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(54) **HEAT-NOT-BURN DEVICE AND SYSTEMS**

(57) There is provided a HNB device (100), comprising a heating chamber (120) for heating a consumable received into the heating chamber; wherein the heating chamber is accessible at a side (106) of the HNB device; and a disposable filter (160) accessible at a mouth end (102) of the HNB device.

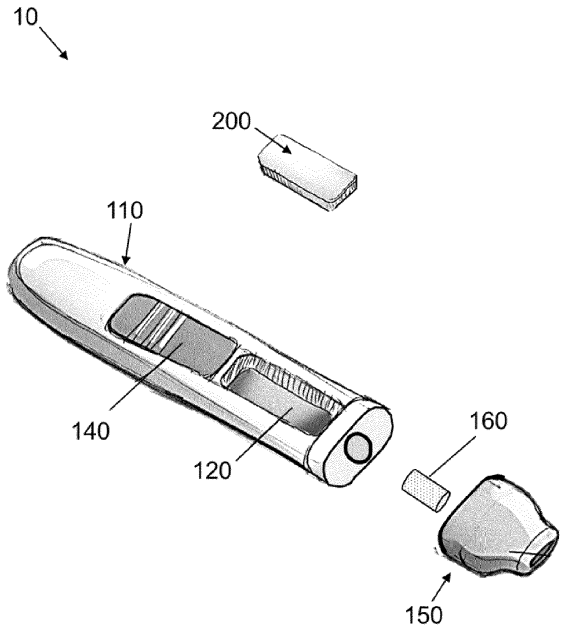

Fig. 7

EP 4 505 887 A1

Description

Field of the Invention

[0001] The present invention relates to a heat-not-burn device and heat-not-burn systems.

Background

[0002] A typical aerosol generating apparatus may comprise a power supply, an aerosol generating unit that is driven by the power supply, an aerosol precursor, which in use is aerosolised by the aerosol generating unit to generate an aerosol, and a delivery system for delivery of the aerosol to a user.

[0003] A drawback with known aerosol generating apparatuses relates to residue of heat-not-burn consumables in a heater system of the aerosol generating apparatuses as a result of piercing of the consumable by a heater rod.

[0004] In spite of the effort already invested in the development of aerosol generating apparatuses/systems further improvements are desirable.

Summary of the Invention

[0005] At its most general, the present invention relates to a heat-not-burn device wherein a consumable and filter of the device are separately accessible. Herein, "heat-not-burn" is abbreviated as "HNB".

[0006] According to a first aspect of the present invention, a HNB device, comprising a heating chamber for heating a consumable received into the heating chamber, wherein the heating chamber is accessible at a side of the HNB device; and a disposable filter accessible at a mouth end of the HNB device.

[0007] Optionally, the HNB device further comprises a mouthpiece at the mouth end of the HNB device.

[0008] Optionally, the mouthpiece is detachable from a main body of the HNB device to enable removal of the disposable filter from the HNB device.

[0009] Optionally, the disposable filter is seated in the mouthpiece and is removable from the mouthpiece when the mouthpiece is detached from the main body.

[0010] Optionally, the disposable filter is seated in the main body and is removable from the main body when the mouthpiece is detached from the main body.

[0011] Optionally, the HNB device further comprises a chamber cover arranged on the side of the HNB device to close the heating chamber.

[0012] Optionally, the heating chamber is accessible by moving the chamber cover to expose the heating chamber.

[0013] Optionally, the chamber cover is slidably mounted to the side of the HNB device.

[0014] Optionally, the chamber cover does not include a heater.

[0015] Optionally, the heating chamber includes a chamber opening for receiving the consumable into the heating chamber and, opposite to the chamber opening, a chamber base.

[0016] Optionally, the heating chamber is configured for single-sided heating.

[0017] Optionally, the chamber base of the heating chamber is formed by a heating element for heating of the heating chamber.

[0018] Optionally, the heating chamber has a length which is measured along the chamber base; a width which is measured along the chamber base in a direction perpendicular to the length; and a depth measured in a direction perpendicular to the chamber base.

[0019] Optionally, the depth is smaller than the width and the length of the heating chamber.

[0020] Optionally, the depth is smaller than the length of the heating chamber.

[0021] According to a second aspect of the present invention, there is provided a HNB system, comprising a HNB device as described above and a consumable.

[0022] Optionally, the consumable is a tobacco brick.

[0023] Optionally, the HNB system according to the second aspect comprises another disposable filter.

[0024] According to a third aspect of the present invention, there is provided a HNB system comprising a HNB device as described above and another disposable filter.

[0025] Optionally, the disposable filter of the HNB device is exchangeable for the other disposable filter.

[0026] Optionally, the HNB system according to the third aspect further comprises another mouthpiece including the other filter.

[0027] Optionally, the mouthpiece of the HNB device is exchangeable for the second mouthpiece in order to thereby exchange the disposable filter for the other disposable filter.

[0028] Optionally, the HNB system according to the third aspect comprises a consumable.

[0029] The invention includes the combination of the aspects and preferred features described except where such a combination is clearly impermissible or expressly avoided.

Summary of the Figures

[0030] 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:

Figure 1 is a perspective view of a HNB system in an engaged state.

Figure 2 is a perspective view of the HNB system of Figure 1 in a disengaged state.

Figure 3 is a perspective view of a heating chamber

of a HNB device of the HNB system of Figure 1.

Figure 4 is a perspective view of the HNB device wherein a chamber cover closes the heating chamber.

Figure 5 is a perspective view of the HNB device wherein a mouthpiece is separated.

Figure 6 is another perspective of the HNB device with separated mouthpiece, wherein a disposable filter has been removed from the mouthpiece.

Figure 7 is an exploded view of the HNB system of Figure 1.

Detailed Description of the Invention

[0031] Before describing several examples implementing the present disclosure, it is to be understood that the present disclosure is not limited by specific construction details or process steps set forth in the following description and accompanying drawings. Rather, it will be apparent to those skilled in the art having the benefit of the present disclosure that the systems, apparatuses and/or methods described herein could be embodied differently and/or be practiced or carried out in various alternative ways.

