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(54) **DISPENSER OF SANITIZING GEL FOR TOILET BOWLS AND THE LIKE**

(57) A dispenser (1) of sanitizing gel for toilet bowls and the like, which comprises an applicator (2) and a piston (3) which is adapted to slide within the applicator (2); the applicator (2) is adapted to contain a single dose of sanitizing gel (20), which is adapted to be dispensed by the applicator (2) by way of the action of the piston (3), a closure plug (6; 12) being provided at the lower end of the applicator (2).

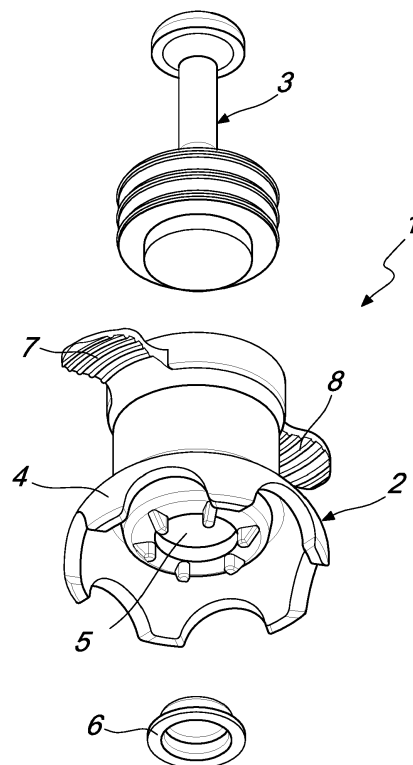


Fig. 8

Description

[0001] The present invention relates to a dispenser of sanitizing gel for toilet bowls and the like.

[0002] As is known, for the application of sanitizing products inside bathroom fittings and the like, dispensers are currently used which make it possible for users to apply the sanitizing product to the inner wall of the bathroom fitting without touching it with their hands and therefore without having to introduce their hands into the bathroom fitting proper.

[0003] Conventional dispensers are usually provided by a form of syringe into which the gel to be dispensed is inserted and wherein the dispensing of the gel occurs in doses, by pushing a piston into the chamber accommodating the gel. The piston is provided with a form of notches which make it possible to dispense preset quantities of gel in each instance. Substantially, therefore, the dispensing device is multi-use and the user uses it for as long as the charge of gel contained in it is available. When the gel charge is exhausted, the device must obviously be replaced.

[0004] The above mentioned dispensing device suffers drawbacks which are due to the fact that, on the one hand, the device is bulky, inconvenient for the user to stow, and requires contrivances in order to limit as far as possible the exposure to air of the gel after the first use, which however is partially inevitable.

[0005] Furthermore, the dispensing of the gel occurs with an advancement by notches, therefore by steps, and it is not an infrequent occurrence for the user to dispense double the preset dose of gel, in that the dispensing device, which is substantially a syringe, is made to advance by several notches instead of by only one, thus executing a double dispensing.

[0006] The aim of the present invention is to provide a dispenser of sanitizing gel for toilet bowls and the like, which enables a dispensing of the gel which is controlled and, especially, single-dose.

[0007] Within this aim, an object of the present invention is to provide a dispenser of sanitizing gel for toilet bowls and the like, in which the dimensions of the dispenser are contained and therefore it is easily stowable by the user.

[0008] Another object of the present invention is to provide a dispenser of sanitizing gel for toilet bowls and the like which, thanks to its shape structure, prevents the possibility of the sanitizing gel remaining exposed to air or in contact with the hands of the user prior to being dispensed.

[0009] This aim and these and other objects which will become better apparent hereinafter are achieved by a dispenser of sanitizing gel for toilet bowls and the like, which comprises an applicator and a piston which is adapted to slide within said applicator, characterized in that said applicator is adapted to contain a single dose of sanitizing gel, said single dose of sanitizing gel being adapted to be dispensed by said applicator by way of the

action of said piston, a closure plug being provided at the lower end of said applicator.

