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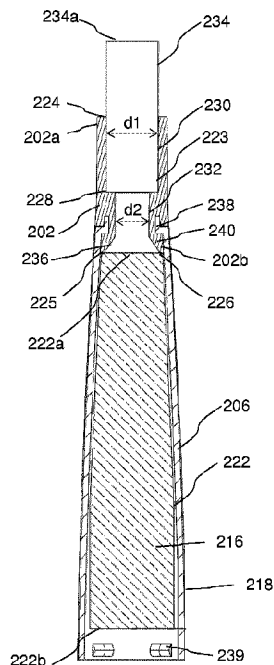
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(54) Title: MOUTHPIECE



(57) **Abrégé/Abstract:**

A mouthpiece (202) for an apparatus for generating an inhalable medium is disclosed. The mouthpiece defines an aperture extending from a first opening (224) at a first end of the mouthpiece to a second opening (236) at an opposing end of the mouthpiece. The mouthpiece is arranged to receive in the aperture through the first opening a flavour element for imparting a flavour to a flow of at least one of a vapour and an aerosol that passes through the mouthpiece in use. The aperture has a first radial dimension towards the first opening, and a second radial dimension towards the second opening, wherein the second radial dimension is smaller than the first radial dimension.

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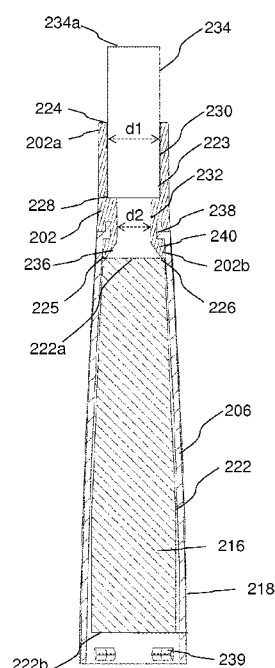


Figure 2b

(57) Abstract: A mouthpiece (202) for an apparatus for generating an inhalable medium is disclosed. The mouthpiece defines an aperture extending from a first opening (224) at a first end of the mouthpiece to a second opening (236) at an opposing end of the mouthpiece. The mouthpiece is arranged to receive in the aperture through the first opening a flavour element for imparting a flavour to a flow of at least one of a vapour and an aerosol that passes through the mouthpiece in use. The aperture has a first radial dimension towards the first opening, and a second radial dimension towards the second opening, wherein the second radial dimension is smaller than the first radial dimension.

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MOUTHPIECE

Technical Field

5 The present invention relates to a mouthpiece, and more particularly to a mouthpiece for an apparatus for generating an inhalable medium.

Background

Smoking articles such as cigarettes, cigars and the like burn tobacco during use to create tobacco smoke. Attempts have been made to provide alternatives to these
10 articles that burn tobacco by creating products that release compounds without burning.

Examples of such products are heating devices which release compounds by heating, but not burning, the material. The material may be for example tobacco or other non-tobacco products, which may or may not contain nicotine. As another example,
15 there are so-called e-cigarette devices. These devices typically contain a liquid which is heated to vaporise the liquid to produce an inhalable vapour or aerosol. The liquid may contain nicotine and/or flavourings and/or aerosol-generating substances, such as glycerol. The known e-cigarette devices typically do not contain or use tobacco.

Summary

According to a first aspect of the present invention, there is provided a mouthpiece for an apparatus for generating an inhalable medium, the mouthpiece defining an aperture extending from a first opening at a first end of the mouthpiece to a second opening at an opposing end of the mouthpiece, the mouthpiece being arranged
25 to receive in the aperture through the first opening a flavour element for imparting a flavour to a flow of at least one of a vapour and an aerosol that passes through the mouthpiece in use, the aperture having a first radial dimension towards the first opening, and a second radial dimension towards the second opening, wherein the second radial dimension is smaller than the first radial dimension.

The second radial dimension may be arranged to prevent said flavour element received in the aperture through the first opening in use from passing through to the second opening.

- 5 The aperture may be or comprise a stepped bore, the stepped bore comprising a first bore portion having the first radial dimension and a second bore portion having the second radial dimension.

- 10 A step of the stepped bore may be arranged to prevent said flavour element from passing to the second opening.

At least a portion of the stepped bore towards the first opening may be cylindrical.

- 15 In use, a step of the stepped bore may support said flavour element received in the aperture through the first opening.

- 20 The mouthpiece may be arranged such that said flavour element received in the aperture through the first opening protrudes beyond the first opening in use.

The first opening may be at a mouth end of the mouthpiece, and the second opening may be at an apparatus end of the mouthpiece.

- 25 The mouthpiece may comprise, at the second opening, a chamfer for engaging with a component of said apparatus.

The first opening may be at an apparatus end of the mouthpiece, and the second opening may be at a mouth end of the mouthpiece.

- 30 The mouthpiece may comprise, at the first opening, a chamfer for engaging with a component of said apparatus.

The apparatus end of the mouthpiece may be arranged to be releasably connectable to said apparatus.

5 The mouthpiece may be arranged such that said flavour element, when received in the aperture through the first opening, in use, is removable from and/or replaceable in the aperture through the first opening.

10 The mouthpiece may comprise the flavour element received in the aperture through the first opening.

A cross section of the flavour element may match a cross section of the aperture.

15 The flavour element may be one or more of: self-supporting, porous, and cylindrical, and/or comprises a cylindrical portion.

The flavour element may be or comprise tobacco.

The flavour element may protrude beyond the first opening.

20 The flavour element may be arranged to define a flow path, for said flow of at least one of an aerosol and a vapour, running from one end of the element to another.

25 According to a second aspect of the present invention, there is provided apparatus for generating an inhalable medium, the apparatus comprising the mouthpiece according to the first aspect.

30 The flavour element may be received in the aperture through the first opening of the mouthpiece, and the apparatus may comprise: a container for holding a liquid; a heater for volatilising liquid held in the container to generate said flow of at least one of a vapour and an aerosol in use; and in use the flow of at least one of a vapour and an aerosol may pass through the flavour element for inhalation by a user.

The flavour element may comprise one or more constituents, and in use the flow of at least one of a vapour and an aerosol through the element may entrain one or more of the constituents in the flow.

5 The first opening of the mouthpiece may be at an apparatus end of the mouthpiece, and the container for holding liquid may comprise a recess into which the element is received.

10 According to a third aspect of the present invention there is provided a mouthpiece for an apparatus for generating an inhalable medium, the mouthpiece defining a aperture extending from a first opening at a mouth end of the mouthpiece to a second opening at an opposing, apparatus end of the mouthpiece, the mouthpiece being arranged to receive in the aperture a flavour element for imparting a flavour to a flow of at least one of a vapour and an aerosol that passes through the mouthpiece in
15 use, the mouthpiece being arranged such that in use said flavour element received into the aperture protrudes beyond the first opening for receipt into a user's mouth, and protrudes beyond the second opening for contact with a component of said apparatus.

20 The apparatus end of the mouthpiece may be arranged to be releasably connectable to said apparatus.

 The mouthpiece may comprise, at the second opening, a chamfer for contacting with said component of said apparatus.

25 The mouthpiece may be arranged to allow said flavour element, when received in the aperture, to be removed from and/or replaced in the aperture.

 The mouthpiece may comprise the flavour element received in the aperture.

30 The flavour element may protrude beyond the first opening and may protrude beyond the second opening.

A cross section of the flavour element may match a cross section of the aperture.

The flavour element may be one or more of: self-supporting, porous, cylindrical, and/or comprise a cylindrical portion.

5

The flavour element may be or comprise tobacco.

The flavour element may be arranged to define a flow path, for said flow of at least one of an aerosol and a vapour, running from one end of the element to the other.

10

According to a fourth aspect of the present invention there is provided apparatus for generating an inhalable medium, the apparatus comprising the mouthpiece according to the third aspect.

15

The flavour element may be received in the aperture of the mouthpiece, and the apparatus may comprise: a container for holding a liquid; a heater for volatilising liquid held in the container to generate said flow of at least one of a vapour and an aerosol in use; and in use the flow of at least one of a vapour and an aerosol may pass through the flavour element for inhalation by a user.

20

The flavour element may comprise one or more constituents, and in use the flow of at least one of a vapour and an aerosol through the flavour element may entrain one or more of the constituents in the flow.

25

The container for holding liquid may comprise a recess into which the element is received.

30

According to a fifth aspect of the present invention, there is provided a mouthpiece for an apparatus for generating an inhalable medium, the mouthpiece defining an aperture for receiving a flavour element for imparting a flavour to a flow of at least one of a vapour and an aerosol that passes through the mouthpiece in use, the aperture extending from a first opening at a mouth end of the mouthpiece to a second

opening at an opposing, apparatus end of the mouthpiece, the mouthpiece comprising, at the second opening, a chamfer for contacting with a component of said apparatus thereby to form a seal between said component and the mouthpiece.

- 5 The apparatus end of the mouthpiece may be arranged to be releasably connectable to said apparatus.

The second opening may be circular.

- 10 The mouthpiece may be arranged such that the flavour element, when received in the aperture, is removable from and/or replaceable in the aperture.

The mouthpiece may comprise the flavour element received in the aperture.

- 15 A cross section of the flavour element may match a cross section of the aperture.

The flavour element may be one or more of: self-supporting, porous, cylindrical, and/or comprise a cylindrical portion.

- 20 The flavour element may be or comprise tobacco.

The flavour element may be arranged to define a flow path, for said flow of at least one of an aerosol and a vapour, running from one end of the flavour element to the other.

- 25 According to a sixth aspect of the present invention, there is provided apparatus comprising the mouthpiece according to the fifth aspect; and a container for holding a liquid, wherein a rim of the container contacts the chamfer of the mouthpiece thereby to form a seal between the container and the mouthpiece.

- 30 The container may comprise a recess for receiving said flavour element.

The apparatus may comprise: a heater for volatilising liquid held in the container to generate said flow of at least one of a vapour and an aerosol in use; and in use the flow of at least one of a vapour and an aerosol may pass from an outlet of the container into the aperture via the second opening of the mouthpiece.

5

The flavour element may be received in the aperture, and in use the flow of at least one of a vapour and an aerosol may pass from the outlet of the container into a user's mouth via the flavour element.

10 The flavour element may comprise one or more constituents, and in use the flow of at least one of a vapour and an aerosol may flow through the flavour element thereby to entrain one or more of the constituents in the flow.

Further features and advantages of the invention will become apparent from the
15 following description of preferred embodiments of the invention, given by way of example only, which is made with reference to the accompanying drawings.

Brief Description of the Drawings

Figure 1 shows a schematic of an exemplary apparatus for generating an
20 inhalable medium;

Figure 2a shows a side view of an exemplary mouthpiece and portion of an apparatus for generating an inhalable medium;

Figure 2b shows a section through line P-P of the exemplary mouthpiece and portion of an apparatus for generating an inhalable medium of Figure 2a;

25 Figure 2c shows a plan view of the exemplary mouthpiece and portion of an apparatus for generating an inhalable medium of Figure 2a;

Figure 2d shows a detail of the section of Figure 2b with some elements removed for clarity;

30 Figure 3a shows a side view of an exemplary mouthpiece and portion of an apparatus for generating an inhalable medium;

Figure 3b shows a section through line Q-Q of the exemplary mouthpiece and portion of an apparatus for generating an inhalable medium of Figure 3a;

Figure 3c shows a plan view of the exemplary mouthpiece and portion of an apparatus for generating an inhalable medium of Figure 3a;

Figure 3d shows a detail of the section of Figure 3b with some elements removed for clarity;

5 Figure 4a shows a side view of an exemplary mouthpiece and portion of an apparatus for generating an inhalable medium;

Figure 4b shows a section through line R-R of the exemplary mouthpiece and portion of an apparatus for generating an inhalable medium of Figure 4a;

10 Figure 4c shows a plan view of the exemplary mouthpiece and portion of an apparatus for generating an inhalable medium of Figure 4a; and

Figure 4d shows a detail of the section of Figure 4b with some elements removed for clarity.

