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(54) **AEROSOL GENERATING DEVICE**

(57) An aerosol generating device comprising a main body comprising a power source, a carriage coupled to the main body, the carriage comprising an inner wall defining a receiving cavity, the receiving cavity configured to receive an aerosol precursor and a susceptor, wherein the susceptor is configured to heat the aerosol precursor received in the receiving cavity, and an induction coil extending around the inner wall, the induction coil electrically connected to electrical contacts and the induction coil configured to generate an alternating electromagnetic field within the receiving cavity, wherein the induction coil is moveably coupled to the main body such that the induction coil is moveable between a connected position in which the electrical contacts are electrically connected to the power source and a disconnected position in which the electrical contacts are electrically disconnected from the power source.

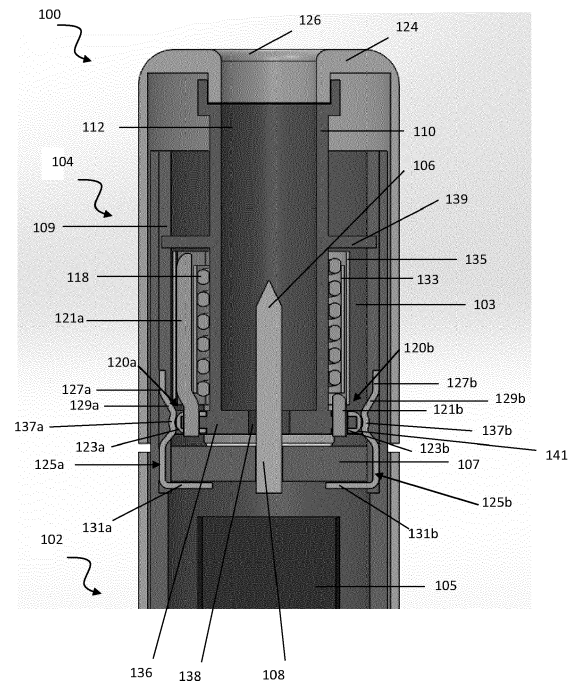


Fig. 6

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Description

FIELD

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

BACKGROUND

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

[0003] A drawback with known aerosol generating devices is that they may be difficult to clean, and it may be difficult to insert aerosol precursor into and remove aerosol precursor from the aerosol generating device. Further, it may be difficult to safely clean the aerosol generating device and/or safely insert aerosol precursor into and remove aerosol precursor from the aerosol generating device.

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

SUMMARY

[0005] In broad terms, the present disclosure provides an aerosol generating device with an induction coil, wherein the induction coil is moveably coupled to a main body of the aerosol generating device between a connected position in which the induction coil is electrically connected to a power source in the main body and a disconnected position in which the induction coil is electrically disconnected from the power source.

[0006] Advantageously then, the electrical connection and disconnection of the induction coil from the power source may enable the induction coil to move with respect to the power source. For example, it may be possible to move the induction coil in a direction away from the power source. This may be advantageous, for example, when a user inserts or removes a consumable from the aerosol generating device or when a user cleans the aerosol generating device.

[0007] Since movement of the induction coil may result in electrical connection or disconnection of the induction coil from the power source, the safety of the device may be improved because an electric current may be prevented from flowing through the induction coil when the induction coil is in the disconnected position. The induction coil may be moved into the disconnected position, for example, when a user inserts or removes a consumable from the aerosol generating device or when a user cleans the aerosol generating device.

[0008] Accordingly, the present disclosure provides an aerosol generating device comprising a main body com-

prising a power source, a carriage coupled to the main body, the carriage comprising an inner wall defining a receiving cavity, the receiving cavity configured to receive an aerosol precursor and a susceptor, wherein the susceptor is configured to heat the aerosol precursor received in the receiving cavity, and an induction coil extending around the inner wall, the induction coil electrically connected to coil contacts and the induction coil configured to generate an alternating electromagnetic field within the receiving cavity, wherein the induction coil is moveably coupled to the main body such that the induction coil is moveable between a connected position in which the coil contacts are electrically connected to the power source and a disconnected position in which the coil contacts are electrically disconnected from the power source.

[0009] The induction coil being moveable may mean the induction coil being reversibly moveable, such that the induction coil is moveable between the connected position and the disconnected position, and between the disconnected position and the connected position. The induction coil may be a copper coil. The induction coil may extend longitudinally along a coil longitudinal axis. That is, the induction coil may have a longitudinal extent. The coil longitudinal axis may be aligned with a longitudinal axis of the main body, the receiving cavity, or the inner wall. The induction coil may be moveable within a channel of the main body. The channel of the main body may be defined by a chassis of the main body.

[0010] The receiving cavity may be configured to receive a consumable that includes an aerosol precursor. The aerosol precursor may be a solid aerosol precursor, which may include tobacco. Alternatively, the solid aerosol precursor may include no tobacco. The aerosol generating device may be a heat-not-burn aerosol generating device, for example a heated tobacco (HT) device.

[0011] The coil contacts may comprise a first coil contact and a second coil contact. The induction coil may be permanently electrically connected to the first coil contact and the second coil contact. The main body may comprise a first main body contact and a second main body contact, the first main body contact and the second main body contact electrically connected to the power source. The power source may be permanently electrically connected to the first main body contact and the second main body contact. In some examples, when the coil is in the connected position the first coil contact may be electrically connected to the first main body contact and the second coil contact may be electrically connected to the second main body contact. In some examples, when the coil is in the disconnected position, the first coil contact may be electrically disconnected from the first main body contact and the second coil contact may be electrically disconnected from the second main body contact.

[0012] The first coil contact may include a first intermediate contact and a first engaging contact. The second coil contact may include a second intermediate contact and a second engaging contact. The first intermediate

contact and the first engaging contact may be electrically connected to one another. The second intermediate contact and the second engaging contact may be electrically connected to one another. The first engaging contact may comprise a first aperture, and the first intermediate contact may extend through the first aperture. The second engaging contact may comprise a second aperture, and the second intermediate contact may extend through the second aperture. In this way, the intermediate contacts and the engaging contacts may be easily electrically connected to one another. Advantageously, the coil contacts being made up of an intermediate contact and an engaging contact may facilitate the electrical connection of the induction coil to the main body contacts.

[0013] The first engaging contact may be configured to engage with the first main body contact. The second engaging contact may be configured to engage with the second main body contact.

[0014] The first intermediate contact may be electrically connected to a first end of the induction coil. The first end of the induction coil may be an upper end of the induction coil, which may be an end of the induction coil located furthest from the power source. The second intermediate contact may be electrically connected to a second end of the induction coil. The second end of the induction coil may be a lower end of the induction coil, which may be an end of the induction coil located closest to the power source.

[0015] In some examples, the first main body contact and/or the second main body contact may be located at a lower end of the channel within which the induction coil is moveable. The lower end of the channel may be a portion of the channel which is closest to the power source. Advantageously, the main body contacts being located at the lower end of the channel may enable the main body contacts to be smaller in size than if they were located at an upper end of the channel. In some examples, when the first main body contact is located at the lower end of the channel, the first intermediate contact may extend along a longitudinal extent of the induction coil and/or along a longitudinal axis of the main body. In this way, the first intermediate contact may electrically connect the upper end of the induction coil to the first main body contact and/or the power source.

[0016] In some examples, the first main body contact and/or the second main body contact may be located at an upper end of the channel within which the induction coil is moveable. The upper end of the channel may be a portion of the channel which is furthest from the power source. Advantageously, the main body contacts being located at the upper end of the channel may prevent the main body contacts being exposed to vapour and/or debris from an aerosol precursor. In some examples, when the second main body contact is located at the upper end of the channel, the second intermediate contact may extend along a longitudinal extent of the induction coil and/or along a longitudinal axis of the main body. In this way, the second intermediate contact may elec-

trically connect the lower end of the induction coil to the power source.

[0017] The aerosol generating device may further comprise coil electrical insulation extending longitudinally along at least a portion of the longitudinal extent of the induction coil, the coil electrical insulation electrically insulating the induction coil from the first and/or the second intermediate contact along the portion of the longitudinal extent of the induction coil. The portion of the longitudinal extent of the induction coil may be the entire longitudinal extent of the induction coil aside from the upper end and/or the lower end of the induction coil. Advantageously then, the first intermediate contact may be electrically connected to the upper end of the induction coil, without being in direct electrical contact with the induction coil along the longitudinal extent of the induction coil. Similarly, the second intermediate contact may be electrically connected to the lower end of the induction coil, without being in direct electrical contact with the induction coil along the longitudinal extent of the induction coil.

[0018] The coil electrical insulation may extend circumferentially around the induction coil. The coil electrical insulation extending circumferentially may mean the coil electrical insulation extending circumferentially around the induction coil with respect to the coil longitudinal axis. As discussed above, such a longitudinal axis may be aligned with the longitudinal axis of the receiving cavity, for example.

[0019] The aerosol generating device may further comprise contact electrical insulation extending circumferentially around the induction coil and the first and/or second intermediate contact. That is, contact electrical insulation may extend circumferentially around the induction coil and may also encompass the first and/or second intermediate contact.

[0020] The coil and/or contact electrical insulation may be heat resistant. The coil and/or contact electrical insulation being heat resistant may mean that the electrical insulation may perform its above-stated function at temperatures reached within the aerosol generating device when the aerosol generating device is operated by a user to generate aerosol. The coil and/or contact electrical insulation may include electrically insulating tape.

[0021] The first main body contact and/or the second main body contact may be resiliently biased. The first main body contact and/or the second main body contact may be resiliently biased towards the channel within which the induction coil is moveable. The first main body contact and/or the second main body contact may be resiliently biased towards the induction coil. The first main body contact and/or the second main body contact may be resiliently biased towards the induction coil when the induction coil is in the connected position. The first main body contact and/or the second main body contact may be resiliently biased towards the first coil contact and/or the second coil contact respectively. The first main body contact and/or the second main body contact may be

resiliently biased towards the first coil contact and/or the second coil contact respectively when the coil is in the connected position. Advantageously, the main body contacts being resiliently biased may improve the electrical connection between the main body contacts and the coil contacts.

[0022] The first main body contact may comprise a first supporting portion and a first protruding portion. The second main body contact may comprise a second supporting portion and a second protruding portion. The first and/or second supporting portion may contact the main body of the device. The first and/or second protruding portion may be spaced apart from the main body of the device. The first protruding portion may protrude from the first supporting portion towards the channel within which the induction coil is moveable. The first protruding portion may protrude from the first supporting portion towards the induction coil and/or towards the first coil contact. The first protruding portion may protrude from the first supporting portion towards the induction coil when the induction coil is in the connected position and/or towards the first coil contact when the induction coil is in the connected position. Similarly, the second protruding portion may protrude from the second supporting portion towards the channel. The second protruding portion may protrude from the second supporting portion towards the induction coil when the induction coil is in the connected position, and/or towards the second coil contact. The second protruding portion may protrude from the second supporting portion towards the induction coil when the induction coil is in the connected position, and/or towards the second coil contact when the induction coil is in the connected position. Advantageously, the resiliently biased nature of the main body contacts may be achieved by the main body contacts comprising the supporting portions and the protruding portions.

[0023] In an alternative embodiment, the first main body contact and/or the second main body contact may comprise a pogo pin. In this way, the resiliently biased nature of the main body contacts may be achieved.

[0024] The first main body contact may include a first fixing portion configured to fixedly couple the first main body contact to the main body. The second main body contact may include a second fixing portion configured to fixedly couple the second main body contact to the main body. The first and/or second fixing portion may comprise a fixing aperture and a fixing element extending through the fixing aperture to fix the fixing portion to the main body. The fixing element may include, for example, a screw or a heat stake.

[0025] A first wire may extend from the first main body contact to the PCB. The first wire may extend from the first fixing portion to the PCB. A second wire may extend from the second main body contact to the PCB. The second wire may extend from the second fixing portion to the PCB. The first wire and/or the second wire may be soldered to the PCB. The PCB may be electrically con-

nected to the power source. In this way, the first main body contact and the second main body contact may be electrically connected to the power source.

[0026] In some examples, the first main body contact and/or the second main body contact may engage with or contact a circumferential side wall of the main body. The first supporting portion and/or the second supporting portion may engage with or contact a circumferential side wall of the main body. The first main body contact and/or the second main body contact may extend from the circumferential side wall of the main body. The circumferential side wall of the main body may be aligned with a longitudinal axis of the main body. Advantageously, as described in more detail below, this configuration may allow the first and second main body contacts to retain the induction coil in the connected position position. The first and second main body contacts may retain the induction coil in the lower position. Retaining the induction coil in the lower position may mean holding the induction coil in the lower position until a force greater than a predetermined force is exerted by a user on the induction coil, the force pulling the induction coil from the connected position to the disconnected position. The first and/or second main body contacts being resiliently biased may enable the first and second main body contacts to retain the induction coil in the connected position. Advantageously then, the first and second main body contacts may act as clips, clipping the induction coil in place in the connected position.

[0027] The first main body contact may include a first indent complementary in shape to the first engaging contact. The second main body contact may include a second indent complementary in shape to the second engaging contact. The first engaging indent may be on the first protruding portion of the first main body contact. The second engaging indent may be on the second protruding portion of the second main body contact. In this way, improved electrical connection may be achieved between the coil contacts and the main body contacts. Further, such a configuration may allow the first and second main body contacts to retain the induction coil in the lower position.

[0028] The first and/or second main body contact may be formed of a stamped metal sheet. The first and/or second coil contact may be formed of a stamped metal sheet. The first and/or second intermediate contact may be formed of a stamped metal sheet. The first and/or second engaging contact may be formed of a stamped metal sheet. The first and/or second main body contact may be formed of copper wire or sheet. The first and/or second coil contact may be formed of copper wire or sheet. The first and/or second intermediate contact may be formed of copper wire or sheet. The first and/or second engaging contact may be formed of copper wire or sheet.

[0029] In some examples, the aerosol generating device may further comprise an elongate susceptor extending from the main body. A fixing base, integrally formed with the susceptor, may fix the susceptor to the main

body. The receiving cavity may be configured to receive the elongate susceptor. When the induction coil is in the connected position the susceptor may be heated by the induction coil. Therefore, when the induction coil is in the connected position the susceptor may heat aerosol precursor received in the receiving cavity. Advantageously, when the induction coil is in the disconnected position the susceptor may not be heated by the induction coil. Therefore, the safety of the aerosol generating device may be improved. The coil may be moved into the disconnected position such that the susceptor is not heated by the induction coil, for example, when a user removes a consumable from the aerosol generating device or when a user cleans the aerosol generating device. In some other examples, the susceptor may be included within the consumable. For example, the susceptor may be located within the aerosol forming substrate.

