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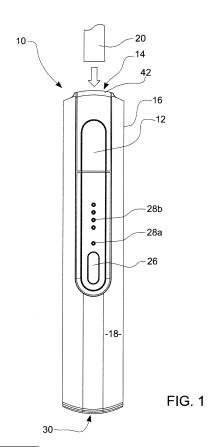
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#### Remarks:

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## (54) SMOKING SUBSTITUTE DEVICE

(57)The present disclosure relates to the field of smoking tobacco. In particular, the present disclosure relates to smoking substitute systems and particularly, although not exclusively, to a heat-not-burn (HNB) smoking substitute system. Further in particular, the present disclosure relates to smoking substitute systems having at least two independent display elements. A smoking substitute device (10), comprising a main body (16), wherein the main body (16) comprises a first display element (28a) for displaying first information (52a) and a second display element (28b) for displaying second information (52b), wherein the first display element (28a) is arranged separate from and independent of the second display element (28b), wherein the first information (52a) is different from the second information (52b), wherein one of the first and second information (52a,b) is adapted for displaying a power status of the smoking substitute device (10), and wherein the smoking substitute device (10) is a heat-not-burn device (10).



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#### Description

**[0001]** This application claims priority to GB 1815524.2 filed 24 September 2018, the contents and elements of which are herein incorporated by reference for all purposes.

#### Field of the Disclosure

**[0002]** The present disclosure relates to the field of smoking tobacco. In particular, the present disclosure relates to smoking substitute systems and particularly, although not exclusively, to a heat-not-burn (HNB) smoking substitute system. Further in particular, the present disclosure relates to smoking substitute systems having at least two independent display elements.

#### **Background**

**[0003]** The smoking of tobacco is generally considered to expose a smoker to potentially harmful substances. It is generally thought that a significant amount of the potentially harmful substances are generated through the heat caused by the burning and/or combustion of the tobacco and the constituents of the burnt tobacco in the tobacco smoke itself.

**[0004]** Conventional combustible smoking articles, such as cigarettes, typically comprise a cylindrical rod of tobacco comprising shreds of tobacco which is surrounded by a wrapper, and usually also a cylindrical filter axially aligned in an abutting relationship with the wrapped tobacco rod. The filter typically comprises a filtration material which is circumscribed by a plug wrap. The wrapped tobacco rod and the filter are joined together by a wrapped band of tipping paper that circumscribes the entire length of the filter and an adjacent portion of the wrapped tobacco rod. A conventional cigarette of this type is used by lighting the end opposite to the filter, and burning the tobacco rod. The smoker receives mainstream smoke into their mouth by drawing on the mouth end or filter end of the cigarette.

**[0005]** Combustion of organic material such as tobacco is known to produce tar and other potentially harmful byproducts. There have been proposed various smoking substitute systems (or "substitute smoking systems") in order to avoid the smoking of tobacco.

**[0006]** Such smoking substitute systems can form part of nicotine replacement therapies aimed at people who wish to stop smoking and overcome a dependence on nicotine.

[0007] Smoking substitute systems include electronic systems that permit a user to simulate the act of smoking by producing an aerosol (also referred to as a "vapour") that is drawn into the lungs through the mouth (inhaled) and then exhaled. The inhaled aerosol typically bears nicotine and/or flavourings without, or with fewer of, the odour and health risks associated with traditional smoking.

**[0008]** In general, smoking substitute systems are intended to provide a substitute for the rituals of smoking, whilst providing the user with a similar experience and satisfaction to those experienced with traditional smoking and with combustible tobacco products. Some smoking substitute systems use smoking substitute articles that are designed to resemble a traditional cigarette and are cylindrical in form with a mouthpiece at one end.

**[0009]** The popularity and use of smoking substitute systems has grown rapidly in the past few years. Although originally marketed as an aid to assist habitual smokers wishing to quit tobacco smoking, consumers are increasingly viewing smoking substitute systems as desirable lifestyle accessories.

