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(54) **Can fixture**

Aufspannvorrichtung für einen Behälter

Fixation pour bouteille de distributeur

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Description

[0001] The present invention relates to a source fixture particularly, though not exclusively, for a source of a metered dose in a dispenser of aerosol or powder borne medicaments.

[0002] Dispensers for administration of a metered dose of a medicament are widely used. In simple form, they comprise a body having a mouthpiece and an aerosol can. The can is connected to the body via its spout, which engages in a junction in the body leading to a nozzle opening towards the mouthpiece. Depression of the can towards the body dispenses the dose.

[0003] In a breath actuated dispenser, such as described as the second embodiment in our International Application No. PCT/GB01/03313, dated 24th July 2001 and published under the number WO 02/11802 A2, the can is fixed to the body and a slidable junction member receives the can spout. A cam mechanism displaces the junction member - and the spout - towards the can, dispensing the dose into the breath actuable mechanism. In that application, we envisaged locating the can by detents engageable in a groove formed around the can, at which a can closure is crimped onto the can proper. However, we have noticed that appreciable differences can exist between the depressed position of the distal end of the spout and the groove portion at which the detents engage due to the build up of tolerances. The problem is exacerbated by the detents and the groove engaging at oblique surfaces, whereby radial tolerances can influence longitudinal position. The result is that the can is insufficiently accurately located longitudinally with respect to the body and the cam mechanism.

[0004] The object of the present invention is to provide a more satisfactory fixture of the can to the body.

[0005] According to the invention there is provided a dispenser for a gaseous, gas borne or droplet substance contained in a source thereof, the dispenser comprising:

- a substance source having:
 - an external surface devoid of any feature intended for longitudinal location of the source and
 - a spout displaceable inwards of the source to a fully depressed dispense position for dispensing a substance dose from the source;
- a body having:
 - a mouthpiece via which the substance dose can be inhaled and
 - a socket sized for lateral location of the source via its external surface, but devoid of any body feature intended for longitudinal location thereof;
- a junction member for the spout, the junction member being arranged in the body to be slidable to a set

position for displacing the spout to its fully depressed dispense position;

- an action for slidably moving the junction member to the set position; and
- a unification of the source or a source locator to the body which locates the source longitudinally with the spout in its fully depressed dispense position when the junction member is in its set position, the locator where provided extending from the body, outside the source and at least partially across the end of the source to provide a longitudinal location for the source, locating it when the movable junction member acts to fully depress the spout inwards of the source.

[0006] According to another aspect of the invention there is provided a method in the production of a dispenser of the first aspect of the invention, the method consisting in the steps of:

- arranging the junction member in the body at its set position;
- longitudinally assembling the source to the body, with the spout engaged with the junction member;
- temporarily holding the body and the source in a unification position with the spout in its fully depressed dispense position and the junction member still in its set position; and
- unifying the body and the source together to fix them in their unified position.

[0007] The unification can be an adhesive between the source and the body, normally in the socket of the body. The body and/or the source or the locator can have a re-entrant feature and the body or the locator can have an aperture communicating with the re-entrant feature through which the adhesive was injected. The re-entrant feature can be an internal groove in the body or the locator for receiving the adhesive for a bond with the source or the body respectively. Alternatively or additionally, the re-entrant feature can be an external groove in the source at a crimp for retaining the spout and the source. The injected adhesive can be low temperature hot melt adhesive or fast setting two part adhesive. In either case, the adhesive will set on injection.

[0008] Alternatively the unification can be a weld between the source and the body or between the source locator and the body, the welding being performed preferably by ultrasonics or by laser.

[0009] A further alternative is a membrane such as a wrapping or a printed label around both the source and the body and unified to both. This alternative can be additional to the use of an adhesive or a weld.

[0010] Whilst it is envisaged that the membrane may be of paper, it equally may be of plastics material.

[0011] The membrane may be circumferentially continuous around the body as in a shrink wrapping, or it may be discontinuous, as in a label wrapped largely around

them. It is also conceivable that two or more separate membranes could be used, one to one side and the other to the other side.

[0012] The membrane may have self-adhesive applied to it or adhesive may be applied directly to the source and the body. Indeed the membrane can be of material which is self-adhesive.

[0013] Where the label is a continuous tube, it can be applied as a shrink wrapping. This is particularly advantageous where the body and the source are of different diameters. A shrink wrapping may grip the body and the source sufficiently tightly to unify them together without requiring adhesive. Alternatively, this may be applied for instance as hot melt. The body and/or the source may be contoured to enhance the grip of the shrink wrapping on them. Such contouring may be used for adhesive labels.

[0014] Again, it is envisaged that the membrane may be welded, as by ultra-sonic welding to either or both of the source and the body. Whilst the latter is currently of plastics material, the former is likely to be of plastics material in due course, facilitating welding. Ultrasonic welding is possible even where the source is of metal or indeed of glass provided they are coated with plastics material or indeed even if they are not, provided that the welding causes the melted body material to adhere to the source - when cooled again - sufficiently for no relative movement between them under normal use conditions.

[0015] More specifically, the following weldings can be envisaged:

- i. Where the source is essentially of plastics material or at least has a plastics material portion, such as its main containing portion, engageable with the body, the two can be ultrasonically welded together.
- ii. Similarly, where the source has a glass container, typically with a valve connected to it by a crimped ferrule, and the glass is covered with a plastics material, either as a shrink wrapping or a spray coating or insert moulding or co-moulding, and the glass container fits closely within the body, the two can be ultrasonically welded together.
- iii. Again, where the source is metallic, either of plastics material coated metal or with sprayed on plastics material, the source can be welded to the body where the two engage with each other. This is possible either as regards a main container of the source or a crimped on ferrule.

[0016] In accordance with particular feature of the invention, the source and the body are relatively located in the temporary holding step by:

- urging the source towards the junction member with a force sufficient to depress the spout towards the source and dispense a dose of the substance to the junction member.

[0017] To help understanding of the invention, specific

embodiments thereof will now be described by way of example and with reference to the accompanying drawings, in which:

- 5 Figure 1 is a cross-sectional side view of a dispenser according to a preferred embodiment of the invention, shown in a closed position;
- Figure 2 is a similar ordinary side view;
- Figure 3 is a view similar to Figure 1 of the dispenser during unification of its can to its body;
- 10 Figure 4 is a similar view partially in cross-section of a variant of the dispenser
- Figure 5 is a cross-sectional side view of another dispenser according to another embodiment of the present invention, shown in a closed position;
- 15 Figure 6 is a similar view of a further dispenser according to another embodiment of the invention;
- Figure 7 is a similar view of yet another dispenser according to another embodiment of the invention;
- 20 Figure 8 is a similar view of yet a further dispenser according to another embodiment of the invention; and
- 25 Figure 9 is a similar view of the last described dispenser according to another embodiment of the invention.

[0018] Referring first to Figures 1 & 2 of the drawings, a dispenser 1 comprises a can 2 and a body 3. The can is an aluminium extrusion with a valve crimped into its mouth, the valve having an outlet spout 4. The crimped region 5 of the can surrounding the valve has a lesser diameter than the can has through the main part 6 of its length.

[0019] The body has a mouthpiece 11 with a pivotal cover 12 drivingly connected to a cam 13. This bears on the underside of a junction member 14, into a socket 15 of which the spout 4 fits. A breath actuated dose release mechanism 16 is provided. Its details form no part of the present invention. The reader is referred our International Application mentioned at the beginning of this specification for details of this mechanism.

[0020] The body has a tubular section 7 for receiving the necked down region 5 of the can. The tubular section and the main part of the can having the same external diameter.

[0021] A printed paper label 21 coated with self-adhesive is wrapped around the joint between the body and the can to unite the can to the body in position such that when the cover is opened, a dose is dispensed by the cam 13 lifting the junction member and depressing the spout. The dose is retained since the action of opening of the cover sets the breath actuation mechanism. On breathing in through the mouthpiece by the user, the mechanism releases the dose for inhalation.

[0022] In order to establish correct positioning of the can with respect to the body, prior to positioning of the label, during assembly of the dispenser, the pre-assembled body 3, cover 12, junction member 14 and release

mechanism 16 are set to their "cover open" position as shown in Figure 3, i.e. with the cover pivoted down from the Figure 1 position. When the dispenser comes to be used, the Figure 3 position is one in which with the can united to the body, the release mechanism is lifted to move the spout 4 inwards of the can, i.e. the spout is depressed. With the mentioned components set to their "cover open" position a can is introduced into the tubular section of the body. With the can and body properly aligned, the spout engages in the socket 15 in the junction member. A predetermined force F is applied to ensure that the spout is fully depressed. This causes the can to release into the release mechanism a dose, which will usually be a metered dose. Thus in this position of the can in the body, when the cover is opened in use, another dose will be released. With the force still applied the label is applied to the can and the body fixing their relative position.

