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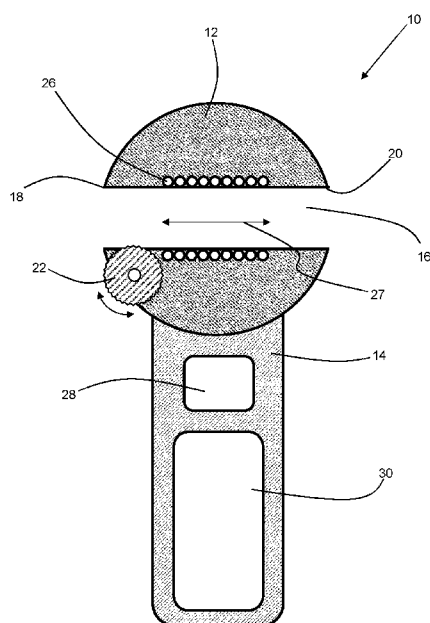


Figure 1

(57) Abstract: There is provided an aerosol-generating device (10) comprising a cavity (16) for receiving an aerosol-generating article (50; 150; 250), wherein the cavity (16) comprises a first end and a second end. The aerosol-generating device (10) also comprises a first opening (18) at the first end of the cavity (16) and a second opening (20) at the second end of the cavity (16). An aerosol-generating article (50; 150; 250) may be inserted into the cavity (16) through the first opening (18) or the second opening (20). The aerosol-generating device (10) also comprises an actuator (22) arranged to move an aerosol-generating article (50; 150; 250) through the cavity (16). Also provided is an aerosol-generating system (100) comprising an aerosol-generating device (10) and an aerosol-generating article (50; 150; 250) comprising at least one aerosol-forming substrate (60; 160, 161; 260, 261) having a total length (70) that is greater than a length (27) of a heating zone of the aerosol-generating device (10). Also provided is an aerosol-generating article (250) comprising first and second aerosol-forming substrates (260, 261) positioned in first and second airflow pathways (254, 256), wherein the second aerosol-forming substrate (261) overlaps only part of the first aerosol-forming substrate (260) in a longitudinal direction of the aerosol-generating article (250).

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AN AEROSOL-GENERATING DEVICE HAVING AN ACTUATOR

The present disclosure relates to an aerosol-generating device comprising a cavity and an actuator arranged to move an aerosol-generating article through the cavity. The present disclosure also relates to an aerosol-generating system comprising an aerosol-generating device and an aerosol-generating article comprising at least one aerosol-forming substrate having a total length that is greater than a length of a heating zone of the aerosol-generating device. The present disclosure also relates to an aerosol-generating article comprising first and second aerosol-forming substrates positioned in first and second airflow pathways, wherein the second aerosol-forming substrate overlaps only part of the first aerosol-forming substrate in a longitudinal direction of the aerosol-generating article.

A number of electrically-operated aerosol-generating systems in which an aerosol-generating device having an electric heater is used to heat an aerosol-forming substrate, such as a tobacco plug, have been proposed in the art. The aerosol-generating substrate may be provided as part of an aerosol-generating article which is inserted into a cavity in the aerosol-generating device.

Typically, aerosol-generating devices comprise a cavity for receiving the aerosol-generating article. Therefore, the size, shape and design of the aerosol-generating article is typically limited by the size and shape of the cavity of the aerosol-generating device.

It would be desirable to provide an aerosol-generating device that may facilitate use of the aerosol-generating device with a wider range of aerosol-generating articles. It would be desirable to provide an aerosol-generating system comprising an aerosol-generating article and an aerosol-generating device that provides greater flexibility with respect to the size, shape and design of the aerosol-generating article compared to existing aerosol-generating systems.

Aerosol-generating articles typically comprise an aerosol-forming substrate, such as a tobacco plug, and a mouthpiece downstream of the tobacco plug. The mouthpiece typically comprises a filter element. Such aerosol-generating articles may offer a user limited options for customising the user experience. Therefore, some users may try to use the aerosol-generating article in a manner not intended by the manufacturer. For example, users may attempt to use the aerosol-generating article without fully inserting the aerosol-generating article into an aerosol-generating device, so that only part of the aerosol-forming substrate is heated. However, the result is that part of the aerosol-forming substrate is not heated and is therefore wasted. Furthermore, using aerosol-generating articles in this manner may reduce consistency from one user experience to the next. Other users may remove part of the aerosol-forming substrate by cutting the aerosol-generating article before insertion into the aerosol-generating device. This results in a further problem of reduce resistance to draw, which may also adversely affect the user experience.

It would be desirable to provide aerosol-generating articles that may facilitate customisation of a user experience.

According to an aspect of the present disclosure there is provided an aerosol-generating device. The aerosol-generating device may comprise a cavity for receiving an aerosol-generating article. The cavity may comprise a first end and a second end. The aerosol-generating device may comprise a first opening at the first end of the cavity. The aerosol-generating device may comprise a second opening at the second end of the cavity. An aerosol-generating article may be inserted into the cavity through the first opening or the second opening. The aerosol-generating device may comprise an actuator arranged to move an aerosol-generating article through the cavity.

According to another aspect of the present disclosure there is provided an aerosol-generating device comprising a cavity for receiving an aerosol-generating article, wherein the cavity comprises a first end and a second end. The aerosol-generating device also comprises a first opening at the first end of the cavity and a second opening at the second end of the cavity. An aerosol-generating article may be inserted into the cavity through the first opening or the second opening. The aerosol-generating device also comprises an actuator arranged to move an aerosol-generating article through the cavity.

The aerosol-generating device comprises first and second openings at first and second ends of a cavity. A cavity comprising openings at first and second ends of the cavity may be referred to as a through-cavity. Advantageously, an aerosol-generating article may be inserted into the cavity through the first opening or the second opening. Advantageously, the through-cavity may facilitate use of the aerosol-generating device with longer aerosol-generating articles compared to existing devices having a cavity comprising a closed end. For example, an aerosol-generating article may be received in the cavity so that the aerosol-generating article protrudes from both the first and second ends of the cavity.

Advantageously, providing a through-cavity may facilitate cleaning of the cavity. For example, a brush or other cleaning tool may be pushed entirely through the cavity, which may facilitate removal of debris and other contaminants from the cavity.

Advantageously, providing a through-cavity may facilitate a simple airflow path through the aerosol-generating device during use. In particular, air may flow directly through an aerosol-generating article received within the cavity without the need for dedicated airflow inlets or airflow outlets on the aerosol-generating device.

Advantageously, the actuator may assist a user in moving an aerosol-generating article through the cavity. Advantageously, the actuator may be used to move the aerosol-generating article through the cavity during a single user experience, or between consecutive user experiences. Advantageously, this may facilitate heating of different portions of an aerosol-

generating article at different times. Advantageously, this may facilitate use of the aerosol-generating device with a wider range of aerosol-generating article compared to existing devices.

The actuator may comprise a conveyor arranged to engage an outer surface of an aerosol-generating article when the aerosol-generating article is received within the cavity.

5 Preferably, the actuator comprises a wheel arranged to engage an outer surface of an aerosol-generating article when the aerosol-generating article is received within the cavity.

Advantageously, a wheel may be relatively simple to design and operate. Advantageously, a wheel may facilitate operation of the actuator in more than one direction. For example, the wheel may be turned clockwise to move an aerosol-generating article through the
10 cavity in a first direction. The wheel may be turned anticlockwise to move an aerosol-generating article through the cavity in a second direction, wherein the second direction is opposite to the first direction.

The wheel may comprise a circumferential engagement surface arranged to engage an outer surface of an aerosol-generating article when the aerosol-generating article is received
15 within the cavity. The engagement surface may be a textured surface. The engagement surface may comprise a rubber. Suitable rubbers include natural rubbers and synthetic rubbers.

Advantageously, applying at least one of a texture and a rubber to the engagement surface of the wheel may provide a relatively high coefficient of friction between the engagement surface and an outer surface of an aerosol-generating article. Advantageously, a relatively high
20 coefficient of friction may facilitate movement of an aerosol-generating article by the actuator.

The actuator may be arranged so that a user may manually operate the actuator to move an aerosol-generating article through the cavity. Advantageously, a manually operated actuator may be relatively simple and cost effective to design and manufacture.

In embodiments in which the actuator comprises a wheel, the wheel may be arranged so
25 that a user may manually rotate the wheel to move an aerosol-generating article through the cavity. Preferably, a portion of the wheel is accessible to a user when an aerosol-generating article is received within the cavity so that a user may directly operate the wheel.

The actuator may be electrically operated.

Advantageously, an electrically operated actuator may facilitate more precise movement
30 of an aerosol-generating article through the cavity.

Advantageously, an electrically operated actuator may be easier for a user to operate.

Advantageously, an electrically operated actuator may facilitate semi-automatic or automatic operation of the actuator.

In embodiments in which the actuator comprises a wheel, the actuator may further
35 comprise an electric motor configured to drive the wheel to move an aerosol-generating article through the cavity. The electric motor may be configured to turn the wheel in a single direction only. The electric motor may be configured to turn the wheel in two directions.

The aerosol-generating device may comprise a user interface configured to provide user control of the electrically operated actuator. The user interface may comprise at least one of a touchscreen, a button, and a switch.

5 The user interface may be configured to allow a user to operate the electrically operated actuator in a user-determined direction. The user interface may be configured to allow a user to operate the electrically operated actuator at a user-determined speed. The user interface may be configured to allow a user to operate the electrically operated actuator for a user-determined time period.

10 The user interface may be configured to allow the user to select at least one of a pre-set direction, a pre-set speed, and a pre-set time period for operation of the electrically operated actuator.

Preferably, the aerosol-generating device comprises an electric heater, a power supply, and a controller configured to supply power from the power supply to the electric heater. Advantageously, during use, the electric heater may heat the aerosol-forming substrate of an aerosol-generating article received within the cavity.

15 In embodiments in which the actuator is electrically operated, preferably the controller is configured to supply power from the power supply to the actuator. In embodiments in which the actuator comprises an electric motor, preferably the controller is configured to supply power from the power supply to the electric motor.

20 Advantageously, providing a controller configured to operate the electrically operated actuator may facilitate semi-automatic or automatic control of the actuator.

The controller may be configured to operate the actuator to move an aerosol-generating article through the cavity between a plurality of predetermined positions. The controller may be configured to operate the actuator to move an aerosol-generating article through the cavity at one or more predetermined times. The controller may be configured to operate the actuator to move an aerosol-generating article through the cavity at one or more predetermined speeds.

Advantageously, the controller may be configured to operate the electric heater and the actuator to heat different portions of an aerosol-generating article in separate heating cycles. The controller may be configured to supply power from the power supply to the electric heater for the duration of a first heating cycle to heat a first portion of an aerosol-generating article. The controller may be configured to supply power from the power supply to the actuator to move the aerosol-generating device through the cavity after the first heating cycle. The controller may be configured to supply power from the power supply to the electric heater for the duration of a second heating cycle to heat a second portion of an aerosol-generating article after the actuator has moved the aerosol-generating device through the cavity.

Advantageously, the controller may be configured to vary which portions of an aerosol-generating article are heated during a continuous heating cycle. The controller may be configured

to simultaneously supply power from the power supply to the electric heater and the electric motor to heat an aerosol-generating article as the aerosol-generating article is moved through the cavity.

Preferably, the electric heater extends around at least a portion of the cavity so that, when an aerosol-generating article is inserted into the cavity, at least a portion of the aerosol-generating article is received within the electric heater. In arrangements in which an aerosol-generating article is received within an electric heater, the electric heater may be referred to as an “external heater”. Advantageously, an external heater facilitates movement of an aerosol-generating article through the cavity and through the external heater.

