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(54) **ULTRASONIC MIST CONDITIONING HAIR STYLING APPARATUS**

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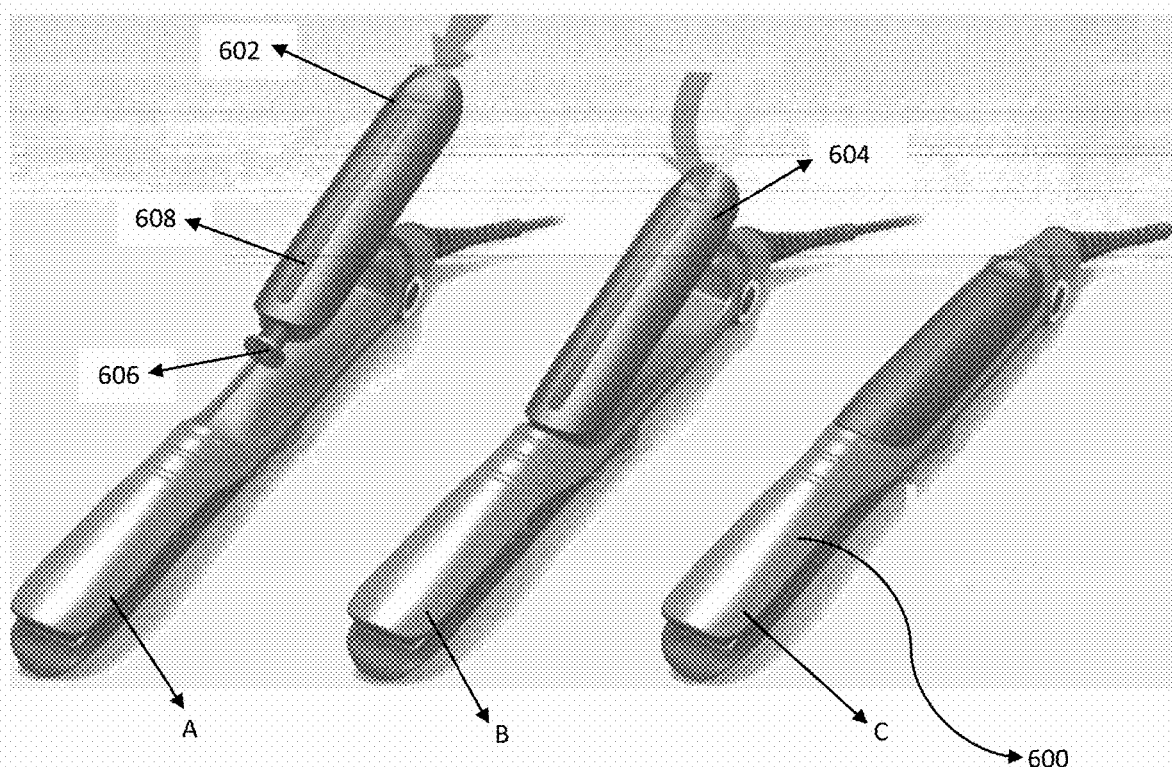
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(57) **ABSTRACT**

Embodiments of the present invention provides a hair drying and styling apparatus that comprises a hair styling tool in combination with an ultrasonic mist generator. The ultrasonic mist generator includes a water tank, an ultrasonic transducer to produce water mist, a wick tube to supply water from the water tank to the transducer, and a spray manifold including a plurality of holes to spray water mist over the heated portions of the hair styling tool and the heated hair. Further, the mist generator also includes a provision to add a customized personal fragrance or cologne to the hair. Furthermore, the mist generator also includes an ion generator to provide negatively ionized water for static control and improving hair gloss and conditioning. Advantageously, the apparatus prevents the hair from over drying, and providing heat damage to hair, scalp or hands of a user/stylist by spraying cool mist during operation.



