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(54) **HIGHLIGHTING HAIR FLUID APPLICATOR**

Publication Classification

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(57) **ABSTRACT**

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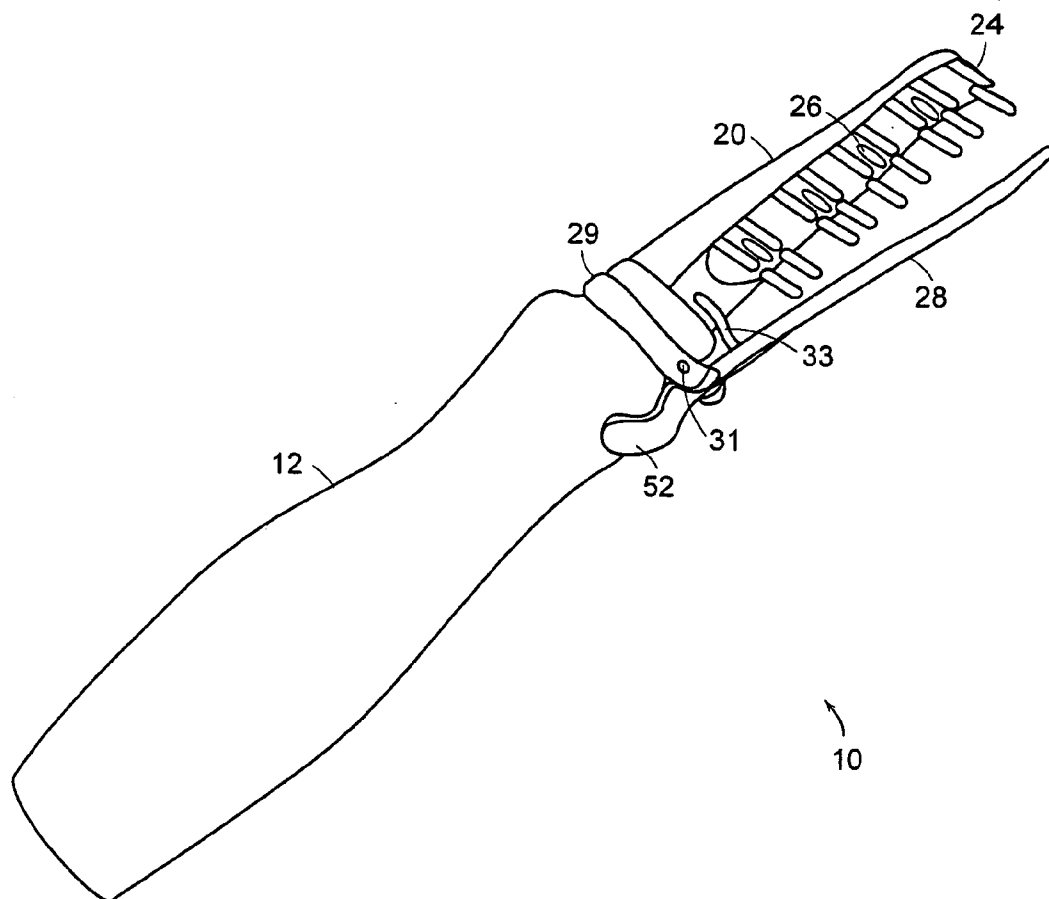
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A hair fluid applicator dispensing member is provided for dispensing a fluid, comprising a body having a plurality of orifices that extend from an inside surface to an outside surface, a plurality of bristles extending from the body, and a plurality of walls extending from the body defining zones for containing fluid therein for streaking hair to be treated. A method is also provided comprising providing a hair fluid applicator including a dispensing member that includes zones for containing fluid therein for streaking hair to be treated. The method also includes pivoting a pick away from the dispensing member and picking up a thin layer or strand of hair, releasing the pick to press the hair against the dispensing member, and sliding the dispensing member along the hair shaft(s) to apply fluid to the hair in a predetermined pattern.

Related U.S. Application Data

(63) Continuation of application No. PCT/US03/40298, filed on Dec. 17, 2003.

(60) Provisional application No. 60/434,187, filed on Dec. 17, 2002.



