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(54) Title: FLAVORED SUPPLEMENTS IN LIQUID FORM TO BE ADDED TO FOOD AND METHODS OF USING SAME

(57) Abstract: The present invention relates to the administration of liquid flavored composition comprising medicine, supplements, vitamins, or other medicants to animals, including people, using a precise-dosing dispenser/pump.

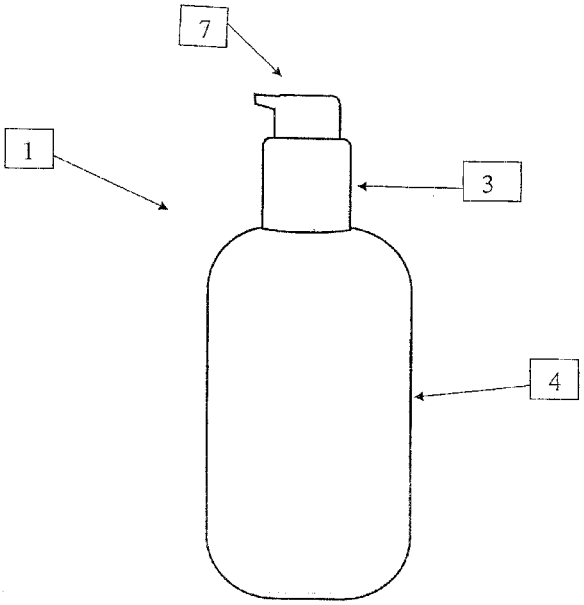

FIG. 1

WO 2010/065291 A2

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

Flavored Supplements in Liquid Form to be Added to Food and Methods of Using Same

CROSS REFERENCE TO RELATED APPLICATION(S)

[001] This application claims the benefit of and priority to United States Provisional Patent Application Serial. No.: 61/117,733 filed November 25, 2008 and is a Continuation of and claims priority to United States Patent Application Serial No.: 12/576,043 filed October 8, 2009. The entire disclosure of both documents is herein incorporated by reference.

BACKGROUND

1. FIELD OF INVENTION

[002] The present invention relates to the administration of a liquid flavored composition comprising medicine, supplements, vitamins, or other medicants to animals, including people, using a precise-dosing dispenser/pump.

2. DESCRIPTION OF THE RELATED ART

[003] Medicine, supplements, vitamins, or other medicants may be injected into or ingested by animals or people. Major difficulties include proper dosage and ease of administration.

[004] Injections, although fairly good at insuring proper dosage, are painful and require control over or cooperation of the animal or person being given the shot. When repeated injections are required, the anticipation of the shot may result in uncooperative behavior, risk improper dosage, and pose a risk of needle pricks to both the recipient and the person giving the injection. Additionally, repeated injections in or near the same spot can lead to tissue damage that can interfere with absorption of the injected medication.

[005] In order to orally ingest medicants, pills or tablets may be used and directly consumed. Disadvantages of pills or tablets, however, include bad taste, bad texture, and size which can greatly hinder compliance with the prescribed regime of consumption. In particular, such resistance may result from a real physical or psychosomatic inability to swallow pills, something more prevalent among children, the elderly, or animals. In fact, forced consumption of pills or tablets may provoke vomiting in some which will foil administration of prescribed medicants.

[006] Dosage can also be a challenge with pills or tablets. For example due to fixed manufacturing units, it is frequently necessary to count out multiple tablets, break them when prescribed dosing is smaller than a single tablet, or both. While counting and breaking may

not seem difficult for most, it can greatly reduce compliance by the administrator if it is, or is perceived to be, inconvenient. For example, some medicants are simply too small or poorly shaped to allow easy cutting or breaking. Additionally, for those who have poor eyesight or inadequate fine-motor-skills, such as the elderly or handicapped, such actions may even be prohibitive for pills and tablets which might otherwise be easily cut, broken, or counted.

