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(54) **MOUTHPIECE FOR INHALING AN AEROSOL WITH FLAVOR GRANULES**

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(57) **ABSTRACT**

A mouthpiece for inhaling an aerosol is provided, the mouthpiece including: an airflow path for an aerosol, the airflow path leading through the mouthpiece; and flavor granules arranged in the airflow path, the flavor granules containing at least one flavoring agent for flavoring the aerosol, the flavor granules being configured to be movable by a user's puff, the flavor granules including a porous matrix material including the at least one flavoring agent, and the porous matrix material having a density of between 0.4 and 2 g/cm^3.

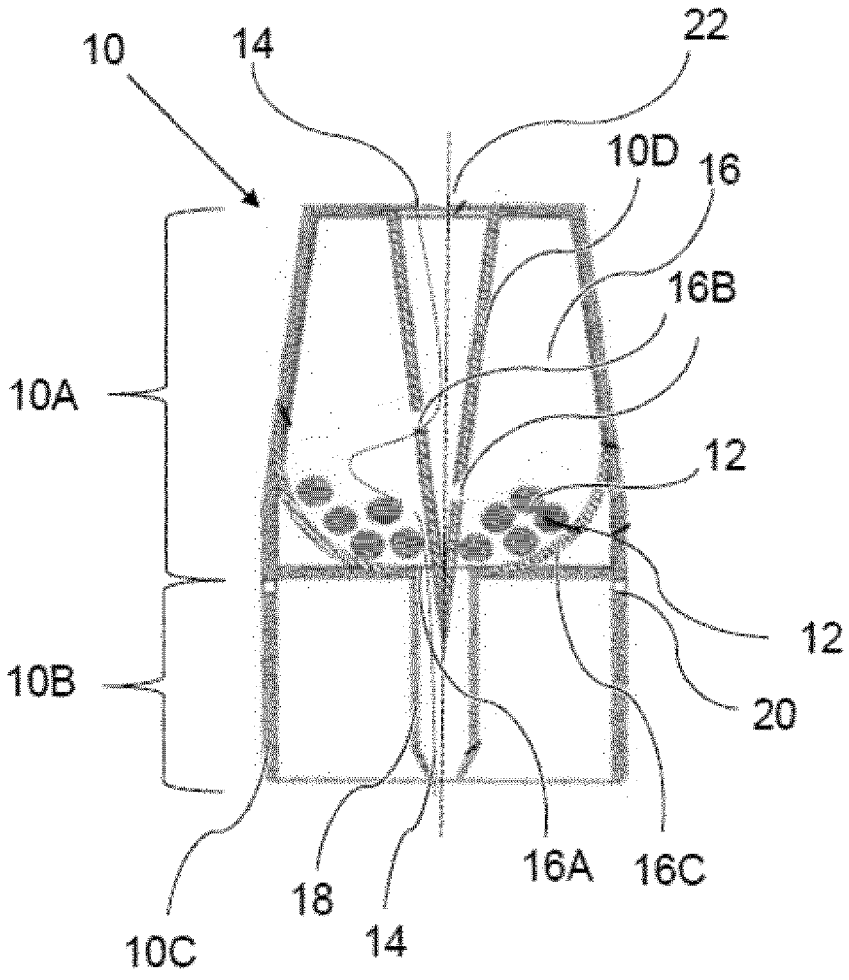


Fig. 1A

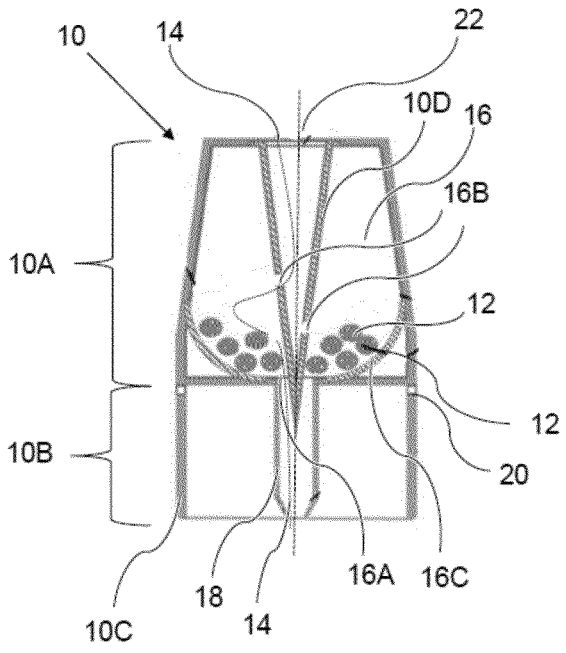


Fig. 1B

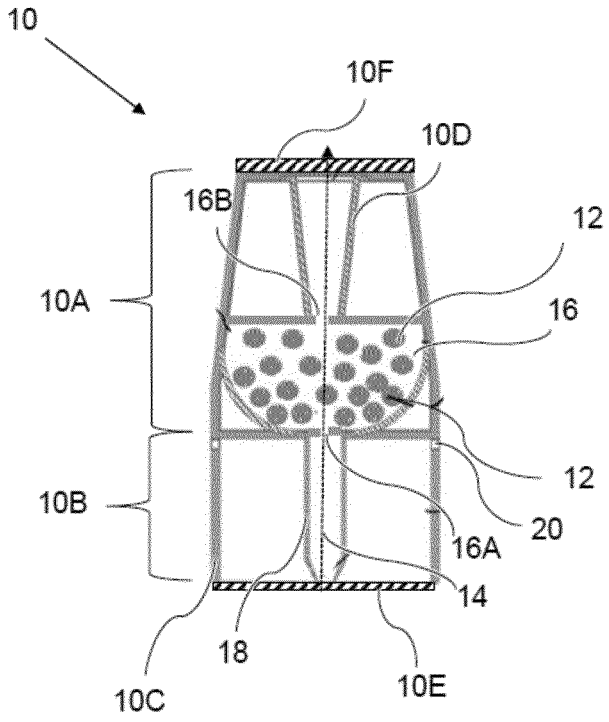


Fig. 2

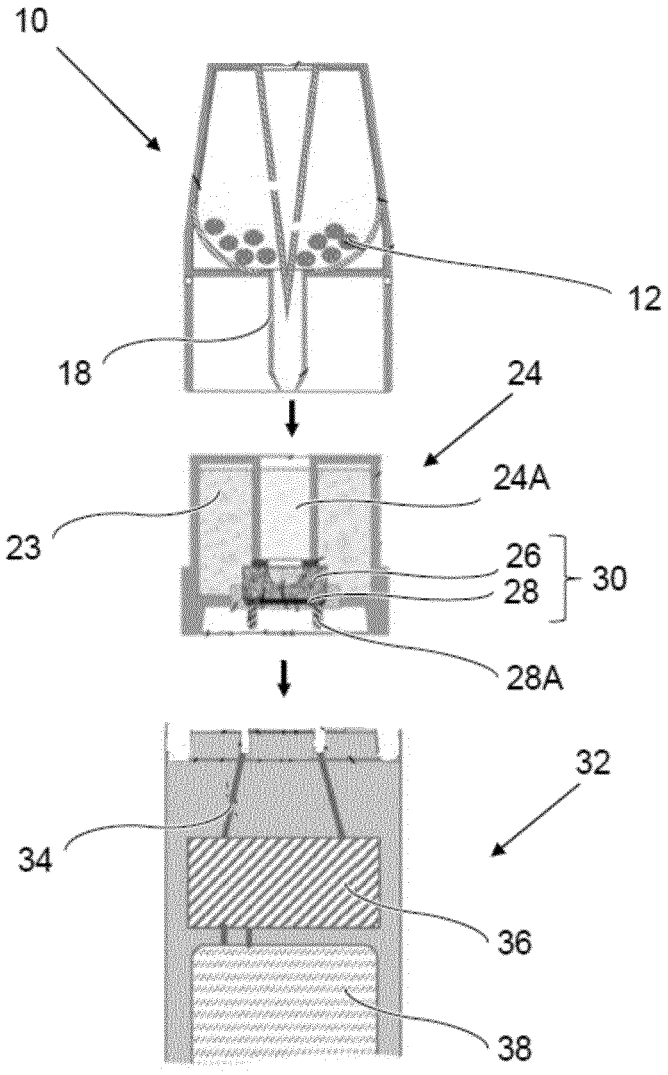


Fig. 3

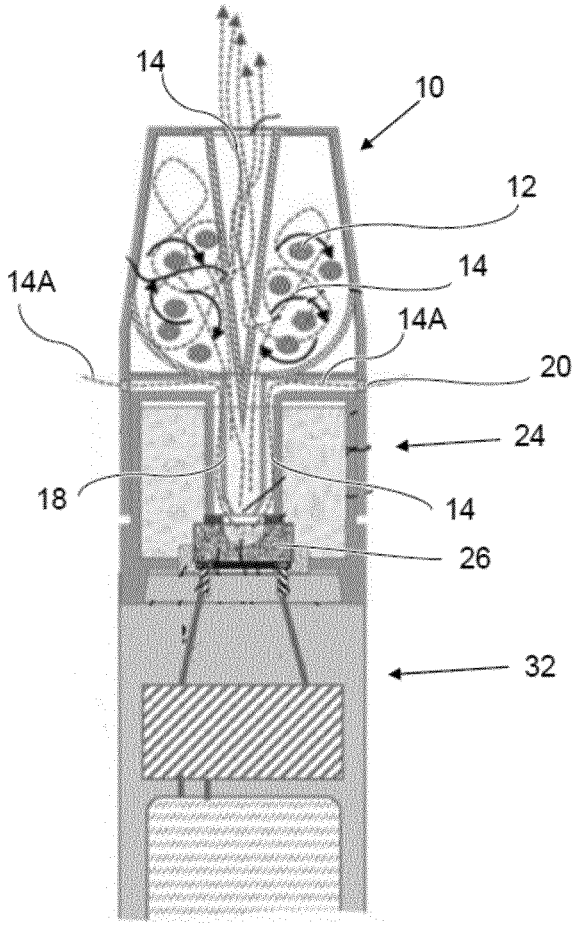
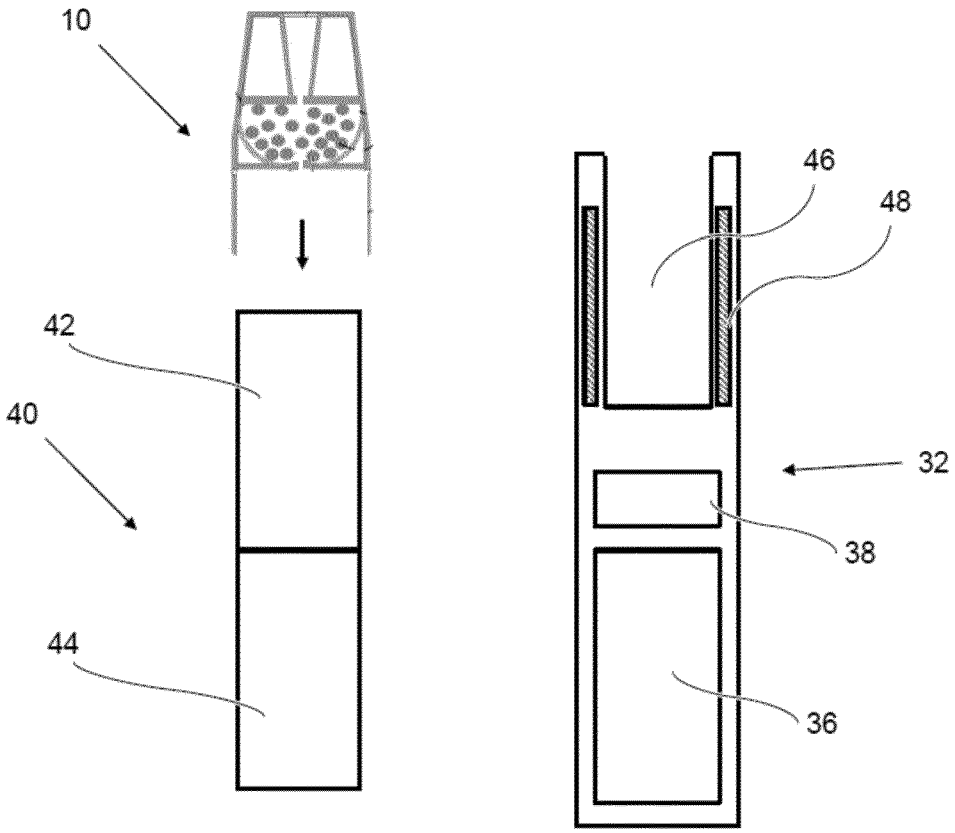


Fig. 4



MOUTHPIECE FOR INHALING AN AEROSOL WITH FLAVOR GRANULES

[0001] The present invention relates to a mouthpiece for inhaling an aerosol. The present invention further relates to flavor granules for flavoring an aerosol.

[0002] Aerosol-generating systems comprise either a cartridge including liquid aerosol-forming substrate or an aerosol-generating article including solid aerosol-forming substrate. These products can be consumed as heat-not-burn products and often contain flavorings which cannot be changed while the cartridge is in use. Cartridges often cannot be disconnected from their respective aerosol-generating devices without the risk of leakages or breaking the cartridge. Any flavorings present in the liquid aerosol-forming substrates of cartridges may have a short shelf life, mainly due to the chemically reactive nicotine component. Similarly, a user may purchase a complete set of aerosol-generating articles, which all include the same flavor.

[0003] It would be desirable to provide a user with the possibility to change the flavor of an aerosol-generating system while being in use. Furthermore, it would be desirable to provide the user with the possibility to change the flavoring of individual aerosol-generating articles which are contained in a set of aerosol-generating articles at the user's convenience. Furthermore, it would be desirable to provide the user with the possibility to obtain a different flavoring dependent on the intensity