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(54) **AEROSOL GENERATING ARTICLE WITH RETAINER**

AEROSOLERZEUGENDER ARTIKEL MIT HALTERUNG

ARTICLE DE GÉNÉRATION D'AÉROSOL COMPRENANT UN DISPOSITIF DE RETENUE

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Description

[0001] The present invention relates to an aerosol generating device. In particular, the present invention relates to an aerosol generating device for use with a heat source and an aerosol-forming substrate. The present invention also relates to an aerosol generating system comprising an aerosol generating device, a heat source, and an aerosol-forming substrate. The present invention also related to a pack for use with the aerosol generating device, and to a kit of parts comprising the aerosol generating device and the pack.

[0002] A number of alternative aerosol generating articles have been proposed in the art. One aim of such alternative aerosol generating articles is to reduce the amount of certain smoke constituents of the type produced by the combustion and pyrolytic degradation of tobacco in combustible cigarettes. In one known type of aerosol generating article, an aerosol is generated by the transfer of heat from a heat source, which may be a combustible heat source, to an aerosol-forming substrate located adjacent to the heat source. During aerosol generation, volatile compounds are released from the aerosol-forming substrate by heat transfer from the heat source and entrained in air drawn through the aerosol generating article. As the released compounds cool, they condense to form an aerosol. These are sometimes known as heated aerosol generating articles.

[0003] US 2019/014818 A1 discloses a holder for an aerosol generating article including a body defining a passage extending from a first end to a second end of the body for receiving the aerosol generating article. The holder further includes a sleeve having a (i) a ventilation region including one or more holes, and (ii) an extinguishment region downstream of the ventilation region. The sleeve is movable over the body between (i) a retracted position, (ii) an extinguishment position, and (iii) a use position between the retracted position and the extinguishment position. The ventilation region is configured to be aligned with the heat source of the aerosol generating article when the sleeve is in the use position. The extinguishment region is configured to be aligned with the heat source of the aerosol generating article when the sleeve is in the extinguishment position.

[0004] EP 2 959 785 A1 discloses that a carbon heat source and a tubular member are a disposable member. The carbon heat source is provided separately of the tubular member that previously houses a flavor source. The tubular member is configured by a member having more flexibility than the carbon heat source.

[0005] In heated aerosol generating articles which comprise a combustible heat source and an aerosol-forming substrate, the combustible heat source must be securely attached to the aerosol-forming substrate to avoid the combustible heat source separating from the rest of the aerosol generating article. The combustible heat source must remain securely attached to the aerosol-forming substrate from manufacture and during the

transport, use, and sometimes disposal of the aerosol generating article. Secure attachment of the combustible heat source to the rest of the aerosol generating article may be difficult since the combustible heat source cannot be fully covered since this may inhibit combustion of the combustible heat source.

[0006] It may be desirable to provide secure attachment of a heat source to the rest of an aerosol generating article in order to prevent the heat source detaching from the rest of the aerosol generating article.

[0007] Combustible heat sources of known aerosol generating articles may be at least partially exposed. This may lead to a risk of heat damage to property caused by the combustible heat source coming into contact with other materials. In some circumstances, there may be a risk that combustible heat sources may ignite materials with which they come into contact. One measure of the tendency of a smoking article to cause ignition of an adjacent material is ignition propensity. It may be desirable to provide an aerosol generating article with a low ignition propensity, with features that reduce its ignition propensity relative to the aerosol generating article without those features, or that have an ignition propensity that is no higher than that of a cigarette.

[0008] Furthermore, some known heated aerosol generating articles do not offer the consumer the opportunity to customise their experience. For example, if a consumer wishes to use a particular aerosol-forming substrate, they must buy an entire aerosol generating article comprising that substrate. Additionally, in known aerosol generating articles, while the combustible heat source and the aerosol-forming substrate are consumed during use, other elements such as cooling and spacer elements, and heat conducting members, are typically disposed of with the rest of the aerosol generating article after one use. It may be desirable to provide an aerosol generating article in which the user experience is readily customisable by a consumer. It may be desirable to provide an aerosol generating article in which certain components, in particular components which are not consumed, may be re-used.

[0009] Furthermore, heat sources of the prior art may comprise carbon, and aerosol-forming substrates of the prior art may comprise aerosol formers. For this reason, users may not wish to come into direct contact with heat sources or aerosol-forming substrates. For example, users may not wish to directly handle heat sources or aerosol-forming substrates. It may be desirable to allow users to customise their experience while minimising physical contact with the heat source and aerosol-forming substrate.

[0010] According to the present invention, as defined in claim 1, there is provided an aerosol generating device comprising an elongate body extending between an upstream end and a downstream end. The elongate body has an upstream recess for receiving an aerosol-forming substrate and a heat source. This allows a heat source and an aerosol-forming substrate, both of which are con-

sumable, to be received in the aerosol generating device. The device may be reused leading to less waste. Additionally, since the recess may receive any aerosol-forming substrate, a user is able to customise their experience by inserting an aerosol-forming substrate of their choice into the upstream recess.

[0011] The aerosol generating device further comprises an annular cutting edge disposed at the upstream end of the upstream recess. The upstream recess may be defined at its upstream end by the annular cutting edge. As discussed in more detail below, the provision of the cutting edge may allow the device to be used in conjunction with a particular pack which may reduce or eliminate the need for a user to come into direct contact with at least one of a heat source and an aerosol-forming substrate.

[0012] The aerosol generating device further comprises an ejection element disposed within the elongate body. The ejection element is movable between a first position and a second position, the ejection element extending further into the upstream recess in the second position than in the first position. This may advantageously provide a means by which a user may remove at least one of a heat source and an aerosol-forming substrate from the device after use without the need to come into direct contact with at least one of the heat source and the aerosol-forming substrate.

[0013] In a preferred embodiment of the present invention, there is provided an aerosol generating device comprising an elongate body extending between an upstream end and a downstream end. The elongate body has an upstream recess for receiving an aerosol-forming substrate and a heat source. The aerosol generating device further comprises an annular cutting edge disposed at the upstream end of the upstream recess. Preferably, the upstream recess is defined at its upstream end by the annular cutting edge. The aerosol generating device further comprises an ejection element disposed within the elongate body, the ejection element being movable between a first position and a second position, the ejection element extending further into the upstream recess in the second position than in the first position.

[0014] The aerosol-generating device of the present invention may be used multiple times by inserting at least one of a new heat source and a new aerosol-forming substrate into the upstream recess. This may advantageously result in less waste each time the aerosol generating device is used. Additionally, the provision of an upstream recess for receiving an aerosol-forming substrate may advantageously allow a user to customise their experience by inserting an aerosol-forming substrate of their choice into the upstream recess. Additionally, receiving a heat source and an aerosol-forming substrate within the upstream recess may advantageously ensure secure retention of the heat source and the aerosol-forming substrate.

[0015] Furthermore, the provision of an annular cutting edge may allow the device to be used in conjunction with

a particular pack which may reduce or eliminate the need for a user to come into direct contact with at least one of a heat source and an aerosol-forming substrate.

[0016] The provision of the ejection element may advantageously provide a means by which a user may remove at least one of a heat source and an aerosol-forming substrate from the device after use without the need to come into direct contact with at least one of a heat source and an aerosol-forming substrate.

[0017] In use, an aerosol-forming substrate and a heat source may be inserted into the upstream recess of the elongate body. The aerosol-forming substrate and the heat source may be in axial alignment, with the heat source being disposed upstream of the aerosol-forming substrate in the upstream recess. The heat source and the aerosol-forming substrate may be inserted by hand. The insertion of the heat source and the aerosol-forming substrate into the upstream recess of the elongate body may move the ejection element from the second position to the first position.

[0018] Preferably, at least the heat source is inserted by using the aerosol generating device in conjunction with a particular pack containing the heat source. The pack may comprise a heat source storage portion having a longitudinal body, a closed first end and an opposed second end, the heat source storage portion second end being closed by a layer of frangible material. A heat source may be disposed in the heat source storage portion. The layer of frangible material may comprise metallic foil.

[0019] When the aerosol generating device of the present invention is used in conjunction with the pack described above, the annular cutting edge disposed at the upstream end of the upstream recess is pushed into the layer of frangible material. The annular cutting edge cuts through the layer of frangible material, leaving a portion of frangible material within the upstream recess. As the elongate body passes into the longitudinal body of the heat source storage portion of the pack, the heat source enters the upstream recess. The elongate body may then be removed from the longitudinal body of the heat source storage portion of the pack and the heat source may be ignited if the heat source is a combustible heat source. Heat from the heat source may be transferred to the aerosol-forming substrate in which an aerosol is formed. Following use, the ejection element may be moved from the first position to the second position which ejects the heat source and the aerosol-forming substrate from the upstream recess.

[0020] The portion of frangible material left within the upstream recess may be disposed between the heat source and the aerosol-forming substrate. The portion of frangible material left within the upstream recess may advantageously act as a barrier between the heat source and the aerosol-forming substrate. The provision of a barrier formed by the portion of frangible material may advantageously prevent or inhibit migration of the at least one aerosol-former from the aerosol-forming substrate

to the heat source during use of the aerosol generating device. The provision of a barrier formed by the portion of frangible material may advantageously inhibit combustion and decomposition products formed during ignition and combustion of the heat source, where the heat source is a combustible heat source, from entering air drawn through the aerosol-forming substrate during use of the aerosol generating device.

[0021] The upstream recess may be sized to receive any number of heat sources and aerosol-forming substrates. Preferably, the upstream recess may be sized to receive a single heat source and a single aerosol-forming substrate. Alternatively, the upstream recess may be sized to receive more than one aerosol-forming substrate. For example, the upstream recess may be sized to receive two, three, four, or more aerosol-forming substrates. This may advantageously allow consumers to customise their experience by inserting a specific combination of different aerosol-forming substrates into the upstream recess. Preferably, the upstream recessed is sized such that when an aerosol-forming substrate and heat source are correctly inserted into the upstream recess, a portion of the heat source protrudes from the upstream end of the upstream recess. This may advantageously ensure that sufficient air is able to reach the heat source to facilitate ignition and sustained combustion of the heat source, where the heat source is a combustible heat source.

[0022] The elongate body may be formed from a single component. The single component elongate body may be formed from a metallic material such as stainless steel. Alternatively, the single component elongate body may be formed from a polymeric material.

[0023] Alternatively, the elongate body may comprise a plurality of components. For example, the elongate body may comprise an upstream portion and a downstream portion.

[0024] The upstream portion of the elongate body may comprise the upstream recess. The upstream portion of the elongate body may comprise the cutting edge. Preferably, the upstream portion of the elongate body may comprise a heat resistant material. This may advantageously prevent damage to the upstream portion of the elongate body which, in use, may be disposed close to a heat source. Preferably, the upstream portion of the elongate body comprises a heat conductive material. This may advantageously ensure sufficient heat transfer from a heat source to an aerosol-forming substrate disposed in the upstream recess. This may advantageously improve the generation of aerosol by the aerosol-forming substrate. The upstream portion of the elongate body may comprise a metallic material. The upstream portion of the elongate body may comprise at least one of stainless steel, Nimonic, Inconel, and aluminium.

[0025] The downstream portion of the elongate body may be disposed downstream of the upstream recess. As a result, the downstream portion of the elongate body may not need to be as resistant to heat as the upstream

portion of the elongate body. Furthermore, a user may hold the aerosol generating device by the downstream portion of the elongate body. Accordingly, the downstream portion of the elongate body may preferably comprise a thermally insulating material. This may advantageously prevent the exterior surface of the aerosol generating device from becoming hot during use. The downstream portion of the elongate body may comprise a polymeric material. For example, the downstream portion of the elongate body may comprise polyether ether ketone (PEEK).

