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(54) Title: SMOKING SUBSTITUTE CONSUMABLE

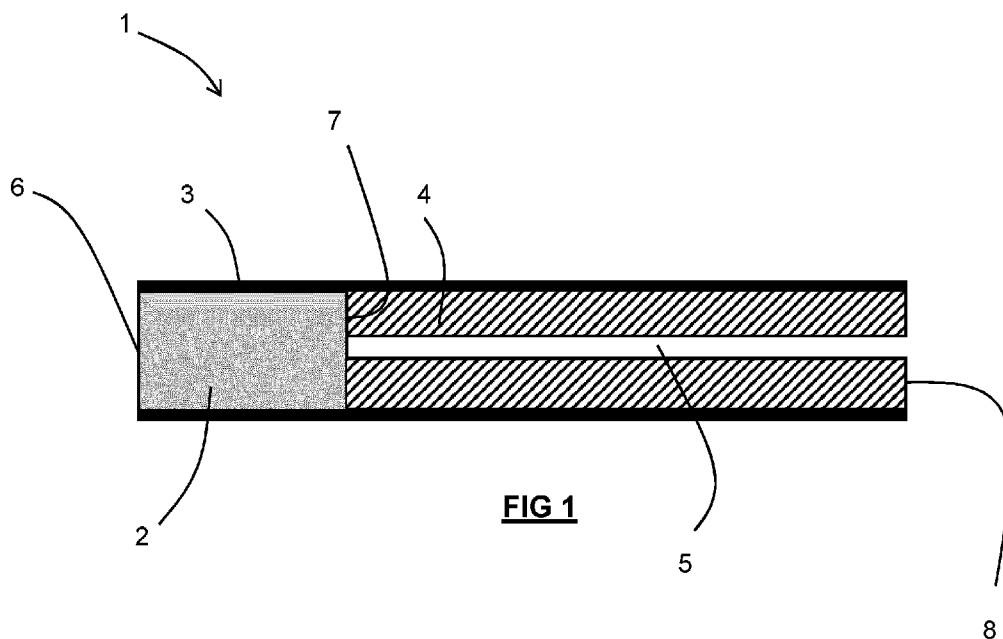


FIG 1

(57) Abstract: The present disclosure relates to an aerosol-forming article comprising: an aerosol-forming substrate (2); and a filter element (4) having a hollow bore (5) extending from the downstream axial end of the substrate to the downstream axial end of the article.



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Smoking substitute consumable

Field of the Disclosure

The present disclosure relates to a consumable for use in a smoking substitute system and particularly, although not exclusively, to a heat-not-burn (HNB) consumable.

5 ***Background***

The smoking of tobacco is generally considered to expose a smoker to potentially harmful substances. It is generally thought that a significant amount of the potentially harmful substances are generated through the heat caused by the burning and/or combustion of the tobacco and the constituents of the burnt tobacco in the tobacco smoke itself.

10 Conventional combustible smoking articles, such as cigarettes, typically comprise a cylindrical rod of tobacco comprising shreds of tobacco which is surrounded by a wrapper, and usually also a cylindrical filter axially aligned in an abutting relationship with the wrapped tobacco rod. The filter typically comprises a filtration material which is circumscribed by a plug wrap. The wrapped tobacco rod and the filter are joined together by a wrapped band of tipping paper that circumscribes the entire length of the filter and an adjacent
15 portion of the wrapped tobacco rod. A conventional cigarette of this type is used by lighting the end opposite to the filter, and burning the tobacco rod. The smoker receives mainstream smoke into their mouth by drawing on the mouth end or filter end of the cigarette.

Combustion of organic material such as tobacco is known to produce tar and other potentially harmful by-products. There have been proposed various smoking substitute systems (or "substitute smoking systems")
20 in order to avoid the smoking of tobacco.

Such smoking substitute systems can form part of nicotine replacement therapies aimed at people who wish to stop smoking and overcome a dependence on nicotine.

Smoking substitute systems include electronic systems that permit a user to simulate the act of smoking by producing an aerosol (also referred to as a "vapour") that is drawn into the lungs through the mouth
25 (inhaled) and then exhaled. The inhaled aerosol typically bears nicotine and/or flavourings without, or with fewer of, the odour and health risks associated with traditional smoking.