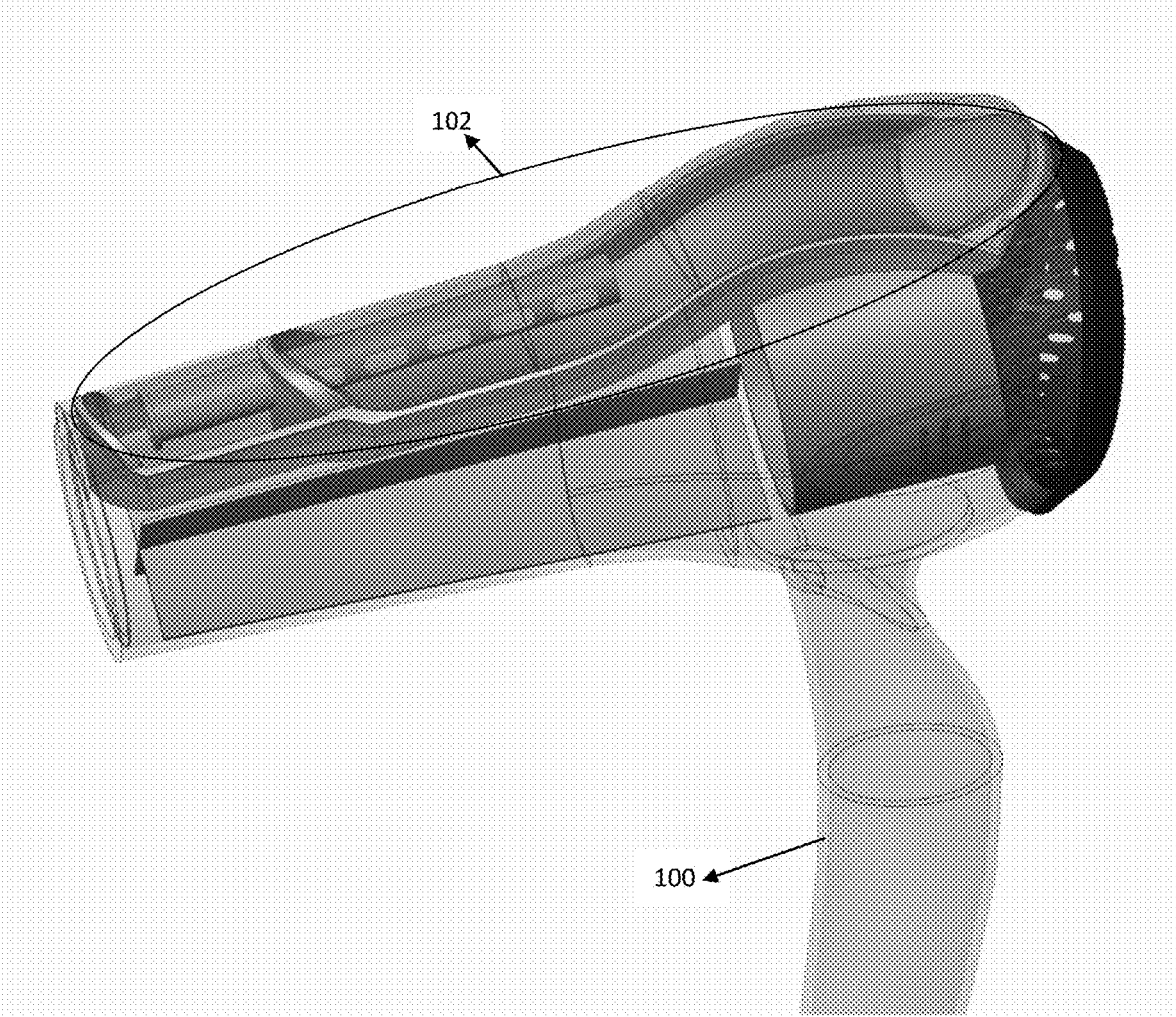


FIG. 1

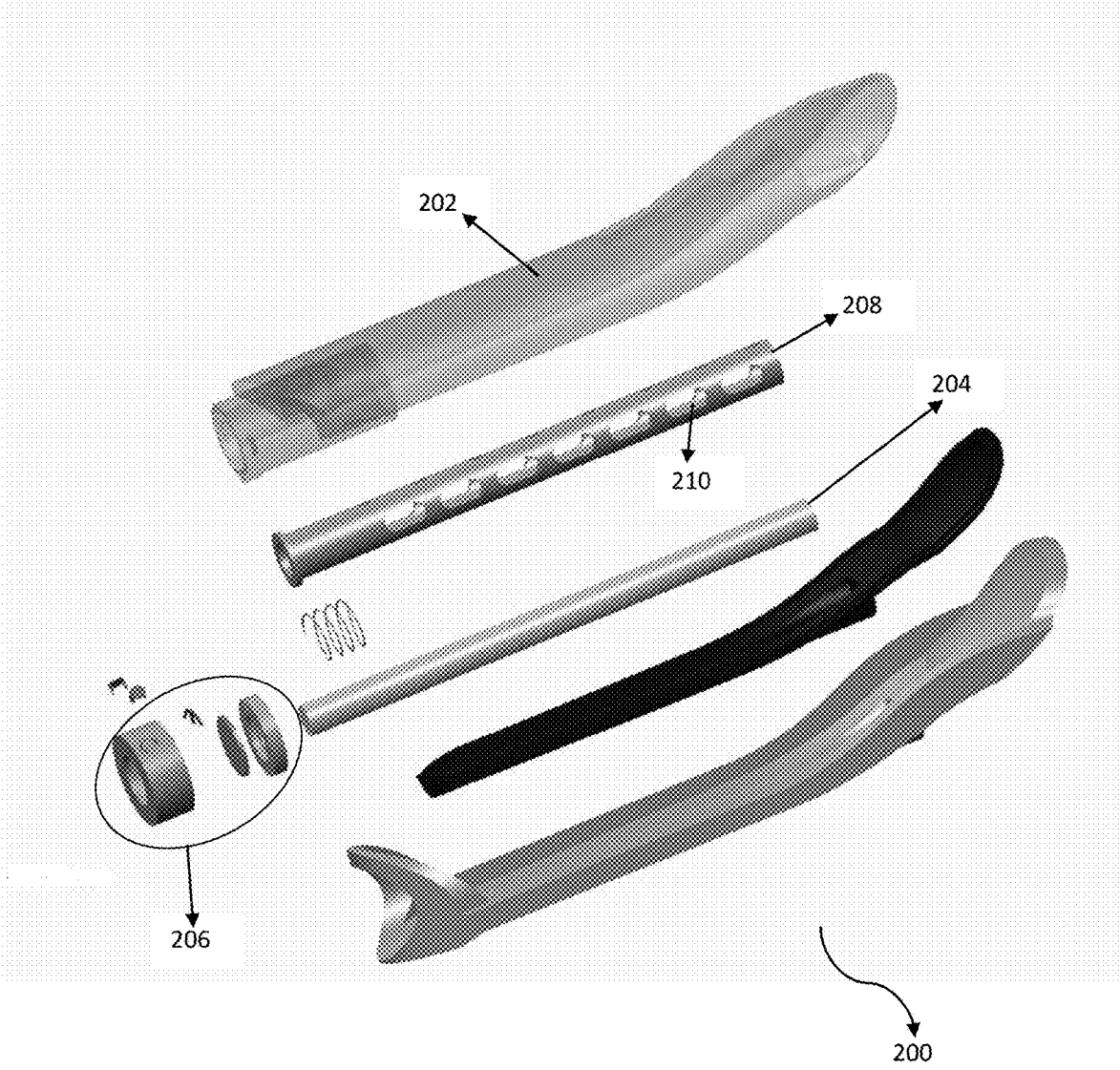


FIG. 2

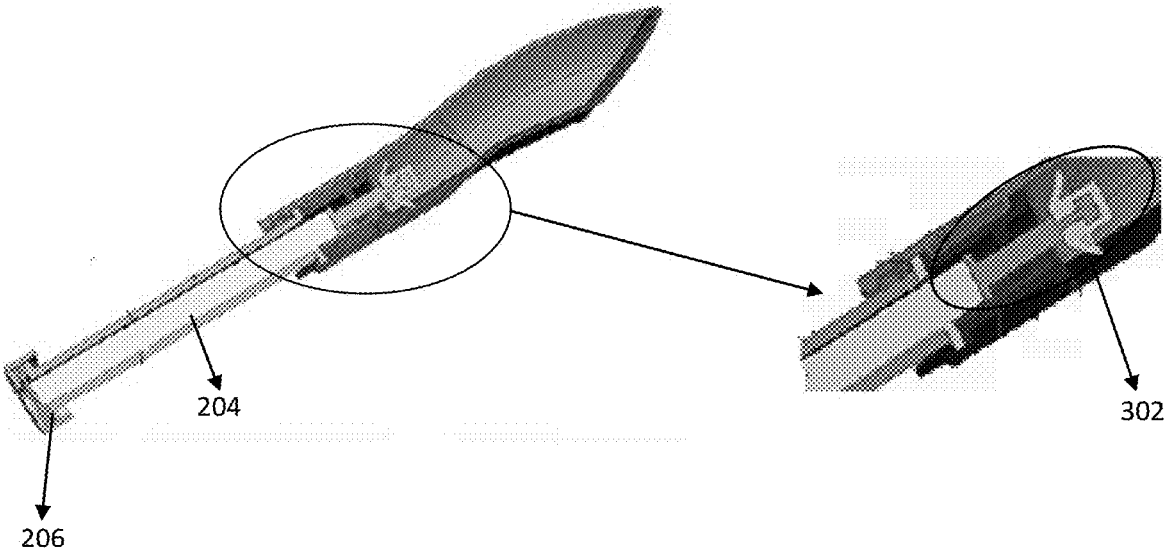


FIG. 3

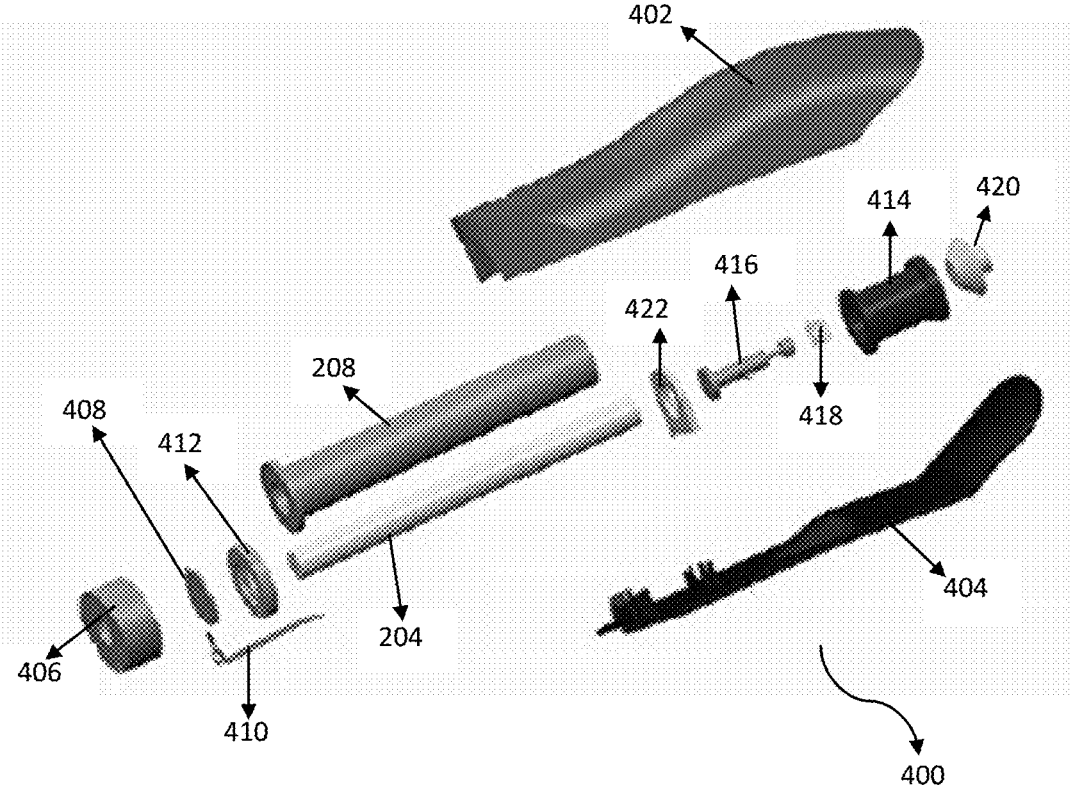


FIG. 4

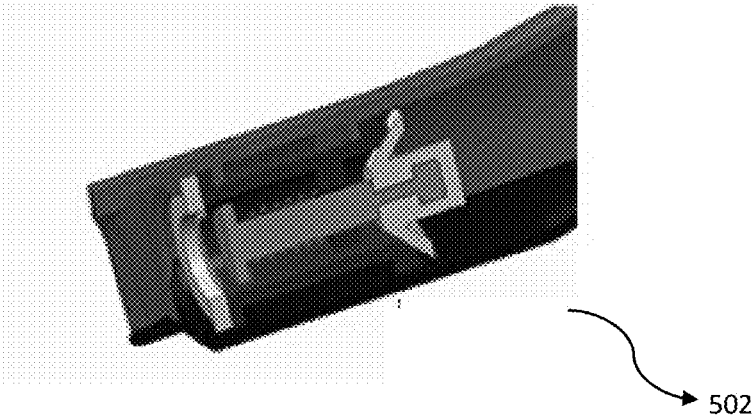


FIG. 5A

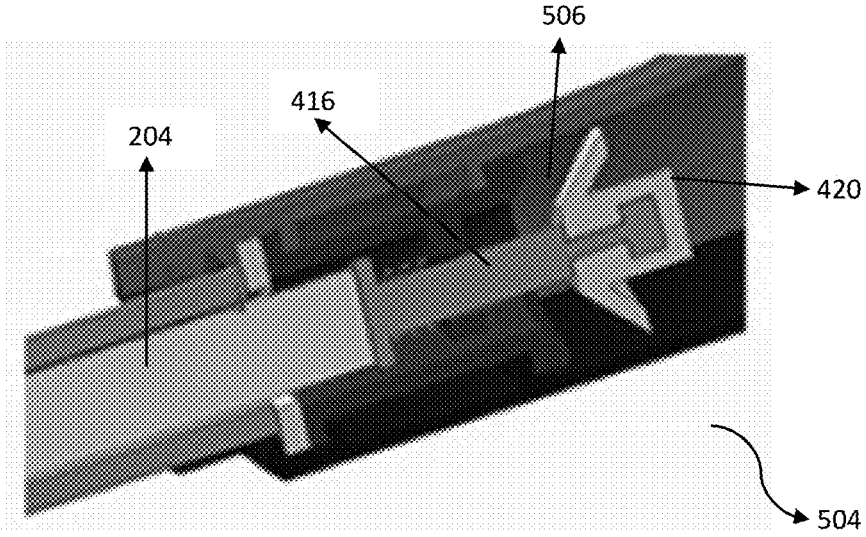


FIG. 5B

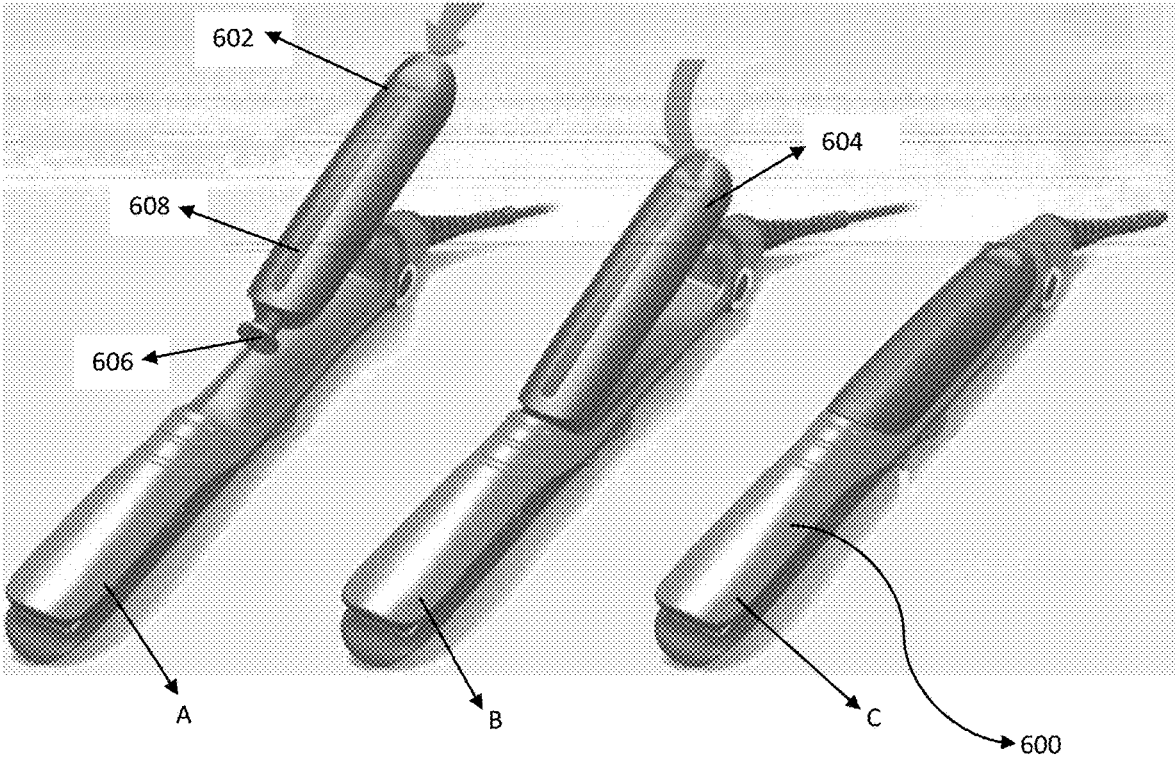


FIG. 6

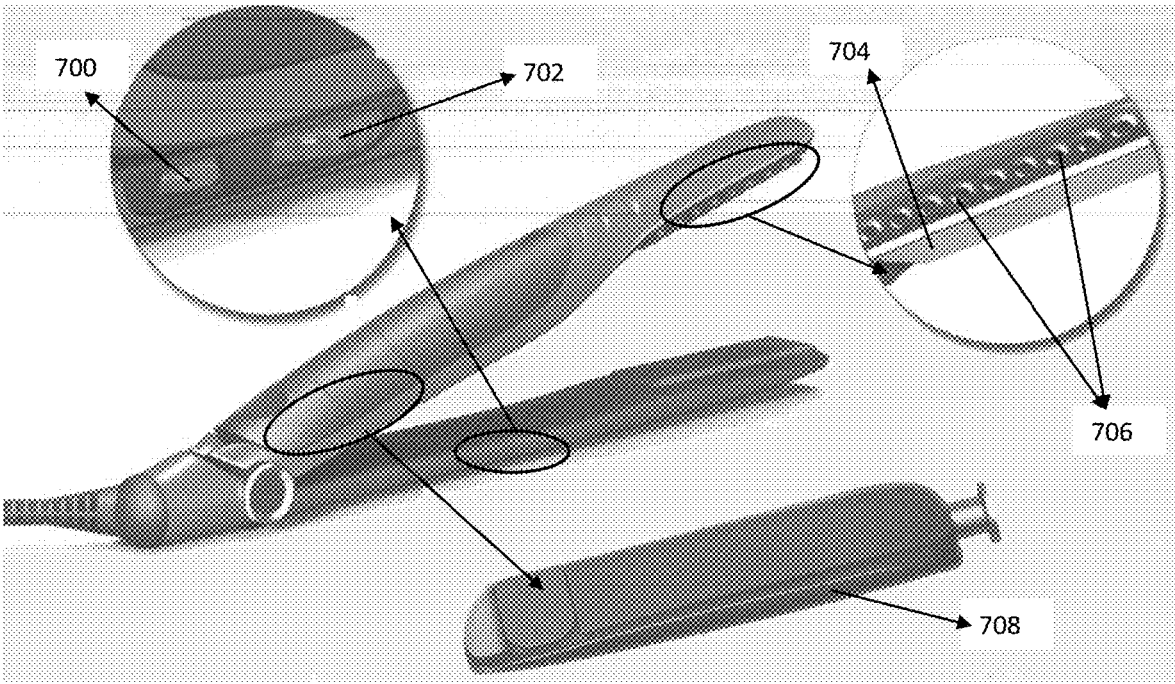


FIG. 7

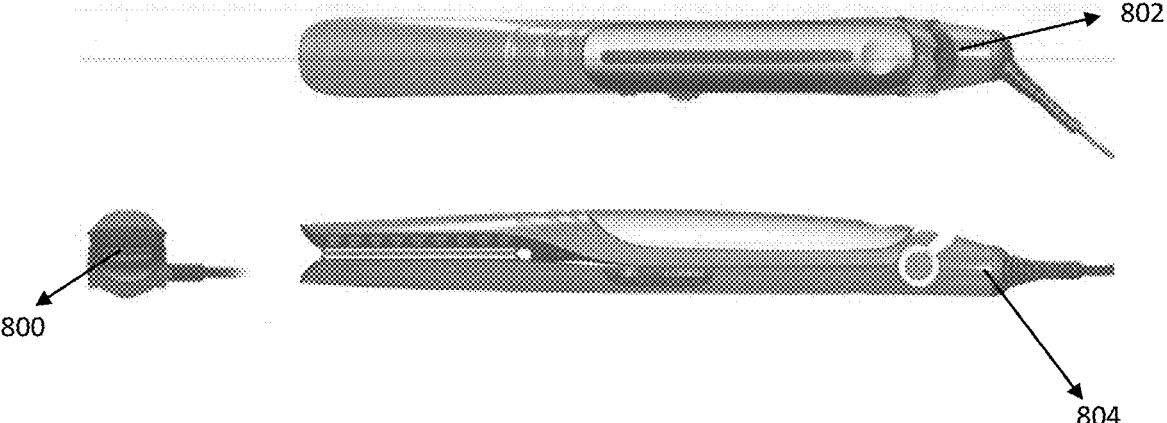


FIG. 8A

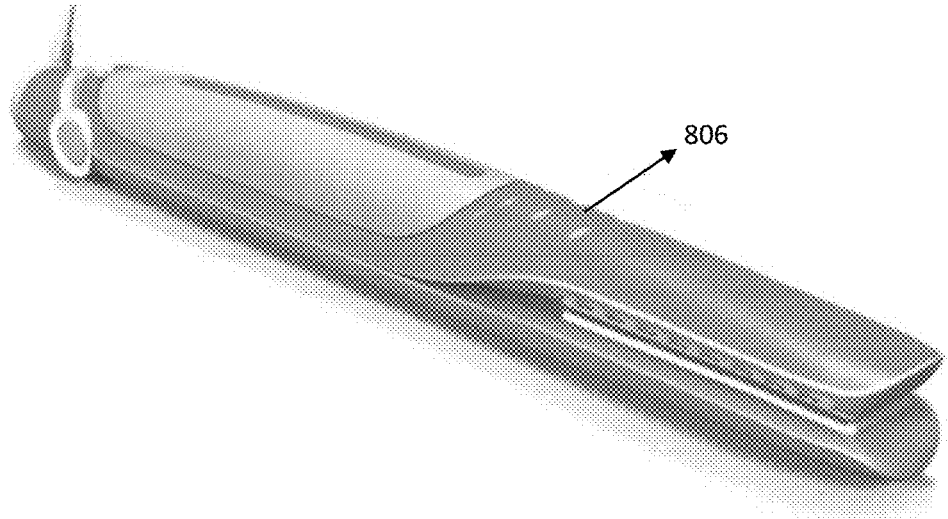


FIG. 8B

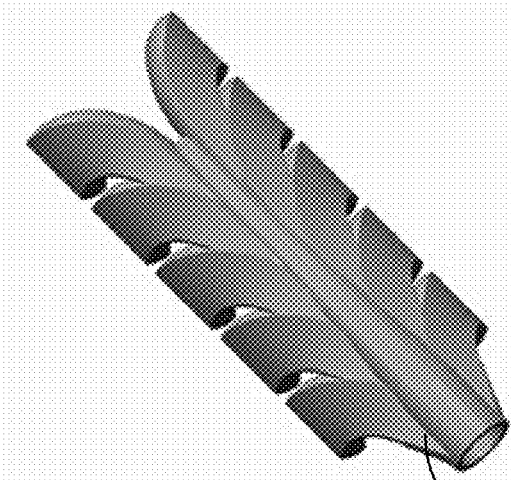


FIG. 9A 900

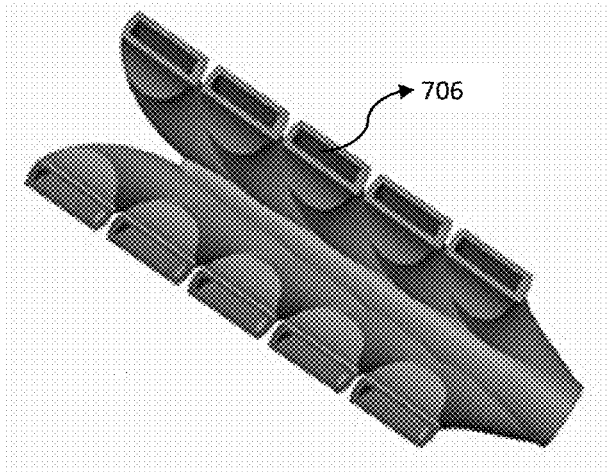


FIG. 9B 706

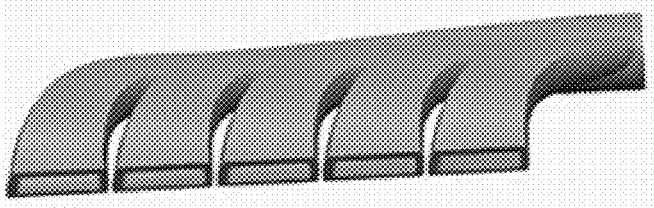


FIG. 9C

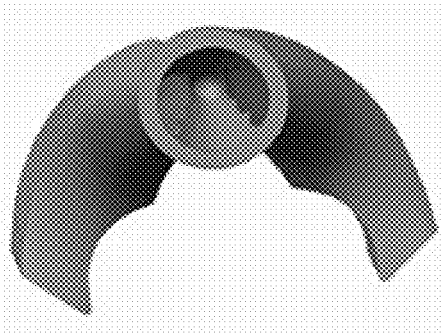


FIG. 9D

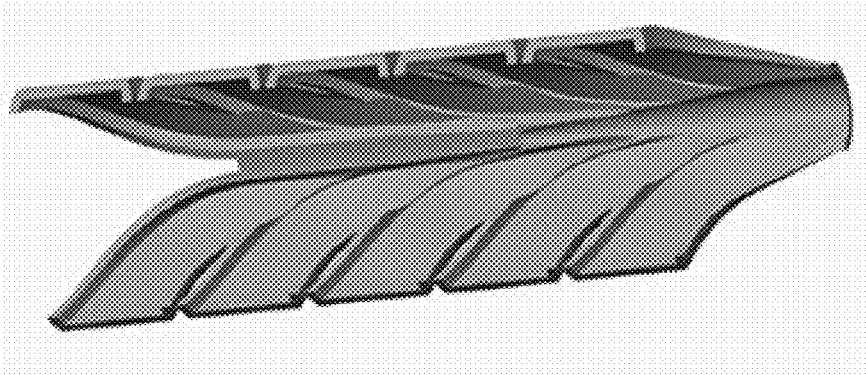


FIG. 9E

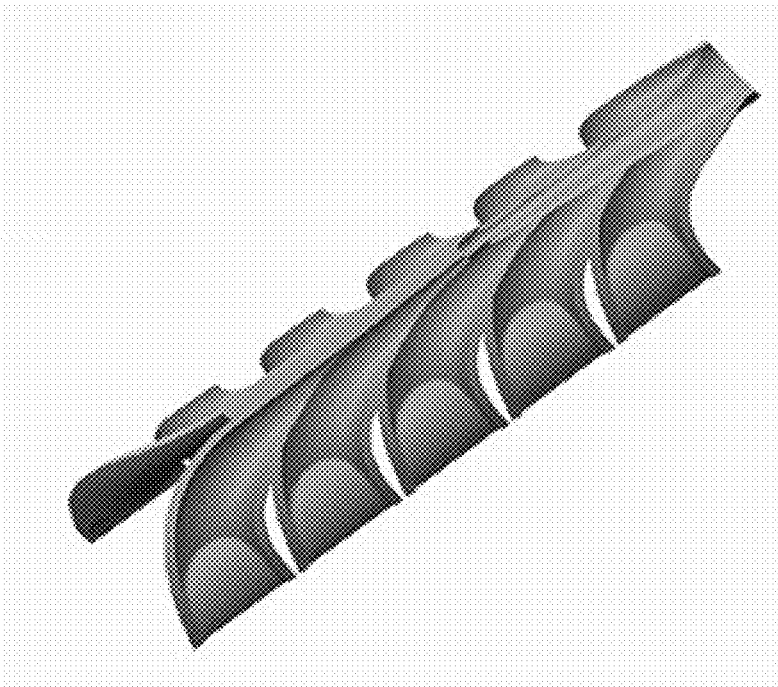


FIG. 9F

ULTRASONIC MIST CONDITIONING HAIR STYLING APPARATUS

FIELD OF INVENTION

[0001] The present invention is generally related to electric heating hair styling appliances, and more particularly related to mist/fog application along with hair styling appliances.

BACKGROUND

[0002] Various appliances and methods have been evolved in technologies to dry wet hair and also to adapt hair styling techniques. Few of the examples are blow dryers, electric dryers, styling tools such as flat irons (straighteners) or curling irons and others. While using these appliances, a general and most occurring problem is over dried or damaged hair from over drying and continuous use of these appliances.

