

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(10) International Publication Number
WO 2019/160765 A1

(43) International Publication Date
22 August 2019 (22.08.2019)

(51) International Patent Classification:

B05B 11/00 (2006.01) A45D 40/24 (2006.01)
A45D 34/04 (2006.01)

(21) International Application Number:

PCT/US2019/017295

(22) International Filing Date:

08 February 2019 (08.02.2019)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

15/898,575 17 February 2018 (17.02.2018) US

(71) Applicant: **ELC MANAGEMENT LLC** [US/US]; 155 Pinelawn Road, Suite 345 South, Melville, New York 11747 (US).

(72) Inventors: **MOIGNARD, Julien**; 315 Seventh Avenue, Apt. 12A, New York, New York 10001-6004 (US). **CRES-CAS, Robert Michael**; 7 Albright Circle, Madison, New Jersey 07940 (US). **DRAKE, Lorraine**; 305 East 70th Street, Apt. 2F, New York, New York 10021 (US). **OWEN, Thomas Edward**; 15 Sycamore Lane, Montauk, New York 11954 (US). **PARDO, Janet**; 10 East End Avenue, Apt. 10J, New York, New York 10075 (US).

(74) Agent: **GIANCANA, Peter** et al.; 155 Pinelawn Road, Suite 345 South, Melville, New York 11747 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: DUAL PUMP DISPENSING SYSTEM

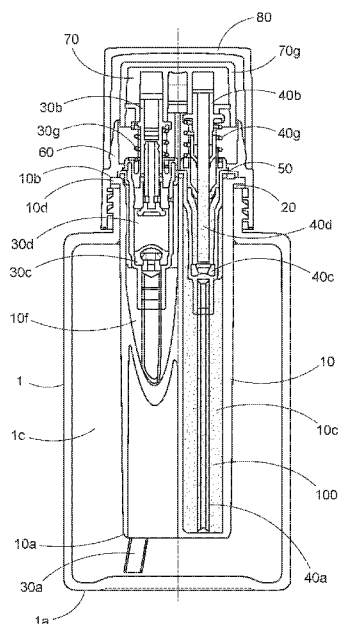


FIG. 4

(57) Abstract: A dual pump dispensing system that features a reservoir within a reservoir arrangement. Each reservoir holds a different product, and has a separate pump dispenser. The pump dispensers are housed in a cartridge so that much of those mechanisms are not visible to the consumer. The pumps are sized to dose a specified ratio of each product, and the products are only mixed at the exit orifice of the nozzle or on the skin.



WO 2019/160765 A1

DUAL PUMP DISPENSING SYSTEM

Background

5 Cosmetic and personal care lotion dispensers that simultaneously dispense two different products are known. These generally use two product reservoirs in a side-by-side arrangement. These may be further differentiated depending on whether the system uses two separately functioning pumps, one for each reservoir, or one pump which draws products from both reservoirs. In the first case, the two products
10 may not be mixed until they are dispensed onto an application surface, such as the skin. This type of system is preferred when the two products are reactive with each other, but should be prevented from reacting until the time of use. In the latter case, the products are mixed in the accumulator of the pump. Since there is always some product in the accumulator in between uses, it may be preferable if the two products
15 are not reactive with each other. In either case, the side by side arrangement of the two reservoirs has a detrimental effect on the overall appearance of the product packaging. For example, clear glass or plastic reservoirs allow the consumer to see the two products and the two pump dispensers. This may not be desirable. Also, since both products are visible, both products have to have a finished appearance for
20 the consumer market. Appearance is a quality that may have little to do with efficacy, but achieving a finished appearance does increase cost. On the other hand, the reservoirs could be opaque so that the products and multiple pump mechanisms are not visible, but then the design choices have been limited by the dual pump system, where the high-end appearance of a clear package may be preferred.

25

Objectives

 A main objective of the present invention is to provide a dual pump dispensing system that simultaneously doses two different products in a specified volumetric
30 ratio, so that the products do not mix until they are exiting the dispensing system. Another objective of the present invention is to provide a dual pump dispensing system that does not detract from the appearance of the product packaging. Another objective is to provide a dual pump dispensing system that affords new options for enhancing the appearance of the product packaging.

Summary

The dual pump dispensing system of the present invention features a reservoir within a reservoir arrangement. Each reservoir holds a different product, and has a
5 separate pump dispenser. The pump dispensers are housed in a cartridge so that much of those mechanisms are not visible to the consumer. The pumps are sized to dose a specified volumetric ratio of each product, and the products are only mixed at the exit orifice of the nozzle or on the skin.

Also described herein, is a kit that comprises a first reservoir of a first flowable
10 product that is sealed with a non-dispensing closure. Separate from the first reservoir, the kit also comprises a cartridge that houses a second reservoir that contains a second flowable product. The second reservoir is fitted with a dual pump dispensing system, and is intended to be inserted into the first reservoir by a user or consumer.

15 Description of the Figures

Figure 1 depicts a container (1) that comprises a first reservoir (1c), shown by the cutaway.

Figures 2A, 2B and 2C depict a cartridge (10) that comprises a second reservoir (10c)

20 Figure 3 is a depiction of a side-by-side arrangement of the first and second pump dispensers (30, 40) and actuator (70).

Figure 4 is a cross sectional view of a dual pump dispensing system according to the present invention.

Figure 5A is a perspective view of a cap (50) for the cartridge (10) which is integrally
25 molded with the accumulator (40d) of the second pump dispenser (40). Figure 5B is a cross sectional view of the same.

Figure 6A is an elevation and cross sectional view of a collar (60) that attaches to the container (1). Figure 6B is a bottom view of the same.

Figure 7A is a perspective view of an actuator (70). Figure 7B is a bottom view of the
30 same.

Figure 8 is one embodiment of a kit (200) according to the present invention.

Figure 9 depicts an embodiment where the container (1) and first flowable product (90) are clear, so that the cartridge (10) is visible inside the container.

Detailed Description

A dual pump dispensing system according to embodiments of the present invention may comprise a container (1), a cartridge (10), a gasket (20), a first
5 mechanical pump dispenser (30), a second mechanical pump dispenser (40), a cartridge cap (50), a collar (60), an actuator (70) and an overcap (80).

Container

Referring to figure 1, the container (1) is that part of the system that can be
10 grasped in the hand of a user. The container comprises a bottom (1a), a top (1b) and a main or first reservoir (1c) for holding a first flowable product (90). The top (1b) of the container comprises a neck (1d) that has means for attaching a collar (60). For example, the neck of the container may have a screw threaded finish (1e). Access
15 into the first reservoir is through an opening (1f) in the neck of the container. In general, all or a portion of the container may be transparent, translucent or opaque.

Cartridge

The dual pump dispensing system according to the present invention comprises a cartridge (10). As shown in figures 2A, 2B and 2C, the cartridge is
20 basically cylindrical, although that is not a strict requirement. The cartridge has a bottom (10a) and a top (10b). The bottom of the cartridge is inserted through the neck (1d) of the container (1), and extends down into product (90) located in the first reservoir (1c) of the container. The top of the cartridge features a flange (10d) that is supported by the top of the neck (1d). To effect a fluid tight seal, a gasket (20) may
25 be disposed in between the top of the neck of the container and the flange of the cartridge (see figure 4).

