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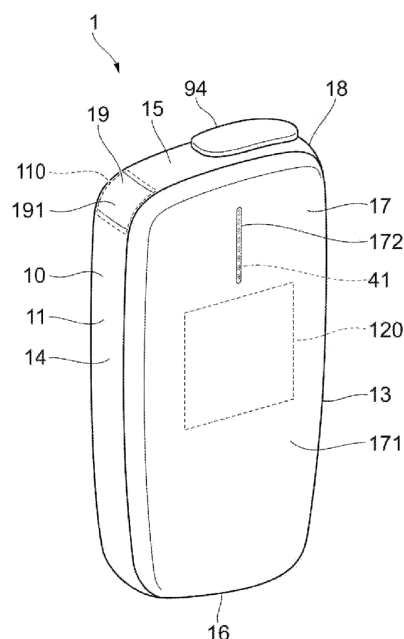
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(54) **AEROSOL GENERATION DEVICE**

(57) An aerosol-generating device 1 comprising: a heating unit for heating an aerosol source; a shoulder-portion contact sensor 110 for detecting an action at a first location on a surface of a housing 11; a rear-face contact sensor 120 for detecting an action at a second location, different from the first location, on the surface of the housing 11; and a control unit for controlling heating by the heating unit in accordance with detection by the shoulder-portion contact sensor 110 and/or the rear-face contact sensor 120.

[Fig. 2]



Description

TECHNICAL FIELD

[0001] The present disclosure relates to an aerosol-generating device.

BACKGROUND ART

[0002] In the aerosol inhaler disclosed in PTL 1, for example, a control device detects an aerosol generation request on the basis of operation of an operating portion comprising a button-type switch. When a user performs a predetermined action on the operating portion in order to start inhaling the aerosol, the operating portion outputs a signal indicating the aerosol generation request to the control device.

CITATION LIST

PATENT LITERATURE

[0003] PTL 1: WO 2022/123796 A1

SUMMARY OF INVENTION

PROBLEM TO BE SOLVED BY THE INVENTION

[0004] If the button-type switch, which is provided on a housing (power supply unit case in PTL 1) of the aerosol-generating device, is not provided with a waterproof structure, there is a risk of water droplets flowing into the housing from a gap between the switch and the housing, causing a fault. It is therefore also feasible to employ a contact sensor for detecting that the user's finger has contacted the housing, in order to make it less likely that water droplets will flow into the housing. When a contact sensor is used, it is desirable for the contact sensor to be capable of accepting numerous input actions.

The objective of the present disclosure lies in providing an aerosol-generating device capable of accepting more input actions while inhibiting inflow of water droplets to the housing.

SOLUTION TO PROBLEM

[0005] The present disclosure, which was completed on the basis of this objective, provides an aerosol-generating device comprising: a heating unit for heating an aerosol source; a first contact sensor for detecting an action at a first location on a surface of a housing; a second contact sensor for detecting an action at a second location, different from the first location, on the surface of the housing; and a control unit for controlling heating by the heating unit in accordance with detection by the first contact sensor and/or the second contact sensor.

Here, the control unit may perform processing in response to an input action common to the first contact sensor and the second contact sensor.

Furthermore, the control unit may make the content of processing in response to an input action accepted by the first contact sensor different from the content of processing in response to an input action accepted by the second contact sensor.

Furthermore, an input action accepted by the first contact sensor may be an action relating to heating of the aerosol source, and an input action accepted by the second contact sensor may be an action relating to checking a physical quantity.

Furthermore, the physical quantity may be at least one of: remaining battery capacity, number of aerosol sources inhalable with that remaining battery capacity, remaining number of times for which inhalation is possible or inhalation time with the aerosol source currently in use, and cumulative value of number of inhalations up to the present time.

Furthermore, the control unit may permit only processing in response to an action on either one of the first contact sensor and the second contact sensor while heating by the heating unit is in progress.

Furthermore, the housing may comprise: a first face provided with an opening for insertion of the aerosol source or a delivery port through which the heated aerosol source is delivered to the outside, a second face provided in a direction intersecting the first face, and a third face provided between the first face and the second face, the first contact sensor may detect an action on the third face relating to heating of the aerosol source, and the control unit may perform only processing in response to an action on the first contact sensor while heating by the heating unit is in progress. Furthermore, the control unit may perform processing in response to an action on the second contact sensor when a predetermined event has been detected, even if heating by the heating unit is in progress.

Furthermore, the control unit may perform processing in response to an action on the second contact sensor only within a predetermined time after the predetermined event was detected. Furthermore, when one sensor out of the first contact sensor and the second contact sensor has a large contact area with another object, the control unit may perform only processing in response to an action on the other sensor.

Furthermore, the control unit may perform processing in response to an action on said other sensor only within a predetermined time after a predetermined action was detected.

ADVANTAGEOUS EFFECTS OF INVENTION

[0006] The present disclosure makes it possible to provide an aerosol-generating device capable of accepting more input actions while inhibiting inflow of water droplets to the housing.

BRIEF DESCRIPTION OF DRAWINGS

[0007]

[Fig. 1] is an exemplary diagram in which an aerosol-generating device is viewed from diagonally above from the front.

[Fig. 2] is an exemplary diagram in which the aerosol-generating device is viewed from diagonally above from the rear.

[Fig. 3] is an exemplary diagram in which a main body with a cover removed is viewed from a front side.

[Fig. 4] is an exemplary diagram schematically showing a configuration example of the aerosol-generating device.

[Fig. 5] shows an example of swiping actions performed by a user on a shoulder-portion contact sensor.

[Fig. 6] shows an example of the relationship between swiping actions on the shoulder-portion contact sensor and switching of a state of a generating device.

[Fig. 7] shows an example of swiping actions performed by a user.

[Fig. 8] shows an example of swiping actions performed by a user.

[Fig. 9] shows an example of the relationship between swiping actions on a rear-face contact sensor and notification content.

[Fig. 10] shows an example of the generating device being held in the left hand.

[Fig. 11] is a flowchart showing an example of in-heating processing performed by the control unit.

[Fig. 12] shows an example of the schematic configuration of a generating device according to a third embodiment.

[Fig. 13] shows an example of the generating device being held in the right hand.

[Fig. 14] shows an example of the schematic configuration of a generating device according to a fourth embodiment.

[Fig. 15] shows an example of swiping actions performed by a user.

[Fig. 16] shows an example of the relationship between swiping actions on the rear-face contact sensor and switching of the state of the generating device.

[Fig. 17] shows an example of the schematic configuration of a generating device according to a fifth embodiment.

[Fig. 18] shows an example of swiping actions performed by a user on the shoulder-portion contact sensor.

[Fig. 19] shows an example of the relationship between swiping actions on the shoulder-portion contact sensor and switching of the state of the generating device.

[Fig. 20] shows an example of swiping actions performed by a user.

EMBODIMENTS OF THE INVENTION

[0008]

Fig. 1 is an exemplary diagram in which an aerosol-generating device 1 is viewed from diagonally above from the front.

Fig. 2 is an exemplary diagram in which the aerosol-generating device 1 is viewed from diagonally above from the rear.

Fig. 3 is an exemplary diagram in which a main body 10 with a cover 9 removed is viewed from a front side.

Fig. 4 is an exemplary diagram schematically showing a configuration example of the aerosol-generating device 1.

The aerosol-generating device (also referred to below simply as a "generating device") 1 comprises: a main body 10 having a heating unit 80 for heating a substrate 1000 that contains an aerosol source; and a cover 9 which is detachable from the main body 10.

(Main body 10)

[0009] The main body 10 comprises a housing 11 forming a substantially cuboid internal space for accommodating the heating unit 80, etc. The cover 9 covers one face of the housing 11. Among the six faces of the housing 11, the face to which the cover 9 is attached will be referred to as a front face 12, the side face on the left-hand side as seen from the front face 12 side will be referred to as a left side face 13, the side face on the right-hand side will be referred to as a right side face 14, the face on the upper side will be referred to as a top face 15, and the face on the lower side will be referred to as a bottom face 16. Furthermore, among the six faces of the housing 11, the face other than the front face 12 connecting to the left side face 13, right side face 14, top face 15 and bottom face 16 will be referred to as a rear face 17. The cover 9 covers the front face 12 of the housing 11, while the left side face 13, right side face 14, top face 15, bottom face 16, and rear face 17 are exposed to the outside while the cover 9 is attached.

[0010] An opening 92 (to be described later) is formed in part of the top face 15 on the left side face 13 side.

The housing 11 furthermore has curved faces which are provided between pairs of faces among the front face 12, left side face 13, right side face 14, top face 15, bottom face 16, and rear face 17. For example, a top left curved face 18 is provided between the left side face 13 and the top face 15. Furthermore, a top right curved face 19 is provided between the left side face 14

and the top face 15.

[0011] According to the configuration above, the opening 92 is provided on the left side face 13 side (which is an example of one end side) of the top face 15, and the top left curved face 18 is provided on the left side face 13 side of the opening 92. The top right curved face 19 is then provided on the right side face 14 side (which is an example of the other end side) of the top face 15. As shown in fig. 3, the top right curved face 19 has a smaller curvature than the top left curved face 18 as seen from the front face 12 side. In other words, the radius of curvature of the top right curved face 19 is greater than the radius of curvature of the top left curved face 18, and the top right curved face 19 changes more gently than the top left curved face 18.

[0012] As shown in fig. 4, the main body 10 comprises: a power source unit 20, a sensor unit 30, a notification unit 40, a memory unit 50, a communication unit 60, a control unit 70, a heating unit 80, a heat insulating portion 85, and a holding portion 90. The power source unit 20, sensor unit 30, notification unit 40, memory unit 50, communication unit 60, control unit 70, heating unit 80, and heat insulating portion 85 are accommodated inside the housing 11. Furthermore, the main body 10 comprises a shutter 94 (see fig. 1) which is disposed on the top face 15 and can be slidably moved along the top face 15.

The components will be described in order below.

((Power source unit 20))

[0013] The power source unit 20 comprises a battery for storing electrical power. A rechargeable battery such as a lithium ion secondary battery may be given as an example of the battery. The battery may be charged by being connected to an external power source by means of a cable or the like connected to a USB (universal serial bus) terminal (not depicted). Furthermore, the battery may also be charged by means of wireless power transmission technology, without being connected to a power transmission-side device. Additionally, it may also be possible to remove only the battery from the main body 10, and it may be possible to replace said battery with a new battery.

((Sensor unit 30))

[0014] The sensor unit 30 detects various types of information relating to the main body 10. The sensor unit 30 then outputs the detected information to the control unit 70. As an example, the sensor unit 30 is configured by a pressure sensor such as a condenser microphone, a flow rate sensor or a temperature sensor. When the sensor unit 30 has detected a numerical value associated with inhalation by a user, the sensor unit 30 then outputs, to the control unit 70, information indicating that the user has inhaled. Furthermore, the

sensor unit 30 detects the temperature of the heating unit 80 and outputs the detected temperature to the control unit 70.

[0015] Furthermore, the sensor unit 30 comprises a shoulder-portion contact sensor 110 and a rear-face contact sensor 120 (to be described in detail later) for detecting that the user is touching the main body 10. The shoulder-portion contact sensor 110 and the rear-face contact sensor 120 function as input devices for accepting input of information from the user. The shoulder-portion contact sensor 110 and the rear-face contact sensor 120 then output, to the control unit 70, the information input by the user.

((Notification unit 40))

[0016] The notification unit 40 notifies the user of information. The notification unit 40 comprises LEDs (light-emitting diodes) 41, by way of example. In this embodiment, a plurality of (e.g. eight) LEDs 41 are arranged in a row in the vertical direction on the front side of a rear wall 171 of the housing 11 that forms the rear face 17 (on the inner side of the housing 11 in other words). The notification unit 40 then causes the LEDs 41 to emit light with different light emission patterns when the battery in the power source unit 20 needs to be charged, when the battery is in the process of charging, and when there is an abnormality in the main body 10, etc. The light emission patterns as referred to here generally include colors and timing of illumination/extinguishing. Instead of or as well as light-emitting devices such as the LEDs 41, the notification unit 40 may also be configured by a display device for displaying images, a sound output device for outputting sounds, or a vibration device which vibrates, etc.

((Memory unit 50))

[0017] The memory unit 50 stores various types of information for operation of the generating device 1. The memory unit 50 is configured by a non-volatile storage medium such as a flash memory, for example. Information relating to the operating system (OS) of the generating device 1, such as the content of control by the control unit 70 of various types of components, is an example of the information stored in the memory unit 50. Another example of the information stored in the memory unit 50 is information relating to inhalation by the user, such as number of inhalations, times of inhalation, and cumulative inhalation time. Furthermore, another example of the information stored in the memory unit 50 is information relating to a control sequence defining temporal changes in target temperature of the heating unit 80 during heating by the heating unit 80. The memory unit 50 may store information relating to several types of control sequences with different temporal changes in target temperature of the heating unit 80.

((Communication unit 60))

[0018] The communication unit 60 is a communication interface for sending and receiving information between the generating device 1 and another device. The communication unit 60 performs communication conforming to any wired or wireless communication standard. Examples of communication standards which may be used include wireless LAN (local area network), wired LAN, Wi-Fi (registered trademark), and Bluetooth (registered trademark), etc. For example, the communication unit 60 receives new OS information from a server in order to update the OS information stored in the memory unit 50.

((Control unit 70))

[0019] The control unit 70 functions as an arithmetic processing device and a control device, controlling overall operation within the generating device 1 in accordance with various programs. The control unit 70 is realized by a CPU (Central Processing Unit) and an electronic circuit such as a microprocessor, for example. The control unit 70 may also include a ROM (read-only memory) for storing programs and computation parameters, etc. which are used, and a RAM (random access memory) for temporarily storing suitably changing parameters, etc. The generating device 1 implements various types of processing on the basis of control performed by the control unit 70. Examples of processing controlled by the control unit 70 include: supply of electricity from the power source unit 20 to other components; charging of the power source unit 20; detection by the sensor unit 30; notification of information by the notification unit 40; storage and reading of information by the memory unit 50; and sending/receiving of information by the communication unit 60. Other processing implemented by the generating device 1, such as processing based on input of information to each component and information output from each component, are also controlled by means of the control unit 70.

((Heating unit 80))

[0020] The heating unit 80 heats the aerosol source to atomize the aerosol source, thereby generating the aerosol. The heating unit 80 is formed by any material such as a metal or polyimide. For example, the heating unit 80 is configured in a film shape and disposed so as to cover the outer circumference of the holding portion 90. When the heating unit 80 generates heat, the aerosol source contained in the substrate 1000 is then heated from the outer circumference of the substrate 1000 and atomized, generating the aerosol. The heating unit 80 generates heat when supplied with electricity from the power source unit 20, heating the substrate 1000. When the temperature of the substrate

1000 heated by means of the heating unit 80 has reached a predetermined temperature, inhalation by the user is then possible. After this, the electrical supply may be stopped when the sensor unit 30 has detected that there has been predetermined user input.

((Heat insulating portion 85))

[0021] The heat insulating portion 85 prevents heat transfer from the heating unit 80 to other components of the generating device 1. The heat insulating portion 85 is disposed so as to cover at least the outer circumference of the heating unit 80. For example, the heat insulating portion 85 is configured by a vacuum insulating material or an aerogel insulating material, etc. It should be noted that a vacuum insulating material is a heat insulating material in which a state of high vacuum is created by wrapping glass wool and silica (silicon powder), etc. in a resin film, for example, so that heat conduction by gas is as close as possible to zero.

((Holding portion 90))

[0022] The holding portion 90 comprises: a columnar internal space 91 provided inside the housing 11; and an opening 92 formed on the top face 15 of the housing 11 in order to allow the internal space 91 to communicate with the outside. The internal space 91 is a columnar body having a bottom portion 93 serving as a bottom face. The holding portion 90 is configured so that the inner diameter of at least part of the columnar body in a height direction is smaller than the outer diameter of the substrate 1000, and is capable of holding the substrate 1000, which has been inserted from the opening 92 into the internal space 91, so as to press the substrate 1000 from the outer circumference thereof. The holding portion 90 also has a function for defining a flow path for air passing through the substrate 1000. An air inflow hole which is an inlet for air into the flow path is disposed in the bottom portion 93, for example. Meanwhile, the opening 92 forms an air outflow hole, which is an outlet for air from the flow path. The opening 92 is exposed by sliding the shutter 94 to an open position, and hidden by sliding the shutter 94 to a closed position.

((Shutter 94))

[0023] The shutter 94 has a magnet on a rear face thereof. Meanwhile, a magnetic sensor (not depicted) of the sensor unit 30 is attached to the top face 15 of the housing 11 in a range of mobility of the shutter 94. The magnetic sensor is a Hall IC formed by a Hall element and an operational amplifier, etc., and outputs a voltage commensurate with the intensity of the magnetic field passing across the Hall element. In this embodiment, the control unit 70 detects opening and closing of the shutter 94 from a change in the voltage out-

put from the magnetic sensor accompanying sliding of the shutter 94.

((Configuration example of external appearance of main body 10))

[0024] As shown in fig. 3, the main body 10 comprises an upper magnet 95 and a lower magnet 96, which are two magnets provided so as to be exposed from the front face 12 of the housing 11 and are used for joining with the cover 9. The upper magnet 95 and the lower magnet 96 have a cylindrical shape which is circular when seen from the front. The centers of the circles of the upper magnet 95 and the lower magnet 96 are aligned in the vertical direction, with the upper magnet 95 being provided on an upper portion of the main body 10 and the lower magnet 96 being provided on a lower portion of the main body 10.