Preferably, the cavity has a circular cross-sectional shape. Advantageously, a circular cross-sectional shape facilitates use of the aerosol-generating device with an aerosol-generating article having a circular cross-sectional shape. Advantageously, a circular cross-section shape may allow a user to insert an aerosol-generating article into the cavity with any rotational orientation. Preferably, an inner diameter of the first opening is the same as an inner diameter of the second opening.

Preferably, the aerosol-generating device comprises a housing defining the cavity. The housing may comprise a first housing portion defining the cavity and a second housing portion extending from the first housing portion. In embodiments in which the aerosol-generating device comprises an electric heater, a power supply and a controller, preferably the electric heater and the actuator are positioned within the first housing portion. The power supply and the controller may be positioned within the second housing portion.

The second housing portion may be movable relative to the first housing portion. The second housing portion may be slidable relative to the first housing portion. The second housing portion may be rotatable relative to the first housing portion.

Preferably, the second housing portion has an elongate shape and comprises a first housing end coupled to the first housing portion for movement relative to the first housing portion, and a second housing end opposite the first housing end.

The term “elongate” is used herein to refer to a shape having a length and a width perpendicular to the length, wherein the ratio of length to width is at least 1.5 to 1.

Advantageously, an elongate second housing portion may facilitate use of the second housing portion as a handle by a user. In other words, a user may hold the aerosol-generating device by the second housing portion during use of the aerosol-generating device.

The aerosol-generating device may comprise at least one indicia on at least one of the first housing portion and the second housing portion, wherein the at least one indicia is arranged to indicate a position of the second housing portion relative to the first housing portion.

The aerosol-generating device may comprise a locking mechanism configured to selectively prevent movement of the second housing portion relative to the first housing portion.

Advantageously, the locking mechanism may prevent unwanted movement of the second housing portion relative to the first housing portion during use of the aerosol-generating device.

The locking mechanism may comprise a ratchet mechanism. Advantageously, a ratchet mechanism may facilitate movement of the second housing portion into one or more predetermined positions relative to the first housing portion.

The electric heater may comprise an inductive heating element. During use, the inductive heating element inductively heats a susceptor material to heat an aerosol-generating article received within the cavity. The susceptor material may form part of the aerosol-generating device. The susceptor material may form part of the aerosol-generating article. The inductive heating element may comprise at least one inductor coil extending around at least a portion of the cavity so that, when an aerosol-generating article is inserted into the cavity, at least a portion of the aerosol-generating article is received within the inductor coil.

The electric heater may comprise a resistive heating element. During use, an electrical current is supplied to the resistive heating element to generate heat by resistive heating. The resistive heating element may comprise a foil heater. Preferably, the foil heater is wrapped around at least a portion of the cavity so that, when an aerosol-generating article is inserted into the cavity, at least a portion of the aerosol-generating article is received within the foil heater. The foil heater may be an etched foil heater. The foil heater may be a tubular foil heater.

The power supply may be a DC voltage source. Preferably, the power supply is a battery. The power supply may be a nickel-metal hydride battery, a nickel cadmium battery, or a lithium based battery. Suitable lithium batteries may include lithium-cobalt, lithium-iron-phosphate and lithium-polymer batteries. The power supply may comprise another form of charge storage device such as a capacitor. The power supply may require recharging. The power supply may have a capacity that allows for the storage of enough energy for use of the aerosol-generating device with one or more aerosol-generating articles.

In embodiments in which the aerosol-generating device comprises a housing, the housing may comprise any suitable material or combination of materials. Examples of suitable materials include metals, alloys, plastics or composite materials containing one or more of those materials, or thermoplastics that are suitable for food or pharmaceutical applications, for example polypropylene, polyetheretherketone (PEEK) and polyethylene. Preferably, the material is light and non-brittle.

According to another aspect of the present disclosure there is provided an aerosol-generating system comprising an aerosol-generating article comprising at least one aerosol-forming substrate, and an aerosol-generating device according to the present disclosure, in accordance with any of the embodiments described herein.

As used herein, the term "aerosol-generating article" refers to an article comprising an aerosol-forming substrate that, when heated, releases volatile compounds that can form an aerosol.

The aerosol-generating article may comprise at least one filter element. The at least one
5 filter element may be adjacent to the at least one aerosol-forming substrate. The at least one filter element may be spaced apart from the at least one aerosol-forming substrate. The aerosol-generating article may comprise at least one additional element positioned between the at least one aerosol-forming substrate and the at least one filter element. The at least one additional element may comprise an aerosol-cooling element.

10 The aerosol-generating article may comprise a wrapper. Preferably, the wrapper is wrapped around the at least one aerosol-forming substrate and, where present, the at least one filter element and the at least one additional element.

According to another aspect of the present disclosure there is provided an aerosol-generating system comprising an aerosol-generating article and an aerosol-generating device.

15 The aerosol-generating article may comprise at least one aerosol-forming substrate positioned between a first end and a second end of the aerosol-generating article. The aerosol-generating article may define a first longitudinal direction extending between the first and second ends of the aerosol-generating article. The at least one aerosol-forming substrate may have a total length extending in the first longitudinal direction. The aerosol-generating device may comprise a cavity
20 for receiving the aerosol-generating article. The cavity may comprise a first end and a second end. The cavity may define a second longitudinal direction extending between the first and second ends of the cavity. The aerosol-generating device may comprise a first opening at the first end of the cavity and a second opening at the second end of the cavity. The aerosol-generating article may be inserted into the cavity through the first opening or the second opening.

25 The aerosol-generating device may comprise an electric heater extending around at least a portion of the cavity and defining a heating zone between a first end of the electric heater and a second end of the electric heater. The heating zone may have a length extending in the second longitudinal direction. The total length of the at least one aerosol-forming substrate may be greater than the length of the heating zone.

30 According to another aspect of the present disclosure there is provided an aerosol-generating system comprising an aerosol-generating article and an aerosol-generating device. The aerosol-generating article comprises at least one aerosol-forming substrate positioned between a first end and a second end of the aerosol-generating article. The aerosol-generating article defines a first longitudinal direction extending between the first and second ends of the
35 aerosol-generating article. The at least one aerosol-forming substrate has a total length extending in the first longitudinal direction. The aerosol-generating device comprises a cavity for receiving the aerosol-generating article, wherein the cavity comprises a first end and a second end. The

cavity defines a second longitudinal direction extending between the first and second ends of the cavity. The aerosol-generating device also comprises a first opening at the first end of the cavity and a second opening at the second end of the cavity, wherein the aerosol-generating article may be inserted into the cavity through the first opening or the second opening. The aerosol-generating device also comprises an electric heater extending around at least a portion of the cavity and defining a heating zone between a first end of the electric heater and a second end of the electric heater. The heating zone has a length extending in the second longitudinal direction, wherein the total length of the at least one aerosol-forming substrate is greater than the length of the heating zone.

Advantageously, providing an aerosol-generating article having at least one aerosol-forming substrate with a total length that is greater than a length of a heating zone of the aerosol-generating device may facilitate the use of a single aerosol-generating article to provide different user experiences. For example, the aerosol-generating article may be gradually moved through the cavity during a single heating cycle so that every portion of the at least one aerosol-forming substrate is heated during a part of the single heating cycle. Alternatively, the aerosol-generating article may remain in a fixed position during a first heating cycle so that a first portion of the at least one aerosol-forming substrate is heated for the entire duration of the first heating cycle. The aerosol-generating article may then be moved through the cavity into a different position for a second heating cycle so that a second portion of the at least one aerosol-forming substrate is heated for the entire duration of the second heating cycle.

The cavity may have a length extending in the second longitudinal direction, wherein the total length of the at least one aerosol-forming substrate is greater than the length of the cavity.

Advantageously, providing an aerosol-generating article having at least one aerosol-forming substrate with a total length that is greater than a length of the cavity may further facilitate the use of a single aerosol-generating article to provide different user experiences.

The at least one aerosol-forming substrate may be a single aerosol-forming substrate, wherein the total length of the at least one aerosol-forming substrate is a length of the single aerosol-forming substrate in the first longitudinal direction.

The electric heater may comprise an inductor coil. The aerosol-generating article may comprise a first susceptor element positioned within the aerosol-forming substrate and a second susceptor element positioned within the aerosol-forming substrate. Advantageously, positioning first and second susceptor elements within the aerosol-forming substrate may facilitate separate inductive heating of first and second portions of the aerosol-forming substrate. For example, the aerosol-generating article may be inserted into the aerosol-generating device so that only one of the first susceptor element and the second susceptor element is positioned within the inductor coil. Advantageously, this may facilitate heating of different portions of the aerosol-forming substrate during different user experiences.

Preferably, the first susceptor element and the second susceptor element are spaced apart from each other in the first longitudinal direction.

The at least one aerosol-forming substrate may comprise a plurality of aerosol-forming substrates, wherein each aerosol-forming substrate has a length extending in the first longitudinal direction, and wherein the total length of the at least one aerosol-forming substrate comprises the combined lengths of the plurality of aerosol-forming substrates. Advantageously, providing a plurality of aerosol-forming substrates may allow separate heating of different aerosol-forming substrates during different user experiences.

Each aerosol-forming substrate may have a length in the first direction of between 8 millimetres and 16 millimetres. Each aerosol-forming substrate may have a length of between 10 millimetres and 12 millimetres.

At least two adjacent aerosol-forming substrates may be spaced apart from each other in the first longitudinal direction. Each aerosol-forming substrate may be spaced apart from adjacent aerosol-forming substrates in the longitudinal direction. Each space between adjacent aerosol-forming substrates has a length extending in the longitudinal direction, and the total length of the at least one aerosol-forming substrate further comprises the combined lengths of the spaces between adjacent aerosol-forming substrates. In other words, the total length of the at least one aerosol-forming substrate comprises the sum of the individual lengths of the aerosol-forming substrates and the individual lengths of the spaces between adjacent aerosol-forming substrates.

Preferably, each space between adjacent aerosol-forming substrates has a length in the first direction of between 2 millimetres and 5 millimetres.

The electric heater may comprise an inductor coil. The aerosol-generating article may comprise a susceptor element positioned within each of the aerosol-forming substrates. Advantageously, providing a separate susceptor element in each of the aerosol-forming substrates may facilitate separate inductive heating of each of the aerosol-forming substrates. For example, the aerosol-generating article may be inserted into the aerosol-generating device so that only one of the aerosol-forming substrates is positioned within an inductor coil. Advantageously, this may facilitate heating of each of the aerosol-forming substrates during different user experiences.

The aerosol-generating article may comprise a wrapper wrapped around the at least one aerosol-forming substrate. The aerosol-generating article may comprise a plurality of indicia on an outer surface of the wrapper, wherein the plurality of indicia are spaced apart from each other in the first longitudinal direction.

Advantageously, the plurality of spaced apart indicia may provide a user with a visual indication of how far the aerosol-generating article has been inserted into the cavity of the aerosol-generating device. For example, a user may insert the aerosol-generating article into the cavity until a chosen indicia is aligned with a portion of a housing of the aerosol-generating device.

Advantageously, this may facilitate insertion of the aerosol-generating article into the aerosol-generating device in a plurality of different positions or orientations to facilitate selective heating of portions of a single aerosol-forming substrate or selective heating of separate aerosol-forming substrates.

5 The plurality of indicia may comprise any suitable number of indicia. For example, the plurality of indicia may comprise two, three, four, five or six indicia.

Preferably, each of the indicia circumscribes a portion of the wrapper. Advantageously, providing indicia that circumscribe a portion of the wrapper may facilitate viewing of each indicia irrespective of a rotational orientation of the aerosol-generating article.

10 Preferably, at least two of the indicia comprise at least one of a different size, a different shape, a different colour, and a different motif. Preferably, each of the indicia comprises at least one of a different size, a different shape, a different colour, and a different motif. Advantageously, providing the indicia with at least one of a different size, a different shape, a different colour, and a different motif may help a user to differentiate between the different indicia.