[0023] The label can pass fully around the can or merely pass most of the way around.

[0024] Once the can and the body are united by the label, air can be drawn into a duct D close to the mouthpiece to induce the release mechanism to release the dose. The cover can then be closed and the dispenser is ready for shipping and use. Alternatively, the cover can be closed without induced release. The closure causes a finger 22 fast with the cam to engage with a finger 23 fast with the flap 24 of the release mechanism whereby the flap is moved to its Figure 1 position and the dose is released.

[0025] It should be noted that whereas a superficial inspection of Figures 1 and 3 might suggest that the can is located by abutment between the end 25 of the tubular section of the body and the step 26 in the can, there is clearance between these features when the can is pushed in to its position in which spout is depressed and the release mechanism is set.

[0026] Alternatively the label can be a shrink wrap label 31, as shown in Figure 4. This is of particular advantage where the body stands slightly proud of the can, as shown in Figure 3, in that a tapered portion 32 of the label bridges the change in diameter from the larger diameter tubular section 33 to the smaller diameter can 34. The tapered portion acts in tension in use of the device. To enhance grip of the shrink wrap, the can and body can be provided with adhesive 35 and/or surface formations 36.

[0027] Referring to Figure 5 of the drawings, the dispenser 101 thereshown comprises a can 102 and a body 103. As with the dispenser of Figure 1, the can is an aluminium extrusion with a valve crimped into its mouth, the valve having an outlet spout 104. The crimped ferrule 105 connecting the valve to the main part 106 of the can has a lesser diameter than the can has through the main part of its length.

[0028] The body has a mouthpiece 111 with a pivotal cover 112 drivingly connected to a cam 113. This bears on the underside of a junction member 114, into a socket 115 of which the spout 104 fits. A breath actuated dose

release mechanism 116 is provided. The body has a tubular section 107 for receiving the ferrule 105 of the can. The tubular section and the main part of the can having the same external diameter.

[0029] The ferrule is made of aluminium with a coating 121 of polypropylene of sufficient thickness that it can be ultrasonically welded 122 to the tubular section 107 of the body. The can is welded into the body in such position that when the cover is opened, a dose is dispensed by the cam 13 lifting the junction member and depressing the spout. The dose is retained since the action of opening of the cover sets the breath actuation mechanism. On breathing in through the mouthpiece by the user, the mechanism releases the dose for inhalation.

[0030] In order to establish the correct positioning prior to welding, during assembly of the dispenser, the pre-assembled body 103, cover 112, junction member 114 and release mechanism 116 are set to their "cover open" position, i.e. with the cover pivoted down from the Figure 5 position, in which in the presence of the can the release mechanism is lifted to depress the spout 104. The can is introduced into the tubular section of the body. With the can and body properly aligned, the spout engages in the socket 115 in the junction member. A predetermined force is applied to ensure that the spout is fully depressed. This causes the can to release into the release mechanism a dose, which will usually be a metered dose. Thus in this position of the can in the body, when the cover is opened in use, another dose will be released. With the force still applied the can is ultrasonically welded in position.

[0031] Figure 6 shows an alternative, in which the tubular body section 207 is longer and the can proper 206 has the same diameter as the ferrule 205. Both the ferrule and the can are spray coated with polypropylene whereby a weld 222 can be established with the section 207, both at the ferrule and the portion of the can within the tubular body section.

[0032] Figure 7 yet another alternative where the "can" proper 306 is of glass and spray coated with polypropylene. This is welded 322 to the body section 307 surrounding it.

[0033] Figure 8 shows another glued dispenser. It has an aperture 410 in its tubular section 407, through which low temperature hot melt adhesive or fast curing two-part adhesive can be injected to set in the groove 409 between the crimped portion 405 of the can and the main body portion 406. A further groove 408 can be provided in the tubular section, to provide a larger cross-sectional area flow path for the adhesive and also to provide a re-entrant key in both the body and the source for the adhesive, whereby the adhesive 411 locates the source in the body not only by its adhesive nature, but also as a solid block keying into both the features. It can also be envisaged that, where the source has little or no groove at the joint between the crimped on valve for the spout and the can proper, the re-entrant groove in the tubular section 407 may be relied on alone to provide the flow passage for

the adhesive.

[0034] Figure 9 shows a further dispenser according to another embodiment of the invention, with a source locator 550. It is a plastics injection moulding. It surrounds the can 506 with a generally cylindrical sleeve 551 along the length of the can extending from the tubular section 507 of the body 503. The sleeve of the locator has an in-turned closure 552 at its end remote from the body 503. The can is a loose fit within the locator sleeve, which allows positioning force F on the sleeve to be conveyed to the can of the source for its correct positioning. The polymers of the locator and of the body are chosen whereby the sleeve is transparent to laser irradiation, whilst the body absorbs the radiation, thus melting and forming a weld 553 with the locator, at their overlap 504 when the parts are properly located and irradiated for locating the can and the body.

[0035] The invention is not intended to be restricted to the details of the above described embodiment. For instance, the weld can be replaced by adhesive. Further the embodiment of Figure 4 can be varied with the shrink wrapping extending along the full length of the source - shown in dashed lines in Figure 4 - and just over its end 41. Thus the shrink wrapping holds the can not only by friction along its length but by physical location where it forms a rim 42 at the end of the can.

Claims

1. A dispenser (1, 101) for a gaseous, gas borne or droplet substance contained in a source thereof, the dispenser comprising:

- a substance source (2, 34, 102, 206, 306, 406, 506) having:

- an external surface (5, 105, 205) devoid of any feature intended for longitudinal location of the source and
- a spout (4, 104) displaceable inwards of the source to a fully depressed dispense position for dispensing a substance dose from the source;

- a body (3, 103, 503) having:

- a mouthpiece (11, 111) via which the substance dose can be inhaled and
- a socket (7, 33, 107, 207, 307, 407, 507) sized for lateral location of the source via its external surface, but devoid of any body feature intended for longitudinal location thereof;

- a junction member (14, 15, 114, 115) for the spout, the junction member being arranged in the body to be slidable to a set position for dis-

placing the spout to its fully depressed dispense position;

- an action (12, 13, 112, 113) for slidably moving the junction member to the set position; and
- a unification (21, 31, 32, 41, 42, 121, 122, 222, 322, 411, 553) of the source or a source locator (550, 551, 552) to the body which locates the source longitudinally with the spout in its fully depressed dispense position when the junction member is in its set position, the locator where provided extending from the body, outside the source and at least partially across the end of the source to provide a longitudinal location for the source, locating it when the movable junction member acts to fully depress the spout inwards of the source.

2. A dispenser as claimed in claim 1, wherein the unification is an adhesive (411) between the source (405, 406) or the locator and the body (407).

3. A dispenser as claimed in claim 2, wherein the adhesive (411) is in the socket of the body (407).

4. A dispenser as claimed in claim 2 or claim 3, wherein the body (407) and/or the source (405, 406) or the locator have a re-entrant feature (408, 409) and the body or the locator has an aperture (410) communicating with the re-entrant feature through which the adhesive was injected.

5. A dispenser as claimed in claim 4, wherein the re-entrant feature is an internal groove (408) in the body or the locator for receiving the adhesive for a bond with the source (405, 406) or the body (407) respectively.

6. A dispenser as claimed in claim 4, wherein the re-entrant feature is an external groove (409) in the source at a crimp (405) for retaining the spout and the source (406).

7. A dispenser as claimed in claim 1, wherein the unification is a weld (122, 222, 322, 553) between the source or the locator and the body.

8. A dispenser as claimed in claim 7, wherein weld is an ultrasonic weld (122) or a laser weld (553).

9. A dispenser as claimed in claim 7 or claim 8, wherein the source and/or the locator and the body are of plastics material.

10. A dispenser as claimed in claim 7 or claim 8, wherein the source is of glass or metal and is coated with plastics material.

11. A dispenser as claimed in claim 7 or claim 8 wherein

the source is of un-coated glass or metal.