[0026] The upstream and downstream portions of the elongate body may be connected by any suitable means. For example, the upstream and downstream portions of the elongate body may be connected by one or more of; an interference fit, a screw connection, and an adhesive.

[0027] The cutting edge may be integrally formed with at least a portion of the elongate body. The cutting edge may be integrally formed with the upstream portion of the elongate body where the elongate body comprises an upstream portion and a downstream portion.

[0028] The annular cutting edge preferably comprises a metallic material. For example, the cutting edge may comprise stainless steel.

[0029] The annular cutting edge may be any edge capable of piercing or cutting through the layer of frangible material of the pack. The annular cutting edge may be a continuous cutting edge. Alternatively, the annular cutting edge may be discontinuous such that the cutting edge includes one or more breaks.

[0030] The annular cutting edge may be flat. Alternatively, at least one first portion of the annular cutting edge may extend further upstream than at least one second portion of the annular cutting edge. This may reduce the area of the cutting edge in contact with the layer of frangible material of the pack. This may lead to an increase in pressure advantageously meaning less force may be required in order to pierce or otherwise cut through the layer of frangible material of the pack. The annular cutting edge may be a cutting blade. The cutting edge may comprise serrations or teeth. These may also advantageously increase the pressure and make it easier to pierce or otherwise cut through the layer of frangible material of the pack.

[0031] The ejection element may be formed from any material. The ejection element may comprise a metallic material or a polymeric material. For example, the ejection element may comprise stainless steel or PEEK. The ejection element may be an ejection rod having an elongate shape.

[0032] The aerosol generating device may be suitable for use with any heat source. The upstream recess may be suitable for receiving any heat source. The heat source may be a single use heat source. The heat source may be a multiple use heat source. The heat source may be a combustible, chemical, electrical or any other heat source. Preferably, the upstream recess is suitable for receiving a combustible heat source.

[0033] As used herein with reference to the invention, the terms "longitudinal" and "axial" are used to describe the direction between the opposed upstream and downstream ends of the aerosol generating device, or of a component of the aerosol generating device.

[0034] As used herein with reference to the invention, the terms "upstream" and "front", and "downstream" and "rear", are used to describe the relative positions of components, or portions of components, of the aerosol generating device in relation to the direction in which airflows through the aerosol generating device during use thereof. Aerosol generating devices according to the invention comprise a proximal end through which, in use, an aerosol exits the device for delivery to a user. The proximal end of the aerosol generating device may also be referred to as the mouth end or the downstream end. In use, a user draws on the mouth end of the aerosol generating device. The mouth end is downstream of the distal end. The distal end of the aerosol generating device may also be referred to as the upstream end. Components, or portions of components, of the aerosol generating device may be described as being upstream or downstream of one another based on their relative positions between the proximal end of the aerosol generating device and the distal end of the aerosol generating device. The front of a component, or portion of a component, of the aerosol generating device is the portion at the end closest to the upstream end of the aerosol generating device. The rear of a component, or portion of a component, of the aerosol generating device is the portion at the end closest to the downstream end of the aerosol generating device.

[0035] The ejection element may comprise a hollow lumen through which the upstream recess is in fluid communication with the downstream end of the elongate body.

[0036] In use, aerosol generated by the aerosol-forming substrate may pass from the upstream recess, through the lumen, and to the downstream end of the elongate body.

[0037] The downstream end of the elongate body may comprise an opening through which aerosol may leave the aerosol generating device.

[0038] The diameter of the lumen may be selected to achieve a desired resistance to draw (RTD). The lumen may also act as a space for a generated aerosol to cool before it leaves the aerosol generating article.

[0039] The aerosol generating device may further comprise an urging means to urge the ejection element from the first position to the second position.

[0040] In use, when actuated, the urging means may therefore act to eject the used heat source and aerosol-forming substrate from the upstream recess of the elongate body after use. This advantageously means a user does not need to physically push the ejection element from the first position to the second position.

[0041] The urging means may be any urging means.

[0042] The urging means may comprise a compression spring. The compression spring may be located

about the ejection element such that the ejection element passes through the central axis of the spring. Where this is the case, ejection element may comprise a flange against which the upstream end of the spring may act to urge the ejection element from the first position to the second position. The elongate body may comprise an internal stop against which the downstream end of the spring may act to urge the ejection element from the first position to the second position.

[0043] The aerosol generating device may comprise a retainer to hold the ejection element in the first position. This may prevent the urging means from urging the ejection element from the first position to the second position when it is not required. This may advantageously prevent a heat source and an aerosol-forming substrate from being ejected from the upstream recess prematurely.

[0044] As set out above, the insertion of a heat source and an aerosol-forming substrate into the upstream recess of the elongate body may move the ejection element from the second position to the first position. Where the aerosol generating device comprises an urging means to urge the ejection element from the first position to the second position, insertion of the insertion of a heat source and an aerosol-forming substrate into the upstream recess may act against the urging means. In other words, the urging means may resist the insertion of a heat source and an aerosol-forming substrate into the upstream recess. This may cause an aerosol-forming substrate located towards the downstream end of the upstream recess to be pushed tightly against a heat source disposed at the upstream end of the upstream recess. This may advantageously improve heat transfer from a heat source to an aerosol-forming substrate. This may advantageously improve the generation of aerosol by the aerosol-forming substrate.

[0045] The retainer may be any retainer capable of overcoming the force of the urging means.

[0046] The retainer may be a mechanical retainer. For example the retainer may comprise an interference fit between a portion of the ejection element and a portion of the elongate body. The force of this interference fit must be overcome to move the ejection element from the first position to the second position. The retainer may be a snap connection between the ejection element and the elongate body. This may be particularly suitable where at least one of the ejection element and the elongate body comprise a resiliently deformable material such as PEEK.

[0047] The retainer may comprise a magnetic connection. For example, the retainer may comprise a pair of permanent magnets, one on the ejection element and one on the elongate body which are configured to be in contact when the ejection element is in the first position such that the magnetic attraction between the two magnets acts to retain the ejection element in the first position. The retainer may comprise a permanent magnet and a ferromagnetic material, such as steel. For example, the ejection element may comprise steel and a permanent

magnet may be disposed in, and attached to, the elongate body in a position that allows the permanent magnet to come into contact with the ejection element when the ejection element is in the first position.

[0048] The magnet located in the elongate body may be an annular magnet. This may advantageously allow aerosol leaving the lumen of the ejection element to pass to the downstream end of the elongate body without being obstructed by the magnet.

[0049] The aerosol generating device may comprise an extinguishing sleeve. The extinguishing sleeve has an upstream end and a downstream end. The extinguishing sleeve may be movable relative to the elongate body in a longitudinal direction between a loading position, in which the cutting edge of the elongate body extends beyond the upstream end of the extinguishing sleeve, and an extinguishing position in which the cutting edge of the elongate body is disposed downstream of the upstream end of the extinguishing sleeve.

[0050] When the aerosol generating device is being used in combination with an aerosol-forming substrate, the extinguishing sleeve is in the loading position to allow sufficient air to reach the heat source to facilitate ignition and sustained combustion of the heat source, where the heat source is a combustible heat source. Following the aerosol generation, the extinguishing sleeve may be moved from the loading position, in an upstream direction, to the extinguishing position. In the extinguishing position, the extinguishing sleeve extends beyond the upstream end of the elongate body. Where a combustible heat source is received within the upstream recess of the elongate body, the movement of the extinguishing sleeve from the loading position to the extinguishing position may restrict the supply of air to the combustible heat source. This may cause the combustible heat source to be extinguished. In the extinguishing position, the extinguishing sleeve may extend further upstream than the upstream end of a combustible heat source received in the upstream recess.

[0051] The provision of an extinguishing sleeve may advantageously provide a convenient way of extinguishing a combustible heat source before it is ejected from the upstream recess by the ejection element.

[0052] The extinguishing sleeve may have a total length which is less than the total length of the elongate body. This may advantageously allow a user to move the extinguishing sleeve relative to the elongate body between the loading position and the extinguishing position by holding the extinguishing sleeve with one hand and a portion of the elongate body with the other hand.

[0053] The extinguishing sleeve may include at least one of an upstream stop and a downstream stop configured to engage with corresponding portions of the elongate body to prevent the elongate body from extending too far in either an upstream or a downstream direction relative to the elongate body. This may advantageously prevent the extinguishing sleeve from separating from the elongate body. Where the downstream portion of the

elongate body comprises a thermally insulating material and the upstream portion of the elongate body comprises a heat conductive material, the extinguishing sleeve may be configured to cover the majority of the upstream portion of the elongate body when the extinguishing sleeve is in both the extinguishing position and in the loading position. This may advantageously prevent the upstream portion of the elongate body, which may become hot during use, from being exposed.

[0054] The extinguishing sleeve may comprise any material. Preferably, the extinguishing sleeve comprises a thermally insulating material. This may advantageously prevent the external surface of the aerosol generating device from becoming too warm during use. For example, the extinguishing sleeve may comprise PEEK.

[0055] The aerosol generating device may comprise at least one locking mechanism to lock the extinguishing sleeve in at least one of the loading position and the extinguishing position. The aerosol generating device may comprise at least one locking mechanism to lock the extinguishing sleeve in each of the loading position and the extinguishing position. The at least one locking mechanism may comprise a ball catch. The at least one locking mechanism may advantageously prevent the extinguishing sleeve from accidentally moving between the loading position and the extinguishing position.

[0056] When the extinguishing sleeve is in the loading position, the cutting edge of the elongate body extends beyond the upstream end of the extinguishing position. This may advantageously allow the cutting edge of the elongate body to pierce or otherwise cut through a layer of frangible material of the pack as described above.

[0057] The overall length of the aerosol generating device may be greater when the extinguishing sleeve is in the extinguishing position rather than in the loading position. For example, when the extinguishing sleeve is in the loading position, the aerosol generating device may have an overall length of between about 70 millimetres and about 100 millimetres, preferably between about 80 millimetres and about 90 millimetres. When the extinguishing sleeve is in the loading position, the aerosol generating device may have an overall length of about 84 millimetres. When the extinguishing sleeve is in the extinguishing position, the overall length of the aerosol generating device may be greater than about 84 millimetres.

[0058] The extinguishing sleeve may be moveable from the extinguishing position to an ejection position in which the cutting edge of the elongate body is disposed further downstream of the upstream end of the extinguishing sleeve than in the extinguishing position, and movement of the extinguishing sleeve from the extinguishing position to the ejection position causes the ejection element to move from the first position to the second position.

[0059] The movement of the extinguishing sleeve from the extinguishing position to the ejection position may cause the retainer to release the ejection element. The

ejection element may then be urged from the first position to the second position by the urging means. The extinguishing sleeve may comprise an internal element which engages with a portion of the ejection element when the extinguishing sleeve moves from the extinguishing position to the ejection position. The engagement between the internal element of the extinguishing sleeve and the portion of the ejection element may overcome the retaining force of the retainer and allow the urging means to urge the ejection element from the first position to the second position. This may eject at least one of the aerosol-forming substrate and heat source from upstream recess.

[0060] The provision of an ejection position for the extinguishing element may advantageously provide a convenient way for a user to move the ejection element from the first position to the second position so as to eject an aerosol-forming substrate and a heat source after use. In particular, it may advantageously provide a convenient way to release the retainer, where present, so as to allow the urging means to move the ejection element from the first position to the second position.