of the user's puffs. Additionally, it would be desirable to provide the user with the possibility to change the flavoring provided by aerosol-generating systems without great energy consumption. Furthermore, it would be desirable to provide components for flavoring an aerosol which can provide further flavorings for heat-not-burn products or for conventional cigarettes.

[0004] According to an embodiment of the present invention a mouthpiece for inhaling an aerosol is provided. The mouthpiece may comprise an airflow path for an aerosol, wherein the airflow path may lead through the mouthpiece. The mouthpiece may comprise flavor granules arranged in the airflow path. The flavor granules may contain at least one flavoring agent for flavoring the aerosol. The flavor granules may be configured to be movable by a user's puff.

[0005] According to another embodiment of the present invention a mouthpiece for inhaling an aerosol is provided. The mouthpiece comprises an airflow path for an aerosol, the airflow path leading through the mouthpiece. The mouthpiece furthermore comprises flavor granules arranged in the airflow path. The flavor granules contain at least one flavoring agent for flavoring the aerosol. The flavor granules are furthermore configured to be movable by a user's puff.

[0006] The flavor granules may be set in motion depending on the strength of the user's puff. The flavor granules may be floatable in the airstream generated by a user's puff. The stronger a user puffs, the more the flavor granules may be moved by the path. The stronger a user puffs, the more flavor agents may be released by the flavor granules floatable in the airstream of a user's puff. This may enable a user to control the flavoring of an aerosol depending on his/her strength of the puff.

[0007] The flavor granules may be configured to provide flavoring for the aerosol proportionally to the strength of a user's puff.

[0008] The flavor granules may be configured to release the at least one flavoring agent upon a user's puff. This may provide an additional flavoring of an aerosol without the necessity of heating the flavor granules. This may provide a simple method for flavoring an aerosol by simply puffing through the mouthpiece.

[0009] The aerosol received by the mouthpiece for further flavoring may be generated from a variety of different aerosol-forming substrates. The aerosol-forming substrate may be one or more of a liquid, a gel or a solid aerosol-forming substrate.