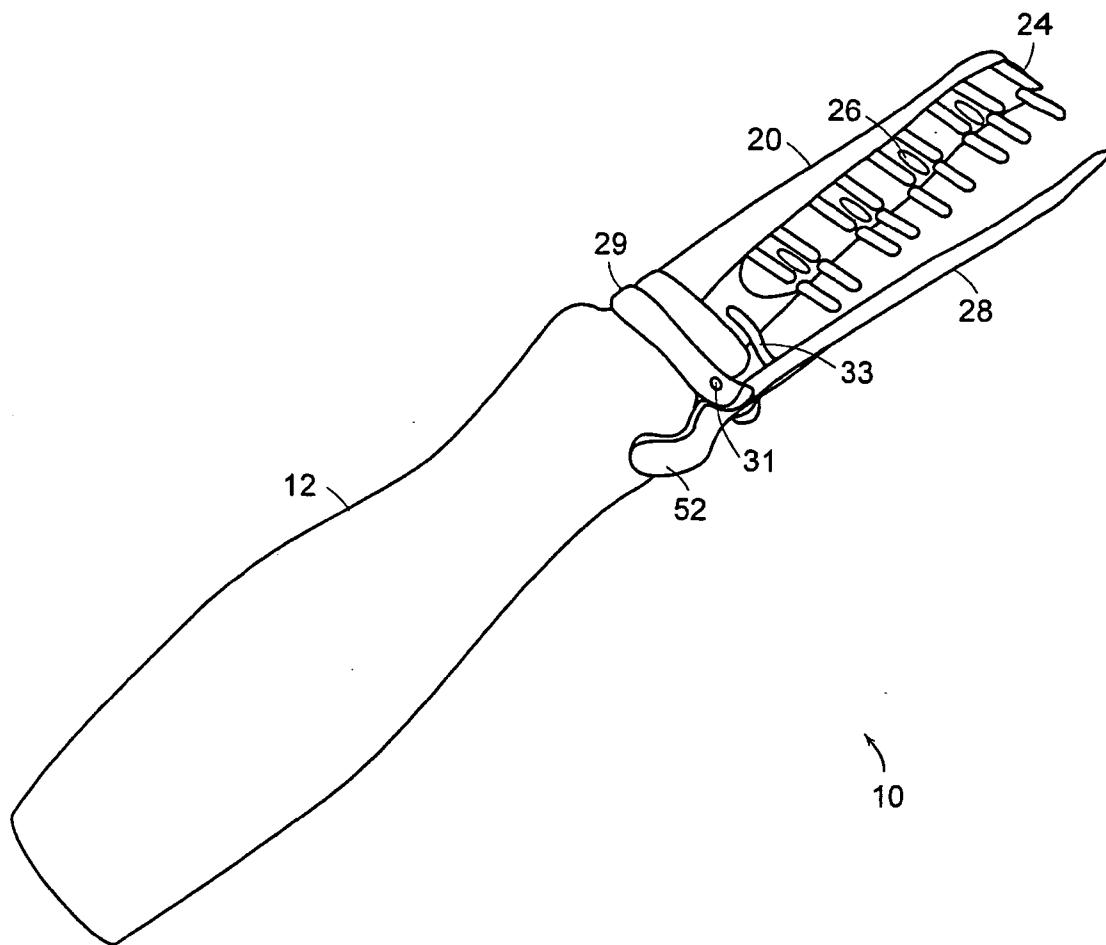


FIG. 1

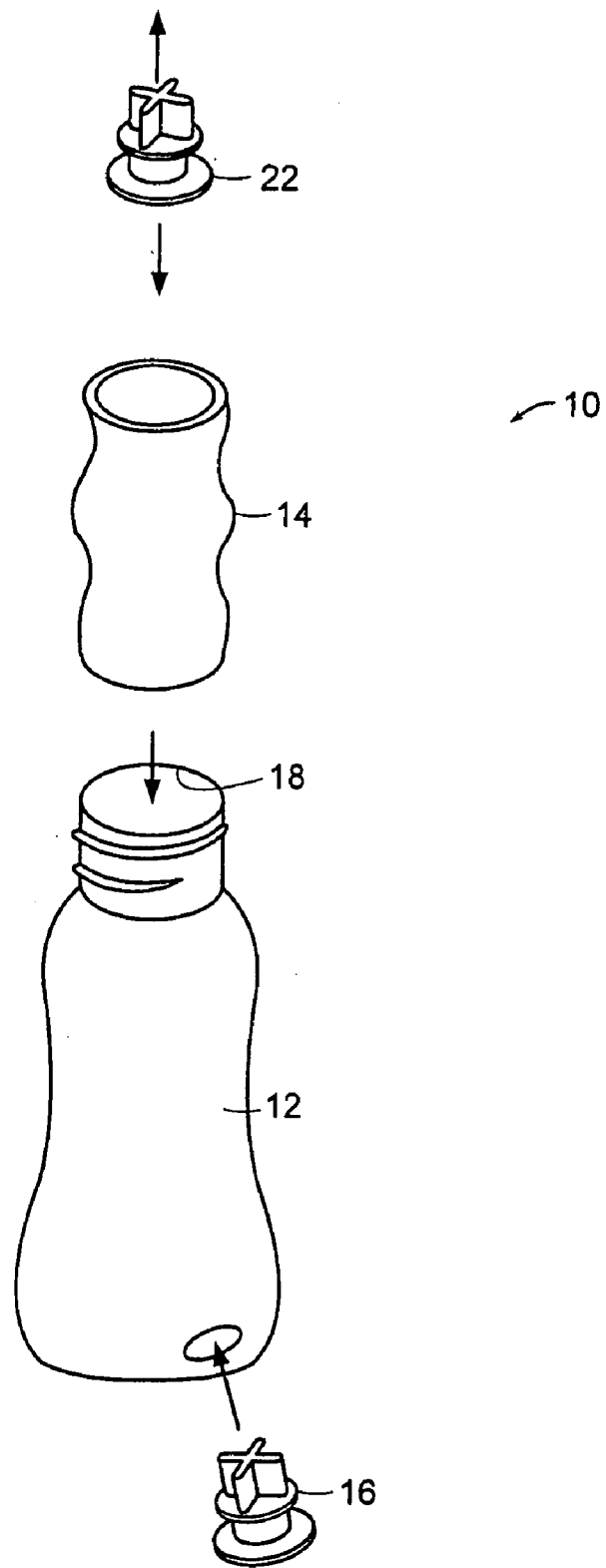


FIG. 2