[0030] In some examples, when the induction coil is in the connected position, the elongate susceptor may be surrounded circumferentially along approximately its entire length by the induction coil. Approximately the entire length of the susceptor may mean between 80% and 100% of the length of the susceptor. Approximately the entire length of the susceptor may mean between 95% and 100% of the length of the susceptor. When the coil is in the disconnected position, an upper portion of the elongate susceptor may be surrounded circumferentially by the induction coil. The upper portion of the elongate susceptor may have a length between 1% and 20% of the entire length of the elongate susceptor. The upper portion of the elongate susceptor may have a length between 1% and 10% of the length of the elongate susceptor. The upper portion of the elongate susceptor may be a portion of the susceptor which is furthest from the power source of the main body of the aerosol generating device.

[0031] The susceptor may be made of stainless steel. The susceptor may be referred to as a heating element. The susceptor may be a rod-shaped susceptor.

[0032] In some examples, a portion of the first and/or second main body contact may extend across a portion of a susceptor support of the main body. The susceptor support of the main body may be a component of the main body from which the susceptor extends. The portion of the first and/or second main body contact may extend across a portion of a lower face of the susceptor support. The lower face of the susceptor support may face towards the power source. In this way, as described in more detail below, the main body contacts may be easily electrically connectable to the PCB and/or to the power source. The first and/or second fixing portion may extend across a portion of a lower face of the susceptor support. The first and/or the second fixing portion may extend across a portion of the susceptor support of the main body.

[0033] In some examples, the first wire may extend from a portion of the first main body contact which extends across a portion of a lower face of the susceptor support to the PCB. In some examples, the second wire

may extend from a portion of the second main body contact which extends across a portion of a lower face of the susceptor support to the PCB.

[0034] In some examples, the first main body contact and/or the second main body contact may extend from the susceptor support of the main body. The first main body contact and/or the second main body contact may extend from an upper face of the susceptor support of the main body. The upper face of the susceptor support may face away from the power source.

[0035] In some examples, the induction coil may be moveable between the connected position and the disconnected position (and vice versa) along a longitudinal axis of the receiving cavity. The receiving cavity may be elongate. In some examples, the induction coil may be moveable between the connected position and the disconnected position along a longitudinal axis of the inner wall. The inner wall may be elongate. In some examples, the induction coil may be moveable between the connected position and the disconnected position along a longitudinal axis of the main body. The main body may be elongate. In some examples, the induction coil may be moveable between the connected position and the disconnected position along a longitudinal axis of the elongate susceptor. In some examples, the induction coil may be moveable between the connected position and the disconnected position along an axis aligned with the longitudinal extent of the induction coil. In this way, the aerosol generating device may maintain its elongate footprint, so the device does not become too large.

[0036] In some examples, the induction coil may be fixedly coupled to the carriage. In some examples, the coil may be fixedly coupled to the inner wall. The coil may be fixed to an outer surface of the inner wall, where the outer surface of the inner wall is the surface which faces away from the receiving cavity.

[0037] The carriage may be moveably coupled to the main body between a lower position in which the induction coil is in the connected position and an upper position in which the induction coil is in the disconnected position. The lower position and the upper position may be positions of the carriage. The carriage being moveable may mean the carriage being reversibly moveable, such that the carriage is moveable between the lower position and the upper position, and between the upper position and the lower position. Advantageously then, the induction coil may be moveable by moving the carriage. Moving the carriage between the lower position and the upper position (and vice versa) may result in the coil being moved between the connected position and the disconnected position (and vice versa). The ability to electrically connect and disconnect the induction coil to and from the power source may enable the induction coil to move with the carriage as the carriage moves between the lower and upper positions.

[0038] In some examples, when the carriage is in the lower position the first coil contact may be electrically connected to the first main body contact and the second

coil contact may be electrically connected to the second main body contact. In some examples, when the carriage is in the upper position, the first coil contact may be electrically disconnected from the first main body contact and the second coil contact may be electrically disconnected from the second main body contact. Thus, when the carriage is in the lower position the induction coil may be electrically connected to the power source, and when the carriage is in the upper position the induction coil may be electrically disconnected from the power source.

[0039] The main body may comprise a channel within which the carriage is moveable. The main body may comprise a chassis, the chassis defining the channel. The chassis may extend circumferentially around the susceptor. There may be an opening in a circumferential side wall of the chassis such that when the carriage is in the upper position the portion of the elongate susceptor is exposed via the access window.

[0040] In some examples, the first main body contact and/or the second main body contact may be located at a lower end of the channel within which the carriage is moveable. The lower end of the channel may be a portion of the channel which is closest to the power source. Advantageously, the main body contacts being located at the lower end of the channel may enable the main body contacts to be smaller in size than if they were located at an upper end of the channel. In some examples, when the first main body contact is located at the lower end of the channel, the first intermediate contact may extend along a longitudinal extent of the induction coil and/or along a longitudinal axis of the main body. In this way, the first intermediate contact may electrically connect the upper end of the induction coil to the first main body contact and/or the power source.

[0041] In some examples, the first main body contact and/or the second main body contact may be located at an upper end of the channel within which the carriage is moveable. The upper end of the channel may be a portion of the channel which is furthest from the power source. Advantageously, the main body contacts being located at the upper end of the channel may prevent the main body contacts being exposed to vapour and/or debris from an aerosol precursor. In some examples, when the second main body contact is located at the upper end of the channel, the second intermediate contact may extend along a longitudinal extent of the induction coil and/or along a longitudinal axis of the main body. In this way, the second intermediate contact may electrically connect the lower end of the induction coil to the power source.

[0042] As discussed above, the first and/or second main body contact may be resiliently biased. The first main body contact and/or the second main body contact may be resiliently biased towards the channel within which the carriage is moveable. The first main body contact and/or the second main body contact may be resiliently biased towards the carriage. The first main body contact and/or the second main body contact may be resiliently biased towards the carriage when

the carriage is in the lower position. The first main body contact and/or the second main body contact may be resiliently biased towards the first coil contact and/or the second coil contact respectively. The first main body contact and/or the second main body contact may be resiliently biased towards the first coil contact and/or the second coil contact respectively when the carriage is in the lower position. Advantageously, the main body contacts being resiliently biased may improve the electrical connection between the main body contacts and the coil contacts.

[0043] As discussed above, the first main body contact may comprise a first supporting portion and a first protruding portion, and the second main body contact may comprise a second supporting portion and a second protruding portion. The first protruding portion may protrude from the first supporting portion towards the channel within which the carriage is moveable. The first protruding portion may protrude from the first supporting portion towards the carriage and/or towards the first coil contact. The first protruding portion may protrude from the first supporting portion towards the carriage when the carriage is in the lower position and/or towards the first coil contact when the carriage is in the lower position. Similarly, the second protruding portion may protrude from the second supporting portion towards the channel. The second protruding portion may protrude from the second supporting portion towards the carriage when the carriage is in the lower position, and/or towards the second coil contact. The second protruding portion may protrude from the second supporting portion towards the carriage when the carriage is in the lower position, and/or towards the second coil contact when the carriage is in the lower position. Advantageously, the resiliently biased nature of the main body contacts may be achieved by the main body contacts comprising the supporting portions and the protruding portions.

[0044] The first and second main body contacts may retain the carriage in the lower position, such that the induction coil is retained in the connected position. Retaining the carriage in the lower position may mean holding the carriage in the lower position until a force greater than a predetermined force is exerted by a user on the carriage, the force pulling the carriage from the lower position to the upper position. The first and/or second main body contacts being resiliently biased may enable the first and second main body contacts to retain the carriage in the lower position. Advantageously then, the first and second main body contacts may act as clips, clipping the carriage in place in the lower position. As discussed above, the first and/or second main body contact may comprise an indent which may allow the first and second main body contacts to retain the carriage in the lower position.

[0045] The first and/or second engaging contact may be fixedly coupled to the carriage. For example, the first and/or second engaging contact may be clipped on to the carriage.

[0046] In some examples, the carriage may comprise a lower rim. The lower rim may extend circumferentially around the inner wall with respect to the longitudinal axis of the inner wall. That is, the lower rim may extend circumferentially around the elongate inner wall. The lower rim may be located on a lower side of the induction coil, which may mean that the lower rim is located closer to the power source than the induction coil. The lower rim may be configured to fixedly couple the first and/or second coil contact to the carriage. The lower rim may be configured to fixedly couple the first and/or second engaging contact and/or intermediate contact to the carriage. In more detail, the first and/or second engaging contact may be clipped onto the lower rim. The first intermediate contact may extend through the first aperture in the first engaging contact and/or through a first aperture in the lower rim. The first aperture in the first engaging contact may be aligned with the first aperture in the lower rim. Similarly, the second intermediate contact may extend through the second aperture in the second engaging contact and/or through a second aperture in the lower rim. The second aperture in the second engaging contact may be aligned with the second aperture in the lower rim.

[0047] In some examples, the carriage may comprise an upper rim. The upper rim may extend circumferentially around the inner wall. The upper rim may extend circumferentially around the inner wall with respect to the longitudinal axis of the inner wall. That is, the upper rim may extend circumferentially around the elongate inner wall. The upper rim may be located on an upper side of the induction coil, which may mean that the upper rim is located further from the power source than the induction coil. The upper rim may comprise a slider protrusion for sliding within the slider groove of the main body. The upper rim may comprise two slider protrusions for sliding within respective slider grooves of the main body. Advantageously then, the carriage may be easily moveable between the lower position and the upper position, and vice versa.

[0048] The carriage may be moveable between the lower position and the upper position (and vice versa) along a longitudinal axis of the receiving cavity, along a longitudinal axis of the inner wall, along a longitudinal axis of the main body or along a longitudinal axis of the susceptor. When the carriage is in the upper position, the carriage may be further from the power source of the main body than when the carriage is in the lower position. That is, the carriage may be moveable from the lower position to the upper position by moving the carriage in a direction which points away from the power source. The carriage may be moveable from the upper position to the lower position by moving the carriage in a direction which points towards the power source. In this way, the aerosol generating device may maintain its elongate footprint.

[0049] Advantageously, it may be easier to insert a consumable into and remove a consumable from the receiving cavity when the carriage is in the upper position

compared to when the carriage is in the lower position. Therefore, the carriage being moveable between the lower position and the upper position may mean that the carriage can be moved into a position in which it is easier to insert a consumable into and remove a consumable from the receiving cavity as well as into a position in which a consumable can be heated by a susceptor to generate aerosol. The ability to electrically connect and disconnect the induction coil to and from the power source may mean that when the carriage is in the upper position the susceptor may not be heated by the induction coil and it may be safe to insert a consumable into or remove a consumable from the receiving cavity, and when the carriage is in the lower position the induction coil may be connected to the power source and the susceptor may be heated by the induction coil such that a consumable in the receiving cavity may be heated by the susceptor.

[0050] In some examples, when the carriage is in the lower position the elongate susceptor may be surrounded circumferentially along its length by the carriage, and when the carriage is in the upper position a portion of the elongate susceptor may be exposed for user access via an access window located between the carriage and the main body. The elongate susceptor being surrounded circumferentially along its length may mean the elongate susceptor being surrounded circumferentially along its entire length. Advantageously, a user may be able to clean the exposed portion of the elongate susceptor using the access window. As mentioned above, the ability to electrically connect and disconnect the induction coil to and from the power source may enable the induction coil to move with the carriage as the carriage moves between the lower and upper positions. Therefore, the induction coil may be moved such that it is not a barrier to cleaning. Further, the ability to electrically connect and disconnect the induction coil to and from the power source may mean that when the portion of the elongate susceptor is exposed the induction coil may be disconnected from the power source and the susceptor may not be heated by the induction coil and the susceptor may be safe to clean, and when the elongate susceptor is surrounded along its length by the carriage the induction coil may be connected to the power source and the susceptor may be heated by the induction coil such that a consumable in the receiving cavity may be heated by the susceptor.

[0051] The portion of the elongate susceptor exposed for user access via the access window may be a lower portion of the susceptor. The lower portion of the susceptor may be a portion of the susceptor which is closest to the power source of the main body of the aerosol generating device.

[0052] The access window between the carriage and the main body may be at least 1 mm in length measured along a longitudinal axis of the receiving cavity, measured along a longitudinal axis of the main body, measured along a longitudinal axis of the inner wall, or measured along a longitudinal axis of the susceptor. The access

window between the carriage and the main body may be at least 5 mm in length measured along a longitudinal axis of the receiving cavity, measured along a longitudinal axis of the main body, measured along a longitudinal axis of the inner wall, or measured along a longitudinal axis of the susceptor. The access window between the carriage and the main body may be at least 1 cm in length measured along a longitudinal axis of the receiving cavity, measured along a longitudinal axis of the inner wall, measured along a longitudinal axis of the main body, or measured along a longitudinal axis of the susceptor. Such sizes of the access window may allow the exposed portion of the elongate susceptor to be cleaned by a user.

[0053] In some examples, the carriage may be slidable between the lower position and the upper position, and vice versa. The main body of the aerosol generating device may comprise a slider groove. The carriage may be slidable along the slider groove of the main body. Advantageously then, the carriage may be easily moveable between the lower position and the upper position, and vice versa.

[0054] In some examples, the aerosol generating device may further comprise a stop configured to substantially prevent the carriage fully decoupling from the main body. In this way, a user may move the carriage between the lower position and the upper position with reduced risk of accidentally decoupling the carriage from the main body.

[0055] The stop may include a main body stop protrusion on the main body and a carriage stop protrusion on the carriage, wherein the main body stop protrusion and the carriage stop protrusion are configured to engage one another when the carriage is in the upper position. The chassis may include the main body stop protrusion.

[0056] In some examples, the carriage may further comprise an outer wall extending circumferentially around the inner wall. The outer wall may extend circumferentially around the inner wall with respect to the longitudinal axis of the inner wall. That is, the outer wall may extend circumferentially around the elongate inner wall. The outer wall may define a coil cavity between the inner wall and the outer wall. The induction coil may be housed within the coil cavity. Advantageously then, the coil may be securely coupled to the carriage. The coil may be fixedly coupled to the carriage in this way.

[0057] A longitudinal extent of the induction coil, measured along the longitudinal axis of the receiving cavity (or measured along the longitudinal axis of the inner wall) may be approximately equal to a depth of the coil cavity measured along a longitudinal axis of the receiving cavity (or measured along a longitudinal axis of the inner wall). The longitudinal axis of the receiving cavity may be perpendicular to a direction followed by the windings of the induction coil. The longitudinal axis of the inner wall may be perpendicular to a direction followed by the windings of the induction coil. The longitudinal extent of the induction coil being approximately equal to the depth of the receiving cavity may mean the longitudinal extent of

the induction coil being between 80% and 100% of the length of the receiving cavity, or between 95% and 100% of the length of the receiving cavity.

[0058] The entire induction coil may be housed within the coil cavity.

