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(54) **HAIR COLORANT APPLICATOR AND METHODS**

Publication Classification

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(57) **ABSTRACT**

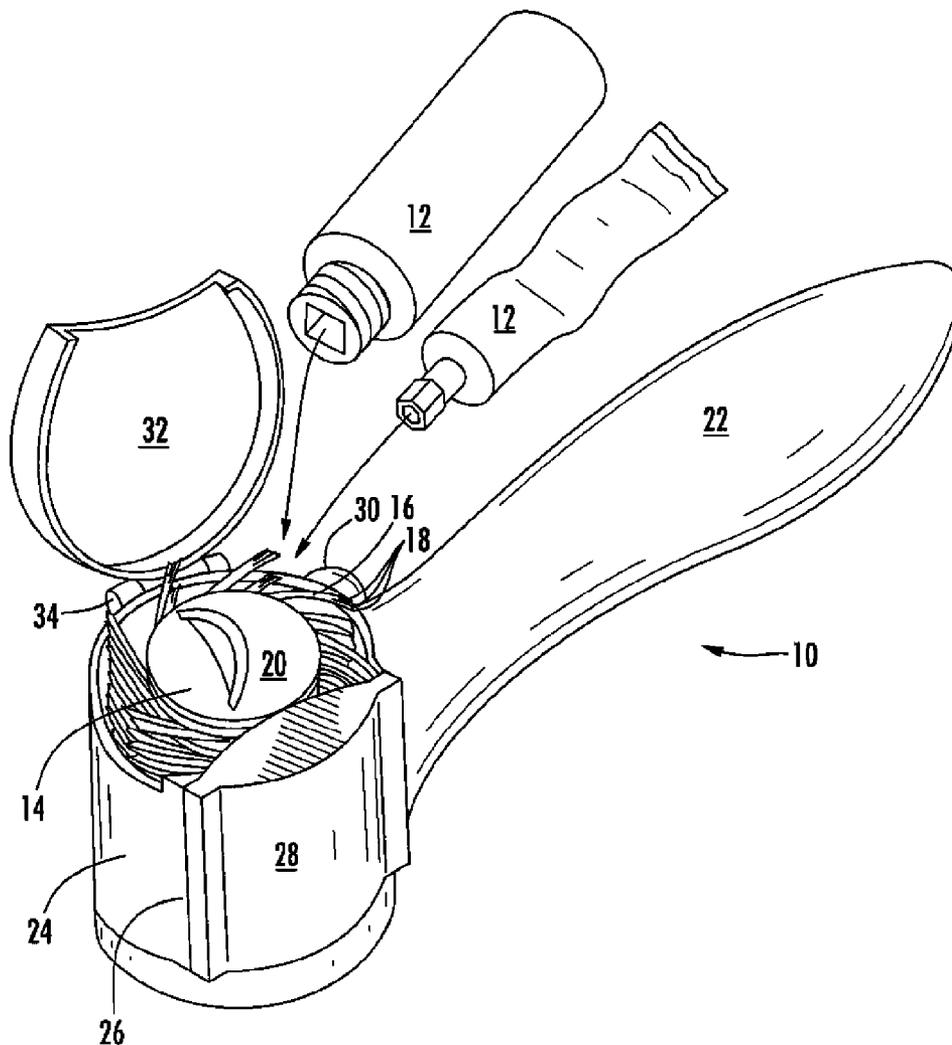
A hair coloring applicator including a body forming a handle, a brush which rotates relative to the body, a housing wherein the brush is rotatable within the housing. The brush may be designed as a plurality of flexible squeegee arms. The housing is designed to receive a liquid hair colorant such that the brush contacts the hair colorant within the housing. The housing includes at least one opening for receiving at least one strand of hair and placing the at least one strand of hair in contact with the brush. The hair colorant and/or the brush may be provided in a disposable cartridge.

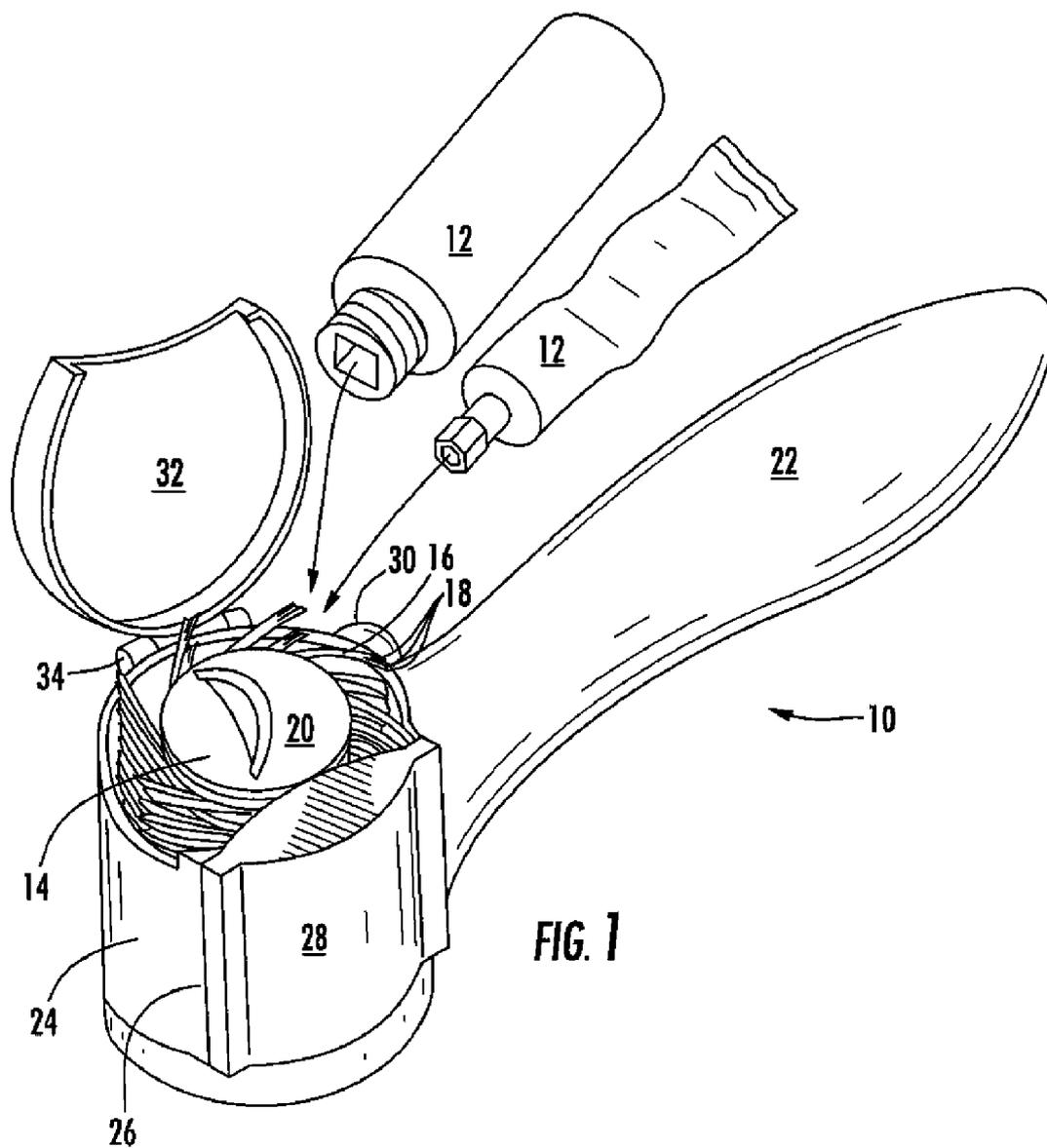
(21) Appl. No.: **11/676,911**

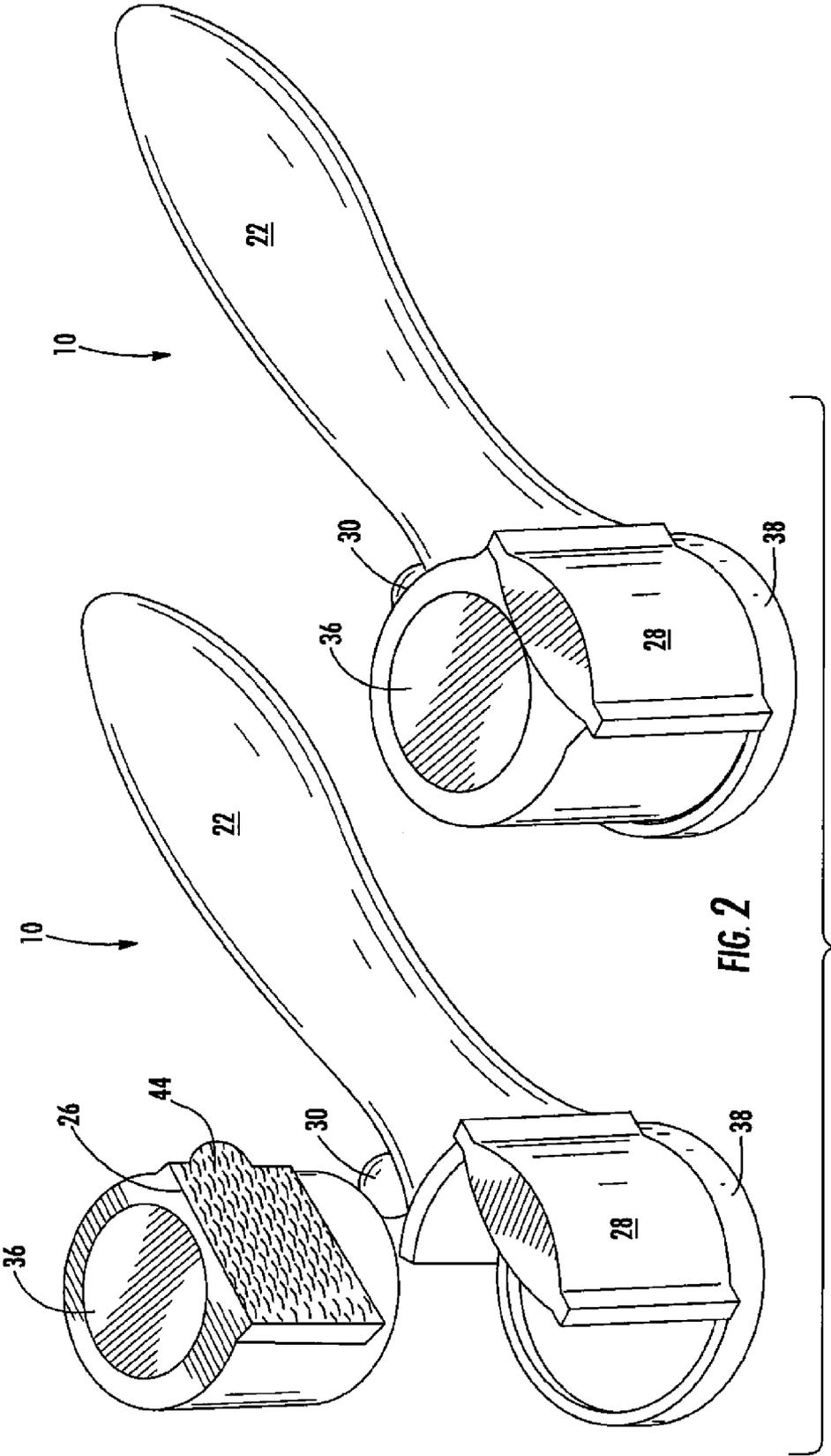
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(60) Provisional application No. 60/775,070, filed on Feb. 21, 2006.