[007] While crushing tablets may seem like a viable solution, this increases the surface area of the medicant which will react with stomach acid. Depending on the medicant, this may inappropriately or even dangerously alter the prescribed rate of absorption in the body. Additionally, crushed tablets have the same drawback with respect to taste, and the texture may be even worse for some.

[008] Some medicants are currently available as liquids. Liquids, however, have multiple problems including needing to be measured out in a spoon, cup, or syringe. In addition to the tedious preparation and consumption, this allows for human error particularly for those who with poor eyesight or inadequate fine-motor-skills, such as the elderly or handicapped, given the requirement to measure and read the correct dose. Furthermore, compliance and accuracy are also challenged when medicants are needed on a regular basis and when odd dosing requires multiple administration. For example, it may be necessary to supply two "doses" for each dose in an irregular measure such as one with a 1 tsp spoon and one with the ½ tsp spoon when 1 ½ tsp of medicant is taken. Additionally, some liquid medicants are of such a thick viscosity that when measured out precisely in a small dosing cup and consumed directly from that same dosing cup will not dispense the entire dose, some of which remains stuck to the inner-surface of the cup. Furthermore, bad taste and the volume of liquid to be consumed per dose may also deter compliance with the prescribed regime of consumption.

[009] Finally, powders may also be available for some medicants. However, as with pills, tablets, or crushed tablets, they can taste bad, can have undesirable texture, and are also

inconvenient to administer due to measuring. Compliance of delivery can be a challenge in a similar way to tablets and liquids.

[010] Because the failure to follow a prescribed regime due to non-compliance or improper dosage may jeopardize the health of an animal or person, some people have looked to combining existing medicine, supplements, vitamins, or other medicants, with food or drinks. For example, some have tried to hide tablets in food, dissolve pills or tablets in drinks, or mix powders or liquid with food or drinks. However, because many of the same difficulties are present, such as taste, texture, measuring proper dosage, and rate of absorption, these methods are of limited utility, and may even inappropriately or dangerously alter administration of the prescribed dose.

[011] Other attempts have been made to aid the administration of medicine, supplements, vitamins, or other medicants by, for example, encapsulating the medicant. For example, U.S. Pat. No. 6,143,316 describes a digestible pouch and method for aiding in the oral administration of such things as medicinal agents. Pouches, however, still need to be consumed and all the disadvantages of taste, texture, size and real physical or psychosomatic inability to consume objects come into play. Additionally, pouches do not adequately address dosing issues because, for example, any such pouch would still need to contain pills or tablets that may have to be cut, broken, or counted or liquid that needs to be measured. Furthermore, a pouch that completely sheathes a medicant may well hamper absorption.

[012] Additional efforts have sought to improve the taste of medicine or supplements. For example, U.S. Pat. No. 4,702,914 describes a ketchup based pet or veterinary food sauce that includes a minor therapeutic amount of a veterinary composition of prophylactic nature against parasitic infestation. Others have sought such increased palatability of medicine while decreasing sugar content of such tomato-based compositions, such as U.S. patent application Publication No. 2005/0158367, which describes a "gravy topper" flavored with,

for example, animal meats such as chicken, pork, beef, veal, fish, and the like. Simple flavorants, regardless of the composition (e.g., sugar-based, tomato-based, etc.), do not, however, adequately address dosing problems such as those addressed above.

[013] There is therefore a need in the art for systems and methods related to the administration of a liquid flavored composition comprising medicine, supplements, vitamins, or other medicants to animals, including people, using a precise-dosing dispenser/pump.

SUMMARY OF INVENTION

[014] Because of these and other problems of the art described herein are systems and methods for the administration to animals, including people, of a liquid flavored composition comprising medicine, supplements, vitamins, or other medicants which is added to food or drink with a precise-dosing dispenser/pump.

