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(54) SMOKING SUBSTITUTE APPARATUS, CAP FOR A SMOKING APPARATUS AND ASSOCIATED MANUFACTURING METHODS

(57) A cap (304) for a smoking substitute apparatus (300) is shaped to conform to an outer surface of the smoking substitute apparatus, and comprises a flavourant. A smoking substitute apparatus has a mouthpiece (303) including a flavourant. A method of manufacturing a cap or a mouthpiece includes the steps of: providing a precursor composition, adding a flavourant to the precursor composition to form a flavour-enhanced precursor composition, and forming the cap or mouthpiece from the flavour-enhanced precursor composition.

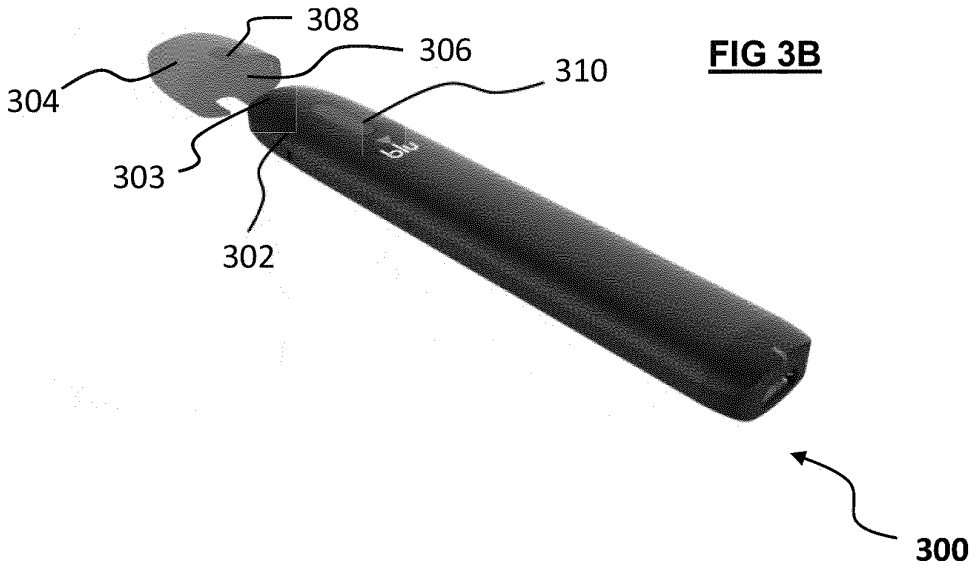

FIG 3B

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Description

[0001] The present invention relates to a smoking substitute apparatus and, in particular, a smoking substitute apparatus that is able to deliver flavour to a user.

BACKGROUND TO THE INVENTION

[0002] The smoking of tobacco is generally considered to expose a smoker to potentially harmful substances. It is generally thought that a significant amount of the potentially harmful substances are generated through the heat caused by the burning and/or combustion of the tobacco and the constituents of the burnt tobacco in the tobacco smoke itself.

[0003] Combustion of organic material such as tobacco is known to produce tar and other potentially harmful by-products. There have been proposed various smoking substitute systems in order to avoid the smoking of tobacco.

[0004] Such smoking substitute systems can form part of nicotine replacement therapies aimed at people who wish to stop smoking and overcome a dependence on nicotine.

[0005] Smoking substitute systems include electronic systems that permit a user to simulate the act of smoking by producing an aerosol (also referred to as a "vapour") that is drawn into the lungs through the mouth (inhaled) and then exhaled. The inhaled aerosol typically bears nicotine and/or a flavourant without, or with fewer of, the odour and health risks associated with traditional smoking.

[0006] In general, smoking substitute systems are intended to provide a substitute for the rituals of smoking, whilst providing the user with a similar experience and satisfaction to those experienced with traditional smoking and with combustible tobacco products.

[0007] The popularity and use of smoking substitute systems has grown rapidly in the past few years. Although originally marketed as an aid to assist habitual smokers wishing to quit tobacco smoking, consumers are increasingly viewing smoking substitute systems as desirable lifestyle accessories. There are a number of different categories of smoking substitute systems, each utilising a different smoking substitute approach.

[0008] One approach is the so-called "vaping" approach, in which a vaporisable liquid, typically referred to (and referred to herein) as "e-liquid", is heated by a heating device (referred to herein as an electronic cigarette or "e-cigarette" device) to produce an aerosol vapour which is inhaled by a user. The e-liquid typically includes a base liquid as well as nicotine and/or a flavourant. The resulting vapour therefore also typically contains nicotine and/or a flavourant. The base liquid may include propylene glycol and/or vegetable glycerine.

[0009] A typical e-cigarette device includes a mouthpiece, a power source (typically a battery), a tank for containing e-liquid, as well as a heating device. In use, electrical energy is supplied from the power source to the heating device, which heats the e-liquid to produce an aerosol (or "vapour") which is inhaled by a user through the mouthpiece.

[0010] E-cigarettes can be configured in a variety of ways. For example, there are "closed system" vaping smoking substitute systems, which typically have a sealed tank and heating element. The tank is pre-filled with e-liquid and is not intended to be refilled by an end user. One subset of closed system vaping smoking substitute systems include a main body which includes the power source, wherein the main body is configured to be physically and electrically coupled to a consumable including the tank and the heating element. In this way, when the tank of a consumable has been emptied, that consumable is disposed of. The main body can be reused by connecting it to a new, replacement, consumable. Another subset of closed system vaping smoking substitute systems are completely disposable, and intended for one-use only.

[0011] There are also "open system" vaping smoking substitute systems which typically have a tank that is configured to be refilled by a user. In this way the entire device can be used multiple times.

[0012] An example vaping smoking substitute system is the myblu™ e-cigarette. The myblu™ e-cigarette is a closed system which includes a main body and a consumable. The main body and consumable are physically and electrically coupled together by pushing the consumable into the main body. The main body includes a rechargeable battery. The consumable includes a mouthpiece, a sealed tank which contains e-liquid, as well as a heater, which for this device is a heating filament coiled around a portion of a wick. The wick is partially immersed in the e-liquid, and conveys e-liquid from the tank to the heating filament. The device is activated when a microprocessor on board the main body detects a user inhaling through the mouthpiece. When the device is activated, electrical energy is supplied from the power source to the heating device, which heats e-liquid from the tank to produce a vapour which is inhaled by a user through the mouthpiece.

