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(54) **AEROSOL PROVISION DEVICE**

(57) There is provided an aerosol provision device comprising a receptacle (205) defining a heating chamber (201) for receiving at least a portion of an article (300) comprising aerosol generating material. The receptacle comprises a base (270b). An aperture (206) is provided in the base and a ridge (290) upstands from the base and surrounds the aperture. The ridge is configured to contact the article.

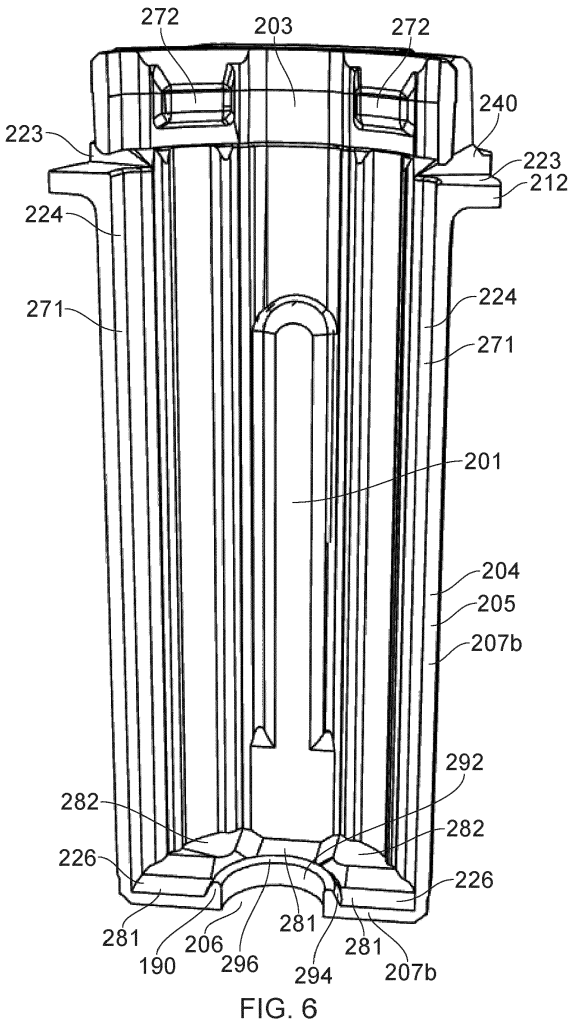

FIG. 6

EP 4 578 313 A1

Description

TECHNICAL FIELD

[0001] The present invention relates to an aerosol provision device and an aerosol provision system.

BACKGROUND

[0002] Smoking articles such as cigarettes, cigars and the like burn tobacco during use to create tobacco smoke. Attempts have been made to provide alternatives to these articles by creating products that release compounds without combusting. Examples of such products are so-called "heat not burn" products or tobacco heating devices or products, which release compounds by heating, but not burning, material. The material may be, for example, tobacco or other non-tobacco products, which may or may not contain nicotine.

SUMMARY

[0003] In accordance with embodiments described herein, there is provided an aerosol provision device comprising: a receptacle defining a heating chamber for receiving at least a portion of an article comprising aerosol generating material; the receptacle comprising a base; an aperture in the base; and a ridge upstanding from the base and surrounding the aperture, wherein the ridge is configured to contact the article.

[0004] In an embodiment of any of the above, the ridge may be configured to form an air flow barrier when contacting the article, to prevent air flow from leaving a region including the aperture.

[0005] In an embodiment of any of the above, the ridge may be configured to cooperate with the article to enclose the aperture.

[0006] In an embodiment of any of the above, the ridge may be arranged to divide an end of the article into an inner region and a peripheral region.

[0007] In an embodiment of any of the above, the aerosol provision device may comprise an air path arranged to direct air from an exterior of the aerosol provision device to an end of the article, the air path passing through the aperture of the receptacle. In an embodiment of any of the above, the air path is an inner air path.

[0008] In an embodiment of any of the above, the air path may be a first air path and the aerosol provision device may comprise a second air path. In an embodiment of any of the above, the second air path may be an outer air path. In an embodiment of any of the above, the second air path may be arranged to direct air from an exterior of the aerosol provision device to an end of the article. In an embodiment of any of the above, the second air path may be at least partly defined between the receptacle and the article in use.

[0009] In an embodiment of any of the above, the ridge may be configured to fluidly separate the first air path from the second air path.

[0010] In an embodiment of any of the above, the receptacle may be configured such that there is a gap between the receptacle and the article when the article is received in the heating chamber.

[0011] In an embodiment of any of the above, the ridge may be configured to contact a distal end of the article

[0012] In an embodiment of any of the above, the receptacle may comprise a peripheral wall.

[0013] In an embodiment of any of the above, a base surface may be defined between the ridge and the peripheral wall.

[0014] In an embodiment of any of the above, the peripheral wall may be a tubular wall.

[0015] In an embodiment of any of the above, the ridge may be configured to space an end of the article from the base surface.

[0016] In an embodiment of any of the above, the base surface may be annular.

[0017] In an embodiment of any of the above, the base surface may be planar.

[0018] In an embodiment of any of the above, the aerosol provision device may comprise a heating element. In an embodiment of any of the above, the heating element is a resistive heating element. In an embodiment of any of the above, the heating element is heatable by penetration with a varying magnetic field. In an embodiment of any of the above, the aerosol provision device comprises a magnetic field generator for generating a varying magnetic field to heat a heating element. In an embodiment of any of the above, the aerosol provision device comprises and inductive heating assembly.

[0019] In an embodiment of any of the above, the heating element may extend through the aperture into the heating chamber.

[0020] In an embodiment of any of the above, the heating element may upstand in the heating chamber.

[0021] In an embodiment of any of the above, the heating element may be spaced from a rim of the aperture.

[0022] In an embodiment of any of the above, the ridge may extend circumferentially around the aperture.

[0023] In an embodiment of any of the above, the ridge may be a lip of the aperture.

[0024] In an embodiment of any of the above, the ridge may define the aperture.

[0025] In an embodiment of any of the above, the aperture may be configured to form at least a portion of an air path into the heating chamber

[0026] In an embodiment of any of the above, the second air path may be at least partly defined within the heating chamber.

[0027] In an embodiment of any of the above, the ridge may be arranged to define a barrier between the first air path and the second air path at the base.

[0028] In an embodiment of any of the above, the second air path may be at least partly defined between the article and the receptacle.

[0029] In an embodiment of any of the above, the ridge may be a barrier member.

[0030] In an embodiment of any of the above, the ridge may be free from breaks.

[0031] In an embodiment of any of the above, the aerosol provision device may comprise a main housing. In an embodiment of any of the above, the receptacle may be received in the main housing.

[0032] In an embodiment of any of the above, the aerosol provision device may comprise a removal mechanism.

[0033] In an embodiment of any of the above, the removal mechanism may comprise the receptacle.

[0034] In an embodiment of any of the above, the main housing may comprise a peripheral wall, and the receptacle may be received in the peripheral wall.

[0035] In an embodiment of any of the above, the peripheral wall of the main housing may be a tubular wall.

[0036] In an embodiment of any of the above, the removal mechanism may be releasably retained, in use, to the main housing

[0037] In accordance with embodiments described herein, there is provided an aerosol provision system comprising the aerosol provision device of the preceding aspect and an article comprising aerosol generating material.

[0038] In accordance with embodiments described herein, there is provided an aerosol provision device comprising: a receptacle defining a heating chamber for receiving at least a portion of an article comprising aerosol generating material; the receptacle comprising a base.

BRIEF DESCRIPTION OF THE DRAWINGS

[0039] Various embodiments will now be described, by way of example only, and with reference to the accompanying drawings, in which:

Figure 1 shows a perspective view of an aerosol provision device located within a charging unit;

Figure 2 shows a perspective cross-sectional view of a portion of the aerosol provision device of Figure 1;

Figure 3 shows a cross-sectional view of a portion of the aerosol provision device of Figure 1;

Figure 4 shows a perspective view of a portion of the aerosol provision device of Figure 1 with a removal mechanism removed;

Figure 5 shows a perspective view of a portion of a removal mechanism of the aerosol provision device of Figure 1;

Figure 6 shows a perspective cross-sectional view of a portion of a removal mechanism of the aerosol provision device of Figure 1; and

Figure 7 shows a perspective cross-sectional view of a portion of a removal mechanism of the aerosol provision device of Figure 1.

DETAILED DESCRIPTION

[0040] According to the present disclosure, a "non-combustible" aerosol provision system is one where a constituent aerosol-generating material of the aerosol provision system (or component thereof) is not combusted or burned in order to facilitate delivery of at least one substance to a user.

[0041] In some embodiments, the delivery system is a non-combustible aerosol provision system, such as a powered non-combustible aerosol provision system.

[0042] In some embodiments, the non-combustible aerosol provision system is an electronic cigarette, also known as a vaping device or electronic nicotine delivery system (END), although it is noted that the presence of nicotine in the aerosol-generating material is not a requirement.

[0043] In some embodiments, the non-combustible aerosol provision system is an aerosol-generating material heating system, also known as a heat-not-burn system. An example of such a system is a tobacco heating system.

[0044] In some embodiments, the non-combustible aerosol provision system is a hybrid system to generate aerosol using a combination of aerosol-generating materials, one or a plurality of which may be heated. Each of the aerosol-generating materials may be, for example, in the form of a solid, liquid or gel and may or may not contain nicotine. In some embodiments, the hybrid system comprises a liquid or gel aerosol-generating material and a solid aerosol-generating material. The solid aerosol-generating material may comprise, for example, tobacco or a non-tobacco product.

[0045] Typically, the non-combustible aerosol provision system may comprise a non-combustible aerosol provision device and a consumable for use with the non-combustible aerosol provision device.

[0046] In some embodiments, the disclosure relates to consumables comprising aerosol-generating material and configured to be used with non-combustible aerosol provision devices. These consumables are sometimes referred to as articles throughout the disclosure.

[0047] In some embodiments, the non-combustible aerosol provision system, such as a non-combustible aerosol provision device thereof, may comprise a power source and a controller. The power source may, for example, be an electric power source or an exothermic power source. In some embodiments, the exothermic power source comprises a carbon substrate which may be energised so as to distribute power in the form of heat to an aerosol-generating material or to a heat transfer material in proximity to the exothermic power

source.

[0048] In some embodiments, the non-combustible aerosol provision system may comprise an area for receiving the consumable, an aerosol generator, an aerosol generation area, a housing, a mouthpiece, a filter and/or an aerosol-modifying agent.