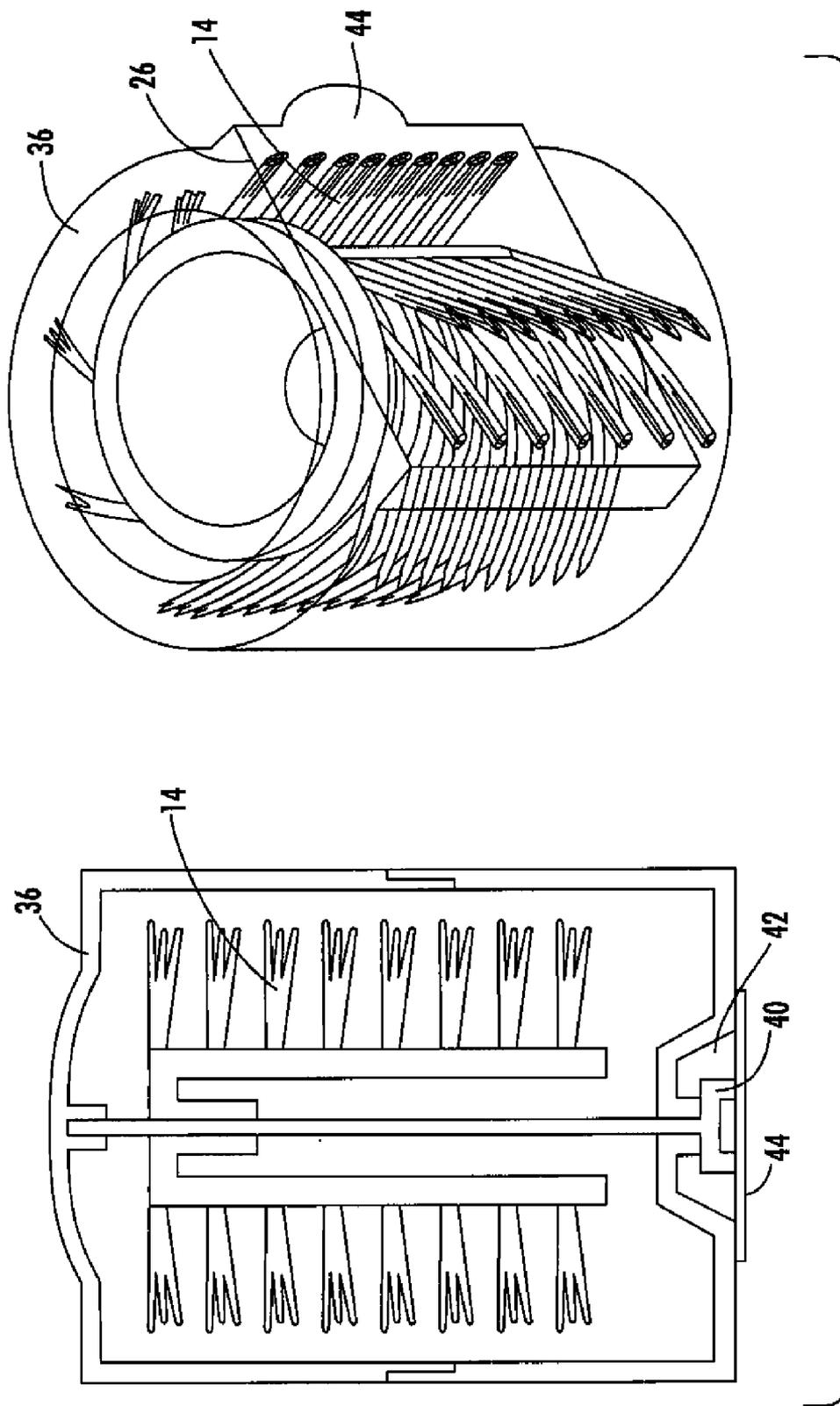


FIG. 3

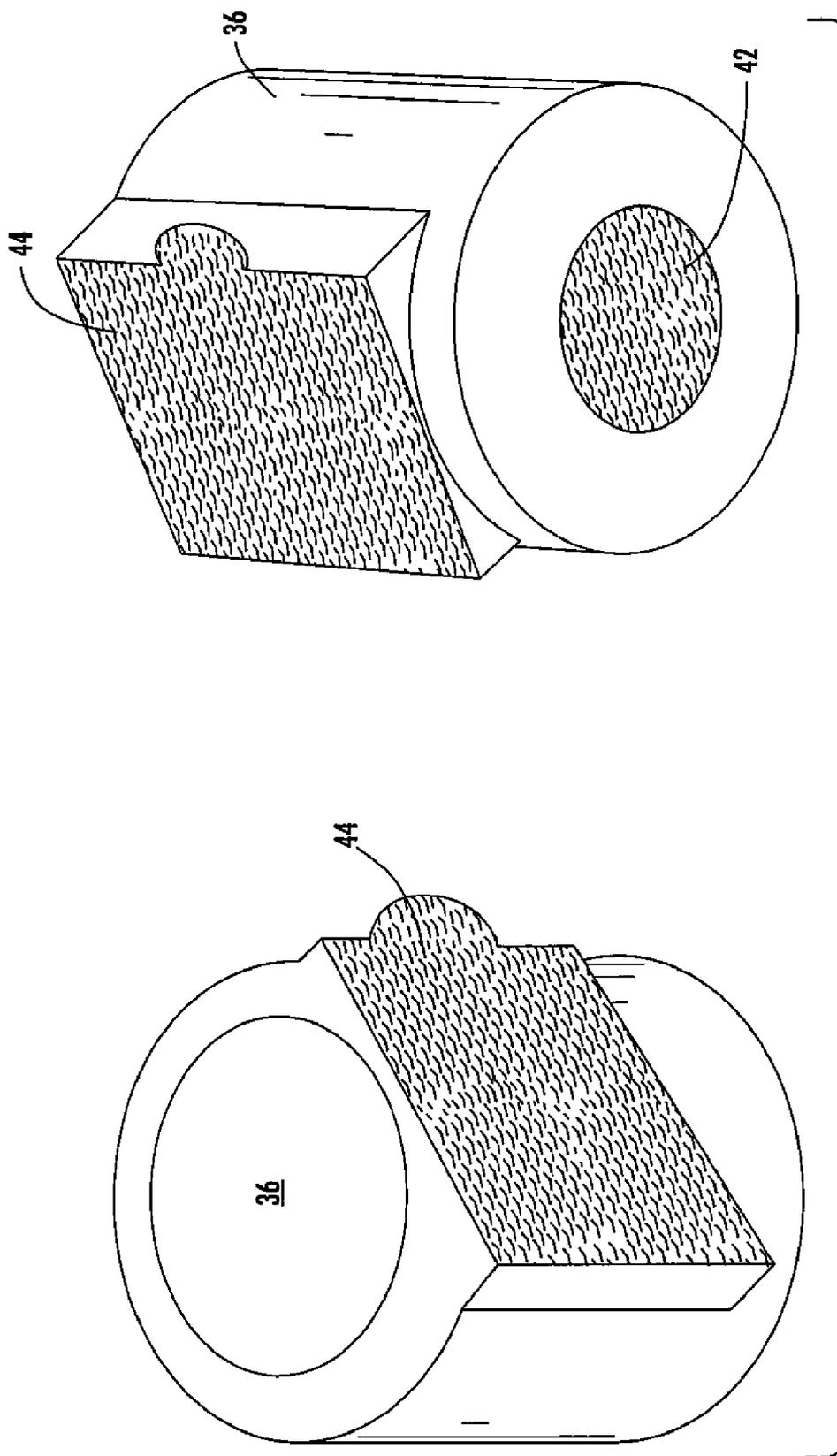
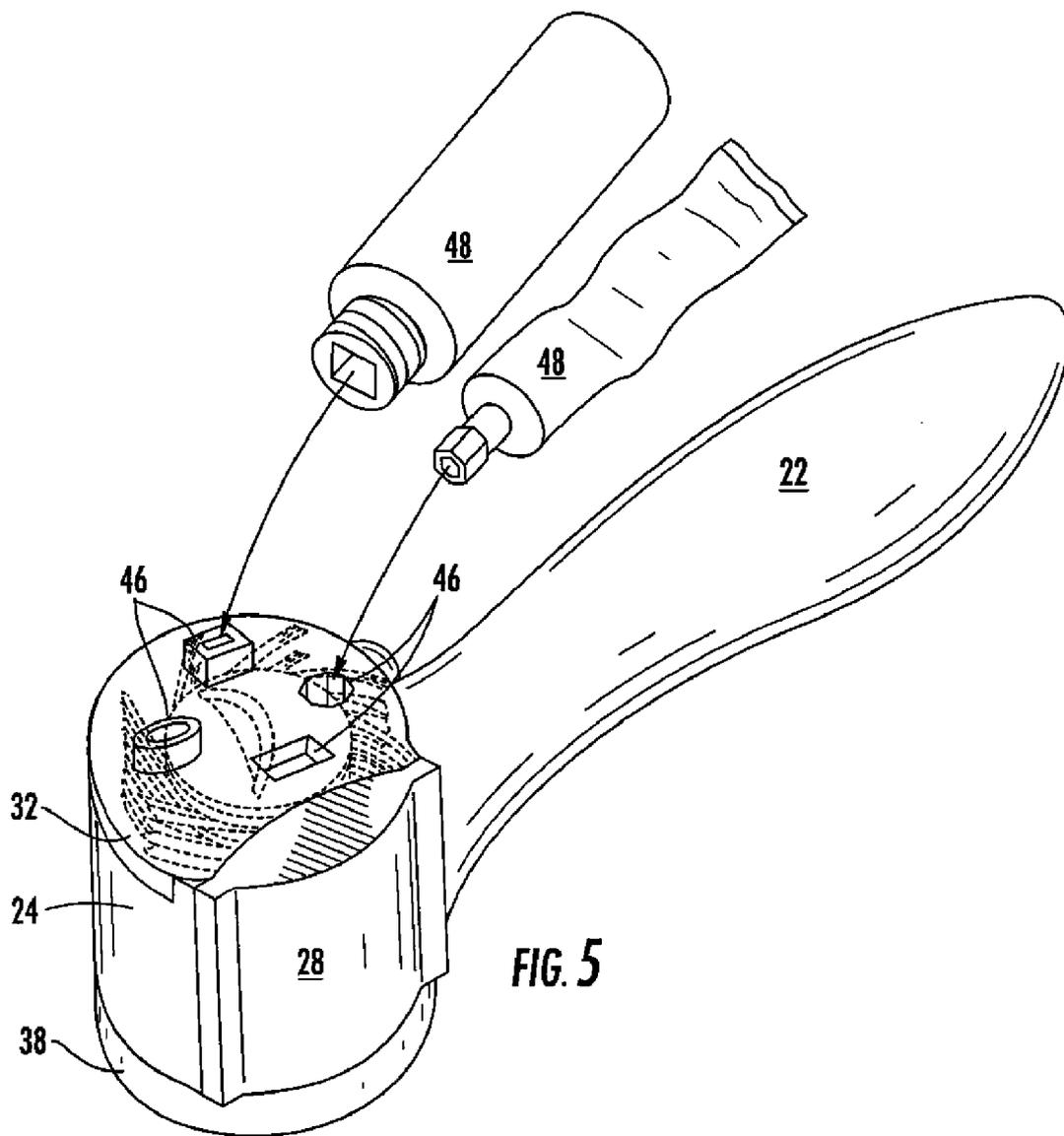
