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Chen

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[54] **FOUNTAIN SHAVING DEVICE**

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Related U.S. Patent Documents

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Appl. No.: **198,000**
Filed: **May 24, 1988**

[51] **Int. Cl.**[5] **B26B 21/44**

[52] **U.S. Cl.** **30/41;** 30/86; 222/391

[58] **Field of Search** 30/41, 86, 32, 34.05, 30/90; 222/402.13, 391, 402.11

[56] **References Cited**

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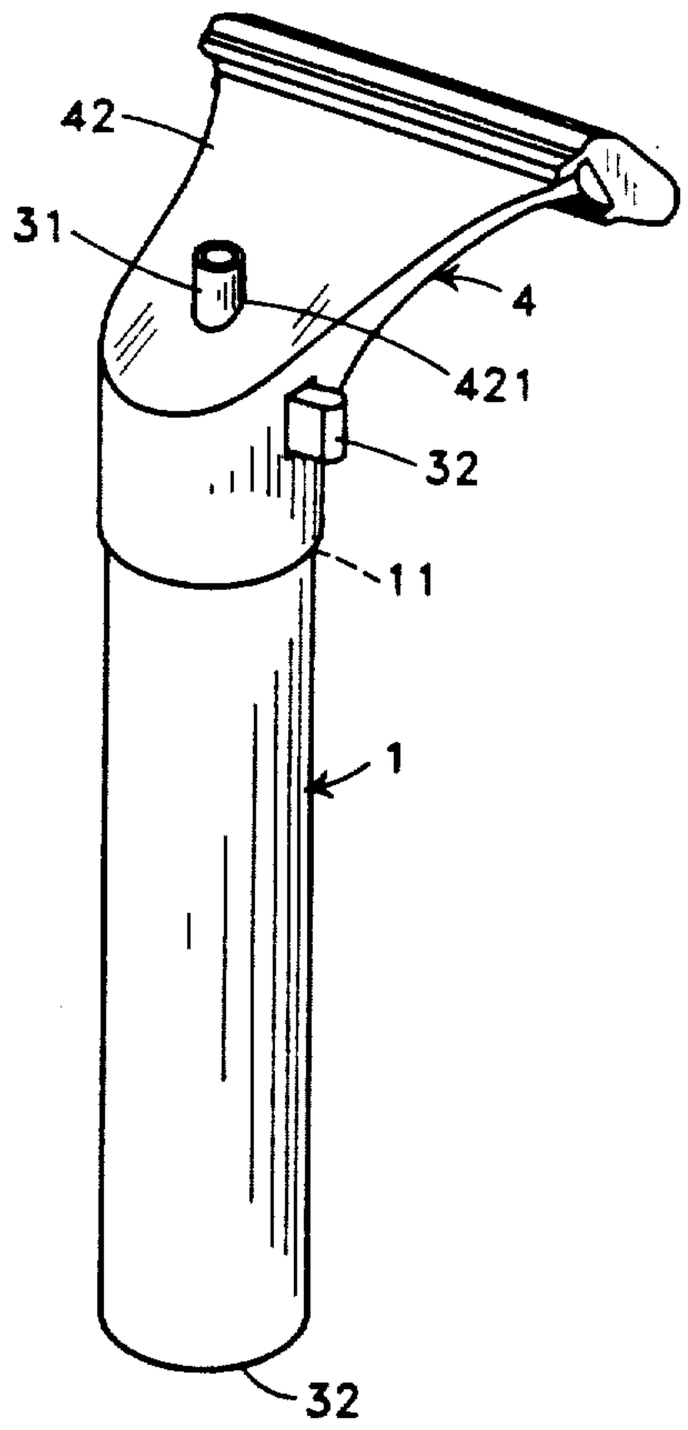
Primary Examiner—Douglas D. Watts
Attorney, Agent, or Firm—Lisa & Lisa

[57] **ABSTRACT**

A fountain shaving device includes an aerosol container of shaving cream, a brush mounted on a first end portion of the aerosol container, a razor having a blade cartridge having blades therein mounted on a second end portion of the container opposite to the brush, and a dispenser controller formed on a brush base having a longitudinal tube linearly connected with a stem of the aersol valve and transversely formed with a lateral wedge portion tapered downwardly outwardly in slidable engagement with another wedge portion tapered upwardly inwardly formed on a lateral push button so that upon a depression of the push button, the two wedge portions may be effected to lower the controller tube and valve stem to open the aerosol valve for conveniently dispensing cream directly into the brush bristles.

