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Miyatani

(54) **FLAT TOBACCO ARTICLE COMPRISING AT LEAST TWO LAYERS AND AEROSOL GENERATING DEVICE WITH SUCH AN ARTICLE**

(71) Applicant: **JT International SA**, Geneva (CH)

(72) Inventor: **Yasuhiro Miyatani**, Tokyo (JP)

(73) Assignee: **JT International SA**, Geneva (CH)

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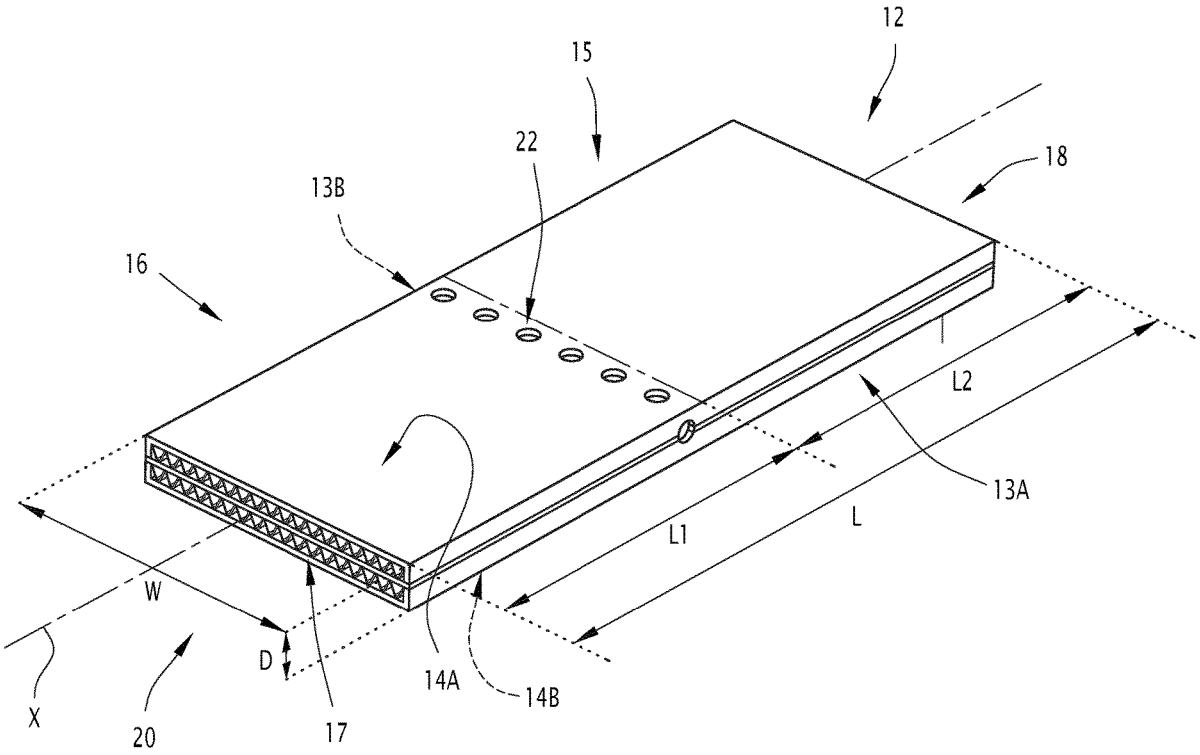
(57) **ABSTRACT**

A flat-shaped tobacco article includes a first heating portion and a second heating portion designed to be arranged parallel to the first heating portion; the first heating portion including a substrate layer including tobacco substrate; the second heating portion including a retainer layer including a vapour forming agent and an agent retainer retaining the vapour forming agent; the flat-shaped tobacco article being configured to receive at least a part of a double-sided flat heater of an aerosol generating device between the first and the second heating portions to heat simultaneously each of the heating portions.



