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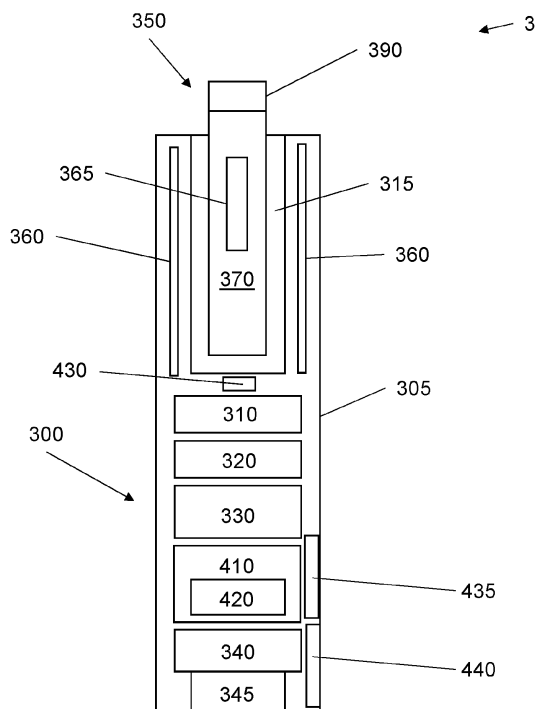
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(54) AEROSOL PROVISION DEVICE

(57) An aerosol provision comprising an aerosol generator configured generate aerosol from aerosol generating material; a controller; and an acceleration sensor. The controller is configured to: in response to the acceleration sensor receiving a first acceleration input, control

the aerosol generator according to a boost mode; and in response to the acceleration sensor receiving a second acceleration input, control the aerosol generator according to an idle mode.

**Figure 1**

Description

TECHNICAL FIELD

[0001] The present disclosure relates to an aerosol provision device; an aerosol provision system comprising the aerosol provision device and an article; and a method for the aerosol provision device.

BACKGROUND

[0002] The operation of delivery systems, such as aerosol provision systems, may be controlled by a controller. A delivery system may comprise an outer housing, a memory, a controller configured to control operation of the delivery system, a control interface for receiving inputs to the delivery system and providing outputs from the delivery system, and a power source configured to supply electrical power for operation of the delivery system. The delivery system may also comprise an aerosol generator, configured to generate aerosol from aerosol generating material, which may be in the form of a liquid, solid, or gel. The operation of the delivery system and the outputs provided by the control interface may be controlled by the controller comprised in the delivery system.

SUMMARY

[0003] In accordance with some embodiments described herein, there is provided an aerosol provision device comprising an aerosol generator configured generate aerosol from aerosol generating material; a controller; and an acceleration sensor, wherein the controller is configured to: in response to the acceleration sensor receiving a first acceleration input, control the aerosol generator according to a boost mode; and in response to the acceleration sensor receiving a second acceleration input, control the aerosol generator according to an idle mode.

[0004] The controller may be configured to control the aerosol generator according to a normal mode, wherein in the normal mode the controller is configured to control the aerosol generator to heat to a normal temperature.

[0005] The controller may be configured to control the aerosol generator to heat to a boost temperature in the boost mode.

[0006] The boost temperature may be greater than the normal temperature.

[0007] The controller may be configured to control the aerosol generator to heat to an idle temperature in the idle mode

[0008] The idle temperature may be less than the normal temperature.

[0009] The idle temperature may be less than the boost temperature.

[0010] The controller may be configured to determine that the first acceleration input has been received when an acceleration above a first threshold is sensed by the

acceleration sensor.

[0011] The controller may be configured to determine that the first acceleration input has been received when a plurality of accelerations above the first threshold are sensed by the acceleration sensor.

[0012] The first acceleration input may comprise a tapping input.

[0013] The first acceleration input may comprise at least three taps.

[0014] The controller may be configured to determine that the second acceleration input has been received when an acceleration below a second threshold is sensed by the acceleration sensor.

[0015] The controller may be configured to determine that the second acceleration input has been received when the acceleration below the second threshold is received for at least an idle time period.

[0016] The second acceleration input may comprise the user not moving the aerosol provision device vertically.

[0017] The second acceleration input may be indicative of the user not inhaling on the aerosol provision device.

[0018] The acceleration sensor may comprise an acceleration sensing device, the acceleration sensing device configured to receive both the first acceleration input and the second acceleration input.

[0019] The acceleration sensor may comprise a first acceleration sensing device configured to receive the first acceleration input; and a second acceleration sensing device configured to receive the second acceleration input.

[0020] The controller may be configured to, in response to the acceleration sensor receiving a third acceleration input, control the aerosol provision device to indicate battery status.

[0021] The third acceleration input may comprise a tapping input.

[0022] The third acceleration input may comprise fewer taps than the first acceleration input.

[0023] The third acceleration input may comprise two taps.

[0024] The controller may be configured to control the aerosol generator to heat the aerosol generating material for an aerosol generating session.

[0025] The aerosol provision device may comprise an article detector, wherein the controller is configured to control the aerosol generator to begin the aerosol generating session in response to the article detector detecting receipt of an article by the aerosol provision device.

[0026] The controller may be configured to control the aerosol generator to return from the idle mode to the boost mode or normal mode in response to receiving a fourth acceleration input

[0027] In accordance with some embodiments described herein, there is provided an aerosol provision system comprising the aerosol provision device and an article comprising aerosol generating material.

[0028] In accordance with some embodiments described herein, there is provided a method for an aerosol provision device, the aerosol provision device comprising an aerosol generator configured to generate aerosol from aerosol generating material, the method comprising: in response to receiving a first acceleration input, controlling the aerosol generator according to a boost mode; and in response to receiving a second acceleration input, controlling the aerosol generator according to an idle mode.

[0029] Any aspect may comprise any feature or functional step described with respect to another aspect, i.e. a controller may be configured to carry out a method step and a method step may comprise any action that the controller is configured to carry out.

FIGURES

[0030] Aspects of the invention will now be described, by way of example only, with reference to accompanying drawings, in which:

Figure 1 shows a cross-sectional view through a schematic representation of an aerosol provision system in accordance with certain embodiments;

Figure 2 shows a flow chart representation of a method for an aerosol provision system, in accordance with certain embodiments

Figure 3 shows a graphical representation of the target temperature profile of an aerosol generator in accordance with certain embodiments;

Figure 4 shows a graphical representation of the target temperature profile of an aerosol generator in accordance with certain embodiments.

[0031] It will be appreciated that the figures are shown as schematic representations that are not at scale and may omit features and/or show features in simplified detail for the sake of clarity.

DETAILED DESCRIPTION

[0032] Aspects and features of certain examples and embodiments are discussed or described herein. Some aspects and features of certain examples and embodiments may be implemented conventionally and these are not discussed/described in detail in the interests of brevity. It will thus be appreciated that aspects and features of apparatus and methods discussed herein which are not described in detail may be implemented in accordance with any conventional techniques for implementing such aspects and features.

[0033] The present application is generally directed to the field of "delivery systems", i.e. systems that deliver at least one substance to a user. Generally, the aim of

delivering that substance to a user will be to satisfy a particular "consumer moment". To this end, the substance may comprise constituents which impart a physiological effect on the user, a sensorial effect on the user, or both. In this context, the substance will generally be present in an aerosol-generating material or another material that is not intended to be aerosolised. The material itself (whether for aerosolisation or not) will typically contain a range of constituents. These are generally broken down as active substances, flavours, aerosol-former materials and other functional materials like fillers. An active substance, when delivered to a user, may result in some form of psychological effect on the user.

[0034] The delivery systems take many forms. According to the present disclosure, a "combustible" aerosol provision system is one where a constituent aerosol-generating material of the aerosol provision system (or component thereof) is combusted or burned during use in order to facilitate delivery of at least one substance to a user.

[0035] Exemplary combustible aerosol provision systems include cigarettes, cigarillos, cigars, and tobacco for pipes or for roll-your-own or for make-your-own cigarettes (whether based on tobacco, tobacco derivatives, expanded tobacco, reconstituted tobacco, tobacco substitutes or other smokable material). Exemplary non-combustible aerosol provision systems include heat-not-burn aerosol provision systems (such as Tobacco Heating Products (THPs) and Carbon-tipped Tobacco Heating Products (CTHPs)) in which a solid material is heated to generate aerosol without combusting the material, vapour aerosol provision systems (commonly known as "electronic cigarettes" or "e-cigarettes") in which liquid material is heated to generate aerosol, and hybrid aerosol provision systems that are similar to vapour aerosol provision systems except that the aerosol generated from the liquid material passes through a second material (such as tobacco) to pick up additional constituents before reaching the user. Exemplary aerosol-free delivery systems that deliver the at least one substance to a user orally, nasally, transdermally or in another way without forming an aerosol, including but not limited to, lozenges, gums, patches, articles comprising inhalable powders, and oral products such as oral tobacco which includes snus or moist snuff, wherein the at least one substance may or may not comprise nicotine.