In general, smoking substitute systems are intended to provide a substitute for the rituals of smoking, whilst providing the user with a similar experience and satisfaction to those experienced with traditional smoking and with combustible tobacco products. Some smoking substitute systems use smoking substitute articles

that are designed to resemble a traditional cigarette and are cylindrical in form with a mouthpiece at one end.

The popularity and use of smoking substitute systems has grown rapidly in the past few years. Although originally marketed as an aid to assist habitual smokers wishing to quit tobacco smoking, consumers are increasingly viewing smoking substitute systems as desirable lifestyle accessories.

There are a number of different categories of smoking substitute systems, each utilising a different smoking substitute approach.

One approach for a smoking substitute system is the so-called "heat not burn" ("HNB") approach in which tobacco (rather than an "e-liquid") is heated or warmed to release vapour. The tobacco may be leaf tobacco or reconstituted tobacco. The vapour may contain nicotine and/or flavourings. In the HNB approach the intention is that the tobacco is heated but not burned, i.e. the tobacco does not undergo combustion.

A typical HNB smoking substitute system may include a device and a consumable. The consumable may include the tobacco material. The device and consumable may be configured to be physically coupled together. In use, heat may be imparted to the tobacco material by a heating element of the device, wherein airflow through the tobacco material causes moisture in the tobacco material to be released as vapour. A vapour may also be formed from a carrier in the tobacco material (this carrier may for example include propylene glycol and/or vegetable glycerine) and additionally volatile compounds released from the tobacco. The released vapour may be entrained in the airflow drawn through the tobacco.

As the vapour passes through the consumable (entrained in the airflow) from an inlet to a mouthpiece (outlet), the vapour cools and condenses to form an aerosol for inhalation by the user. The aerosol will normally contain the volatile compounds.

In HNB smoking substitute systems, heating as opposed to burning the tobacco material is believed to cause fewer, or smaller quantities, of the more harmful compounds ordinarily produced during smoking. Consequently, the HNB approach may reduce the odour and/or health risks that can arise through the burning, combustion and pyrolytic degradation of tobacco.

In some cases, the aerosol passing from the mouthpiece (i.e. being inhaled by a user) may not be in a desirable state. Thus, it may be desirable to alter one or more characteristics of the aerosol before it is inhaled by the user.

There is a need for an improved design of HNB consumables to enhance the user experience and improve the function of the HNB smoking substitute system.

The present disclosure has been devised in the light of the above considerations.

Summary of the Disclosure

At its most general, the present disclosure relates to an aerosol-forming article e.g. a smoking substitute article such as an HNB consumable having an axial bore extending from an aerosol-forming substrate to the downstream axial end of the article.

- 5 According to a first aspect, there is provided an aerosol-forming article (e.g. a smoking substitute article such as an HNB consumable) comprising an aerosol-forming substrate and a filter element having a hollow bore extending from the downstream axial end of the substrate to the downstream axial end of the article.

By providing an aerosol-forming article having only two axial components, the complexity of the manufacture of the article is significantly reduced thus reducing manufacturing times, cost and tolerances.

- 10 The axial bore extending from the downstream axial end of the substrate to the axial downstream (mouth) end of the article provides a space for mixing and cooling of the vapour/aerosol generated by heating of the substrate and also provides passage of low resistance to help reduce condensation and maximise visible vapour.

Optional features will now be set out. These are applicable singly or in any combination with any aspect.

- 15 The aerosol-forming article is preferably a heat-not-burn (HNB) consumable.

The aerosol-forming substrate is capable of being heated to release at least one volatile compound that can form an aerosol. The aerosol-forming substrate may be located at the upstream end of the article/consumable.

- 20 As used herein, the terms "upstream" and "downstream" are intended to refer to the flow direction of the vapour/aerosol i.e. with the downstream end of the article/consumable being the mouth end or outlet where the aerosol exits the article/consumable for inhalation by the user. The upstream end of the article/consumable is the opposing end to the downstream end.