12. A dispenser as claimed in any one of claims 7 to 11, wherein the weld (222, 322) is between a container of the source and the body. 5
13. A dispenser as claimed in any one of claims 7 to 11, wherein the weld (122, 222) is between a ferrule of the source and the body. 10
14. A dispenser as claimed in any one of claims 7 to 11, wherein the weld (553) is between source locator and the body (504).
15. A dispenser as claimed in any preceding claim, wherein the unification is a membrane (21, 31, 32, 41, 42) around both the source or the locator and the body and unified to both. 15
16. A dispenser as claimed in claim 15, wherein the membrane is a wrapping (31, 32, 41, 42). 20
17. A dispenser as claimed in claim 15, wherein the membrane is a printed label (21). 25
18. A dispenser as claimed in claim 15, claim 16 or claim 17, wherein the membrane is of paper (21).
19. A dispenser as claimed in claim 15, claim 16 or claim 17, wherein the membrane is of plastics material. 30
20. A dispenser as claimed in any one of claims 15 to 19, wherein the membrane (21, 31, 32) is circumferentially continuous around the body. 35
21. A dispenser as claimed in claim 15, wherein the membrane is a shrink wrapping (31, 32, 41, 42).
22. A dispenser as claimed in any one of claims 15 to 19, wherein the membrane (41, 42) is discontinuous around the source or the locator and the body. 40
23. A dispenser as claimed in claim 22, wherein two or more separate membranes (41, 42) could be used, one to one side of the source or the locator and the body and the other to the other side. 45
24. A dispenser as claimed in any one of claims 15 to 23, wherein the or each membrane (21) has self-adhesive applied to it. 50
25. A dispenser as claimed in any one of claims 15 to 23, wherein the or each membrane is of self adhesive material. 55
26. A dispenser as claimed in any one of claims 15 to 23, wherein adhesive (35) for the membrane is applied directly to the source or the locator and the

body.

27. A dispenser as claimed in any one of claims 15 to 23, wherein the source or the locator and/or the body are contoured (36) to enhance the grip of the membrane to them.
28. A method in the production of a dispenser (1,101) as claimed in any one of claims 1 to 27, the method consisting in the steps of:
- arranging the junction member (14, 15, 114, 115) in the body (3, 103, 503) at its set position;
 - longitudinally assembling the source (2, 34, 102, 206, 306, 406, 506) to the body, with the spout (4, 104) engaged with the junction member;
 - temporarily holding (F) the body and the source in a unification position with the spout in its fully depressed dispense position and the junction member still in its set position; and
 - unifying (21, 31, 32, 41, 42, 121, 122, 222, 322, 411, 553) the body and the source together to fix them in their unified position.
29. A method as claimed in claim 28, wherein the source and the body are relatively located in the temporary holding step by urging the source towards the junction member with a force (F) sufficient to fully depress the spout towards the source and dispense a dose of the substance to the junction member.

Patentansprüche

1. Spender (1, 101) für eine gasförmige, gas getragene oder tropfenförmige Substanz, welche in einer Quelle davon enthalten ist, wobei der Spender umfasst:
- eine Substanzquelle (2, 34, 102, 206, 306, 406, 506), welche aufweist:
 - eine äußere Fläche (5, 105, 205), welche keine Merkmale zum Längspositionieren der Quelle aufweist, und
 - einen Schnabel (4, 104), welcher nach innerhalb der Quelle bis zu einer vollständig niedergedrückten Ausgabeposition bewegbar ist, zum Ausgeben einer Substanzdosis aus der Quelle;
 - einen Körper (3, 103, 503), welcher aufweist:
 - ein Mundelement (11, 111), über welches die Substanzdosis inhaliert werden kann, und
 - eine Fassung (7, 33, 107, 207, 307, 407, 507), welche zum seitlichen Positionieren

- der Quelle über ihre Außenfläche dimensioniert ist, die jedoch keine Körpermerkmale aufweist, welche zu ihrem Längspositionieren vorgesehen sind;
- ein Verbindungsteil (14, 15, 114, 115) für den Schnabel, wobei das Verbindungsteil in dem Körper so angeordnet ist, dass es bis zu einer eingestellten Position gleitbar ist, um den Schnabel in seine vollständig niedergedrückte Ausgabeposition zu bewegen;
 - einen Mechanismus (12, 13, 112, 113) zum gleitenden Bewegen des Verbindungsteils in die eingestellte Position; und
 - eine Vereinigung (21, 31, 32, 41, 42, 121, 122, 222, 322, 411, 553) der Quelle oder eines Quellenlokalisierers (550, 551, 552) mit dem Körper, welche die Quelle in der Längsrichtung positioniert, wobei der Schnabel in seiner vollständig niedergedrückten Ausgabeposition angeordnet ist, wenn das Verbindungsteil sich in seiner eingestellten Position befindet, wobei der Lokalisierer, falls vorgesehen, sich vom Körper, außerhalb der Quelle und zumindest teilweise quer über das Ende der Quelle erstreckt, um eine längsgerichtete Positionierung für die Quelle zu bieten, indem sie positioniert wird, wenn das bewegliche Verbindungsteil wirkt, um den Schnabel vollständig in das Innere der Quelle einzudrücken.
2. Spender nach Anspruch 1, wobei die Vereinigung ein Klebstoff (411) zwischen der Quelle (405, 406) oder dem Lokalisierer und dem Körper (407) ist.
 3. Spender nach Anspruch 1 oder 2, wobei der Klebstoff (411) sich in der Fassung des Körpers (407) befindet.
 4. Spender nach Anspruch 2 oder 3, wobei der Körper (407) und/oder die Quelle (405, 406) oder der Lokalisierer ein einwärts gerichtetes Merkmal (408, 409) aufweisen und der Körper oder der Lokalisierer eine Öffnung (410) aufweist, welche mit dem einwärts gerichteten Merkmal kommuniziert, durch welche der Klebstoff eingespritzt worden ist.
 5. Spender nach Anspruch 4, wobei das einwärts gerichtete Merkmal eine innere Rille (408) im Körper oder im Lokalisierer zum Aufnehmen des Klebstoffs ist, um jeweils eine Verbindung mit der Quelle (405, 406) oder mit dem Körper (407) zu bilden.
 6. Spender nach Anspruch 4, wobei das einwärts gerichtete Merkmal eine äußere Rille (409) in der Quelle an einem Falz (405) zum Halten des Schnabels und der Quelle (406) ist.
 7. Spender nach Anspruch 1, wobei die Vereinigung eine Schweißnaht (122, 222, 322, 553) zwischen der Quelle oder dem Lokalisierer und dem Körper ist.
 8. Spender nach Anspruch 7, wobei die Schweißung eine Ultraschallschweißung (122) oder eine Laserschweißung (553) ist.
 9. Spender nach Anspruch 7 oder 8, wobei die Quelle und/oder der Lokalisierer und der Körper aus Kunststoff bestehen.
 10. Spender nach Anspruch 7 oder 8 wobei die Quelle aus Glas oder Metall besteht und mit Kunststoffmaterial überzogen ist.
 11. Spender nach Anspruch 7 oder 8, wobei die Quelle ein nicht überzogenes Glas oder Metall ist.
 12. Spender nach einem der Ansprüche 7 bis 11, wobei sich die Schweißnaht (222, 322) zwischen einem Behälter für die Quelle und dem Körper befindet.
 13. Spender nach einem der Ansprüche 7 bis 11, wobei sich die Schweißnaht (122, 222) zwischen einer Hülse der Quelle und dem Körper befindet.
 14. Spender nach einem der Ansprüche 7 bis 11, wobei sich die Schweißnaht (553) zwischen dem Quellenlokalisierer und dem Körper (504) befindet.
 15. Spender nach einem der vorhergehenden Ansprüche, wobei die Vereinigung aus einer sowohl um die Quelle oder den Lokalisierer als auch den Körper angeordneten Membran (21, 31, 32, 41, 42) besteht und diese mit beiden vereinigt ist.
 16. Spender nach Anspruch 15, wobei die Membran eine Umhüllung (31, 32, 41, 42) ist.
 17. Spender nach Anspruch 15, wobei die Membran ein bedrucktes Etikett (21) ist.
 18. Spender nach Anspruch 15, Anspruch 16 oder Anspruch 17, wobei die Membran aus Papier (21) besteht.
 19. Spender nach Anspruch 15, Anspruch 16 oder Anspruch 17, wobei die Membran aus Kunststoff besteht.
 20. Spender nach einem der Ansprüche 15 bis 19, wobei die Membran (21, 31, 32) um den Körper umfänglich durchgehend ist.
 21. Spender nach Anspruch 15, wobei die Membran eine Schrumpfumhüllung (31, 32, 41, 42) ist.