[0036] While various techniques will be described herein with regard to non-combustible aerosol provision systems, these may readily be applied in the context of any of the aforementioned delivery systems, for example by implementation within a delivery system where feasible, or in a "smart" container for delivery systems, e.g. for storing delivery systems. The delivery system described herein can be implemented as a combustible aerosol provision system, a non-combustible aerosol provision system or an aerosol-free delivery system.

[0037] In particular, but not exclusively, the present

disclosure relates to a non-combustible aerosol provision system. A "non-combustible" aerosol provision system is an aerosol provision system where a constituent aerosol generating material of the aerosol provision system (or component thereof) is not combusted or burned in order to facilitate delivery of at least one substance to a user. The delivery system may be a non-combustible aerosol provision system, such as a powered non-combustible aerosol provision system. The non-combustible aerosol provision system may be an electronic cigarette, also known as a vaping device or electronic nicotine delivery system (END), although it is noted that the presence of nicotine in the aerosol-generating material is not a requirement. The non-combustible aerosol provision system may be an aerosol generating material heating system, such as a heat-not-burn system. An example of such a system is a tobacco heating system. In particular, but not exclusively, the present disclosure relates to an electronic aerosol provision system, which may (or may not) be an electronic non-combustible aerosol provision system.

[0038] Aerosol-generating material is a material that is capable of generating aerosol, for example when heated, irradiated or energized in any other way. Aerosol-generating material may, for example, be in the form of a solid, liquid or semi-solid (such as a gel) which may or may not contain an active substance and/or flavourants. The aerosol-generating material may comprise one or more active substances and/or flavours, one or more aerosol-former materials, and optionally one or more other functional material. The aerosol-generating material may comprise a binder, such as a gelling agent, and an aerosol former. Optionally, a substance to be delivered and/or filler may also be present. Optionally, a solvent, such as water, is also present and one or more other components of the aerosol-generating material may or may not be soluble in the solvent. In some embodiments, the aerosol-generating material is substantially free from botanical material. In particular, in some embodiments, the aerosol-generating material is substantially tobacco free.

[0039] The aerosol-generating material may comprise or be in the form of an aerosol-generating film. The aerosol-generating film may comprise a binder, such as a gelling agent, and an aerosol former. Optionally, a substance to be delivered and/or filler may also be present. The aerosol-generating film may be substantially free from botanical material. In particular, in some embodiments, the aerosol-generating material is substantially tobacco free. The aerosol-generating film may have a thickness of about 0.015 mm to about 1 mm. For example, the thickness may be in the range of about 0.05 mm, 0.1 mm or 0.15 mm to about 0.5 mm or 0.3 mm. The aerosol-generating film may be continuous. For example, the film may comprise or be a continuous sheet of material. The sheet may be in the form of a wrapper, it may be gathered to form a gathered sheet or it may be shredded to form a shredded sheet. The shredded sheet may comprise one or more strands or strips of aerosol-gen-

erating material. The aerosol-generating film may be discontinuous. For example, the aerosol-generating film may comprise one or more discrete portions or regions of aerosol-generating material, such as dots, stripes or lines, which may be supported on a support. In such embodiments, the support may be planar or non-planar. The aerosol-generating film may be formed by combining a binder, such as a gelling agent, with a solvent, such as water, an aerosol-former and one or more other components, such as one or more substances to be delivered, to form a slurry and then heating the slurry to volatilise at least some of the solvent to form the aerosol-generating film. The slurry may be heated to remove at least about 60 wt%, 70 wt%, 80 wt%, 85 wt% or 90 wt% of the solvent.

[0040] The aerosol-generating material may comprise or be an "amorphous solid". In some embodiments, the aerosol-generating material comprises an aerosol-generating film that is an amorphous solid. The amorphous solid may be a "monolithic solid". The amorphous solid may be substantially non-fibrous. In some embodiments, the amorphous solid may be a dried gel. The amorphous solid is a solid material that may retain some fluid, such as liquid, within it. In some embodiments, the amorphous solid may, for example, comprise from about 50wt%, 60wt% or 70wt% of amorphous solid, to about 90wt%, 95wt% or 100wt% of amorphous solid. The amorphous solid may be substantially free from botanical material. The amorphous solid may be substantially tobacco free.

[0041] The aerosol-former material may comprise one or more constituents capable of forming an aerosol. In some embodiments, the aerosol-former material may comprise one or more of glycerol, propylene glycol, diethylene glycol, triethylene glycol, tetraethylene glycol, 1,3-butylene glycol, erythritol, meso-Erythritol, ethyl vanillate, ethyl laurate, a diethyl suberate, triethyl citrate, triacetin, a diacetin mixture, benzyl benzoate, benzyl phenyl acetate, tributyrin, lauryl acetate, lauric acid, myristic acid, and propylene carbonate. The one or more other functional materials may comprise one or more of pH regulators, colouring agents, preservatives, binders, fillers, stabilizers, and/or antioxidants.

[0042] As is common in the technical field, the terms "vapour" and "aerosol", and related terms such as "vaporise", "volatilise" and "aerosolise", may generally be used interchangeably. In use, an inhalation on the aerosol provision system occurs when a user inhales aerosol generated from the aerosol generating material. A sequence of inhalations can be considered a "session". A sequence may correspond to a characteristic pattern of inhalations. A sequence may correspond to a predetermined number, or range, or inhalations on the aerosol provision system by the user. For example, a session may be defined as 10 inhalations, or between 8 to 12 inhalations. Additionally or alternatively, a session may be defined by a predetermined time from an initial inhalation on the aerosol provision system (for example, with aerosol generating material being heated to a target temperature for the predetermined time). For example

the predetermined time may be under 4 four minutes, under 6 minutes, or under 10 minutes. Hence, a session can be defined when the total number inhalations reaches a predetermined number, or range, of inhalations and/or when the time elapsed from the initial inhalation reaches the predetermined time. It should be appreciated that the values for the predetermined number of inhalations and predetermined time have been given purely as an example, and other numbers and times may be used in other implementations as appropriate.

[0043] Typically, the aerosol provision system may comprise an aerosol provision device (e.g. a reusable part) and a consumable for use with the aerosol provision device (e.g. a disposable part). In many cases, the consumable is sold separately from the device, and often in a multipack. The terms "consumable" and "article" may generally be used interchangeably. Often the consumable will comprise the aerosol generating material, and the aerosol provision device will comprise a power source, controller, control interface, and memory (each of which will be discussed in more detail herein) enclosed at least partly within an outer housing which may be formed from any suitable material, for example a plastics material or a metal. In use, the consumable may be engaged with the aerosol provision device. For example, at least part of the consumable may be received by the aerosol provision device, for example in a consumable chamber of the aerosol provision device which is configured to receive at least part of the consumable. The aerosol provision device is configured to generate aerosol from the aerosol generating material of the consumable. Once the aerosol generating material of consumable has been exhausted, the user can remove the consumable, e.g. by disengaging the aerosol provision device and the consumable, dispose of it, and replace it with a (new) consumable. Devices conforming to this type of two-piece modular configuration may generally be referred to as two-piece aerosol provision devices, which together with a consumable may generally be referred to as two-piece aerosol provision systems.

[0044] In such two-piece aerosol provision systems, the consumable and aerosol provision device are able to engage with one another. For example, the consumable may be mechanically and/or electrically coupled to the aerosol provision device, using an engagement interface of the aerosol provision device and a corresponding engagement interface of the consumable. The engagement interface of the aerosol provision device may comprise mechanical engagement means for mechanical coupling with the consumable, e.g. with corresponding mechanical engagement means of the consumable. The engagement interface may comprise an electrical engagement interface for electrically connecting with the consumable, e.g. with a corresponding electrical engagement interface of the consumable. The electrical engagement interface of the aerosol provision device may be configured to supply electrical power to the con-

sumable, for example to an aerosol generator of the consumable (as will be discussed in more detail herein).

[0045] While a consumable commonly comprises a single portion of aerosol generating material, in some cases the consumable may comprise a plurality of portions of aerosol generating material, each of which may be different. In such cases, the consumable may be received by an aerosol provision device which is configured to generate aerosol from one or more of the plurality of portions of aerosol generating material. For example, the aerosol provision device may be configured to generate aerosol independently from each of the portions of aerosol generating material. Each portion of aerosol generating material may be a discrete portion, wherein the plurality of discrete portions are separate from one another such that each of the discrete portions may be energised (e.g. heated) individually, and/or may be energised (e.g. heated) independently, to generate an aerosol.

