

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 105 260 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:

19.05.2004 Bulletin 2004/21

(21) Application number: **99942201.7**

(22) Date of filing: **13.08.1999**

(51) Int Cl.7: **B26B 21/44**, B65D 83/14

(86) International application number:
PCT/US1999/018541

(87) International publication number:
WO 2000/010780 (02.03.2000 Gazette 2000/09)

(54) **RAZOR WITH A FLUID RESERVOIR AND A DISPENSING DEVICE**

RASIERMESSER MIT EINEM FLÜSSIGKEITSRESERVOIR UND EINEM VERTEILER

RAZOIR AVEC UN RESERVOIR POUR FLUID ET UN DISTRIBUTEUR

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**

(30) Priority: **19.08.1998 GB 9818115**

(43) Date of publication of application:
13.06.2001 Bulletin 2001/24

(73) Proprietor: **THE GILLETTE COMPANY**
Boston, Massachusetts 02199 (US)

(72) Inventors:
• **HAWS, Christopher Martin**
Streatley-on-Thames, Berkshire RG8 9QL (GB)

• **HAZELL, Stephen Paul**
Reading, Berkshire RG6 7YB (GB)

(74) Representative:
Ebner von Eschenbach, Jennifer et al
Ladas & Parry,
Dachauerstrasse 37
80335 München (DE)

(56) References cited:
DE-A- 4 335 449 **US-A- 3 053 422**
US-A- 3 743 085 **US-A- 4 238 882**
US-A- 5 234 140 **US-A- 5 337 478**

Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 1 105 260 B1

Description

[0001] This invention relates to a razor according to the preamble of claim 1 (see, for example, US-A-5 337 478).

[0002] There have been previous proposals to include a pressurized container in a razor handle structure for dispensing shaving foam, examples of such constructions being those described in US 5337478, DE4335449, WO-A-97/18065 and EP-A-OSOS630. The containers used in these razors are of the type which are pressurized in the factory at the time of manufacture. There have also been proposed razors in which liquid is discharged from a reservoir under gravity during shaving, examples of such razors being those described in US-A-4238882, US-A-4074429 and GB-A-2266854. In GB-A-690828 there is disclosed a razor with a refillable reservoir which is pressurized by a piston actuated by a spring or a manually operated air pump and GB-A-2075406 describes a razor in which liquid is dispensed from a refillable container by operation of a fluid pump.

[0003] In a razor according to the present invention the fluid is discharged at a position ahead of the blade or blades of the razor as they move across the skin during shaving, such as at the position of the guard of the shaving head which is disposed in advance of the blade or blades.

[0004] The substance is introduced into the reservoir as a predetermined dose and the razor further comprises a dispensing device for delivering a predetermined dose of substance into the water-filled reservoir, the dispensing device being arranged to hold a plurality of doses and being operable to deliver the doses into the reservoir in turn.

[0005] Most conveniently and preferably the substance is a solid and is supplied in predetermined doses in tablet or capsule form. In this case, the dispensing device incorporates a magazine which is adapted to hold several tablets and to dispense the tablets one at a time into the reservoir for mixture with liquid therein.

[0006] The substance can be chosen so that when mixed with water it will produce a fluid which can have a desired effect when applied to the skin in the course of a shaving procedure or in association with a shaving procedure. Thus, the prepared fluid may for example have one or more of the following effects:

- (i) lubrication to help the razor slide over the skin;
- (ii) moisturizing and/or otherwise conditioning the skin;
- (iii) adding a fragrance;
- (iv) chemically treating hairs to facilitate cutting;
- (v) bacterial or medicinal treatment of the skin;
- (vi) cleansing the skin; and
- (vii) blood coagulation and/or other beneficial treatment of minor cuts and abrasions which can be suffered during shaving.

[0007] A gas generating substance can be included so that the substance, when mixed with water, will effervesce. The gas which is generated is preferably inert and carbon dioxide is most preferred as it is harmless and can be easily produced. The gas generator could for example be sodium bicarbonate which generates carbon dioxide gas when dissolved in water. The generation of carbon dioxide can, however, be accelerated by a chemical reaction involving neutralization of a carbonate salt by a weak acid, and the preferred gas generating substance is a mixture of dry solids comprising citric and/or tartaric acid with a carbonate salt including one or more selected from sodium carbonate, sodium bicarbonate, sodium hydrogen carbonate, potassium carbonate, potassium bicarbonate and potassium hydrogen carbonate. Other suitable gas generators will occur to those skilled in the art.

[0008] The substance which is mixed with water in the reservoir may be a solid substance, in which case it can conveniently be provided in tablet form, or as a powder contained within a soluble capsule. Alternatively, a substance other than a powder can be used and supplied, for example, within a soluble capsule or in a sealed sachet from which the substance is discharged into the reservoir.

[0009] A better understanding of the invention in its different aspects will be gained from the more detailed description which follows and in which reference is made to the accompanying drawings, wherein:

Figure 1 is a front view of a razor;

Figure 2 is a side view of the razor shown in Figure 1;

Figure 3 shows the razor of Figure 1 from the rear; Figure 4 is an enlarged underside view of the shaving head of the razor shown in Figure 1;

Figure 5 is a side view of the razor of Figure 1 with the reservoir container removed;

Figure 6 is an enlarged perspective view showing an upper part of the razor of Figure 1;

Figure 7 is a cross-section through the upper part of the razor of Figure 1;

Figure 7A is a sectioned perspective view showing a modification to the razor neck and cartridge of the example illustrated in Figure 7;

Figures 8 and 9 are cross-sections illustrating the dip tube valve system in upright and inverted orientations, respectively;

Figure 10 is a front view showing a razor according to the invention, including a tablet dispenser;

Figure 11 is a side view of the razor of Figure 10; and Figure 12 shows the razor of Figure 10 in perspective and which the upper part partially removed for filling the reservoir container with water.

[0010] The examples of Figures 1-9 are not covered by the claims and are not embodiments of the invention but they are useful to understand the invention.

[0011] Referring initially to Figures 1 to 7 there is shown a razor having a shaving head or blade unit 1 including three blades 2 with parallel cutting edges carried within a frame 3 which also supports guard and cap structures 4,5 defined by elastomeric strips which are each shown to have an array of close-packed cylindrical recesses 6, although other configurations of recesses and/or projections could be provided instead as known in the art. For further details of the elastomeric strips 4,5 and the recesses 6 therein reference can be made to W096/02369, W097/17174. The cap structure 5 includes a lubricating strip 12 as known per se and which may be as described in US Patent No. 5113585. The blades 2 can be movable independently of each other against the action of return springs under the forces experienced by the blades during shaving as also known in the art. Further details of spring loaded blades may be found in US Patent No. 4492025. Alternatively, the blades 2 can be fixedly mounted in the frame. The shaving head 1 may be fixedly attached to the remaining parts of the razor with the intention that at least the upper part of the razor be discarded in entirety when the blades 2 have become dulled, or the shaving head 1 could be of the replaceable cartridge type so that the shaving head is merely replaced when the blades 2 have lost their sharpness.