Detailed Description

15 Referring to Figure 1, a schematic of an example apparatus 100 for generating an inhalable medium is illustrated. In this example, the apparatus 100 is a so called “electronic cigarette” device 100. In broad outline, the device 100 volatilises a liquid to form a vapour or an aerosol which passes through a flavour element 134 received in a mouthpiece 102 of the device 100. The flavour element 134 imparts a flavour to the
20 vapour or aerosol passing through the mouthpiece 102 for inhalation by a user.

In this respect, first it may be noted that, in general, a vapour is a substance in the gas phase at a temperature lower than its critical temperature, which means that for example the vapour can be condensed to a liquid by increasing its pressure without
25 reducing the temperature. On the other hand, in general, an aerosol is a colloid of fine solid particles or liquid droplets, in air or another gas. A colloid is a substance in which microscopically dispersed insoluble particles are suspended throughout another substance.

30 Returning to Figure 1, the device 100 comprises an outer body 118 comprising an upper portion 106 housing a cartridge 104 and lower portion 105 housing a battery portion 112. The cartridge 104 is connected to, but removable from, the battery portion

112. At least the upper portion 106 of the outer body 118 may be removed so as to expose the cartridge 104, and hence allow installation, removal and/or replacement of the cartridge 104. The cartridge 104 has a liquid container 122 for containing liquid 116.

5

The device 100 has a mouthpiece 102 (examples of which are described in more detail below) removeably connected to the upper portion 106 of the outer body 118. The mouthpiece 102 has received therein a flavour element 134 for imparting a flavour to a flow of aerosol or vapour that passes through the mouthpiece 102. The flavour
10 element 134 may be or comprise for example tobacco, or other flavoured materials that may be used to create a desired taste or aroma, or other properties, such as nicotine content.

The device 100 is arranged so that as the liquid 116 is volatilised so as to
15 produce an aerosol of liquid droplets or sufficiently heated to produce a vapour, at least some and preferably all or substantially all of the aerosol or vapour passes through the flavour element 134 received in the mouthpiece 102 for example so as to entrain constituents of the flavour element 134 therein.

20 The liquid container 122 is provided generally centrally of the cartridge 104. The liquid container 122 is frustoconical in shape, but may have a different shape, such as conical, cylindrical, etc. The liquid container 122 is annular in shape and defines a cylindrical channel (not shown) running through the length of the liquid container 122. The liquid container 122 may be formed of rigid, watertight and airtight materials, such
25 as metal, suitable plastics, etc.

The cartridge 104 is provided with a heater 110 and a wick (not shown) in (thermal) contact with the heater 110. In this example, the heater 110 and the wick are provided as a single unit 108, sometimes known as an “atomiser” 108. In this case,
30 where the cartridge 104 includes an atomiser 150, such a cartridge 104 is often referred to as a “cartomiser” 104. The orientation of the heater 110 is shown schematically and for example the heater 110 may be a coil having its longitudinal axis perpendicular or

parallel to the longitudinal axis of the cartridge 104. The wick (not shown) is in contact with the liquid 116. This may be achieved for example by the wick (not shown) being inserted through a through hole (not shown) in an end wall 122b of the liquid container 122. Alternatively or additionally, the end wall 122b may be a porous member which
5 allows liquid to pass through from the liquid container 122, and the wick (not shown) may be in contact with the porous end wall 122b. The end wall 122b may be for example in the form of a porous ceramic disk. A porous end wall 122b of this type helps to regulate the flow of liquid onto the wick (not shown). The wick (not shown) is generally absorbent and acts to draw in liquid 116 from the liquid container 122 by capillary
10 action (shown in Figure 1 by arrows A). The wick is preferably non-woven and may be for example a cotton or wool material or the like, or a synthetic material, including for example polyester, nylon, viscose, polypropylene or the like, or a ceramic material.

The cartridge 104 is (electrically) connected to a battery in the battery portion
15 116 to enable the heater 110 to be powered. When the heater 110 is powered (which may be instigated for example by the user operating a button (not shown) of the device 100 or by a puff detector (not shown) of the overall device 100, as is known per se), liquid 116 is drawn (shown in Figure 1 by arrows A) in from the liquid container 122 by the wick and is heated by the heater 110 to volatilise or vaporise the liquid, so as to
20 generate at least one of a vapour and an aerosol. As the user draws on the mouthpiece 102, air is drawn through an air inlet 120. The liquid 116 is volatilised or vaporised by the heater 110 into air from the air inlet 120 thereby to produce a flow of one of a vapour and an aerosol. The flow vapour or aerosol is drawn through a channel (not shown) of the liquid container 122, through the flavour element 134 received in the mouthpiece
25 102, and out from the device 100 for inhalation by a user (shown by arrow B in Figure 1). The vapour or aerosol picks up (entrains) flavour (and/or other constituents) from the flavour element 134. One or more constituents of the flavour element is thereby mixed with the flow of at least one of a vapour and an aerosol. In examples where the flavour element 134 contains or includes nicotine, the vapour or aerosol may also
30 contain nicotine entrained from that solid material. A one-way valve (not shown) may be provided, for example at or near an upper end 122a of the liquid container 122, so

that the vapour or aerosol can only exit the cartridge 104 and cannot back-flow to the heater 110 or the electronics (not shown) of the device 100.

5 The flavour element 134 may be or comprise material that may be used to impart a flavour (and/or one or more other constituents) to the aerosol or vapour. In some examples, the one or more constituents of the flavour element may comprise constituents inherent to the material itself. The material may for example consist of or comprise tobacco. As the aerosol or vapour passes through and over the tobacco, the aerosol or vapour entrains organic and other compounds or constituents from the tobacco that lend tobacco its organoleptic properties, thus imparting the flavour to the aerosol or vapour. It will be understood however that materials other than tobacco may be used to impart different flavours (and/or one or more other constituents) to the aerosol or vapour flow. The flavour element 134 may comprise constituents added to a material of the flavour element 134.

15

Nicotine may be provided in the liquid 116. Accordingly, where it is intended that the device 100 provides nicotine for the user, the nicotine may be provided in the liquid 116, may be obtained from the flavour element 134, or any combination of these. Likewise, flavourings may be added to the flavour element 134 (whether or not the flavour element 134 is or includes tobacco) and/or to the liquid 116. A material of the flavour element 134 may be a solid material, or be a mixture of solid materials, one or more of each comprising one or more constituents that can be mixed with the flow of vapour or aerosol. It will be appreciated that the flavour element 134 may comprise one or more other constituents that are not entrained into the aerosol or vapour passing there through.

25

The flavour element 134 may be porous 134, for example so as allow vapour or aerosol to pass through it. The flavour element 134 may be self-supporting, for example the flavour element 134 may comprise material wrapped partially or wholly in a wrapper, and/or the flavour element 134 may be supported in a resilient housing, for example a plastic housing (not shown).. The flavour element 134 may be arranged to define a flow path, for a flow of at least one of the aerosol and the vapour, running from

30

one end of the flavour element 134 to another. The flavour element 134 may be cylindrical, and/or comprise a cylindrical portion, for example so as to be received snugly in a correspondingly shaped hole in the mouthpiece 102.

5 Figures 2a to 2d illustrate a mouthpiece 202 according to a first example. Specifically, Figure 2a illustrates a side view of the mouthpiece 202 and upper portion 206 of the outer body 218 of a device (100 in Figure 1). In this first example, Figure 2b illustrates a section through line P-P in Figure 2a, Figure 2c illustrates a plan view of that shown in Figure 2a, and Figure 2d shows a detail of the section of Figure 2b with
10 a flavour element 234 and a liquid container 222 removed for clarity.

 In Figures 2a to 2d, the mouthpiece 202 is connected to a portion 206 of an outer body 218 of an overall device (100 in Figure 1). The example mouthpiece 202, portion 206 of the outer body 218, and liquid container 222 in Figures 2a to 2d can be used, for
15 example, in the device 100 of Figure 1 instead of the mouthpiece 102, upper portion 106 of the outer body 118, and liquid container 122 respectively. For brevity, features in Figures 2a to 2d and the functioning thereof that are the same or similar to those features already described with reference to Figure 1 are given similar reference numerals to as in Figure 1 but increased by 100, and will not be described in detail
20 again.

 Referring now to Figures 2a to 2d, the mouthpiece 202 defines a hole or aperture 223 extending from a first opening 224 at a first end 202a of the mouthpiece 202 to a second opening 226 at an opposing end 202b of the mouthpiece 202. The mouthpiece
25 202 has received in the aperture 223 through the first opening 224 a flavour element 234 for imparting a flavour to a flow of at least one of a vapour and an aerosol that passes through the mouthpiece 202 in use. The flavour element 234 may be the same as or similar to the flavour element 134 as mentioned above with reference to Figure 1. The aperture 223 has a first radial dimension d1 towards the first opening 224, and a
30 second, smaller radial dimension d2 towards the second opening 226, thereby to prevent the flavour element 234 received in the aperture 223 through the first opening 224 from passing through to the second opening 226. A user may therefore, for example, insert a

flavour element 234 into the aperture 223 through the first opening 224 of the mouthpiece 202 only to a certain and/or predefined extent.

The aperture 223 is a stepped bore 230, 232 comprising a first bore 230 having
5 the first radial dimension d1 and a second bore 232 having the second radial dimension d2. The step 228 of the stepped bore 230, 232 prevents the flavour element 234 from passing into the second bore 232 and hence towards the second opening 226. The step 228 of the stepped bore 230, 232 also supports the flavour element 234 received in the first bore 230.

10 The cross section of the flavour element 234 and the cross section of the at least a portion of the first bore 230 (and the first opening 224) may be matched so as to allow easy receipt of the flavour element 234 into the first bore 230. For example, as is shown in Figures 2a to 2d, the first bore 230 is cylindrical so as to receive therein the
15 cylindrical flavour element 234. The diameter of the flavour element 234 may be approximately equal to, for example slightly smaller than, the diameter d1 of the first bore 230 so as to ensure an easy fit of the flavour element 234 into the first bore 230. In other examples, the diameter of the flavour element 234 may be slightly larger than the diameter d1 of the first bore 230, for example to ensure a tight (snug) fit of the
20 flavour element 234 into the first bore 230. In this case, the flavour element 234 may be or comprise a resilient and/or deformable material. The flavour element 234 may be retained in the mouthpiece 202 for example by friction with the walls of the mouthpiece 202 defining the first bore 230. The first radial dimension d1 may be, for example in the range of 7 to 9 millimetres, for example at or around 8 millimetres, for example 7.7
25 millimetres. The second radial dimension d2 may be, for example, in the range 4 to 6 millimetres, for example at or around 5 millimetres. The first bore 230 may be cylindrical, or may taper from the first opening 224 to the step 228. For example, the diameter of the first bore may taper from 7.8 millimetres at the first opening 224 to 7.5 millimetres at the step 228, for example. The diameter of the flavour element 234 may
30 be, for example, in the range of 7 to 9 millimetres, for example at or around 8 millimetres, for example 7.64 mm.

In this first example, the first opening 224 is at a mouth end 202a of the mouthpiece 202, and the second opening 226 is at a device end 202b of the mouthpiece 202.

5 The flavour element 234 extends out beyond the first opening 224 of the mouthpiece 202. For example, the length of the first bore 230 from the first opening 224 to the step 228 may be at or around 11 millimetres, and the length of the flavour element may be at or around 22 millimetres, i.e. leaving 11 millimetres of rod extending beyond the first opening 224 of the mouthpiece 202, for example.