[0046] Embodiments are also envisaged in which the aerosol provision device is a one-piece aerosol provision device, which is not configured to receive a removable consumable, and instead the aerosol provision device itself comprises the aerosol generating material. The one-piece aerosol provision device may be configured to be refillable, such that when at least a portion of the (initial) aerosol generating material of the aerosol provision device is exhausted, it can be refilled with (new) aerosol generating material. Alternatively, the one-piece aerosol provision device may be a disposable one-piece aerosol provision device, which the user can dispose of once the aerosol generating material has been exhausted (for example, after a predetermined number of inhalations), and for example is not configured to be refillable by the user. Further, the one-piece aerosol provision device may be a non-rechargeable one-piece aerosol provision device, not comprising a charging interface (as will be discussed in more detail herein) for receiving power from an external power source. A one-piece aerosol provision device such as these (either refillable or disposable) may use any of the features used in two-piece (and/or multi-consumable) aerosol provision systems, such as, but not limited to, the aerosol generating material, aerosol generator, power source, control interface, controller, and memory (as will be discussed in more detail herein). Likewise, these components may be enclosed at least partly within an outer housing which may be formed from any suitable material, for example a plastics material or a metal.

[0047] The aerosol provision system (e.g. the aerosol provision device thereof) may be elongate, extending along a longitudinal axis. The aerosol provision system (e.g. the aerosol provision device thereof) has a proximal end, which will be closest to the user (e.g. the user's mouth) when in use by the user to inhale aerosol generated by the aerosol provision system, and a distal end which will be furthest from the user when in use, i.e. at an end opposing the proximal end.

[0048] The proximal end may also be referred to as the "mouth end". The aerosol provision system (e.g. the aerosol provision device thereof) accordingly defines a proximal direction, which is directed towards the user when in use, e.g. along the longitudinal axis from the distal end to the proximal end. Further, the aerosol provision system likewise defines a distal direction, which is directed away from the user when in use, e.g. along the longitudinal axis from the proximal end to the distal end. The terms 'proximal' and 'distal' as applied to features of the aerosol provision system (e.g. aerosol provision device) will be described by reference to the relative positioning of such features with respect to each other in a proximal or distal direction along the longitudinal axis.

[0049] The construction of the aerosol provision system (and aerosol provision device thereof) may change depending upon the form of the aerosol generating material which it is configured to generate aerosol from. However, while examples will be discussed below with regard to various different forms of aerosol generating material, and correspondingly different aerosol provision device constructions, the techniques discussed herein may be applied in all forms of the aerosol generating material.

[0050] The aerosol provision system (e.g. the aerosol provision device thereof) comprises an aerosol generator configured to generate aerosol from the aerosol generating material, the aerosol being generated at an aerosol generation area of the aerosol provision system. The aerosol generator often, but not always, comprises a heating assembly configured to heat the aerosol generating material and cause it to volatilise, thereby generating aerosol which can be inhaled by the user. While many features will be discussed herein with regard to an aerosol generator which comprises a heating assembly, we note that these features may likewise be applied to an aerosol generator which does not necessarily comprise a heating assembly. For example, the aerosol generator may be configured to subject the aerosol-generating material to one or more of vibration, increased pressure, or electrostatic energy.

[0051] The aerosol provision system (e.g. the aerosol provision device thereof) often comprises a heating chamber, which the heating assembly is configured to heat, such that aerosol generating material in the heating chamber is heated. In such arrangements, the heating chamber may correspond to the aerosol generation area. The heating chamber is configured to receive aerosol generating material. The heating chamber may be comprised in the consumable. The aerosol provision system (e.g. the aerosol provision device thereof) may comprise a consumable chamber configured to receive at least part of the consumable. The heating chamber may correspond to the consumable chamber, however, such as in arrangements where the heating chamber is comprised in the consumable, the heating chamber may not necessarily correspond to the consumable chamber, but rather a region within the consumable which, when

connected to the aerosol provision device in use, is received in the consumable chamber. The consumable may be configured to be partially or fully inserted into the aerosol provision device by inserting it into the consumable chamber through an opening in the outer housing of the aerosol provision device.

[0052] The heating assembly may comprise a heating element, and the heating assembly is configured to heat the heating element. The heating element is for heating the aerosol generating material, e.g. by being configured to heat the heating chamber. The heating element may be a part of the aerosol provision device, or a part of the consumable, or may be a separate component which is a part of the aerosol provision system in addition to the aerosol provision device and the consumable. A plurality of corresponding heating elements may be used, which the heating assembly may be configured to heat independently, e.g. such that they can heat individually or in combination.

[0053] In some arrangements the heating assembly is configured to cause the heating element to become heated by resistive heating, wherein a current is passed through the heating element in order to cause heating to occur as a result of the electrical resistance of the heating element. In some arrangements the heating assembly is configured to cause a heating element to become heated by inductive heating, in which case a magnetic field generator of the heating assembly is configured to generate a varying magnetic field that penetrates the heating element, and causes susceptor material within the heating element to become heated. In other words, the susceptor material is configured to be heated by penetration with a varying magnetic field. The magnetic field generator may comprise a coil, such as a helical coil, which may encircle at least part of the heating chamber.

[0054] Arrangements are contemplated in which the heating assembly comprises a radiation heating component configured to generate radiation for heating the aerosol generating material, e.g. for heating the heating chamber. The radiation may comprise electromagnetic radiation, such as infrared radiation or microwave radiation, or sonic radiation, such as ultrasonic radiation.

[0055] Each of these heating techniques may be applied to any of the aerosol generating materials discussed above, and in the context of one-piece aerosol provision systems, two-piece aerosol provision systems, and multi-consumable aerosol provision systems, or any other form of delivery system which uses heating to generate aerosol from aerosol generating material.

[0056] In arrangements where the aerosol generating material is a liquid, the aerosol generating can be stored within a reservoir comprised in the aerosol provision system. The reservoir may be a part of the aerosol provision device, particularly in the case that the aerosol provision device is a one-piece aerosol provision device, or may be a part of the consumable (when present). In arrangements where the reservoir storing the aerosol generating material is a part of the consumable, the consumable may

also comprise the heating element, which may be heated using resistive or inductive heating. In such arrangements where the consumable comprises a reservoir storing aerosol generating material, the consumable may be referred to as a cartridge.

[0057] The reservoir may have the form of a storage tank, being a container or receptacle in which aerosol generating material can be stored such that the liquid is free to move and flow within the confines of the tank. In arrangements in which the reservoir is comprised in the consumable, the reservoir may be sealed after filling during manufacture so as to be disposable after the aerosol generating material is consumed, otherwise, it may have an inlet port through which new aerosol generating material can be added by the user. In such arrangements the heating element may be comprised in the consumable, and the heating element may be located externally of the reservoir tank for generating the aerosol by vaporisation of the aerosol generating material by heating. A transfer arrangement which may comprise a wick or other porous element may be provided to deliver aerosol generating material from the reservoir to the heating element. This aerosol generating material is thereby heated and vaporised, to be replaced by new aerosol generating material from the reservoir for transfer to the heating element by the wick transfer arrangement. The transfer arrangement may be thought of as a conduit between the reservoir and the heating element that transfers aerosol generating material from the reservoir to the heating element. Although discussed in the context of a reservoir and heating element comprised in the consumable, these features may likewise be applied in an aerosol provision device, for example in the case the aerosol provision device is a one-piece aerosol provision device.

[0058] In arrangements where the aerosol generating material is a solid or a gel, the aerosol generating material can be provided in the consumable. The consumable may be in a rod format, which may also interchangeably be referred to as a "stick" format, and which may have a cylindrical shape. In some cases, the consumable further comprises a filter and/or a cooling element. In such cases, the consumable may comprise the mouthpiece. The consumable may comprise a wrapper, which at least partially surrounds other components of the consumable, including one or more of a filter, a cooling element, a mouthpiece and the aerosol generating material. In some cases, the wrapper may comprise a paper layer. In some cases, the wrapper may comprise a non-combustible layer (e.g. a layer which is resistant to combustion), such as a metallic foil. Suitably, the wrapper may comprise an aluminium foil layer. The wrapper may comprise a laminate structure, and in some cases, the laminate structure may comprise a least one paper layer and at least one non-combustible layer.

[0059] The consumable may be provided in a differently shaped format such as a planar format, in which case the consumable comprises a sheet. The aerosol

generating material can be present on or in a support, to form a substrate. The support may, for example, be or comprise paper, card, paperboard, cardboard, reconstituted material, a plastics material, a ceramic material, a composite material, glass, a metal, or a metal alloy.

[0060] When present, the heating element may be a part of the aerosol provision device, such that it comes into proximity (e.g. in contact) with the consumable when the consumable is received by the aerosol provision device. Alternatively, the heating element may be a part of the consumable. This may be the case in arrangements where the aerosol generating material is liquid, solid, or gel.