[0049] In some embodiments, the consumable for use with the non-combustible aerosol provision device may comprise aerosol-generating material, an aerosol-generating material storage area, an aerosol-generating material transfer component, an aerosol generator, an aerosol generation area, a housing, a wrapper, a filter, a mouthpiece, and/or an aerosol-modifying agent.

[0050] Aerosol-generating material is a material that is capable of generating aerosol, for example when heated, irradiated or energized in any other way. Aerosol-generating material may, for example, be in the form of a solid, liquid or semi-solid (such as a gel) which may or may not contain an active substance and/or flavourants.

[0051] The aerosol-generating material may comprise a binder and an aerosol former. Optionally, an active and/or filler may also be present. Optionally, a solvent, such as water, is also present and one or more other components of the aerosol-generating material may or may not be soluble in the solvent. In some embodiments, the aerosol-generating material is substantially free from botanical material. In particular, in some embodiments, the aerosol-generating material is substantially tobacco free.

[0052] The aerosol-generating material may comprise or be an aerosol-generating film. The aerosol-generating film may be formed by combining a binder, such as a gelling agent, with a solvent, such as water, an aerosol-former and one or more other components, such as active substances, to form a slurry and then heating the slurry to volatilise at least some of the solvent to form the aerosol-generating film. The slurry may be heated to remove at least about 60 wt%, 70 wt%, 80 wt%, 85 wt% or 90 wt% of the solvent. The aerosol-generating film may be a continuous film or a discontinuous film, such an arrangement of discrete portions of film on a support. The aerosol-generating film may be substantially tobacco free.

[0053] The aerosol-generating film may comprise or be a sheet, which may optionally be shredded to form a shredded sheet.

[0054] The aerosol-generating material may comprise one or more active substances and/or flavours, one or more aerosol-former materials, and optionally one or more other functional material.

[0055] An aerosol generator is an apparatus configured to cause aerosol to be generated from the aerosol-generating material. In some embodiments, the aerosol generator is a heater configured to subject the aerosol-generating material to heat energy, so as to release one or more volatiles from the aerosol-generating material to form an aerosol. In some embodiments, the aerosol generator is configured to cause an aerosol to be generated from the aerosol-generating material without heating. For example, the aerosol generator may be configured to subject the aerosol-generating material to one or more of vibration, increased pressure, or electrostatic energy.

[0056] A consumable is an article comprising or consisting of aerosol-generating material, part or all of which is intended to be consumed during use by a user. A consumable may comprise one or more other components, such as an aerosol generating material storage area, an aerosol-generating material transfer component, an aerosol generation area, a housing, a wrapper, a mouthpiece, a filter and/or an aerosol-modifying agent. A consumable may also comprise an aerosol generator, such as a heater, that emits heat to cause the aerosol-generating material to generate aerosol in use. The heater may, for example, comprise combustible material, a material heatable by electrical conduction, or a susceptor.

[0057] A susceptor is a heating material that is heatable by penetration with a varying magnetic field, such as an alternating magnetic field. The susceptor may be an electrically-conductive material, so that penetration thereof with a varying magnetic field causes induction heating of the heating material. The heating material may be magnetic material, so that penetration thereof with a varying magnetic field causes magnetic hysteresis heating of the heating material. The susceptor may be both electrically-conductive and magnetic, so that the susceptor is heatable by both heating mechanisms. The aerosol provision device that is configured to generate the varying magnetic field is referred to as a magnetic field generator, herein.

[0058] Non-combustible aerosol provision systems may comprise a modular assembly including both a reusable aerosol provision device and a replaceable aerosol generating article. In some implementations, the non-combustible aerosol provision device may comprise a power source and a controller (or control circuitry). The power source may, for example, comprise an electric power source, such as a battery or rechargeable battery. In some implementations, the non-combustible aerosol provision device may also comprise an aerosol generating component. However, in other implementations the aerosol generating article may comprise partially, or entirely, the aerosol generating component.

[0059] Induction heating is a process in which an electrically-conductive object, referred to as a susceptor, is heated by penetrating the object with a varying magnetic field. The process is described by Faraday's law of induction and Ohm's law. An induction heater may comprise an electromagnet and a device for passing a varying electrical current, such as an alternating current, through the electromagnet. When the electromagnet and the object to be heated are suitably relatively positioned so that the resultant varying magnetic field produced by the electromagnet penetrates the object, one or more eddy currents are generated inside the object. The object has a

resistance to the flow of electrical currents and when such eddy currents are generated in the object, their flow against the electrical resistance of the object causes the object to be heated. This process is called Joule, ohmic or resistive heating.

[0060] Magnetic hysteresis heating is a process in which an object made of a magnetic material is heated by penetrating the object with a varying magnetic field. A magnetic material can be considered to comprise many atomic-scale magnets, or magnetic dipoles. When a magnetic field penetrates such material, the magnetic dipoles align with the magnetic field. Therefore, when a varying magnetic field, such as an alternating magnetic field, for example as produced by an electromagnet, penetrates the magnetic material, the orientation of the magnetic dipoles changes with the varying applied magnetic field. Such magnetic dipole reorientation causes heat to be generated in the magnetic material.

[0061] When an object is both electrically-conductive and magnetic, penetrating the object with a varying magnetic field can cause both Joule heating and magnetic hysteresis heating in the object. Moreover, the use of magnetic material can strengthen the magnetic field, which can intensify the Joule heating.

[0062] Various embodiments will now be described in more detail.

[0063] Figure 1 shows an aerosol generating system 10 according to an embodiment comprising an aerosol provision device 100 which is shown located within a cavity of a charging unit 101. The aerosol provision device 100 is arranged to generate aerosol from an aerosol generating article 300 which may be inserted, in use, into the aerosol provision device 100.

[0064] The aerosol provision device 100 is an elongate structure, extending along a longitudinal axis. Additionally, the aerosol provision device has a proximal end 107, which will be closest to the user (e.g. the user's mouth) when in use by the user to inhale the aerosol generated by the aerosol provision device 100, as well as a distal end 109 which will be furthest from the user when in use. The proximal end 107 may also be referred to as the "mouth end". The aerosol provision device 100 also accordingly defines a proximal direction, which is directed towards the user when in use, i.e. in the direction from the distal end 109 to the proximal end 107. Further, the aerosol provision device 100 also likewise defines a distal direction, which is directed away from the user when in use, i.e. in the direction from the proximal end 107 to the distal end 109.

[0065] The aerosol provision device 100 may be removably inserted into the charging unit 101 in order to be charged. The charging unit 101 comprises a cavity for receiving the aerosol provision device 100. The aerosol provision device 100 may be inserted into the cavity via an opening. The cavity may also comprise a longitudinal opening. A portion of the aerosol provision device 100 may comprise a first side. One or more user-operable control elements such as buttons 106 which can be used to operate the aerosol provision device 100 may be provided on the first side of the aerosol provision device 100. The first side of the aerosol provision device 100 may be received in the longitudinal opening provided in the charging unit 101.

[0066] Figure 2 shows a cross sectional view of a portion of the aerosol provision device 100. The aerosol provision device 100 comprises a heating chamber 201. The aerosol provision device 100 comprises an opening 203 leading into the heating chamber 201. A rod-shaped aerosol generating article 300 comprising aerosol generating material may be inserted through the opening and may be retained within the heating chamber of the aerosol provision device 100. The aerosol generating article 300 may be heated by a heating element 202 so that an aerosol or other inhalable medium may be generated which may then be inhaled by a user of the aerosol provision device 100.

[0067] The charging unit 101 may include a slidable lid 103. When the aerosol provision device 100 is inserted into the charging unit 101 in order to be recharged, the slidable lid 103 may be closed so as to cover the opening into the aerosol provision device 100. The charging unit 101 may include a user interface such as display 108.

[0068] The aerosol provision device 100 comprises a main housing 200 which surrounds the heating chamber 201. The main housing 200 comprises an outer wall 200a. The outer wall 200a is tubular and extends along the longitudinal axis of the aerosol provision device 100. The outer wall 200a at least partially surrounds the heating chamber 201. The outer wall 200a is a double wall containing an air gap 218. The air gap 218 provides thermal insulation. In embodiments, the outer wall 200a may be solid.

[0069] The outer wall 200a defines a receiving chamber 208 of the aerosol provision device 100. The receiving chamber 208 is a volume which is at least partly enclosed within the outer wall 200a. The outer wall 200a may be a shape other than tubular and may be any shape which encloses (e.g. encircles) and defines a receiving chamber 208. The outer wall 200a is closed at its distal end by a base wall 200b. The base wall 200b provides a base of the receiving chamber 208. The base wall 200b and the outer wall 200a together define the receiving chamber 208. The receiving chamber 208 is open at a proximal end. The heating chamber 201 is contained within and may be a subset of the receiving chamber 208. In embodiments, the receiving chamber 208 and base wall 200b may be omitted.

[0070] The heating element 202 is provided in the main housing 200. The heating element 202 extends or projects into the heating chamber 201. The heating element 202 comprises a base portion 202a which is located in a recess provided in a portion of the main housing 200. The heating element 202 comprises a resistive heating element. The heating element 202 comprises a pin which may be inserted, in use, into a distal end of an aerosol generating article which is received within the heating

chamber 201 in order to internally heat the aerosol generating article. In embodiments, the heating element 202 comprises a resistive blade heating element. Such a blade element comprises a planar portion and a pointed portion. The pointed portion of the resistive blade heating element may assist in penetrating into a distal end of the aerosol generating article 300. In embodiments, the heating element 202 comprises an inductive heating element which is arranged to internally heat the aerosol generating article 300. The inductive heating element may similarly comprise a pin or blade. In embodiments, the heating element 202 is a part of the aerosol generating article 300, rather than being a part of the aerosol provision device 100. In embodiments, the heating element 202 defines the heating chamber 201. In embodiments, the heating element 202 surrounds the heating chamber 201. In embodiments, the heating element 202 is tubular. Such embodiments may employ one or more of resistive heating, inductive heating or other.

[0071] The aerosol provision device 100 comprises a receptacle 205. The receptacle 205 is at least partly disposed in the receiving chamber 208. The receptacle 205 defines the heating chamber 201. The receptacle 205 is arranged to receive at least a portion of the article 300. The receptacle 205 comprises a longitudinal portion 207a. The longitudinal portion 207a is a tubular wall. The longitudinal portion is a peripheral wall 207a. The receptacle 205 comprises a base 207b. The base 207b comprises an aperture 206. The heating element 202 projects through the aperture 206. The base 207b closes a distal end of the tubular wall 200a. A proximal end of the wall 200a is open.