[0013] For a smoking substitute device it is desirable to deliver nicotine into the user's lungs, where it can be absorbed into the bloodstream. As explained above, in the so-called "vaping" approach, e-liquid is heated by a heating device to produce an aerosol vapour which is inhaled by a user. Many e-cigarettes also deliver flavour to the user to enhance the experience. In such e-cigarettes, flavour compounds are contained in the e-liquid that is heated. However, toxicology restrictions are placed on the amount of flavour that can be contained in the e-liquid, and this can result in some e-liquid flavours delivering a weak and underwhelming taste sensation to consumers in the pursuit of safety. Further, there is a view that providing a flavourant as part of the e-liquid, such that the flavourant is vaporised with the e-liquid, may be disadvantageous.

[0014] There may be a need for improved design of smoking substitute systems, in particular in regards to the delivery of flavour to a user.
The present disclosure has been devised in the light of the above considerations.

SUMMARY OF THE INVENTION

[0015] In general terms, the present application is directed towards apparatuses for supplying flavour to a user during the vaping process without needing to resort to flavoured e-liquid, as well as method for manufacturing such apparatuses. Broadly speaking, the present invention achieves this by encapsulating or otherwise storing flavourant in a component or part of a smoking substitute apparatus which comes into contact with a user's lips during the vaping process. Thus, even with a flavourless e-liquid composition, the user is still able to enjoy a pleasant gustatory experience when vaping, for example by licking or sucking on the mouthpiece of the smoking substitute apparatus.

[0016] A first aspect of the present invention provides a cap for a smoking substitute apparatus, wherein the cap is shaped to conform to an outer surface of the smoking substitute apparatus, and the cap comprises a flavourant. By providing a cap for the smoking substitute apparatus, the user is able to place the cap on the end of the smoking substitute apparatus during use, so that they are able to taste the flavourant while using the smoking substitute apparatus. It is preferred that the cap is removably attachable to a mouthpiece of the smoking substitute apparatus, so that the user can change at will which flavour they taste while using the smoking substitute apparatus.

[0017] Specifically, the cap may include a recess for receiving the mouthpiece end of the smoking substitute apparatus, such that an inner surface of the recess conforms to the outer surface of the mouthpiece of the smoking substitute apparatus. The cap also preferably includes a hole at an opposite end to an edge or opening of the recess, such that in use, the hole is aligned with an inlet at the mouthpiece of the smoking substitute apparatus. In this way, when the cap is in placed on the mouthpiece of the smoking substitute apparatus, the inlet through which the user inhales is exposed, so that inhalation is not impeded.

[0018] It is preferred that the thickness of the cap is uniform or substantially uniform. Alternatively put, the thickness of the cap may be such that in use, the whole of an outer surface of the cap is a uniform or substantially uniform distance from the outer surface of the mouthpiece of the smoking substitute apparatus. In this way, the cap forms a neat cover, which varies very little from the shape of the smoking substitute apparatus itself. This effect may also be achieved by the provision of a cap which is shaped such that in use the outer surface of the cap is flush or substantially flush with the outer surface of the mouthpiece of the smoking substitute apparatus.

[0019] As is evident from the above, a crucial element of the present invention is the delivery of flavour to a user during use of the smoking substitute apparatus. In order to achieve this, the cap may be formed or partially formed from a flavourant-containing material. In this way, the user is still able to feel the sensation of taste as the cap is in their mouth during inhalation of the (flavourless) e-liquid. In preferred embodiments, the flavourant may be encapsulated in the flavourant-containing material. Specifically, the flavourant may be encapsulated in microcapsules which form part of the flavourant-containing material. In some embodiments, the flavourant-containing material may be a plastic, or a polymer such as low-density polyethylene, high-density polyethylene, polypropylene, polyvinyl chloride, polystyrene, nylon, polytetrafluoroethylene (PTFE, Teflon), polyurethane, polyethylene terephthalate, or silicone. Alternatively, the flavourant-containing material may comprise borosilicate.

[0020] In alternative embodiments, rather than making the cap from e.g. a flavoured polymer, the flavourant-containing material itself may be edible. For example, the cap may be in the form of a moulded hard sweet, such as a boiled sweet. As such, in some embodiments, the cap may be fully edible. In this way, the user can then either suck on, or lick the cap during inhalation, in order to experience the flavour. Alternatively, users may choose to eat the whole cap before inhalation, so that the sweet flavour remains in their mouth during the inhalation process. By providing a range of edible caps such as this in a range of different flavours, a user is able to select which flavour they taste while vaping. Caps in such embodiments may include one or more of the following ingredients: sugar syrup (e.g. sucrose, glucose, fructose), citric acid, flavourant, citric acid, gelatin, food colouring, gum.

[0021] Rather than being in the form of a boiled sweet, a fully edible cap may be in the form of a softer sweet such as a gummy sweet or a chewy sweet like a Gummi Bear, a Fruit Pastille or a Wine Gum. In other embodiments, the cap may be in the form of a moulded piece of chewing gum, which may optionally be swallowable. In all these embodiments, the user may retain the edible cap in their mouth during inhalation, in order to experience the flavour.

[0022] The first aspect of the invention relates to an external removable cap which can be placed onto the end of a smoking substitute apparatus. According to a second aspect of the invention, the flavour may be provided in the mouthpiece of the smoking substitute apparatus itself. Specifically, a second aspect of the invention provides a smoking substitute apparatus having a mouthpiece, wherein the mouthpiece includes a flavourant. This provides similar advantages to the first aspect of the invention, except the flavourant is present in the smoking substitute apparatus itself, rather than being in the form of an external cap. This is advantageous because it means that fewer individual parts are required to achieve the same effect. Many of the optional features set out

above with respect to the first aspect of the invention apply equally well to the second aspect of the invention. For example, the mouthpiece of the smoking substitute apparatus may be formed or partially formed from a flavourant-containing material, in which the flavourant may be encapsulated. The flavourant-containing material may be in the form of a polymer such as silicone. In some embodiments of the second aspect of the invention, the mouthpiece of the smoking substitute apparatus may include a flavourant-containing material which is edible, or the mouthpiece of the smoking substitute apparatus may be fully edible.