[0061] The non-combustible aerosol provision system (e.g. the aerosol provision device or consumable thereof) may comprise an aerosol-modifying agent. An aerosol-modifying agent is a substance, typically located downstream of the aerosol generation area, that is configured to modify the aerosol generated, for example by changing the taste, flavour, acidity or another characteristic of the aerosol. The aerosol-modifying agent may be provided in an aerosol-modifying agent release component, that is operable to selectively release the aerosol-modifying agent. The aerosol-modifying agent may, for example, be an additive or a sorbent. The aerosol-modifying agent may, for example, comprise one or more of a flavourant, a colourant, water, and a carbon adsorbent. The aerosol-modifying agent may, for example, be a solid, a liquid, or a gel. The aerosol-modifying agent may be in powder, thread or granule form. The aerosol-modifying agent may be free from filtration material.

[0062] In some embodiments, the non-combustible aerosol provision system, such as a non-combustible aerosol provision device thereof, may comprise a power source. The power source may, for example, comprise an electric power source or an exothermic power source. In some embodiments, the exothermic power source comprises a carbon substrate which may be energised so as to distribute power in the form of heat to an aerosol-generating material or to a heat transfer material in proximity to the exothermic power source. In some embodiments, the power source comprises a battery, such as a rechargeable battery. Examples of suitable batteries include, for example, a lithium battery (such as a lithium-ion battery), a nickel battery (such as a nickel-cadmium battery), and an alkaline battery. The power source is connected to the heating assembly and configured to supply power to the heating assembly, such that the power source is configured to supply power to the heating assembly, and the heating assembly is configured to use power supplied by the power source to heat aerosol generating material.

[0063] In some embodiments, the aerosol provision system (e.g. the aerosol provision device thereof) comprises a controller configured to control operation of the aerosol provision system. It will be appreciated the functionality of the controller can be provided in various different ways, for example using one or more suitably

programmed programmable computer(s) and / or one or more suitably configured application-specific integrated circuit(s) / circuitry / chip(s) / chipset(s) configured to provide the desired functionality. It will be appreciated the controller may comprise a microcontroller (MCU), an application specific integrated circuit (ASIC), a central processing unit (CPU), and/or a microprocessor. The controller may be considered to be processing circuitry. The operations of the controller are generally controlled at least in part by software programs executed on the controller.

[0064] The controller may be configured to control operation of the aerosol generator, e.g. the heating assembly thereof. While many arrangements will be discussed with regard to the controller being configured to control operation of the heating assembly of the aerosol generator, these may be more generally applied to an aerosol generator which may or may not comprise a heating assembly. The controller is connected to the power source and the aerosol generator, and is configured to control the supply of power from the power source to the aerosol generator. As such, the controller may be configured to control the heating of aerosol generating material by the heating assembly.

[0065] The controller may be configured to heat aerosol generating material in accordance with a heating profile, e.g. by causing the heating assembly to heat the aerosol generating material in accordance with the heating profile. A heating profile refers to the variation of temperature of a material over time. For example, the varying temperature of a heating element measured at the heating element for the duration of a session of use may be referred to as the heating profile of that heating element (or equally as the heating profile of the heating assembly unit comprising that heating element). The heating element provides heat to the aerosol generating material during use, to generate an aerosol. The heating profile of the heating element therefore induces the heating profile of aerosol-generating material, e.g. which is disposed near the heating element.

[0066] The aerosol provision system (e.g. the aerosol provision device thereof) may also comprise a control interface for receiving inputs and/or providing outputs. For instance, the control interface may be configured to receive inputs, and provide input data to the controller corresponding to the received inputs. The control interface may be configured to receive output data from the controller, and provide outputs corresponding to the output data received from the controller.

[0067] The control interface may comprise a user interface comprising one or more input components for receiving inputs from a user, and one or more output components for providing outputs to a user. The one or more input components are configured to receive inputs from a user, and provide corresponding input data to the controller. The one or more input components may be configured to receive the inputs from a user in the form of physical manipulation by the user. The one or more input

components may comprise a button (such as a rolling button), a switch, a dial, a microphone, a camera, an accelerometer, a touchscreen, or any plurality or combination thereof. The one or more input components may be assigned to functions such as switching the aerosol provision device on and off, and selecting an operating mode of the aerosol provision system (as will be discussed in more detail herein). The one or more output components are configured to receive output data from the controller, and provide corresponding outputs to a user. The one or more output components may comprise a visual output component such as a light, e.g. an LED, a display, e.g. a seven-segment display or a screen; an auditory output component such as a speaker; a haptic component such as an eccentric rotating mass vibration motor or any plurality or combination thereof. The controller may be configured to cause the one or more output components to provide an output indicative of a property of the aerosol provision system, for example a property of the aerosol generating material, or the remaining power of the power source, and so forth.

[0068] The aerosol provision system (e.g. the aerosol provision device thereof) may also comprise a memory. The memory may comprise volatile memory, such as random-access memory (RAM) or flash memory, and/or non-volatile memory, such as read only memory (ROM), electrically erasable read only memory (EEPROM), or electrically erasable programmable read only memory (EEPROM). In embodiments, this memory comprises controller memory which is a part of the controller, and which may be integrated in the controller. The memory may additionally or alternatively comprise external memory, connected to the controller, and external to the controller. The external memory may be removable from the aerosol provision system (e.g. the aerosol provision device thereof), and may comprise an SD card or a microSD card. Software programs for execution by the controller may be stored on the memory.

[0069] The control interface may comprise communication circuitry configured to connect to one or more further devices, and/or communicate data with one or more further devices. The communication circuitry communicating data with one or more further devices may comprise sending data to one or more further devices (e.g. to transfer data from the aerosol provision device to the one or more further devices), receiving data from one or more further devices (e.g. to transfer data from the one or more further devices to the aerosol provision device), or both sending data to and receiving data from one or more further devices. The term "send" with regard to data can be understood to be the emission of data from a device, while the term "transfer" can be understood to be the emission of data from a device and receipt of the data by another device. In this context, a further device to the aerosol provision device may be another aerosol provision device, a consumable, or (as described further herein) an external power source device, or a computing device. In some embodiments, the communication cir-

cuitry is integrated into the controller, and in other embodiments it is implemented separately (comprising, for example, separate application-specific integrated circuit(s), circuitry, chip(s), and/or chipset(s)).

[0070] The communication circuitry may comprise a wireless communication module configured to establish a wireless data connection with one or more further devices. The communication circuitry may also or alternatively comprise a wired communication module configured to establish a wired data connection with one or more further devices, and/or communicate data with one or more further devices using a wired data connection. For example, the wired communication module may comprise a wired interface such as a USB interface (e.g. a USB-A interface, a USB-B interface, a mini-USB interface, a micro-USB interface, a USB-C interface, or a USB-3 interface), a Thunderbolt interface, or other wired data interface. As a result, the wired data connection may correspondingly be a USB connection (e.g. a USB-A connection, a USB-B connection, a mini-USB connection, a micro-USB connection, USB-C connection, or a USB-3 connection), a Thunderbolt connection, or other wired data connection. More generally, it will be appreciated the wired module may comprise any wired interface using a wired protocol which enables the transfer of data, according to, for example, a packet data transfer protocol, and may comprise pin or contact pad arrangements configured to engage cooperating pins or contact pads on a further device which can be connected to the aerosol provision system (e.g. aerosol provision device thereof).

[0071] A wired interface such as the any of the ones described above may additionally act as a power inlet port connectable to an external power source to receive power from the external power source. Alternatively, an aerosol provision may comprise a charging interface that is separate from a wired communication module having a wired interface.

[0072] Various embodiments will now be described in more detail.

[0073] Figure 1 shows a cross sectional view through a schematic representation of a two-piece aerosol provision system 3 in accordance with certain embodiments.

[0074] The aerosol provision system 3 is a two-piece aerosol provision system, comprising an aerosol provision device 300 and an article 350 comprising aerosol generating material 370. The article 350 is a consumable 350. The aerosol provision device 300 comprises an outer housing 305, a memory 310, a controller 320 configured to control operation of the aerosol provision system 3, a control interface 330 for receiving inputs to the aerosol provision device 300 and providing outputs from the aerosol provision device 300, a heating assembly 360 comprising a magnetic field generator 360 configured to generate a varying magnetic field, a power source 340 configured to supply electrical power for operation of the aerosol provision device 300 and a power inlet port 345 connectable to an external power source to receive

power from the external power source. In this embodiment, the heating assembly 360 is the aerosol generator 360. The heating assembly 360 is a magnetic field generator 360. The aerosol generator 360 is configured to generate aerosol from aerosol generating material 370. The controller 320 is configured to control the aerosol generator 360 to heat aerosol generating material 370 for an aerosol generating session. During the aerosol generating session the controller 320 controls the aerosol generator 360 to heat to a target temperature across a defined period of use, for example across a defined time period or over a defined number of puffs taken by the user.