- 25 In order to generate an aerosol, the aerosol-forming substrate comprises at least one volatile compound that is intended to be vaporised/aerosolised and that may provide the user with a recreational and/or medicinal effect when inhaled. Suitable chemical and/or physiologically active volatile compounds include the group consisting of: nicotine, cocaine, caffeine, opiates and opoids, cathine and cathinone, kavalactones, mysticin, beta-carboline alkaloids, salvinorin A together with any combinations, functional equivalents to, and/or synthetic alternatives of the foregoing.

- 30 The aerosol-forming substrate may comprise plant material. The plant material may comprise least one plant material selected from the list including *Amaranthus dubius*, *Arctostaphylos uva-ursi* (Bearberry),

Argemone mexicana, *Amica*, *Artemisia vulgaris*, Yellow Tees, *Galea zacatechichi*, *Canavalia maritima* (Baybean), *Cecropia mexicana* (Guamura), *Cestrum nocturnum*, *Cynoglossum virginianum* (wild comfrey), *Cytisus scoparius*, *Damiana*, *Entada rheedii*, *Eschscholzia californica* (California Poppy), *Fittonia albivenis*, *Hippobroma longiflora*, *Humulus japonica* (Japanese Hops), *Humulus lupulus* (Hops), *Lactuca virosa* (Lettuce Opium), *Lagdera alata*, *Leonotis leonurus*, *Leonurus cardiaca* (Motherwort), *Leonurus sibiricus* (Honeyweed), *Lobelia cardinalis*, *Lobelia inflata* (Indian-tobacco), *Lobelia siphilitica*, *Nepeta cataria* (Catnip), *Nicotiana species* (Tobacco), *Nymphaea alba* (White Lily), *Nymphaea caerulea* (Blue Lily), Opium poppy, *Passiflora incarnata* (Passionflower), *Pedicularis densiflora* (Indian Warrior), *Pedicularis groenlandica* (Elephant's Head), *Salvia divinorum*, *Salvia dorrii* (Tobacco Sage), *Salvia species* (Sage), *Scutellaria galericulata*, *Scutellaria lateriflora*, *Scutellaria nana*, *Scutellaria species* (Skullcap), *Sida acuta* (Wireweed), *Sida rhombifolia*, *Silene capensis*, *Syzygium aromaticum* (Clove), *Tagetes lucida* (Mexican Tarragon), *Tarchonanthus camphoratus*, *Tumera diffusa* (Damiana), *Verbascum* (Mullein), *Zamia latifolia* (Maconha Brava) together with any combinations, functional equivalents to, and/or synthetic alternatives of the foregoing.

Preferably, the plant material is tobacco. Any type of tobacco may be used. This includes, but is not limited to, flue-cured tobacco, burley tobacco, Maryland Tobacco, dark-air cured tobacco, oriental tobacco, dark-fired tobacco, perique tobacco and rustica tobacco. This also includes blends of the above mentioned tobaccos.

Any suitable parts of the tobacco plant may be used. This includes leaves, stems, roots, bark, seeds and flowers.

The tobacco may comprise one or more of leaf tobacco, stem tobacco, tobacco powder, tobacco dust, tobacco derivatives, expanded tobacco, homogenised tobacco, shredded tobacco, extruded tobacco, cut rag tobacco and/or reconstituted tobacco (e.g. slurry recon or paper recon).

The aerosol-forming substrate may comprise a gathered sheet of homogenised (e.g. paper/slurry recon) tobacco or gathered shreds/strips formed from such a sheet.

In some embodiments, the sheet used to form the aerosol-forming substrate has a grammage greater than or equal to 100 g/m², e.g. greater than or equal to 110 g/m² such as greater than or equal to 120 g/m².

The sheet may have a grammage of less than or equal to 300 g/m² e.g. less than or equal to 250 g/m² or less than or equal to 200 g/m².

The sheet may have a grammage of between 120 and 190 g/m².

The aerosol-forming substrate may comprise at least 50 wt% plant material, e.g. at least 60 wt% plant material e.g. around 65 wt% plant material. The aerosol-forming substrate may comprise 80 wt% or less plant material e.g. 75 or 70 wt% or less plant material.