[0061] Furthermore, since the extinguishing sleeve must pass from the loading position, through the extinguishing position, before arriving at the ejection position, the aerosol generating device cannot eject a heat source before the extinguishing sleeve has moved to the extinguishing position. This may advantageously help to ensure that a heat source received in the upstream recess of the elongate body is extinguished before it is ejected from the upstream recess of the elongate body, where the heat source is a combustible heat source.

[0062] Movement of the extinguishing sleeve from the ejection position back to the loading position may cause the ejection element to move from the second position back to the first position. Preferably, movement of the extinguishing sleeve from the ejection position back to the loading position does not cause the ejection element to move from the second position back to the first position. As set out above, it is preferable that the insertion of an aerosol-forming substrate and a heat source into the upstream recess of the elongate body pushes the ejection element from the second position to the first position since this may cause an aerosol-forming substrate located towards the downstream end of the upstream recess to be pushed tightly against a heat source disposed at the upstream end of the upstream recess. This may advantageously improve heat transfer from a heat source to an aerosol-forming substrate. This may advantageously improve the generation of aerosol by the aerosol-forming substrate.

[0063] The overall length of the aerosol generating device may be greater when the extinguishing sleeve is in the ejection position rather than in the loading, or extinguishing positions. For example, when the extinguishing sleeve is in the ejection position, the aerosol generating device may have an overall length of between about 80 millimetres and about 110 millimetres, preferably be-

tween about 90 millimetres and about 100 millimetres. When the extinguishing sleeve is in the ejection position, the aerosol generating device may have an overall length of about 96 millimetres. When the extinguishing sleeve is in either of the loading, or extinguishing positions, the overall length of the aerosol generating device may be less than about 96 millimetres.

[0064] The aerosol generating device may further comprise at least one air inlet through the elongate body, into the upstream recess.

[0065] The at least one air inlet through the elongate body may advantageously allow air to access at least one of a heat source and an aerosol-forming substrate. This may advantageously facilitate ignition and sustained combustion of a heat source disposed within the upstream recess, where the heat source is a combustible heat source. Furthermore, the air passing into the upstream recess may also advantageously facilitate the generation and transfer of aerosol from the aerosol-forming substrate to the downstream end of the elongate body.

[0066] The at least one air inlet may comprise at least one upstream air inlet for supplying air to a heat source, and at least one downstream air inlet for supplying air to an aerosol-forming substrate.

[0067] Since both a heat source and an aerosol-forming substrate may require a supply of air, the provision of at least one upstream air inlet, and at least one downstream air inlet may advantageously ensure that sufficient air is able to access both a heat source and an aerosol-forming substrate received in the upstream recess of the elongate body.

[0068] The at least one upstream air inlet may be located such that it is adjacent the portion of the upstream recess of the elongate body configured to receive a heat source. The at least one downstream air inlet may be located such that it is adjacent the portion of the upstream recess of the elongate body configured to receive an aerosol-forming substrate.

[0069] The at least one upstream air inlet may comprise any number of individual air inlets. The at least one downstream air inlet may comprise any number of individual air inlets. The individual air inlets may be any size. The number and size of the at least one upstream air inlet and the at least one downstream air inlet may be chosen to provide an appropriate total air inlet area. The total air inlet area of the at least one upstream air inlet may be selected to allow sufficient air to reach a heat source to facilitate ignition and sustained combustion of the heat source, where the heat source is a combustible heat source. The total air inlet area of the at least one downstream air inlet may be selected to allow sufficient air to reach an aerosol-forming substrate to generate an aerosol whilst still providing an acceptable resistance to draw. The total air inlet area of the at least one upstream air inlet may be greater than the total air inlet area of the at least one downstream air inlet. This may be because the amount of air required to facilitate ignition and sus-

tained combustion of a combustible heat source may be greater than the amount of air required to generate an aerosol in an aerosol-forming substrate and provide an acceptable resistance to draw.

[0070] For example, the at least one upstream air inlet may comprise a series of elongate slits while the at least one downstream air inlet may comprise a series of shorter slits or circular perforations.

[0071] Alternatively, or in addition, the at least one upstream air inlet may comprise several rows of perforations while the at least one downstream air inlet may comprise fewer rows of perforations.

[0072] The extinguishing sleeve may comprise at least one sleeve air inlet. The at least one sleeve air inlet may be configured to align with the at least one downstream air inlet of the elongate body when the extinguishing sleeve is in the loading position such that, in the loading position air may pass through the at least one sleeve air inlet and then through the at least one downstream air inlet of the elongate body to an aerosol-forming substrate.

[0073] This advantageously allows air to pass through the at least one downstream air inlet of the elongate body without being obscured by the extinguishing sleeve.

[0074] The extinguishing sleeve may further comprise at least one sleeve air inlet configured to align with the at least one upstream air inlet of the elongate body when the extinguishing sleeve is in the loading position such that, in the loading position air may pass through the at least one sleeve air inlet and then through the at least one upstream air inlet of the elongate body to a heat source. Alternatively, or in addition, the at least one upstream air inlet of the elongate body may be provided in a portion of the elongate body which extends upstream of the upstream end of the elongate body when the extinguishing element is in the loading position. This may advantageously mean that, in the loading position, upstream air inlets are not obstructed by the extinguishing element.

[0075] The aerosol generating device may further comprise a heat conducting body disposed within the upstream recess and connected to the extinguishing sleeve such that movement of the extinguishing sleeve between the loading and the extinguishing position causes a corresponding movement of the heat conducting body.

[0076] The heat conducting body may provide an efficient means by which heat may be transferred from a heat source to an aerosol-forming substrate. The heat conducting body may provide a further means for extinguishing a combustive heat source received in the upstream recess of the elongate body. As the extinguishing element is moved from the loading position to the extinguishing position, the heat conducting body extends over a greater area of the combustible heat source. This may draw heat away from the combustible heat source, cooling the combustible heat source and contributing to the extinguishing of the combustible heat source.

[0077] The heat conducting body may comprise any heat conducting material. The heat conducting body may comprise a metal. For example, the heat conducting body may comprise at least one of aluminium, steel, Nimonic, and Inconel. Preferably the heat conducting body comprises aluminium.

[0078] The heat conducting body may extend any distance along the length of the upstream recess. The heat conducting body may extend from the downstream end of the upstream recess to the upstream end of the upstream recess. This may maximise heat conduction from a heat source to an aerosol-forming substrate. The upstream end of the heat conducting body may not extend upstream of the upstream end of the upstream recess. This may advantageously prevent the heat conducting body from impeding the supply of air to a heat source. The heat conducting body may not extend upstream of the upstream end of the extinguishing sleeve. The upstream end of the heat conducting body may be aligned with the upstream end of the extinguishing sleeve. This may prevent the heat conducting body, which may grow hot during use of the aerosol-generating article, from coming into direct contact with any other material. This may advantageously reduce or help to prevent possible damage to material caused by contact with the hot heat conducting body.

[0079] When the extinguishing sleeve is in the loading position, and an aerosol-forming substrate and a heat source are received in the upstream recess, the position and length of the heat conducting body is such that the heat conducting body overlays the downstream end of the heat source. The heat conducting body may overlay at least about 1 millimetre, or at least about 2 millimetres of the downstream end of the heat source. The heat conducting body may overlay about 3 millimetres of the downstream end of the heat source.

[0080] When the extinguishing sleeve is in the loading position, the upstream recess may have a length, from the annular cutting edge to the upstream end of the ejection element of between about 5 millimetres and about 25 millimetres, between about 10 millimetres and about 20 millimetres, or between about 12 millimetres and about 17 millimetres. When the extinguishing sleeve is in the loading position, the upstream recess may have a length, from the annular cutting edge to the upstream end of the ejection element of about 15 millimetres.

[0081] The aerosol generating device may comprise at least one retaining means disposed in the recess configured to retain a heat source.

[0082] The provision of the at least one retaining means may advantageously ensure a heat source is securely retained within the upstream recess when the aerosol generating device is in use.

[0083] The at least one retaining means may comprise at least one resilient element. The at least one resilient element may be attached to, and extend from the inner surface upstream recess. The at least one resilient element may comprise a plurality of resilient elements, for

example, the at least one resilient element may comprise two resilient elements. Where the at least one resilient element comprises two resilient elements, the two resilient elements may be disposed opposite each other on the inner surface of the upstream recess.

[0084] The retaining means may ensure that, when a heat source is received within the upstream recess, there is a tight fit between the heat source and the inner surface of the upstream recess. This may prevent air being drawn past the heat source to the aerosol-forming substrate. This may advantageously inhibit activation of combustion of a combustible heat source during puffing by a user. This may substantially prevent or inhibit spikes in the temperature of the aerosol-forming substrate during puffing by a user. By preventing or inhibiting activation of combustion of a combustible heat source, and so preventing or inhibiting excess temperature increases in the aerosol-forming substrate, combustion or pyrolysis of the aerosol-forming substrate under intense puffing regimes may be advantageously avoided. In addition, the impact of a user's puffing regime on the composition of the mainstream aerosol may be advantageously minimised or reduced.

[0085] The provision of a retaining means, and the resulting tight fit of a combustible heat source, may advantageously substantially prevent or inhibit combustion and decomposition products, chemical reactants or by-products of chemical reactions, and other materials formed during use of a heat source received in the upstream section of the cavity from entering air drawn through the aerosol-forming substrate and being delivered to a user. This may be particularly advantageous where the heat source is a combustible heat source and comprises one or more additives to aid ignition or combustion of the combustible heat source.

[0086] The downstream end of the elongate body may comprise a downstream recess for receiving a mouthpiece.

[0087] The provision of a downstream recess to receive a mouthpiece may mean the mouthpiece used with the aerosol generating device may be removable from the device. Where the mouthpiece is re-usable, this may allow the mouthpiece to be cleaned. Where the mouthpiece is disposable, this may allow the mouthpiece to be replaced after each, or a number, of uses of the aerosol generating device. The downstream recess may be sized for receiving a filter.

[0088] The downstream recess may be in fluid communication with the upstream recess such that aerosol generated by an aerosol-forming substrate in the upstream recess is able to pass to the downstream recess and out of the aerosol generating device.

[0089] The recess may comprise at least one portion having a reduced diameter.

[0090] The at least one portion having a reduced diameter may have a reduced diameter compared to the diameter of the recess both upstream and downstream of the at least one portion having a reduced diameter.

[0091] The at least one portion having a reduced diameter may advantageously help to retain a mouthpiece received in the downstream recess. For example, where the mouthpiece is a filter, the filter may be slightly compressed by the at least one portion having a reduced diameter to retain the filter securely in the downstream recess.

[0092] The at least one portion having a reduced diameter may prevent aerosol passing out of the aerosol generating device between a mouthpiece and the inner surface of the downstream recess. This may advantageously ensure that all or most of the aerosol generated by the aerosol-forming substrate passes out of the device through the mouthpiece.

[0093] The at least one portion having a reduced diameter may comprise at least one O-ring disposed on the inner surface of the downstream recess. The at least one O-ring may comprise any number of O-rings. For example, the at least one O-ring may comprise two O-rings.

[0094] According to a further aspect of the present invention, as defined in claim 12, there is provided a pack for use with an aerosol generating device. The pack comprises a heat source storage portion having a longitudinal body, a closed first end, and an opposed second end. The heat source storage portion second end is closed by a layer of frangible material. A heat source is disposed in the heat source storage portion.

