The present invention relates to a toothpaste dispensing regulator cap. The present invention comprises a lid member and a body member. The body member has an entrance orifice on one end that adapts to the neck of a toothpaste tube and an exit orifice on the other end that dispenses a “pea-size” amount of toothpaste into a thin layer along the bristle of the toothbrush. Additionally, the exit orifice has different shapes such as a star, box, or other designs so the stream of toothpaste that comes out will have a unique shape that appeals to a child and helps to develop good dental habits.
TOOTHPASTE DISPENSING REGULATOR CAP

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

This invention relates to a toothpaste tube attachment, and more specifically to a reusable flow-through toothpaste dispensing regulator cap that has a narrow exit orifice with unique shapes.

[0002] 2. Description of Related Art

For years, we have become influenced by commercials featuring the entire toothbrushers' bristle covered with perfectly placed paste. In practical use, this only leads to waste and higher toothpaste expense. In most instances, some toothpaste would drop off the toothbrush prior to brushing or be flushed out in the first spit. In short, for the major part of brushing action, the paste that comes in usage would only be a small portion of the initial quantity. Using a large quantity of toothpaste is especially a problem for young children because while brushing they may inappropriately swallow rather than spit out the toothpaste leading to ingestion of excess fluoride. If too much fluoride is given into the mouth of a child a mild fluorosis can occur. This is seen as white spots on the teeth of the child. According to research studies, the required amount of toothpaste for good oral hygiene is a pea-size amount.

Therefore, there is a need to invent a device that would dispense only right/required amount of toothpaste in the first attempt, on top of a toothbrush which usually is a very thin layer of paste that goes the length of the bristles on the toothbrush and equal to the amount of a pea-size quantity. This can be achieved by simply attaching a dispensing regulator cap, which has a small exit orifice, to the neck of the toothpaste tube.

Currently, various types of devices have been developed for use in dispensing a pre-measured charge of toothpaste from a toothpaste tube. Vast majority of the toothpaste dispenser in prior art are electrical or mechanical, which have not been extensively accepted by masses for various reasons such as complexity, undue manipulation, lack of a tight seal when not in use, expense concerns. Thus, there is a need to provide a new invention that is simple, affordable, completely sealed when not in use, and is able to deliver the right amount of toothpaste. Our invention is simple, affordable and can deliver the right amount of toothpaste.

Both U.S. Pat. No. 6,988,638 to Zak and U.S. Pat. No. 5,988,442 to Corey et al. disclose toothpaste tube attachments that are in the shape of a figure and dispense toothpaste through an exit orifice located in the attachment by manually squeezing the toothpaste tube. The latter prior art additionally provides the flexibility to customize the exit orifice of a toothpaste tube as well as the angle at which toothpaste exits the tube. Our present invention is distinguished from these prior art in that the shape of our device is traditional and is not in the shape of a figure. More specifically, the present invention dispenses the toothpaste into a thin layer along the bristle of the toothbrush but the total amount will only equal a "pea size" quantity. Additionally, the present invention has openings that are shaped like star, box, or some other design so the stream of toothpaste that comes out will have a unique shape that appeals to a child and helps to develop good dental habits.

SUMMARY OF THE INVENTION

In order to resolve the problems identified above, the primary object of the present invention is to provide a device that has a smaller opening/orifice that could replace the original cap that comes along with the toothpaste tube. The device according to the principle of the present invention will reduce the amount of toothpaste dispensed to a pea-size dab.

It is another object of the present invention to provide a device that is wider and flat head that will enable the toothpaste tube to stand by itself eliminating the need for any separate stand or holder.

It is another object of the present invention to provide a device that has a user friendly closure mechanism. This is particularly important with respect to young children who tend to have difficulty manipulating screw on cap.

It is a further object of the present invention to provide the device that has a unique opening or orifice shaped like a star or other design so the stream of toothpaste that comes out will have a unique shape that appeals to a child and helps to develop good dental habits.