[0072] In embodiments, the outer wall 200a forms the receptacle 205. That is, the receptacle 205 need not be a separate component and the main housing 200 or another component of the aerosol provision device 100 may define the heating chamber 201.

[0073] The aerosol provision device 100 comprises a removal mechanism 204 which is removably retained to the main housing 200. The removal mechanism 204 is retained to the main housing 200 so that at least a portion of the removal mechanism 204 extends into the receiving chamber 208. The removal mechanism 204 is removable from the main housing 200. The removal mechanism 204 comprises the receptacle 205. The removal mechanism 204 is at least partially insertable and removable in the receiving chamber 208 through the opening of the receiving chamber 208. In embodiments, the removal mechanism 204 is omitted. In embodiments, the receptacle 205 is not part of a removal mechanism 204. The receptacle 205 may be provided as a permanent part of the device 100.

[0074] As the removal mechanism 204 is detached from the main housing 200 and then withdrawn from the main housing 200, the base 207b of the receptacle 205 will engage with a distal end face of the aerosol generating article 300 with the result that the base 207b will pull the article 300 off and away from the heating element 202. As a result, the article 300 may be fully removed from the aerosol provision device 100 by the removal mechanism 204. In particular, the article 300 can be removed from the aerosol provision device 100 with a substantially reduced risk of the article 300 breaking apart or a portion of the article 300 remaining attached to the heating element 202. Furthermore, in the event that any spent aerosol generating material or any other portion of the article 300 does become detached or break apart, the base 207b may be arranged to capture any debris or other portion of the article 300 and to ensure that the debris is collected by the base 207b and hence removed with the removal mechanism 204. Once the removal mechanism 204 has been removed from the aerosol provision device 100, the removal mechanism 204 may then be emptied and/or cleaned. Removal of the removal mechanism 204 from the main body 200 of the aerosol provision device 100 also facilitates access to the heating element 202 and in particular enables the heating element 202 to be cleaned by a cleaning tool.

[0075] In order to retain the removal mechanism 204 to the main housing 200, the removal mechanism 204 is pushed into engagement with the main housing 200 in the distal direction, i.e. towards the distal end of the main housing 200, until the removal mechanism 204 is able to move no further in the distal direction. In the following description, when the removal mechanism 204 is referred to as being "retained to" the main housing 200, this is when the removal mechanism 204 is engaged with the main housing 200, and can move no further in the distal direction.

[0076] Together, the tubular wall 207a and the base 207b define and enclose the heating chamber 201. The heating chamber 201 defines an article receiving chamber. The article receiving chamber comprises an inner surface, at least part of which is configured to contact the aerosol generating article 300. The inner surface comprises a longitudinally extending portion which is provided by the tubular wall 207a, and an end portion which is provided by the base 207b. When the aerosol generating article 300 is received in the heating chamber 201, it may contact both the longitudinally extending portion of the inner surface, and the end portion of the inner surface. In particular, the article chamber (i.e. the tubular wall 207a and the base 207b) may be configured to receive at least part of an aerosol generating article which is in the form of rod which is longitudinally extending and cylindrical, such that the longitudinal axis of the article is parallel to (and optionally in line with) the longitudinal axis of the aerosol provision device 100 when received in the article chamber. In embodiments, the inner surfaces of the tubular wall 200a and the base 200b do not contact the article 300. The article 300 may be supported by the heating element 202 or any other suitable component.

[0077] In embodiments, the removal mechanism 204 comprises a first magnet or a magnetisable material. The main housing 200 may comprise a second magnet or magnetisable material. In use, the removal mechanism 204 may be magnetically retained to the main housing

200 by the interaction of the first magnet or magnetisable material and the second magnet or magnetisable material, forming a retaining configuration.

[0078] The removal mechanism 204 is fully detachable from the main housing 200. The removal mechanism 204 may be retained to the main housing 200 by a magnetic force of attraction between the first magnet or magnetisable material and the second magnet or magnetisable material. The removal mechanism 204 may be detached from the main housing 200 by overcoming the magnetic force between the first magnet or magnetisable material and the second magnet or magnetisable material. Alternatively or in addition, the removal mechanism 204 may be removably retained to the main housing 200 by other means. For example, the removal mechanism 204 may be configured to be removably retained to the main housing 200 by an interference fit with the main housing. Alternatively, the removal mechanism 204 may be movable relative to the main housing 200 but not detachable from the main housing 200. For example, the removal mechanism 204 may be arranged to slide in the main housing 200. In embodiments, the first and second magnet or magnetisable material may be omitted.

[0079] Further embodiments are contemplated wherein the first magnet or a magnetisable material and/or the second magnet or magnetisable material may comprise an electromagnet.

[0080] The receptacle 205 comprises an outer cap 210. When retained to the main housing 200, the outer cap 210 encapsulates, for example covers, at least a portion of the main housing 200, such as the outer wall 200a of the main housing. The tubular wall 207a, base 207b and outer cap 210 may comprise an integral, for example unitary, component, formed, for example, by moulding. Alternatively, the tubular wall 207a and base 207b may comprise a first component and the outer cap 210 may comprise a second separate component. The first and second components may then be secured together. In embodiments, the outer cap 210 may be omitted.

[0081] Figure 3 shows a cross-sectional view of a portion of the aerosol provision device 100 and shows a main housing 200 with a heating element 202 extending into a heating chamber 201 and wherein a removal mechanism 204 is removably retained to the main housing 200.

[0082] The removal mechanism 204 surrounds the heating element 202. An aerosol generating article 300 is shown located at least partly within the article chamber, and accordingly also within the heating chamber 201, such that the aerosol generating article 300 is positioned onto the heating element 202.

[0083] When retained to the main housing 200, the outer cap 210 forms a portion of an outer housing of the aerosol provision device 100. The outer cap 210 may radially surround the tubular element 207a with a gap being provided between the internal element (e.g. the tubular element 207a) and the outer cap 210, the gap extending along a portion of the length of the removal mechanism 204, and being configured to receive a portion of the main housing 200, e.g. the outer wall 200a. The removal mechanism 204 may define the opening 203, through which the aerosol generating article 300 may be inserted in a first direction in order to be inserted into the article chamber. This first direction is the distal direction, and may be parallel to the longitudinal axis of the aerosol provision device 100. In embodiments, this opening 203 is configured to contact the aerosol generating article, such that air is substantially prevented from passing through the opening 203 when the aerosol generating article 300 is inserted through the opening 203 and into the article chamber.

[0084] Figure 4 shows an embodiment of the main housing 200, in particular the outer wall 200a. As depicted, the outer wall 200a is tubular. The main housing 200 also comprises a ledge 214 which is configured to contact (e.g. the distal end of) the outer cap 210 of the removal mechanism 204 when the removal mechanism 204 is retained to the main housing 200. In embodiments, the ledge 214 is omitted.

[0085] The outer wall 200a comprises a non-circular portion 250. The non-circular portion 250 is configured to be received in a corresponding non-circular cavity of the removal mechanism 204 so as to prevent relative rotational motion of the removal mechanism 204 and the main housing 200 when the removal mechanism 204 is retained to the main housing 200. The non-circular portion 250 may be omitted.

[0086] In use, a user can insert or partially insert the aerosol generating article 300 through the opening 203 into the aerosol provision device 100. The aerosol generating article 300 is received within the tubular wall 207a of the receptacle 205 and hence the aerosol generating article 300 is received into the article chamber defined by the tubular wall 207a and the base 207b, and is additionally received into the heating chamber 201. The heating element 202 may be arranged to pierce a distal end of the aerosol generating article 300 so that the heating element 202 is located within the aerosol generating article 300 and is arranged to heat the aerosol generating article 300 via internal heating. In embodiments, the heating element 202 does not pierce the article 300 but surrounds or is adjacent to the article 300.

[0087] Referring back to Figure 3, once the aerosol generating article 300 has been inserted into the aerosol provision device 100 the user may then conduct a session. During the session the aerosol generating article 300 may be heated by the heating element 202. It will be understood that a session of use may last several minutes. For example, according to various embodiments a session of use may last 2-3 mins, 3-4 mins or 4-5 mins.

[0088] At the end of a session of use the user may wish to remove the spent aerosol generating article 300 from the aerosol provision device 100 and optionally replace the spent aerosol generating article 300 with a fresh aerosol generating article. According to an embodiment,

in order to remove a spent aerosol generating article 300 after a session of use, the user may detach the removal mechanism 204 from the main housing 200 by applying a force to the removal mechanism 204 in order to overcome the magnetic force of attraction between the first magnet provided in the removal mechanism 204 and the second magnet provided in the main housing 200.

[0089] The aerosol provision device 100 comprises an air path 220 configured to support an air flow. The air path 220 extends through one or more air inlets 221 of the aerosol provision device 100. The one or more air inlets 221 are positioned on a lateral side of the aerosol provision device 100. The air inlets 201 are arranged to direct air into the aerosol provision device 100. The air inlets 221 may be spaced from the proximal end 107 of the aerosol provision device 100. The lateral side of the aerosol provision device 100 is the outer surface of the aerosol provision device 100 which extends between the proximal and distal ends 107, 109 of the aerosol provision device 100, and may face away and outwards from the longitudinal axis of the device. In embodiments, the air inlets 221 may be positioned other than on a lateral side of the aerosol provision device 100. For example, one or more air inlets may be positioned on the proximal end 107 or distal end 109 of the aerosol provision device 100.

[0090] In embodiments, the one or more air inlets 221 allow air surrounding the periphery of the device to be drawn into the air path 220, i.e. they are arranged to direct air from a peripheral region of the aerosol provision device 100, into the aerosol provision device 100, optionally in an inlet direction which is a radial direction towards the longitudinal axis of the aerosol provision device 100. Such air may be cooler and/or cleaner than air closer to the proximal periphery of the device 100, which may be contaminated with user exhalates.

[0091] The one or more air inlets 221 may be arranged distal to the removal mechanism 204. In embodiments, the one or more air inlets 221 comprise one or more openings defined between the distal end of the outer cap 210 of the removal mechanism 204 and the main housing 200, which are present when the removal mechanism 204 is retained to the main housing 200. Alternatively or additionally, the one or more air inlets 221 may correspond to one or more openings through the outer cap 210 or one or more openings in the main housing 200.