10

 The flavour element 234 extending out beyond the first opening 224 of the mouthpiece 202 allows, for example, a user to draw on the flavour element 234 rather than on the mouthpiece 202. This may improve user experience, for example, because the flavour element 234 can be fabricated to have a diameter, for example between 7
15 and 9 millimetres (e.g. at or around 8 millimetres), more preferable for a user to place in their mouth. This may also improve user experience, for example, because the flavour element 234 can be fabricated to be made of or comprise a material more preferable for a user to place in their mouth, for example cellulose acetate and/or paper, for example coated paper. Moreover, this may improve hygiene because the user can dispose of and
20 replace the flavour element 234, i.e. frequently replace (if desired) that part of the device 100 which comes into contact with their mouth. This may also make sharing of a single device between multiple users more attractive and/or convenient. Further, the flavour element 234 extending out beyond the first opening 224 of the mouthpiece 202 allows for the flavour element 234 to be easily removed from the mouthpiece 202, for example
25 by a user manually pulling the flavour element 234 out of the first opening 224, for example against the friction between the flavour element 234 and the walls of the mouthpiece 202 defining the first bore 230. A user may do this, for example, when the flavour and/or other constituents of the flavour element 234 have expired or deteriorated. A replacement flavour element 234 can then be easily inserted, for
30 example by a user holding the flavour element 234 and manually pushing it into the first bore 230 up until the flavour element abuts the step 228, for example.

The device end 202b of the mouthpiece 202 is arranged to be releasably connectable to the upper portion 206 of the outer body 218 of the device (100 in Figure 1). The device end 202b of the mouthpiece 202 has a connecting element 240 for connecting with a reciprocal connecting element 238 of the upper portion 206 of the outer body 218. The connecting element 240 of the mouthpiece 202 comprises a protrusion 240 for snap-fitting against a ledge 238 of the upper portion 206 of the outer body 218. The mouthpiece 202 may be released from the portion 206 of the outer body 218 by a user manually squeezing the mouthpiece 202 across its width, thereby to disengage the protrusion 240 from the ledge 238, thereby allowing the user to lift the mouthpiece 202 out and away from the upper portion 206 of the outer body 218. It will be appreciated that any other releasable connecting elements and/or mechanism may be used. For example, the mouthpiece 202 may be releasably connected to the portion 206 of the outer body 218 by friction fit, push fit, screw fit e.g. using reciprocal threads etc. The mouthpiece 202 being releasably connectable to the outer body 218 allows for example a user to easily access the liquid container 222 and/or the second opening 226 of the mouthpiece 202 e.g. for cleaning purposes.

It will be appreciated that in some examples, the mouthpiece 202 and the upper portion 206 of the outer body 218 are not releasably connectable to one another. For example, the mouthpiece 202 and the upper portion 206 of the outer body 218 may be co-moulded pieces that are not separable by a user. For example, the connecting element 240 of the mouthpiece 202 may be co-moulded with the connecting element 238 of the upper portion 206 of the outer body 218. In this case, for example, in order for a user to access the liquid container 216, for example so as to remove and/or replace the liquid container 216 from the device (100 in Figure 1), the user removes as one piece the mouthpiece 202 and the upper portion 206 of the outer body 218 from the lower portion (105 in Figure 1) of the outer body 218 of the device (100 in Figure 1).

The mouthpiece 202, at the opening 226 at the device end 202b of the mouthpiece 202, comprises a chamfer 236 for contacting the liquid container 222. The chamfer 236 extends all the way around the circumference of the second opening 226 of the mouthpiece 202. A rim 225 (i.e. an apex or corner 225) at the upper end 222a of

the liquid container 222 may press against the chamfer 236 of the mouthpiece 202 in use thereby to form a seal between the liquid container 222 and the mouthpiece 202. This allows all or substantially all of the vapour or aerosol exiting a channel (not shown) in the liquid container 222 at the upper end 222a of the liquid container 222 in use to
5 flow into the aperture 223 of the mouthpiece 202 and thereafter through the flavour element 234. The opening 226 at the device end 202b of the mouthpiece 202 is circular so as that a seal may be easily and reliably formed between the mouthpiece 202 and the circular rim 225 of the liquid container 222. It will be appreciated that in other examples, the mouthpiece 202 may not comprise such a chamfer 236. For example, a
10 face (not shown) of the mouthpiece 202 at the device end 202b opening 226 may contact flush with a face of the liquid container 222 (i.e. in a head on arrangement) thereby to form a seal between the mouthpiece 202 and the liquid container 222. In another example, the mouthpiece 202, at the opening 226 at the device end 202b of the mouthpiece 202, may comprise alternatively or additionally a protruding
15 circumferential wall or lip that contacts the liquid container 222, for example contacts an inner face of a corresponding protruding circumferential wall or lip at the rim 225 of the liquid container 222.

The upper portion 206 of the housing 218 comprises one or more second
20 connecting elements 239 for releasably connecting the upper portion 206 of the housing 218 to the lower portion (105 in Figure 1) of the housing 218. The second connecting elements 239 may be, for example, protrusions of the upper portion 206 for receipt into a reciprocal recesses in the lower portion (105 in Figure 1) of the housing 218. It will be appreciated that any releasable connecting elements or mechanism may be used
25 instead, for example, friction fit, push fit, screw fit e.g. using reciprocal threads etc.

In use, when the upper portion 206 of the outer body 218 and liquid container 222 are connected to the rest of the device (e.g. as shown schematically for device 100 in Figure 1), when a user draws on the flavour element 234, air is drawn in through an
30 air inlet (120 in Figure 1). A heater (110 in Figure 1) volatilises liquid 216 held in the liquid container 222 into the inlet air to generate a flow of vapour or aerosol. The flow passes through the channel (not shown) in the liquid container out of the upper end 222a

of the liquid container 222, through the second bore 232, through the flavour element 234, and exits from an upper end 234a of the flavour element 234 for inhalation by the user. Where the flavour element 234 comprises one or more constituents, the flow of vapour or an aerosol through the flavour element 234 entrains one or more of the constituents in the flow.

Figures 3a to 3d illustrate a mouthpiece 302 according to a second example. Specifically, Figure 3a illustrates a side view of the mouthpiece 302 and upper portion 306 of the outer body 318 of a device (100 in Fig. 1), Figure 3b illustrates a section through line Q-Q in Figure 3a, Figure 3c illustrates a plan view of that shown in Figure 3a, and Figure 3d shows a detail of the section of Figure 3b with a flavour element 334 and a liquid container 322 removed for clarity.

In Figures 3a to 3d, the mouthpiece 302 is connected to an upper portion 306 of an outer body 318 of an overall device (100 in Figure 1). The example mouthpiece 302, portion 306 of the outer body 318, and liquid container 322 in Figures 3a to 3d can be used, for example, in the device 100 of Figure 1 instead of the mouthpiece 102, portion 106 of the outer body 118, and liquid container 122 respectively. For brevity, features in Figures 3a to 3d and the functioning thereof that are the same or similar to those features already described with reference to Figures 1 to 2d are given similar reference numerals to as in Figures 2a to 2d but increased by 100, and will not be described in detail again.

Referring now to Figures 3a to 3d, the mouthpiece 302 defines a hole or aperture 323 extending from a first opening 324 at a first end 302b of the mouthpiece 302 to a second opening 326 at an opposing end 302a of the mouthpiece 302. In this second example, the first opening 324 is at a device end 302b of the mouthpiece 302, and the second opening 326 is at a mouth end 302a of the mouthpiece 302. The mouthpiece 302 has received in the aperture 323 through the first opening 324 a flavour element 334 for imparting a flavour to a flow of at least one of a vapour and an aerosol that passes through the mouthpiece 302 in use. The flavour element 334 may be similar to or the same as the flavour element 234 and/or 134 described above. The aperture 323 has a

first radial dimension $d1'$ towards the first opening 324, and a second, smaller radial dimension $d2'$ towards the second opening 326, thereby to prevent the flavour element 334 received in the aperture 323 through the first opening 324 from passing through to the second opening 326. The flavour element 334 may therefore be held within the device (100 in Figure 1) by the mouthpiece 302.

The aperture 323 comprises a stepped bore 330,332 comprising a first bore 330 having the first radial dimension $d1'$ and a second bore 332 having the second radial dimension $d2'$. The step 328 of the stepped bore 330, 332 prevents the flavour element 334 from passing into the second bore 332 and hence towards the second opening 326. The cross section of the flavour element 334 and the cross section of at least a portion of the first bore 330 (and the first opening 324) may be matched so as to allow easy receipt of the flavour element 334 into the first bore 330. For example, as is shown in Figures 3a to 3d, the first bore 330 (and the first opening 324) is cylindrical so as to receive therein the cylindrical flavour element 334. The diameter of the flavour element 334 may be approximately equal to, for example slightly smaller than, the diameter $d1'$ of the first bore 330 so as to ensure an easy fit of the flavour element 334 into the first bore 330. In other examples, the diameter of the flavour element 334 may be slightly larger than the diameter $d1'$ of the first bore 330, for example to ensure a tight (snug) fit of the flavour element 334 into the first bore 330. In this case, the flavour element 334 may be or comprise a resilient and/or deformable material. The flavour element 334 may be retained in the mouthpiece 302, for example, by friction. The first radial dimension $d1'$ may be, for example in the range of 7 to 9 millimetres, for example at or around 8 millimetres, for example 7.7 millimetres. The second radial dimension $d2'$ may be, for example, in the range 4 to 6 millimetres, for example at or around 5 millimetres. The first bore 330 may be cylindrical, or may taper slightly from the first opening 324 to the step 328. For example, the diameter of the first bore may taper from 8.4 millimetres at the first opening 324 to 8.0 millimetres at the step 328, for example. The diameter of the flavour element 234 may be in the range of 7 to 9 millimetres, for example at or around 8 millimetres, for example 7.64 millimetres.

The flavour element 334 extends out (protrudes) beyond the first opening 324 of the mouthpiece 302. For example, this allows a user, when the mouthpiece 302 is disconnected from the upper portion 306 of the housing 318, to easily manually remove and/or replace the flavour element 324 in the first bore 330 (through the first opening 234) of the mouthpiece 302. For example, the length of the first bore 330 from the first opening 324 to the step 328 may be at or around 12 millimetres, and the length of the flavour element may be at or around 22 millimetres, i.e. leaving around 10 millimetres of rod extending beyond the first opening 224 of the mouthpiece 202, for example. In examples where the mouthpiece 302 and the upper portion 306 of the outer body 318 are not releasably connectable to one another, the user may remove as one piece the mouthpiece 302 and the upper portion 306 of the outer body 318 from the lower portion (105 in Fig. 1) of the outer body 318 of the device (100 in Fig. 1), thereby to expose the flavour element 304 to allow a user to easily remove and/or replace the flavour element 304.

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The liquid container 322 comprises a recess 360 in the upper end 222a of the liquid container 322 into which a lower portion 334b of the flavour element 324 is received. The flavour element 324 extends out (protrudes) from the recess 360, out beyond the liquid container 332, so as to also be received in the first bore 330 of the mouthpiece 302 when the mouth piece 302 and the upper portion 306 of the outer body 318 are connected together. The cross section of the flavour element 334 and the cross section of the recess 360 may be matched so as to allow easy receipt of the flavour element 334 into the recess 360. For example, as is shown in Figures 3a to 3d, the recess 360 is cylindrical so as to receive therein the cylindrical flavour element 334. The diameter of the flavour element 334 may be approximately equal to, for example slightly smaller than, the diameter of the recess 360 so as to allow easy receipt of the flavour element 334 into the recess 360. In other examples, the diameter of the flavour element 334 may be slightly larger than the diameter of the recess 360, for example to ensure a tight (snug) fit of the flavour element 334 into the recess 360. In this case, the flavour element 334 may be or comprise a resilient and/or deformable material.