**[0010]** There are a number of different categories of smoking substitute systems, each utilising a different smoking substitute approach.

**[0011]** One approach for a smoking substitute system is the so-called "heat not burn" ("HNB") approach in which tobacco (rather than an "e-liquid") is heated or warmed to release vapour. The tobacco may be leaf tobacco or reconstituted tobacco. The vapour may contain nicotine and/or flavourings. In the HNB approach the intention is that the tobacco is heated but not burned, i.e. the tobacco does not undergo combustion.

**[0012]** A typical HNB smoking substitute system may include a device and a consumable. The consumable may include the tobacco material. The device and consumable may be configured to be physically coupled together. In use, heat may be imparted to the tobacco material by a heating element of the device, wherein airflow through the tobacco material causes moisture in the tobacco material to be released as vapour. A vapour may also be formed from a carrier in the tobacco material (this carrier may for example include propylene glycol and/or vegetable glycerine) and additionally volatile compounds released from the tobacco. The released vapour may be entrained in the airflow drawn through the tobacco.

**[0013]** As the vapour passes through the consumable (entrained in the airflow) from an inlet to a mouthpiece (outlet), the vapour cools and condenses to form an aerosol for inhalation by the user. The aerosol will normally contain the volatile compounds.

**[0014]** In HNB smoking substitute systems, heating as opposed to burning the tobacco material is believed to cause fewer, or smaller quantities, of the more harmful compounds ordinarily produced during smoking. Consequently, the HNB approach may reduce the odour and/or health risks that can arise through the burning, combustion and pyrolytic degradation of tobacco.

**[0015]** There may be a need for improved design of smoking substitute systems, in particular HNB smoking substitute systems, to enhance the user experience and improve the function of the HNB smoking substitute system.

**[0016]** The present disclosure has been devised in the light of the above considerations.

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#### Summary of the Disclosure

**[0017]** At least one such need may be met with the subject-matter of the independent claims. Preferred embodiments may be taken from the dependent claims and are explained in more detail in the following description in relation to the provided drawings.

**[0018]** At its most general, the present disclosure relates to an aerosol forming delivery system, e.g. a smoking substitute system such as an HNB system. More specifically, the present disclosure relates to a smoking substitute device with independent display elements.

**[0019]** According to a first aspect of the present disclosure there is a provided a smoking substitute device comprising a main body, wherein the main body comprises a first display element for displaying first information and a second display element for displaying second information, wherein the first display element is arranged separate from and independent of the second display element, wherein the first information is different from the second information, wherein one of the first and second information is for displaying a power status of the smoking substitute device and wherein the smoking substitute device is a heat-not-burn device.

**[0020]** According to a second aspect of the present disclosure, there is provided a smoking substitute system comprising a smoking substitute device and a smoking substitute consumable.

**[0021]** According to a third aspect of the present disclosure, there is provided a method for using a smoking substitute system, wherein the method comprising inserting a smoking substitute consumable in to a smoking substitute device and heating the smoking substitute consumable using a heating element.

**[0022]** Ideas and concepts of this disclosure may be considered to be based on the following observations and findings.

[0023] As mentioned before, the present disclosure is concerned with smoking substitute systems. A smoking substitute system may comprise a smoking substitute device or an aerosol-forming device, which may be a heat-not-burn (HNB) smoking substitute device. An HNB device is a device that is adapted for heating but not combusting the aerosol-forming substrate. This substrate may be made of tobacco material and may comprise additives assisting in the forming of the aerosol by the smoking substitute device. The smoking substitute device may comprise a main body for housing a heating element. The heating element may comprise an elongated, e.g. rod-shaped, tube-shaped or blade-shaped heating element. The heating element may project into or surround a cavity within the main body of the smoking substitute device, which cavity is for receiving a smoking substitute consumable.

