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(54) Application device of sanitary hygiene products

(57) An application device of sanitary hygiene products in the form of tablets or "soaps" containing foaming adhesive and/ or disinfecting products which can be positioned on a wall of a sanitary fixture comprises a primary container (20) for the distribution of the product by means of a mouth (22), wherein the mouth of said container (20) is associated with a forming unit (30) of the product dispensed, equipped with a hole (31) for the release of the product and distancing elements (32) for the application of the product on the wall of a sanitary fixture, wherein the primary container (20) has deformable or flexible walls which can be squeezed for dispensing the product by pressure through the outlet mouth (22), said distancing elements being suitable for resting on the above wall during the distribution phases of the product.

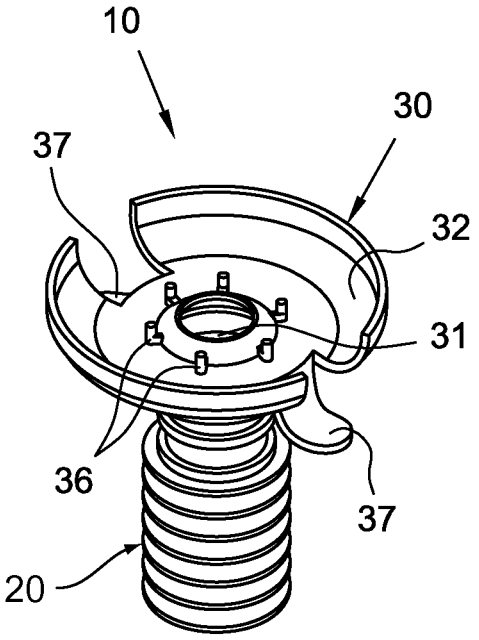

Fig. 2c

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Description

[0001] The present invention relates to an application device of sanitary-hygiene products. In particular, the present invention relates to a device capable of applying sanitary hygiene products in the form of tablets or "soaps" containing foaming and/or disinfecting products, i.e. viscous adhesive products with detergent and/or perfuming and/or hygienizing properties, which can be positioned on one of the walls of a WC or similar sanitary fixture.

[0002] A WC typically consists of a sanitary basin, normally made of ceramic and a seat equipped with a lid. These foaming products in the form of tablets are currently inserted inside perforated containers, normally made of plastic, and positioned close to the inside edge of the basin of the WC, so that the tablets come into contact with the water discharged and gradually release the product in the form of foam, with each discharge.

[0003] These types of solutions have numerous disadvantages. The positioning of the containers, for example, is often inaccurate and unstable and the flow of water discharged does not completely immerse the tablet of foaming disinfecting product, causing an insufficient distribution of the product with a consequent lack of disinfecting action. In addition, it is often difficult to verify the quantity of product remaining in the container to understand when the cartridge containing the tablet must be substituted by a new one.

[0004] The use is also known of detergent and/or perfuming and/or hygienizing products with a progressive release, which are activated by the user and exert their action until exhaustion, and also, with respect to the treatment of sanitary fixtures, for perfuming environments and wardrobes, in addition to the cleaning of dishwashers and washing machines, for example.

[0005] An example, in fact, consists of perfuming devices for environments suitable for progressively releasing volatile substances from a liquid or solid or gel matrix.

[0006] The use is also known in the field of dishwashers of deodorant devices to be positioned inside the dishwasher, which, releases a quantity of product with every washing, until complete dissolution.

[0007] Finally, detergent and/or perfuming and/or hygienizing materials with adhesive properties have been developed, which are suitable for being directly applied to a surface of the environment to be treated, without requiring supporting elements which must be removed at the end of use.

[0008] These materials can be either in the form of a solid or in the form of a paste or gel and are distributed in doses through an application device.

[0009] In this way, the product in the form of a disk or tablet, for example applied directly on the internal wall of the basin, advantageously in a position which allows it to be completely immersed by the flow of water discharged, is visible, can be controlled in its quantity and is progressively consumed as effectively as possible.