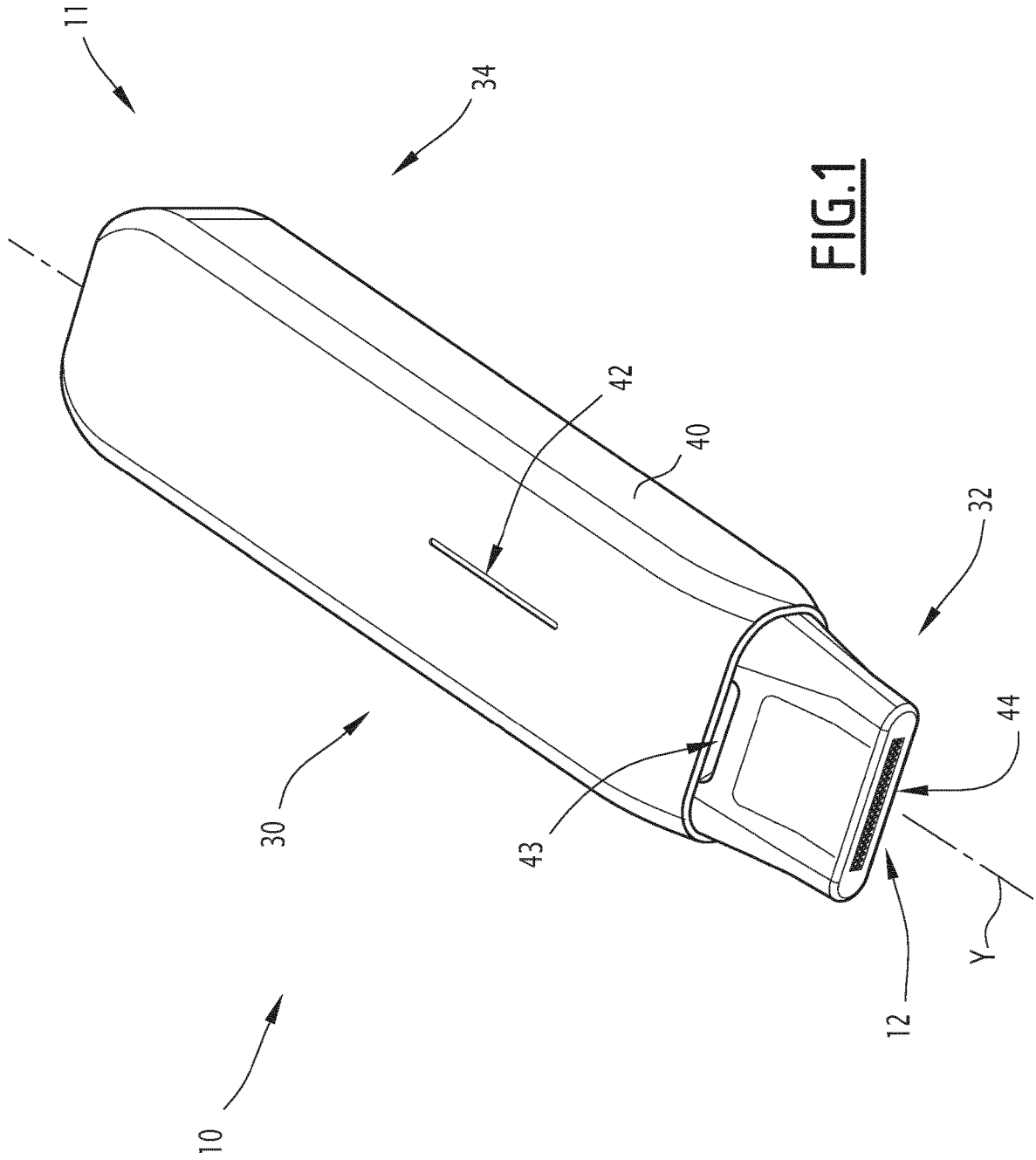


FIG.1

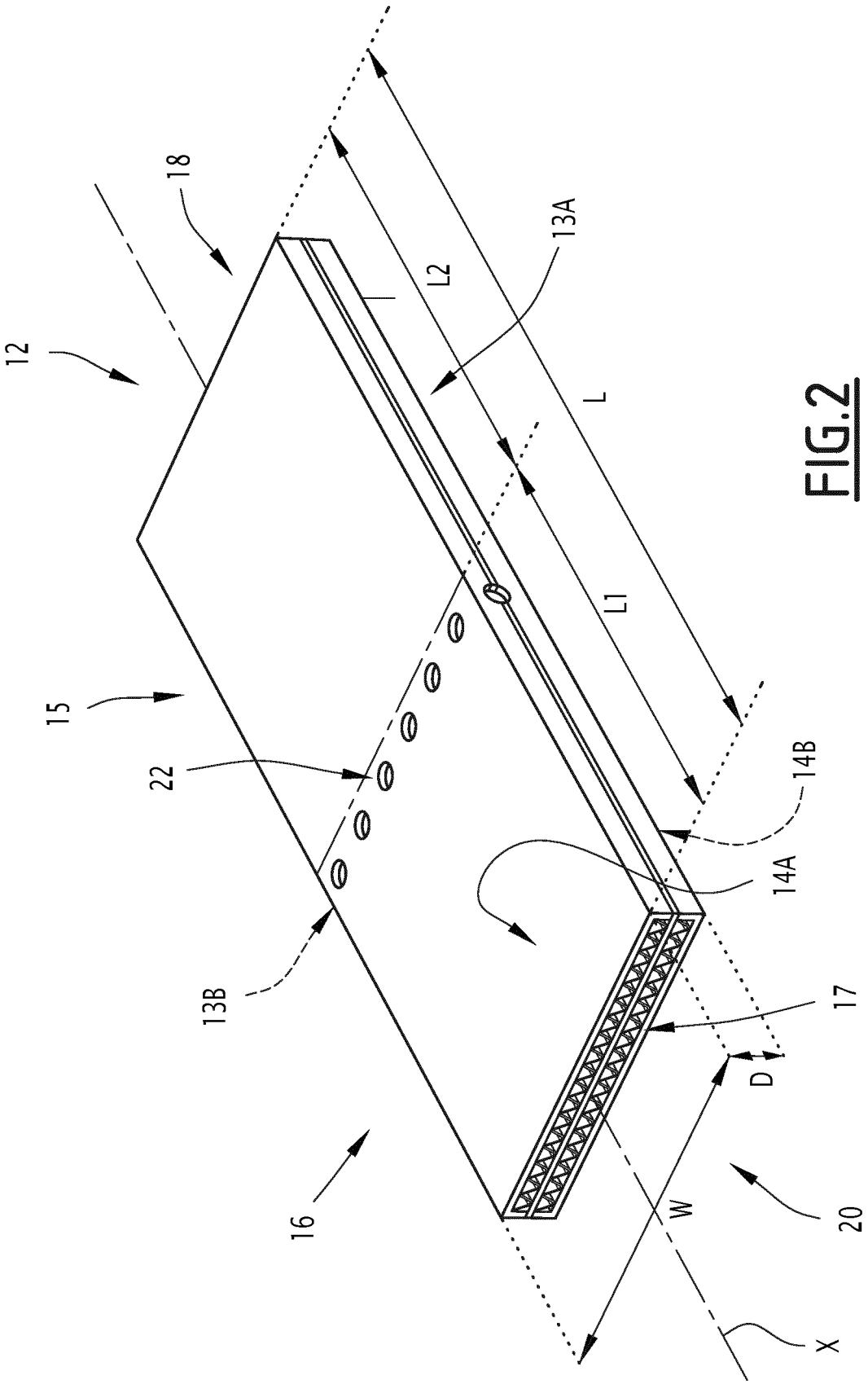


FIG.2

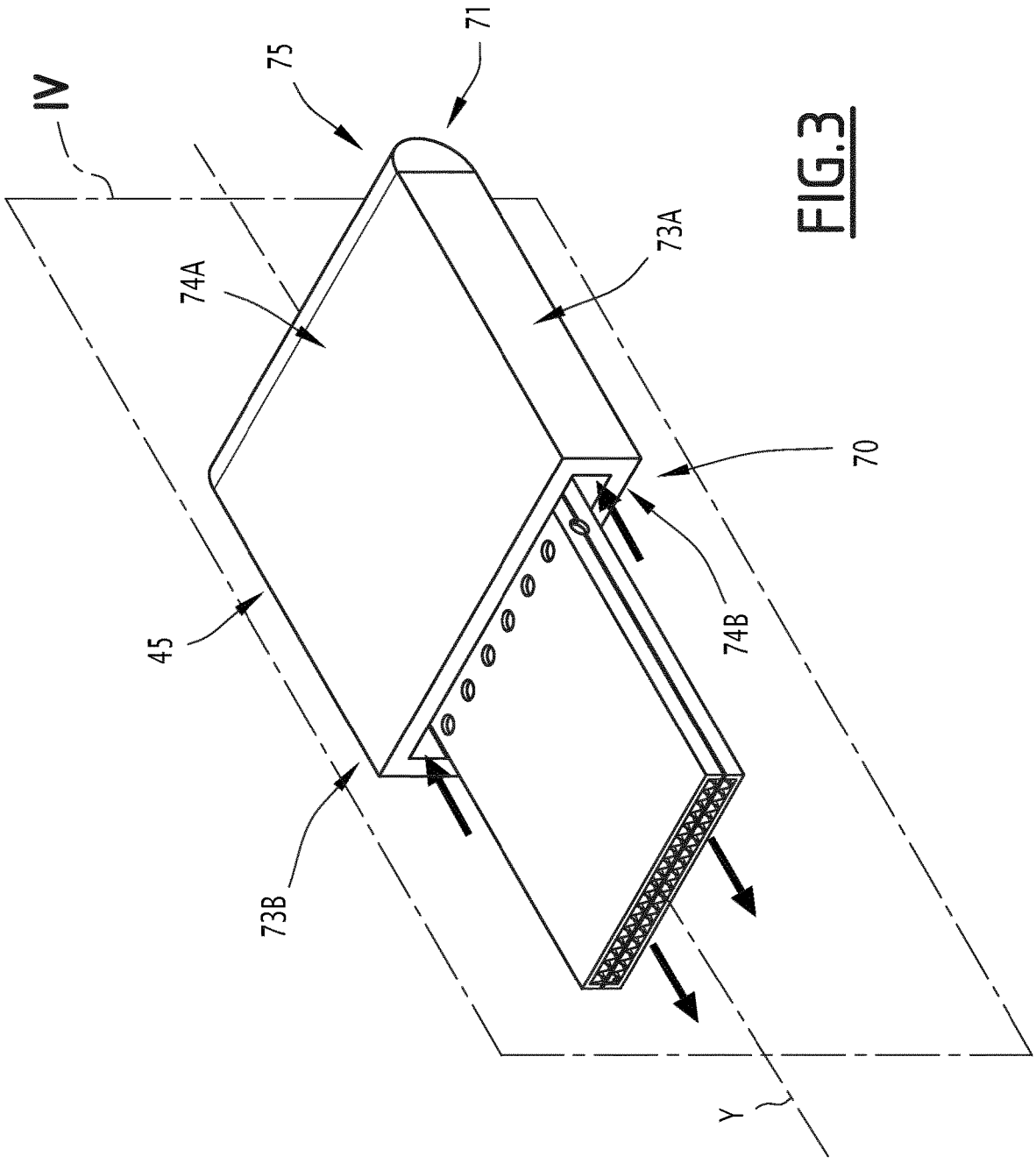


FIG.3

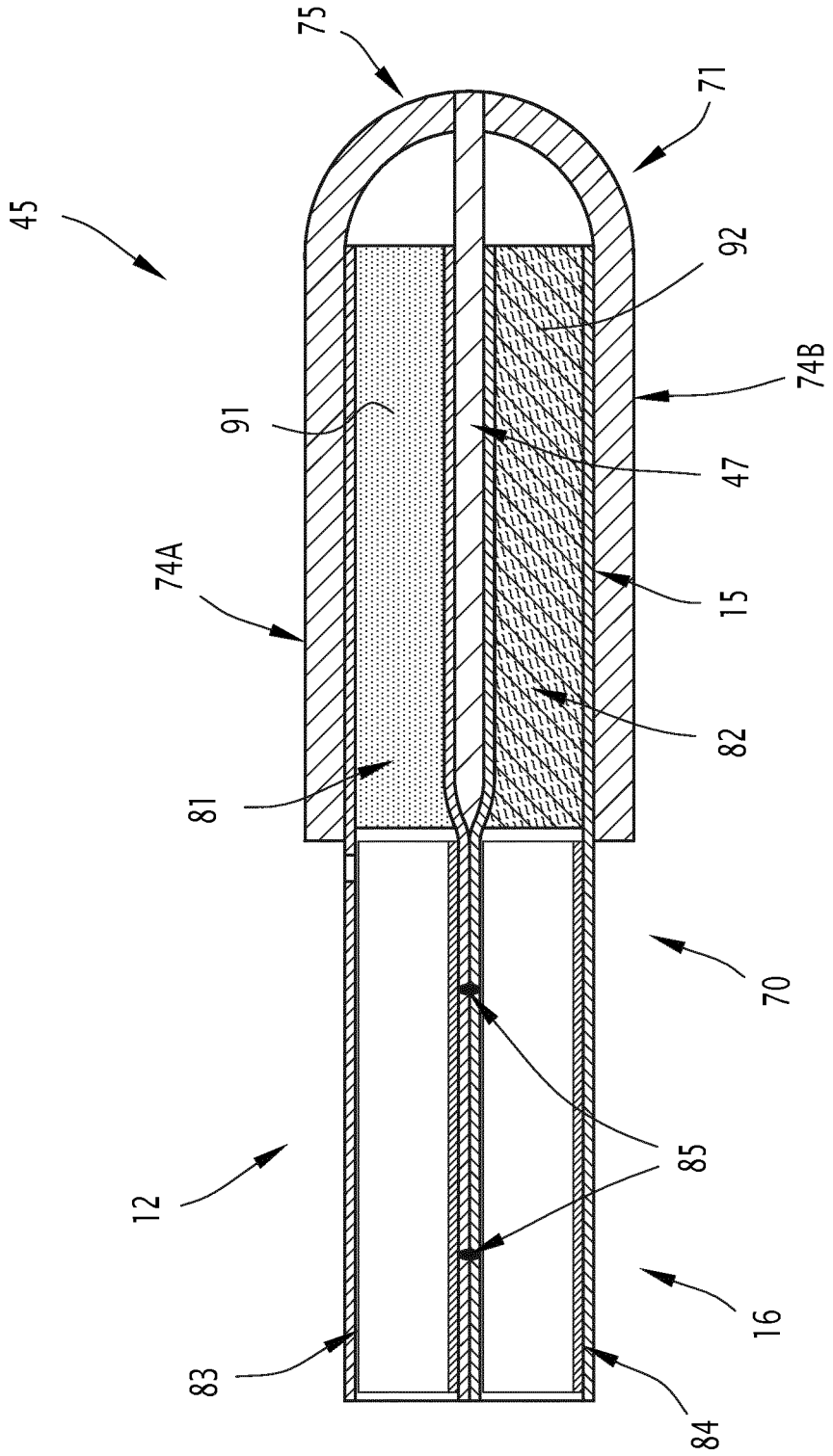


FIG.4

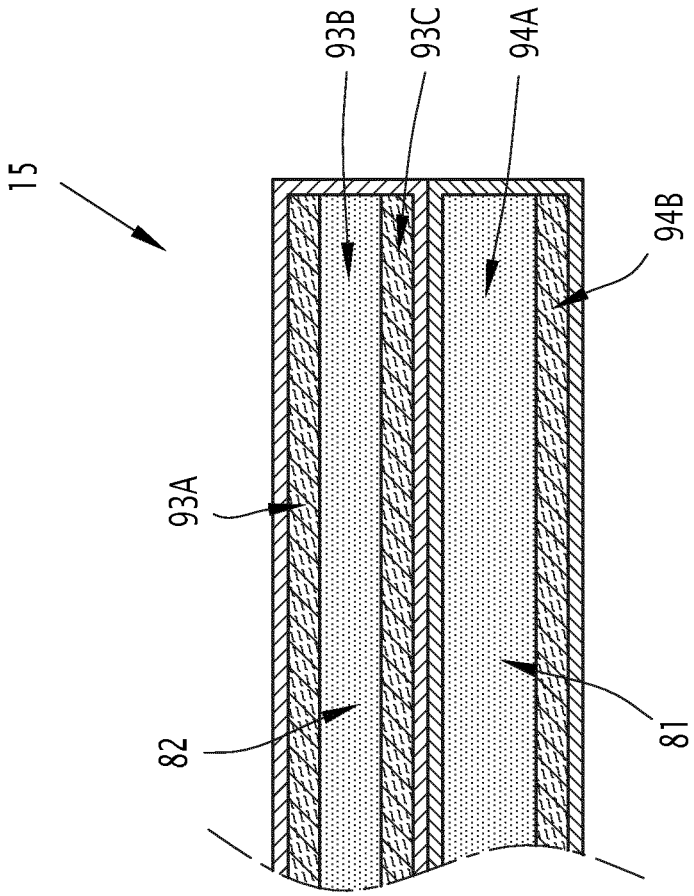


FIG.5

FLAT TOBACCO ARTICLE COMPRISING AT LEAST TWO LAYERS AND AEROSOL GENERATING DEVICE WITH SUCH AN ARTICLE

FIELD OF THE INVENTION

[0001] The present invention concerns a flat-shaped tobacco article configured to receive at least a part of a double-sided flat heater.

[0002] The present invention also concerns an aerosol generating assembly comprising such an article and an aerosol generating device configured to operate with this article. The tobacco article comprises for example a solid substrate able to form aerosol when being heated. Thus, the aerosol generating device configured to operate with the article, also known as a heat-not-burn device, is adapted to heat, rather than burn, the substrate by conduction, convection and/or radiation, to generate aerosol for inhalation.

BACKGROUND OF THE INVENTION

[0003] The popularity and use of reduced-risk or modified-risk devices (also known as vaporisers) has grown rapidly in the past few years as an aid to assist habitual smokers wishing to quit smoking traditional tobacco products such as cigarettes, cigars, cigarillos, and rolling tobacco. Various devices and systems are available that heat or warm vaporizable substances as opposed to burning tobacco in conventional tobacco products.

[0004] A commonly available reduced-risk or modified-risk device is the heated substrate aerosol generation device or heat-not-burn device. Devices of this type generate aerosol or vapour by heating an aerosol substrate comprised in a tobacco article usable with such type of devices. The aerosol substrate typically comprises moist leaf tobacco or other suitable vaporizable material to a temperature typically in the range 150° C. to 350° C. Heating an aerosol substrate, but not combusting or burning it, releases aerosol that comprises the components sought by the user but not the toxic and carcinogenic by-products of combustion and burning. Furthermore, the aerosol produced by heating the tobacco or other vaporizable material does not typically comprise the burnt or bitter taste resulting from combustion and burning that can be unpleasant for the user and so the substrate does not therefore require the sugars and other additives that are typically added to such materials to make the smoke and/or vapour more palatable for the user.

