A dipstick-type applicator for tooth whitener and skin care medication includes a housing defining an internal chamber sealed when an applicator is received therein. A quantity of liquid medication is hermetically sealed within the chamber. The applicator consists of a gripping portion, a stem, and at the distal end of the stem, a tip made of a flexible absorbent material having a flat angled distal surface that is specifically designed to best coat the user’s teeth with tooth whitener or the user’s skin with skin care medication. A wiper within the housing has a reduced diameter opening, through which the tip of the applicator must travel to remove the tip from the chamber filled with liquid medication. The relationship between the outer dimensions of the tip and the opening in the wiper is such that excess liquid medication is removed from the tip as it is removed from the chamber.
DIPSTICK-TYPE APPLICATOR FOR TOOTH WHITENER AND SKIN CARE MEDICATION

BACKGROUND OF THE INVENTION

[0001] The present invention relates to a dipstick-type applicator for tooth whitener and skin care medication.

[0002] Tooth whitening systems are becoming more and more popular at late. The aspect of the tooth whitening industry that is presently showing the most growth is that aspect in which kits are purchased by the ultimate users so that tooth whitening can be carried out within one’s home, rather than having to suffer the inconvenience of having to visit the dentist’s office.

[0003] Applicants have found that the most effective way to package tooth whitener is in a system in which the ultimate user employs an applicator combined with a single dose of tooth whitener, of sufficient volume to allow a single tooth whitening to be conducted. In this regard, to enhance the shelf life of a tooth whitening substance, for example, one made of peroxide gels, it is best to provide that tooth whitener vacuum-packed or otherwise hermetically sealed. Thus, when the vacuum-seal is broken, the shelf life of the tooth whitening substance is dramatically shortened. A tooth whitening system which only causes a single dose of tooth whitener to be released from vacuum storage would be advantageous so that the user is always employing relatively fresh tooth whitener.

[0004] Some applicator systems that are currently on the market are messy to use including the use of strips in which the tooth whitening substance can be removed onto the fingers, hands and clothing of the user, and other applicators for liquid tooth whitener in which dripping can often occur. As such, a need has developed for a tooth whitening system including an applicator that is easy and effective to use, precludes dripping of the tooth whitening substance and staining of the clothing and hands of the user, while also maintaining the tooth whitening substance fresh until the moment of use.

[0005] Similar issues arise concerning application of skin care medication. It is important that skin care medication be maintained hermetically sealed until the moment of application to enhance shelf life and effectiveness. As such, it would be advantageous to provide an applicator for skin care medication that fulfills these goals.

[0006] It is with these thoughts in mind that the present invention was developed.

SUMMARY OF THE INVENTION

[0007] The present invention relates to a dipstick-type applicator for tooth whitener and skin care medication. The present invention includes the following interrelated objects, aspects and features:

[0008] (1) In a first aspect, the present invention contemplates a generally cylindrical housing having a closed end and an open end designed to receive a dipstick-type applicator. The housing defines an internal chamber that is sealed when the applicator is received therein.

[0009] (2) For this purpose, in the preferred embodiment, complementary threads on the applicator and housing intermesh when the distal end of the applicator is inserted within the chamber to seal the chamber. In fact, before use, in the preferred embodiment, a quantity of tooth whitening substance such as, for example, peroxide gel or a skin care medication substance such as, for example, benzoyl peroxide, vitamin E or retinol, is placed within the chamber, the applicant is assembled to the housing and, in a manner well known to those skilled in the art, any air within the chamber is evacuated to provide a vacuum seal (hermetically sealed chamber).

[0010] (3) The applicator consists of a gripping portion, a stem, and at the distal end of the stem, a tip made of a flexible absorbent material. In the preferred embodiment, the tip has a flat angled distal surface that is specifically designed to best coat the user’s teeth with tooth whitener. The same surface is equally effective in coating the user’s skin with a skin care medication.

[0011] (4) In an important aspect of the present invention, a wiper is received within the housing and has a reduced diameter opening, through which the tip of the applicator must travel to remove the tip from the chamber filled with tooth whitener or skin care medication. The relationship between the outer dimensions of the tip and the opening in the wiper is such that excess liquid is removed from the tip as it is removed from the chamber. In this way, dripping of liquid, once the tip has been removed from the chamber, is substantially precluded.

[0012] (5) As explained above, the inventive applicator is equally usable in applying skin care medications. Such skin care medications may be used to treat such conditions as acne, blemishes, rosacea as well as wrinkles. Single dose hermetically sealed formulations that may be applied in accordance with the teachings of the present invention may include salicylic acid, benzoyl peroxide, vitamin E, retinol, AHA, and alpha lipoic acid. These medications are stabilized through hermetic sealing and are provided in a single dose such that the applicator may be used and then discarded.