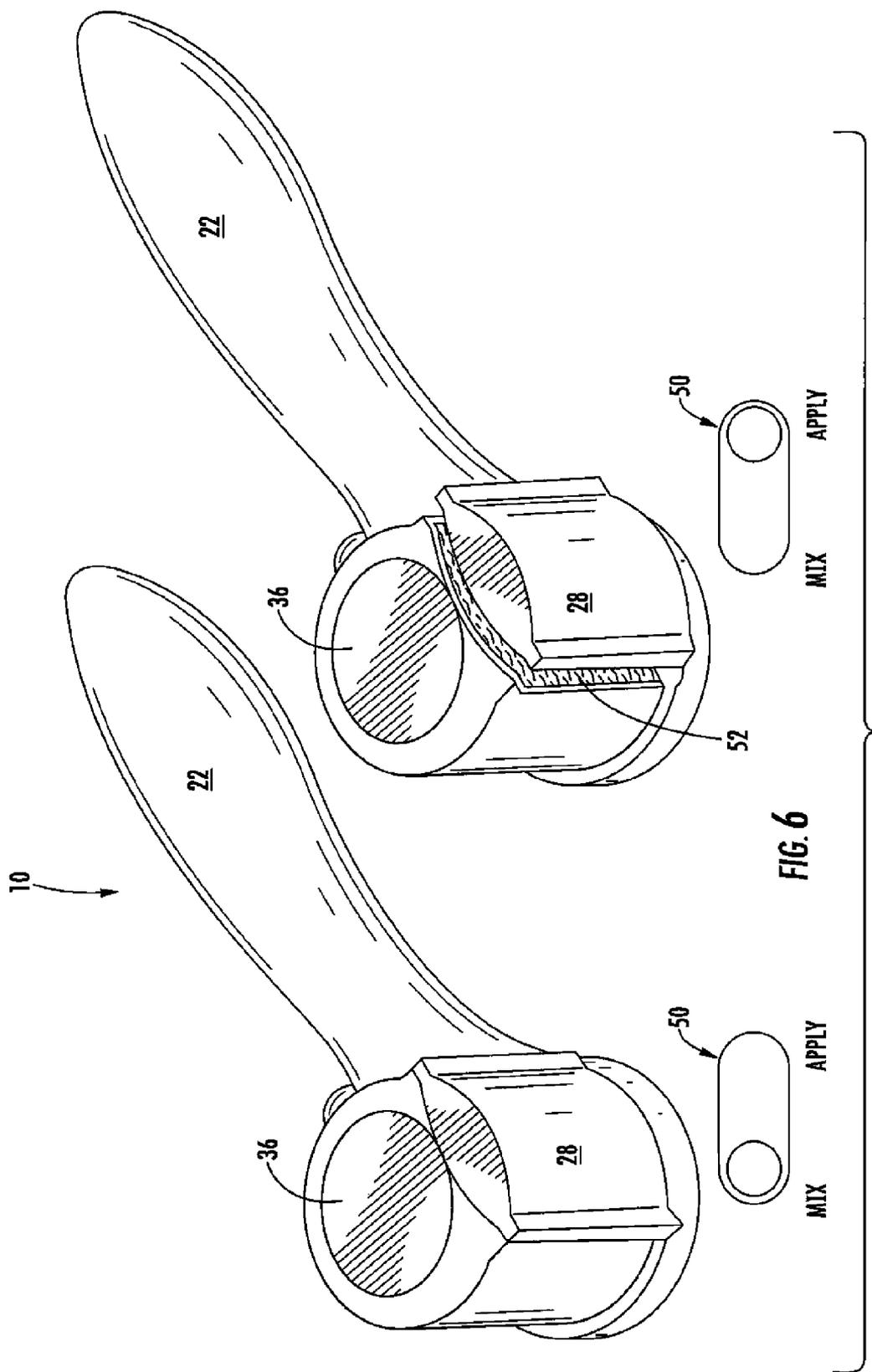
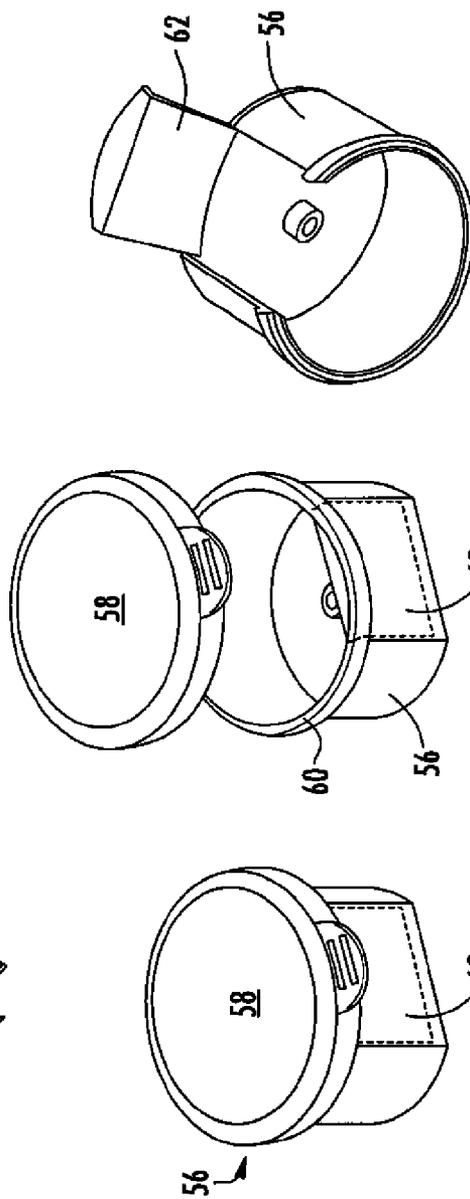
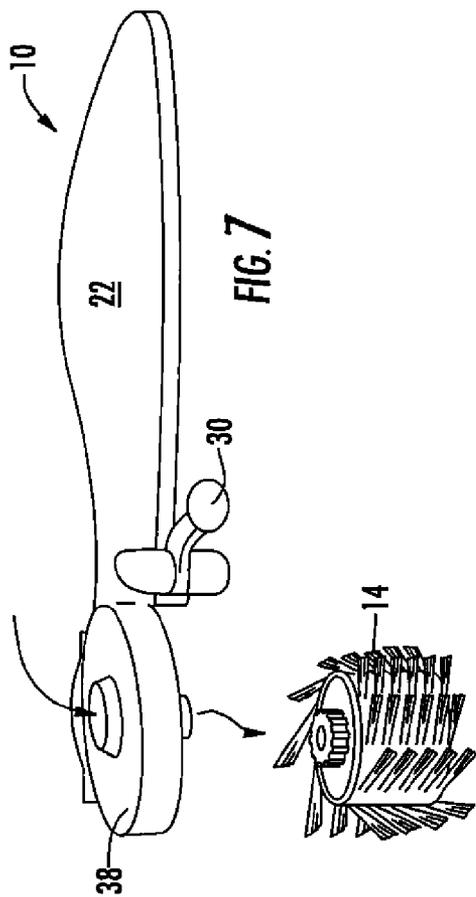