[0005] It is clear therefore that the aerosol generation from the substrate through the whole vaping session presents a challenging issue. For example, in some cases, the aerosol substrate can generate vapour at the beginning of the session and can be exhausted at the end. Thus, the quantity of vapour generated during the session can vary significantly that can cause undesirable user experience. Additionally, in some aerosol generating devices, heat transfer from the heater to the substrate is not optimal. In this case, the heat is wasted or a large amount of insulator materials is used to avoid heat leakage.

SUMMARY OF THE INVENTION

[0006] The present invention aims to propose a tobacco article for using with a heat-not-burn device which can provide a better user experience during the whole vaping session. Particularly, the invention aims to enhance and make it last during the whole vaping session aerosol generation ensured by a tobacco article when it is used with a heat-not-burn device. Additionally, the invention ensures an optimal heat transfer from the heater to the tobacco article so as to avoid heat wasting or using a large amount of insulators.

[0007] For this purpose, the invention relates to a flat-shaped tobacco article comprising a first heating portion and a second heating portion designed to be arranged parallel to the first heating portion;

[0008] the first heating portion comprising a substrate layer comprising tobacco substrate;

[0009] the second heating portion comprising a retainer layer comprising a vapour forming agent and an agent retainer retaining the vapour forming agent;

[0010] the flat-shaped tobacco article being configured to receive at least a part of a double-sided flat heater of an aerosol generating device between the first and the second heating portions to heat simultaneously each of the heating portions.

[0011] Thanks to these features, the double-sided flat heater is fully surrounded by the tobacco article so as the heat is substantially fully transferred to the tobacco article without heat wasting or using a large amount of insulators. Additionally, the invention proposes to associate to opposite sides of the heater heating portions which may have different compositions. Thus, it is possible to adapt the response times of these heating portions to obtain a desired effect while vapour generating. Particularly, by "response time", it should be understood the time that is necessary to the corresponding layer or heating portion to provide the desired effect when it is being heated. The desired effect can be vapour generation. Different response times imply