The cartridge (10) further comprises an interior wall (10e) that divides the interior of the cartridge. One of the interior divisions of the cartridge is formed as a
30 passageway (10f) that is opened at both ends of the cartridge. The opening at the top of the cartridge is the first top opening (10g). The opening at the bottom of the cartridge (10h) allows the first flowable product (90) to enter the passageway (10f). The other interior division of the cartridge is formed as a second reservoir (10c) that is closed at the bottom (10a) of the cartridge, while the opening at the top of the

cartridge is the second top opening (10i). The second reservoir is for holding a second flowable product (100).

An outer surface of the cartridge may optionally comprise a logo or other decorative element (10j; see figure 9). This feature will be particularly relevant to certain embodiments of the invention described below.

Two Mechanical Pump Dispensers

The dual pump dispensing system according to the present invention comprises two mechanical pump dispensers (hereinafter, the first pump (30) and the second pump (40)). Referring to figures 3 and 4, both pumps comprise components that are well known to persons skilled in the art, such as dip tubes (30a, 40a), upper stems (30b, 40b), check valves (30c, 40c), accumulators (30d, 40d), and springs (30g, 40g), as well as pistons and lower stems.

The first pump (30) is inserted through the first top opening (10g) of the passageway (10f) of the cartridge (10), so that much of the first pump sits in the passageway. The upper stem (30b) of the first pump, however, rises above the top (10b) of the cartridge, and the free end of the dip tube (30a) of the first pump extends out the bottom (10a) of the cartridge into the first reservoir (1c) of the container (1) to a location that is near the bottom (1a) of the container. The first pump draws product (90) from the first reservoir through the dip tube (30a), and passes it on to the upper stem (30b) in the usual manner of lotion pump dispensers.

The second pump (40) is inserted through the second top opening (10i) of the second reservoir (10c) of the cartridge (10), so that much of the second pump sits in the second reservoir. The upper stem (40b) of the second pump, however, rises above the top (10b) of the cartridge, and the free end of the dip tube (40a) of the second pump extends toward the closed portion of the bottom (10a) of the cartridge. The second pump draws product (100) from the second reservoir of the cartridge through the dip tube (40a) and passes it on to the upper stem (40b) in the usual manner of lotion pump dispensers.

One of the challenges to be overcome in developing commercially acceptable embodiments of the present invention was how to keep the diameter of the cartridge (10) small while still being able to fit two functioning mechanical pump dispensers into the cartridge. The cartridge outer diameter had to be as small as possible so that the opening (1f) in the neck (1c) of the container (1) could be close to what is typical for

products in the personal care field. For example, in various embodiments of the invention, we reduced the cartridge outer diameter to about 23 mm to fit into a container opening of less than 24mm.

5 Cartridge Cap

Optionally, the top of the cartridge (10) is fitted with a cartridge cap (50, see figures 5A and 5B). On the bottom of the cartridge cap are first and second vertical walls (50a, 50b), the shapes of which match the shapes of the corresponding first and second openings (10g or 10i) at the top of the cartridge. The vertical walls fit snugly
10 into the openings in the top of the cartridge, sufficiently tight to retain the cartridge cap in the cartridge. Passing through the cartridge cap are first and second openings (50g, 50i), each one surrounded by one of the vertical walls (50a, 50b). The accumulators (30d, 40d) of the first and second pumps (30, 40) pass through the two openings of the cartridge cap, which are shaped and sized to fit snugly around the
15 accumulators, thus providing stability to the two pumps. Optionally, the accumulator of one or both of the pumps can be integrally molded with the cartridge cap. For example, in figure 5B, the accumulator (40d) of the second pump (40) is shown as being integrally molded with the cartridge cap (50), while the accumulator (30d) of the first pump (30) is intended to be inserted through the first opening (50g) of the
20 cartridge cap.

Collar

A collar (60), as shown in figures 6A and 6B, is comprised of an upper circumferential wall (60a) and a lower circumferential wall (60b), separated by a base
25 (60c). The base has first and second openings (60g, 60i) that correspond to the first and second top openings (10g, 10i) of the cartridge. The flange (10d) at top of the cartridge (10) is received into the collar (60), against the underside of the base (60c), and secured there with a friction fit, locking tabs or some other method suitable for securing plastic components together. The first and second openings (60g, 60i) in the
30 base, the first and second top openings (10g, 10i) of the cartridge, and, if present, the first and second openings (50g, 50i) of the cartridge cap must respectively align, so as to allow the upper stems (30b, 40b) of the two pumps (30, 40) to protrude through the base. When the second mechanical pump dispenser is seated in the second reservoir, and the flange (10d) of the cartridge (10) is secured into the collar (60), then

the second flowable product is effectively sealed off from the environment, and maintained in a fresh and stable condition.

The inner surface of the lower circumferential wall (60b) comprises screw threads (60e) that are designed to interact with the threaded finish (1e) of the neck (1d) of the container (1). This threaded engagement secures the cartridge with the two pumps onto the container (1). When the collar is fully screwed down onto the container neck, then the first flowable product is effectively sealed off from the environment, and maintained in a fresh and stable condition.

10 Actuator

As noted, the two upper stems (30b, 40b) of the two pumps (30, 40) protrude through the collar (60). A single actuator (70, see figures 7A and 7B) comprises two inlet ports (70a, 70b). Each port is able to receive one of the upper stems. Two channels (70c, 70d) lead from the inlet ports to at least one (one or two) exit orifices (70e) of the actuator. If there is only one exit orifice, then the two channel merge into one just before reaching the exit orifice, and the two flowable products (90, 100) begin to be mixed in the actuator. Alternatively, if there are two exit orifices, then each channel leads to one exit orifice, and the two flowable products do not mix until completely outside of the dispensing device; on the skin of a user, for example. An overshell (70g) may be used as a decorative element for the actuator or to provide a tactile element.

Overcap

The outer surface of the upper circumferential wall (60a) of the collar (60) provides a surface for securing an overcap (80) by friction fit. The overcap may be used to protect the actuator (70) and to give a more finished appearance to the package. The overcap may be transparent, translucent or opaque.

Two Flowable Products

A first flowable product (90) is housed in the first reservoir (1c) of the container (1). A second flowable product (100) is housed in the second reservoir (10c) of the cartridge (10). Preferred flowable products are viscous, excluding, for example, powder products. Preferred flowable products will typically be lotions or creams that are of sufficiently low viscosity that they can be pumped by the first and second

mechanical pump dispensers (30, 40). With this dispensing system, a single push of the actuator (70) causes a single dose of two products (90, 100) to be dispensed in a defined volumetric ratio. In the personal care field, lotion pump dispensers of various dosages are available. Such pumps typically dispense from about 25 μ L to about

5 500 μ L of product per dose. Therefore, by proper design or selection of the pump dispensers, the volumetric ratio of a single dose of dispensed products may range from about 1:1 to about 20:1, as needed, to ensure a complete reaction of the dispensed products, or to ensure a particular consumer experience or benefit.