[0025] As shown in fig. 2, the main body 10 comprises, on the rear wall 171 of the housing 11 that forms the rear face 17, a display window 172 which transmits the light from the plurality of LEDs 41 disposed inside the housing 11. The display window 172 is a window provided at a position corresponding to positions of the plurality of LEDs 41 disposed inside the housing 11 of the main body 10, and transmits the light from the plurality of LEDs 41. This allows the user to see the light from the rear face 17 side.

(Cover 9)

[0026] The cover 9 is shaped so as to cover the front face 12 of the housing 11 of the main body 10, and so as not to form a step with the left side face 13, right side face 14, top face 15, and bottom face 16 of the housing 11. The cover 9 thus has a decorative function, forming an integrated external appearance with the left side face 13, right side face 14, top face 15, and bottom face 16 of the housing 11. The cover 9 furthermore has a function of suppressing propagation of heat released from the main body 10.

(Substrate 1000)

[0027] The substrate 1000 is a stick-shaped member. The substrate 1000 comprises a substrate portion 1001 and a mouthpiece portion 1002.

[0028] The substrate portion 1001 contains an aerosol source. The aerosol source is atomized by heating so as to generate an aerosol. The aerosol source may be, for example, a tobacco-derived substance such as cut tobacco, or a processed product obtained by molding a tobacco raw material into a granular form, a sheet form, or a powder form. Furthermore, the aerosol source may also contain a non-tobacco-derived substance produced from a plant other than tobacco (e.g., mint or herb, etc.). As one example, the aerosol source may contain a flavoring component such as menthol.

When the generating device 1 is a medical inhaler, the aerosol source may contain a drug to be inhaled by a patient. It should be noted that the aerosol source is not limited to a solid, and may equally be a polyhydric alcohol such as glycerol or propylene glycol, and a liquid such as water, for example. In a state in which the substrate 1000 is being held in the holding portion 90, at least part of the substrate portion 1001 is accommodated in the internal space 91 of the holding portion 90.

[0029] The mouthpiece portion 1002 is a member which is held in the user's mouth during inhalation. In a state in which the substrate 1000 is being held in the holding portion 90, at least part of the mouthpiece portion 1002 protrudes from the opening 92. When the user then inhales with the mouthpiece portion 1002, which protrudes from the opening 92, held in the mouth, air flows into the holding portion 90 from the air inflow hole which is not depicted. The air which has flowed in passes through the internal space 91 of the holding portion 90, that is, through the substrate portion 1001, and reaches the user's mouth together with the aerosol generated from the substrate portion 1001.

{Shoulder-portion contact sensor 110 and rear-face contact sensor 120}

[0030] The shoulder-portion contact sensor 110 and the rear-face contact sensor 120 will be described in detail below.

[0031] Examples of methods of detection used by the shoulder-portion contact sensor 110 and the rear-face contact sensor 120 include capacitive, resistive film, surface acoustic wave, infrared, electromagnetic induction, and load sensing.

[0032] The shoulder-portion contact sensor 110 is disposed on a lower side of a top right wall 191 of the housing 11 that forms the top right curved face 19 (on the inner side of the housing 11 in other words). The shoulder-portion contact sensor 110 then detects the position at which a user's finger F (see fig. 5) contacted the top right curved face 19. The shoulder-portion contact sensor 110 has a rectangular shape when seen in a direction orthogonal to the top right curved face 19, and is arranged so that the surface thereof is parallel to the top right curved face 19. For example, when the shoulder-portion contact sensor 110 uses a capacitive detection method, the shoulder-portion contact sensor 110 has a matrix of numerous electrodes running in a direction from the top face 15 toward the right side face 14 and in a front-rear direction (the direction orthogonal to the page in fig. 3), and the surface thereof is always covered by slight static electricity. When the finger F touches the top right curved face 19, the finger F then attracts the static electricity covering the surface of the shoulder-portion contact sensor 110. The shoulder-portion contact sensor 110 determines positional coordinates of where the finger F is touching by identifying the place where static electricity was attracted, and

sends the positional coordinates to the control unit 70 via an internal bus.

[0033] The shoulder-portion contact sensor 110 can be arranged inside the housing 11 because the shoulder-portion contact sensor 110 uses the detection method described above. The shoulder-portion contact sensor 110 then enables the user to perform input actions by touching the top right curved face 19 with their finger F. Furthermore, the top right curved face 19 has the same shape in the location where the shoulder-portion contact sensor 110 is arranged on the inside of the generating device 1, and in the location where the shoulder-portion contact sensor 110 is not arranged. That is to say, the location on the top right curved face 19 where the shoulder-portion contact sensor 110 is arranged on the inside and the location where the shoulder-portion contact sensor 110 is not arranged are formed so as to be indistinguishable on the surface in both a visual and a tactile sense.

[0034] The rear-face contact sensor 120 is disposed on the front side of the rear wall 171 of the housing 11 that forms the rear face 17 (on the inner side of the housing 11 in other words), to the lower side of the plurality of LEDs 41 arranged in a row in the vertical direction. The rear-face contact sensor 120 then detects the position at which the user's finger F contacted the rear face 17. The rear-face contact sensor 120 has a rectangular shape when seen in the front-rear direction, and is arranged so that the surface thereof is parallel to the rear face 17. For example, when the rear-face contact sensor 120 uses a capacitive detection method, the rear-face contact sensor 120 has a matrix of numerous electrodes running in the vertical direction and lateral direction in fig. 3, for example, and the surface thereof is always covered by slight static electricity. When the finger F touches the rear face 17, the finger F then attracts the static electricity covering the surface of the rear-face contact sensor 120. The rear-face contact sensor 120 determines positional coordinates of where the finger F is touching by identifying the place where static electricity was attracted, and sends the positional coordinates to the control unit 70 via an internal bus.

[0035] The rear-face contact sensor 120 can be arranged inside the housing 11 because the rear-face contact sensor 120 uses the detection method described above. The rear-face contact sensor 120 then enables the user to perform input actions by touching the rear face 17 with their finger F. Furthermore, the rear face 17 has the same shape in the location where the rear-face contact sensor 120 is arranged on the inside of the generating device 1, and in the location where the rear-face contact sensor 120 is not arranged. That is to say, the location on the rear face 17 where the rear-portion contact sensor 120 is arranged on the inside and the location where the rear-face contact sensor 120 is not arranged are formed so as to be indistinguishable on the surface in both a visual and a tactile

sense.

[0036] The control unit 70 determines what kind of action was performed on the shoulder-portion contact sensor 110 and the rear-face contact sensor 120 based on information sent from the shoulder-portion contact sensor 110 and the rear-face contact sensor 120.

The control unit 70 determines that a swiping action was performed when it has been detected that the contact position of the finger F moved over the top right curved face 19 or the rear face 17 (in other words moved along the top right curved face 19 or the rear face 17). Furthermore, the control unit 70 determines that a tapping action was performed when there was an action in which the finger F contacted the top right curved face 19 or the rear face 17 and the finger F was moved away from the top right curved face 19 or the rear face 17 within a reference time (e.g. 2 seconds), without performing a swiping action.

[0037] Swiping actions on the shoulder-portion contact sensor 110 will be described in detail below.

Fig. 5 shows an example of swiping actions performed by the user on the shoulder-portion contact sensor 110. It should be noted that in fig. 5, the position of the finger F before movement for the input action is represented by a broken line, and the position of the finger F after movement is represented by a solid line.

[0038] As shown in fig. 5(a), the control unit 70 determines that a first-movement swiping action was performed when information has been sent from the shoulder-portion contact sensor 110 indicating that the finger F moved in a direction from the top face 15 side toward the right side face 14 side (this may be referred to below as a "first direction"). As shown in fig. 5(b), the control unit 70 determines that a second-movement swiping action was performed when information has been sent from the shoulder-portion contact sensor 110 indicating that the finger F moved in a direction from the right side face 14 side toward the top face 15 side (this may be referred to below as a "second direction").

[0039] Fig. 6 shows an example of the relationship between swiping actions on the shoulder-portion contact sensor 110 and switching of the state of the generating device 1.

The control unit 70 controls operation of the generating device 1 on the basis of actions on the shoulder-portion contact sensor 110.

If the generating device 1 is in sleep mode, for example, the generating device 1 is activated and switched to active mode when the control unit 70 has determined that a first-movement swiping action was performed. Furthermore, if the generating device 1 is in active mode, the generating device 1 is switched to sleep mode when the control unit 70 has determined that a second-movement swiping action was performed. Moreover, in an example that may be given, if the generating device 1 is in sleep mode, the generating device 1 is in a state where most functions cannot be

used, except for the function of determining actions on the shoulder-portion contact sensor 110, for example. Furthermore, in an example that may be given, if the generating device 1 is in active mode, the generating device 1 is in a state where most functions can be used, except for the function of heating by the heating unit 80.

[0040] Furthermore, if the generating device 1 is in active mode, heating by the heating unit 80 is started when the control unit 70 has determined that a first-movement swiping action was performed. The control unit 70 then stops heating after the heating unit 80 has performed heating in accordance with the control sequence, which is stored in the memory unit 50 and defines temporal changes in the target temperature of the heating unit 80 during heating by the heating unit 80. Note that the control unit 70 may start heating by the heating unit 80 on the condition that the cover 9 is attached to the main body 10.

Furthermore, while the heating unit 80 is performing heating, heating by the heating unit 80 is stopped when the control unit 70 has determined that a second-movement swiping action was performed.

[0041] Moreover, when an instruction based on a swiping action for controlling mode switching of the generating device 1 or operation of the heating unit 80 has been accepted, the control unit 70 may notify the user via the notification unit 40 that the instruction has been accepted. For example, if the generating device 1 is in active mode, heating by the heating unit 80 is started and a vibration device is also caused to vibrate when the control unit 70 has determined that a first-movement swiping action was performed. Alternatively, the control unit 70 may also cause a sound to be output from a sound output device, or may cause a light-emitting device to emit light, instead of or as well as causing the vibration device to vibrate.

[0042] Swiping actions on the rear-face contact sensor 120 will be described in detail next. Fig. 7 and 8 show examples of swiping actions performed by the user. It should be noted that in fig. 7 and 8, the position of the finger F before movement for the input action (in other words the region where the finger F is in contact with the rear face 17) is represented by a broken line, and the position of the finger F after movement is represented by a solid line. Furthermore, the rear-face contact sensor 120 is represented by a solid line in fig. 7 and 8.

[0043] Fig. 7 shows an example of swiping actions in four directions. More specifically, as shown in fig. 7(a), the control unit 70 determines that an up-movement swiping action (an example of an input action) was performed when information has been sent from the rear-face contact sensor 120 indicating that the finger F moved upward. As shown in fig. 7(b), the control unit 70 determines that a down-movement swiping action was performed when information has been sent from the rear-face contact sensor 120 indicating that the fin-

ger F moved downward. As shown in fig. 7(c), the control unit 70 determines that a left-movement swiping action was performed when information has been sent from the rear-face contact sensor 120 indicating that the finger F moved to the left. As shown in fig. 7(d), the control unit 70 determines that a right-movement swiping action was performed when information has been sent from the rear-face contact sensor 120 indicating that the finger F moved to the right.

[0044] As shown in fig. 8(a), the control unit 70 determines that an up/right-movement swiping action was performed when information has been sent from the rear-face contact sensor 120 indicating that the finger F moved diagonally up to the right. As shown in fig. 8(b), the control unit 70 determines that a down/left-movement swiping action was performed when information has been sent from the rear-face contact sensor 120 indicating that the finger F moved diagonally down to the left. As shown in fig. 8(c), the control unit 70 determines that an up/left-movement swiping action was performed when information has been sent from the rear-face contact sensor 120 indicating that the finger F moved diagonally up to the left. As shown in fig. 8(d), the control unit 70 determines that a down/right-movement swiping action was performed when information has been sent from the rear-face contact sensor 120 indicating that the finger F moved diagonally down to the right.

[0045] Here, even if the movement direction of the finger F is slightly diagonal with respect to the up/down/left/right directions, the control unit 70 determines swiping actions for movement in those four directions. For example, as long as the movement direction of the finger F is within a predetermined angle (e.g. 15°) to each of the up/down/left/right directions, the control unit 70 determines swiping actions for movement in those four directions. On the other hand, if the predetermined angle (e.g. 15°) is exceeded in relation to the four directions, then the control unit 70 determines swiping actions for movement in a diagonal direction. This will be described more specifically with the example of upward movement. The control unit 70 determines an up-movement swiping action even if the movement direction of the finger F is not exactly upward (the direction in fig. 7(a)), as long as the deviation from that direction is within a predetermined angle, for example. On the other hand, if the swiping action is more than the predetermined angle to the right from the upward direction, the control unit 70 determines that an up/right-movement swiping action was performed, and if the swiping action is more than the predetermined angle to the left from the upward direction, the control unit 70 determines that an up/left-movement swiping action was performed.

[0046] Fig. 9 shows an example of the relationship between swiping actions on the rear-face contact sensor 120 and notification content.

The control unit 70 notifies the user of physical quanti-

ties via the notification unit 40 in response to a swiping action on the rear-face contact sensor 120. Examples of physical quantities that may be given include: remaining capacity in a battery constituting an electrical power source, number of aerosol sources (substrates 1000 in other words) inhalable with the remaining battery capacity, remaining number of times for which inhalation is possible or remaining inhalation time with the aerosol source currently in use, and cumulative value of number of inhalations up to the present time. Furthermore, the control unit 70 uses the plurality of LEDs 41 provided above the rear-face contact sensor 120 as the means for notifying the physical quantities.

[0047] When it has been determined that an up-movement swiping action was performed on the rear-face contact sensor 120, the control unit 70 causes light emission by a number of LEDs 41, among the plurality of LEDs 41, commensurate with the remaining battery capacity. For example, the control unit 70 causes all of the plurality of LEDs 41 to emit light when the remaining battery capacity is 90% or greater. Furthermore, the control unit 70 causes one LED 41 to emit light when the remaining battery capacity is less than 10%.

[0048] When it has been determined that a right-movement swiping action was performed on the rear-face contact sensor 120, the control unit 70 causes light emission by a number of LEDs 41, among the plurality of LEDs 41, commensurate with the number of aerosol sources inhalable with the remaining battery capacity. For example, when the number of aerosol sources inhalable with the remaining battery capacity is equal to or greater than a predefined first number (e.g. 10), the control unit 70 causes all of the plurality of LEDs 41 to emit light. Furthermore, when the number of aerosol sources inhalable with the remaining battery capacity is less than a predefined second number (e.g. 2), the control unit 70 causes one LED 41 to emit light.

[0049] When it has been determined that a down-movement swiping action was performed on the rear-face contact sensor 120, the control unit 70 causes light emission by a number of LEDs 41, among the plurality of LEDs 41, commensurate with the remaining number of times for which inhalation is possible or the remaining inhalation time with the aerosol source currently in use. For example, when the remaining number of times for which inhalation is possible or the remaining inhalation time with the aerosol source currently in use is equal to or greater than a predefined first number of times (e.g. 40 times) or first time (e.g. 5 minutes), the control unit 70 causes all of the plurality of LEDs 41 to emit light. Furthermore, when the remaining number of times for which inhalation is possible or the remaining inhalation time with the aerosol source currently in use is less than a predefined second number of times (e.g. 5 times) or second time (e.g. 30 seconds), the control unit 70 causes one LED 41 to emit light.

[0050] When it has been determined that a left-movement swiping action was performed on the rear-face contact sensor 120, the control unit 70 causes light emission by a number of LEDs 41, among the plurality of LEDs 41, commensurate with the cumulative value of the number of times of inhalation up to the present time. For example, when the cumulative value of the number of times of inhalation up to the present time is equal to or greater than a predefined first cumulative number of times (e.g. 1 million times), the control unit 70 causes all of the plurality of LEDs 41 to emit light. Furthermore, when the cumulative value of the number of times of inhalation up to the present time is less than a predefined second cumulative number of times (e.g. 10,000 times), the control unit 70 causes one LED 41 to emit light.

[0051] Moreover, in an example that may be given, the control unit 70 notifies the user of the physical quantity via the notification unit 40, in response to a swiping action on the rear-face contact sensor 120, regardless of the state of the generating device 1, for example sleep mode, active mode, or heating by the heating unit 80 in progress. Alternatively, the control unit 70 may notify the user of the physical quantity via the notification unit 40 in response to a swiping action on the rear-face contact sensor 120 only when the generating device 1 is in active mode or heating by the heating unit 80 is in progress.

[0052] As described above, the generating device 1 comprises: the heating unit 80 for heating an aerosol source; the shoulder-portion contact sensor 110 (example of a first contact sensor) for detecting an action on the top right curved face 19 (example of a first location) on the surface of the housing 11; and the rear-face contact sensor 120 (example of a second contact sensor) for detecting an action on the rear face 17 (example of a second location), different from the top right curved face 19, on the surface of the housing 11. Furthermore, the generating device 1 comprises the control unit 70 for controlling heating by the heating unit 80 in accordance with detection by the shoulder-portion contact sensor 110 and/or the rear-face contact sensor 120.

[0053] By virtue of the generating device 1 configured in the manner above, the shoulder-portion contact sensor 110 and the rear-face contact sensor 120 can be arranged inside the housing 11, and it is therefore possible to better inhibit inflow of water droplets to the housing 11 as compared to a configuration in which there is a gap between a button-type switch and a housing, for example. Furthermore, the generating device 1 comprises the two contact sensors - the shoulder-portion contact sensor 110 and the rear-face contact sensor 120 - so more input actions can be accepted than when only either one of those contact sensors is provided, for example.

