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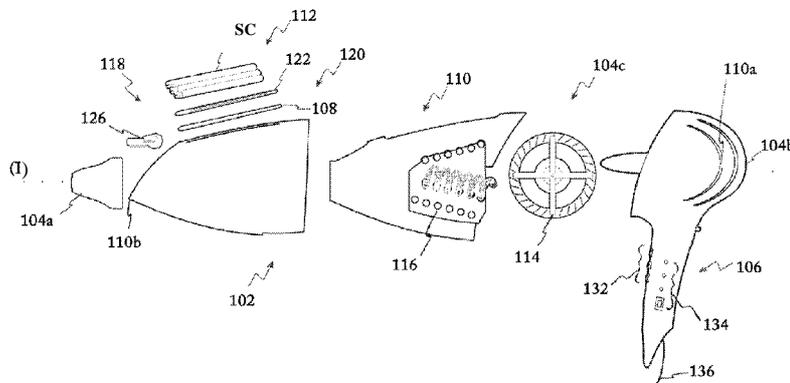


FIG 1B

(57) Abstract: A hair drying device with integrated spray mechanism is provided. The device comprises a housing defining an internal cavity which is thermally isolated into a main cavity and an auxiliary cavity. The main cavity comprises a blow-drying assembly for establishing an air stream through the main cavity and a heating assembly for heating the air stream. The auxiliary cavity comprises a dispensing assembly, which in turn, comprises means for holding at least one spray cartridge therein and further comprising means for actuating the spray cartridge to release a pressurized fluid contained therein.

## HAIR DRYING DEVICE WITH INTEGRATED SPRAY MECHANISM

## BACKGROUND OF THE PRESENT INVENTION

## TECHNICAL FIELD

[0001] The present invention generally relates to hair drying devices. More specifically, the present invention relates to a hair drying device with an integrated spray mechanism.

## DESCRIPTION OF THE RELATED ART

[0002] Hair dryers have been in common use both in domestic as well as commercial applications for several decades. Conventionally, hair dryers have been used to expedite evaporation of water from hair through blowing, typically at high speeds, hot or cold air over wet or damp hair. However, in recent years, hair dryers have also emerged as integral tools for hair styling. Such use of hair dryer is attributed to formation of internal bonds within individual hair strands. Although temporary, such internal bonds are significantly strong and manifest in volume and lift in hair and thereby, facilitate varied hair styling techniques.

[0003] It is also a common practice to enhance such desirable properties as tension, hold, and lift in hair through use of various hair styling products.

[0004] Quite unsurprisingly, several hair stylists use a combination of blow-drying techniques and hair styling products to achieve desired coiffures. While doing so, hair stylists typically hold a hair comb in one hand and switch between a hair dryer and a hair spray device, for application of desired hair styling product, with the other hand. It will be appreciated that such process is not only tedious and clumsy but also highly inefficient.

[0005] While there is a distinct need for application of various hair styling products before, during and/or after a blow-drying operation, at times, it is also desirable to apply other hair and/or scalp related products such as hair products providing colour, sheen, and fragrance to hair; hair products intended to minimize damage to hair constitution and frizz in hair owing to excessive heat; essential oils and other medicinal products for therapeutic purposes; and at times, simply water or moisture.

[0006] It is noted at this point that while it may appear paradoxical, at times, it is desired to apply water and/or steam to hair during a blow-drying operation, especially when it is being performed to achieve a desired hair style, to prevent over-drying and damage to hair.

[0007] Any such product that is desired to be applied to hair and/or scalp before, during, and/or after a blow-drying operation will hereinafter be referred to as hair treatment product. It is noted that this phrase is intended to be interpreted in a broad sense and is not merely limited to such products that may have therapeutic uses. The phrase hair treatment is intended to be interpreted in a board sense in a similar manner.

[0008] It will now be well appreciated that, owing to various reasons, it is required to apply different hair treatment products before, during, and/or after a blow-drying operation .

[0009] In the state of the art, hair-dryers and devices for dispensing hair treatment products, even when intended to be applied to hair and/or scalp through a spray mechanism, exist as separate devices; thereby, making application of desired hair treatment products more cumbersome.

[0010] In light of the foregoing, there is a need for a hair drying device that facilitates application of one or

more hair treatment products especially during a blow-drying operation .

#### SUMMARY OF THE PRESENT INVENTION

[0011] It is an object of the present invention to provide a hair drying device with an integrated spray mechanism such that application of one or more hair treatment products is facilitated before, during, and/or after a blow-drying operation .

[0012] The underlying concept of the present invention is to provide a hair drying device with an integrated spray mechanism. The hair drying device is designed such as to provide a main cavity which includes conventional blow-drying assemblies related to blowing and heating functions among others and in addition, an auxiliary cavity adapted for supporting a dispensing assembly, which in turn, includes means for holding a spray cartridge therein and means for actuating the spray cartridge to release a pressurized fluid contained therein. It is noted that the spray cartridge according to the present invention includes a vessel containing a pressurized fluid, which is a mixture of a hair product along with a propellant, and fitted with a release valve and a nozzle. When the release valve is actuated, through means for actuating included in the dispensing assembly, the pressurized fluid is released through the nozzle forming a spray. The hair drying device of the present invention is provided with suitable blow-drying and spray control interfaces to control respective operations.