Examples of useful product ratios include those from 1:1 to 20:1, preferably 5:1 to

10 20:1, or more preferably from 5:1 to 15:1, and even more preferably from 5:1 to 10:1.

Generally, the second mechanical pump dispenser (40), which draws from the second reservoir (10c) located in the cartridge (10), will be the smaller dosing pump, since this pump draws from the smaller of the two reservoirs. Likewise, the first pump (30) will be the larger dosing pump, since this pump draws from the larger first reservoir

15 (1c). Optionally, the first and second reservoirs will be filled in the same ratio as the dosing ratio of the two pumps, so that both reservoirs are depleted at about the same time.

The two flowable products (90, 100) may be inert with respect to each other, but a significant advantage of the invention is that two products, that would otherwise

20 react with each other, can be separated, and not mixed until the time of use, thus ensuring efficacy and freshness.

Another significant advantage of the invention is the ability to fill the first reservoir (1c) with a primary personal care product (90) that provides a general benefit for skin or hair, and to fill the second reservoir (10c) with a secondary personal

25 care product (100) that has specific skin care activity to address one or more specific needs. For example, the first reservoir may be filled with a popular skin moisturizer, while the second (cartridge) reservoir holds a product that has one or more active ingredients for treating lines and wrinkles, or uneven skin tone, or uneven skin texture, or an anti-irritant product or an fatigue product, etc. Alternatively, the first

30 reservoir may be filled with the same popular skin moisturizer, while the second (cartridge) reservoir holds a product that has one or more active ingredients for cleansing, toning, treating acne, preventing sun damage, providing after-sun treatment, etc. Thus, the present invention permits an easy, inexpensive way for a

consumer to try one “hero” product in combination with many other skin benefit products, for an added advantage. From a business perspective, a marketer is enabled to present a single primary product in a number of variations according to the number of secondary products. The consumer benefits from the convenience of a
5 ready to use combination that requires only one purchase.

The first time that a dual pump dispenser of the present invention is used, several strokes will be required to prime the two mechanical pump dispensers (30, 40). Optionally, and by design, the second mechanical pump dispenser may require more strokes to prime than the first mechanical pump dispenser. This will ensure that
10 that the active ingredient in the second reservoir (10c) is not dispensed by itself, before the moisturizer in the first reservoir (1c). This will be advantageous when the second (cartridge) reservoir contains a concentrated form of one or more ingredients that might irritate the skin in undiluted form. For example, the first mechanical pump dispenser (30) may, by design, require 1-6 strokes to prime, while the second
15 mechanical pump dispenser (40) will require 6-10 strokes to prime.

As noted above, the first reservoir (1c) and the second reservoir (10c) may be filled in the same ratio as the dosing ratio of the two mechanical pump dispensers (30, 40), so that both reservoirs are depleted at about the same time. However, sometimes it will be advantageous to make sure that second reservoir empties before
20 the first reservoir. For example, when the second flowable product (100) in the second reservoir contains a concentrated form of one or more ingredients that might irritate the skin in undiluted form, then it will be desirable to ensure that that the second flowable product is used up before the first flowable product (90). This can be done by ensuring that the filling ratio of the first reservoir to the second reservoir
25 exceeds the dosing ratio of the first mechanical pump dispenser to the second mechanical pump dispenser. This also guarantees that the concentrated product (100) of the second reservoir is always diluted in the first product, in a set ratio.

Kit

30 The present invention may also be implemented as a kit. Some embodiments of a kit (200) according to the invention comprise a container assembly (300) and a cartridge assembly (400). The container assembly comprises a container (1) of a first flowable product (90), wherein the container is provided with a non-dispensing closure, such as a screw threaded cap (110) that is sized to cooperate with the screw

threaded finish (1e) of the neck (1d). When the cooperating threads are fully engaged, the cap seals off access (the opening 1f) to the first flowable product in the first reservoir (1c). The first flowable product is maintained in a fresh and stable condition for sale in a commercial environment.

5 Separately, the cartridge assembly (400) comprises a collar (60), cartridge (10) that is sized to fit into the opening (1f) of the container (1), two mechanical pump dispensers (30, 40) with an actuator (70), as described above. The second reservoir holds a second flowable product (100). As noted above, when the second mechanical pump dispenser (40) is seated in the second reservoir (10c), and the
10 flange (10d) of the cartridge is secured into the collar (60), then the second flowable product is effectively sealed off from the environment, and maintained in a fresh and stable condition for sale in a commercial environment. To protect the actuator (70) and for a finished appearance, an overcap (80) may be fitted onto the collar, as described above.

15 A consumer purchases a container assembly (300) of first flowable product (90), and a cartridge assembly (400) of second flowable product (100). It is possible then to give to the consumer a choice of one or more second flowable products to match with one or more first flowable products. After purchase, the consumer is intended to remove the non-dispensing closure (110) from the container (1), and
20 insert the cartridge (10) into the first reservoir, and then to screw the collar (60) onto the screw threaded finish (1e) of the neck (1d).

A method of using a kit as described herein may comprise the steps of: removing the non-dispensing closure (110) from the container (1) of the container assembly (300), inserting the bottom (10b) of the cartridge (10) of the cartridge
25 assembly (400) into the first reservoir (1c), screwing the collar (60) onto the screw threaded finish (1e) of the neck (1d), stroking the actuator (70) until a desired amount of both of the first and second flowable products (90,100) is dispensed from the actuator, and applying both products to the skin of a user, simultaneously.

30 Some Optional Features

Referring to figure 8 and 9, the outer surface of the cartridge may be any color or colors, and may optionally comprise a logo or other decorative element (10j). There are a number of situations in which this is advantageous. For example, when the cartridge is sold as part of a kit, then the outer surface of the cartridge is visible,

and providing color, graphics and/or a logo to the outer surface of the cartridge will enhance product appeal in the marketplace.

Also, for example, when all or a portion of the container (1) is transparent and the reservoir (1c) contains a clear first flowable product (91), then the outer surface of the cartridge (10) will be visible through the container and first flowable product. In this situation, providing color, graphics and/or a logo (10j) will enhance product appeal in the marketplace. A particularly preferred version of this is when the container and first flowable product are of a very high clarity (see figure 9). Such a product might be an aqueous gel product, for example. In the personal care marketplace, high clarity in packaging and product almost always conveys an upscale or high end fashion appearance. The clarity of the container and first flowable product creates an opportunity to display a range of aesthetic elements to further enhance the visual interest and appeal.