The aerosol-forming substrate may comprise one or more additives selected from humectants, flavourants, fillers, aqueous/non-aqueous solvents and binders.

Humectants are provided as vapour generators – the resulting vapour helps carry the volatile active compounds and increases visible vapour. Suitable humectants include polyhydric alcohols (e.g. propylene glycol (PG), triethylene glycol, 1,2-butane diol and vegetable glycerine (VG)) and their esters (e.g. glycerol mono-, di- or tri-acetate). They may be present in the aerosol-forming substrate in an amount between 1 and 50 wt%.

The humectant content of the aerosol-forming substrate may have a lower limit of at least 1 % by weight of the plant material, such as at least 2 wt %, such as at least 5 wt %, such as at least 10 wt %, such as at least 20 wt %, such as at least 30 wt %, or such as least 40 wt %.

The humectant content of the aerosol-forming substrate may have an upper limit of at most 50 % by weight of the plant material, such as at most 40 wt %, such as at most 30 wt %, or such as at most 20 wt %.

Preferably, the humectant content is 1 to 40 wt % of the aerosol-forming substrate, such as 1 to 20 wt %

Suitable binders are known in the art and may act to bind together the components forming the aerosol-forming substrate. Binders may comprise starches and/or cellulosic binders such as methyl cellulose, ethyl cellulose, hydroxypropyl cellulose, hydroxyethyl cellulose and methyl cellulose, gums such as xanthan, guar, arabic and/or locust bean gum, organic acids and their salts such as alginic acid/ sodium alginate, agar and pectins.

Preferably the binder content is 5 to 10 wt% of the aerosol-forming substrate e.g. around 6 to 8 wt%.

Suitable fillers are known in the art and may act to strengthen the aerosol-forming substrate. Fillers may comprise fibrous (non-tobacco) fillers such as cellulose fibres, lignocellulose fibres (e.g. wood fibres), jute fibres and combinations thereof.

Preferably, the filler content is 5 to 10 wt% of the aerosol-forming substrate e.g. around 6 to 9 wt%.

The aerosol-forming substrate may comprise an aqueous and/or non-aqueous solvent. In some embodiments, the aerosol forming substrate has a water content of between 5 and 10 wt% e.g. between 6-9 wt% such as between 7-9 wt%.

The flavourant may be provided in solid or liquid form. It may include menthol, liquorice, chocolate, fruit flavour (including e.g. citrus, cherry etc.), vanilla, spice (e.g. ginger, cinnamon) and tobacco flavour. The flavourant may be evenly dispersed throughout the aerosol-forming substrate or may be provided in isolated locations and/or varying concentrations throughout the aerosol-forming substrate.

- 5 The aerosol-forming substrate may be formed in a substantially cylindrical shape such that the article/consumable resembles a conventional cigarette. It may have a diameter of between 5 and 10mm e.g. between 6 and 9mm or 6 and 8mm e.g. around 7 mm. It may have an axial length of between 10 and 15mm e.g. between 11 and 14mm such as around 12 or 13mm.

- 10 The aerosol-forming substrate may be at least partly circumscribed by a wrapping layer e.g. a paper wrapping layer. The wrapping layer may overlie an inner foil layer or may comprise a paper/foil laminate (with the foil innermost).

The article/consumable comprises a filter element extending from the downstream axial end of the substrate to the downstream axial end of the article.

The filter element may be at least partly (e.g. entirely) circumscribed by the (paper) wrapping layer.

- 15 The filter element may be comprised of cellulose acetate or polypropylene tow. The filter element may be comprised of activated charcoal. The filter element may be comprised of paper. The filter element may be comprised of plant material e.g. extruded plant material. The filter element may be circumscribed with a plug wrap e.g. a paper plug wrap (which will itself be circumscribed by the wrapping layer).

- 20 The filter element may have a substantially cylindrical shape with a diameter substantially matching the diameter of the aerosol-forming substrate (i.e. between 5 and 10mm e.g. between 6 and 9mm or 6 and 8mm e.g. around 7 mm). The axial length of the filter element may be less than 50 mm and greater than 20 mm, e.g. between 25 and 45 mm, for example between 30 and 40 mm e.g. between 33 and 38 mm, such as around 36mm.

