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(19) **United States**(12) **Patent Application Publication**
Lee(10) **Pub. No.: US 2009/0282690 A1**(43) **Pub. Date: Nov. 19, 2009**(54) **HAIR DRYER**(52) **U.S. Cl. 34/97; 34/96; 392/385; 392/379**(76) **Inventor: Chung Ku Lee, Seoul (KR)**

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PARK LAW FIRM**3255 WILSHIRE BLVD, SUITE 1110****LOS ANGELES, CA 90010 (US)**(21) **Appl. No.: 12/123,243**(22) **Filed: May 19, 2008****Publication Classification**(51) **Int. Cl.****A45D 20/12** (2006.01)**A45D 20/10** (2006.01)**F24H 3/02** (2006.01)(57) **ABSTRACT**

A hair dryer is disclosed. The hair dryer includes a main body which accommodates a fan, a motor and a heater, a handle which extends downward from the main body and is provided with a button, and a nozzle which is coupled to the main body and contains water or hair tonic. The nozzle includes a body, a receiving part, and a containing part. The containing part includes a container which contains water or hair tonic, and a cover which is made of a porous metal material and formed at the container by insert injection molding. Accordingly, when the hair dryer is used, water or hair tonic is ejected and supplied to the hair, thereby protecting the hair.

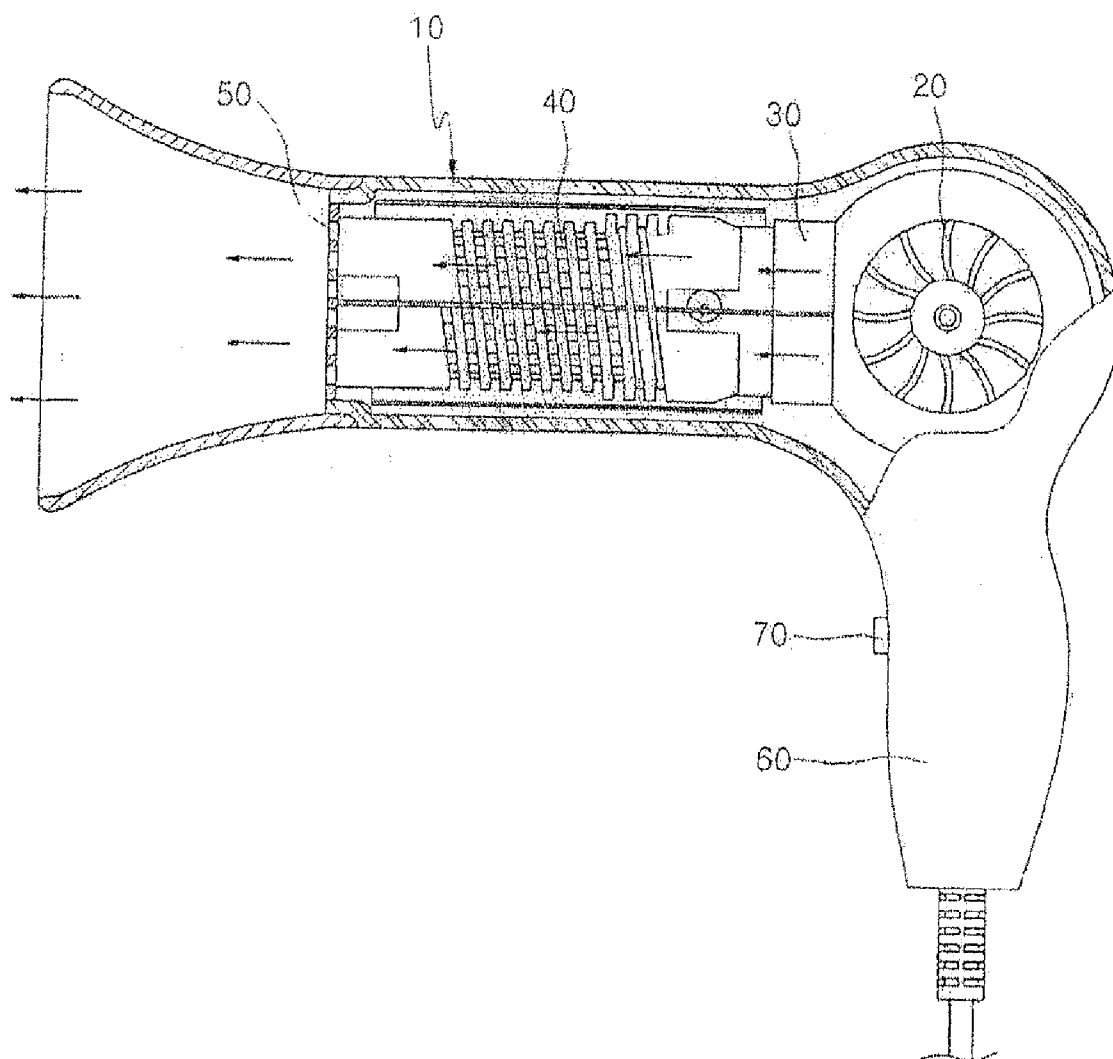


Figure 1

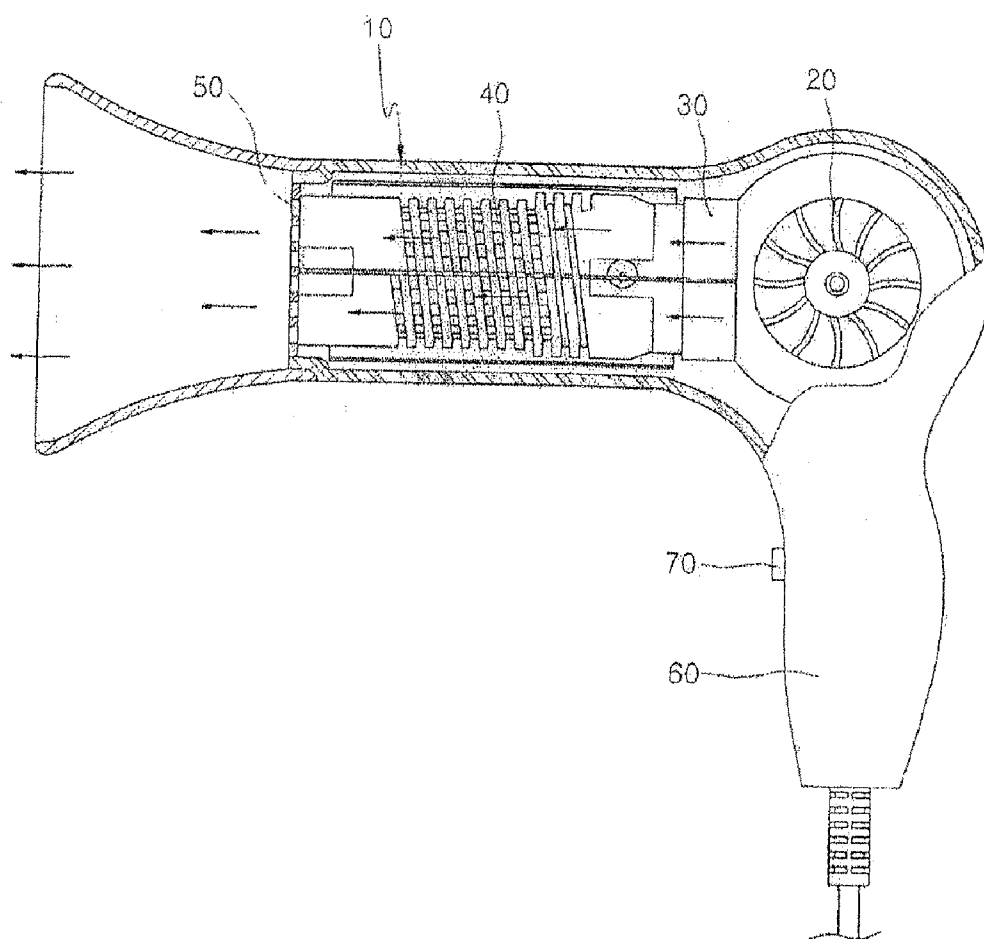


Figure 2