What is claimed is:

1. A dual pump dispensing system that comprises:
 - a container (1) that has:
 - 5 a first reservoir (1c),
 - a neck (1d), and
 - access into the first reservoir through an opening (1f) in the neck of the container;
 - a collar (60) that attaches to the neck (1d) of the container (1);
 - 10 a cartridge (10) that comprises:
 - a top (10b) that is secured into the collar (60);
 - a bottom (10a) that is inserted through the neck (1d) of the container (1) and that extends down into the first reservoir (1c) of the container;
 - an interior wall (10e) that divides the interior of the cartridge (10) into a
 - 15 passageway (10f) and a second reservoir (10c), wherein:
 - the passageway is opened at both ends of the cartridge, and
 - the second reservoir is closed at the bottom (10a) of the cartridge;
 - a first mechanical pump dispenser (30) that sits in the passageway (10f) of the cartridge (10) and that has:
 - 20 a dip tube (30a) that extends down into the first reservoir (1c), and
 - an upper stem (30b) that protrudes through the collar (60);
 - a second mechanical pump dispenser (40) that sits in the second reservoir (10c) of the cartridge (10) and that has:
 - a dip tube (40a) that extends toward the bottom (10a) of the cartridge, and
 - 25 an upper stem (40b) that protrudes through the collar (60);
 - an actuator (70) that comprises two inlet ports (70a, 70b) that lead to at least one exit orifice (70e), wherein each inlet port is able to receive one of the upper stems (30b, 40b).
- 30 2. The dual pump dispensing system according to claim 1 further comprising a first flowable product (90) located in the first reservoir (1c), and a second flowable product (100) located in the second reservoir (10c).

3. The dual pump dispensing system according to claim 2 wherein a single push of the actuator (70) causes the first and second flowable products (90, 100) to be dispensed in a volumetric ratio of 5:1 to 20:1.
- 5 4. The dual pump dispensing system according to claim 2 wherein the actuator comprises two exit orifices.
5. The dual pump dispensing system of claim 2 wherein the outer surface of the cartridge (10) is visible through the container (1) and the first flowable product
10 (90).
6. The dual pump dispensing system of claim 5 wherein the first flowable product (90) is a clear, aqueous gel product.
- 15 7. A kit (200) comprising a container assembly (300) and a cartridge assembly (400), wherein:
- the container assembly comprises:
- a container (1) that has:
- 20 a first reservoir (1c) that holds a first flowable product (90),
a neck (1d),
access into the first reservoir through an opening (1f) in the neck (1d) of the container (1); and
a non-dispensing closure (110) that seals off the opening (1f) in the neck (1d)
25 of the container (1);
- the cartridge assembly (400) comprises:
- a collar (60) that is able to be attached to the neck (1d) of the container (1);
a cartridge (10) that that is sized to fit through opening (1f) of the neck (1d) of the
30 container (1), comprising:
a top (10b) that is secured into the collar (60);
a bottom (10a);
an interior wall (10e) that divides the interior of the cartridge (10) into a
passageway (10f) and a second reservoir (10c), wherein:
35 the passageway is opened at both ends of the cartridge (10),

- the second reservoir is closed at the bottom (10a) of the cartridge, and holds a second flowable product (100);
- a first mechanical pump dispenser (30) that sits in the passageway (10f) of the cartridge (10) and that has:
- 5 a dip tube (30a) that extends down through the passageway (10f), and an upper stem (30b) that protrudes through the collar (60);
- a second mechanical pump dispenser (40) that sits in the second reservoir (10c) of the cartridge (10) and that has:
- 10 a dip tube (40a) that extends toward the bottom (10a) of the cartridge, and an upper stem (40b) that protrudes through the collar (60);
- an actuator (70) that comprises two inlet ports (70a, 70b) that lead to at least one exit orifice (70e), wherein each inlet port is able to receive one of the upper stems (30b, 40b).
- 15 8. A method of using a kit (200) according to claim 7, comprising the steps of:
- removing the non-dispensing closure (110) from the container (1) of the container assembly (300),
- inserting the bottom (10b) of the cartridge (10) of the cartridge assembly (400) into the first reservoir (1c),
- 20 screwing the collar (60) onto the screw threaded finish (1e) of the neck (1d), stroking the actuator (70) until a desired amount of both of the first and second flowable products (90,100) is dispensed from the actuator, and applying both products to the skin simultaneously.