[0010] An objective of the present invention is to provide an application device of sanitary hygiene products which eliminates supports of the product which must be removed at the end of the product life.

[0011] For the application, on the other hand, it is important for the functioning of the application device to be intuitive and simple to manage, also with one hand only.

[0012] A simple construction of the application device also contributes to reducing the production costs.

[0013] A further objective of the present invention is to provide an application device of sanitary hygiene products which is easy to use.

[0014] Another objective of the present invention is to provide an application device of sanitary hygiene products which is particularly simple and functional, with reduced costs.

[0015] These objectives according to the present invention are achieved by providing an application device of sanitary hygiene products as specified in claim 1.

[0016] Further characteristics are included in the dependent claims.

[0017] The characteristics and advantages of the device according to the present invention will appear more evident from the following illustrative and non-limiting description, referring to the enclosed schematic drawings, in which:

figure 1 shows an exploded schematic view of a first application device according to the present invention;

figures 2a, 2b and 2c illustrate a side view and perspective view of the application device of figure 1 according to a first embodiment of the present invention;

figures 3a, 3b and 3c illustrate the application device of figure 1 according to a second embodiment of the present invention;

figures 4 to 7 show further embodiments of a primary container of the application device according to the invention;

figure 8 is a perspective view of a further embodiment of a forming unit of the application device according to the invention;

figure 9 is a schematic view of an application device according to the invention equipped with a distributing unit produced according to a first embodiment;

figure 10 shows an application device according to the invention provided with a distributing unit according to a further embodiment.

[0018] With reference to the figures, these show an application device of a viscous adhesive product with detergent and/or perfuming and/or hygienizing properties, indicated as a whole with 10 or 10' comprising, according to a first simplified embodiment, a primary container 20 of a product based on gel and/or adhesive viscous paste with detergent, perfuming and hygienizing properties and a forming unit 30 of the product distributed, and according to a further embodiment also a mechanical dispensing

unit 40.

[0019] The primary container 20 has deformable walls for distribution by pressing, or squeezing, the product through an outlet mouth 22.

[0020] The primary container 20 of the application device 10, 10' comprises, according to a simplified embodiment, a single dose of viscous adhesive product with detergent and/or perfuming and/or hygienizing properties. This embodiment advantageously simplifies the production of the application device 10, 10', and also its preservation and use.

[0021] The application device 10, 10' according to the present invention can however also comprise a primary container 20 containing a quantity of viscous adhesive product with detergent and/or perfuming and/or hygienizing properties suitable for the application of a plurality of doses. The dosage of the product can be effected at the discretion of the user or dosage means, not shown, can be provided.

[0022] The deformable walls of the primary container 20 are made of rigid, semi-rigid or flexible plastic material through different non-limiting solutions.

[0023] The deformable walls are, for example, collapsible in correspondence with discontinuity areas in the direction of the arrow F. They can be at least partly shaped, for example, in the form of bellows 23 with ridges and troughs situated orthogonal or parallel to an axis 22' of the outlet mouth 22 (figures 1 and 4), or they can have recessing parts 24 (figure 5). In particular, these containers are produced by the blowing and/or injection of plastic material.

[0024] In a preferred embodiment, the primary container 20 is in the form of bellows, i.e. a container having flexible walls so that if subjected to pressure on the walls or bottom, it is able to distribute the product contained therein through its mouth 22.

[0025] Thermoformed primary containers 20 made of plastic material, on the other hand, have convex areas 25 possibly with a decreasing wall thickness (figure 6).

[0026] According to a further embodiment, the primary containers 20 are in the form of envelopes 26 of flexible plastic film welded along the edges, possibly englobing rigid plastic inserts, for example a pipette which forms the outlet mouth 22 (figure 7).

[0027] The forming unit 30 comprises a hole 31 for the outlet of the product and distancing elements 32 between the hole 31 and an application surface. The distancing elements 32 comprise at least two extensions suitable for resting on the application surface to keep the surface of the outlet hole at a prefixed distance from the surface.