22. Spender nach einem der Ansprüche 15 bis 19, wobei die Membran (41, 42) nicht durchgehend um die Quelle oder den Lokalisierer und den Körper angeordnet ist.
23. Spender nach Anspruch 22, wobei zwei oder mehrere getrennte Membranen (41,42) verwendet werden könnten, eine auf einer Seite der Quelle oder des Lokalisierers und des Körpers und die andere auf der anderen Seite.
24. Spender nach einem der Ansprüche 15 bis 23, wobei auf die oder jede Membran (21) Selbstkleber aufgebracht ist.
25. Spender nach einem der Ansprüche 15 bis 23, wobei die oder jede Membran aus Selbstklebematerial besteht.
26. Spender nach einem der Ansprüche 15 bis 23, wobei Klebstoff (35) für die Membran direkt auf die Quelle oder auf den Lokalisierer und den Körper aufgebracht wird.
27. Spender nach einem der Ansprüche 15 bis 23, wobei die Quelle oder der Lokalisierer und/oder der Körper profiliert (36) sind, um die Haftung der Membran an denselben zu verbessern.
28. Verfahren zur Herstellung eines Spenders (1, 101) nach einem der Ansprüche 1 bis 27, wobei das Verfahren aus folgenden Schritten besteht:
- Anordnen des Verbindungsteils (14, 15, 114, 115) in dem Körper (3, 103, 503) in seiner eingestellten Position;
 - längsgerichteter Zusammenbau der Quelle (2, 34, 102, 206, 306, 406, 506) mit dem Körper, wobei der Schnabel (4, 104) mit dem Verbindungsteil in Eingriff steht;
 - zeitweiliges Halten (F) des Körpers und der Quelle in einer Vereinigungsposition mit dem Schnabel in seiner vollständig niedergedrückten Ausgabeposition und mit dem Verbindungsteil noch in seiner eingestellten Position; und
 - Vereinigen (21, 31, 32, 41, 42, 121, 122, 222, 322, 411, 553) des Körpers mit der Quelle, um dieselben in ihrer vereinigten Position zu befestigen.
29. Verfahren nach Anspruch 28, wobei die Quelle und der Körper relativ zueinander im Schritt des zeitweiligen Haltens positioniert sind, indem die Quelle zum Verbindungsteil hin mit einer Kraft (F) gedrückt wird, welche ausreicht, um den Schnabel vollständig zur Quelle hin zu drücken und eine Dosis der Substanz zum Verbindungsteil auszugeben.

Revendications

1. Distributeur (1, 101) pour une substance gazeuse, en suspension dans un gaz ou sous forme de gouttelettes, contenue dans une source de celle-ci, le distributeur comprenant :
- une source de substance (2, 34, 102, 206, 306, 406, 506) comportant :
 - une surface externe (5, 105, 205) dépourvue d'une quelconque structure destinée à un positionnement longitudinal de la source ; et
 - un bec verseur (4, 104) pouvant être déplacé vers l'intérieur de la source, vers une position de distribution complètement enfoncée pour distribuer une dose de la substance à partir de la source ;
 - un corps (3, 103, 503) comportant :
 - un embout (11, 111) à travers lequel la dose de substance peut être inhalée ; et
 - une douille (7, 33, 107, 207, 307, 407, 507) dimensionnée en vue d'un positionnement latéral de la source à travers sa surface externe, mais dépourvue d'une quelconque structure du corps destinée à un positionnement longitudinal de celle-ci ;
 - un élément de jonction (14, 15, 114, 115) pour l'embout, l'élément de jonction étant agencé dans le corps de sorte à pouvoir coulisser vers une position réglée pour déplacer le bec verseur vers sa position de distribution complètement enfoncée ;
 - une action (12, 13, 112, 113) pour déplacer de manière coulissante l'élément de jonction vers la position réglée ; et
 - une unification, (21, 31, 32, 41, 42, 121, 122, 222, 322, 411, 553) de la source ou d'un positionneur de la source (550, 551, 552) par rapport au corps, positionnant la source de manière longitudinale, le bec verseur se trouvant sans sa position de distribution complètement enfoncée lorsque l'élément de jonction se trouve dans sa position réglée, le positionneur, s'il est présent, s'étendant à partir du corps, à l'extérieur de la source et au moins en partie à travers l'extrémité de la source pour établir un emplacement longitudinal de la source, la positionnant lorsque l'élément de jonction mobile entraîne l'enfoncement complet du bec verseur vers l'intérieur de la source.
2. Distributeur selon la revendication 1, dans lequel l'unification est un adhésif (411) entre la source (405,

- 406) ou le positionneur et le corps (407).
3. Distributeur selon la revendication 2, dans lequel l'adhésif (411) et disposé dans la douille du corps (407).
 4. Distributeur selon les revendications 2 ou 3, dans lequel le corps (407) et/ou la source (405, 406) ou le positionneur comportent une structure rééminente (408, 409), le corps ou le positionneur comportant une ouverture (410) communiquant avec la structure rééminente à travers laquelle l'adhésif a été injecté.
 5. Distributeur selon la revendication 4, dans lequel la structure rééminente est une rainure interne (408) dans le corps ou le positionneur, destinée à recevoir l'adhésif, respectivement en vue d'une liaison avec la source (405, 406) ou le corps (407).
 6. Distributeur selon la revendication 4, dans lequel la structure rééminente est une rainure externe (409) dans la source au niveau d'un sertissage (405), pour retenir le bec verseur et la source (406).
 7. Distributeur selon la revendication 1, dans lequel l'unification est une soudure (122, 222, 322, 553) entre la source ou le positionneur et le corps.
 8. Distributeur selon la revendication 7, dans lequel la soudure est une soudure par ultrasons (122) ou une soudure par laser (553).
 9. Distributeur selon les revendications 7 ou 8, dans lequel la source et/ou le positionneur sont composés d'un matériau plastique.
 10. Distributeur selon les revendications 7 ou 8, dans lequel la source est composée de verre ou de métal et est revêtue d'un matériau plastique.
 11. Distributeur selon les revendications 7 ou 8, dans lequel la source est composée de verre ou de métal non revêtu.
 12. Distributeur selon l'une quelconque des revendications 7 à 11, dans lequel la soudure (222, 322) est formée entre un récipient de la source et le corps.
 13. Distributeur selon l'une quelconque des revendications 7 à 11, dans lequel la soudure (122, 222) est formée entre une virole de la source et le corps.
 14. Distributeur selon l'une quelconque des revendications 7 à 11, dans lequel la soudure (553) est formée entre le positionneur de la source et le corps (504).
 15. Distributeur selon l'une quelconque des revendications précédentes, dans lequel l'unification est une membrane (21, 31, 32, 41, 42) entourant aussi bien la source ou le positionneur que le corps et reliée à ces deux éléments.
 - 5 16. Distributeur selon la revendication 15, dans lequel la membrane est une enveloppe (31,32,41,42).
 17. Distributeur selon la revendication 15, dans lequel la membrane est une étiquette imprimée (21).
 - 10 18. Distributeur selon les revendications 15, 16 ou 17, dans lequel la membrane est composée de papier (21).
 - 15 19. Distributeur selon les revendications 15, 16 ou 17, dans lequel la membrane est composée d'un matériau plastique.
 - 20 20. Distributeur selon l'une quelconque des revendications 15 à 19, dans lequel la membrane (21, 31, 32) s'étend de manière continue autour de la circonférence du corps.
 - 25 21. Distributeur selon la revendication 15, dans lequel la membrane est un emballage rétractable (31, 32, 41, 42).
 - 30 22. Distributeur selon l'une quelconque des revendications 15 à 19, dans lequel la membrane (41, 42) s'étend de manière discontinue autour de la source ou du positionneur et du corps.
 - 35 23. Distributeur selon la revendication 22, dans lequel deux ou plusieurs membranes séparées (41, 42) pourraient être utilisées, l'une sur un côté de la source ou du positionneur et du corps et l'autre sur l'autre côté.
 - 40 24. Distributeur selon l'une quelconque des revendications 15 à 23, dans lequel la ou chaque membrane (21) comporte un autoadhésif qui y est appliqué.
 - 45 25. Distributeur selon l'une quelconque des revendications 15 à 23, dans lequel la ou chaque membrane est composée d'un matériau autoadhésif.
 - 50 26. Distributeur selon l'une quelconque des revendications 15 à 23, dans lequel l'adhésif (35) pour la membrane est appliqué directement sur la source ou le positionneur et le corps.
 - 55 27. Distributeur selon l'une quelconque des revendications 15 à 23, dans lequel la source ou le positionneur et/ou le corps sont profilés (36) pour améliorer l'adhérence de la membrane sur ceux-ci.
 28. Procédé de production d'un distributeur (1, 101) selon l'une quelconque des revendications 1 à 27, le

procédé comprenant les étapes ci-dessous :

- agencement de l'élément de jonction (14, 15, 114, 115) dans le corps (3, 103, 503) au niveau de sa position réglée ; 5
 - assemblage longitudinal de la source (2, 34, 102, 206, 306, 406, 506) sur le corps, le bec verseur (4, 104) étant engagé dans l'élément de jonction ; 10
 - maintien temporaire (F) du corps et de la source dans une position d'unification, le bec verseur se trouvant dans sa position de distribution complètement enfoncée et l'élément de jonction se trouvant toujours dans sa position réglée ; et 15
 - unification (21, 31, 32, 41, 42, 121, 122, 222, 322, 411, 553) du corps et de la source afin de les fixer dans leur position unifiée.
- 29.** Procédé selon la revendication 28, dans lequel la source et le corps sont positionnés de manière relative au cours de l'étape de maintien temporaire en poussant la source vers l'élément de jonction par l'intermédiaire d'une force (F) suffisante pour enfoncer complètement le bec verseur vers la source et pour distribuer une dose de la substance à l'élément de jonction. 20
- 25
- 30
- 35
- 40
- 45
- 50
- 55