**[0024]** The smoking substitute device may comprise an electrical power supply, e.g. a (rechargeable) battery for powering the heating element. It may further comprise a control unit to control the supply of power to the heating

element.

[0025] In some embodiments, when a consumable is inserted into the cavity within the main body, a portion of the smoking substitute consumable is to be penetrated by the heating element upon insertion of the smoking substitute consumable. In particular, the heating element may penetrate the smoking substitute consumable in an area of the consumable where the aerosol-forming substrate, e.g. tobacco material, is arranged.

[0026] The heating element is thus arranged inside of the smoking substitute consumable and in particular inside of the tobacco material. When energy is provided to the heating element, the heating element is heated to a target temperature, preferably in the range above the vaporization temperature of nicotine contained in the tobacco material, but below the temperature where the tobacco material would start to burn or combust. E.g., the heating element may be heated to a temperature of above 170°C, the vaporization temperature of nicotine, but below 400°C to avoid burning of the tobacco material in the consumable. Preferably, the target temperature may not exceed approx. 350°C.

[0027] In accordance with the present disclosure, the smoking substitute device is provided with at least two display elements for displaying information. The display elements are arranged separate from and are independent of one another. In other words, the location of a first display element and a second display element is visually distinguishable in that the two display elements are not conceived as part of one display element. Further, they are independent from one another to the extent that they display different information or different kinds or types of information. Preferably, one display element is displaying a power status of the smoking substitute device, while the other display element is displaying a different type of information.

[0028] A power status of the smoking substitute device may in particular be an on/off status of the smoking substitute device, in other words an indication to a user whether the device is switched on or off. Further, e.g. in case the power status is displaying an ON status of the smoking substitute device, a further differentiation of the displayed information may be provided by distinguishing between a status, where the device is on but currently not operable and a further information displaying that the device is on and in a condition that would allow start of operation of the device. In some embodiments the ON status may be indicative of the heating element being energized such that the ON status would indicate that the heating element is active. The ON status may be indicative of the heating element being within the target temperature range, or outside the target temperature range. In such arrangements it is envisaged that the ON status would thus indicate to a user that the heating element is active, or that a "smoking" cycle of the device is in progress. It is also envisaged that in some embodiments, the ON status may be indicative of the heater exceeding a threshold safety temperature which may be,

for example, a temperature above 400° C or which could give rise to a risk of damage to the device.

**[0029]** Accordingly, the second display element may depict second information, which second information conveys different information from the information of the first display element to a user of the smoking substitute device. Such information may be the aforementioned "ready for use" information or may be further information, like a power source level information, a heating status information.

**[0030]** Providing a smoking substitute device with independent display elements, one of which for displaying a power status or ON status of the smoking substitute device facilitates the recognition of an ON status to the user as the display element is not shared so as to display different information at different times. Further, separate display elements allow the provision of operation information to a user completely independent of the requirement to also indicate a power status, thereby resulting in less confusion of the user to determine whether a device is switched on or off.

**[0031]** Optional features will be set out now. These are applicable singularly or in any combination within the aspect of the present disclosure.

**[0032]** According to an embodiment of the present disclosure, the power status is for displaying an on/off status of the smoking substitute device.

**[0033]** E.g., the display may be illuminated when the smoking substitute device is in an ON status, while it may not be illuminated when the smoking substitute device is an OFF status. Thereby, a user can instantly gather from the display element the power status of the smoking substitute device.

**[0034]** According to a further embodiment of the present disclosure, the other one of the first and second information may be for displaying information out of the group consisting of status information, power source level information, time to use information, remaining time of use information, heating status information.

**[0035]** Accordingly, the information may display how much energy is left in the power source, how much time is required before the smoking substitute device may be in an operable condition, e.g. displaying time until the heating element has reached a target temperature for consumption. Further, a remaining time of use information may indicate a time until the power source is emptied to a point where no operation of the smoking substitute device is possible anymore. Even further, heating status information may provide information whether the heating element is currently switched on or off, thus whether it is heating the tobacco material.