[0003] Addressing to the above mentioned problems, the hair drying appliances are characterized with sensors or other devices to automatically switch off or lower the temperature after a predetermined time or temperature reached or moisture level of hair. Nevertheless, the issues still remains more or less the same.

[0004] Technologies have evolved to overcome the issues with over drying of hair from the heating appliances. A US Patent Application Number US20170013931A1 discloses an ultrasonic fog treatment and hair straightener. Suitably, the hair straightener is provided by an electric device comprising a heating mechanism and restorative or spa means, including storage boxes and atomization means. The restorative and spa means for hair styling and spa effectively alleviate hair damage caused by heating and enhance the straightening effect of the hair. The ultrasonic mist generator produces mist/fog targeting hair that is enclosed between the metal plates of the straightener.

[0005] Another Patent Application numbered CN203597526U describes an electric hair curler with the mist spraying function. According to the electric hair curler with the mist spraying function, due to the fact that water mist can be sprayed on the hair through the atomizing and spraying device when the hair is curled, the hair can be kept wet, the hair is prevented from being curled or pulled in the dry and hot environment and is also prevented from being scorched and damaged, a style needed by people can be obtained, the automation degree is high, the hair curling efficiency is greatly improved, and the hair is protected.

[0006] Although various technologies have disclosed use of mist spraying on hair while styling or drying hair, but none of them discloses a method and design of apparatus for evenly spraying the mist/fog at hair, while also providing a unique fragrance or scents to the hair during styling or drying the hair. Furthermore, there always have been problems of non-uniform spraying of steam along the hair that resulted in uneven moisturizing of the hair. The farther a vent or mist source is designed in a hair styling tool, the less emission occurs at the furthest vents. This results in uneven spraying of mist. Also, steam is usually applied in general hair styling tools that further have problems of improper absorption of steam into the hair cuticle, and hence may have risk of scalding the scalp or stylist hands.

[0007] Therefore, there exists a need to provide an apparatus and method for hair styling and drying that includes a

heating hair styling appliance in combination with a mist/fog generator that evenly sprays mist at hair. Further, there is a need to characterize provisions in the hair styling tools for adding a customized fragrance in addition to the mist/fog supply for increased aromatic preferences.

SUMMARY OF THE INVENTION

[0008] Hence, it is an objective of the present invention to provide an apparatus for hair drying and styling that comprises a hair styling appliance in combination with a mist/fog generator. In an embodiment, the mist/fog generator incorporates ultrasonic production and application of mist.

[0009] It is further an objective of the present invention to provide a uniform ultra fine water/moisture particle size for uniform deposition of the mist at hair via the hair styling appliance.

[0010] It is another objective of the present invention to add provisions in the hair styling appliance for adding customized personal cologne/fragrance to hair for better aromatic results.

[0011] It is another objective of the present invention to adapt ion technology for enhancing conditioning effects of the hair.

[0012] It is a further objective of the present invention to activate mist/fog application manually during styling or independently as required by a stylist/user.