[0010] Further characteristics and advantages of the invention will become better apparent from the description of preferred, but not exclusive, embodiments of the dispenser according to the present invention, which are illustrated by way of non-limiting example in the accompanying drawings wherein:

Figure 1 is a perspective view of the dispenser according to the invention, in the pre-dispensing condition;

Figure 2 is a perspective view of the dispenser in the condition subsequent to dispensing;

Figure 3 is a cross-sectional view of the device according to the invention in the condition of Figure 1; Figure 4 is a cross-sectional view of the dispenser according to the invention in the condition of Figure 2, in the step of application to the wall of a bathroom fitting;

Figure 5 is a perspective view from below of the dispenser according to the invention in the condition of Figure 1;

Figure 6 is a perspective view from below of the dispenser according to the invention in the condition of Figure 2;

Figure 7 is an exploded perspective view of the dispenser according to the invention;

Figure 8 is an exploded perspective view of the dispenser according to the invention according to a further embodiment thereof;

Figure 9 is an exploded perspective view of the dispenser according to the invention according to a still further embodiment thereof.

[0011] With reference to the figures, the dispenser according to the invention, generally designated by the reference numeral 1, comprises an applicator 2 inside which a single dose of gel 20 can be accommodated and which is provided with a piston 3.

[0012] The piston 3 conveniently can slide into an applicator 2 in order to dispense the single dose of gel 20.

[0013] The applicator 2 has, conveniently, a shield-like end portion, 4, with irregular edges, which widens around a central dispensing orifice 5, in order to give a desired shape to the gel dispensed by the orifice 5 when the applicator 2 rests against the inner surface 10 of a toilet bowl 11.

[0014] In an embodiment thereof (Figure 8), the dispenser according to the invention therefore consists only of the dispensing element 2 and the piston 3 which is slideable therein, with a disposable plug 6 for closing the applicator 2.

[0015] Conveniently, the applicator 2 is provided with a pair of wings 7 and 8 which are adapted to enable the user to grasp the applicator 2 with the hand and with a further finger press on the piston 3 in order to make the desired dose of gel come out.

[0016] In the first embodiment, the applicator 2 directly accommodates internally a dose of gel and is a disposable element, as are the piston 3 and the plug 6.

[0017] Therefore, in the first embodiment, the dispenser overall is a single-use, i.e. disposable, dispensing device which is capable of dispensing a single dose of gel and is then disposed of.

[0018] A second embodiment of the device according to the invention is shown in Figures 1 to 7, in which the applicator 2 internally accommodates a cylinder 9 of the disposable type, which is adapted to contain the desired dose of gel, and to be stopped by a plug 12, also of the disposable type.

[0019] In this second embodiment, the applicator 2 is instead a reusable element, as is a plug 13 of the applicator, which is arranged to close the lower end of the applicator as protection from contact when the applicator is retained (reused).

[0020] In such embodiment, the piston 3 is also of the disposable type.

[0021] In this second embodiment, the user has a supply of disposable cylinders 9 which already contain a desired dose of gel inside them, and are closed by the disposable plug 12, and are provided internally with the disposable piston 3.

[0022] The applicator 2 on the other hand is a reusable element and therefore the user, prior to dispensing the dose of gel, has to remove the plug 13 of the applicator 2, and press the disposable piston thus making it slide into the disposable cylinder 9, so as to obtain the removal of the disposable plug 12 and thus dispense the desired dose.

[0023] In this second embodiment, therefore, the user has a dispenser of sanitizing gel with an applicator 2 and the associated plug 13, and which can be used by replacing the disposable cylinder 9 and the corresponding disposable piston 3, as well as the plug 12.

[0024] In a third embodiment of the dispenser according to the invention (Figure 9), the piston 3 is divided into two elements, i.e. a reusable grip 3a and a disposable compression plug 3b which can be mounted on the grip 3a.

[0025] The remaining components of the dispenser in the third embodiment thereof are entirely similar to the components described for the second embodiment.

[0026] Therefore, even in the third embodiment, the dispenser according to the invention is a device in which the user reuses the applicator 2, the associated plug 13 and the piston, but replaces the disposable plug of the piston, i.e. the compression plug, and also the cylinder 9 and the closure plug of the cylinder 12.

[0027] The three embodiments of the dispenser according to the invention make it possible therefore to have a single-dose dispenser in which, according to the embodiments, the applicator can be of the disposable type or otherwise, just as the piston can be of the disposable type or of the replaceable type. In the latter case, the replacement is of a portion of the piston which constitutes

the element that presses on the gel 20 contained in the disposable cylinder.

[0028] In all the embodiments described above the cylinder 9 is provided in a downward region with a narrower region 15 with a collar 16. Following the engagement of the cylinder 9 inside the applicator 2, the cylinder 9 is rested with the narrower region 15 and the corresponding collar 16 against the applicator 2 and there is no contact between the gel and the upper part of the applicator 2.