[0092] After beginning at the one or more air inlets 221, the air path 220 then extends in a second direction, towards the proximal end 107 of the aerosol provision device 100, through one or more first air channels 222. This second direction may be the proximal direction, and the one or more first air channels 222 may extend to the proximal end of the main housing 200, i.e. to the proximal end of the outer wall 200a. As such, the one or more first air channels 222 are arranged to direct air from the one or more air inlets 221 in the second direction, optionally to the proximal end of the main housing 200. In embodiments, the one or more first air channels 222 longitudinally overlap the heating element 202, and optionally extend beyond the proximal end of the heating element 202. The one or more first air channels 222 are arranged radially outwards of the article chamber and the heating chamber 201.

[0093] The second direction is at an angle to the inlet direction, e.g. perpendicular to the inlet direction, and so it may be said that the air is arranged to follow an L-shaped path through the one or more air inlets 221 and along the one or more first air channels 222. By directing air along this L-shaped path, and then through the aerosol generating article from the distal end, as will be discussed in more detail below, the air is drawn from a region which is distal from the proximal end 107, or "mouth end", of the device, and as such may be less warm and less likely to comprise user exhalates. Furthermore, by drawing this air along the L-shaped path through the aerosol provision device 100, the air may be cooler and cleaner and hence can act to provide a cooling effect within the aerosol provision device 100, particularly in regions which are adjacent to the heating element 202 and the heating chamber 201.

[0094] In embodiments, the one or more first air channels 222 may comprise a gap defined between the outer wall 200a of the main housing 200, and the outer cap 210 of the removal mechanism 204, formed when the removal mechanism 204 is retained to the main housing 200. Alternatively or additionally, the one or more first air channels 222 may extend within the main housing 200, or within the removal mechanism, e.g. within the outer cap 210.

[0095] Figures 5 and 6 show an embodiment of the receptacle 205. The outer cap 210 is removed, to allow the tubular wall 207a to be viewed. A flange 212 extends in a radial direction from the tubular wall 207a. The flange 212 is an annular member, though in embodiments may extend around only a part of the circumference of the receptacle 205. The flange 212 extends from the proximal end of the tubular wall 207a. In this embodiment, the flange 212, tubular wall 207a and base 207b are an integrally formed one-piece component defining the receptacle 205.

[0096] Referring back to Figure 3, after extending through the one or more first air channels 222, the air path 220 divides into an inner air path 240 and an outer air path 242. The air inlet 221 is common to the inner air path 240 and the outer air path 242. In embodiments, separate air inlets 221 may be provided for each of the inner air path 240 and the outer air path 241. In embodiments, one or more of the inner air path 240 and the outer air path 242 may extend from the opening 203. The flange 212 acts as a divider, splitting the air path 220 into the inner air path 240 and outer air path 242. The inner air path 240 extends over a proximal surface of the flange 212. The outer air path extends beneath a distal surface of the flange 212.

[0097] The inner air path 240 is defined at least partially on an inner side of the receptacle 205. The outer air path 242 is defined at least partially on an outer side of the receptacle 205. In general terms, the inner air path 240

then extends in an axial direction between an inner surface of the tubular wall 207a and the article 300. In general terms, the outer air path 242 then extends in an axial direction between an outer surface of the tubular wall 207a and an inner surface of the outer wall 200a of the main housing 200. In embodiments, the outer flow path 242 may extend between or be defined within substantially any component of the aerosol provision device 100. The inner air path 240 extends within the heating chamber 201 and the outer air path 240 extends outside the heating chamber 201. The inner and outer air paths 240 242 are separated along at least part of their extent by the receptacle 205, in embodiments by the flange 212, tubular wall 207a and base 207b. In embodiments, the flange 212 may be omitted.

[0098] The inner air path 240 will now be described in more detail.

[0099] After extending through the one or more first air channels 222, the inner air path 240 extends in a third direction, through one or more second air channels 223. These one or more second air channels 222 extend in the third direction, which is radially inwards, and are arranged to direct air from the one or more first air channels 222 in the third direction, which is towards the longitudinal axis of the aerosol provision device 100.

[0100] The one or more second air channels 223 comprise one or more airflow openings in the removal mechanism 204. In particular, the one or more second air channels 223 comprise one or more openings which are defined between an upper surface of the flange 212 of the removal mechanism 204 and the outer cap 210 of the removal mechanism 204. By defining these one or more openings between the flange 212 of the removal mechanism 204 and the outer cap 210, the manufacture of the removal mechanism 204 can be made more straightforward.

[0101] The one or more openings may comprise one, two, three, four, five, six, or more openings. These one or more openings may be arranged equidistant from one another, in order to enable a circumferentially even flow of air there through. The one or more openings extend radially inwards, from the one or more first air channels 222 to the article chamber. Alternatively or additionally, the one or more second air channels 223 may extend within the main housing 200, or within the removal mechanism, e.g. within the outer cap 210. The one or more openings may be omitted.

[0102] After extending through the one or more second air channels 223, the inner air path 240 then extends in a fourth direction, through one or more third air channels 224. The one or more third air channels 224 are arranged to direct air from the one or more second air channels 223 in the fourth direction, and extend in the fourth direction, which is towards the distal end 109 of the aerosol provision device 100, and optionally in the distal direction. This fourth direction may be opposed to, and parallel to, the second direction. These one or more third air channels 224 are arranged to direct air towards the distal end 109 of the aerosol provision device 100, to the distal end of the article chamber, the distal end of the heating chamber 201, or beyond the heating chamber 201 in the distal direction.

[0103] The one or more third air channels 224 comprise a gap defined between the inner surface of the heating chamber 201 and the aerosol generating article 300, e.g. between the tubular wall 207a and the aerosol generating article 300, when the aerosol generating article 300 is received by the inner surface in the heating chamber 201.

[0104] Figure 6 shows the removal mechanism 204, in which the tubular wall 207a and the base 207b which define the article chamber are visible. The outer cap 210 of the removal mechanism 204 is removed, to allow the internal portion (comprising the tubular wall 207a, and a base 207b) to be viewed.

[0105] The inner surface of the heating chamber 201 (in particular, the tubular wall 207a) comprises one or more longitudinal recesses 271, which extend along the inner surface of the heating chamber 201 in the distal direction, and which extend the length of the tubular wall 207a from the proximal end of the tubular wall 207a to the base 207b. These longitudinal recesses 271 extend parallel to the longitudinal axis of the aerosol provision device 100, but this is not always necessary. Each of the one or more longitudinal recesses 271 is configured to receive air from a corresponding one of the one or more second air channels 223.

[0106] When the aerosol generating article 300 is received by the inner surface of the heating chamber 201, the aerosol generating article 300 engages with the inner surface such that the one or more longitudinal recesses 271 and the aerosol generating article 300 together define the one or more third air channels 224, i.e. by covering each of the one or more longitudinal recesses 271, such that the one or more third air channels 224 comprise the gap between the one or more longitudinal recesses 271 of the inner surface and the aerosol generating article 300.

[0107] The one or more longitudinal recesses 271 may comprise one, two, three, four, five, six, or more longitudinal recesses 271. In embodiments, the longitudinal recesses may be omitted. The one or more longitudinal recesses 271 may be arranged equidistant from one another, in order to enable a circumferentially even flow of air therethrough. The inner surface also comprises one or more protrusions 272, which are arranged on the inner surface of the tubular wall 207a, and which are configured to engage the article 300 received in the heating chamber 201, so as to apply a compression to the article 300 which holds the article 300 in place within the article chamber. In embodiments, the protrusions 272 may be omitted. Alternatively or additionally, the one or more third air channels 224 may extend within the main housing 200, or within the removal mechanism 204.

[0108] After extending through the one or more third channels 224, the inner air path 240 extends in a fifth

direction, optionally through one or more fourth air channels 226 which are arranged to direct air from the one or more third channels 224 in the fifth direction. The fifth direction is radially inwards, towards the longitudinal axis of the aerosol provision device 100.

[0109] Figure 10 shows an embodiment of a distal portion of the receptacle 205, shown part cut-away. The base 207b of the receptacle 205 comprises one or more radial recesses 281, which are defined between one or more stepped protrusions 282 in the base 207b. The one or more radial recesses 281 are arranged in fluid communication with the corresponding one or more longitudinal recesses 271, where the tubular wall 207a and the base 207b meet. The one or more radial recesses 281 extend radially inward from the radial extent of the base 207b, i.e. from the tubular wall 207a. In embodiments, each of the one or more radial recesses 281 extend from the radial extent of the base 207b towards the longitudinal axis of the heating chamber 201. The one or more stepped protrusions 282 extend in the proximal direction. When the aerosol generating article 300 is inserted into the heating chamber 201 it comes into contact with the one or more stepped portions 282, and covers the one or more radial recesses 281, so as to form the one or more fourth air channels 226.

[0110] When the aerosol generating article 300 is inserted into the heating chamber 201, the one or more longitudinal recesses 271 and the one or more radial recesses 281 are enclosed, so as to form the one or more third air channels 224 and the one or more fourth air channels 226 respectively. The one or more third air channels 224 are arranged to direct air towards the distal end 109 of the aerosol provision device 100, to the distal end of the heating chamber 201 (i.e. the base 207b), and the one or more fourth air channels 226 are arranged to direct this air radially inwards towards the longitudinal axis 100 of the aerosol provision device 100. The inner air path 240 then arrives at the distal end of the aerosol generating article 300. In embodiments, the one or more radial recesses 281 and stepped protrusions 282 may be omitted. The base 207b of the receptacle 205 may be substantially flat, except for the ridge 290 which will be described below.

[0111] The inner air path 240 therefore follows an 'M' shape, when viewed in cross-section, the plane of the cross section including the longitudinal axis of the device 100. In embodiments, the inner air path 240 may differ. The inner air path may follow substantially any path which directs air from an exterior of the aerosol provision device to the base 207b of the receptacle 205. For example, the inner air path 242 may extend from the opening 203, in a distal and axial direction between the article 300 and the wall 207a of the receptacle 205, to the base 207b of the receptacle 205.

[0112] Referring again to Figure 3, the outer air path 242 will now be described in more detail. After extending through the one or more first air channels 222, the outer air path 242 extends in the third direction, through one or more fifth air channels 228. These one or more fifth air channels 228 extend in the third direction and are arranged to direct air from the one or more first air channels 222 in the third direction. The one or more fifth air channels 228 extend along a lower surface of the flange 212 to an outer surface of the tubular wall 207a of the receptacle 205.