[0023] The third and fourth aspects of the invention relate to methods of manufacturing, respectively, the cap and smoking substitute apparatus of the first and second aspects of the invention, and in particular the means by which the flavourant is added to the material. Specifically, a third aspect of the invention provides a method of manufacturing the cap of the first aspect of the invention, the method including the steps of: providing a precursor composition, adding a flavourant to the precursor composition to form a flavour-enhanced precursor composition; and forming the cap from the flavour-enhanced precursor composition. In this way, the flavourant is able to permeate through the precursor composition before the cap is formed, ensuring an even distribution of the flavourant throughout the precursor composition, and thus in the finished product. In preferred embodiments of the third aspect of the invention, the cap is formed using an injection moulding process, and accordingly the precursor composition may be in the form of an injection moulding precursor composition, and the step of forming the cap includes a step of injection moulding of the flavour-enhanced precursor composition. The suitability and advantages of injection moulding for such a process are well known to the skilled person.

[0024] Similarly, the fourth aspect of the present invention provides a method of manufacturing the smoking substitute apparatus of the second aspect of the invention, the method including the steps of: providing a precursor composition, adding a flavourant to the precursor composition to form a flavour-enhanced precursor composition; and forming the mouthpiece of the smoking substitute apparatus from the flavour-enhanced precursor composition. The advantages of the fourth aspect of the invention are analogous to the advantages of the third aspect of the invention. In preferred embodiments of the fourth aspect of the invention, the cap is formed using an injection moulding process, and accordingly the precursor composition may be in the form of an injection moulding precursor composition, and the step of forming the mouthpiece includes a step of injection moulding of the flavour-enhanced precursor composition.

[0025] The following optional features apply equally well to the third and fourth aspects of the invention. Particularly (but not exclusively) in the case of methods involving injection moulding, the precursor composition is generally liquid. In such embodiments of the third and fourth aspects of the present invention, the step of adding a flavourant to the precursor composition may include adding a liquid flavourant to the precursor composition, the liquid optionally being in the form of an oil such as an organic oil. Alternatively, or additionally, the adding step may include a step of adding a solid flavourant, e.g. in the form of a powder or a microencapsulated flavourant, to the precursor composition. In some embodiments, fruit juice and/or sugar syrup may be added to the precursor composition.

[0026] The following paragraphs are general and apply to all four aspects of the invention described above, where relevant.

[0027] It should be noted that throughout this application, the term "flavourant" is used to describe a compound or combination of compounds that provide flavour and/or aroma. For example, the flavourant may be configured to interact with a sensory receptor of a user (such as an olfactory or taste receptor). The flavourant may include one or more volatile substances. The flavourant may be provided in solid or liquid form. The flavourant may be natural or synthetic. For example, the flavourant may include menthol, liquorice, chocolate, fruit flavour (including e.g. citrus, cherry etc.), vanilla, spice (e.g. ginger, cinnamon) and tobacco flavour. The flavourant may be evenly dispersed or may be provided in isolated locations and/or varying concentrations.

[0028] The smoking substitute apparatus may be in the form of a consumable. The consumable may be configured for engagement with a main body (i.e. so as to form a closed smoking substitute system). For example, the consumable may comprise components of the system that are disposable, and the main body may comprise non-disposable or non-consumable components (e.g. power supply, controller, sensor, etc.) that facilitate the delivery of aerosol by the consumable. In such an embodiment, the aerosol former (e.g. e-liquid) may be replenished by replacing a used consumable with an unused consumable.

[0029] Alternatively, the smoking substitute apparatus may be a non-consumable apparatus (e.g. that is in the form of an open smoking substitute system). In such embodiments an aerosol former (e.g. e-liquid) of the system may be replenished by re-filling e.g. a reservoir of the smoking substitute apparatus with the aerosol former (rather than replacing a consumable component of the apparatus).

[0030] In light of this, it should be appreciated that some of the features described herein as being part of the smoking substitute apparatus may alternatively form part of a main body for engagement with the smoking substitute apparatus (i.e. when the smoking substitute apparatus is in the form of a consumable).

[0031] Where the smoking substitute apparatus is in the form of a consumable, the main body and the consumable may be configured to be physically coupled together. For example, the consumable may be at least partially received in a recess of the main body, such that

there is an interference fit between the main body and the consumable. Alternatively, the main body and the consumable may be physically coupled together by screwing one onto the other, or through a bayonet fitting.

[0032] Thus, the smoking substitute apparatus may comprise one or more engagement portions for engaging with a main body. In this way, one end of the smoking substitute apparatus may be coupled with the main body, whilst an opposing end of the smoking substitute apparatus may define a mouthpiece of the smoking substitute system.

[0033] The smoking substitute apparatus may comprise a reservoir configured to store an aerosol former, such as an e-liquid. The e-liquid may, for example, comprise a base liquid and e.g. nicotine. The base liquid may include propylene glycol and/or vegetable glycerine. The e-liquid may be flavourless. That is, the e-liquid may not contain any flavourants and may consist solely of a base liquid of propylene glycol and/or vegetable glycerine and nicotine.

[0034] The reservoir may be in the form of a tank. At least a portion of the tank may be translucent. For example, the tank may comprise a window to allow a user to visually assess the quantity of e-liquid in the tank. A housing of the smoking substitute apparatus may comprise a corresponding aperture (or slot) or window that may be aligned with a translucent portion (e.g. window) of the tank. The reservoir may be referred to as a "clearomizer" if it includes a window, or a "cartomizer" if it does not.

[0035] The smoking substitute apparatus may comprise a passage for fluid flow therethrough. The passage may extend through (at least a portion of) the smoking substitute apparatus, between openings that may define an inlet and an outlet of the passage. The outlet may be at a mouthpiece of the smoking substitute apparatus. In this respect, a user may draw fluid (e.g. air) into and through the passage by inhaling at the outlet (i.e. using the mouthpiece). The passage may be at least partially defined by the tank. The tank may substantially (or fully) define the passage. In this respect, the tank may surround the passage.

[0036] The smoking substitute apparatus may comprise an aerosol-generator. The aerosol generator may comprise a wick. The aerosol generator may further comprise a heater. The wick may comprise a porous material. A portion of the wick may be exposed to fluid flow in the passage. The wick may also comprise one or more portions in contact with liquid stored in the reservoir. For example, opposing ends of the wick may protrude into the reservoir and a central portion (between the ends) may extend across the passage so as to be exposed to fluid flow in the passage. Thus, fluid may be drawn (e.g. by capillary action) along the wick, from the reservoir to the exposed portion of the wick.