[0028] The forming unit 30, shown for example in figure 1, has cap-shaped distancing elements and comprises grasping elements 37, for example in the form of gripping flaps preferably situated opposite each other on the circumference of the same cap, which help the compression movement of the container.

[0029] Said cap 32 is in fact suitable for resting on a wall, for example of a sanitary fixture, and said flaps 37 are suitable for favouring the positioning of the cap 32 and squeezing the primary container 20.

[0030] The primary container 20 and forming unit 30 can be produced in a single piece, and also in two pieces which are then firmly constrained or coupled with each other at the moment of use of the distributing device 10, 10'.

[0031] In the case of a single piece, the outlet mouth 22 of the primary container 20 and hole 31 of the forming unit 30 coincide.

[0032] In the case of removable coupling with the primary container 20, the forming unit 30, comprises at least one annular seat 33 for coupling with the mouth 22 of the primary container 20. The coupling can be threaded, bayonet, clip-inserted or simply buffered.

[0033] The forming unit 30, shown in figures 2 and 3, also comprises modelling means of the product, consisting for example of an indented edge 35 of the outlet hole 31 and/or a plurality of incision teeth 36, arranged according to a circular crown around the outlet hole 31. The type and arrangement of the indentation 35 of the edge and also the incision teeth 36 determine the final form of the dose of product distributed.

[0034] In particular, the hole 31 can be variably shaped with the indented edge 35, for example, as a star, polygonal in general, or square, or circle, which is associated with said mouth of the container so that the product distributed has a form on the wall which substantially corresponds to that of the shaping.

[0035] In the embodiment illustrated in figures 2a, 2b and 2c, the cap 32 is inserted on the mouth 22 of the primary container 20 and comprises a closing stopper 36 joined to the cap 32 by means of a circumferential prefracturing portion, equipped with a plurality of connection strips, suitable for allowing the opening of the container by rotating the stopper, breakage of the prefracturing portion and subsequent removal of the same stopper. For this purpose, the stopper 36 has a corrugated outer surface to facilitate its handling.

[0036] In the embodiment illustrated in figures 3a, 3b and 3c, the cap 32 can be positioned on the mouth 22 of the primary container 20, after the removal of a sealing element 26. The sealing element 26 is made in a piece from the cap 32 and can be a stopper screwed onto the mouth of the container or joined to the mouth itself by other means, such as for example a glued or welded film.

[0037] When the cap and container can be separated, the cap can be re-used, after substituting the used container with a new one full of another or analogous product.

[0038] According to a further embodiment of the forming unit 30, this can comprise guiding means 34 for the primary container 20, consisting for example of one or more walls suitable for at least partially externally enfolding the primary container 20 (figure 8).

[0039] Figures 9 and 10 show different embodiments of the mechanical dispensing unit 40 of the application device 10', which comprise coupling means 41 with the forming unit 30 and at least one moveable thrust plane

42, suitable for being engaged with at least a portion of the deformable walls of the primary container 20 for squeezing the primary container 20.

[0040] According to different possible embodiments, in an application device 10' according to the invention, the mechanical dispensing unit 40 and the forming unit 30 can be produced in a single piece or in distinct parts which can be firmly or irremovably coupled.

[0041] Figure 9 shows an application device 10', in which the mechanical dispensing unit 40 comprises a support 41, for example deformable, coupled with the forming unit 30. The support 41 is particularly suitable for receiving a primary container 20 in the form of a thermoformed blister or in the form of an envelope made of plastic film. Two side clamps comprise two thrust planes 42 for squeezing the primary container 20. When the user presses on the dispensing unit 40 on opposite sides, as schematized with the arrows F in figure 9, the thrust planes 42 are progressively pressed against the primary container 20, squeezing it. This can occur due to the elastic nature of the structure and also due to a particular leverage.