[0010] The mouthpiece may be configured to be detachably connectable to one or both of an aerosol-generating article or a cartridge containing an aerosol-forming substrate. The aerosol-generating article may comprise a substrate section containing aerosol-forming substrate. The aerosol-forming substrate may form an aerosol upon heating or upon combustion. The flavor granules of the mouthpiece may provide an additional flavoring for the aerosol created from the aerosol-forming substrate. The mouthpiece may provide a user with the opportunity to select different mouthpieces with different flavorings for the same aerosol-generating article or cartridge at the user's convenience.

[0011] The flavor granules may comprise a porous matrix material including the at least one flavoring agent. The at least one flavoring agent may be embedded within the porous matrix material. The at least one flavoring agent may be absorbed by the porous matrix material.

[0012] This may ensure that a large amount of the at least one flavoring agent can be included in the flavor granules. This may also ensure that a large amount of the at least one flavoring agent can be released into the aerosol upon a user's puff. The porous matrix material may ensure that the flavor granules are movable by a user's puff. This may also configure flavor granules to be floatable in a user's puff.

[0013] The porous matrix material may have a density of between 0.4 and 2 g/cm^3, preferably between 0.5 to 1.1 g/cm^3. In particular, the density of the porous matrix material may be between 0.41 and 1.9 g/cm^3, preferably between 0.53 to 1.1 g/cm^3.

[0014] Such a density may be advantageous in order to allow the flavor granules to be movable by a user's puff. The density of the matrix material may be determined according to standard methods known to a skilled person.

[0015] The porous matrix material may have a porosity of between 0.11 and 0.8, preferably between 0.4 to 0.8, more preferably between 0.5 and 0.7. Porosity of the matrix material may be determined as the ratio of the volume of voids in the material (V_p) and the total volume of the material (V_t) V_p/V_t employing standard methods.

[0016] Porous matrix material having such a porosity may enable a large amount of the at least one flavoring agent to be included in the flavor granules.

[0017] The flavor granules may comprise between 40 and 80 weight percent of the total weight, preferably between 50 and 70 weight percent of porous matrix material. The flavor granules may comprise between 20 and 60 weight percent, preferably between 30 to 50 weight percent of the total weight of the at least one flavoring agent.

[0018] The porous matrix material may be water-soluble. This may ensure that only the at least one flavoring agent included in the porous matrix material is volatilized upon a user's puff. Water vapor included in a user's puff may not be able to dissolve the porous matrix material.

[0019] The porous matrix material may comprise one or more of: plastic, cellulosic material, lignocellulosic material, ceramic material, minerals, and fabric. Preferably, the

porous matrix material may be selected from a group consisting of: basalt stone, bamboo fiber composites, cork, modal fabric composite, nonwoven, cellulose composite, cyclodextrin. Particular preferred is basalt stone. The porous matrix material may comprise an open-cells porous material. The voids in an open-cells porous material may be easily accessible for the at least one flavoring agent. This may facilitate an easy impregnation of the open-cells porous matrix material with the at least one flavoring agent.

[0020] These materials may be well suited in order to be employed as a porous matrix material. These materials may be able to absorb a large amount of the at least one flavoring agent.

[0021] The flavor granules may have a particle diameter of between 0.7 and 4.7 millimeters. Preferably the particle diameter may be between 1.7 and 3.8 millimeters.

[0022] Such a particle diameter may be particularly well suited for the flavor granules to be configured to be movable by a user's puff.

[0023] The at least one flavoring agent may be volatile. This may ease the volatilization of the at least one flavoring agent upon a user's puff. The at least one flavoring agent may be a liquid or a gel. The at least one flavoring agent may be selected from a group consisting of: mint oil, menthol, isomenthone, and menthyl acetate.

[0024] The flavor granules may additionally comprise at least one aerosol-former. Preferably the at least one aerosol-former may be selected from a group consisting of: propanediol, propanediol, glycerol, diacetate, diethyl phthalate. These aerosol-formers may be included in the aerosol in addition to the at least one flavoring agent when a user pulls on the mouthpiece. These aerosol-formers may also control the volatilization rate of the at least one flavoring agent.

[0025] The mouthpiece may comprise a longitudinal axis. The airflow path may partly be arranged in a direction parallel to the longitudinal axis. The airflow path may be partly arranged diagonally to the longitudinal axis. The flavor granules may be arranged in the airflow path partly arranged diagonally to the longitudinal axis. This may provide an extended airflow path through the mouthpiece and through the flavor granules. This may provide an enhanced contact time between the flavor granules and the airstream provided by a user's puff. This may aid in the volatilization of the at least one flavoring agent.

[0026] The airflow path through the mouthpiece may partly not be arranged parallel to the longitudinal axis. In particular, the airflow path through the mouthpiece may partly deviate from the direction along the longitudinal axis. This may provide the extended airflow path through the mouthpiece. This also may lead to an enhanced contact time between the flavor granules and the airstream, as already discussed above.

[0027] The mouthpiece further may comprise a flavor compartment including the flavor granules. The flavor compartment may provide a compartment for the flavor granules to float in the airstream of a user's puff. The flavor compartment may provide space for the flavor granules to move upon a user's puff. The flavor granules may occupy only a part of the flavor compartment. This may provide a space for the flavor granules to be movable upon a user's puff.

[0028] The flavor compartment may have an average volume of between 0.5 to 1.5 cm^3, preferably of 0.6 to 0.9 cm^3. Such flavor compartment may contain between 0.4 to 0.7 grams of the flavor granules.

[0029] The flavor compartment may be located in the part of the airstream which may be arranged diagonally to the longitudinal axis of the mouthpiece. The flavor compartment may also be located in the part of the airstream which may not be arranged parallel to the direction of the longitudinal axis. This may extend the airflow path through the flavor compartment including the flavor granules.

[0030] The flavor compartment may be annular-shaped. This may provide an annular ring of flavor granules in the flavor compartment in the mouthpiece. This may provide an advantageous airflow path through the flavor compartment. The annular-shaped flavor compartment may be arranged along the longitudinal axis of the mouthpiece.

[0031] The flavor compartment may comprise walls. The walls of the flavor compartment may be one or both of internal walls of the mouthpiece or external walls of the mouthpiece. The internal walls of the mouthpiece may be located in the interior of the mouthpiece. The external walls of the mouthpiece may be outside walls of the mouthpiece. The outside walls of the mouthpiece may provide an area for the user to handle the mouthpiece and to inhale an aerosol from the mouthpiece.

[0032] The walls of the flavor compartment may be in contact with the flavor granules. Upon a user's puff, the flavor granules may move and may bounce off the walls. This may provide a vibrational feedback to the user. The vibrational feedback to the user may be stronger, if the flavor granules are heavier containing more of the at least one flavoring agent. The vibrational feedback thus may provide a user with information about how much of the at least one flavoring agent of the mouthpiece has already been used.

[0033] The flavor compartment may comprise a flavor compartment air inlet. The flavor compartment air inlet may provide access of the airflow generated upon a user's puff into the flavor compartment. The flavor compartment air inlet may be located upstream of the flavor granules located in the flavor compartment.

[0034] The flavor compartment may comprise a flavor compartment air outlet. The flavor compartment air outlet may provide an airflow path for the aerosol including the at least one volatilized flavoring agent out of the flavor compartment. The flavor compartment air outlet may be located downstream of the flavor granules located in the flavor compartment.

[0035] As used herein, the terms "upstream", and "downstream", are used to describe the relative positions of components, or portions of components, of the mouthpiece or an aerosol-generating device used together with the mouthpiece in relation to the direction in which air flows through the mouthpiece or aerosol-generating device during use thereof along the air flow path. The mouthpiece according to the invention comprise a proximal end through which, in use, an aerosol exits the mouthpiece. The proximal end of the aerosol generating device may also be referred to as the mouth end or the downstream end. The proximal end of the aerosol generating device may be the mouthpiece connected to the aerosol generating device. The mouth end is downstream of the distal end. The distal end of the aerosol generating device or the mouthpiece may also be referred to as the upstream end. Components, or portions of components, of the mouthpiece or the aerosol generating device may be described as being upstream or downstream of one

another based on their relative positions with respect to the airflow path through the mouthpiece or the aerosol generating device.