[0113] The one or more fifth air channels 228 are defined between the flange 212 of the removal mechanism 204 and the main housing 200. More specifically, the one or more fifth air channels 228 are defined between the lower surface of the flange 212 and an end surface of the outer wall 200a of the main housing 200. By defining the one or more fifth air channels 228 between the flange 212 of the receptacle 205 and the main housing 200, the manufacture of the receptacle 205 can be made more straightforward. Alternatively or additionally, the one or more fifth air channels 228 may extend within the main housing 200, or within the receptacle 205, e.g. within the flange 212.

[0114] After extending through the one or more fifth air channels 228, the outer air path 242 then extends in the fourth direction, through one or more sixth air channels 230. The one or more sixth air channels 230 are arranged to direct air from the one or more fifth air channels 228 in the fourth direction, and extend in the fourth direction. These one or more sixth air channels 230 are arranged to direct air towards the distal end 109 of the aerosol provision device 100, to the distal end of the heating chamber 201, the distal end of the heating chamber 201, or beyond the heating chamber 201 in the distal direction. The one or more sixth air channels 230 comprise a gap defined between the outer surface of the tubular wall 207a of the receptacle 205 and an inner surface of the outer wall 200a of the main housing 200. Alternatively or additionally, the one or more sixth air channels 230 may extend within the main housing 200, or within the receptacle 205.

[0115] After extending through the one or more sixth channels 230, the outer air path 242 arrives at the distal end of the receptacle 205, and extends in the fifth direction, optionally through one or more seventh air channels 232 which are arranged to direct air from the one or more sixth channels 230 in the fifth direction. The one or more seventh air channels 232 comprise a space defined between the base 207a of the receptacle 205 and the base wall 200b of the heating chamber 201.

[0116] After extending through the one or more seventh air channels 232, the outer air path 242 extends in the second direction through the aperture 206 in the base 207b of the receptacle 205. As previously discussed, the heating element 202 extends through the aperture 206. The aperture 206 is larger than the heating element 202. That is, a space is defined between an outer surface of the heating element 202 and an edge of the heating element 202. The outer air path 242 extends through this space. The outer air path 242 then arrives at the distal end of the article 300.

[0117] The outer air path 242 therefore follows an 'M'

shape, when viewed in cross-section, the plane of the cross section including the longitudinal axis of the device 100. In embodiments, the outer air path 242 may follow substantially any path which directs air from an exterior of the aerosol provision device 100 to the aperture 206 in the base of the receptacle 205. For example, the outer air path 242 may extend from an air inlet in the distal end 109 of the aerosol provision device 100, through an air channel in an axial direction, to the aperture 206.

[0118] Referring again to Figures 3 and 10 in particular, the receptacle 205 comprises a ridge 290 surrounding the aperture 206. The ridge 290 extends circumferentially around the aperture 206. The ridge 290 defines the aperture 206. The ridge 290 is a lip of the aperture 206. The lip protrudes in a longitudinal direction. The ridge extends at the rim of the aperture. As such, the ridge 290 defines the rim of the aperture. The rim defines the peripheral extent of the aperture. In other embodiments, the ridge 290 is offset from the rim of the aperture 206. The ridge 290 is defined by a protruding member. The ridge 290 comprises a radially inward face 292. In embodiments, the radially inward face 292 forms the rim of the aperture 206. The radially inward face 292 extends parallel to the longitudinal axis. In embodiments, the radially inward face 292 is ramped. That is, the radially inward face 292 extends at an angle transverse to the longitudinal axis.

[0119] The ridge 290 comprises a radially outward face 294. The radially outward face 294 is ramped. That is, the radially outward face 294 extends at an angle transverse to the longitudinal axis. In embodiments, the radially outward face 294 extends parallel to the longitudinal axis.

[0120] The ridge 290 comprises a contact surface 296. The contact surface 296 is configured to contact the article 300. The contact surface 296 is planar. The contact surface 296 extends perpendicular to the longitudinal axis. In embodiments, the contact surface 296 comprises a different configuration. In such configurations, the contact surface 296 may extend to an apex in cross-section, may be arcuate, or may be omitted such that the radially inward and outward faces 292 294 converge to each other.

[0121] The ridge 290 upstands from the base 207b. The ridge 290 extends in the proximal direction. In use, when the article 300 is fully inserted in the heating chamber 201, the ridge 290 contacts a distal end of the article 300. The ridge 290 is configured to cooperate with the article to enclose the aperture 206. In embodiments, the ridge 290 is configured to distend the article 300. That is the ridge 290 is configured to deform the article 300 or to extend into the article 300. In embodiments, the ridge 290 is configured to not distend the article 300.

[0122] The aperture 206 is circular. The aperture in embodiments has a non-circular configuration. In embodiments, the shape of the aperture corresponds to the shape of the heating element 202. The aperture rim is offset from the heating element. That is, the aperture rim is free from contact with the heating element 202. In embodiments, part of the aperture rim may contact the heating element 202. The spacing between the rim and the heating element 202 is equidistant around the heating element 202. Such an arrangement aids consistency of flow. In embodiments, the spacing may differ.

[0123] The base 207b of the receptacle 205 comprises a base surface 209. In embodiments, the base surface 209 forms part of the one or more radial recesses 281. The base surface 209 is the distal-most upper facing surface of the receptacle 205. The one or more stepped protrusions 282 may protrude from the base surface 209 in the proximal direction. The ridge 290 protrudes from the base surface 209 in the proximal direction. The base surface 209 extends between the ridge 290 and the wall 207a of the receptacle 205. In use, the ridge 290 spaces the distal end of the article 300 from the base surface 209.

[0124] The ridge 290 protrudes from the stepped protrusions 282. The stepped protrusions in embodiments may be omitted. In embodiments, the ridge 290 extends further in the proximal direction than the stepped protrusions 282. The ridge 290 in use spaces the distal end of the article 300 from a respective upper surface of the or each stepped protrusion 282. In embodiments, the ridge 290 and the or each stepped protrusion 282 are each configured to contact the article 300. In embodiments, the ridge 290 extends in the article 300 to the extent that the distal end of the article contacts the or each stepped protrusion 282. In embodiments, the ridge 290 extends the same distance in the proximal direction as the stepped protrusions 282 and the distal end of the article 300 in use contacts both the ride 290 and a respective upper surface of the or each stepped protrusion 282.

[0125] Channels 211 are defined between each stepped protrusion 282 and the ridge 290. In embodiments, the channels 211 are omitted and the stepped protrusions 282 extend to the ridge 290. The channels may enable circumferential air flow around the ridge 290. This may provide redundancy in case part of the inner air path 240 is blocked, and may provide more even ventilation of the article 300.

[0126] The ridge 290, in use, forms an air flow barrier. The ridge 290 is a barrier member. The ridge 290 is free from breaks. The ridge 290, in use, prevents air flow from leaving a region including the aperture. In the embodiment of Figure 10, the region is limited to the aperture 206 itself. In embodiments, the region comprises a portion of the base 207b.

[0127] In embodiments, the stepped protrusions 282 are omitted and the base surface 209 is annular. The base surface 209 in embodiments is planar.

[0128] Air from the outer air path 242 flows through the aperture 206 into the region enclosed by the ridge 290. The ridge 290 is arranged to divide the distal end of the article 300 into an inner region and a peripheral region. The air from the outer air path 242 flows into the inner region of the distal end of the article 300. The inner region of the distal end of the article 300 is comprised in the outer air path 242. Air from the inner air path 240 flows into the

peripheral region of the distal end of the article 300. The peripheral region of the distal end of the article 300 is comprised in the inner air path 240. The ridge 290 fluidly separates the inner air path 240 from the outer air path 242. The ridge 290 prevents mixing of air between the inner air path 240 and the outer air path 242. Air from the inner air path 240 therefore enters a different portion of the article 300 to air of the outer air path 242. This may provide more even ventilation of the article 300. The ridge 290 may also act to prevent backflow or turbulent flow in the region of the heating element 202. Air in the region of the heating element 202 may otherwise be turbulent due being heated by the heating element 202. Reducing turbulence may improve condensate management, reducing a likelihood of condensate forming in the region in question, which may cause blockages.

[0129] The aerosol generating article 300 is configured such that air can enter at the distal end of the article 300 and leave the article 300 at the proximal end of the article 300. As such, the inner air path 240 and outer air path 242 finally extend into the distal end of the aerosol generating article 300. Air from the inner and outer air paths 240 242 passes through the article 300, and leaves the article 300 (optionally through the proximal end) for inhalation by the user. While air is directed along the air path through the article 300, vapour or aerosol which has been generated by applying heat to the aerosol generating article 300 using the heating element 202 may be carried along with the air which has entered the device through the one or more air inlets 221 and been directed along the air path, and thereby delivered to the user along with the air.

[0130] The air path 220, comprising the inner air path 240 and the outer air path 242 is therefore arranged to direct air into the aerosol provision device 100 in an inlet direction through the one or more air inlets 221, in a second direction towards a proximal end 107 of the aerosol provision device 100 through one or more first channels 222, in a third direction towards the longitudinal axis of the aerosol provision device 100 through one or more second channels 223, and then in a fourth direction towards the distal end 109 of the aerosol provision device 100 through one or more third channels 224, and then in a fifth direction towards the longitudinal axis of the aerosol provision device 100 through one or more fifth air channels. From the distal end of the aerosol generating article 300, the air path 220 is then arranged to direct air through the aerosol generating article 300, and to a user for inhalation.

[0131] The air path 220 through the aerosol provision device 100 is therefore tortuous. As such, this air path 220 may both be well suited to providing a high pressure drop and resistance to user draw, as well as providing cooling and ventilation in regions of the device adjacent to the heating chamber 201 and particularly the heating element 202. In embodiments, the air path 220 may extend longitudinally past the heating element 202 both when extending along the second direction through the one or more first air channels 222 and when extending along the fourth direction when passing through one or more third air channels 224.