[0042] Figure 10 shows a further embodiment of an application device 10', in which the guiding wall 34 of the forming unit 30 is a tubular wall equipped with a window 38 for the insertion of the primary container.

[0043] The mechanical dispensing unit 40 comprises, as coupling means 41 with the forming unit 30, a tube suitable for being fitted above the tubular wall 34 and containing in its interior a thrust plane 42 which presses on the bottom of the primary container 20, represented in bellows form 23. A spring 43, positioned between the forming unit 30 and the mechanical dispensing unit 40 re-establishes the initial relative position at the end of the application of the dosage of the product.

[0044] The sealing element 26 applied for the closing of the mouth 22 of the primary container 20 is also shown together with the stopper 36 of the front end of the forming unit 30.

[0045] The same closing means, or analogous means, can also be provided for the other embodiments of the primary container 20 and forming unit 30.

[0046] In an application device of a viscous adhesive product with detergent and/or perfuming and/or hygienizing properties 10, 10', according to the invention, it is also possible to combine the elements shown and described, i.e. the different embodiments of the primary containers 20, the forming units 30 and the dispensing units 40 also with combinations not expressly illustrated or described.

[0047] The device according to the present invention operates in the following way. When the tablet of product contained in the container is to be positioned on the specific surface (for example the internal wall of a sanitary basin), the distancing elements are placed on the same surface and the device is grasped with the help of the flaps and the container squeezed, allowing the product to be released, conveying it onto the wall. The product has the consistency of a gel and therefore forms a tablet having the desired shape and consistency, on the wall of the sanitary fixture and is ready to be used for disinfecting, for example during the distribution of the water.

[0048] For the purposes of the present invention, a sanitary fixture refers for example to a WC, washbasin, Turkish bath, urinal etc... The device, object of the present invention, is also suitable for application to other wet surfaces to be cleaned and perfumed, such as sinks, dishwashers or washing machines.

[0049] The application device according to the invention has the advantage of dividing the containment and distribution functions of the product between distinct and separate elements. This simplifies the production and distribution of primary containers for refilling the application device which can be either disposable or containing various dosages of product.

[0050] A further advantage consists in the various fragrances which can be selected with the simple substitution of the primary containers.

[0051] Furthermore, in the particular case in which the primary container is of the disposable type, the various fragrances can be adopted for every subsequent application.

[0052] The application device according to the invention can also be advantageously used in different contexts in addition to the cleaning of sanitary fixtures, among which for example also for the application to other wet surfaces to be cleaned and perfumed, such as sinks, dishwashers or washing machines.

[0053] The application device according to the invention can also be used for the application of doses of perfuming material to dry surfaces, such as for example wardrobes or vertical or horizontal surfaces in rooms.

[0054] The application device thus conceived can undergo numerous modifications and variants, all included in the invention; furthermore, all the details can be substituted by technically equivalent elements. In practice, the materials used, as also the dimensions, can vary according to the technical requirements.

Claims

1. An application device of sanitary hygiene products in the form of tablets or "soaps" containing foaming adhesive and or disinfecting products which can be positioned on a wall of a sanitary fixture comprising a primary container (20) for the distribution of the product by means of a mouth (22), wherein the mouth of said primary container (20) is associated with a forming unit (30) of the product dispensed, equipped with a hole (31) for the release of the product and distancing elements (32) for the application of the product on the wall of a sanitary fixture, **characterized in that** said primary container (20) has deformable or flexible walls which can be squeezed for dispensing the product by pressure through said outlet

mouth (22), said distancing elements (32) being suitable for resting on the above wall during the distribution phases of the product.

2. The device according to claim 1, **characterized in that** said distancing elements (32) are cap-shaped and are provided with gripping flaps (37) arranged on the circumference of the cap itself, said flaps (37) being suitable for favouring the positioning of the cap and squeezing the primary container (20).

3. The device according to claim 2, **characterized in that** said gripping flaps (37) are arranged on the circumference opposite to each other.