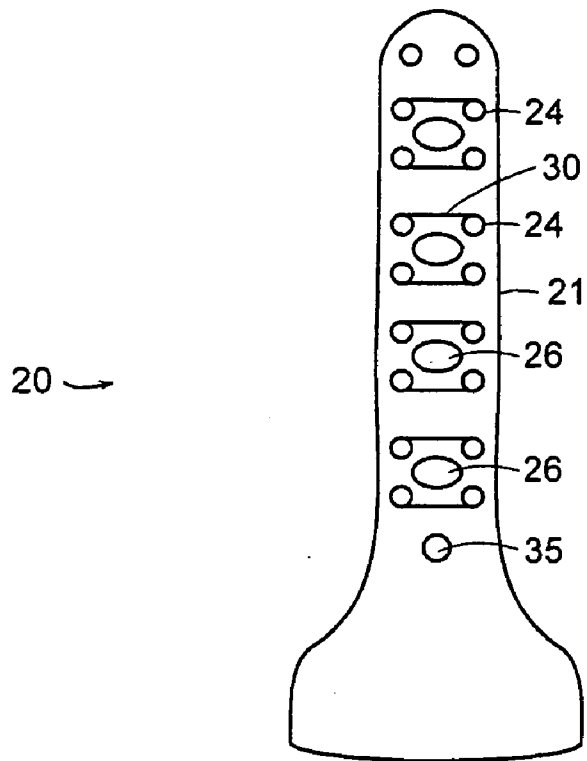


FIG. 3

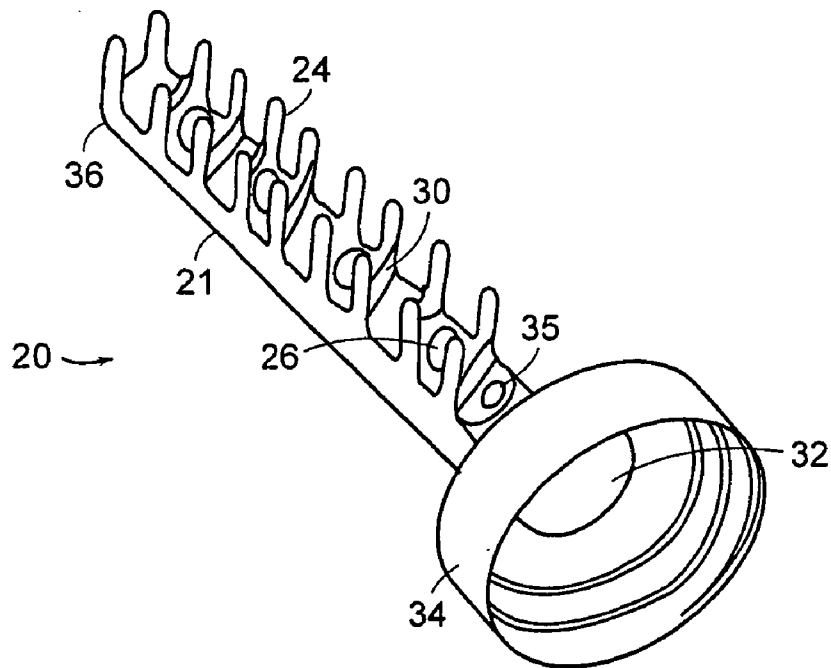


FIG. 4