[0029] In practice it has been found that the dispenser according to the present invention fully achieves the set aim and objects, in that it makes it possible to dispense a single dose of sanitizing gel into a toilet bowl and the like, and it makes it possible to carry out the dispensing in a single solution, with part or all of the dispenser being single-use.

[0030] The dispenser, thus conceived, is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims. Moreover, all the details may be substituted by other, technically equivalent elements.

[0031] In practice the materials employed, and the contingent dimensions and shapes, may be any according to requirements and to the state of the art.

[0032] The disclosures in Italian Patent Application No. MI2015A000214 (102015902330517) from which this application claims priority are incorporated herein by reference.

[0033] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

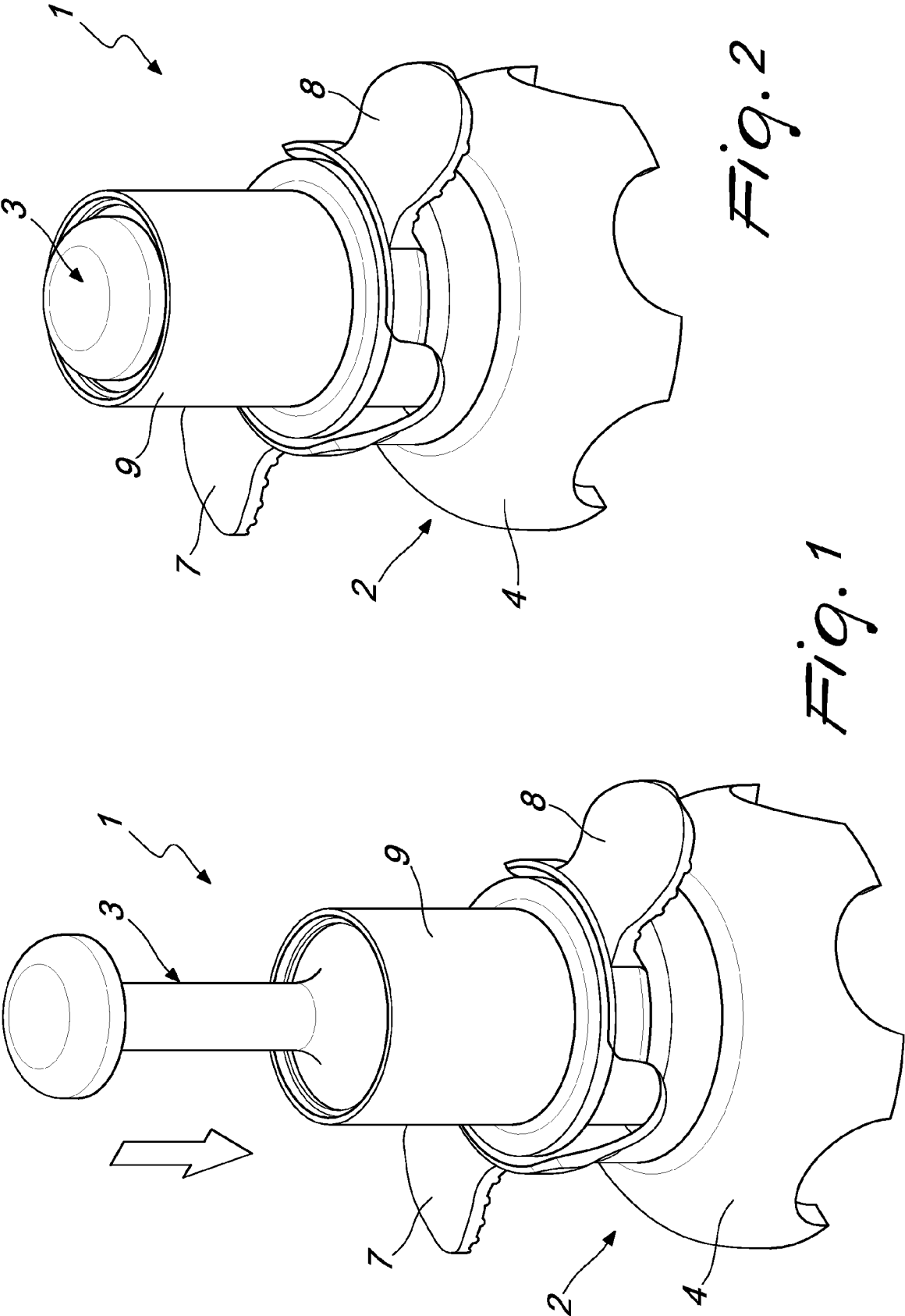
Claims

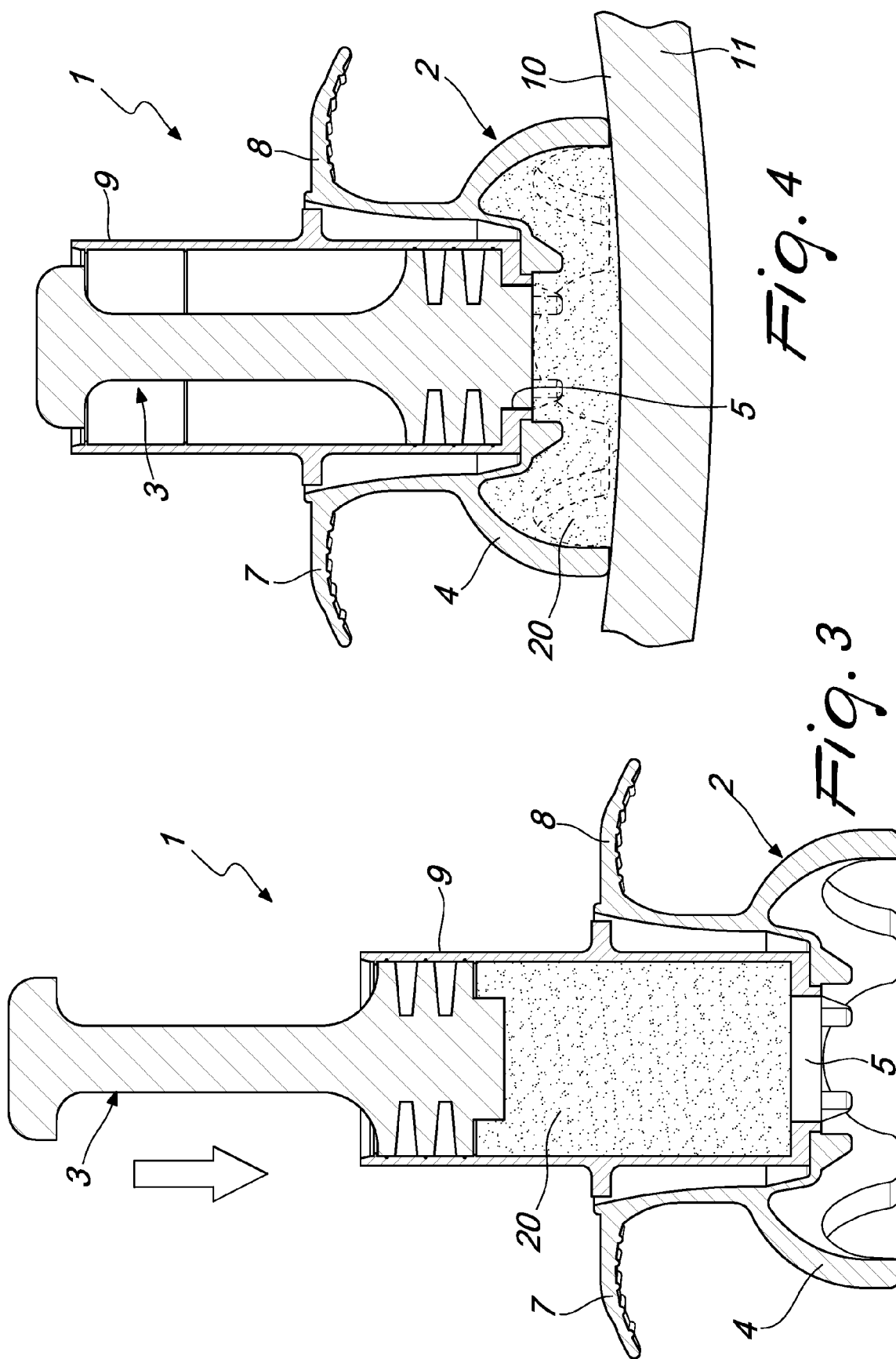
1. A dispenser (1) of sanitizing gel for toilet bowls and the like, which comprises an applicator (2) and a piston (3) which is adapted to slide within said applicator (2), **characterized in that** said applicator (2) is adapted to contain a single dose of sanitizing gel (20), said single dose of sanitizing gel being adapted to be dispensed by said applicator (2) by way of the action of said piston (3), a closure plug (6; 12) being provided at the lower end of said applicator (2).
2. The dispenser according to claim 1, **characterized in that** said applicator (2) is of the disposable type.
3. The dispenser according to claim 1, **characterized in that** said piston (3) and said closure plug (6; 12) of said applicator (2) are of the disposable type.
4. The dispenser according to one or more of the preceding claims, **characterized in that** it comprises a

cylinder (9) adapted to contain said single dose of sanitizing gel (20), said cylinder being adapted to be accommodated within said applicator (2), said piston (3) being adapted to slide inside said cylinder (9), in order to dispense said sanitizing gel (20).