[0059] The induction coil may be the only component of the aerosol generating device housed within the coil cavity. The induction coil and one or more of the coil contacts may be the only components of the aerosol generating device housed within the coil cavity.

[0060] In some examples, a depth of the coil cavity measured along a longitudinal axis of the receiving cavity (or measured along a longitudinal axis of the inner wall) may be approximately equal to the length of the elongate susceptor. In some examples, the longitudinal extent of the induction coil measured along the longitudinal axis of the receiving cavity (or measured along the longitudinal axis of the inner wall) may be approximately equal to the length of the susceptor. Advantageously then, the susceptor may be heated by the induction coil along substantially the whole length of the susceptor. The depth of the coil cavity being approximately equal to the length of the susceptor may mean the depth of the receiving cavity is between 80% and 120% of the length of the susceptor.

The depth of the coil cavity being approximately equal to the length of the susceptor may mean the depth of the receiving cavity is between 95% and 105% of the length of the susceptor. The longitudinal extent of the induction coil being approximately equal to the length of the susceptor may mean the longitudinal extent of the induction coil is between 80% and 120% of the length of the susceptor. The longitudinal extent of the induction coil being approximately equal to the length of the susceptor may mean the longitudinal extent of the induction coil is between 95% and 105% of the length of the susceptor.

[0061] An outer circumferential surface of the outer wall may interface with an inner circumferential surface of the main body. The inner circumferential surface of the main body may comprise a slider groove. The outer circumferential surface of the outer wall may be slidable along the slider groove of the inner circumferential surface of the main body. Advantageously then, the carriage may be easily moveable between the lower position and the upper position, and vice versa.

[0062] A length of the outer wall measured along a longitudinal axis of the receiving cavity (or measured along a longitudinal axis of the inner wall) may be smaller than a length of the inner wall measured along a longitudinal axis of the receiving cavity (or measured along a longitudinal axis of the inner wall). That is, the outer wall may extend along only a portion of the inner wall in a longitudinal direction of the inner wall. The outer wall may extend along only a lower portion of the inner wall in a longitudinal direction of the inner wall. The lower portion of the inner wall may be a portion of the inner wall which is closest to the power source of the main body.

[0063] As mentioned above, in some examples a stop configured to substantially prevent the carriage fully de-

coupling from the main body may include a main body stop protrusion and a carriage stop protrusion. The carriage stop protrusion may be the outer wall of the carriage. That is, the outer wall may be configured to engage with the main body stop protrusion when the carriage is in the upper position. Specifically, an upper surface of the outer wall may be configured to engage with the main body stop protrusion when the carriage is in the upper position. The upper surface of the outer wall may be a surface of the outer wall which faces away from the power source of the main body. The upper surface of the outer wall may be a surface of the outer wall which is located furthest from the power source of the main body. Advantageously then, a user may move the carriage between the lower position and the upper position with reduced risk of accidentally decoupling the carriage from the main body, and such a stop mechanism may be simply implemented.

[0064] In some examples, the outer wall may include a first coil contact-receiving aperture and a second coil contact-receiving aperture. The first coil contact may extend through the first coil contact-receiving aperture and the second coil contact may extend through the second coil contact-receiving aperture.

[0065] In some examples, the carriage may further comprise a base wall configured to abut the main body when the carriage is in the lower position and configured to be spaced apart from the main body when the carriage is in the upper position. The base wall may be configured to abut a susceptor-supporting portion of the main body when the carriage is in the lower position and configured to be spaced apart from the susceptor-supporting portion of the main body when the carriage is in the upper position. The susceptor-supporting portion of the main body may be a portion of the main body from which the susceptor extends.

[0066] The base wall may be integrally formed with the outer wall. The base wall may extend between the outer wall and the inner wall such that the coil cavity is closed at a lower end of the coil cavity. The lower end of the coil cavity may be an end of the coil cavity which is closest to the lower portion of the susceptor. The lower end of the coil cavity may be an end of the coil cavity which is closest to the power source of the main body. Advantageously, because the coil cavity may be closed at its lower end, debris from aerosol precursor inserted into the receiving cavity may be prevented from entering the coil cavity. In this way, the induction coil may be prevented from accumulating debris and/or from having its performance affected.

[0067] In some examples, an end of the coil cavity may be open. The coil cavity may be open at an upper end of the coil cavity. The upper end of the coil cavity may be an end of the coil cavity which is furthest from the lower portion of the susceptor. The upper end of the coil cavity may be an end of the coil cavity which is furthest from the power source in the main body. In this way, the coil cavity may be open to the ambient air. In some examples, the

coil cavity and the receiving cavity are open towards the same direction.

[0068] The base wall may extend inwards from the inner wall. That is, the base wall may extend from the inner wall in a direction towards the susceptor. In this way, a consumable inserted into the receiving cavity may be supported by the base wall. Therefore, when the carriage is moved from the lower position to the upper position, a consumable in the receiving cavity may be lifted in a direction away from the power source of the aerosol generating device. When the carriage is moved from the upper position to the lower position, a consumable in the receiving cavity may be moved in a direction towards the power source of the aerosol generating device. Furthermore, debris from the consumable may collect on the base wall.

[0069] The base wall may comprise a susceptor-receiving aperture configured to receive the susceptor therethrough. In this way, it may be possible for the carriage to move relative to the susceptor between the lower position and the upper position (and vice versa). When the carriage is in the lower position, substantially the entire susceptor may extend through the susceptor-receiving aperture. Therefore, when the carriage is in the lower position, substantially the entire susceptor may extend into the receiving cavity defined by the inner wall of the carriage. When the carriage is in the lower position, the susceptor may be surrounded circumferentially along its length a combination of the inner wall and the base wall. When the carriage is in the upper position, none of the susceptor may protrude through the susceptor-receiving aperture. When the carriage is in the upper position, only an upper portion of the susceptor may extend through the susceptor-receiving aperture. Therefore, when the carriage is in the upper position, only the upper portion of the susceptor may extend into the receiving cavity defined by the inner wall of the carriage. The upper portion of the susceptor may be a portion of the susceptor which is furthest from the power source of the main body of the aerosol generating device. Advantageously, it may be easier to insert and remove a consumable into and out of the receiving cavity when the carriage is in the upper position, because in the upper position none, or only a portion of the susceptor (the upper portion of the susceptor) may extend into the receiving cavity.

[0070] Debris from aerosol precursor received in the receiving cavity may fall through the susceptor-receiving aperture. The access window discussed above may advantageously allow a user to remove such debris from the aerosol generating device.

[0071] In some examples, the carriage may form a cap of the aerosol generating device. In some examples, the carriage, or the cap, may comprise an external wall including a consumable-receiving aperture. The consumable-receiving aperture may be configured to receive aerosol precursor therethrough, such that the aerosol precursor may be inserted into the receiving cavity. The external wall may form an external wall of the aerosol

generating device. An external wall may be a wall with a surface contactable by a user. An external wall may be a wall with a surface contactable by a user during an aerosol generation operation of the aerosol generating device.

[0072] The carriage may further comprise a support wall extending from the external wall. The support wall may be configured to engage with a housing of the main body. An outer surface of the support wall may be configured to engage with an inner surface of the housing. The outer surface of the support wall may be a surface which faces away from the receiving cavity. The inner surface of the housing may be a surface which faces towards the receiving cavity. The support wall may be slidable with respect to the housing of the main body. In this way, sliding movement of the carriage may be more stable.

[0073] The external wall may include an external wall stop configured to engage with the housing when the carriage is in the lower position such as to substantially prevent the carriage moving along a direction which points towards the power source when the carriage is in the lower position.

[0074] The external wall and the support wall may be integrally formed with one another. The external wall and/or the support wall may be integrally formed with the inner wall. In this way, the carriage may be more durable.

[0075] The preceding summary is provided for purposes of summarizing some examples to provide a basic understanding of aspects of the subject matter described herein. Accordingly, the above-described features should not be construed to narrow the scope or spirit of the subject matter described herein in any way. Moreover, the above and/or proceeding examples may be combined in any suitable combination to provide further examples, except where such a combination is clearly impermissible or expressly avoided. Other features, aspects, and advantages of the subject matter described herein will become apparent from the following text and the accompanying drawings.

BRIEF DESCRIPTION OF THE FIGURES

[0076] Aspects, features and advantages of the present disclosure will become apparent from the following description of examples in reference to the appended drawings in which like numerals denote like elements.

Fig. 1 is a block system diagram showing an example aerosol generating apparatus.

Fig. 2 is a block system diagram showing an example implementation of the apparatus of Fig. 1, where the aerosol generating apparatus is configured to generate aerosol from a liquid precursor.

Figs. 3a and 3b are schematic diagrams showing an

example implementation of the apparatus of Fig. 2.

Fig. 4 is a block system diagram showing an example implementation of the apparatus of Fig. 1, where the aerosol generating apparatus is configured to generate aerosol from a solid precursor.

Fig. 5 is a schematic diagram showing an example implementation of the apparatus of Fig. 4.

Fig. 6 is a cross-sectional view of an aerosol generating device according to an embodiment of the present disclosure.

Fig. 7 is a cross-sectional view of an aerosol generating device according to an embodiment of the present disclosure.

Fig. 8 is a cut-away view of an aerosol generating device according to an embodiment of the present disclosure.

Fig. 9 is a cut-away view of an aerosol generating device according to an embodiment of the present disclosure.

Fig. 10 is a cut-away view of an aerosol generating device according to an embodiment of the present disclosure.

Fig. 11 is a cross-sectional view of an aerosol generating device according to an embodiment of the present disclosure.

Fig. 12 is a cross-sectional view of an aerosol generating device according to an embodiment of the present disclosure.

DETAILED DESCRIPTION OF EMBODIMENTS

[0077] Before describing several examples implementing the present disclosure, it is to be understood that the present disclosure is not limited by specific construction details or process steps set forth in the following description and accompanying drawings. Rather, it will be apparent to those skilled in the art having the benefit of the present disclosure that the systems, apparatuses and/or methods described herein could be embodied differently and/or be practiced or carried out in various alternative ways.

[0078] Unless otherwise defined herein, scientific and technical terms used in connection with the presently disclosed inventive concept(s) shall have the meanings that are commonly understood by those of ordinary skill in the art, and known techniques and procedures may be performed according to conventional methods well known in the art and as described in various general and more specific references that may be cited and

discussed in the present specification.

[0079] Any patents, published patent applications, and non-patent publications mentioned in the specification are hereby incorporated by reference in their entirety.

[0080] All examples implementing the present disclosure can be made and executed without undue experimentation in light of the present disclosure. While particular examples have been described, it will be apparent to those of skill in the art that variations may be applied to the systems, apparatus, and/or methods and in the steps or in the sequence of steps of the methods described herein without departing from the concept, spirit, and scope of the inventive concept(s). All such similar substitutions and modifications apparent to those skilled in the art are deemed to be within the spirit, scope, and concept of the inventive concept(s) as defined by the appended claims.

[0081] The use of the term "a" or "an" in the claims and/or the specification may mean "one," as well as "one or more," "at least one," and "one or more than one." As such, the terms "a," "an," and "the," as well as all singular terms, include plural referents unless the context clearly indicates otherwise. Likewise, plural terms shall include the singular unless otherwise required by context.

[0082] The use of the term "or" in the present disclosure (including the claims) is used to mean an inclusive "and/or" unless explicitly indicated to refer to alternatives only or unless the alternatives are mutually exclusive. For example, a condition "A or B" is satisfied by any of the following: A is true (or present) and B is false (or not present), A is false (or not present) and B is true (or present), and both A and B are true (or present).

[0083] As used in this specification and claim(s), the words "comprising," "having," "including," or "containing" (and any forms thereof, such as "comprise" and "comprises," "have" and "has," "includes" and "include," or "contains" and "contain," respectively) are inclusive or open-ended and do not exclude additional, unrecited elements or method steps.

[0084] Unless otherwise explicitly stated as incompatible, or the physics or otherwise of the embodiments, examples, or claims prevent such a combination, the features of examples disclosed herein, and of the claims, may be integrated together in any suitable arrangement, especially ones where there is a beneficial effect in doing so. This is not limited to only any specified benefit, and instead may arise from an "ex post facto" benefit. This is to say that the combination of features is not limited by the described forms, particularly the form (e.g. numbering) of example(s), embodiment(s), or dependency of claim(s). Moreover, this also applies to the phrase "in one embodiment," "according to an embodiment," and the like, which are merely a stylistic form of wording and are not to be construed as limiting the following features to a separate embodiment to all other instances of the same or similar wording. This is to say, a reference to 'an,' 'one,' or 'some' embodiment(s) may be a reference to any one or more, and/or all embodiments, or combination(s) thereof, dis-

closed. Also, similarly, the reference to "the" embodiment may not be limited to the immediately preceding embodiment. Further, all references to one or more embodiments or examples are to be construed as non-limiting to the claims.

[0085] The present disclosure may be better understood in view of the following explanations, wherein the terms used that are separated by "or" may be used interchangeably:

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

[0086] Each occurrence of the aerosol generating apparatus being caused to generate aerosol for a period of time (which may be variable) may be referred to as an **"activation"** of the aerosol generating apparatus. The aerosol generating apparatus may be arranged to allow an amount of aerosol delivered to a user to be varied per activation (as opposed to delivering a fixed dose of aerosol), e.g. by activating an aerosol generating unit of the apparatus for a variable amount of time, e.g. based on the strength/duration of a draw of a user through a flow path of the apparatus (to replicate an effect of smoking a conventional combustible smoking article).

[0087] The aerosol generating apparatus may be portable. As used herein, the term **"portable"** may refer to the apparatus being for use when held by a user.

[0088] As used herein, an **"aerosol generating system"** may be a system that includes an aerosol generating apparatus and optionally other circuitry/components associated with the function of the apparatus, e.g. one or more external devices and/or one or more external components (here "external" is intended to mean external to the aerosol generating apparatus). As used herein, an "external device" and "external component" may include one or more of a: a charging device, a mobile device (which may be connected to the aerosol generating apparatus, e.g. via a wireless or wired connection); a

networked-based computer (e.g. a remote server); a cloud-based computer; any other server system.

[0089] An example aerosol generating system may be a system for managing an aerosol generating apparatus. Such a system may include, for example, a mobile device, a network server, as well as the aerosol generating apparatus.

[0090] As used herein, an **"aerosol"** may include a suspension of precursor, including as one or more of: solid particles; liquid droplets; gas. Said suspension may be in a gas including air. An aerosol herein may generally refer to/include a vapour. An aerosol may include one or more components of the precursor.