[0095] The provision of a pack comprising a heat source storage portion and a frangible barrier may advantageously extend the shelf life of the heat source by preventing volatile components of the heat source from escaping. The provision may also advantageously prevent the heat source adsorbing moisture during storage which may inhibit ignition or combustion of the heat source, where the heat source is a combustible heat source.

[0096] When the pack is used in conjunction with the aerosol generating device described above, the annular cutting edge which defines the upstream end of the recess is pushed into the layer of frangible material. The annular cutting edge pierces or otherwise cuts through the layer of frangible material, leaving a portion of frangible material within the upstream recess. As the elongate body passes into the longitudinal body of the heat source storage portion of the pack, the heat source enters the upstream recess. The elongate body may then be removed from the longitudinal body of the heat source storage portion of the pack and the heat source may be ignited, where the heat source is a combustible heat source.

[0097] Use of the pack with the aerosol generating device described above may advantageously reduce or eliminate the need for a user to come into direct contact with the heat source.

[0098] The heat source may be any heat source. The heat source may be a combustible heat source.

[0099] The combustible heat source is preferably a sol-

id heat source, and may comprise any suitable combustible fuel including, but not limited to, carbon and carbon-based materials containing aluminium, magnesium, one or more carbides, one or more nitrides and combinations thereof. Solid combustible heat sources for heated smoking articles and methods for producing such heat sources are known in the art and described in, for example, US-A-5,040,552 and US-A-5,595,577. Typically, known solid combustible heat sources for heated smoking articles are carbon-based, that is they comprise carbon as a primary combustible material. The combustible heat source may be a combustible carbonaceous heat source. The combustible heat source may comprise a wrap for hygienic reasons. The wrap may comprise paper.

[0100] The portion of frangible material left within the upstream recess may be disposed between the heat source and the aerosol-forming substrate. The portion of frangible material left within the upstream recess may advantageously act as a barrier between the heat source and the aerosol-forming substrate. The provision of a barrier formed by the portion of frangible material may advantageously prevent or inhibit migration of the at least one aerosol-former from the aerosol-forming substrate to the heat source during use of the aerosol generating device. The provision of a barrier formed by the portion of frangible material may advantageously inhibit combustion and decomposition products formed during ignition and combustion of the heat source, where the heat source is a combustible heat source, from entering air drawn through the aerosol-forming substrate during use of the aerosol generating device.

[0101] The frangible material may comprise any material. Preferably, the frangible material may comprise a metallic material. Where the frangible material comprises a metallic material, the portion of the metallic material disposed between the heat source and the aerosol-forming substrate may advantageously conduct heat efficiently from the heat source to the aerosol-forming substrate.

[0102] Preferably, the layer of frangible material comprises a layer of aluminium foil.

[0103] The layer of frangible material may be provided with at least one line of weakness. The at least one line of weakness may advantageously encourage the frangible material to break at the correct place to form a portion of frangible material to become a barrier, when the annular cutting edge pierces or otherwise cuts through the layer of frangible material. The at least one line of weakness may be a circle. The at least one line of weakness may comprise a score line.

[0104] The distance between the first and second end of the heat source storage portion may be about the same as the length of the heat source. The distance between the first and second end of the heat source storage portion may be such that the heat source is in contact the first end of the heat source storage portion and the layer of frangible material.

[0105] This may advantageously help to hold the heat source in position in the heat source storage portion. This

may also help to hold the layer frangible material tight when annular cutting edge pierces or otherwise cuts through the layer of frangible material which may advantageously make cutting through the layer of frangible material easier.

[0106] The diameter of the longitudinal body is greater than the diameter of the heat source received in the longitudinal body. The diameter of the longitudinal body may be greater than the diameter of the upstream portion of an aerosol generating device to be used in conjunction with the pack. This may advantageously allow the upstream portion of an aerosol generating device to be received in the heat source storage portion when the pack is being used in conjunction with an aerosol generating device.

[0107] The closed first end of the heat source storage portion may comprise a shallow recess for receiving a portion of the heat source. This may hold the heat source away from the longitudinal body of the heat source storage portion so that the elongate body of an aerosol generating device is able to enter the longitudinal body of the heat source storage portion.

[0108] The diameter of the shallow recess may be the same or slightly larger than the diameter of the heat source such that, when a portion of the heat source is received in the shallow recess, it may be tightly held by the shallow recess. This may advantageously ensure that the heat source is held in the centre of the heat source storage portion allowing the elongate body of an aerosol generating device to enter the heat source storage portion without being impeded by the heat source.

[0109] The longitudinal body and the closed first end of the heat source storage portion may be formed from any material. Preferably, the longitudinal body and the closed first end of the of the heat source storage portion are integrally formed. The longitudinal body and the closed first end of the of the heat source storage portion may be formed from a polymeric material. The polymeric material may include at least one of polyethylene, polypropylene, or polylactic acid. Where the longitudinal body and the closed first end of the of the heat source storage portion are formed from a polymeric material, they may be formed using injection moulding or thermoforming.

[0110] The pack may comprise a plurality of storage portions, each containing a single heat source. The plurality of storage portions may be arranged in a two dimensional array.

[0111] The pack may further comprise an aerosol-forming substrate storage portion. The aerosol-forming substrate storage portion may comprise a longitudinal body, a first end, and an opposed second end. The aerosol-forming substrate storage portion first end may be closed by the layer of frangible material. The aerosol-forming substrate storage portion second end may be closed by a removable closure. An aerosol-forming substrate may be disposed within the aerosol-forming substrate storage portion.

[0112] The provision of a further storage portion for

storing an aerosol-forming substrate may advantageously simplify the insertion of an aerosol-forming substrate into the upstream recess of the elongate body of the aerosol generating article. In use, the removable closure is removed, exposing the aerosol-forming substrate in the aerosol-forming substrate storage portion. The upstream end of the elongate body is inserted into the aerosol-forming substrate storage portion, causing the aerosol-forming substrate to be inserted into the upstream recess. The annular cutting edge then passes through the layer of frangible material and the heat source is inserted into the upstream recess as described above.

[0113] The provision of a further storage portion for storing an aerosol-forming substrate may advantageously prevent loss of volatile components of the aerosol-forming substrate. This may extend the shelf life of the aerosol-forming substrate.

[0114] A portion of the layer of frangible material may form a barrier between the heat source and the aerosol-forming substrate. The layer of frangible material may form a barrier between the heat source and the aerosol-forming substrate.

[0115] As used herein with reference to the invention, the term "aerosol-forming substrate" is used to describe a substrate capable of releasing upon heating volatile compounds, which can form an aerosol. The aerosols generated from aerosol-forming substrates of aerosol generating devices according to the invention may be visible or invisible and may include vapours (for example, fine particles of substances, which are in a gaseous state, that are ordinarily liquid or solid at room temperature) as well as gases and liquid droplets of condensed vapours.

[0116] The aerosol-forming substrate may be a solid aerosol-forming substrate. Alternatively, the aerosol-forming substrate may comprise both solid and 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. Alternatively, the aerosol-forming substrate may comprise a non-tobacco material. The aerosol-forming substrate may further comprise one or more aerosol formers. Examples of suitable aerosol formers include, but are not limited to, glycerine and propylene glycol.

[0117] The aerosol-forming substrate may be a rod comprising a tobacco-containing material.

[0118] If the aerosol-forming substrate is a solid aerosol-forming substrate, the solid aerosol-forming substrate may comprise, for example, one or more of: powder, granules, pellets, shreds, spaghetti strands, strips or sheets containing one or more of: herb leaf, tobacco leaf, fragments of tobacco ribs, reconstituted tobacco, homogenised tobacco, extruded tobacco and expanded tobacco. The solid aerosol-forming substrate may be in loose form, or may be provided in a suitable container or cartridge. For example, the aerosol-forming material of the solid aerosol-forming substrate may be contained within a paper or other wrapper and have the form of a

plug. Where an aerosol-forming substrate is in the form of a plug, the entire plug including any wrapper is considered to be the aerosol-forming substrate.

[0119] The solid aerosol-forming substrate may contain additional tobacco or nontobacco volatile flavour compounds, to be released upon heating of the solid aerosol-forming substrate. The solid aerosol-forming substrate may also contain capsules that, for example, include the additional tobacco or non-tobacco volatile flavour compounds and such capsules may melt during heating of the solid aerosol-forming substrate.

[0120] The solid aerosol-forming substrate may be provided on or embedded in a thermally stable carrier. The carrier may take the form of powder, granules, pellets, shreds, spaghetti strands, strips or sheets. The solid aerosol-forming substrate may be deposited on the surface of the carrier in the form of, for example, a sheet, foam, gel or slurry. The solid aerosol-forming substrate may be deposited on the entire surface of the carrier, or alternatively, may be deposited in a pattern in order to provide a non-uniform flavour delivery during use.

[0121] The aerosol-forming substrate may be in the form of a plug or segment comprising a material capable of emitting volatile compounds in response to heating circumscribed by a paper or other wrapper. Where an aerosol-forming substrate is in the form of such a plug or segment, the entire plug or segment including any wrapper is considered to be the aerosol-forming substrate.

[0122] The heat source and the aerosol-forming substrate may be connected by a wrapper to form a single consumable element. This may advantageously make removing and inserting the heat source and the aerosol-forming substrate into the upstream recess more convenient.

[0123] The removable closure may be any sort of closure. For example, the removable closure may comprise a lid removably affixed to the second end of the aerosol-forming substrate storage portion. The lid may be removably affixed to the second end of the aerosol-forming substrate by at least one of, a screw thread connection, an adhesive, a snap connection, or an interference fit. Preferably, the removable closure comprises an adhesive label adhered to the second end of the aerosol-forming substrate storage portion. The adhesive label may comprise a pull tab. The pull tab may advantageously facilitate removal of the adhesive label from the second end of the aerosol-forming substrate storage portion.

[0124] The longitudinal body of the aerosol-forming substrate storage portion may be formed from a polymeric material. The polymeric material may include at least one of polyethylene, polypropylene, or polylactic acid. Where the longitudinal body of the aerosol-forming substrate storage portion is formed from a polymeric material, it may be formed using injection moulding or thermofforming.

[0125] The pack may further comprise at least one resilient element extending into the aerosol-forming substrate storage portion from the longitudinal body of the

aerosol-forming substrate storage portion.

[0126] The at least one resilient element may advantageously ensure that the aerosol-forming substrate is held in the centre of the heat source storage portion allowing the elongate body of an aerosol generating device to enter the aerosol-forming substrate storage portion without being impeded by aerosol-forming substrate.

[0127] The at least one resilient element may be configured to deform when the elongate body of an aerosol generating device is inserted into the aerosol-forming substrate storage portion.

[0128] The at least one resilient member may be integrally formed with the longitudinal body of the aerosol-forming substrate storage portion. The at least one resilient member may be formed from a resilient material. For example, the at least one resilient member may be formed from a polymeric material. The polymeric material may include at least one of polyethylene, polypropylene, or polylactic acid. Where the at least one resilient member is formed from a polymeric material, it may be formed using injection moulding or thermoforming.

[0129] The at least one resilient member may comprise a plurality of resilient members. For example, the at least one resilient member may comprise two resilient members. The two resilient members may extend from opposite sides of the longitudinal body of the aerosol-forming substrate storage portion. This may advantageously further ensure that the aerosol-forming substrate is held in the centre of the heat source storage portion.

[0130] The pack may comprise an alignment means to facilitate alignment of the upstream end of the elongate body of an aerosol generating device with the heat source below the layer of frangible material. The alignment means may be an alignment marking.

[0131] The pack may comprise an alignment layer overlaying the layer of frangible material at the second end of the heat source storage portion. The alignment layer may comprise an aperture with at least one resilient member extending inwards from the edge of the aperture.