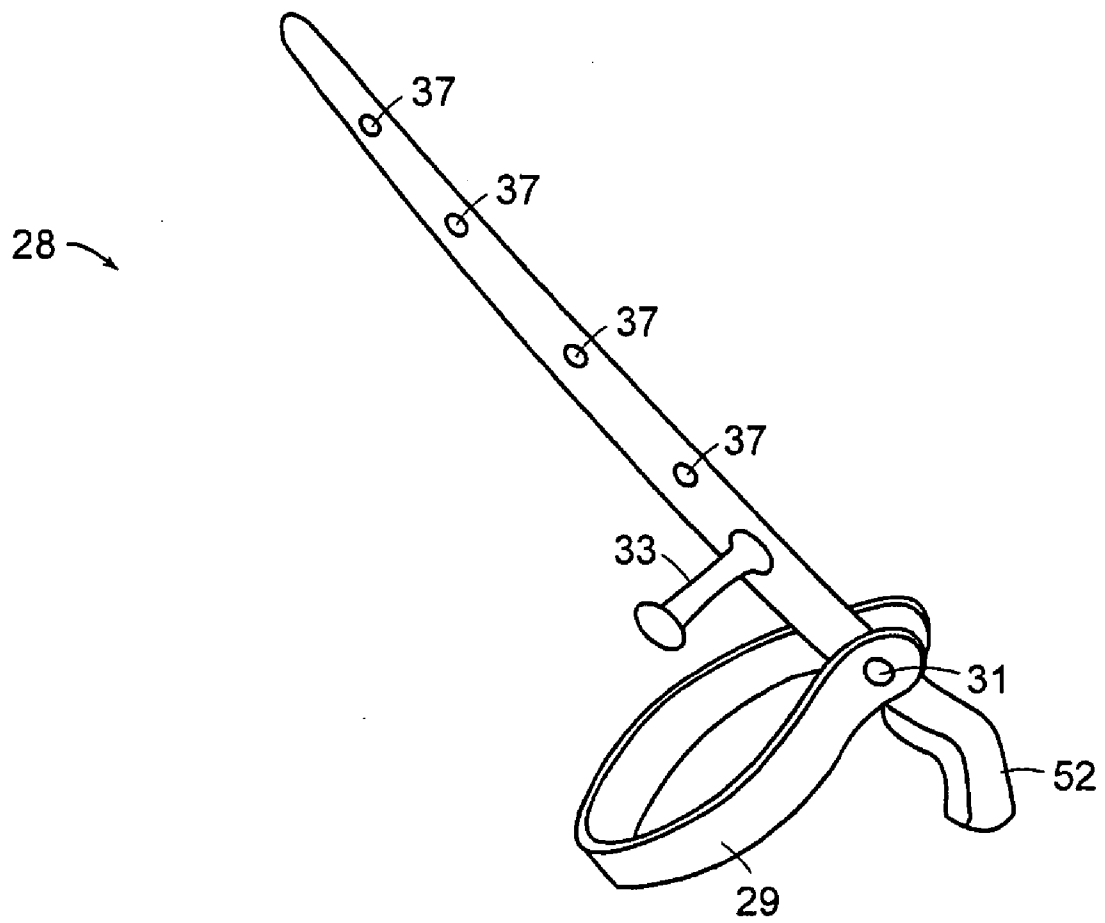


FIG. 5

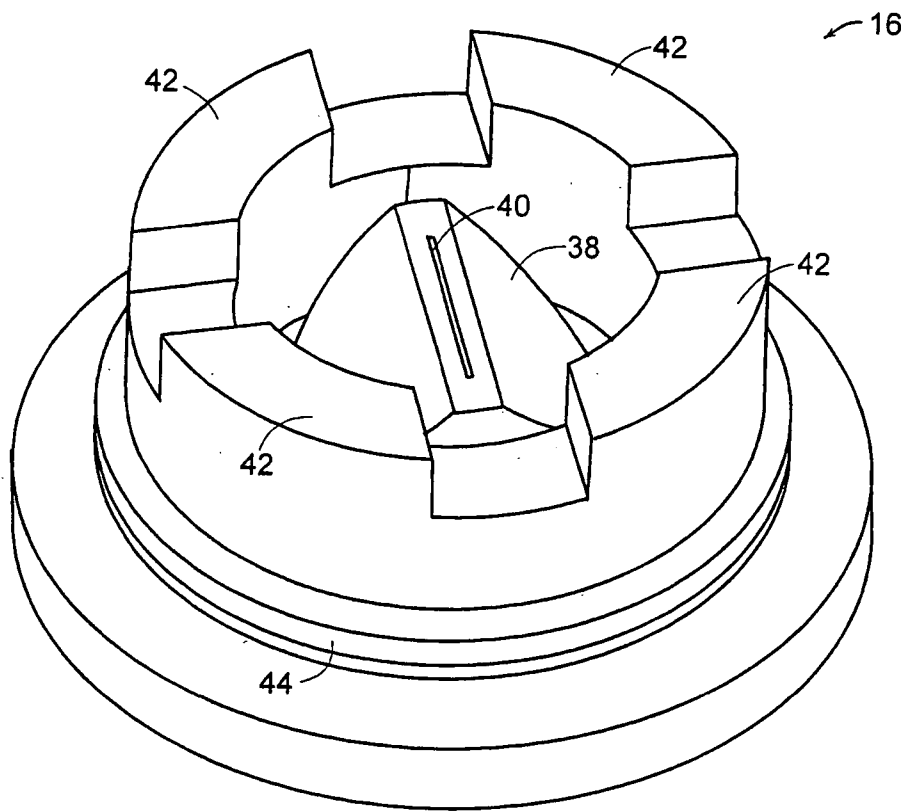


FIG. 6

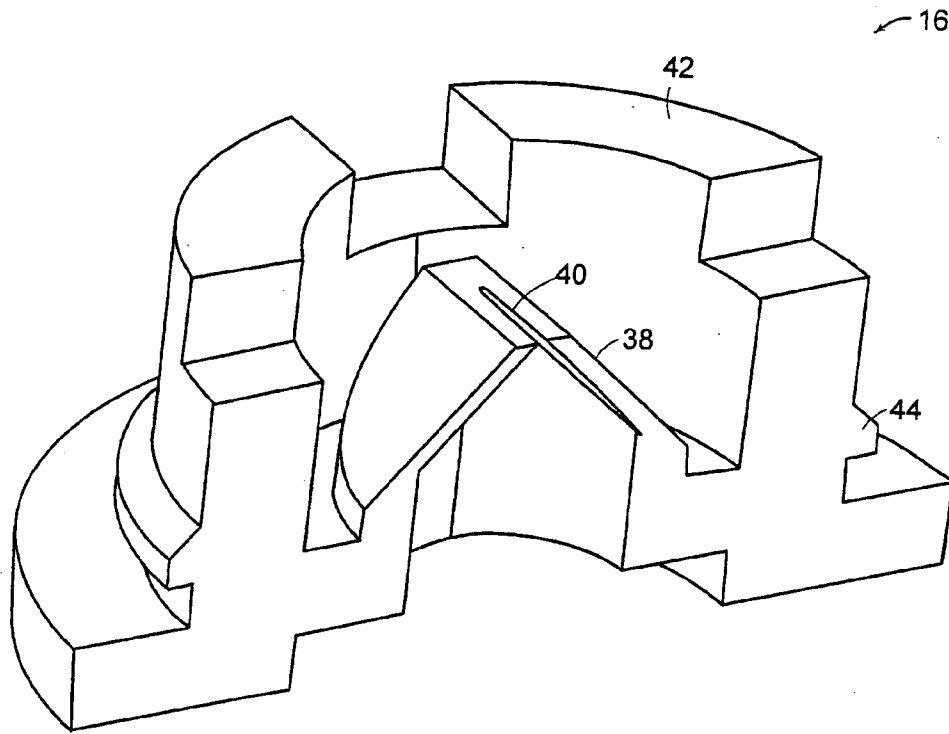