[0013] An embodiment of the present invention discloses an apparatus for hair styling that comprises a hair styling tool including a heating mechanism to provide heat for styling or drying hair; and an ultrasonic mist generator, attached adjacent to the hair styling tool, for producing and applying an ultra fine spray of cool sonic mist to the hair, the ultrasonic mist generator includes a tank to store a fluid; an ultrasonic transducer to produce the spray of mist; a manifold to uniformly and evenly spray the mist onto the heated portions of the hair styling tool and heated hair; and a means to add a customized fragrance to the fluid and hair; where the manifold uniformly sprays the ultra fine small and light mist to replace moisture lost by the hair while drying out by the heat from the hair styling tool.

[0014] Another embodiment discloses an apparatus for hair styling that comprises a hair styling tool for providing heat treatment to hair; and a piezoelectric based ultrasonic mist generator, attached along the hair styling tool, for producing an ultra fine and uniform spray of cool water sonic mist that replaces moisture lost by the hair during the heat treatment; the generator includes a means to provide an added customized fragrance to the mist and hence, hair.

[0015] A yet another embodiment discloses the mist generator produces a cool mist which is so small, fine and light that the mist is able to penetrate into the hair cuticle much more effectively than steam without the risk of scalding the scalp or hands of a stylist.

[0016] Another embodiment discloses that the hair styling tool is any one of a hair dryer or a hair straightener or a hair curling iron/rod or any other heat treatment tool for hair.

[0017] Another embodiment describes the mist generator is placed along the body length of the hair styling tool, and the manifold sprays the cool mist either along the body length or vertical to the body length of the hair styling tool.

[0018] The foregoing and other objects, features and advantages of the invention will be apparent from the following more particular descriptions of exemplary embodiments of the invention.

BRIEF DESCRIPTION OF THE EMBODIMENTS

[0019] The manner in which these objectives and other desirable characteristics can be obtained is explained in the following description and attached figures in which:

[0020] FIG. 1 shows a hair dryer as the hair styling tool, equipped with the mist generator, in accordance with an embodiment of the present invention;

[0021] FIG. 2 shows an exploded view of the mist generator, in accordance with an embodiment of the present invention;

[0022] FIG. 3 shows a sectional view of the mist generator detached from the hair dryer and an enlarged view of the valve system employed in the hair dryer, in accordance with an embodiment of the present invention;

[0023] FIG. 4 another exploded view of the mist generator, in accordance with an embodiment of the present invention;

[0024] FIGS. 5A and 5B show the closed and opened positions of the valve arrangement, in accordance with an embodiment of the present invention;

[0025] FIG. 6 shows a hair straightener with flat metal plates, as the hair styling tool, equipped with a mist generator, in accordance with an embodiment of the present invention;

[0026] FIG. 7 shows enlarged portions of the straightener to clearly show mist generator control and rheostat temperature control buttons; nozzle holes for spraying mist, and a rubber base of the water tank, in accordance with an embodiment of the present invention;

[0027] FIGS. 8A and 8B show different views of the hair straightener, in accordance with an embodiment of the present invention; and

[0028] FIGS. 9A-9F show different views of the manifold that is used with the hair straightener, in accordance with an embodiment of the present invention.

DETAILED DESCRIPTION

[0029] This patent describes the subject matter for patenting with specificity to meet statutory requirements. However, the description itself is not intended to limit the scope of this patent. The principles described herein may be embodied in many different forms, while being used individually or jointly.

[0030] Illustrative embodiments of the invention now will be described more fully hereinafter with reference to the accompanying drawings, in which some, but not all embodiments of the invention are shown. Indeed, the invention may be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will satisfy applicable legal requirements. Like numbers refer to like elements throughout.

[0031] The present invention discloses an apparatus and related method for hair drying and hair styling. The apparatus is used by a stylist/user for styling or drying hair which involves using heat treatments. Therefore, the apparatus comprises a styling tool which operates essentially as a normal heated appliance used for styling and drying hair. Due to harmful effects of over using heat treatments on hair, the apparatus in the present invention uses a fine vapor mist application parallel or adjacent to the heated area of the tool. Hence, the apparatus comprises a hair styling appliance or tool in combination with a mist/fog generator located adjacent to the hair styling tool.

[0032] The hair styling tool operating essentially as a normal heated appliance uses either standard heating technologies or ion generators in combination with the heater. It may be appreciated by a person ordinarily skilled in the art that the heating appliances of the hair styling tool may be of different types, such as standard Resistance Wire, Positive Temperature Coefficient (PTC) or Ceramic heater technologies and the like, without departing from the scope and meaning of the present invention. Preferably a ceramic heater since it is not affected by the mist generator that is outboard or adjacent to the heating portion of the styling tool. Examples of the hair styling tools that may be employed in the present invention may include and are not limited to flat irons (straighteners), or curling irons (various shapes/styles—employing spring clamps, marcel clamps or no clamp), or electric hair dryers and the like.

[0033] The mist/fog generator provides and applies ultra fine mist uniformly on the hair that is targeted by the hair styling tool. The mist/fog generator can be activated as required by the user/stylist to provide conditioning moisture that assists in setting hair curls, waves or styling shapes or straightening as desired. The mist/fog generator may be hereinafter referred to as mist generator. The function of the mist generator is to produce ultra fine particles of mist or fog to spray or apply the mist at the hair in order to provide very uniform surface moisture and has the added benefit of reducing hair damage caused by over drying of hair.

[0034] In an embodiment of the present invention, the mist generator is an ultrasonic mist generator. The ultrasonic mist generator is able to function independently of the hair styling tool with which it is incorporated or may work in conjunction with the styling tool as required by the stylist. Such user control may be provided in the apparatus where the user may be able to operate the mist generator independently or in conjunction with the styling tool. Further, the ultrasonic mist generator provides a controlled moisture delivery of ultra fine particles of cool sonic mist via the hair styling tool.

[0035] The ultrasonic mist generator comprises a piezoelectric-based ultrasonic transducer; a fixed or removable water/fluid tank; a wick tube; a manifold including a spray nozzle/ultrasonic nebulizer with uniformly placed holes. In an embodiment, in some types of hair styling tools, the mist generator comprises a water supply system in form of a valve to allow water entry to the ultrasonic transducer. The piezoelectric-based ultrasound transducer works similarly to an ultrasound humidifier. The transducer provides a means to produce large amounts of very fine water mist that is used for maximum absorption. The small drops generated by the ultrasonic transducer behave more like a gas, evenly moistening the surface of the heating hair styling tool and enabling the drops to be better absorbed by the hair. This functioning of the ultrasonic transducer for mist generation can easily be combined with a variety of heating hair styling tools.

[0036] Furthermore, the water tank stores water or other required fluid, such as a conditioner, a hair serum, an aromatic fluid type, and the like. For an easy explanation and consistency, water is considered as the fluid stored in tank, throughout the detailed description. In an embodiment, the tank is removably attached to the hair styling tool. In another embodiment, the water tank may be fixed also. In an embodiment, the tank is provided with a provision to check water level in it. It may be appreciated by a person ordinarily

skilled in the art that the water tank may include different provisions to check the water level, such as a clear transparent area to act as a window to view the water level, an electronic digital display, a gauge system, and the like, without departing from the meaning and scope of the present invention. The tank has a friction fit feel to provide a proper seating of the tank on the hair styling tool. Once, the tank is properly fitted on the hair styling tool, the user may turn on a mist control provided on the hair styling tool.