9 Claims, 2 Drawing Sheets



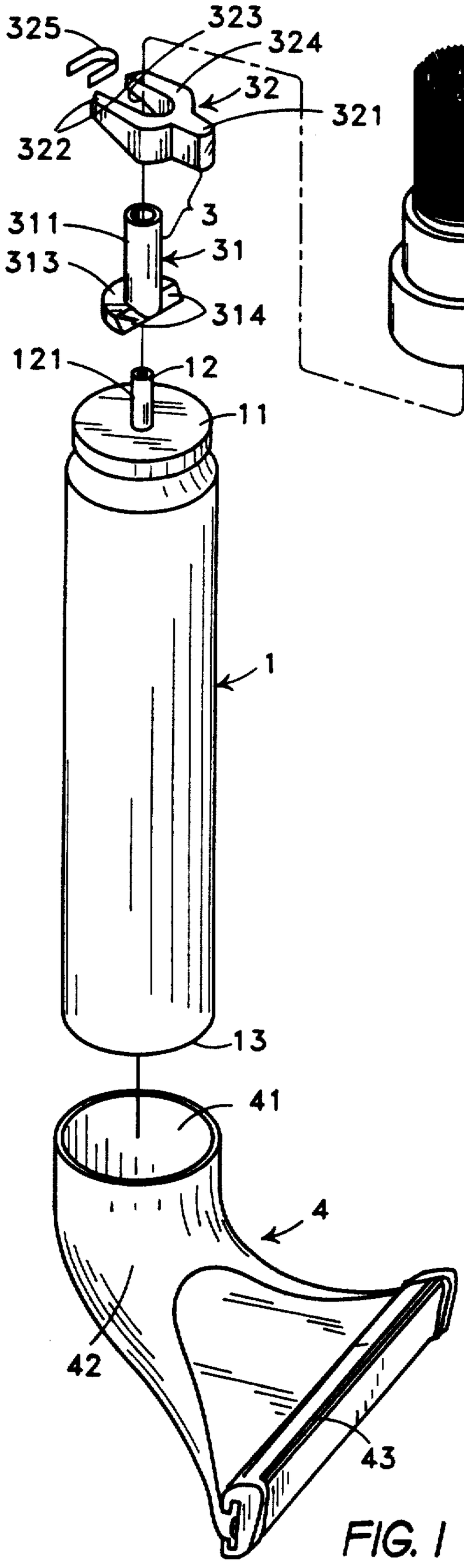
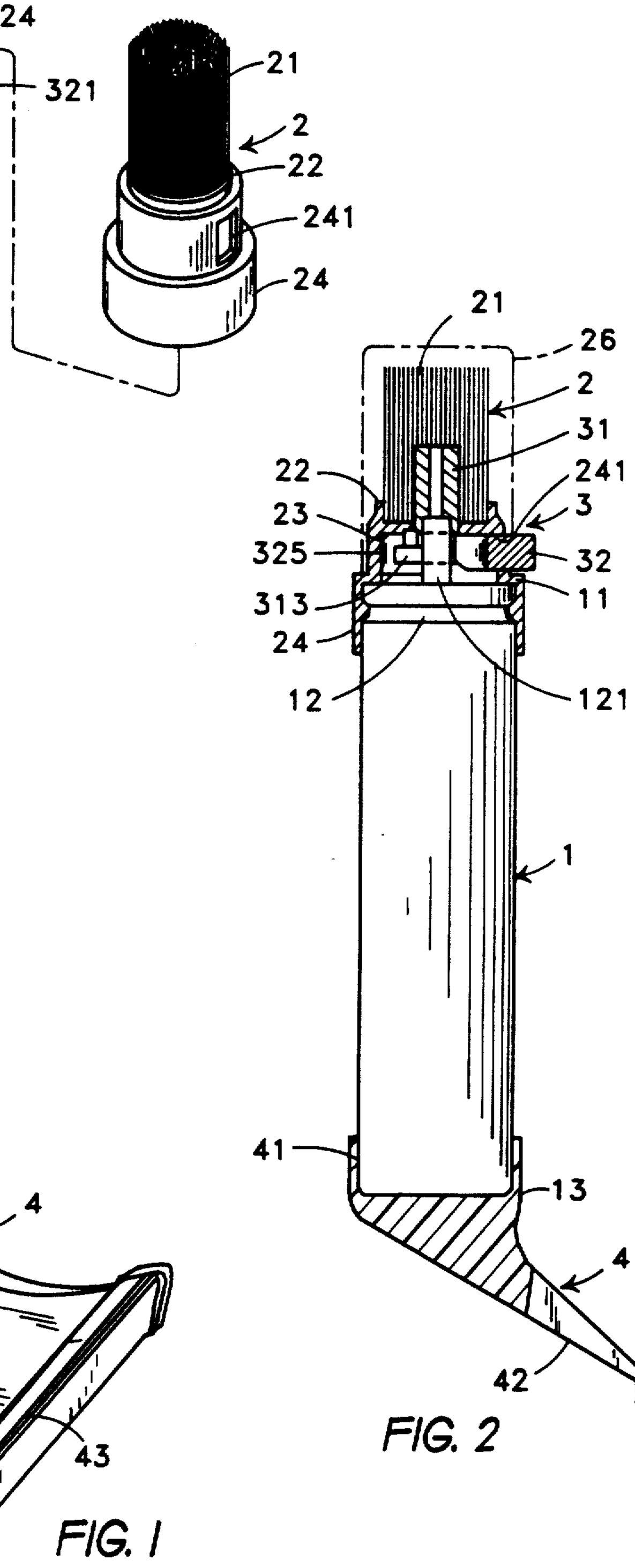