[0091] As used herein, a **"precursor"** may include one or more of a: liquid; solid; gel; loose leaf material; other substance. The precursor may be processed by an aerosol generating unit of an aerosol generating apparatus to generate an aerosol. The precursor may include one or more of: an active component; a carrier; a flavouring. The active component may include one or more of nicotine; caffeine; a cannabidiol oil; a non-pharmaceutical formulation, e.g. a formulation which is not for treatment of a disease or physiological malfunction of the human body. The active component may be carried by the carrier, which may be a liquid, including propylene glycol and/or glycerine. The term "flavouring" may refer to a component that provides a taste and/or a smell to the user. The flavouring may include one or more of: Ethylvanillin (vanilla); menthol, Isoamyl acetate (banana oil); or other. The precursor may include a substrate, e.g. reconstituted tobacco to carry one or more of the active component; a carrier; a flavouring.

[0092] As used herein, a **"storage portion"** may be a portion of the apparatus adapted to store the precursor. It may be implemented as fluid-holding reservoir or carrier for solid material depending on the implementation of the precursor as defined above.

[0093] As used herein, a **"flow path"** may refer to a path or enclosed passageway through an aerosol generating apparatus, e.g. for delivery of an aerosol to a user. The flow path may be arranged to receive aerosol from an aerosol generating unit. When referring to the flow path, upstream and downstream may be defined in respect of a direction of flow in the flow path, e.g. with an outlet being downstream of an inlet.

[0094] As used herein, a **"delivery system"** may be a system operative to deliver an aerosol to a user. The delivery system may include a mouthpiece and a flow path.

[0095] As used herein, a **"flow"** may refer to a flow in a flow path. A flow may include aerosol generated from the precursor. The flow may include air, which may be induced into the flow path via a puff by a user. As used herein, a **"puff"** (or **"inhale"** or **"draw"**) by a user may refer to expansion of lungs and/or oral cavity of a user to create a pressure reduction that induces flow through the flow path.

[0096] As used herein, an **"aerosol generating unit"**

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

[0097] As used herein, a **"heating system"** may refer to an arrangement of at least one heating element, which is operable to aerosolise a precursor once heated. The at least one heating element may be electrically resistive to produce heat from the flow of electrical current there-through. The at least one heating element may be arranged as a susceptor to produce heat when penetrated by an alternating magnetic field. The heating system may be configured to heat a precursor to below 300 or 350 degrees C, including without combustion.

[0098] As used herein, a **"consumable"** may refer to a unit that includes a precursor. The consumable may include an aerosol generating unit, e.g. it may be arranged as a cartomizer. The consumable may include a mouthpiece. The consumable may include an information carrying medium. With liquid or gel implementations of the precursor, e.g. an e-liquid, the consumable may be referred to as a "capsule" or a "pod" or an "e-liquid consumable". The capsule/pod may include a storage portion, e.g. a reservoir or tank, for storage of the precursor. With solid material implementations of the precursor, e.g. tobacco or reconstituted tobacco formulation, the consumable may be referred to as a "stick" or "package" or "heat-not-burn consumable". In a heat-not-burn consumable, the mouthpiece may be implemented as a filter and the consumable may be arranged to carry the precursor. The consumable may be implemented as a dosage or pre-portioned amount of material, including a loose-leaf product.

[0099] As used herein **"heat-not-burn"** (or **"HNB"** or **"heated precursor"**) may refer to the heating of a precursor, typically tobacco, without combustion, or without substantial combustion (i.e. localised combustion may be experienced of limited portions of the precursor, including of less than 5% of the total volume).

[0100] Referring to Fig. 1, an example aerosol generating apparatus 1 includes a power source 2, for supply of electrical energy. The apparatus 1 includes an aerosol generating unit 4 that is driven by the power source 2. The power source 2 may include an electric power source in the form of a battery and/or an electrical connection to an external power source. The apparatus 1 includes a precursor 6, which in use is aerosolised by the aerosol generating unit 4 to generate an aerosol. The apparatus 2 includes a delivery system 8 for delivery of the aerosol to a user.

[0101] Electrical circuitry (not shown in figure 1) may be implemented to control the interoperability of the power source 4 and aerosol generating unit 6.

[0102] In variant examples, which are not illustrated, the power source 2 may be omitted since, e.g. an aerosol generating unit implemented as an atomiser with flow expansion may not require a power source.

[0103] Fig. 2 shows an implementation of the apparatus 1 of Fig. 1, where the aerosol generating apparatus 1 is configured to generate aerosol from a liquid precursor.

[0104] In this example, the apparatus 1 includes a device body 10 and a consumable 30.

[0105] In this example, the body 10 includes the power source 4. The body may additionally include any one or more of electrical circuitry 12, a memory 14, a wireless interface 16, one or more other components 18.

[0106] The electrical circuitry 12 may include a processing resource for controlling one or more operations of the body 10 and consumable 30, e.g. based on instructions stored in the memory 14.

[0107] The wireless interface 16 may be configured to communicate wirelessly with an external (e.g. mobile) device, e.g. via Bluetooth.

[0108] The other component(s) 18 may include one or more user interface devices configured to convey information to a user and/or a charging port, for example (see e.g. Fig. 3).

[0109] The consumable 30 includes a storage portion implemented here as a tank 32 which stores the liquid precursor 6 (e.g. e-liquid). The consumable 30 also includes a heating system 34, one or more air inlets 36, and a mouthpiece 38. The consumable 30 may include one or more other components 40.

[0110] The body 10 and consumable 30 may each include a respective electrical interface (not shown) to provide an electrical connection between one or more components of the body 10 with one or more components of the consumable 30. In this way, electrical power can be supplied to components (e.g. the heating system 34) of the consumable 30, without the consumable 30 needing to have its own power source.

[0111] In use, a user may activate the aerosol generating apparatus 1 when inhaling through the mouthpiece 38, i.e. when performing a puff. The puff, performed by the user, may initiate a flow through a flow path in the consumable 30 which extends from the air inlet(s) 34 to the mouthpiece 38 via a region in proximity to the heating system 34.

[0112] Activation of the aerosol generating apparatus 1 may be initiated, for example, by an airflow sensor in the body 10 which detects airflow in the aerosol generating apparatus 1 (e.g. caused by a user inhaling through the mouthpiece), or by actuation of an actuator included in the body 10. Upon activation, the electrical circuitry 12 (e.g. under control of the processing resource) may supply electrical energy from the power source 2 to the heating system 34 which may cause the heating system 32 to heat liquid precursor 6 drawn from the tank to

produce an aerosol which is carried by the flow out of the mouthpiece 38.

[0113] In some examples, the heating system 34 may include a heating filament and a wick, wherein a first portion of the wick extends into the tank 32 in order to draw liquid precursor 6 out from the tank 32, wherein the heating filament coils around a second portion of the wick located outside the tank 32. The heating filament may be configured to heat up liquid precursor 6 drawn out of the tank 32 by the wick to produce the aerosol.

[0114] In this example, the aerosol generating unit 4 is provided by the above-described heating system 34 and the delivery system 8 is provided by the above-described flow path and mouthpiece 38.

[0115] In variant embodiments (not shown), any one or more of the precursor 6, heating system 34, air inlet(s) 36 and mouthpiece 38, may be included in the body 10. For example, the mouthpiece 36 may be included in the body 10 with the precursor 6 and heating system 32 arranged as a separable cartomizer.

[0116] Figs. 3a and 3b show an example implementation of the aerosol generating device 1 of Fig. 2. In this example, the consumable 30 is implemented as a capsule/pod, which is shown in Fig. 3a as being physically coupled to the body 10, and is shown in Fig. 3b as being decoupled from the body 10.

[0117] In this example, the body 10 and the consumable 30 are configured to be physically coupled together by pushing the consumable 30 into an aperture in a top end 11 the body 10, with the consumable 30 being retained in the aperture via an interference fit.

[0118] In other examples (not shown), the body 10 and the consumable 30 could be physically coupled together in other ways, e.g. by screwing one onto the other, through a bayonet fitting, or through a snap engagement mechanism, for example.

[0119] The body 10 also includes a charging port (not shown) at a bottom end 13 of the body 10.

[0120] The body 10 also includes a user interface device configured to convey information to a user. Here, the user interface device is implemented as a light 15, which may e.g. be configured to illuminate when the apparatus 1 is activated. Other user interface devices are possible, e.g. to convey information haptically or audibly to a user.

[0121] In this example, the consumable 30 has an opaque cap 31, a translucent tank 32 and a translucent window 33. When the consumable 30 is physically coupled to the body 10 as shown in Fig. 3a, only the cap 31 and window 33 can be seen, with the tank 32 being obscured from view by the body 10. The body 10 includes a slot 15 to accommodate the window 33. The window 33 is configured to allow the amount of liquid precursor 6 in the tank 32 to be visually assessed, even when the consumable 30 is physically coupled to the body 10.

[0122] Fig. 4 shows an implementation of the apparatus 1 of Fig. 1, where the aerosol generating apparatus 1 is configured to generate aerosol by a-heat not-burn

process.

[0123] In this example, the apparatus 1 includes a device body 50 and a consumable 70.

[0124] In this example, the body 50 includes the power source 4. The apparatus also includes and a heating system 52. The heating system 54 includes at least one heating element 54. The body may additionally include any one or more of electrical circuitry 56, a memory 58, a wireless interface 60, one or more other components 62.

[0125] The electrical circuitry 56 may include a processing resource for controlling one or more operations of the body 50, e.g. based on instructions stored in the memory 58.

[0126] The wireless interface 60 may be configured to communicate wirelessly with an external (e.g. mobile) device, e.g. via Bluetooth.

[0127] The other component(s) 62 may include an actuator, one or more user interface devices configured to convey information to a user and/or a charging port, for example (see e.g. Fig. 5).

[0128] The body 50 is configured to engage with the consumable 70 such that the at least one heating element 54 of the heating system 52 penetrates into the solid precursor 6 of the consumable. In use, a user may activate the aerosol generating apparatus 1 to cause the heating system 52 to cause the at least one heating element 54 to heat the solid precursor 6 of the consumable (without combusting it) by conductive heat transfer, to generate an aerosol which is inhaled by the user.

[0129] Fig. 5 shows an example implementation of the aerosol generating device 1 of Fig. 4.

[0130] As depicted in Fig. 5, the consumable 70 is implemented as a stick, which is engaged with the body 50 by inserting the stick into an aperture at a top end 53 of the body 50, which causes the at least one heating element 54 of the heating system 52 to penetrate into the solid precursor 6.

[0131] The consumable 70 includes the solid precursor 6 proximal to the body 50, and a filter distal to the body 50. The filter serves as the mouthpiece of the consumable 70 and thus the apparatus 1 as a whole. The solid precursor 6 may be a reconstituted tobacco formulation.

[0132] In this example, the at least one heating element 54 is a rod-shaped element with a circular transverse profile. Other heating element shapes are possible, e.g. the at least one heating element may be blade-shaped (with a rectangular transverse profile) or tube-shaped (e.g. with a hollow transverse profile).

[0133] In this example, the body 50 is coupled to a cap 51. In use the cap 51 is engaged at a top end 53 of the body 50. Although not apparent from Fig. 5, the cap 51 is moveable relative to the body 50. In particular, the cap 51 is slidable and can slide along a longitudinal axis of the body 50.

[0134] The body 50 also includes an actuator 55 on an outer surface of the body 50. In this example, the actuator 55 has the form of a button.

[0135] The body 50 also includes a user interface device configured to convey information to a user. Here, the user interface device is implemented as a plurality of lights 57, which may e.g. be configured to illuminate when the apparatus 1 is activated and/or to indicate a charging state of the power source 4. Other user interface devices are possible, e.g. to convey information haptically or audibly to a user.

[0136] The body may also include an airflow sensor which detects airflow in the aerosol generating apparatus 1 (e.g. caused by a user inhaling through the consumable 70). This may be used to count puffs, for example.

[0137] In this example, the consumable 70 includes a flow path which transmits aerosol generated by the at least one heating element 54 to the mouthpiece of the consumable.

[0138] In this example, the aerosol generating unit 4 is provided by the above-described heating system 52 and the delivery system 8 is provided by the above-described flow path and mouthpiece of the consumable 70.

[0139] Referring to Fig. 6, a portion of an aerosol generating device 100 according to an embodiment of the present disclosure is a heat-not-burn aerosol generating device (which may be the heat-not-burn aerosol generating device 1 shown in Figs. 4 and 5 described above). In other embodiments, the aerosol generating device 100 may be configured to generate aerosol from a liquid precursor (as described above with reference to Figs. 2 and 3).

[0140] The aerosol generating device 100 shown in Fig. 6 comprises a main body 102 (which may be the body 50 shown in Figs. 4 and 5) and a carriage 104 (which may be the cap 51 shown in Fig. 4, as will be described in more detail below) coupled to the main body 102. The main body 102 comprises a battery 105 as the power source (which may be the power source 2 shown in Fig. 4). The carriage 104 is located within a channel 103 of the main body 102, defined by a chassis 109 of the main body.

[0141] An elongate rod-shaped susceptor 106 (which may be the heating element 54 shown in Figs. 4 and 5 described above) extends from a susceptor support 107 of the main body 102, the susceptor 106 fixed to the susceptor support 107 by a fixing base 108 integrally formed with the susceptor 106. As will be described in more detail below, the susceptor 106 is configured to heat a consumable 70 inserted into the aerosol generating device 100. In some embodiments according to the present disclosure the susceptor 106 may take different shapes, for example, the susceptor 106 may be a blade-shaped susceptor. In some embodiments according to the present disclosure, a susceptor may be located in the consumable 70 instead of being a part of the device 100.

[0142] The carriage 104 comprises an inner wall 110 defining a receiving cavity 112. The receiving cavity 112 is configured to receive a consumable 70 containing an aerosol precursor. The receiving cavity 112 is also configured to receive the susceptor 106, such that the sus-

ceptor 106 may heat a consumable 70 received in the receiving cavity 112.

[0143] An induction coil 118 is fixed to an outer surface of the inner wall 110. In other embodiments according to the present invention, the induction coil 118 may instead be fixed to an internal surface of the inner wall 110, where the internal surface of the inner wall 110 is the surface which faces towards the receiving cavity 112. In other embodiments according to the present invention, the induction coil 118 may be held within a coil cavity 116 of the carriage 104, as will be described in more detail below with reference to Figs. 11 and 12.

[0144] The longitudinal extent of the induction coil 118 measured along the longitudinal axis of the receiving cavity 112 is approximately equal to the length of the susceptor 106. Thus, the susceptor 106 may be heated by the induction coil 118 along substantially the whole length of the susceptor 106.

[0145] The induction coil 118 is permanently electrically connected to first and second coil contacts 120a/b. The first coil contact 120a includes a first intermediate contact 121a and a first engaging contact 123a electrically connected to one another. Similarly, the second coil contact 120b includes a second intermediate contact 121b and a second engaging contact 123b electrically connected to one another. The electrical connection of the first and second intermediate contacts 121a/b with the first and second engaging contacts 123a/b is described in more detail below with reference to Figs. 8 and 9. The first intermediate contact 121a extends along a longitudinal extent of the induction coil 118 and is electrically connected to an upper end of the induction coil 118. The second intermediate contact 121b is electrically connected to a lower end of the induction coil 118. The first and second engaging contacts 123a/b are configured to engage with first and second main body contacts 125a/b respectively, as is described in further detail below.