[0037] Under operation, the delivery system of the mist generator employs the wick tube to supply water from the tank to the transducer. The transducer utilizes and vibrates its metal disc and wires to generate cool sonic mist and injects the mist into the manifold. From the manifold, the spray nozzle produces a fine spray of mist to be applied on the surface of the hair styling tool and hence, the hair. Different types of hair styling tools may employ different shapes of manifolds. Therefore, the shape and size of the manifold may be determined and is dependent on the styling tool configuration and types, thus not reducing the thermal capacity/load of the styling tools. For example, in a straightener or flat iron type tool, the manifold can be external to the heated metal plates, while a curling iron device would require a thermally insulated manifold internal to barrel or housing of the curling iron.

[0038] In an embodiment, the present invention adapts/accepts ion technology to enhance conditioning effects of the hair. The mist generator incorporates a negative ion generator to produce and spray ionized water. The delivery of negatively ionized water provides static control, decreases flyaway hair and improves hair gloss in closing down the cuticle for maximum light reflection.

[0039] In an embodiment, the water supply system for the mist generator is a very small detachable/spring plunger release similar to mini-ultrasonic personal humidifiers (1.0 to 4.5 ounces depending on desired run time between refills). In another embodiment, the water supply system is in the form of a one-way valve. The wick tube pushes the valve open when the water tank is mounted on the hair styling tool. The valve arrangement for water supply is explained in details in the following figures.

[0040] In an embodiment, the present invention also provides potential in the apparatus to add customized personal cologne/fragrance to hair. This may be accomplished by filling the tank with an aromatic fluid or serum or by adding scents/fragrances to the water supply that do not contain heavy oils that would contaminate the transducer.

[0041] Further, the apparatus also has different input/output control modules to control the operation of the hair styling tool and the mist generator. Some or all of the controls may be provided at the hair styling tool while some may be provided at the mist generator. Different control modules may include and are not limited to turn ON/OFF of the hair styling tool, turn ON/OFF of the mist generator, rheostat temperature controls, mist volume control, an output module to show whether the water tank is properly fitted on the hair styling tool, an output module to show operating conditions of the hair styling tool and the mist generator, a water level display, and others. It may be appreciated by the person ordinarily skilled in the art that the input/output control module may be of different types, such as touch input, button inputs, scrolling buttons, LCD display, LED lights, and others, without departing from the meaning and scope of the present invention.

[0042] In a further embodiment, the apparatus for hair drying and styling may involve a temperature feedback loop in heating system for the hair styling tool to maintain the temperature of the surface or housing or barrel of the hair styling tool while emitting cool sonic mist at the hair that aids in styling/setting of curl and preventing hair from becoming over dried.

[0043] FIG. 1 shows a hair dryer as the hair styling tool, equipped with the mist generator, in accordance with an embodiment of the present invention. The hair dryer **100** blows out hot air to dry or style the wet hair. Further, the hair dryer **100** is equipped with a detachable mist generator **102**. The detachable mist generator **102** comprises a detachable water tank, a wick tube, an ultrasonic transducer, a manifold with ultrasonic nebulizer, and a one-way valve system for water supply. Transducer and the wick tube remain in housing of the hairdryer. The mist generator is explained in details in conjunction with the following figures. FIG. 2 shows an exploded view **200** of the mist generator **102**. The mist generator **102** includes the detachable water tank **202**, the wick tube **204**, the ultrasonic transducer **206**, and the manifold with ultrasonic nebulizer **208**. The manifold **208** has uniformly spaced vents or holes **210** to provide uniform application of water mist on the hair.

[0044] The manifold with the holes/spray nozzle is designed in such a way to have uniform and ultra fine mist particle size for uniform deposition at hair via the hair dryer **100**. It may be appreciated by a person ordinarily skilled in the art that the design of the manifold may be varied depending on the hair styling tool type and the requirements, without departing from the meaning and scope of the present invention. Such as, the holes may be of any shapes and sizes depending upon the requirements. For example, the holes may be round or circular in shape, with equal diameter and size, or gradually increasing or decreasing in sizes along the length of the manifold **208**. For uniform and even application of water mist on the hair, the placement, size and shape of the holes/spray nozzle/nebulizer plays an important role.

[0045] FIG. 3 shows the sectional view of the mist generator **102** detached from the hair dryer **100** and an enlarged view of the valve system employed in the hair dryer, in accordance with in an embodiment of the present invention. As mentioned above in the FIG. 2, the wick tube **204** and the transducer **206** are arranged in the hair dryer housing. The hair dryer **100** employs a one-way valve arrangement **302** for allowing water supply from the water tank **202** to the transducer **206** via the wick tube **204**. When the water tank **202** is mounted on the hair dryer **100**, the valve **302** is in open position allowing water supply. Whereas, when the tank **202** is dismantled from the hair dryer **100**, the valve closes and discontinues the water supply avoiding any water leakage.

[0046] FIG. 4 shows another exploded view of the mist generator **102**, in accordance with an embodiment of the present invention. The view **400** shows a tank top **402** and a tank bottom **404** of the water tank **202**. Further, the wick tube **204** is inserted in the manifold **208**. This arrangement allows the outlet of the mist drops formed at the wick tube **204** via the manifold **208** and the holes **210** (not shown in this figure). Furthermore, as seen in the FIG. 4, the ultrasonic transducer **206** includes a transducer housing **406** that houses a transducer disc **408** wound by a transducer wire

410. The transducer is finally sealed with a transducer gasket 412. A tank gasket 422 is also used to seal and separate water tank.

[0047] Further, as seen in the exploded view of the FIG. 4, the valve arrangement 302 includes a valve housing 414 that houses an arrangement of a valve stem 416 and a spring 418, which is sealed by a valve seal 420. The spring 418 and stem 416 arrangement of the valve system 302 allows opening and closing of the valve seal 420 that further allows or disallows respectively water supply from the water tank 202 to the transducer 206 via the wick tube 204.

[0048] FIGS. 5A and 5B show the closed (502) and opened (504) positions of the valve arrangement 302. When the water tank 202 is mounted on the hair dryer 100, the wick tube 204 pushes the valve stem 416 that further pushes the valve seal 420 into the water tank 202. This opens up a passage 506 that allows water to flow from the water tank 202 towards the wick tube 204.

[0049] FIG. 6 shows a hair straightener with flat metal plates, as the hair styling tool, equipped with a mist generator, in accordance with an embodiment of the present invention. The hair straightener 600 is combined with the mist generator 602 that includes a removable water tank 604. The water tank 604 needs to be installed in a seat provided in the straightener 600. As seen in the FIG. 6, step A shows the water tank 604 is pushed into the wick tube 606. Step B shows the water tank 604 placed in the seat of the straightener 600. Once the wick 606 is inserted into the water tank 604, the tank is pressed down and seated in the place. A friction fit feel gives the assurity of the tank 604 to be firmly placed in the straightener 600, as seen in step C. Further, the water tank 604 has a clear molded area 608 that acts as a window to clearly view the water level in the tank.

[0050] FIG. 7 shows enlarged portions of the straightener to clearly show mist generator control and rheostat temperature control buttons; nozzle holes for spraying mist, and a rubber base of the water tank, in accordance with an embodiment of the present invention. The hair straightener 600 includes different controls to control the operations of the straightener and the mist generator 602. Such as, the mist generator can be turned ON by using the button 700 provided at the edge of the straightener 600. Similarly, the temperature of rheostat can be controlled by operating the button 702. Placed adjacent to the metal plates 704 of the straightener is the manifold that comprises the holes 706 of the spray nozzle to uniformly spray mist at the metal plates 704 and the trapped hair between the metal plates as well. Further, the water tank 604 has a rubber fit door 708 on its underside to ensure that the user does not try to fill the tank while it is locked into the straightener 600.