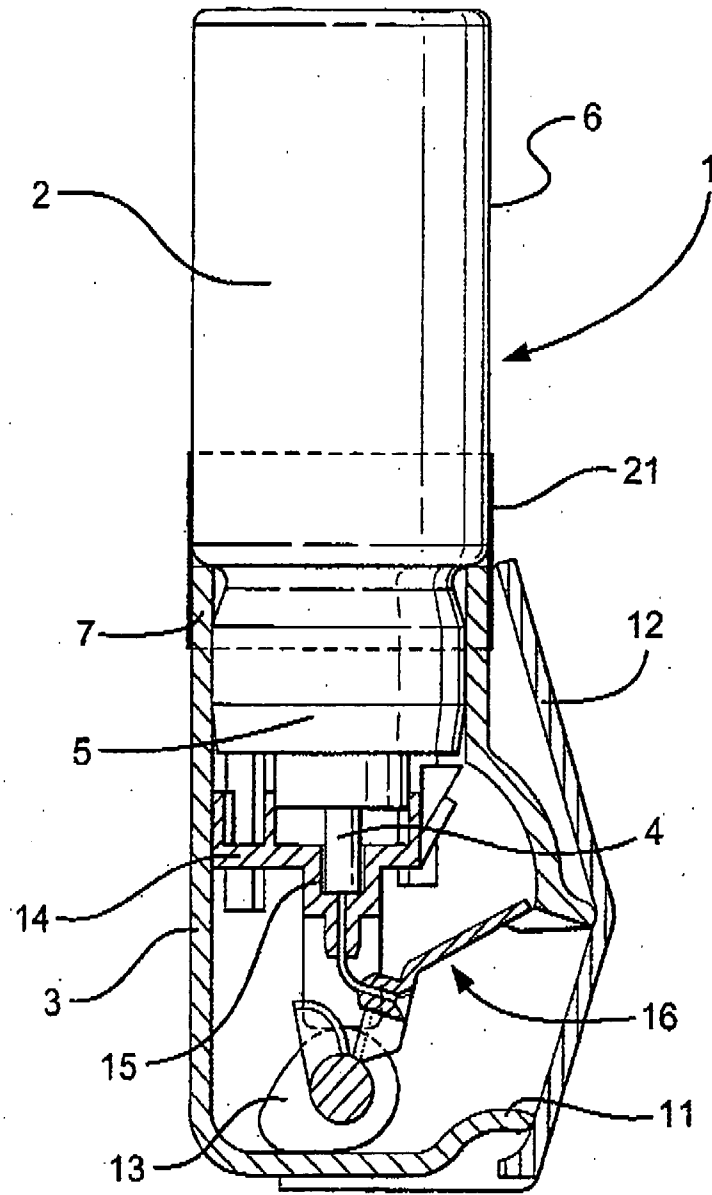


Fig. 1

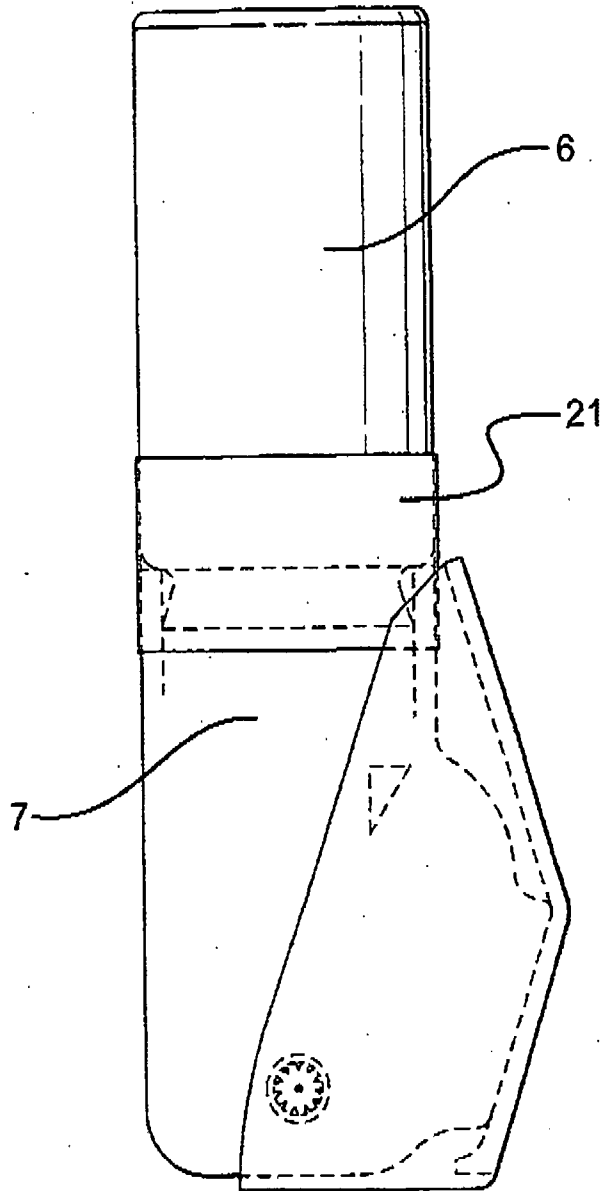
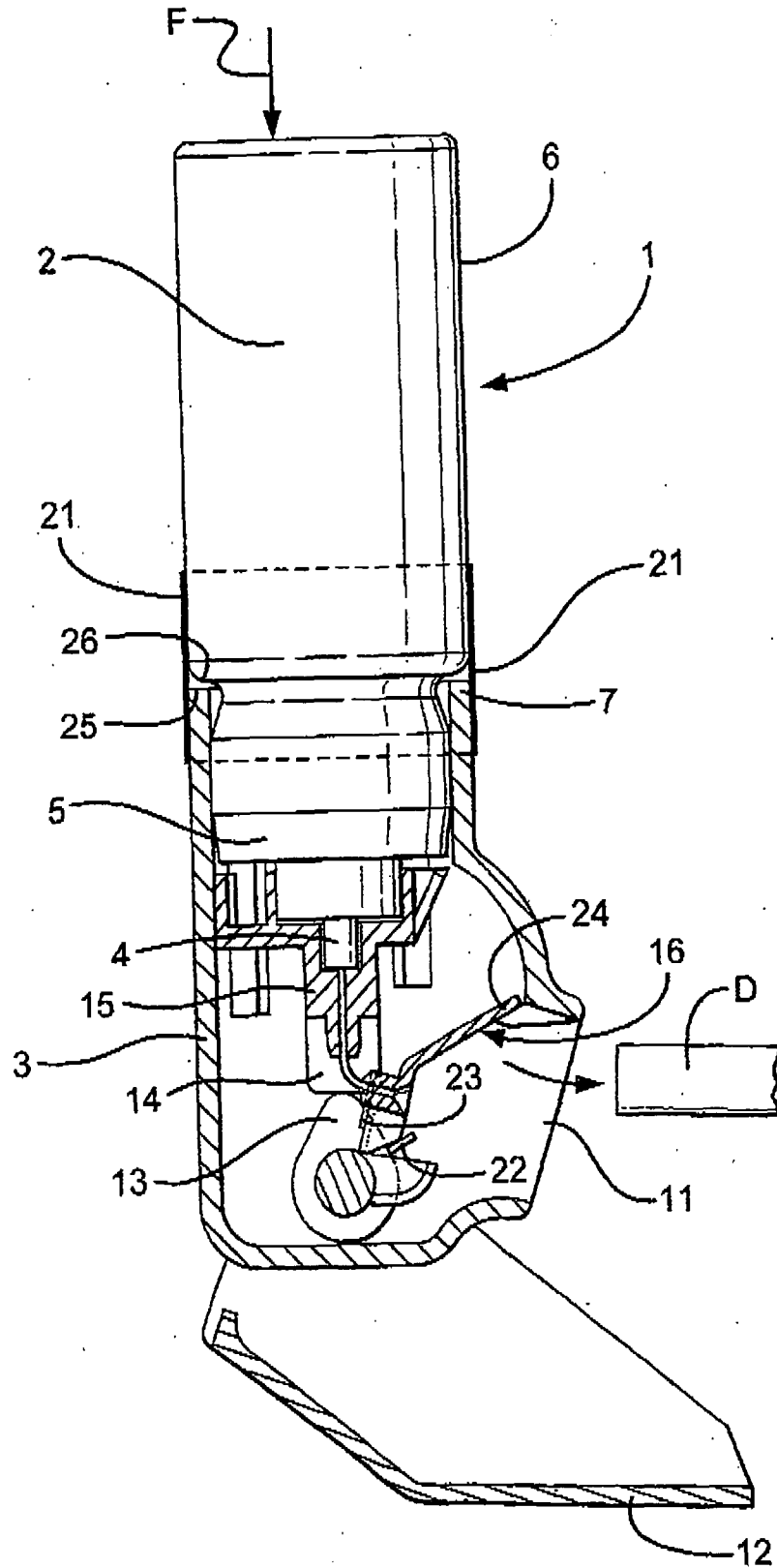