[0146] The first and second main body contacts 125a/b are permanently electrically connected to the power source 105. Although not shown in the figures, first and second wires extend from the first and second main body contacts 125a/b respectively to a PCB which is electrically connected to the power source 105. The wires are soldered to the PCB.

[0147] In the example shown in Fig. 6, the main body contacts 125a/b are resiliently biased contacts which extend from the circumferential side wall of the main body 102. According to this configuration, the first and second main body contacts 125a/b can push against the first and second engaging contacts 123a/b respectively, achieving an improved electrical connection between the main body contacts 125a/b and the coil contacts 120a/b, and thereby clipping the carriage 104 in a lower position (which is discussed in more detail below).

[0148] Each of the main body contacts 125a/b comprises a supporting portion 127a/b, a protruding portion 129a/b and a fixing portion 131a/b. The supporting por-

tion 127a/b contacts the circumferential side wall of the main body 102, and the protruding portion 129a/b protrudes from the supporting portion 127a/b towards the channel 103. In this way, the resiliently biased nature of the main body contacts 125a/b is achieved. The protruding portion 129a/b of each of the first and second main body contacts 125a/b includes an indent 137a/b complementary in shape to the respective first or second engaging contact 123a/b. Such indents 137a/b both improve the electrical connection between the main body contacts 125a/b and the engaging contacts 123a/b and improve the ability of the main body contacts 125a/b to clip the carriage 104 in the lower position (which is discussed in more detail below). The fixing portion extends across a lower face of the susceptor support 107 and fixedly couples the main body contact 125a/b to the main body 102.

[0149] In other embodiments according to the present invention, the first main body contact 125a and the second main body contact 125b may comprise pogo pins. The pogo pins may extend from an upper face of the susceptor support 107.

[0150] In the example shown in Fig. 6, the first and second main body contacts 125a/b are located at the lower end of the channel 103. Thus, the first intermediate contact 121a extending along the longitudinal extent of the induction coil 118 allows the first intermediate contact to electrically connect the upper end of the induction coil 118 to the first main body contact 125a. In other embodiments according to the present invention, the first and second main body contacts 125a/b may be located at the upper end of the channel 103. The first and second main body contacts 125a/b are described in more detail below.

[0151] The aerosol generating device 100 comprises coil electrical insulation 133 which extends circumferentially around the induction coil 118 and longitudinally along a portion of the longitudinal extent of the induction coil 118. The coil electrical insulation 133 electrically insulates the induction coil 118 from the first intermediate contact 121a.

[0152] The aerosol generating device 100 further comprises contact electrical insulation 135 extending circumferentially around the induction coil 118 and the first and second intermediate contacts 121a/b.

[0153] The coil electrical insulation 133 and the contact electrical insulation 135 are formed of electrically insulating tape, which is also heat resistant.

[0154] In other embodiments according to the present invention, as will be described below with reference to Figs. 11 and 12, instead or, or in addition to, the electrically insulating tape 133/135, the carriage 104 may comprise an outer wall 114 extending circumferentially around the inner wall 110.

[0155] In the embodiment shown in Fig. 6, the carriage 104 forms a cap of the device 100. The carriage 104 (or the cap) includes an external wall 124 with a receiving aperture 126 configured to receive a consumable 70 therethrough such that the consumable 70 may be in-

serted into the receiving cavity 112. As can be seen in Fig. 6, the external wall 124 of the carriage 104 (or the cap) forms an external wall 124 of the aerosol generating device 100.

[0156] The carriage 104 is slidable through the channel 103 along the longitudinal axis of the main body 102 between a lower position and an upper position. Fig. 6 shows the aerosol generating device 100 with the carriage 104 in the lower position, and Fig. 7 shows the aerosol generating device 100 of Fig. 6 with the carriage 104 in the upper position. As illustrated between Figs. 6 and 7, a movement of the carriage 104 from the lower position to the upper position is a movement of the carriage 104 in a direction which points away from the power source 105. A movement of the carriage 104 from the upper position to the lower position is a movement of the carriage 104 in a direction which points towards the power source 105.

[0157] An upper rim of the carriage, which extends circumferentially around the inner wall on an upper side of the induction coil, comprises a slider protrusion for sliding within a slider groove of the main body. The upper rim of the carriage is described in more detail below with reference to Figs. 8 and 9. The lower rim of the carriage, which extends circumferentially around the inner wall on a lower side of the induction coil, and which is configured to fixedly couple the first and second coil contacts to the carriage, is also described in more detail below with reference to Figs. 8 and 9.

[0158] The carriage 104 further comprises a base wall 136, which is integrally formed with the inner wall 110. The base wall 136 extends inwards from the inner wall 110 in a direction towards the susceptor 106. In this way, a consumable 70 inserted into the receiving cavity 112 is supported by the base wall 136, such that when the carriage 104 moves between the lower position and the upper position (and vice versa) the consumable 70 is carried upwards and downwards with the base wall 136. The base wall 136 comprises a susceptor-receiving aperture 138 configured to receive the susceptor 106 therethrough.

[0159] As can be seen in Fig. 6, when the carriage 104 is in the lower position substantially the entire susceptor 106 extends into the receiving cavity 112, and as can be seen in Fig. 7, when the carriage 104 is in the upper position only an upper portion of the susceptor 106 extends through the susceptor-receiving aperture 138 and into the receiving cavity 112. Because in the upper position only the upper portion of the susceptor 106 extends into the receiving cavity 112, it may be easier to insert and remove a consumable 70 into and out of the receiving cavity 112 when the carriage 104 is in the upper position compared to the lower position.

[0160] When the carriage 104 is in the lower position, as shown in Fig. 6, the elongate susceptor 106 is surrounded circumferentially along its length by the carriage 104. In particular, the elongate susceptor 106 is surrounded circumferentially along its length by the inner

wall 110 and the external wall 124. When the carriage 104 is in the upper position, as shown in Fig. 7, the lower portion of the elongate susceptor 106 is exposed for user access via an access window 142 located between the carriage 104 and the main body 102. A user may be able to clean the exposed portion of the elongate susceptor 106 using the access window 142.

[0161] When the carriage 104 is in the lower position, the induction coil 118 is in a connected position in which the coil contacts 120a/b are electrically connected to the power source 105. When the carriage 104 is in the upper position, the induction coil 118 is in a disconnected position in which the coil contacts 120a/b are electrically disconnected from the power source 105. Thus, movement of the carriage 104 from the lower position to the upper position electrically disconnects the induction coil 118 from the power source 105, and movement of the carriage 104 from the upper position to the lower position electrically connects the induction coil 118 to the power source 105. Such electrical connection and disconnection may enable the induction coil 118 to move with the movement of the carriage 104. Therefore, the induction coil 118 may be moved with the carriage 104 such that it is not a barrier to cleaning. Furthermore, the electrical connection and disconnection may mean that when the portion of the elongate susceptor 106 is exposed the induction coil 118 may be disconnected from the power source 105 and the susceptor 106 may not be heated by the induction coil 118 and the susceptor 106 may be safe to clean, and when the elongate susceptor 106 is surrounded along its length by the carriage 104 the induction coil 118 may be connected to the power source 105 and the susceptor 106 may be heated by the induction coil 118 such that a consumable 70 in the receiving cavity 112 may be heated by the susceptor 106.

[0162] As can be seen in Fig. 6, when the induction coil 118 is in the connected position, the elongate susceptor 106 is surrounded circumferentially along approximately its entire length by the induction coil 118. As can be seen in Fig. 7, when the coil is in the disconnected position, an upper portion of the elongate susceptor 106 is surrounded circumferentially by the induction coil 118.

[0163] The electrical connection and disconnection are enabled by the first and second coil contacts 120a/b and first and second main body contacts 125a/b. As can be seen in Fig. 6, when the carriage 104 is in the lower position, the first coil 120a contact is electrically connected to the first main body contact 125a and the second coil contact 120b is electrically connected to the second main body contact 125b, and as can be seen in Fig. 7, when the carriage 104 is in the upper position, the first coil contact 120a is electrically disconnected from the first main body contact 125a and the second coil contact 120b is electrically disconnected from the second main body contact 125b.

[0164] As discussed above, the main body contacts 125a/b are resiliently biased contacts which extend from the circumferential side wall of the main body 102. There-

fore, when the carriage 104 is in the lower position, the first and second main body contacts 125a/b push against the first and second engaging contacts 123a/b respectively, thereby clipping the carriage 104 in the lower position and enabling a good electrical connection between the coil contacts 120a/b and the main body contacts 125a/b. When a user pulls the carriage 104 upwards with a force greater than that required to release the engaging contacts 123a/b from the grip of the main body contacts 125a/b, the carriage 104 moves into the upper position in which the coil contacts 120a/b are no longer in electrical connection with the main body contacts 125a/b.

[0165] Fig. 8 provides a perspective cut-away view of the aerosol generating device 100 shown in Figs. 6 and 7, which shows the second main body contact 125b and the second coil contact 120b, and the upper 139 and lower rims 141 of the carriage 104 in more detail. Fig. 9 provides a perspective cut-away view of the aerosol generating device 100 shown in Figs. 6 and 7, which shows the main body contacts 125a/b and the first coil contact 120a, and the upper 139 lower rims 141 of the carriage 104 in more detail. Note that features of the aerosol generating device 100, such as the electrically insulating tape, are omitted from Fig. 9 to enable other features of the device 100, such as the induction coil 118 and the coil contacts 120a/b to be shown. The PCB 150 can also be seen in Fig. 9.

[0166] As shown in Figs. 8 and 9, the first and second engaging contacts 123a/b are clipped onto the lower rim 141 of the carriage 104. The first and second intermediate contacts 121 a/b each extend through an aperture in the respective first or second engaging contact 123a/b and through a respective aperture in the lower rim 141. In this way, the intermediate contacts 121a/b and the engaging contacts 123a/b are electrically connected to one another, and the coil contacts 120a/b are fixedly coupled to the carriage 104.

[0167] As further shown in Fig. 8, the fixing portion 131b of the second main body contact 125b includes a fixing aperture 143b. Although not included in Fig. 8, the fixing portion 131b also includes a fixing element extending through the fixing aperture 143b, such as a screw or a heat stake, to fix the second main body contact 125b to the main body 102. The fixing portion 131b extends across a portion of the lower face of the susceptor support 107. This facilitates connection of the main body contact 125b to the power source 105 because the wire connecting the main body contact 125b to the PCB may extend from the fixing portion 131b on the lower face of the susceptor support 107. Although not shown in Fig. 8, as can be seen in Fig. 9, the first main body contact 125a includes a fixing portion 131a with corresponding features to the fixing portion 131b of the second main body contact 125b.

[0168] The electrical contacts shown in Figs. 8 and 9 are formed of stamped metal sheet. In more detail, the first and second intermediate contacts 121 a/b, the first and second engaging contacts 123a/b, and the first and second main body contacts 125a/b are formed of

stamped metal sheet.

[0169] Fig. 9 further shows that the upper rim 139 of the carriage 104 comprises two slider protrusions 145 for sliding within respective slider grooves 147 of the main body 102.

[0170] Fig. 10 provides a further perspective cut-away view of the aerosol generating device 100 shown in Figs. 6 to 9.

[0171] The battery 105 and the PCB 150 within the main body 102 of the aerosol generating device is shown in Fig. 10, as well as the main body contacts 125a/b. The inner wall 110 and the upper 139 and lower 141 rims of the carriage 104 are also shown in Fig. 10, with the induction coil 118 extending around the inner wall.

[0172] Figs. 11 and 12 show an aerosol generating device 200 according to another embodiment of the present invention.

[0173] Corresponding features to the aerosol generating device shown in Figs. 6 to 9 are shown using the same reference numerals as those used for Figs. 6 to 9.

[0174] For example, the aerosol generating device 200 shown in Figs. 11 and 12, which is a heat-not-burn aerosol generating device, comprises a main body 102, a carriage 104 coupled to the main body, and an elongate rod-shaped susceptor 106 extending from the main body. Similarly to the embodiment discussed above with reference to Figs. 6 to 9, the carriage comprises an inner wall 110 defining a receiving cavity 112 configured to receive a consumable and the susceptor 106.

[0175] In the embodiment shown in Figs. 11 and 12, the carriage 104 further comprises an outer wall 114 extending circumferentially around the inner wall 110. The outer wall 114 defines a coil cavity 116 between the inner wall 110 and the outer wall 114. An induction coil 118, which extends circumferentially around the inner wall 110, is housed within the coil cavity 116. In this way, the induction coil 118 is fixedly coupled to the carriage 104.

[0176] The induction coil 118 is permanently electrically connected to first and second coil contacts 120a/b which extend through respective coil contact-receiving apertures 122a/b in the outer wall 114. The induction coil 118 and the coil contacts 120a/b are the only components of the aerosol generating device 100 housed within the coil cavity 116. When the coil contacts 120a/b are electrically connected to the power source in the main body 102, an electrical current can flow through the induction coil 118 and an alternating electromagnetic field may be generated within the receiving cavity 112, thereby heating up the susceptor 106. The electrical connection of the coil contacts 120a/b to the power source will be described in more detail below.

[0177] The longitudinal extent of the induction coil 118, measured along the longitudinal axis of the receiving cavity 112, is approximately equal to the depth of the coil cavity 116 along the longitudinal axis of the receiving cavity 112, and the entire induction coil 118 is housed within the coil cavity 116. Furthermore, the longitudinal extent of the induction coil 118 measured along the long-

itudinal axis of the receiving cavity 112 is approximately equal to the length of the susceptor 106. Thus, the susceptor 106 may be heated by the induction coil 118 along substantially the whole length of the susceptor 106.

[0178] In the embodiment shown in Fig. 11, the carriage 104 forms a cap of the device 100. The carriage 104 (or the cap) includes an external wall 124 with a receiving aperture 126 configured to receive a consumable 70 therethrough such that the consumable 70 may be inserted into the receiving cavity 112. As can be seen in Fig. 11, the external wall 124 of the carriage 104 (or the cap) forms an external wall 124 of the aerosol generating device 100.

[0179] The carriage 104 is slidable along the longitudinal axis of the main body 102 between a lower position and an upper position. Fig. 11 shows the aerosol generating device 100 with the carriage 104 in the lower position, and Fig. 12 shows the aerosol generating device 100 of Fig. 11 with the carriage 104 in the upper position. As can be inferred from Figs. 11 and 12 a movement of the carriage 104 from the lower position to the upper position is a movement of the carriage 104 in a direction which points away from the power source. A movement of the carriage 104 from the upper position to the lower position is a movement of the carriage 104 in a direction which points towards the power source.