[0032] Unless otherwise defined herein, scientific and technical terms used in connection with the presently disclosed inventive concept(s) shall have the meanings that are commonly understood by those of ordinary skill in the art, and known techniques and procedures may be performed according to conventional methods well known in the art and as described in various general and more specific references that may be cited and discussed in the present specification.

[0033] All examples implementing the present disclosure can be made and executed without undue experimentation in light of the present disclosure. While particular examples have been described, it will be apparent to those of skill in the art that variations may be applied to the systems, apparatus, and/or methods and in the steps or in the sequence of steps of the methods described herein without departing from the concept, spirit, and scope of the inventive concept(s). All such similar substitutions and modifications apparent to those skilled in the art are deemed to be within the spirit, scope, and concept of the inventive concept(s) as defined by the appended claims.

[0034] The use of the term "a" or "an" in the claims and/or the specification may mean "one," as well as "one or more," "at least one," and "one or more than one." As such, the terms "a," "an," and "the," as well as all singular terms, include plural referents unless the context clearly indicates otherwise. Likewise, plural terms shall include the singular unless otherwise required by context.

[0035] The use of the term "or" in the present disclosure (including the claims) is used to mean an inclusive "and/or" unless explicitly indicated to refer to alternatives only or unless the alternatives are mutually exclusive. For example, a condition "A or B" is satisfied by any of the following: A is true (or present) and B is false (or not present), A is false (or not present) and B is true (or present), and both A and B are true (or present).

[0036] As used in this specification and claim(s), the words "comprising, "having," "including," or "containing" (and any forms thereof, such as "comprise" and "comprises," "have" and "has," "includes" and "include," or "contains" and "contain," respectively) are inclusive or open-ended and do not exclude additional, unrecited elements or method steps.

[0037] Unless otherwise explicitly stated as incompatible, or the physics or otherwise of the embodiments, examples, or claims prevent such a combination, the features of examples disclosed herein, and of the claims, may be integrated together in any suitable arrangement, especially ones where there is a beneficial effect in doing so. This is not limited to only any specified benefit, and instead may arise from an "ex post facto" benefit. This is to say that the combination of features is not limited by the described forms, particularly the form (e.g. numbering) of example(s), embodiment(s), or dependency of claim(s). Moreover, this also applies to the phrase "in one embodiment," "according to an embodiment," and the like, which are merely a stylistic form of wording and are not to be construed as limiting the following features to a separate embodiment to all other instances of the same or similar wording. This is to say, a reference to 'an,' 'one,' or 'some' embodiment(s) may be a reference to any one or more, and/or all embodiments, or combination(s) thereof, disclosed. Also, similarly, the reference to "the" embodiment may not be limited to the immediately preceding embodiment. Further, all references to one or more embodiments or examples are to be construed as non-limiting to the claims.

[0038] The present disclosure may be better understood in view of the following explanations, wherein the terms used that are separated by "or" may be used interchangeably:

As used herein, an **"aerosol generating apparatus"** (or **"electronic(e)-cigarette")** may be an apparatus configured to deliver an aerosol to a user for inhalation by the user. The apparatus may additionally/alternatively be referred to as a "smoking substitute apparatus", if it is intended to be used instead of a conventional combustible smoking article. As used herein a combustible "smoking article" may refer to a cigarette, cigar, pipe or other article, that produces smoke (an aerosol comprising solid particulates and gas) via heating above the thermal decomposition temperature (typically by combustion and/or pyrolysis). An aerosol generated by the apparatus may comprise an aerosol with particle sizes of 0.2 - 7 microns, or less than 10 microns, or less than 7 microns. This particle size may be achieved by control of one or more of: heater temperature; cooling rate as the

vapour condenses to an aerosol; flow properties including turbulence and velocity. The generation of aerosol by the aerosol generating apparatus may be controlled by an input device. The input device may be configured to be user-activated, and may for example include or take the form of an actuator (e.g. actuation button) and/or an airflow sensor.

[0039] Each occurrence of the aerosol generating apparatus being caused to generate aerosol for a period of time (which may be variable) may be referred to as an **"activation"** of the aerosol generating apparatus. The aerosol generating apparatus may be arranged to allow an amount of aerosol delivered to a user to be varied per activation (as opposed to delivering a fixed dose of aerosol), e.g. by activating an aerosol generating unit of the apparatus for a variable amount of time, e.g. based on the strength/duration of a draw of a user through a flow path of the apparatus (to replicate an effect of smoking a conventional combustible smoking article).

[0040] The aerosol generating apparatus may be portable. As used herein, the term **"portable"** may refer to the apparatus being for use when held by a user.

[0041] As used herein, an **"aerosol generating system"** may be a system that includes an aerosol generating apparatus and optionally other circuitry/components associated with the function of the apparatus, e.g. one or more external devices and/or one or more external components (here "external" is intended to mean external to the aerosol generating apparatus). As used herein, an "external device" and "external component" may include one or more of a: a charging device, a mobile device (which may be connected to the aerosol generating apparatus, e.g. via a wireless or wired connection); a networked-based computer (e.g. a remote server); a cloud-based computer; any other server system.

[0042] An example aerosol generating system may be a system for managing an aerosol generating apparatus. Such a system may include, for example, a mobile device, a network server, as well as the aerosol generating apparatus.

[0043] As used herein, an **"aerosol"** may include a suspension of precursor, including as one or more of: solid particles; liquid droplets; gas. Said suspension may be in a gas including air. An aerosol herein may generally refer to/include a vapour. An aerosol may include one or more components of the precursor.