**[0036]** The first display element and the second display element may be differently sized.

**[0037]** According to a further embodiment of the present invention the display element not displaying the power status information may be substantially larger that the display element displaying the power status information.

**[0038]** Providing a display which is substantially larger, e.g. twice the size, three times the size, four times the size, five times the size or even larger, provides the opportunity to display more information than on the display displaying the power status information. To that extent, the first display element and the second display element are not required to be of the same technology.

**[0039]** According to a further embodiment of the present disclosure, the display element displaying the power status information may be active substantially as long as the smoking substitute device is in an ON status and the display element not displaying the power status information and may be only intermittently activated.

**[0040]** In other words, the power status of the smoking substitute device may be signalled to a user substantially for the duration of the smoking substitute device being in an on powered status while additional information may only be delivered to the user when required.

**[0041]** It is further conceivable that the display element not displaying the power status information may not be continuously activated with different types of information but also may be de-activated or off during a time where no information needs to be conveyed to a user. Contrary hereto, the power status information may be provided to a user for as long as the smoking substitute device is switched on.

[0042] According to a further embodiment of the present disclosure, the smoking substitute device further comprises a control element, wherein the display element displaying the power status information is arranged in the vicinity of or is incorporated in the control element. [0043] By so linking the display element displaying the power status information with the means to switch on and off the smoking substitute device, a logical grouping for easier readability is provided to the user.

**[0044]** According to a further embodiment of the present disclosure, the first display element and/or the second display element may be a display element out of the group consisting of an LED element, a plurality of LED elements, an LCD display element, an OLED element and a plurality of OLED elements.

**[0045]** LED elements or organic LED elements may allow the provision of information to a user in a manner to which the user is accustomed while minimising energy consumption for the operation of the display elements. An LCD display element, comprising e.g. a matrix of LED elements or organic LED elements, may allow the display of more complex information to a user.

**[0046]** According to a further embodiment of the present invention the first display element and/or the second display element are adapted for displaying information in different colours.

**[0047]** As such, the colours of the first display element and the second display element may be different from one another or the display element may be adapted for changing the colour used for displaying information. Likewise a display element may be a multi-colour display element being able to change its colour e.g dependent on

the information to be displayed.

[0048] According to a further embodiment of the present disclosure, a change in colour of a display element may correspond to a change in a status displayed. [0049] E.g. the power status may be displayed by an illuminated display element, while further information may be conveyed by employing different colour, e.g. a red colour for a basic ON indication, while e.g. a green colour may display ON status and further a "ready to use" status of the smoking substitute device.

**[0050]** According to a further embodiment of the present disclosure, a type of displayed information may be colour dependent.

**[0051]** E.g. a green coloured countdown displayed on a display element may relate to time until the device is operable to start the substitute smoking operation, while a red coloured countdown may signify a different type of information.

**[0052]** The skilled person will appreciate that except where mutually exclusive, a feature or parameter described in relation to any one of the above aspects may be applied to any other aspect. Furthermore, except where mutually exclusive, any feature or parameter described herein may be applied to any aspect and/or combined with any other feature or parameter described herein.

#### Summary of the Figures

**[0053]** 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 shows a view of an exemplary embodiment of a smoking substitute device in accordance with the present invention;

Figures 2A,B show further exemplary embodiments of a smoking substitute device in accordance with the present invention; and

Figure 3 shows a schematics of an exemplary embodiment of a smoking substitute device in accordance with the present invention.

#### Detailed Description of the Figures

**[0054]** Fig. 1 shows a view of an exemplary embodiment of a smoking substitute device 10, here exemplarily an HNB device 10.