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5. The dispenser according to one or more of the preceding claims, **characterized in that** said cylinder (9) is closed in a downward region by said closure plug (6; 12). 10
6. The dispenser according to one or more of the preceding claims, **characterized in that** said piston (3) and said cylinder (9) are of the disposable type. 15
7. The dispenser according to one or more of the preceding claims, **characterized in that** said piston (3) is constituted by a first element (3a) which defines the stem of the piston (3) and by a second element (3b), which is adapted to be mated with said first element (3a) and defines the pusher of said piston (3). 20
8. The dispenser according to one or more of the preceding claims, **characterized in that** said applicator (2) is provided with a pair of wings (7, 8) adapted to be gripped by the fingers of a user. 25
9. The dispenser according to one or more of the preceding claims, **characterized in that** said applicator (2) has a shield-like end portion (4), with irregular edges, which widens around a central orifice (5), in order to give the desired shape to the gel dispensed from said orifice, when said applicator (2) rests against the inner surface (10) of a toilet bowl (11). 30 35
10. The dispenser according to one or more of the preceding claims, **characterized in that** said cylinder (9) is provided in a downward region with a narrower region (15) with a collar (16), the engagement of said cylinder (9) within said applicator (2) bringing said cylinder (9) so that it rests, with the narrower region (15) and the corresponding collar (16) against said applicator (2). 40 45
11. The device according to one or more of the preceding claims, **characterized in that** said applicator (2) is provided in a downward region with a protective plug (13). 50
12. The dispenser according to one or more of the preceding claims, **characterized in that** said applicator (2), said piston (3), said closure plug (6; 12) of said piston (3) and said protective plug (13) of said applicator (2) are made of plastic material. 55