FIG. 7

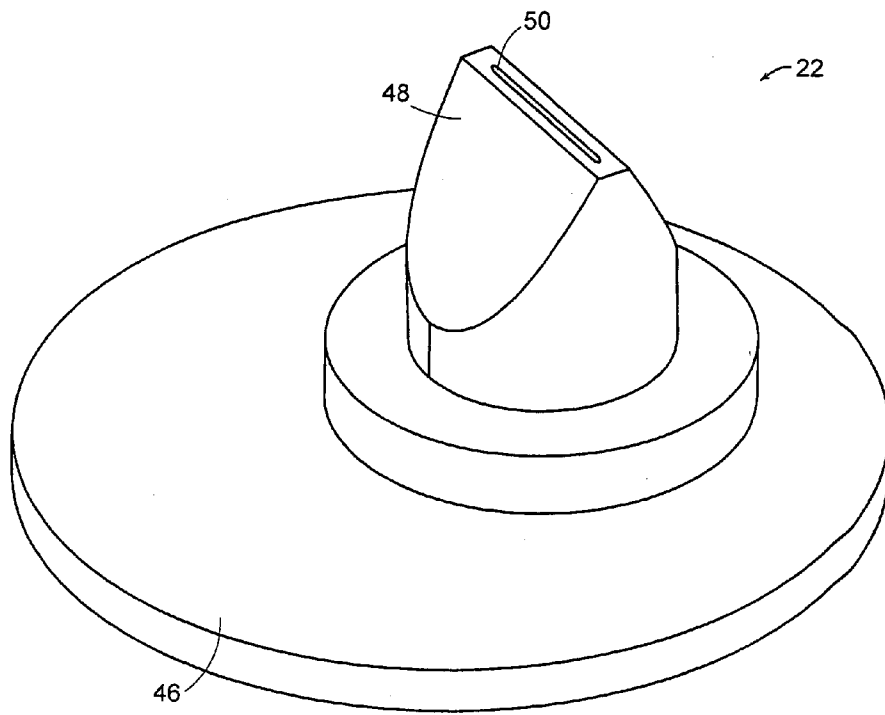
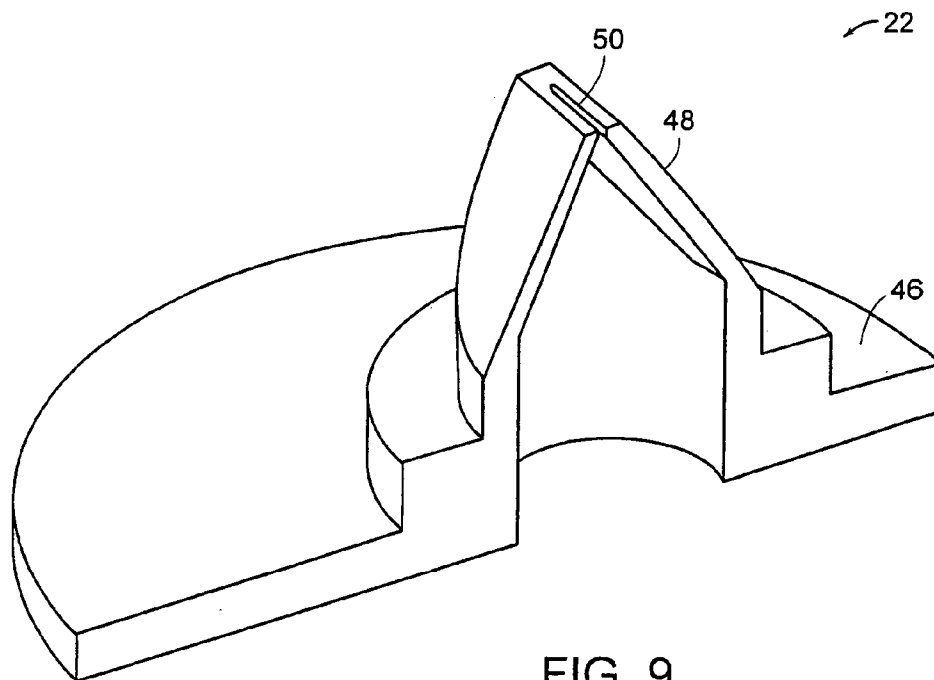