[0044] As used herein, a **"precursor"** may include one or more of a: liquid; solid; gel; loose leaf material; other substance. The precursor may be processed by an aerosol generating unit of an aerosol generating apparatus to generate an aerosol. The precursor may include one or more of: an active component; a carrier; a flavouring. The active component may include one or more of nicotine; caffeine; a cannabidiol oil; a non-pharmaceutical formulation, e.g. a formulation which is not for treatment of a disease or physiological malfunction of the human body. The active component may be carried by the carrier, which may be a liquid, including propylene glycol and/or glycerine. The term "flavouring" may refer to a component that provides a taste and/or a smell to the user. The flavouring may include one or more of: Ethylvanillin (vanilla); menthol, Isoamyl acetate (banana oil); or other. The precursor may include a substrate, e.g. reconstituted tobacco to carry one or more of the active component; a carrier; a flavouring.

[0045] As used herein, a **"flow path"** may refer to a path or enclosed passageway through an aerosol generating apparatus, e.g. for delivery of an aerosol to a user. The flow path may be arranged to receive aerosol from an aerosol generating unit. When referring to the flow path, upstream and downstream may be defined in respect of a direction of flow in the flow path, e.g. with an outlet being downstream of an inlet.

[0046] As used herein, a **"delivery system"** may be a system operative to deliver an aerosol to a user. The delivery system may include a mouthpiece and a flow path.

[0047] As used herein, a **"flow"** may refer to a flow in a flow path. A flow may include aerosol generated from the precursor. The flow may include air, which may be induced into the flow path via a puff by a user.

[0048] As used herein, an **"aerosol generating unit"** may refer to a device configured to generate an aerosol from a precursor. The aerosol generating unit may include a unit to generate a vapour directly from the precursor (e.g. a heating system or other system) or an aerosol directly from the precursor (e.g. an atomiser including an ultrasonic system, a flow expansion system operative to carry droplets of the precursor in the flow without using electrical energy or other system). A plurality of aerosol generating units to generate a plurality of aerosols (for example, from a plurality of different aerosol precursors) may be present in an aerosol generating apparatus.

[0049] As used herein, a **"heating system"** may refer to an arrangement of at least one heating element, which is operable to aerosolise a precursor once heated. The at least one heating element may be electrically resistive to produce heat from the flow of electrical current therethrough. The at least one heating element may be arranged as a susceptor to produce heat when penetrated by an alternating magnetic field. The heating system may be configured to heat a precursor to below 300 or 350 degrees C, including without combustion.

[0050] As used herein, a **"consumable"** may refer to a unit that includes a precursor. The consumable may include an aerosol generating unit, e.g. it may be arranged as a cartomizer. The consumable may include a mouthpiece. The consumable may include an information carrying medium. With liquid or gel implementations of the precursor, e.g. an e-liquid, the consumable may be referred to as a "capsule" or a "pod" or an "e-liquid consumable". The capsule/pod may include a storage portion, e.g. a reservoir or tank, for storage of the precursor. With solid material implementations of the precursor, e.g. tobacco or reconstituted tobacco formulation,

the consumable may be referred to as a "stick" or "package" or "heat-not-burn consumable". In a heat-not-burn consumable, the mouthpiece may be implemented as a filter and the consumable may be arranged to carry the precursor. The consumable may be implemented as a dosage or pre-portioned amount of material, including a loose-leaf product.

[0051] As used herein, an **"information carrying medium"** may include one or more arrangements for storage of information on any suitable medium. Examples include: a computer readable medium; a Radio Frequency Identification (RFID) transponder; codes encoding information, such as optical (e.g. a bar code or QR code) or mechanically read codes (e.g. a configuration of the absence or presents of cut-outs to encode a bit, through which pins or a reader may be inserted).

[0052] As used herein **"heat-not-burn"** (or **"HNB"** or **"heated precursor"**) may refer to the heating of a precursor, typically tobacco, without combustion, or without substantial combustion (i.e. localised combustion may be experienced of limited portions of the precursor, including of less than 5% of the total volume).

[0053] 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.

[0054] Figures 1 and 2 are perspective views of an aerosol generating system, provided as a heat-not-burn system 10 for providing aerosol/vapour to a user.

[0055] The HNB system 10 comprises an aerosol generating apparatus, provided as a HNB device 100, and an aerosol-forming article in the form of a consumable 200, which comprises an aerosol former 202. The HNB device 100 and the consumable 200 are configured such that the consumable 200 can be engaged with the HNB device 100. Figure 1 shows the HNB device 100 and the consumable 200 in an engaged state, whilst Figure 2 shows the HNB device 100 and the consumable 200 in a disengaged state. Suitably, the HNB device 100 has a consumable opening 102 (shown in Figure 3 as a dashed-dotted line). The consumable 200 is insertable into the HNB device 100 through the consumable opening 102 in an insertion direction 105.

[0056] The consumable 200 generally resembles a cuboid and may also be referred to as a brick consumable or as a brick.

[0057] The HNB device 100 is configured to vaporise the aerosol former 202 by heating the aerosol former 202 (so as to form a vapour/aerosol for inhalation by a user). Suitably, the HNB device 100 comprises a heating system described below.

[0058] The HNB device 100 has a mouth end 102 (or 'first end') and a grip end 104 (or 'second end'). The mouth end 102 and the grip end 104 are opposite ends of the HNB device 100, delimiting a device length. The mouth end 102 is in use engaged by the user for inhalation, while the grip end 104 may be manually engaged by the user for holding the HNB device 100.

[0059] The HNB device 100 has a device side 106 (or 'device face'). The device side 106 is one of the sides extending between the mouth end 102 and the grip end 104. In this example, the HNB device 100 is generally bar shaped and has four separate device sides: a first pair of device sides, which may be referred to as top side and bottom side; and a second pair of device sides, which may be referred to as left side and right side.

[0060] The HNB device 100 includes a main body 110 and a heating chamber 120 in the main body 110.

[0061] Figure 3 is a perspective view of the heating chamber 120.

[0062] The heating chamber 120 is a recess formed the main body 110 of the HNB device 100 for receiving the consumable 200 and heating the consumable 200 in the heating chamber 110. Suitably, the heating chamber 120 includes a chamber opening 121. Through the chamber opening 121, the consumable 200 is manually insertable into the heating chamber 120 and removable therefrom.