[0036] The mouthpiece may comprise outer walls. The outer walls may comprise any suitable material suitable for the mouthpiece. One or both of the outer walls and the inner walls may comprise plastic, cardboard or metal.

[0037] The mouthpiece may further comprise an inlet portion. The inlet portion may be configured for receiving the aerosol. The mouthpiece furthermore may comprise an outlet portion. The outlet portion may be configured for outflow of the aerosol, for example to a user. The airflow path through the mouthpiece may be arranged between the inlet portion and the outlet portion.

[0038] The inlet portion of the mouthpiece may be configured for being detachably connectable to one or more of a cartridge for an aerosol-forming substrate, an aerosol-generating device or an aerosol-generating article. The inlet portion may be configured to receive the aerosol generated from the aerosol-forming substrate of the cartridge or the aerosol-generating article.

[0039] The inlet portion of the mouthpiece may include connection taps. The connection taps may be configured for being detachably connectable to one or more of a cartridge for an aerosol-forming substrate, an aerosol-generating device or an aerosol-generating article.

[0040] The flavor compartment air inlet may provide an airflow path between the inlet portion of the mouthpiece and the flavor compartment. The inlet portion therefore may be configured to direct the aerosol generated by the cartridge or the aerosol-generating article through the flavor compartment air inlet into the flavor compartment.

[0041] The outlet portion of the mouthpiece may comprise an inner wall providing an aerosol outlet for a user. The inner wall of the outlet portion of the mouthpiece may comprise a flavor outlet in fluid communication with the flavor granules. The flavor outlet may be in fluid communication with the flavor compartment. This may provide a flow path from the flavor granules to the aerosol outlet. The above-mentioned flavor compartment air outlet of the flavor compartment may correspond to the flavor outlet.

[0042] The inner wall may have a conical shape. The inner wall may have a larger cross-sectional area at the downstream end of the inner wall than at the upstream end. The speed of the mixture of the aerosol and the at least one flavoring agent may be lower at the downstream end of the inner wall compared to the upstream end. This may provide a Venturi effect. This may enable a better mixing of the mixture of the aerosol and the at least one flavoring agent before being inhaled by a user.

[0043] The inlet portion of the mouthpiece may comprise a tubular section. The tubular section may be configured for being detachably connectable to a cartridge. The tubular section may be arranged along the longitudinal axis of the mouthpiece.

[0044] The tubular section may enable contact to a cartridge, in particular to a central hollow portion of an annular-shaped cartridge.

[0045] The tubular section may comprise an opening at the upstream end. The opening at the upstream end may have a smaller diameter than the downstream end of the tubular section. This may lead to a reduction of the speed of the aerosol at the downstream end of the tubular section compared to the upstream end. This may enable a better mixing of the air and the aerosol originating from the aerosol-forming substrate.

[0046] The mouthpiece may comprise an outer wall. The outer wall may comprise at least one mouthpiece air inlet configured for allowing ambient air to enter the mouthpiece. The inlet portion of the mouthpiece may comprise the at least one mouthpiece air inlet.

[0047] The mouthpiece may further comprise an outlet sealing layer. The outlet sealing layer may seal the outlet portion of the mouthpiece. The mouthpiece may further comprise an inlet sealing layer. The inlet sealing layer may seal the inlet portion of the mouthpiece. The presence of one or both of the outlet sealing layer and the inlet sealing layer may prevent the evaporation of the at least one flavoring agent out of the mouthpiece. A user may remove the inlet sealing layer and the outlet sealing layer before using the mouthpiece. After removal of the outlet sealing layer and the inlet sealing layer a user may connect the mouthpiece with one or both of an aerosol-generating article or the cartridge.

[0048] The invention also provides flavor granules for flavoring an aerosol. The flavor granules may comprise a porous matrix material including at least one flavoring agent for flavoring the aerosol. The flavor granules may be configured to be movable by a user's puff.

[0049] Another embodiment of the invention provides flavor granules for flavoring an aerosol. The flavor granules comprise a porous matrix material including at least one flavoring agent for flavoring the aerosol. The flavor granules are configured to be movable by a user's puff.

[0050] The flavor granules may be used in order to provide flavoring to an aerosol generated from one or both of a cartridge comprising an aerosol-forming substrate or an aerosol-generating article comprising the aerosol-forming substrates. The flavor granules may enable a flavoring of an aerosol without the requirement of heating the aerosol. The at least one flavoring agents of the flavor granules may be entrained in the aerosol when floating in the air stream of a user's puff.

[0051] The flavor granules of the present invention may be produced by fluid bed processing. In particular, the flavor granules may be produced by two specific types of fluid bed processing, namely top spray granulation or spray dryer granulation. A fluidized bed reactor may be used. In the fluidized bed reactor particles of the porous matrix material may be suspended in a fluid. The fluid may include the at least one flavoring agent. This may take place at a higher temperature and higher pressure. This may enable the at least one flavoring agent to be embedded and to be absorbed by porous matrix material. In both cases of fluid bed processing warm air may be blown through a perforated distributor on the bottom of a vertical tubular structure, for example a vertical fluid bed tower. The at least one flavoring agent may be sprayed in liquid form on the top of the fluid bed tower while the porous matrix material may be continuously flowing in the warm air from bottom to top of the vertical tower. During the fluid bed processing the particles of the porous matrix material to be impregnated with the flavoring agent flow higher in the fluid bed and are subjected to impregnation with the flavoring agent at the top of the vertical fluid bed tower. The heavier flavor granules including the porous matrix material impregnated with the flavoring agent tend to float in a lower position of the vertical fluid bed tower due to their increased weight. The particles of the

porous matrix material may be impregnated with the flavoring agent or a coating of the flavoring agent on the particles of the porous matrix material may be provided. The particles of the porous matrix material may be porous basalt stone with an average diameter of between 1 to 5 millimeters, preferably between 1.7 to 3.5 millimeters. The flavoring agent may be liquid at processing temperature. The flavoring agent may include a salt, for example sea salt, liquid food coloring, vegetable gelatin and water. The at least one flavoring agent may include flavors such as citrus, lemon, grapefruit, spearmint, lavender, bergamot, cinnamon, and frankincense. The flavoring agent may include amorphous sol-gel silicon which may enable the sol-gel entrapment of sensitive flavoring agents in the porous matrix material. The finished flavor granules are dried with heated air after impregnation. Fluid bed processors including a vertical fluid bed tower are marketed by various companies, such as Diosna GmbH, Senieer, or Gea AG.

[0052] The porous matrix material of the flavor granules may have a density of between 0.4 and 2 g/cm^3, preferably between 0.5 to 1.1 g/cm^3. In particular, the density of the porous matrix material may be between 0.41 and 1.9 g/cm^3, preferably between 0.53 to 1.1 g/cm^3. The porous matrix material may have a porosity of between 0.11 and 0.8, preferably between 0.4 to 0.8, more preferably between 0.5 and 0.7. The porous matrix material may have a porosity of between 0.11 and 0.45.

[0053] The porous matrix material may be water-soluble. This may ensure that only the at least one flavoring agent included in the porous matrix material is volatilized upon a user's puff. Water vapor included in a user's puff may not be able to dissolve the porous matrix material.

[0054] The porous matrix material may comprise one or more of: plastic, cellulosic material, lignocellulosic material, ceramic material, minerals, and fabric. Preferably, the porous matrix material may be selected from a group consisting of: basalt stone, bamboo fiber composites, cork, modal fabric composite, nonwoven, cellulose composite, cyclodextrin.

[0055] The flavor granules may comprise between 40 and 80 weight percent of the total weight, preferably between 50 and 70 weight percent of the porous matrix material. The flavor granules may comprise between 20 and 60 weight percent, preferably between 30 to 50 weight percent of the total weight of the at least one flavoring agent.