[0013] In a particularly advantageous embodiment, the spray cartridge and in particular, the spray nozzle is arranged such that when the pressurized fluid emanates therefrom, the direction of flow of the pressurized fluid is towards the direction of an air stream emanating from the hair drying device during a blow-drying operation such as to ensure that the pressurized fluid emanating from the spray cartridge mixes with the air stream and carried therewith to

facilitate effective impingement of pressurized fluid upon hair fibers. It should be noted, however, that the spray mechanism of the present invention is not as such dependent on the blow-drying function and may be used independent of that .

[0014] In a first aspect of the present invention, a device suitable for hair drying is provided. The device comprises a housing, an insulating partition, a blow-drying assembly, a heating assembly, and a dispensing assembly.

[0015] At least a first portion of the housing extends substantially along a longitudinal direction (I) and defines an anterior end, a posterior end, and an internal cavity extending there between. The insulating partition is disposed within the internal cavity extending along the longitudinal direction (I) in such manner as to partition the internal cavity into a main cavity and an auxiliary cavity.

[0016] The main cavity has at least one air inlet opening towards the posterior end and at least one air outlet opening towards the anterior end. The auxiliary cavity is thermally isolated from the main cavity.

[0017] The blow-drying assembly is disposed substantially within the main cavity and configured for establishing an air stream through the main cavity along the longitudinal direction (I) from the posterior end to the anterior end. The heating assembly is disposed substantially within the main cavity intermediate the blow-drying assembly and the anterior end and configured for heating the air stream. The dispensing assembly is disposed substantially within the auxiliary cavity and comprises means for holding at least one spray cartridge therein and further comprising means for actuating the spray cartridge to release a pressurized fluid contained therein .

[0018] Accordingly, the present invention advantageously provides a hair drying device with an integrated spray

mechanism and thus, facilitates application of any desired hair treatment product before, during, and/or after a blow-drying operation.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0019] The present invention is further described hereinafter with reference to illustrated embodiments shown in the accompanying drawings, in which:

FIGS 1A-1B illustrate a perspective view and an exploded view respectively of a hair drying device in accordance with an exemplary embodiment of the present invention,

FIGS 2A-2C illustrate schematic views of a dispensing assembly in accordance with an exemplary embodiment of the present invention,

FIG 3 illustrates a schematic view of multiple spray cartridges in accordance with an exemplary embodiment of the present invention,

FIG 4 illustrates a schematic view of a dispensing assembly thermally coupled to a heating assembly in accordance with an exemplary embodiment of the present invention, and

FIG 5 illustrates a schematic view of a second portion of a housing of a hair drying device in accordance with an exemplary embodiment of the present invention.

#### DETAILED DESCRIPTION OF THE PRESENT INVENTION

[0020] Various embodiments are described with reference to the drawings, wherein like reference numerals are used to refer to like elements throughout. In the following description, for purpose of explanation, numerous specific

details are set forth in order to provide a thorough understanding of one or more embodiments. It may be evident that such embodiments may be practised without these specific details .

[0021] Referring to FIGS 1A and 1B, a perspective view and an exploded view respectively of a hair drying device 100 are depicted in accordance with an exemplary embodiment of the present invention.

[0022] The hair drying device 100 includes a housing 102. The housing 102 has a first portion 104 and a second portion 106. The hair drying device 100 further includes an insulating partition 108, which partitions an internal cavity within the first portion 104 into a main cavity 110 and an auxiliary cavity 112. The hair drying device 100 further includes a blow-drying assembly 114, a heating assembly 116, and a dispensing assembly 118.

[0023] In various exemplary embodiments of the present invention, the housing 102 has a modular design and is formed using any number of individual components, as may be desired.

[0024] As mentioned earlier, the housing 102 includes two main portions, the first portion 104 and the second portion 106. As can be seen in the adjoining figures, the first portion 104 extends substantially along a longitudinal direction (I) and defines an anterior end 104a and a posterior end 104b. The first portion 104 of the housing 102 is designed to form an internal cavity 104c therein which extends from the posterior end 104b to the anterior end 104a thereof .

[0025] The insulating partition 108 is disposed within the internal cavity 104c extending substantially along the longitudinal direction (I) in such manner as to partition the internal cavity 104c into the main cavity 110 and the auxiliary cavity 112. As will be appreciated the arrangement of insulating partition 108 is in a plane parallel to the

longitudinal direction (I). This ensures that the main cavity 110 still extends from substantially adjacent to the posterior end 104b to substantially adjacent to the anterior end 104a.

[0026] The main cavity 110 is provided with one or more air inlet openings 110a towards the posterior end 104b and at least one air outlet opening 110b towards the anterior end 104a. As will be readily appreciated the desired air inlet openings 110a and the air outlet opening 110b may be provided in any suitable manner. In accordance with the current practice, multiple thin slots are created near the posterior end 104b to form the air inlet openings 110a while the air outlet opening 110b is implemented as a single relatively larger opening at the anterior end 104a. The air outlet opening 110b may be configured to be attached to several different attachments to suitably direct flow of air stream emanating from the hair drying device 100.