[0037] The heater may comprise a heating element, which may be in the form of a filament wound about the wick (e.g. the filament may extend helically about the wick). The filament may be wound about the exposed portion of the wick. The heating element may be electrically connected (or connectable) to a power source. Thus, in operation, the power source may supply electricity to (i.e. apply a voltage across) the heating element so as to heat the heating element. This may cause liquid stored in the wick (i.e. drawn from the tank) to be heated so as to form a vapour and become entrained in fluid flowing through the passage. This vapour may subsequently cool to form an aerosol in the passage.

[0038] The smoking substitute apparatus (or main body engaged with the smoking substitute apparatus) may comprise a power source. The power source may be electrically connected (or connectable) to a heater of the smoking substitute apparatus (e.g. when engaged with the main body). The power source may be a battery (e.g. a rechargeable battery). A connector in the form of e.g. a USB port may be provided for recharging this battery.

[0039] When the smoking substitute apparatus is in the form of a consumable, the smoking substitute apparatus may comprise an electrical interface for interfacing with a corresponding electrical interface of the main body. One or both of the electrical interfaces may include one or more electrical contacts. Thus, when the main body is engaged with the consumable, the electrical interface may be configured to transfer electrical power from the power source to a heater of the consumable.

[0040] The electrical interface may also be used to identify the smoking substitute apparatus (in the form of a consumable) from a list of known types. For example, the consumable may have a certain concentration of nicotine and the electrical interface may be used to identify this. The electrical interface may additionally or alternatively be used to identify when a consumable is connected to the main body.

[0041] Again, where the smoking substitute apparatus is in the form of a consumable, the main body may comprise an interface, which may, for example, be in the form of an RFID reader, a barcode or QR code reader. This interface may be able to identify a characteristic (e.g. a type) of a consumable engaged with the main body. In this respect, the consumable may include any one or more of an RFID chip, a barcode or QR code, or memory within which is an identifier and which can be interrogated via the interface.

[0042] The smoking substitute apparatus or main body may comprise a controller, which may include a microprocessor. The controller may be configured to control the supply of power from the power source to the heater of the smoking substitute apparatus (e.g. via the electrical contacts). A memory may be provided and may be operatively connected to the controller. The memory may include non-volatile memory. The memory may include instructions which, when implemented, cause the controller to perform certain tasks or steps of a method.

[0043] The main body or smoking substitute apparatus may comprise a wireless interface, which may be configured to communicate wirelessly with another device,

for example a mobile device, e.g. via Bluetooth®. To this end, the wireless interface could include a Bluetooth® antenna. Other wireless communication interfaces, e.g. WiFi®, are also possible. The wireless interface may also be configured to communicate wirelessly with a remote server.

[0044] A puff sensor may be provided that is configured to detect a puff (i.e. inhalation from a user). The puff sensor may be operatively connected to the controller so as to be able to provide a signal to the controller that is indicative of a puff state (i.e. puffing or not puffing). The puff sensor may, for example, be in the form of a pressure sensor or an acoustic sensor. That is, the controller may control power supply to the heater of the consumable in response to a puff detection by the sensor. The control may be in the form of activation of the heater in response to a detected puff. That is, the smoking substitute apparatus may be configured to be activated when a puff is detected by the puff sensor. When the smoking substitute apparatus is in the form of a consumable, the puff sensor may form part of the consumable or the main body.

[0045] The invention includes the combination of the aspects and preferred features described except where such a combination is clearly impermissible or expressly avoided.

BRIEF DESCRIPTION OF THE DRAWINGS

[0046] So that the invention may be understood, and so that further aspects and features thereof may be appreciated, embodiments illustrating the principles of the invention will now be discussed in further detail with reference to the accompanying figures, in which:

Fig. 1A is a front view of a smoking substitute system, in an engaged position;

Fig. 1B is a front view of the smoking substitute system in a disengaged position;

Fig. 1C is a section view of a smoking substitute apparatus of the first embodiment;

Fig. 2 is a perspective view of a consumable.

Figs. 3A and 3B show perspective views of a smoking substitute device and a flavour cap.

Fig. 4 shows a smoking substitute device having an edible flavour cap.

DETAILED DESCRIPTION OF THE DRAWINGS

[0047] Aspects and embodiments of the present invention will now be discussed with reference to the accompanying figures. Further aspects and embodiments will be apparent to those skilled in the art. All documents mentioned in this text are incorporated herein by reference.

[0048] Figures 1A and 1B illustrate a smoking substitute system in the form of an e-cigarette system 101. The system 101 comprises an e-cigarette device defining a main body 102 of the system 101, and an smoking substitute apparatus in the form of an e cigarette consumable (or "pod") 103. In the illustrated embodiment the consumable 103 (smoking substitute apparatus) is removable from the main body (e-cigarette device), so as to be a replaceable component of the system 101. In other words, the e-cigarette system 101 is a closed system.

[0049] As is apparent from Figures 1A and 1B, the consumable 103 is configured to engage the main body 102. Figure 1A shows the main body 102 and the consumable 103 in an engaged state, whilst Figure 1B shows the main body 102 and the consumable 103 in a disengaged state. When engaged, a portion of the consumable 103 is received in a cavity of the main body 102 and is retained in the engaged position by way of a snap-engagement mechanism. In other embodiments, the main body 102 and consumable 103 may be engaged by screwing one into (or onto) the other, through a bayonet fitting, or by way of an interference fit.

[0050] The system 101 is configured to vaporise an aerosol-former, which in the illustrated embodiment, is in the form of a nicotine-based e-liquid 104. The e-liquid 104 comprises nicotine and a base liquid including propylene glycol and/or vegetable glycerine. In the present embodiment, the e-liquid 104 is flavourless (and does not include any added flavourant). That is, if the e-liquid 104 were to be inhaled (i.e. in aerosol form) by a user, it would not have a particularly perceptible flavour or taste.

[0051] As is more apparent from Figure 1C, this e-liquid 104 is stored within a reservoir in the form of a tank 105 that forms part of the consumable 103. In the illustrated embodiment, the consumable 103 is a "single-use" consumable 103. That is, upon exhausting the e-liquid 104 in the tank 105, the intention is that the user disposes of the entire consumable 103. In other embodiments, the e-liquid (i.e. aerosol former) may be the only part of the system that is truly "single-use". That is, the tank may be refillable with e-liquid or the e-liquid may be stored in a non-consumable component of the system. For example, the e-liquid may be stored in a tank located in the main body or stored in another component that is itself not single-use (e.g. a refillable cartomizer).