[015] The systems and methods discussed herein can generally serve to reduce the challenges of administering medicants, such as ingestion, dosing, and absorption, to those who need them, especially, but not limited to, non-human animals, children, and the elderly. In particular, the precise-dosing dispenser/pump allows for exact and convenient measurements without the need to cut, break, or count pills or tablets. Furthermore, the fact that the liquid composition is to be taken with food in a manner that generally conceals the medicant by flavoring which either meshes with the taste of the food or enhances the taste of the food allows for it to be consumed without the recipient being aware; or given a companion or complementary taste (e.g., creamer taste for coffee) allows for the medicant to be consumed knowingly without the disadvantages (e.g., taste, texture, size, etc.) thereby overcoming resistance which may result from a real physical or psychosomatic inability to swallow pills or directly drink liquid medicant.

[016] As such, these systems and methods can improve the consumption, accuracy, and compliance with a prescribed regime thereby improving health.

[017] There is described herein, in an embodiment, a method of administering a precise and proper dose of medicant comprising: providing a container; having a flavored liquid medicant stored within the container; depressing a precise-dosing-pump attached to the container a prescribed multiple number of times, each pump discharging a sub-unit of a prescribed dose; dispensing the prescribed dose of the flavored liquid medicant from the container on to food or drink prior to ingestion; and ingesting the food or drink with medicant.

[018] In an embodiment of the method, the flavored liquid medicant meshes with the taste of food or drink upon which the flavored liquid medicant will be dispensed.

[019] In an embodiment of the method, the flavored liquid medicant has a companion or complementary taste with the food or drink upon which the flavored liquid medicant will be dispensed.

[020] There is also described herein a device for administering a precise and proper dose of medicant comprising: a container; a precise-dosing-pump attached to the container; and a flavored liquid medicant stored within the container; wherein, a user depresses a plunger a prescribed number of times on the precise-dosing-pump, each pump discharging a sub-unit of the prescribed dose of the flavored liquid medicant from the container on to food or drink prior to ingestion.

[021] In an embodiment of the device, the flavored liquid medicant meshes with the taste of food or drink upon which the flavored liquid medicant will be dispensed.

[022] In an embodiment of the device, the flavored liquid medicant has a companion or complementary taste with the food or drink upon which the flavored liquid medicant will be dispensed.

BRIEF DESCRIPTION OF THE FIGURES

[023] FIG. 1 depicts a dispenser for providing supplements in liquid form.

[024] FIG. 2 depicts dispenser of FIG. 1 in exploded form.

[025] FIG. 3 depicts dispenser of FIG. 1 being used to dispense a supplement onto a food item.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT(S)

[026] In an embodiment, the invention relates to systems and methods for providing medicine, supplements, vitamins, or other medicants in a liquid form that has flavors added to mask the medicant's taste. The liquid is dispensed onto food or drink generally after it is fully prepared and ready for consumption. The dispenser includes a precise-dosing-pump which is designed to deliver specific and consistent amounts with each pump action so as to accurately allow the party dispensing, who may be different from the party consuming, to attain the proper dose.

[027] The amount dispensed per pump of the precise-dosing-pump is generally significantly less than a single dose for even the smallest target consumer so that a single pump will always provide a sub-unit of measurement for any consumer. To obtain this ratio, the medicant will be sufficiently diluted and be chosen to conform to the mechanics and volume of a precise-dosing-pump. Therefore, a single pump will always provide a sub-unit of the prescribed dose for all consumers. Thus, it is easier to provide for a number of different sized doses accurately and without division.

[028] FIGS. 1-3 provide for illustrations of an embodiment of the invention. In an embodiment, the dispenser (FIG. 1) will provide for a relatively small dose for each dispensing action. For example, reaching the recommended dose for a 100 pound animal or person might require four pumps of plunger (7) on the precise-dosing-pump (3) which will squirt medicant held in the container (4) onto food. In contrast, for other products currently available it could be 1 and ½ tablets or 1 and ¼ tablespoons of either a liquid or a powder as should be apparent. Furthermore, if four pumps are used per 100 pounds of consumer an additional pump can be used for each 25 pounds of consumer, whereas, if the 100 pounds corresponded to two tablets, a 125 pound consumer would require an additional half tablet. The ratio may change based on the size of the consumer or the type of medicant. Thus, for

medicant given to a 50 pound consumer, the medicant may be provided so that 5 pumps are needed (different concentration or different pump) thus allowing finer control on the amount of medicant provided.