[0075] The outer housing 305 may also enclose at least partly the other components of the aerosol provision device 300, namely the controller 320, the control interface 330, the magnetic field generator 360, the power source 340 and the power inlet port 345. The aerosol provision device 300 is a handheld electronic vapour device, meaning that the outer housing 305 enclosing the other components is dimensioned and configured to be held in the hand of a user. In other words, the device is portable.

[0076] The consumable 350 comprises aerosol generating material 370 which is in the form of a solid or gel. The consumable 350 is in a rod format, and is received by a heating chamber 315 of the aerosol provision device 300. The magnetic field generator 360 is configured cause the heating chamber 315 to become heated, and the aerosol generating material 370 of the consumable 350 within the heating chamber 315. To do this, the consumable 350 comprises a heating element 365, having susceptor material which is susceptible to heating by penetration with a varying magnetic field generated by the magnetic field generator 360. The magnetic field generator 360 is configured to generate this varying magnetic field, which penetrates the heating chamber 315, and the heating element 365 of the consumable 350, causing it to become heated, and in turn heat the aerosol generating material 370.

[0077] In this embodiment, the consumable comprises a mouthpiece 390, through which the user can draw aerosol that has been generated from the aerosol generating material 370. The aerosol provision device 300 and consumable 350 do not require respective engagement interfaces configured to enable the aerosol provision device 300 and consumable 350 to be electrically connected to one another, as an electrical connection therebetween is not used to heat the aerosol generating material 370.

[0078] The aerosol provision device 300 further comprises an article detector 430. The article detector 430 is configured to detect when the consumable 350 is received by the aerosol provision device 300. The controller 320 is configured to control the aerosol generator 360 to begin the aerosol generating session in response to the article detector 430 detecting receipt of the consumable 350 by the aerosol provision device 300. In the

present example the article detector 430 is a pressure switch which is depressed by the consumable 350 when the consumable 350 is inserted into the aerosol provision device 300.

[0079] The controller 320 is configured to control the aerosol generator 360 according to a normal mode during the aerosol generating session (in the absence of the provision of specific inputs to the aerosol provision device 300 as described below) When the controller 320 controls the aerosol generator 360 according to the normal mode, the aerosol provision device 300 is said to be in the normal mode. In the normal mode, the controller 320 is configured to control the aerosol generator 360 to heat to a normal temperature T1, as shown in Figure 3. In some embodiments, the controller 320 may be configured to control the aerosol generator 360 to heat according to a varying temperature profile across the aerosol generating session in the normal mode.

[0080] The aerosol provision device 300 further comprises an acceleration sensor 410. The acceleration sensor 410 is configured to detect accelerations, wherein accelerations may comprise, for example, taps on, movement of or gestures made with the aerosol provision device 300.

[0081] The controller 320 is configured to begin controlling the aerosol generator 360 according to a boost mode, in response to the acceleration sensor 410 receiving a first acceleration input. When the controller 320 controls the aerosol generator 360 according to the boost mode, the aerosol provision device 300 is said to be in the boost mode. In the present example the first acceleration input comprises a tapping input. During standard operation, this means that the first acceleration input comprises a user tapping the outer housing of the aerosol provision system 3. In this embodiment, the first acceleration input comprises at least three taps. The controller 320 is configured to determine that the first acceleration input has been received when an acceleration above a first threshold is sensed by the acceleration sensor 410. In this embodiment, the controller 320 is configured to determine that the first acceleration input has been received when a plurality of accelerations above the first threshold are sensed by the acceleration sensor 410. More specifically, the controller 320 is configured to determine that the first acceleration input has been received when at least three accelerations above the first threshold are sensed by the acceleration sensor 410.

[0082] In the boost mode, the controller 320 is configured to control the aerosol generator 360 to heat to a boost temperature T2, as shown in Figure 3. The boost temperature T2 is greater than the normal temperature T1. In some embodiments, the controller 320 may be configured to control the aerosol generator 360 to heat according to a varying temperature profile in the boost mode. In said embodiments, the temperature to which the aerosol generator 360 is heated in the boost mode remains greater than the corresponding temperature in the normal mode, across the aerosol generating session.

In the present example, the controller 320 is configured to cease controlling the aerosol generator 360 according to the boost mode after a predetermined boost time P1 (as shown in Figure 3) has elapsed from the first acceleration input being received.

[0083] The controller 320 therefore controls the aerosol generator 360 according to the boost mode for a defined boost period, wherein the defined boost period is equal to the predetermined boost time P1. The defined boost period may comprise non-consecutive partial boost periods. During the defined boost period, the controller 320 may switch to control the aerosol generator 360 according to a different mode if a specific input is provided to the aerosol provision device 300, effectively 'pausing' the defined boost period. The defined boost period may then be 'resumed' if another specific input is received by the aerosol provision device 300. For example, the controller 320 may control the aerosol generator 360 according to the boost mode for a first partial boost period, then switch to operate according to a different mode for a period upon receipt of an input, before returning to operate according to the boost mode for a second partial boost period, such that the sum of the first partial boost period and second partial boost period is equal to the predetermined boost time P1 (a specific example is provided in Figure 4).

[0084] In other examples, after the first acceleration input has been received, the controller is configured to continue controlling the aerosol generator 360 according to the boost mode for the remainder of the aerosol generation session i.e. without returning to the normal mode.

[0085] The boost mode allows a user to receive a greater amount of aerosol when desired, which may improve user experience.

[0086] The controller 320 is configured to control the aerosol generator 360 according to an idle mode, in response to the acceleration sensor 410 receiving a second acceleration input. When the controller 320 controls the aerosol generator 360 according to the idle mode, the aerosol provision device 300 is said to be in the idle mode. The second acceleration input comprises the user not moving the aerosol provision device 300 vertically. The second acceleration input is indicative of the user not inhaling on the aerosol provision device 300. This is because during standard operation, the user raises the aerosol provision device 300 towards their mouth to take an inhalation, which applies an acceleration to the aerosol provision device 300.

[0087] The controller 320 is configured to determine that the second acceleration input has been received when an acceleration below a second threshold is sensed by the acceleration sensor 410. In this embodiment, the controller 320 is configured to determine that the second acceleration input has been received when the acceleration below the second threshold is received for at least an idle time period P2, as shown in Figure 3. In some embodiments, the controller 320 may be configured to determine the direction in which the acceleration

occurs. In said embodiments, the controller 320 is configured to determine that the second acceleration input has been received when an acceleration below the second threshold in a particular direction (e.g. in the vertical direction) is sensed by the acceleration sensor 410, with accelerations in other directions not affecting the transition to the idle mode.

[0088] In the idle mode, the controller 320 is configured to control the aerosol generator 360 to heat to an idle temperature T3, as shown in Figure 3. The idle temperature T3 is less than the boost temperature T2. The idle temperature T3 is less than the normal temperature T1. In some embodiments, the controller 320 may be configured to control the aerosol generator 360 to heat according to a varying temperature profile in the idle mode. In said embodiments, the temperature to which the aerosol generator 360 is heated in the idle mode remains less than the corresponding temperature in the normal mode or boost mode, across the aerosol generating session.

[0089] The idle mode may allow less power to be used by the aerosol provision device 300 during a period in which the user is not taking inhalations. The use of an idle mode may also prevent unnecessary aerosol being generated but not inhaled.

[0090] Controlling the activation of the boost mode and idle mode using acceleration inputs simplifies the control of the aerosol provision device 300 for a user.

[0091] The aerosol provision device comprises an indicator system. The indicator system is configured to indicate to the user if the aerosol generator 360 is operating according to the normal mode, the boost mode or the idle mode. The indicator system is further configured to indicate when the device 300 is turned on or off; when an article 350 is inserted into the device 300, and when an aerosol generating session is beginning or ending. In the present example, the indicator system comprises an LED indicator 435 and a haptic element 440. The LED indicator 435 is configured to: provide a first indication (in the present example no illumination) to indicate that the device 300 is turned off; provide a second indication (in the present example illuminate with a solid white light) to indicate that the aerosol generating session is in progress; and provide a third indication (in the present example repetitively illuminate with a white light for 3 seconds followed by no light for 1 second) to indicate the device 300 is in the boost mode. The haptic element 440 is configured to: provide a fourth indication (in the present example a vibration) to indicate an article 350 has been inserted into the aerosol provision device 300 and the aerosol generating session has begun; and provide a fifth indication (in the present example three consecutive vibrations) to indicate that the device 300 has entered the boost mode.

[0092] In this embodiment, the acceleration sensor 410 comprises an acceleration sensing device 420. The acceleration sensing device 420 may, for example, be an accelerometer or gyroscope. The acceleration sensing device 420 is configured to receive both the first

acceleration input and the second acceleration input. This may allow for reduced cost and complexity of manufacture of the aerosol provision device 300. In other embodiments, the acceleration sensor 410 may comprise a first acceleration sensing device and a second acceleration sensing device, (e.g. accelerometer(s) and/or gyroscopes(s)) wherein the first acceleration sensing device is configured to receive the first acceleration input, and the second acceleration sensing device is configured to receive the second acceleration input. This may allow the first and second acceleration sensing devices to be more finely tuned and better suited to sense their respective inputs.