[0012] The razor includes a refillable reservoir in the form of a container 8 which doubles as the razor handle, this container having a generally flat rectangular form enclosing an interior chamber with an inlet/discharge port 7 defined by a neck 9 (Fig. 7) located at the upper end of the reservoir container and by means of which the container is detachably connected, such as by a screw threaded or bayonet type coupling, to a razor neck 10. A lower part of the razor neck 10 forms a cap for co-operation with the container neck 9, and the upper part of the razor neck carries the shaving head 1. The razor neck 10 is equipped with an elongate dip tube 11 (Figs 5 and 7) which is arranged to extend down through the container neck 9 and substantially to the bottom of the container 8 when it is coupled to the razor neck 10. Further details of the dip tube are described below with reference to Figures 8 and 9. The upper end of the dip tube 11 communicates with a fluid delivery passage 13 which in the embodiment illustrated in Figure 7 is formed by a tube 14, but in the modified embodiment shown in Figure 7A a bore 17 through the razor neck 10 defines part of the fluid delivery passage. The downstream end of the delivery passage 13 is connected to an inlet duct 15 in the shaving head. The inlet duct 15 is formed in a manifold member 16 which is attached to the underside of the frame 3 of the shaving head 1 and includes a socket 15a to which the end of the tube 14 is fitted and with which the duct 15 communicates. The manifold member 16 extends along the underside of the guard 4, parallel with the blades and adjacent the trailing edge of the guard surface, as can be seen in Figure 4. The delivery manifold 16 defines an interior channel 16a and has

spaced along its length a series of holes which are aligned with openings 18 in the guard surface. Thus, it will be understood that fluid in the container 1 can be delivered, by means of the dip tube 11, the delivery passage 13, the delivery manifold 16, and the openings 18 to the guard surface, it being the intention that such delivery should occur during the process of shaving with the razor. In the modified construction of Figure 7A, the delivery tube opens into one of the recesses 6 of the guard strip 5 and in this case there is no manifold member, the tube 14 being connected to an opening in the guard structure.

[0013] At the beginning of a shaving procedure, the container 8 is disconnected from the razor neck 10 and is filled with water to a depth that may be indicated by an appropriate marking on the container. A tablet 20 (Fig. 5) of a solid substance which on contact with water effervesces to generate gas, preferably carbon dioxide and with the water forms a fluid having a characteristic which makes it desirable for application to the skin during shaving, is dropped into the container 8 through the neck 9, and the container is then immediately reconnected to the razor neck 10. The preferred gas generating substance comprises a mixture of tartaric acid and/or citric acid with a carbonate, bicarbonate or hydrogen carbonate salt of sodium or potassium. The gas generated by the reaction of the tablet substance with the water causes the pressure within the ullage space above the water in the container to rise, and this pressure forces the prepared fluid produced by the solid substance mixing with the water to flow through the dip tube 11 and to the shaving head following the flow path previously described. The amounts of gas generated and fluid prepared are sufficient for continuous delivery to take place for the time taken to complete a shave with the razor, although it will be appreciated that the amounts of carbon dioxide generating substance will depend on the volume of the container 8 and the amount of water it is intended to be filled with. In one test, however, a container having a capacity of 40ml was filled with 30ml of water. Two tablets each weighing 0.3g were added to the water, the composition of each tablet being:

Sodium hydrogen carbonate	44 wt%
Citric Acid	36 wt%
Xanthum Gum	15 wt%
Polyox (lubricant)	5 wt%

The maximum pressure generated in the container which was fitted with a 5mm bore ball valve in the dip tube, was 0.6 psi (4.1kPa) and this pressure produced an average maximum flow rate of 4.5ml/min, and continuous flow of liquid from the container lasted for an average of about 7 minutes.

[0014] It will be understood the procedure of filling the container 8 and adding a tablet 20 will be repeated for each shave. If desired the delivery passage could be

fitted with a valve to allow the user to control the time of delivery and/or the rate of delivery of prepared fluid to the shaving head 1.

[0015] As razors are sometimes held other than upright during shaving the dip tube 11 preferably incorporates a valve arrangement to ensure that prepared fluid is always discharged by the gas pressure. As shown in Figures 8 and 9, the dip tube 11 has openings 23, 23' adjacent its opposite ends for connecting the inside of the tube with the interior of the container, these openings being controlled by respective ball valves 24, 25. Each of the valves is gravity operated with the ball 24, 25 moving under its own weight between open and closed positions as the container is rotated between upright and inverted orientations. When the container is upright (Fig. 8) the lower valve 24 is open due to its ball having moved away from the valve seat 24a and the upper valve 25 is closed, due to its ball engaging the valve seat 25a and being held against the seat by the pressure in the container. When the container is inverted (Fig. 9), the valve 25 is opened and the valve 24 is closed. Thus, in both orientations that dip tube opening 23 or 23' which is opened for flow of fluid into the dip tube 11 is always immersed in the fluid within the container 8.

[0016] In Figures 10-12 there is illustrated a razor according to the invention which is generally similar to that described above but differs in that the razor neck 10 incorporates a tablet magazine and dispenser 30. The shape of the container 8 is adapted to define a forwardly facing neck opening or port to which the lower part of the razor neck 10 is detachably connectable by any suitable means capable of establishing a sealed connection between the razor neck 10 and the container 8. The lower portion of the razor neck 10 incorporates the tablet magazine and dispenser 30 which includes a cylindrical housing 31 within which there is received a rotary member 32 defining a series of pockets 34, five in number as shown, distributed in a circular array and intended to receive respective tablets of solid substance to be mixed with water within the container 8. A detent system is preferably provided to provide some control over the rotation of the member 32 whereby the pockets 34 are easily presented in turn in position to dispense the tablets contained therein into the container interior. The tablet magazine can be rechargeable to allow the pockets to be refilled with tablets after they have been emptied, or the rotary member could be replaceable to allow an emptied member 32 to be replaced by a similar but fully charged one. Alternatively, the magazine may be adapted to hold a sufficient number of tablets for a number of shaves that the blades of the razor are expected to last for before becoming dulled, and the magazine and razor cartridge may then be discarded and replaced together, possibly as a single unit or a cartridge and magazine assembly.