[0027] As the auxiliary cavity 112 is separated from the main cavity 110 using the insulating partition 108, it will be readily evident that the auxiliary cavity 112 is thermally isolated from the main cavity 110. This technical feature of the present invention advantageously facilitates use of such spray cartridges that contain thermally sensitive hair treatment products, as will be better appreciated from the description provided later in the present application.

[0028] It should be noted that auxiliary cavity 112, as such, may not necessarily be contained within the internal cavity 104c in its entirety and may extend beyond the internal cavity 104c.

[0029] The housing 102 includes a flap-like cover arrangement 130 configured for permitting access to the auxiliary cavity 112 such that the spray cartridge is externally mountable therein, as will be further explained later in the present description.

[0030] The flap-like cover arrangement 130 includes a flap-like structure that covers the auxiliary cavity 112. Thus, the auxiliary cavity 112 is at least partially bounded by insulating partition 108, optionally, a part of the first portion 104, and the flap-like cover arrangement 130. The main cavity 110 is bounded by the first portion 104 and the insulating partition 108.

[0031] The key functional components within each of the two cavities, the main cavity 110 and the auxiliary cavity 112 will now be explained.

[0032] The main cavity 110 includes the blow-drying assembly 114 and the heating assembly 116.

[0033] The blow-drying assembly 114 is disposed substantially within the main cavity 110. The blow-drying assembly 114 is configured for establishing an air stream through the main cavity 110 along the longitudinal direction (I) from the posterior end 104b to the anterior end 104a.

[0034] In one example, the blow-drying assembly 114 typically includes a blower fan operated using a universal motor. However, several different techniques may be used to implemented the blow-drying assembly 114 as is well known in the art and hence, not being described in detail for sake of brevity .

[0035] The heating assembly 116 is disposed substantially within the main cavity 110 intermediate the blow-drying assembly 114 and the anterior end 104a and configured for heating the air stream. In one non-limiting example, the heating assembly 116 includes an electrically resistive coil configured to generate heat upon passage of an electrical current there through. Such coil is wound on support structure formed using a thermally insulating material such as mica.

[0036] During a blow-drying operation, the blow-drying assembly 114 is operated to create an air stream through the internal cavity 104c. The ambient air is sucked into the internal cavity 104c from the air inlet openings 110a. As air stream flows through the heating assembly 116, the temperature of the air stream rises, and eventually, the heated air stream exists the internal cavity 104c through the air outlet opening 110b.

[0037] Turning now to the auxiliary cavity 112, a dispensing assembly 118 is provided to achieve the desired spray mechanism. The dispensing assembly 118 is further depicted in more detail in FIGS 2A-2C.

[0038] Referring to FIGS 2A through 2C, schematic views of a dispensing assembly are depicted in accordance with an exemplary embodiment of the present invention.

[0039] The dispensing assembly 118 is disposed substantially within the auxiliary cavity 112 and includes means 120 for holding at least one spray cartridge therein and means 126 for actuating the spray cartridge to release a pressurized fluid contained therein.

[0040] Referring to FIG 3, a schematic view of spray cartridges (sc) is depicted in accordance with an exemplary embodiment of the present invention.

[0041] As generally well understood in the art, such spray cartridge includes a vessel that contains a pressurized fluid. It is contemplated that the pressurized fluid will usually be a combination of one or more desired hair treatment products and a propellant.

[0042] The vessel is provided with a valve that can be actuated to release the pressurized fluid contained in the vessel. The vessel further includes a nozzle to create a desired spray profile.

[0043] It is well understood that numerous different types and sizes of nozzles are available that provide different spray profiles. The spray cartridge intended to be used in the present invention may be provided with any suitable nozzle type in a suitable size depending on such physical properties as viscosity, surface tension, and so on of the pressurized fluid, in particular, the hair treatment product, and desired spray profile parameters such as flow-rate, spray angle, drop-size and so on.

[0044] While the spray cartridge may assume any required form factor, in a preferred embodiment of the present invention, the spray cartridge has a elongated tubular structure .

[0045] Referring back to FIGS 2A through 2C along with FIGS 1A-1B, in one exemplary embodiment of the present invention, the means 120 are embodied in cartridge seats 122 in the form of grooves adapted to provide snap-fit mounting of the spray cartridge therein. The desired cartridge seats 122 may be formed within the insulating partition 108 or may be formed using a separate structure which is then disposed on the insulating partition 108.

[0046] In an exemplary embodiment, the individual cartridge seats 122 are thermally insulated from each other. Such thermal insulation is desirable in case one or more spray cartridges are desired to be selectively heated. In an exemplary embodiment, the required thermal isolation is achieved using thermal partitions 124 between individual cartridge seats 122.

[0047] In an exemplary embodiment of the present invention, the means 126 for actuating are embodied in a mechanical lever-like arrangement that when triggered causes the valve in the spray cartridge to release the pressurized fluid contained therein.

[0048] As can be seen in the adjoining figures, particularly in FIGS 2B and 2C, the dispensing assembly 118 includes an ejector arrangement 128 adapted for ejecting the spray cartridge. In the exemplary embodiment depicted in the adjoining figures, the dispensing assembly 118 includes three cartridge seats 122 and each cartridge seat 122 is provided with an ejector push-button, which when operated, triggers a lever mechanism to push-eject the spray cartridge from the respective cartridge seat 122.