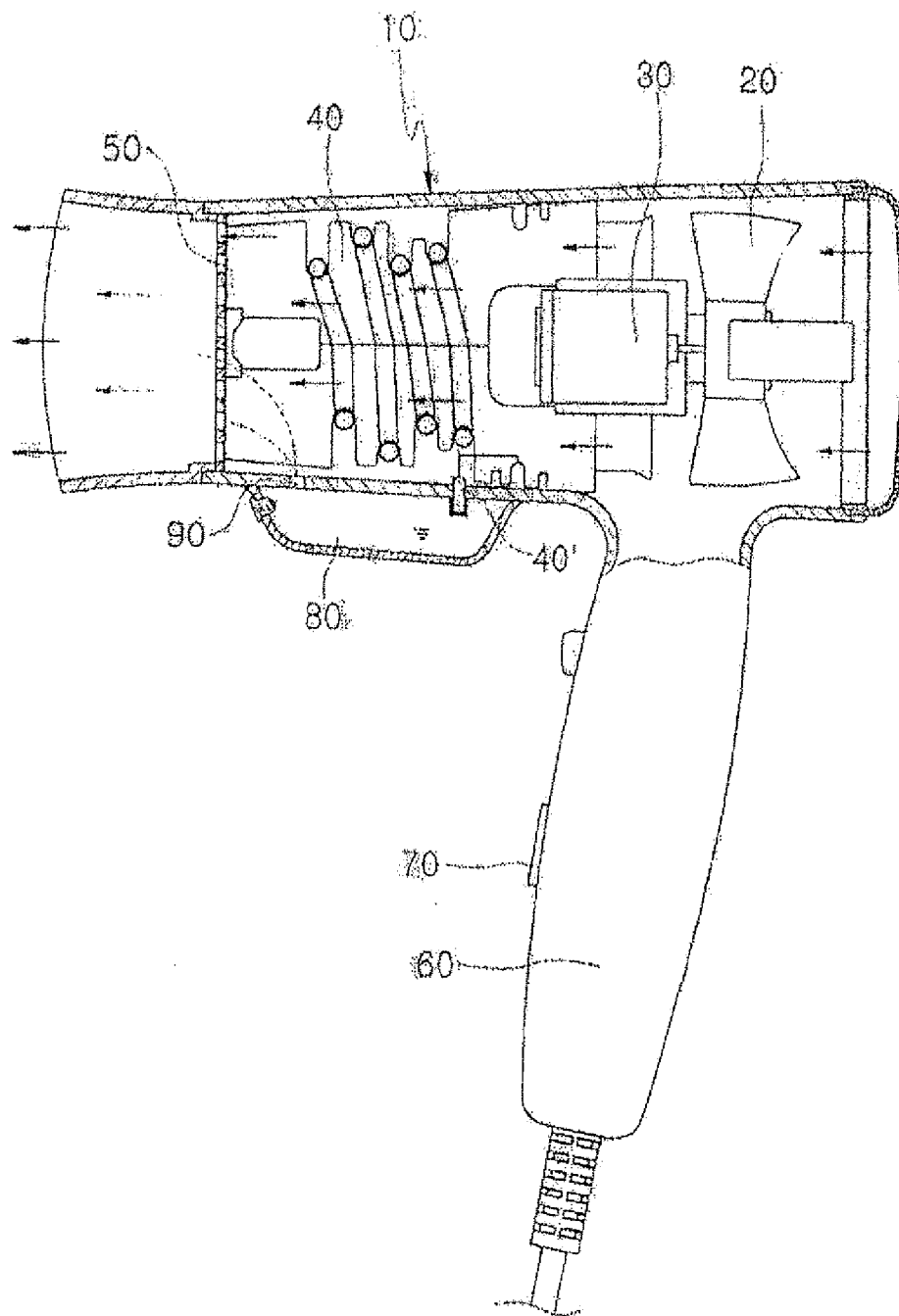


Figure 3

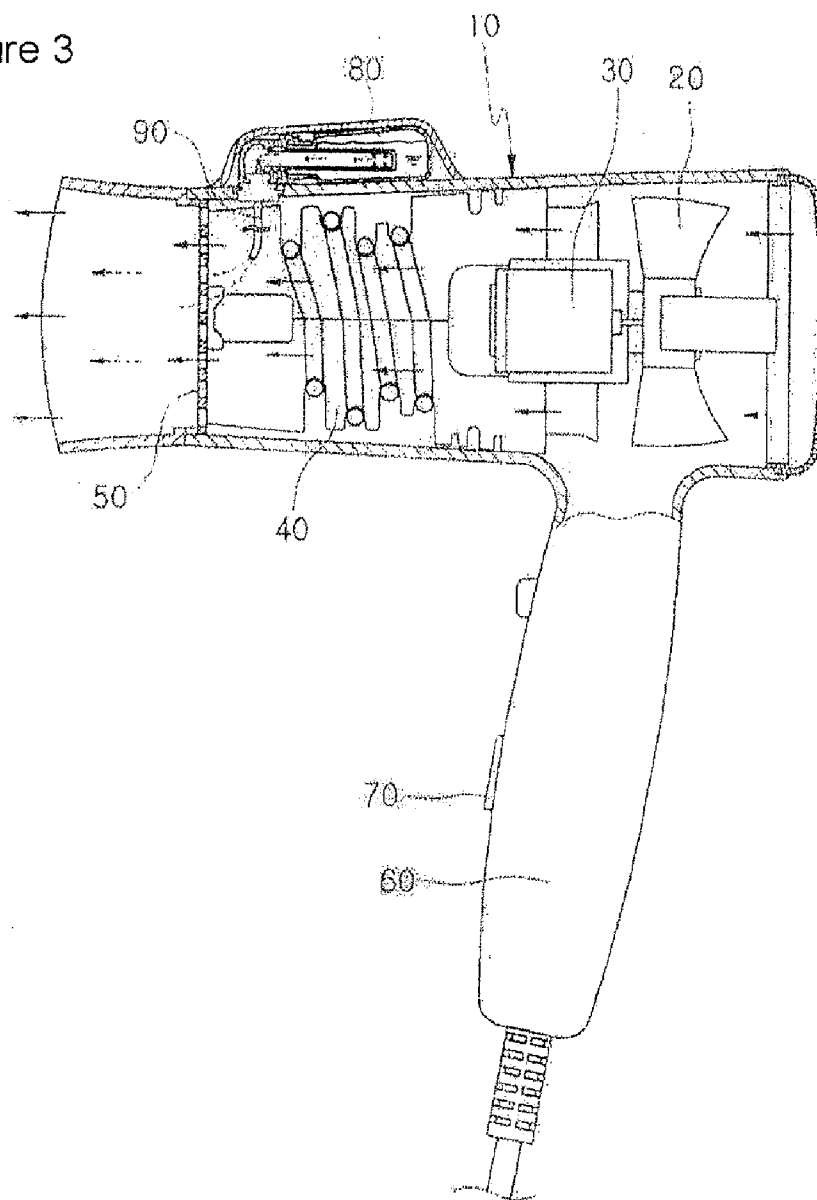


Figure 4

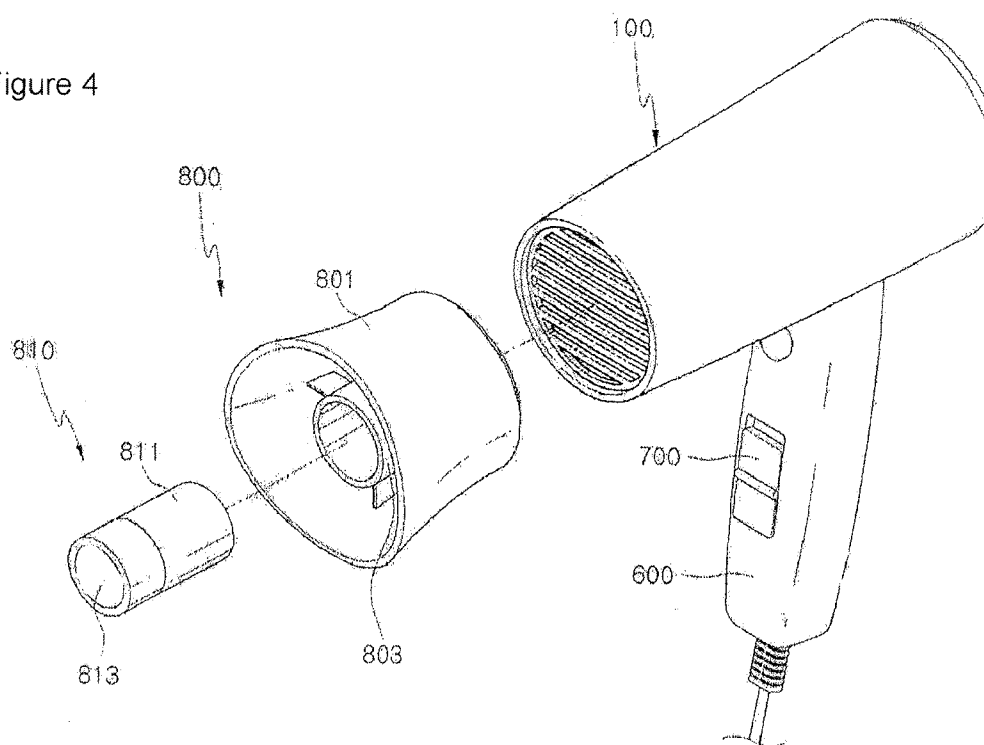


Figure 5

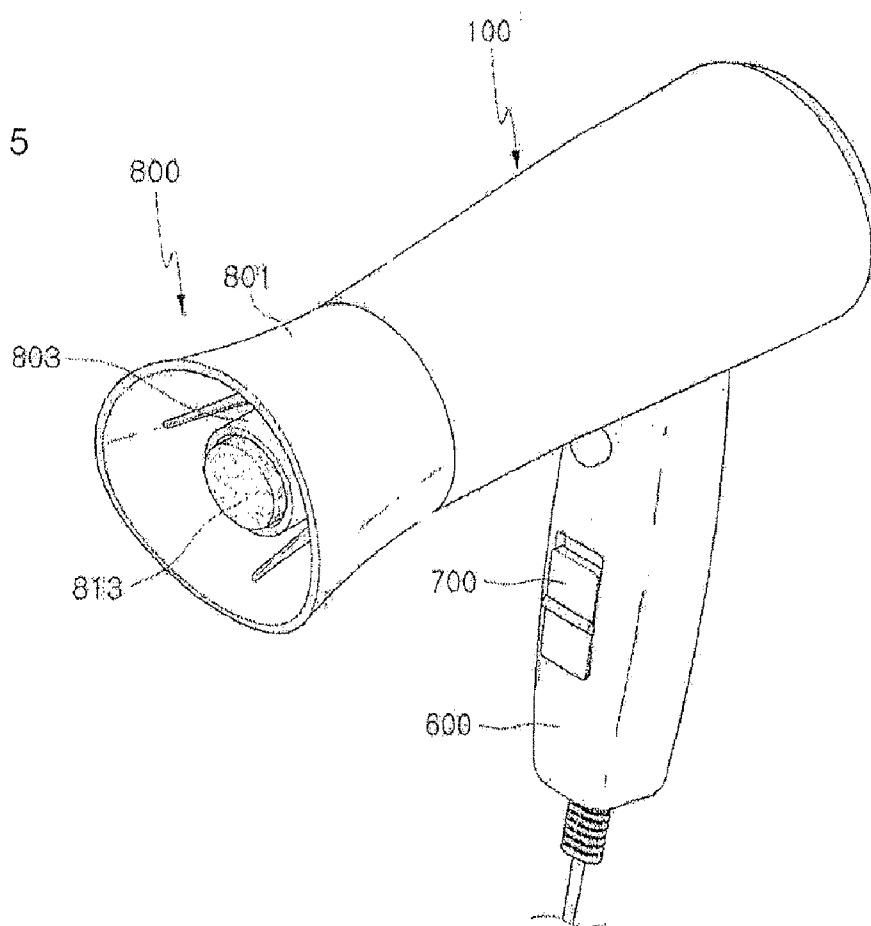


Figure 6

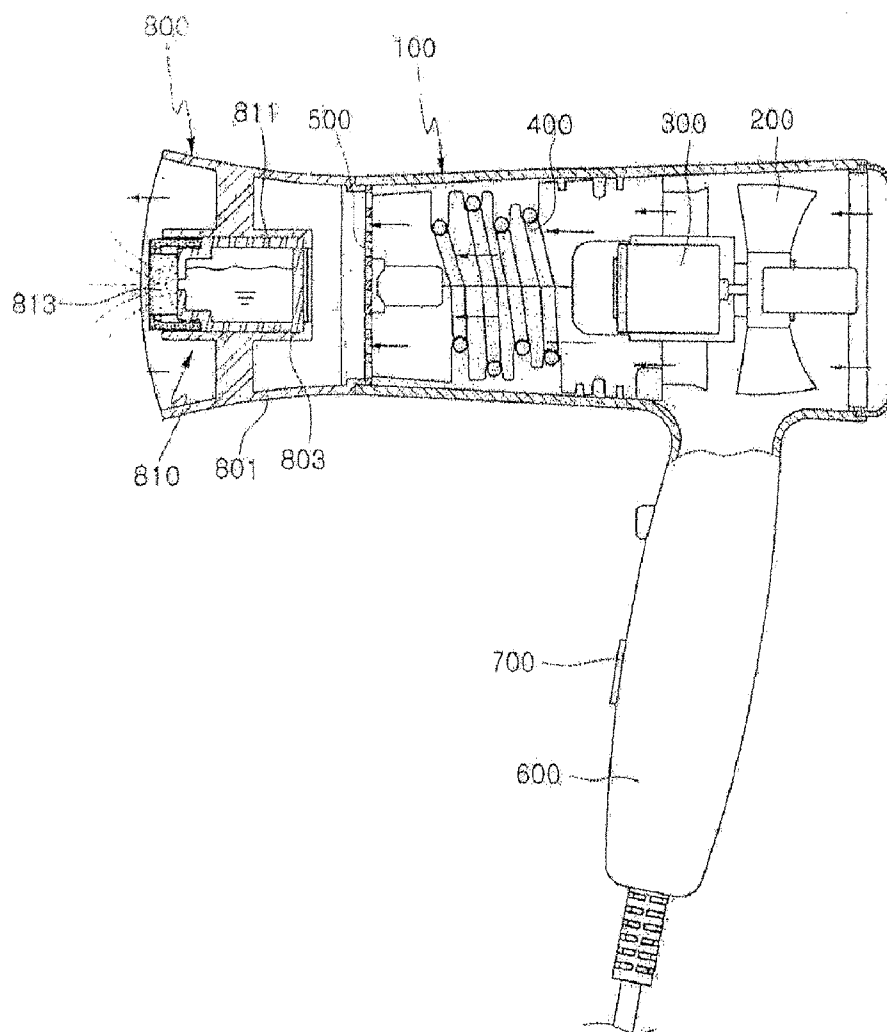


Figure 7

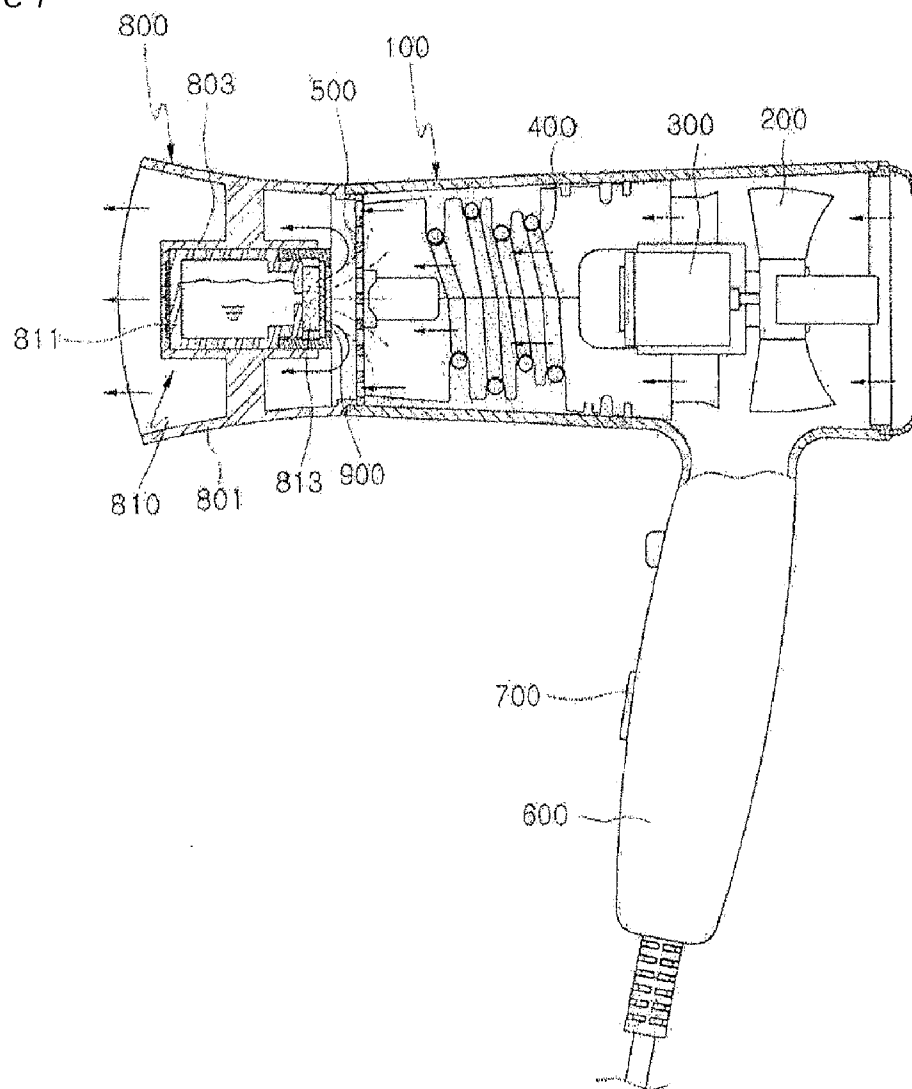
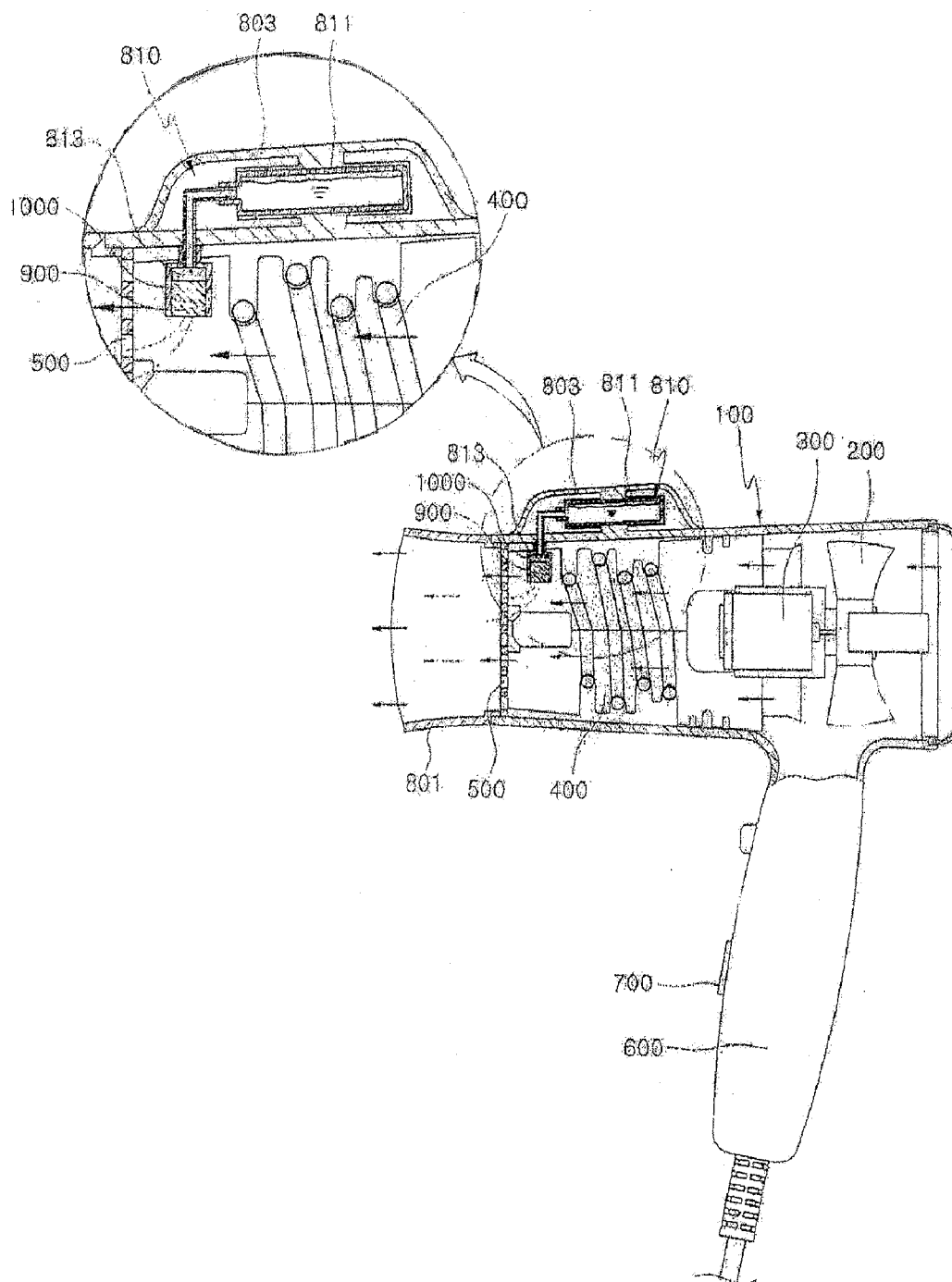