[0180] The outer circumferential surface of the outer wall 114, which interfaces with the inner circumferential surface of the main body 102, is slidable along a slider groove 128 in the inner circumferential surface of the main body 102. The length of the outer wall 114, measured along the longitudinal axis of the receiving cavity 112, is smaller than the length of the inner wall 110, measured along the longitudinal axis of the receiving cavity 112, such that the outer wall 114 extends along only a lower portion of the inner wall 110. A main body stop protrusion 130 on the main body 102 is configured to engage with the upper surface of the outer wall 114 when the carriage 104 is in the upper position such as to prevent the carriage 104 fully decoupling from the main body 102 when the carriage 104 is in the upper position. In this way, the main body stop protrusion 130 and the outer wall 114 together form a stop.

[0181] The carriage 104 further comprises a support wall 132 extending from the external wall 124. The support wall 132 and the external wall 124 are integrally formed with one another and are integrally formed with the inner wall 110. An outer surface of the support wall 132 is configured to engage with an inner surface of the housing 134 of the main body, such that the sliding movement of the carriage 104 with respect to the main body 102 is more stable. The external wall 124 includes an external wall stop configured to engage with the housing 134 when the carriage 104 is in the lower position such as to substantially prevent the carriage 104 moving along the direction which points towards the power source when the carriage 104 is in the lower position.

[0182] The carriage 104 further comprises a base wall

136, which is integrally formed with the outer wall 114. The base wall 136 extends between the outer wall 114 and the inner wall 110 such that the coil cavity 116 is closed at the lower end of the coil cavity 116. In contrast, the coil cavity 116 is open at its upper end such that the coil cavity 116 and the receiving cavity 112 are open towards the same direction. The base wall 136 further extends inwards from the inner wall 110 in a direction towards the susceptor 106. In this way, a consumable 70 inserted into the receiving cavity 112 the consumable 70 is supported by the base wall 136, such that when the carriage 104 moves between the lower position and the upper position (and vice versa) the consumable 70 is carried upwards and downwards with the base wall 136.

The base wall 136 comprises a susceptor-receiving aperture 138 configured to receive the susceptor 106 therethrough. As can be seen in Fig. 11, when the carriage 104 is in the lower position the entire susceptor 106 extends through the susceptor-receiving aperture 138 such that substantially the entire susceptor 106 extends into the receiving cavity 112, and as can be seen in Fig. 12, when the carriage 104 is in the upper position only an upper portion of the susceptor 106 extends through the susceptor-receiving aperture 138 and into the receiving cavity 112. Because in the upper position only the upper portion of the susceptor 106 extends into the receiving cavity 112, it may be easier to insert and remove a consumable 70 into and out of the receiving cavity 112 when the carriage 104 is in the upper position compared to the lower position.

[0183] As can further be seen in Fig. 11, the base wall 136 is configured to abut a susceptor-supporting portion 140 of the main body 102 (from which the susceptor 106 extends) when the carriage 104 is in the lower position. Further, as can be seen in Fig. 12, the base wall 136 is configured to be spaced apart from the susceptor-supporting portion 140 of the main body 102 when the carriage 104 is in the upper position. Thus, when the carriage 104 is in the lower position, as shown in Fig. 11, the elongate susceptor 106 is surrounded circumferentially along its length by the carriage 104 (specifically by the inner wall 110 and the base wall 136), and when the carriage 104 is in the upper position, as shown in Fig. 12, the lower portion of the elongate susceptor 106 is exposed for user access via an access window 142 located between the carriage 104 and the main body 102. A user may be able to clean the exposed portion of the elongate susceptor 106 using the access window 142.

[0184] When the carriage 104 is in the lower position, the induction coil 118 is in a connected position in which the coil contacts 120a/b are electrically connected to the power source. When the carriage 104 is in the upper position, the induction coil 118 is in a disconnected position in which the coil contacts 120a/b are electrically disconnected from the power source. Thus, movement of the carriage 104 from the lower position to the upper position electrically disconnects the induction coil 118 from the power source, and movement of the carriage

104 from the upper position to the lower position electrically connects the induction coil 118 to the power source. Such electrical connection and disconnection may enable the induction coil 118 to move with the movement of the carriage 104. Therefore, the induction coil 118 may be moved with the carriage 104 such that it is not a barrier to cleaning. Furthermore, the electrical connection and disconnection may mean that when the portion of the elongate susceptor 106 is exposed the induction coil 118 may be disconnected from the power source and the susceptor 106 may not be heated by the induction coil 118 and the susceptor 106 may be safe to clean, and when the elongate susceptor 106 is surrounded along its length by the carriage 104 the induction coil 118 may be connected to the power source and the susceptor 106 may be heated by the induction coil 118 such that a consumable 70 in the receiving cavity 112 may be heated by the susceptor 106.

[0185] The electrical connection and disconnection are enabled by the first and second coil contacts 120a/b which are permanently electrically connected to the induction coil 118, and first and second main body contacts (not shown in Figs. 11 and 12), which are permanently electrically connected to the power source in the main body 102. When the carriage is in the lower position, the first coil 120a contact is electrically connected to the first main body contact and the second coil contact 120b is electrically connected to the second main body contact, and when the carriage is in the upper position, the first coil contact 120a is electrically disconnected from the first main body contact and the second coil contact 120b is electrically disconnected from the second main body contact.

Claims

1. An aerosol generating device comprising:

a main body comprising a power source;
a carriage coupled to the main body, the carriage comprising:
an inner wall defining a receiving cavity, the receiving cavity configured to receive an aerosol precursor and a susceptor, wherein the susceptor is configured to heat the aerosol precursor received in the receiving cavity; and,
an induction coil extending around the inner wall, the induction coil electrically connected to coil contacts and the induction coil configured to generate an alternating electromagnetic field within the receiving cavity,

wherein the induction coil is moveably coupled to the main body such that the induction coil is moveable between a connected position in which the coil contacts are electrically connected to the power source and a disconnected position in which the coil con-

tacts are electrically disconnected from the power source.

2. The aerosol generating device of claim 1 wherein the coil contacts comprise a first coil contact and a second coil contact and wherein the induction coil is permanently electrically connected the first coil contact and the second coil contact.
3. The aerosol generating device of claim 2 wherein the main body comprises a first main body contact and a second main body contact, the first main body contact and the second main body contact permanently electrically connected to the power source.
4. The aerosol generating device of claim 3 wherein:
when the induction coil is in the connected position, the first coil contact is electrically connected to the first main body contact and the second coil contact is electrically connected to the second main body contact, and
when the induction coil is in the disconnected position, the first coil contact is electrically disconnected from the first main body contact and the second coil contact is electrically disconnected from the second main body contact.
5. The aerosol generating device of any of the preceding claims wherein the induction coil is moveable between the connected position and the disconnected position along a longitudinal axis of the receiving cavity.
6. The aerosol generating device of any of the preceding claims wherein the carriage is moveably coupled to the main body between a lower position in which the induction coil is in the connected position and an upper position in which the induction coil is in the disconnected position.
7. The aerosol generating device of any of the preceding claims wherein the induction coil is fixedly coupled to the carriage.
8. The aerosol generating device of any of the preceding claims further comprising a stop configured to substantially prevent the carriage fully decoupling from the main body.
9. The aerosol generating device of claim 8 wherein the stop includes a main body protrusion on the main body and a carriage protrusion on the carriage, wherein the main body protrusion and the carriage protrusion are configured to engage one another when the carriage is in the upper position.
10. The aerosol generating device of any of the preced-

ing claims further comprising an elongate susceptor extending from the main body, wherein the receiving cavity is configured to receive the elongate susceptor.

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11. The aerosol generating device of claim 10, when dependent upon any of claims 5 to 9, wherein when the carriage is in the lower position the elongate susceptor is surrounded circumferentially along its length by the carriage, and when the carriage is in the upper position a portion of the elongate susceptor is exposed for user access via an access window located between the carriage and the main body. 10
12. The aerosol generating device of any of the preceding claims wherein the carriage further comprises an outer wall extending circumferentially around the inner wall and defining a coil cavity between the inner wall and the outer wall, and wherein the induction coil is housed within the coil cavity. 20
13. The aerosol generating device of claim 12 wherein the outer wall includes electrical contact-receiving apertures and wherein the electrical contacts each extend through a respective electrical contact receiving aperture 25
14. The aerosol generating device of claim 12 or claim 13 wherein a depth of the coil cavity along a longitudinal axis of the receiving cavity is approximately equal to the length of the elongate susceptor. 30
15. The aerosol generating device of any of claims 12 to 14, wherein a length of the outer wall along a longitudinal axis of the receiving cavity is less than a length of the inner wall along the longitudinal axis of the receiving cavity. 35

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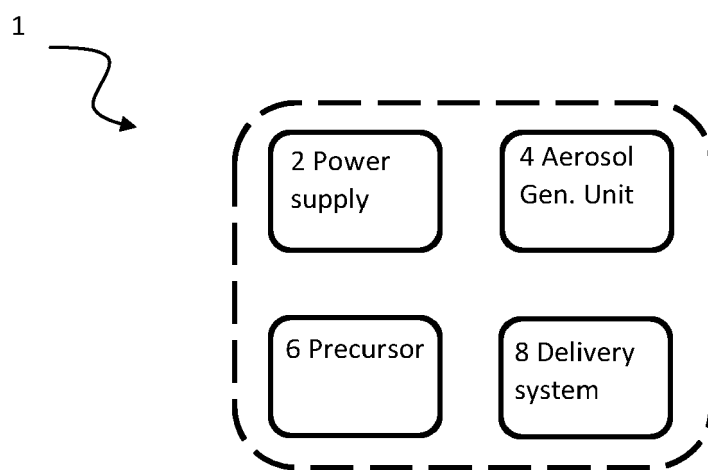