**[0055]** The HNB device 10 comprises a rod-shaped heating element 12, which projects into a cavity 14 within the main body 16 of the device 10. A smoking substitute consumable 20 may be inserted into the cavity 14 of the main body 12 of the device 10 such that the heating rod 12 penetrates an aerosol-forming substrate, e.g. tobacco

material in one outer part, e.g. the lower part of the smoking substitute consumable 20, distal from an outward facing opening 42 of cavity 14. Heating of e.g. reconstituted tobacco in the aerosol-forming substrate is effected by powering the heating element 12, with a power source 18, e.g. a rechargeable battery 18 incorporated in the smoking substitute device 10. As the tobacco is heated, moisture and volatile compounds (e.g. nicotine) within the tobacco and possibly a humectant are released as a vapour and entrained within an airflow generated by inhalation by the user.

[0056] Heating of the tobacco by the heating element 12 may be activated by the user pressing an actuator 26, here exemplarily activation switch 26, on a side surface of the main body 16 of the smoking substitute device 10. A first display element 28a, here exemplarily a single LED or organic LED is arranged in the vicinity of the activation switch 26 on the side surface of main body 16. Further, a second display element 28b, here exemplarily a number of LEDs or organic LEDs, is additionally arranged on the main body 16, here exemplarily adjacent to the first display element 28a. In other words, the first display element 28a is arranged separate from and independent of the second display element 8b. In particular by a visually recognisable separation on a front side of the main body 16, this separation is achieved. The first display element 28a is arranged in the vicinity of control element 26 to allow easy recognition of the on/off status of the smoking substitute device 10.

[0057] At the bottom of smoking substitute device 10, a charging connector 30 is depicted. The charging connector 30 may be embodied as a standard USB connector, e.g. mini-USB or micro-USC. Preferably, the charging connector 30 is embedded as a symmetrical connector, like a USB-C connector. Alternatively, the charging connector 30 may be embodied as a lightning connector. The charging connector 30 may provide a connection for either energy or data or both.

**[0058]** Now referring to Figures 2A and 2B, different versions of the first display element 28a in accordance with the present disclosure are depicted.

[0059] In addition to the arrangement of Fig. 1, the first display element 28a may be embodied sized differently, in particular sized differently to the second display element 28b and its individual elements, respectively, or the location may be changed. E.g. in Fig. 2A, a larger LED element or organic LED element is employed. Possibly, the first display element 28a comprises a plurality of coloured, in particular differently coloured, LED elements or organic LED elements, to be able to depict different colours. In Fig. 2B, the first display element 28a has been incorporated into control element 26. The first display element 28a of Fig. 2B corresponds to the first display element 28a of Figure 2A. It is also conceivable to integrate a first display element 28a in accordance with Figure 1 into control element 26.

[0060] Now referring to Fig. 3, which shows a schematics of an exemplary embodiment of a smoking sub-

stitute device in accordance with the present invention. [0061] Smoking substitute device 10 comprises a main body 16 or housing and a power source 18, e.g. a rechargeable battery. Further provided is a control unit 32, which may include a microprocessor. Memory 34 is provided for storing e.g. control instructions for control unit 32 or the microprocessor. Memory 34 is preferably provided as non-volatile memory. Smoking substitute device 10 may further comprise a display element 28, which may be embodied as a single or a plurality of LEDs or organic LEDs. The LEDs are possibly adapted for displaying different colours in accordance with instructions from the control unit 32 and memory 34, depicting different modes of operation with different colours of smoking substitute device 10 or generally different information directed to the user operating the smoking substitute device 10. A control element 26 is provided, e.g. an actuator or activation switch, with which the smoking substitute device may be switched on and off, an operation may be initiated and/or a mode of operation may be set.

[0062] Further, an electrical interface 30 or charging connector 30 is provided, which may be incorporated in the main body 16 and which may include one or more electrical contacts. The electrical interface 30 may be located in, and preferably at the bottom of, an aperture in an end section of the main body 16. Electrical interface 30 may be adapted to be coupled with an external charging station to receive power for charging the power source 18. Alternatively, electrical interface 30 may be embodied as a charging connector 30, which may be a USB or lightning connection. Preferably, the charging connector 30 is embodied as a USB-C connector, which is an example of a symmetrical connector.