[0054] Furthermore, the control unit 70 makes the content of processing in response to an input action

accepted by the shoulder-portion contact sensor 110 different from the content of processing in response to an input action accepted by the rear-face contact sensor 120. For example, the control unit 70 switches the mode of the generating device 1, and starts/stops heating by the heating unit 80 in response to swiping actions on the shoulder-portion contact sensor 110. Furthermore, the control unit 70 notifies physical quantities via the notification unit 40 in response to swiping actions on the rear-face contact sensor 120. In other words, input actions accepted by the shoulder-portion contact sensor 110 are actions relating to heating of the aerosol source, and input actions accepted by the rear-face contact sensor 120 are actions relating to checking physical quantities. The generating device 1 is therefore capable of accepting more types of processing via the shoulder-portion contact sensor 110 and the rear-face contact sensor 120.

[0055] Fig. 10 shows an example of the generating device 1 being held in the left hand. As shown in fig. 10, while the user is gripping the generating device 1 having the configuration above in their left hand, the user can perform swiping actions with their left thumb on the top right curved face 19 of the generating device 1. By virtue of the generating device 1, the user is therefore able to perform swiping actions more easily than by performing swiping actions on a face of the housing 11 other than the top right curved face 19, and can thereby perform actions relating to switching mode and heating by the heating unit 80.

[0056] Here, the opening 92 is provided on one end side (the left side in fig. 3) of the top face 15, and the right side face 14 is provided on the other end side (the right side in fig. 3) of the top face 15. It is therefore possible to increase the space for placement of the shoulder-portion contact sensor 110 while also making the housing 11 more compact as compared to a configuration in which the opening 92 is provided in the center of the top face 15 in the lateral direction, for example.

[0057] The control unit 70 accepts movement actions in the direction from the top face 15 side to the right side face 14 side as input actions on the shoulder-portion contact sensor 110. The control unit 70 then starts heating by the heating unit 80 when this movement action has been accepted. In other words, when it has been determined that a first-movement swiping action on the top right curved face 19 was performed, the control unit 70 starts heating by the heating unit 80 in accordance with the processing stored in association with the first-movement swiping action. The first-movement swiping action performed with the thumb on the top right curved face 19 is similar to the action of spinning a striker wheel to light a lighter, for example. It will therefore be easy for the user to remember that the first-movement swiping action is the action to start heating by the heating unit 80, so the user can start heating by the heating unit 80 with high precision.

[0058] Furthermore, the control unit 70 accepts movement actions in the direction from the right side face 14 side to the top face 15 side as input actions on the shoulder-portion contact sensor 110. The control unit 70 then stops heating by the heating unit 80 when this movement action has been accepted. In other words, when it has been determined that a second-movement swiping action on the top right curved face 19 was performed, the control unit 70 stops heating by the heating unit 80 in accordance with the processing stored in association with the second-movement swiping action. The second-movement swiping action performed with the thumb on the top right curved face 19 is an action in the opposite direction to the action of spinning a striker wheel to light a lighter, for example. It will therefore be easy for the user to remember that the second-movement swiping action is the action to stop heating by the heating unit 80, so the user can stop heating by the heating unit 80 with high precision.

[0059] It should be noted that in the embodiment described above, when it has been determined that a first-movement swiping action was performed during sleep mode, the control unit 70 switches the generating device 1 to active mode, and when it has been determined that a second-movement swiping action was performed during active mode, the control unit 70 switches the generating device 1 to sleep mode. However, mode switching between sleep mode and active mode need not involve determining that a first-movement or second-movement swiping action was performed. For example, if the generating device 1 is in sleep mode, the control unit 70 may switch to active mode when it has been determined that a tapping action was performed.

[0060] Furthermore, as shown in fig. 10, while the user is gripping the generating device 1 having the configuration above in their left hand, the user can perform swiping actions with their left thumb on the rear face 17 of the generating device 1. Alternatively, while the user is gripping the generating device 1 in their left hand, the user can perform swiping actions on the rear face 17 with a finger on their right hand (e.g., with their index finger). By virtue of the generating device 1, the user is therefore able to perform swiping actions more easily than by performing swiping actions on a face of the housing 11 other than the top right curved face 19 or the rear face 17, and can thereby check the physical quantities.

[0061] Moreover, in the embodiment described above, the control unit 70 notifies physical quantities via the notification unit 40 in response to a swiping action on the rear-face contact sensor 120, but the control unit 70 may additionally perform other processing in response to a swiping action on the rear-face contact sensor 120. For example, the control unit 70 may perform processing relating to heating by the heating unit 80 in response to a swiping action on the rear-face contact sensor 120. More specifically, when it has been

determined that an up/right-movement swiping action was performed on the rear-face contact sensor 120 while the heating unit 80 is performing heating, the control unit 70 may increase the heating temperature, while on the other hand the control unit 70 may reduce the heating temperature when it has been determined that a down/left-movement swiping action was performed on the rear-face contact sensor 120. Furthermore, if there are multiple control sequences stored in the memory unit 50, the control unit 70 may modify the settings from the control sequence currently set to a control sequence with a higher target temperature of the heating unit 80 when the generating device 1 is in active mode and it has been determined that an up/right-movement swiping action was performed. Furthermore, the control unit 70 may modify the settings from the control sequence currently set to a control sequence with a lower target temperature of the heating unit 80 when the generating device 1 is in active mode and it has been determined that a down/left-movement swiping action was performed.

<Second Embodiment>

[0062] The control unit 70 of the generating device according to the second embodiment (which is not depicted) performs different processing from that of the generating device 1 according to the first embodiment. The same reference signs are used for components having the same function in the first and second embodiments, and those components will not be described in detail again.

[0063] The control unit 70 according to the second embodiment is configured so that processing is not performed in response to an action on the rear-face contact sensor 120 while the heating unit 80 is performing heating. That is to say, after the heating unit 80 has started heating, the control unit 70 does not notify physical quantities via the notification unit 40, for example, even if it has been determined that a swiping action was performed on the rear-face contact sensor 120 while the heating unit 80 is performing heating. Alternatively, the control unit 70 is configured not to accept information relating to positional coordinates of where the finger F is touching which is sent from the rear-face contact sensor 120. This makes it possible to inhibit notification of physical quantities via the notification unit 40, for example, caused by the user accidentally having touched the rear-face contact sensor 120.

[0064] Furthermore, the control unit 70 may perform processing in response to an action on the rear-face contact sensor 120 when a predetermined event has been detected.

An example of a predetermined event that may be given is a double tapping action (two consecutive tapping actions in other words) having been performed on the rear-face contact sensor 120. That is to say, when it has been determined that a swiping action was per-

formed on the rear-face contact sensor 120 following a determination that a double tapping action was performed on the rear-face contact sensor 120 while the heating unit 80 is performing heating, the control unit 70 notifies the user via the notification unit 40 of the physical quantity corresponding to the swiping action.

[0065] Another example of the predetermined event that may be given is a double tapping action being performed on the generating device according to the second embodiment (not limited to a double tapping action on the rear-face contact sensor 120). That is to say, the control unit 70 notifies the user via the notification unit 40 of the physical quantity corresponding to the swiping action after a determination that a double tapping action was performed on the generating device while the heating unit 80 is performing heating. Moreover, in an example that may be given, the control unit 70 determines whether or not a double tapping action was performed on the generating device, based on output from an acceleration sensor of the sensor unit 30.

[0066] In addition, when the control unit 70 performs processing in response to an action on the rear-face contact sensor 120 after detecting a predetermined event, the control unit 70 may be configured to perform the processing in response to the action on the rear-face contact sensor 120 only within a predetermined time (e.g. 5 seconds) after the predetermined event was detected. That is to say, when it has been determined that a swiping action was performed on the rear-face contact sensor 120 within the predetermined time of the predetermined event having been detected while the heating unit 80 is performing heating, the control unit 70 notifies the user via the notification unit 40 of the physical quantity corresponding to the swiping action. Meanwhile, when it has been determined that a swiping action was performed on the rear-face contact sensor 120 after the predetermined time has elapsed, even though the predetermined event was detected while the heating unit 80 is performing heating, the control unit 70 does not stop heating by the heating unit 80. Alternatively, the control unit 70 is configured not to accept information sent from the rear-face contact sensor 120 after the predetermined time has elapsed.

[0067] An example of in-heating processing performed by the control unit 70 will be described below with the aid of a flowchart.

Fig. 11 is a flowchart showing an example of in-heating processing performed by the control unit 70. While heating by the heating unit 80 is in progress, the control unit 70 repeatedly performs in-heating processing at preset fixed intervals of time (e.g. 1 msec).

The control unit 70 determines whether or not a second-movement swiping action was performed on the shoulder-portion contact sensor 110 (S1101). If a second-movement swiping action was performed (YES in S1101), the control unit 70 then stops heating by the heating unit 80 (S1102). Meanwhile, if a second-movement swiping action was not performed (NO in S1101),

the control unit 70 determines whether or not a timing has been reached where heating should be stopped in accordance with the control sequence (S1103). If the timing at which heating should be stopped has been reached (YES in S1103), the control unit 70 stops heating by the heating unit 80 (S1102).

[0068] On the other hand, if the timing at which heating should be stopped has not been reached (NO in S1103), the control unit 70 determines whether or not a predetermined event has been detected (S1104). If the predetermined event has been detected (YES in S1104), the control unit 70 determines whether or not a swiping action was performed on the rear-face contact sensor 120 (S1105). If a swiping action was performed on the rear-face contact sensor 120 (YES in S1105), the control unit 70 then notifies the user (S1106) via the notification unit 40 of the physical quantity corresponding to the swiping action, and terminates the in-heating processing.

[0069] Meanwhile, if a swiping action was not performed on the rear-face contact sensor 120 (NO in S1105), the control unit 70 determines whether or not a predetermined time has elapsed (S1107). If the predetermined time has not elapsed (NO in S1107), the control unit 70 performs the processing of S1105 and onward. On the other hand, if the predetermined time has elapsed (YES in S1107), the control unit 70 terminates the in-heating processing. Furthermore, if the predetermined event has not been detected in the processing of S1104 (NO in S1104), the control unit 70 terminates the in-heating processing.

[0070] As described above, the control unit 70 according to the second embodiment permits only processing in response to an action on either one of the shoulder-portion contact sensor 110 and the rear-face contact sensor 120 while heating by the heating unit 80 is in progress. In the example described above, the control unit 70 permits only acceptance of actions on the shoulder-portion contact sensor 110 while heating by the heating unit 80 is in progress. In other words, in the generating device according to the second embodiment, the control unit 70 does not perform processing in response to actions on the rear-face contact sensor 120 while heating by the heating unit 80 is in progress. This makes it possible to inhibit notification of physical quantities via the notification unit 40, for example, caused by the user accidentally having touched the rear-face contact sensor 120.

[0071] More specifically, the housing 11 comprises: the top face 15 (example of a first face) provided with the opening 92 for insertion of the aerosol source; the right side face 14 (example of a second face) provided in a direction intersecting the top face 15; and the top right curved face 19 (example of a third face) provided between the top face 15 and the right side face 14. The shoulder-portion contact sensor 110 then detects actions on the top right curved face 19 relating to heating of the aerosol source, and the control unit 70 performs

only processing in response to actions on the shoulder-portion contact sensor 110 while heating by the heating unit 80 is in progress.

[0072] The control unit 70 may perform processing in response to an action on the rear-face contact sensor 120 when a predetermined event has been detected, even if heating by the heating unit 80 is in progress. Processing in response to an action on the rear-face contact sensor 120 is performed after an intentional user action, thereby offering greater convenience. In this case also, the control unit 70 performs processing in response to an action on the rear-face contact sensor 120 only within a predetermined time after the predetermined event was detected. This makes it possible to inhibit notification of physical quantities via the notification unit 40, for example, when the predetermined event has occurred without being intended by the user.

[0073] Moreover, the control unit 70 according to the second embodiment may permit only processing in response to an action on the rear-face contact sensor 120, and not the shoulder-portion contact sensor 110, while heating by the heating unit 80 is in progress. That is to say, after heating has been started by the heating unit 80, the heating is stopped after the heating unit 80 has performed heating in accordance with the control sequence, but the control unit 70 does not stop heating by the heating unit 80 while the heating unit 80 is performing heating, even if it has been determined that a second-movement swiping action was performed on the shoulder-portion contact sensor 110. Alternatively, the control unit 70 is configured not to accept information relating to positional coordinates of where the finger F is touching which is sent from the shoulder-portion contact sensor 110. This makes it possible to inhibit the heating unit 80 from stopping heating due to an accidental user action.

<Third Embodiment>

[0074] Fig. 12 shows an example of the schematic configuration of a generating device 3 according to a third embodiment. Fig. 12(a) is an exemplary diagram in which the generating device 3 is viewed from diagonally above from the front, and fig. 12(b) is an exemplary diagram in which the generating device 3 is viewed from diagonally above from the rear.

[0075] The generating device 3 according to the third embodiment differs from the generating device 1 according to the first embodiment in that the generating device 3 does not have a cover 9, the generating device 3 has a front-face contact sensor 130 in addition to the shoulder-portion contact sensor 110 and the rear-face contact sensor 120, the generating device 3 has a plurality of LEDs 342, and the generating device 3 has a different control unit 370 corresponding to the control unit 70. The same reference signs are used for components having the same function in the first and third embodiments, and those components will not be de-

scribed in detail again.

[0076] The generating device 3 comprises a housing 311 corresponding to the housing 11 of the first embodiment. The housing 311 comprises a front face 312 corresponding to the front face 12 of the first embodiment. The generating device 3 does not have a cover 9, so the front face 312 is also exposed to the outside while the generating device 3 is being used, for example during heating by the heating unit 80.

[0077] The front-face contact sensor 130 is disposed on a rear side of a front wall 317 of the housing 311 that forms the front face 312 (on the inner side of the housing 311 in other words). In an example that may be given, the front-face contact sensor 130 has the same structure and functions as the rear-face contact sensor 120. The front-face contact sensor 130 is arranged so that the surface thereof is parallel to the front face 312. The front-face contact sensor 130 then detects the position at which the user's finger F contacted the front face 312.

[0078] A plurality of (e.g. eight) LEDs 342 are arranged in a row in the vertical direction on the rear side of the front wall 317 of the housing 311 that forms the front face 312 (on the inner side of the housing 311 in other words).

The front wall 317 comprises a display window 372 which transmits the light from the plurality of LEDs 342 disposed inside the housing 311. The display window 372 is a window provided at a position corresponding to positions of the plurality of LEDs 342 disposed inside the housing 311, and transmits the light from the plurality of LEDs 342. This allows the user to see the light from the front face 312 side.

[0079] When a swiping action has been performed on the front-face contact sensor 130, the control unit 370 also notifies physical quantities relating to the generating device 3 similarly to when a swiping action has been performed on the rear-face contact sensor 120. That is to say, the control unit 370 performs processing in response to an input action common to the front-face contact sensor 130 and the rear-face contact sensor 120. Furthermore, the control unit 370 provides a common notification for a swiping action on the front-face contact sensor 130 and a swiping action on the rear-face contact sensor 120.

[0080] For example, when it has been determined that an up-movement swiping action was performed on the front-face contact sensor 130, the control unit 370 causes light emission by a number of LEDs 342, among the plurality of LEDs 342, commensurate with the remaining battery capacity.

Furthermore, when it has been determined that a right-movement swiping action was performed on the front-face contact sensor 130, the control unit 370 causes light emission by a number of LEDs 342, among the plurality of LEDs 342, commensurate with the number of aerosol sources inhalable with the remaining battery capacity.

Furthermore, when it has been determined that a down-movement swiping action was performed on the front-face contact sensor 130, the control unit 370 causes light emission by a number of LEDs 342, among the plurality of LEDs 342, commensurate with the remaining number of times for which inhalation is possible or the remaining inhalation time with the aerosol source currently in use.

Furthermore, when it has been determined that a left-movement swiping action was performed on the front-face contact sensor 130, the control unit 370 causes light emission by a number of LEDs 342, among the plurality of LEDs 342, commensurate with the cumulative value of the number of times of inhalation up to the present time.

[0081] As described above, the rear-face contact sensor 120 is provided to correspond to the rear face 17 of the generating device 3, the front-face contact sensor 130 is provided to correspond to the front face 312, and these contact sensors are provided so as to face each other with the heating unit 80 therebetween. The control unit 370 of the generating device 3 then performs processing in response to input actions common to the rear-face contact sensor 120 and the front-face contact sensor 130.

[0082] As a result, the user can perform input actions on the front-face contact sensor 130 when holding the generating device 3 in their hand with the front face 312 facing them, and can perform input actions on the rear-face contact sensor 120 when holding the generating device 3 in their hand with the rear face 17 facing them.

[0083] Fig. 13 shows an example of the generating device 3 being held in the right hand.

As shown in fig. 13, while the user is gripping the generating device 3 having the configuration above in their right hand, the user can perform swiping actions with their right thumb on the top right curved face 19 of the generating device 3. By virtue of the generating device 3, the user is therefore able to perform swiping actions more easily than by performing swiping actions on a face of the housing 311 other than the top right curved face 19.

[0084] Furthermore, as shown in fig. 13, while the user is gripping the generating device 3 in their right hand, the user can perform swiping actions with their right thumb on the front face 312 of the generating device 3. Alternatively, while the user is gripping the generating device 3 in their right hand, the user can perform swiping actions on the front face 312 with a finger on their left hand (e.g., with their index finger). The generating device 3 is thus very convenient because the user can perform input actions from multiple directions.

[0085] Moreover, the control unit 370 may also be configured so that processing is not performed in response to actions on the rear-face contact sensor 120 or the front-face contact sensor 130 while the heating unit 80 is performing heating, similarly to the control

unit 70 according to the second embodiment.