FIG. 4







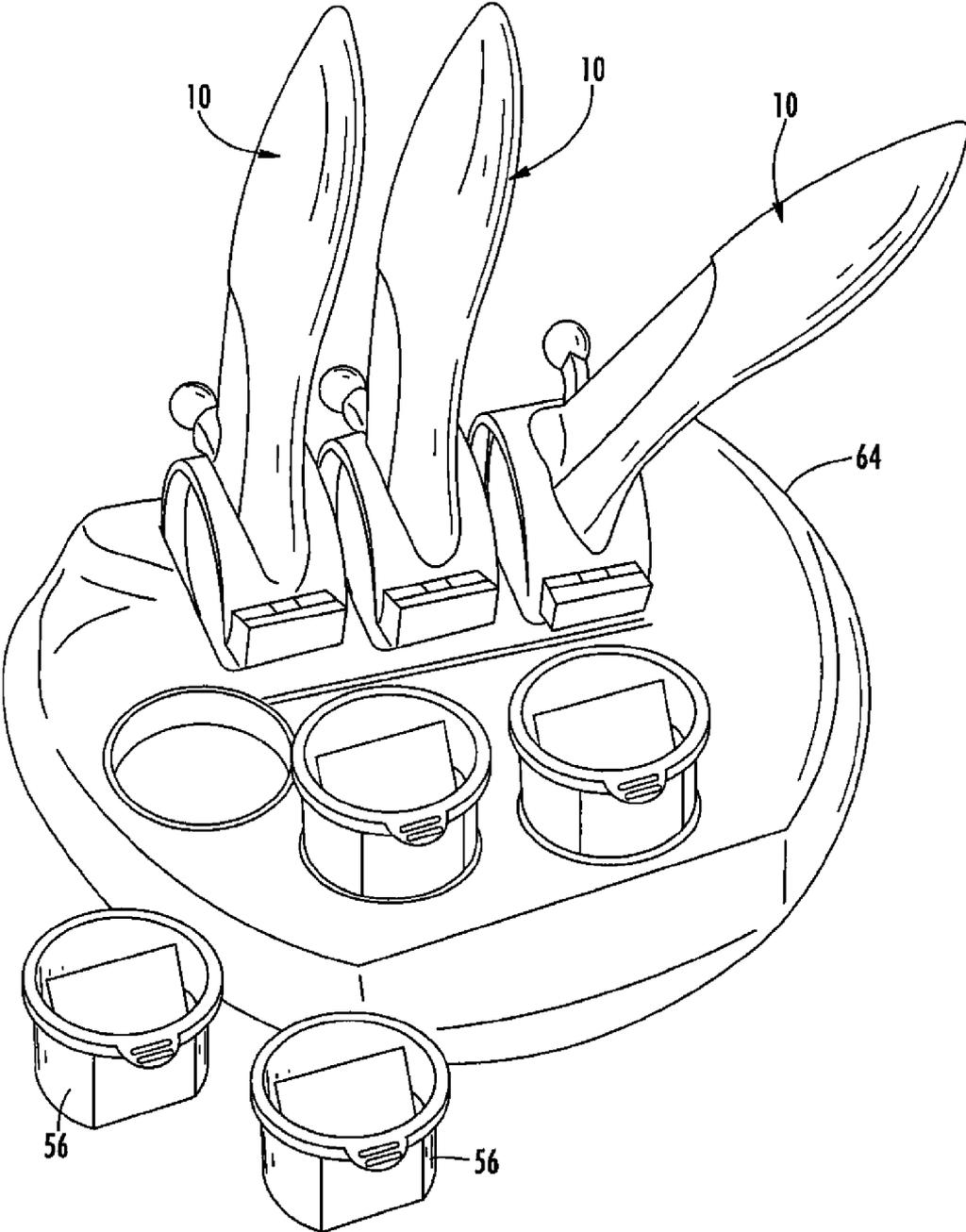


FIG. 8

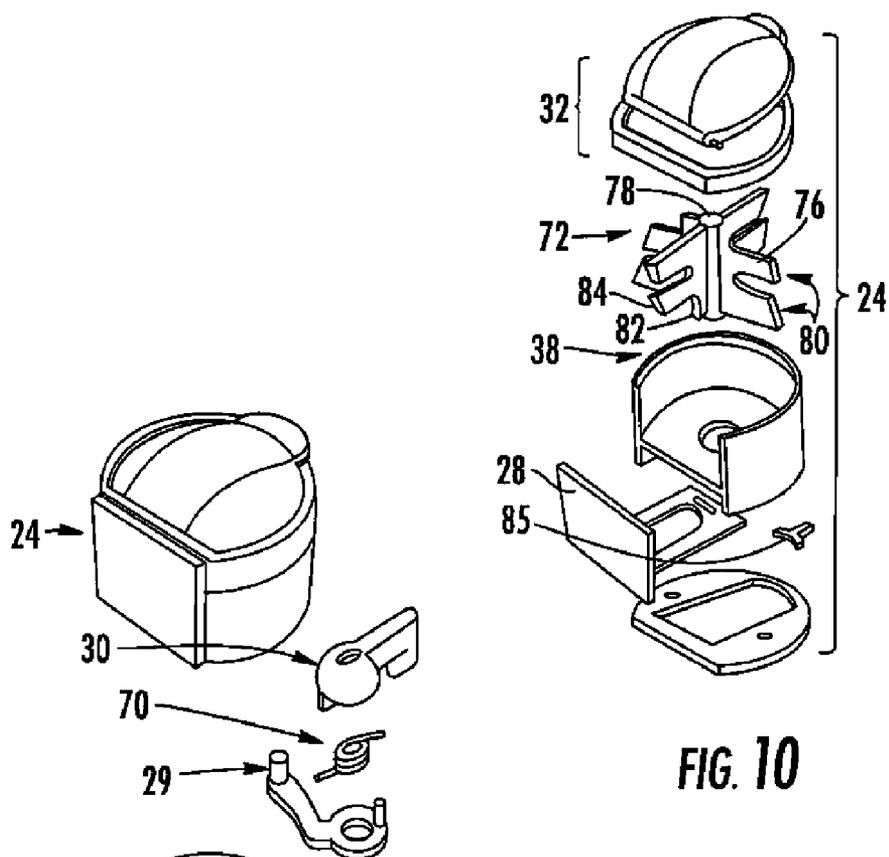


FIG. 10

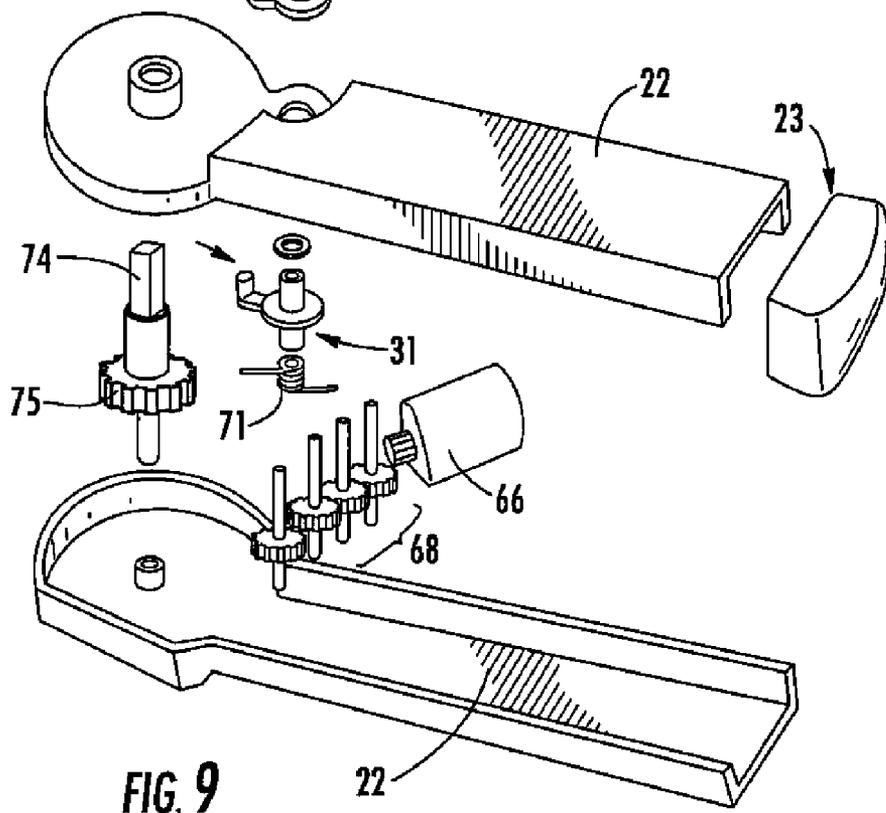


FIG. 9

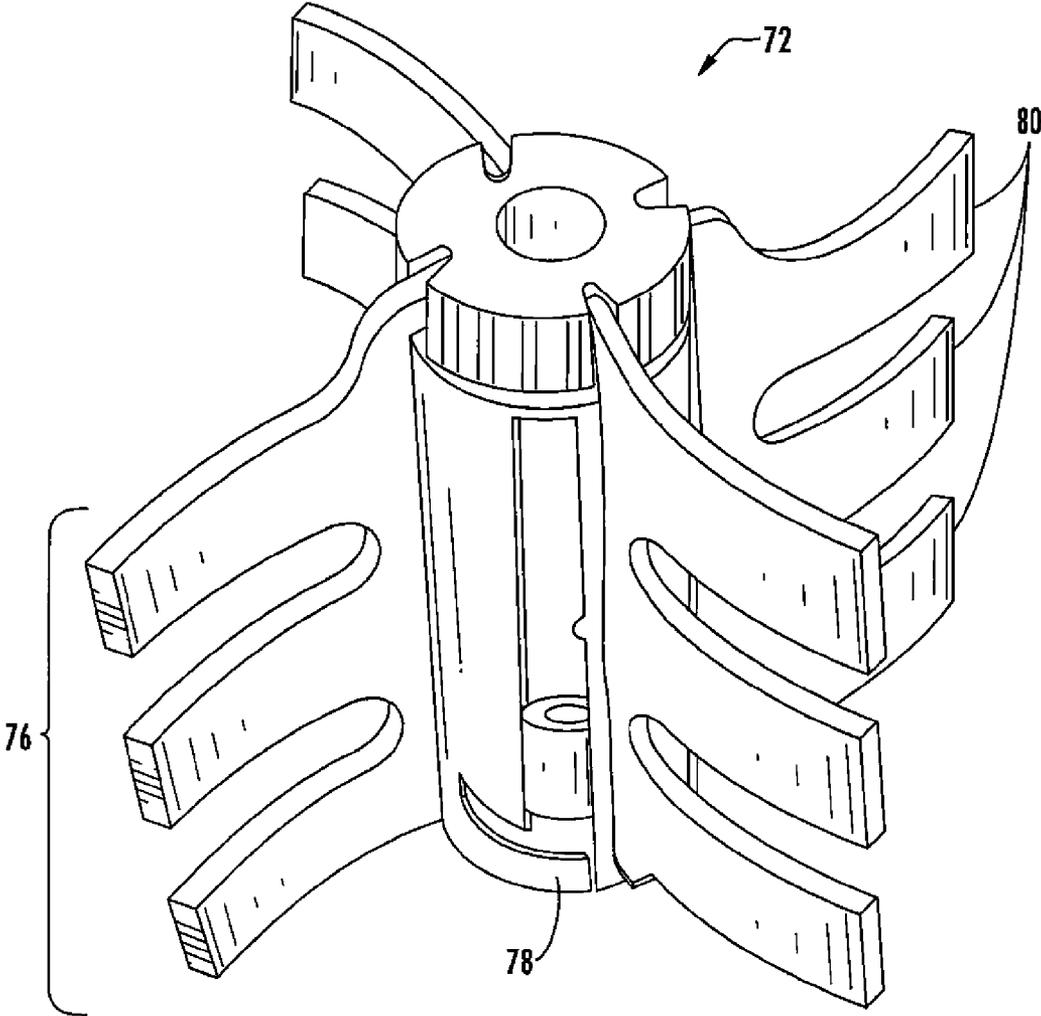


FIG. 11

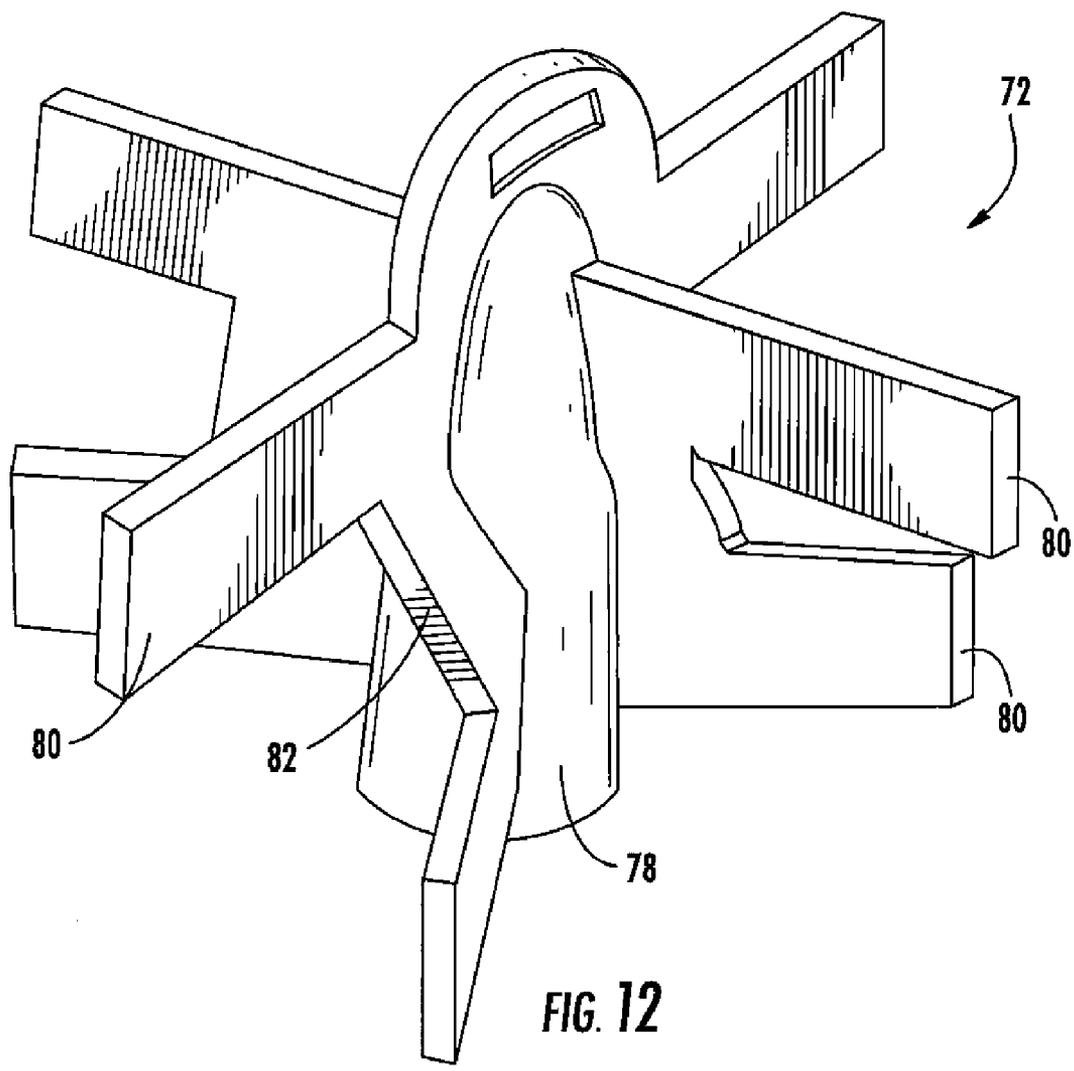


FIG. 12

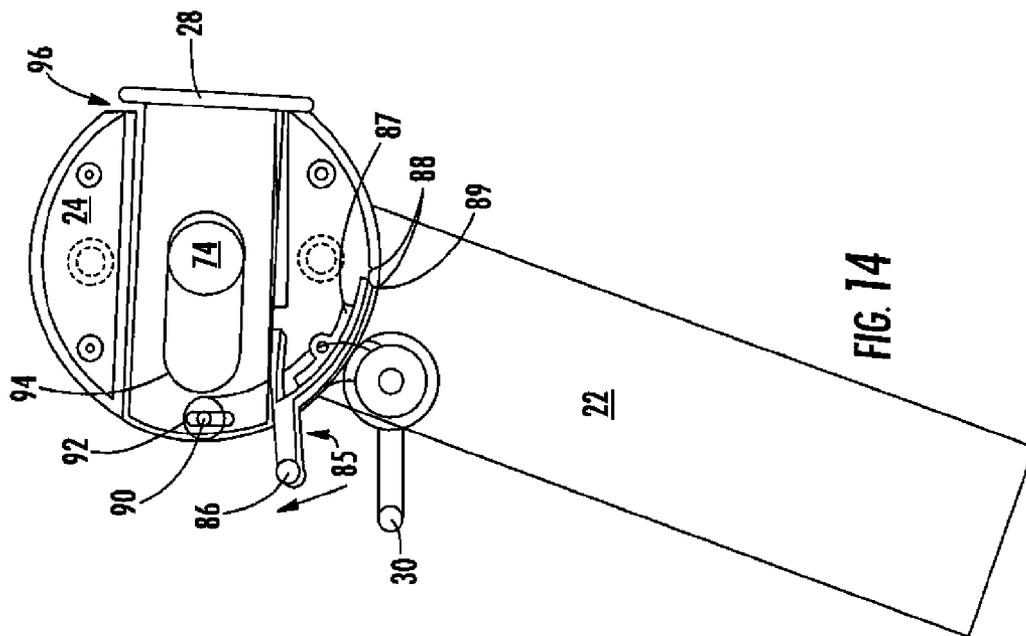


FIG. 14

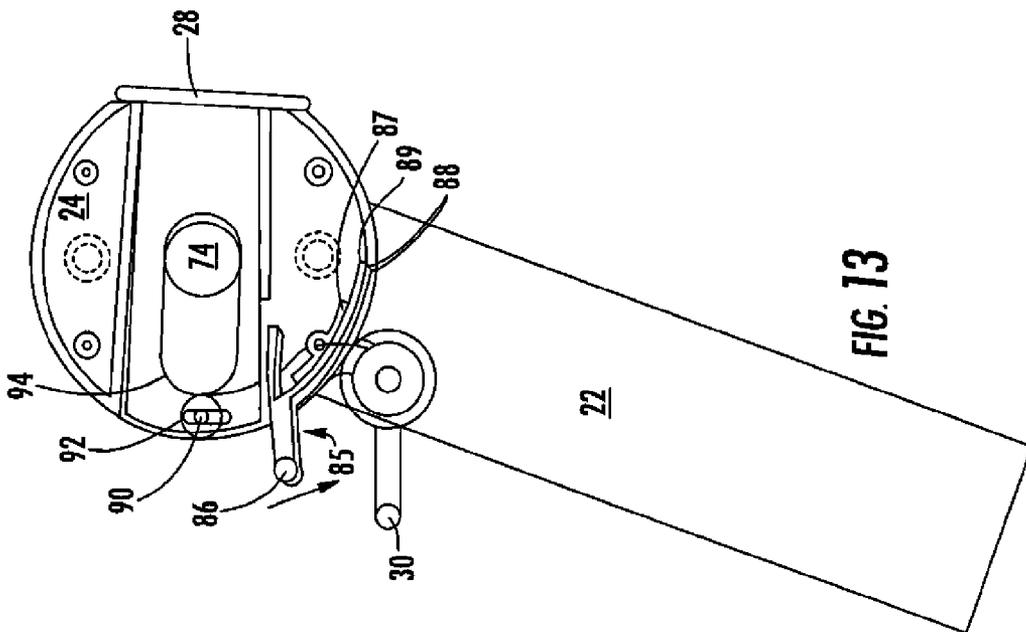