Fig. 1

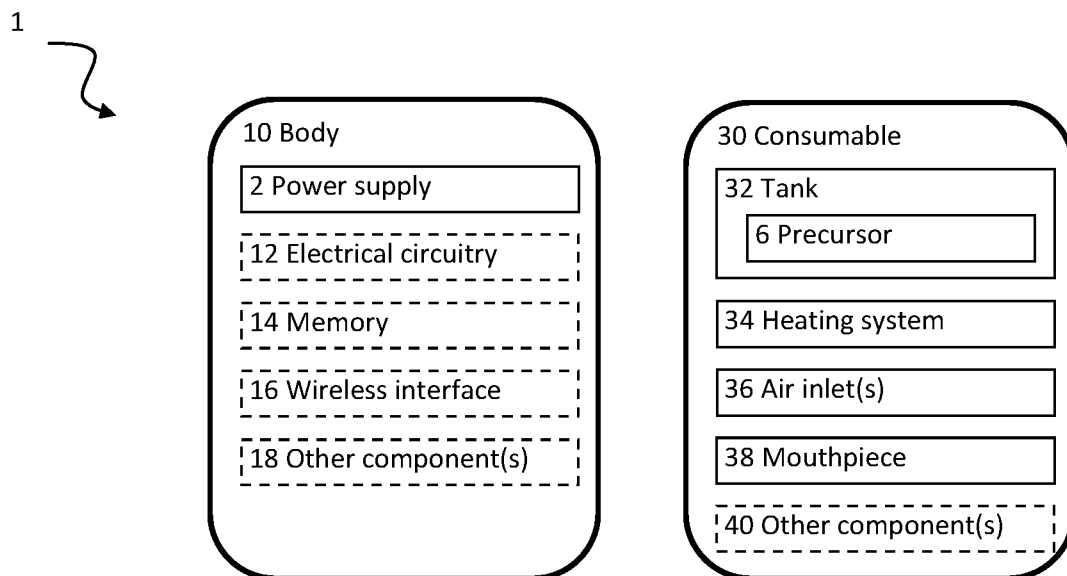


Fig. 2

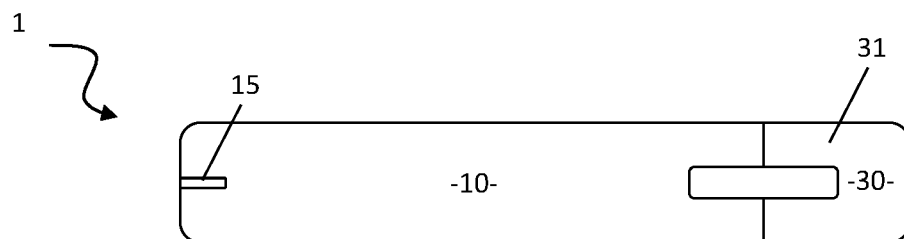


Fig. 3a

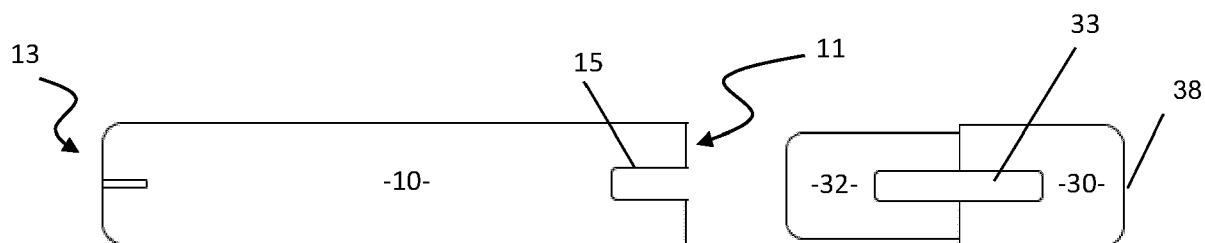


Fig. 3b

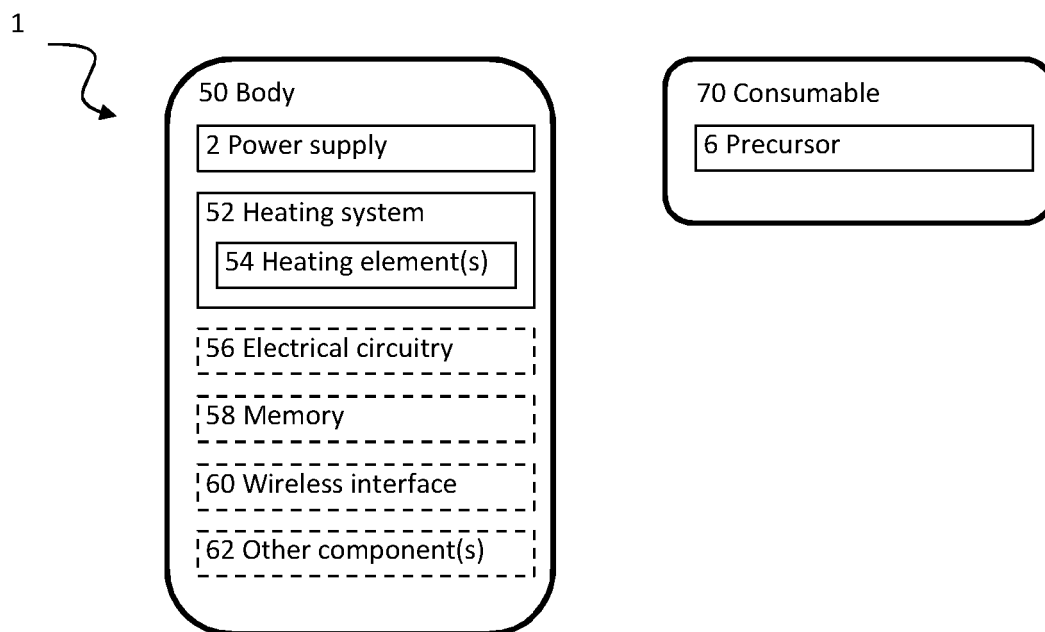


Fig. 4

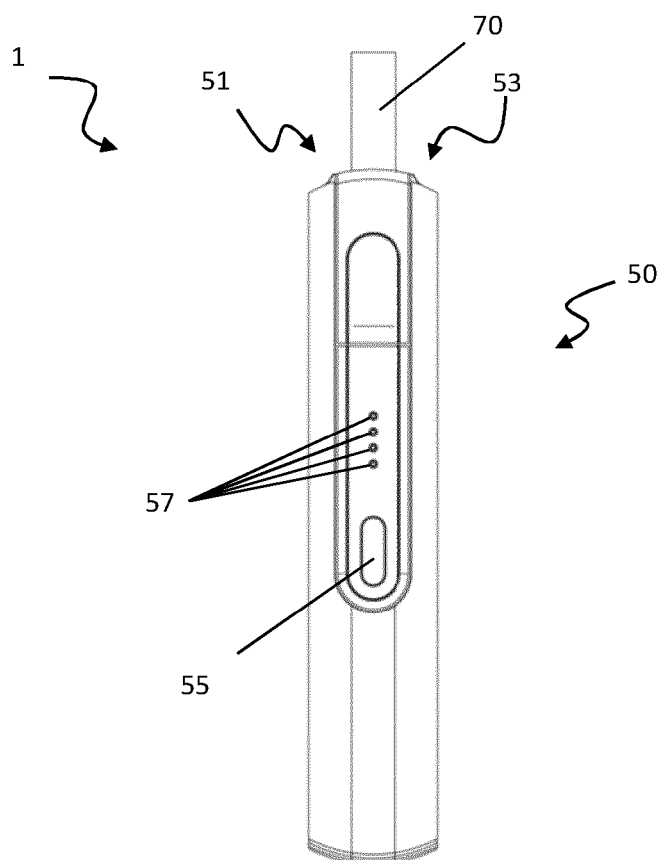


Fig. 5

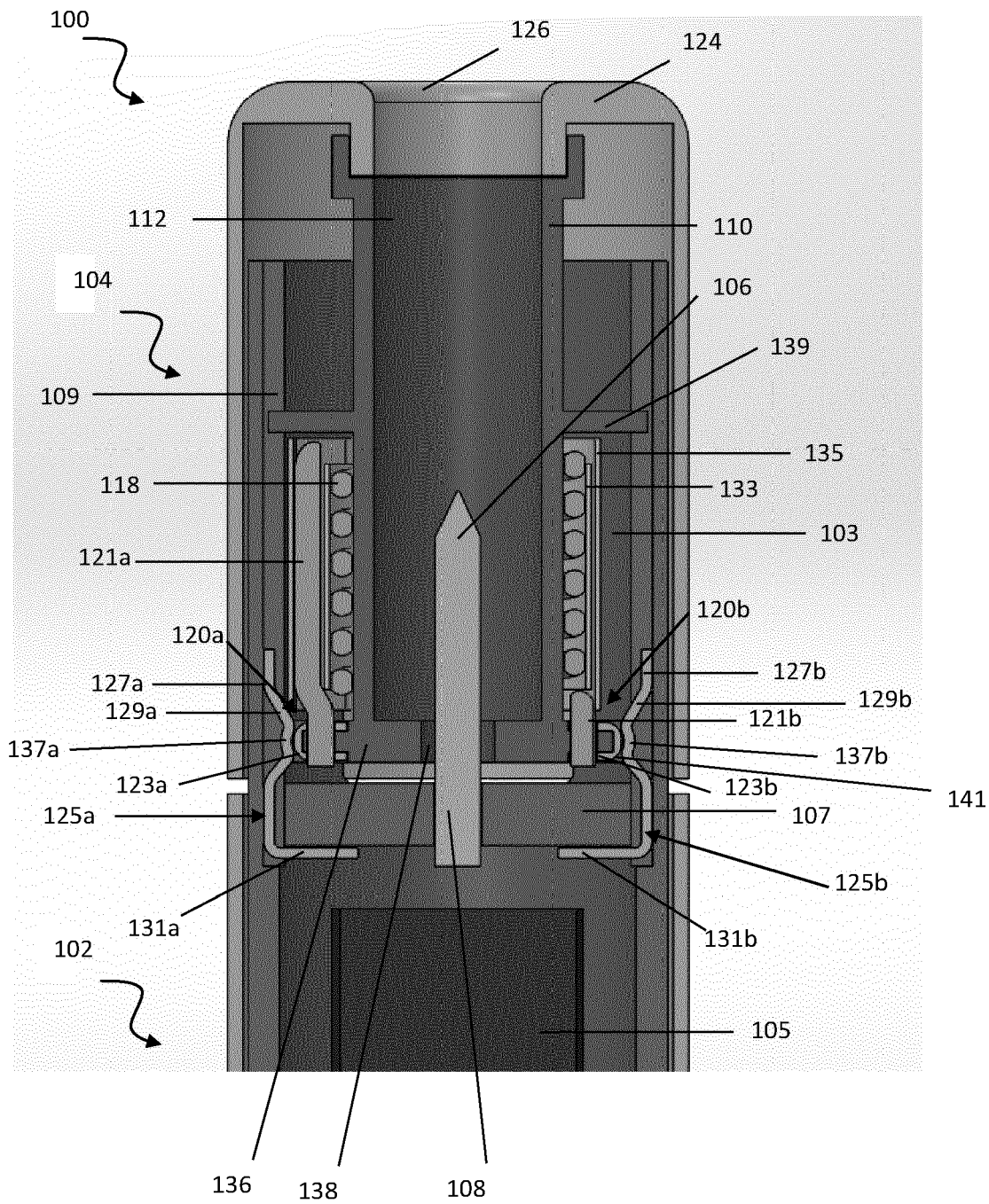


Fig. 6

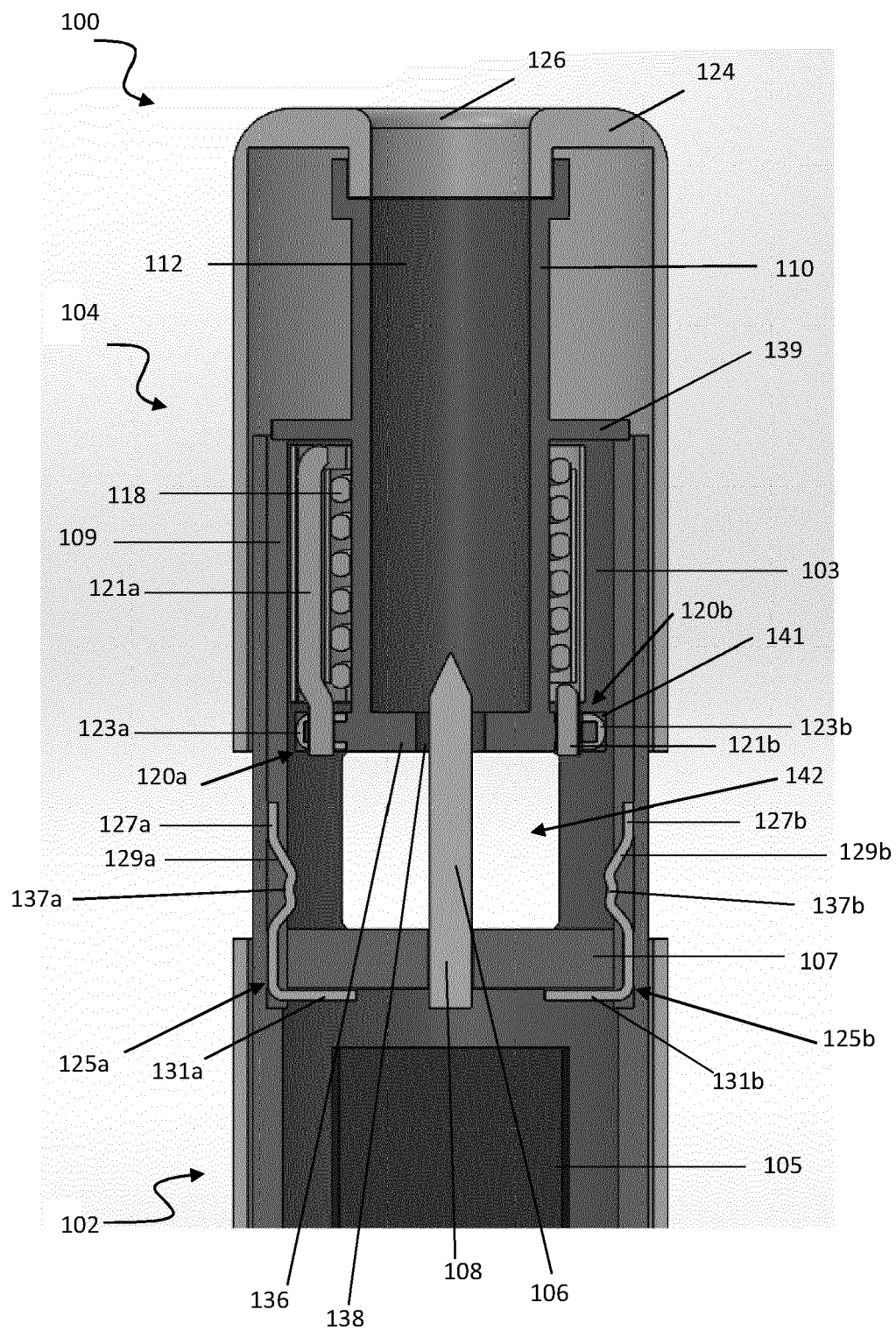