<Fourth Embodiment>

[0086] Fig. 14 shows an example of the schematic configuration of a generating device 4 according to a fourth embodiment. Fig. 14(a) is an exemplary diagram in which the generating device 4 is viewed from diagonally above from the front, and fig. 14(b) is an exemplary diagram in which the generating device 4 is viewed from diagonally above from the rear.

[0087] The generating device 4 according to the fourth embodiment differs from the generating device 3 according to the third embodiment in that the generating device 4 does not have a shoulder-portion contact sensor 110, and the generating device 4 has a different control unit 470 corresponding to the control unit 370. The same reference signs are used for components having the same function in the third and fourth embodiments, and those components will not be described in detail again.

[0088] In addition to having the function of notifying physical quantities in response to input actions on the rear-face contact sensor 120 (example of a first contact sensor) and the front-face contact sensor 130 (example of a second contact sensor), similarly to the control unit 370, the control unit 470 also has functions for controlling mode switching of the generating device 4 and operation of the heating unit 80 in response to actions on the rear-face contact sensor 120 and the front-face contact sensor 130.

The control unit 470 accepts input actions common to the rear-face contact sensor 120 and the front-face contact sensor 130. The rear-face contact sensor 120 will be taken as an example in the description below.

[0089] Fig. 15 shows an example of swiping actions performed by a user. It should be noted that in fig. 15, the position of the finger F before movement for the input action (in other words the region where the finger F is in contact with the rear face 17) is represented by a broken line, and the position of the finger F after movement is represented by a solid line. Furthermore, the rear-face contact sensor 120 is represented by a solid line in fig. 15.

[0090] As shown in fig. 15(a) and 15(b), the control unit 470 determines that a clockwise-movement swiping action was performed when information has been sent from the rear-face contact sensor 120 indicating that the finger F moved in a clockwise arc. Furthermore, the control unit 470 determines that a clockwise half-turn-movement swiping action was performed when the center angle of the arc of the clockwise movement is 90° or less, as shown in fig. 15(a), and the control unit determines that a clockwise full-turn-movement swiping action was performed when the center angle of the arc of the clockwise movement is greater than 90°, as shown in fig. 15(b).

[0091] Furthermore, as shown in fig. 15(c) and 15(d),

the control unit 470 determines that a counterclockwise-movement swiping action was performed when information has been sent from the rear-face contact sensor 120 indicating that the finger F moved in the shape of a counterclockwise arc. Furthermore, the control unit 470 determines that a counterclockwise half-turn-movement swiping action was performed when the center angle of the arc of the counterclockwise movement is 90° or less, as shown in fig. 15(c), and the control unit determines that a counterclockwise full-turn-movement swiping action was performed when the center angle of the arc of the counterclockwise movement is greater than 90°, as shown in fig. 15(d).

[0092] Fig. 16 shows an example of the relationship between swiping actions on the rear-face contact sensor 120 and switching of the state of the generating device 4.

The control unit 470 controls operation of the generating device 4 on the basis of actions on the rear-face contact sensor 120.

If the generating device 4 is in sleep mode, for example, the generating device 4 is activated and switched to active mode when the control unit 470 has determined that a clockwise full-turn-movement swiping action was performed. Furthermore, if the generating device 4 is in active mode, the generating device 4 is switched to sleep mode when the control unit 470 has determined that a counterclockwise full-turn-movement swiping action was performed.

[0093] It should be noted that the control unit 470 may also activate the generating device 4 from sleep mode on determining that a clockwise half-turn-movement swiping action was performed. Furthermore, the control unit 470 may also switch the generating device 4 from active mode to sleep mode on determining that a counterclockwise half-turn-movement swiping action was performed.

[0094] The control unit 470 controls operation of the heating unit 80 on the basis of swiping actions on the rear-face contact sensor 120.

For example, if the generating device 4 is in active mode, heating by the heating unit 80 is started when the control unit 470 has determined that a clockwise half-turn-movement swiping action was performed. Furthermore, while the heating unit 80 is performing heating, heating by the heating unit 80 is stopped when the control unit 470 has determined that a counterclockwise half-turn-movement swiping action was performed.

[0095] It should be noted that the control unit 470 may also start heating by the heating unit 80 on determining that a clockwise full-turn-movement swiping action was performed. Furthermore, the control unit 470 may also stop heating by the heating unit 80 on determining that a counterclockwise full-turn-movement swiping action was performed.

[0096] While the heating unit 80 is performing heating, the control unit 470 increases the heating tempera-

ture when it has been determined that an up/right-movement swiping action was performed. On the other hand, while the heating unit 80 is performing heating, the control unit 470 reduces the heating temperature when it has been determined that a down/left-movement swiping action was performed.

Moreover, while the heating unit 80 is performing heating, the control unit 470 may increase the heating temperature when it has been determined that an up/left-movement swiping action was performed, and may reduce the heating temperature when it has been determined that a down/right-movement swiping action was performed.

[0097] Furthermore, if there are multiple control sequences stored in the memory unit 50, the control unit 470 may modify the settings from the control sequence currently set to a control sequence with a higher target temperature of the heating unit 80 when the generating device 4 is in active mode and it has been determined that an up/right-movement swiping action was performed. Furthermore, the control unit 470 may modify the settings from the control sequence currently set to a control sequence with a lower target temperature of the heating unit 80 when the generating device 4 is in active mode and it has been determined that a down/left-movement swiping action was performed.

[0098] In the generating device 4 according to the fourth embodiment configured in the manner above also, the control unit 470 is capable of performing processing in response to input actions common to the rear-face contact sensor 120 and the front-face contact sensor 130. Furthermore, when one sensor out of the rear-face contact sensor 120 and the front-face contact sensor 130 has a large contact area with another object (e.g., the user's hand), the control unit 470 may permit acceptance of actions on the other sensor.

[0099] As shown in fig. 10, for example, when the user is gripping the front face 312 of the generating device 4 in the palm of their hand, it is feasible for the user to perform input actions on the rear-face contact sensor 120. Furthermore, when the user is gripping the front face 312 in the palm of their hand, the contact area with the user's hand is greater on the front face 312, which corresponds to the location where the front-face contact sensor 130 is placed, than on the rear face 17, which corresponds to the location where the rear-face contact sensor 120 is placed. Therefore, no processing is performed in respect of the front-face contact sensor 130 (example of "one sensor") which has a large contact area with the user's hand, and only processing in response to actions on the rear-face contact sensor 120 (example of "the other sensor") is performed, for example. This makes it possible to inhibit erroneous processing caused by the user's grip. Furthermore, the control unit 470 may perform processing in response to an action on the rear-face contact sensor 120 only within a predetermined time (e.g. 5 seconds) after a predetermined action was detected.

Examples of predetermined actions that may be given include a double tapping action having been performed on the rear-face contact sensor 120, and a double tapping action having been performed on the generating device 4.

[0100] Meanwhile, when the user is gripping the rear face 17 of the generating device 4 in the palm of their hand as shown in fig. 13, it is feasible for the user to perform input actions on the front-face contact sensor 130. Furthermore, when the user is gripping the rear face 17 in the palm of their hand, the contact area with the user's hand is greater on the rear face 17, which corresponds to the location where the rear-face contact sensor 120 is placed, than on the front face 312, which corresponds to the location where the front-face contact sensor 130 is placed. Therefore, no processing is performed in respect of the rear-face contact sensor 120 (example of "one sensor") which has a large contact area with the user's hand, and only processing in response to actions on the front-face contact sensor 130 (example of "the other sensor") is performed, for example. This makes it possible to inhibit erroneous processing caused by the user's grip. Furthermore, the control unit 470 may perform processing in response to an action on the front-face contact sensor 130 only within a predetermined time (e.g. 5 seconds) after a predetermined action was detected. Examples of predetermined actions that may be given include a double tapping action having been performed on the front-face contact sensor 130, and a double tapping action having been performed on the generating device 4.

<Fifth Embodiment>

[0101] Fig. 17 shows an example of the schematic configuration of a generating device 5 according to a fifth embodiment.

[0102] The generating device 5 according to the fifth embodiment differs from the generating device 1 according to the first embodiment in that the generating device 5 has a different main body 510 corresponding to the main body 10, and also does not have a cover 9. The same reference signs are used for components having the same function in the first and fifth embodiments, and those components will not be described in detail again.

[0103] The main body 510 differs from the main body 10 in that the main body 510 comprises: a different housing 511 corresponding to the housing 11; a different shoulder-portion contact sensor 540 corresponding to the shoulder-portion contact sensor 110; a different side-face contact sensor 550 corresponding to the rear-face contact sensor 120; a different plurality of LEDs 541 corresponding to the plurality of LEDs 41; and a different control unit 570 corresponding to the control unit 70.

The housing 511 forms a substantially cylindrical internal space for accommodating the heating unit 80, etc.

The housing 511 has a cylindrical side face 514, a top face 515, and a bottom face 516 covering a lower-side opening portion of the side face 514. An opening 592 allowing insertion of the substrate 1000 is formed in the center of the top face 515. A curved face 519 is then provided around the whole circumference of the top face 515 between the side face 514 and the face surrounding the opening 592.

[0104] A plurality of (e.g. eight) LEDs 541 are arranged in a row in the vertical direction on the inner side of a side wall 571 of the housing 511 that forms the side face 514. The side wall 571 comprises a display window 572 which transmits the light from the plurality of LEDs 541 disposed inside the housing 511. The display window 572 is a window provided at a position corresponding to positions of the plurality of LEDs 541, and transmits the light from the plurality of LEDs 541.

[0105] The shoulder-portion contact sensor 540 is disposed on an inner side of the housing 511 that forms the curved face 519, and detects the position where the user's finger F contacted the curved face 519. For example, when the shoulder-portion contact sensor 540 uses a capacitive detection method, the shoulder-portion contact sensor 540 has a matrix of numerous electrodes running in a direction from the top face 515 toward the side face 514 and in a circumferential direction, and the surface thereof is always covered by slight static electricity. When the finger F touches the curved face 519, the finger F then attracts the static electricity covering the surface of the shoulder-portion contact sensor 540. The shoulder-portion contact sensor 540 determines positional coordinates of where the finger F is touching by identifying the place where static electricity was attracted, and sends the positional coordinates to the control unit 570 via an internal bus.

[0106] The side-face contact sensor 550 is disposed on a lower side of the plurality of LEDs 541 and on the inner side of the side wall 571 of the housing 11 that forms the side face 514, and detects the position where the user's finger F contacted the side face 514. For example, when the side-face contact sensor 550 uses a capacitive detection method, the side-face contact sensor 550 has a matrix of numerous electrodes running in the vertical direction and the circumferential direction, and the surface thereof is always covered by slight static electricity. When the finger F touches the side face 514, the finger F then attracts the static electricity covering the surface of the side-face contact sensor 550. The side-face contact sensor 550 determines positional coordinates of where the finger F is touching by identifying the place where static electricity was attracted, and sends the positional coordinates to the control unit 570 via an internal bus. It should be noted that the side-face contact sensor 550 may be provided around the whole circumference, or it may be provided across a predetermined center angle range (e.g., 90°, 120° or 180°), centered on an imaginary line joining the plurality of LEDs 541.

[0107] Fig. 18 shows an example of swiping actions performed by the user on the shoulder-portion contact sensor 540.

As shown in fig. 18(a), the control unit 570 determines that a first-movement swiping action was performed when information has been sent from the shoulder-portion contact sensor 540 indicating that the finger F moved in a direction from the top face 515 side toward the side face 514 side (this may be referred to below as a "first direction"). As shown in fig. 18(b), the control unit 570 determines that a second-movement swiping action was performed when information has been sent from the shoulder-portion contact sensor 540 indicating that the finger F moved in a direction from the side face 514 side toward the top face 515 side (this may be referred to below as a "second direction").

[0108] Fig. 19 shows an example of the relationship between swiping actions on the shoulder-portion contact sensor 540 and switching of the state of the generating device 5.

The control unit 570 controls operation of the generating device 5 on the basis of actions on the shoulder-portion contact sensor 540.

If the generating device 5 is in sleep mode, for example, the generating device 5 is activated and switched to active mode when the control unit 570 has determined that a first-movement swiping action was performed. Furthermore, if the generating device 5 is in active mode, the generating device 5 is switched to sleep mode when the control unit 570 has determined that a second-movement swiping action was performed.

[0109] Furthermore, if the generating device 5 is in active mode, heating by the heating unit 80 is started when the control unit 570 has determined that a first-movement swiping action was performed. Furthermore, while the heating unit 80 is performing heating, heating by the heating unit 80 is stopped when the control unit 570 has determined that a second-movement swiping action was performed.

[0110] Swiping actions on the side-face contact sensor 550 will be described in detail next.

Fig. 20 shows an example of swiping actions performed by a user. It should be noted that in fig. 20, the position of the finger F before movement for the input action (in other words the region where the finger F is in contact with the side face 514) is represented by a broken line, and the position of the finger F after movement is represented by a solid line.

[0111] Fig. 20 shows an example of swiping actions in four directions. More specifically, as shown in fig. 20(a), the control unit 570 determines that an up-movement swiping action was performed when information has been sent from the side-face contact sensor 550 indicating that the finger F moved upward. As shown in fig. 20(b), the control unit 570 determines that a down-movement swiping action was performed when information has been sent from the side-face contact sensor

550 indicating that the finger F moved downward. As shown in fig. 20(c), the control unit 570 determines that a left-movement swiping action was performed when information has been sent from the side-face contact sensor 550 indicating that the finger F moved to the left (in other words a clockwise direction when viewed from the top face 515 side). As shown in fig. 20(d), the control unit 570 determines that a right-movement swiping action was performed when information has been sent from the side-face contact sensor 550 indicating that the finger F moved to the right (in other words a counterclockwise direction when viewed from the top face 515 side).

[0112] More specifically, the control unit 570 notifies the user of physical quantities via the plurality of LEDs 541 in response to swiping actions on the side-face contact sensor 550.

For example, when it has been determined that an up-movement swiping action was performed on the side-face contact sensor 550, the control unit 570 causes light emission by a number of LEDs 541, among the plurality of LEDs 541, commensurate with the remaining battery capacity. Furthermore, when it has been determined that a right-movement swiping action was performed on the side-face contact sensor 550, the control unit 570 causes light emission by a number of LEDs 541, among the plurality of LEDs 541, commensurate with the number of aerosol sources inhalable with the remaining battery capacity.

Furthermore, when it has been determined that a down-movement swiping action was performed on the side-face contact sensor 550, the control unit 570 causes light emission by a number of LEDs 541, among the plurality of LEDs 541, commensurate with the remaining number of times for which inhalation is possible or the remaining inhalation time with the aerosol source currently in use.

Furthermore, when it has been determined that a left-movement swiping action was performed on the side-face contact sensor 550, the control unit 570 causes light emission by a number of LEDs 541, among the plurality of LEDs 541, commensurate with the cumulative value of the number of times of inhalation up to the present time.

[0113] As described above, the generating device 5 comprises: the heating unit 80 for heating an aerosol source; the shoulder-portion contact sensor 540 (example of a first contact sensor) for detecting an action on the curved face 519 (example of a first location) on the surface of the housing 511; and the side-face contact sensor 550 (example of a second contact sensor) for detecting an action on the side face 514 (example of a second location), different from the curved face 519, on the surface of the housing 11. Furthermore, the generating device 5 comprises the control unit 570 for controlling heating by the heating unit 80 in accordance with detection by the shoulder-portion contact sensor 540 and/or the side-face contact sensor 550.

[0114] By virtue of the generating device 5 configured in the manner above, the shoulder-portion contact sensor 540 and the side-face contact sensor 550 can be arranged inside the housing 511, and it is therefore possible to better inhibit inflow of water droplets to the housing 511 as compared to a configuration in which there is a gap between a button-type switch and a housing, for example. Furthermore, the generating device 5 comprises the two contact sensors - the shoulder-portion contact sensor 540 and the side-face contact sensor 550 - so more input actions can be accepted than when only either one of those contact sensors is provided, for example.

[0115] Furthermore, the control unit 570 makes the content of processing in response to an input action accepted by the shoulder-portion contact sensor 540 different from the content of processing in response to an input action accepted by the side-face contact sensor 550. For example, the control unit 570 switches the mode of the generating device 5, and starts/stops heating by the heating unit 80 in response to swiping actions on the shoulder-portion contact sensor 540. Furthermore, the control unit 570 notifies physical quantities via the notification unit 40 in response to swiping actions on the side-face contact sensor 550. In other words, input actions accepted by the shoulder-portion contact sensor 540 are actions relating to heating of the aerosol source, and input actions accepted by the side-face contact sensor 550 are actions relating to checking physical quantities. The generating device 5 is therefore capable of accepting more types of processing via the shoulder-portion contact sensor 540 and the side-face contact sensor 550.

[0116] Furthermore, in the generating device 5, the opening 592 is provided in the center of the top face 515, and the side face 514 is provided around the top face 515. As a result, input actions through the shoulder-portion contact sensor 540 can be performed with the thumb, regardless of which circumferential position on the housing 511 is being gripped.

[0117] Note that functions of the control unit 70 according to the second to fourth embodiments may also be applied to the control unit 570 according to the fifth embodiment.

[0118] Note that there is no particular limitation to the configuration of the aerosol source or the heating unit 80 in any of the generating devices 1-5 according to the first to fifth embodiments, respectively.