FIG. 13

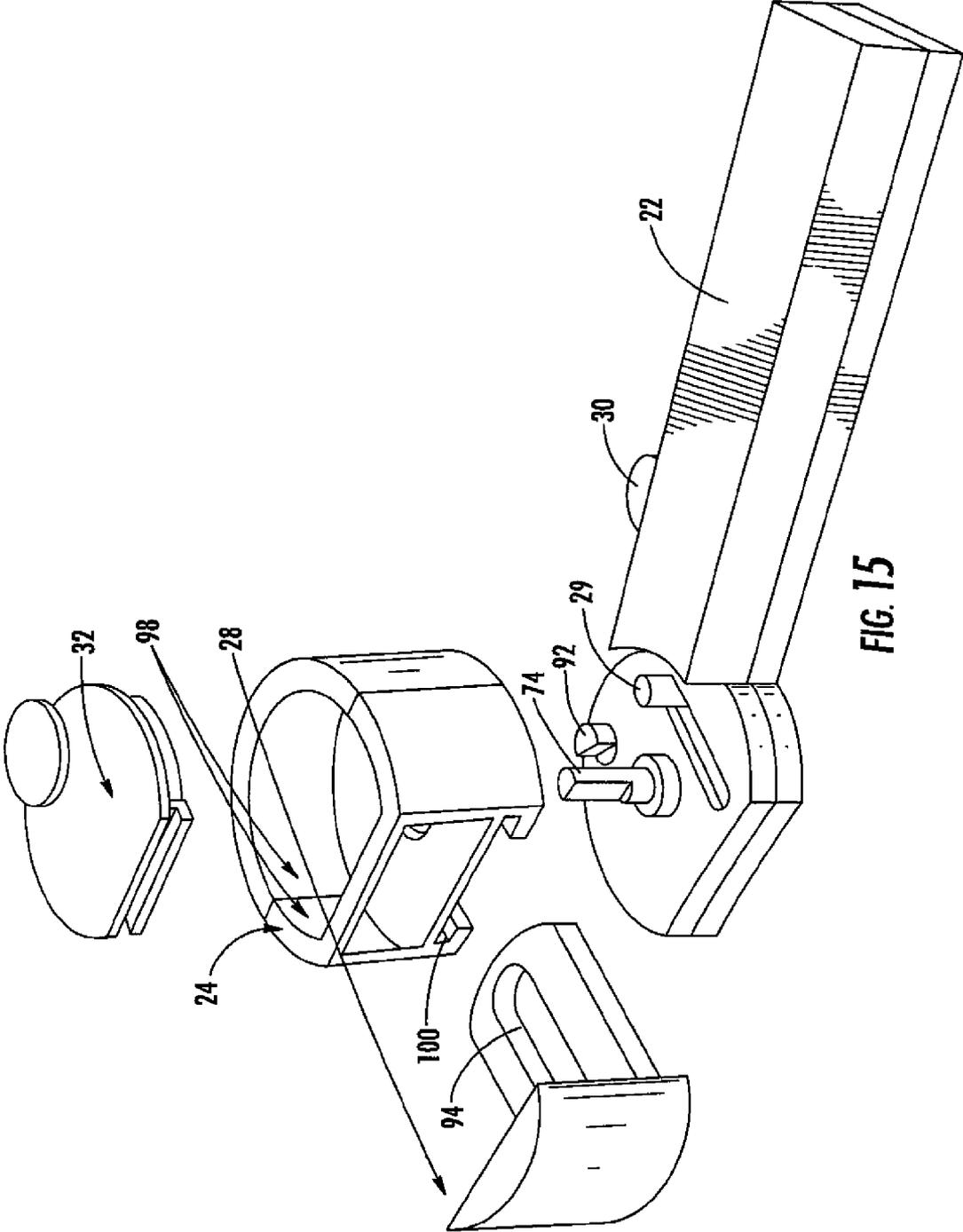


FIG. 15

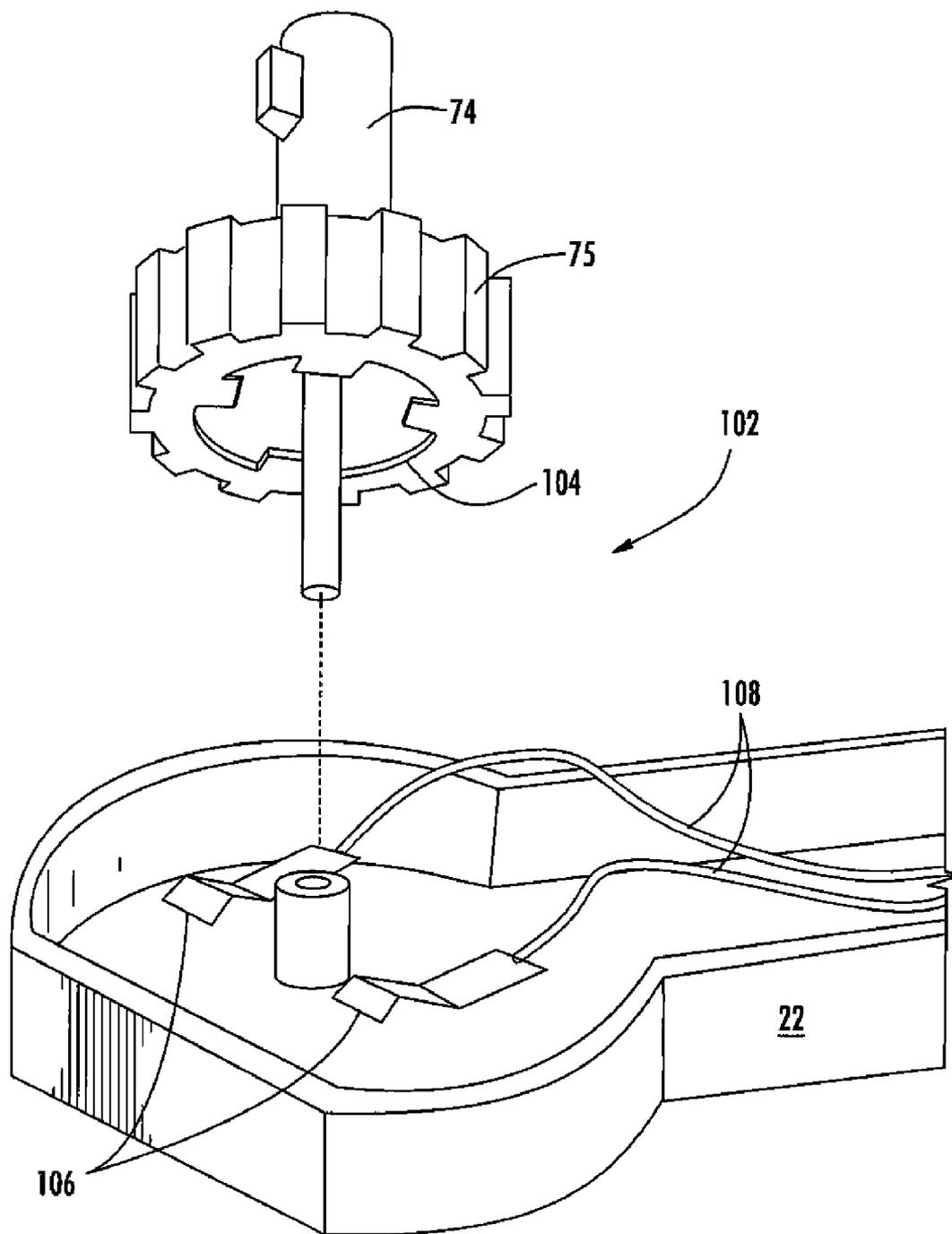


FIG. 16

HAIR COLORANT APPLICATOR AND METHODS

FIELD OF THE INVENTION

[0001] This invention is directed generally to hair coloring, and more particularly to an applicator and methods for applying hair colorants to hair.