[0013] As such, it is a first object of the present invention to provide a dipstick-type applicator for tooth whitener and skin care medication.

[0014] It is a further object of the present invention to provide such a device in which a single dose of medication is vacuum packed within a chamber of a housing.

[0015] It is a still further object of the present invention to provide such a device in which an applicator includes an absorbent tip having an angled surface configured to best apply tooth whitener to the outer surfaces of the teeth of the user or skin care medication to the user’s skin.

[0016] It is a still further object of the present invention to provide such a device in which a wiper is provided to wipe excess medication from the tip as it is removed from the housing’s chamber.

[0017] These and other objects, aspects and features of the present invention will be better understood from the following detailed description of the preferred embodiment when read in conjunction with the appended drawing figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] FIG. 1 shows an exploded cross-sectional view of the inventive device including the housing and applicator.
FIG. 2 shows a cross-sectional view similar to that of FIG. 1 but with the applicator and housing assembled together.

FIG. 3 shows an enlarged cross-sectional view of the wiper that is shown installed within the housing in FIGS. 1 and 2.

FIG. 4 shows a cross-sectional view of the details of the wiper portion of the applicator.

FIG. 5 shows a side view of the hand gripping portion of the applicator.

SPECIFIC DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference, first, to FIGS. 1 and 2, the present invention is generally designated by the reference numeral 10 and is seen to include a housing 11 and an applicator 40. The housing 11 includes a distal wall 13, side walls 15 which may, if desired, be cylindrical, and a proximal open end 17. Within the proximal opening 17, a cylindrical recess 19 is provided, which includes female screw threads 21 for a purpose to be described in greater detail hereinafter. A shoulder 23 surrounds an opening 24 that leads distally to an internal chamber 25 that is sized and configured to receive a single dose of tooth whitener such as, for example, peroxide gel.

As explained above, the present invention is equally effective in applying a single dose of a skin care medication such as salicylic acid, benzoyl peroxide, vitamin E, retinol, AHA, and alpha lipic acid. The following description is specific to application of tooth whiteners but should be understood to be equally applicable to applying skin care medication to the user’s skin.

With particular reference to FIGS. 1 and 3, within the chamber 25 a wiper 30 is provided that includes a generally cylindrical side wall 31, a distal end 32 having a reduced diameter opening 33 therethrough, a proximal opening 34 and, peripheral to the opening 34, an enlarged annular shoulder 35 having a distal annular surface 36 designed to sit on the shoulder 23 as shown in FIG. 1 when the wiper 30 is assembled to the housing 11. For this purpose, the wiper 30 has annular protrusions 37 and 38 which snap into annular grooves 26 and 27 (FIG. 1) to hold the wiper 30 in assembled relation with respect to the housing 11 as seen in FIG. 1. The passageway 39 through the wiper 30 may, if desired, be cylindrical.

With reference, now, to FIGS. 1, 4 and 5, in particular, it is seen that the applicator 40 includes a hand gripping portion 41, a stem 43, and a tip 45.

With reference to FIGS. 1 and 5, the hand gripping portion is seen to include an annular convex surface 44 that is designed to be comfortably gripped by the fingers of the user. This surface terminates at a shoulder 45 leading to a cylindrical portion 47 having male screw threads 49 designed to enmesh with the female screw threads 21 (FIGS. 1 and 2) of the housing 11. As seen from a comparison of FIGS. 1 and 5, the gripping portion includes an internal recess 51 that receives the proximal end of the stem 43 which proximal end is designated in FIG. 1 by the reference numeral 53. The distal end 55 of the stem 43 includes an internal passageway 57 sized to receive the proximally extending stem 59 of the tip 45 which is seen in FIG. 4. FIG. 1 shows the stem 59 received within the passageway 57 of the stem 43.

The tip 45 preferably has a circular cross-section and has an angled surface 61 that is sized and configured to best apply tooth whitener to the teeth of the user. The tip 45 is preferably made of a soft absorbent material such as that which is sold under the Trademark “HYTREL.”

FIG. 2 shows the applicator 40 assembled to the housing 11 with the threads 21 and 49 enmeshed and the tip 45 contained within the chamber 25. As should be clear from FIG. 2, the opening 33 in the wiper 30 is sized such that the tip 45 must be flexible and resilient to allow it to traverse the opening 33 since, as shown in FIG. 2, the dimensions of the tip 45 are slightly larger than the dimensions of the opening 33.