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Similarly to as described above for the first example, the device end 302b of the mouthpiece 302 is arranged to be releasably connectable to the upper portion 206 of the outer body 318 of the device for example via connecting element 340 for connecting with a reciprocal connecting element 338 of the portion 306 of the outer body 318. As
5 above, the connecting elements 340, 338 or connecting mechanism may comprise any releasable connection, for example, by snap fit, friction fit, push fit, screw fit e.g. using reciprocal threads etc.

The mouthpiece 302 being releasably connectable to the upper portion 306 of
10 the outer body 318 allows a user for example to easily access the flavour element 324 that may be received in one of the bore 330 of the mouthpiece 302 and the recess 360 of the liquid container 322 when the mouthpiece 302 is removed from the upper portion 306 of the outer body 318. For example, a user may manually pull the flavour element 334 out of the first opening 324 of the mouthpiece 302 (or the recess 360 of the liquid
15 container 322), for example against the friction between the flavour element 234 and the walls of the mouthpiece 202 defining the first bore 230 (or the walls of the liquid container 322 defining the recess 360). A user may do this, for example, when the flavour and/or other constituents of the flavour element 334 have expired or deteriorated. A replacement flavour element 334 can then be easily inserted, for
20 example by a user holding an upper end 334a of the flavour element and pushing the lower end 334b of the flavour element 334 it into the recess 360 of the liquid container 322. The user may then lower the mouthpiece 302 over the upper end 334a of the flavour element 334 so that the flavour element 334 is received into the first bore 330 (through the first opening 324) of the mouthpiece 302. The user may then connect the
25 mouthpiece 302 to the upper portion 306 of the outer body 318, at which point the upper end 334a of the flavour element 334 will be abutting or near abutting the step 328 of the stepped bore 330,332 of the mouthpiece 302. The flavour element 302 is therefore held securely in position between the mouthpiece 302 and the liquid container 322.

30 As above, it will be appreciated that in some examples, the mouthpiece 302 and the upper portion 306 of the outer body 318 are not releasably connectable to one another. For example, the mouthpiece 302 and the upper portion 306 of the outer body

318 may be co-moulded pieces that are not separable by a user. For example, the connecting element 340 of the mouthpiece 302 may be co-moulded with the connecting element 338 of the upper portion 306 of the outer body 318. In this case, for example, in order for a user to access the flavour element 304, for example so as to remove and/or replace the flavour element 304 from the recess 360 of the liquid container 322, the user removes as one piece the mouthpiece 302 and the upper portion 306 of the outer body 318 from the lower portion (105 in Figure 1) of the outer body 318 of the device (100 in Figure 1). A user may then, for example, manually pull the flavour element 334 out of the recess 360 of the liquid container 322, for example, when the flavour and/or other constituents of the flavour element 334 have expired or deteriorated, or the user wants to change the flavour of the aerosol or vapour produced. A replacement flavour element 334 can then be easily inserted, for example by a user holding an upper end 334a of the flavour element and pushing the lower end 334b of the flavour element 334 it into the recess 360 of the liquid container 322. The user may then lower the mouthpiece 302 and the upper portion 306 of the outer body 318, as one piece, over the upper end 334a of the flavour element 334 so that the flavour element 334 is received into the first bore 330 (through the first opening 324) of the mouthpiece 302. The user may then connect the upper portion 306 of the outer body 318 to the lower portion (105 in Figure 1) of the outer body, at which point the upper end 334a of the flavour element 334 will be abutting or near abutting the step 328 of the stepped bore 330, 332 of the mouthpiece 302. The flavour element 302 is therefore held securely in position between the mouthpiece 302 and the liquid container 322.

In either case, the flavour element 334 extending into the recess 360 of the liquid container 332 and into the first bore 330 of the mouthpiece 302 allows for the flavour element 334 to be relatively long for example, and hence have the potential to impart more flavour and/or other constituents into the vapour or aerosol in use, but without the need to extend the length of the overall device (100 in Figure 1).

As in the first example, the mouthpiece 303 may comprise, at the opening 326 at the device end 302b of the mouthpiece 302, a chamfer 336 for contacting a rim 335

at the upper end 322a of the liquid container 322, thereby to form a seal between the liquid container 322 and the mouthpiece 302.

As in the first example, the upper portion 306 of the housing 318 comprises one
5 or more second connecting elements 339 for releasably connecting the portion 306 of the housing 318 to the lower portion (105 in Figure 1) of the housing 318.

In use, when the portion 306 of the outer body 318 and liquid container 322 is connected to the rest of the overall device (e.g. as shown schematically for device 100
10 in Figure 1), when a user draws on the mouth end 302a of the mouthpiece 302, air is drawn in through an air inlet (120 in Figure 1). A heater (110 in Figure 1) volatilises liquid 316 held in the liquid container 322 into the inlet air to generate a flow of vapour or aerosol. The flow passes out of a channel (not shown) in the liquid container 322, out into the recess 360 of the liquid container, through the flavour element 334 so as to
15 exit at the upper end of the flavour element 334a, out into the second bore 332 of the mouthpiece and out of the second opening 324 at the mouth end 302a of the mouthpiece 322 for inhalation by the user. Where the flavour element 334 comprises one or more constituents, the flow of vapour or an aerosol through the flavour element 334 entrains one or more of the constituents in the flow.

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Figures 4a to 4d illustrate a mouthpiece 402 according to a third example. Specifically, Figure 4a illustrates a side view of the mouthpiece 402 and upper portion 406 of the outer body 418 of a device (100 in Figure 1), Figure 4b illustrates a section through line R-R in Figure 4a, Figure 4c illustrates a plan view of that shown in Figure
25 4a, and Figure 4d shows a detail of the section of Figure 4b with a flavour element 434 and a liquid container 422 removed for clarity.

In Figures 4a to 4d, the mouthpiece 402 is connected to an upper portion 406 of an outer body 418 of an overall device (100 in Figure 1). The example mouthpiece 402,
30 upper portion 406 of the outer body 418, and liquid container 422 in Figures 3a to 3d can be used, for example, in apparatus 100 of Figure 1 instead of the mouthpiece 102, upper portion 106 of the outer body 118, and liquid container 122 respectively. For

brevity, features in Figures 4a to 4d and the functioning thereof that are the same or similar to those features already described with reference to Figures 1 to 3d are given similar reference numerals to as in Figures 3a to 3d but increased by 100, and will not be described in detail again.

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Referring now to Figures 4a to 4d, the mouthpiece 402 defines a hole or aperture 423 extending from a first opening 424 at a mouth end 402a of the mouthpiece 422 to a second opening 426 at an opposing, device end 402b of the mouthpiece 422. The mouthpiece 422 has received in the aperture 423 through the first opening 424 a flavour element 434 for imparting a flavour to a flow of at least one of a vapour and an aerosol that passes through the mouthpiece 422 in use. The flavour element 434 may be similar to or the same as the flavour element 334 of the second example or the flavour element 234 of the first example described above. In this third example, the flavour element 434 extends out (protrudes) beyond the first opening 424 for receipt into a user's mouth, and extends out (protrudes) beyond the second opening 426 for contact with the liquid container 422 (example of a component of the device (100 in Figure 1)). For example, the length of the flavour element may be at or around 36 millimetres, and the length of the aperture 423 from the first opening 424 to the second opening 426 may be at or around 11 millimetres, for example.

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The cross section of the flavour element 434 and the cross section of the aperture 423 may be matched so as to allow easy receipt of the flavour element 434 into the aperture 423. For example, as is shown in Figures 4a to 4d, the aperture 434 is cylindrical so as to receive therein the cylindrical flavour element 434. The diameter of the flavour element 434 may be approximately equal to, for example slightly smaller than, the diameter of the aperture 434 so as to ensure an easy fit of the flavour element 434 into the aperture 434. In other examples, the diameter of the flavour element 434 may be slightly larger than the diameter of the aperture 434, for example to ensure a tight (snug) fit of the flavour element 434 into the aperture 434. In this case, the flavour element 434 may be or comprise a resilient and/or deformable material. The flavour element 434 may be retained in the aperture 434 by friction.

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Similarly to as described in the second example, the liquid container 422 comprises a recess 460 in the upper end 422a of the liquid container 422 into which a lower portion 434b of the flavour element 424 is received. The flavour element 424 extends out (protrudes) beyond the recess 460 so as to also be received in the aperture 423 of the mouthpiece 402. The cross section of the flavour element 434 and the cross section of the recess 460 may be matched so as to allow easy receipt of the flavour element 434 into the recess 460. For example, as is shown in Figures 4a to 4d, the recess 460 is cylindrical so as to receive therein the cylindrical flavour element 434. The diameter of the flavour element 434 may be approximately equal to, for example slightly smaller than, the diameter of the recess 460 so as to ensure an easy fit of the flavour element 434 into the recess 460. In other examples, the diameter of the flavour element 434 may be slightly larger than the diameter of the recess 460, for example to ensure a tight (snug) fit of the flavour element 434 into the recess 460. In this case, the flavour element 434 may be or comprise a resilient and/or deformable material. The flavour element 343 may be retained in the recess 460 by friction for example. For example, the diameter of the aperture 434 may be in the range 7 to 9 millimetres, for example at or around 8 millimetres, for example 7.7 millimetres. The aperture 434 may be cylindrical, or may taper slightly from the first opening 424 to the second opening 426. For example, the diameter of the aperture 434 may taper from 7.9 millimetres at the first opening 424 to 7.5 millimetres at the second opening 426, for example. The diameter of the flavour element 234 may be in the range of 7 to 9 millimetres, for example at or around 8 millimetres, for example 7.64 millimetres.

Similarly to as described in the first example, the flavour element 434 extending out beyond the first opening 424 of the mouthpiece 402 allows, for example, a user to draw on the flavour element 434 rather than the mouthpiece 402. This allows, for example, a user to draw on the flavour element 434 alone. This may improve user experience, for example, because the flavour element 434 can have a diameter and/or be made of a material more preferable for a user to place in their mouth. Moreover, this may improve hygiene characteristics of the device (100 in Figure 1) because the user can dispose of and replace the flavour element 434, i.e. frequently replace (if desired) that part of the device 100 which comes into contact with their mouth. Further,

the flavour element 434 extending out beyond the first opening 424 of the mouthpiece 402 allows for the flavour element 234 to be easily removed from the mouthpiece 402, for example by a user manually pulling the flavour element 434 out of the recess 436 and the aperture 423 by the first opening 424, for example against the friction between
5 the flavour element 434 and the walls of the mouthpiece 402 defining the aperture 434 and/or the walls of the liquid container 422 defining the recess 436. A user may do this, for example, when the flavour and/or constituents of the flavour element 434 have expired or deteriorated. A replacement flavour element 434 can then be easily inserted, for example by a user holding the flavour element 434 and pushing it through the first
10 opening 424, through the aperture 423, and into the recess 460 of the liquid container 422 up until the flavour element 434 contacts the liquid container 422. The flavour element 434 extending out (protruding) beyond the second opening 426 of the mouthpiece 402 into the recess 460 of the liquid container 432 (and out beyond the first opening 424 of the mouthpiece 402) allows for the flavour element 434 to be relatively
15 long, and hence have the potential to impart more flavour and/or other constituents into the vapour or aerosol in use, but without the need to extend the length of the overall device (100 in Figure 1).

As in the first and second examples, the device end 402b of the mouthpiece 402
20 is arranged to be releasably connectable to the upper portion 406 of the outer body 418 of the device for example via connecting element 440 for connecting with a reciprocal connecting element 438 of the upper portion 406 of the outer body 418. As above, the connecting elements 440, 438 and/or connecting mechanism may comprise any releasable connection, for example, by snap fit, friction fit, push fit, screw fit e.g. using
25 reciprocal threads etc. As above, it will be appreciated that in some examples, the mouthpiece 402 and the upper portion 406 of the outer body 418 are not releasably connectable to one another. For example, the mouthpiece 402 and the upper portion 406 of the outer body 318 may be co-moulded pieces that are not separable by a user. For example, the connecting element 440 of the mouthpiece 402 may be co-moulded with
30 the connecting element 438 of the upper portion 306 of the outer body 418.