BACKGROUND

[0002] Hair coloring is undertaken to change or cover the color of hair for many different reasons. For instance, hair is often colored to cover hair that has turned gray, to lighten or change the shade of hair, or to highlight or lowlight hair. The hair coloring procedures used to generate these results are often markedly different and use different coloring materials. The hair coloring materials may be dyes that may not be easily washed from the colored hair with conventional shampoo and water, or other materials.

[0003] For as many reasons exist for a person to color their hair, there exist nearly as many systems for applying color to hair. For instance, hair may be colored by hair professionals in salons using liquid dyes. The dyes are thoroughly mixed prior to application to the hair by a technician or stylist. This process may also be completed at home using dyes purchased at retail stores. A system for applying color to hair is shown in U.S. Pat. No. 6,053,177, which depicts a cartridge coupled to a plurality of hollow dispensing tines. The tines resemble the bristles of a common hair brush. The cartridge includes a piston that forces a hair dye through the tines to contact hair while the cartridge is passed through hair as though brushing hair using a conventional hair brush. While these systems provide methods for applying dye to hair, most of these systems do not facilitate easy to use methods of applying dye to select portions of hair on a person's head. In addition, most conventional systems involve undesirable contact of a person's hands with hair dyes, which can contain irritants.

[0004] U.S. Patent Application Publication No. 2004/0211437 describes a hair coloring apparatus including a rotating brush that may be used to apply a solid, semi-solid hair or gel colorant to a person's hair. The colorant is generally held within a cartridge positioned such that the brush comes into contact with the hair colorant during rotation, and then deposits the hair colorant onto the hair. The apparatus described in U.S. 2004/0211437 is not designed to work with liquid hair colorant, as the housing containing the rotating brush does not prevent liquid from exiting the housing. The apparatus is thus generally limited to use in a toy or novelty market, as professional-looking coloring results are difficult to obtain with a solid hair colorant.

[0005] Thus, a need exists for a hair coloring apparatus capable of overcoming these and other disadvantages of the conventional systems.

SUMMARY OF THE INVENTION

[0006] The invention relates to a hair colorant applicator including a housing, and a brush which rotates relative to the housing. Hair colorant may be placed in the housing, and thus on the brush. The housing includes at least one opening for receiving at least one strand of hair and placing the at least one strand of hair in contact with the brush. The brush may then be rotated to apply the hair colorant to the at least one strand of hair, while the hair is drawn through the applicator.

[0007] In one arrangement, the hair coloring applicator can include a body forming a handle, a brush which rotates relative to the body, and a housing. The brush is rotatable within the housing, and the housing is designed to receive a liquid hair colorant such that the brush contacts the hair colorant within the housing. The housing includes at least one opening for receiving at least one strand of hair and placing the at least one strand of hair in contact with the brush.

[0008] The applicator may be used for a variety of purposes. For instance, and not by way of limitation, the hair coloring applicator may be used to add streaks of bright colors to hair for a fun effect. The applicator may also be used to color a natural streak of hair on a person that is not the same color as the rest of the hair. For example, the applicator may be used to add color to a streak of gray hair so that the gray streak blends in with the surrounding hair. In another example, the hair coloring applicator may be used to apply a highlight, such as a blonde streak, to a head of hair. In yet another example, the applicator may be used to add streaks of multiple colors to a head of hair.

[0009] In another arrangement a hair coloring applicator is provided, including a handle, a receptacle that is coupled to the handle and is configured to receive one or more hair colorant ingredients, the receptacle having an opening through which the one or more colorant ingredients are discharged as a mixture, and a shaft that is rotatably mounted to the handle. A squeegee member is operatively coupled to the shaft so that it rotates therewith and includes a plurality of squeegee arms that extend outwardly from the shaft. A slider that slides relative to the receptacle and is positioned between a mix position in which the slider seals the opening in the receptacle during a mixing operation in which the one or more colorant ingredients are mixed into the mixture and an apply position in which the slider is spaced from the opening to create a gap for receiving at least one strand of hair and placing the strand of hair into contact with the plurality of squeegee arms so as to apply the mixture to the strand of hair.

[0010] In a further arrangement, a hair coloring applicator includes a handle, a housing that is coupled to the handle and is configured to receive one or more hair colorant ingredients, the housing having a first part and a second part that can be moved relative to the first part to create a gap for receiving a strand of hair, and a shaft that is rotatably mounted to the handle and is at least partially disposed within the receptacle. A squeegee member is coupled to the shaft so that it rotates therewith and includes a plurality of squeegee fingers that extend radially outward from the shaft into mixing contact with the one or more hair colorant ingredients to define a mixture. A motor is operatively connected to the shaft for controllably rotating the shaft and the squeegee member coupled thereto causing the squeegee fingers to contact the strand of hair so as to apply the mixture thereto, the squeegee fingers being initially positioned in a rest position prior to operation of the motor in which none of the squeegee fingers extend into the gap. A cycle switch is electrically connected to the motor for controlling the rotation of the shaft and position of the squeegee fingers such that after the motor is turned off, the squeegee fingers assume the rest position where none of the fingers extend into the gap.

[0011] In yet a further arrangement, a hair coloring applicator can include a handle, a housing that is detachably coupled to the handle and is configured to receive and hold one or more hair colorant ingredients, the housing being formed of a first part and a second part that slides relative to the first part so as to create a gap between the two parts to permit the one or more colorants to be discharged from the first part as a mixture, and a shaft that is rotatably mounted to the handle and extend at least partially into the housing. A squeegee member is coupled to the shaft so that it rotates therewith within the housing and includes a plurality of flexible squeegee fingers that extend radially outward for the shaft into mixing contact with the one or more hair colorant ingredients to define the mixture. A control mechanism is positionable between at least a mix position in which the first and second parts are sealed to one another and the colorant is contained within the housing and an apply position in which the second part is spaced from the first part creating the gap that receives a strand of hair and places the strand of hair into contact with the plurality of squeegee members so as to apply the colorant to the strand of hair.

[0012] These and other uses will become apparent upon review of the enclosed drawings and detailed description below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The accompanying drawings, which are incorporated in and form a part of the specification, illustrate embodiments of the presently disclosed invention and, together with the description, disclose the principles of the invention.

[0014] FIG. 1 is a perspective view of a hair coloring applicator according to one arrangement of the invention.

[0015] FIG. 2 is a perspective view of a hair coloring applicator according to another arrangement of the invention.

[0016] FIG. 3 includes a sectional view and a perspective view of the cartridge of FIG. 2.

[0017] FIG. 4 includes perspective view of the cartridge of FIG. 2.

[0018] FIG. 5 is a perspective view of a hair coloring applicator according to another arrangement of the invention.

[0019] FIG. 6 is a perspective view of a hair coloring applicator according to another arrangement of the invention.

[0020] FIG. 7 includes a perspective view of a hair coloring applicator and cartridges according to another arrangement of the invention.

[0021] FIG. 8 is a perspective view of a hair coloring applicator and cartridge station according to another arrangement of the invention.

[0022] FIG. 9 is an exploded perspective view of a hair coloring applicator according to another arrangement of the invention.

[0023] FIG. 10 is an exploded perspective view of a mixing bowl assembly for a hair coloring applicator.

[0024] FIG. 11 is a perspective view of an alternative arrangement of squeegee member for a hair coloring applicator.

[0025] FIG. 12 is a perspective view of an alternative arrangement of squeegee member for a hair coloring applicator.

[0026] FIG. 13 is a view of an arrangement for operating a slider for a hair coloring applicator, in a "mix" position.

[0027] FIG. 14 is a view of the arrangement of FIG. 13 in an "apply" position.

[0028] FIG. 15 is an exploded perspective view of a housing for a hair coloring applicator according to another arrangement of the invention.

[0029] FIG. 16 is a perspective view of a cycle switch for operating a motor for a hair coloring applicator.

DETAILED DESCRIPTION OF THE INVENTION

[0030] U.S. Patent Application Publication No. 2004/0211437 describes a hair coloring apparatus including a rotating brush that may be used to apply a solid, semi-solid hair or gel colorant to a person's hair. The entire contents of U.S. Patent Application Publication No. 2004/0211437 are incorporated herein in their entirety by reference.

[0031] This invention is directed to a hair coloring applicator 10, as shown in FIGS. 1-8. The hair coloring applicator 10 may have numerous configurations capable of applying a liquid hair colorant 12 to one or more strands of hair. The hair colorant 12 may be any liquid hair dye, and may be a permanent dye or may be nonpermanent and temporary in duration. The term "liquid" as used herein is intended to cover any liquid, gel or other flowable fluid. The strands of hair may be human hair found growing from or connected to a human head, strands of hair connected to a wig, hair connected to a device for holding hair, or other hair. Hair coloring applicator is not limited to coloring only human hair, but may be used to color dolls, animal hair, filaments, and other items.

[0032] The hair coloring applicator 10 may have one or more brushes 14. The brush 14 may be generally annular or cylindrical. The term "brush" when used in connection with the applicator described herein can be understood to include brushes, combs, picks, teasers, squeegees and any other arrangement having bristles, hairs, arms, fingers, tines, filaments, quills, and any similar protrusions that can apply coloring material to hair and which may be formed of flexible or non-flexible materials (which may preferably be non-absorbent), or may include arrangements having pads of napped material or other absorbent or semi-absorbent material such as a foam or sponge material. The term "napped material" can be understood to include napped, villous, piled, velvet, plush or tufted fabric or material, or any other suitable material that can apply coloring material to hair. The term "absorbent material" can be understood to include foam, sponge, woolen, matted or felted material, or any other suitable material that can apply coloring material to hair. The invention is not intended to be limited in this regard.

[0033] The brush 14 may include a plurality of tufts 16, each of which may be formed of a plurality of bristles 18.