[0017] In use of the razor of Figs 10-12, the container 8 is detached from the razor neck 10 and filled to a certain level with water, after which the container 8 and ra-

zor neck are reconnected. The rotary member 32 is then turned manually to bring a pocket 34 containing a tablet to a rotational dispensing position whereat the tablet 20 is deposited from the pocket into the container where it mixes with the water for generating gas and producing a prepared fluid to be delivered to the shaving head 1. The fluid is conducted to the guard surface of the shaving head in the same way as described above with respect to the embodiment of Figures 1-9, namely through the dip tube, the delivery passage included in the razor neck, the delivery manifold provided in the shaving head, and the openings 18 at the guard surface. It will be appreciated that the tablet magazine and dispenser is shown only schematically and it would be arranged so that the container is sealed closed after delivering a tablet into the container, which is necessary to create the gas pressure needed for discharging the prepared fluid in the reservoir container.

[0018] Modifications are of course possible to the specific embodiments described above without departing from the scope of the invention as defined by the claims which follow. By way of example, a valve could be included in the fluid passage 13 between the container 8 and shaving head 1 to allow the user to control when and/or the rate at which fluid is to be supplied to the shaving head.

Claims

1. A razor comprising a shaving head (1) including at least one blade (2) and a reservoir (8) for supplying a fluid to be applied to the skin in connection with a shaving procedure, the fluid being discharged at or adjacent the shaving head (1) under pressure, and the reservoir (8) being coupled to the shaving head (1) and including a chamber, **characterized in that** said chamber is adapted to contain water and a substance to prepare said fluid, the chamber is refillable with water, said reservoir includes at least one inlet and discharge port (7) for filling the chamber with water for delivering into the chamber the substance for mixing with water is the chamber to prepare the fluid to be applied to the skin and for discharging the prepared fluid from the chamber for the application to the skin, and a dispensing device (30) incorporated in the razor, operable to deliver a predetermined dose of the substance into the reservoir, is arranged to hold a plurality of doses and to deliver the predetermined doses into the reservoir (8) in turn, wherein the fluid is discharged under pressure produced in the chamber by the gas generated when the substance is mixed with the water in the chamber.
2. A razor according to claim 1, **characterized in that** the reservoir (8) is a container arranged to form a razor handle.

3. A razor according to claim 2, **characterized in that** the shaving head (1) is supported on the container by a razor neck (10) providing a delivery passage for conducting fluid discharged from the reservoir chamber to the shaving head (1). 5
4. A razor according to claim 3, **characterized in that** the shaving head (1) is arranged for the fluid to be discharged at a position ahead of the blade or blades (2) as they move across the skin during shaving. 10
5. A razor according to claim 4, **characterized in that** the fluid is discharged at a guard surface (4). 15
6. A razor according to any one of claims 1 to 5, **characterized in that** said predetermined dose of substance is provided in tablet form (20) or contained in a water soluble capsule. 20
7. A razor according to any one of claims 1 to 5, **characterized in that** the dispensing device (30) comprises a magazine for holding predetermined doses of substance in tablet form (20). 25
8. A razor according to claim 7, **characterized in that** each dose of substance is sufficient for one complete shave.
9. A razor according to claim 8, **characterized in that** the substance generates carbon dioxide on being mixed with water. 30
10. A razor according to claim 9, **characterized in that** the substance comprises sodium bicarbonate. 35
11. A razor according to claim 9, **characterized in that** the substance comprises tartaric acid and/or citric acid and at least one salt selected from the group consisting of sodium carbonate, sodium bicarbonate, sodium hydrogen carbonate, potassium carbonate, potassium bicarbonate and potassium hydrogen carbonate. 40
12. A razor according to any one of claims 1 to 8, **characterized in that** the substance, on admixture with water, produces a fluid with desired lubricating properties and/or moisturizing properties and/or fragrance and/or chemical hair treatment properties and/or bacterial or medicinal properties, and/or cleansing properties and/or blood coagulation properties. 45
13. A razor according to any one of claims 1 to 12, **characterized in that** a valve means (24, 25) is provided for controlling flow of fluid through discharge port (7) through which fluid flows from the reservoir. 50

14. A razor according to any one of claims 1 to 12, **characterized in that** a dip tube (11) is provided for discharge of fluid from the reservoir (8), the dip tube having a valve arrangement permitting discharge of fluid therethrough with the reservoir held either upright or inverted.

Patentansprüche

1. Rasierer, der einen Rasiererkopf (1) umfasst, mit mindestens einer Klinge (2) und einem Reservoir (8) für die Zufuhr eines Fluids zum Auftragen auf die Haut in Verbindung mit einem Rasiervorgang, wobei das Fluid an oder angrenzend an den Rasiererkopf (1) unter Druck abgegeben wird, und wobei das Reservoir (8) mit dem Rasiererkopf (1) gekoppelt ist und eine Kammer aufweist, **dadurch gekennzeichnet, dass** die genannte Kammer Wasser und eine Substanz zur Vorbereitung des genannten Fluids aufweisen kann, wobei die Kammer mit Wasser aufgefüllt werden kann, wobei das genannte Reservoir mindestens einen Einlass und Auslassanschluss (7) zum Füllen der Kammer mit Wasser aufweist, um die Substanz der Kammer zum Mischen mit Wasser in der Kammer zuzuführen, um das der Haut zuzuführende Fluid vorzubereiten und um das vorbereitete Fluid aus der Kammer zum Auftragen auf die Haut abzugeben, und mit einer Spendervorrichtung (30), die in dem Rasierer vorgesehen ist, die funktionsfähig eine vorbestimmte Dosis der Substanz in dem Reservoir zuführen kann, wobei die Vorrichtung so angeordnet ist, dass sie eine Mehrzahl von Dosen speichert und die vorbestimmten Dosen in dem Reservoir (8) nacheinander abgibt, wobei das Fluid unter Druck abgegeben wird, der in der Kammer durch das Gas erzeugt wird, das erzeugt wird, wenn die Substanz mit dem Wasser in der Kammer gemischt wird.
2. Rasierer nach Anspruch 1, **dadurch gekennzeichnet, dass** es sich bei dem Reservoir (8) um einen Behälter handelt, der so angeordnet ist, dass er ein Rasiererhandstück bildet.
3. Rasierer nach Anspruch 2, **dadurch gekennzeichnet, dass** der Rasiererkopf (1) an dem Behälter durch einen Rasierers Hals (10) gestützt wird, der einen Zufuhrdurchgang vorsieht, um das aus der Reservoirkammer abgegebene Fluid zu dem Rasiererkopf (1) zu leiten.
4. Rasierer nach Anspruch 3, **dadurch gekennzeichnet, dass** der Rasiererkopf (1) so angeordnet ist, dass das Fluid an einer Position vor der Klinge bzw. den Klingen (2) abgegeben wird, wenn sich diese während der Rasur über die Haut bewegen.