[0051] FIGS. 8A and 8B show different views of the hair straightener 600. Such as, view 800 shows the front view, view 802 shows the top view, view 804 shows the side view of the straightener, while in FIG. 8B, view 806 shows the perspective view of the straightener 600.

[0052] FIGS. 9A-9F show different views of the manifold 900 that is used with the hair straightener 600. The manifold includes a plurality of vents or holes 706 that sprays water mist on the heated metal plates and on the hair. The manifold 900 is designed in such a way to have uniform and ultra fine mist particle size for uniform deposition at hair via the hair straightener. As seen in the FIGS. 9A-9F, the manifold 900 incorporates an inverse proportion on the center volume tube that feeds each vent. This compensates for pressure differ-

ence as the mist is transferred along its length. By tapering the center feed volume of the manifold 900, pressure equalization occurs to give uniform output at the various locations along its length. This avoids a general problem in all the steam products of having non-uniform application of mist. Also, another common problem in such heat styling tools with steam/mist production is the further away the mist source, the less emission occurs at the furthest vents. Advantageously, the current design of the manifold 900 with tapered internal feed volume avoids these common problems in the heat styling tools. It may be appreciated by a person skilled in the art that the manifold 900 and holes 706 may have different sizes and shaped depending on the design of the hair styling tool, without departing from the meaning and scope of the present invention.

[0053] Although the detailed description along with the drawings show two embodiments of the present invention disclosing hair dryer 100 and hair straightener 600, the apparatus of the present invention may be a variety of other hairy styling tools, such as a curling iron rod, which can be equipped with the mist generator to produce and apply water mist on the hair.

[0054] Advantageously, the present invention provides an apparatus for hair drying and styling that comprises a heating hair styling tool in combination with a mist generator. The mist generator creates cool sonic water mist by employing an ultrasonic transducer. The mist application feature of the styling tool combines the benefits of a heater thermal capacity styling tools with the advantage of a damp styling preventing the danger of scaling or burning the users head or hands with hot steam emission.

[0055] Further, the present invention also provides conditioning moisture to assist in setting hair curls, waves or styling shapes or straightening as desired. Furthermore, the present invention may also provide added benefits of hair gloss reflection & diminished static adaptation by employing a negative ion generator. Additionally, the apparatus in the present invention may also employ provisions of adding customized fragrance to hair for preferred aromas. The mist generator of the apparatus may be manually activated during styling or independently as required by the stylist/user.

[0056] Since other modifications and changes varied to fit particular operating requirements and environments are apparent to those skilled in the art, the invention is not considered limited to the example chosen for purposes of disclosure, and covers all changes and modifications which do not constitute departures from the true spirit and scope of this invention.

[0057] Having thus described the invention, what is desired to be protected by Letters Patent is presented in the subsequently appended claims.

[0058] Although the invention has been explained in relation to its preferred embodiment, it is to be understood that many other possible modifications and variations can be made without departing from the spirit and scope of the invention as herein described.

[0059] As one of ordinary skill in the art may appreciate, the example apparatus and method described herein can be modified. For example, certain modules/elements can be omitted, certain elements can be carried added, and other steps can be added. Although particular embodiments of the invention have been described in detail, it is understood that the invention is not limited correspondingly in scope, but

includes all changes, modifications and equivalents coming within the spirit and terms of the claims appended hereto.

[0060] While the invention has been described in connection with what is presently considered to be the most practical and various embodiments, it is to be understood that the invention is not to be limited to the disclosed embodiments, but on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims.

[0061] This written description uses examples to disclose the invention, including the best mode, and also to enable any person skilled in the art to practice the invention, including making and using any devices or systems and performing any incorporated methods. The patentable scope of the invention is defined in the claims, and may include other examples that occur to those skilled in the art. Such other examples are intended to be within the scope of the claims if they have structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal languages of the claims.

What is to be claimed is:

1. An apparatus for hair drying and styling, comprising: a hair styling tool including a heating mechanism to provide heat for styling or drying hair; and an ultrasonic mist generator, attached adjacent to the hair styling tool, for producing and applying an ultra fine spray of cool sonic mist to the hair, the ultrasonic mist generator includes:
 - a tank to store a fluid; an ultrasonic transducer to produce the spray of mist; a manifold to uniformly and evenly spray the mist onto the heated portions of the hair styling tool and heated hair; and a means to add a customized fragrance to the fluid and hair; where the manifold uniformly sprays the ultra fine small and light mist to replace moisture lost by the hair while drying out by the heat from the hair styling tool.
2. The apparatus as claimed in claim 1, wherein the mist generator further includes a wick tube to supply the fluid from the tank to the ultrasonic transducer; and a fluid supply arrangement to allow outflow of fluid from the tank towards the wick tube.
3. The apparatus as claimed in claim 1, wherein the fluid is water.
4. The apparatus as claimed in claim 1, wherein the fluid is a conditioner, a hair serum, or any other aromatic fluid.
5. The apparatus as claimed in claim 1, wherein the mist generator further includes an ion generator to produce negatively ion charged water for providing static control and improving conditioning and gloss of hair.
6. The apparatus as claimed in claim 1, wherein the operation of the mist generator is manually controlled by a user or a stylist or automatically controlled depending on temperature and other conditions of the hair styling tool and hair.

7. The apparatus as claimed in claim 1, wherein the mist generator is able to work either independently of the hair styling tool or along with the operation of the hair styling tool.

8. The apparatus as claimed in claim 1, wherein the mist generator produces a cool mist which is so small, fine and light that the mist is able to penetrate into the hair cuticle much more effectively than steam without the risk of scalding the scalp or hands of a stylist.

9. The apparatus as claimed in claim 1, wherein the hair styling tool is any one of a hair dryer or a hair straightener or a hair curling iron/rod or any other heat treatment tool for hair.

10. The apparatus as claimed in claim 1 and claim 9, wherein the ultrasonic transducer and the wick tube are inside housing of the hair dryer.

11. The apparatus as claimed in claim 1, wherein the tank is detachably attached to the hair styling tool.

12. The apparatus as claimed in claim 2, wherein the fluid supply arrangement is a one-way valve arrangement, or a detachable/spring plunger fluid release.

13. The apparatus as claimed claim 1, wherein the hair styling tool is provided with input/output control modules to control the operation of the hair styling tool and the mist generator, and to control the temperature of the hair styling tool and the amount of mist to be sprayed, to check fluid level in the tank, and the like.

14. The apparatus as claimed claim 1, wherein the mist generator is placed along the body length of the hair styling tool, and the manifold sprays the cool mist either along the body length or vertical to the body length of the hair styling tool.

15. An apparatus for hair styling comprising:

a hair styling tool for providing heat treatment to hair; and a piezoelectric based ultrasonic mist generator, attached along the hair styling tool, for producing an ultra fine and uniform spray of cool water sonic mist that replaces moisture lost by the hair during the heat treatment; the generator includes a means to provide an added customized fragrance to the mist and hence, hair.

16. The apparatus as claimed in claim 15, wherein the hair styling tool may be one of a hair dryer or a hair straightener or a hair curling iron/rod.

17. The apparatus as claimed in claim 15, wherein the mist generator further includes a fixed or detachably removed water tank for storing water; a a piezoelectric transducer to produce ultrasonic cool mist; a wick tube to supply the water from the water tank to the transducer; and a manifold to evenly diffuse an ultra fine spray of water mist over the hair styling tool and the hair.

18. The apparatus as claimed in claim 15, wherein the mist generator may work either independently or in combination with the hair styling tool; and may operated manually or automatically.

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