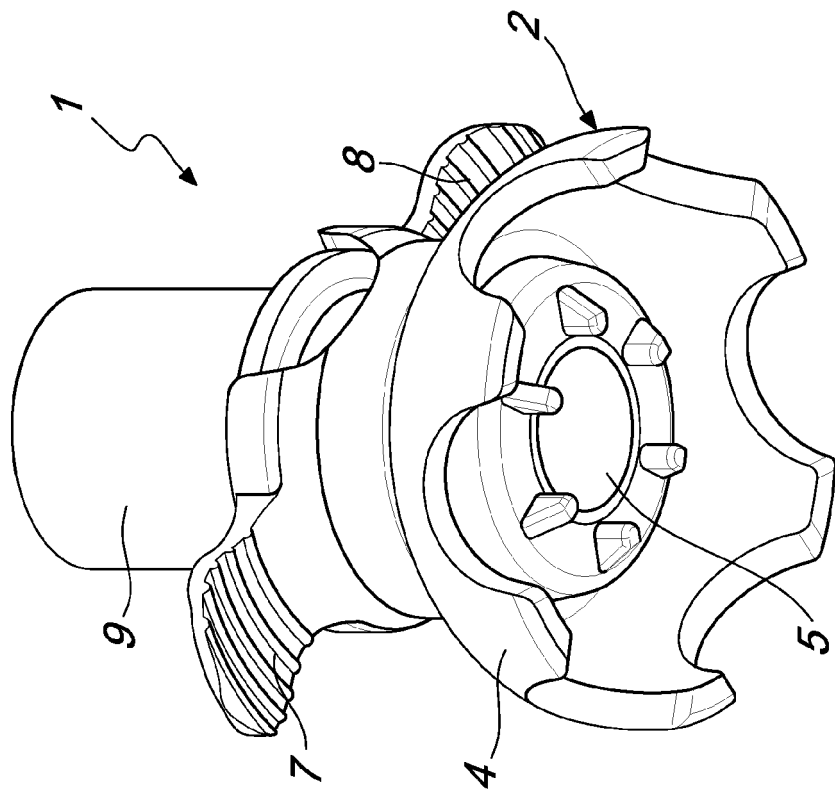


Fig. 6