4. The device according to claims 1 or 2, **characterized in that** said primary container (20) and said forming unit (30) are produced in a single piece.

5. The device according to claim 4, **characterized in that** said forming unit (30) comprising a closing stopper (36) joined to the same by means of a circumferential prefracturing portion, equipped with a plurality of connection strips, suitable for allowing the opening of the container by rotating the stopper, breakage of the prefracturing portion and subsequent removal of the same stopper.

6. The device according to claims 1 or 2, **characterized in that** said forming unit (30) can be positioned on the mouth (22) of the primary container (20) and is provided with said hole (31) variably shaped, for example, as a star, polygonal, or square, or circle, which is associated with said mouth of the container and/or a plurality of incision teeth (36) arranged in a circular crown around said hole (31).

7. The device according to claims 1 or 2, **characterized in that** said primary container (20) is a bellows container.

8. The application device according to claim 1, **characterized in that** said primary container (20) has deformable walls comprising discontinuity areas.

9. The application device according to claim 8, **characterized in that** said deformable walls comprising discontinuity areas have recessing parts (24), said primary containers (20) being produced by the blowing and/or injection of plastic material.

10. The application device according to claim 8, **characterized in that** said deformable walls comprising discontinuity areas have convex areas (25), possibly with a decreasing wall thickness, said primary containers (20) being produced by the thermoforming of plastic material.

11. The application device according to claim 1, **characterized in that** said forming unit (30) comprises guiding means (34) for said primary container (20) comprising at least one wall suitable for at least partially externally enfolding said primary container (20).

12. The application device according to claims 1 or 2, **characterized in that** said primary container (20) comprises a single dose of said viscous adhesive product with detergent and/or perfuming and/or hygienizing properties.

13. The application device according to claim 1, **characterized in that** said primary container (20) has deformable walls consisting of envelopes (26) of flexible plastic film welded along the edges.

14. The application device according to claim 13, **characterized in that** said walls comprise rigid plastic inserts for the distribution of the product.

15. The application device according to claim 1, **characterized in that** it also comprises a mechanical dispensing unit (40) comprising at least coupling means (41) with said forming unit (30) and at least one movable thrust plane (42), suitable for being engaged with at least a portion of said deformable walls of the primary container (20) for squeezing the primary container (20).

16. The application device according to claim 15, **characterized in that** said mechanical dispensing unit (40) and said forming unit (30) are produced in a single piece.