FIG. 8



HIGHLIGHTING HAIR FLUID APPLICATOR

RELATED APPLICATION

[0001] This application is a continuation of International Application No. PCT/US03/40298, which designated the United States, was filed on Dec. 17, 2003, and was published in English, which claims the benefit of U.S. Provisional Application No. 60/434,187, filed Dec. 17, 2002. The entire teachings of International Application and the U.S. Provisional Application are hereby incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0002] Conventional hair dye applicator devices that utilize a compressible bottle containing liquid, such as a dye, are well known in the art. However, such devices typically do not provide means for controlling application of the fluid to the user's hair in an acceptable manner. Furthermore, these prior art devices do not provide means for controlling application of the liquid in a desired pattern.

SUMMARY OF THE INVENTION

[0003] A hair fluid applicator dispensing member is provided for dispensing a fluid. The dispensing member includes a body having a plurality of orifices that extend from an inside surface to an outside surface, a plurality of bristles extending from the body, and a plurality of walls extending from the body defining zones for containing fluid therein for streaking hair to be treated.

[0004] In other embodiments, a hair fluid applicator comprises a collapsible fluid container for containing a liquid, a one-way fluid valve in communication with an open end of the fluid container for allowing egress of the liquid, and a compressible air container encasing at least part of the fluid container. The air container includes an open end for receiving the fluid container and a one-way air valve for allowing air into the air container while preventing air from exiting therefrom. A dispensing member is connectable to the air container for delivering fluid in a streaking pattern to hair to be treated. As the air container is compressed by a user, the fluid container collapses to force the liquid out of the fluid container.

[0005] A method is also provided for applying a fluid to hair to be treated, comprising providing a hair fluid applicator including a dispensing member that includes a body having a plurality of orifices that extend from an inside surface to an outside surface, a plurality of bristles extending from the body, and a plurality of walls extending from the body defining zones for containing fluid therein for streaking hair to be treated. The hair fluid applicator also includes a pick pivotally connected thereto. The method also includes pivoting the pick away from the dispensing member and picking up a thin layer or strand of hair, releasing the pick to press the hair against the dispensing member, and sliding the dispensing member along the hair shaft(s) to apply fluid to the hair in a predetermined pattern.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The foregoing and other objects, features and advantages of the invention will be apparent from the following more particular description of various embodiments of the invention, as illustrated in the accompanying

drawings in which like reference characters refer to the same parts throughout the different views. The drawings are not necessarily to scale, emphasis instead being placed upon illustrating the principles of the invention.

[0007] FIG. 1 is a perspective view of an embodiment of a highlighting hair fluid applicator.

[0008] FIG. 2 is a partial exploded view of the hair fluid applicator illustrated in FIG. 1.

[0009] FIG. 3 is a front view of the dispensing member illustrated in FIG. 1.

[0010] FIG. 4 is a perspective view of the dispensing member illustrated in FIG. 1.

[0011] FIG. 5 is a perspective view of the pick illustrated in FIG. 1.

[0012] FIG. 6 is a perspective view of a one-way air valve in accordance with an embodiment of the invention.

[0013] FIG. 7 is a sectional, perspective view of the one-way air valve illustrated in FIG. 6.

[0014] FIG. 8 is a perspective view of a one-way fluid valve in accordance with an embodiment of the invention.

[0015] FIG. 9 is a sectional, perspective view of the one-way fluid valve illustrated in FIG. 8.