[0049] In various exemplary embodiments of the present invention, the dispensing assembly 118 is configured such that when the spray cartridge is mounted therein, a fluid spray emanating therefrom is directed toward the air stream emanating from the air outlet opening 110b. In other words, the direction of flow of the pressurized fluid is configured to be towards the direction of an air stream emanating from the hair drying device 100 during a blow-drying operation such as to ensure that the pressurized fluid emanating from the spray cartridge mixes with the air stream and carried therewith to facilitate effective impingement of pressurized fluid upon hair fibers.

[0050] It should be noted, however, that the spray mechanism of the present invention, embodied in the dispensing assembly 118, is not as such dependent on the blow-drying function and may be used independent of that.

[0051] Referring now to FIG 4, a schematic view of a dispensing assembly 118 thermally coupled to a heating assembly 116 is depicted in accordance with an exemplary embodiment of the present invention.

[0052] In this embodiment, at least one cartridge seat 122 is provided with a heat absorbent pad in the form of an internal lining. The electrically resistive coil is extended through the heat absorbent pad. Thus, the heating assembly 116 is operatively coupled to the dispensing assembly 118 and

configured for effecting controlled heating of at least one spray cartridge mounted therein.

[0053] It is noted that suitable power supply control means such as current regulators are used to independently regulate electrical current through the portion of electrically resistive coil extending through the dispensing assembly 118. Such regulation is independent of the regulation of electrical current through the electrical coil in the heating assembly 116 responsible for regulating temperature of the air stream emanating from the hair drying device 100.

[0054] Referring now to FIG 5 in combination with the preceding figures, schematic view of a second portion 106 of the housing 102 of the hair drying device 100 are depicted in accordance with an exemplary embodiment of the present invention .

[0055] As can be clearly seen in the adjoining figures, the second portion 106 of the housing 102 extends along a traverse direction (II) substantially orthogonal to the longitudinal direction (I) . The second portion 106 of the hair drying device 100 has such form factor that is suitable for providing a convenient hold the hair drying device 100 using the second portion 106.

[0056] In an exemplary embodiment of the present invention, the second portion 106 is provided with various control interfaces. The control interfaces include a blow-drying control interface 132 and a spray control interface 134 .

[0057] It should be noted that these control interfaces 132 and 134 may be implemented in any desirable manner through various kinds of buttons and/or tactile surfaces. The control interfaces 132, 134 may further include a display unit to provide information to a user about current settings of various parameters and facilitate desired changes therein.

[0058] The blow-drying control interface 132 is configured for permitting regulation of power supply to at least one of the blow-drying assembly 114 and the heating assembly 116.

[0059] In one exemplary embodiment, the blow-drying control interface 132 includes a main power button that enables switching-on and switching-off of the hair drying device 100. The blow-drying control interface 132 includes a speed control button to regulate speed of the blow-drying assembly 114. The blow-drying control interface 132 includes a heat control button to regulate heat generated by the heating assembly 116.

[0060] The spray control interface 134 is configured for permitting regulation of the means for actuating the spray cartridge .

[0061] In one exemplary embodiment, the spray control interface 134 includes a main activation button enabling switching-on and switching-off of the spray mechanism. The spray control interface 134 also includes individual trigger buttons to activate the means 126 for actuating the spray cartridge mounted in corresponding cartridge seats 122. In this example, the number of trigger buttons is same as the number of cartridge seats 122 in the dispensing assembly 118. In addition, the spray control interface 134 may include a heat button, which when operated permits passage of controlled electrical current through at least one cartridge seat 122 to facilitate heating of a spray cartridge mounted therein .

[0062] It is noted that several different possibilities for actuating an individual spray cartridge will be readily relevant to any person ordinarily skilled in the art. For example, the desired spray cartridge may be actuated using a combination of two buttons, a selector button and a trigger button. The selector button could be a multi-way switch and may be set at 1, 2, and 3. When the trigger button is

operated, the spray cartridge corresponding to the setting of the multi-way switch is actuated. As yet another example, a display unit with tactile sensor may enable a user to select and actuate any desired spray cartridge. All such different possible implementations of the spray control interface 134 are intended to be covered within the scope of the present invention .

[0063] In one embodiment of the present invention, the spray control interface 134 is mechanically coupled to the means 126 for actuating the spray cartridge. Such mechanical coupling may be achieved using a series of levers and metallic wires, such that mechanical force exerted by a user in pushing the trigger button is transmitted to the means 126. In other words, a mechanical actuation signal is transmitted from the spray control interface 134 to the means 126.

[0064] In another embodiment of the present invention, the spray control interface 134 is electrically coupled to the means 126 for actuating the spray cartridge. Such electrical coupling is achieved through sensing actuation of the trigger button and transmitting an electrical signal to the means 126. The means 126 are configured to receive such electrical signal and based thereon, actuate the spray cartridge. Thus, in other words, an electrical actuation signal is transmitted from the spray control interface 134 to the means 126.

[0065] As shown in adjoining figures, the hair drying device 100 of the present invention is contemplated to be powered using a power cord 136. However, in alternative exemplary embodiments of the present invention, the hair drying device 100 may be powered through a rechargeable battery provided within the hair drying device 100. In such embodiment, the hair drying device 100 includes a suitable interface for charging the battery through an external power supply .