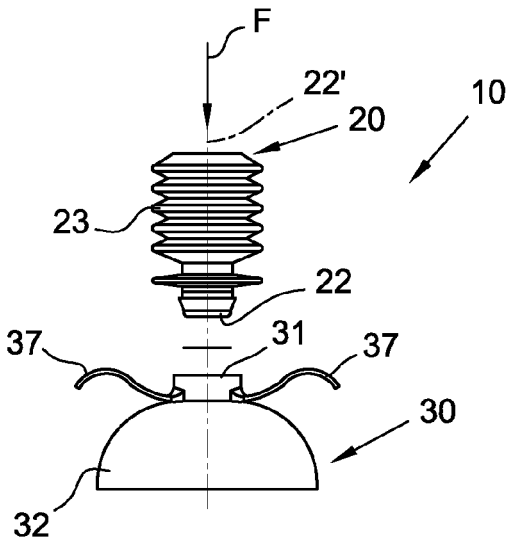


Fig. 1

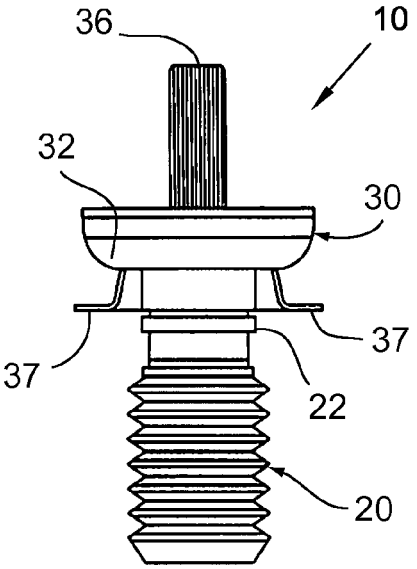


Fig. 2a

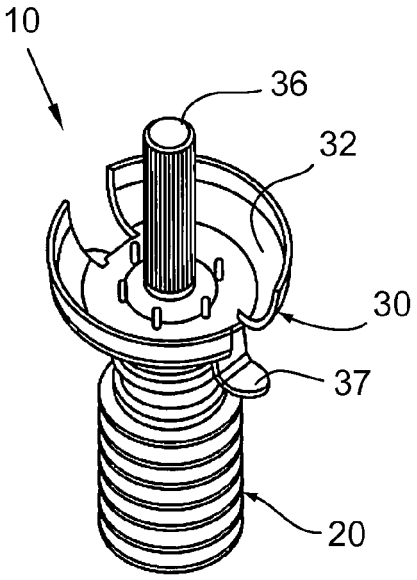


Fig. 2b

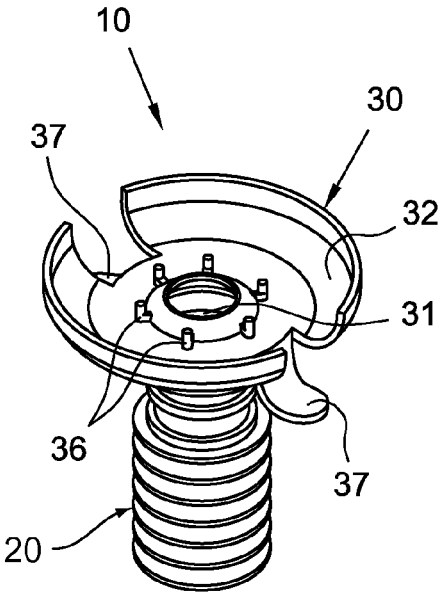


Fig. 2c

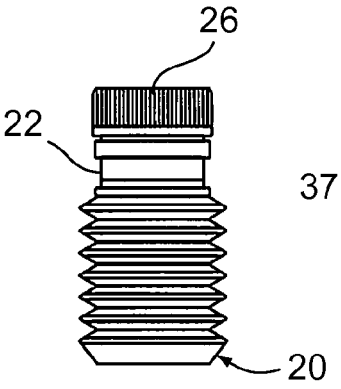


Fig. 3a