As in the first and second examples, the mouthpiece 402 may comprise, at the opening 426 at the device end 402b of the mouthpiece 402, a chamfer 436 for contacting a rim 435 at the upper end 422a of the liquid container 422, thereby to form a seal between the liquid container 422 and the mouthpiece 402.

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As in the first and second examples, the upper portion 406 of the housing 418 comprises one or more second connecting elements 439 for releasably connecting the portion 406 of the housing 418 to the lower portion (105 in Figure 1) of the housing 418.

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In use, when the upper portion 406 of the outer body 418 and liquid container 422 is connected to the rest of the device (e.g. as shown schematically for device 100 in Figure 1), when a user draws on the flavour element 434, air is drawn in through an air inlet (120 in Figure 1). A heater (110 in Figure 1) volatilises liquid 416 held in the liquid container 422 into the inlet air to generate a flow of vapour or aerosol. The flow passes out of a channel (not shown) in the liquid container 422, out into the recess 460 of the liquid container, through the flavour element 434, and exits from an upper end 434a of the flavour element 434a for inhalation by the user. Where the flavour element 434 comprises one or more constituents, the flow of vapour or an aerosol through the flavour element 434 entrains one or more of the constituents in the flow.

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In the above examples, the liquid container 122, 222, 322, 422 was annular in shape and defined a cylindrical channel (not shown in the figures) running through the length of the liquid container 122, 222, 322, 422. However, in other examples, the liquid container may not be annular in shape, and/or the cartridge 104 may comprise an outer shell that defines an annular channel between the liquid container and the outer shell through which vapour or aerosol may pass.

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Although the examples above referred to use of a cartridge 104, it will be readily appreciated that there are many configurations of so called e-cigarettes (some of which not having cartridges as such, but rather, for example, refillable liquid containers

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integral to the device 100) and that the above examples may also be applied to these or other configurations.

Although the above examples referred to the flavour element being cylindrical
5 or having a cylindrical portion to be received into a cylindrical hole aperture or bore of the mouthpiece and/or of the recess of the liquid container, it will be appreciated that the flavour element may have any shaped cross section (e.g. oval, square, polygonal), and the aperture of the mouthpiece, or a portion thereof, and/or the recess of the liquid container, or a portion thereof, may correspondingly have any shaped cross section

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Although in the above examples, the mouthpiece comprised, at an opening of a aperture at the device end of the mouthpiece, a chamfer for contacting the liquid container, this need not necessarily be the case. In other examples, the mouthpiece may not comprise such a chamfer. For example, a face of the mouthpiece at the device end
15 opening may contact flush with a face of the liquid container (i.e. in a head on arrangement) thereby to form a seal between the mouthpiece and the liquid container. In another example, the mouthpiece, at the opening of the aperture at the device end of the mouthpiece, may comprise alternatively or additionally a protruding circumferential wall or lip that contacts the liquid container, for example contacts an inner face of a
20 corresponding protruding circumferential wall or lip at the rim of the liquid container. In yet other examples, there may be no such seal between the liquid container and the mouthpiece. For example, in the first and third examples described above where the user can draw on the flavour element rather than the mouthpiece itself, there may be alternatively or additionally a seal between the flavour element and the liquid container.

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The liquid 116, 216, 316, 416 is preferably a liquid that is volatilisable at reasonable temperatures, preferably in the range of 100-300°C or more particularly around 150-250°C, as that helps to keep down the power consumption of the apparatus with which the cartridge is used. Suitable materials include those conventionally used
30 in e-cigarette devices, including for example propylene glycol and glycerol (also known as glycerine). Also as described in relation to the examples above, the flavour element may be or comprise a material that may be used to impart a flavour (or other constituent)

to the aerosol or vapour produced from the liquid as the aerosol or vapour passes through the flavour element. For example, the material may comprise constituents that impart cooling sensations, heating sensations, nutraceutical benefits, stimulating benefits or produce or induce any other sensation or benefit in the user. The material
5 may for example consist of or comprise tobacco. As the aerosol or vapour passes through and over the tobacco material, the aerosol or vapour entrains organic and other compounds or constituents from the tobacco material that lend tobacco its organoleptic properties, thus imparting the flavour to the aerosol or vapour as it passes to the mouthpiece. Materials other than tobacco may be used to impart different flavours to
10 the aerosol or vapour stream. For example, materials other than tobacco may be blended with tobacco, or blends of other materials such as, for example, vanilla pods, star anise, mint leaves, other herbs, and the like. For example, flavourants could be included in the material or in the liquid or both. In the example where flavourants are included in both the flavour element and the liquid, the generated vapour or aerosol may be flavoured
15 with a first flavour, and the flavour element may impart a second flavour to the vapour or aerosol passing there through. The first flavour and the second flavour may be the same, in which case the flavour element may act so as to enhance the flavour of the vapour or aerosol passing there through. The first flavour and the second flavour may be different, in which case the flavour element may act so as to alter the flavour of the
20 vapour or aerosol passing there through. The user may therefore easily customise the flavour of the vapour or aerosol exiting the device for inhalation.

In any of the examples described above, an apparatus controller may control operation of the apparatus as a whole. The controller for example may cause the heater
25 to be powered as and when required and switch off the heater when heating is not required. Operation of the heater may be controlled so that the liquid and/or material of the flavour element is heated to an optimum temperature. Particular considerations include ensuring that the flavour element does not burn, ensuring that adequate vaporisation of the liquid is achieved, ensuring that the vaporised liquid or aerosol is at
30 an appropriate temperature to liberate compounds from the flavour element, and ensuring that the vapour or aerosol that reaches the user is at a comfortable and safe temperature. A puff detector, a device which is known per se, may be provided to signal

to the controller when the heater needs to be energised. Alternatively or additionally, the user may control the apparatus via controls or an interface external to the overall apparatus (not shown), for example via radio control signals, or Bluetooth or the like from a separate control device, such as a smartphone or the like.

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In use, the material of the flavour element may be heated by vapour or aerosol with a temperature higher than the temperature of the material. It will be appreciated that any temperature above ambient temperature of the material and/or above the ambient temperature of the device as a whole will improve release of constituents from the solid material.

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In use, the liquid may be heated to a temperature of between around 100-300°C or more particularly around 150°C to 250°C. Suitable liquid materials 116, 216, 316, 416 include materials that provide volatilised components upon heating, typically in the form of an aerosol. Suitable materials that the flavour element may be or comprise include any tobacco-containing material and may, for example, include one or more of tobacco per se, different varieties of tobacco, tobacco derivatives, pelletised tobacco, extruded tobacco, expanded tobacco, reconstituted tobacco, ground tobacco, tobacco extract, homogenised tobacco or tobacco substitutes. In the case of tobacco, the material may be in the form of a rod of tobacco, a pod or plug of tobacco, loose tobacco, agglomerates, etc., and may be in relatively dry form or in relatively moist form for example. The tobacco may have been modified, for example chemically modified, for example had its pH modified so as to promote the release of selected constituents of the tobacco such as nicotine. Suitable solid materials may include other, non-tobacco, products, which, depending on the product, may or may not contain nicotine. A tobacco rod may be formed using a wrapping material.

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As used herein, the terms "flavour" and "flavourant" may refer to materials which, where local regulations permit, may be used to create a desired taste or aroma in a product for adult consumers. They may include extracts (e.g., licorice, hydrangea, Japanese white bark magnolia leaf, chamomile, fenugreek, clove, menthol, Japanese mint, aniseed, cinnamon, herb, wintergreen, cherry, berry, peach, apple, Drambuie,

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bourbon, scotch, whiskey, spearmint, peppermint, lavender, cardamom, celery, cascarilla, nutmeg, sandalwood, bergamot, geranium, honey essence, rose oil, vanilla, lemon oil, orange oil, cassia, caraway, cognac, jasmine, ylang-ylang, sage, fennel, piment, ginger, anise, coriander, coffee, or a mint oil from any species of the genus

5 Mentha), flavour enhancers, bitterness receptor site blockers, sensorial receptor site activators or stimulators, sugars and/or sugar substitutes (e.g., sucralose, acesulfame potassium, aspartame, saccharine, cyclamates, lactose, sucrose, glucose, fructose, sorbitol, or mannitol), and other additives such as charcoal, chlorophyll, minerals, botanicals, or breath freshening agents. They may be imitation, synthetic or natural

10 ingredients or blends thereof. They may be in any suitable form, for example, oil, liquid, solid, or powder. For example, a liquid, oil, or other such fluid flavourant may be impregnated in a porous solid material so as to impart flavour and/or other properties to that porous solid material. As such, the liquid or oil is a constituent of the material in which it is impregnated.

15

The above embodiments are to be understood as illustrative examples of the invention. It is to be understood that any feature described in relation to any one embodiment may be used alone, or in combination with other features described, and may also be used in combination with one or more features of any other of the

20 embodiments, or any combination of any other of the embodiments. Furthermore, equivalents and modifications not described above may also be employed without departing from the scope of the invention, which is defined in the accompanying claims.

Claims

1. A mouthpiece for an apparatus for generating an inhalable medium, the mouthpiece defining an aperture extending from a first opening at a first end of the mouthpiece to a second opening at an opposing end of the mouthpiece, the mouthpiece being arranged to receive in the aperture through the first opening a flavour element for imparting a flavour to a flow of at least one of a vapour and an aerosol that passes through the mouthpiece in use, the aperture having a first radial dimension towards the first opening, and a second radial dimension towards the second opening, wherein the second radial dimension is smaller than the first radial dimension; and the mouthpiece further comprising the flavour element received in the aperture through the first opening.
2. The mouthpiece of claim 1, wherein the second radial dimension is arranged to prevent said flavour element received in the aperture through the first opening in use from passing through to the second opening.
3. The mouthpiece of claim 1 or 2, wherein the aperture is or comprises a stepped bore, the stepped bore comprising a first bore portion having the first radial dimension and a second bore portion having the second radial dimension.
4. The mouthpiece of claim 3, wherein a step of the stepped bore is arranged to prevent said flavour element from passing to the second opening.
5. The mouthpiece of claim 3 or 4, wherein at least a portion of the stepped bore towards the first opening is cylindrical.
6. The mouthpiece of any one of claims 3 to 5, wherein in use a step of the stepped bore supports said flavour element received in the aperture through the first opening.
7. The mouthpiece of any one of claims 1 to 6, wherein the mouthpiece is arranged such that said flavour element received in the aperture through the first opening protrudes beyond the first opening in use.

8. The mouthpiece of any one of claims 1 to 7, wherein the first opening is at a mouth end of the mouthpiece, and the second opening is at an apparatus end of the mouthpiece.
- 5
9. The mouthpiece of claim 8, wherein the mouthpiece comprises, at the second opening, a chamfer for engaging with a component of said apparatus.
10. The mouthpiece of any one of claims 1 to 7, wherein the first opening is at an apparatus end of the mouthpiece, and the second opening is at a mouth end of the mouthpiece.
- 10
11. The mouthpiece of claim 10, wherein the mouthpiece comprises, at the first opening, a chamfer for engaging with a component of said apparatus.
- 15
12. The mouthpiece of any one of claims 8 to 11, wherein the apparatus end of the mouthpiece is arranged to be releasably connectable to said apparatus.
13. The mouthpiece according to any one of claims 1 to 12, wherein the mouthpiece is arranged such that said flavour element, when received in the aperture through the first opening, in use, is removable from and/or replaceable in the aperture through the first opening.
- 20
14. The mouthpiece of any one of claims 1 to 13, wherein a cross section of the flavour element matches a cross section of the aperture.
- 25
15. The mouthpiece of any one of claims 1 to 14, wherein the flavour element is one or more of: self-supporting, porous, and cylindrical, and/or comprises a cylindrical portion.
- 30
16. The mouthpiece of any one of claims 1 to 15, wherein the flavour element is or comprises tobacco.