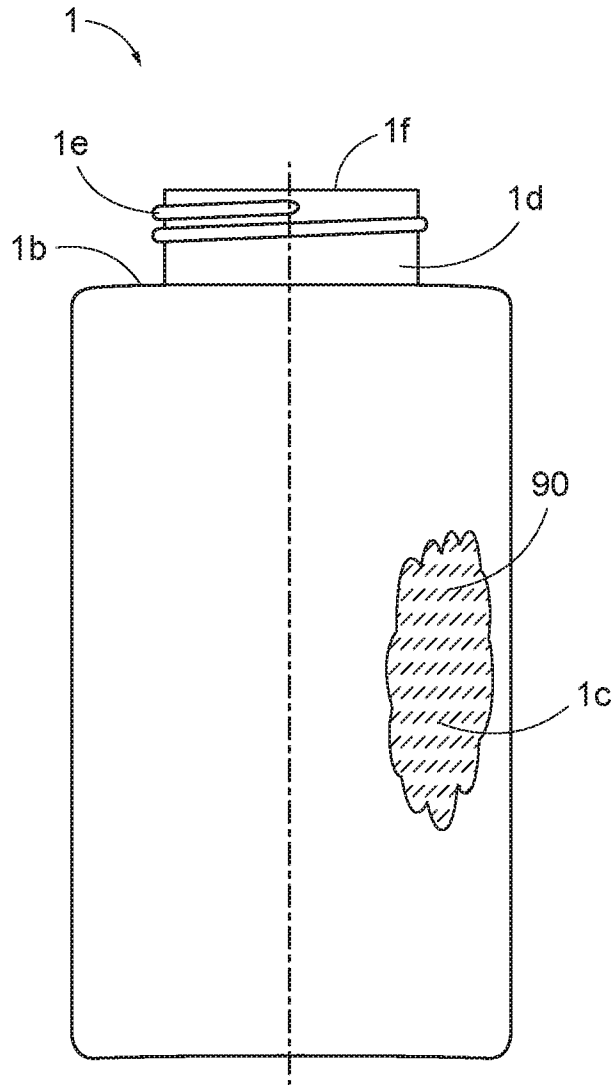


FIG. 1

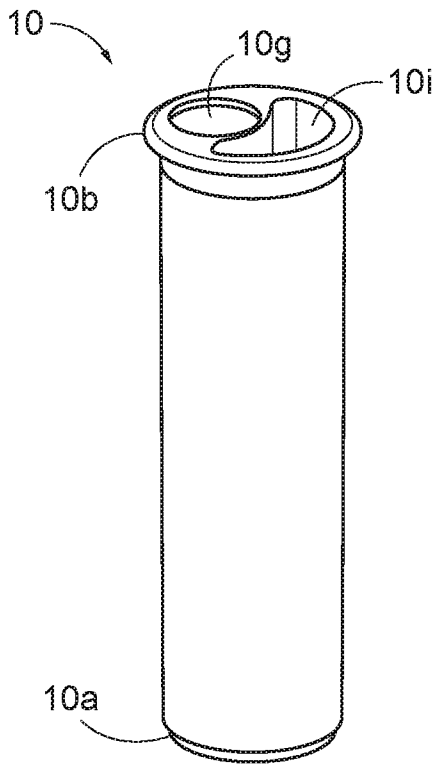


FIG. 2A

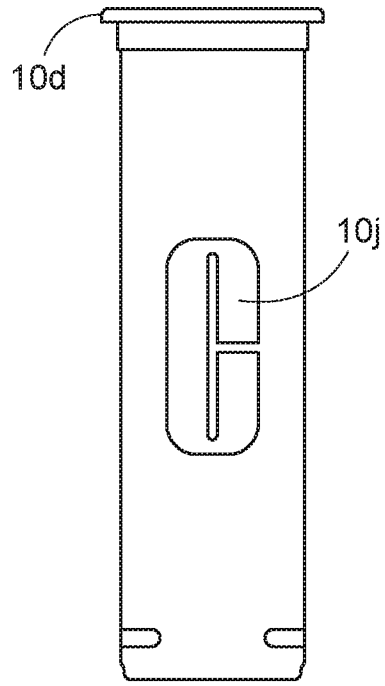


FIG. 2C

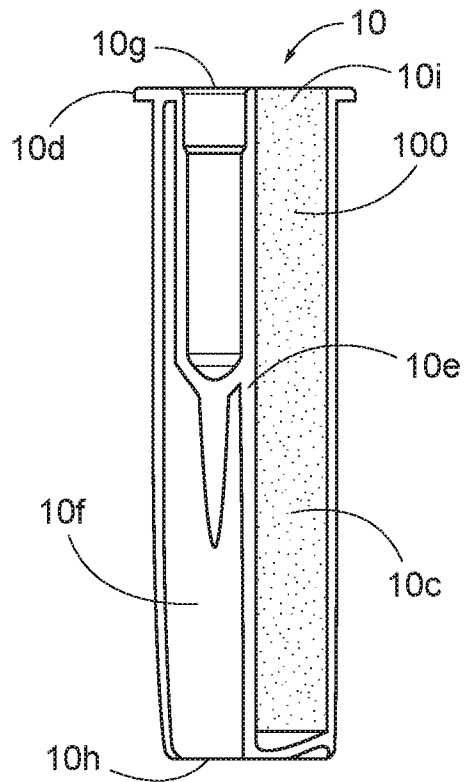


FIG. 2B

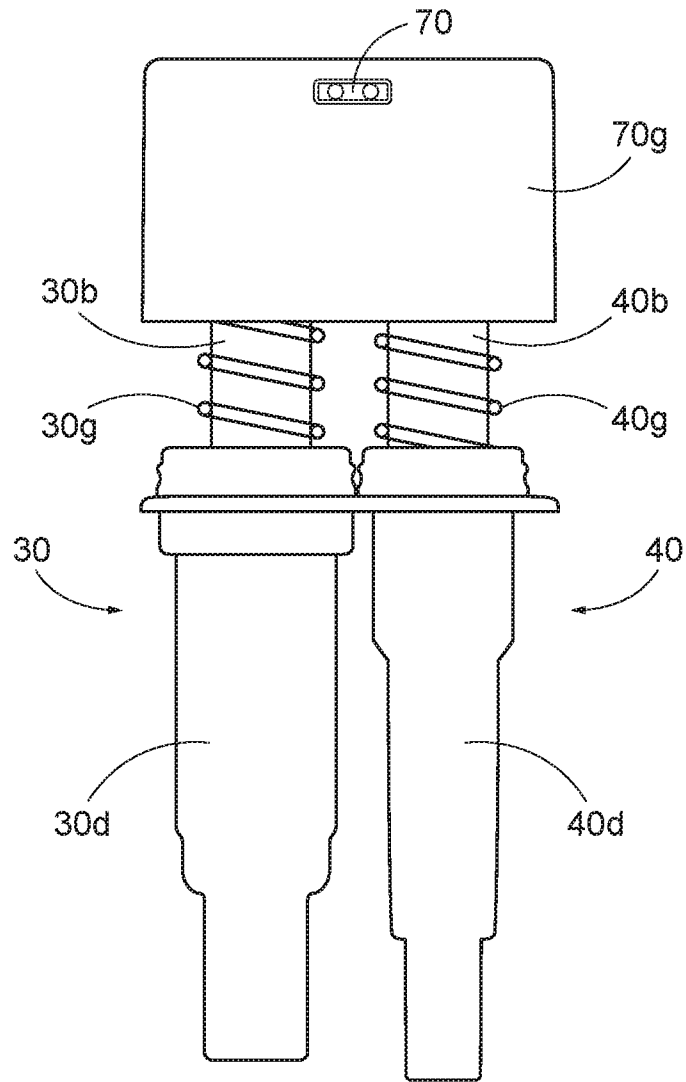


FIG. 3

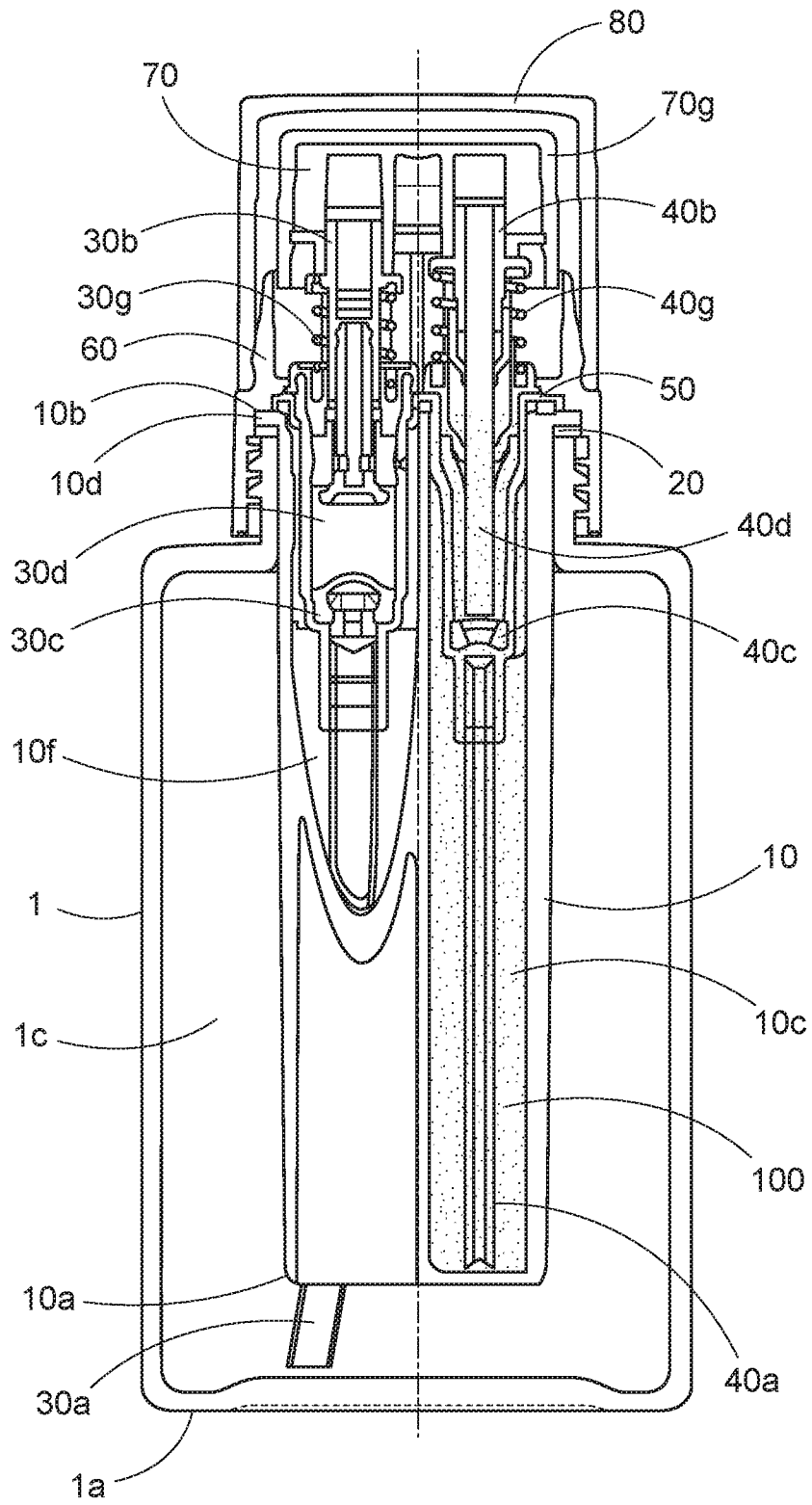


FIG. 4

5/8