[0056] The flavor granules may comprise any component or any feature already described above with regard to the mouthpiece of the present invention.

[0057] One embodiment of the invention also provides an aerosol-generating system. The aerosol-generating system may comprise a mouthpiece as described herein. The aerosol-generating system furthermore may comprise a cartridge containing an aerosol-forming substrate and may comprise an aerosol-generating device. The mouthpiece may be configured to be detachably connectable to the cartridge.

[0058] Another embodiment of the invention provides an aerosol-generating system. The aerosol-generating system comprises a mouthpiece as described herein. Additionally, the aerosol-generating system comprises a cartridge containing an aerosol-forming substrate and an aerosol-generating device. The mouthpiece is configured to be detachably connectable to the cartridge.

[0059] The cartridge may be configured to be detachably connectable to the aerosol-generating device. The mouthpiece may be detachably connectable to the cartridge. The cartridge may be detachably connectable to the aerosol-generating device.

[0060] Such an aerosol-generating system may provide an aerosol from the aerosol-forming substrate of the cartridge upon heating. This aerosol may be further flavorized by the at least one flavoring agent of the flavor granules contained in the mouthpiece. A user may add further flavor from the mouthpiece to the aerosol by simply pulling on the mouthpiece. This may not require additional heating. In particular, the heat of the aerosol generated from the aerosol-forming substrate may be sufficient together with the airstream generated by the user's puff in order to entrain the at least one flavoring agent in the aerosol.

[0061] The aerosol-forming substrate contained in the cartridge may be liquid.

[0062] The cartridge of the aerosol-generating system may comprise a vaporizer assembly for vaporizing the aerosol-forming substrate. The vaporizer assembly may comprise a porous evaporation element. The porous evaporation element may be in fluid communication with the aerosol-forming substrate contained in the cartridge. The porous evaporation element may be configured to absorb the aerosol-forming substrate, in particular the liquid aerosol-forming substrate. The porous evaporation element may comprise a porous ceramic material for absorbing the aerosol-forming substrate.

[0063] The vaporizer assembly may comprise a heater element. The porous evaporation element may be connected to the heater element in a thermally conducting manner. The heater element may be configured to heat the porous evaporation element. This may result in evaporation and aerosolization of the aerosol-forming substrate contained in the porous evaporation element. The heater element may comprise connections pins. The connection pins may be configured for being connected to an energy source of an aerosol-generating device.

[0064] As used herein, the term 'aerosol-forming substrate' relates to a substrate capable of releasing one or more volatile compounds that can form an aerosol. Such volatile compounds may be released by heating the aerosol-forming substrate.

[0065] The aerosol-forming substrate may comprise liquid components. The aerosol-forming substrate may comprise a tobacco-containing material containing volatile tobacco flavour compounds which are released from the substrate upon heating. The aerosol-forming substrate may comprise tobacco extract. The aerosol-forming substrate may comprise a non-tobacco material. The aerosol-forming substrate may comprise an aerosol former that facilitates the formation of a dense and stable aerosol. Suitable aerosol-formers are well known in the art and include, but are not limited to: polyhydric alcohols, such as triethylene glycol, 1,3-butanediol and glycerine; esters of polyhydric alcohols, such as glycerol mono-, di- or triacetate; and aliphatic esters of mono-, di- or polycarboxylic acids, such as dimethyl dodecanedioate and dimethyl tetradecanedioate. Aerosol formers may be polyhydric alcohols or mixtures thereof, such as triethylene glycol, 1,3-butanediol and glycerine. The aerosol-former may be propylene glycol. The aerosol former may comprise both glycerine and propylene glycol.

[0066] The cartridge may comprise a central hollow portion. The cartridge may have an annular shape. The mouth-

piece may be configured to be detachably connectable to the central hollow portion of the cartridge.

[0067] The tubular section of the inlet portion of the mouthpiece may be configured for being insertable into the central hollow portion of the cartridge. This may provide an airflow path leading from the cartridge through the tubular section of the inlet portion of the mouthpiece to the flavor granules.

[0068] The cartridge may comprise inner walls. The inner walls of the cartridge may be adjacent to the central hollow portion of the cartridge. The cartridge furthermore may comprise outer walls.

[0069] Upon connection of the mouthpiece with the cartridge an airflow channel may be formed between the outer walls of the cartridge and the inlet portion of the mouthpiece and between the inner wall of the cartridge and the tubular section of the mouthpiece. This airflow channel may direct ambient air to the vaporizer assembly of the cartridge. The airflow channel may receive ambient air through the mouthpiece air inlet.

[0070] This may enable an airflow channel to be formed only upon connection of the cartridge with the mouthpiece.

[0071] Upon connection of the mouthpiece with the cartridge, the tubular section of the inlet portion may be positioned adjacent to the vaporizer assembly of the cartridge. In particular, the upstream end of the tubular section may be positioned adjacent to the vaporizer assembly of the cartridge.

[0072] This may enable any aerosol generated at the vaporizer assembly of the cartridge to be directed through the tubular section of the mouthpiece to the vapor granules.

[0073] The cartridge of the aerosol-generating system may be configured to be detachably connectable to an aerosol-generating device. The aerosol-generating device may comprise electrical connections. These electrical connections may be configured to be detachably connectable to the cartridge. In particular, the electrical connections may be configured to be detachably connectable to the connection pins of the cartridge.

[0074] This aerosol-generating device may comprise a power supply. The power supply may be configured to operate the heater element of the cartridge. The power supply may be a battery, within a main body of the aerosol-generating device. In one embodiment, the power supply is a Lithium-ion battery. Alternatively, the power supply may be a Nickel-metal hydride battery, a Nickel cadmium battery, or a Lithium based battery, for example a Lithium-Cobalt, a Lithium-Iron-Phosphate, Lithium Titanate or a Lithium-Polymer battery. As an alternative, the power supply may be another form of charge storage device such as a capacitor. The power supply may require recharging and may have a capacity that enables to store enough energy for one or more usage experiences; for example, the power supply may have sufficient capacity to continuously generate aerosol for a period of around six minutes or for a period of a multiple of six minutes. In another example, the power supply may have sufficient capacity to provide a predetermined number of puffs or discrete activations of the heater element.

[0075] The aerosol-generating device may comprise electric circuitry. The electric circuitry may comprise a microprocessor, which may be a programmable microprocessor. The microprocessor may be part of a controller. The electric circuitry may comprise further electronic components. The electric circuitry may be configured to regulate a supply of power to the heater element.

[0076] Another embodiment of the invention provides an aerosol generating system, which may comprise a mouthpiece as described herein. Furthermore, the aerosol-generating system may comprise an aerosol-generating article. The aerosol-generating system may comprise an aerosol-generating device comprising a cavity for receiving the aerosol-generating article. The mouthpiece may be configured to be detachably connectable to the aerosol-generating article.

[0077] An aerosol-forming substrate may conveniently be part of an aerosol-generating article or smoking article. The aerosol-forming substrate may be part of a substrate portion of the aerosol-generating article.

[0078] Another embodiment of the invention provides an aerosol-generating system comprising a mouthpiece as described herein. Additionally, the aerosol-generating system comprises an aerosol-generating article. The aerosol-generating system also comprises an aerosol-generating device, the aerosol-generating device comprising a cavity for receiving the aerosol-generating article. The mouthpiece is configured to be detachably connectable to the aerosol-generating article.

[0079] Mouthpieces according to the invention can also be configured to be detachably connectable to aerosol-generating articles. These aerosol-generating articles may comprise a substrate section, including aerosol-forming substrate. The aerosol-generating article may have a tubular shape. The aerosol-generating article may have a rod-like shape.

[0080] The aerosol-forming substrate may be solid. The aerosol-forming substrate is a substrate capable of releasing volatile compounds that can form an aerosol. The volatile compounds may be released by heating the aerosol-forming substrate. The aerosol-forming substrate may comprise nicotine. The aerosol-forming substrate may comprise plant-based material. The aerosol-forming substrate may comprise tobacco. The aerosol-forming substrate may comprise a tobacco-containing material containing volatile tobacco flavour compounds, which are released from the aerosol-forming substrate upon heating. The aerosol-forming substrate may alternatively comprise a non-tobacco-containing material. The aerosol-forming substrate may comprise homogenised plant-based material, including homogenized tobacco, for example made by, for example, a paper making process or a casting process.