17. The mouthpiece of any one of claims 1 to 16, wherein the flavour element protrudes beyond the first opening.

18. The mouthpiece of any one of claims 1 to 17, wherein the flavour element
5 is arranged to define a flow path, for said flow of at least one of an aerosol and a vapour, running from one end of the flavour element to another.

19. Apparatus for generating an inhalable medium, the apparatus comprising the mouthpiece of any one of claims 1 to 18.

10

20. The apparatus of claim 19, the flavour element being received in the aperture through the first opening of the mouthpiece, the apparatus comprising:

a container for holding a liquid;

a heater for volatilising liquid held in the container to generate said flow of

15 at least one of a vapour and an aerosol in use;

wherein in use the flow of at least one of a vapour and an aerosol passes through the flavour element for inhalation by a user.

21. The apparatus of claim 20, wherein the flavour element comprises one or
20 more constituents, and in use the flow of at least one of a vapour and an aerosol through the flavour element entrains one or more of the constituents in the flow.

22. The apparatus of claim 20 or 21, wherein the first opening of the mouthpiece is at an apparatus end of the mouthpiece, and the container for holding liquid
25 comprises a recess into which the flavour element is received.

23. A mouthpiece for an apparatus for generating an inhalable medium, the mouthpiece defining a aperture extending from a first opening at a mouth end of the mouthpiece to a second opening at an opposing, apparatus end of the
30 mouthpiece, the mouthpiece being arranged to receive in the aperture a flavour element for imparting a flavour to a flow of at least one of a vapour and an aerosol that passes through the mouthpiece in use, the mouthpiece being arranged such that in use said flavour element received into the aperture protrudes beyond the first opening for receipt into a user's mouth, and protrudes beyond the second

opening for contact with a component of said apparatus; and the mouthpiece further comprising the flavour element received in the aperture.

24. The mouthpiece of claim 23, wherein the apparatus end of the mouthpiece
5 is arranged to be releasably connectable to said apparatus.

25. The mouthpiece of claim 23 or 24, wherein the mouthpiece comprises, at the second opening, a chamfer for contacting with said component of said apparatus.
10

26. The mouthpiece of any one of claims 23 to 25, wherein the mouthpiece is arranged to allow said flavour element, when received in the aperture, to be removed from and/or replaced in the aperture.

27. The mouthpiece of any one of claims 23 to 26, wherein the flavour element protrudes beyond the first opening and protrudes beyond the second opening.
15

28. The mouthpiece of any one of claims 23 to 27, wherein a cross section of the flavour element matches a cross section of the aperture.
20

29. The mouthpiece of any one of claims 23 to 28, wherein the flavour element is one or more of: self-supporting, porous, cylindrical, and/or comprises a cylindrical portion.

30. The mouthpiece of any one of claims 23 to 29, wherein the flavour element is or comprises tobacco.
25

31. The mouthpiece of any one of claims 23 to 30, wherein the flavour element is arranged to define a flow path, for said flow of at least one of an aerosol and a vapour, running from one end of the flavour element to the other.
30

32. Apparatus for generating an inhalable medium, the apparatus comprising the mouthpiece of any one of claims 23 to 31.

33. The apparatus of claim 32, the flavour element being received in the aperture of the mouthpiece, the apparatus comprising:

a container for holding a liquid;

a heater for volatilising liquid held in the container to generate said flow of

5 at least one of a vapour and an aerosol in use;

wherein in use the flow of at least one of a vapour and an aerosol passes through the flavour element for inhalation by a user.

34. The apparatus of claim 33, wherein the flavour element comprises one or
10 more constituents, and in use the flow of at least one of a vapour and an aerosol through the flavour element entrains one or more of the constituents in the flow.

35. The apparatus of claim 32 or 34, wherein the container for holding liquid comprises a recess into which the flavour element is received.

15

36. A mouthpiece for an apparatus for generating an inhalable medium, the mouthpiece defining an aperture for receiving a flavour element for imparting a flavour to a flow of at least one of a vapour and an aerosol that passes through the mouthpiece in use, the aperture extending from a first opening at a mouth end of the mouthpiece to a second opening at an opposing, apparatus end of the
20 the mouthpiece, the mouthpiece comprising, at the second opening, a chamfer for contacting with a component of said apparatus thereby to form a seal between said component and the mouthpiece; and the mouthpiece further comprising the flavour element received in the aperture.

25

37. The mouthpiece of claim 36, wherein the apparatus end of the mouthpiece is arranged to be releasably connectable to said apparatus.

38. The mouthpiece of claim 36 or 37, wherein the second opening is circular.

30

39. The mouthpiece of any one of claims 36 to 38, wherein the mouthpiece is arranged such that the flavour element, when received in the aperture, is removable from and/or replaceable in the aperture.

40. The mouthpiece of any one of claims 36 to 39, wherein a cross section of the flavour element matches a cross section of the aperture.
41. The mouthpiece of any one of claims 36 to 40, wherein the flavour element
5 is one or more of: self-supporting, porous, cylindrical, and/or comprises a cylindrical portion.
42. The mouthpiece of any one of claims 36 to 41, wherein the flavour element is or comprises tobacco.
10
43. The mouthpiece of any one of claims 36 to 42, wherein the flavour element is arranged to define a flow path, for said flow of at least one of an aerosol and a vapour, running from one end of the flavour element to the other.
44. Apparatus comprising the mouthpiece of any one of claims 36 to 43; and a container for holding a liquid, wherein a rim of the container contacts the chamfer of the mouthpiece thereby to form a seal between the container and the mouthpiece.
15
45. The apparatus of claim 44, the container comprising a recess for receiving said flavour element.
20
46. The apparatus of claim 44 or 45, the apparatus comprising:
a heater for volatilising liquid held in the container to generate said flow of
25 at least one of a vapour and an aerosol in use;
wherein in use the flow of at least one of a vapour and an aerosol passes from an outlet of the container into the aperture via the second opening of the mouthpiece.
47. The apparatus of claim 46, comprising the flavour element received in the aperture, and wherein in use the flow of at least one of a vapour and an aerosol passes from the outlet of the container into a user's mouth via the flavour element.
30
48. The apparatus of claim 47, wherein the flavour element comprises one or more constituents, and in use the flow of at least one of a vapour and an aerosol

flows through the flavour element thereby to entrain one or more of the constituents in the flow.