5. Rasierer nach Anspruch 4, **dadurch gekennzeichnet, dass** das Fluid an einer Schutzoberfläche (4) abgegeben wird.

6. Rasierer nach einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** die genannte vorbestimmte Dosis der Substanz in Tablettenform (20) vorgesehen ist oder sich in einer wasserlöslichen Kapsel befindet.

7. Rasierer nach einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** die Spendervorrichtung (30) ein Magazin zum Speichern vorbestimmter Dosen der Substanz in Tablettenform (20) umfasst.

8. Rasierer nach Anspruch 7, **dadurch gekennzeichnet, dass** jede Dosis der Substanz für eine komplette Rasur ausreicht.

9. Rasierer nach Anspruch 8, **dadurch gekennzeichnet, dass** die Substanz beim Mischen mit Wasser Kohlendioxid erzeugt.

10. Rasierer nach Anspruch 9, **dadurch gekennzeichnet, dass** die Substanz Natriumbikarbonat umfasst.

11. Rasierer nach Anspruch 9, **dadurch gekennzeichnet, dass** die Substanz Weinsäure und/oder Zitronensäure und mindestens ein Salz umfasst, das aus der Gruppe ausgewählt wird, die Natriumkarbonat, Natriumbikarbonat, Natriumhydrogencarbonat, Kaliumkarbonat, Kaliumbikarbonat und Kaliumhydrogencarbonat umfasst.

12. Rasierer nach einem der Ansprüche 1 bis 8, **dadurch gekennzeichnet, dass** die Substanz beim Mischen mit Wasser ein Fluid mit gewünschten Gleiteigenschaften und/oder feuchtigkeitsspendenden Eigenschaften und/oder Duftstoffeigenschaften und/oder chemischen Haarbehandlungseigenschaften und/oder bakteriellen oder medizinischen Eigenschaften und/oder reinigenden Eigenschaften und/oder Blutgerinnungseigenschaften erzeugt.

13. Rasierer nach einem der Ansprüche 1 bis 12, **dadurch gekennzeichnet, dass** eine Ventileinrichtung (24, 25) zur Regelung des Fluidflusses durch den Auslassanschluss (7), durch den Fluid aus dem Reservoir (8) strömt, vorgesehen ist.

14. Rasierer nach einem der Ansprüche 1 bis 12, **dadurch gekennzeichnet, dass** eine Tauchrohrleitung (11) zur Abgabe von Fluid aus dem Reservoir (8) vorgesehen ist, wobei die Tauchrohrleitung eine Ventilanordnung aufweist, die eine Abgabe von

Fluid dort hindurch ermöglicht, wenn das Reservoir aufrecht oder auf dem Kopf stehend gehalten wird.

5 Revendications

1. Rasoir comportant une tête de rasage (1) comprenant au moins une lame (2) et un réservoir (8) destiné à délivrer un fluide devant être appliqué sur la peau en liaison avec une procédure de rasage, le fluide étant libéré sous pression au niveau de ou de façon adjacente à la tête de rasage (1), et le réservoir (8) étant relié à la tête de rasage (1) et comprenant une chambre, **caractérisé en ce que** ladite chambre est prévue pour contenir de l'eau et une substance pour préparer ledit fluide, la chambre est rechargeable avec de l'eau, ledit réservoir comprend au moins un orifice d'entrée et de sortie (7) pour le remplissage avec de l'eau afin de délivrer dans la chambre la substance pour le mélange avec l'eau dans la chambre de façon à préparer le fluide devant être appliqué sur la peau et afin d'évacuer le fluide préparé de la chambre pour l'application sur la peau, et un dispositif de distribution (30) incorporé dans le rasoir, pouvant agir afin de délivrer une dose prédéterminée de la substance dans le réservoir, est prévu pour contenir une multiplicité de doses et pour délivrer les doses prédéterminées dans le réservoir (8) à son tour, le fluide étant évacué sous une pression produite dans la chambre par le gaz généré lorsque la substance est mélangée avec l'eau dans la chambre.

2. Rasoir selon la revendication 1, **caractérisé en ce que** le réservoir (8) est un réceptacle prévu pour former un manche de rasoir.

3. Rasoir selon la revendication 2, **caractérisé en ce que** la tête de rasage (1) est supportée sur le réceptacle par un col de rasoir (10) procurant un passage de sortie destiné à conduire du fluide évacué de la chambre de réservoir vers la tête de rasage (1).

4. Rasoir selon la revendication 3, **caractérisé en ce que** la tête de rasage (1) est prévue pour que le fluide soit évacué dans une position en avant de la lame ou des lames (2) lorsqu'elles se déplacent sur la peau pendant le rasage.

5. Rasoir selon la revendication 4, **caractérisé en ce que** le fluide est libéré au niveau d'une surface de protection (4).

6. Rasoir selon l'une quelconque des revendications 1 à 5, **caractérisé en ce que** ladite dose de substance prédéterminée est prévue sous une forme de tablette (20) ou contenue dans une capsule soluble

dans l'eau.

7. Rasoir selon l'une quelconque des revendications 1 à 5, **caractérisé en ce que** le dispositif de distribution (30) comprend une réserve destinée à contenir des doses de substance prédéterminées sous une forme de tablette (20). 5
8. Rasoir selon la revendication 7, **caractérisé en ce que** chaque dose de substance est suffisante pour un rasage complet. 10
9. Rasoir selon la revendication 8, **caractérisé en ce que** la substance génère du dioxyde de carbone lorsqu'elle est mélangée avec de l'eau. 15
10. Rasoir selon la revendication 9, **caractérisé en ce que** la substance comprend du bicarbonate de sodium. 20
11. Rasoir selon la revendication 9, **caractérisé en ce que** la substance comprend de l'acide tartrique et/ou de l'acide citrique et au moins un sel choisi dans le groupe composé du carbonate de sodium, du bicarbonate de sodium, de l'hydrogénocarbonate de sodium, du carbonate de potassium, du bicarbonate de potassium et de l'hydrogénocarbonate de potassium. 25
12. Rasoir selon l'une quelconque des revendications 1 à 8, **caractérisé en ce que** la substance, lors du mélange avec de l'eau, produit un fluide avec des propriétés lubrifiantes et/ou des propriétés d'humidification et/ou un parfum et/ou des propriétés de traitement capillaire chimique et/ou des propriétés bactériennes ou médicinales, et/ou des propriétés de nettoyage et/ou des propriétés de coagulation du sang souhaités. 30 35
13. Rasoir selon l'une quelconque des revendications 1 à 12, **caractérisé en ce que** des moyens de soupape (24, 25) sont prévus pour commander l'écoulement de fluide à travers un orifice de sortie (7) à travers lequel du fluide s'écoule depuis le réservoir. 40 45
14. Rasoir selon l'une quelconque des revendications 1 à 12, **caractérisé en ce qu'**un tube plongeur (11) est prévu pour l'évacuation de fluide depuis le réservoir (8), le tube plongeur ayant un agencement de soupape permettant l'évacuation de fluide à travers avec le réservoir maintenu droit ou inversé. 50