[0132] The provision of an alignment layer may advantageously help a user to align the upstream end of the elongate body of an aerosol generating device with the heat source below the layer of frangible material. This may otherwise be difficult, particularly where the layer of frangible material comprises an opaque material. In use, the upstream end of the elongate body of an aerosol generating device is pushed through the aperture in the alignment layer. If the upstream end of the elongate body of an aerosol generating device is misaligned, it will deform the at least one resilient member. The at least one resilient member will act to push the upstream end of the elongate body of an aerosol generating device away from the edge of the aperture towards the centre of the aperture where it will be in alignment with the heat source underneath the layer of frangible material.

[0133] The alignment layer may comprise a plurality of resilient members extending from the edge of the aperture. This may advantageously ensure that the upstream

end of the elongate body of an aerosol generating device is correctly aligned with the heat source regardless of how the upstream end of the elongate body of an aerosol generating device is misaligned.

[0134] The alignment layer may comprise any material. For example, the alignment layer may comprise at least one of; a polymeric material, metal, paper, and cardboard.

[0135] The pack may further comprise a spacer layer between the second end of the heat source storage portion and the alignment layer. The spacer layer may comprise at least one aperture. The at least one aperture in the spacer layer may align with the at least one aperture in the alignment layer.

[0136] The spacer layer may act to separate the second end of the heat source storage portion and the alignment layer. This may advantageously provide greater opportunity for the alignment layer to correct any misalignment of the upstream end of the elongate body of an aerosol generating device with the heat source as the upstream end of the elongate body of an aerosol generating device is pushed through the alignment layer.

[0137] The spacer layer may comprise any material. For example, the spacer layer may comprise cardboard, for example corrugated cardboard. This may be advantageous since cardboard is relatively lightweight.

[0138] According to a further aspect of the present disclosure, there is provided a kit of parts comprising an aerosol generating article of the present invention, and a pack of the present disclosure.

[0139] It should also be appreciated that particular combinations of the various features described can be implemented, supplied, or used independently.

[0140] The invention will be further described, by way of example only, with reference to the accompanying drawings in which:

Figure 1 is a longitudinal cross-sectional view of an aerosol generating device according to the invention with the ejection element in the first position.

Figure 2 is a longitudinal cross-sectional view of an aerosol generating device according to the invention with the ejection element in the second position.

Figure 3 is a longitudinal cross-sectional view of an aerosol generating device according to the invention with the ejection element in the first position, and the extinguishing sleeve in the extinguishing position.

Figure 4 is a longitudinal cross sectional view of a pack according to the present invention.

Figure 5 is a perspective view of a pack according to the invention.

Figure 6 is a perspective view of a pack according to the invention.

[0141] In the figures, the same reference numerals are used to refer to the same elements.

[0142] Figure 1 shows an aerosol generating device 100 comprising an elongate body 101 extending between

an upstream end and a downstream end. The elongate body 101 includes an upstream recess 104 for receiving an aerosol-forming substrate 106 and a heat source 105. The aerosol generating device 100 further comprises an annular cutting edge 107 disposed at the upstream end of the upstream recess 104. The aerosol generating device 100 further comprises an ejection element 108 disposed within the elongate body 101, the ejection element 108 being movable between a first position and a second position, the ejection element 108 extending further into the upstream recess 104 in the second position than in the first position.

[0143] The elongate body 101 comprises an upstream portion 102 and a downstream portion 103. The upstream portion 102 of the elongate body 101 includes the upstream recess 104 and is formed from stainless steel. The downstream portion 103 of the elongate body 101 is formed from PEEK. The upstream portion 102 of the elongate body 101 is connected to the downstream portion 103 of the elongate body 101 by a snap connection.

[0144] The upstream recess 104 is cylindrical and is defined at its upstream end by the annular cutting edge 107, and at its downstream end by the upstream end of the ejection element 108.

[0145] The annular cutting edge 107 is integrally formed with the upstream portion of the elongate body 102 and comprises a sharp annular blade configured to cut through layers of frangible material, for example, aluminium foil.

[0146] The ejection element 108 is formed from a ferromagnetic steel and includes a hollow lumen 109 such that the upstream cavity 104 is in fluid communication with the downstream end of the aerosol generating device 100. The aerosol generating device 100 further comprises an urging means to urge the ejection element 108 from the first position to the second position. The urging means is a compression spring 110 disposed around the ejection element 108. The upstream end of the compression spring 110 acts against a flange on the ejection element 108. The downstream end of the compression spring 110 acts against an internal stop of the elongate body 101.

[0147] The aerosol generating device 100 further comprises a retainer to hold the ejection element 108 in the first position. The retainer comprises a permanent annular magnet 111 within the elongate body 101 configured to be in contact with and retain the ejection element 108 when the ejection element 108 is in the first position.

[0148] The aerosol generating device 100 further comprises an extinguishing sleeve 112. The extinguishing sleeve 112 has an upstream end and a downstream end. The extinguishing sleeve 112 is movable relative to the elongate body 101 in a longitudinal direction between a loading position and an extinguishing position. In the loading position, the annular cutting edge 107 of the elongate body 101 extends beyond the upstream end of the extinguishing sleeve 112. In the extinguishing position, the cutting edge 107 of the elongate body 101 is disposed

downstream of the downstream of the upstream end of the extinguishing sleeve 112. The extinguishing sleeve 112 is shorter than the elongate body 101 allowing the most downstream end of the elongate body 101 to be exposed when the extinguishing sleeve 112 is in both the loading and extinguishing positions. The extinguishing sleeve 112 is formed from PEEK.

[0149] The extinguishing sleeve 112 may be further movable from the extinguishing position to an ejection position in which the cutting edge 107 of the elongate body 101 is disposed further downstream of the upstream end of the extinguishing sleeve 112 than in the extinguishing position.

[0150] The movement of the extinguishing sleeve 112 from the extinguishing position to the ejection position causes the ejection element 108 to move from the first position to the second position. The extinguishing sleeve 112 comprises an internal element (not shown) which engages with a portion of the ejection element 108 when the ejection sleeve 112 moves from the extinguishing position to the ejection position. This causes the extinguishing element 108 to be released from the magnet 111 after which it is urged by the compression spring 110 from the first position to the second position.

[0151] The aerosol generating device 100 comprises a plurality of air inlets through the elongate body 101 allowing air to pass into the upstream recess. The plurality of air inlets comprises a plurality of upstream air inlets 113, provided through the elongate body 101 adjacent the portion of the upstream recess 104 configured to receive a heat source 105. The plurality of air inlets further comprises a plurality of downstream air inlets 114, provided through the elongate body 101 adjacent the portion of the upstream recess 104 configured to receive an aerosol-forming substrate 106. The total air inlet area of the plurality of upstream air inlets 113 is greater than the total air inlet area of the plurality of downstream air inlets 114.

[0152] The extinguishing sleeve 112 comprises a plurality of air inlets 115. The plurality of sleeve air inlets 115 are configured to align with the plurality of downstream air inlets 114 of the elongate body 101 when the extinguishing sleeve 112 is in the loading position.

[0153] The aerosol generating device 100 further comprises a heat conductive body 116 disposed within the heat conducting recess 104 and connected to the extinguishing sleeve 112 such that movement of the extinguishing sleeve 112 between the loading and the extinguishing position causes a corresponding movement of the heat conducting body 116.

[0154] The heat conducting body 116 is formed from aluminium and extends to the downstream end of the extinguishing sleeve 112.

[0155] The aerosol generating device 100 further comprises a retaining means for retaining a heat source 105 in the upstream recess 104. The retaining means comprises a resilient element 117 attached to, and extending from, the inner surface of the elongate body 101 in the

upstream recess 104.

[0156] The downstream end of the elongate body 101 comprises a downstream recess 118 for receiving a mouthpiece 119. The mouthpiece 119 is a disposable filter. The downstream recess 118 is in fluid communication with the upstream recess 104 through the hollow lumen 109.

[0157] The downstream recess 118 comprises two O-rings 120 which reduce the diameter of the downstream recess 118 at two points.

[0158] Figures 4, 5, and 6 show a pack according to the invention for use with an aerosol generating device 100 according to the invention. The pack 200, 300 comprises a heat source storage portion 201 having a longitudinal body 202, a closed first end 203, and an opposed second end. The opposed second end is closed with a layer of aluminium foil 204. A heat source 105 is disposed in the heat source storage portion 201.

[0159] Heat source 105 is a combustible carbonaceous heat source.

[0160] The distance between the closed first end 203 and the second end of the heat source storage portion is about the same as the length of the heat source 105 such that the heat source is in contact with the closed first end 203 and the layer of aluminium foil 204. The diameter of the longitudinal body 202 is greater than the diameter of the heat source 105. The closed first end 203 of the heat source storage portion 201 comprises a shallow recess 205 for receiving a portion of the heat source 105.

[0161] The longitudinal body 202 and closed first end 203 are integrally formed from a polymeric material using injection moulding.

[0162] As shown in Figures 5 and 6, the pack 200, 300 may comprise multiple heat source storage portions 201 in an array.

[0163] Figures 4 and 5 show a first type of pack 200 which further comprises an aerosol-forming substrate storage portion 206 comprising a longitudinal body 207, a first end, and an opposed second end. The first end of the aerosol-forming substrate storage portion 206 is closed by the layer of aluminium foil 204. The second end of the aerosol-forming substrate storage portion 206 is closed by a removable closure 208. An aerosol-forming substrate 106 is disposed in the aerosol-forming substrate storage portion 206. The longitudinal body 207 of the aerosol-forming substrate storage portion 206 is formed from a polymeric material using injection moulding.

[0164] The first type of pack 200 further comprises a plurality of resilient elements 209 which extend into the aerosol-forming substrate storage portion 206 from the longitudinal body 207 of the aerosol-forming substrate storage portion 206. The plurality of resilient elements 209 are integrally formed with the elongate body 207 from a polymeric material using injection moulding.

[0165] As shown in Figure 5, the pack 200 may comprise multiple aerosol-forming substrate storage portions

206 in an array with a corresponding number of heat source storage portions 201.

[0166] The aerosol-forming substrate 106 comprises a tobacco-containing material containing volatile tobacco flavour compounds, which are released from the substrate upon heating.

[0167] Figure 6 shows a second type of pack 300 further comprising an alignment layer 301 overlaying the layer of aluminium foil 204 at the second end 203 of the heat source storage portion 201. The alignment layer 301 comprises an aperture 302 with a plurality of resilient members 303 extending inwards from the edge of the aperture 302. The alignment layer 301 is formed from cardboard. As shown in Figure 8, the alignment layer 301 may comprise multiple apertures 302 in an array with a corresponding number of heat source storage portions 201.

[0168] The second type of pack 300 further comprises a spacer layer 304 between the second end of the heat source storage portion 201 and the alignment layer 301. The spacer layer is formed from cardboard and includes an aperture 310. The aperture 310 is aligned with the aperture 302 of the alignment layer and the heat source storage portion 201. As shown in Figure 8, the spacer layer 304 may comprise multiple apertures 310 in an array with a corresponding number of heat source storage portions 201 and apertures 302 of the alignment layer 301.

[0169] In use, the aerosol generating device 100 is initially in the configuration shown in Figure 2, with the ejection element 108 in the second position, and the extinguishing sleeve 112 in the loading position. A filter 119 is inserted into the downstream recess 118 and retained by the O-rings 120.