**[0063]** 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.

**[0064]** 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 scope of the invention.

**[0065]** 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.

**[0066]** Any section headings used herein are for organizational purposes only and are not to be construed as limiting the subject matter described.

**[0067]** 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.

[0068] 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%.

**[0069]** 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.

**[0070]** Elements that are described in conjunction with different embodiments may be combined. Reference signs in the claims shall not to be construed as limiting the scope of the claims.

**[0071]** Features of embodiments of the invention are set out in the following paragraphs:

Clause 1: A smoking substitute device (10), comprising a main body (16); wherein the main body (16) comprises a first display element (28a) for displaying first information (52a) and a second display element (28b) for displaying second information (52b); wherein the first display element (28a) is arranged separate from and independent of the second display element (28b); wherein the first information (52a) is different from the second information (52b); wherein one of the first and second information (52a,b) is for displaying a power status of the smoking substitute device (10); and wherein the smoking substitute device (10) is a heat-not-burn device (10).

Clause 2: A smoking substitute device (10) according to the preceding clause, wherein the power status is for displaying an ON/OFF status of the smoking substitute device (10).

Clause 3: A smoking substitute device (10) accord-

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ing to clause 2, comprising a heating element (12), wherein said ON status is indicative of the heating element (12) being energized.

Clause 4: A smoking substitute device (10) according to clause 1 or clause 2, comprising a heating element (12), wherein said ON status is indicative of the heating element (12) being within a target temperature range.

Clause 5: A smoking substitute device (10) according to clause 1 or clause 2, comprising a heating element (12), wherein said ON status is indicative of the heating element (12) being outside a target temperature range.

Clause 6: A smoking substitute device (10) according to clause 1 or clause 2, comprising a heating element (12), wherein said ON status is indicative of said heating element (12) exceeding a threshold safety temperature.

Clause 7: A smoking substitute device (10) according to at least one of the preceding clauses, wherein the other one of the first and second information (52a,b) is for displaying information out of the group consisting of status information, power source level information, time to use information, remaining time of use information, heating status information.

Clause 8: A smoking substitute device (10) according to at least one of the preceding clauses, wherein the first display element (28a) and the second display element (28b) are differently sized.

Clause 9: A smoking substitute device (10) according to at least one of the preceding clauses, wherein the display element (28a,b) not displaying the power status information is substantially larger than the display element (28a,b) displaying the power status information.

Clause 10: A smoking substitute device (10) according to at least one of the preceding clauses, wherein the display element (28a,b) displaying the power status information is active substantially as long as the smoking substitute device (10) in an on status, and wherein the display element not displaying the power status information in only intermittently activated.

Clause 11: A smoking substitute device (10) according to at least one of the preceding clauses, further comprising a control element (26); wherein the display element (52a,b) displaying the power status information is arranged in the vicinity of or is incorporated in the control element (26).

Clause 12: A smoking substitute device (10) accord-

ing to at least one of the preceding clauses, wherein the first display element (28a) and/or the second display element (28b) are a display element out of the group consisting of an LED element, a plurality of LED elements, an LCD display element, an OLED element and a plurality of OLED elements.

Clause 13: A smoking substitute device (10) according to at least one of the preceding clauses, wherein the first display element (28a) and/or the second display element (28b) are adapted for displaying information in different colours.

Clause 14: A smoking substitute device (10) according to the preceding clause, wherein a change in colour of a display element (52a,b) corresponds to a change in a status displayed.

Clause 15: A smoking substitute device (10) according to at least one of clauses 11 or 12, wherein the type of displayed information is colour-dependent.

Clause 16: A smoking substitute system, comprising a smoking substitute device (10) according to at least one of the preceding clauses and a smoking substitute consumable (20).

Clause 17: A method of using the smoking substitute system according to the preceding clause, the method comprising: inserting the smoking substitute consumable (20) into the smoking substitute device (10); and heating the smoking substitute consumable (20) using the heating element (12).