1/7

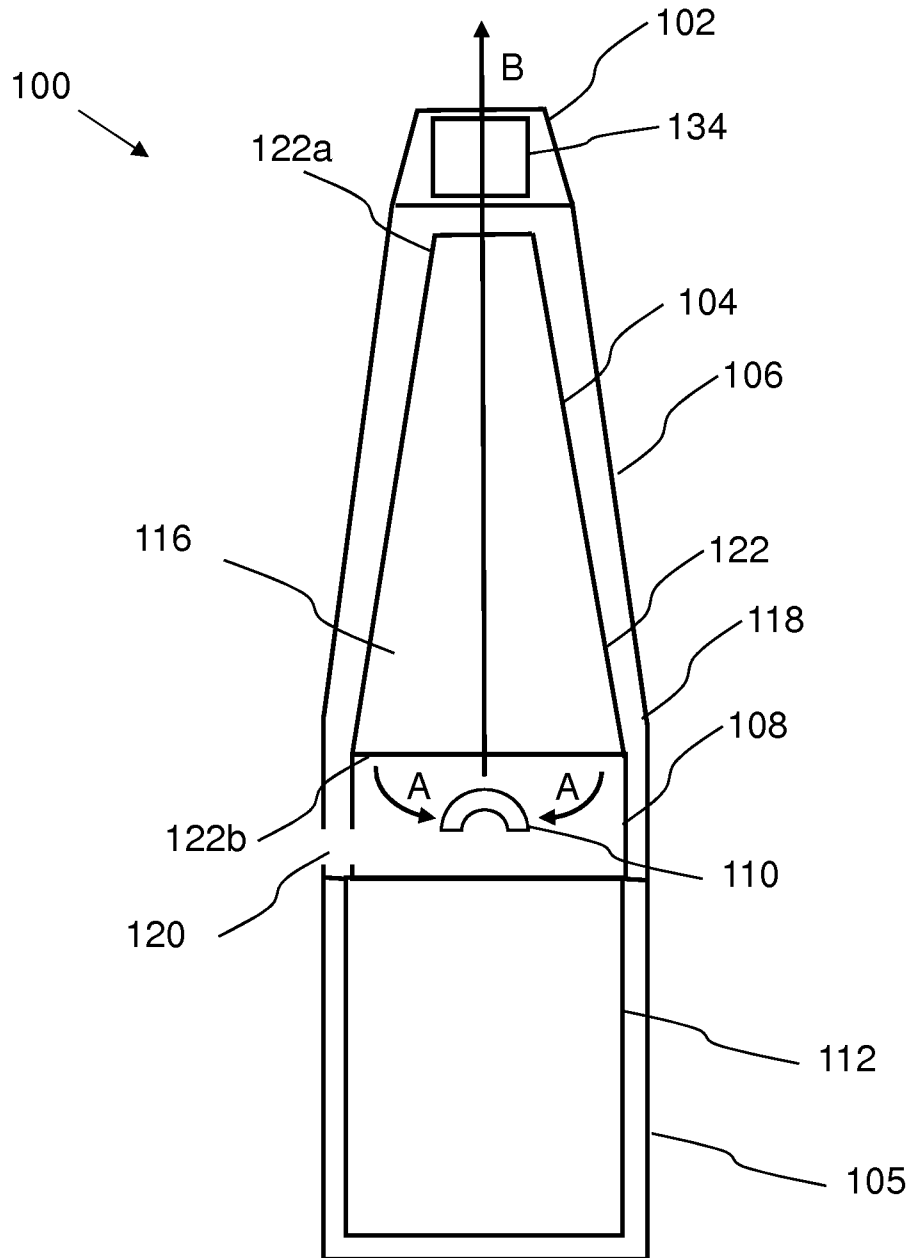


Figure 1

2/7

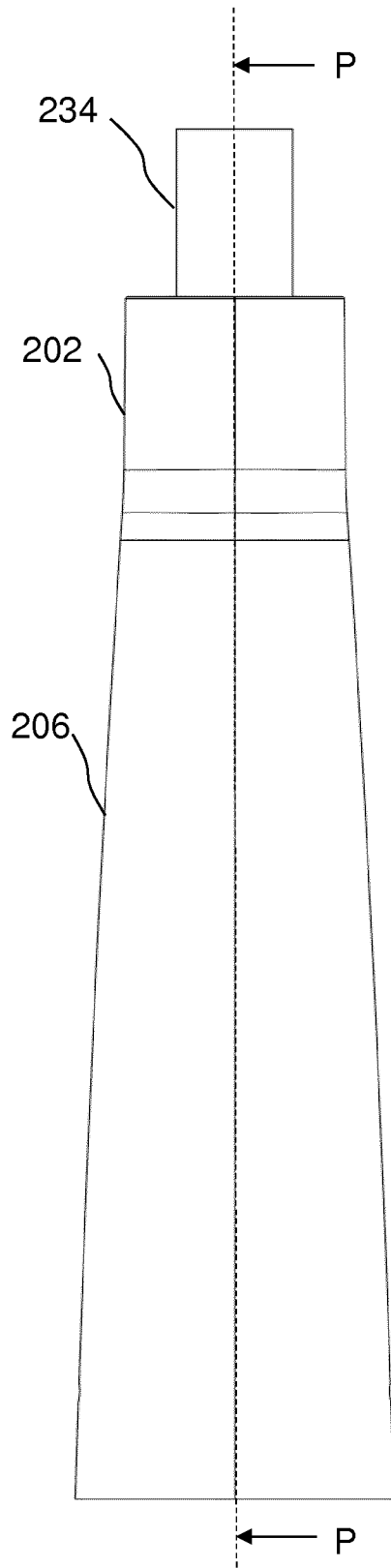


Figure 2a

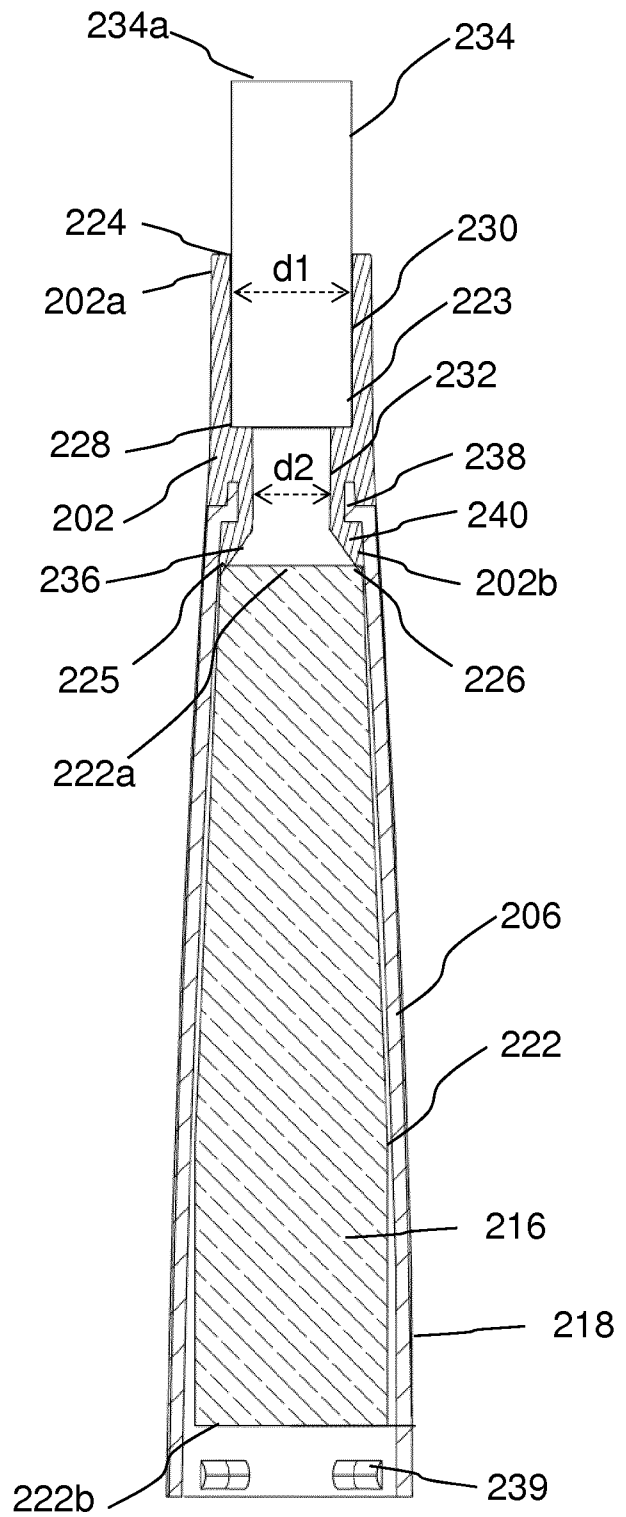


Figure 2b

3/7

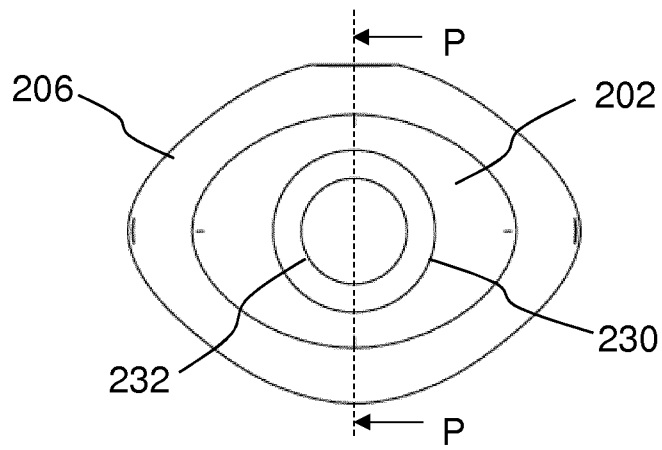


Figure 2c

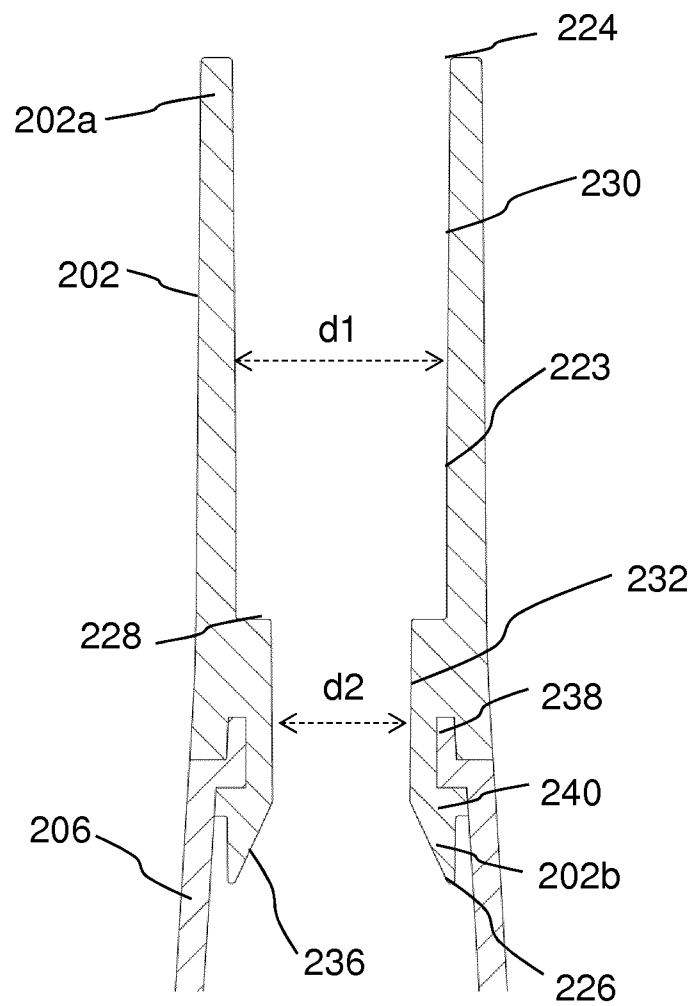


Figure 2d

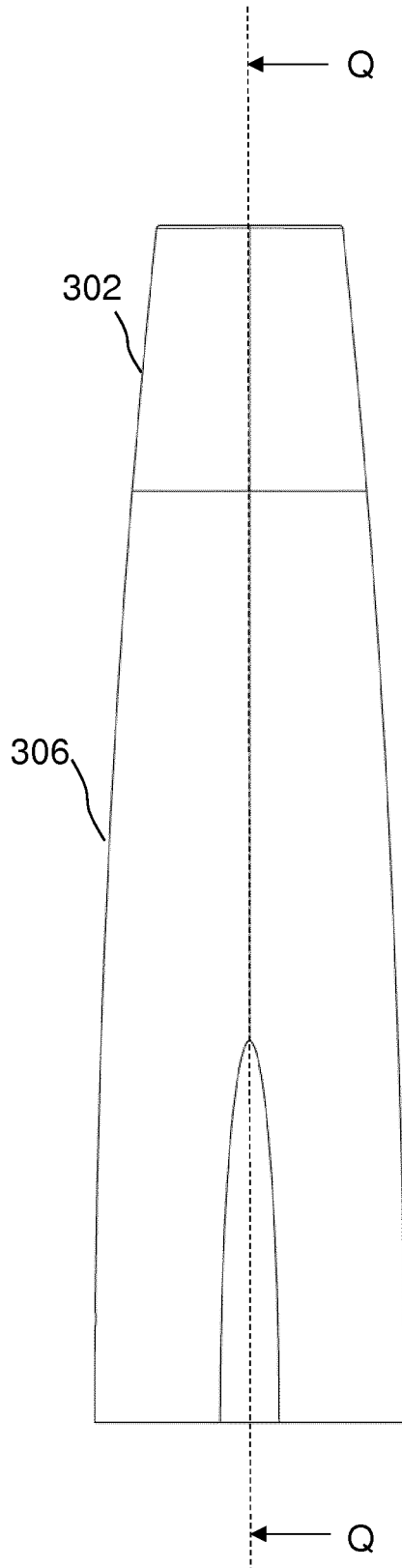


Figure 3a

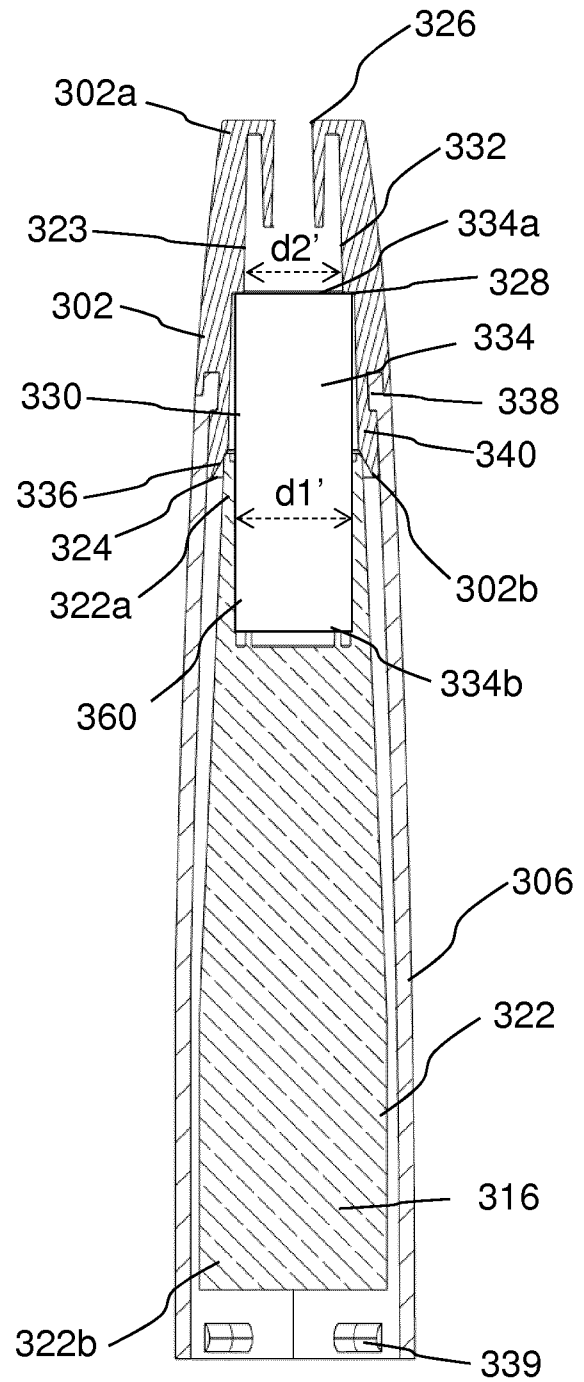