55

FIG. 1

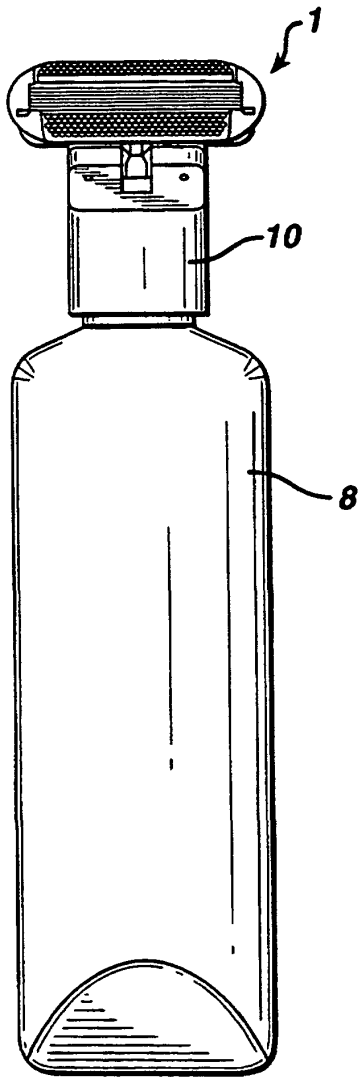


FIG. 2

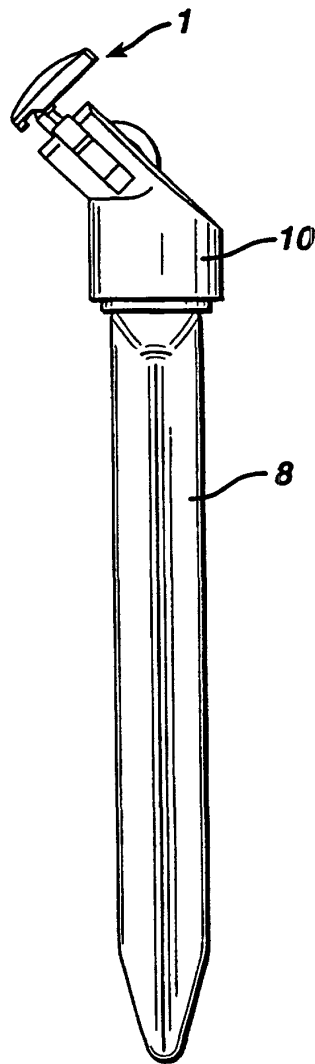


FIG. 3

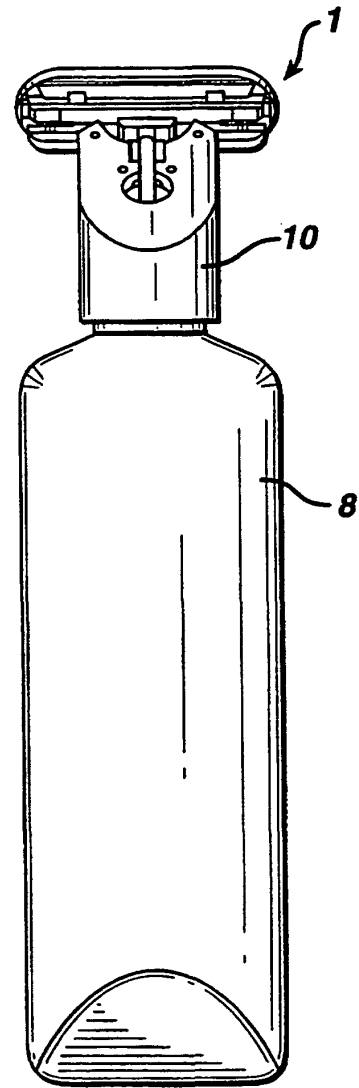