325
323
324
32
321
322
311
3
313
31
314
121
12
11
1
13
41
4
42
43

FIG. 1


21
2
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241
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FIG. 2

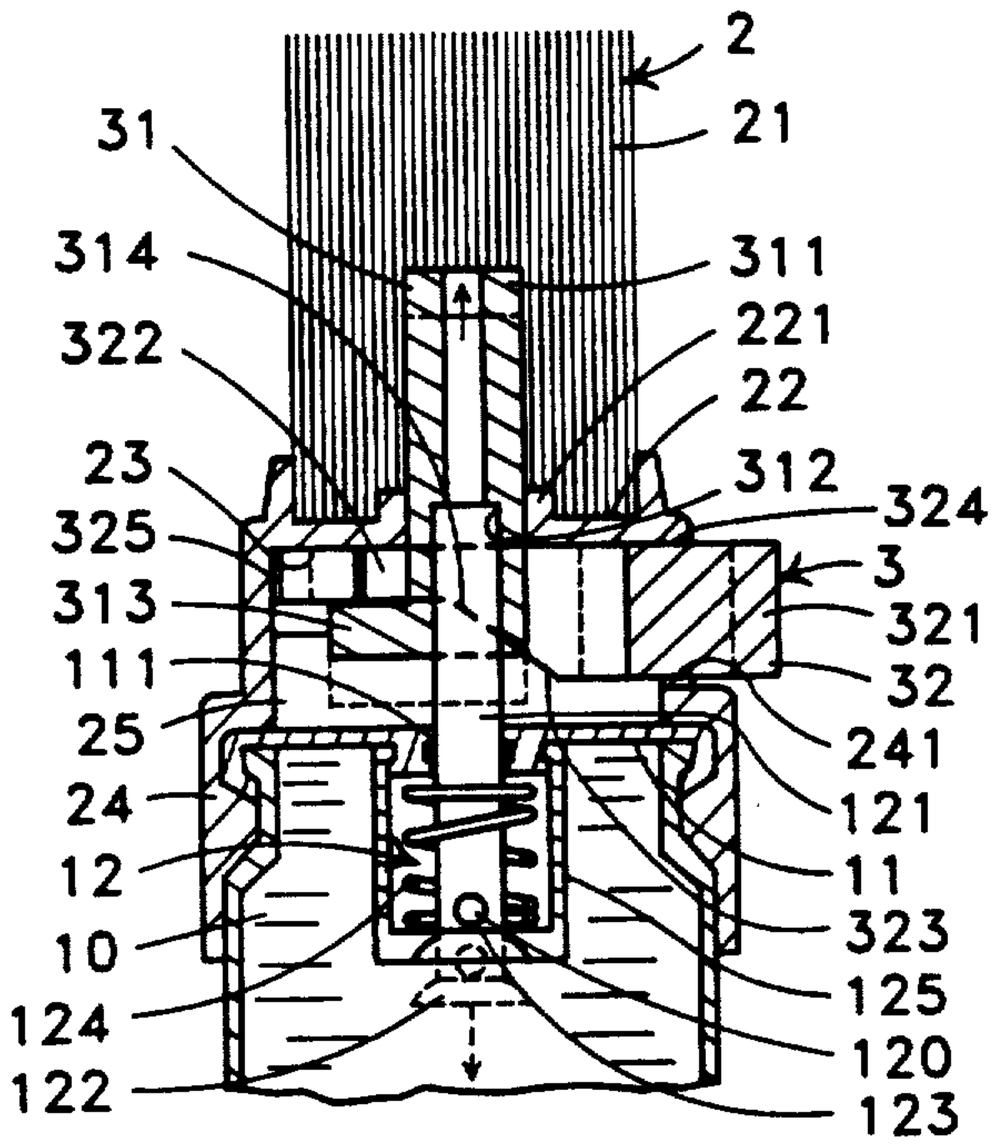

FIG. 3

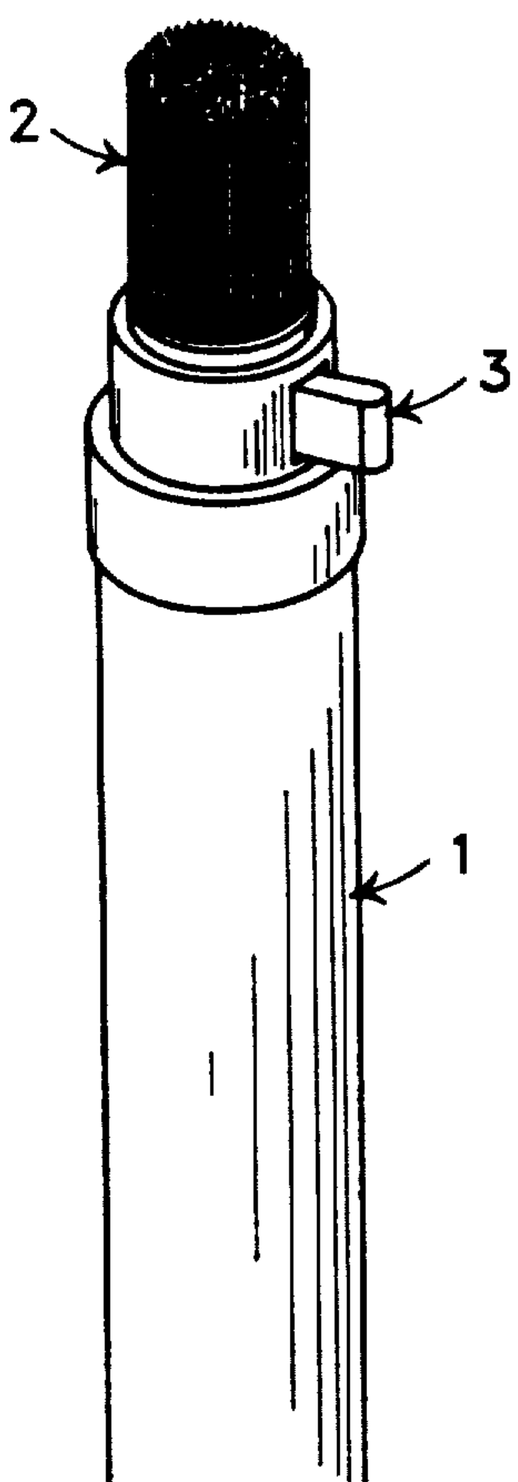

FIG. 4

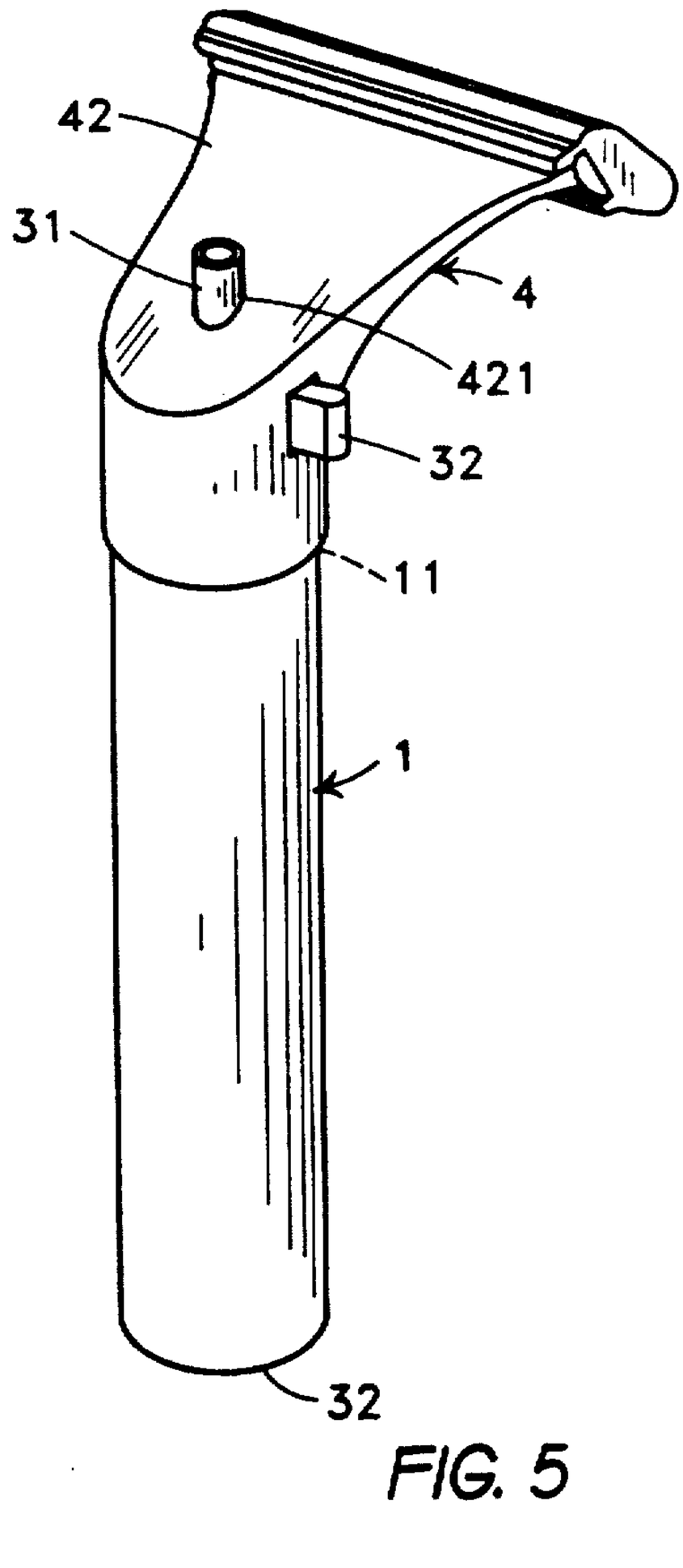

FIG. 5

FOUNTAIN SHAVING DEVICE

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

BACKGROUND OF THE INVENTION

Lorenzo Lopez, Jr. disclosed a shaving device in his U.S. Pat. No. 4,023,269 including a razor blade and a supply of shaving cream in a device for convenient shaving. However, such a conventional shaving device has the following drawbacks in use:

1. Even the operator 81 is depressed to open a valve of the aerosol container 18, the valve stem is not made as an inclined surface to mate with the inclined surface of the operator 81 as shown in his FIG. 2 so that a heavier force is required to depress the operator 81 bearing against a strong force exerting on an acute edge of the valve stem resiliently actuated by a valve spring inside the aerosol container.

2. By depressing the operator 81 to push the valve stem inwardly through the opening 20, a shaving cream will be discharged through the passageway 52 towards the brush 36, of which the passageway 52 is very long to easily cause contamination or curing of the cream as kept in the passageway.