DETAILED DESCRIPTION OF THE INVENTION

[0016] A description of various embodiments of the invention follows. A highlighting hair fluid applicator 10, which can be disposable or reusable, is illustrated in FIG. 1. Generally, the applicator 10 includes an air container 12 that encases at least a majority of a collapsible fluid container 14 (FIG. 2) that can contain a fluid, such as a colorant, dye, shampoo, conditioner, hair straightener, etc. The air container 12 is resiliently compressible, i.e., deformable when squeezed, but returns to its original shape, and can include a one-way air valve 16 for allowing air into the air container while preventing air from exiting therefrom. The air container 12 includes an open end 18 (FIG. 2) couplable to a dispensing head, head part, brush head, or dispensing member 20 through which the fluid is delivered to hair to be treated. In a particular embodiment, the dispensing head 20 can be screwed onto the air container 12 or otherwise affixed thereto. A one-way fluid valve 22 (e.g., FIG. 2) is disposed between the open end 18 of the air container 12 and the dispensing head 20 for allowing egress of the fluid from the fluid container 14 while preventing fluid from entering the fluid container (see, for example, FIG. 47 of U.S. Pat. No. 6,357,449, the entire teachings of which are incorporated herein by reference).

[0017] In a particular embodiment, the dispensing member 20 includes a plurality of bristles or teeth 24 (FIGS. 3 and 4) extending from a body 21. A pick 28 is attached to the applicator 10 by a ring or clamp 29 (FIGS. 1 and 5) and is pivotally connected thereto by a hinge or pivot point 31. Orifices 26 can be provided along the dispensing head 20 for providing fluid at the base of bristles 24. In other embodiments, orifices can be provided in the base, along the shaft, and/or at the tip of the bristles 24. Intervals can be provided between the orifices 26 for both the dispensing member 20 and pick 28 (FIGS. 1 and 5). Separating walls 30 can be

provided between one or more orifices 26 in the dispensing member 20. It has been discovered that without the walls 30, the fluid, such as liquid dye, tends to mix together as it is applied to the hair thereby dyeing most of the hair and not streaking or highlighting only a strand or strands of hair. The walls 30 thus form alternating zones having fluid therein to streak the hair to be treated.

[0018] Orifices 37 (FIG. 5) can be provided in the pick 28 and can face the orifices 26 at the base of the dispensing member 20 in the illustrated embodiment. In a particular embodiment, the pick 28 is fluidly connected to the fluid container 14. In this embodiment, tubing 33 fluidly connects the pick 28 to an orifice 35 (FIG. 3) in the dispensing member 20 to supply fluid to the orifices 37 in the pick.

[0019] The dispensing member 20 forms an internal conduit 32 from the proximal end 34 toward the distal end 36 for carrying the fluid from the fluid container 14 to the bristles 24 and/or orifices 37. The internal conduit 32 can decrease in cross-sectional area from the proximal end 34 to the distal end 36 to provide proper fluid flow to the orifices.

[0020] An embodiment of the one-way air valve 16 is illustrated in FIGS. 6 and 7 and includes a duckbill-type valve 38 having a slit 40 through which air is allowed to flow into the air container 12, although other types of one-way valves can be implemented. The valve 16 can include raised members or bumpers 42 that support the fluid container 14 above the slit 40 so that air can flow into the air container 12. The valve 16 can also include a flange 44 that snap-fits into the air container 12 and provides a seal.

[0021] Another embodiment of a one-way fluid valve 22 (FIGS. 8 and 9) can include a flange 46 that forms a seal between the fluid container 14 and the dispensing head 20. The one-way valve 22 can also include a duckbill-type valve 48 that includes a slit 50 such that the fluid passes in a one-way direction through the valve 22. In other embodiments, other types of one-way fluid valves can be implemented.

[0022] In operation, a proximate end 52 of the pick 28 is pressed to pivot the pick away from the dispensing member 20. The pick 28 can be used to pick up a thin layer or a strand of hair. When the proximate end 52 of the pick 28 is released, the pick can be spring-loaded to press the hair against the dispensing member 20 to hold the hair taut while allowing the dispensing member 20 to slide down the hair shafts to apply fluid to the hair. When the air container 12 is compressed, the air pressure between the air container and the fluid container 14 increases since the air cannot escape. This increased pressure collapses the fluid container 14 that pumps fluid up through the one-way fluid valve 22 into the dispensing member 20 and out through orifices 26 and/or 37. When the compression on the air container 12 is relieved, the one-way fluid valve 22 does not allow the back flow of fluid to the fluid container 14. Due to the higher outside pressure, air outside rushes in through the one-way air valve 16 and enters the space between the two containers 12, 14 to equalize the pressure.

[0023] With no backflow, the fluid container 14 collapses and by repeating the steps, fluid continuously flows out of the dispensing head 20 with every compression until the desired amount of fluid is evacuated from the fluid container, regardless of the orientation of the applicator 10.