FIG. 4

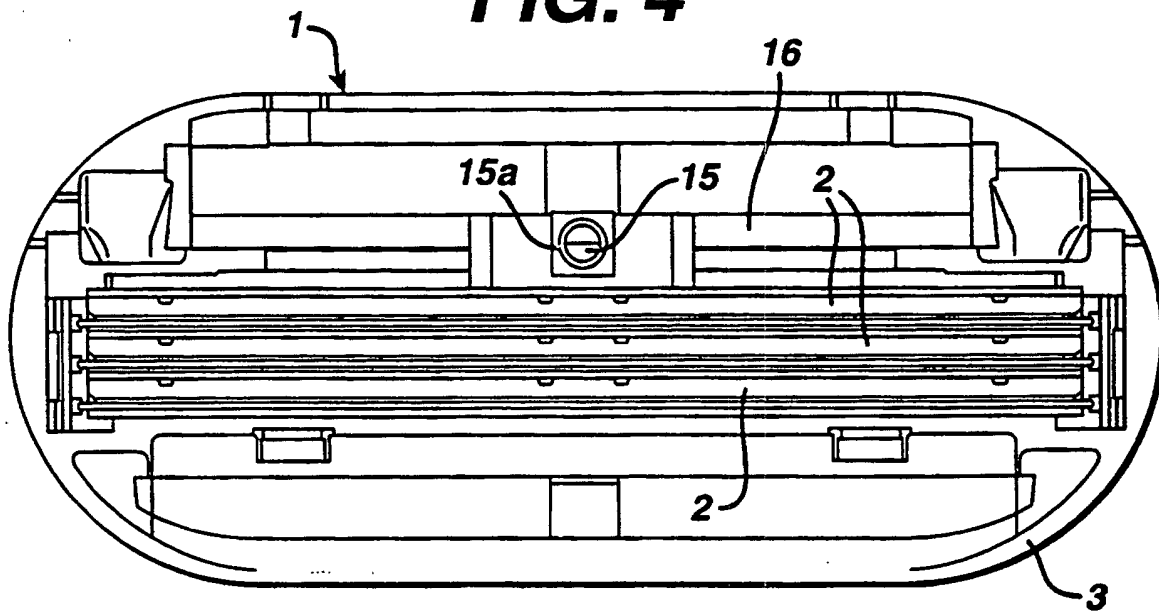


FIG. 5

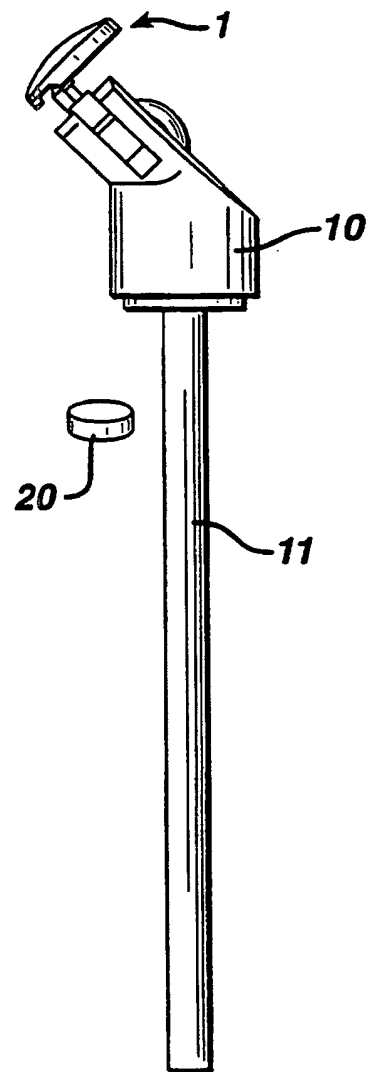
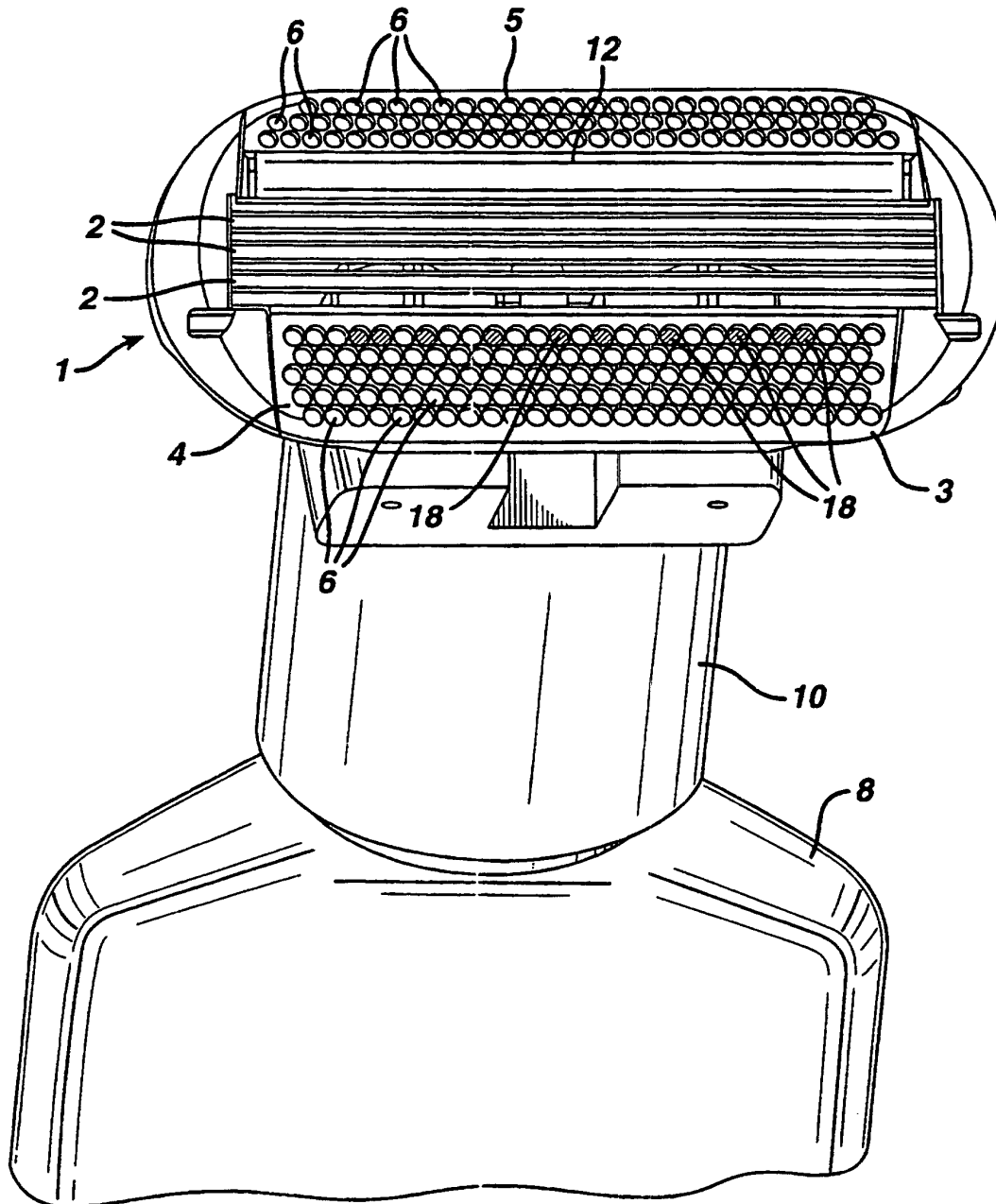