The tufts **16** may be provided on a rotatable hub **20**. The hub **20** may be circular or may have any other suitable shape. The plurality of tufts **16** may together form a generally annular brush. The brush **14** may be rotatably mounted to a body **22** which forms a handle for a user to grasp. The bristles **18** may extend from the brush **14** and may be angled away from the direction of rotation of the brush **14**. The body **22** contains a motor **66** (shown in FIG. 9) for rotating the brush **14**, and a power supply such as batteries (not shown) that may be accessible via a removable battery cap **23**. Details of a suitable motor and drive mechanism that may be used in the hair coloring applicator **10** may be found in U.S. Patent Application Publication No. 2004/0211437, although it will be appreciated that any suitable motor and drive mechanism may be employed.

[0034] The brush **14** may be configured to be contained in a housing **24**. The housing **24** may be substantially circular, and encloses the brush **14**. The housing **24** may substantially prevent inadvertent contact with the bristles **18** while the brush **14** is rotating and thereby prevent the hair colorant **12** from inadvertently contacting unwanted areas such as a user's face, hands, arm, clothing, furniture, or other objects. The housing **24** may be aligned with the body **22** such that the axis of rotation of the brush **14** is generally perpendicular to the body **22**. A suitable gear mechanism **68** (shown in FIG. 9) may be provided in the body **22** and at the base of the housing **24** and may be employed to transfer rotation of a shaft of a motor **66** contained within the body **22** to the brush **14**.

[0035] The housing **24** may also include at least one opening **26** for application of hair colorant **12** to at least one strand of hair. The opening **26** may be covered with a slider **28** that is used to hold at least one strand of hair against the brush **14**. The slider **28** may have an inside surface that is flat or may be convex, such as a convex cylindrical shape, which enables hair placed within the opening **26** to slide smoothly past the slider **28**. The slider **28** is generally L-shaped having a floor which is positioned underneath the housing **24**, and is biased inwardly into a closed position by a bias such as a spring **70** (shown in FIG. 9). An operating lever **30** may be used both to open and close the slider **28**, and to operate the motor to rotate the brush **14** via a motor control mechanism **31**. In a preferred arrangement, the operating lever **30** may be pushed against the spring **70** to open the slider **28** via a slider arm **29** for the insertion of hair therein, and then released to a neutral position in which the slider is biased shut. The operating lever may then be pulled to an "apply" position, acting against the bias of a second spring **71** to operate the motor **66**.

[0036] In the arrangement shown in FIG. 1, a lid **32** may be attached to the housing **24** by hinges **34**. The lid opens to allow access to the interior of the housing **24** containing the brush **14** so that one or more hair colorants **12** or other chemicals may be added to the interior of the housing **24**. The hair colorants **12** may comprise chemicals that are mixed together to form a dye prior to application of the dye to a person's hair. After addition of the hair colorants **12** to the interior of the housing **24**, the motor may be operated using the operating lever **30** to rotate the brush **14** while the slider **28** is closed to a "mix" position. The brush **14** thus mixes the hair colorants together, removing the need for a stylist to mix the chemicals together by hand, and reducing any chemical exposure created by handling the hair colo-

rants **12**. A sufficient quantity of hair colorants **12** are added to the housing **24** to substantially coat the brush **14** during mixing of the hair colorant **12**, but not so much that the hair colorant **12** spills out of the housing **24** when the slider **28** is opened to receive the hair therein. After mixing of the hair colorant **12**, the slider **28** is opened to an "apply" position such that a small gap is left between the slider and the opening **26**, and a strand of hair is placed adjacent the opening **26**, preferably with the applicator **10** positioned close to the hair root. The brush **14** is then rotated again, and the applicator **10** is drawn along the hair strand so that the brush **14** deposits the hair colorant along the hair strand.

[0037] FIGS. 2 to 4 illustrate another arrangement of the hair coloring applicator **10**. In this arrangement, a portion of the housing **24** and the brush **14** are integrated in a removable cartridge **36**. The applicator **10** also includes a housing base **38** attached to the body **22** that supports the cartridge **36** when installed. The housing base **38** also supports the slider **28**, and the gear mechanism **68** for the motor **66**. The cartridge **36** includes a coupling **40** that can be mated with a corresponding coupling (not shown) on the housing base **38**, and which connects the brush **14** to the motor.

[0038] The cartridge **36** may include the opening **26**, and a second opening **42** for the coupling **40**. The openings **26** and **42** may be covered by a peel-away material **44** to seal the cartridge. The cartridge **36** can thus contain liquid hair colorant **12** predisposed therein. To install the cartridge, a user first removes the material **44** covering the openings **42** and **26**, and clicks the coupling **40** into place on the housing base **38**. The brush **14** may then be rotated by operating the operating lever **30** to mix the hair colorant **12** thoroughly, and to coat the brush **14** with the hair colorant. Hair may then be placed within the slider **28**, and the hair colorant **12** applied to the hair as in the previously described arrangement.

[0039] In the arrangement shown in FIG. 5, either the lid **32** of the housing **24** of the arrangement of FIG. 1, or the cartridge **36** of the arrangement of FIGS. 2 to 4 may be provided with one or more openings **46** to receive the hair colorant chemicals. The openings **46** may be shaped to mate with specific bottles or containers **48** of specific chemicals, or may be designed to receive any bottle or container **48**. The openings **46** may be used to fill or refill the housing **24** or cartridge **36** with hair colorant **12** for mixing. In an alternative arrangement, the entire lid or a portion of the lid may be removable, for example the lid may be a snap-fit detachable cap, enabling a user to fill the housing with suitable hair colorants **12**.

[0040] FIG. 6 shows the slider **28** in two different inwardly-biased positions. The housing **24** may be provided with a mix/apply selector **50** to enable a user to set the slider **28** to a mixing or an application position. The application position retains a small gap **52** between the slider **28** and the housing **24** to enable the hair to be drawn through the housing **24** while preventing the slider **28** from squeezing off the hair colorant that has just been applied to the hair. The slider **28** also has an open position that is operable using the operating lever **30**, to enable the hair to be initially placed in the opening **26**.

[0041] FIG. 7 shows an alternative arrangement of the applicator **10**. In this arrangement, the brush **14** is removable, and is designed to be snapped into place onto the

applicator 10. A housing base 38 attached to the body 22 of the applicator 12 includes a release mechanism incorporating a release button 54 allowing the brush to be removably held in place. A cartridge 56 is provided with a removable lid 58 that is a snap-fit on a rim 60, and a break-away panel 62. The cartridge 56 contains the hair colorant 12 preloaded therein. To use the cartridge 56, a user removes the lid 58, and inserts the brush 14 (that has already been attached to the body 22) into the cartridge 56. The rim 60 of the cartridge 56 is a snap-fit onto the housing base 38, which secures the cartridge 56 to the body 22 of the applicator 10. The brush 14 can be rotated at this point to thoroughly mix the hair colorant 12 contained within the cartridge 56, and to apply the colorant to the brush 14. The break-away panel 62 is then removed, which allows access to the brush 14, and the applicator is drawn along a strand of hair. The opening formed by removal of the break-away panel 62 enables the brush and hair colorant 12 to contact the hair. The cartridge 56 can be disposed of after use, and the brush 14 may be removed from the base 38 for easy cleaning.

[0042] FIG. 8 shows a plurality of applications 10 and cartridges 56 provided in an easy-to-use base station 64, which allows a stylist to easily select an appropriate applicator 10 and hair colorant to use. A variety of colors of hair colorant 12 may be provided with each base station 64, which may also incorporate spaces for replacement brushes 14 and/or different types of brushes for different coloring applications. The applicator 10 may include a foil applicator to layer a foil tape automatically underneath the strand of hair that has been colored with the hair colorant 12, enabling a stylist to easily seal the foil tape around the hair for development of the color.

[0043] FIGS. 9-10 show a further arrangement of the invention, which may be particularly useful for applying a liquid hair colorant having a relatively thick consistency (such as, for example, a mayonnaise-like consistency). In this arrangement, the brush is formed by a squeegee member 72 that can be detachably mounted on a rotatable shaft 74 driven via a drive gear 75 by the motor 66. The squeegee member 74 can comprise a plurality of squeegee arms 76 attached to a central hub 78. The squeegee member 72 is preferably made of a flexible material, such as a flexible silicone rubber, plastic, rubber or nylon material, or any other suitable material. The squeegee member 72 is also preferably made of a non-absorbent material. The illustrated squeegee member 72 has four squeegee arms 76, arranged circumferentially around the hub 78. The squeegee arms 76 may be arranged approximately equidistantly from one another, for example at approximately 90° angles to each other when four squeegee arms are employed, or may be arranged in any suitable orientation. It will be appreciated that the illustrated arrangement is purely exemplary, and that any number and arrangement of squeegee arms may be employed.

[0044] In the illustrated arrangement, each squeegee arm 76 is bifurcated into two smaller arms or fingers 80 such that the squeegee arm 76 is generally in the shape of an F. Each finger 80 extends radially outwardly from the hub 78 and has a proximal end attached to a perpendicular portion 82 that is joined to the hub 78 and also has a free distal end 84. The free distal ends 84 are cut at an inclined angle to an axis of rotation of the hub 78. The squeegee arms 76 are arranged around the hub 78 with alternate arms 76 presented in

opposite orientations, such that one squeegee arm has its fingers 80 at one axial end of the hub 78, and the neighboring squeegee arm 76 has its fingers 80 at the other axial end of the hub 78. The arms may be arranged so that a finger 80 on one squeegee arm 76 is aligned with a gap between the fingers 80 on the following squeegee arm 76. Alternating the orientation of the squeegee arms 76 also ensures that the inclined free distal ends 84 of the fingers 80 are inclined in opposite directions. These arrangements aid in thorough mixing of the hair colorant 12 within the housing, and also in movement of the hair colorant 12 to the opening 26 and application to the hair.

[0045] It will be appreciated that the arrangement of squeegee arms 76 may be varied while still providing a thorough mixing and application of the hair colorant 12. For example, the squeegee arms 76 may not be bifurcated, but may have one or more apertures therein to allow the arms 76 to travel easily through the colorant 12. Single arms 76 may be provided on the hub 78, with the arms positioned at varying axial locations so that appropriate mixing of the colorant 12 is achieved. As shown in FIG. 11, a plurality of tines or fingers 80 may be provided to form each squeegee arm 76, similar to a comb. In the illustrated arrangement, three fingers 80 are provided, although any suitable number of fingers may be employed. Each squeegee arm 76 is also curved slightly in the direction of rotation of the squeegee member 72. As shown in FIG. 12, each squeegee arm 76 may be formed of fingers 80 that are radially displaced from one another, with the portion 82 that is adjacent to the hub 78 having an inclined portion between the fingers 80. The arrangements shown in FIG. 12 employ a hard plastic hub 78, with a separate squeegee member 72 formed of a flexible material such as silicone rubber that is insert molded or pushed into place over the hub 78. These and many other variations are within the scope of this invention.

[0046] The squeegee arms 76 may be slightly longer than an inner radius of the housing 24. In this manner, the flexible squeegee arms 76 can sweep the inner surface of the housing 24 as they are rotated by the motor 66. Additionally, this ensures that the squeegee arms 76 come into contact with hair placed within the gap 52, providing for a thorough transfer of hair colorant 12 onto the hair.