For example, the device may be one in which the heating unit is configured by a metallic coil wound around a liquid guiding portion for guiding a liquid aerosol source from a liquid storage portion and holding the aerosol source, and heat generated by the heating unit then heats and atomizes the aerosol source held by the liquid guiding portion, generating an aerosol. Alternatively, the device may be one in which a susceptor configured by a metallic conducting wire wound around a liquid guiding portion is caused to generate heat by

means of electromagnetic induction, thereby heating and atomizing the aerosol source held by the liquid guiding portion, and generating an aerosol. In the case of a device which generates an aerosol by heating and atomizing an aerosol source held by a liquid guiding portion, a delivery port through which the generated aerosol is delivered should be formed on a top face (e.g., the housing 11) of the housing (e.g., the housing 11) of the device. Furthermore, the mouthpiece may be attached to the delivery port. Furthermore, in terms of the configuration of the heating unit 80 and the aerosol source, the device may be one which generates an aerosol by heating a liquid aerosol source or by heating a substrate containing the aerosol source. Furthermore, the device may be one in which a magnetic field is generated by an electromagnetic induction source formed by a coiled conducting wire wound around the outer periphery of a holding portion, while a stick-type substrate comprising a susceptor is held in the holding portion, and the aerosol source contained in the stick-type substrate is heated and atomized by Joule heat generated by the susceptor, generating an aerosol. Furthermore, in terms of the configuration of the heating unit 80 and the aerosol source, the device may be one in which a vapor generated by heating a polyhydric alcohol such as glycerol or propylene glycol, and a liquid such as water, is caused to pass through a capsule containing an aerosol source including tobacco granules or similar, thereby extracting flavor and aroma, and the resulting vapor is delivered to the above-mentioned delivery port.

<Summary>

[0119] It should be noted that the present disclosure includes the following features.

- (1) An aerosol-generating device comprising: a heating unit for heating an aerosol source; a first contact sensor for detecting an action at a first location on a surface of a housing; a second contact sensor for detecting an action at a second location, different from the first location, on the surface of the housing; and a control unit for controlling heating by the heating unit in accordance with detection by the first contact sensor and/or the second contact sensor.
- (2) The aerosol-generating device as disclosed in (1), wherein the control unit performs processing in response to an input action common to the first contact sensor and the second contact sensor.
- (3) The aerosol-generating device as disclosed in (1), wherein the control unit makes the content of processing in response to an input action accepted by the first contact sensor different from the content of processing in response to an input action accepted by the second contact sensor.
- (4) The aerosol-generating device as disclosed in

(3), wherein an input action accepted by the first contact sensor is an action relating to heating of the aerosol source, and an input action accepted by the second contact sensor is an action relating to checking a physical quantity.

(5) The aerosol-generating device as disclosed in (4) wherein the physical quantity is at least one of: remaining battery capacity, number of aerosol sources inhalable with that remaining battery capacity, remaining number of times for which inhalation is possible or inhalation time with the aerosol source currently in use, and cumulative value of number of inhalations up to the present time.

(6) The aerosol-generating device as disclosed in any one of (1) to (3), wherein the control unit permits only processing in response to an action on either one of the first contact sensor and the second contact sensor while heating by the heating unit is in progress.

(7) The aerosol-generating device as disclosed in (6), wherein the housing comprises: a first face provided with an opening for insertion of the aerosol source or a delivery port through which the heated aerosol source is delivered to the outside, a second face provided in a direction intersecting the first face, and a third face provided between the first face and the second face, the first contact sensor detects an action on the third face relating to heating of the aerosol source, and the control unit performs only processing in response to an action on the first contact sensor while heating by the heating unit is in progress.

(8) The aerosol-generating device as disclosed and (7), wherein the control unit performs processing in response to an action on the second contact sensor when a predetermined event has been detected, even if heating by the heating unit is in progress.

(9) The aerosol-generating device as disclosed in (8), wherein the control unit performs processing in response to an action on the second contact sensor only within a predetermined time after the predetermined event was detected.

(10) The aerosol-generating device as disclosed in (6), wherein, when one sensor out of the first contact sensor and the second contact sensor has a large contact area with another object, the control unit performs only processing in response to an action on the other sensor.

(11) The aerosol-generating device as disclosed in (10), wherein the control unit performs processing in response to an action on said other sensor only within a predetermined time after a predetermined action was detected.

REFERENCE SIGNS LIST

[0120] 1, 3, 4, 5... Aerosol-generating device, 9...

Cover, 10... Main body, 11... Housing, 12, 312... Front face, 14... Right side face, 15, 515... Top face, 17... Rear face, 19... Top right curved face, 30... Sensor unit, 70, 370, 470, 570... Control unit, 80... Heating unit, 110, 540... Shoulder-portion contact sensor, 120... Rear-face contact sensor, 130... Front-face contact sensor, 514... Side face, 519... Curved face, 550... Side-face contact sensor

Claims

1. An aerosol-generating device comprising:
a heating unit for heating an aerosol source;

a first contact sensor for detecting an action at a first location on a surface of a housing;
a second contact sensor for detecting an action at a second location, different from the first location, on the surface of the housing; and
a control unit for controlling heating by the heating unit in accordance with detection by the first contact sensor and/or the second contact sensor.

2. The aerosol-generating device as claimed in claim 1, wherein
the control unit performs processing in response to an input action common to the first contact sensor and the second contact sensor.

3. The aerosol-generating device as claimed in claim 1, wherein
the control unit makes the content of processing in response to an input action accepted by the first contact sensor different from the content of processing in response to an input action accepted by the second contact sensor.

4. The aerosol-generating device as claimed in claim 3, wherein
an input action accepted by the first contact sensor is an action relating to heating of the aerosol source, and an input action accepted by the second contact sensor is an action relating to checking a physical quantity.

5. The aerosol-generating device as claimed in claim 4, wherein
the physical quantity is at least one of: remaining battery capacity, number of aerosol sources inhalable with that remaining battery capacity, remaining number of times for which inhalation is possible or inhalation time with the aerosol source currently in use, and cumulative value of number of inhalations up to the present time.

6. The aerosol-generating device as claimed in any

one of claims 1 to 3, wherein

the control unit permits only processing in response to an action on either one of the first contact sensor and the second contact sensor while heating by the heating unit is in progress.

7. The aerosol-generating device as claimed in claim 6, wherein

the housing comprises: a first face provided with an opening for insertion of the aerosol source or a delivery port through which the heated aerosol source is delivered to the outside, a second face provided in a direction intersecting the first face, and a third face provided between the first face and the second face,

the first contact sensor detects an action on the third face relating to heating of the aerosol source, and

the control unit performs only processing in response to an action on the first contact sensor while heating by the heating unit is in progress.

8. The aerosol-generating device as claimed in claim 7, wherein

the control unit performs processing in response to an action on the second contact sensor when a predetermined event has been detected, even if heating by the heating unit is in progress.

9. The aerosol-generating device as claimed in claim 8, wherein

the control unit performs processing in response to an action on the second contact sensor only within a predetermined time after the predetermined event was detected.

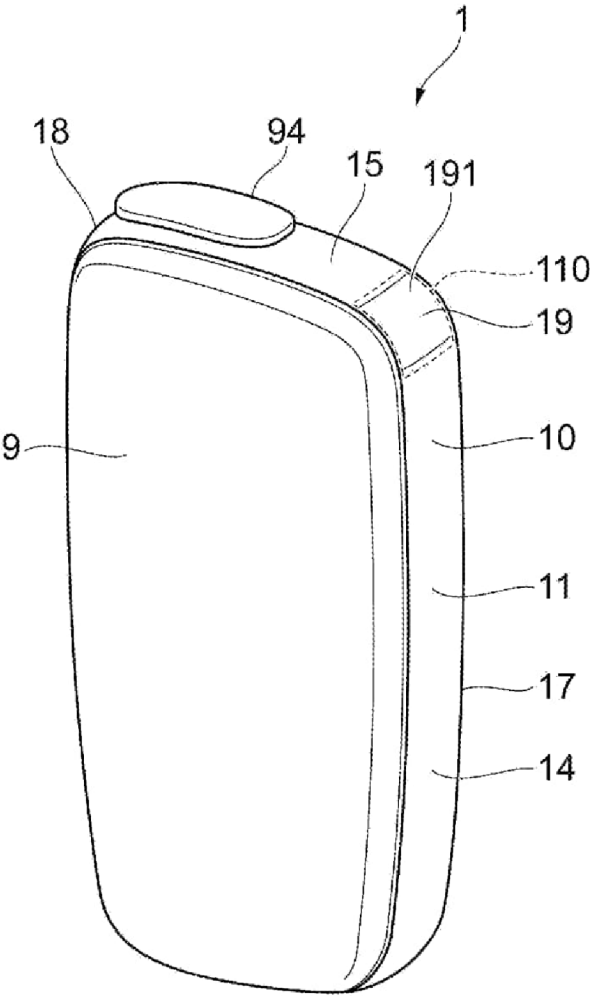
10. The aerosol-generating device as claimed in claim 6, wherein

when one sensor out of the first contact sensor and the second contact sensor has a large contact area with another object, the control unit performs only processing in response to an action on the other sensor.

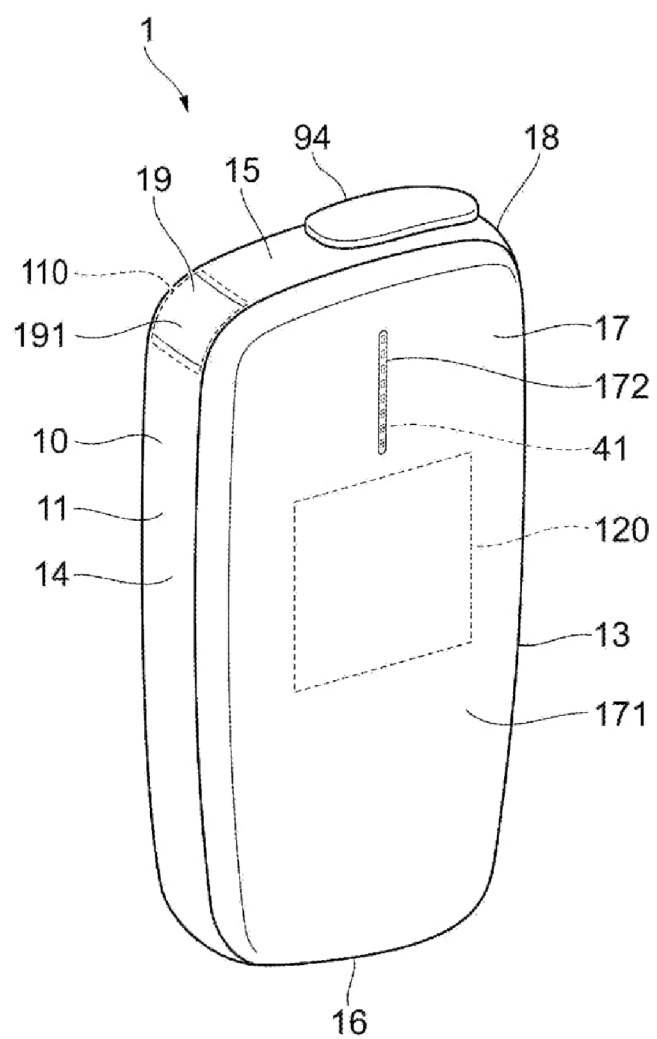
11. The aerosol-generating device as claimed in claim 10, wherein

the control unit performs processing in response to an action on said other sensor only within a predetermined time after a predetermined action was detected.

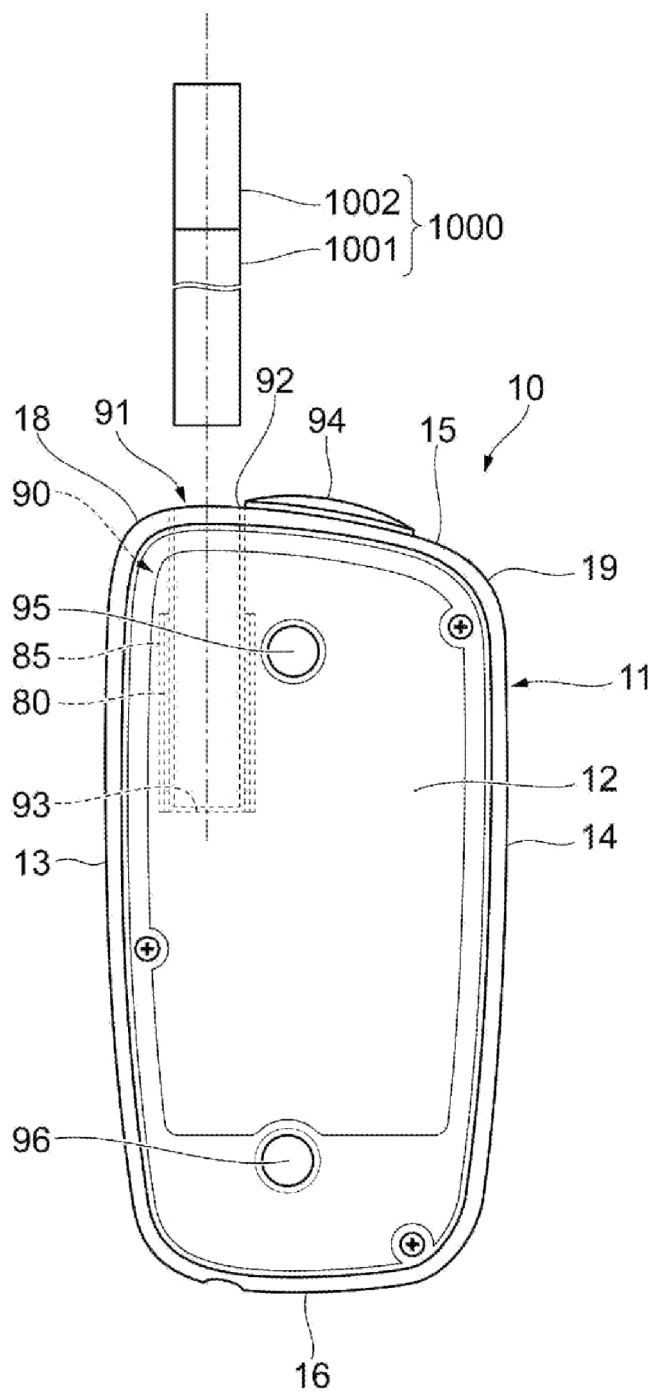
[Fig. 1]



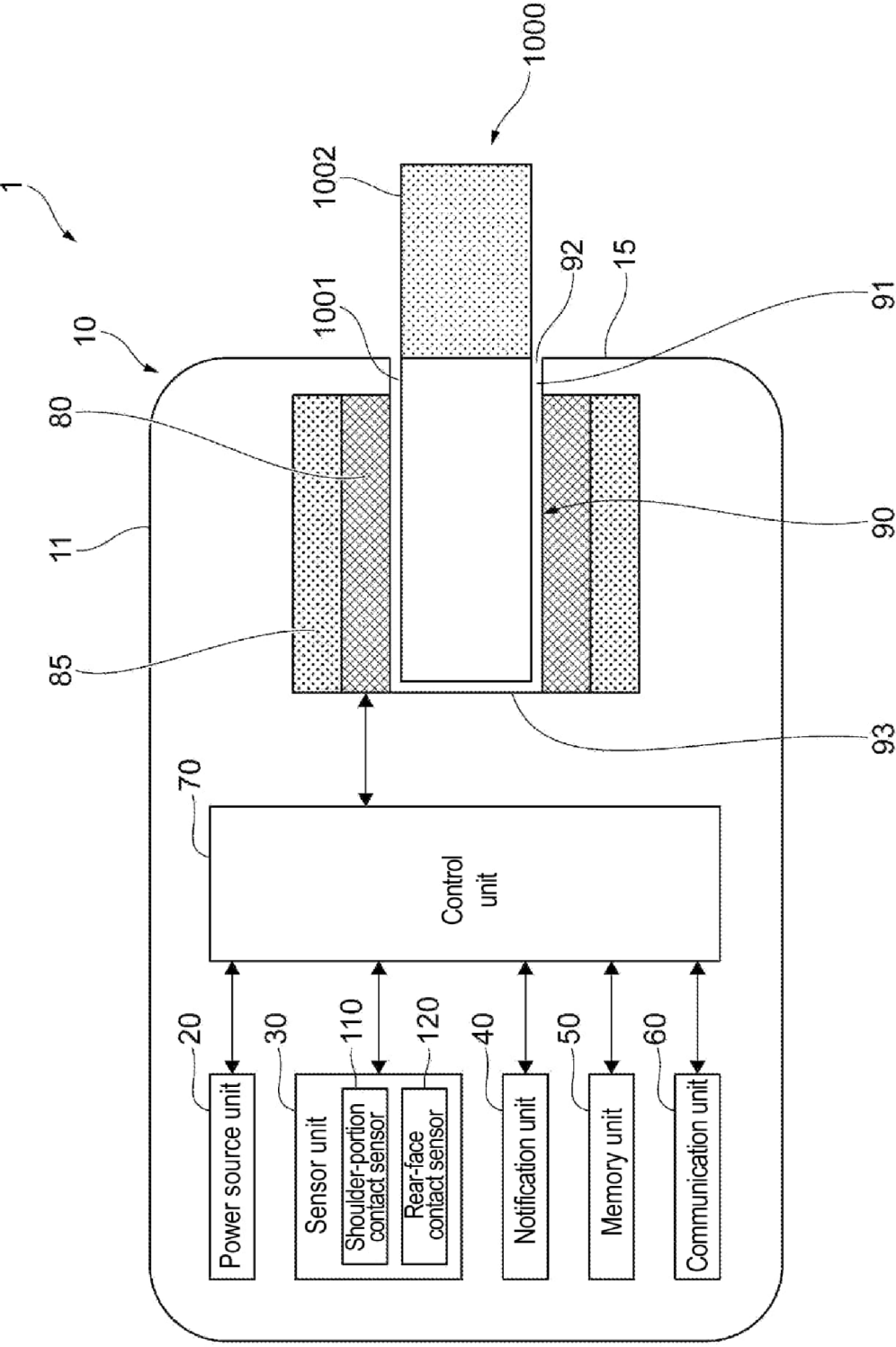
[Fig. 2]