[0066] During operation of the hair drying device 100 of the present invention, a user switches on the hair drying device 100 using a corresponding button included in the blow-drying control interface 132. The user selects an appropriate heat and fan speed setting. Thereafter, the user activates the spray control interface 134 and triggers spray of a desired hair treatment product through activating corresponding buttons provided in the spray control interface 134. The desired hair treatment products is thus released. Owing to the configuration of the hair drying device 100, the spray of the hair treatment product is directed towards the air stream emanating from the hair drying device 100. Thus, the hair treatment product is carried by the air stream to impinge upon user's hair. Thus, the user is advantageously able to apply desirable hair treatment product during a blow-drying operation with ease and without switching between different devices. As will be readily understood, the user is able to selectively use the spray mechanism without activating the blow-drying operation. Thus, the user is also able to spray desirable hair treatment product before and/or after a blow-drying operation.

[0067] It is contemplated that the spray cartridge may be a disposable unit such that a user buys any desired hair treatment products in the form of spray cartridges. Once the hair treatment product in a given spray cartridge is used, the spray cartridge is disposed off and replaced by a new spray cartridge containing the same hair treatment product.

[0068] As will now be appreciated, the present invention advantageously provides a hair drying device with an integrated spray mechanism and thus, facilitates application of any desired hair treatment product before, during, and/or after a blow-drying operation.

[0069] While the present invention has been described in detail with reference to certain embodiments, it should be appreciated that the present invention is not limited to those embodiments. In view of the present disclosure, many

modifications and variations would present themselves, to those of skill in the art without departing from the scope of various embodiments of the present invention, as described herein. The scope of the present invention is, therefore, indicated by the following claims rather than by the foregoing description. All changes, modifications, and variations coming within the meaning and range of equivalency of the claims are to be considered within their scope.

What is claimed is:

1. A device suitable for hair drying, said device comprising
  - a housing, at least a first portion of said housing extending substantially along a longitudinal direction and defining an anterior end, a posterior end, and an internal cavity extending there between,
  - an insulating partition, said insulating partition disposed within said internal cavity extending along said longitudinal direction in such manner as to partition said internal cavity into a main cavity and an auxiliary cavity, wherein said auxiliary cavity is thermally isolated from said main cavity, and further wherein said main cavity has at least one air inlet opening towards said posterior end and at least one air outlet opening towards said anterior end,
  - a blow-drying assembly, said blow-drying assembly disposed substantially within said main cavity and configured for establishing an air stream through said main cavity along said longitudinal direction from said posterior end to said anterior end,
  - a heating assembly, said heating assembly disposed substantially within said main cavity intermediate said blow-drying assembly and said anterior end and configured for heating said air stream, and
  - a dispensing assembly, said dispensing assembly disposed substantially within said auxiliary cavity and comprising means for holding at least one spray cartridge therein and further comprising means for actuating said spray cartridge to release a pressurized fluid contained therein .
2. The device according to claim 1, wherein said housing comprises a flap-like cover arrangement configured for permitting access to said auxiliary cavity such that said spray cartridge is externally mountable therein.
3. The device according to any of the preceding claims, wherein said dispensing assembly comprises at least one

cartridge seat adapted for providing a snap-fit mounting of said spray cartridge therein.

4. The device according to any of the preceding claims, wherein said dispensing assembly comprises at least one ejector arrangement adapted for ejecting said spray cartridge therefrom.
5. The device according to any of the preceding claims, wherein said dispensing assembly comprises a plurality of cartridge seats, said cartridge seats being mutually thermally isolated.
6. The device according to any of the preceding claims, wherein said heating assembly is operatively coupled to said dispensing assembly and configured for effecting controlled heating of at least one spray cartridge mounted therein.
7. The device according to any of the preceding claims, wherein said spray cartridge is mounted within said dispensing assembly such that fluid spray emanating therefrom is directed toward said air stream emanating from said air outlet opening.
8. The device according to any of the preceding claims, wherein at least a second portion of said housing extends substantially orthogonal to said longitudinal direction.
9. The device according to any of the preceding claims further comprising a blow-drying control interface, said blow-drying control interface configured for permitting regulation of power supply to at least one of said blow-drying assembly and said heating assembly.
10. The device according to any of the preceding claims further comprising a spray control interface, said spray control interface configured for permitting regulation of said means for actuating said spray cartridge.

11. The device according to claim 10, wherein said spray control interface is mechanically coupled to said means for actuating said spray cartridge, and configured for providing a mechanical actuation signal thereto.
12. The device according to claim 10, wherein said spray control interface is electrically coupled to said means for actuating said spray cartridge, configured for providing an electrical actuation signal thereto.