- 25 The hollow bore through the filter element may be uniform along its axial length with a bore diameter of between 1 and 5 mm, e.g. between 2 and 4 mm or between 2 and 3 mm.

The hollow bore through the filter element may vary along the axial length. For example, there may be a stepped variation in bore diameter along its axial length. In some embodiments, the filter element comprises a plurality of portions wherein at least one of the portions has a different bore diameter than the other filter portions. The portions are unified to form the unitary filter element.

For example, there may be an upstream filter portion and a terminal filter portion. In some embodiments, the bore diameter of the upstream filter portion is greater than the bore diameter of the terminal filter portion. For example, the upstream filter portion may have a bore diameter that is 0.5 mm or more, or 1 mm or more than the bore diameter of the terminal filter portion. For example, the upstream filter portion may have a
5 bore diameter of between 3 and 5 mm. The terminal filter portion may have a bore diameter of between 1 and 2 mm.

In some embodiments, the bore diameter of the upstream and terminal filter portions may be equal.

There may be an intermediate filter portion axially interposed and adjacent the upstream and terminal filter portions. The diameter of the bore within the intermediate portion is preferably larger than the diameter in
10 both the upstream and terminal filter portions. The bore diameter within the intermediate portion may be greater than 3 or 4 or 5 mm. For example, it may be between 5 and 7 mm or 6 and 7 mm.

The filter portions may each have a substantially equal axial length, e.g. between 8 and 15 mm, or 9 and 13 mm, e.g. between 10 and 12 mm. The intermediate filter portion have a longer axial length e.g. between 10 and 15 mm e.g. between 12 and 14 mm or 13 and 14 mm e.g. around 14 mm.

15 In a second aspect, there is provided a smoking substitute system comprising an aerosol-forming article according to the first aspect and a device comprising a heating element.

The device may be a HNB device i.e. a device adapted to heat but not combust the aerosol-forming substrate.

The device may comprise a main body for housing the heating element. The heating element may comprise
20 an elongated e.g. rod, tube-shaped or blade heating element. The heating element may project into or surround a cavity within the main body for receiving the article/consumable described above.

The device (e.g. the main body) may further comprise an electrical power supply e.g. a (rechargeable) battery for powering the heating element. It may further comprise a control unit to control the supply of power to the heating element.

25 In a third aspect, there is provided a method of using a smoking substitute system according to the second aspect, the method comprising:

- inserting the article/consumable into the device; and
- heating the article/consumable using the heating element.

In some embodiments, the method comprises inserting the article/consumable into a cavity within the main
30 body and penetrating the article/consumable with the heating element upon insertion of the

article/consumable. For example, the heating element may penetrate the aerosol-forming substrate in the article/consumable.

The skilled person will appreciate that except where mutually exclusive, a feature or parameter described in relation to any one of the above aspects may be applied to any other aspect. Furthermore, except where mutually exclusive, any feature or parameter described herein may be applied to any aspect and/or combined with any other feature or parameter described herein.

Summary of the Figures

So that the invention may be understood, and so that further aspects and features thereof may be appreciated, embodiments illustrating the principles of the invention will now be discussed in further detail with reference to the accompanying figures, in which:

Figure 1 shows a first embodiment of an HNB consumable;

Figure 2 shows a second embodiment of an HNB consumable

Figure 3 shows a third embodiment of an HNB consumable; and

Figure 4 shows the first embodiment within a device forming an HNB system.

Detailed Description of the Figures

As shown in Figure 1, the HNB consumable 1 comprises an aerosol-forming substrate 2 at the upstream end 6 of the consumable 1.

The aerosol-forming substrate comprises reconstituted tobacco which includes nicotine as a volatile compound.

The aerosol-forming substrate 2 comprises 65 wt% tobacco which is provided in the form of gathered shreds produced from a sheet of slurry/paper recon tobacco. The tobacco is dosed with 20wt% of a humectant such as propylene glycol (PG) or vegetable glycerine (VG) and has a moisture content of between 7-9 wt%. The aerosol-forming substrate further comprises cellulose pulp filler and guar gum binder.