[0170] Where the aerosol generating device 100 is used with the first type of pack 200, the removable closure 208 is removed and the upstream end of the aerosol generating device 100 is inserted into the aerosol-forming substrate storage portion 206. As the upstream end of the elongate body 101 hits the resilient elements 109, the resilient elements 109 are pushed aside and the aerosol-forming substrate 106 passes into the upstream cavity 104 of the aerosol generating device 100. Once the elongate body 101 reaches the end of the first end of the aerosol-forming substrate storage portion 206, the annular cutting edge 107 cuts through the layer of aluminium foil 204 and enters the heat source storage portion 201. As the annular cutting edge 107 cuts through the layer of aluminium foil 204, it cuts out a portion of the aluminium foil which also enters the upstream recess 104. As the elongate body 101 continues into the heat source storage portion 201, the heat source 105 enters the upstream recess 104 and is held by the retaining means 117. The aerosol generating device 100 is then removed from the pack 200.

[0171] Where the aerosol generating device 100 is used with the second type of pack 300, an aerosol-forming substrate is first inserted into the upstream recess

104. The aerosol generating device 100 is then inserted through the aperture 302 of the alignment layer. If the aerosol generating article 100 is misaligned with the heat source 105, the resilient members 303 act to push the aerosol generating article 100 back to alignment such that by the time the upstream end of the elongate body 101 reaches the second end of the heat source storage portion 201, it is aligned with the heat source 105. The annular cutting edge 107 then cuts through the layer of aluminium foil 204 as described above and the heat source 105 passes into the upstream recess 104.

[0172] As the aerosol-forming substrate 106 and the combustible heat source 105 pass into the upstream recess 104, they push the ejection element 108 from the second position to the first position. Once in the first position, the magnet 111 acts to retain the ejection element in the first position. This configuration is shown in Figure 1.

[0173] The heat source 105 is a combustible heat source as described above, and is ignited using a yellow flame lighter. Sufficient air is able to reach the heat source 105 since the heat source 105 extends further upstream than the upstream end of the elongate body 101, and the elongate body is provided with a plurality of upstream air inlets 113. Heat from the heat source 105 is conducted by the portion of aluminium foil between the heat source 105 and the aerosol-forming substrate, to the aerosol-forming substrate. Heat is also conducted by the heat conducting body 116 to the aerosol-forming substrate 106 which releases an aerosol. The aerosol is entrained in an air stream which passes into the upstream recess 104 through the aligned downstream elongate body air inlet 114 and the extinguish sleeve air inlet 115. The aerosol is then drawn through the hollow lumen 109 of the ejection element 108, through the filter 119 and out of the aerosol generating device 100.

[0174] Once the experience is over, the extinguishing sleeve 112 is slid from the loading position to the extinguishing position. This restricts the amount of air which is able to access the heat source 105. Additionally, the heat conducting body 116 moves to cover the entire length of the heat source 105, reducing the temperature of the heat source 105. Both of these effects together extinguish the heat source 105. This position is shown in Figure 3.

[0175] The extinguishing sleeve 112 is then moved further upstream from the extinguishing position to the ejection position. This releases the ejection element 108 from the magnet 111. The compression spring 110 then urges the ejection element 108 from the first position to the second position. The ejection element 108 pushes the extinguished heat source 105 and the consumed aerosol-forming substrate 106 out of the upstream recess 104. The extinguishing sleeve 112 is then moved from the ejection position back to the loading position, leaving the aerosol generating device as shown in Figure 2.

Claims

1. An aerosol generating device (100) comprising,
 - an elongate body (101) extending between an upstream end and a downstream end, the elongate body having an upstream recess (104) for receiving an aerosol-forming substrate (106) and a heat source (105),
 - an annular cutting edge (107) capable of piercing or cutting through a layer of frangible material of a pack, the annular cutting edge being disposed at the upstream end of the upstream recess, and
 - an ejection element (108) disposed within the elongate body, the ejection element being movable between a first position and a second position, the ejection element extending further into the upstream recess in the second position than in the first position.
2. An aerosol generating device (100) according to claim 1, wherein the ejection element (108) comprises a hollow lumen (109) through which the upstream recess (104) is in fluid communication with the downstream end of the elongate body (101).
3. An aerosol generating device (100) according to claim 1 or 2, further comprising an urging means to urge the ejection element (108) from the first position to the second position, preferably the urging means comprises a compression spring (110).
4. An aerosol generating device (100) according to claim 3, further comprising a retainer to hold the ejection element (108) in the first position, preferably the retainer comprises a magnetic connection.
5. An aerosol generating device (100) according to any preceding claim, further comprising an extinguishing sleeve (112) having an upstream end and a downstream end, movable relative to the elongate body (101) in a longitudinal direction between a loading position, in which the cutting edge (107) of the elongate body extends beyond the upstream end of the extinguishing position, and an extinguishing position in which the cutting edge of the elongate body is disposed downstream of the upstream end of the extinguishing sleeve.
6. An aerosol generating device (100) according to claim 5, wherein the extinguishing sleeve (112) is further moveable from the extinguishing position to an ejection position in which the cutting edge (107) of the elongate body (101) is disposed further downstream of the upstream end of the extinguishing sleeve than in the extinguishing position, and movement of the extinguishing sleeve from the extinguish-

ing position to the ejection position causes the ejection element (108) to move from the first position to the second position.

7. An aerosol generating device (100) according to claim 5 or 6, wherein the aerosol generating device further comprises at least one air inlet through the elongate body (101), into the upstream recess (104). 5
8. An aerosol generating device (100) according to claim 7, wherein the at least one air inlet comprises at least one upstream air inlet (113) for supplying air to a heat source (105), and at least one downstream air inlet (114) for supplying air to an aerosol-forming substrate (106), preferably the extinguishing sleeve (112) comprises at least one sleeve air inlet (115), the at least one sleeve air inlet being configured to align with the at least one downstream air inlet (114) of the elongate body (101) when the extinguishing sleeve is in the loading position such that, in the loading position air may pass through the at least one sleeve air inlet and then through the at least one downstream air inlet of the elongate body to an aerosol-forming substrate (106). 10
9. An aerosol generating device (100) according to any one of claims 5 to 8, further comprising a heat conducting body (116) disposed within the upstream recess (104) and connected to the extinguishing sleeve (112) such that movement of the extinguishing sleeve between the loading and the extinguishing position causes a corresponding movement of the heat conducting body. 15
10. An aerosol generating device (100) according to any preceding claim, further comprising at least one retaining means disposed in the recess (104) configured to retain a heat source (105). 20
11. An aerosol generating device (100) according to any preceding claim, wherein the downstream end of elongate body (101) comprises downstream recess (118) for receiving a mouthpiece (119), preferably the recess (118) comprises at least one portion having a reduced diameter. 25
12. A pack (200, 300) for use with an aerosol generating device (100) according to any preceding claim, the pack comprising: 30

a heat source storage portion (201) having a longitudinal body (202), a closed first end (203), and an opposed second end, the heat source storage portion second end being closed by a layer of frangible material (204), and 35

a heat source (105) disposed in the heat source storage portion. 40

13. A pack (200, 300) according to claim 12, further comprising; 45

an aerosol-forming substrate storage portion (206) having a longitudinal body (207), a first end, and an opposed second end, the aerosol-forming substrate storage portion first end being closed by the layer of frangible material (204), and the aerosol-forming substrate storage portion second end being closed by a removable closure (208), and 50

an aerosol-forming substrate (106) disposed within the aerosol-forming substrate storage portion, preferably the pack further comprises at least one resilient element (209) extending into the aerosol-forming substrate storage portion (206) from the longitudinal body (207) of the aerosol-forming substrate storage portion. 55

14. A pack (200, 300) according to claim 13, wherein a portion of the layer of frangible material (204) forms a barrier between the heat source (105) and the aerosol-forming substrate (106). 60

15. A pack (200, 300) according to any one of claims 12 to 14, further comprising an alignment layer (301) overlying the layer of frangible material (204) at the second end of the heat source storage portion (201), the alignment layer comprising an aperture (302) and at least one resilient member (303) extending inwards from the edge of the aperture. 65

Patentansprüche

1. Aerosolherzeugungsanordnung (100), aufweisend: 70

einen länglichen Körper (101), der sich zwischen einem vorgelagerten Ende und einem nachgelagerten Ende erstreckt, wobei der längliche Körper eine vorgelagerte Aussparung (104) zum Aufnehmen eines aerosolbildenden Substrats (106) und einer Wärmequelle (105) aufweist, 75

eine ringförmige Schneidkante (107), die in der Lage ist, eine Schicht aus zerbrechlichem Material einer Packung zu durchstechen oder zu durchschneiden, wobei die ringförmige Schneidkante an dem vorgelagerten Ende der vorgelagerten Aussparung angeordnet ist, und ein Auswurfelement (108), das innerhalb des länglichen Körpers angeordnet ist, wobei das Auswurfelement zwischen einer ersten Position und einer zweiten Position beweglich ist, wobei sich das Auswurfelement in der zweiten Position weiter in die vorgelagerte Aussparung erstreckt als in der ersten Position. 80