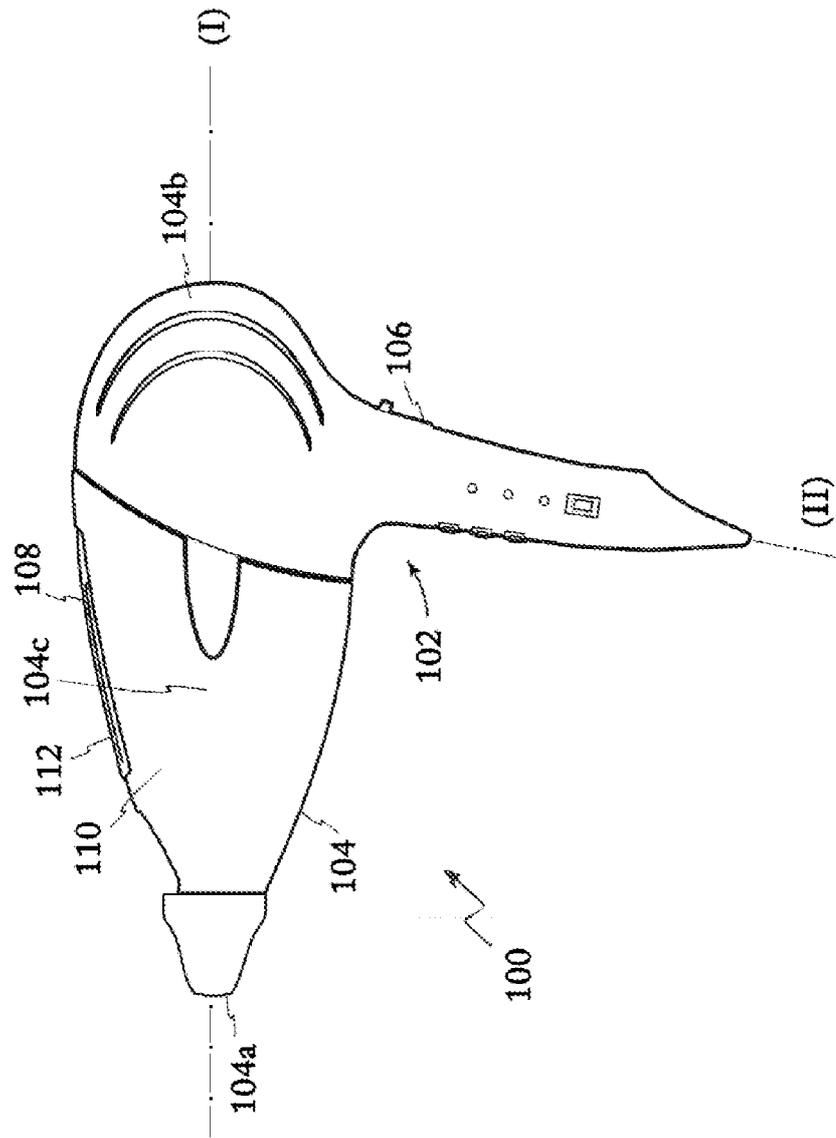


FIG 1A

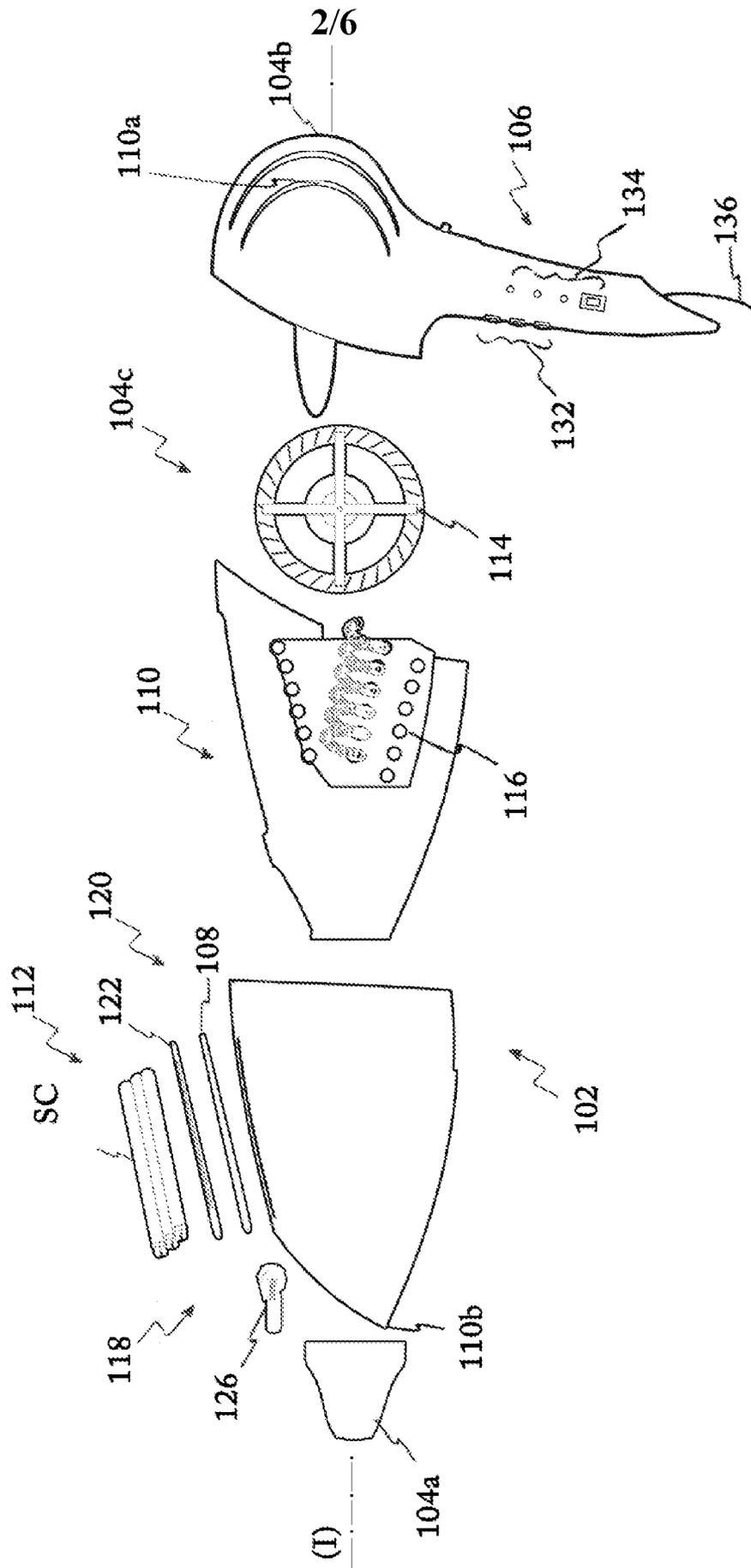


FIG 1B

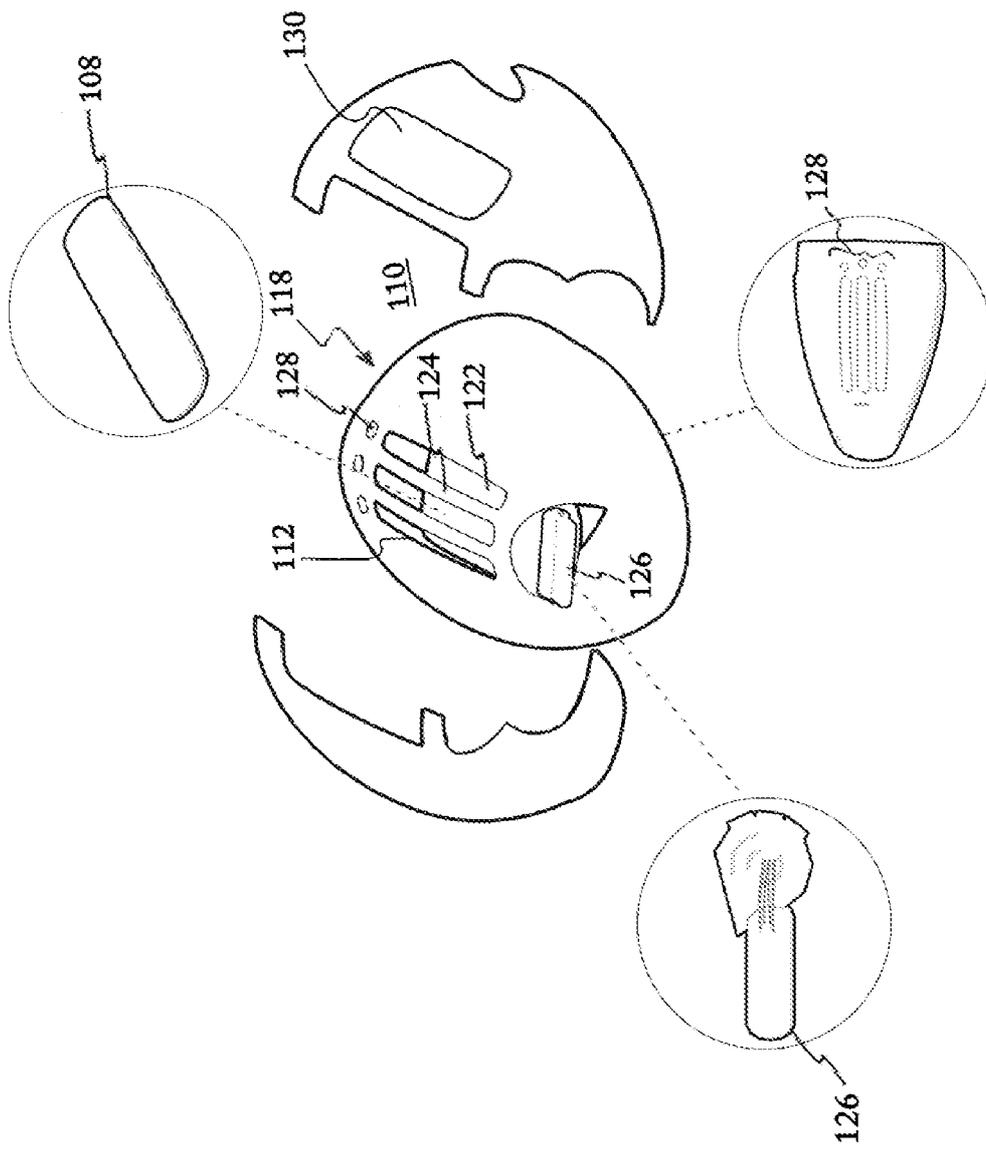


FIG 2

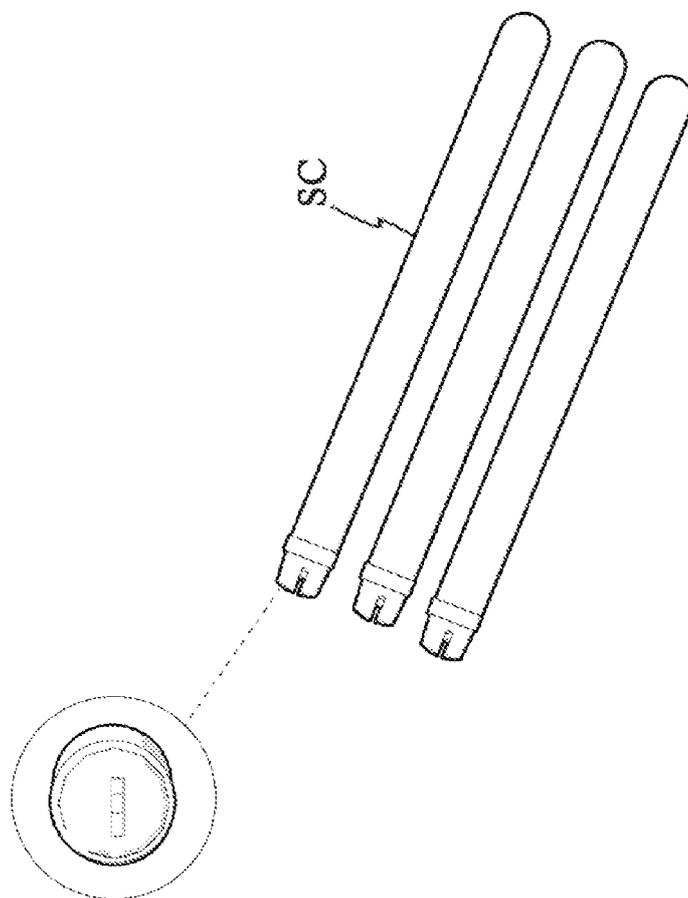


FIG 3

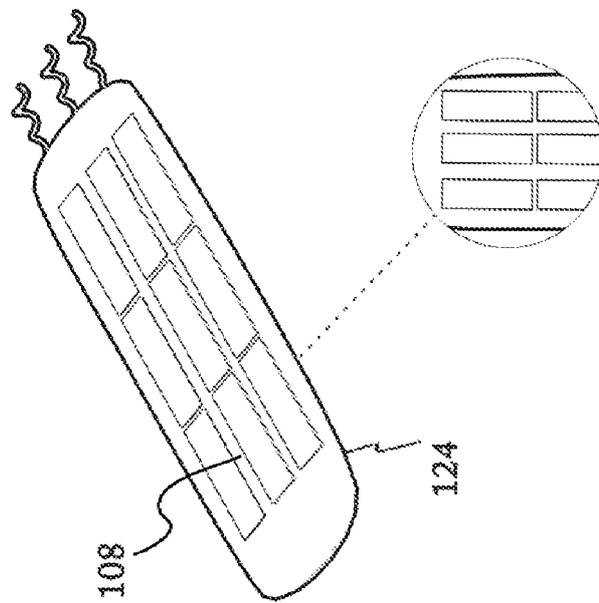


FIG 4

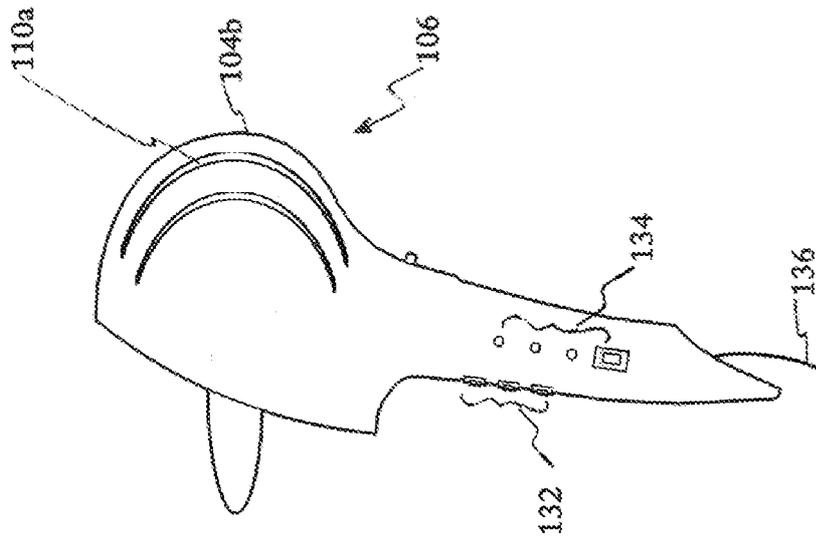


FIG 5

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IB2014/064989

## A. CLASSIFICATION OF SUBJECT MATTER

A45D 20/08 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, WPI: IPC (A45D 20/08), CPC (B05B 11/0002, B05B 7/2402), &amp; Keywords (spray, aerosol, mist, droplets, dispense, pressure, compress, thermal, heat, insulate, barrier, shield, cartridge, container, can, reservoir, combine, integrate, cover, lid, closure, and similar terms);

Espacenet: Name search for Applicant/Inventor further limited by: HAIR;

Google: Name search for Inventor further limited by: HAIR, DUBAI.

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	Documents are listed in the continuation of Box C	

 Further documents are listed in the continuation of Box C
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* Special categories of cited documents:		
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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 13 February 2015	Date of mailing of the international search report 13 February 2015
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## INTERNATIONAL SEARCH REPORT

International application No.

C (Continuation).

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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