[0052] The tank 105 surrounds, and thus defines a portion of, a passage 106 that extends between an inlet 107 and an outlet 108 at opposing ends of the consumable 103. In this respect, the passage comprises an upstream end at the end of the consumable 103 that engages with the main body 102, and a downstream end at an opposing end of the consumable 103 that comprises a mouthpiece 109 of the system 101. When the consumable 103 is engaged with the main body 102, a user can inhale (i.e. take a puff) via the mouthpiece 109 so as to draw air through the passage 106, and so as to form an airflow (indicated by arrows) in a direction from the inlet 107 to

the outlet 108 of the passage 106. Although not illustrated, the passage 106 may be partially defined by a tube (e.g. a metal tube) extending through the consumable 103. The passage 106 is in fluid communication with a gap defined between the consumable 103 and the main body 102 (when engaged) such that air outside of the system 101 is drawn into the passage 106 (during an inhale).

[0053] The smoking substitute system 101 is configured to vaporise the e-liquid 104 for inhalation by a user. To provide this, the consumable 103 comprises a heater having of a porous wick 110 and a resistive heating element in the form of a heating filament 111 that is helically wound around a portion of the porous wick 110. The porous wick 110 extends across the passage 106 (i.e. transverse to a longitudinal axis of the passage106) and opposing ends of the wick 110 extend into the tank 105 (so as to be submerged in the e liquid 104). In this way, e-liquid 104 contained in the tank 105 is conveyed from the opposing ends of the porous wick 110 to a central portion of the porous wick 110 so as to be exposed to the airflow in the passage 106 (i.e. caused by a user inhaling).

[0054] The helical filament 111 is wound about this exposed central portion of the porous wick 110 and is electrically connected to an electrical interface in the form of electrical contacts 112 mounted at the end of the consumable that is proximate the main body 102 (when engaged). When the consumable 103 is engaged with the main body 102, the electrical contacts 112 contact corresponding electrical contacts (not shown) of the main body 102. The main body electrical contacts are electrically connected to a power source (not shown) of the main body 102, such that (in the engaged position) the filament 111 is electrically connected to the power source. In this way, power can be supplied by the main body 102 to the filament 111 in order to heat the filament 111. This heat is transferred from the filament 111 to the porous wick 110 which causes e-liquid 104 conveyed by the porous wick 110 to increase in temperature to a point at which it vaporises. The vaporised e-liquid becomes entrained in the airflow and, between the vaporisation point at the filament 111 and the outlet 108 of the passage 106, condenses to form an aerosol. This aerosol is then inhaled, via the mouthpiece 109, by a user of the system 101.

[0055] The power source of the main body 102 may be in the form of a battery (e.g. a rechargeable battery). The main body 102 may comprise a connector in the form of e.g. a USB port for recharging this battery. The main body 102 may also comprise a controller that controls the supply of power from the power source to the main body electrical contacts (and thus to the filament 111). That, is the controller may be configured to control a voltage applied across the main body electrical contacts, and thus the voltage applied across the filament 111. In this way, the filament 111 may only be heated under certain conditions (e.g. during a puff and/or only when the system is in an active state). In this respect, the main body 102 may include a puff sensor (not shown) that is configured to detect a puff (i.e. inhalation). The puff sensor may be operatively connected to the controller so as to be able to provide a signal, to the controller, which is indicative of a puff state (i.e. puffing or not puffing). The puff sensor may, for example, be in the form of a pressure sensor or an acoustic sensor.

[0056] Although not shown, the main body 102 and consumable 103 may comprise a further interface which may, for example, be in the form of an RFID reader, a barcode or QR code reader. This interface may be able to identify a characteristic (e.g. a type) of a consumable 103 engaged with the main body 102. In this respect, the consumable 103 may include any one or more of an RFID chip, a barcode or QR code, or memory within which is an identifier and which can be interrogated via the interface.

[0057] Fig. 2 shows an example of a consumable 200 which may be used with a smoking substitute device (not shown). The features of the consumable have already been described in detail above, with reference to Figs. 1A to 1C. Consumable 200 includes a mouthpiece 202, which in the present invention may be formed from a flavoured polymer material. Figs. 3A and 3B show an example of a smoking substitute device 300 having a consumable 302 in place at an end 300a. In Fig. 3A, cap 304 is fitted onto the mouthpiece 303 of the consumable 302, which is connected to the main body 301 of the smoking substitute device 300. In Fig. 3B, the cap 304 is shown detached. The cap 304, like the mouthpiece 202 in Fig. 2, is made from a flavoured polymer material. Cap 304 includes a recess 306 into which the end 300a of the mouthpiece 303 fits snugly. At a distal end 304a of the cap 304 is there is a hole (not visible in Figs. 3A and 3B) which is located to align with an inhalation outlet of the mouthpiece 303 when the cap 304 is present on the mouthpiece 303. The cap 304 includes a notch 308 which is located to align with window 310, in order to allow the user to see how much e-liquid is left in the consumable 302. The arrangement shown in Fig. 4 is identical to that shown in Figs. 3A and 3B, except the cap is edible, and may be licked/sucked while vaping, or completely eaten afterwards or during, depending on the user's preference.

[0058] The features disclosed in the foregoing description, or in the following claims, or in the accompanying drawings, expressed in their specific forms or in terms of a means for performing the disclosed function, or a method or process for obtaining the disclosed results, as appropriate, may, separately, or in any combination of such features, be utilised for realising the invention in diverse forms thereof.

[0059] While the invention has been described in conjunction with the exemplary embodiments described above, many equivalent modifications and variations will be apparent to those skilled in the art when given this disclosure. Accordingly, the exemplary embodiments of the invention set forth above are considered to be illus-

trative and not limiting. Various changes to the described embodiments may be made without departing from the spirit and scope of the invention.

[0060] For the avoidance of any doubt, any theoretical explanations provided herein are provided for the purposes of improving the understanding of a reader. The inventors do not wish to be bound by any of these theoretical explanations.

[0061] Any section headings used herein are for organizational purposes only and are not to be construed as limiting the subject matter described.

[0062] Throughout this specification, including the claims which follow, unless the context requires otherwise, the words "have", "comprise", and "include", and variations such as "having", "comprises", "comprising", and "including" will be understood to imply the inclusion of a stated integer or step or group of integers or steps but not the exclusion of any other integer or step or group of integers or steps.