[0093] The controller 320 is configured to control the aerosol provision device 300 to indicate battery status, in response to the acceleration sensor 410 receiving a third acceleration input. Battery status may be indicated by the indicating system. In the present example, the LED indicator 435 is configured to flash with a white illumination to indicate how many aerosol generating sessions remain, dependent on the current battery status. The third acceleration input comprises a tapping input. In this embodiment, the third acceleration input comprises fewer taps than the first acceleration input. In this embodiment, the third acceleration input comprises two taps. The controller 320 is configured to determine when the third acceleration input has been received when two accelerations above the first threshold are sensed by the acceleration sensor 410, and a third acceleration above the first threshold is not sensed within a predetermined time period.

[0094] In some embodiments, the controller 320 is configured to control the aerosol generator 360 to return from operating according to the idle mode to operating according to the boost mode or normal mode, in response to receiving a fourth acceleration input (i.e. returning to the mode according to which the aerosol generator 360 was controlled prior to the idle mode). If the controller 320 was controlling the aerosol generator 360 to operate according to the normal mode immediately prior to the aerosol provision device 300 entering the idle mode, the controller returns to controlling the aerosol generator 360 according to the normal mode when the fourth acceleration input is received. If the controller 320 was controlling the aerosol generator 360 to operate according to the boost mode immediately prior to the aerosol provision device 300 entering the idle mode, the controller returns to controlling the aerosol generator 360 according to the boost mode when the fourth acceleration input is received. The fourth acceleration input may, for example, be a further tapping input or movement of the aerosol provision device 300 by the user (e.g. a movement indicative of the user being about to inhale on the device, such as a vertical movement). The controller 320 may be configured to determine that the fourth acceleration input has been received when an acceleration above a fourth threshold is sensed by the acceleration sensor 410.

[0095] The controller 320 is configured to switch from

controlling the aerosol generator 360 according to any of the normal mode, boost mode or idle mode to controlling the aerosol generator 360 according to any of the normal mode, boost mode or idle mode across the duration of the aerosol generating session if the corresponding acceleration input is received, or if the corresponding time period elapses. Example of this are shown in Figures 3 and 4, discussed below.

[0096] Figure 2 shows a flow chart representation of a method for an aerosol provision system, in accordance with certain embodiments.

[0097] At step S0, the controller 320 controls the aerosol generator 360 to begin the aerosol generating session. In this embodiment, step S0 occurs when the article detector 430 detects receipt of the article 350 by the aerosol provision device 300.

[0098] At step S1, the controller 320 controls the aerosol generator 360 to operate during an aerosol generating session. During step S1, the aerosol generator 360 is initially controlled to operate according to the normal mode, the boost mode, the idle mode or any other mode.

[0099] At step S12, the acceleration sensor 410 detects the first acceleration input. In this embodiment, receipt of the first acceleration input relates to the user providing a tapping input to the aerosol provision device 300.

[0100] At step S13, in response to the aerosol provision device 300 receiving the first acceleration input, the controller 320 controls the aerosol generator 360 to operate according to the boost mode. As set out above, the aerosol generator will heat to the boost temperature T2 in the boost mode, wherein the boost temperature T2 is greater than the normal temperature T1.

[0101] At step S22, the acceleration sensor 410 detects the second acceleration input. In this embodiment, receipt of the second acceleration input relates to the user not inhaling on the aerosol provision device 300.

[0102] At step S23, in response to the aerosol provision device 300 receiving the second acceleration input, the controller 320 controls the aerosol generator 360 according to the idle mode. As set out above, the aerosol generator will heat to the idle temperature T3 in the idle mode, wherein the idle temperature T3 is less than the normal temperature T1 and less than the boost temperature T2.

[0103] After step S13 or step S23, the controller 320 controls the aerosol generator 360 to continue operating for an aerosol generating session, and step S1 resumes. The aerosol generating session ends after the predefined period of use elapses.

[0104] Figures 3 and 4 show graphical representations of the target temperature profile of an aerosol generator 360 in accordance with certain embodiments. It will be understood that the profiles shown in Figures 3 and 4 are examples and different profiles will be achieved depending on when inputs are provided. Additionally, while Figures 3 and 4 show the aerosol generator being controlled to constant target temperatures in a given mode, it is

possible that within each mode the temperature may vary over time.

[0105] Figures 3 and 4 comprise example temperature profiles which the aerosol generator 360 may follow, showing a first temperature profile C1, a second temperature profile C2, a third target temperature profile C3 and a fourth target temperature profile C4. The temperature profiles C1 C2 C3 C4 represent the target temperature of the aerosol generator 360 (i.e. the temperature to which the controller 320 controls the aerosol generator 360) across an aerosol generating session. In other words, the temperature profiles C1 C2 C3 C4 show how the target temperature of the aerosol generator 360 varies over a set time period.

[0106] The first temperature profile C1 shows the controller 320 controlling the aerosol generator 360 according to the normal mode at the start of the aerosol generating session, such that the aerosol generator heats to the normal temperature T1. In response to the acceleration sensor 410 receiving the first acceleration input at point A, the aerosol provision device 300 switches from the normal mode to the boost mode. This means that the controller 320 controls the aerosol generator 360 according to the boost mode, such that the aerosol generator 360 heats to the boost temperature T2. After the predetermined boost time P1 elapses, the aerosol provision device 300 switches from the boost mode to the normal mode at point B. This means the controller 320 returns to controlling the aerosol generator 360 according to the normal mode. In response to the acceleration sensor 410 receiving the second acceleration input at point C, the aerosol provision device 300 switches from the normal mode to the idle mode. This means that controller 320 controls the aerosol generator 360 according to the idle mode, such that the aerosol generator 360 heats to the idle temperature T3.

[0107] The second example temperature profile C2 shows the controller 320 controlling the aerosol generator 360 according to the normal mode at the start of the aerosol generating session, such that the aerosol generator 360 heats to the normal temperature T1. In response to the acceleration sensor 410 receiving the second acceleration input at point D, the aerosol provision device 300 switches from the normal mode to the idle mode. This means that the controller 320 controls the aerosol generator 360 according to the idle mode, such that the aerosol generator 360 heats to the idle temperature T3. In response to the acceleration sensor 410 receiving the first acceleration input at point E, the aerosol provision device switches from the idle mode to the boost mode. This means that the controller 320 controls the aerosol generator 360 according to the boost mode, such that the aerosol generator 360 heats to the boost temperature T2. After the predetermined boost time P1 elapses, the aerosol provision device 300 switches from the boost mode to the normal mode at point E. This means that the controller 320 returns to controlling the aerosol generator 360 according to the normal mode.

[0108] The third example temperature profile C3 shows the controller 320 controlling the aerosol generator 360 according to the normal mode at the start of the aerosol generating session, such that the aerosol generator 360 heats to the normal temperature T1. In response to the acceleration sensor 410 receiving the first acceleration input at point G, the aerosol provision device 300 switches from the normal mode to the boost mode. This means that the controller 320 controls the aerosol generator 360 according to the boost mode for time P1a, such that the aerosol generator 360 heats to the boost temperature T2. In response to the acceleration sensor 410 receiving the second acceleration input at point H (whilst the aerosol provision device 300 is still in the boost mode), the aerosol provision device 300 switches from the boost mode to the idle mode. This means that the controller 320 controls the aerosol generator 360 according to the idle mode, such that the aerosol generator 360 heats to the idle temperature T3. In response to the acceleration sensor 410 receiving the fourth acceleration input at point J, the aerosol provision device 300 switches back from the idle mode to the boost mode. The aerosol provision device continues to operate in the boost mode for time P1b, until the remainder of the predetermined boost time P1 elapses at point K (i.e. the sum of times P1a and P2b is equal to time P1). In response to the predetermined boost time elapsing at point K, the aerosol provision device 300 switches from the boost mode to the normal mode. In response to the acceleration sensor 410 receiving the second acceleration input at point L, the aerosol provision device 300 switches from the normal mode to the idle mode.

[0109] The fourth example temperature profile C4 shows the controller 320 controlling the aerosol generator 360 according to the normal mode at the start of the aerosol generating session, such that the aerosol generator 360 heats to the normal temperature T1. In response to the acceleration sensor 410 receiving the second acceleration input at point M, the aerosol provision device 300 switches from the normal mode to the idle mode. This means that the controller 320 controls the aerosol generator 360 according to the idle mode, such that the aerosol generator 360 heats to the idle temperature T3. In response to the acceleration sensor 410 receiving the fourth acceleration input at point N, the aerosol provision device 300 switches back from the idle mode to the normal mode. In response to the acceleration sensor 410 receiving the first acceleration input at point P, the aerosol provision device 300 switches from the normal mode to the boost mode. This means that the controller 320 controls the aerosol generator 360 according to the boost mode, such that the aerosol generator 360 heats to the boost temperature T2. After the predetermined boost time P1 elapses, the aerosol provision device 300 switches from the boost mode to the normal mode at point Q. This means the controller 320 returns to controlling the aerosol generator 360 according to the normal mode.