Figure 8



HAIR DRYER

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a hair dryer, and more particularly, to a hair dryer that is equipped with a container storing water or hair tonic, and is capable of ejecting the water or the hair tonic to the hair when used, to thereby protect the hair.

[0003] 2. Description of the Related Art

[0004] Generally, a hair dryer is used to dry hair after shampooing or for hairstyling.

[0005] As shown in FIG. 1, a typical hair dryer includes a main body 10 and a handle 60.

[0006] The main body 10 accommodates a fan 20 at an inner rear portion, a motor 30 provided in front of the fan 20 to drive the fan 20, and a heater 40 provided in front of the motor 30.

[0007] The handle 60 is provided with a button 70.

[0008] If the button 70 provided at the handle 60 is pushed, the heater 40 emits heat, and the fan 20 is driven to eject the hot air through openings 50 formed at the main body 10 to dry or style hair.

[0009] However, when using the hair dryer for a long time or long period, hair is damaged by the heat.

[0010] To protect the hair from heat, hair dryers capable of supplying water or hair tonic to the hair have been devised.

[0011] For instance, there is a heating type hair dryer (refer to FIG. 2) and a convection type hair dryer (refer to FIG. 3).

[0012] As shown in FIG. 2, the heating type hair dryer includes a water container 80 storing water, a first heater 40 for heating air, and a second heater 40' for heating the water stored in the water container 80. The water heated by the heater 40' is evaporated, and steam is ejected through the openings 50 formed at the main body 10.

[0013] However, the heating type hair dryer has the problem that the main body 10 is heated by the heater 40' and a user may get burnt.

[0014] Also, unless a fiber member provided at a contact portion between the heater and the water container gets wet, steam cannot be generated.

[0015] In other words, if the hair dryer is not used for a long period, the fiber member gets useless by being dried and carbonized.

[0016] As shown in FIG. 3, the convection type hair dryer includes a container 80 storing hair tonic, and a discharge part 90 for discharging the hair tonic from the container 80. When the hair dryer operates, the hair tonic exhausted from the container 80 is ejected through the openings 50 with air blown from the fan 20.

[0017] However, the convection type hair dryer has the problem that the ejecting amount of hair tonic is too small to achieve the hair protecting effect, and it has a large-sized structure.