[029] With each pump of the plunger (7) on the precise-dosing-pump (3), dispensing the flavored medicant in an amount that is generally significantly less than a full dose (given increased dilution and/or a precise-dosing-pump which dispenses only a small amount of liquid flavored medicant), dosing is easier and does not require half or quarter pumps. So instead of having to count and break tablets or measuring teaspoons of powders or liquids every day for each dose, the number of pumps allows the consumer to quickly and accurately attain their dose goals by simply applying the flavored liquid to food via the needed, easy to count, number of pumps. This is generally more convenient and supports administration compliance and accuracy in the measurement of a dose and also assures that the desired strength of the vitamin, supplement, nutrient, or medication is given. Furthermore, because the medicants are delivered in a liquid form, there is no need for binding agents or fillers as with tablets or powders that need these additives to help keep the compounds together for administration. The lower amount of medicant per pump is unsuitable for tablets or even liquid, the latter which still has to be measured out in spoons, cups, or syringes, and would require large multi-servings which can be hard to administer.

[030] It should be clear from the above it is highly possible that a consumer could use four or more pumps to reach their desired medicine dose. Medicine provided using a traditional methodology (e.g. pills) requiring such a subdivided dose can make compliance (e.g., taking five separate pills) difficult.

[031] In FIG. 2, this depicted embodiment, the dispenser (1) includes a flavored liquid (2), consisting of vitamins, supplements or other medicants in a container (4). The container (4) will generally serve as a storage device as well as providing for an environment which may

be sanitary and relatively free from contamination. The medicant(s) may be in liquid form because they naturally occur that way or may be provided in solution, mixture, or suspension depending on what specific medicant(s) are used. The container (4) is provided with a precise-dosing-pump top (3), which generally squirts a precise and measured amount of the flavored liquid medicant, drawn through the dip tube (6), when the plunger (7) is depressed. The precise-dosing-pump top (3) will generally be removably attached to the container (4) such as by being screwed onto mating threads (5) as is understood by those of ordinary skill. In other embodiments, however, alternative attachment methods such as snap-tops may be used. In still further embodiments, the precise-dosing-pump top (3) may be designed to not be removable, in ordinary usage, from the top of the container (4). This can prevent a user from tampering with the flavored liquid medicant (2) or trying to refill the container (4).

[032] In FIG. 3, by pressing down on the plunger (7) attached to the precise-dosing-pump top (3), the flavored liquid medicant (2) will be squirted on to prepared food or drink (8) and consumed. Generally, the amount dispensed will be in the form of droplets which may be of any size determined by the mechanics and the volume of the precise-dosing-pump top, which may or may not be adjustable (i.e., perhaps twisting the top will result in more or less liquid being dispensed). This can allow for the liquid (2) to be spread over a relatively large area of the food to prevent the material from pooling and therefore possibly having a strange flavor profile.

[033] Depending on the embodiment, the liquid (2) can be any individual or combination of health related vitamins, supplements or other medicants and may include any number of flavor additives and/or aromatic notes that mask the taste of the medicants. The selected flavor may generally depend on the nature of the medicant to be masked and the type of food or drink upon which the liquid (2) is to be dispensed. For example, if the liquid (2) is to be dispensed for consumption by dogs, the flavoring may be a meat flavoring which would

generally appeal to dogs and can enhance the flavor of, or combine with and be camouflaged by, the taste of many packaged dog foods. Alternatively, if the liquid (2) is to be dispensed to humans, the flavoring may be coffee. This could allow for the material to be disguised by placing it in a coffee beverage. Similarly, the human may be provided with the meat flavoring where it could be added to a gravy or directly to a meat dish. Still further, the liquid (2) may be flavored with a flavoring to complement or enhance the food it is being served with. For example, if the liquid (2) is to be added to coffee it may be flavored with hazelnut, chocolate, or other flavors which are commonly added to coffee. If being added to meat or gravy, the flavor may be that of rosemary, pepper, sage or other spices commonly used in such dishes. Alternatively it may be flavored with a salt flavor to provide for such a taste.