15 The spacing in the first longitudinal direction between adjacent indicia may be between 5 millimetres and 10 millimetres.

The aerosol-generating article may comprise at least one filter element. The at least one filter element may be adjacent to the at least one aerosol-forming substrate. The at least one filter element may be spaced apart from the at least one aerosol-forming substrate. The aerosol-
20 generating article may comprise at least one additional element positioned between the at least one aerosol-forming substrate and the at least one filter element. The at least one additional element may comprise an aerosol-cooling element.

In embodiments in which the aerosol-generating article comprises a wrapper, preferably the wrapper is wrapped around the at least one aerosol-forming substrate and, where present,
25 the at least one filter element and the at least one additional element.

Each of the aerosol-forming substrates may comprise a plug of tobacco. The tobacco plug may comprise one or more of: powder, granules, pellets, shreds, spaghettis, strips or sheets containing one or more of: tobacco leaf, fragments of tobacco ribs, reconstituted tobacco, homogenised tobacco, extruded tobacco and expanded tobacco. Optionally, the tobacco plug
30 may contain additional tobacco or non-tobacco volatile flavour compounds, to be released upon heating of the tobacco plug. Optionally, the tobacco plug may also contain capsules that, for example, include the additional tobacco or non-tobacco volatile flavour compounds. Such capsules may melt during heating of the tobacco plug. Alternatively, or in addition, such capsules may be crushed prior to, during, or after heating of the tobacco plug. Optionally, the tobacco plug
35 may contain one or more botanicals.

Where the tobacco plug comprises homogenised tobacco material, the homogenised tobacco material may be formed by agglomerating particulate tobacco. The homogenised

tobacco material may be in the form of a sheet. The homogenised tobacco material may have an aerosol-former content of greater than 5 percent on a dry weight basis. The homogenised tobacco material may alternatively have an aerosol former content of between 5 percent and 30 percent by weight on a dry weight basis. Sheets of homogenised tobacco material may be formed by agglomerating particulate tobacco obtained by grinding or otherwise comminuting one or both of tobacco leaf lamina and tobacco leaf stems; alternatively, or in addition, sheets of homogenised tobacco material may comprise one or more of tobacco dust, tobacco fines and other particulate tobacco by-products formed during, for example, the treating, handling and shipping of tobacco. Sheets of homogenised tobacco material may comprise one or more intrinsic binders, that is tobacco endogenous binders, one or more extrinsic binders, that is tobacco exogenous binders, or a combination thereof to help agglomerate the particulate tobacco. Alternatively, or in addition, sheets of homogenised tobacco material may comprise other additives including, but not limited to, tobacco and non-tobacco fibres, aerosol-formers, humectants, plasticisers, flavourants, fillers, aqueous and non-aqueous solvents and combinations thereof. Sheets of homogenised tobacco material are preferably formed by a casting process of the type generally comprising casting a slurry comprising particulate tobacco and one or more binders onto a conveyor belt or other support surface, drying the cast slurry to form a sheet of homogenised tobacco material and removing the sheet of homogenised tobacco material from the support surface.

Each tobacco plug may have a length of between 8 millimetres and 16 millimetres. Each tobacco plug may have a length of between 10 millimetres and 12 millimetres.

Each tobacco plug may have a diameter of between 5 millimetres and 12 millimetres.

Each filter element described herein may comprise any suitable material. Suitable materials for each filter element may include at least one of acetate tow, paper, lyocell, viscose, biodegradable fibres, polylactic acid (PLA), and one or more polyhydroxyalkanoates (PHA). Each filter element described herein may comprise a cellulose acetate filter plug. Each filter element may have a length of between 5 millimetres and 10 millimetres.

The aerosol-generating device may comprise any feature or combination of features as already described herein. The aerosol-generating device may be an aerosol-generating device according to the present disclosure.

According to another aspect of the present disclosure there is provided an aerosol-generating article. The aerosol-generating article may comprise a first end and a second end. The aerosol-generating article may define a longitudinal direction extending between the first end and the second end. The aerosol-generating article may comprise a first airflow pathway extending in the longitudinal direction. The aerosol-generating article may comprise a second airflow pathway extending in the longitudinal direction. The aerosol-generating article may comprise a first aerosol-forming substrate positioned within the first airflow pathway. The aerosol-generating article may comprise a second aerosol-forming substrate positioned within the second

airflow pathway. The second aerosol-forming substrate may overlap only part of the first aerosol-forming substrate in the longitudinal direction.

According to another aspect of the present disclosure there is provided an aerosol-generating article comprising a first end and a second end. The aerosol-generating article defines a longitudinal direction extending between the first end and the second end. The aerosol-generating article also comprises a first airflow pathway extending in the longitudinal direction and a second airflow pathway extending in the longitudinal direction. The aerosol-generating article also comprises a first aerosol-forming substrate positioned within the first airflow pathway and a second aerosol-forming substrate positioned within the second airflow pathway. The second aerosol-forming substrate overlaps only part of the first aerosol-forming substrate in the longitudinal direction.

The aerosol-generating article comprises a second aerosol-forming substrate that overlaps only part of a first aerosol-forming substrate in a longitudinal direction of the aerosol-generating article. Advantageously, this may facilitate the use of a single aerosol-generating article to provide a user with multiple different user experiences, or a single user experience with variable aerosol-generation during the user experience. For example, the aerosol-generating article may be configured so that, when the aerosol-generating article is received in a cavity of an aerosol-generating device, the aerosol-generating device heats only the first aerosol-forming substrate, only the second aerosol-forming substrate, or both the first and the second aerosol-forming substrates.

Advantageously, providing the first and second aerosol-forming substrates in separate first and second airflow pathways may facilitate heating of one aerosol-forming substrate without contaminating the other aerosol-forming substrate.

The aerosol-generating article may comprise a third airflow pathway extending in the longitudinal direction and a third aerosol-forming substrate positioned within the third airflow pathway. The third aerosol-forming substrate may overlap only part of the first aerosol-forming substrate in the longitudinal direction.

Advantageously, providing a third aerosol-forming substrate that overlaps only part of the first aerosol-forming substrate in the longitudinal direction may facilitate further variation of one or more user experiences using the aerosol-generating article.

Preferably, the second aerosol-forming substrate does not overlap the third aerosol-forming substrate in the longitudinal direction.

Preferably, the first aerosol-forming substrate comprises a portion that does not overlap the second aerosol-forming substrate or the third aerosol-forming substrate.

The aerosol-generating article may comprise a plug element defining the first airflow pathway, the second airflow pathway and, where present, the third airflow pathway. Preferably,

the plug element contains the first aerosol-forming substrate, the second aerosol-forming substrate, and, where present, the third aerosol-forming substrate.

Advantageously, providing a plug element defining the airflow pathways and containing the aerosol-forming substrates may facilitate manufacture of the aerosol-generating article. For example, the plug element may be assembled with the aerosol-forming substrates in a dedicated process to create a loaded plug element. The loaded plug element may then be combined with other elements, such as filter element and wrappers, using more conventional processes and machines for assembling aerosol-generating articles.

The plug element may comprise any suitable material. Suitable materials may include at least one of polyether ether ketone (PEEK) and ceramics. The material forming the plug element may be flavoured. The plug element may comprise at least one flavourant sorbed into the material forming the plug element. The plug element may comprise one or more flavour elements contained within the plug element. The plug element may comprise one or more flavour elements positioned on the plug element. Each flavour element may comprise a substrate and at least one flavourant sorbed into the substrate. Each substrate may comprise a plastic. Each substrate may be in the form of a strip. Each substrate may comprise an extruded plastic.

Preferably, the plug element has a cylindrical shape. The plug element may have a diameter of between 6 millimetres and 8 millimetres.

Each aerosol-forming substrate may have a cylindrical shape. Each aerosol-forming substrate may have a diameter of between 0.5 millimetres and 6 millimetres. At least one of the aerosol-forming substrates may have a diameter of between 0.5 millimetres and 1 millimetre. At least one of the aerosol-forming substrates may have a diameter of between 4 millimetres and 6 millimetres.

The aerosol-generating article may comprise a susceptor element positioned within each of the aerosol-forming substrates. Advantageously, providing a separate susceptor element in each of the aerosol-forming substrates may facilitate separate inductive heating of each of the aerosol-forming substrates.

The aerosol-generating article may comprise an outer wrapper. Preferably, the outer wrapper is wrapped around the aerosol-forming substrates. In embodiments in which the aerosol-generating article comprises a plug element, preferably the outer wrapper is wrapped around the plug element.

The aerosol-generating article may comprise a plurality of indicia on an outer surface of the outer wrapper, wherein the plurality of indicia are spaced apart from each other in the longitudinal direction.

Advantageously, the plurality of spaced apart indicia may provide a user with a visual indication of how far the aerosol-generating article has been inserted into a cavity of an aerosol-generating device. For example, a user may insert the aerosol-generating article into a cavity of

an aerosol-generating device until a chosen indicia is aligned with a portion of a housing of the aerosol-generating device. Advantageously, this may facilitate insertion of the aerosol-generating article into the aerosol-generating device in a plurality of different positions or orientations to facilitate selective heating of one or more of the first aerosol-forming substrate, the second aerosol-forming substrate, and, where present, the third aerosol-forming substrate.

The plurality of indicia may comprise any suitable number of indicia. For example, the plurality of indicia may comprise two, three, four, five or six indicia.

Preferably, each of the indicia circumscribes a portion of the outer wrapper. Advantageously, providing indicia that circumscribe a portion of the outer wrapper may facilitate viewing of each indicia irrespective of a rotational orientation of the aerosol-generating article.

Preferably, at least two of the indicia comprise at least one of a different size, a different shape, a different colour, and a different motif. Preferably, each of the indicia comprises at least one of a different size, a different shape, a different colour, and a different motif. Advantageously, providing the indicia with at least one of a different size, a different shape, a different colour, and a different motif may help a user to differentiate between the different indicia.

The spacing in the longitudinal direction between adjacent indicia may be between 5 millimetres and 10 millimetres.

At least one of the aerosol-forming substrates may comprise tobacco element. The tobacco element may comprise one or more of: powder, granules, pellets, shreds, spaghettis, strips or sheets containing one or more of: tobacco leaf, fragments of tobacco ribs, reconstituted tobacco, homogenised tobacco, extruded tobacco and expanded tobacco. Optionally, the tobacco element may contain additional tobacco or non-tobacco volatile flavour compounds, to be released upon heating of the tobacco element. Optionally, the tobacco element may also contain capsules that, for example, include the additional tobacco or non-tobacco volatile flavour compounds. Such capsules may melt during heating of the tobacco element. Alternatively, or in addition, such capsules may be crushed prior to, during, or after heating of the tobacco element.

Where the tobacco element comprises homogenised tobacco material, the homogenised tobacco material may be formed by agglomerating particulate tobacco. The homogenised tobacco material may be in the form of a sheet. The homogenised tobacco material may have an aerosol-former content of greater than 5 percent on a dry weight basis. The homogenised tobacco material may alternatively have an aerosol former content of between 5 percent and 30 percent by weight on a dry weight basis. Sheets of homogenised tobacco material may be formed by agglomerating particulate tobacco obtained by grinding or otherwise comminuting one or both of tobacco leaf lamina and tobacco leaf stems; alternatively, or in addition, sheets of homogenised tobacco material may comprise one or more of tobacco dust, tobacco fines and other particulate tobacco by-products formed during, for example, the treating, handling and shipping of tobacco. Sheets of homogenised tobacco material may comprise one or more intrinsic binders, that is

tobacco endogenous binders, one or more extrinsic binders, that is tobacco exogenous binders, or a combination thereof to help agglomerate the particulate tobacco. Alternatively, or in addition, sheets of homogenised tobacco material may comprise other additives including, but not limited to, tobacco and non-tobacco fibres, aerosol-formers, humectants, plasticisers, flavourants, fillers, aqueous and non-aqueous solvents and combinations thereof. Sheets of homogenised tobacco material are preferably formed by a casting process of the type generally comprising casting a slurry comprising particulate tobacco and one or more binders onto a conveyor belt or other support surface, drying the cast slurry to form a sheet of homogenised tobacco material and removing the sheet of homogenised tobacco material from the support surface.