2. Aerosolerzeugungsvorrichtung (100) nach Anspruch 1, wobei das Auswurfelement (108) ein hohles Lumen (109) aufweist, durch das die vorgelagerte Aussparung (104) in Fluidverbindung mit dem nachgelagerten Ende des länglichen Körpers (101) steht. 5
3. Aerosolerzeugungsvorrichtung (100) nach Anspruch 1 oder 2, ferner umfassend ein Druckmittel zum Drücken des Auswurfelements (108) aus der ersten Position in die zweite Position, wobei das Druckmittel bevorzugt eine Druckfeder (110) umfasst. 10
4. Aerosolerzeugungsvorrichtung (100) nach Anspruch 3, ferner umfassend eine Halterung zum Halten des Auswurfelements (108) in der ersten Position, wobei die Halterung bevorzugt eine magnetische Verbindung aufweist. 15
5. Aerosolerzeugungsvorrichtung (100) nach einem beliebigen vorhergehenden Anspruch, ferner umfassend eine Löschhülse (112) mit einem vorgelagerten Ende und einem nachgelagerten Ende, die relativ zu dem länglichen Körper (101) in einer Längsrichtung zwischen einer Ladeposition, in der sich die Schneidkante (107) des länglichen Körpers über das vorgelagerte Ende der Löschposition hinaus erstreckt, und einer Löschposition, in der die Schneidkante des länglichen Körpers dem vorgelagerten Ende der Löschhülse nachgelagert angeordnet ist, beweglich ist. 20 25 30
6. Aerosolerzeugungsvorrichtung (100) nach Anspruch 5, wobei die Löschhülse (112) weiterhin von der Löschposition in eine Auswurfposition bewegbar ist, in der die Schneidkante (107) des länglichen Körpers (101) dem vorgelagerten Ende der Löschhülse weiter nachgelagert ist als in der Löschposition, und die Bewegung der Löschhülse von der Löschposition in die Auswurfposition die Bewegung des Auswurfelements (108) von der ersten Position in die zweite Position bewirkt. 35 40
7. Aerosolerzeugungsvorrichtung (100) nach Anspruch 5 oder 6, wobei die Aerosolerzeugungsvorrichtung ferner wenigstens einen Lufteinlass durch den länglichen Körper (101) in die vorgelagerte Aussparung (104) aufweist. 45
8. Aerosolerzeugungsvorrichtung (100) nach Anspruch 7, wobei der wenigstens eine Lufteinlass wenigstens einen vorgelagerten Lufteinlass (113) zum Zuführen von Luft zu einer Wärmequelle (105) und wenigstens einen nachgelagerten Lufteinlass (114) zum Zuführen von Luft zu einem aerosolbildenden Substrat (106) aufweist, wobei die Löschhülse (112) bevorzugt wenigstens einen Hülsenlufteinlass (115) aufweist, wobei der mindestens eine Hülsenlufteinlass zum Ausrichten mit dem wenigstens einen nachgelagerten Lufteinlass (114) des länglichen Körpers (101) ausgelegt ist, wenn sich die Löschhülse in der Ladeposition befindet, sodass in der Ladeposition Luft durch den wenigstens einen Hülsenlufteinlass und anschließend durch den wenigstens einen nachgelagerten Lufteinlass des länglichen Körpers zu einem aerosolbildenden Substrat (106) strömen kann. 50
9. Aerosolerzeugungsvorrichtung (100) nach einem der Ansprüche 5 bis 8, ferner umfassend einen innerhalb der vorgelagerten Aussparung (104) angeordneten und mit der Löschhülse (112) verbundenen Wärmeleitkörper (116), sodass eine Bewegung der Löschhülse zwischen der Lade- und der Löschposition eine entsprechende Bewegung des Wärmeleitkörpers bewirkt. 55
10. Aerosolerzeugungsvorrichtung (100) nach einem beliebigen vorhergehenden Anspruch, ferner aufweisend wenigstens ein in der Aussparung (104) angeordnetes Rückhaltemittel, ausgelegt zum Zurückhalten einer Wärmequelle (105).
11. Aerosolerzeugungsvorrichtung (100) nach einem beliebigen vorhergehenden Anspruch, wobei das nachgelagerte Ende des länglichen Körpers (101) eine nachgelagerte Aussparung (118) zur Aufnahme eines Mundstücks (119) aufweist, wobei die Aussparung (118) bevorzugt wenigstens einen Abschnitt mit einem reduzierten Durchmesser aufweist.
12. Packung (200, 300) zum Gebrauch mit einer Aerosolerzeugungsvorrichtung (100) nach einem beliebigen vorhergehenden Anspruch, die Packung umfassend:
 - einen Wärmequellenspeicherabschnitt (201), aufweisend einen länglichen Körper (202), ein geschlossenes erstes Ende (203) und ein gegenüberliegendes zweites Ende, wobei das zweite Ende des Wärmequellenspeicherabschnitts durch eine Schicht aus zerbrechlichem Material (204) geschlossen ist, und eine in dem Wärmequellenspeicherabschnitt angeordnete Wärmequelle (105).
13. Packung (200, 300) nach Anspruch 12, ferner umfassend:
 - einen Speicherabschnitt für aerosolbildendes Substrat (206) mit einem länglichen Körper (207), einem ersten Ende und einem gegenüberliegenden zweiten Ende, wobei das erste Ende des Speicherabschnitts für aerosolbildendes Substrat durch die Schicht aus zerbrechlichem

Material (204) verschlossen ist und das zweite Ende des Speicherabschnitts für aerosolbildendes Substrat durch einen entfernbaren Verschluss (208) verschlossen ist, und ein innerhalb des Speicherabschnitts für aerosolbildendes Substrat angeordnetes aerosolbildendes Substrat (106), wobei die Packung ferner bevorzugt wenigstens ein elastisches Element (209) aufweist, das sich von dem länglichen Körper (207) des Speicherabschnitts für aerosolbildendes Substrat in den Speicherabschnitt (206) für aerosolbildendes Substrat erstreckt.

14. Packung (200, 300) nach Anspruch 13, wobei ein Abschnitt der Schicht aus zerbrechlichem Material (204) eine Sperre zwischen der Wärmequelle (105) und dem aerosolbildenden Substrat (106) bildet.

15. Packung (200, 300) nach einem der Ansprüche 12 bis 14, ferner aufweisend eine Ausrichtungsschicht (301), die über der Schicht aus zerbrechlichem Material (204) an dem zweiten Ende des Wärmequellenabschnitts (201) liegt, wobei die Ausrichtungsschicht eine Öffnung (302) und wenigstens ein elastisches Element (303) umfasst, das sich von der Kante der Öffnung nach innen erstreckt.

Revendications

1. Dispositif de génération d'aérosol (100) comprenant,

un corps allongé (101) s'étendant entre une extrémité amont et une extrémité aval, le corps allongé ayant un évidement amont (104) destiné à recevoir un substrat formant aérosol (106) et une source de chaleur (105),
un bord de coupe annulaire (107) capable de perforer ou de découper une couche de matériau frangible d'un paquet, le bord de coupe annulaire étant disposé au niveau de l'extrémité amont de l'évidement amont, et
un élément d'éjection (108) disposé au sein du corps allongé, l'élément d'éjection étant mobile entre une première position et une deuxième position, l'élément d'éjection s'étendant plus loin dans l'évidement amont dans la deuxième position que dans la première position.

2. Dispositif de génération d'aérosol (100) selon la revendication 1, dans lequel l'élément d'éjection (108) comprend une lumière creuse (109) à travers laquelle l'évidement amont (104) est en communication fluïdique avec l'extrémité aval du corps allongé (101).

3. Dispositif de génération d'aérosol (100) selon la re-

vendication 1 ou 2, comprenant en outre un moyen de sollicitation pour solliciter l'élément d'éjection (108) de la première position à la deuxième position, de préférence le moyen de sollicitation comprend un ressort de compression (110).

4. Dispositif de génération d'aérosol (100) selon la revendication 3, comprenant en outre un élément de retenue pour tenir l'élément d'éjection (108) dans la première position, de préférence l'élément de retenue comprend un raccordement magnétique.

5. Dispositif de génération d'aérosol (100) selon l'une quelconque des revendications précédentes, comprenant en outre un manchon d'extinction (112) ayant une extrémité amont et une extrémité aval, mobile par rapport au corps allongé (101) dans une direction longitudinale entre une position de chargement, dans laquelle le bord de coupe (107) du corps allongé s'étend au-delà de l'extrémité amont de la position d'extinction, et une position d'extinction dans laquelle le bord de coupe du corps allongé est disposé en aval de l'extrémité amont du manchon d'extinction.

6. Dispositif de génération d'aérosol (100) selon la revendication 5, dans lequel le manchon d'extinction (112) est en outre déplaçable de la position d'extinction à une position d'éjection dans laquelle le bord de coupe (107) du corps allongé (101) est disposé plus loin en aval de l'extrémité amont du manchon d'extinction que dans la position d'extinction, et le déplacement du manchon d'extinction de la position d'extinction à la position d'éjection amène l'élément d'éjection (108) à se déplacer de la première position à la deuxième position.

7. Dispositif de génération d'aérosol (100) selon la revendication 5 ou 6, dans lequel le dispositif de génération d'aérosol comprend en outre au moins une entrée d'air à travers le corps allongé (101), jusque dans l'évidement amont (104).

8. Dispositif de génération d'aérosol (100) selon la revendication 7, dans lequel l'au moins une entrée d'air comprend au moins une entrée d'air amont (113) pour alimenter en air une source de chaleur (105), et au moins une entrée d'air aval (114) pour alimenter en air un substrat formant aérosol (106), de préférence le manchon d'extinction (112) comprend au moins une entrée d'air de manchon (115), l'au moins une entrée d'air de manchon étant configurée pour s'aligner avec l'au moins une entrée d'air aval (114) du corps allongé (101) lorsque le manchon d'extinction est dans la position de chargement de telle sorte que, dans la position de chargement l'air peut passer à travers l'au moins une entrée d'air de manchon, puis à travers l'au moins une entrée d'air aval du

corps allongé jusqu'à un substrat formant aérosol (106).

9. Dispositif de génération d'aérosol (100) selon l'une quelconque des revendications 5 à 8, comprenant en outre un corps thermoconducteur (116) disposé au sein de l'évidement amont (104) et raccordé au manchon d'extinction (112) de telle sorte que le déplacement du manchon d'extinction entre la position de chargement et la position d'extinction provoque un déplacement correspondant du corps thermoconducteur. 5
10. Dispositif de génération d'aérosol (100) selon l'une quelconque des revendications précédentes, comprenant en outre au moins un moyen de retenue disposé dans l'évidement (104) configuré pour retenir une source de chaleur (105). 10
11. Dispositif de génération d'aérosol (100) selon l'une quelconque des revendications précédentes, dans lequel l'extrémité aval du corps allongé (101) comprend un évidement aval (118) destiné à recevoir un embout buccal (119), de préférence l'évidement (118) comprend au moins une portion ayant un diamètre réduit. 20
12. Paquet (200, 300) pour une utilisation avec un dispositif de génération d'aérosol (100) selon l'une quelconque des revendications précédentes, le paquet comprenant : 25
 - une portion de stockage de source de chaleur (201) ayant un corps longitudinal (202), une première extrémité fermée (203), et une deuxième extrémité opposée, la deuxième extrémité de portion de stockage de source de chaleur étant fermée par une couche de matériau frangible (204), et 35
 - une source de chaleur (105) disposée dans la portion de stockage de source de chaleur. 40
13. Paquet (200, 300) selon la revendication 12, comprenant en outre ; 45
 - une portion de stockage de substrat formant aérosol (206) ayant un corps longitudinal (207), une première extrémité, et une deuxième extrémité opposée, la première extrémité de la portion de stockage de substrat formant aérosol étant fermée par la couche de matériau frangible (204), et la deuxième extrémité de portion de stockage de substrat formant aérosol étant fermée par une fermeture amovible (208), et 50
 - un substrat formant aérosol (106) disposé au sein de la portion de stockage de substrat formant aérosol, de préférence le paquet comprend en outre au moins un élément élastique 55

(209) s'étendant jusque dans la portion de stockage de substrat formant aérosol (206) à partir du corps longitudinal (207) de la portion de stockage de substrat formant aérosol.

14. Paquet (200, 300) selon la revendication 13, dans lequel une portion de la couche de matériau frangible (204) forme une barrière entre la source de chaleur (105) et le substrat formant aérosol (106) .
15. Paquet (200, 300) selon l'une quelconque des revendications 12 à 14, comprenant en outre une couche d'alignement (301) recouvrant la couche de matériau frangible (204) au niveau de la deuxième extrémité de la portion de stockage de source de chaleur (201), la couche d'alignement comprenant une ouverture (302) et au moins un membre élastique (303) s'étendant vers l'intérieur à partir du bord de l'ouverture.