[0063] The heating chamber 120 includes a chamber base 122.

[0064] The heating chamber 120 has a chamber length 123 which is measured along the chamber base 122. The heating chamber 120 has a chamber width 124 which is measured along the chamber base 122 in a direction perpendicular to the chamber length 123. The heating chamber 120 has a chamber depth 125 measured in a direction perpendicular to the chamber base 122. As such, the chamber base 122 is a chamber surface bounding the chamber depth 125.

[0065] As shown in Figure 3, the chamber length 123 is greater than the chamber width 124; and the chamber width 124 is greater than the chamber depth 125.

[0066] The heating chamber 120 is configured for single-sided heating of the consumable 200. Suitably, the chamber base 122 formed by a heater 130. In Figure 3, the chamber base 122 and the heater 130 are illustrated separately for convenience of illustration but may be provided as a single structure. In use, the heater 130 generates heat. Since the heater 130 is located at one side of the consumable 200 and, in this example, the heater 130 is the sole heater, this provides for single-sided heating.

[0067] The HNB device includes a chamber cover 140. The chamber cover 140 is arranged on the device side 106. The chamber cover 140 is arrangeable to close the heating chamber 120.

[0068] Figure 4 is a perspective view of the HNB device 100 wherein the chamber cover 140 closes the heating chamber 120. The heating chamber 120 is accessible by moving the chamber cover 140 to expose the heating chamber 120. Similarly, the heating chamber 120 is closable by moving the chamber cover 140 to close the heating chamber 120. Suitably, the chamber cover 140 is moveable between a first position, in which the heating chamber 120 is closed (shown in Figure 4), and a second position, in which the heating chamber 120 is exposed (shown in Figure 1).

[0069] In this example, the chamber cover 140 is slidably mounted to the device side 106, and slidable between the first position and the second position by the user.

[0070] Figure 5 shows the HNB device 100 where a mouthpiece 150 of the HNB device 100 has been detached from the main body 110, whereas in Figures 1, 2 and 4 the mouthpiece 150 is attached to the main body 110.

[0071] The main body 110 has a first end 112 and, opposite thereto, a second end 114. The mouthpiece 150 is attached to the first end 112 of the main body 110.

[0072] The mouthpiece 150 is detachable from the main body 110. In this example, the mouthpiece 150 may be manually pulled from the main body 110 to detach the mouthpiece 150, and manually pushed onto the main body 110 to reattach the mouthpiece 150.

[0073] The mouthpiece 150 has an outlet end 152 (or 'first end') and an inlet end 154 (or 'second end'). The inlet end 154 is configured for connection with the end 112 of the main body 110 and to receive aerosol/vapour from the main body 110 when the HNB device 100 is in use. The aerosol/vapour received into the inlet end 152 is communicated to the outlet end 152, from where the aerosol/vapour is released to the user of the HNB device 100.

[0074] As shown in Figure 5, the mouthpiece 150 is tapered towards the outlet end 152. As such, the mouthpiece 150 has a smaller cross-section at the outlet end 152 than at the inlet end 154. This may provide for an ergonomic shape and hence improve user experience.

[0075] Figure 6 shows the HNB device 100 with the mouthpiece 150 detached, and the disposable filter 160 removed from the mouthpiece 150, whereas in Figure 5 the disposable filter 160 is seated in the mouthpiece 150.

[0076] When the mouthpiece 150 is removed from the main body 110, the disposable filter 160 may be removed from the mouthpiece 150. The disposable filter 160 may be replaced with a new disposable filter before replacing the mouthpiece 150 on the main body 110.

[0077] Figure 7 is an exploded view of the HNB system 10 showing the main body 110, the mouthpiece 150 separated from the main body 110, the disposable filter 160 removed from the mouthpiece 150, and the consumable 200 removed from the heating chamber 120.

[0078] In use, insertion of the consumable 200 into the HNB device 100 through the chamber opening 121 by a user causes the consumable 200 to be received into the heating chamber 120. Thus, the consumable 200 is located alongside the heater 130.

[0079] The HNB device 100 is configured to generate aerosol/vapour for inhalation by the user through heating of the consumable 200 by means of the heater 130 as part of a session. Suitably the heater 130 is configured to heat the consumable 200 to a suitable temperature, e.g. a temperature of 200 to 300 degrees Celsius. Conveniently, the heater 130 is electrically connectable to a power source 180, for example when the consumable 200 is engaged with the HNB device 100.

[0080] Following one or multiple sessions, the user may remove the consumable 200 from the heating chamber 120 accessible at the device side 106 of the HNB device 100. In this example, the user may manually push the slidable chamber cover 140 to expose the heating chamber 120 and remove the consumable 200 therefrom.

[0081] The user may place a new consumable 200 in the heating chamber 120 and return the chamber cover 140 to close the heating chamber 120.

[0082] Following one or multiple sessions, the user may remove the disposable filter 160. In this example, the user may manually pull the mouthpiece 150 from the main body 110 to separate the mouthpiece 150 from the main body 110. The user may then remove the disposable filter 160 from the mouthpiece 150 when detached from the main body 110. In this example, the disposable filter 160 is accessible at, and removable from, the inlet end 154 of the mouthpiece 150.

[0083] After removal of the disposable filter, the user may place a new disposable filter 160 in the mouthpiece 150, and fit the mouthpiece 150 to the main body 110.

[0084] Conveniently, the consumable 200 and the disposable filter 160 are independently accessible and separately replaceable. As such, improved flexibility may be provided to the user such that, for example, the user may replace each of the consumable 200 and the disposable filter 160 as and when desired without having to replace both simultaneously as would be required for a consumable with integrated filter.

[0085] According to the HNB device 100 described above, the active component, i.e. the consumable 200, and the filter component, i.e. the disposable filter 160, are separate. As such, the HNB device 100 may provide a user experience different from conventional stick-based experiences and instead may provide a user experience more similar to vaping, which may be preferred by certain users. Moreover, the HNB device 100 may provide improved preheat times and a mouthpiece instead of classical filter. Furthermore, the HNB device 100 may offer improved flexibility to the user. By contrast, in at least some conventional devices, the active component and the filter component are integrated as a single stick consumable and can only be exchanged by the user as one unit.