At least one of the aerosol-forming substrates may comprise a flavour yarn or a flavour thread. Preferably, the flavour yarn or the flavour thread comprises a yarn or thread coated or impregnated with at least one flavourant. The at least one flavourant may comprise menthol.

The aerosol-generating article may comprise at least one filter element. The at least one filter element may be adjacent to at least one of the aerosol-forming substrates. The at least one filter element may be spaced apart from the aerosol-forming substrates. In embodiments in which the aerosol-generating article comprises a plug element, the at least one filter element may be adjacent to the plug element. The at least one filter element may be spaced apart from the plug element.

The aerosol-generating article may comprise at least one additional element positioned between the plug element and the at least one filter element. The at least one additional element may comprise an aerosol-cooling element.

In embodiments in which the aerosol-generating article comprises an outer wrapper, preferably the outer wrapper is wrapped around the plug element and, where present, the at least one filter element and the at least one additional element.

The aerosol-generating article may comprise any feature or combination of features as already described herein. The aerosol-generating article may be an aerosol-generating article according to the present disclosure.

According to another aspect of the present disclosure there is provided an aerosol-generating system. The aerosol-generating system comprises an aerosol-generating article according to the present disclosure. The aerosol-generating system also comprises an aerosol-generating device comprising a housing defining a cavity for receiving the aerosol-generating article, an electric heater, a power supply, a controller configured to supply power from the power supply to the electric heater.

The aerosol-generating device may comprise any of the features already described herein. The aerosol-generating device may be an aerosol-generating device according to the present disclosure.

The invention is defined in the claims. However, 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.

Example Ex1: An aerosol-generating device comprising:

5 a cavity for receiving an aerosol-generating article, wherein the cavity comprises a first end and a second end;

a first opening at the first end of the cavity and a second opening at the second end of the cavity, wherein the aerosol-generating article may be inserted into the cavity through the first opening or the second opening; and

10 an actuator arranged to move an aerosol-generating article through the cavity.

Example Ex2: An aerosol-generating device according to Example Ex1, wherein the actuator comprises a wheel arranged to engage an outer surface of an aerosol-generating article when the aerosol-generating article is received within the cavity.

15 Example Ex3: An aerosol-generating device according to Example Ex2, wherein the wheel is arranged so that a user may manually rotate the wheel to move an aerosol-generating article through the cavity.

Example Ex4: An aerosol-generating device according to Example Ex2, further comprising an electric motor configured to drive the wheel to move an aerosol-generating article through the cavity.

20 Example Ex5: An aerosol-generating device according to Example Ex4, further comprising a user interface configured to provide user control of the electric motor.

Example Ex6: An aerosol-generating device according to any preceding Example, further comprising:

an electric heater;

25 a power supply; and

a controller configured to supply power from the power supply to the electric heater.

Example Ex7: An aerosol-generating device according to Example Ex6 in combination with Example Ex 4 or 5, wherein the controller is configured to supply power from the power supply to the electric motor.

30 Example Ex8: An aerosol-generating device according to Example Ex7, wherein the controller is configured to:

supply power from the power supply to the electric heater for the duration of a first heating cycle to heat a first portion of an aerosol-generating article;

35 supply power from the power supply to the electric motor to move the aerosol-generating device through the cavity; and

supply power from the power supply to the electric heater for the duration of a second heating cycle to heat a second portion of an aerosol-generating article.

Example Ex9: An aerosol-generating device according to Example Ex7, wherein the controller is configured to simultaneously supply power from the power supply to the electric heater and the electric motor to heat an aerosol-generating article as the aerosol-generating article is moved through the cavity.

5 Example Ex10: An aerosol-generating device according to any of Examples Ex6 to Ex9, wherein the electric heater extends around at least a portion of the cavity so that, when an aerosol-generating article is inserted into the cavity, the aerosol-generating article is received within the electric heater.

10 Example Ex11: An aerosol-generating device according to any preceding Example, wherein the cavity has a circular cross-sectional shape, and wherein an inner diameter of the first opening is the same as an inner diameter of the second opening.

 Example Ex12: An aerosol-generating system comprising:
 an aerosol-generating article comprising at least one aerosol-forming substrate; and
 an aerosol-generating device according to any preceding Example.

15 Example Ex13: An aerosol-generating system according to Example Ex12 when dependent directly or indirectly on Example Ex6, wherein the aerosol-generating article comprises a first end and a second end, wherein the aerosol-generating article defines a first longitudinal direction extending between the first and second ends of the aerosol-generating article, wherein the at least one aerosol-forming substrate has a total length extending in the first longitudinal
20 direction, wherein the cavity defines a second longitudinal direction extending between the first and second ends of the cavity, wherein the electric heater defines a heating zone between a first end of the electric heater and a second end of the electric heater, wherein the heating zone has a length extending in the second longitudinal direction, and wherein the total length of the at least one aerosol-forming substrate is greater than the length of the heating zone.

25 Example Ex14: An aerosol-generating system comprising:
 an aerosol-generating article comprising at least one aerosol-forming substrate positioned between a first end and a second end of the aerosol-generating article, wherein the aerosol-generating article defines a first longitudinal direction extending between the first and second ends of the aerosol-generating article, and wherein the at least one aerosol-forming substrate has
30 a total length extending in the first longitudinal direction; and

 an aerosol-generating device comprising:

 a cavity for receiving the aerosol-generating article, wherein the cavity comprises a first end and a second end, and wherein the cavity defines a second longitudinal direction extending between the first and second ends of the cavity;

35 a first opening at the first end of the cavity and a second opening at the second end of the cavity, wherein the aerosol-generating article may be inserted into the cavity through the first opening or the second opening; and

an electric heater extending around at least a portion of the cavity and defining a heating zone between a first end of the electric heater and a second end of the electric heater, wherein the heating zone has a length extending in the second longitudinal direction, and wherein the total length of the at least one aerosol-forming substrate is greater than the length of the heating zone.

Example Ex15: An aerosol-generating system according to Example Ex13 or Ex14, wherein the cavity has a length extending in the second longitudinal direction, and wherein the total length of the at least one aerosol-forming substrate is greater than the length of the cavity.

Example Ex16: An aerosol-generating system according to Example Ex13, Ex14 or Ex15, wherein the at least one aerosol-forming substrate is a single aerosol-forming substrate, and wherein the total length of the at least one aerosol-forming substrate is a length of the single aerosol-forming substrate in the first longitudinal direction.

Example Ex17: An aerosol-generating system according to Example Ex16, wherein the aerosol-generating article further comprises:

a first susceptor element positioned within the aerosol-forming substrate; and
a second susceptor element positioned within the aerosol-forming substrate, wherein the first susceptor element and the second susceptor element are spaced apart from each other in the first longitudinal direction.

Example Ex18: An aerosol-generating system according to Example Ex13, Ex14 or Ex15, wherein the at least one aerosol-forming substrate comprises a plurality of aerosol-forming substrates, wherein each aerosol-forming substrate has a length extending in the first longitudinal direction, and wherein the total length of the at least one aerosol-forming substrate comprises the combined lengths of the plurality of aerosol-forming substrates.

Example Ex19: An aerosol-generating system according to Example Ex18, wherein at least two adjacent aerosol-forming substrates are spaced apart from each other in the first longitudinal direction, wherein each space between adjacent aerosol-forming substrates has a length extending in the longitudinal direction, and wherein the total length of the at least one aerosol-forming substrate further comprises the combined lengths of the spaces between adjacent aerosol-forming substrates.

Example Ex20: An aerosol-generating system according to Example Ex19, wherein the aerosol-generating article further comprises a susceptor element positioned within each of the aerosol-forming substrates.

Example Ex21: An aerosol-generating system according to any of Examples Ex13 to Ex20, wherein the aerosol-generating article further comprises:

a wrapper wrapped around the at least one aerosol-forming substrate; and
a plurality of indicia on an outer surface of the wrapper, wherein the plurality of indicia are spaced apart from each other in the first longitudinal direction.

Example Ex22: An aerosol-generating system according to Example Ex21, wherein each of the indicia circumscribes a portion of the wrapper.

Example Ex23: An aerosol-generating system according to Example Ex21 or Ex22, wherein the each of the indicia comprises at least one of a different size, a different shape, a different colour, and a different motif.

Example Ex24: An aerosol-generating system according to Example Ex21, Ex22 or Ex23, wherein a spacing in the first longitudinal direction between adjacent indicia is between 5 millimetres and 10 millimetres.

Example Ex25: An aerosol-generating article comprising:
a first end and a second end, wherein the aerosol-generating article defines a longitudinal direction extending between the first end and the second end;
a first airflow pathway extending in the longitudinal direction;
a second airflow pathway extending in the longitudinal direction;
a first aerosol-forming substrate positioned within the first airflow pathway; and
a second aerosol-forming substrate positioned within the second airflow pathway;
wherein the second aerosol-forming substrate overlaps only part of the first aerosol-forming substrate in the longitudinal direction.

Example Ex26: An aerosol-generating article according to Example Ex25, further comprising:
a third airflow pathway extending in the longitudinal direction; and
a third aerosol-forming substrate positioned within the third airflow pathway;
wherein the third aerosol-forming substrate overlaps only part of the first aerosol-forming substrate in the longitudinal direction.

Example Ex27: An aerosol-generating article according to Example Ex26, wherein the second aerosol-forming substrate does not overlap the third aerosol-forming substrate in the longitudinal direction.

Example Ex28: An aerosol-generating article according to Example Ex26 or Ex27, wherein the first aerosol-forming substrate comprises a portion that does not overlap the second aerosol-forming substrate or the third aerosol-forming substrate.

Example Ex29: An aerosol-generating article according to any of Examples Ex25 to Ex28, further comprising a plug element defining the first airflow pathway and the second airflow pathway.

Example Ex30: An aerosol-generating article according to any of Examples Ex25 to Ex29, further comprising a susceptor element positioned within each of the aerosol-forming substrates.

Example Ex31: An aerosol-generating article according to any of Examples Ex25 to Ex30, further comprising:

an outer wrapper; and

a plurality of indicia on an outer surface of the outer wrapper, wherein the plurality of indicia are spaced apart from each other in the longitudinal direction.

Example Ex32: An aerosol-generating article according to Example Ex31, wherein
5 each of the indicia circumscribes a portion of the outer wrapper.

Example Ex33: An aerosol-generating article according to Example Ex31 or Ex32, wherein the each of the indicia comprises at least one of a different size, a different shape, a different colour, and a different motif.

Example Ex34: An aerosol-generating article according to Example Ex 31, Ex32 or
10 Ex33, wherein a spacing in the longitudinal direction between adjacent indicia is between 5 millimetres and 10 millimetres.

Example Ex35: An aerosol-generating system comprising:
an aerosol-generating article according to any of Examples Ex25 to Ex34; and
an aerosol-generating device comprising:

15 a housing defining a cavity for receiving the aerosol-generating article;
an electric heater;
a power supply; and
a controller configured to supply power from the power supply to the electric heater.

Example Ex36: An aerosol-generating system comprising an aerosol-generating
20 device according to any of Examples Ex1 to Ex11 and an aerosol-generating article according to any of Examples Ex25 to Ex34.