Fig.2



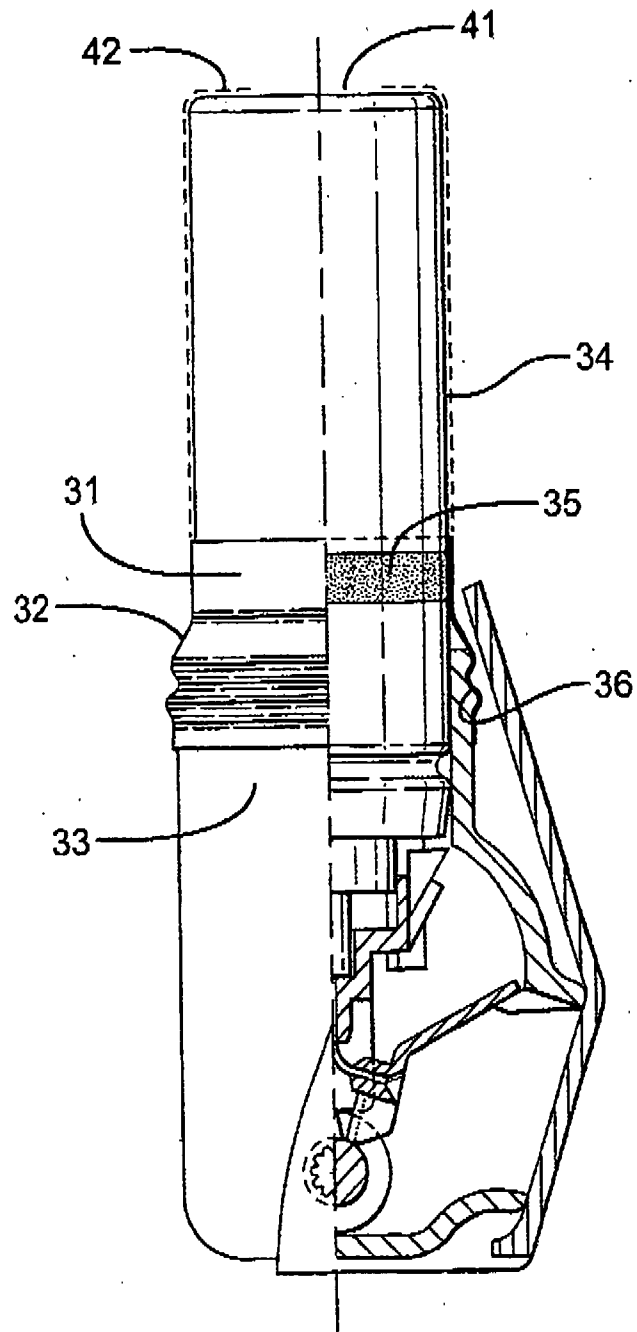


Fig.4

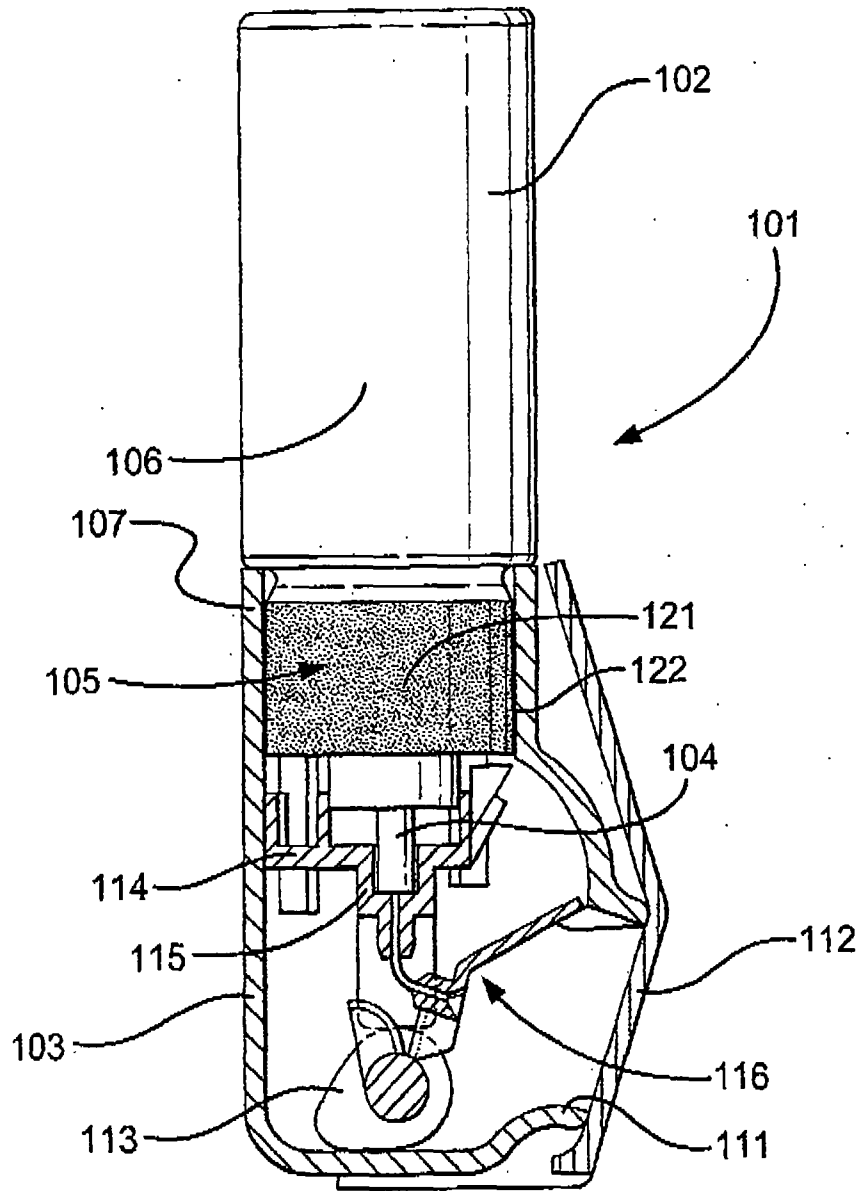


Fig.5

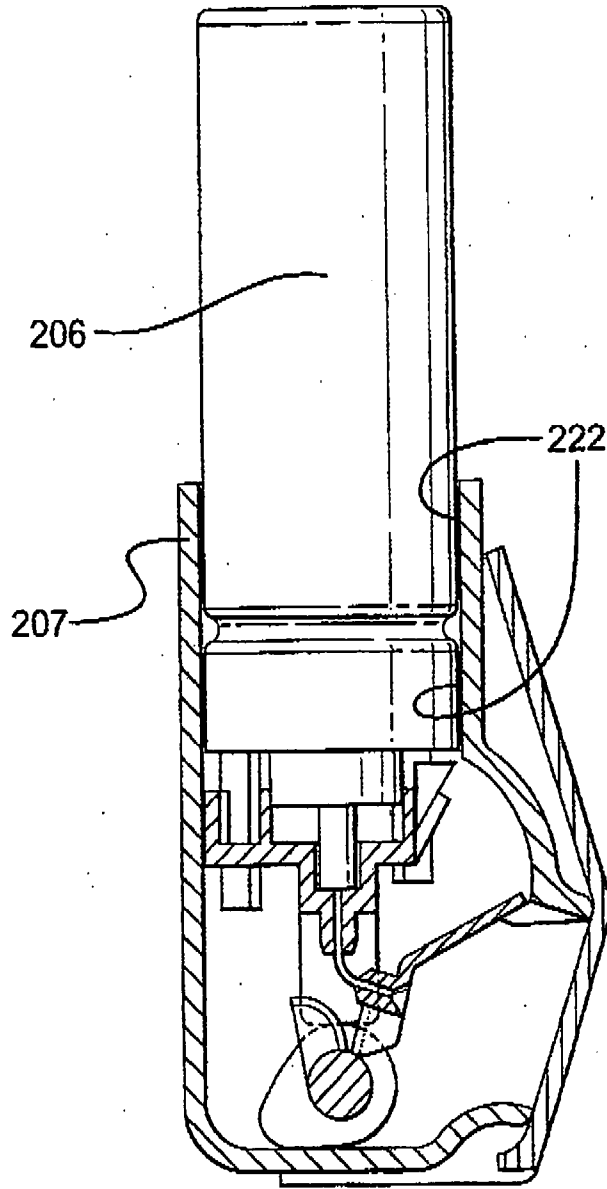


Fig. 6

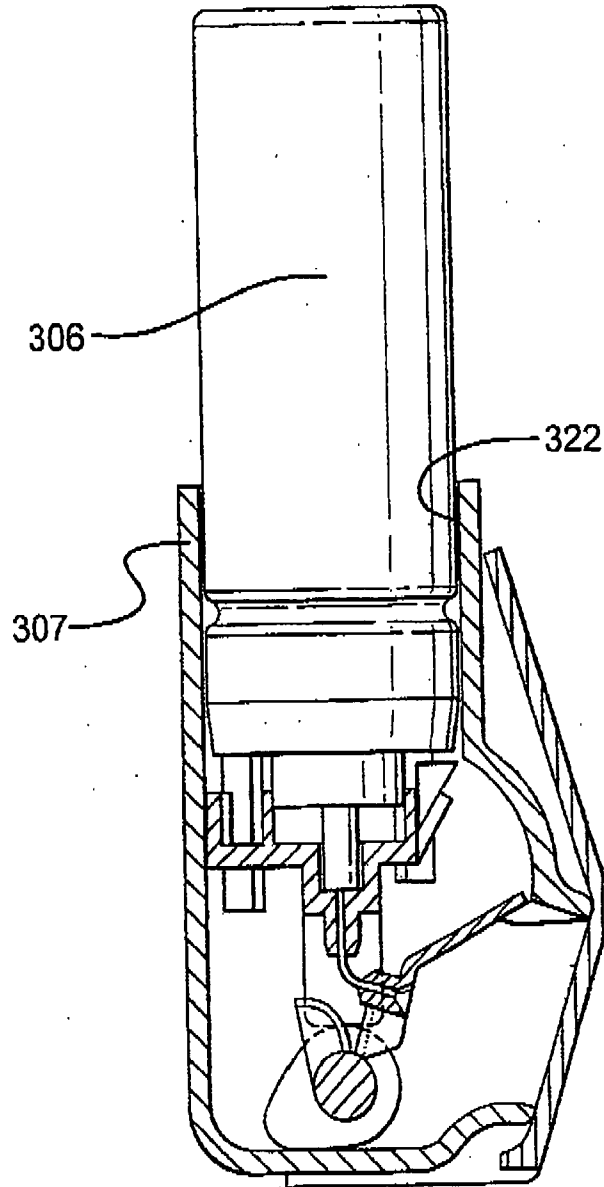


Fig. 7

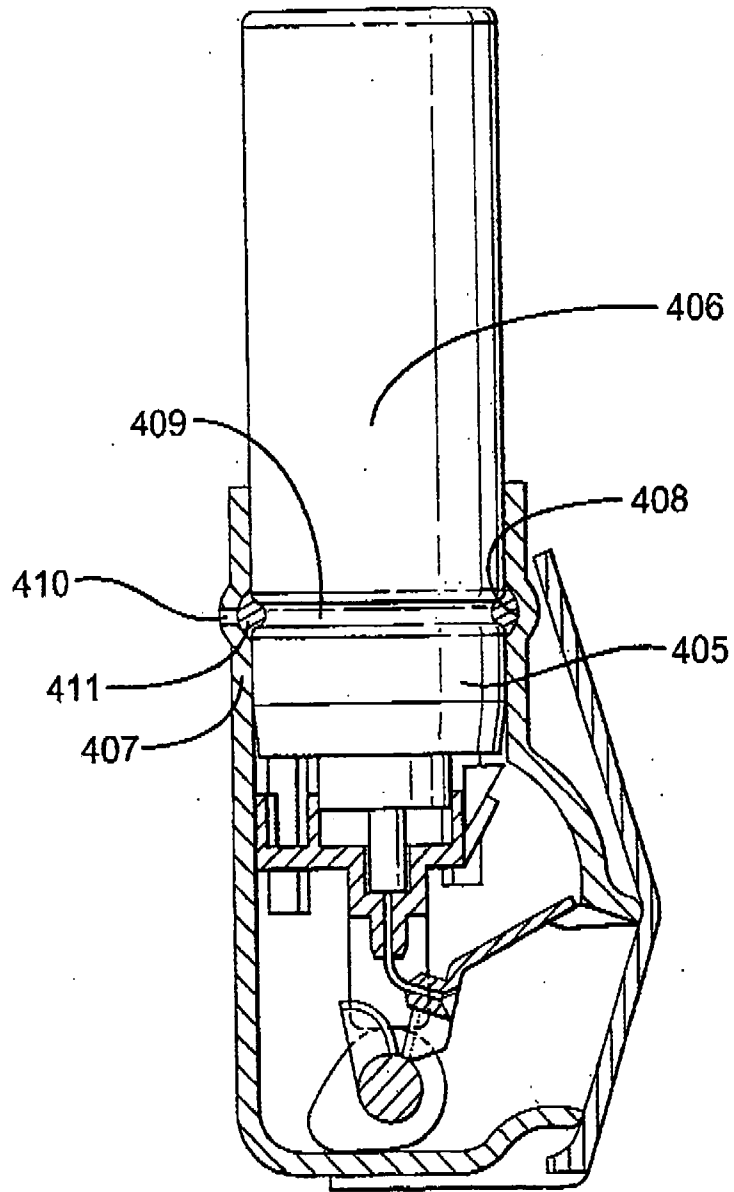