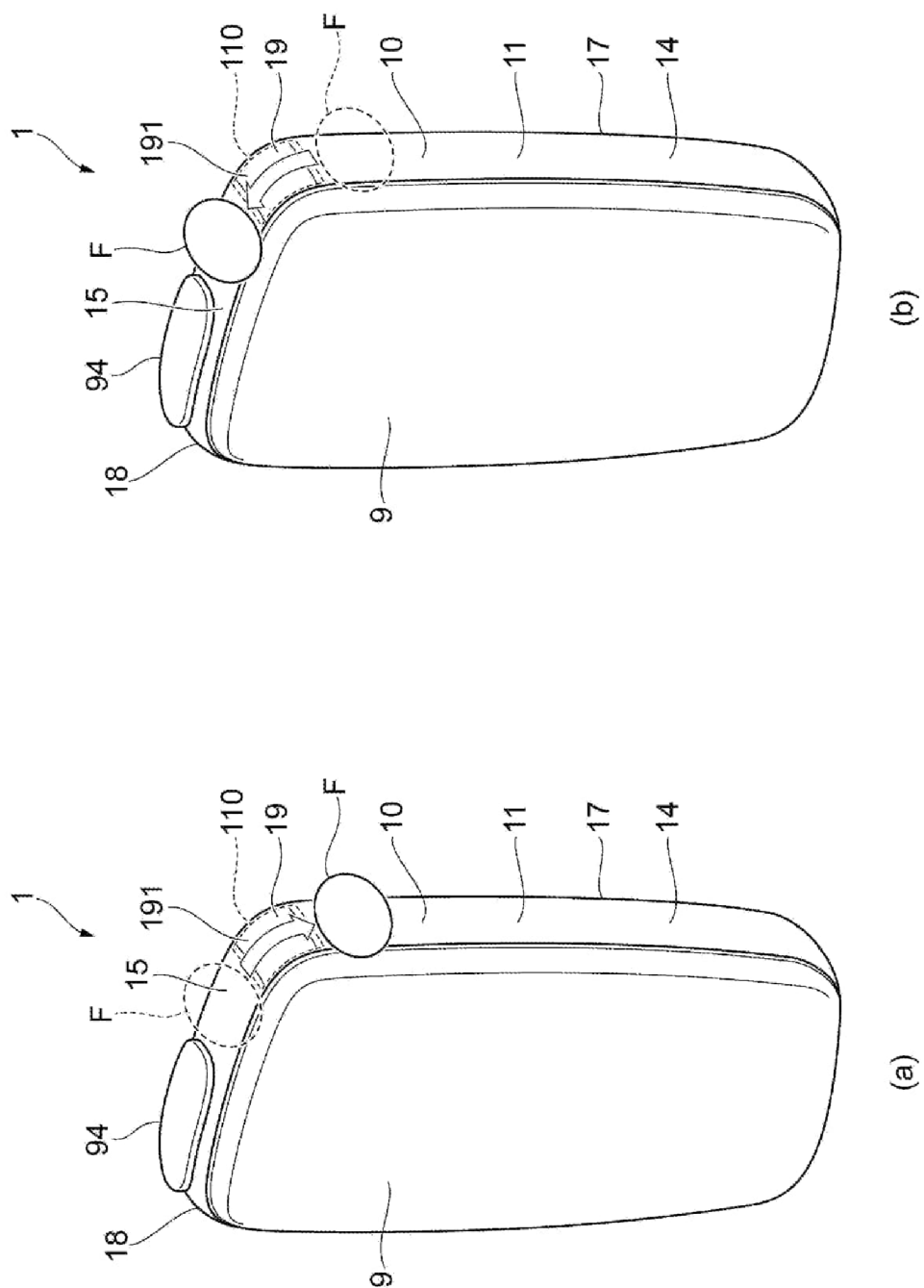
[Fig. 3]



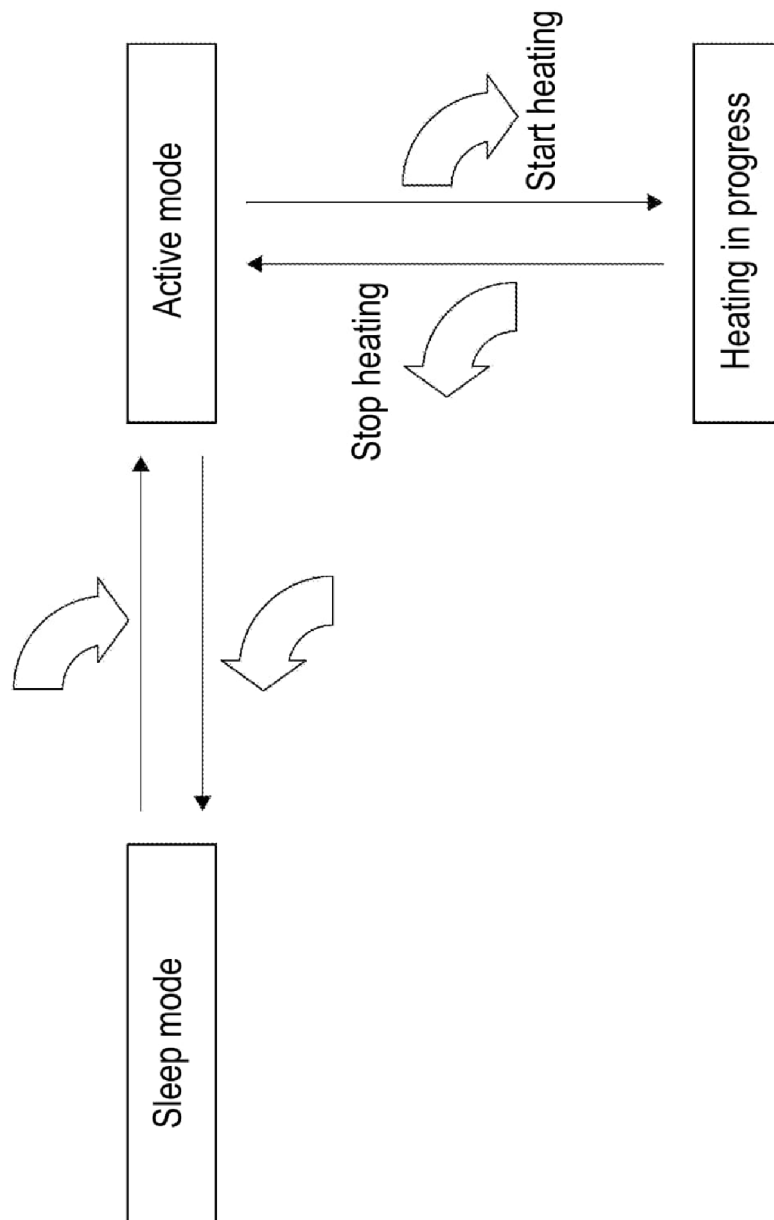
[Fig. 4]



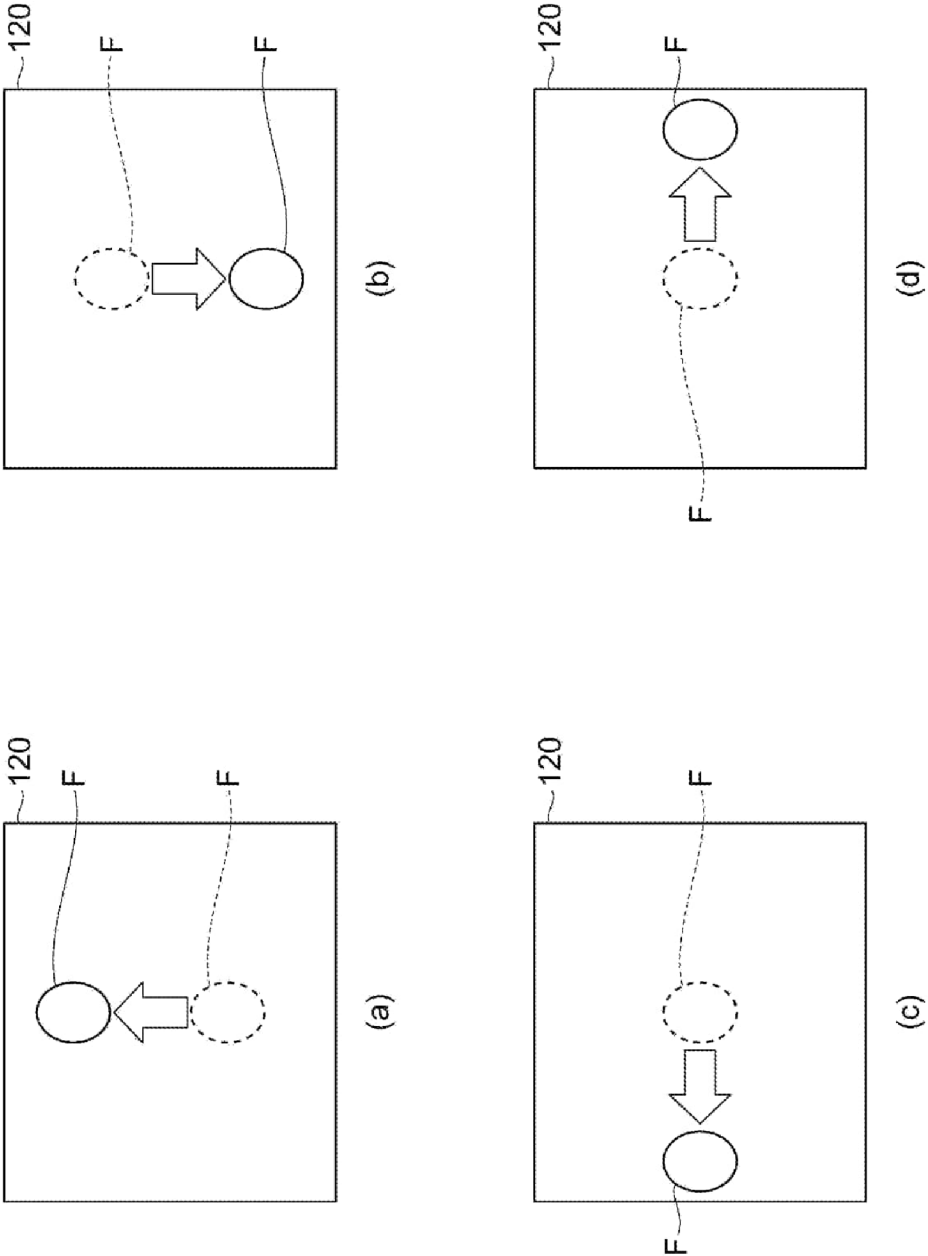
[Fig. 5]



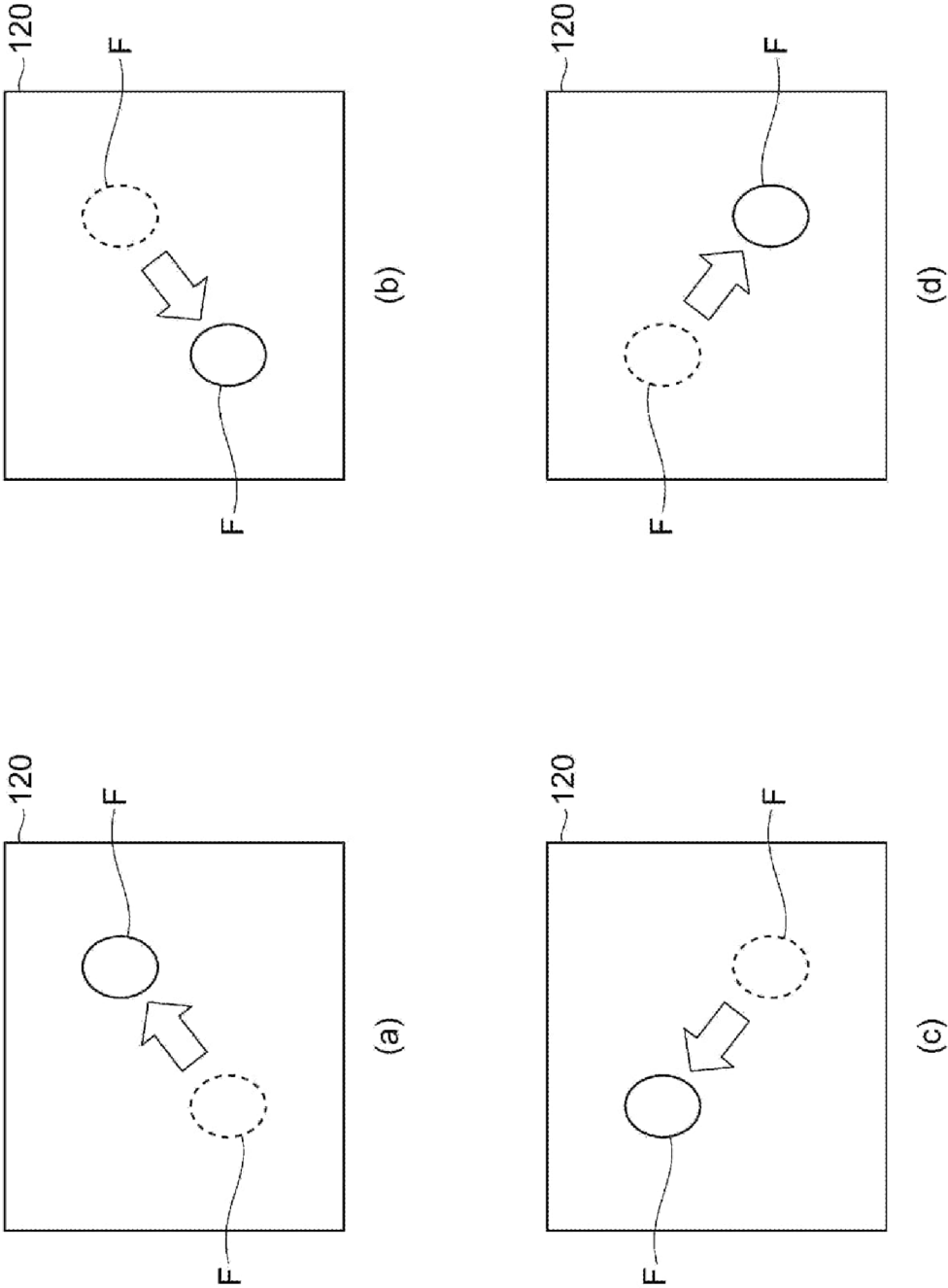
[Fig. 6]



[Fig. 7]



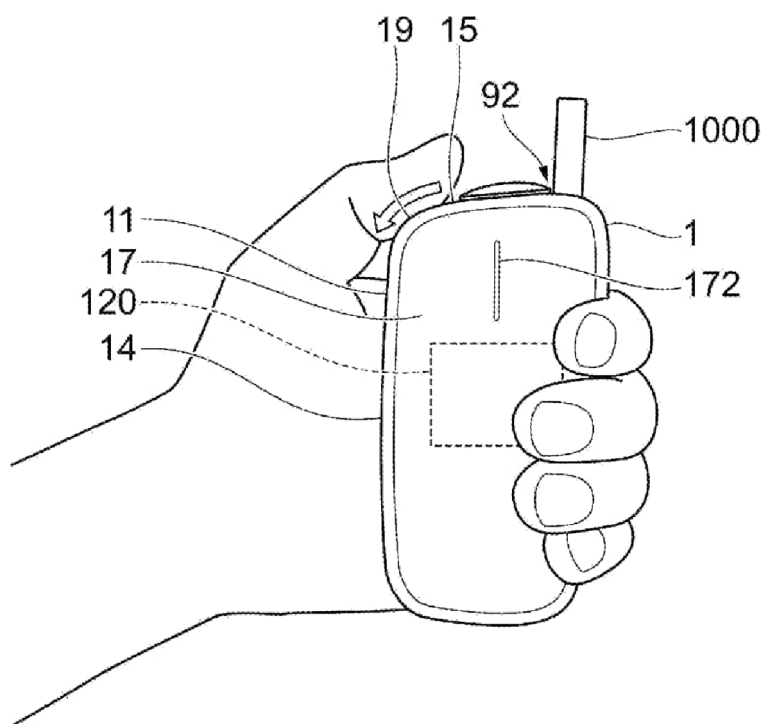
[Fig. 8]