Embodiments of the present disclosure will now be described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 shows a cross-sectional view of an aerosol-generating device according to an
25 embodiment of the present disclosure;

Figure 2 shows a cross-sectional view of an aerosol-generating article according to a first embodiment of the present disclosure;

Figure 3 shows a side view of the aerosol-generating article of Figure 2;

Figures 4 to 7 show two configurations of an aerosol-generating system comprising the
30 aerosol-generating device of Figure 1 and the aerosol-generating article of Figures 2 and 3;

Figure 8 shows a cross-sectional view of an aerosol-generating article according to a second embodiment of the present disclosure;

Figure 9 shows a side view of the aerosol-generating article of Figure 8;

Figure 10 shows a cross-sectional view of an aerosol-generating article according to a
35 third embodiment of the present disclosure; and

Figure 11 shows a side view of the aerosol-generating article of Figure 10.

Figure 1 shows a cross-sectional view of an aerosol-generating device 10 according to an embodiment of the present disclosure. The aerosol-generating device 10 comprises a first housing portion 12 and a second housing portion 14 extending from the first housing portion 12. As illustrated by comparing Figures 1 and 4, the second housing portion 14 is connected to the first housing portion 12 so that the second housing portion 14 may be rotated relative to the first housing portion 12. During use of the aerosol-generating device 10 a user may use the second housing portion 14 as a handle to hold the aerosol-generating device 10. Therefore, the user may rotate the second housing portion 14 into an ergonomically comfortable position.

The first housing portion 12 defines a cavity 16 for receiving an aerosol-generating article. The first housing portion 12 also defines a first opening 18 at a first end of the cavity 16 and a second opening 20 at a second end of the cavity 16. The first and second openings 18, 20 are sized so that an aerosol-generating article may be inserted into the cavity 16 through the first opening 18 or the second opening 20.

An actuator 22 comprising a toothed wheel is rotatably mounted on the first housing portion 12. The toothed wheel extends into the cavity 16 to engage an aerosol-generating article when the aerosol-generating article is inserted into the cavity 16. When an aerosol-generating article is received within the cavity 16 a user may turn the toothed wheel to move the aerosol-generating article through the cavity 16. In the embodiments shown in Figure 1 the toothed wheel protrudes from an outer surface of the first housing portion 12 so that a user can manually turn the toothed wheel. In an alternative embodiment the actuator 22 comprises an electric motor arranged to turn the toothed wheel and the aerosol-generating device 10 comprises a user interface to allow a user to electrically operate the toothed wheel.

An electric heater 26 is positioned in the first housing portion 12 and comprises an inductor coil extending around a central portion of the cavity 16. The inductor coil defines a heating zone in the cavity 16, the heating zone having a length 27 extending in a longitudinal direction of the cavity 16.

A controller 28 and a power supply 30 comprising a battery are positioned in the second housing portion 14. The controller 28 is configured to supply power from the power supply 30 to the inductor coil to inductively heat an aerosol-generating article received within the cavity 16. In embodiments in which the actuator 22 comprises an electric motor, the controller 28 is also configured to supply power from the power supply 30 to the electric motor.

Figures 2 and 3 show an aerosol-generating article 50 according to a first embodiment of the present disclosure. The aerosol-generating article 50 comprises a filter element 52 at a first end 54 of the aerosol-generating article 50 and a porous element 56 at a second end 58 of the aerosol-generating article 50. During use, the filter element 52 forms a mouth end of the aerosol-generating article 50. The porous element 56 may have a higher porosity than the filter element 52 to provide a desired resistance to draw for the aerosol-generating article 50.

Positioned at a centre of the aerosol-generating article 50 is an aerosol-forming substrate 60 comprising a tobacco plug. The aerosol-forming substrate 60 has a length 70 extending in a longitudinal direction of the aerosol-generating article 50. The length 70 of the aerosol-forming substrate 60 is larger than the length 27 of the heating zone defined by the inductor coil of the aerosol-generating device 10. An aerosol-cooling element 62 is positioned between the filter element 52 and the aerosol-forming substrate 60.

The aerosol-generating article 50 also comprises a first susceptor element 66 positioned within a first portion of the aerosol-forming substrate 60 and a second susceptor element 68 positioned within a second portion of the aerosol-forming substrate 60. The first and second susceptor elements 66, 68 are spaced apart from each other in the longitudinal direction of the aerosol-generating article 50.

A wrapper 72 is wrapped around the filter element 52, the porous element 56, the aerosol-forming substrate 60 and the aerosol-cooling element 62. A plurality of indicia are provided on an outer surface of the wrapper 72, the plurality of indicia comprising a first indicia 74 and a second indicia 76. Each indicia comprises a different printed line extending around the wrapper 72 to enable a user to distinguish between the different indicia.

Figures 4 to 7 show an aerosol-generating system 100 comprising the aerosol-generating device 10 of Figure 1 and the aerosol-generating article 50 of Figures 2 and 3. When the aerosol-generating article 50 is received within the cavity 16 the outer surface of the wrapper 72 is engaged with the toothed wheel of the actuator 22.

In a first configuration shown in Figures 4 and 5, a user inserts the aerosol-generating article 50 into the cavity 16 and rotates the toothed wheel to move the aerosol-generating article 50 through the cavity 16 until the first indicia 74 is aligned with an edge of the first housing portion 12. In this configuration only the first portion of the aerosol-forming substrate 60 and the first susceptor element 66 are positioned within the inductor coil. Therefore, in the first configuration, the electric heater 26 heats only the first portion of the aerosol-forming substrate 60.

In a second configuration shown in Figures 6 and 7, a user rotates the toothed wheel to move the aerosol-generating article 50 through the cavity 16 until the second indicia 76 is aligned with an edge of the first housing portion 12. In this configuration only the second portion of the aerosol-forming substrate 60 and the second susceptor element 68 are positioned within the inductor coil. Therefore, in the second configuration, the electric heater 26 heats only the second portion of the aerosol-forming substrate 60.

The first and second configurations allow a user to use the aerosol-generating article 50 for two user experiences, each experience using only half of the aerosol-forming substrate 60. The user may use the first configuration followed by the second configuration. Alternatively, the user may use the second configuration followed by the first configuration.

Figures 8 and 9 show an alternative aerosol-generating article 150 according to a second embodiment of the present disclosure. The aerosol-generating article 150 is substantially the same as the aerosol-generating article 50 shown in Figures 2 and 3, and like reference numerals are used to designate like parts.

5 The aerosol-generating article 150 differs from the aerosol-generating article 50 by the arrangement of the aerosol-forming substrate. In particular, the aerosol-generating article 150 comprises a first aerosol-forming substrate 160 comprising a first tobacco plug in which the first susceptor element 66 is positioned, and a second aerosol-forming substrate 161 comprising a
10 second tobacco plug in which the second susceptor element 68 is positioned. The first and second tobacco plugs 160, 161 are spaced apart from each other in the longitudinal direction of the aerosol-generating article 50 by a space 163. The total length 70 of the aerosol-forming section of the aerosol-generating article 150 comprises the combined lengths of the first aerosol-forming substrate 160, the space 163, and the second aerosol-forming substrate 161. The total
15 length 70 of the aerosol-forming section of the aerosol-generating article 250 is larger than the length 27 of the heating zone defined by the inductor coil of the aerosol-generating device 10.

The skilled person will appreciate that the separate first and second aerosol-forming substrates 160, 161 of the aerosol-generating article 150 correspond to the first and second portions of the single aerosol-forming substrate 60 of the aerosol-generating article 50. Therefore, the aerosol-generating article 150 may be used with the aerosol-generating device 10 in the same
20 manner as the aerosol-generating article 50.

Figures 10 and 11 show an alternative aerosol-generating article 250 according to a third embodiment of the present disclosure. The aerosol-generating article 250 is substantially the similar to the aerosol-generating article 50 shown in Figures 2 and 3, and like reference numerals are used to designate like parts.

25 The aerosol-generating article 250 differs from the aerosol-generating article 50 by the arrangement of the aerosol-forming substrate. In particular, the aerosol-generating article 250 comprises a plug element 252 positioned between the filter element 52 and the porous element 56. The plug element 252 defines a first airflow pathway 254 and a second airflow pathway 256 each extending in the longitudinal direction of the aerosol-generating article 250.

30 A first aerosol-forming substrate 260 comprising a tobacco plug is positioned within the first airflow pathway 254. A first susceptor element 266 is positioned within a first portion of the first aerosol-forming substrate 260 and a second susceptor element 267 is positioned within a second portion of the first aerosol-forming substrate 260. The first and second susceptor elements 266, 267 are spaced apart from each other in the longitudinal direction of the aerosol-generating article 250.
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A second aerosol-forming substrate 261 comprising a flavour thread is positioned within the second airflow pathway 256. A third susceptor element 268 is positioned within the second

airflow pathway 256 alongside the second aerosol-forming substrate. The second aerosol-forming substrate 261 overlaps only the second portion of the first aerosol-forming substrate 260 in the longitudinal direction of the aerosol-generating article 250.

A total length 70 of the aerosol-forming section of the aerosol-generating article 250 comprises the combined lengths of the first aerosol-forming substrate 260 and the second aerosol-forming substrate 261. The total length 70 of the aerosol-forming section of the aerosol-generating article 250 is larger than the length 27 of the heating zone defined by the inductor coil of the aerosol-generating device 10.

The skilled person will appreciate that the aerosol-generating article 250 may be used with the aerosol-generating device 10 in a similar manner as the aerosol-generating article 50. In particular, when the aerosol-generating article 250 is inserted into the cavity 16 of the aerosol-generating device 10 in the first configuration shown in Figures 4 and 5, only the first portion of the first aerosol-forming substrate 260 and the first susceptor element 266 are positioned within the inductor coil. Therefore, in the first configuration, the electric heater 26 heats only the first portion of the first aerosol-forming substrate 260.

When the aerosol-generating article 250 is inserted into the cavity 16 of the aerosol-generating device 10 in the second configuration shown in Figures 6 and 7, the second portion of the first aerosol-forming substrate 260, the second susceptor element 267, the second aerosol-forming substrate 261 and the third susceptor element 268 are positioned within the inductor coil. Therefore, in the second configuration, the electric heater 26 heats the second portion of the first aerosol-forming substrate 260 and the second aerosol-forming substrate 261.

Claims

1. An aerosol-generating device comprising:
a cavity for receiving an aerosol-generating article, wherein the cavity comprises a first
5 end and a second end;
a first opening at the first end of the cavity and a second opening at the second end of the
cavity, wherein the aerosol-generating article may be inserted into the cavity through the first
opening or the second opening; and
an actuator arranged to move an aerosol-generating article through the cavity.
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2. An aerosol-generating device according to claim 1, wherein the actuator comprises a
wheel arranged to engage an outer surface of an aerosol-generating article when the aerosol-
generating article is received within the cavity.
- 15 3. An aerosol-generating device according to claim 2, wherein the wheel is arranged so that
a user may manually rotate the wheel to move an aerosol-generating article through the cavity.
4. An aerosol-generating device according to claim 2, further comprising an electric motor
configured to drive the wheel to move an aerosol-generating article through the cavity, optionally
20 further comprising a user interface configured to provide user control of the electric motor.
5. An aerosol-generating device according to any preceding claim, further comprising:
an electric heater;
a power supply; and
25 a controller configured to supply power from the power supply to the electric heater.
6. An aerosol-generating device according to claim 5 in combination with claim 4, wherein
the controller is configured to supply power from the power supply to the electric motor.
- 30 7. An aerosol-generating device according to claim 6, wherein the controller is configured to:
supply power from the power supply to the electric heater for the duration of a first heating
cycle to heat a first portion of an aerosol-generating article;
supply power from the power supply to the electric motor to move the aerosol-generating
device through the cavity; and
35 supply power from the power supply to the electric heater for the duration of a second
heating cycle to heat a second portion of an aerosol-generating article.