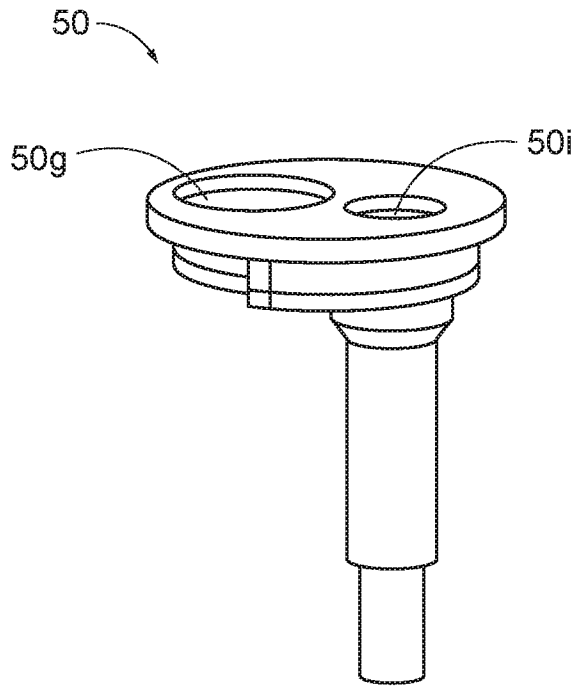


FIG. 5A

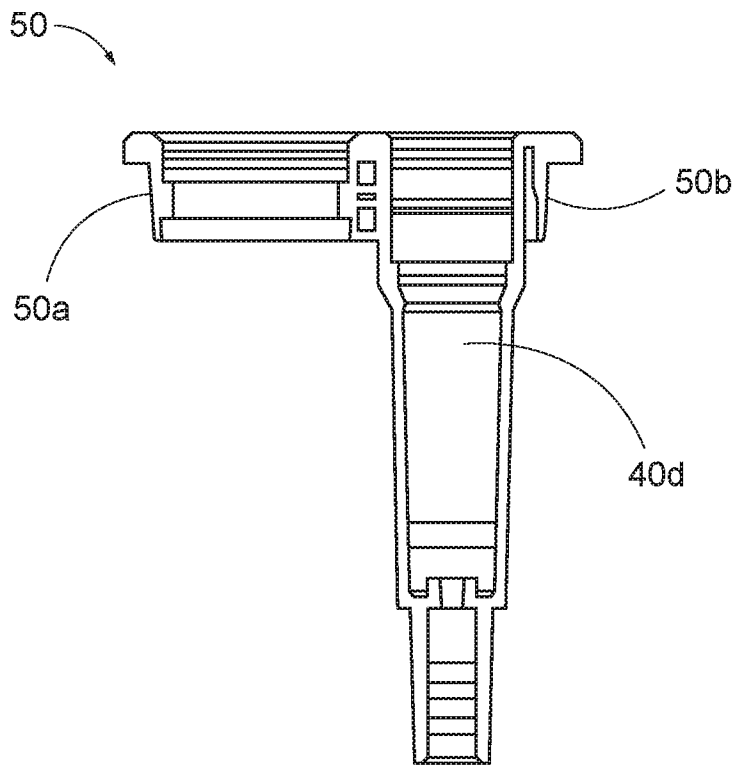


FIG. 5B

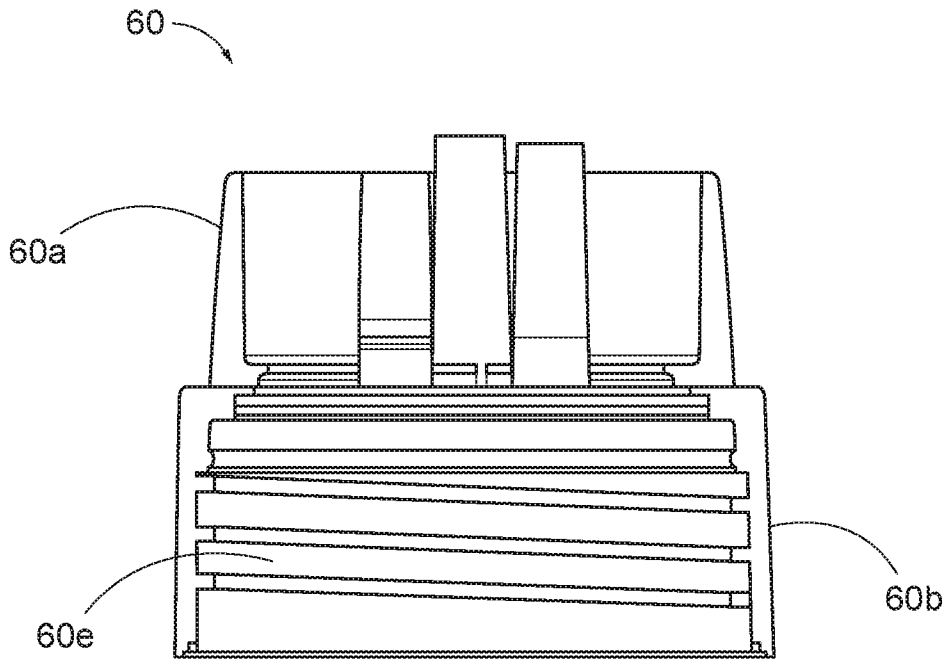


FIG. 6A

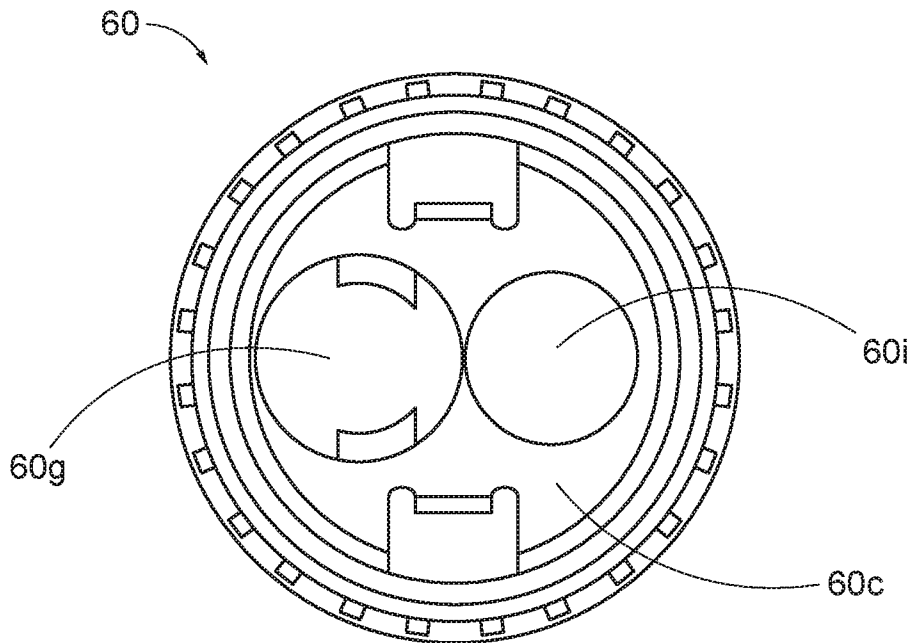


FIG. 6B

7/8

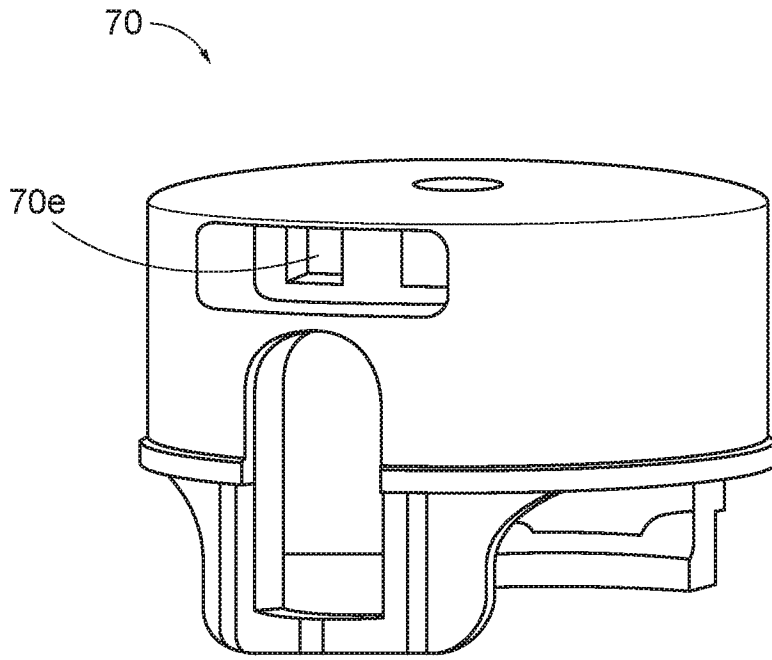


FIG. 7A

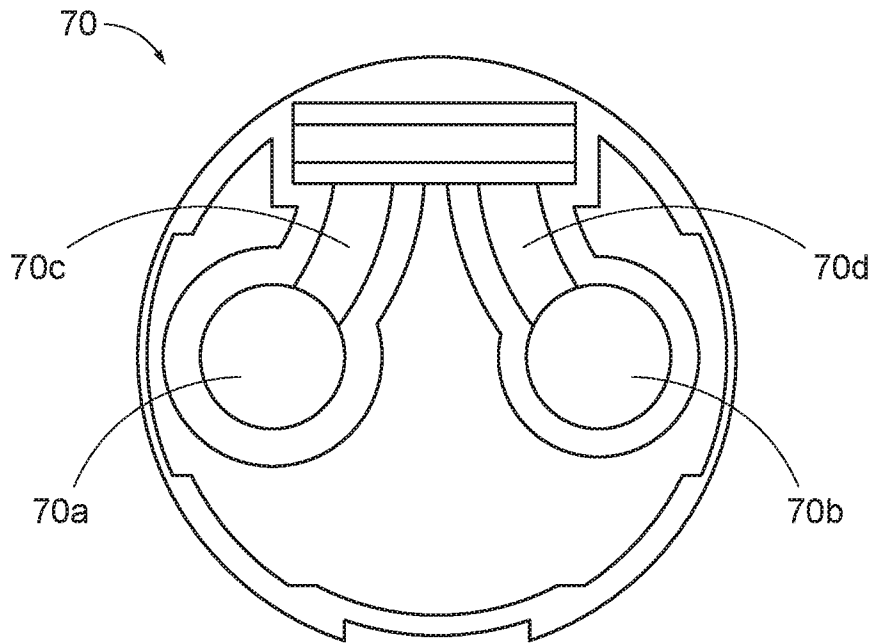


FIG. 7B

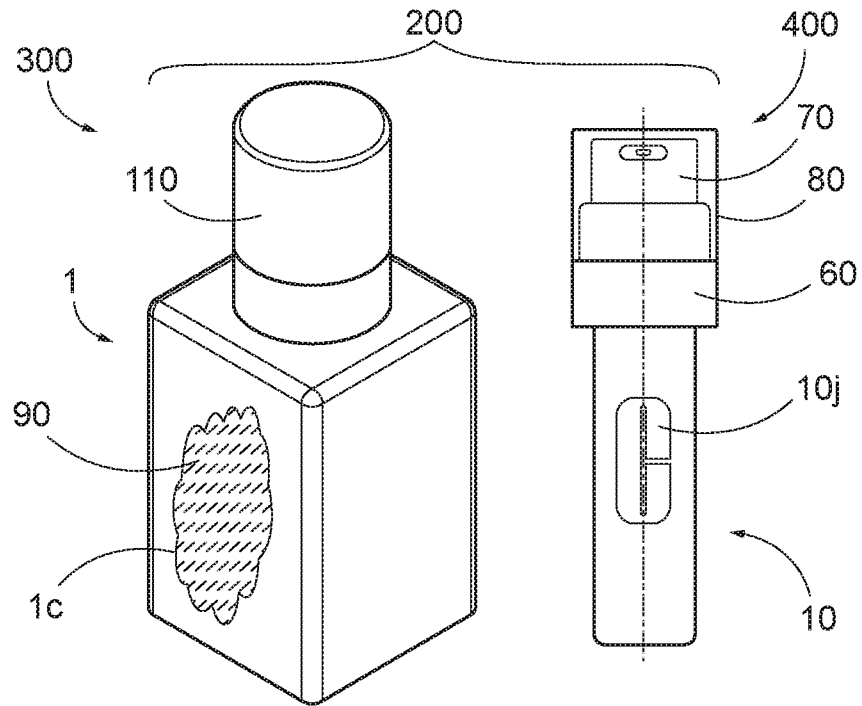