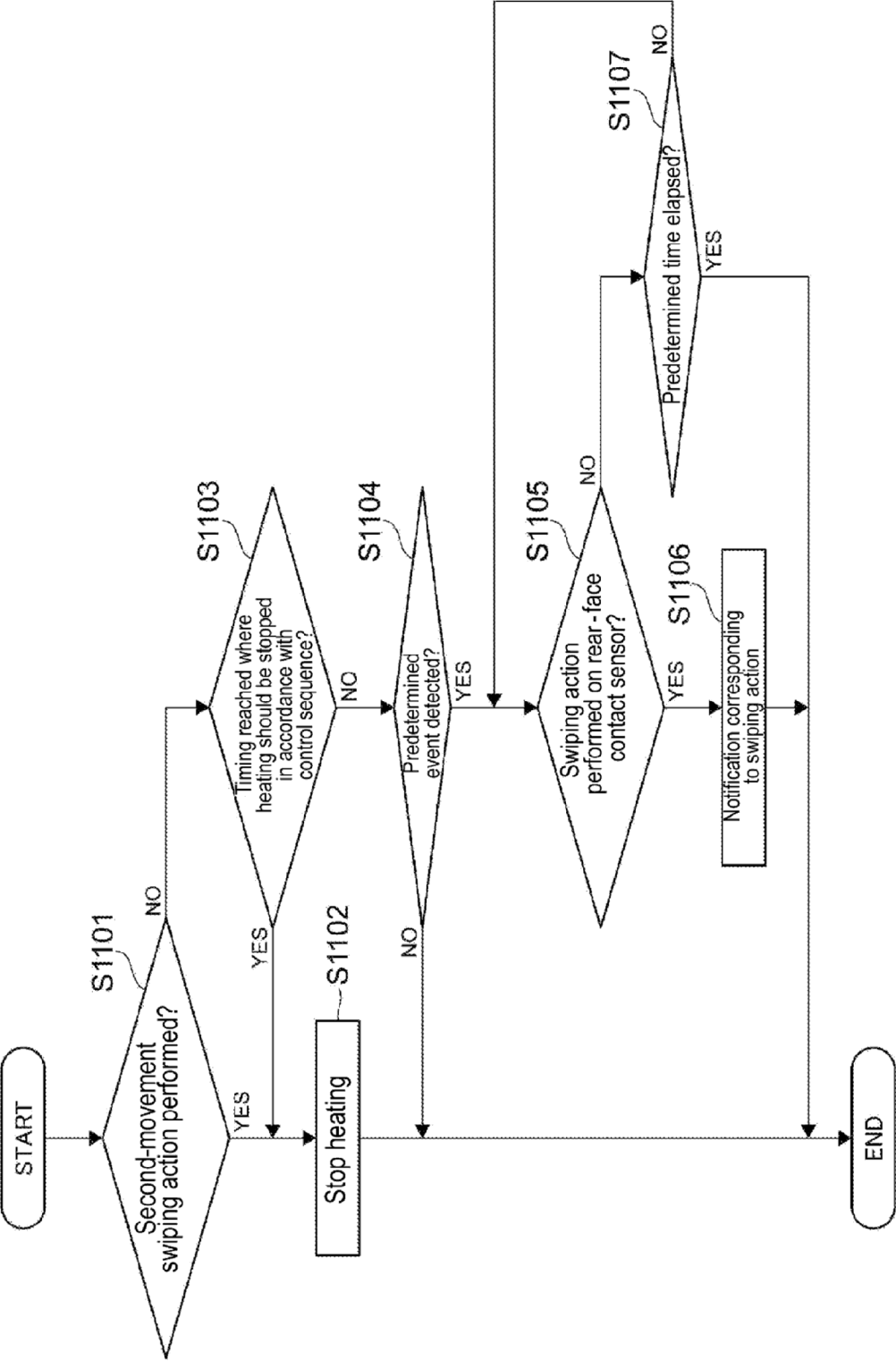
[Fig. 9]

Swiping action	Notification content
	Remaining battery capacity
	Number of aerosol sources inhalable with remaining battery capacity
	Remaining number of times for which inhalation is possible or remaining inhalation time with aerosol source currently in use
	Cumulative value of number of inhalations up to present time

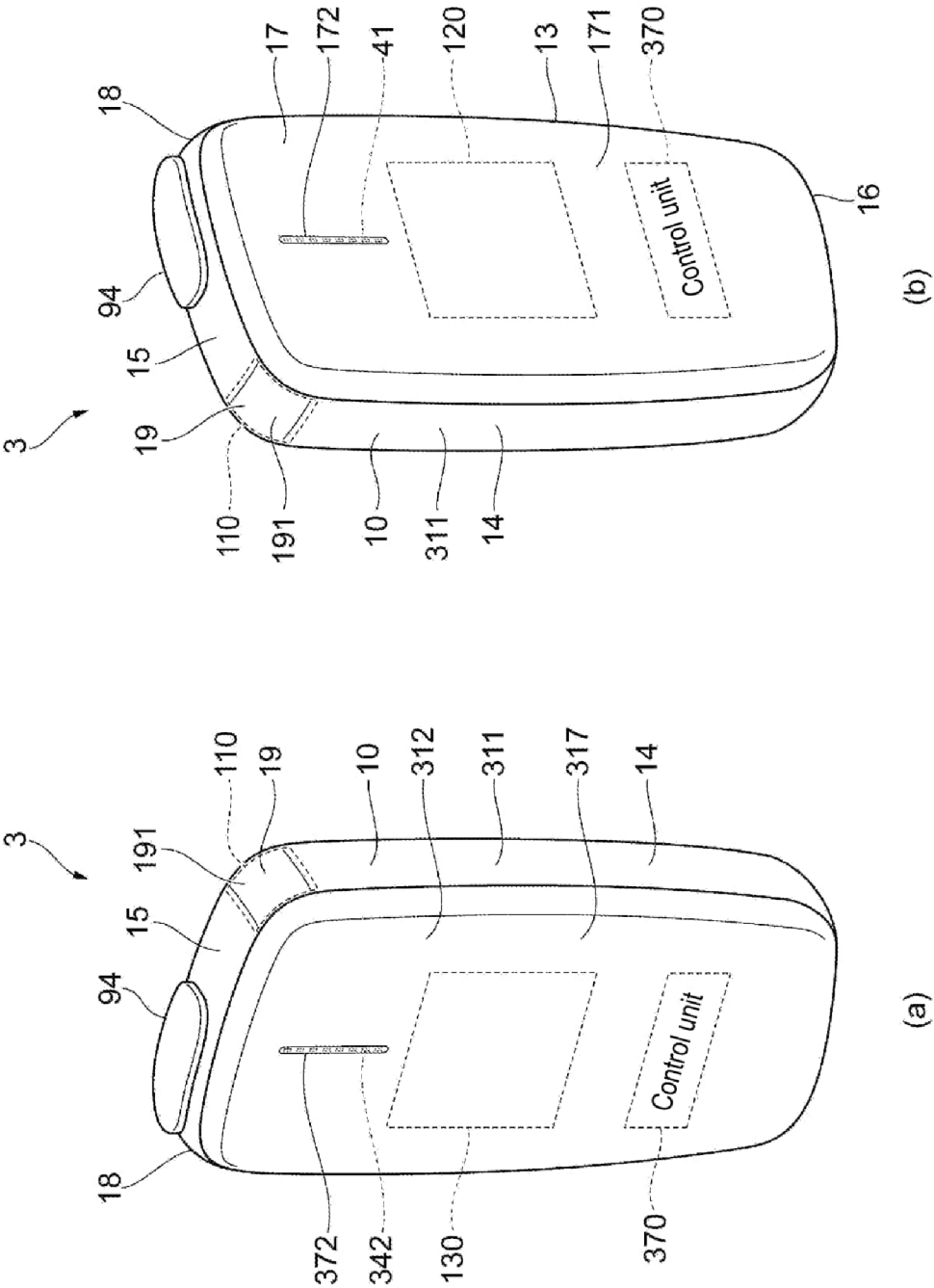
[Fig. 10]



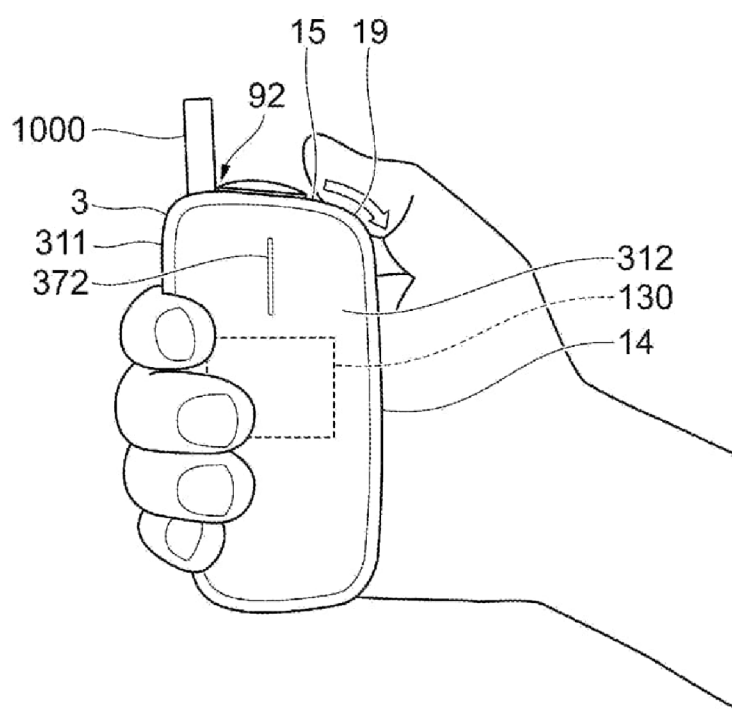
[Fig. 11]



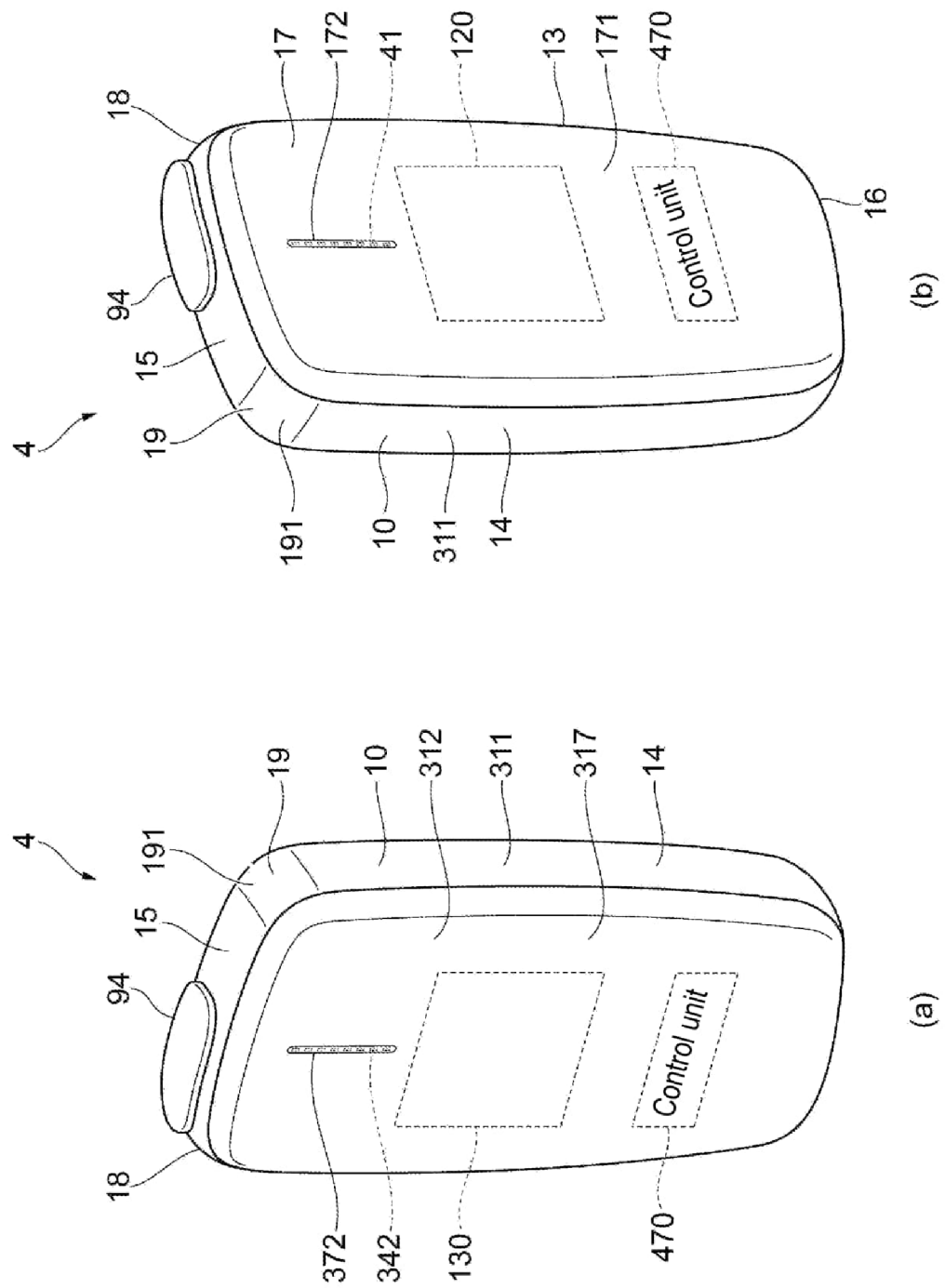
[Fig. 12]



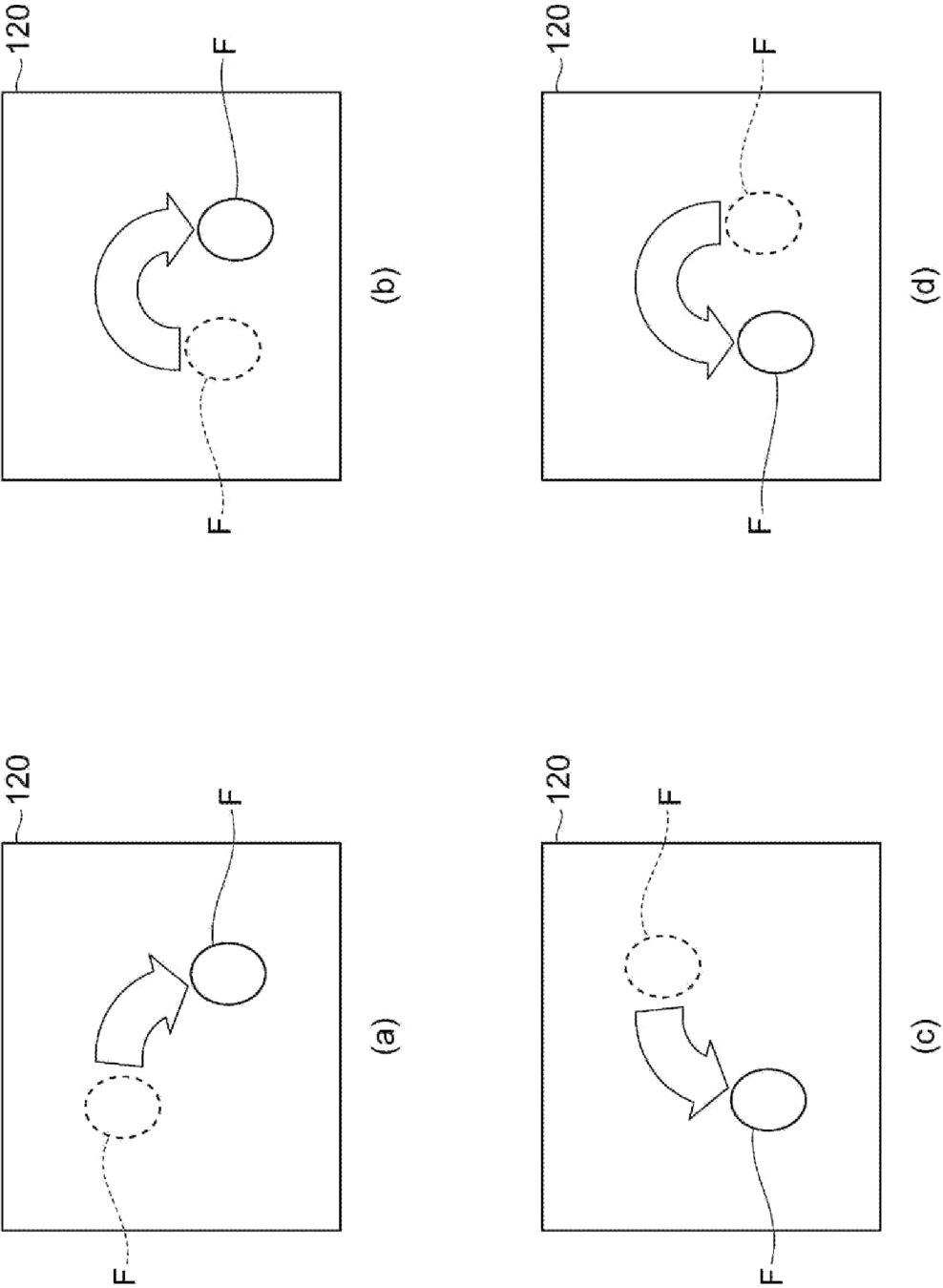
[Fig. 13]