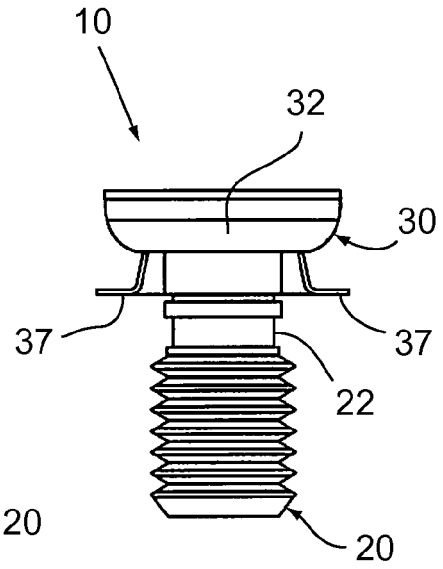


Fig. 3b

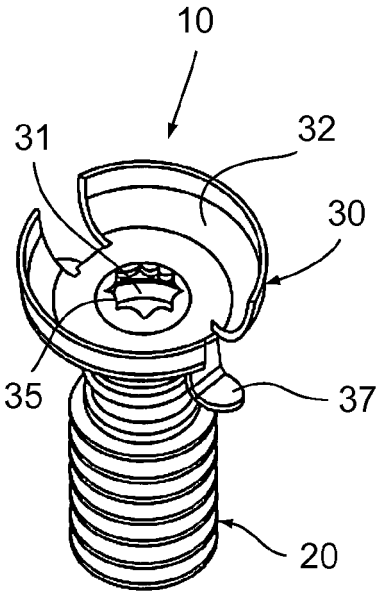


Fig. 3c

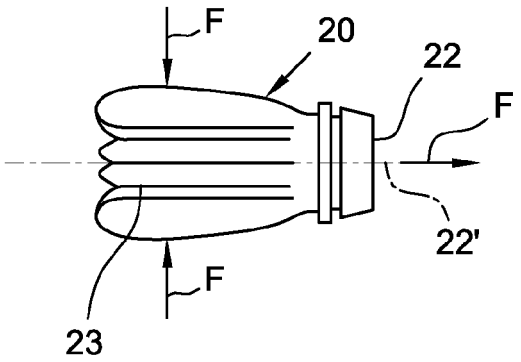


Fig. 4

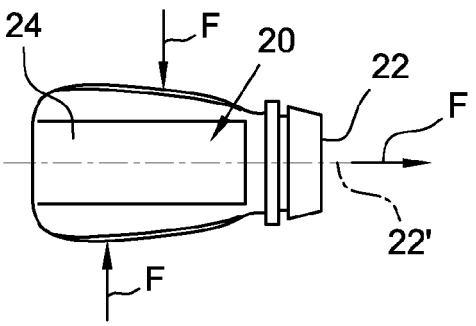


Fig. 5

Fig. 6

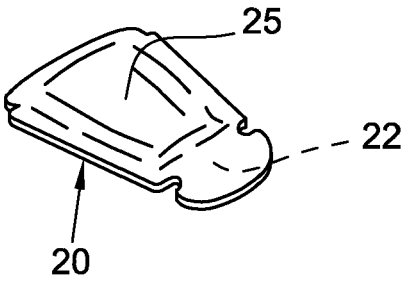
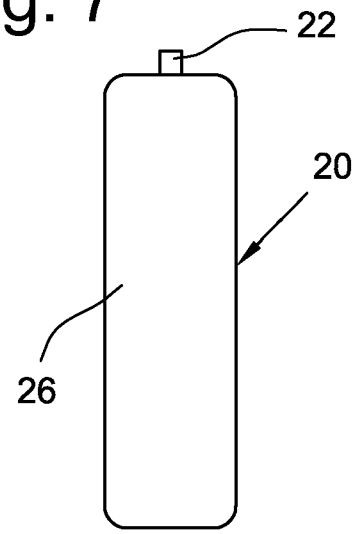