different temperatures of the corresponding layers in each heating portion at least at some moments of the vaping session. These layers can be used to store separately at least a part of the vapour forming agent from the tobacco substrate. By adapting the properties of these layers in each heating portion, their composition and respective arrangement, it is possible to enhance vapour generation at different moments of the vaping session. For example, it is possible to enhance vapour generation at early stages of the vaping session (i.e. preheating stage) or on the contrary, at the end of the vaping session.

[0012] According to the invention, the tobacco substrate can present shredded and/or compressed tobacco leafs. The substrate layer comprises such a tobacco substrate together with a bonding material. The substrate layer may thus present a dough flatten and cut in an appropriate manner. In some embodiments, the substrate layer may be free of vapour forming agent. In some other embodiments, the substrate layer comprises one or several vapour forming agents.

[0013] According to some embodiments, the agent retainer is chosen in the group consisting of unwoven fabric; cotton and paper.

[0014] Thanks to these features, an appropriate agent retainer adapted to retain the vapour forming agent and heat it until a suitable temperature at a suitable moment of the vaping session can be chosen.

[0015] According to some embodiments, the vapour forming agent is chosen in the group consisting of:

[0016] polyol such as sorbitol, glycerol;

[0017] glycol such as propylene glycol or triethylene glycol;

[0018] non-polyol such as monohydric alcohols;

[0019] acid such as lactic acid, glycerol derivatives;

[0020] esters such as triacetin, triethylene glycol diacetate, triethyl citrate, glycerine or vegetable glycerine;

[0021] any mixture of the previously cited elements.

[0022] Thanks to these features, an appropriate vapour forming agent adapted to release vapour when being heated until a suitable temperature at a suitable moment of the vaping session can be chosen.

[0023] According to some embodiments, the first heating portion further comprises at least one retainer layer arranged parallel to the substrate layer.

[0024] Thanks to these features, a retainer layer in the first heating portion can be used. This retainer layer may have for example a response time different from the response time of the retainer layer used in the second heating portion. Thus, the aerosol generation during the whole vaping session can be adjusted to obtain a desired effect.