FIG. 8

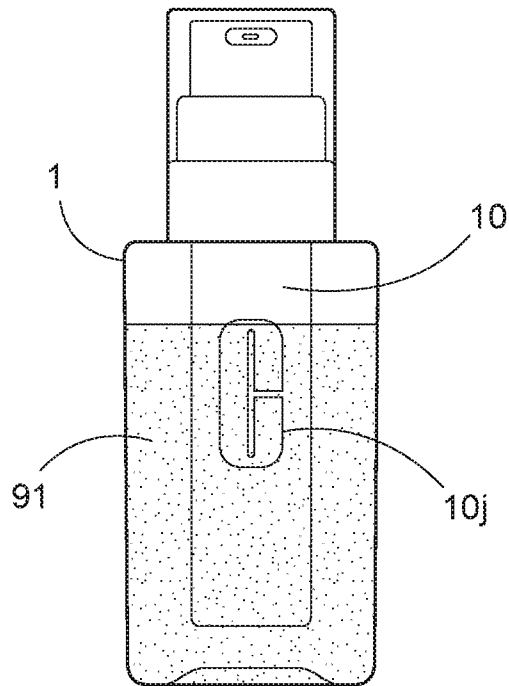


FIG. 9

A. CLASSIFICATION OF SUBJECT MATTER**B05B 11/00(2006.01)i, A45D 34/04(2006.01)i, A45D 40/24(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B05B 11/00; A45D 34/00; B65D 25/04; B65D 47/34; B65D 81/32; B67D 5/52; B67D 5/56; A45D 34/04; A45D 40/24