[0086] The HNB device 100 as described above may provide some or all of the following advantages:

- faster and more uniform heating;
- a different and more modern device experience, similar to vaping;
- easier access for cleaning;
- less residue in the heating chamber after a smoking session;

- more flexibility in portion size.

[0087] The HNB device 100 described above has four separate sides. In some examples, the sides may not be separate, e.g. where a cylindrical HNB device is provided.

[0088] The HNB device 100 described above has a slidable chamber cover 140. In some examples, the chamber cover 140 may be pivotable or otherwise moveable relative to the heating chamber in order to expose the heating chamber, e.g. detachable from the main body 110.

[0089] The mouthpiece 150 of the HNB device 100 described above seats the disposable filter 160. In some examples, the disposable filter 160 may be seated in the main body 110.

[0090] 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.

[0091] 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 illustrative and not limiting. Various changes to the described embodiments may be made without departing from the spirit and scope of the invention.

[0092] 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.

[0093] Any section headings used herein are for organizational purposes only and are not to be construed as limiting the subject matter described.

[0094] 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.

[0095] 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%.

[0096] 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 HNB device (100), comprising:

a heating chamber (120) for heating a consumable (200) received into the heating chamber, wherein the heating chamber is accessible at a side (106) of the HNB device; and
a disposable filter (160) accessible at a mouth end (102) of the HNB device.

2. The HNB device according to claim 1,

further comprising a mouthpiece (150) at the mouth end of the HNB device;
wherein the mouthpiece is detachable from a main body (110) of the HNB device to access to the disposable filter.

3. The HNB device according to claim 2,
wherein the disposable filter is seated in the mouthpiece and is removable from the mouthpiece when the mouthpiece is detached from the main body.

4. The HNB device according to claim 2,
wherein the disposable filter is seated in the main body and is removable from the main body when the mouthpiece is detached from the main body.

5. The HNB device according to any preceding claim,

further comprising a chamber cover (140) arranged on the side of the HNB device to close the heating chamber;
wherein the heating chamber is accessible by moving the chamber cover to expose the heating chamber.

6. The HNB device according to claim 5,
wherein the chamber cover is slidably mounted to the side of the HNB device.

7. The HNB device according to any preceding claim, wherein the chamber cover does not include a heater.

8. The HNB device according to any preceding claim, wherein the heating chamber includes a chamber opening (121) for receiving the consumable into the heating chamber and, opposite to the chamber opening, a chamber base (122).

9. The HNB device according to claim 8, wherein the heating chamber is configured for single-sided heating.

10. The HNB device according to claim 9, wherein the chamber base of the heating chamber is formed by a heating element (130) for heating of the heating chamber.

11. The HNB device according to any one of claims 8 to 10,

wherein the heating chamber has:

a length (123) which is measured along the chamber base,
a width (124) which is measured along the chamber base in a direction perpendicular to the length, and
a depth (125) measured in a direction perpendicular to the chamber base;

wherein the depth is smaller than each of the width and the length of the heating chamber.

12. A HNB system (100), comprising:
a HNB device (100) according to any preceding claim and a consumable (200).

13. The HNB system according to claim 12, wherein the consumable is a tobacco brick (200).

14. A HNB system (10), comprising:

a HNB device (100) according to any preceding claim and another disposable filter (160);
wherein the disposable filter of the HNB device is exchangeable for the other disposable filter.

15. The HNB system according to claim 12 or 13,

further comprising another mouthpiece (150) including the other filter;
wherein the mouthpiece of the HNB device is exchangeable for the other mouthpiece to thereby exchange the disposable filter for the other disposable filter.