[0081] The aerosol-forming substrate may comprise at least one aerosol-former. The aerosol-former may be any of the aerosol-formers already described above in connection with the aerosol-forming substrate contained in the cartridge.

[0082] The mouthpiece of the invention can therefore be used in order to change the flavor of the aerosol-generating articles at a user's convenience. The user may consume an aerosol-generating article employing the aerosol-generating system described herein. After usage, the user may disconnect the mouthpiece from the aerosol-generating article. The user may reuse the mouthpiece or any other mouthpiece including flavor granules with different flavorings with further aerosol-generating articles.

[0083] The aerosol-generating article may generate an aerosol by heating the aerosol-forming substrate to a tem-

perature below combustion temperature. Such an aerosol-generating article may also be referred to as a "heat-not-burn product".

[0084] The cavity of the aerosol-generating device may have an open end into which the aerosol-generating article is inserted. The open end may be a proximal end. The cavity may have a closed end opposite the open end. The closed end may be the base of the cavity. The closed end may be closed except for the provision of air apertures arranged in the base. The base of the cavity may be flat. The base of the cavity may be circular. The base of the cavity may be arranged upstream of the cavity. The open end may be arranged downstream of the cavity. The cavity may have an elongate extension. The cavity may have a longitudinal central axis. A longitudinal direction may be the direction extending between the open and closed ends along the longitudinal central axis. The longitudinal central axis of the cavity may be parallel to the longitudinal axis of the aerosol-generating device.

[0085] The cavity may be configured as a heating chamber. The cavity may have a cylindrical shape. The cavity may have a hollow cylindrical shape. The cavity may have a shape corresponding to the shape of the aerosol-generating article to be received in the cavity. The cavity may have a circular cross-section. The cavity may have an elliptical or rectangular cross-section. The cavity may have an inner diameter corresponding to the outer diameter of the aerosol-generating article.

[0086] The aerosol-generating device may comprise a heating element. The heating element may be configured to heat an aerosol-generating article received in the cavity. The heating element may be configured to heat the aerosol-generating article to a temperature ranging from 220 degrees Celsius to 400 degrees Celsius, preferably from 250 degrees Celsius to 290 degrees Celsius. At these temperatures an aerosol may be generated from the aerosol-forming substrate included in the aerosol-generating article.

[0087] The heating element may comprise one or both of an inductive heating element and a resistive heating element. The inductive heating element may comprise an inductor coil disposed around at least a portion of the cavity and connected to a power supply. The power supply may be configured to provide an alternating electric current to the inductor coil, such that in use, the inductor coil may generate an alternating magnetic field to heat a susceptor by creating eddy currents. The susceptor may be part of one or both of the aerosol-generating device and the aerosol-generating article received in the cavity of the aerosol-generating device. Preferably, the susceptor may be part of the aerosol-generating device or the aerosol-generating article.

[0088] As described herein, induction heating may be utilized. For induction heating, the induction coil and the susceptor are provided. In general, a susceptor is a material that is capable of generating heat, when penetrated by an alternating magnetic field. When located in an alternating magnetic field. If the susceptor is conductive, then typically eddy currents are induced by the alternating magnetic field. If the susceptor is magnetic, then typically another effect that contributes to the heating is commonly referred to hysteresis losses. Hysteresis losses occur mainly due to the movement of the magnetic domain blocks within the susceptor, because the magnetic orientation of these will align with the magnetic induction field, which alternates. Another effect contributing to the hysteresis loss is when the magnetic domains will grow or shrink within the susceptor. Commonly all these changes in the susceptor that happen on a nano-scale or below are referred to as "hysteresis losses", because they produce heat in the susceptor. Hence, if the susceptor is both magnetic and electrically conductive, both hysteresis losses and the generation of eddy currents will contribute to the heating of the susceptor. If the susceptor is magnetic, but not conductive, then hysteresis losses will be the only means by which the susceptor will heat, when penetrated by an alternating magnetic field. According to the invention, the susceptor may be electrically conductive or magnetic or both electrically conductive and magnetic. An alternating magnetic field generated by one or several induction coils heat the susceptor, which then transfers the heat to the aerosol-forming substrate, such that an aerosol is formed. The heat transfer may be mainly by conduction of heat. Such a transfer of heat is best, if the susceptor is in close thermal contact with the aerosol-forming substrate.

[0089] An airflow channel may run through the cavity. Ambient air may be drawn into the aerosol-generating device, into the cavity and towards the user through the airflow channel. Downstream of the cavity, the mouthpiece may be arranged. The airflow channel may extend through the mouthpiece.

[0090] The aerosol-generating device of the present invention is configured to heat the aerosol-forming substrate to a temperature below a combustion temperature of the aerosol-forming substrate, but at or above a temperature at which one or more volatile compounds of the aerosol-forming substrate are released to form an inhalable aerosol for inhalation by a user.

[0091] The aerosol-generating device may comprise electric circuitry. The electric circuitry may comprise a microprocessor, which may be a programmable microprocessor. The microprocessor may be part of a controller. The electric circuitry may comprise further electronic components. The electric circuitry may be configured to regulate a supply of power to the heating element, particularly to the induction coil. Power may be supplied to the heating element continuously following activation of the aerosol-generating device or may be supplied intermittently, such as on a puff-by-puff basis. The power may be supplied to the heating element in the form of pulses of electrical current. The electric circuitry may be configured to monitor the electrical resistance of the heating element, and preferably to control the supply of power to the heating element dependent on the electrical resistance of the heating element.

[0092] The aerosol-generating device may comprise a power supply, typically a battery, within a main body of the aerosol-generating device. The power supply can be the same power supply as already described above with regard to the aerosol-generating device which is configured to be detachably connectable to the cartridge.

[0093] Another embodiment of the invention provides an aerosol-generating system comprising a mouthpiece as described herein. Furthermore, the aerosol-generating system comprises an aerosol-generating article configured for providing an aerosol upon combustion. The mouthpiece is configured to be detachably connectable to the aerosol-generating article.

[0094] The aerosol-generating article may generate an aerosol by lighting the article and heating the aerosol-forming substrate above a combustion temperature. The

mouthpiece of the present invention may serve to add a flavoring to the aerosol created by combusting the aerosol-generating article.

[0095] Below, there is provided a non-exhaustive list of non-limiting examples. Any one or more of the features of these examples may be combined with any one or more features of another example, embodiment, or aspect described herein.

[0096] Example A: Mouthpiece for inhaling an aerosol, comprising

[0097] an airflow path for an aerosol, the airflow path leading through the mouthpiece,

[0098] flavor granules arranged in the airflow path,

[0099] the flavor granules containing at least one flavoring agent for flavoring the aerosol,

[0100] wherein the flavor granules are configured to be movable by a user's puff.

[0101] Example B: Mouthpiece according to the preceding example, wherein the flavor granules comprise a porous matrix material including the at least one flavoring agent, preferably wherein the at least one flavoring agent is embedded within the porous matrix material.

[0102] Example C: Mouthpiece according to the preceding example, wherein the porous matrix material has a density of between 0.4 and 2 g/cm^3.

[0103] Example D: Mouthpiece according to any of the preceding examples B to C, wherein the porous matrix material has a porosity of between 0.11 and 0.45.

[0104] Example E: Mouthpiece according to any of the preceding examples B to D, wherein the porous matrix material is water-insoluble, preferably wherein the porous matrix material comprises one or more of: plastic, cellulosic material, lignocellulosic material, ceramic material, minerals, and fabric, preferably wherein the porous matrix material is selected from a group consisting of: basalt stone, bamboo fiber composites, cork, modal fabric composite, nonwoven, cellulose composite, cyclodextrin.