[0025] According to some embodiments, said retainer layer of the first heating portion is arranged to be heated directly by the corresponding side of the flat heater.

[0026] Thanks to these features, the retainer layer of the first heating portion can be heated until a greater temperature than the substrate layer. Thus, in some cases, it is possible to ensure a greater heating temperature of the retainer layer without burning the tobacco substrate contained in the substrate layer.

[0027] According to some embodiments, said retainer layer of the first heating portion is arranged to be heated through the corresponding substrate layer.

[0028] According to some embodiments, the second heating portion comprises two retainer layers, the substrate layer being arranged between these two retainer layers.

[0029] According to some embodiments, said two retainer layers of the second heating portion have different thicknesses and/or comprise different vapour forming agents and/or comprise different agent retainers.

[0030] Thanks to these features, it is possible to use two retainer layers having different response times in the same heating portion.

[0031] According to some embodiments, the second heating portion further comprises a substrate layer arranged parallel to the retainer layer of this heating portion.

[0032] According to some embodiments, said substrate layer of the second heating portion is arranged to be heated directly by the corresponding side of the flat heater.

[0033] Thanks to these features, it is also possible to use a substrate layer in the second heating portion to improve user experience during a vaping session. Additionally, the different substrate layers can comprise different tobacco substrates (tobacco nature, blend, flavour, etc.).

[0034] According to some embodiments, the second heating portion has the same layer composition as the first heating portion.

[0035] Thanks to these features, the tobacco article can have a symmetrical structure. Therefore, the flat-shaped heater can be received in the centre of this structure and ensure homogeneous heat transfer over all of the layers.

[0036] According to some embodiments, the second heating portion has a layer composition different from a layer composition of the first heating portion.

[0037] According to some embodiments, each heating portion is wrapped into a separate wrapper.

[0038] Thanks to these features, the flat-shaped heater can be easily inserted in the tobacco article and extracted therefrom.

[0039] According to some embodiments, comprising attaching means for attaching said heating portions or their extensions, one to the other.

[0040] Thanks to these features, the tobacco article can present a unique piece which can be easily manipulated by the user.

[0041] According to some embodiments, each heating portion is extended by a filter part, preferably both heating portions share a same portion of a mouthpiece part.

[0042] Thanks to these features, the aerosol generated in each heating portion can be filtered and advantageously cooled before reaching the user's mouth and/or lips.

[0043] According to some embodiments, the or at least one substrate layer and/or the or at least one retainer layer is (are) arranged to be heated directly by the corresponding side of the flat heater.

[0044] Thanks to these features, the heat transfer can be further improved.

[0045] The invention also relates to an aerosol generating assembly comprising:

[0046] an aerosol generating device comprising a double-sided flat heater;

[0047] a flat-shaped tobacco article intended to be heated by the heater to generate aerosol, as defined above.

BRIEF DESCRIPTION OF THE DRAWINGS

[0048] The invention and its advantages will be better understood upon reading the following description, which is given solely by way of non-limiting example and which is made with reference to the appended drawings, in which:

[0049] FIG. **1** is a perspective view of an aerosol generating assembly according to the invention, the aerosol generating assembly comprising an aerosol generating device and a flat-shaped tobacco article;

[0050] FIG. **2** is a perspective view of the flat-shaped tobacco article of FIG. **1**;

[0051] FIG. **3** is a perspective view of a heating chamber of the aerosol generating device of FIG. **1**, the heating chamber receiving the flat-shaped tobacco article;

[0052] FIG. **4** is a cross-sectional view of FIG. **2** according to plane IV; and

[0053] FIG. **5** is a cross-sectional view of a heater part of the flat-shaped tobacco article according to an example different from the example of FIG. **4**.

DETAILED DESCRIPTION OF THE INVENTION

[0054] Before describing the invention, it is to be understood that it is not limited to the details of construction set forth in the following description. It will be apparent to those skilled in the art having the benefit of the present disclosure that the invention is capable of other embodiments and of being practiced or being carried out in various ways.

[0055] As used herein, the term "aerosol generating device" or "device" may include a vaping device to deliver an aerosol to a user, including an aerosol for vaping, by means of a heater element explained in further detail below. The device may be portable. "Portable" may refer to the device being for use when held by a user. The device may be adapted to generate a variable amount of aerosol, e.g. by activating the heater element for a variable amount of time (as opposed to a metered dose of aerosol), which can be controlled by a trigger. The trigger may be user activated, such as a vaping button and/or inhalation sensor. The inhalation sensor may be sensitive to the strength of inhalation as well as the duration of inhalation to enable a variable amount of vapour to be provided (so as to mimic the effect of smoking a conventional combustible smoking article such as a cigarette, cigar or pipe, etc.). The device may include a temperature regulation control to drive the temperature of the heater and/or the heated aerosol generating substance (aerosol pre-cursor) to a specified target temperature and thereafter to maintain the temperature at the target temperature that enables efficient generation of aerosol.

[0056] As used herein, the term "aerosol" may include a suspension of vaporizable material as one or more of: solid particles; liquid droplets; gas. Said suspension may be in a gas including air. Aerosol herein may generally refer to/include a vapour. Aerosol may include one or more components of the vaporizable material.

[0057] As used herein, the term "vaporizable material" or "precursor" may refer to a smokable material which may for example comprise nicotine or tobacco and a vapour forming agent. Tobacco may take the form of various materials such as shredded tobacco, granulated tobacco, tobacco leaf and/or reconstituted tobacco. The vaporizable material may also comprise at least one of a gelling agent, a binding agent, a stabilizing agent, and a humectant.

[0058] As used herein, the term "vapour forming agent" or "aerosol forming agent" or "aerosol former" may referrer to: a polyol such as sorbitol, glycerol, and glycols like propylene glycol or triethylene glycol; a non-polyol such as monohydric alcohols, acids such as lactic acid, glycerol derivatives, esters such as triacetin, triethylene glycol diacetate, triethyl citrate, glycerin or vegetable glycerin. In some embodiments, the aerosol generating agent may be glycerol, propylene glycol, or a mixture of glycerol and propylene glycol. A vapour forming agent may also refer to any mixture of the previously cited elements.

[0059] FIG. **1** shows an aerosol generating assembly **10** comprising an aerosol generating device **11** and flat-shaped tobacco article **12** inserted into the aerosol generating device **11**. This flat-shaped tobacco article **12** is shown in more detail on FIG. **2**.