Figure 3b

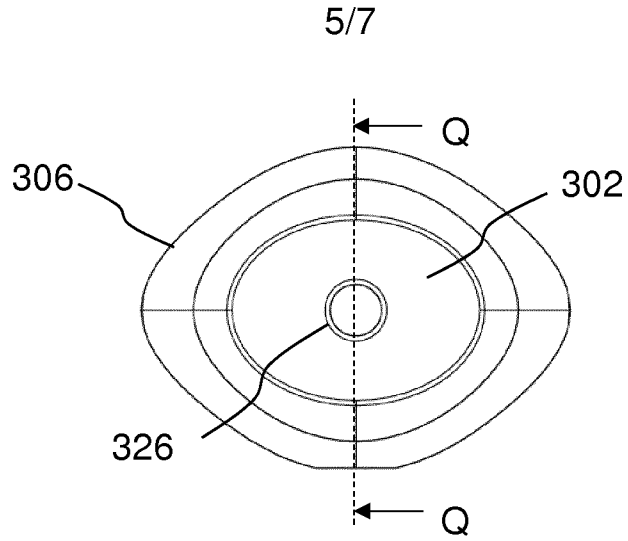


Figure 3c

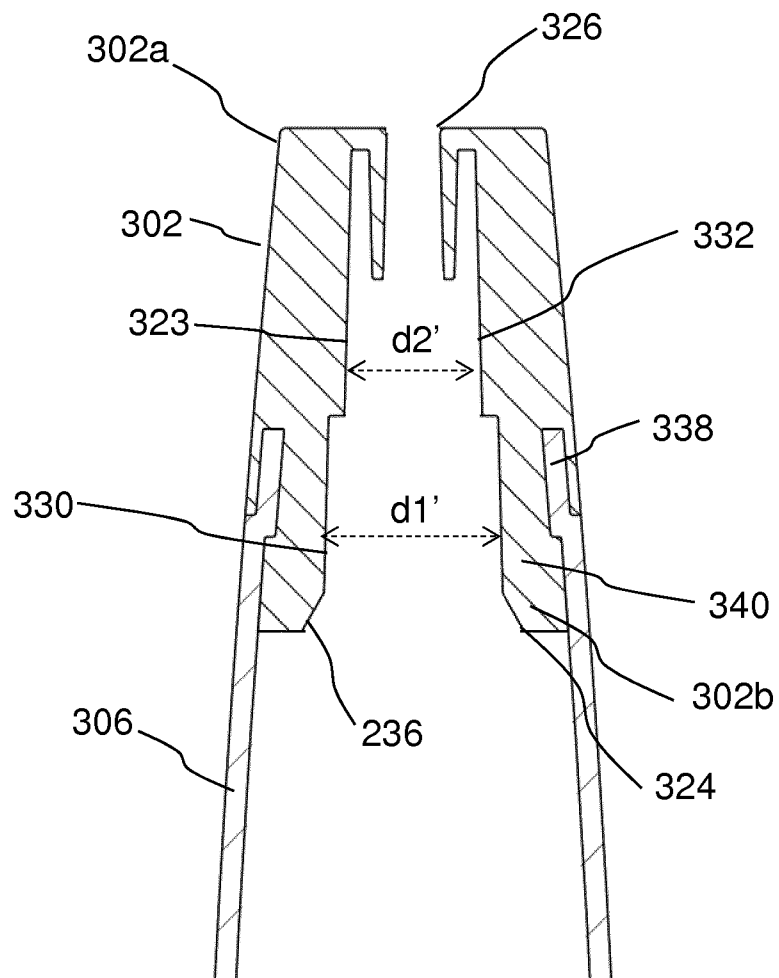


Figure 3d

6/7

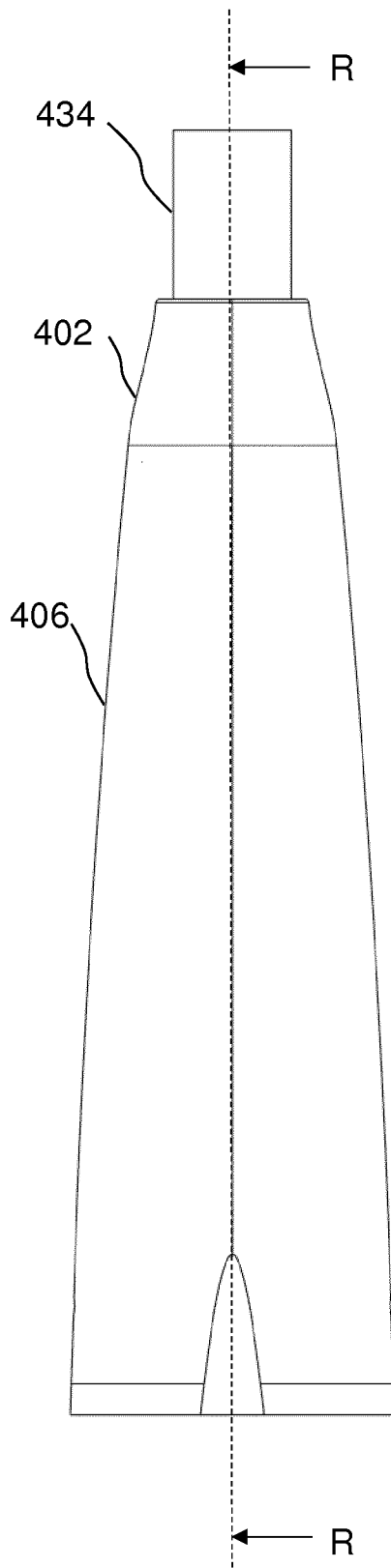


Figure 4a

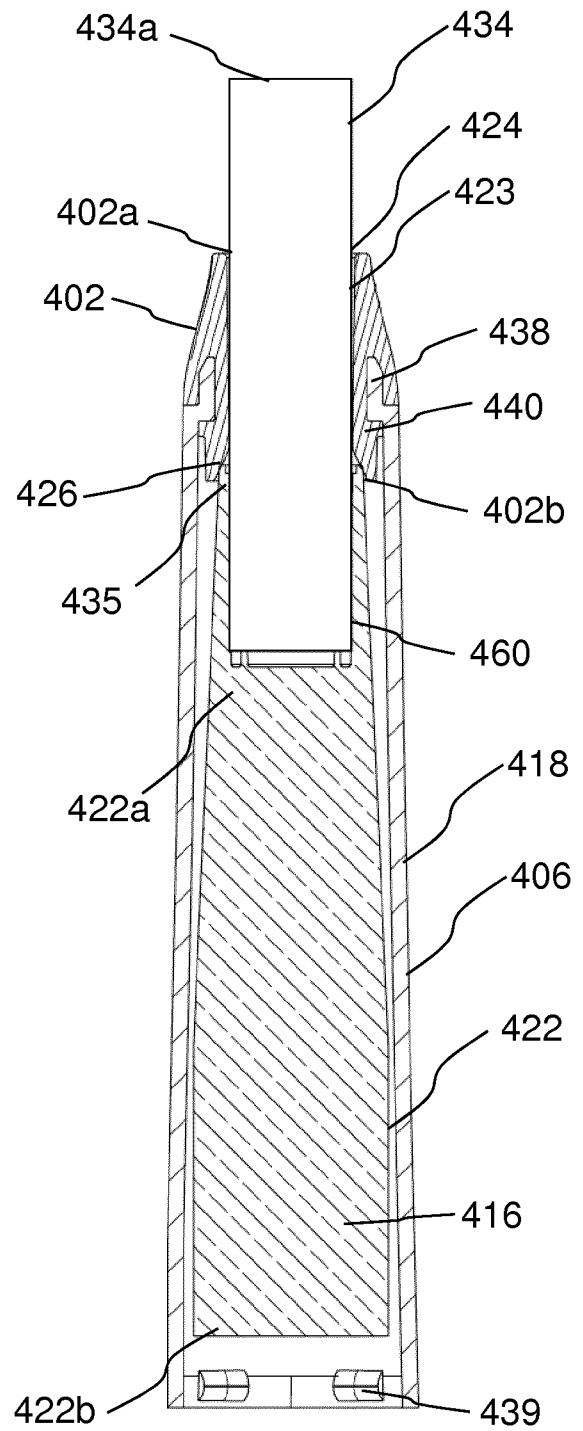


Figure 4b

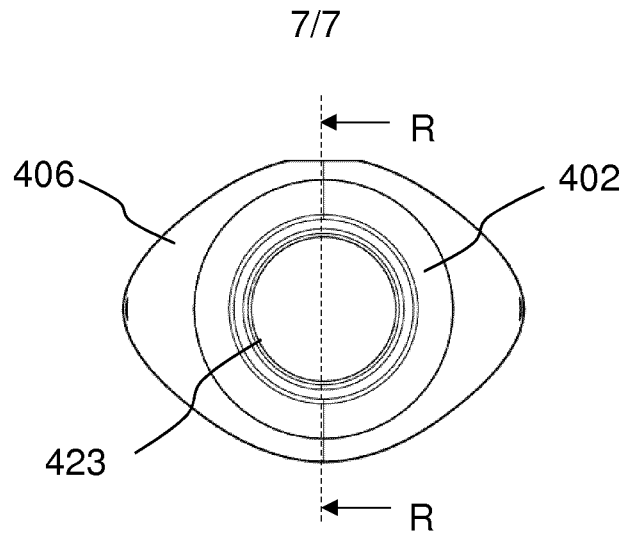


Figure 4c

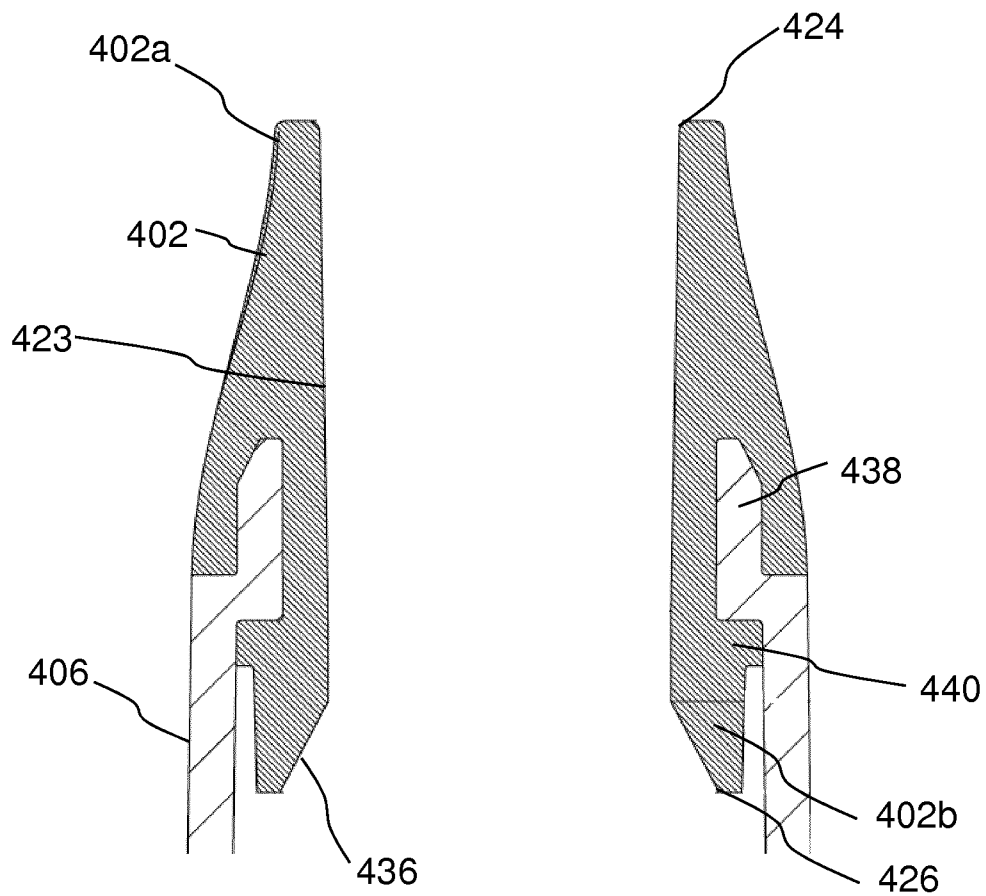


Figure 4d