[0047] Referring to FIGS. 13 and 14, the slider 28 may be operated by a mix/apply switch 85, which is formed of a control lever 86 that is slidably movable in a track 87 in the housing 24. Two indentations 88 may be provided in the tracks 87, into which a raised portion 89 on the end of the lever 86 may be received. A slider pin 90 is received in an aperture 92 in the floor of the slider 28, and the slider 28 may also include a slot 94 in the floor thereof to allow the shaft 74 to extend therethrough. The mix/apply switch 85 may be moved to a "mix" position by moving the control lever in the direction of the arrow shown in FIG. 13 with the slider 28 closed, in order to mix the hair colorant 12 contained within housing 24. The "apply" position may be set after the slider 28 has been opened for receiving a strand of hair therein by means of the operating lever 30. The "apply" position moves the slider 28 off-center by pivoting the slider 28 around the slider pin 90 and creates a gap 96 at one side of the slider 28. This gap is used as the "exit" slide of the slider 28, and allows the hair colorant 12 to remain on the hair after application. The hair colorant 12 can then be left on the hair

for a predetermined period of time, in order to allow the colorant to dye the hair before it is rinsed off.

[0048] FIG. 15 shows an arrangement of the housing 24, in which the housing has been molded from two halves 98. This arrangement can be used with the arrangement of FIGS. 13 and 14. A track 100 is provided underneath the housing 24, in which the slider 28 is slidably movable. The lid 32 may be a snap fit into housing 24, such that it forms a detachable cap. Referring to FIG. 16, the operating lever 30 may be connected to the motor 66 via a cycle switch 102. The cycle switch ensures continued operation of the motor after the operating lever 30 has been released from its “apply” position. The cycle switch 102 includes a contact plate 104 fixed to one side of the drive gear 75. Switch contacts 106 are connected to the motor 66 via wires 108. Continued operation of the motor 66 is carried out via a separate circuit including a resistor, which feeds the motor with a reduced amount of current in order to cause minimal rotation of the squeegee member 72 in order that the squeegee arms are rotated into a predetermined rest position prior to allowing opening of the slider 28. The predetermined rest position may be one in which the switch contacts 106 rest between gaps in the contact plate 104 such that none of the squeegee arms 76 extend past the opening 26. This allows a user to more easily place a strand of hair into the slider 28, and to remove the hair therefrom, and also aids in the prevention of leakage of hair colorant 12 from the housing 24 via opening 26.

[0049] The foregoing is provided for purposes of illustrating explaining, and describing embodiments of this invention. Modifications and adaptations to these embodiments will be apparent to those skilled in the art and may be made without departing from the scope or spirit of this invention.

1. A hair coloring applicator, comprising:
 - a body forming a handle;
 - a brush, wherein the brush rotates relative to the body; and
 - a housing, wherein the brush is rotatable within the housing, and wherein the housing is designed to receive a liquid hair colorant such that the brush contacts the hair colorant within the housing,
 wherein the housing includes at least one opening for receiving at least one strand of hair and placing the at least one strand of hair in contact with the brush.
2. The hair coloring applicator of claim 1, wherein the brush is generally annular.
3. The hair coloring applicator of claim 1, wherein the brush comprises a support and at least one of the group consisting of bristles, napped material and absorbent material arranged on the support.
4. The hair coloring applicator of claim 1, wherein the housing is removable from the body.
5. The hair coloring applicator of claim 4, wherein the housing forms a disposable cartridge.
6. The hair coloring applicator of claim 5, wherein the cartridge is pre-loaded with hair colorant.
7. The hair coloring applicator of claim 5, wherein the cartridge is pre-loaded with the brush.
8. The hair coloring applicator of claim 7, wherein the cartridge includes a coupling designed to mate with a complementary coupling provided on the hair coloring applicator for providing power to rotate the brush.

9. The hair coloring applicator of claim 5, wherein the cartridge includes a removable lid allowing access to the interior thereof.

10. The hair coloring applicator of claim 5, wherein the cartridge includes a break-away panel allowing access to the interior thereof.

11. The hair coloring applicator of claim 5, wherein the cartridge includes openings covered with peel-away material allowing access to the interior of the cartridge.

12. The hair coloring applicator of claim 1, wherein the housing includes at least one opening designed to mate with a container of hair colorants, allowing hair colorant to be placed in the housing through said at least one opening.

13. The hair coloring applicator of claim 1, further comprising a slider movably coupled to the housing for placing at least one strand of hair in contact with the brush.

14. The hair coloring applicator of claim 13, wherein the slider comprises a convex inside surfaces.

15. The hair coloring applicator of claim 13, wherein the slider is biased toward the brush.

16. The hair coloring applicator of claim 15, wherein the slider is biased toward the brush into two selectable positions, a first position leaving no gap between the slider and the housing, and a second position leaving a small gap between the slider and the housing, the small gap being sized to allow a strand of hair to be drawn therethrough.

17. The hair coloring applicator of claim 13, further comprising an operating mechanism that operates both the slider and a motor that drives the brush.

18. The hair coloring applicator of claim 17, wherein the operating mechanism is biased to a position whereby the slider is closed and the motor is off.

19. The hair coloring applicator of claim 1, further comprising a motor having a shaft that rotates the brush.

20. The hair coloring applicator of claim 19, further comprising a gear assembly configured to couple the shaft of the motor to the brush.

21. The hair coloring applicator of claim 20, further comprising a power source.

22. The hair coloring applicator of claim 21, wherein the power source is at least one battery.

23. A hair coloring applicator comprising:
 - a handle;
 - a receptacle that is coupled to the handle and is configured to receive one or more hair colorant ingredients, the receptacle having an opening through which the one or more colorant ingredients are discharged as a mixture;
 - a shaft that is rotatably mounted to the handle;
 - a squeegee member that is operatively coupled to the shaft so that it rotates therewith and includes a plurality of squeegee arms that extend from the shaft; and
 - a slider that slides relative to the receptacle and is positioned between a mix position in which the slider seals the opening in the receptacle during a mixing operation in which the one or more colorant ingredients are mixed into the mixture and an apply position in which the slider is spaced from the opening to create a gap for receiving at least one strand of hair and placing the strand of hair into contact with the plurality of squeegee arms so as to apply the mixture to the strand of hair.
24. The applicator of claim 23, wherein the receptacle is detachably coupled to the handle.

25. The applicator of claim 23, wherein the receptacle is substantially bowl shaped and the opening is formed within a side wall of the receptacle and an underside of the receptacle defines a track which a portion of the slider is received to permit the slider to slide relative to the receptacle.

26. The applicator of claim 23, wherein the slider includes a part which engages and interferes with the slider and when the part is positioned in the mix position, the slider seals the receptacle opening and when the part is positioned in the apply position, the slider is angled relative to the receptacle to create the gap and permit the colorant to be applied to the hair.

27. The applicator of claim 23, wherein there are four squeegee arms extending circumferentially about the shaft.

28. The applicator of claim 23, further including a motor assembly including a motor that is operatively connected to the shaft by a plurality of gears to cause rotation of the shaft when the motor is operated.

29. The applicator of claim 23, wherein the squeegee member is detachably mounted on the shaft.

30. The applicator of claim 23, further comprising: a control mechanism including a lever, a slider actuator that is spring mounted to the lever such that the actuator pivots on the lever, the slider actuator being coupled to the slider to cause the slider to move between the mix and apply positions, wherein the lever and actuator are disposed outside of the handle.

31. The applicator of claim 30, wherein the lever has a round pin associated therewith that extends through a through-hole in the handle for engaging and turning a motor on and off, the motor being operable to rotate the shaft.

32. The applicator of claim 23, wherein the receptacle has an opening in a floor thereof through which the shaft extends and the slider includes a slot which is in registration with the opening in the floor to permit the shaft to extend there-through.

33. The applicator of claim 23, wherein each squeegee arm is flexible member an the handle includes a slide button which at least two positions corresponding to the mix position and the apply position, wherein the slide button is operatively connected to the slider so that when the slide button is slid to the apply position, the slider is inclined relative to the receptacle to create the gap.

34. A hair coloring applicator comprising:

a handle;

a housing that is coupled to the handle and is configured to receive one or more hair colorant ingredients, the housing having a first part and a second part that can be moved relative to the first part to create a gap for receiving a strand of hair;

a shaft is rotatably mounted to the handle and is at least partially disposed within the receptacle;

a squeegee member that is coupled to the shaft so that it rotates therewith and includes a plurality of squeegee fingers that extend radially outward from the shaft into mixing contact with the one or more hair colorant ingredients to define a mixture;

a motor operatively connected to the shaft for controllably rotating the shaft and the squeegee member coupled thereto causing the squeegee fingers to contact the strand of hair so as to apply the mixture thereto, the

squeegee fingers being initially positioned in a rest position prior to operation of the motor in which none of the squeegee fingers extend into the gap; and

a cycle switch electrically connected to the motor for controlling the rotation of the shaft and position of the squeegee fingers such that after the motor is turned off, the squeegee fingers assume the rest position where none of the fingers extend into the gap.

35. The applicator of claim 34, wherein the cycle switch is configured such that when the motor is turned off, the motor stops receiving full current and a separate circuit feeds the motor with a reduced amount of current by means of a resistor to cause minimal rotation of the squeegee member until the squeegee fingers assume the rest position.

36. The applicator of claim 34, wherein there are four squeegee fingers that are positioned in equidistant from one another.

37. The applicator of claim 34, wherein the second part comprises a slider that slides relative to the first part and is positioned between a mix position in which the slider seals an opening formed in the first part during a mixing operation in which the one or more colorant ingredients are mixed into the mixture and an apply position in which the slider is spaced from the first part to create the gap for receiving at least one strand of hair within the gap and placing the strand of hair into contact with the plurality of squeegee fingers so as to apply the mixture to the strand of hair.

38. The applicator of claim 35, further including a lid that is detachably mounted to one of the first and second parts.

39. The applicator of claim 37, wherein the slider has a horizontal portion that is slidingly received within a track that is formed in the underside of the first part.

40. The applicator of claim 37, wherein the first part has an opening in a floor thereof through which the shaft extends and the slider includes a slot which is in registration with the opening in the floor to permit the shaft to extend there-through.

41. The applicator of claim 37, wherein an inner surface of the first part comprises an arcuate surface, while an inner surface of the slider is a planer surface such that when the slider is in the apply position, a radius of the squeegee finger is greater than a radius from the shaft to an inner surface of the receptacle.

42. The applicator of claim 34, wherein there are four squeegee fingers, each of which assumes one of four rest positions prior to operation of the motor and after the motor is stopped and the cycle switch is activated, each finger assumes one of the four rest positions which can be different from the rest position prior to operation of the motor.

43. A hair coloring applicator comprising:

a handle;

a housing that is detachably coupled to the handle and is configured to receive and hold one or more hair colorant ingredients, the housing being formed of a first part and a second part that slides relative to the first part so as to create a gap between the two parts to permit the one or more colorants to be discharged from the first part as a mixture;

a shaft that is rotatably mounted to the handle and extends at least partially into the housing;

a squeegee member that is coupled to the shaft so that it rotates therewith within the housing and includes a

plurality of flexible squeegee fingers that extend radially outward from the shaft into mixing contact with one or more hair colorant ingredients to define the mixture; and

a control mechanism positionable between at least a mix position in which the first and second parts are sealed to one another and the colorant is contained within the housing and an apply position in which the second part is spaced from the first part creating the gap that receives a strand of hair and places the strand of hair

into contact with the plurality of squeegee members so as to apply the colorant to the strand of hair.

44. The applicator of claim 43, wherein the control mechanism includes a slide button that is operatively connected to the second part such that the sliding of the button between the mix position and the apply position causes movement of the second part relative to the first part.

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