[0060] In reference to FIG. **2**, the flat-shaped tobacco article **12**, referenced here-below as tobacco article **12**, is for example a flat-shaped cuboid extending along a longitudinal axis X and having external dimensions L×W×D. In a typical example, the length L of the article according to the longitudinal axis X equals substantially to 33 mm while its width W and depth D are substantially equal respectively to 12 mm and 3.5 mm. According to different examples, the values L, W and D can be selected within a range of +/−40%, but dimensions of the flat-shaped tobacco article of the invention are not limited to specific ranges. The depth D of the tobacco article **12** is formed by a pair of parallel walls **13**A, **13**B, called hereinafter article lateral walls **13**A, **13**B, and the width W of the tobacco article **12** is formed by a pair of parallel walls **14**A, **14**B, called hereinafter article contact walls **14**A, **14**B. The article walls **13**A, **13**B, **14**A, **14**B form two parallel pairs of outer surfaces of the tobacco article **12**. According to other examples of the invention, the tobacco article **12** can have any other suitable flat shape and/or external dimensions. In a general case, the flat shape of the tobacco article should be understood as a shape having its depth for example at least 5 times, advantageously at least 10 times and more advantageously at least 15 times less than each of its longitudinal and/or transversal dimension. Additionally, as it will be explained in further detail below, the depth D of at least a part of the tobacco article **12** may vary when it is received in the aerosol generating device **11**.

[0061] The tobacco article **12** comprises a heater part **15** and a mouthpiece part **16** arranged along the longitudinal axis X. In some embodiments, the tobacco article **12** may comprise only the heater part **15**. The heater part **15** may for example be slightly longer than the mouthpiece part **16**. For example, the length L**2** of the heater part **15** according to the longitudinal axis X may be substantially equal to 18 mm and the length L**1** of the mouthpiece part **16** according to the longitudinal axis X may be substantially equal to 15 mm. The heater part **15** defines an abutting end **18** of the article **12** and the mouthpiece part **16** defines a mouth end **20** of the article **12**. The heater part **15** and the mouthpiece part **16** may be fixed one to the other by a unique wrapper extending around the longitudinal axis X or using different wrappers as it will be explained in further detail below. The or each wrapper may, for example, comprise paper and/or non-woven fabric and/or aluminium. The or each wrapper may be porous or air impermeable. The or each wrapper forms a plurality of airflow channels extending inside the article **12** between the abutting end **18** and the mouth end **20**.

[0062] The heater part **15** is intended to be heated by a heater and comprises at least one substrate layer and at least one retainer layer. These layers will be explained in more detail referring to cross-sectional views of the tobacco article **12** shown on FIGS. **4** to **5**, according to different examples of the invention.

[0063] According to the example of FIG. **1**, the mouthpiece part **16** is intended to be received inside a mouthpiece of aerosol generating device **11**. According to other examples of the invention, the mouthpiece part **16** forms itself a mouthpiece intended to be in contact with the user's mouth and/or lips. The mouthpiece part **16** comprises a core **17** acting for example like a filter. The core **17** may for example be a foam, or packed strands or fibres. The core **17** may be formed through an extrusion and/or rolling process into a stable shape. The article may be shaped to provide one or more airflow channels. In the particular example of FIG. **2**, the mouthpiece part **16** defines a plurality of venting holes **22** arranged for example according to the whole perimeter of the mouthpiece part **16** along two axis perpendicular to the longitudinal axis X. In other words, according to this example, the venting holes **22** are arranged on each wall of the article among the article lateral walls **13**A, **13**B and the article contact walls **14**A, **14**B. According to another example, the venting holes **22** are arranged only on the article contact walls **14**A, **14**B or preferably, only on one of the article contact walls **14**A, **14**B. In both examples, the venting holes **22** may be aligned perpendicularly to the longitudinal axis X on the or each corresponding wall of the

tobacco article **12**, and can be spaced by a same distance. The venting holes **22** allow fresh air entering inside the tobacco article **12** to achieve particular vaping/tasting effects.

[0064] Referring again to FIG. **1**, the aerosol generating device **11** comprises a device body **30** forming at least one side wall **40**. The device body **30** comprises a mouthpiece **32** and a housing **34** arranged successively according to axis Y shown on FIG. **1**. According to different examples of the invention, the mouthpiece **32** and the housing **34** can form two different pieces or one single piece. Particularly, in case of two different pieces, the mouthpiece **32** is designed to be fixed on or be received in an insertion opening formed at one of the ends of the housing **34**.

[0065] In each cross section, the housing **34** may for example form a substantially rectangular shape with rounded edges. In this case, the housing **34** with the mouthpiece **32** form at least four side walls **40**. According to other examples, the housing **34** can have a round cross-sectional shape. In this case, it can form with the mouthpiece **32** only one side wall **40**. The housing **34** can be formed from a single piece or several assembled pieces made of any suitable material like aluminium or plastic. In some embodiments, the material of the housing **34** can be a thermally conductive material. In some other embodiments, it can be a thermally insulating material. In some embodiments, the housing **34** can form on the corresponding part of the device side wall **40** one or several openings suitable for arranging control and/or visual elements. For example, such element may comprise control buttons, touch panels, screens, LEDs, etc. Particularly, in the example of FIG. **1**, the housing **34** forms a slot opening **42** receiving for example a LED indicating at least an ON state of the device **11**. It can also indicate for example a battery law state, an error state, etc.

[0066] In some examples, the housing **34** and/or the mouthpiece **32** may form an air inlet **43** in a fluid communication with an airflow path inside the device **11**. This air inlet **43** can be formed for example on the side wall **40**, for example in the transition zone between the mouthpiece **32** and the housing **34**, as it is shown on FIG. **1**. According to another example, the air inlet can be formed in a bottom wall of the housing **34**, opposite to the insertion opening of the housing **34**.

[0067] The mouthpiece **32** forms an air outlet **44** in a fluid communication with the airflow path inside the device **11**. Particularly, the air outlet **44** is configured to deliver to the user aerosol formed inside the device **11**. In some examples, the air outlet **44** may also be used to load the tobacco article **12** inside the device **11**. In some other examples, the tobacco article **12** can be loaded inside the device **11** when the mouthpiece **32** is detached from the housing **34**.

[0068] The housing **34** delimits an internal space of the device **11** receiving various elements designed to carry out different functionalities of the device **11**. This internal space can for example receive a battery for powering the device **11**, a control module for controlling the operation of the device **11**, a heating chamber **45** for receiving the tobacco article **12** and a heater **47** for heating the heater part **15** of the tobacco article **12**. Among these elements, only the heating chamber **45** and the heater **47** will be explained in further detail in reference to FIGS. **3** and **4**.

[0069] Referring to FIG. **3**, the heating chamber **45** forms a cup-shaped heating chamber extending along the axis Y between a proximal end **70** and a distal end **71**. The heating chamber **45** is designed to receive the heater part **15** of the tobacco article **12**. For this purpose, the heating chamber **45** defines substantially the same cross-sectional shape as the tobacco article **12**. Particularly, in the example of the FIG. **3**, the heating chamber **45** defines a rectangular cross-sectional shape with two parallel chamber lateral walls **73**A, **73**B and two parallel chamber contact walls **74**A, **74**B. The heating chamber **45** also defines a distal wall **75** arranged perpendicularly to the axis Y. Particularly, the distal wall **75** is adjacent to each of the walls **73**A, **73**B, **74**A, **74**B.