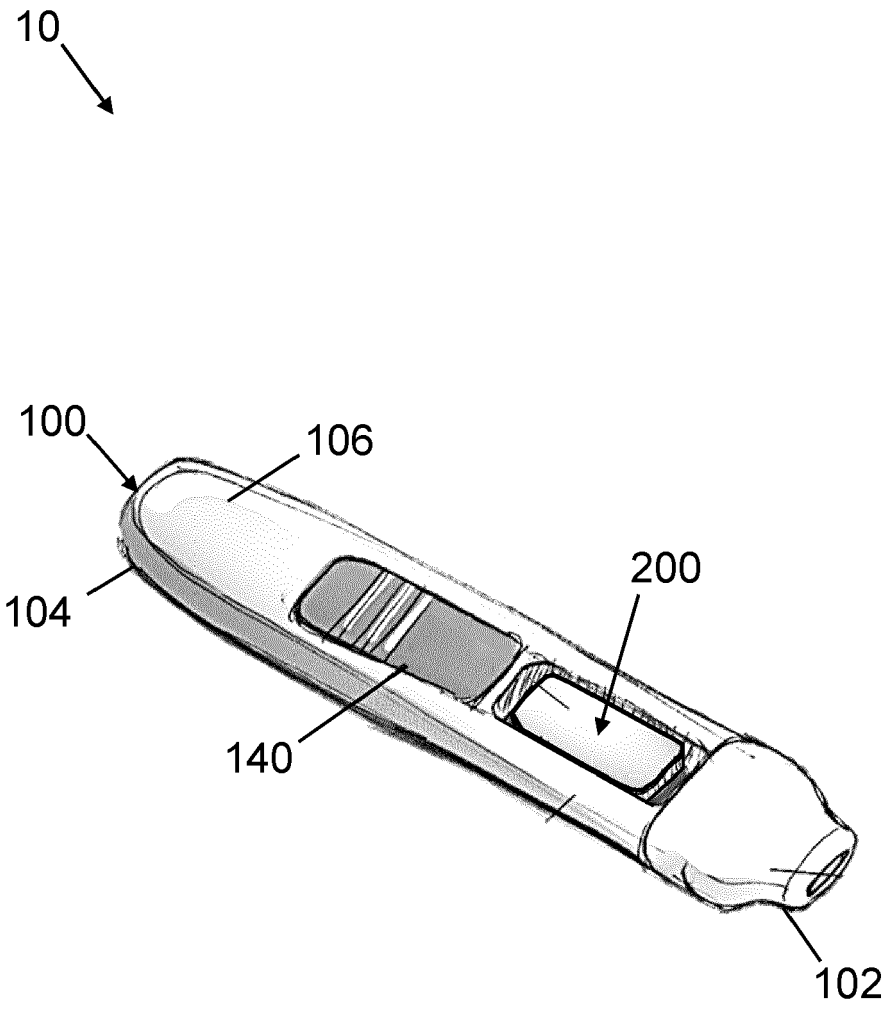

Fig. 1

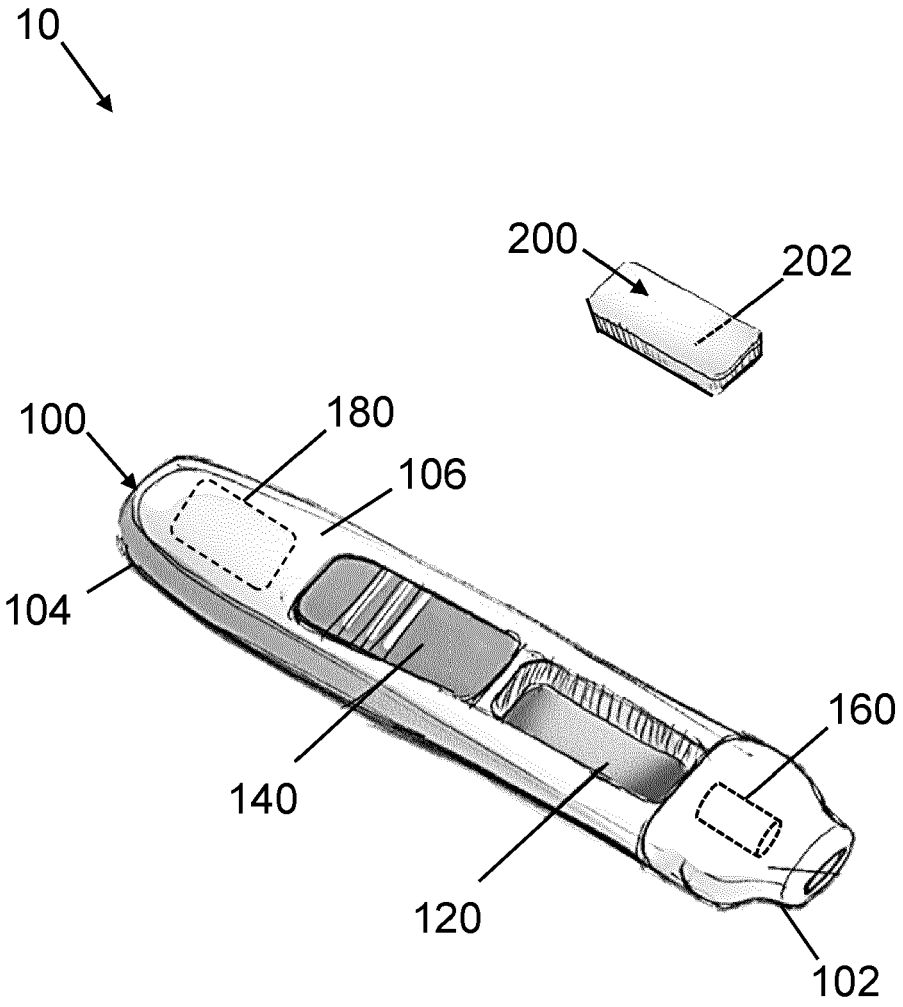

Fig. 2

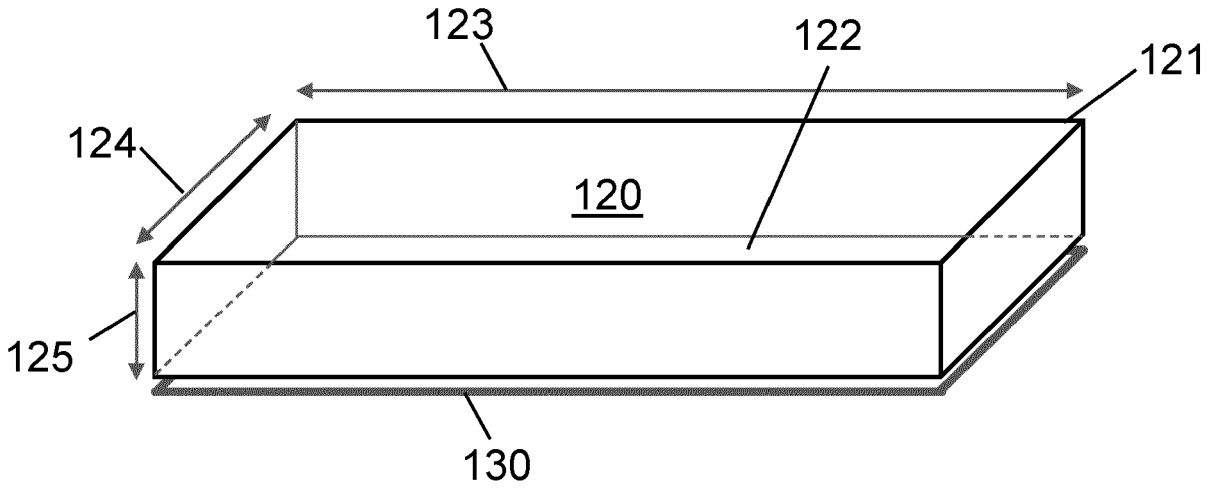

Fig. 3

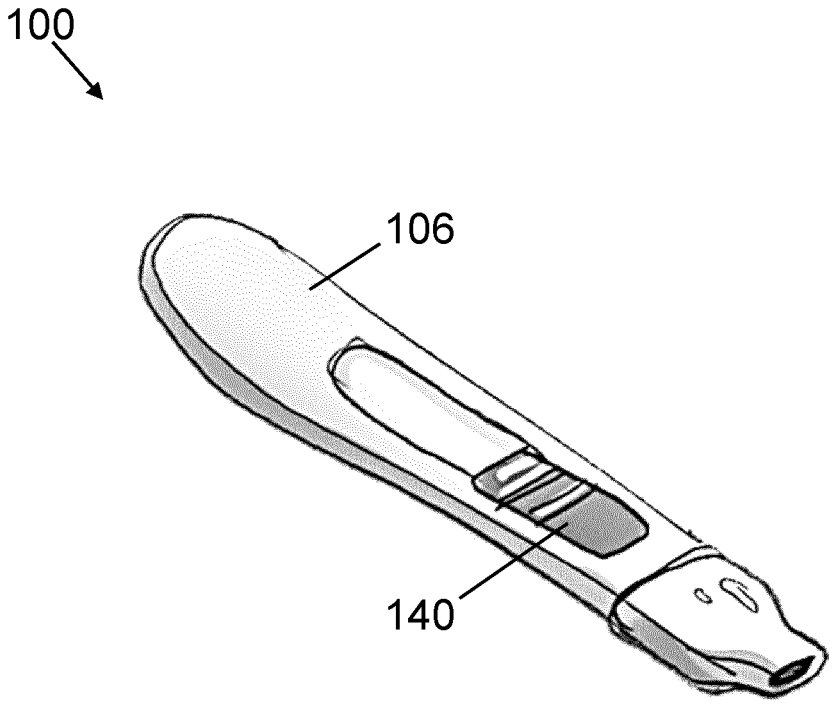

Fig. 4