[0018] Also, the hair tonic with high viscosity is not ejected well.

[0019] If the diameter of the discharge part is enlarged to increase the ejecting amount of hair tonic, the hair tonic may leak outside in a non-used state and cause an electric shock when using the hair dryer.

SUMMARY OF THE INVENTION

[0020] Therefore, the present invention has been made in view of the above problems, and it is an object of the present

invention to provide a hair dryer that is equipped with a container storing water or hair tonic, and is capable of ejecting the water or the hair tonic to the hair when used, to thereby protect the hair.

[0021] In accordance with an aspect of the present invention, the above and other objects can be accomplished by the provision of a hair dryer including a main body which accommodates a fan, a motor and a heater, and a handle which extends downward from the main body and is provided with a button, comprising a nozzle which is coupled to the main body and contains water or hair tonic.

[0022] The nozzle includes a body, a receiving part, and a containing part.

[0023] The containing part includes a container which contains water or hair tonic, and a cover which is made of a porous metal material and formed at the container by insert injection molding.

[0024] The nozzle further includes an evaporation filter which is provided on a front surface of the cover. The evaporation filter absorbs a substance contained in the container and evaporates the substance to decrease a particle size of the substance and easily supply the substance to the hair.

[0025] In accordance with another aspect of the present invention, there is provided a hair dryer comprising: a main body which accommodates a fan and a heater; a receiving part which is provided on the main body; and a containing part which is received in the receiving part, the containing part including a container which contains water or hair tonic, a cover which is made of a porous metal material, an evaporation filter, and a straw which houses the cover and the evaporation filter. If air heated by the heater heats the straw when discharged outside by the fan, heat is transferred to the container, and a substance contained in the container expands and leaves the containing part, and is ejected with air to be supplied to the hair.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026] The above and other objects, features and other advantages of the present invention will be more clearly understood from the following detailed description taken in conjunction with the accompanying drawings, in which:

[0027] FIG. 1 is a sectional view illustrating a typical hair dryer;

[0028] FIG. 2 is a sectional view illustrating a conventional hair dryer;

[0029] FIG. 3 is a sectional view illustrating another conventional hair dryer;

[0030] FIG. 4 is an exploded perspective view illustrating a hair dryer in accordance with a first exemplary embodiment of the present invention;

[0031] FIG. 5 is a perspective view illustrating the hair dryer in accordance with the first exemplary embodiment of the present invention;

[0032] FIG. 6 is a sectional view illustrating the hair dryer in accordance with the first exemplary embodiment of the present invention;

[0033] FIG. 7 is a sectional view illustrating a hair dryer in accordance with a second exemplary embodiment of the present invention; and

[0034] FIG. 8 is a sectional view illustrating a hair dryer in accordance with a third exemplary embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0035] Now, preferred embodiments of the present invention will be described in detail with reference to the annexed drawings.

[0036] FIGS. 4 to 6 are an exploded perspective view, a perspective view, and a sectional view, respectively, illustrating a hair dryer in accordance with a first exemplary embodiment of the present invention.

[0037] The hair dryer according to the present invention comprises a main body 100, a handle 600, and a nozzle 800 in which water or hair tonic is contained.

[0038] The main body 100 accommodates a fan 200, a motor 300, and a heater 400.

[0039] The fan 200 is disposed at an inner rear portion of the main body 100, and the motor 300 is disposed in front of the fan 200 to drive the fan 200.

[0040] If a button 700 provided at the handle 600 (which will be described later) is pushed, the fan 200 is applied with power and rotates.

[0041] When receiving power, the heater 400 heats air and the nozzle 800, so that the water or the hair tonic contained in the nozzle 800 expands and is ejected outside.

[0042] The handle 600 extends downward from a portion of the main body 100, and is provided with the button 700.

[0043] If the button 700 provided at the handle 600 is pushed, the motor 300 is driven to rotate the fan 200, and the heater 400 is driven to heat air blown from the fan 200 toward openings 500.

[0044] The nozzle 800, in which the water or the hair tonic is contained, is coupled to a front end of the main body 100 where the openings 500 are formed.

[0045] The nozzle 800 includes a body 801, a containing part 810 in which the water or the hair tonic is contained, and a receiving part 803 in which the containing part 810 is received.

[0046] The body 801 of the nozzle 800 is coupled to the front end of the main body 100 where the openings 500 are formed. The body 801 of the nozzle 800 is shaped such that a cross-sectional area increases as it progresses forward.

[0047] The receiving part 803 is disposed inside the body 801, and the containing part 810 is received in the receiving part 803.

[0048] The containing part 810 includes a container 811 in which the water or the hair tonic is contained, and a cover 813 which covers the container 811.

[0049] It is preferred that the container 811 is made of a material having a high heat conductivity, such as plastic, aluminum, or copper, in order to effectively transfer heat to the substance (the water or the hair tonic) contained in the container 811 when the container 811 is heated. The cover 813 covering the container 811 is formed at an opening of the container 811 by insert injection molding.

[0050] The cover 813 is made of a porous metal material. The cover 813 restricts the evaporation of the substance (the water or the hair tonic) in a natural condition, and allows the expanded substance by heating the container 811 using the heater to be ejected from the container 811.

[0051] The containing part 810 is received in the receiving part 803 while the cover 813 is directed forward of the hair dryer.

[0052] FIG. 7 is a sectional view illustrating a hair dryer in accordance with a second exemplary embodiment of the present invention.