Clause 18: A method according to the preceding clause, the method further comprising: inserting the smoking substitute consumable (20) into the cavity (14) within the main body (16) of the smoking substitute device (10); and penetrating the smoking substitute consumable (20) with the heating element (12) upon insertion of the smoking substitute consumable (20).

## List of reference numerals

# [0072]

- 10 smoking substitute device/HNB device
- 12 heating element
- 50 14 cavity
  - 16 main body
  - 18 power source/battery
  - 20 smoking substitute consumable
  - 26 control element/actuator/activation switch
    - 28a,b display element
    - 30 electrical interface/charging connector

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- 32 control unit/microprocessor
- 34 memory
- 42 outward facing opening of cavity

52a,b first, second information

#### Claims

1. A smoking substitute device (10), comprising:

a main body (16); and a control element (26);

display element (28a) for displaying first information (52a) and a second display element (28b) for displaying second information (52b); wherein the first display element (28a) is arranged separate from and independent of the second display element (28b); wherein the first information (52a) is different from the second information (52b); wherein one of the first and second information (52a,b) is for displaying a power status of the smoking substitute device (10); wherein the smoking substitute device (10) is a heat-not-burn device (10); wherein the control element is for switching

the smoking substitute device on or off; and wherein the display element for displaying

the power status is incorporated in the con-

wherein the main body (16) comprises a first

2. A smoking substitute device (10) according to the preceding claim, wherein the power status is for displaying an ON/OFF status of the smoking substitute device (10).

trol element.

- 3. A smoking substitute device (10) according to claim 2, comprising a heating element (12), wherein said ON status is indicative of the heating element (12) being energized.
- 4. A smoking substitute device (10) according to claim 1 or claim 2, comprising a heating element (12), wherein said ON status is indicative of the heating element (12) being within a target temperature range.
- 5. A smoking substitute device (10) according to claim 1 or claim 2, comprising a heating element (12), wherein said ON status is indicative of the heating element (12) being outside a target temperature range.
- 6. A smoking substitute device (10) according to claim

1 or claim 2, comprising a heating element (12), wherein said ON status is indicative of said heating element (12) exceeding a threshold safety temperature

- 7. A smoking substitute device (10) according to at least one of the preceding claims, wherein the other one of the first and second information (52a,b) is for displaying information out of the group consisting of status information, power source level information, time to use information, remaining time of use information, heating status information.
- 8. A smoking substitute device (10) according to at least one of the preceding claims, wherein the first display element (28a) and the second display element (28b) are differently sized, optionally wherein the display element (28a,b) not displaying the power status information is substantially larger than the display element (28a,b) displaying the power status information.
- **9.** A smoking substitute device (10) according to at least one of the preceding claims,

wherein the display element (28a,b) displaying the power status information is active substantially as long as the smoking substitute device (10) in an on status, and wherein the display element not displaying the power status information in only intermittently

10. A smoking substitute device (10) according to at least one of the preceding claims, wherein the first display element (28a) and/or the second display element (28b) are a display element out of the group consisting of an LED element, a plurality of LED elements, an LCD display element, an OLED element and a plurality of OLED elements.

activated.

played.

- **11.** A smoking substitute device (10) according to at least one of the preceding claims,
- wherein the first display element (28a) and/or the second display element (28b) are adapted for displaying information in different colours, optionally wherein a change in colour of a display element (52a,b) corresponds to a change in a status dis-
  - **12.** A smoking substitute device (10) according to at least one of the preceding claims, wherein the type of displayed information is colour-dependent.
  - 13. A smoking substitute system, comprising a smoking

substitute device (10) according to at least one of the preceding claims and a smoking substitute consumable (20).

**14.** A method of using the smoking substitute system according to the preceding claim, the method comprising:

inserting the smoking substitute consumable (20) into the smoking substitute device (10); and heating the smoking substitute consumable (20) using the heating element (12).