[0110] The various embodiments described herein are presented only to assist in understanding and teaching the claimed features. These embodiments are provided as a representative sample of embodiments only, and are not exhaustive and/or exclusive. It is to be understood that advantages, embodiments, examples, functions, features, structures, and/or other aspects described herein are not to be considered limitations on the scope of the invention as defined by the claims or limitations on equivalents to the claims, and that other embodiments may be utilised and modifications may be made without departing from the scope of the claimed invention. Various embodiments of the invention may suitably comprise, consist of, or consist essentially of, appropriate combinations of the disclosed elements, components, features, parts, steps, means, etc, other than those specifically described herein. In addition, this disclosure may include other inventions not presently claimed, but which may be claimed in future.

Claims

1. An aerosol provision comprising:

an aerosol generator configured generate aerosol from aerosol generating material;
a controller; and
an acceleration sensor,
wherein the controller is configured to:

in response to the acceleration sensor receiving a first acceleration input, control the aerosol generator according to a boost mode; and
in response to the acceleration sensor receiving a second acceleration input, control the aerosol generator according to an idle mode.

2. The aerosol provision device of claim 1, wherein the controller is configured to control the aerosol generator according to a normal mode, wherein in the normal mode the controller is configured to control the aerosol generator to heat to a normal temperature.

3. The aerosol provision device of any preceding claim, wherein the controller is configured to control the aerosol generator to heat to a boost temperature in the boost mode.

4. The aerosol provision device of claim 3 when dependent on claim 2, wherein the boost temperature is greater than the normal temperature.

5. The aerosol provision device of any preceding claim, wherein the controller is configured to control the

aerosol generator to heat to an idle temperature in the idle mode.

6. The aerosol provision device of claim 5 when dependent on claim 2, wherein the idle temperature is less than the normal temperature. 5
7. The aerosol provision device of any preceding claim, wherein the controller is configured to determine that the first acceleration input has been received when an acceleration above a first threshold is sensed by the acceleration sensor. 10
8. The aerosol provision device of any preceding claim, wherein the first acceleration input comprises a tapping input. 15
9. The aerosol provision device of any preceding claim, wherein the controller is configured to determine that the second acceleration input has been received when an acceleration below a second threshold is sensed by the acceleration sensor. 20
10. The aerosol provision device of any preceding claim, wherein the controller is configured to determine that the second acceleration input has been received when the acceleration below the second threshold is received for at least an idle time period. 25
11. The aerosol provision device of any preceding claim, wherein the second acceleration input is indicative of the user not inhaling on the aerosol provision device. 30
12. The aerosol provision device of any preceding claim, wherein the acceleration sensor comprises an acceleration sensing device, the acceleration sensing device configured to receive both the first acceleration input and the second acceleration input, or wherein the acceleration sensor comprises a first acceleration sensing device configured to receive the first acceleration input; and a second acceleration sensing device configured to receive the second acceleration input. 35 40
13. The aerosol provision device of any preceding claim, wherein the controller is configured to control the aerosol generator to heat the aerosol generating material for an aerosol generating session. 45
14. An aerosol provision system comprising the aerosol provision device of claims 1 to 13 and an article comprising aerosol generating material. 50
15. A method for an aerosol provision device, the aerosol provision device comprising an aerosol generator configured to generate aerosol from aerosol generating material, the method comprising: 55
in response to receiving a first acceleration input,

controlling the aerosol generator according to a boost mode; and
in response to receiving a second acceleration input, controlling the aerosol generator according to an idle mode.