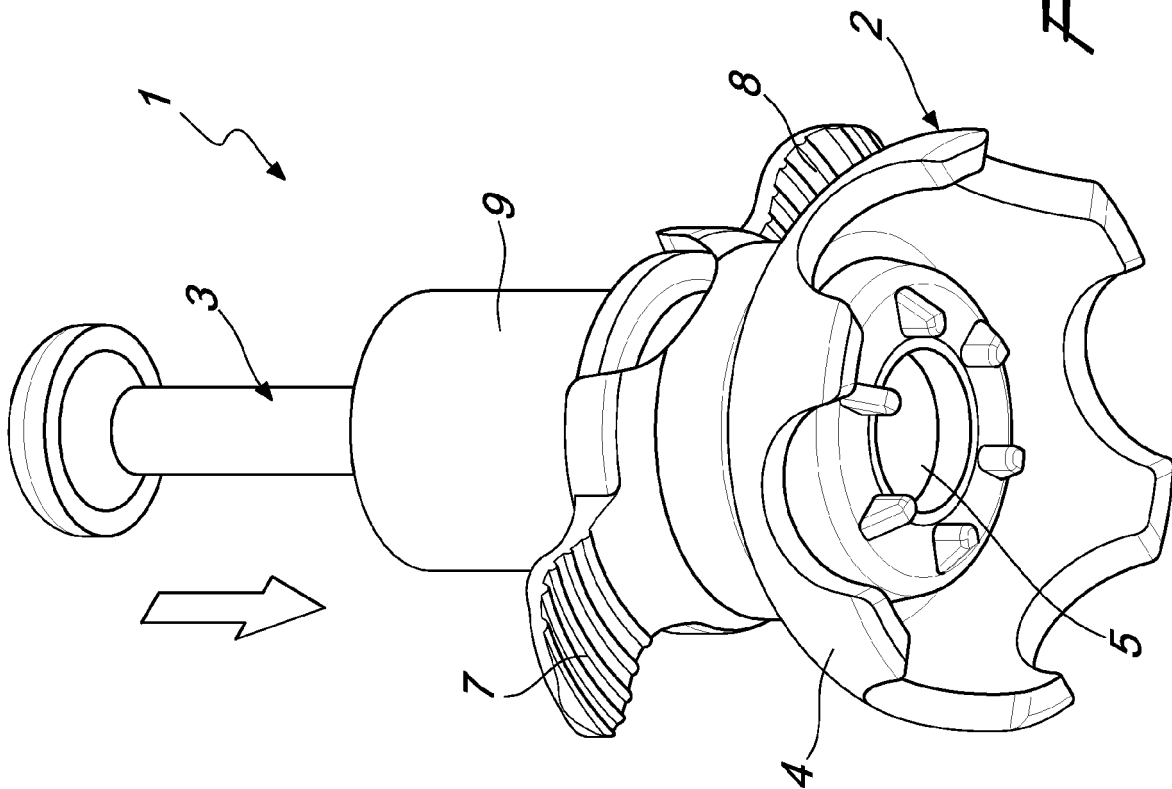
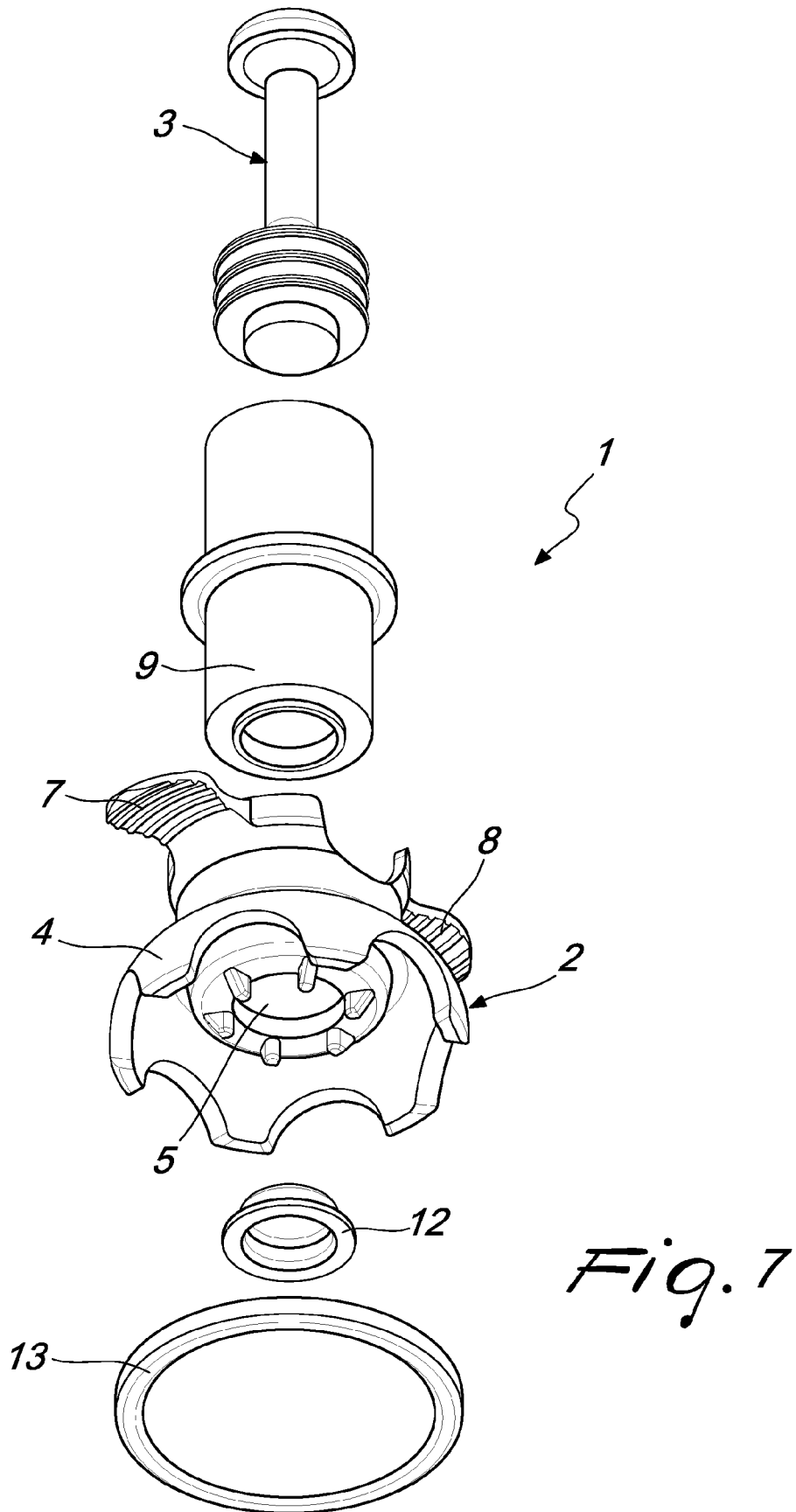