3. When the operator 81 is suddenly released from the seals 84, the acute edge of the valve stem as tensioned by a valve spring and the pressurized cream in the aerosol container 18 may forcibly bias (or even brake) an inner end of the operator 81 to slow down the recovery or outward protruding of the operator, especially frictionally held by packing seals 84, thereby possibly causing cream leakage due to a difficulty for sharply closing the aerosol valve.

The present inventor has found the drawbacks of the conventional shaving device and invented the present fountain shaving device overcoming the above-mentioned drawbacks.

SUMMARY OF THE INVENTION

The object of the present invention is to provide a fountain shaving device including a brush mounted on one end of an aerosol container of shaving cream, a razor means mounted on the other end of the aerosol container, and a push-button controller operatively depressible for opening an aerosol valve for directly discharging a shaving cream from the aerosol container into the brush bristles for convenient shaving purpose.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective illustration showing all elements in construction of the present invention.

FIG. **2** is a sectional drawing of the present invention, when assembled.

FIG. **3** is a sectional drawing showing a mechanism for dispensing shaving cream in accordance with the present invention.

FIG. **4** is a perspective view of the present invention without mounting a blade cartridge means.

FIG. **5** shows another application of the present invention.

DETAILED DESCRIPTION

As shown in FIG. **1–3**, the present invention comprises: an aerosol container of shaving cream **1** also

serving as a handle, a brush means **2** mounted on a first end portion **11** of the container **1**, a shaving-cream despensing controller **3** mounted on the first end portion **11** of the container **1** and mounted in the brush means **2**, and a razor means **4** mounted on a second end portion **13** of the container **1** opposite to the first end portion **11**.

The aerosol container of shaving cream **1** includes: an aerosol valve **12** mounted in the first end **11** of the aerosol container **1** having a central hollow stem **121** longitudinally reciprocatively mounted in a central opening **111** of the first end portion **11** normally protruding outwardly as retained by a tensioning spring **124** seated on a cartridge **125**, a lower plug **122** formed on a lowest end of the stem **121** operatively sealing a valve opening or seat **123** of a valve cartridge **125** internally secured to the first end portion **11**, and a cream outlet port **120** formed in a lower portion of the stem positioned above the plug **122** and being normally excluded from any inlet cream by closing the plug **122** on the seat **123** of the valve cartridge **125**. The valve **12** can be selected from any other conventional designs or modifications to have a central hollow stem **121** operatively depressible for opening the valve, and normally protruding outwardly from the container **1** without depressing of the stem **121**.

The razor means **4** includes a socket **41** for mounting a second end portion **13** of the container opposite to the brush means **2** and a holder portion **42** for connecting a blade cartridge **43** containing shaving blades thereon.

The brush means **2** includes a plurality of bristles **21** planted on a base plate **22**, and a cylindrical portion **24** formed under the base plate **22** secured to the first end portion **11** of the container **1**, defining a cylindrical chamber **25** among a bottom flat surface **23** of the base plate **22**, the first end portion **11** of the container and an inside wall of the cylindrical portion **24** to generally encase the dispensing controller **3** in the chamber **25**. A cover **26** may be provided to protect the bristles.

The shaving-cream dispensing controller **3** is an essential means of the present invention and includes: a longitudinal dispenser **31** and a lateral actuator **32**.

The longitudinal dispenser **31** includes a central guide tube **311** having its inner tubular hole coaxially engaged with the central hollow stem **121** of the aerosol valve **12** having an annular extension **312** of the tube **311** engaged with an upper edge of the stem **121**, and a disk portion **313** formed on a lower end of the tube **311** perpendicular to the tube **311** having a first inclined surface **314** tilting downwardly outwardly.