[034] Depending on the embodiment, the container (4) is preferably a plastic bottle to allow for reduction in weight and to provide for reduced breakability. However, in alternative embodiments, alternative materials may be used such as, but not limited to, glass, aluminum, other metals, or any combination of these. Such materials may be used to prevent the container (4) from imparting any taste to the liquid (2) or to prevent certain agents from reacting with the container in addition to other reasons known to those of ordinary skill.

[035] As contemplated above, the dispenser (1) will generally be used to add the liquid (2) to food in dish, bowl, glass, or on a plate but can also potentially be applied to sandwiches, snacks, crackers, cookies or any other consumable food type item in whatever form it is presented once it is prepared. Further, the liquid (2) may also be added to foods which are partially prepared. For example, it may be added to a gravy as it is being prepared. Further, the liquid (2) may be allowed to sit on the surface of the food or may be mixed in depending on the type of food too which it is added and the flavoring used.

[036] As should be evident from the above, the dispenser, liquid medicant and flavoring, and the methods of using the same can be used with a variety of different users. Generally, they will be dispensed by a user who is responsible for the care of the consumer for whom the medicant in prescribed, which may or may not be the same party. The party consuming the medicant may be a human, regardless of age, or may be a non-human animal such as, but not limited to, a pet or zoo animal.

[037] While the invention has been disclosed in conjunction with a description of certain embodiments, including those that are currently believed to be the preferred embodiments, the detailed description is intended to be illustrative and should not be understood to limit the scope of the present disclosure. As would be understood by one of ordinary skill in the art, embodiments other than those described in detail herein are encompassed by the present invention. Modifications and variations of the described embodiments may be made without departing from the spirit and scope of the invention.

CLAIMS

1. A method of administering a precise and proper dose of medicant comprising:

providing a container;

having a flavored liquid medicant stored within said container;

depressing a precise-dosing-pump attached to said container a prescribed multiple number of times, each pump discharging a sub-unit of a prescribed dose;

dispensing said prescribed dose of said flavored liquid medicant from said container on to food or drink prior to ingestion; and

ingesting said food or drink with medicant.

2. A method of claim 1 where said flavored liquid medicant meshes with the taste of food or drink upon which said flavored liquid medicant will be dispensed.

3. A method of claim 1, where said flavored liquid medicant has a companion or complementary taste with the food or drink upon which said flavored liquid medicant will be dispensed.

4. A device for administering a precise and proper dose of medicant comprising:

a container;

a precise-dosing-pump attached to said container; and

a flavored liquid medicant stored within said container;

wherein, a user depresses a plunger a prescribed number of times on said precise-dosing-pump, each pump discharging a sub-unit of the prescribed dose of said flavored liquid medicant from said container on to food or drink prior to ingestion.

5. A device of claim 4 where said flavored liquid medicant meshes with the taste of food or drink upon which said flavored liquid medicant will be dispensed.

6. A device of claim 4, where said flavored liquid medicant has a companion or complementary taste with the food or drink upon which said flavored liquid medicant will be dispensed.