It is yet another object of the present invention to provide a device that is reusable. Adapting to this reusable device will enable toothpaste manufacturer to introduce into the market, cap-less toothpaste. By introducing cap-less toothpaste and promoting a reusable device, we will further help reduce our carbon footprint. Lesser plastic caps in ground-fills means less pollution.

The various embodiments of the device in accordance with the present invention have in common a lid and a body member. The body member of the device has an entrance orifice on one side that adapts to the neck of a toothpaste tube. On the other end of the body member, which is close to the lid, has a narrow diameter exit orifice through which the toothpaste is dispensed. The lid and the body member are connected via a mechanism known in the art. The lid is flat-headed and wide to enable a toothpaste tube stand on itself.

The exit orifice is generally small in size, so the amount dispensed is a pea-size dab. The reduced amount helps reduce the waste of toothpaste and reduce the expense spent in toothpaste. The reduced amount of toothpaste may help avoid slow poisoning and accidental poisoning that occurs due to over-usage of toothpaste. The exit has unique shape such as a star, a fish, a moon, etc. to make children have fun when brushing teeth and helps to develop good dental habits.

The more important features of the invention have thus been outlined in order that the more detailed description that follows may be better understood and in order that the present contribution to the art may better be appreciated. Additional features of the invention will be described hereinafter and will form the subject matter of the claims that follow.

Before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

As such, those skilled in the art will appreciate that the conception, upon which this disclosure is based, may readily be utilized as a basis for the designing of other structures, methods and systems for carrying out the several pur-
poses of the present invention. It is important, therefore, that the claims be regarded as including such equivalent constructions insofar as they do not depart from the spirit and scope of the present invention.

[0018] The foregoing has outlined, rather broadly, the preferred feature of the present invention so that those skilled in the art may better understand the detailed description of the invention that follows. Additional features of the invention will be described hereinafter that form the subject of the claims of the invention. Those skilled in the art should appreciate that they can readily use the disclosed conception and specific embodiment as a basis for designing or modifying other structures for carrying out the same purposes of the present invention and that such other structures do not depart from the spirit and scope of the invention in its broadest form.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] Other aspects, features, and advantages of the present invention will become more fully apparent from the following detailed description, the appended claims, and the accompanying drawings in which similar elements are given similar reference numerals.

[0020] FIG. 1 shows a lateral sectional view of an embodiment of the present invention with the lid closed over the toothpaste exit orifice.

[0021] FIG. 2 shows a lateral sectional view of an embodiment of the present invention with the lid in open position.

[0022] FIGS. 3, 4, 5, 6, 7, and 8 show a frontal view of different shaped exit orifices on an embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0023] FIG. 1 and FIG. 2 illustrate a lateral sectional view of an embodiment of the toothpaste dispensing regulator cap according to the present invention. FIG. 1 is a demonstration of the device with the lid closed and FIG. 2 is a demonstration of the device with the lid open. The device 1 comprises a body member 2 having an entrance 3, an entrance orifice 4 that can be affixed to the neck of a toothpaste tube, a continuous passage 5 and an exit orifice 6. The device also has a lid member 7 that covers the exit orifice 6 and a linkage member 8 between the body member 2 and the lid member 7.

[0024] Once the orifice 4 is affixed to the neck of the toothpaste tube, when the toothpaste tube is squeezed, the toothpaste travels from toothpaste tube through the passage 5 inside the device 1 out through the exit orifice 6 and onto the toothbrush bristles.

[0025] The internal dimension and surface of the entrance 3 and entrance orifice 4 may be sized, tapered, and threaded to match a number of differently sized, tapered, and/or threaded toothpaste tubes.

[0026] The exit orifice 6 may have different dimensions and shapes. However, a small exit orifice is preferable in order to meet the primary object of the present invention. A small exit orifice dispenses the toothpaste in the form of a thin layer across the toothbrush bristle that amounts to a "pea size" quantity so that less toothpaste is extruded when the toothpaste tube is squeezed than would have been extruded without the device. The small orifice will regulate the amount of toothpaste dispensed thus helping children who in general have less efficient muscle control to get right amount of toothpaste.