The lateral actuator **32** generally perpendicular to the dispenser tube **311** includes a push-button portion **321** normally protruding outwardly through a slot **241** formed in the cylindrical portion **24**; a bifurcate wedge portion **322** protruding inwardly opposite to the push-button portion **321** to tangentially dispose around the tube **311**, having an upper flat surface **324** coplanar to an upper flat surface of the push-button portion **321** laterally sliding along the bottom flat surface **23** of the brush base plate **22** and having a second inclined surface **323** formed on a bottom of the wedge portion **322** tilting upwardly inwardly to be slidably engageable with the first inclined surface of the longitudinal dispenser **31**; and a restoring spring plate **325** retained between the bifurcate wedge portion **322** and an inside wall of the cylindrical portion **24** normally pushing the actuator **32** outwardly to protrude the push-button portion **321** beyond the slot **241**. The brush means **2** may further include a cap **26** for hygienic purpose.

The central guide tube **311** has its outer tubular wall reciprocatively engaged in a shallow jacket **221** formed in a central portion of the base plate **22**, The guide tube **311** is fluidically communicated with the central hollow stem **121** and has its upper end poking into a bundle of bristles **21** of the brush means **2**.

When using the present invention for shaving purpose, the push-button portion **321** is depressed inwardly as shown in FIG. **3** to allow the second inclined surface **323** to thrust the first inclined surface **314** of the longitudinal dispenser **31** downwardly to lower the central stem **121** of the aerosol valve **12**, thereby discharging a shaving cream **10** through the port **120**, the stem **121** and the tube **311** into the brush bristles **21** for direct distribution of cream onto a man's skin. When releasing the push-button portion **321**, the spring **124** will resiliently raise the stem **121** and the dispenser **313** to allow the first inclined surface **314** to thrust the second inclined surface **323** of the lateral actuator **32** to recover the outward protrusion of the push-button portion **321**, also laterally restored by the spring plate **325**.

Naturally, the spring plate **325** may also be omitted when the aerosol spring **124** is strong enough.

As shown in FIG. **4**, the razor means **4** may be omitted so that the brush **2** is mounted on an aerosol container **1** filled with shaving cream.

As shown in FIG. **5**, the razor means **4** is mounted on the first end plate **11** of aerosol container **1**, The holder portion **42** of the razor means **4** may be formed with a tube hole **421** therein to substitute the shallow jacket **221** of the brush means **2** so that the tube **311** is reciprocatively operated in the hole **421** when depressing or releasing the push-button portion **321**.

The present invention has the following advantages superior to a conventional shaving device such as taught by Lopez's U.S. Pat. No. 4,023,269;

1. The shaving cream is directly and immediately distributed into the brush bristles by merely push button operation for convenient and hygienic using of cream.

2. The longitudinal (vertical) dispenser tube **311** coaxially linearly connected with the aerosol valve stem **121**, both tube **311** and stem **121** slidingly held in two plates **22**, **11**, can be stably operated without causing a serious braking or twisting action between the lateral push button and the aerosol valve stem, when slidably thrusting the two inclined surfaces **314**, **323** by depressing or releasing the push button **321**.

3. The bifurcate wedge portion **322** of the lateral actuator has two arms tangentially disposing around the central tube for ensuring a sharply slidable engagement of the two inclined surfaces **323**, **314**, as assisted by a stable lateral sliding movement of the actuator **32** transversely reciprocating in the chamber **25** of the cylindrical portion **24** of the brush means **2**, so that a transverse (horizontal) movement of the actuator **32** is very stable in commensuration of a stable longitudinal (vertical) movement of the dispenser **31**, resulting in a very smooth depression operation of push button when opening an aerosol valve or a smooth recovery of push button when closing the valve.

The lateral actuator **32** of the dispensing controller **3** can be modified to have variable adjusting means, such as by forming scales on the actuator (not shown) or other stepwise control means so as to adjust the discharge quantity of shaving cream.

I claim:

1. A fountain shaving device comprising:

an aerosol container of shaving cream serving as a handle having a first end portion provided with an aerosol valve therein, having a central hollow stem of the aerosol valve longitudinally protruding outwardly in said first end portion depressible for opening the aerosol valve for discharging the shaving cream outwardly through said hollow stem, and having a second end portion on a bottom side of said container opposite to said first end portion;

a razor means mounted on said second end portion having a blade cartridge mounted thereon;

a brush means having a plurality of bristles planted on a base plate and a cylindrical portion formed under said base plate secured to said first end portion of said aerosol container; and a shaving-cream dispensing controller generally formed in said cylindrical portion of said brush means, the improvement which comprises:

said shaving-cream dispensing controller including a longitudinal dispenser having a central guide tube with its upper end poking into a bundle of brush bristles and having its lower portion coaxially connected with said central hollow stem of said aerosol valve and reciprocatively moving in a cylindrical jacket formed in the base plate of said brush means, and having a disk portion formed on a lower end of said guide tube perpendicular to said guide tube having a first inclined surface formed on said disk portion tilting downwardly and outwardly; and

a lateral actuator generally perpendicular to said guide tube having a push-button portion normally protruding outwardly through a slot formed in said cylindrical portion of said brush means, a bifurcate wedge portion protruding inwardly from said push-button portion to tangentially dispose around said guide tube having an upper flat surface laterally sliding along a bottom flat surface of said base plate of said brush means and having a second inclined surface formed on a bottom of said bifurcate wedge portion tilting upwardly and inwardly to be slidably engageable with said first inclined surface of said longitudinal dispenser, a restoring spring plate resiliently retained between said actuator and an inside wall of said cylindrical portion of said brush means to normally protrude said push-button portion outwardly, whereby upon a depression of said push-button portion, said second inclined surface of said lateral actuator will slidingly thrust said first inclined surface of said longitudinal dispenser downwardly to open said aerosol valve for discharging the shaving cream outwardly into the brush bristles.

2. A fountain shaving device according to claim **1**, wherein said dispensing controller is generally operated in a chamber defined among said base plate of said brush means, an inside wall of said cylindrical portion of said brush means and said first end portion of said aerosol container.

3. A fountain shaving device according to claim **1**, wherein said central guide tube is formed with an annular extension in an inner tubular hole to engage with an upper end of said hollow stem of said aerosol valve.

4. A fountain shaving device comprising: an aerosol container of shaving cream serving as a handle having a first end portion provided with an aerosol valve therein, having a central hollow stem of the aerosol valve longitudinally protruding outwardly in said first end portion de-

pressible for opening the aerosol valve for discharging the shaving cream outwardly through said hollow stem; a brush means having a plurality of bristles planted on a base plate and a cylindrical portion formed under said base plate secured to said first end portion of said aerosol container; and a shaving cream dispensing controller generally formed in said cylindrical portion of said brush means, the improvement which comprises: said shaving cream dispensing controller including a longitudinal dispenser having a central guide tube with its upper end poking into a bundle of brush bristles and having its lower portion coaxially connected with said central hollow stem of said aerosol valve and reciprocatively moving in a cylindrical jacket formed in the base plate of said brush means, and having a disk portion formed on a lower end of said guide tube perpendicular to said guide tube having first inclined surface formed on said disk portion tilting downwardly and outwardly; and a lateral actuator generally perpendicular to said guide tube having a push-button portion normally protruding outwardly through a slot formed in said cylindrical portion of said brush means, a bifurcate wedge portion protruding inwardly from said push-button portion to tangentially dispose around said guide tube having an upper flat surface laterally sliding along a bottom flat surface of said base plate of said brush means and having a second inclined surface formed on a bottom of said bifurcate wedge portion tilting upwardly and inwardly to be slidably engageable with said first inclined surface of said longitudinal dispenser; whereby upon a depression of said

push-button portion, said second inclined surface of said lateral actuator will slidingly thrust said first inclined surface of said longitudinal dispenser downwardly to open said aerosol valve for discharging the shaving cream outwardly into the brush bristles.

5. A fountain shaving device according to claim 4, wherein said dispensing controller is generally operated in a chamber defined among said base plate of said brush means, an inside wall of said cylindrical portion of said brush means and said first end portion of said aerosol container.

6. A fountain shaving device according to claim 4, wherein said central guide tube is formed with an annular extension in an inner tubular hole to engage with an upper end of said hollow stem of said aerosol valve.

7. A fountain shaving device according to claim 4, further having a razor means mounted on a container end portion, said razor means including a blade carriage mounted thereon.

8. A fountain shaving device according to claim 7, wherein the razor means includes a hollow socket which is mounted on a second container portion opposite the end portion carrying the brush means.

9. A fountain shaving device according to claim 7, wherein the razor means includes a hollow socket which fits over the bristles of the brush means and is secured to said first container end portion.

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