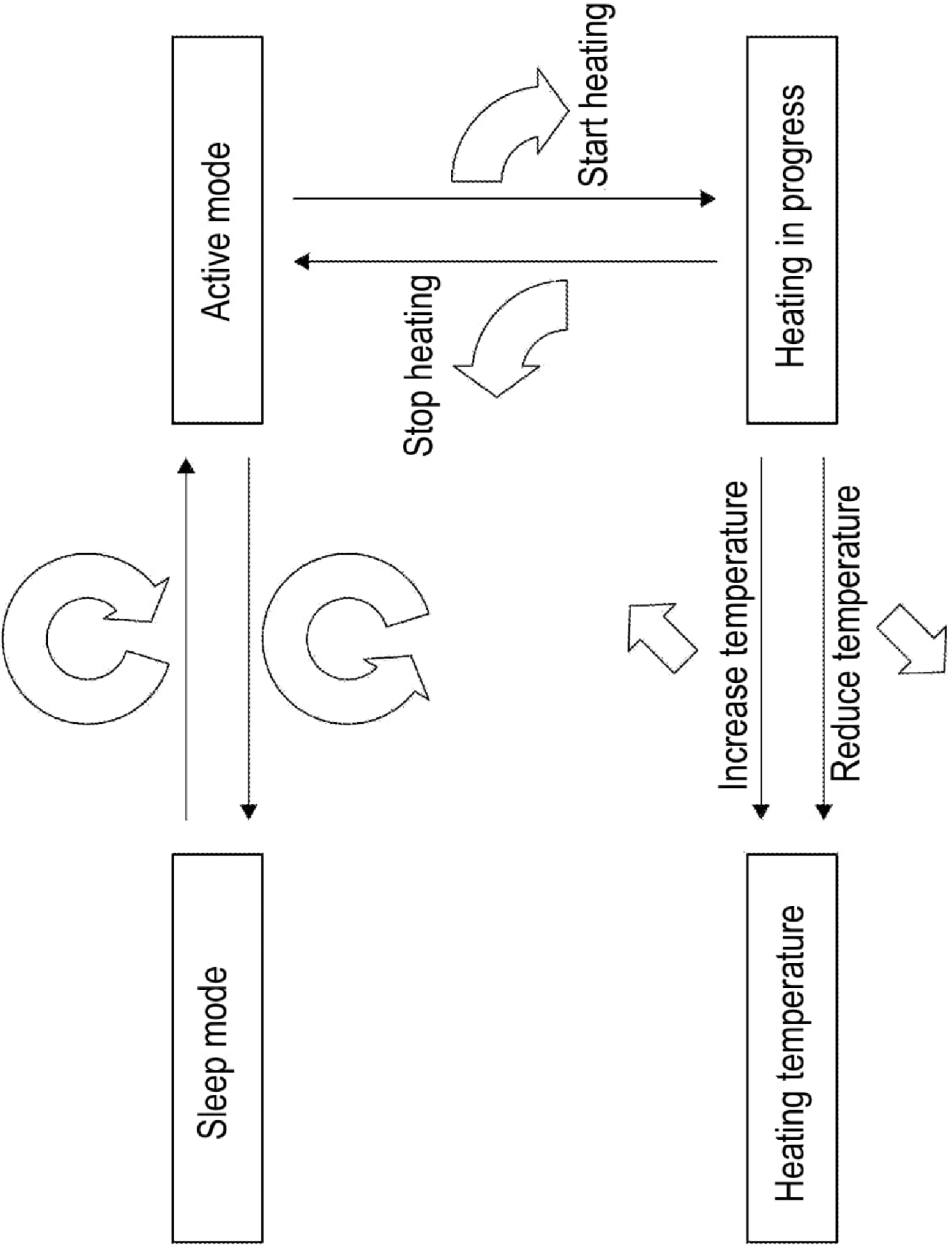
[Fig. 14]



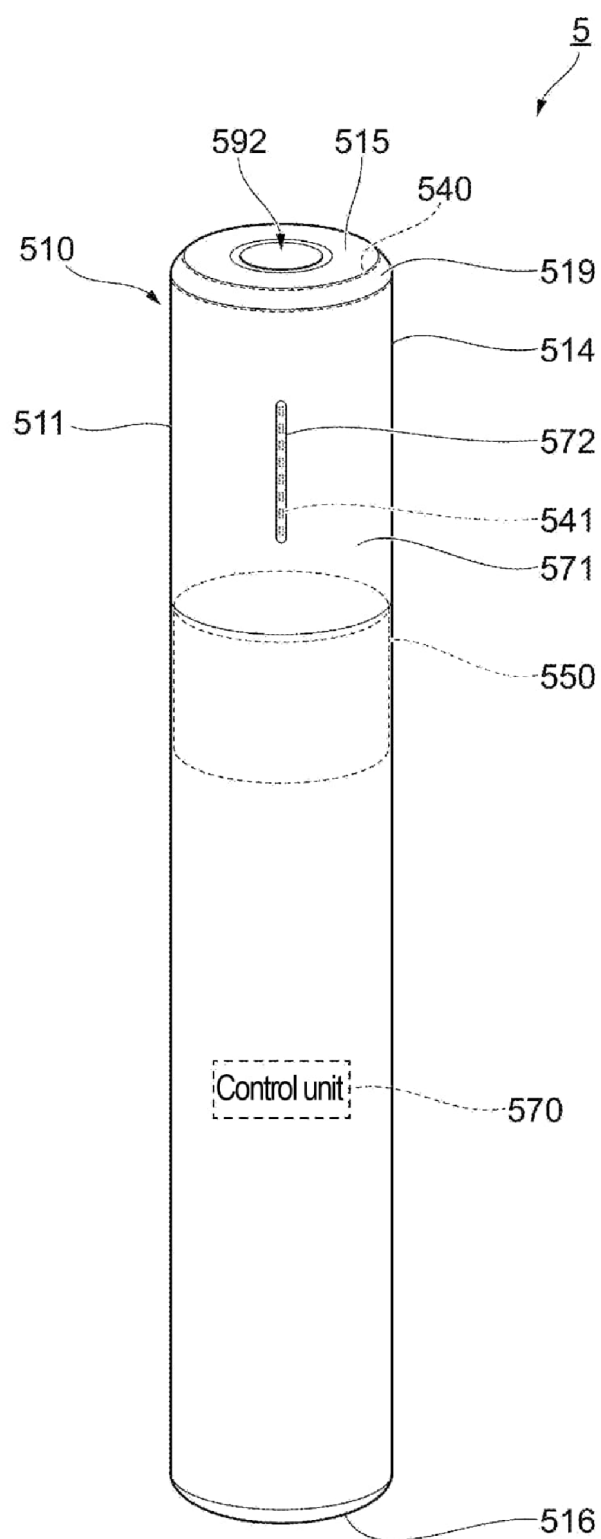
[Fig. 15]



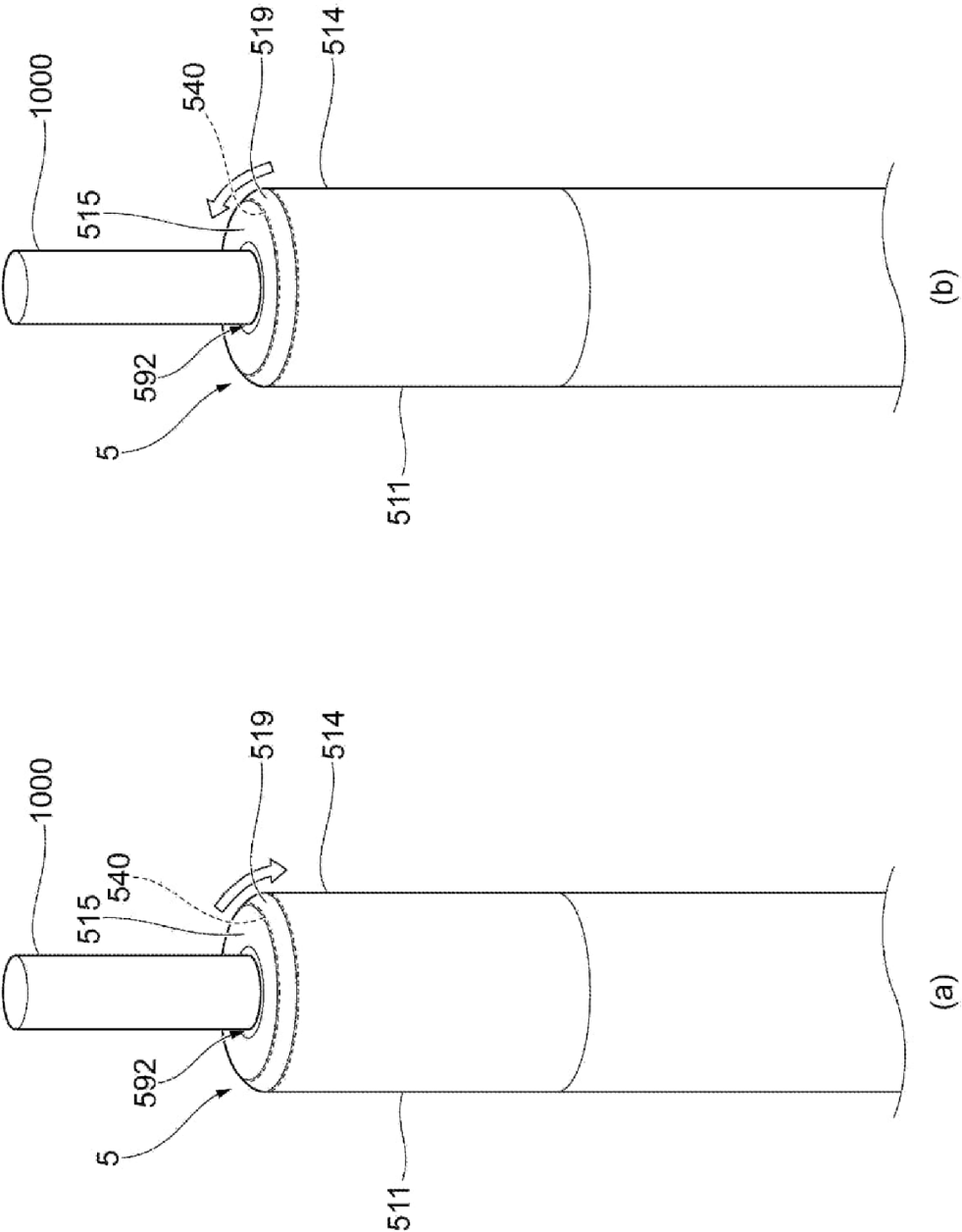
[Fig. 16]



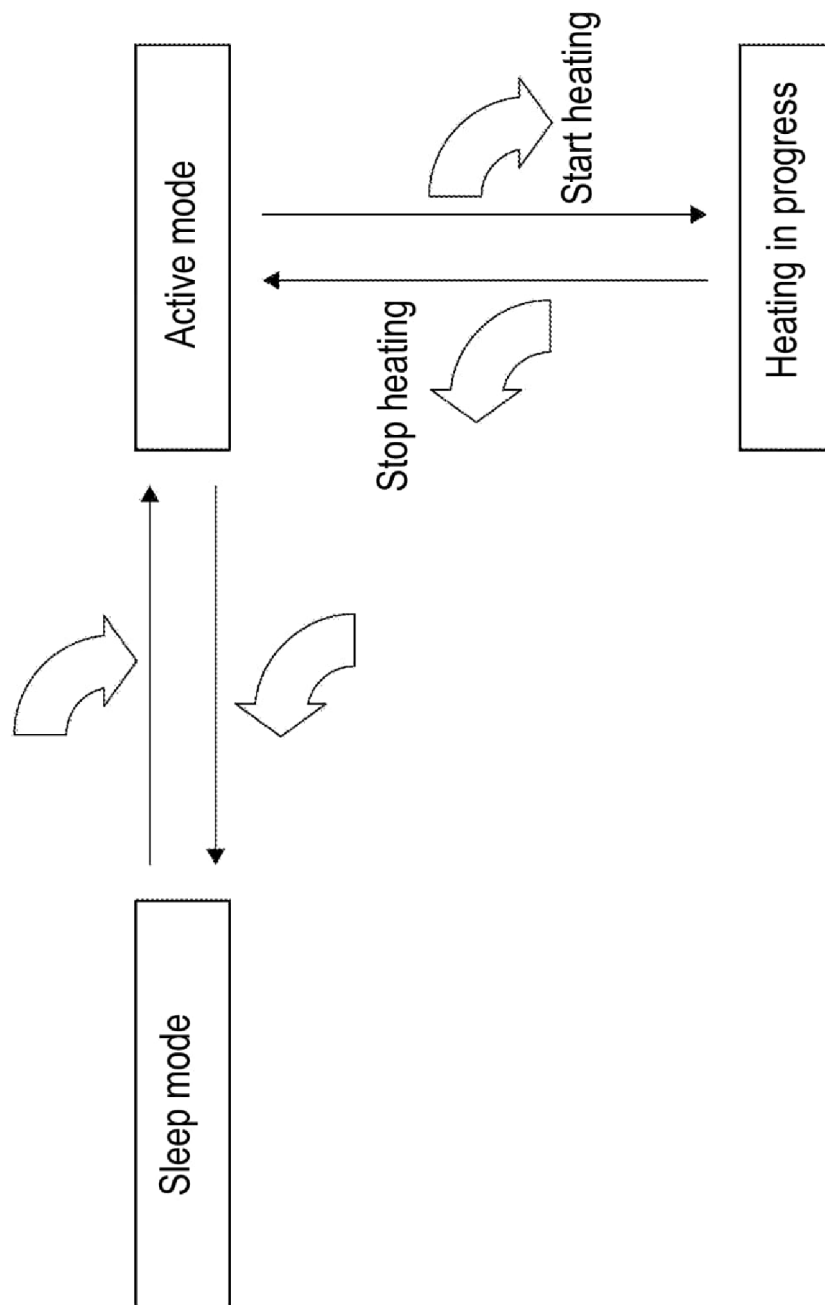
[Fig. 17]



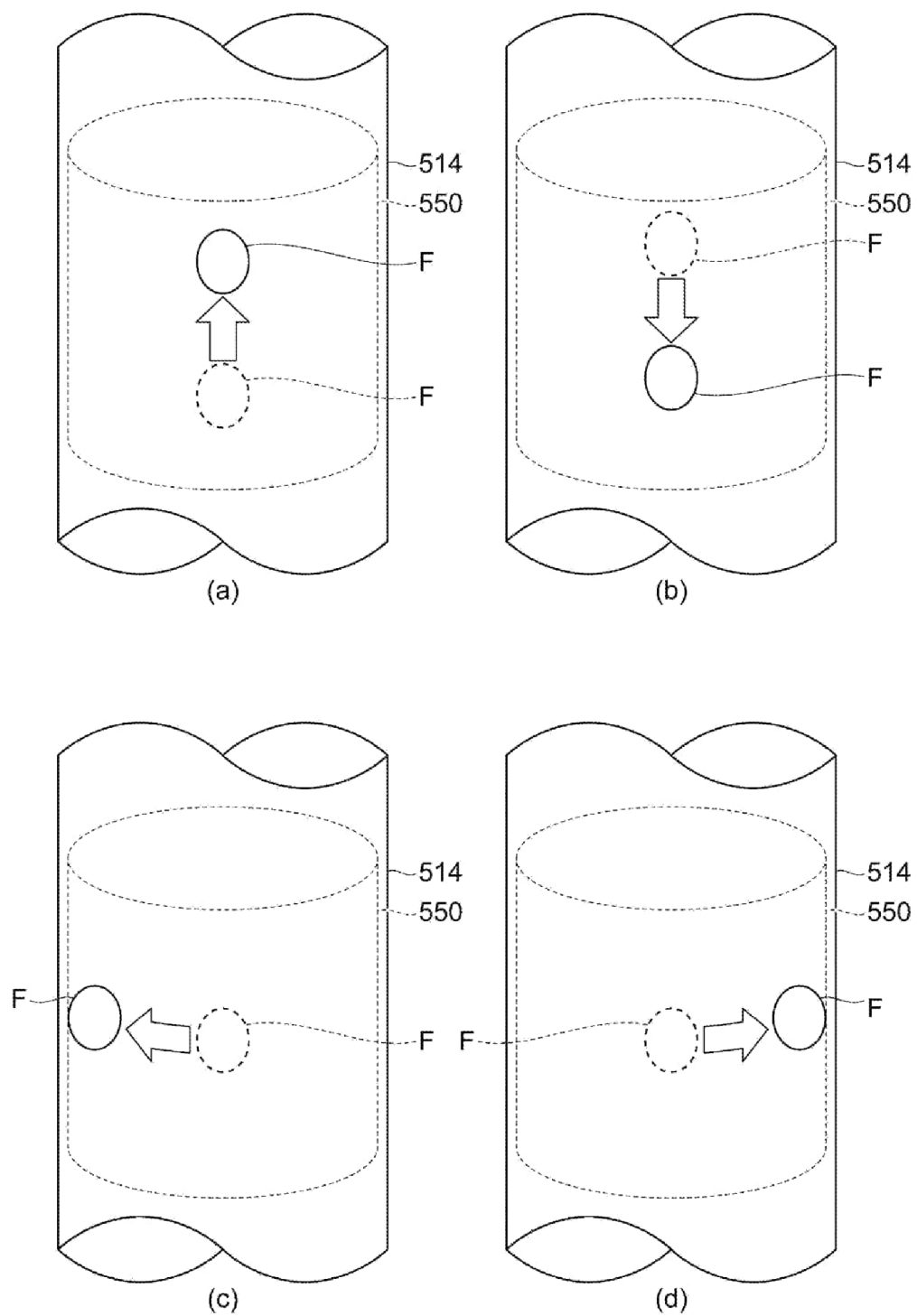
[Fig. 18]



[Fig. 19]



[Fig. 20]



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2023/044490

A. CLASSIFICATION OF SUBJECT MATTER

A24F 40/51(2020.01)i

FI: A24F40/51

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A24F40/51

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

Published examined utility model applications of Japan 1922-1996
 Published unexamined utility model applications of Japan 1971-2024
 Registered utility model specifications of Japan 1996-2024
 Published registered utility model applications of Japan 1994-2024

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2023-546347 A (JT INTERNATIONAL SA) 02 November 2023 (2023-11-02) paragraphs [0023]-[0038], fig. 1-3	1-2
A		6-11
Y	JP 2021-500004 A (PHILIP MORRIS PRODUCTS S.A.) 07 January 2021 (2021-01-07) paragraphs [0009], [0107]-[0119], fig. 5	1-5
A		6-11
Y	JP 2022-533744 A (KT&G CORPORATION) 25 July 2022 (2022-07-25) paragraphs [0062]-[0063], fig. 1-3	1-5
A		6-11
Y	JP 2017-523785 A (NICOVENTURES HOLDINGS LIMITED) 24 August 2017 (2017-08-24) paragraphs [0034], [0045]	1-5
A		6-11

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2023/044490

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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REFERENCES CITED IN THE DESCRIPTION

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