8. An aerosol-generating device according to claim 6, wherein the controller is configured to simultaneously supply power from the power supply to the electric heater and the electric motor to heat an aerosol-generating article as the aerosol-generating article is moved through the cavity.

5 9. An aerosol-generating system comprising:
an aerosol-generating article comprising at least one aerosol-forming substrate; and
an aerosol-generating device according to any preceding claim.

10. An aerosol-generating system according to claim 9 when dependent directly or indirectly
10 on claim 5, wherein the aerosol-generating article comprises a first end and a second end, wherein the aerosol-generating article defines a first longitudinal direction extending between the first and second ends of the aerosol-generating article, wherein the at least one aerosol-forming substrate has a total length extending in the first longitudinal direction, wherein the cavity defines a second longitudinal direction extending between the first and second ends of the cavity, wherein
15 the electric heater defines a heating zone between a first end of the electric heater and a second end of the electric heater, wherein the heating zone has a length extending in the second longitudinal direction, and wherein the total length of the at least one aerosol-forming substrate is greater than the length of the heating zone.

20 11. An aerosol-generating system according to claim 10, wherein the cavity has a length extending in the second longitudinal direction, and wherein the total length of the at least one aerosol-forming substrate is greater than the length of the cavity.

12. An aerosol-generating system according to claim 10 or 11, wherein the at least one
25 aerosol-forming substrate comprises a plurality of aerosol-forming substrates, wherein each aerosol-forming substrate has a length extending in the first longitudinal direction, and wherein the total length of the at least one aerosol-forming substrate comprises the combined lengths of the plurality of aerosol-forming substrates,

optionally wherein at least two adjacent aerosol-forming substrates are spaced apart from
30 each other in the first longitudinal direction, wherein each space between adjacent aerosol-forming substrates has a length extending in the longitudinal direction, and wherein the total length of the at least one aerosol-forming substrate further comprises the combined lengths of the spaces between adjacent aerosol-forming substrates.

35 13. An aerosol-generating system according to claim 10, 11 or 12, wherein the aerosol-generating article further comprises:
a wrapper wrapped around the at least one aerosol-forming substrate; and

a plurality of indicia on an outer surface of the wrapper, wherein the plurality of indicia are spaced apart from each other in the first longitudinal direction,

optionally wherein each of the indicia circumscribes a portion of the wrapper,

optionally wherein each of the indicia comprises at least one of a different size, a different shape, a different colour, and a different motif,

optionally wherein a spacing in the first longitudinal direction between adjacent indicia is between 5 millimetres and 10 millimetres.

14. An aerosol-generating article comprising:

a first end and a second end, wherein the aerosol-generating article defines a longitudinal direction extending between the first end and the second end;

a first airflow pathway extending in the longitudinal direction;

a second airflow pathway extending in the longitudinal direction;

a first aerosol-forming substrate positioned within the first airflow pathway; and

a second aerosol-forming substrate positioned within the second airflow pathway;

wherein the second aerosol-forming substrate overlaps only part of the first aerosol-forming substrate in the longitudinal direction.

15. An aerosol-generating article according to claim 14, further comprising:

a third airflow pathway extending in the longitudinal direction; and

a third aerosol-forming substrate positioned within the third airflow pathway;

wherein the third aerosol-forming substrate overlaps only part of the first aerosol-forming substrate in the longitudinal direction,

optionally wherein the second aerosol-forming substrate does not overlap the third aerosol-forming substrate in the longitudinal direction,

optionally wherein the first aerosol-forming substrate comprises a portion that does not overlap the second aerosol-forming substrate or the third aerosol-forming substrate.

16. An aerosol-generating article according to claim 14 or 15, further comprising a plug element defining the first airflow pathway and the second airflow pathway.

17. An aerosol-generating article according to claim 14, 15 or 16, further comprising:

an outer wrapper; and

a plurality of indicia on an outer surface of the outer wrapper, wherein the plurality of indicia are spaced apart from each other in the longitudinal direction,

optionally wherein each of the indicia circumscribes a portion of the outer wrapper,

optionally wherein the each of the indicia comprises at least one of a different size, a different shape, a different colour, and a different motif,

optionally wherein a spacing in the longitudinal direction between adjacent indicia is between 5 millimetres and 10 millimetres.

5

18. An aerosol-generating system comprising an aerosol-generating device according to any of claims 1 to 8 and an aerosol-generating article according to any of claims 14 to 17.