[0063] It must be noted that, as used in the specification and the appended claims, the singular forms "a," "an," and "the" include plural referents unless the context clearly dictates otherwise. Ranges may be expressed herein as from "about" one particular value, and/or to "about" another particular value. When such a range is expressed, another embodiment includes from the one particular value and/or to the other particular value. Similarly, when values are expressed as approximations, by the use of the antecedent "about," it will be understood that the particular value forms another embodiment. The term "about" in relation to a numerical value is optional and means, for example, +/- 10%.

[0064] The words "preferred" and "preferably" are used herein refer to embodiments of the invention that may provide certain benefits under some circumstances. It is to be appreciated, however, that other embodiments may also be preferred under the same or different circumstances. The recitation of one or more preferred embodiments therefore does not mean or imply that other embodiments are not useful, and is not intended to exclude other embodiments from the scope of the disclosure, or from the scope of the claims.

Claims

1. A cap for a smoking substitute apparatus, wherein:

   the cap is shaped to conform to an outer surface of the smoking substitute apparatus, and
   the cap comprises a flavourant.

2. The cap of claim 1, wherein:
   the cap is removably attachable to and configured to cover at least a portion of a mouthpiece of the smoking substitute apparatus.

3. The cap of claim 1 or claim 2, wherein:
   the cap includes a recess for receiving the mouthpiece of the smoking substitute apparatus, such that an inner surface of the recess conforms to the outer surface of the mouthpiece of the smoking substitute apparatus.

4. The cap of claim 3, wherein:
   the cap includes a hole at an opposite end of the cap to an edge of the recess, such that in use, the hole is aligned with an inlet at the mouthpiece end of the smoking substitute apparatus.

5. The cap of any one of claims 1 to 4, wherein:
   the thickness of the cap is uniform.

6. The cap of any one of claims 1 to 4, wherein:
   the cap is shaped such that in use in use, the outer surface of the cap is flush or substantially flush with the outer surface of the mouthpiece of the smoking substitute apparatus.

7. The cap of any one of claims 1 to 6, wherein:
   the cap is formed or partially formed from a flavourant-containing material.

8. The cap of claim 7, wherein:
   the flavourant is encapsulated in the flavourant-containing material.

9. The cap of claim 7 or claim 8, wherein:
   the flavourant-containing material includes a polymer.

10. The cap of claim 7 or claim 8, wherein:
    the flavourant-containing material is edible.

11. The cap of any one of claims 1 to 8 and 9, wherein:
    the cap is fully edible.

12. A smoking substitute apparatus having a mouthpiece, wherein:
    the mouthpiece includes a flavourant.

13. The smoking substitute apparatus of claim 12, wherein:
    the mouthpiece of the smoking substitute apparatus is formed or partially formed from a flavourant-containing material.

14. The smoking substitute apparatus of claim 13, wherein:
    the flavourant is encapsulated in the flavourant-containing material.

15. The smoking substitute apparatus of claim 14, wherein:
    the flavourant-containing material includes a polymer.

16. A method of manufacturing the cap of any one of claims 1 to 11, the method including the steps of:

providing a precursor composition;
adding a flavourant to the precursor composition to form a flavour-enhanced precursor composition; and
forming the cap from the flavour-enhanced precursor composition.

17. A method of manufacturing the smoking substitute apparatus of any one of claims 12 to 15, the method including the steps of:

providing a precursor composition;
adding a flavourant to the precursor composition to form a flavour-enhanced precursor composition; and
forming the mouthpiece from the flavour-enhanced precursor composition.

18. The method of claim 16 or claim 17, wherein:
a solid flavourant and/or a liquid flavourant is added to the precursor composition.