[0105] Example F: Mouthpiece according to any of the preceding examples, wherein the flavor granules have a particle diameter of between 0.7 and 4.7 millimeters, preferably a particle diameter of between 1.7 and 3.8 millimeters.

[0106] Example G: Mouthpiece according to any of the preceding examples, wherein the at least one flavoring agent is volatile, preferably wherein the at least one flavoring agent is a liquid or a gel, more preferably wherein the at least one flavoring agent is selected from a group consisting of: mint oil, menthol, isomenthone, menthyl acetate.

[0107] Example H: Mouthpiece according to any of the preceding examples, wherein the flavor granules additionally comprise at least one aerosol-former, preferably wherein the at least one aerosol-former is selected from a group consisting of: propanediol, propanediol, glycerol, diacetate, diethyl phthalate.

[0108] Example I: Mouthpiece according to any of the preceding examples, comprising a longitudinal axis, wherein the airflow path is partly arranged diagonally to the longitudinal axis.

[0109] Example J: Mouthpiece according to any of the preceding examples, further comprising a flavor compartment including the flavor granules, preferably, wherein the flavor compartment is annular-shaped.

[0110] Example K: Mouthpiece according to any of the preceding examples, further comprising an inlet portion configured for receiving the aerosol and an outlet portion configured for outflow of the aerosol, wherein the airflow path is arranged between the inlet portion and the outlet portion.

[0111] Example L: Mouthpiece according to the preceding example K, wherein the inlet portion is being configured for being detachably connectable to one or more of a cartridge for an aerosol-forming substrate, an aerosol-generating device or an aerosol-generating article.

[0112] Example M: Mouthpiece according to any of the preceding examples K or L, wherein the outlet portion further comprises an inner wall providing an aerosol outlet for a user, preferably wherein the inner wall has a conical shape, more preferably wherein the inner wall has a larger cross-sectional area at the downstream end of the inner wall than at the upstream end.

[0113] Example N: Mouthpiece according to the preceding example M, wherein the inner wall comprises a flavor outlet in fluid communication with flavor granules, preferably wherein the flavor outlet is in fluid communication with the flavor compartment.

[0114] Example O: Mouthpiece according to any of the preceding examples K to N, wherein the inlet portion comprises a tubular section configured for being detachably connectable to a cartridge, preferably wherein the tubular section is arranged along a longitudinal axis of the mouthpiece.

[0115] Example P: Mouthpiece according to the preceding example O, wherein the tubular section comprises an opening at the upstream end, preferably wherein the opening at the upstream end has a smaller diameter than the downstream end of the tubular section.

[0116] Example Q: Mouthpiece according to any of the preceding examples, further comprising an outer wall, wherein the outer wall comprises at least one mouthpiece air inlet configured for allowing ambient air to enter the mouthpiece, preferably according to claims **10** to **14**, wherein the inlet portion comprises the at least one mouthpiece air inlet.

[0117] Example R: Mouthpiece according to any of the preceding examples K to Q, further comprising one or both of an outlet sealing layer, sealing the outlet portion and an inlet sealing layer, sealing the inlet portion.

[0118] Example S: Flavor granules for flavoring an aerosol, comprising

[0119] a porous matrix material including at least one flavoring agent for flavoring the aerosol,

[0120] wherein the flavor granules are configured to be movable by a user's puff.

[0121] Example T: Flavor granules according to the preceding example S, wherein the porous matrix material has a density of between 0.4 and 2 g/cm^3.

[0122] Example U: Flavor granules according to any of the preceding examples S or T, wherein the porous matrix material has a porosity of between 0.11 and 0.45.

[0123] Example V: Flavor granules according to any of the preceding examples S to U, wherein the porous matrix material is water-insoluble, preferably wherein the porous matrix material comprises one or more of: plastic, cellulosic material, lignocellulosic material, ceramic material, minerals, and fabric, preferably wherein the porous matrix material is selected from a group consisting of: basalt stone, bamboo fiber composites, cork, modal fabric composite, nonwoven, cellulose composite, cyclodextrin.

[0124] Example W: Aerosol-generating system, comprising

[0125] a mouthpiece according to any of the preceding examples A to R,

[0126] a cartridge containing an aerosol-forming substrate, and

[0127] an aerosol-generating device, wherein

[0128] the mouthpiece is configured to be detachably connectable to the cartridge.

[0129] Example X: Aerosol-generating system according to the preceding example W, wherein the aerosol-forming substrate is liquid.

[0130] Example Y: Aerosol-generating system according to any of the preceding examples W to X, wherein the cartridge comprises a vaporizer assembly for vaporizing the aerosol-forming substrate.

[0131] Example Z: Aerosol-generating system according to any of the preceding examples W to Y, wherein the cartridge comprises a central hollow portion, preferably wherein the cartridge is annular shaped, the mouthpiece being configured to be connectable to the central hollow portion of the cartridge.

[0132] Example AA: Aerosol-generating system according to the preceding example Z, further according to any of the claim **15** or **16**, wherein the tubular section of the inlet portion is configured for being insertable into the central hollow portion of the cartridge.

[0133] Example AB: Aerosol-generating system according to the preceding example AA, wherein the cartridge comprises inner walls, the inner wall being adjacent to the central hollow portion, the cartridge further comprising outer walls, wherein upon connection of the mouthpiece with the cartridge an airflow channel is formed between the outer walls of the cartridge and the inlet portion of the mouthpiece and between the inner wall of the cartridge and the tubular section of the mouthpiece.

[0134] Example AC: Aerosol-generating system according to the preceding example AB, wherein upon connection of the mouthpiece with the cartridge, the tubular section of the inlet portion is positioned adjacent to the vaporizer assembly of the cartridge.

[0135] Example AD: Aerosol-generating system, comprising

[0136] a mouthpiece according to any of the preceding examples A to R,

[0137] an aerosol-generating article, and

[0138] an aerosol-generating device comprising a cavity for receiving the aerosol-generating article, wherein

[0139] the mouthpiece is configured to be detachably connectable to the aerosol-generating article.

[0140] Example AE: Aerosol-generating system, comprising

[0141] a mouthpiece according to any of the preceding examples A to R, and

[0142] an aerosol-generating article configured for providing an aerosol upon combustion,

[0143] wherein the mouthpiece is configured to be detachably connectable to the aerosol-generating article.

[0144] Features described in relation to one embodiment may equally be applied to other embodiments of the invention.

[0145] The invention will be further described, by way of example only, with reference to the accompanying drawings in which:

[0146] FIGS. **1**A and **1**B show cross-sectional views of two different embodiments of mouthpieces of the present invention;

[0147] FIG. **2** shows a cross-sectional view of an aerosol-generating system including a mouthpiece of the invention, a cartridge and an aerosol-generating device;

[0148] FIG. **3** shows a cross-sectional view of an assembled aerosol-generating system showing the airflow path through the aerosol-generating system;

[0149] FIG. **4** shows a cross-sectional view of another aerosol-generating system including an aerosol-generating article and an aerosol-generating device including a cavity for receiving the aerosol-generating article.

[0150] In the following the same elements are marked with the same reference numerals throughout all the figures.