[0132] The split or dual air path 220 (i.e. comprising the inner air path 240 and outer air path 242) may provide a higher flow rate, because the cross-sectional area of the air path 220, which in embodiments is the sum of the cross-sectional areas of the inner air path 240 and the outer air path 242, may be made relatively larger. A lower pressure loss may also result, which may be desirable. The split or dual air path may also provide redundancy in case of blockage: if one of the inner air path 240 and the outer air path 242 is blocked, air may continue to flow through the other flow path 240 241. Such blockage may occur for example due to debris from the article 300 or condensate from the aerosol. The split or dual air path 220 may also provide improved recycling of heat from the heating element 202: fresh air flowing along the external surface of the receptacle 205 and also along the external surface of the article 300 may be preheated, and carry heat back to the article 300. Such air may also cool components of the device 100 such as the receptacle 205 particularly efficiently, as air flows across both the inner surface of the receptacle 205 and the outer surface of the receptacle 205. This may lower the external surface temperature of the device 100, which may improve a user experience, and improve energy efficiency.

[0133] It is noted that while the air path 220 is discussed in the context of an aerosol provision device 100 comprising both a main housing 200 and a removal mechanism 204 which is removably retained by the main housing 200, this is not essential. Rather, this air path 220 may be applied to an arrangement in which the aerosol provision device 100 does not comprise a removal mechanism 204 which is removably retained by a housing. In such an arrangement, the receiving chamber 208 may correspond to the heating chamber 201, such that the inner surface which contacts the article 300 is the inner surface of the heating chamber 201; which may have all of the same features of the inner surface of the article chamber. Further, more generally, this air path 220 may be applied to any aerosol provision device 100 having a heating element 202 and a heating chamber 201 which is configured to receive an aerosol generating article.

[0134] The various embodiments described herein are presented only to assist in understanding and teaching the claimed features. These embodiments are provided as a representative sample of embodiments only, and are not exhaustive and/or exclusive. It is to be understood that advantages, embodiments, examples, functions, features, structures, and/or other aspects described herein are not to be considered limitations on the scope of the invention as defined by the claims or limitations on equivalents to the claims, and that other embodiments may be utilised and modifications may be made without departing from the scope of the claimed invention. Various embodiments of the invention may suitably comprise, consist of, or consist essentially of, appropriate combinations of the disclosed elements, components,

features, parts, steps, means, etc, other than those specifically described herein. In addition, this disclosure may include other inventions not presently claimed, but which may be claimed in future.

Claims

1. An aerosol provision device comprising:

   a receptacle defining a heating chamber for receiving at least a portion of an article comprising aerosol generating material;
   the receptacle comprising a base;
   an aperture in the base; and
   a ridge upstanding from the base and surrounding the aperture, wherein the ridge is configured to contact the article.

2. The aerosol provision device of claim 1, wherein the ridge is configured to form an air flow barrier when contacting the article, to prevent air flow from leaving a region including the aperture.

3. The aerosol provision device of claim 1 or 2, wherein the ridge is configured to cooperate with the article to enclose the aperture.

4. The aerosol provision device of any of claims 1 to 3, wherein the ridge is arranged to divide an end of the article into an inner region and a peripheral region.

5. The aerosol provision device of any of claims 1 to 4, comprising an air path arranged to direct air from an exterior of the aerosol provision device to an end of the article, the air path passing through the aperture of the receptacle.

6. The aerosol provision device of claim 5, wherein the air path is a first air path and the device comprises a second air path, arranged to direct air from an exterior of the aerosol provision device to an end of the article and at least partly defined between the receptacle and the article in use.

7. The aerosol provision device of claim 6, wherein the ridge is configured to fluidly separate the first air path from the second air path.

8. The aerosol provision device of any of claims 1 to 7, wherein the receptacle is configured such that there is a gap between the receptacle and the article when the article is received in the heating chamber.

9. The aerosol provision device of any of claims 1 to 8, wherein the ridge is configured to contact a distal end of the article.

10. The aerosol provision device of any of claims 1 to 9, wherein the receptacle comprises a peripheral wall, and a base surface is defined between the ridge and the peripheral wall and wherein the ridge is configured to space an end of the article from the base surface.

11. The aerosol provision device of any of claims 1 to 10, comprising a heating element, wherein the heating element extends through the aperture into the heating chamber.

12. The aerosol provision device of claim 11, wherein the heating element is spaced from a rim of the aperture.

13. The aerosol provision device of any of claims 1 to 12, wherein the aerosol provision device comprises a removal mechanism for removing the article from the heating chamber, and wherein the removal mechanism comprises the receptacle.

14. The aerosol provision device of claim 13, comprising a main housing and wherein removal mechanism is releasably retained, in use, to the main housing.

15. An aerosol provision system comprising the aerosol provision device of any of claims 1 to 14, and an article comprising aerosol generating material.

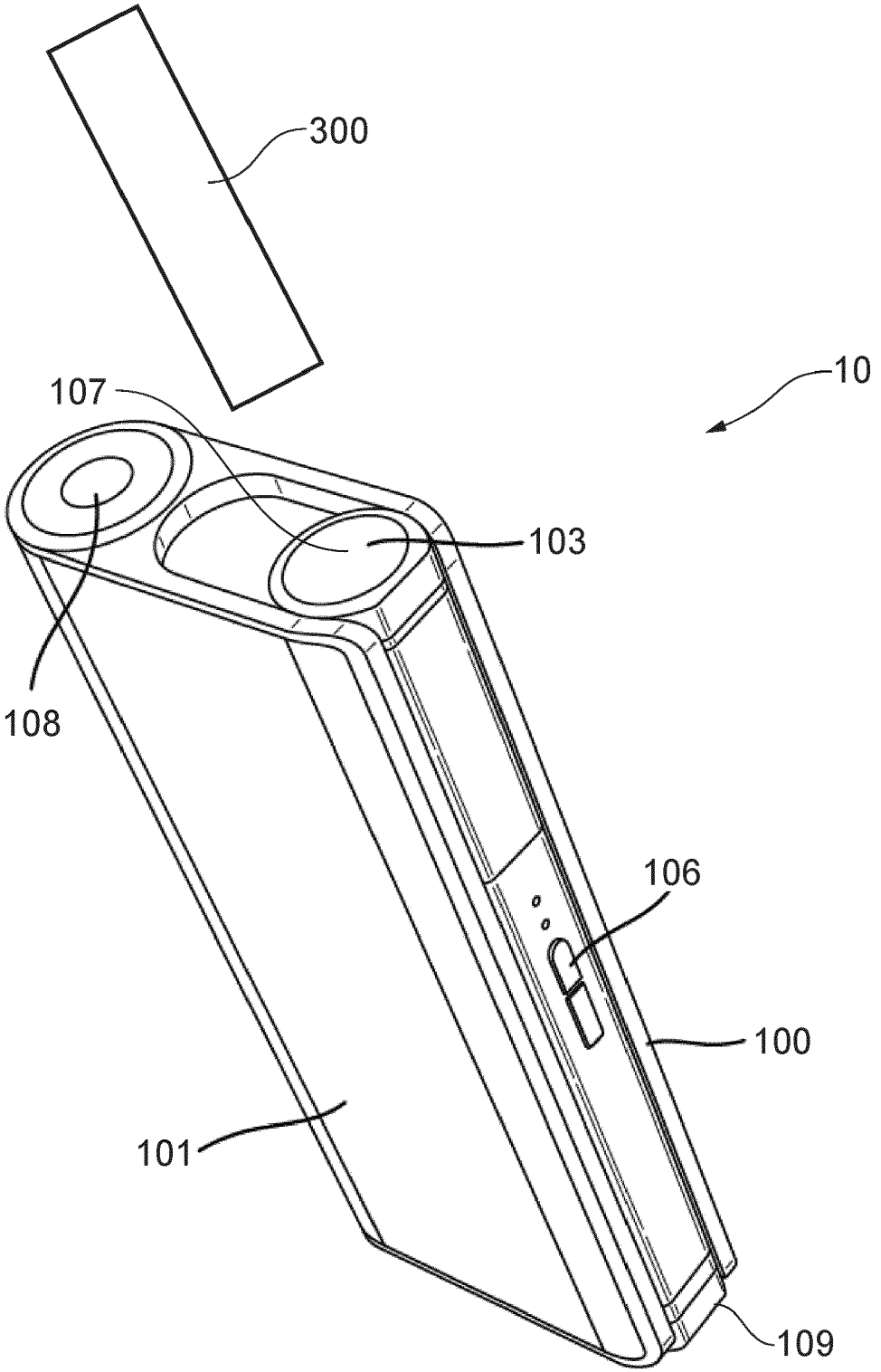

FIG. 1

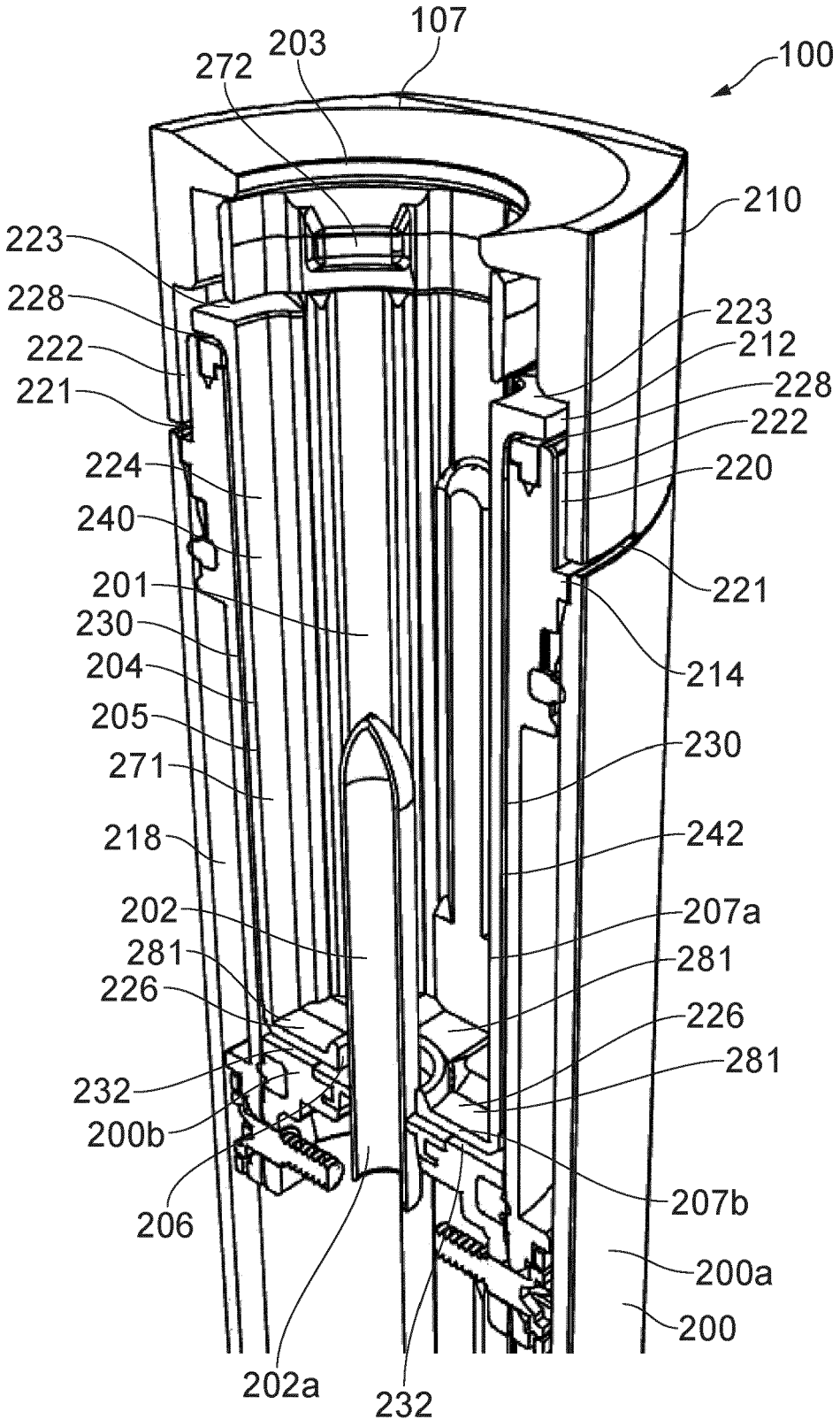
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FIG. 2