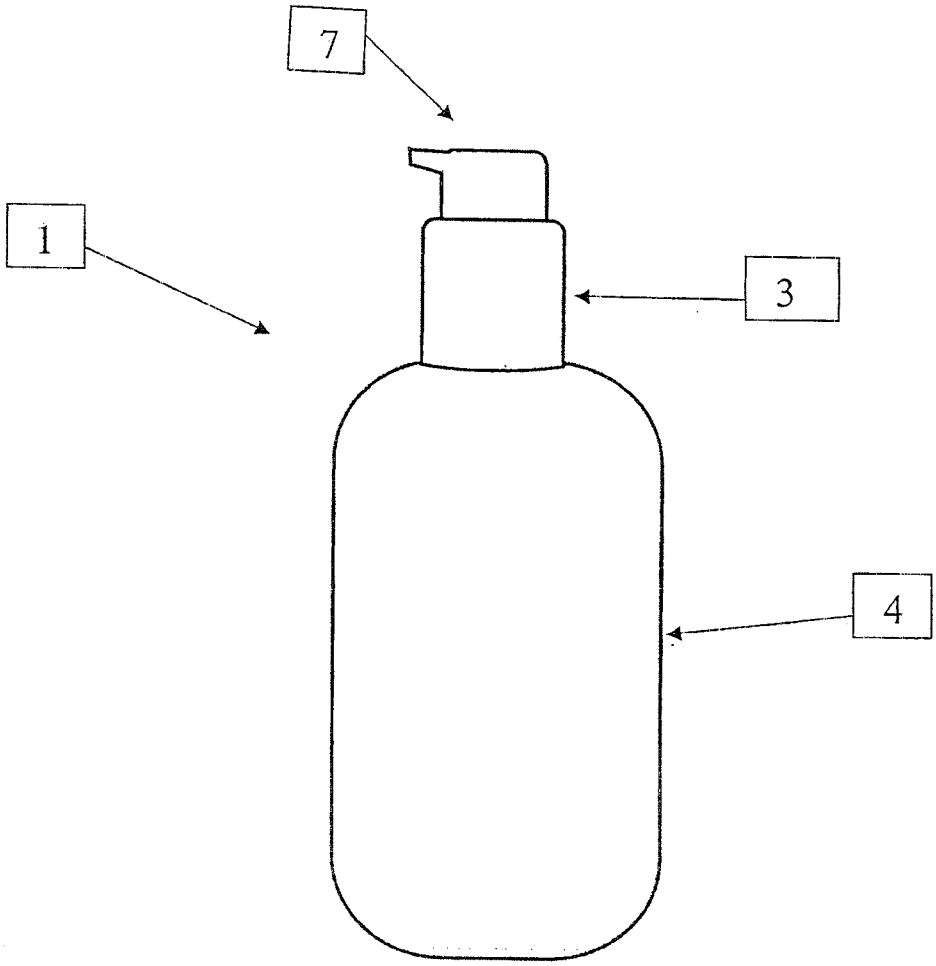

FIG. 1

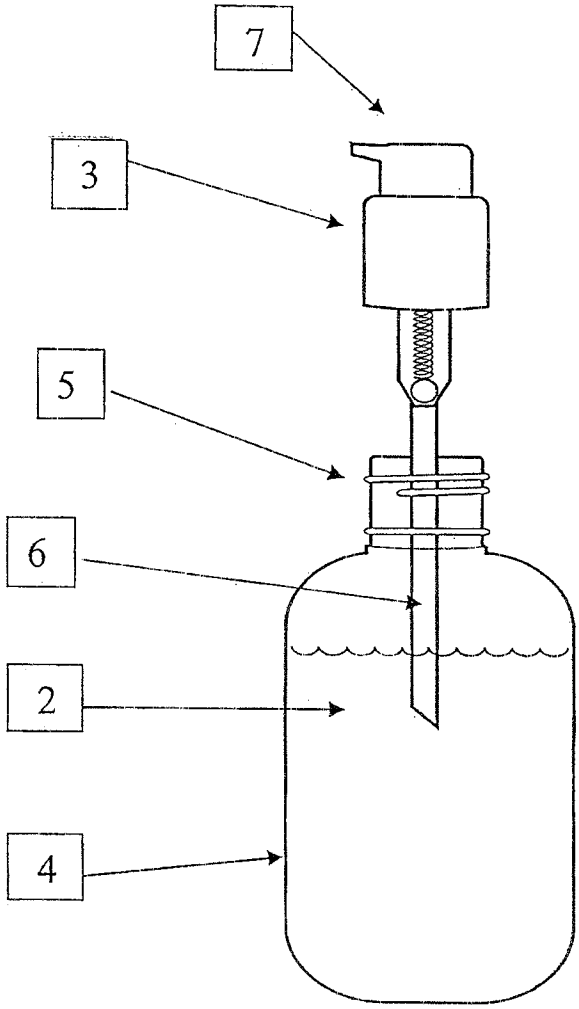