FIG. 6



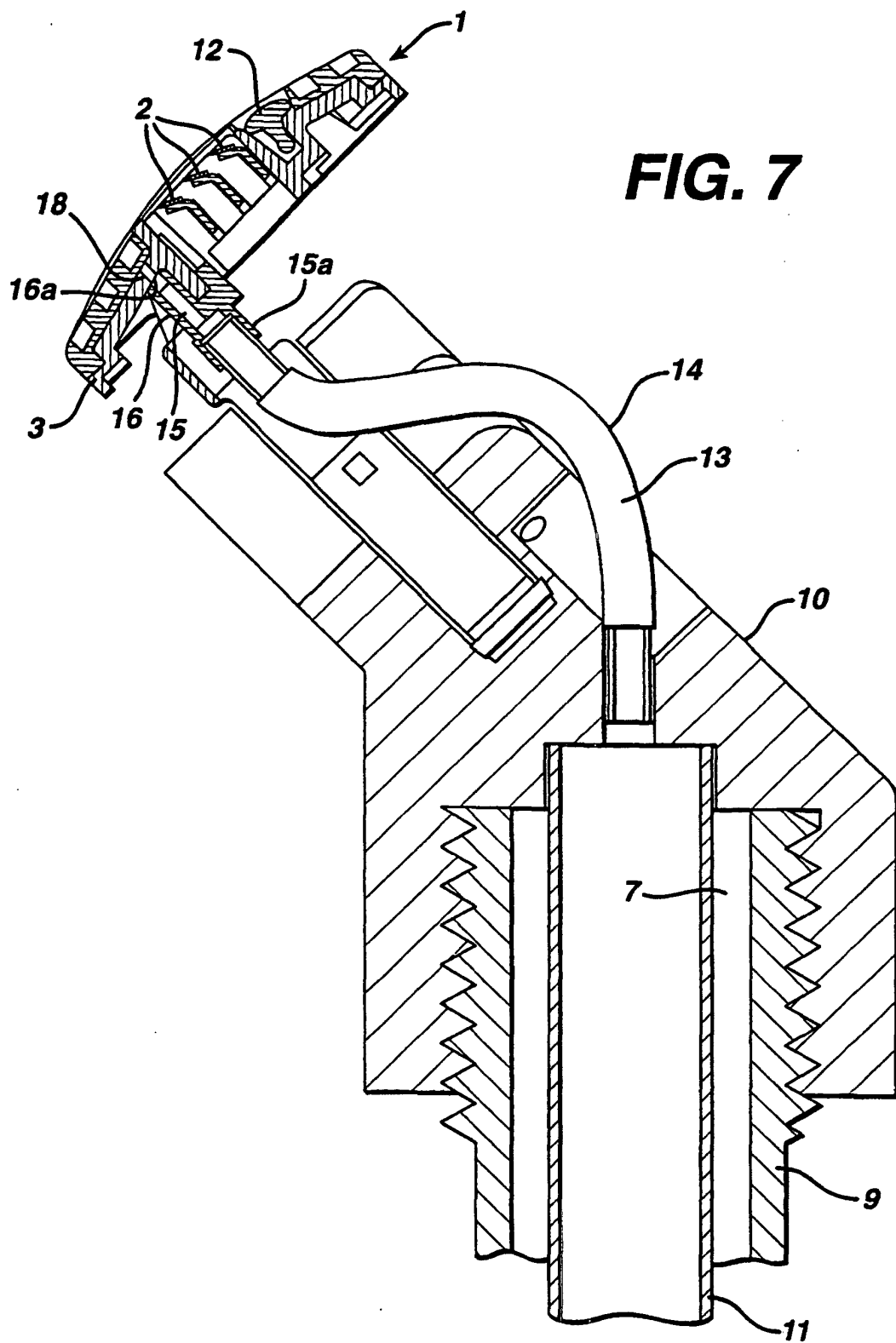


FIG. 7A

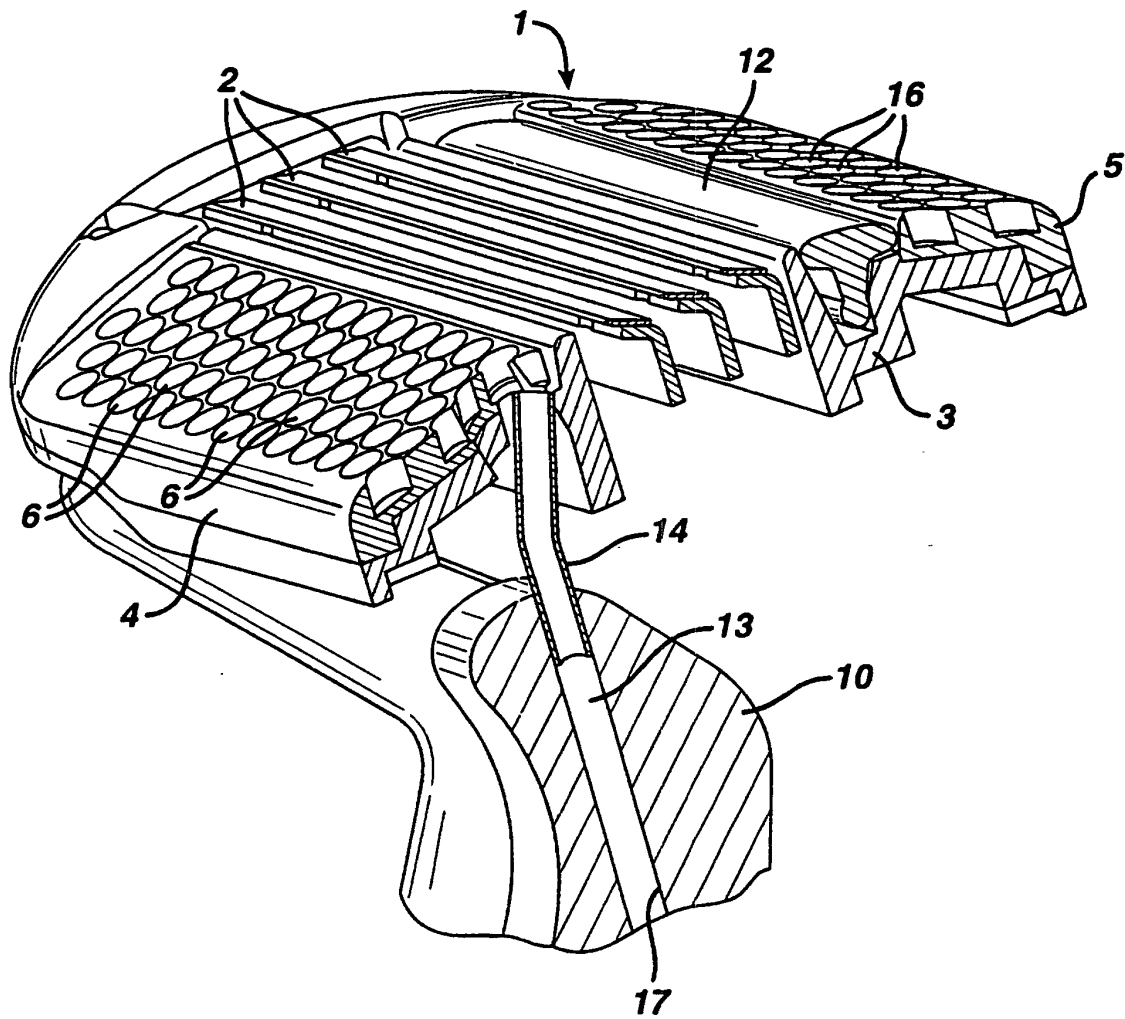


FIG. 8

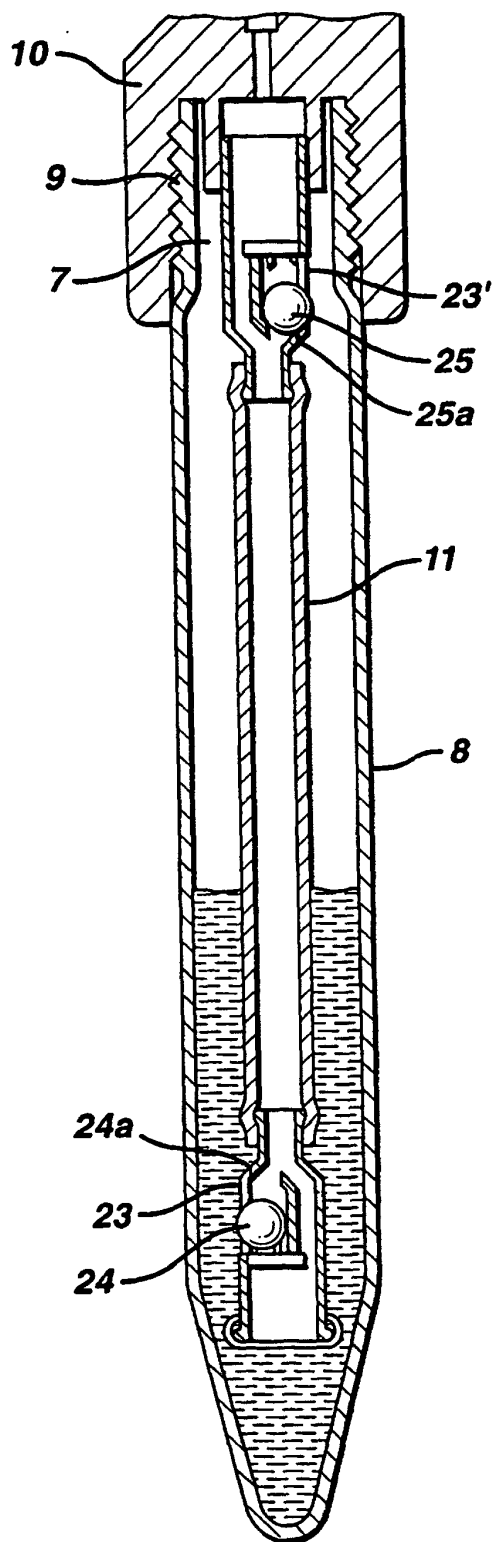