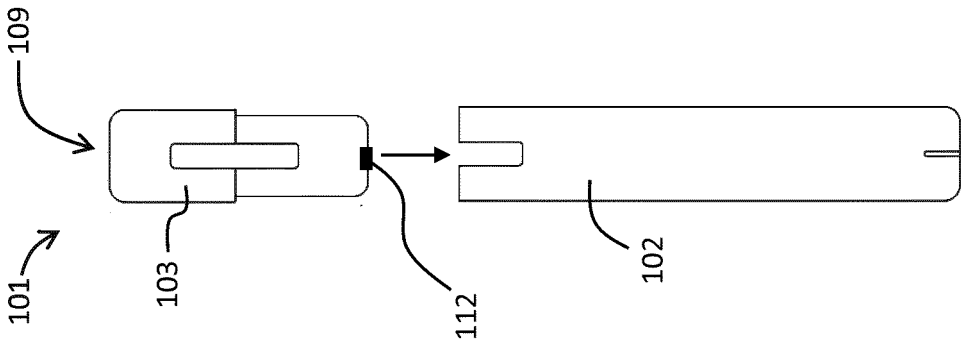

FIG 1B

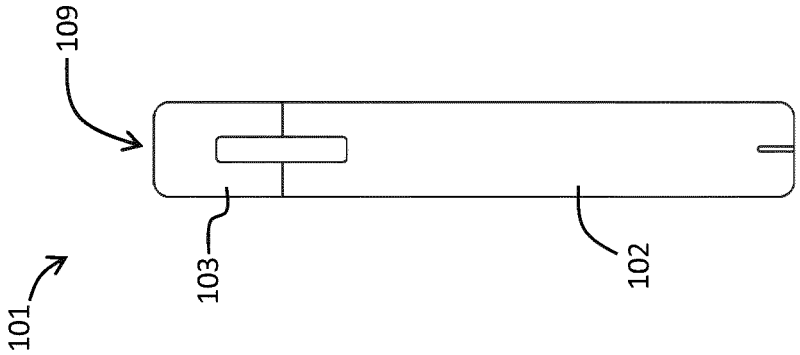

FIG 1A

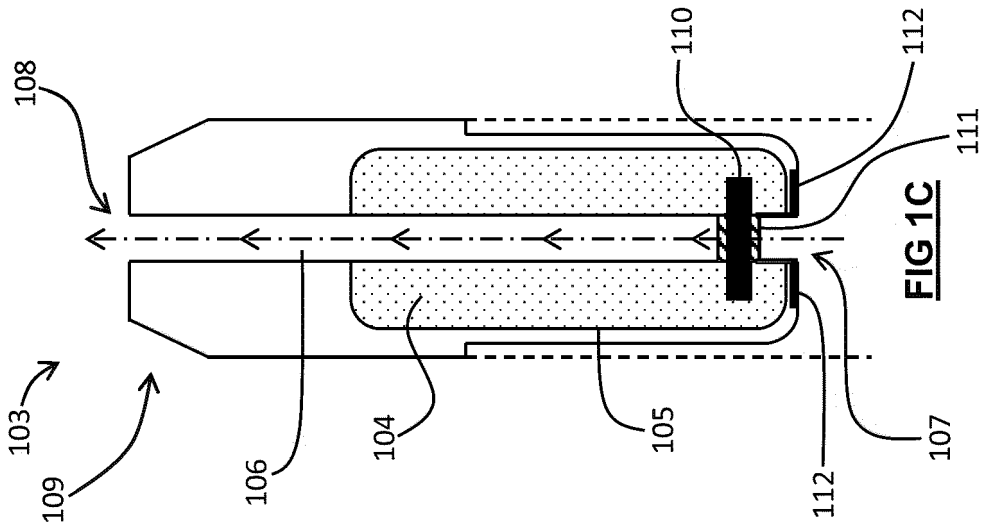

FIG 1C

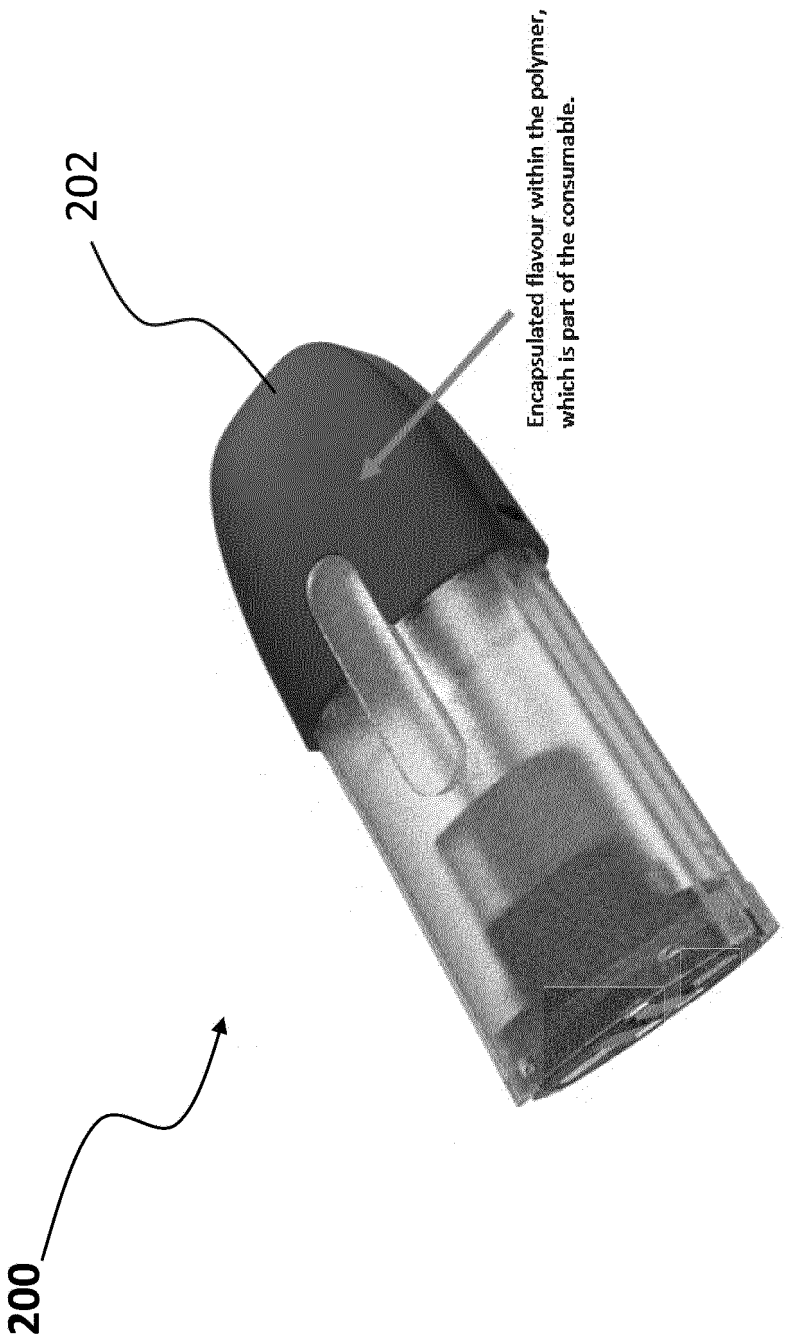
202
Encapsulated flavour within the polymer, which is part of the consumable.
200