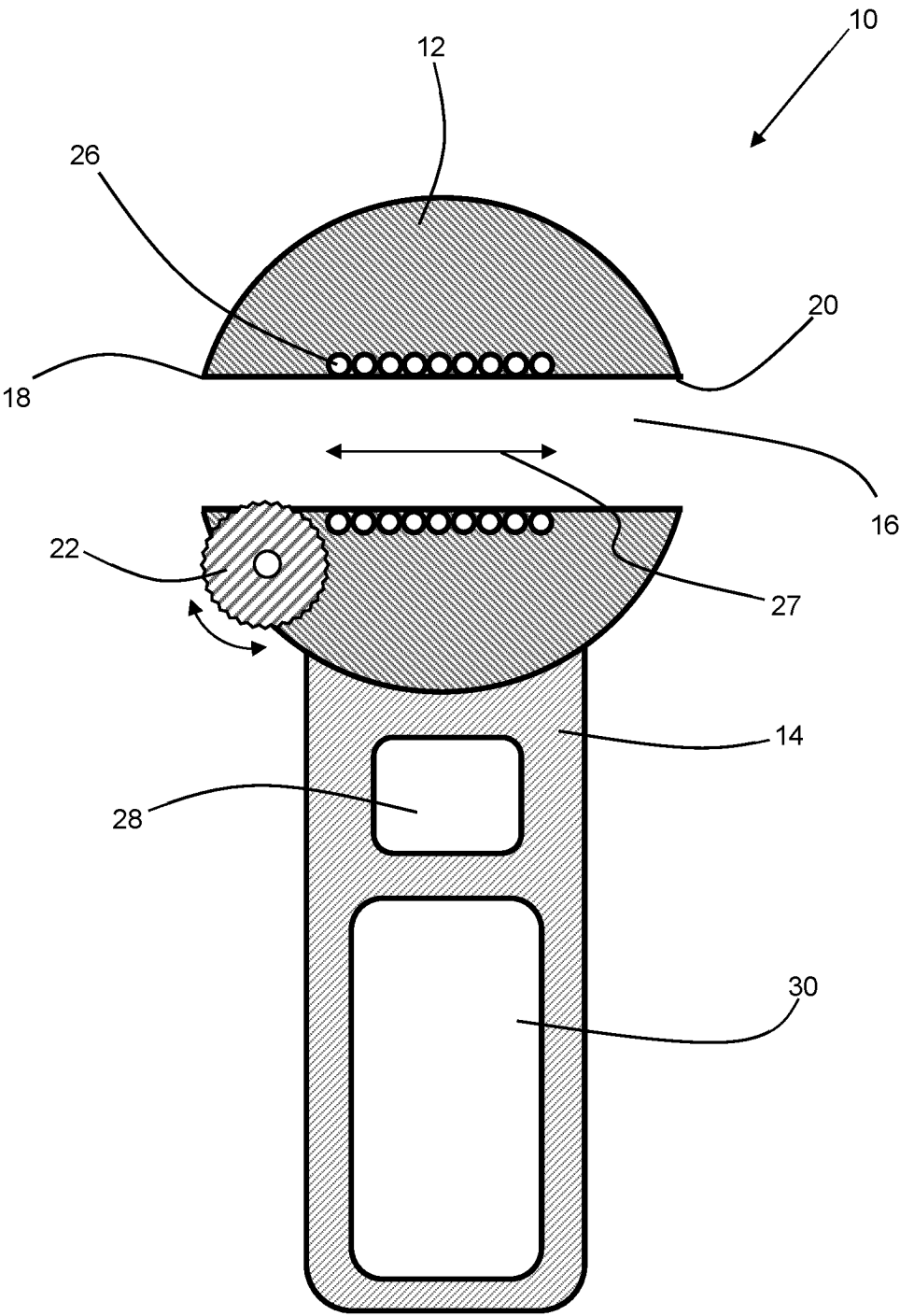


Figure 1

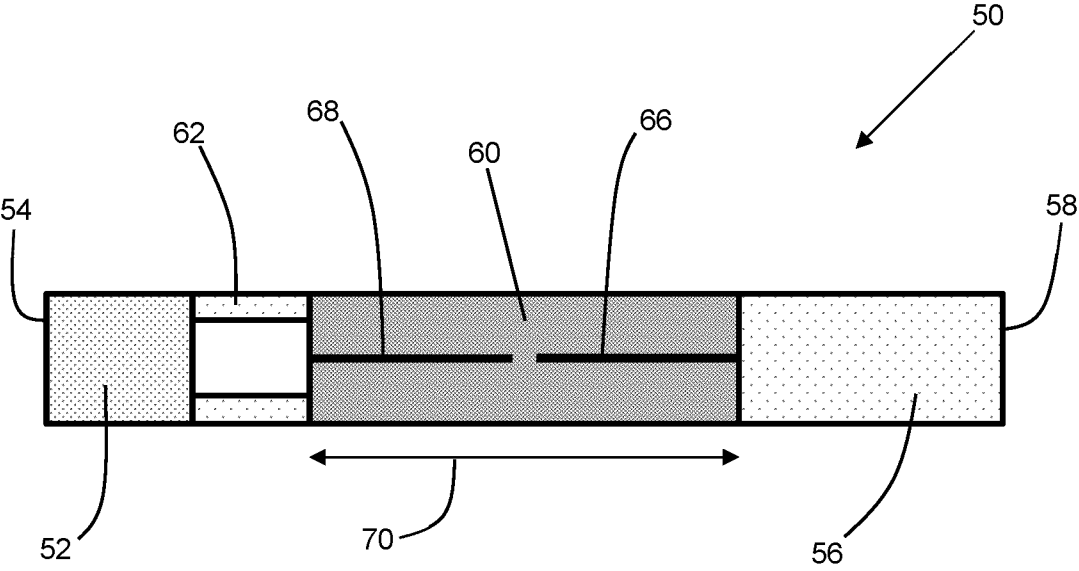


Figure 2

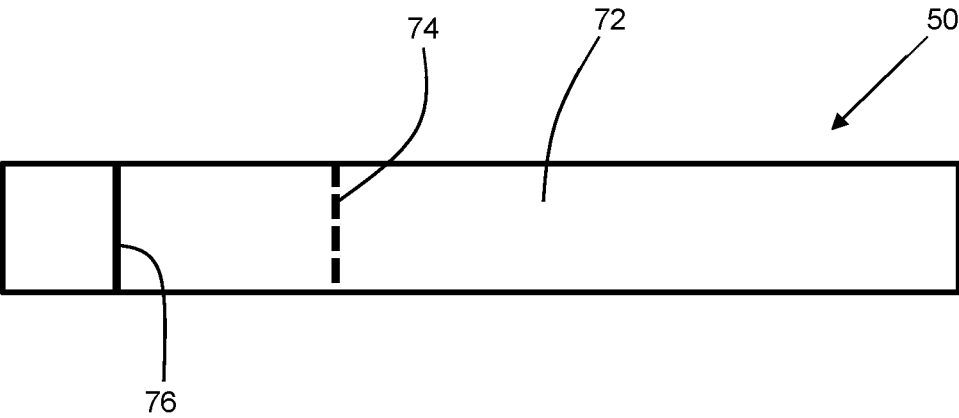


Figure 3

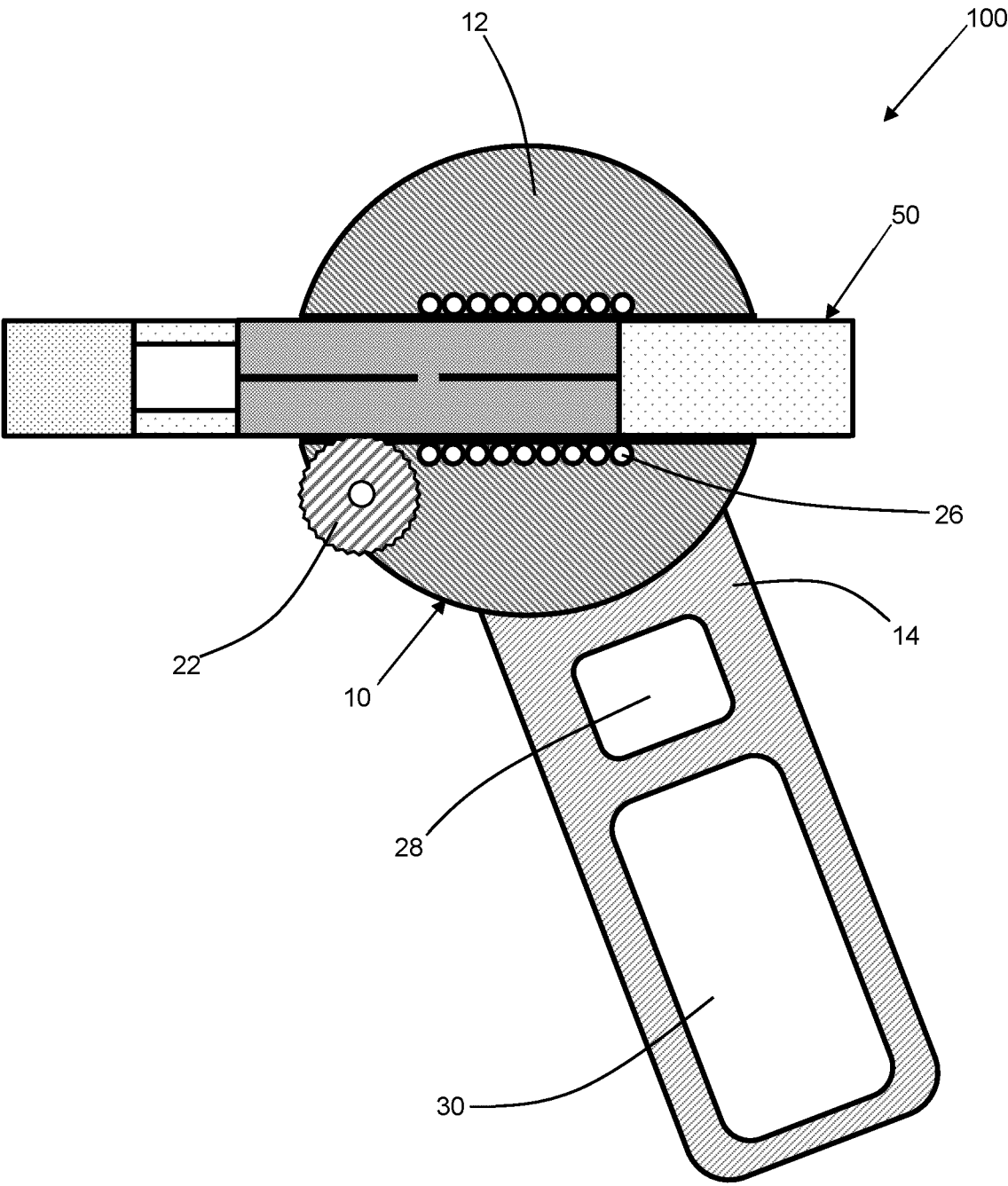


Figure 4

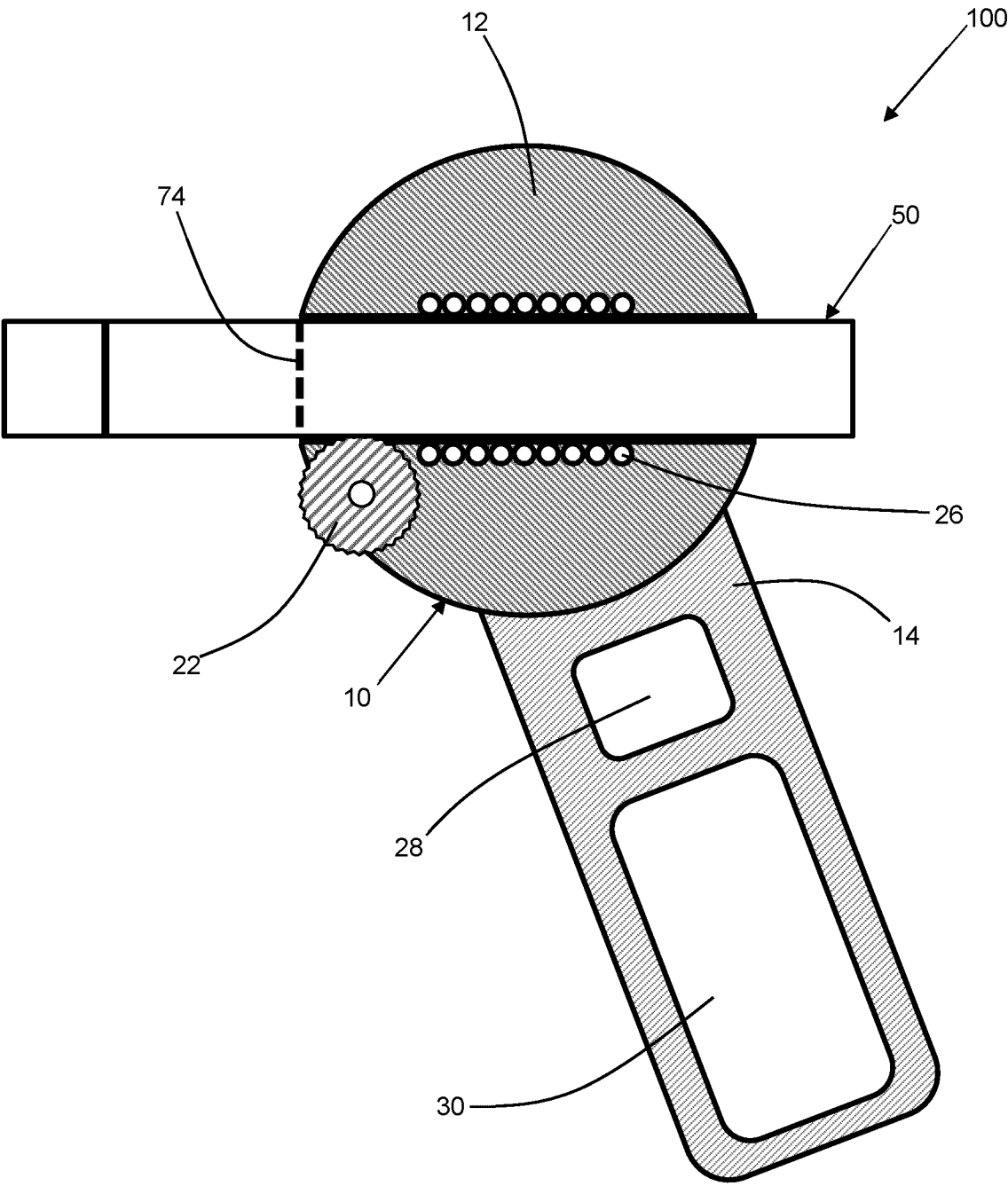


Figure 5

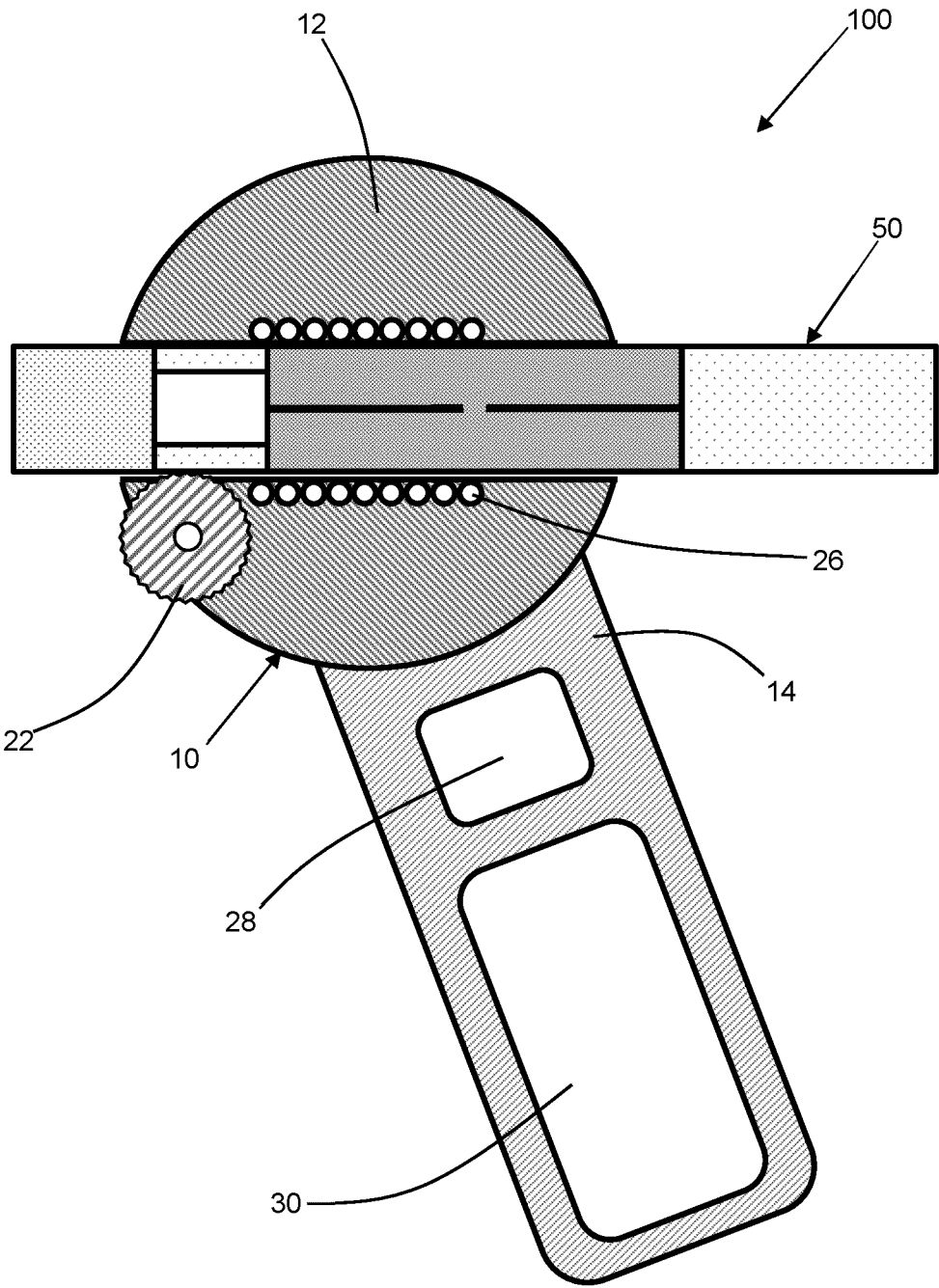


Figure 6

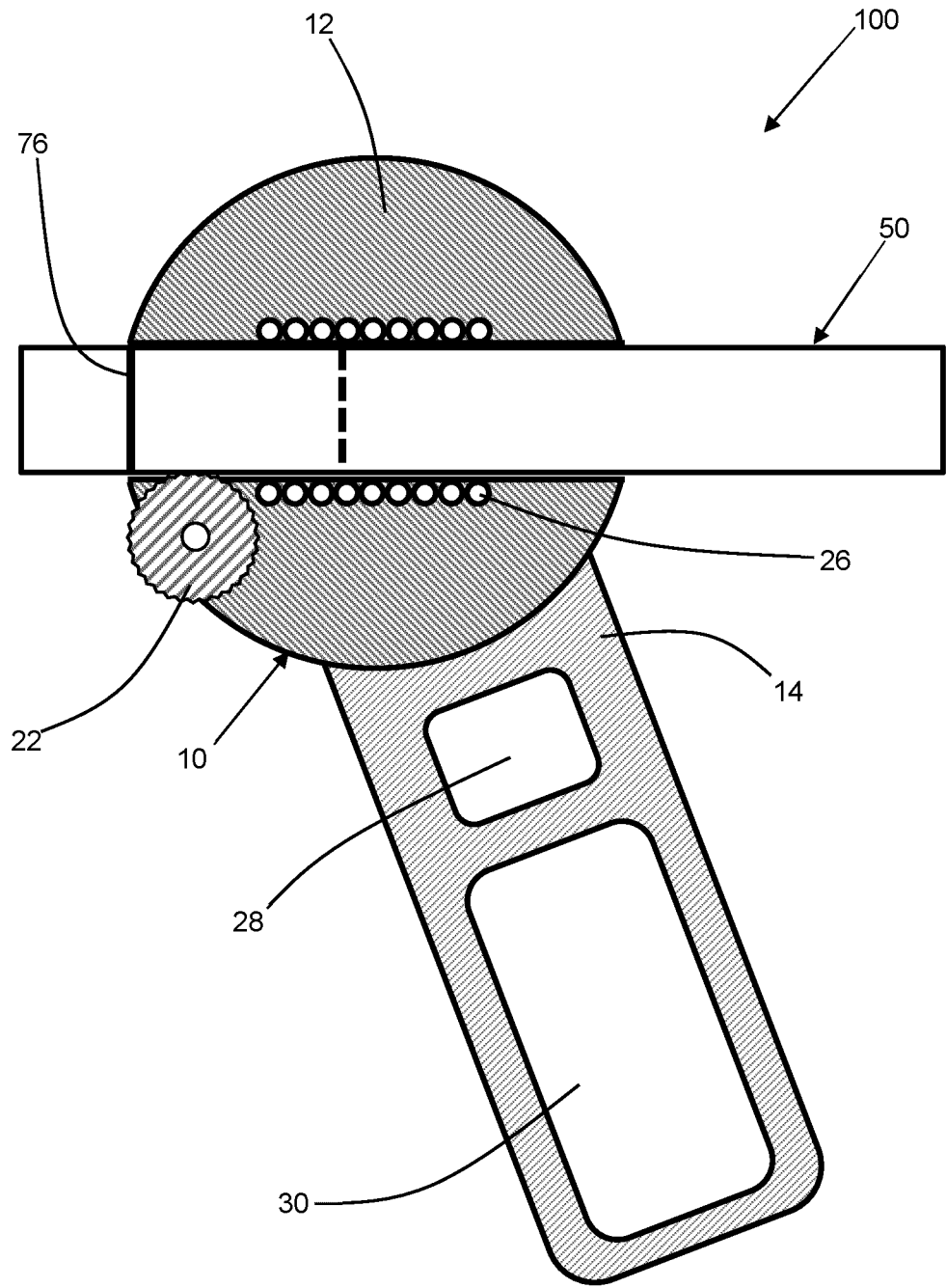


Figure 7

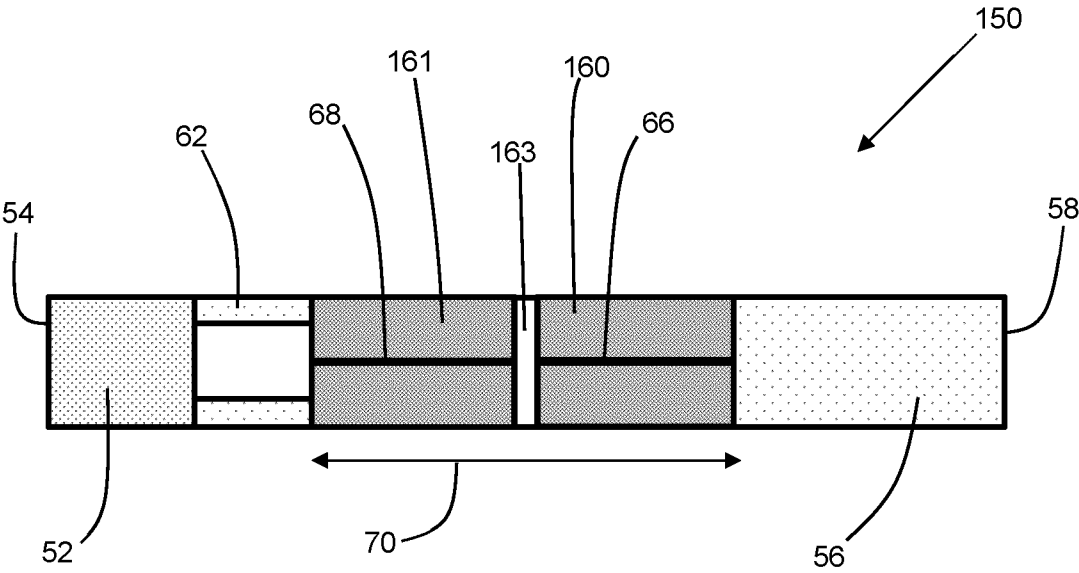


Figure 8

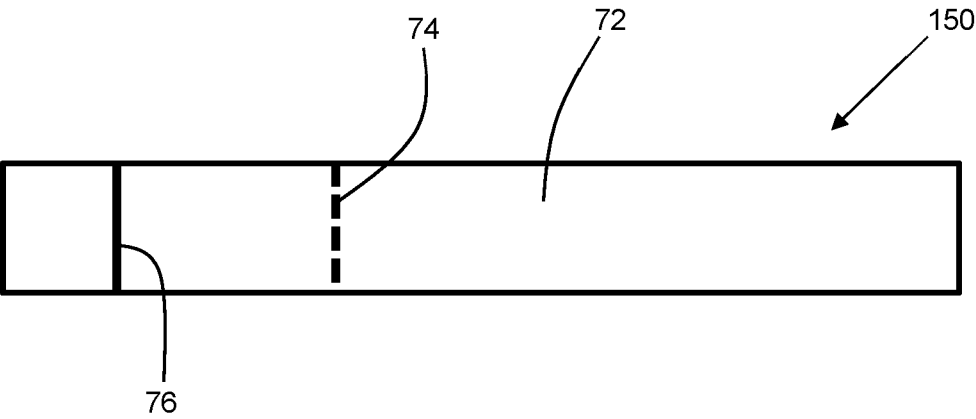


Figure 9

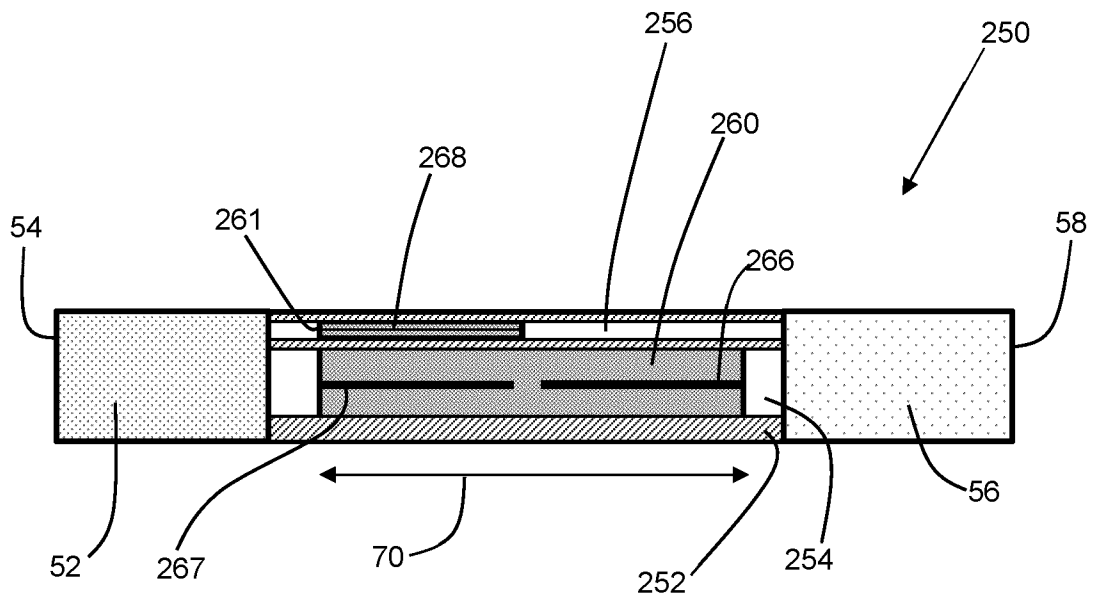


Figure 10

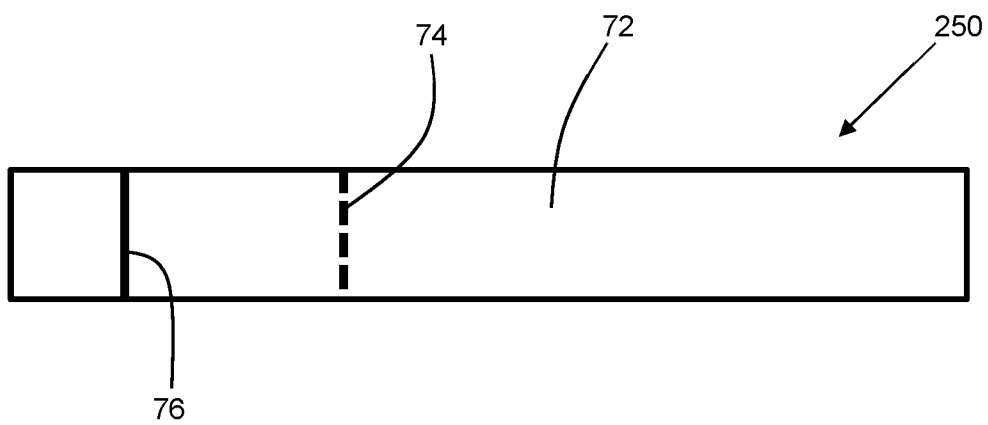


Figure 11

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2022/053516

A. CLASSIFICATION OF SUBJECT MATTER		
INV.	A24D1/20	A24F40/00
	A24F40/465	
ADD.		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
A24D A24F		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
EPO-Internal, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	paragraphs [0022] - [0025], [0029], [0031], [0049], [0050]	13, 18

X	WO 98/34664 A1 (ASTRA AB [SE]; WIDERSTROEM CARIN [SE]) 13 August 1998 (1998-08-13)	1, 10-12
	page 8, line 11 - page 9, line 6; figures 1a, 3a, 3b	

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A	paragraphs [0043], [0049], [0050], [0073]	15, 17

A	WO 2020/201707 A1 (NICOVENTURES TRADING LTD [GB]) 8 October 2020 (2020-10-08)	1-13
	page 14, line 17 - line 21; figure 4	

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☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search		Date of mailing of the international search report
27 May 2022		09/06/2022
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Coniglio, Carlo

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2022/053516

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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A	KR 2020 0007475 A (KT & G CORP [KR]) 22 January 2020 (2020-01-22) figures -----	14

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International application No

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