Fig. 8

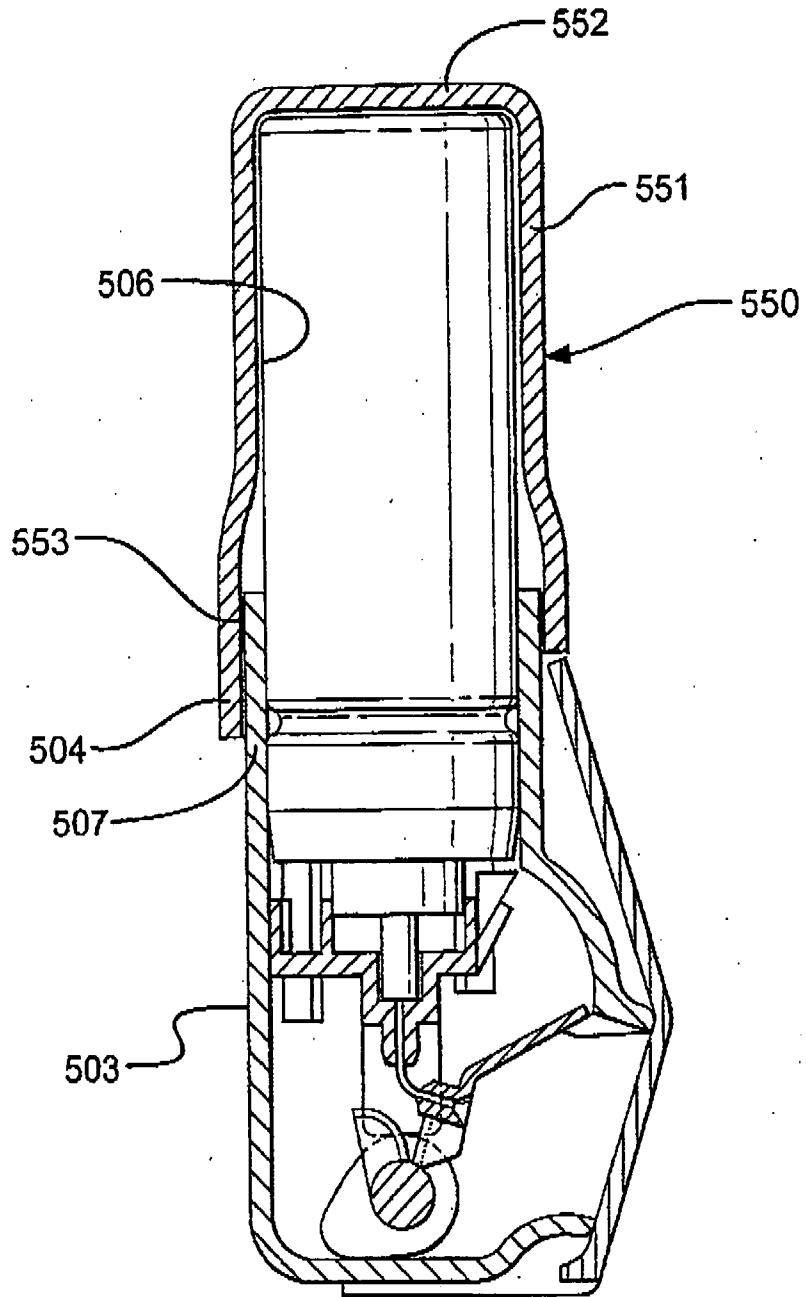


Fig.9

REFERENCES CITED IN THE DESCRIPTION

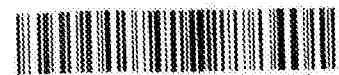
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Patent documents cited in the description