[0024] In particular embodiments, the valves 16, 22 can be formed from a flexible material, for example, a thermoplastic elastomer, such as silicone. The one-way fluid valve 22 can be formed from a chemically-resistant material. In specific embodiments, the air container 12 can be formed from a low density polyethylene, and the dispensing member 20 can be formed from polypropylene. In one embodiment, the fluid container 14 is formed from a low density polyethylene/PPO blend.

[0025] Any of the hair fluid applicators disclosed herein can be used on humans as well as animals, such as a dog.

[0026] While this invention has been particularly shown and described with references to various embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the scope of the invention encompassed by the appended claims.

What is claimed is:

1. A hair fluid applicator dispensing member for dispensing a fluid, comprising:

a body having a plurality of orifices that extend from an inside surface to an outside surface;

a plurality of bristles extending from the body; and

a plurality of walls extending from the body defining zones for containing fluid therein for streaking hair to be treated.

2. The dispensing member of claim 1, wherein a pair of walls surround one or more orifices in the dispensing member to define the zones.

3. The dispensing member of claim 1, further comprising a pick pivotally connected to or adjacent the dispensing member.

4. The dispensing member of claim 3, wherein the pick includes a plurality of orifices fluidly connectable to a fluid container containing the fluid.

5. The dispensing member of claim 1, wherein the fluid includes at least one of dye, colorant, shampoo, conditioner, and hair straightener.

6. The dispensing member of claim 1, wherein the orifices in the body are fluidly connectable to a fluid container containing the fluid.

7. A hair fluid applicator, comprising:

a collapsible fluid container for containing a liquid, the fluid container having an open end for allowing egress of the liquid;

a one-way fluid valve in communication with the open end of the fluid container for allowing egress of the liquid;

a compressible air container encasing at least part of the fluid container, the air container having an open end for receiving the fluid container, the air container also including a one-way air valve for allowing air into the air container while preventing air from exiting therefrom; and

a dispensing member connectable to the air container for delivering fluid in a streaking pattern to hair to be treated;

wherein as the air container is compressed by a user, the fluid container collapses to force the liquid out of the fluid container.

8. The hair fluid applicator of claim 7, wherein the dispensing member includes:

a body having a plurality of orifices that extend from an inside surface to an outside surface;

a plurality of bristles extending from the body; and

a plurality of walls extending from the body defining zones for containing fluid therein for the streaking hair to be treated.

9. The hair fluid applicator of claim 8, wherein a pair of walls surround one or more orifices in the dispensing member to define the zones.

10. The hair fluid applicator of claim 8, further comprising a pick pivotally connected to or adjacent the dispensing member.

11. The hair fluid applicator of claim 8, wherein the orifices in the body are fluidly connectable to a fluid container containing the fluid.

12. The hair fluid applicator of claim 10, wherein the pick includes a plurality of orifices fluidly connectable to the fluid container.

13. The hair fluid applicator of claim 7, wherein the fluid includes at least one of dye, colorant, shampoo, conditioner, and hair straightener.

14. The hair fluid applicator of claim 7, wherein the one-way air valve includes one or more raised members that can support the fluid container above a slit in a duckbill valve of the one-way air valve.

15. A hair fluid applicator, comprising:

a collapsible fluid container for containing a fluid, the fluid container having an open end for allowing egress of the fluid;

a compressible air container encasing a majority of the fluid container;

a one-way air valve configured to allow air into the air container and to prevent air from exiting therefrom;

a dispensing head having a proximal end and a distal end, the proximal end being attachable to the air container,

the dispensing head having a plurality of bristles, the dispensing head including one or more orifices fluidly connectable to the open end of the fluid container, the dispensing member also including a plurality of walls extending from the body defining zones for containing fluid therein for streaking hair to be treated; and

a one-way fluid valve disposed between the open end of the fluid container and the dispensing head, the one-way fluid valve allowing egress of the fluid while preventing fluid from entering the fluid container.

16. The hair fluid applicator of claim 15, wherein at least some of the bristles include one or more orifices fluidly connectable to the open end of the fluid container.

17. The hair fluid applicator of claim 15, wherein the one-way fluid valve includes a flange that forms a seal between the fluid container and the dispensing head.

18. The hair fluid applicator of claim 15, further comprising a pick pivotally connected to or adjacent the dispensing head.

19. The hair fluid applicator of claim 15, wherein the one-way air valve includes one or more raised members that can support the fluid container above a slit in a duckbill valve of the one-way air valve.

20. A method of applying a fluid to hair to be treated, comprising:

providing a hair fluid applicator including a dispensing member that includes a body having a plurality of orifices that extend from an inside surface to an outside surface, a plurality of bristles extending from the body, and a plurality of walls extending from the body defining zones for containing fluid therein for streaking hair to be treated, the hair fluid applicator also including a pick pivotally connected thereto;

pivoting the pick away from the dispensing member and picking up a thin layer or strand of hair;

releasing the pick to press the hair against the dispensing member; and

sliding the dispensing member along the hair shaft(s) to apply fluid to the hair in a streaking pattern.

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