Fig. 7

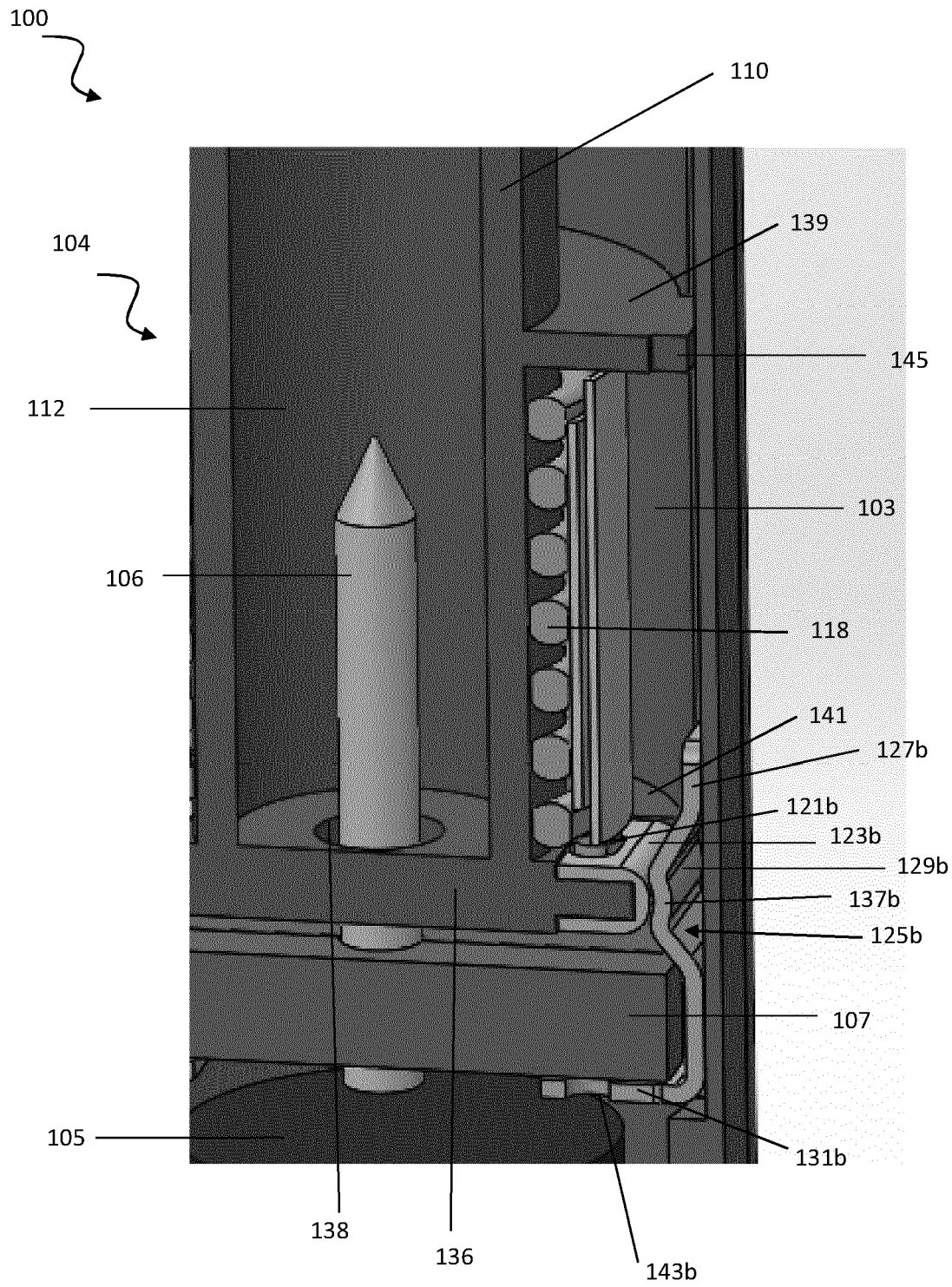


Fig. 8

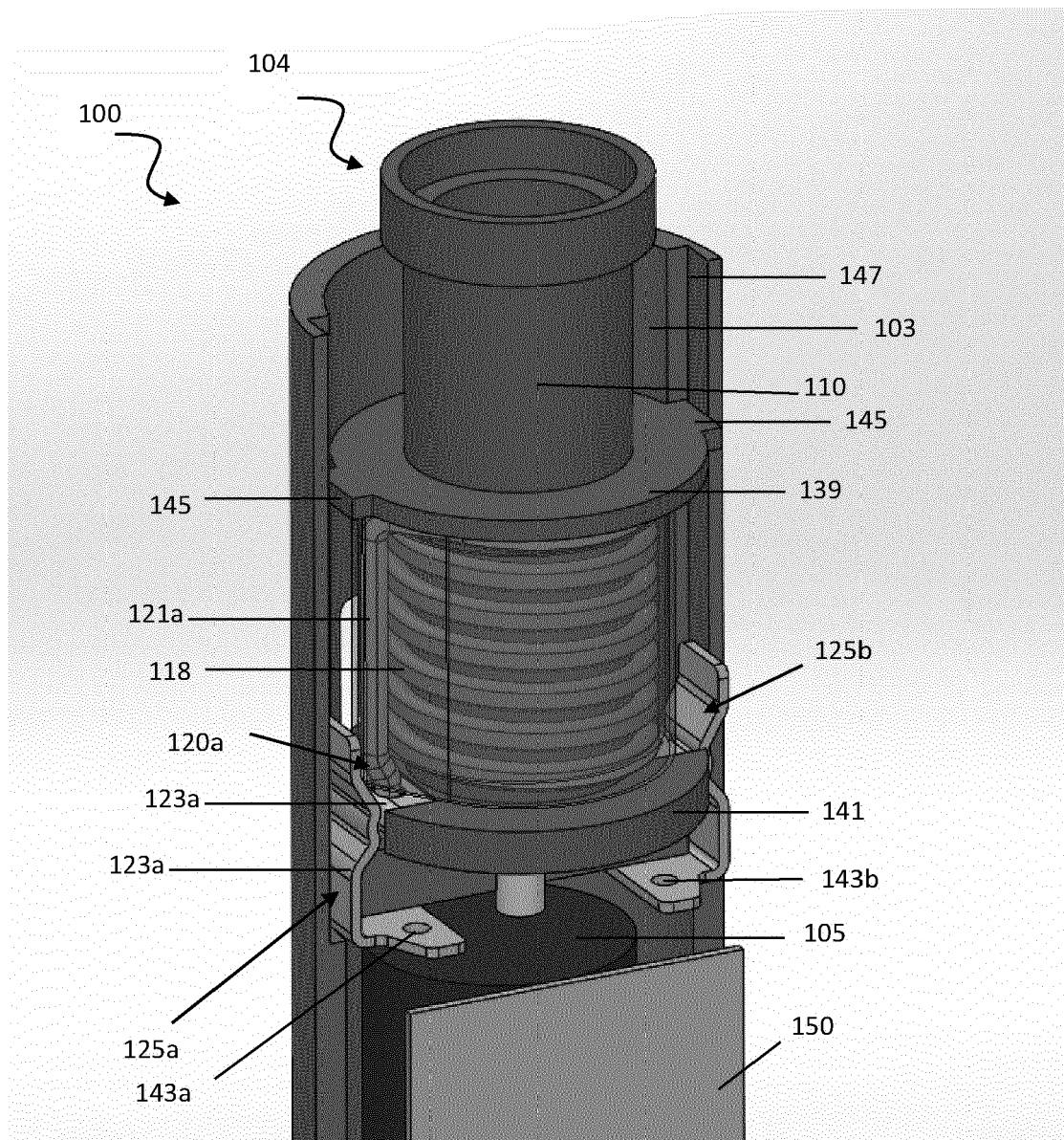


Fig. 9

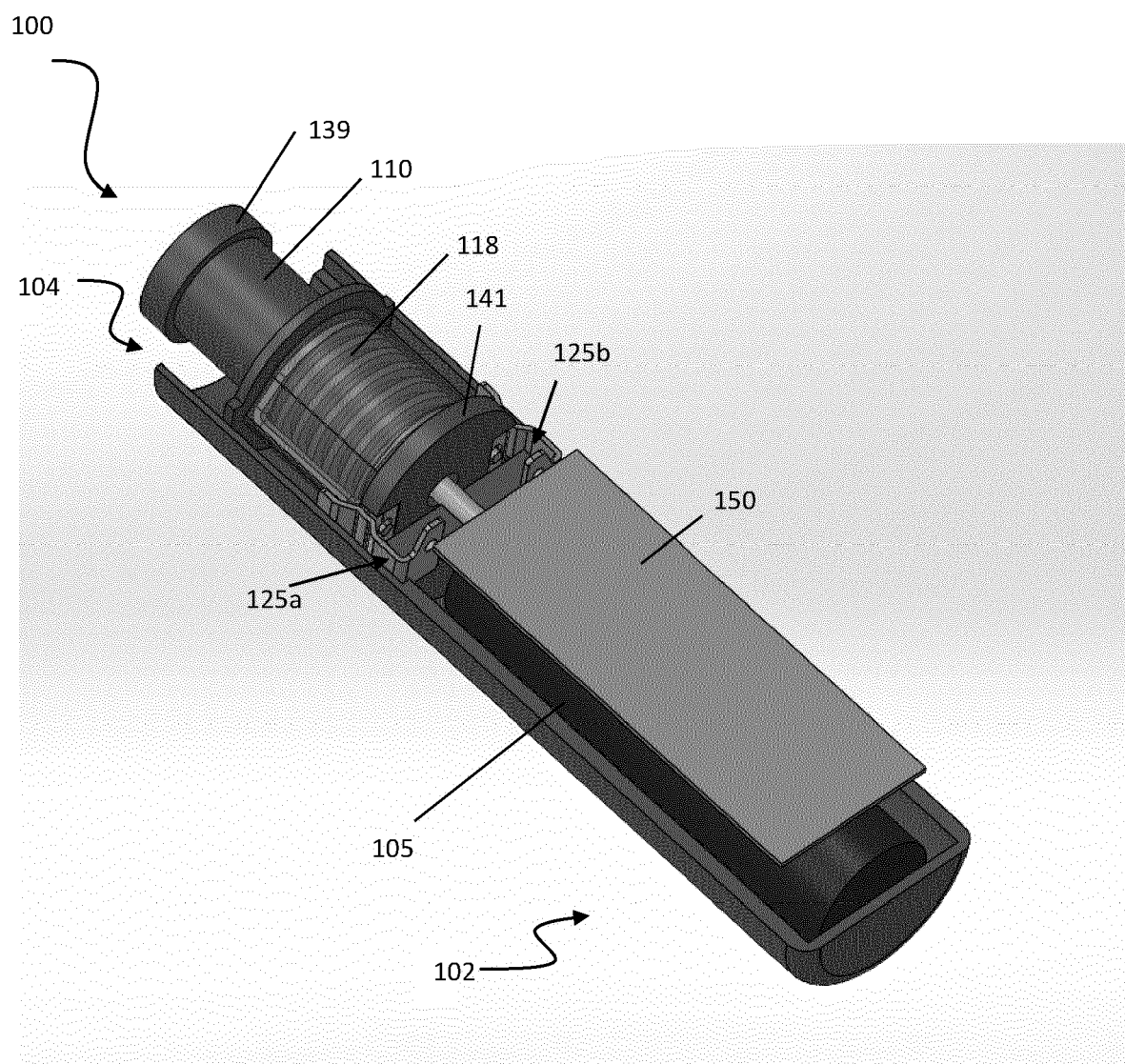


Fig. 10

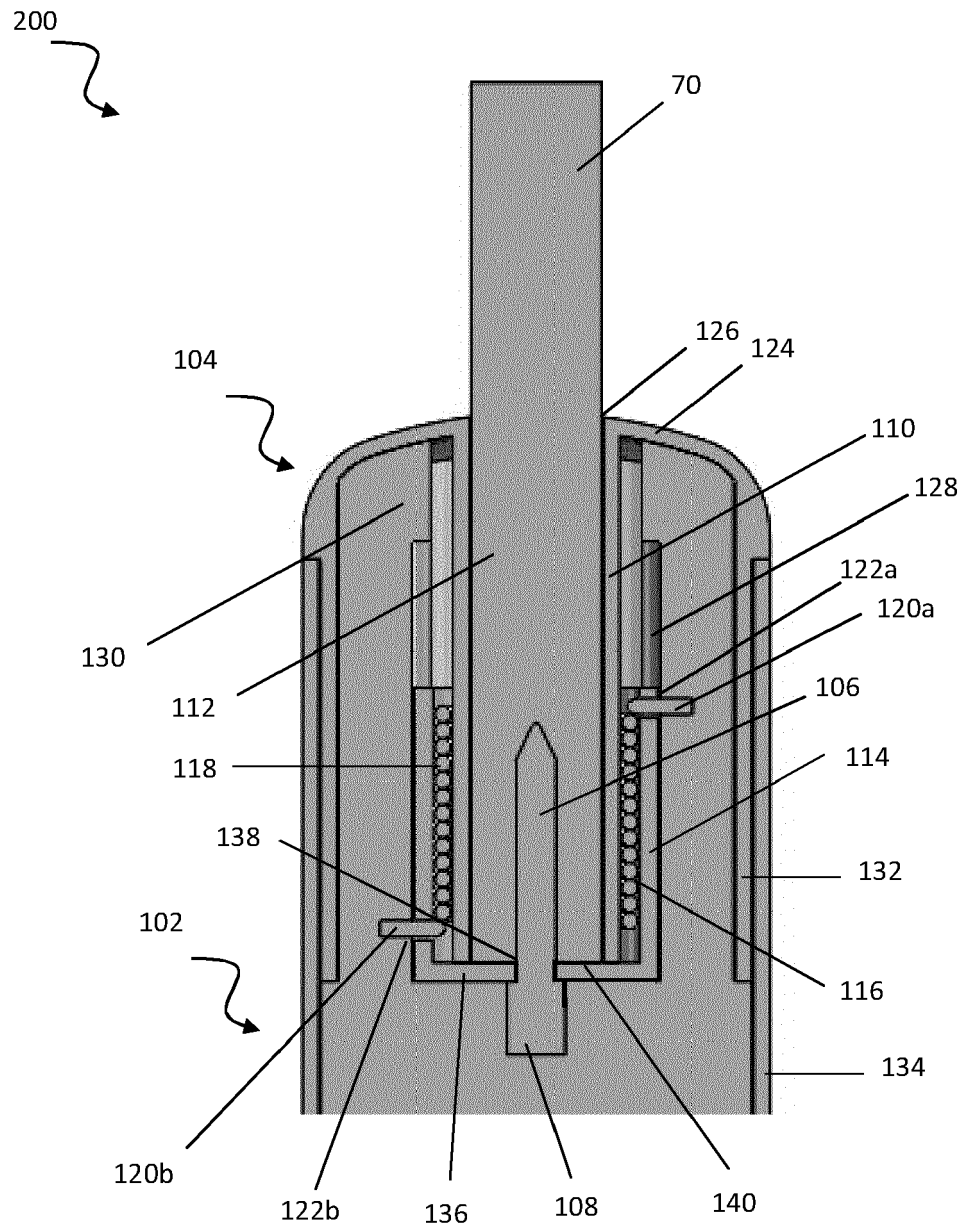


Fig. 11

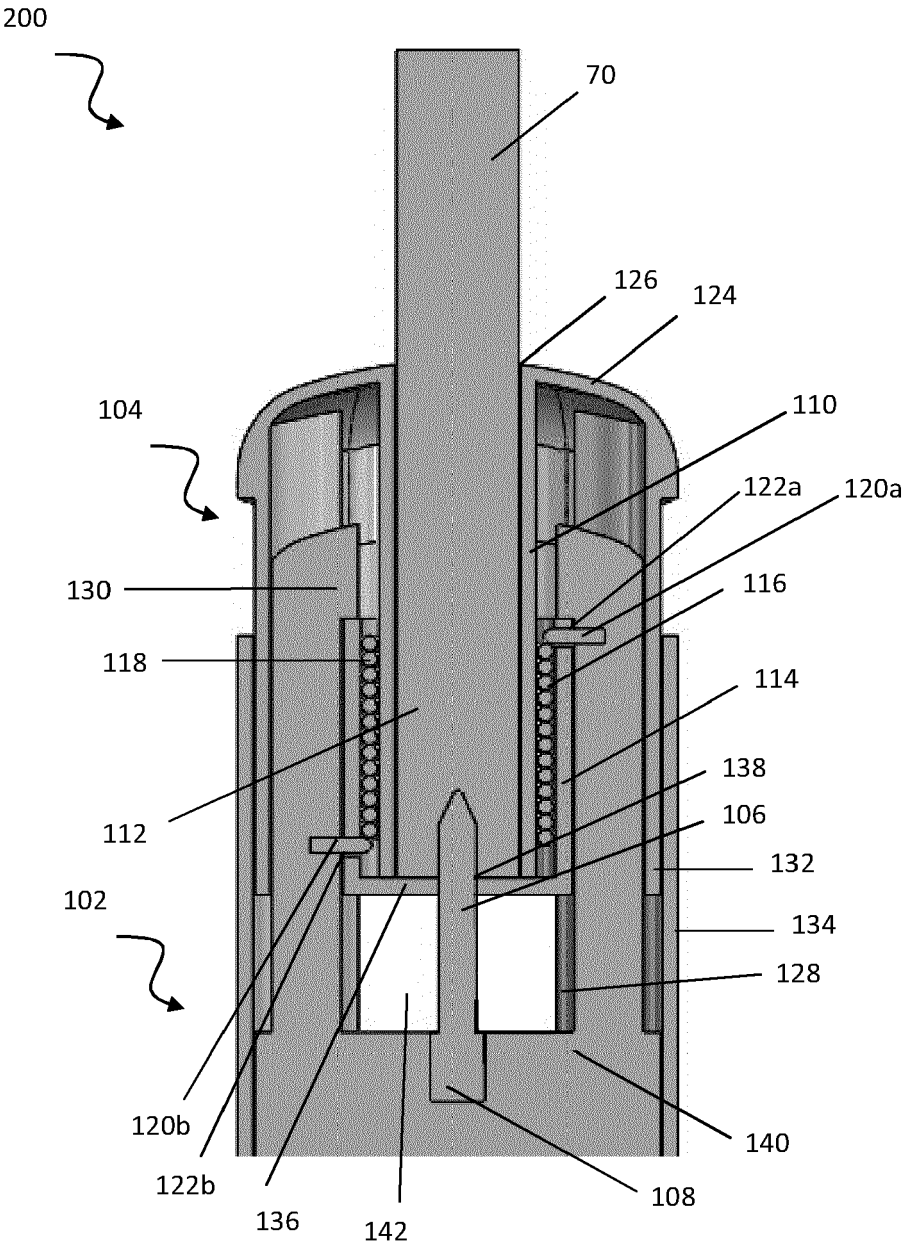


Fig. 12



EUROPEAN SEARCH REPORT

Application Number

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