FIG. 2

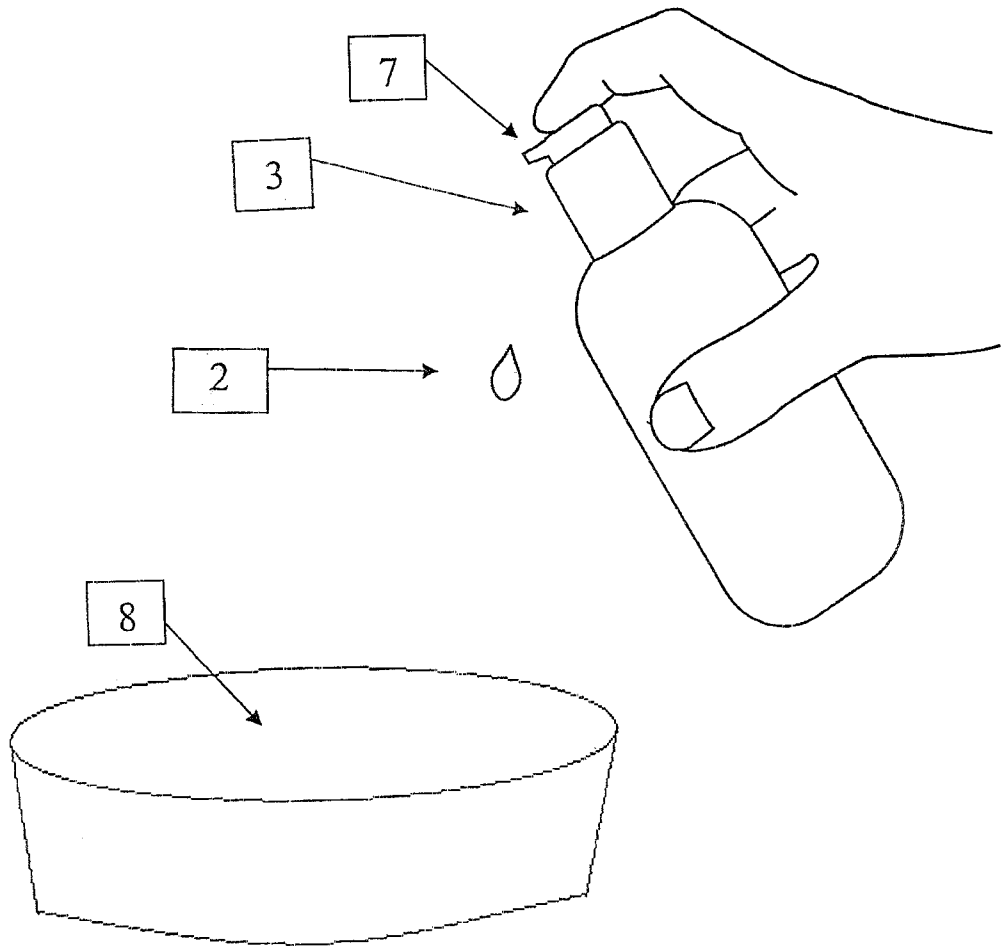

FIG. 3