[0070] The heating chamber **45** is adapted to receive at least the heater part **15** of the tobacco article **12** so as the longitudinal axis X coincides with the axis Y, the article lateral walls **13**A, **13**B face the respective chamber lateral walls **73**A, **73**B and the article contact walls **14**A, **14**B face the respective camber contact walls **74**A, **74**B.

[0071] According to different examples of the invention, the distal end **71** of the heating chamber **45** may be sealed or may define at least one opening. In the first case, the proximal end **70** of the chamber **45** may form the unique opening of the chamber **45** configured to receive the tobacco article **12** with a play. Particularly, in this case, an airflow channel can be formed between each pair of the lateral walls **13**A, **73**A and **13**B, **73**B of the article **12** and the chamber **45**, while the corresponding contact walls **14**A, **74**A and **14**B, **74**B can be in contact one with the other. As it is shown on FIG. **3**, while using the device **11**, in this case, an airflow path can extend from the air inlet **43** through the airflow channels formed between the corresponding pairs of lateral walls and then, after a "U"-turn inside the heating chamber **45** through the tobacco article **12** until the air outlet **44**. In the second case, all of the walls of the tobacco article **12** can be in contact with the corresponding walls of the heating chamber **45**. In this case, while using the device **11**, an airflow path can extend from the air inlet **43** through the opening formed in the distal end **71** and then, through the tobacco article **12** until the air outlet **44**. According to other examples, the heating chamber **45** may form other openings for example in its lateral or contact walls to form an airflow path through the tobacco article **12**.

[0072] As shown on FIG. **4**, the heater **47** is arranged inside the heating chamber **45** and extends for example from the distal wall **75** substantially along the whole length of the other chamber walls **73**A, **73**B, **74**A, **74**B. According to one embodiment of the invention, the heater **47** extends from a centre of the distal wall **75**. According to another embodiment, the heater **47** is arranged between the centre of the distal wall **75** and one of the chamber lateral walls **73**A, **73**B. According to still another embodiment that can be combined with the previous embodiment, the heater **47** is arranged between the centre of the distal wall **75** and one of the chamber contact walls **74**A, **74**B.

[0073] According to the invention, the heater **47** is a double-sided flat heater configured to penetrate inside the heater part **15** of the tobacco article **12** when the article **12** is inserted in the heating chamber **45**. Particularly, the heater **47** defines two opposite sides configured to transfer heat to the corresponding portions of the tobacco article **12**. For this purpose, the heater **47** may comprise for example a unique heating element, as for example a heating blade. This heating element is connected to the control module of the device **11** and is configured to be operated according to one or several heating profiles by this control module. According to another embodiment, the heater **47** comprises a flat

support receiving on each of its sides a heating element. In this case, each heating element can be made for example from a film, like a polyimide film. Additionally, in some embodiments, both heating elements can be operated by the control module according to a same heating profile. According to other embodiments, the heating elements are operated separately by the control module, for example according to different heating profiles. These heating profiles can for example be chosen depending on the tobacco article portion in contact with the corresponding side of the heater **47** and/or depending on the stage of the vaping session (pre-heating, heating, etc.).

[0074] In some embodiments, the different sides of the heater **47** can be covered by a same coating or different coatings. In this last case, the coatings can be chosen to ensure different heat transfer properties to obtain for example different heating temperatures on these sides, at least at some stages of the vaping session. These coatings can for example be used when the heater **47** comprises a unique heating element.

[0075] FIG. **4** shows a cross-sectional view of the tobacco article **12**, when it is inserted partially inside the heating chamber **45**. According to the example of this FIG. **4**, the heater part **15** of the tobacco article **12** comprises a first heating portion **81** and a second heating portion **82** intended to be in contact with different sides of the flat heater **47**. In other words, the heater part **15** of the tobacco article **12** is configured to receive the heater **47** between its heating portions **81**, **82**. In some embodiments, each heating portion **81**, **82** is configured to be compressed at least slightly upon insertion the heater **47** between them. In this case, when non-compressed, the depth D of the tobacco article **12** can correspond substantially to the distance between the chamber contact walls **74**A, **74**B. Additionally, the heating portions **81**, **82** may have the same thickness or different thicknesses. In the first case, the heater **47** is advantageously arranged at the centre between the chamber contact walls **74**A, **74**B, and the in the second case, the heater **47** may be arranged in offset with this centre. Additionally, in the second case, the tobacco article **12** may for example define a unique insertion orientation. This insertion orientation can for example be indicated on the external surface of the article **12** or be defined by a specific shape of the article **12** and/or the heating chamber **45** preventing thus the insertion of the tobacco article **12** according to the other orientation.

[0076] Each heating portion **81**, **82** can be wrapped in a corresponding wrapper. Additionally, the same wrapper can be used to wrap the corresponding portion of the mouthpiece part **16** of the tobacco article **12**. Thus, in the example of FIG. **4**, a first wrapper **83** can be used to wrap the first heating portion **81** of the heater part **15** and the portion of the mouthpiece part **16** extending continuously the first heating portion **81** to the mouthpiece part **16**. Similarly, a second wrapper **84** can be used to wrap the second heating portion **82** of the heater part **15** and the portion of the mouthpiece part **16** extending continuously the second heating portion **82** to the mouthpiece part **16**. In this example, the mouthpiece part **16** is thus divided in two distinct portions wrapped in different wrappers **81**, **82**. Additionally, in this case, these portions of the mouthpiece part **16** can be attached between them using appropriate attaching means **85**, like glue, clips, wires, etc. In a variant, only the first and the second heating portions **81**, **82** are wrapped in different wrappers. In this case, these heating portions **81**, **82** can share the same non-divided portion of the mouthpiece part **16**. According to still another variant, the tobacco article **12** has only an external wrapper and the heating portions **81**, **82** can be divided by their layers or any other appropriate mean.

[0077] According to the example of FIG. **4**, the first heating portion **81** comprises a unique layer which is a substrate layer **91**. Particularly, the substrate layer **91** comprises tobacco substrate as for example shredded tobacco, granulated tobacco, tobacco leaf and/or reconstituted tobacco. According to some examples, the substrate layer **91** may further comprise a vapour forming agent integrated into the tobacco substrate.

[0078] In the same example, the second heating portion **82** also comprises a unique layer. Contrary to the first heating portion, the unique layer of the second heating portion **82** is a retainer layer **92**. This retainer layer **92** comprises an agent retainer impregnated with a vapour forming agent. The agent retainer is chosen for example in the group comprising:

[0079] unwoven fabric;

[0080] cotton; and

[0081] paper.