FIG 2

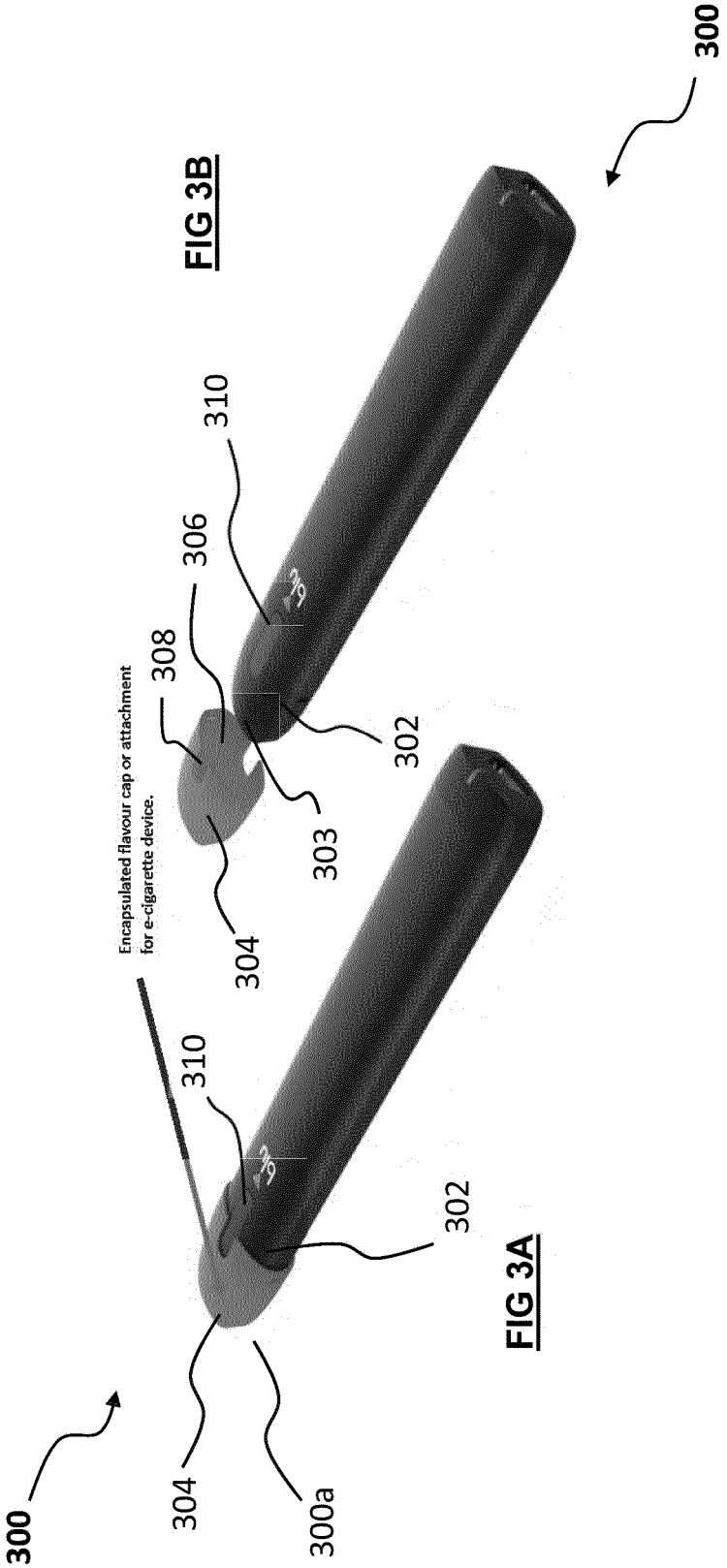
300
310
306
308
302
303
304
Encapsulated flavour cap or attachment for e-cigarette device.
310
302
304
300a
300

FIG 3B

FIG 3A

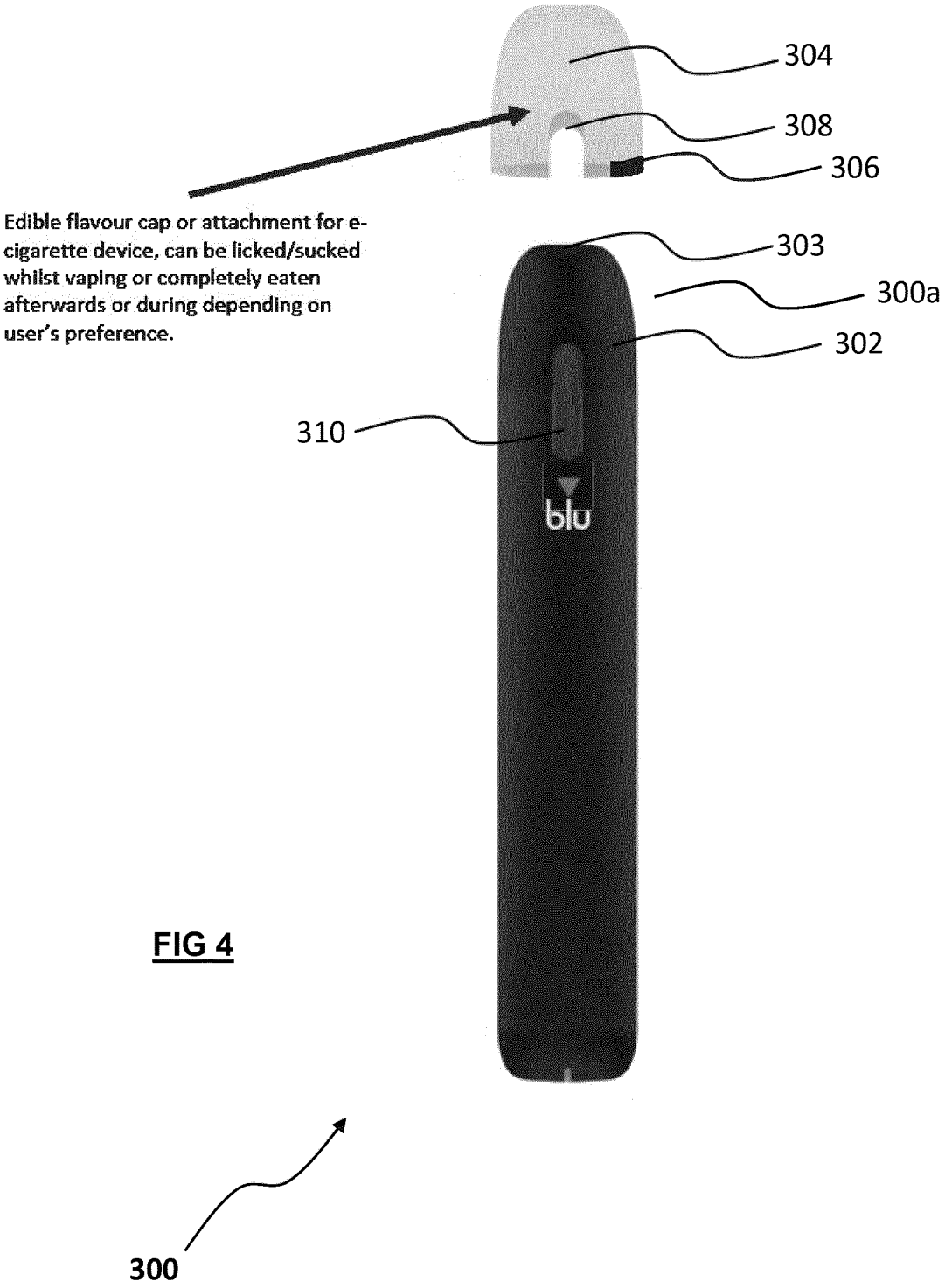
304
308
306
Edible flavour cap or attachment for e-cigarette device, can be licked/sucked whilst vaping or completely eaten afterwards or during depending on user's preference.
303
300a
302
310
blu
300

FIG 4

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EUROPEAN SEARCH REPORT

Application Number
EP 19 15 5884

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	30 July 2019	Koob, Michael

CATEGORY OF CITED DOCUMENTS

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