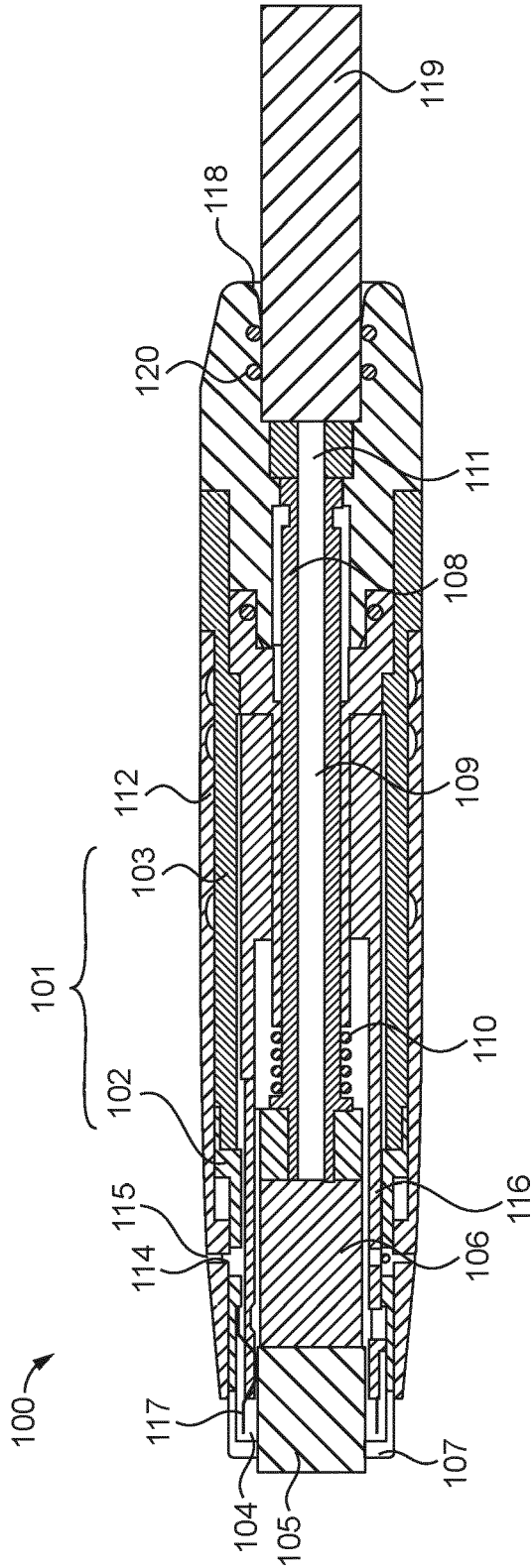


FIG. 1

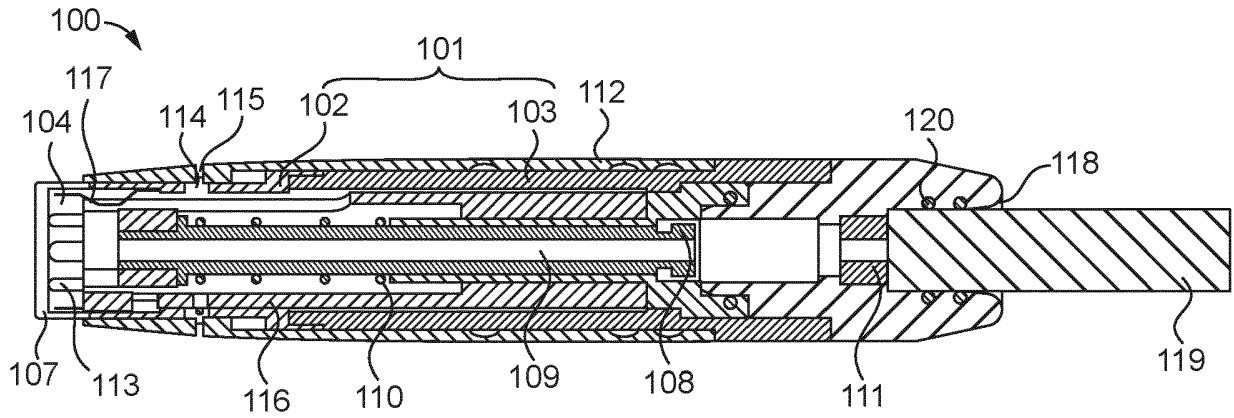


FIG. 2

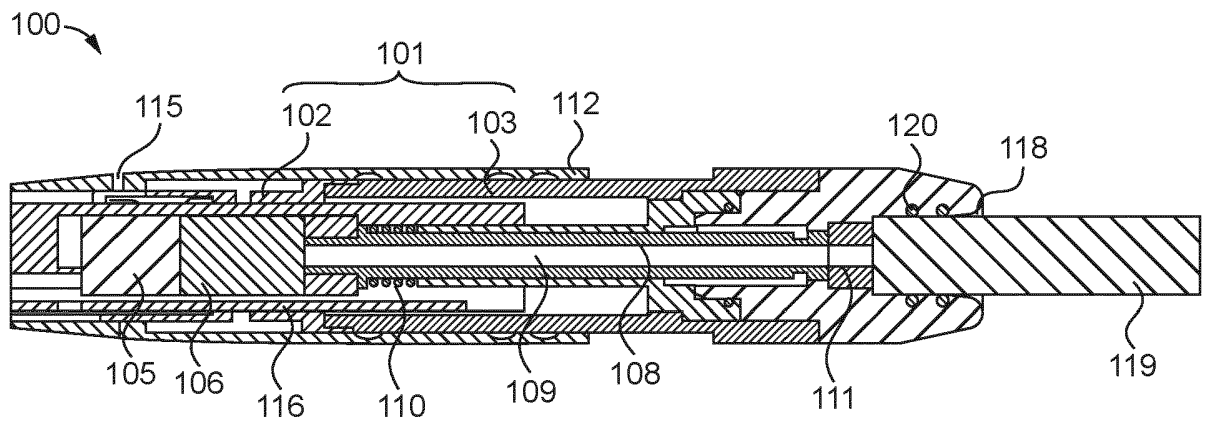


FIG. 3

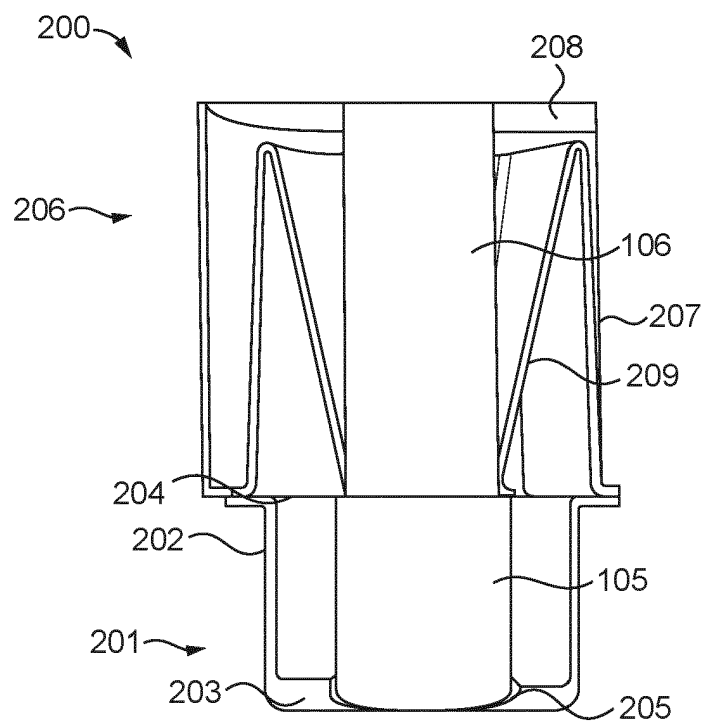


FIG. 4

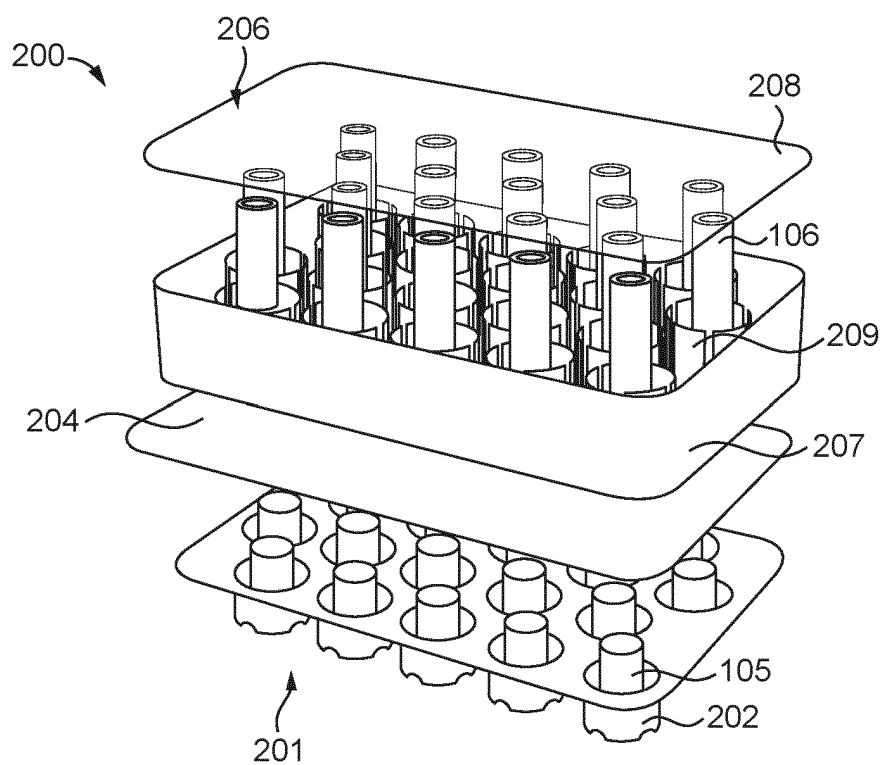


FIG. 5

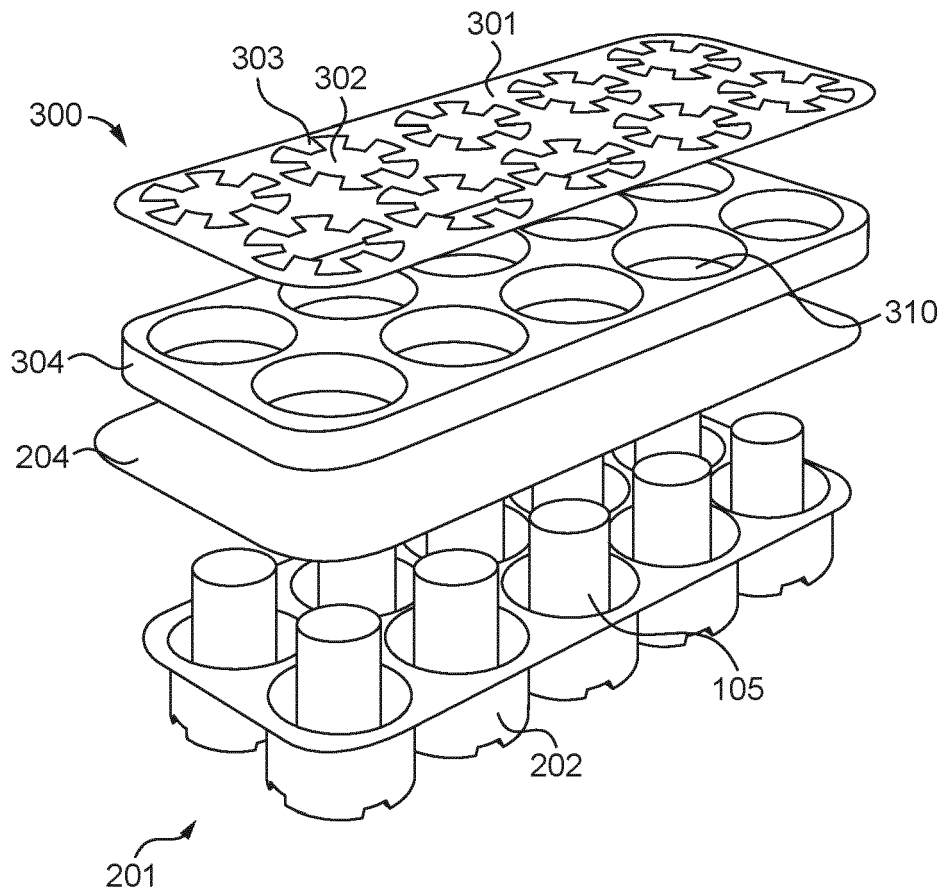


FIG. 6

REFERENCES CITED IN THE DESCRIPTION

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