[0151] FIG. **1**A shows a cross-sectional view of an embodiment of a mouthpiece **10** of the present invention. The mouthpiece **10** includes an inlet portion **10**B which is configured for receiving the aerosol and an outlet portion **10**A which is configured for outflow of the aerosol to a user. The mouthpiece **10** includes a flavor compartment **16** which contains vapor granules **12**. The flavor compartment includes a flavor compartment air inlet **16**A for receiving the aerosol from an aerosol-forming substrate, which is located upstream of the mouthpiece. Flavor compartment air outlets **16** B are present in the inner walls of the outlet portion for releasing a mixture of the aerosol and the at least one flavoring agent into the aerosol outlet for mixing. The inlet portion **10**B of the mouthpiece **10** contains a tubular section **18**, which is configured for being detachably connectable for example to a cartridge containing aerosol-forming substrate (cartridge not shown in FIG. **1**A). The airflow path **14** denoted by the dashed line in the inlet portion **10**B runs along the longitudinal axis **22** of the mouthpiece and enters the flavor compartment **16** through the flavor compartment air inlets **16**A. The flavor granules **12** are configured to be movable in the air stream of the user's puff and the at least one flavoring agent included in the flavor granules becomes entrained in the aerosol in the flavor compartment **16**. Subsequently, the mixture of the aerosol and the at least one flavoring agent leaves the flavor compartment **16** through the flavor compartment air outlets **16**B. The airflow path **14** in the flavor compartment **16** is partly arranged diagonally to the longitudinal axis **22** of the mouthpiece, denoted by the dashed line. This increases the airflow path through the flavor compartment **16** and the flavor granules **12**, so that there is higher possibility that a larger amount of at least one flavoring agent is entrained in the aerosol. The inner walls **10**D of the outlet portion **10**A of the mouthpiece comprise a conical shape. The diameter of the inner walls at the upstream end is smaller than the diameter of the inner walls at the downstream end. This leads to reduction of the speed of the aerosol and the at least one flavoring agent at the downstream end, favouring the mixing of the aerosol and the at least one flavoring agent. The mouthpiece **10** also contains outer walls **10**C which include a mouthpiece air inlet **20**. This mouthpiece air inlet **20** allows the passage of ambient air into the mouthpiece. This ambient air can be employed for the production of an aerosol from an aerosol-forming substrate of for example a cartridge.

[0152] FIG. **1**B shows a cross-sectional view of another embodiment of a mouthpiece of the present invention. In contrast to the embodiment of the mouthpiece shown in FIG. **1**B, the air flow path **14** in the mouthpiece of FIG. **1**B completely runs along the longitudinal axis of the mouthpiece. Both, the flavor compartment air inlet **16**A and the flavor compartment air outlet **16**B are located along the longitudinal axis of the mouthpiece. This mouthpiece additionally includes an inlet sealing layer **10**E sealing the inlet portion **10**B of the mouthpiece and an outlet sealing layer **10**F sealing the outlet portion **10**A of the mouthpiece. The sealing players prevent the evaporation of the at least one flavoring agent during storage of the mouthpiece and increase the shelf life of the mouthpiece. Both sealing layers can be removed by a user prior to the use of the mouthpiece.

[0153] FIG. **2** depicts a cross-sectional schematic view of a disassembled aerosol-generating system including a mouthpiece **10** of the invention, a cartridge **24** and an aerosol-generating device **32**. As indicated by the arrows the tubular section **18** of the inlet portion of the mouthpiece **10** can be connected to the cartridge **24** through the central hollow portion **24**A of the cartridge. The cartridge **24** contains liquid aerosol-forming substrate **23**. A vaporizer assembly **30** is present in the cartridge **24** including a porous evaporation element **26**, which is connected to the heater element **28** in a thermally conductive manner. The porous evaporation element **26** is able to absorb liquid aerosol-forming substrate **23**. Upon heating of the heater element **28** the liquid aerosol-forming substrate can be evaporated. The heater element **28** contains connection pins **28**A. These connection pins are configured to be detachably connectable to electrical connections **34** of the aerosol-generating device **32** (see the respective arrow between the cartridge **24** and the aerosol-generating device **32**). The aerosol-generating device also contains control circuitry **36** and a power supply **38** for the heater element **28** of the cartridge. Such an aerosol-generating system allows the generation of an aerosol from the aerosol-forming substrate **23** of the cartridge and the subsequent flavoring of the aerosol with the at least one flavoring agent of the flavor granules **12** of the mouthpiece **10**.

[0154] FIG. **3** shows a cross-sectional view of the assembled aerosol-generating system of FIG. **2**. Upon connection of the mouthpiece **10** with the cartridge **24** an additional airflow path **14**A is formed between the inner walls of the cartridge and the walls of the inlet portion **10**B of the mouthpiece **10**. Ambient air can enter this newly created airflow path **14**A through the mouthpiece air inlet **20** and can be directed to the vaporizer assembly of the cartridge. At the vaporizer assembly of the cartridge, liquid aerosol-forming substrate contained in the cartridge is evaporated and mixed with the ambient air to create an aerosol. Subsequently, the aerosol is directed through the tubular section **18** of the mouthpiece into the flavor compartment **16**. The flavor granules **12** start moving and floating in the air stream of the user's puff, thereby releasing the at least one flavoring agent. The mixture of the aerosol and the at least one flavoring agent leaves the flavor compartment through the flavor compartment air outlet and enters the conical aerosol outlet. This aerosol outlet enables the mixing of the aerosol and the at least one flavoring agent, so that the mixture can subsequently be inhaled by a user.

[0155] FIG. **4** depicts another disassembled aerosol-generating system, including a mouthpiece **10** in accordance with the present invention. In this aerosol-generating system the mouthpiece **10** can be connected to an aerosol-generating article **40**. This aerosol-generating article **40** contains a hollow tube section **42** and substrate section **44**. The substrate section **44** can comprise solid aerosol-forming substrate. The assembly of the mouthpiece **10** and the aerosol-generating article **40** can be inserted into the cavity **46** of an aerosol-generating device **32**. The aerosol-generating device includes a heater element **48** adjacent to the cavity **46** for heating the substrate section **44** of the aerosol-generating article to a temperature below the combustion temperature of the aerosol-forming substrate. The aerosol-generating device also includes control circuitry **38** and a power supply **36** for the heater element **48**.

1.-**15**. (canceled)

16. A mouthpiece for inhaling an aerosol, the mouthpiece comprising:

an airflow path for an aerosol, the airflow path leading through the mouthpiece; and

flavor granules arranged in the airflow path, the flavor granules containing at least one flavoring agent for flavoring the aerosol,

wherein the flavor granules are configured to be movable by a user's puff,

wherein the flavor granules comprise a porous matrix material including the at least one flavoring agent, and

wherein the porous matrix material has a density of between 0.4 and 2 g/cm^3.

17. The mouthpiece according to claim **16**, wherein the at least one flavoring agent is embedded within the porous matrix material.

18. The mouthpiece according to claim **16**, wherein the porous matrix material has a density of between 0.5 to 1.1 g/cm^3.

19. The mouthpiece according to claim **17**, wherein the porous matrix material has a porosity of between 0.11 and 0.45.

20. The mouthpiece according to claim **17**, wherein the porous matrix material is water-insoluble.

21. The mouthpiece according to claim **17**, wherein the porous matrix material comprises one or more of: plastic, cellulosic material, lignocellulosic material, ceramic material, minerals, and fabric.

22. The mouthpiece according to claim **17**, wherein the porous matrix material is selected from a group consisting of: basalt stone, bamboo fiber composites, cork, modal fabric composite, nonwoven, cellulose composite, cyclodextrin.

23. The mouthpiece according to claim **16**, wherein the flavor granules have a particle diameter of between 0.7 millimeters and 4.7 millimeters.

24. The mouthpiece according to claim **16**, wherein the flavor granules have a particle diameter of between 1.7 millimeters and 3.8 millimeters.

25. The mouthpiece according to claim **16**, further comprising a longitudinal axis, wherein the airflow path is partly arranged diagonally to the longitudinal axis.

26. The mouthpiece according to claim **16**,

further comprising an inlet portion configured for receiving the aerosol and an outlet portion configured for outflow of the aerosol,

wherein the airflow path is arranged between the inlet portion and the outlet portion.

27. The mouthpiece according to claim **26**, wherein the inlet portion comprises a tubular section configured to be detachably connectable to a cartridge.

28. The mouthpiece according to claim **27**, wherein the tubular section is arranged along a longitudinal axis of the mouthpiece.

29. The mouthpiece according to claim **16**,

further comprising an outer wall,

wherein the outer wall comprises at least one mouthpiece air inlet configured for allowing ambient air to enter the mouthpiece.

30. An aerosol-generating system, comprising

a mouthpiece according to claim **16**;

a cartridge containing an aerosol-forming substrate; and

an aerosol-generating device,

wherein the mouthpiece is configured to be detachably connectable to the cartridge.

* * * * *