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: dual pump, dispenser, container, cartridge, actuator, collar, neck

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR 20-2013-0006909 U (AMOREPACIFIC CORP.) 02 December 2013 See paragraphs [0022]-[0032] and figures 3, 4, 5a, 5b.	1-8
Y	EP 1407827 A2 (SPRAYEX, INC.) 14 April 2004 See paragraphs [0095], [0102], [0103] and figures 32-35.	1-8
A	JP 2003-252383 A (YOSHINO KOGYOSHO CO., LTD.) 10 September 2003 See paragraphs [0019]-[0021] and figure 4.	1-8
A	US 5439141 A (CLARK et al.) 08 August 1995 See column 7, lines 3-32 and figures 10, 11.	1-8
A	US 2007-0241114 A1 (ROBERTS, THOMAS C.) 18 October 2007 See paragraphs [0034], [0038] and figures 5A, 9, 10.	1-8

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

23 May 2019 (23.05.2019)

Date of mailing of the international search report

24 May 2019 (24.05.2019)

Name and mailing address of the ISA/KR

International Application Division

Korean Intellectual Property Office

189 Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea

Facsimile No. +82-42-481-8578

Authorized officer

LEE, Dal Kyong

Telephone No. +82-42-481-8440



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2019/017295

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 20-2013-0006909 U	02/12/2013	KR 20-0471795 Y1	14/03/2014
EP 1407827 A2	14/04/2004	AU 3200595 A	22/02/1996
		AU 4013799 A	23/09/1999
		AU 4016699 A	23/09/1999
		AU 4514597 A	05/02/1998
		AU 6170296 A	30/12/1996
		AU 6416398 A	18/09/1998
		AU 6596296 A	26/02/1997
		AU 753451 B2	17/10/2002
		AU 8484898 A	10/02/1999
		CA 2195781 A1	08/02/1996
		CA 2195781 C	06/09/2005
		CA 2200864 A1	13/02/1997
		CA 2200864 C	25/10/2005
		CA 2206299 A1	24/04/1997
		CA 2206299 C	03/05/2005
		CA 2206573 A1	01/05/1997
		CA 2206573 C	10/05/2005
		CA 2223443 A1	19/12/1996
		CA 2281544 A1	03/09/1998
		CA 2281544 C	08/05/2007
		CA 2302465 A1	28/01/1999
		CN 1161028 A	01/10/1997
		CN 1161028 C	01/10/1997
		CN 1165506 A	19/11/1997
		CN 1165506 C	19/11/1997
		CN 1166161 A	26/11/1997
		CN 1166161 C	26/11/1997
		CN 1166162 A	26/11/1997
		CN 1166162 C	26/11/1997
		CN 1186476 A	01/07/1998
		CN 1249708 A	05/04/2000
		CN 1265080 A	30/08/2000
		CN 1265080 C	30/08/2000
		EP 0777625 A1	06/08/2003
		EP 0781254 A1	05/11/2003
		EP 0796201 A1	14/01/1998
		EP 0796201 B1	19/01/2000
		EP 0799149 A1	15/04/1998
		EP 0799149 B1	22/12/1999
		EP 0830309 A1	15/09/2004
		EP 0830309 A4	21/04/1999
		EP 0998425 A1	10/05/2000
		EP 1054812 A2	29/11/2000
		EP 1054812 A4	10/07/2002
		EP 1407827 A3	20/10/2004
		EP 1561514 A2	10/08/2005
		EP 1561514 A3	26/04/2006

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2019/017295

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		JP 10-511324 A	04/11/1998
		JP 10-511629 A	10/11/1998
		JP 10-512219 A	24/11/1998
		JP 2001-510127 A	31/07/2001
		JP 2001-516314 A	25/09/2001
		JP 2001-517182 A	02/10/2001
		JP 2002-509504 A	26/03/2002
		JP 2005-289518 A	20/10/2005
		JP 2007-210682 A	23/08/2007
		KR 10-0232426 B1	01/12/1999
		KR 10-0251597 B1	15/04/2000
		KR 10-1997-0704626 A	06/09/1997
		KR 10-1997-0706201 A	03/11/1997
		KR 10-1999-0022409 A	25/03/1999
		KR 10-2000-0075750 A	26/12/2000
		KR 10-2001-0022048 A	15/03/2001
		NZ 291008 A	29/07/1999
		NZ 335647 A	26/01/2001
		NZ 502248 A	28/08/2002
		US 2001-0011661 A1	09/08/2001
		US 2002-0031625 A1	14/03/2002
		US 2003-0000961 A1	02/01/2003
		US 2003-0038186 A1	27/02/2003
		US 2008-0011779 A1	17/01/2008
		US 5529216 A	25/06/1996
		US 5836479 A	17/11/1998
		US 5871122 A	16/02/1999
		US 5890624 A	06/04/1999
		US 5944223 A	31/08/1999
		US 5947332 A	07/09/1999
		US 6073808 A	13/06/2000
		US 6129810 A	10/10/2000
		US 6142049 A	07/11/2000
		US 6319453 B1	20/11/2001
		US 6431402 B1	13/08/2002
		US 6540109 B1	01/04/2003
		WO 96-03344 A1	08/02/1996
		WO 96-40583 A1	19/12/1996
		WO 97-05056 A1	13/02/1997
		WO 97-14616 A1	24/04/1997
		WO 97-15501 A1	01/05/1997
		WO 98-38094 A2	03/09/1998
		WO 98-38094 A3	22/10/1998
		WO 99-03778 A1	28/01/1999
JP 2003-252383 A	10/09/2003	JP 4236028 B2	11/03/2009
US 5439141 A	08/08/1995	AU 3098895 A	22/02/1996
		WO 96-03341 A1	08/02/1996

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2019/017295

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2007-0241114 A1	18/10/2007	US 2005-0077316 A1	14/04/2005
		US 2012-0317928 A1	20/12/2012
		US 2014-0131381 A1	15/05/2014
		US 2017-0349330 A1	07/12/2017
		US 8261929 B2	11/09/2012
		US 8584890 B2	19/11/2013
		US 9546022 B2	17/01/2017
		WO 2007-103503 A1	13/09/2007