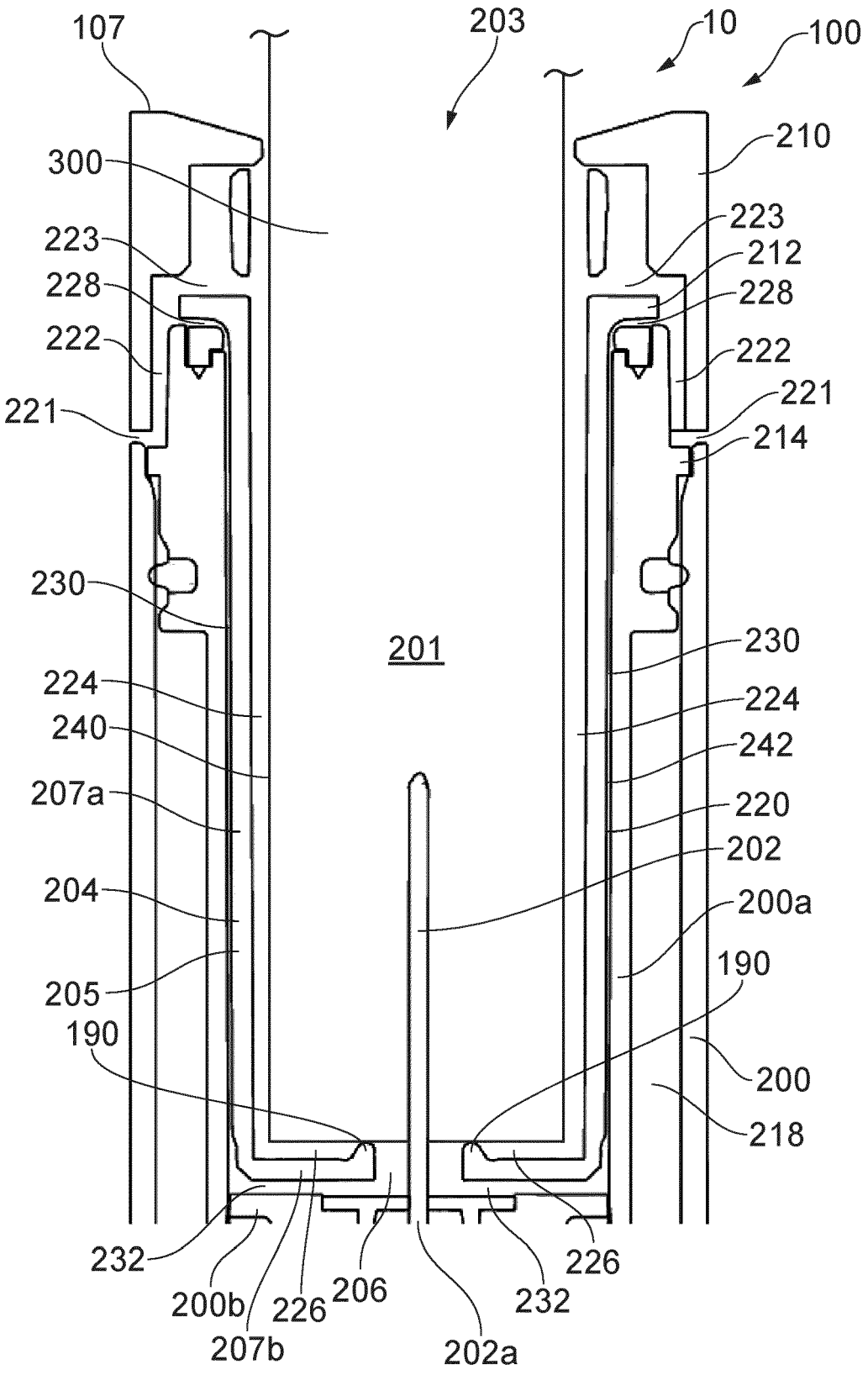
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FIG. 3