The aerosol-forming substrate 2 is formed in a substantially cylindrical shape such that the consumable resembles a conventional cigarette. It has diameter of around 7 mm and an axial length of around 12 mm.

The consumable further comprises a filter element 4 formed of cellulose acetate tow and having an axial length of around 36 mm. The filter element has a substantially cylindrical shape with diameter of the filter

element 4 matching the diameter of the aerosol-forming substrate 2. There is a hollow axial bore 5 having a diameter of around 2 mm extending from the downstream axial end 7 of the aerosol-forming substrate to the downstream axial end 8 of the consumable 1.

The aerosol-forming substrate 2 and filter element 4 is circumscribed by a paper wrapping layer 3.

5 Figure 2 shows a second embodiment of a consumable 1' which is the same as that shown in Figure 1 except that the filter element comprises an upstream filter portion 4a having an axial length of 10mm and bore 5a diameter of 3 mm, an intermediate filter portion 4b having an axial length of 14 mm and a bore 5b diameter of 5 mm and a terminal filter portion 4c having an axial length of 12mm and a bore 5c diameter of 3 mm.

10 There is a stepped change in bore diameter between the three portions 4a, 4b and 4c and they are integrally combined to form the unitary filter element.

Figure 3 shows a third embodiment of a consumable 1'' which is the same as the second embodiment bore 5a in the upstream filter portion 4a has a greater diameter (3mm) than the bore 5c in the terminal filter portion 4c.

15 Figure 4 shows the first embodiment inserted into an HNB device 10 comprising a rod-shaped heating element 20. The heating element 20 projects into a cavity 11 within the main body 12 of the device.

The consumable 1 is inserted into the cavity 11 of the main body 12 of the device 10 such that the heating rod 20 penetrates the aerosol-forming substrate 2. Heating of the reconstituted tobacco in the aerosol-forming substrate 2 is effected by powering the heating element (e.g. with a rechargeable battery (not shown)). As the tobacco is heated, moisture and volatile compound (e.g. nicotine) within the tobacco and the humectant are released as a vapour and entrained within an airflow generated by inhalation by the user at the upstream axial end 8 of the consumable.

25 The axial bore 5 extending from the downstream axial end 7 of the substrate to the axial downstream (mouth) end 8 of the article provides a space for mixing and cooling of the vapour/aerosol generated by heating of the substrate and also provides passage of low resistance to help reduce condensation and maximise visible vapour.

The features disclosed in the foregoing description, or in the following claims, or in the accompanying drawings, expressed in their specific forms or in terms of a means for performing the disclosed function, or a method or process for obtaining the disclosed results, as appropriate, may, separately, or in any combination of such features, be utilised for realising the invention in diverse forms thereof.

While the invention has been described in conjunction with the exemplary embodiments described above, many equivalent modifications and variations will be apparent to those skilled in the art when given this disclosure. Accordingly, the exemplary embodiments of the invention set forth above are considered to be illustrative and not limiting. Various changes to the described embodiments may be made without
5 departing from the scope of the invention.

For the avoidance of any doubt, any theoretical explanations provided herein are provided for the purposes of improving the understanding of a reader. The inventors do not wish to be bound by any of these theoretical explanations.

Any section headings used herein are for organizational purposes only and are not to be construed as
10 limiting the subject matter described.

Throughout this specification, including the claims which follow, unless the context requires otherwise, the words "have", "comprise", and "include", and variations such as "having", "comprises", "comprising", and "including" will be understood to imply the inclusion of a stated integer or step or group of integers or steps but not the exclusion of any other integer or step or group of integers or steps.

15 It must be noted that, as used in the specification and the appended claims, the singular forms "a," "an," and "the" include plural referents unless the context clearly dictates otherwise. Ranges may be expressed herein as from "about" one particular value, and/or to "about" another particular value. When such a range is expressed, another embodiment includes from the one particular value and/or to the other particular value. Similarly, when values are expressed as approximations, by the use of the antecedent "about," it
20 will be understood that the particular value forms another embodiment. The term "about" in relation to a numerical value is optional and means, for example, +/- 10%.