[0053] The hair dryer of this embodiment is configured such that the containing part 810 is received in the receiving part 803 while the cover 813 is directed toward the main body 100. An evaporation filter 900 is provided on a front surface of the cover 813.

[0054] When the substance contained in the container 811 expands by the air heated by the heater 400 and is ejected through the cover 813, the evaporation filter 900 absorbs the substance. The substance absorbed in the evaporation filter 900 is evaporated and ejected outside with the air blown from the fan 200. By such an evaporation filter 900, the particle size of the substance becomes so small as to be easily applied to the hair.

[0055] FIG. 8 is a sectional view illustrating a hair dryer in accordance with a third exemplary embodiment of the present invention.

[0056] The hair dryer of this embodiment is configured such that the receiving part 803 is provided on the main body 100, in which the container 811 of the containing part 810 is received. The containing part 810 includes the cover 813 made of a porous metal material, and the evaporation filter 900. The cover 813 and the evaporation filter 900 are housed in a straw 1000 that is made of a material having a high heat conductivity.

[0057] If the air heated by the heater 400 heats the straw 1000 when discharged outside by the fan 200, the heat is transferred to the containing part 810. The substance contained in the containing part 810 expands and leaves the containing part 810, and is ejected with the air through the openings of the hair dryer to be supplied to the hair.

[0058] Hereinafter, the operation of the hair dryer according to the first embodiment of the present invention will be described.

[0059] Referring to FIG. 6, if the button 700 provided at the handle 600 is pushed, the motor 300 is driven to rotate the fan 200 and the heater 400 emits heat.

[0060] The fan 200 rotating by the motor 300 blows the Air toward the openings 500, and the air is heated by the heater 400 while passing by the heater 400.

[0061] While passing through the openings 500, the heated air heats the water or the hair tonic contained in the containing part 810 received in the receiving part 803 of the nozzle 800 which is coupled to the front end of the main body 100 where the openings 500 are formed.

[0062] The water or the hair tonic contained in the containing part 810, that is heated by the air, expands in the container 811, and is exhausted from the container 811 through the cover 813 of a porous metal material which is attached to the container 811.

[0063] The water or the hair tonic exhausted from the container 811 is ejected outside with the air blown from the fan 200 and passing through the openings 500, and supplied to the hair, so as to protect the hair when drying the hair after shampooing or hairstyling.

[0064] The operation of the hair dryer according to the second embodiment of the present invention will now be described.

[0065] Referring to FIG. 7, if the button 700 provided at the handle 600 is pushed, the motor 300 is driven to rotate the fan 200 and the heater 400 emits heat.

[0066] The fan 200 rotating by the motor 300 blows the air toward the openings 500, and the air is heated by the heater 400 while passing by the heater 400.

[0067] While passing through the openings 500, the heated air heats the water or the hair tonic contained in the containing part 810 received in the receiving part 803 of the nozzle 800, which is coupled to the front end of the main body 100 where the openings 500 are formed.

[0068] The water or the hair tonic contained in the containing part 810, that is heated by the air, expands in the container 811, and is exhausted from the container 811 through the cover 813 of a porous metal material which is attached to the container 811. The water or the hair tonic exhausted through the cover 813 is absorbed in the evaporation filter 900 provided on the outer surface of the cover 813, and then evaporated.

[0069] The water or the hair tonic exhausted from the container 811 and evaporated by the evaporation filter 900 is ejected outside with the air blown from the fan 200 and passing through the openings 500, and is supplied to the hair, so as to protect the hair when drying the hair after shampooing or hairstyling.

[0070] The operation of the hair dryer according to the third embodiment of the present invention will now be described.

[0071] Referring to FIG. 8, if the button 700 provided at the handle 600 is pushed, the motor 300 is driven to rotate the fan 200 and the heater 400 emits heat.

[0072] If the air heated by the heater 400 heats the straw 1000 when discharged outside by the fan 200, the heat is transferred to the containing part 810. The substance contained in the containing part 810 expands and leaves the containing part 810, and is ejected with the air through the openings of the hair dryer to be supplied to the hair.

[0073] As apparent from the above description, the hair dryer according to the present invention is equipped with the container storing the water or the hair tonic, and is capable of ejecting the water or the hair tonic to the hair when used, thereby protecting the hair.

[0074] Although the preferred embodiments of the present invention have been disclosed for illustrative purposes, those

skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.

What is claimed is:

1. A hair dryer including a main body which accommodates a fan, a motor and a heater, and a handle which extends downward from the main body and is provided with a button, comprising:

a nozzle which is coupled to the main body and contains water or hair tonic.

2. The hair dryer according to claim 1, wherein the nozzle includes a body, a receiving part, and a containing part.

3. The hair dryer according to claim 2, wherein the containing part includes a container which contains water or hair tonic, and a cover which is made of a porous metal material and formed at the container by insert injection molding.

4. The hair dryer according to claim 2, wherein the nozzle further includes an evaporation filter which is provided on a front surface of the cover,

whereby the evaporation filter absorbs a substance contained in the container and evaporates the substance to decrease a particle size of the substance and easily supply the substance to the hair.

5. A hair dryer comprising:

a main body which accommodates a fan and a heater;

a receiving part which is provided on the main body; and

a containing part which is received in the receiving part, the containing part including a container which contains water or hair tonic, a cover which is made of a porous metal material, an evaporation filter, and a straw which houses the cover and the evaporation filter,

whereby if air heated by the heater heats the straw when discharged outside by the fan, heat is transferred to the container, and a substance contained in the container expands and leaves the containing part, and is ejected with air to be supplied to the hair.

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