Fig. 5



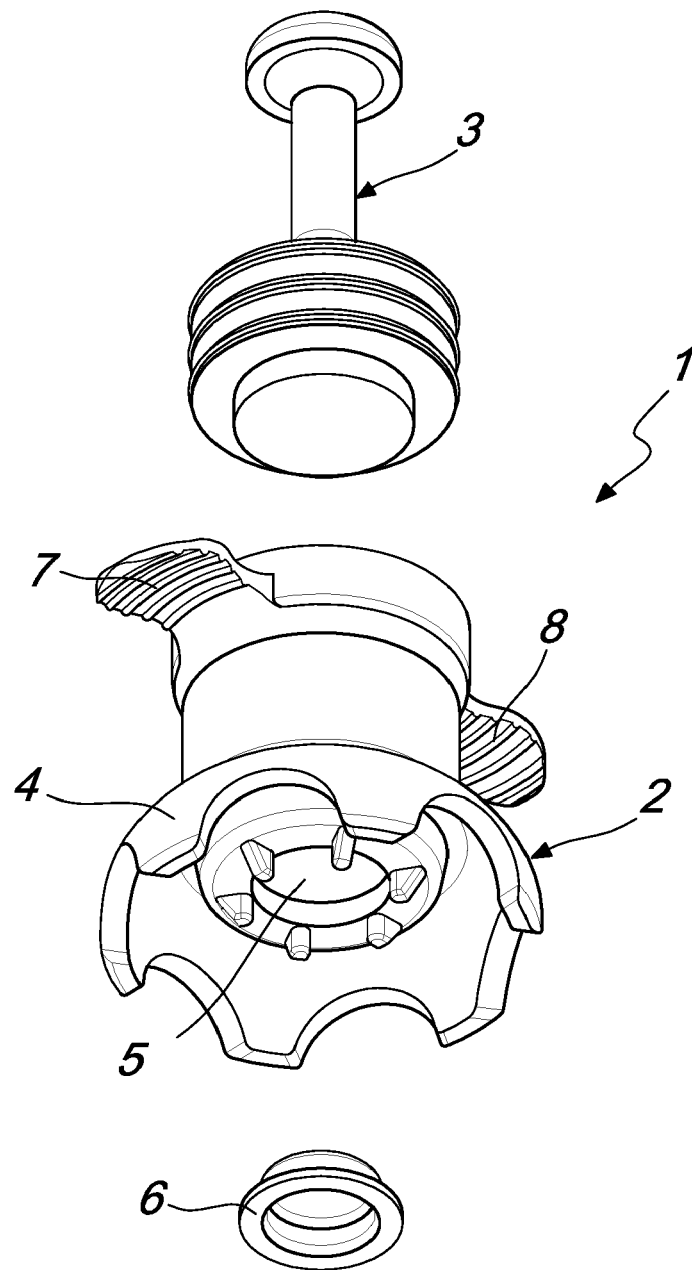


Fig. 8

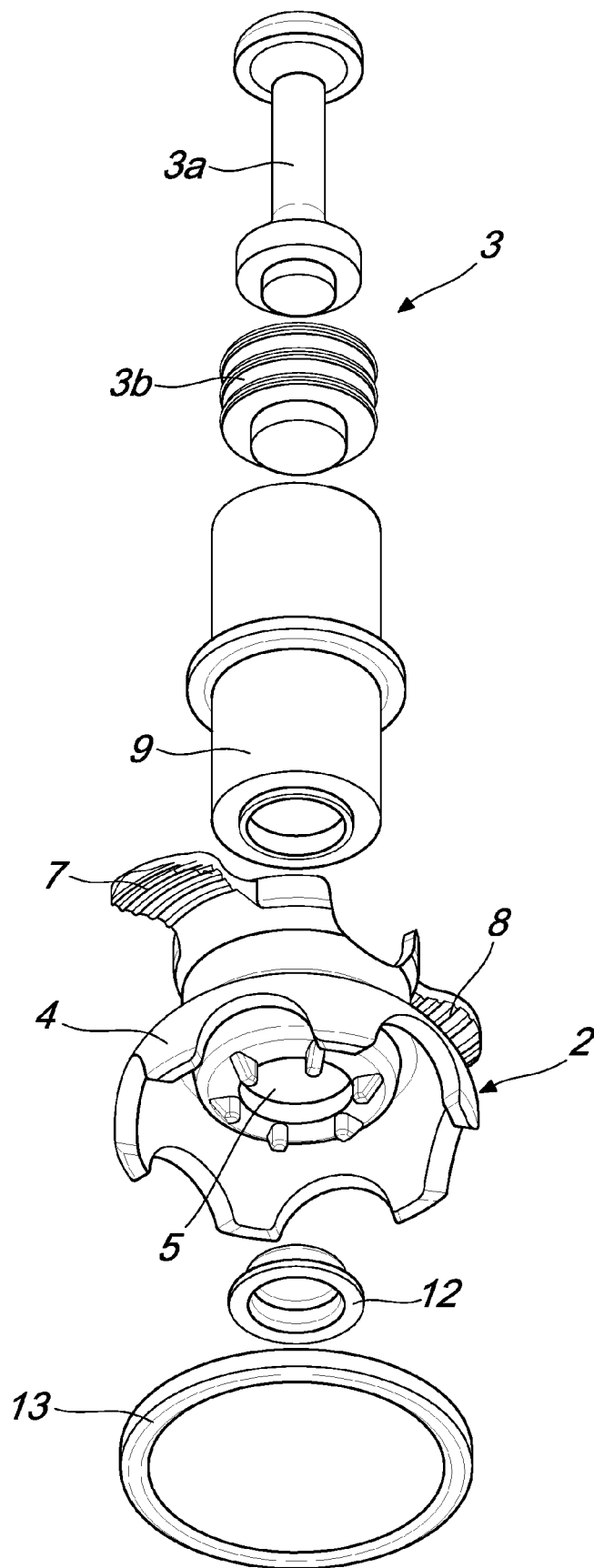


Fig. 9



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 Application Number
 EP 16 15 5514

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			TECHNICAL FIELDS SEARCHED (IPC)
			E03D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 5 July 2016	Examiner Geisenhofer, Michael
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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 EPO FORM 1503 03.02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 16 15 5514

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