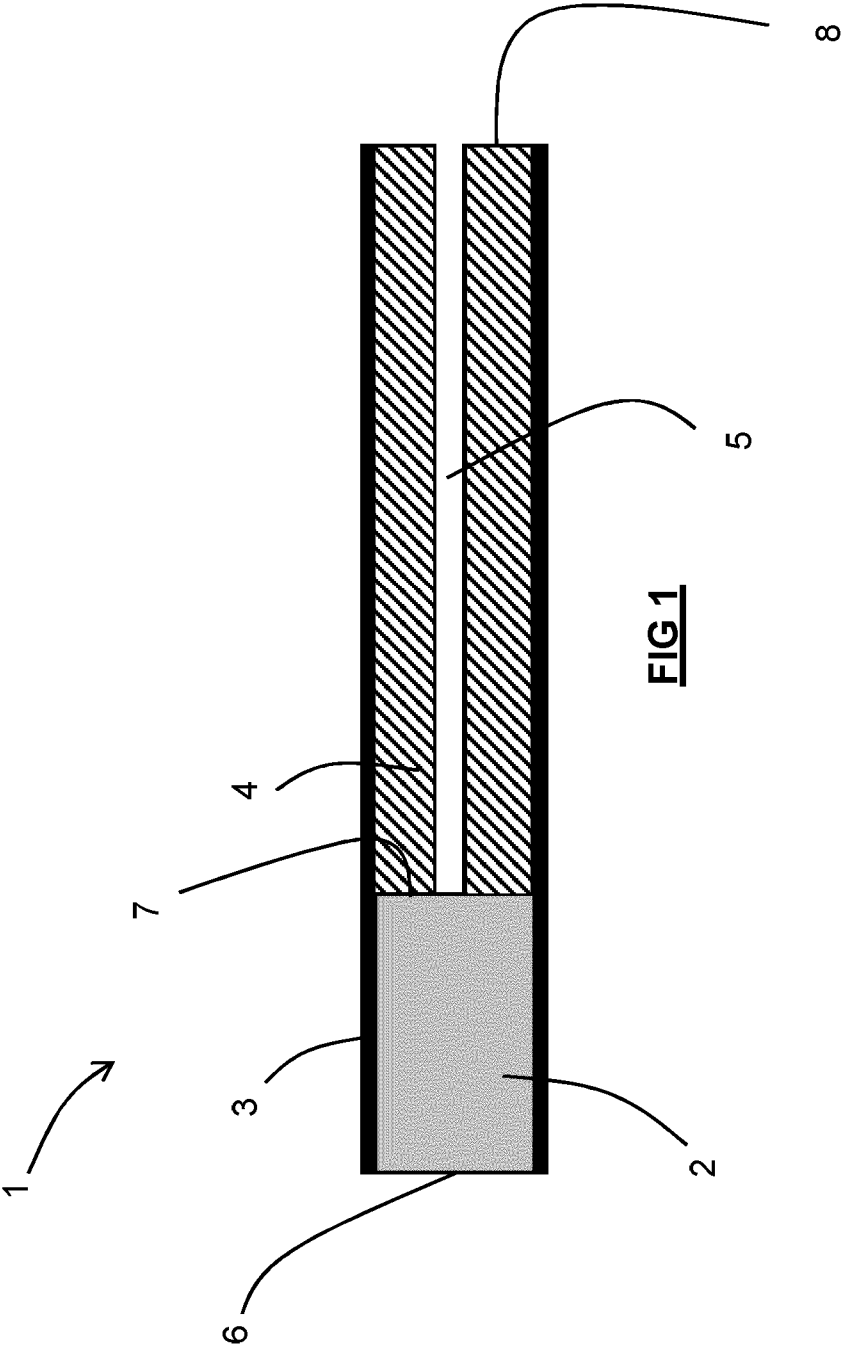
The words "preferred" and "preferably" are used herein refer to embodiments of the invention that may provide certain benefits under some circumstances. It is to be appreciated, however, that other embodiments may also be preferred under the same or different circumstances. The recitation of one or
25 more preferred embodiments therefore does not mean or imply that other embodiments are not useful, and is not intended to exclude other embodiments from the scope of the disclosure, or from the scope of the claims.