[0027] The passage 5 or exit orifice 6 of this device can be shaped like a star or box or some other design so the stream of toothpaste that comes out will have a unique shape that appeals to a child and helps make a child have more fun when brushing his or her teeth and helps to develop good dental habits. A number of exemplary shapes of an exit orifice are displayed in FIG. 3, FIG. 4, FIG. 5, FIG. 6, FIG. 7, and FIG. 8.

[0028] For a user friendly type of closure, the preferred embodiment of the device includes a flip-up lid, which is preferably integrally attached to the body member via an integral flexible hinge so that the lid is easy to open and will never drop off and get lost. The lid preferably includes a protruding part 9, as shown in FIG. 3, which extends down into the exit port when the lid is closed to ensure a complete seal. Virtually any closure mechanism suitable for the toothpaste can be adapted into the device. The lid may have different shapes and sizes. Preferably, the lid will be sufficiently wide and flat-headed that enables toothpaste tube to stand by itself, eliminating the need for any separate stand or holder. Preferably, the lid and body member have same dimensions.

[0029] The device 1 may be made of different material. In the preferred embodiment, the device 1 is made of plastic, can be reused over and over again which helps reduce the need to re-manufacture a perfectly good re-useable part. By re-using rather than re-placing the regulator cap, both the carbon footprint and pollution from a plastic manufacturing facility may be reduced.

[0030] While there have been shown and described and pointed out the fundamental novel features of the invention as applied to the preferred embodiments, it will be understood that the foregoing is considered as illustrative only of the principles of the invention and not intended to be exhaustive or to limit the invention to the precise forms disclosed. Obvious modifications or variations are possible in light of the above teachings. The embodiments discussed were chosen and described to provide the best illustration of the principles of the invention and its practical application to enable one of ordinary skill in the art to utilize the invention in various embodiments with various modifications as are suited to the particular use contemplated. All such modifications and variations are within the scope of the invention as determined by the appended claims when interpreted in accordance with the breadth to which they are entitled.

What is claimed is:

1. A reusable toothpaste dispensing regulator cap comprising:
   a body member having an entrance, an entrance orifice that can be affixed to a neck of a toothpaste tube, a continuous passage and a small exit orifice;
   a lid member covering the body member; and
   a linking member between the body member and the lid member.

2. A reusable toothpaste dispensing regulator cap comprising:
   a body member having an entrance and a threaded entrance orifice that can be affixed to a threaded neck of a toothpaste tube, a continuous passage and a small exit orifice that dispenses the toothpaste in the form of a thin layer across the toothbrush bristle that amounts to a "pea size" quantity;
   a lid member covering the body member; and
   a linking member between the body member and the lid member.

3. The reusable toothpaste dispensing regulator cap of claim 1, wherein the entrance orifice has threads to match threaded neck of a toothpaste tube.
4. The reusable toothpaste dispensing regulator cap of claim 1, wherein the small exit orifice dispenses the toothpaste in the form of a thin layer across the toothbrush bristle in a "pea size" quantity.

5. The reusable toothpaste dispensing regulator cap of claim 2, wherein the small exit orifice can have different shapes.

6. The reusable toothpaste dispensing regulator cap of claim 2, wherein the linking member is a hinge.

7. The reusable toothpaste dispensing regulator cap of claim 2, wherein the lid member is large and flat-headed enabling the toothpaste tube to stand on the counter by itself.

8. The reusable toothpaste dispensing regulator cap of claim 2, wherein the lid member has a protruding part that extends down into the exit orifice when the lid is closed.

9. The reusable toothpaste dispensing regulator cap of claim 2, wherein the lid member has a protruding part that extends down over the exit orifice when the lid is closed.

10. The reusable toothpaste dispensing regulator cap of claim 2, wherein the lid member and body member have same dimensions.

11. The reusable toothpaste dispensing regulator cap of claim 2 is made of a plastic.

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