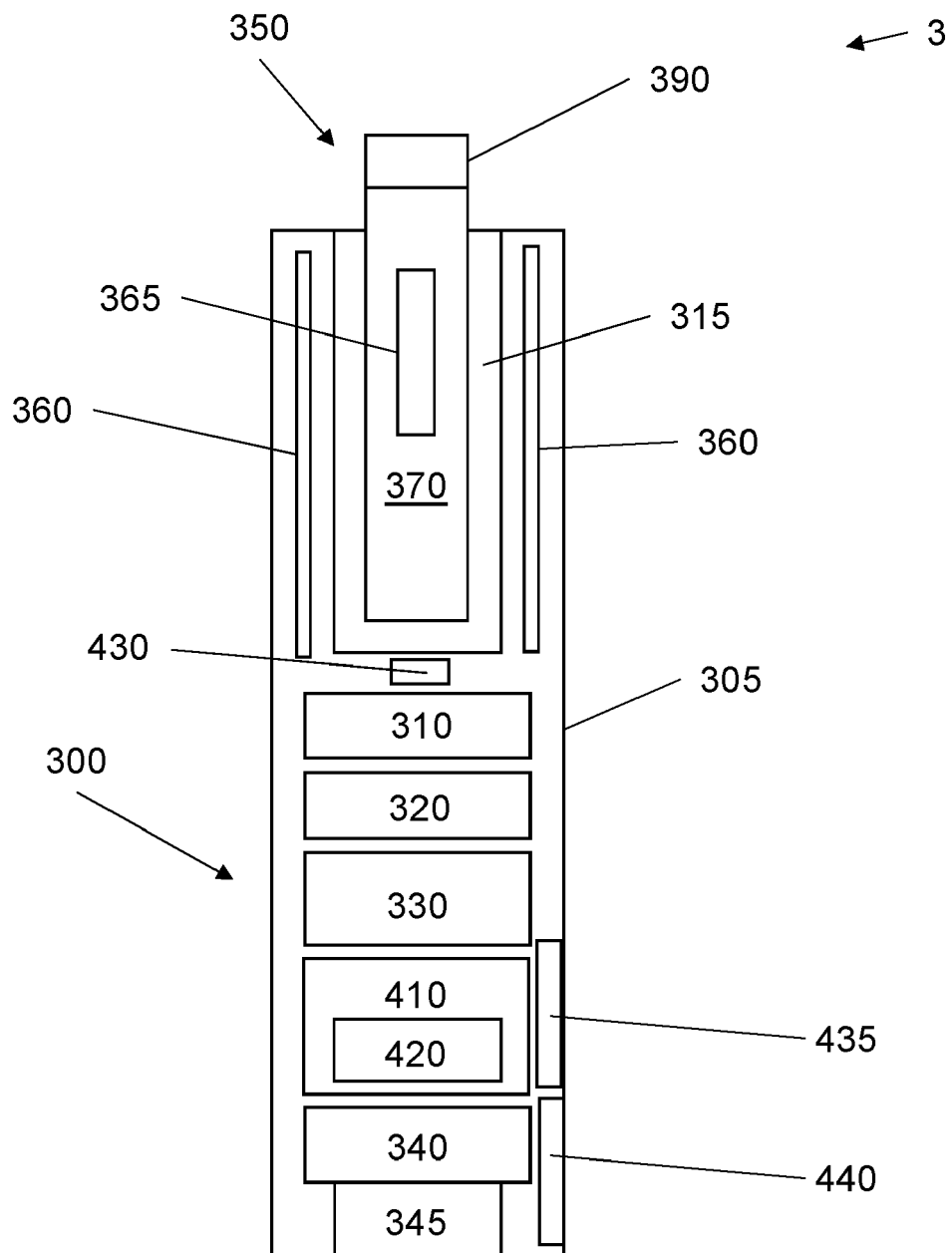


Figure 1

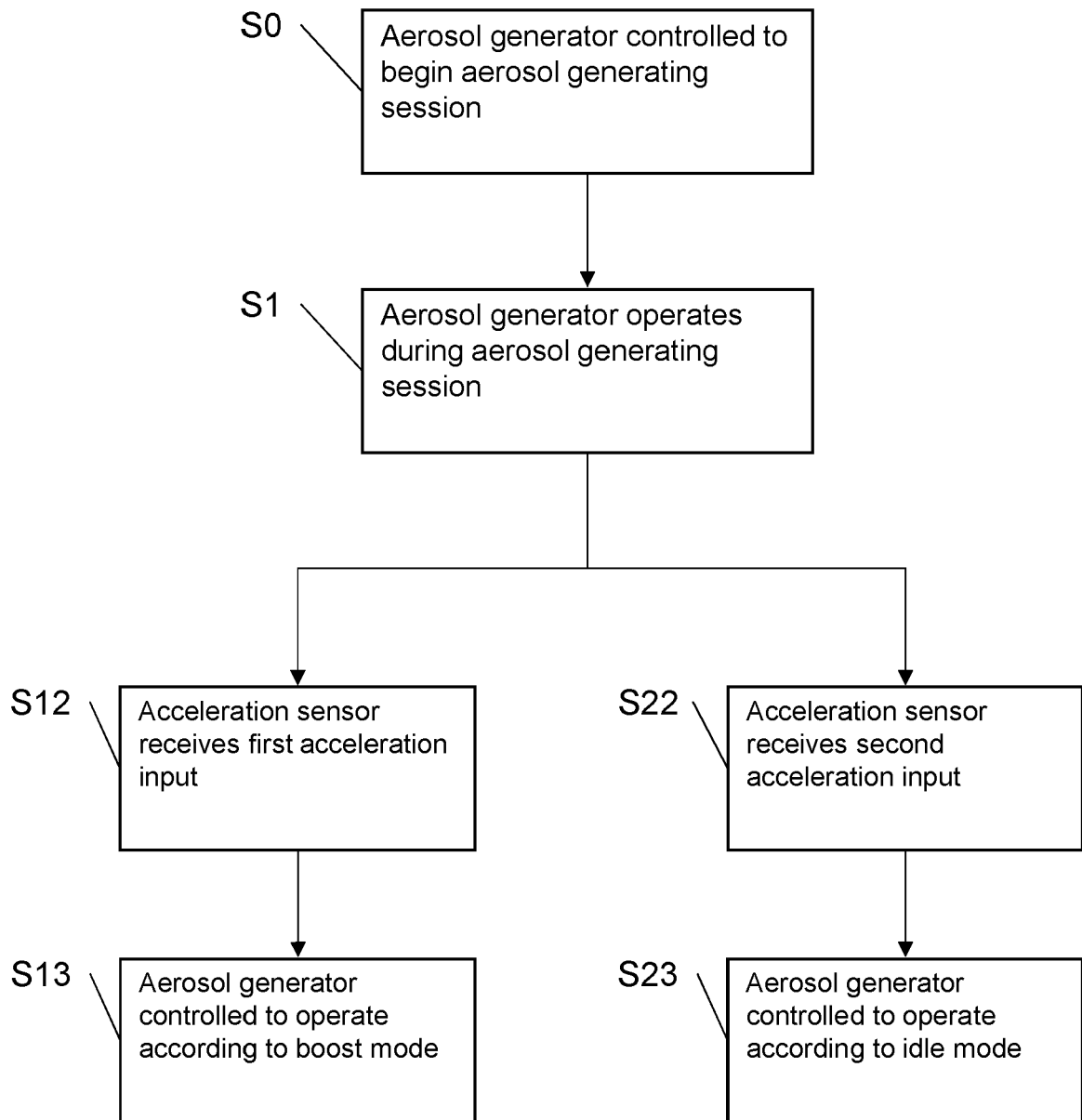


Figure 2

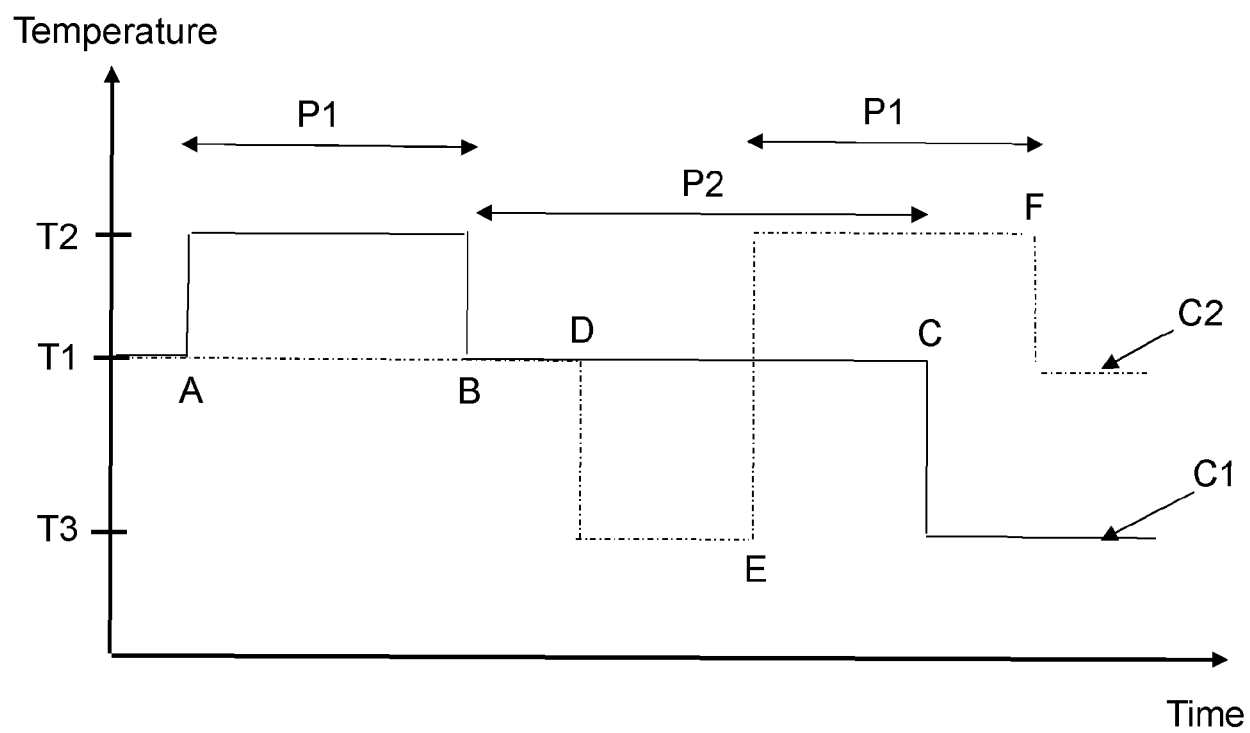


Figure 3

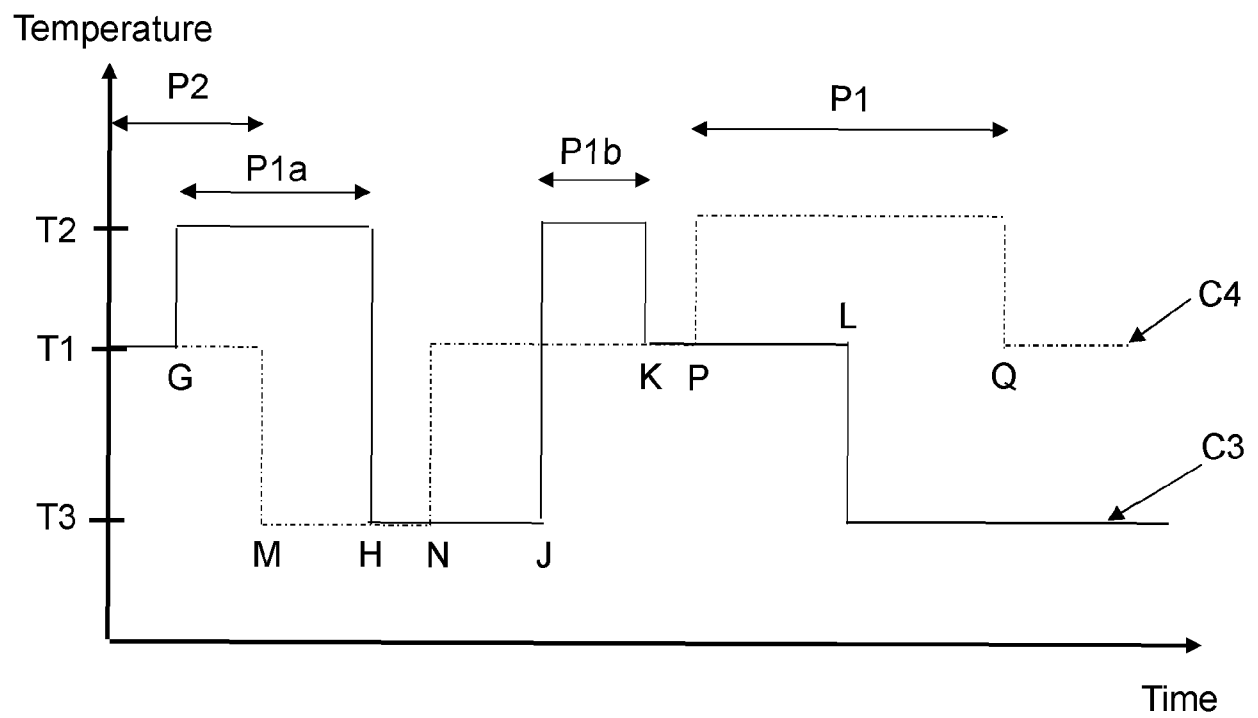


Figure 4



EUROPEAN SEARCH REPORT

Application Number

EP 24 18 9764

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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		16 December 2024	Klintebäck, Daniel
CATEGORY OF CITED DOCUMENTS			
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T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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