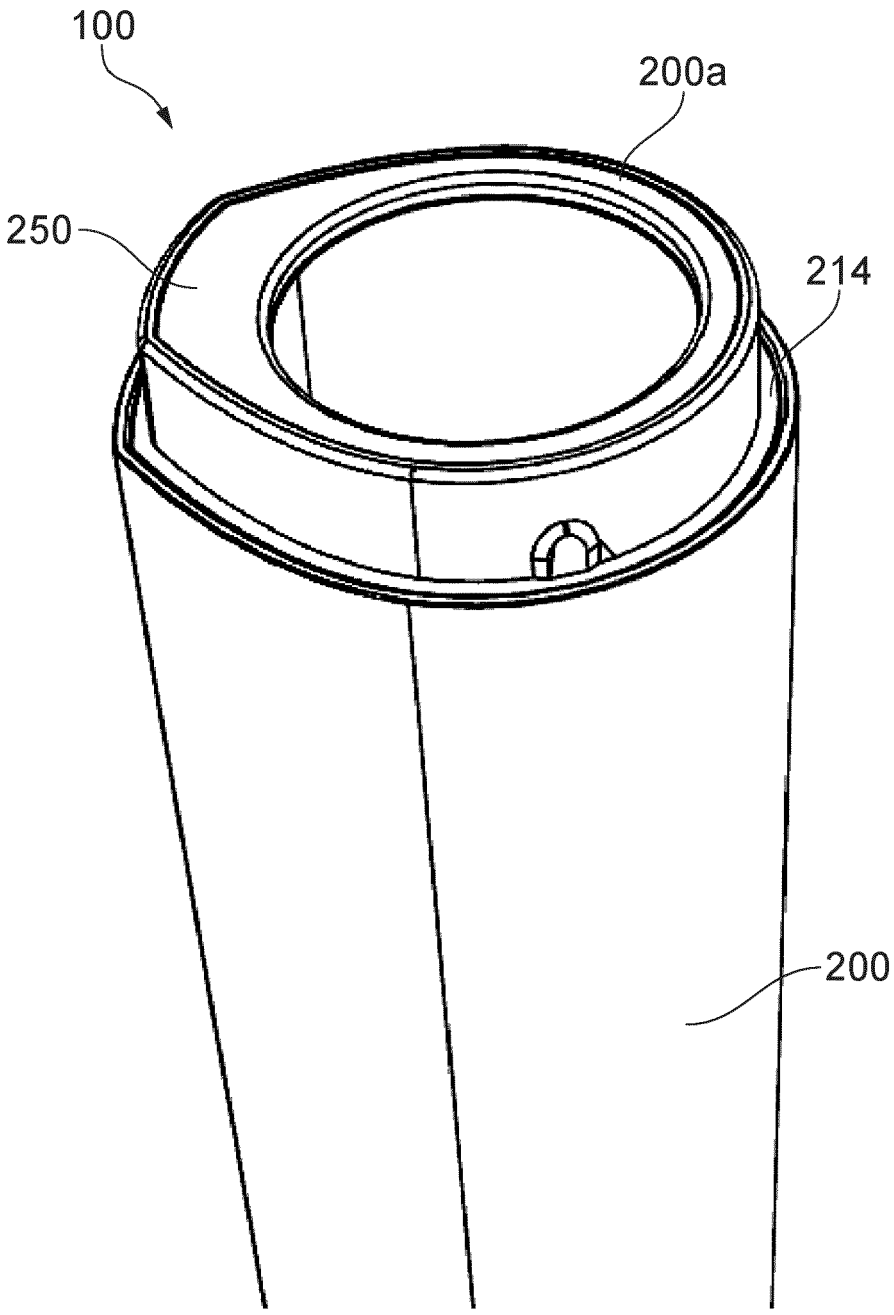

FIG. 4

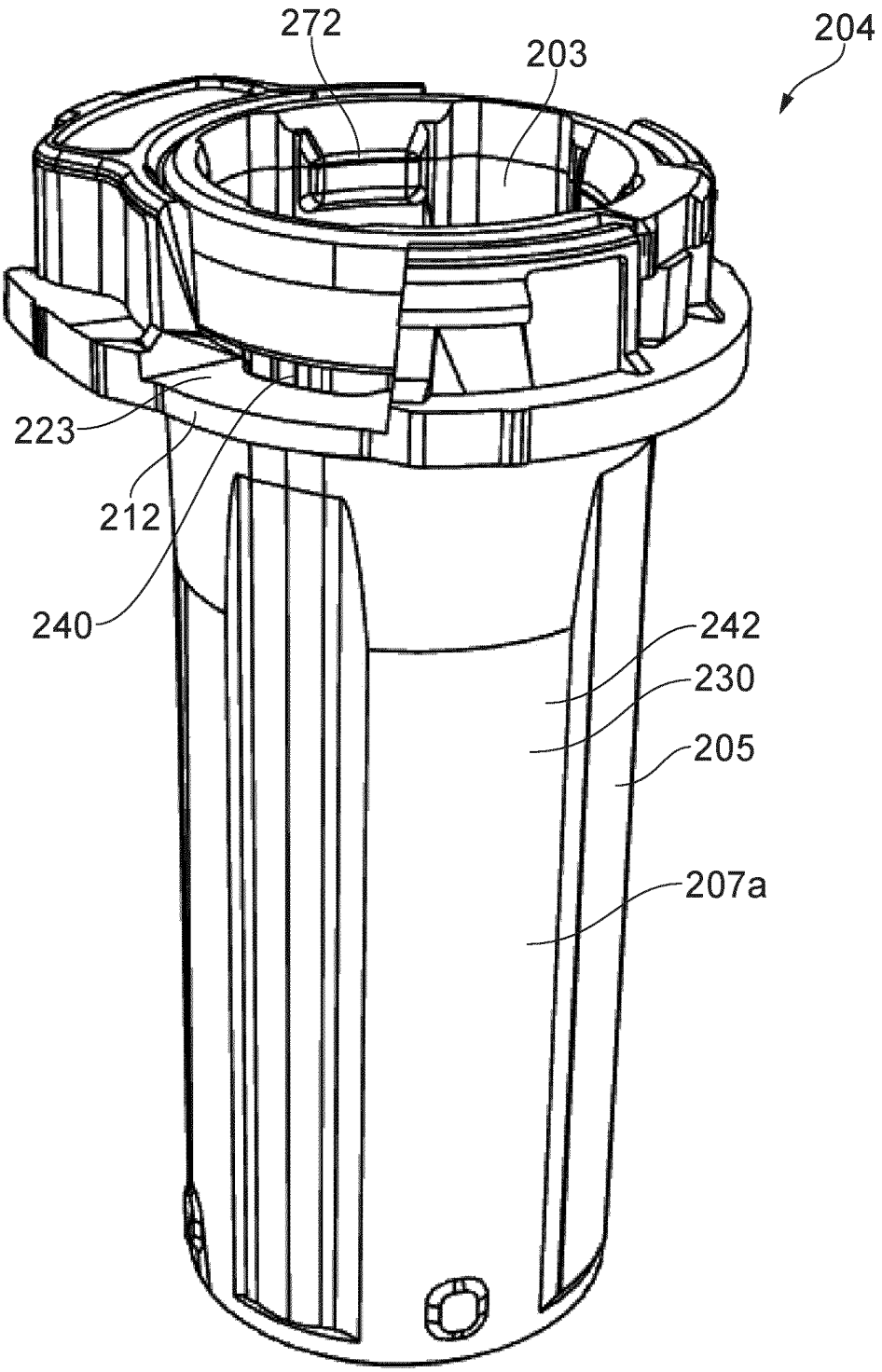

FIG. 5

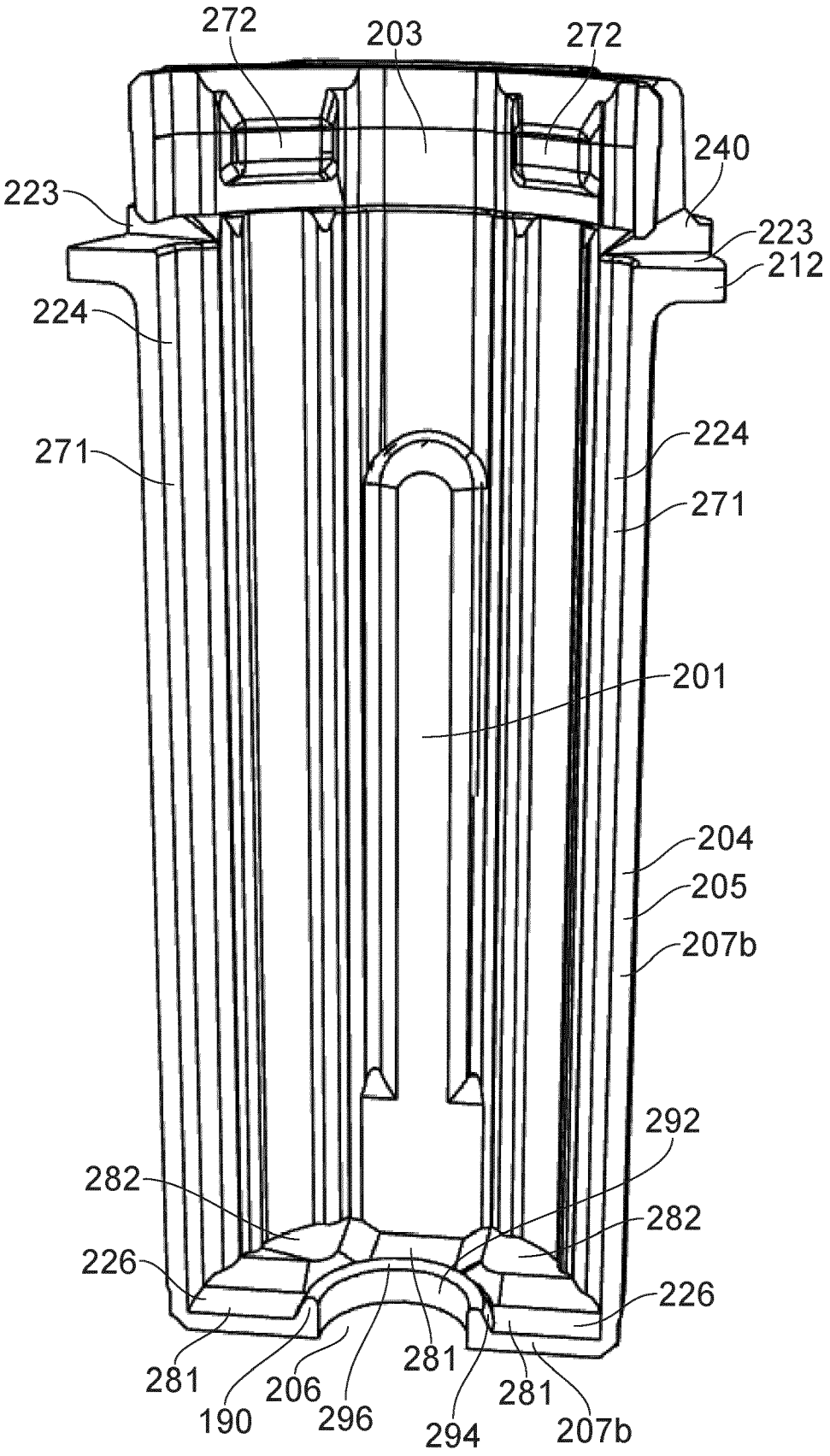
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FIG. 6

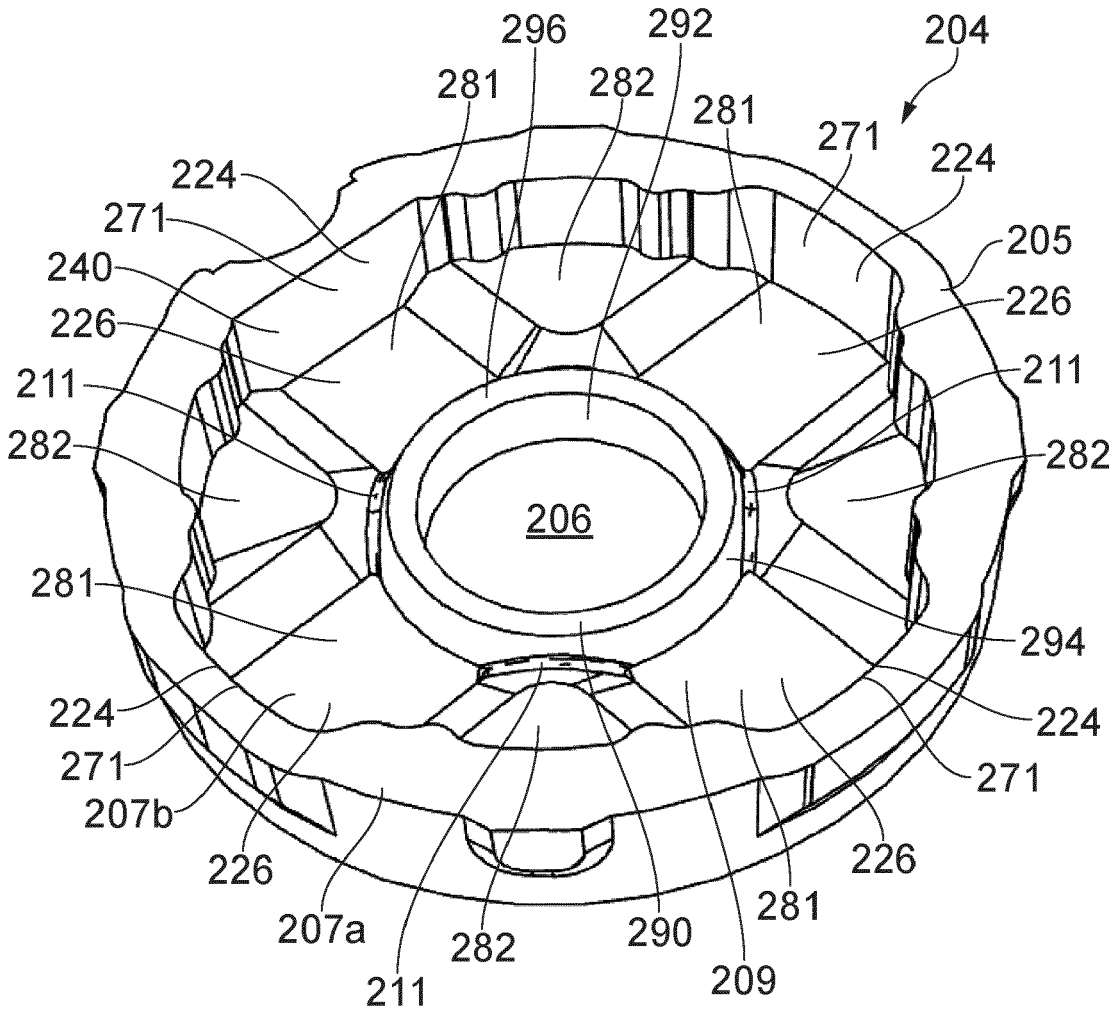
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FIG. 7

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EUROPEAN SEARCH REPORT

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A24F

The present search report has been drawn up for all claims

1

Place of search	Date of completion of the search	Examiner
Munich	5 July 2024	Alaguero, Daniel

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