[0082] The agent retainer can be impregnated with the vapour forming agent in a liquid or gas form using any suitable manufacturing process. For example, this can be done while forming the retainer layer **92**. After being impregnated, the agent retainer keeps substantially unchanged its internal structure and stocks the vapour forming agent for example in a form of droplets between different segments of this internal structure.

[0083] Advantageously, the retainer layer **92** consists of said agent retainer impregnated with said vapour forming agent. In other words, in this case, the retainer layer **92** comprises only said elements and notably, does not comprise any tobacco or nicotine containing substrate.

[0084] Advantageously, in the case where the substrate layer **91** also comprises a vapour forming agent, this vapour forming agent may be chosen different or substantially the same that the vapour forming agent comprised in the retainer layer **92**, based on the response time of each layer **91**, **92**.

[0085] According to the example of FIG. **4**, each of the layers **91**, **92** is intended to be heated directly by the heater **47**. Particularly, as used herein, a layer of the tobacco article **12** is considered to be heated directly by the heater **47** when there is no any other layer of the tobacco article **12** between this layer and the heater **47**. However, other elements, like the wrappers **83**, **84** or a coating of the heater **47**, may be interposed between this layer and the heater **47**.

[0086] FIG. **5** shows an example of the heater portion **15** having a different layer arrangement inside each heating portion **81**, **82**.

[0087] Particularly, in the example of this FIG. **5**, the second heating portion **82** comprises two retainer layers **93**A, **93**C and one substrate layer **93**B. The substrate layer **93**B is similar to the substrate layer **91** explained above and may for example be arranged between the retainer layers **93**A, **93**C. Each of the retainer layers **93**A, **93**C can be similar to the retainer layer **92** explained above. The retainer layers **93**A, **93**C can comprise a same vapour forming agent and/or agent retainer, or different vapour forming agents and/or agent retainers. Additionally, the retainer layers **93**A, **93**C can have a same thickness or different thicknesses. In this last case, the retainer layer **93**C can be thicker than the retainer layer **93**A. Finally, as it is shown on FIG. **5**, the

retainer layer **93**C is intended to be heated directly by the corresponding side of the heater **47**

[0088] The first portion **81** of the heater part **15** can also comprise several layers. Thus, according to the example of the same FIG. **5**, the first portion **81** comprises one substrate layer **94**A and one retainer layer **94**B. The substrate layer **94**A is for example similar to the substrate layer **93**B explained above and is intended for example to be heated directly by the corresponding side of the heater **47**. The retainer layer **94**B can also be similar to the retainer layers **93**A, **93**C explained above and may comprise a same vapour forming agent and/or agent retainer, or a vapour forming agent and/or agent retainer different from those of at least one of these retainer layers **93**A, **93**C. Additionally, the layers **94**A, **94**B can have the same thickness or different thicknesses. For example, the retainer layer **94**B can be thicker than the substrate layer **94**A.

[0089] Of course, many other examples of layer arrangement inside each of the heating portions **81**, **82** are possible. This arrangement can correspond to any combination of layers explained above. According to some examples, the heating portions **81**, **82** can have the same layer composition. Additionally, for the person skilled in art, it is clear that the number of retainer layers and/or their arrangement and/or their thickness and/or their composition can be adapted basing on the desired response time of each of this layer.

[0090] The illustrations in the accompanying FIGS. **4** and **5** are non-limiting examples of the flat-shaped tobacco article of the invention, and there are numerous modifications and variations of the invention that still fall within the scope of appended claims. For example, the flat-shaped tobacco article **12** in FIG. **4** and FIG. **5** can have a gap formed between the heating portions **81**, **82**, before being inserted into the heating chamber **45**. Such a gap can have a shape corresponding to the heater **47**, and thus can facilitate insertion of the flat-shaped tobacco article **12** into the heating chamber **45** and/or reduce compression of the heating portions **81**, **82** due to the insertion of the heater **47**, for example. Furthermore, unlike the illustrations in FIGS. **2**, **3**, **4** and **5**, the heating portions **81**, **82** can also be provided as separate members from each other, which are inserted into the heating chamber **45** to come in contact with the opposite sides of the heater **47**, respectively.

1. A flat-shaped tobacco article comprising a first heating portion and a second heating portion configured to be arranged parallel to the first heating portion;

the first heating portion comprising a substrate layer comprising tobacco substrate;

the second heating portion comprising a retainer layer comprising a vapour forming agent and an agent retainer retaining the vapour forming agent;

the flat-shaped tobacco article being configured to receive at least a part of a double-sided flat heater of an aerosol generating device between the first and second heating portions to heat simultaneously each of the heating portions, the substrate layer and the retainer layer of respectively the first heating portion and the second heating portion are arranged to be heated directly by a corresponding side of the flat heater.

2. The flat-shaped tobacco article according to claim **1**, wherein the agent retainer is at least one of:

unwoven fabric;

cotton; or

paper.

3. The flat-shaped tobacco article according to claim **1**, wherein the vapour forming agent is at least one of:

polyol;

glycol;

non-polyol;

acid;

esters; or

any mixture thereof.

4. The flat-shaped tobacco article according to claim **1**, wherein the first heating portion further comprises at least one retainer layer arranged parallel to the substrate layer.

5. The flat-shaped tobacco article according to claim **4**, wherein the at least one retainer layer of the first heating portion is arranged to be heated through the corresponding substrate layer.

6. The flat-shaped tobacco article according to claim **1**, wherein the second heating portion further comprises a substrate layer arranged parallel to the retainer layer of this the second heating portion.

7. The flat-shaped tobacco article according to claim **6**, wherein the second heating portion further comprises a second retainer layers, the substrate layer being arranged between the two retainer layers of the second heating portion.

8. The flat-shaped tobacco article according to claim **7**, wherein the two retainer layers of the second heating portion have different thicknesses and/or comprise different vapour forming agents and/or comprise different agent retainers.

9. The flat-shaped tobacco article according to claim **1**, wherein the second heating portion has a layer composition different from a layer composition of the first heating portion.

10. The flat-shaped tobacco article according to claim **1**, wherein each heating portion is wrapped into a separate wrapper.

11. The flat-shaped tobacco article according to claim **1**, further comprising attaching means for attaching the heating portions, or extensions thereof, one to the other.

12. The flat-shaped tobacco article according to claim **1**, wherein each heating portion is extended by a filter part.

13. An aerosol generating assembly comprising:

an aerosol generating device comprising a double-sided flat heater;

the flat-shaped tobacco article according to claim **1** configured to be heated by the heater to generate aerosol.

14. The flat-shaped tobacco article according to claim **1**, further comprising glue, clips, and/or wires for attaching the heating portions, or extensions thereof, one to the other.

15. The flat-shaped tobacco article according to claim **12**, wherein both heating portions share a same portion of a mouthpiece part.

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