In the preferred embodiment of the present invention, before use, the chamber 25 is filled with sufficient quantity of tooth whitener in a liquid form to facilitate conducting a single tooth whitening treatment of all of the user’s teeth. Before use, in a manner well known to those skilled in the art, the chamber 25 is evacuated of air so that the tooth whitener is vacuum-packed therein.

When it is desired to whiten one’s teeth using the inventive device 10, one need merely grip the housing 11 and twist the applicator 40 gripping the surfaces 44 thereof. Once the applicator 40 begins to rotate with respect to the housing 11, the vacuum seal is broken. The tip 45 is immersed in tooth whitener and when it traverses the opening 33 of the wiper 30, a significant amount of the tooth whitener is wiped off, thereby precluding dripping of the tooth whitener once the tip 45 is removed from the chamber 25. Furthermore, the relationship between the dimensions of the opening 33 and the tip 45 is such that an appropriate quantity of tooth whitener is retained on the tip 45 to effectively apply to the user’s teeth. The user begins applying tooth whitener to the teeth and periodically dips the tip 45 back within the chamber 25 to replenish the supply of tooth whitener thereon.

When a single tooth whitening application has been completed by the user, the user need merely re-attach the applicator 40 to the housing 11 and discard the entire device 10 as a unit.

In the preferred embodiment of the present invention, the housing and the structures of the applicator besides the tip 45 and of the wiper are made of a plastic material such as, for example, translucent polypropylene. If desired, the wiper may be made of a material such as that which is known as “EVA”. As explained above, the tip 45 may be made of a suitable soft resilient liquid absorbent material such as, for example, that which is sold under the Trademark “HYTREL.” Other materials may suitably be used for the various structures of the present invention provided the effectiveness of its use as a single dose tooth whitening or skin care medication container and applicator is not compromised.

As such, an invention has been disclosed in terms of a preferred embodiment thereof which fulfills each and every one of the objects of the invention as set forth hereinabove, and provides a new and useful dipstick-type applicator for tooth whitener and skin care medication of great novelty and utility.
[0035] Of course, various changes, modifications and alterations in the teachings of the present invention may be contemplated by those skilled in the art, without departing from the intended spirit and scope thereof.

[0036] As such, it is intended that the present invention only be limited by the terms of the appended claims.

1. An applicator device for applying medication to a user comprising:
   a) a housing having an opening allowing access to a chamber;
   b) a quantity of medication within said chamber;
   c) an applicator having an applicator tip insertable within said chamber; and
   d) a wiper extending at least partially about a periphery of said opening and sized to remove excess medication from said tip as said tip is removed from said chamber.

2. The device of claim 1, wherein said housing is cylindrical.

3. The device of claim 2, wherein said opening is at one end of said housing and an opposite end of said housing is defined by an end wall.

4. The device of claim 1, wherein said opening is generally circular.

5. The device of claim 3, wherein said opening is generally circular.

6. The device of claim 1, wherein said quantity comprises sufficient medication for a single treatment.

7. The device of claim 1, wherein said medication is hermetically sealed within said chamber.

8. The device of claim 1, wherein said wiper includes a generally circular opening smaller than outer dimensions of said chamber.

9. The device of claim 8, wherein said wiper comprises a sleeve installed within said housing and having said opening at a distal end thereof.

10. The device of claim 1, wherein said applicator includes a stem proximal of and attached to said tip.

11. The device of claim 10, wherein said applicator includes a hand grip proximal of said stem.

12. The device of claim 11, wherein said hand grip includes concave surfaces adapted to receive a user's fingers.

13. The device of claim 11, wherein said tip is made of a resilient absorbent material.

14. The device of claim 11, wherein said tip is made of a resilient absorbent material.

15. An applicator device for applying medication comprising:
   a) a cylindrical housing having a circular opening allowing access to a chamber;
   b) a single-dose quantity of liquid medication within said chamber;
   c) an applicator having an applicator tip insertable within said chamber, said tip having a circular cross-section and a flat applicator surface; and
   d) a wiper extending at least partially about a periphery of said opening and sized to remove excess medication from said tip as said tip is removed from said chamber.

16. The device of claim 15, wherein said liquid medication is hermetically sealed within said chamber.

17. The device of claim 15, wherein said wiper comprises a sleeve installed within said housing and having an opening at a distal end thereof.

18. The device of claim 15, wherein said applicator includes (1) a stem proximal of and attached to said tip; and (2) a hand grip proximal of said stem.

19. The device of claim 18, wherein said hand grip includes concave surfaces adapted to receive a user's fingers.

20. The device of claim 15, wherein said tip is made of a resilient absorbent material.

* * * * *