- GB 0103313 W [0003]
- WO 0211802 A2 [0003]

DOBOZ SZERELVÉNY
SZABADALMI IGÉNYPONTOK

1. Elosztó (dispenser) (1, 101) gáz állapotú, gáz-hordozó (gas borne) vagy cseppecske (droplet) anyaghoz, amely egy forrásában (source) tartózkodik, ahol az elosztó tartalmaz:
 - egy anyag (substance) forrást (2, 34, 102, 206, 306, 406, 506), amely a következőkkel rendelkezik:
 - külső felület (5, 105, 205), amely mentes bármely olyan vonástól (feature), amely a forrás hosszanti elhelyezéséhez (location) lenne szárnva, és
 - egy kifolyó darab (spout) (4, 104), amely elmozdítható befelé a forráshoz egy teljesen lenyomott (depressed) elosztó (dispense) pozícióba egy anyag dózisének elosztásához a forrásból;
 - egy test (3, 103, 503), amely a következőkkel rendelkezik:
 - szájdarab (szopóka) (mouthpiece) (11, 111), amelynek útján az anyag dózist inhalálni lehet;
 - talapzat (socket) (7, 33, 107, 207, 307, 407, 507), amely a forrás oldalsó elhelyezkedéséhez van méretezve külső felülete útján, de mentes bármiféle olyan test vonástól, amely ennek hosszanti elhelyezéséhez van szárnva;
 - egy elágazó (junction) tag (14, 15, 114, 115) a kifolyó darabhoz, ahol az elágazó tag a testben van elrendezve csúsztatásban egy kötött pozícióba (set position) a kifolyó darab elhelyezéséhez (displace) teljesen lenyomott elosztó pozíciójába;
 - egy tevékenység (action) (12, 13, 112, 113) az elágazó tag csúsztatható mozgatásához a kötött (set) pozícióba; és
 - a forrás vagy egy forrás lokátor (helymeghatározó) (550, 551, 552) egyesítője (unification) (21, 31, 32, 41, 42, 121, 122, 222, 322, 411, 553) a testhez, amely elhelyezi a forrást hosszantian a kifolyó darabbal annak teljesen lenyomott elosztó pozíciójában, amikor az elágazó tag kötött (set) pozíciójában van, a lokátor, ahol szolgáltatva van, kiterjed (extend) a testből, a forráson kívülre és legalább részlegesen a forrás végén keresztül, hogy szolgáltatson egy hosszanti elhelyezkedést a forrás számára, elhelyezve azt, amikor a mozgatható elágazó tag úgy működik, hogy teljesen lenyomja a kifolyó darabot a forrásba befelé.
2. Az 1. igénypont szerinti elosztó, ahol az egyesítő egy ragasztó (adhesive) (411) a forrás (405, 406) vagy a lokátor és a test (407) között.
3. Az 1, vagy 2. igénypont szerinti elosztó, ahol a ragasztó (411) a test (407) talapzatában van.
4. A 2. vagy 3. igénypont szerinti elosztó, ahol a test (407) és/vagy a forrás (405, 406) vagy a lokátor rendelkezik egy homorú (re-entrant) vonással (408, 409), és a testnek vagy a lokátornak van egy nyílása (aperture) (410), amely kommunikál a homorú vonással, amelyen keresztül a ragasztó be van injektálva.
5. A 4. igénypont szerinti elosztó, ahol a homorú vonás egy belső vajat (groove) (408) a testben vagy a lokátorban a ragasztó befogadásához egy kötéshez (bond) a forrással (405, 406), illetve a testfel (407).
6. A 4. igénypont szerinti elosztó, ahol a homorú vonás egy külső vajat (409) a forrásban egy redőnél (crimp) (405) a kifolyó darab és a forrás (406) fenntartására (retain).
7. Az 1. igénypont szerinti elosztó, ahol az egyesítő egy hegesztés (weld) (122, 222, 322, 563) a forrás vagy a lokátor és a test között.
8. A 7. igénypont szerinti elosztó, ahol a hegesztés ultrahangos hegesztés (122) vagy lézeres hegesztés (553).
9. A 7. vagy 8. igénypont szerinti elosztó, ahol a forrás és/vagy a lokátor és a test műanyagból (plastic material) vannak.
10. A 7. vagy 8. igénypont szerinti elosztó, ahol a forrás üvegből vagy fémből van és be van borítva (coat) műanyaggal.
11. A 7. vagy 8. igénypont szerinti elosztó, ahol a forrás csupasz (un-coated) üveg vagy fém.
12. A 7-11. igénypontok bármelyike szerinti elosztó, ahol a hegesztés (222, 322) a forrásnak egy tartálya és a test között van.
13. A 7-11. igénypontok bármelyike szerinti elosztó, ahol a hegesztés (122, 222) a forrásnak egy szorítógyűrűje (ferrule) és a test között van.
14. A 7-11. igénypontok bármelyike szerinti elosztó, ahol a hegesztés (553) a forrás lokátor és a test (504) között van.
15. Az 1-14. igénypontok bármelyike szerinti elosztó, ahol az egyesítő egy membrán (21, 31, 32, 41, 42) mind a forrás vagy a lokátor,



mind a test körül, és egyesíti mindkettőt.

16. A 15. igénypont szerinti elosztó, ahol a membrán egy burkolat (wrapping) (31, 32, 41, 42).

17. A 15. igénypont szerinti elosztó, ahol a membrán egy nyomtatott jel (printed label) (21).

18. A 15-17. igénypontok bármelyike szerinti elosztó, ahol a membrán papírból van.

19. A 15-17. igénypontok bármelyike szerinti elosztó, ahol a membrán műanyagból van.

20. A 15-19. igénypontok bármelyike szerinti elosztó, ahol a membrán (21, 31, 32) kerületileg (circumferentially) folytonos a test körül.

21. A 15. igénypont szerinti elosztó, ahol a membrán zsugor (shrink) burkolat (31, 32, 41, 42).

22. A 15-19. igénypontok bármelyike szerinti elosztó, ahol a membrán (41, 42) nem folytonos (discontinuous) a forrás vagy lokátor és a test körül.

23. A 22. igénypont szerinti elosztó, ahol két vagy több elkülönült membránt (41, 42) lehet alkalmazni, az egyik a forrás vagy a lokátor és a test egyik oldalán, és a másik a másik oldalán.

24. A 15-23. igénypontok bármelyike szerinti elosztó, ahol a membrán vagy az egyes membránok (21) öntapadó ragasztóval bírnak, felhordva rájuk.

25. A 15-23. igénypontok bármelyike szerinti elosztó, ahol a membrán vagy az egyes membránok öntapadó anyagból vannak.

26. A 15-23. igénypontok bármelyike szerinti elosztó, ahol ragasztó (35) van felhordva a membránhoz, közvetlenül a forráshoz vagy a lokátorhoz és a testhez.

27. A 15-23. igénypontok bármelyike szerinti elosztó, ahol a forrás vagy lokátor és/vagy a test körül van határolva (contour) (36), hogy fokozódjék a membrán megragadhatósága (grip) hozzájuk.

28. Eljárás egy, az 1-27. igénypontok bármelyike szerinti elosztó (1, 101) előállítására, ahol az eljárás a következő lépésekből áll:

- elrendezzük az elágazó tagot (14, 15, 114, 115) a testben (3, 103, 503) kötött (set) pozíciójában;

- hosszantán összeszereljük (assembly) a forrást (2, 34, 102, 206, 306, 406, 506) a testhez a kifolyó darabbal (4, 104), amely össze van kapcsolva (engage) az elágazó taggal;

- átmenetileg megtartjuk (hold) (F) a testet és a forrást egyesítő (unification) pozícióban a kifolyó darabbal annak teljesen lenyomott elosztó pozíciójában és az elágazó taggal még annak kötött (set) pozíciójában; és

- egyesítjük (21, 31, 32, 41, 42, 121, 122, 222, 322, 411, 553) a testet és a forrást együtt, hogy rögzítsük (fix) ezeket egyesített (unified) pozíciójukban.

29. A 28. igénypont szerinti eljárás, ahol a forrás és a test viszonyítva (relatively) vannak elhelyezve az átmeneti megtartási (holding) lépésben a forrás serkentése (urging) révén az elágazó tag irányában egy olyan (F) erővel (force), amely elegendő arra, hogy teljesen lenyomja (depress) a kifolyó darabot a forrás irányában, és elossa az anyagnak egy dózist az elágazó taghoz.