**15.** A method according to the preceding claim, the method further comprising:

inserting the smoking substitute consumable (20) into the cavity (14) within the main body (16) of the smoking substitute device (10); and penetrating the smoking substitute consumable (20) with the heating element (12) upon insertion of the smoking substitute consumable (20).

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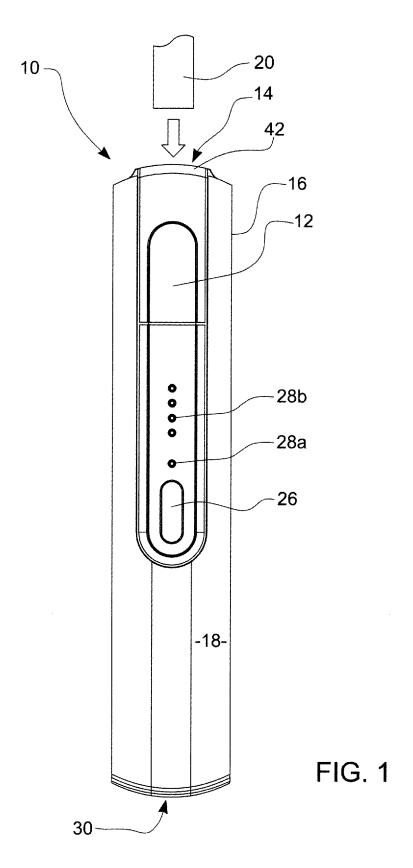
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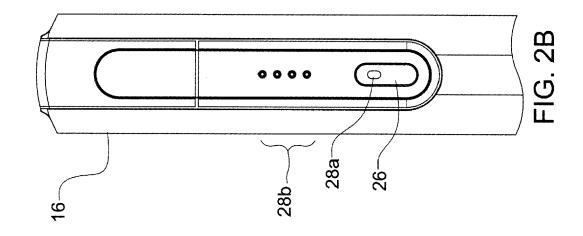
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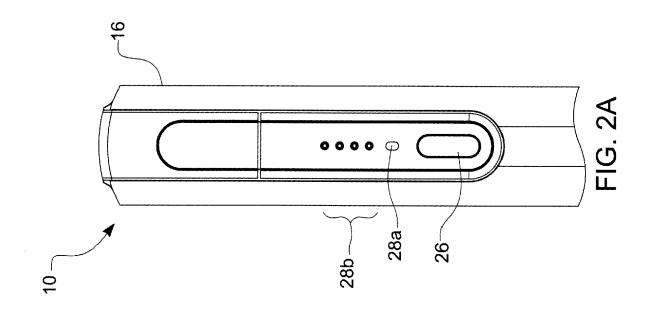
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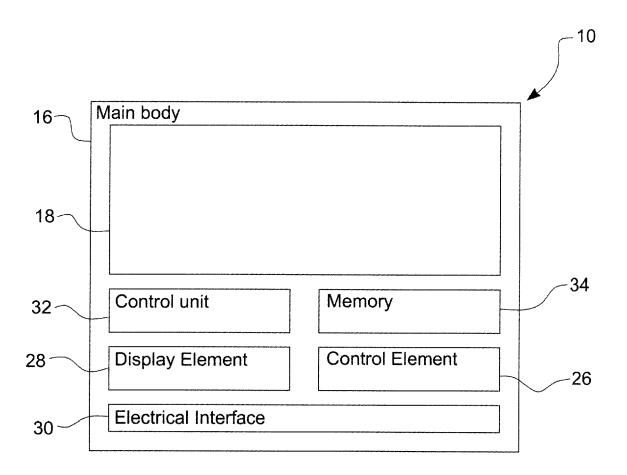


FIG. 3

# EP 4 223 166 A2

#### REFERENCES CITED IN THE DESCRIPTION

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# Patent documents cited in the description

• GB 1815524 A [0001]