FIG. 9

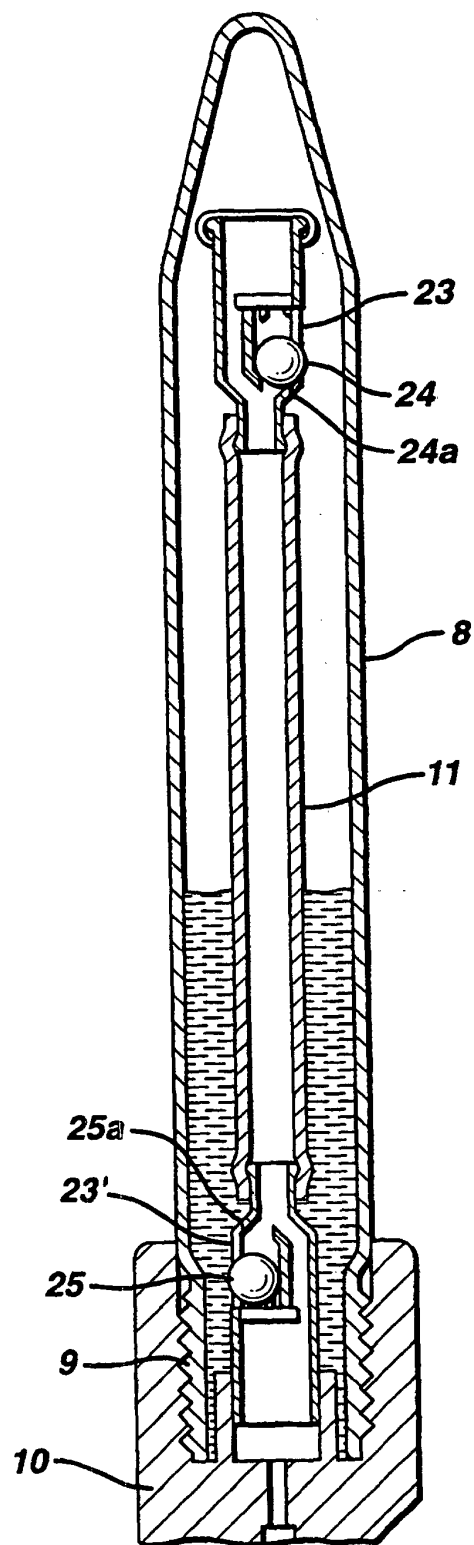


FIG. 10

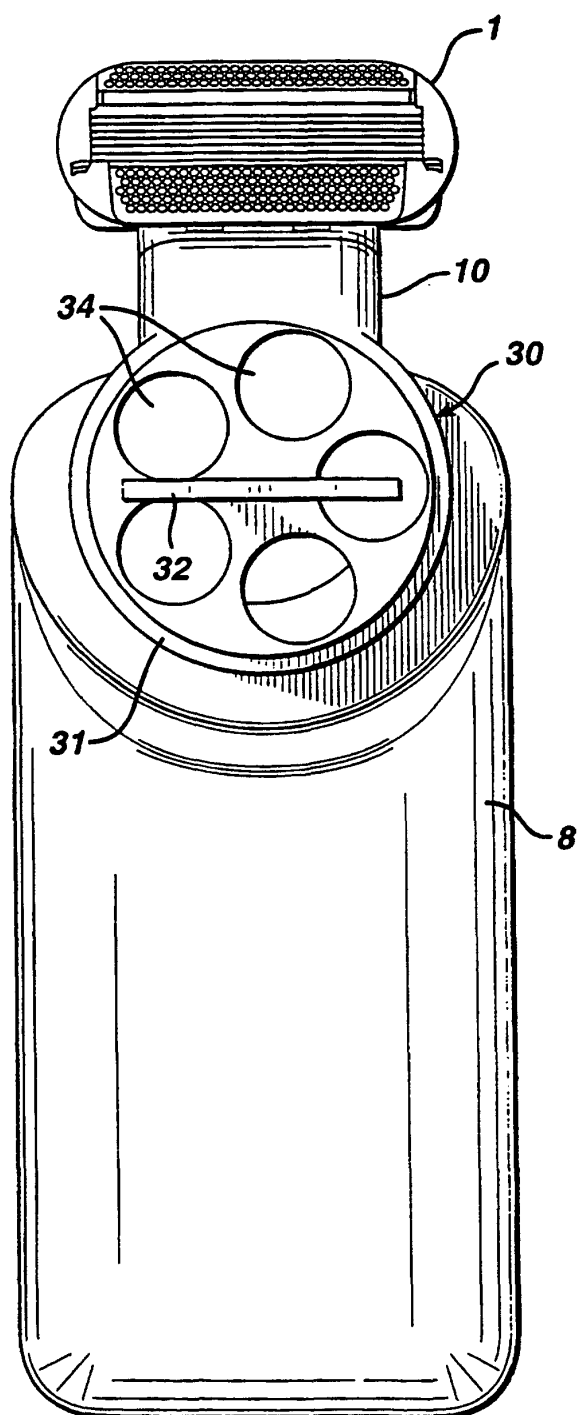


FIG. 11