Fig. 7



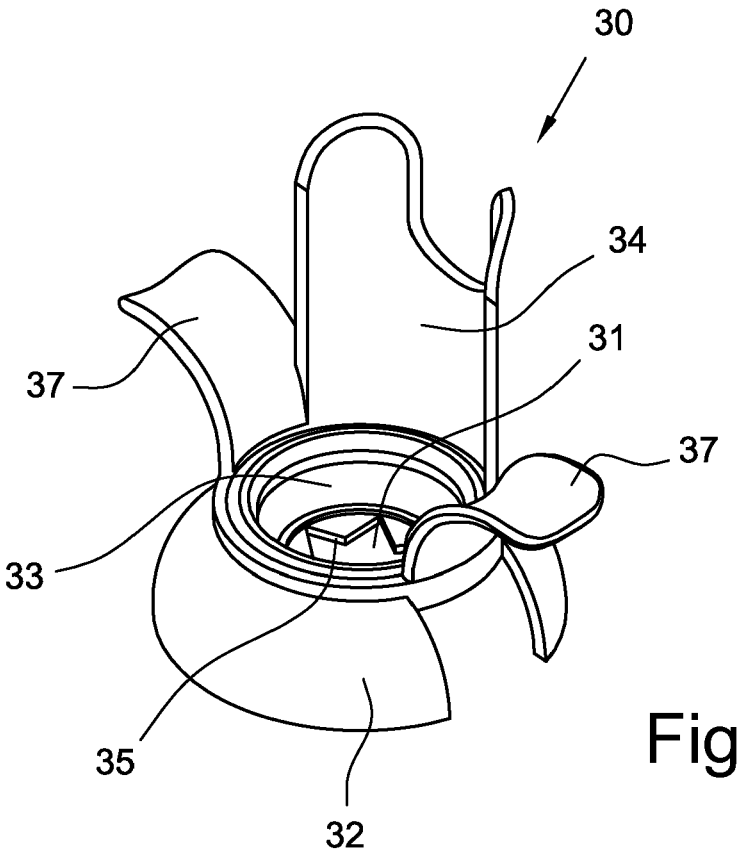


Fig. 8

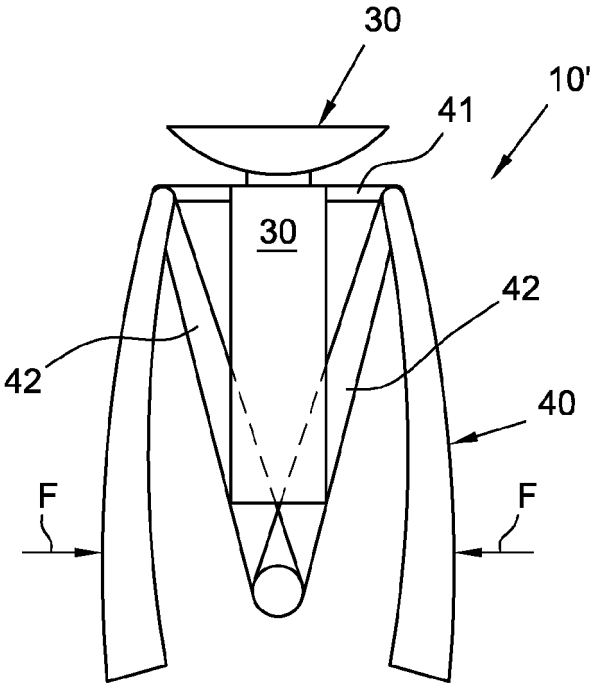


Fig. 9

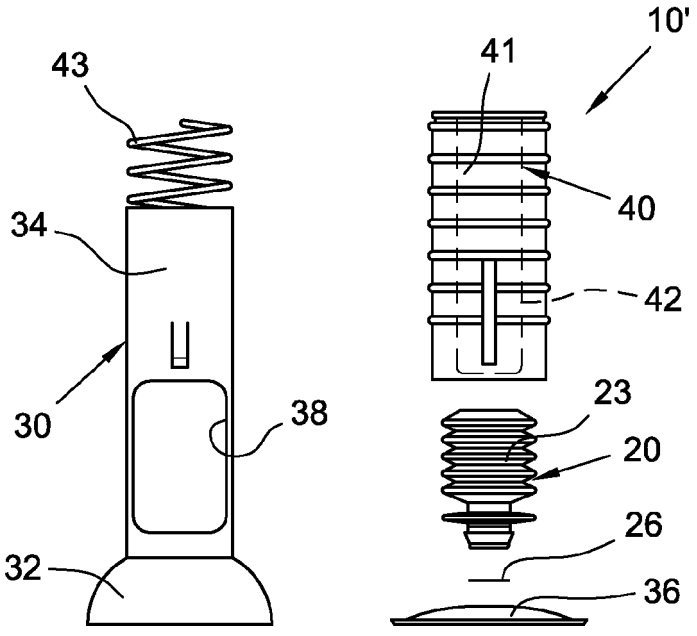


Fig. 10

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EUROPEAN SEARCH REPORT

Application Number
EP 10 17 0608

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Y	AU 505 048 B2 (LAJOVIC D S) 8 November 1979 (1979-11-08) * page 3 - page 5; figures 1,2 *	1,3,4, 7-10	
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	7 December 2010	Horst, Werner

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

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