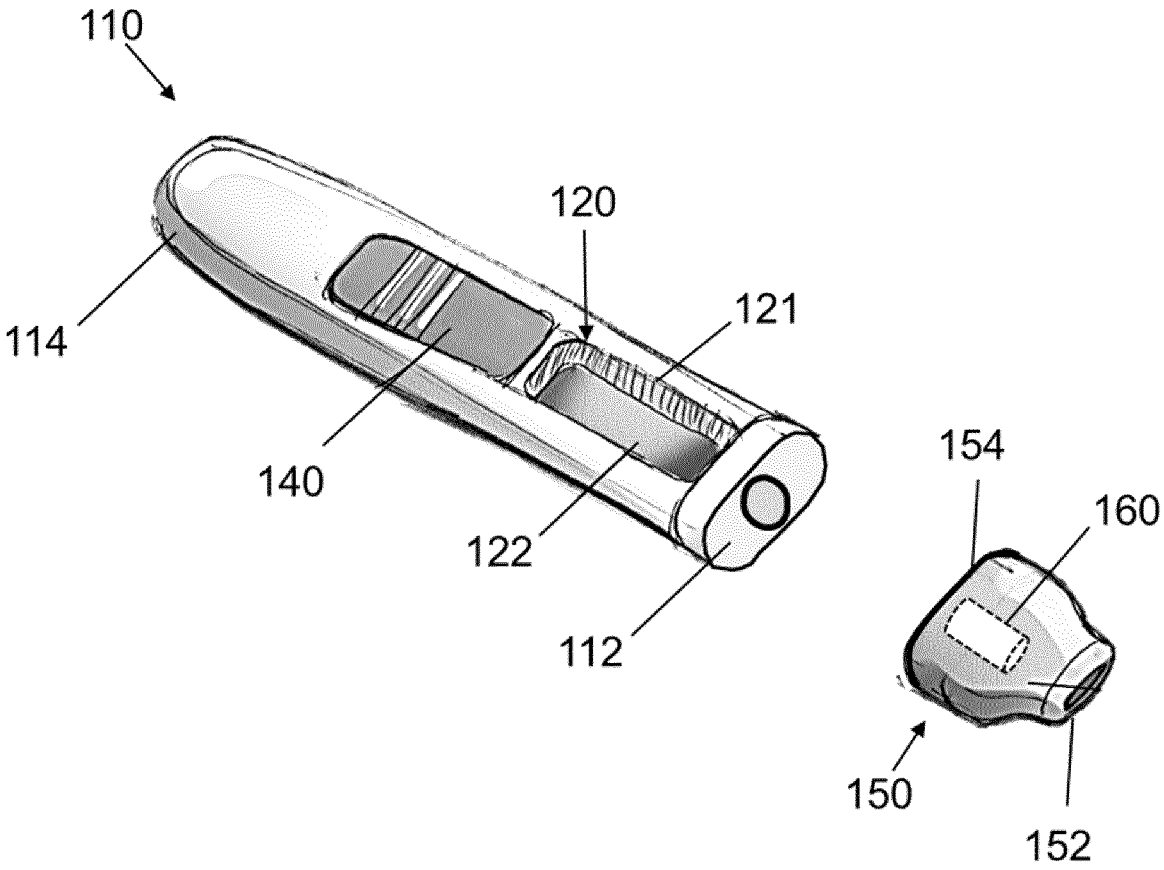

Fig. 5

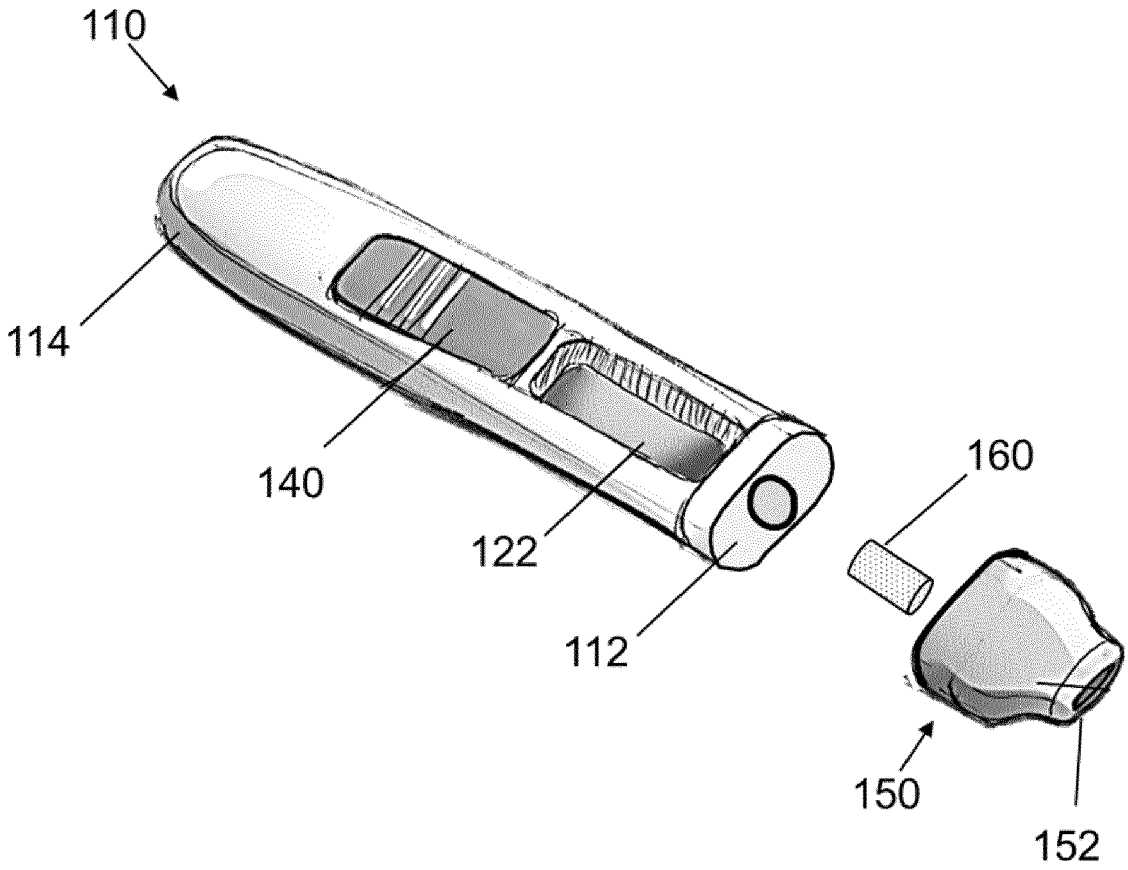

Fig. 6

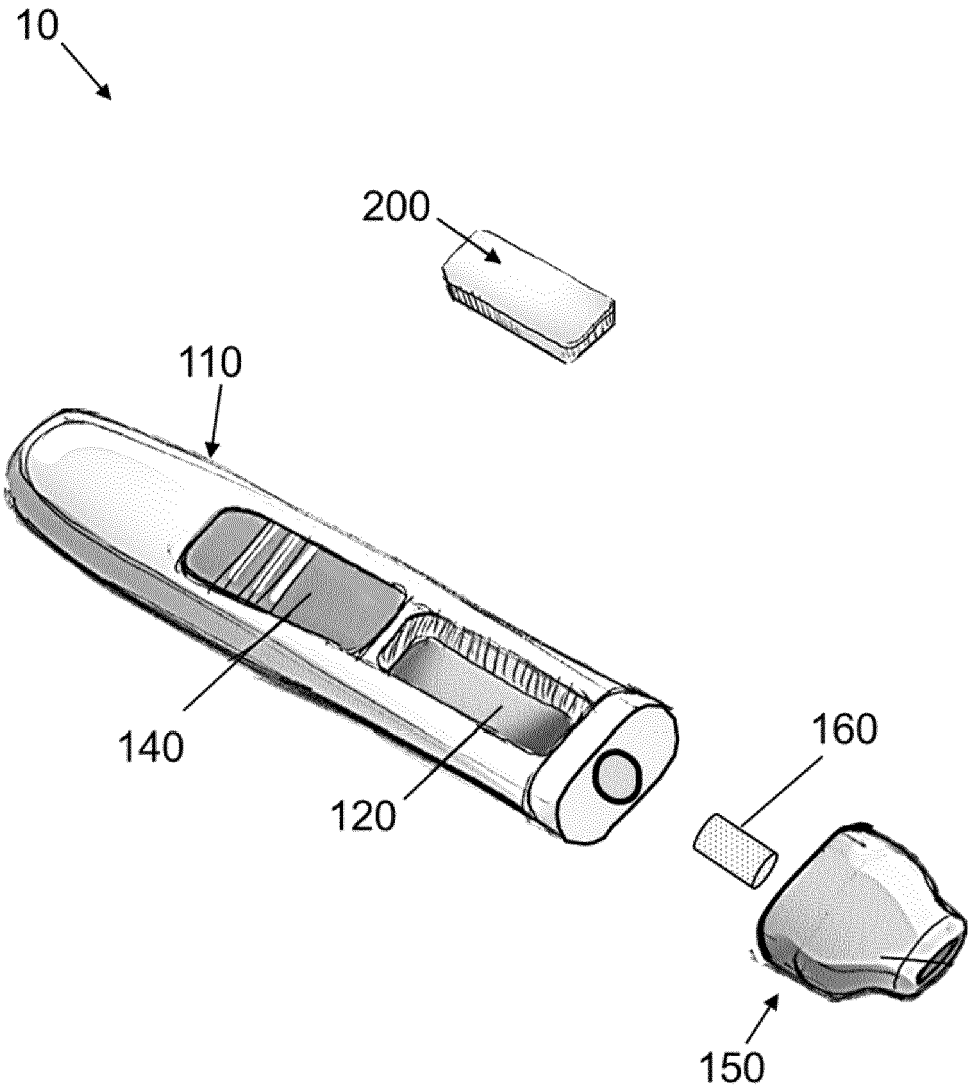

Fig. 7

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Application Number
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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	19 February 2024	Caballero Martínez

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