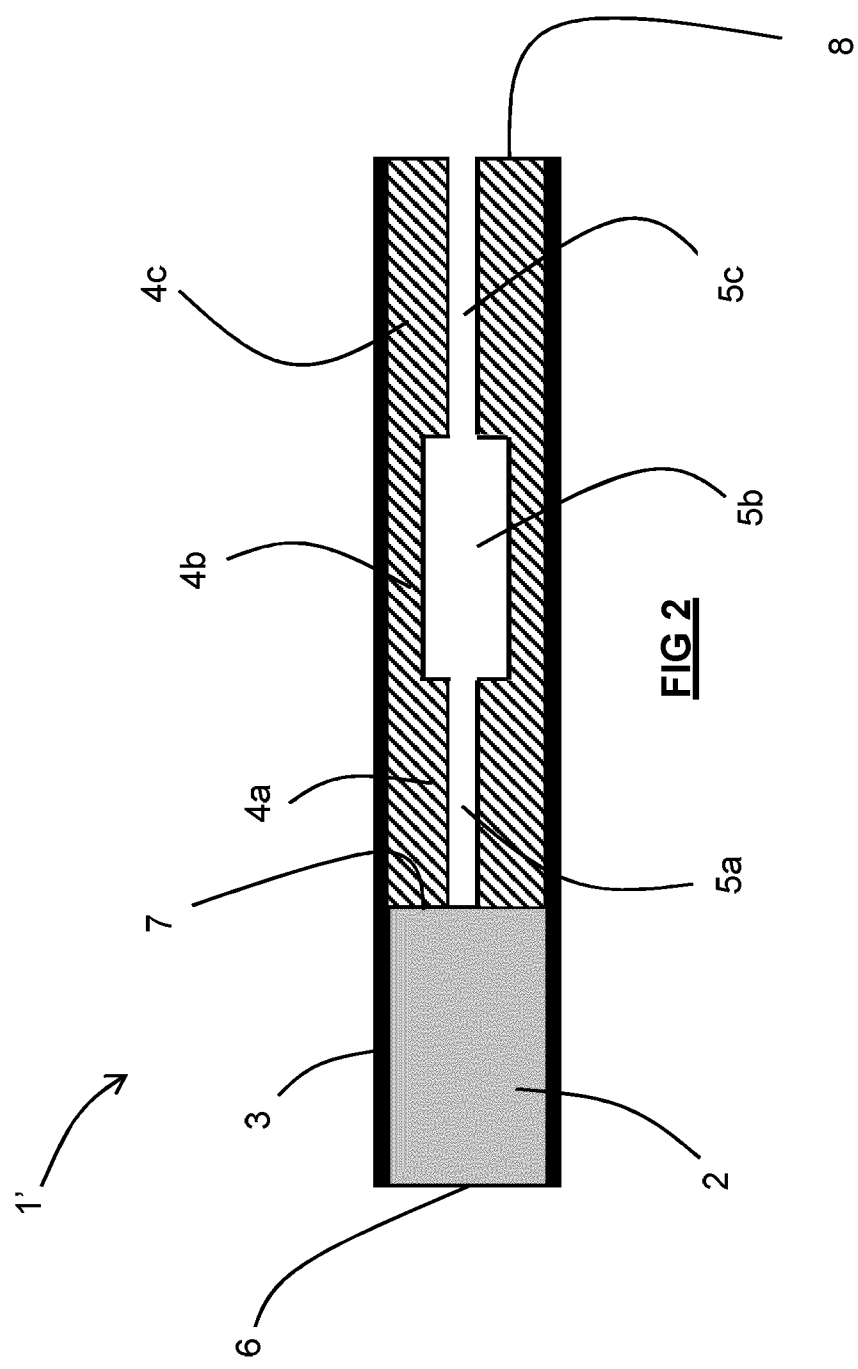
Claims:

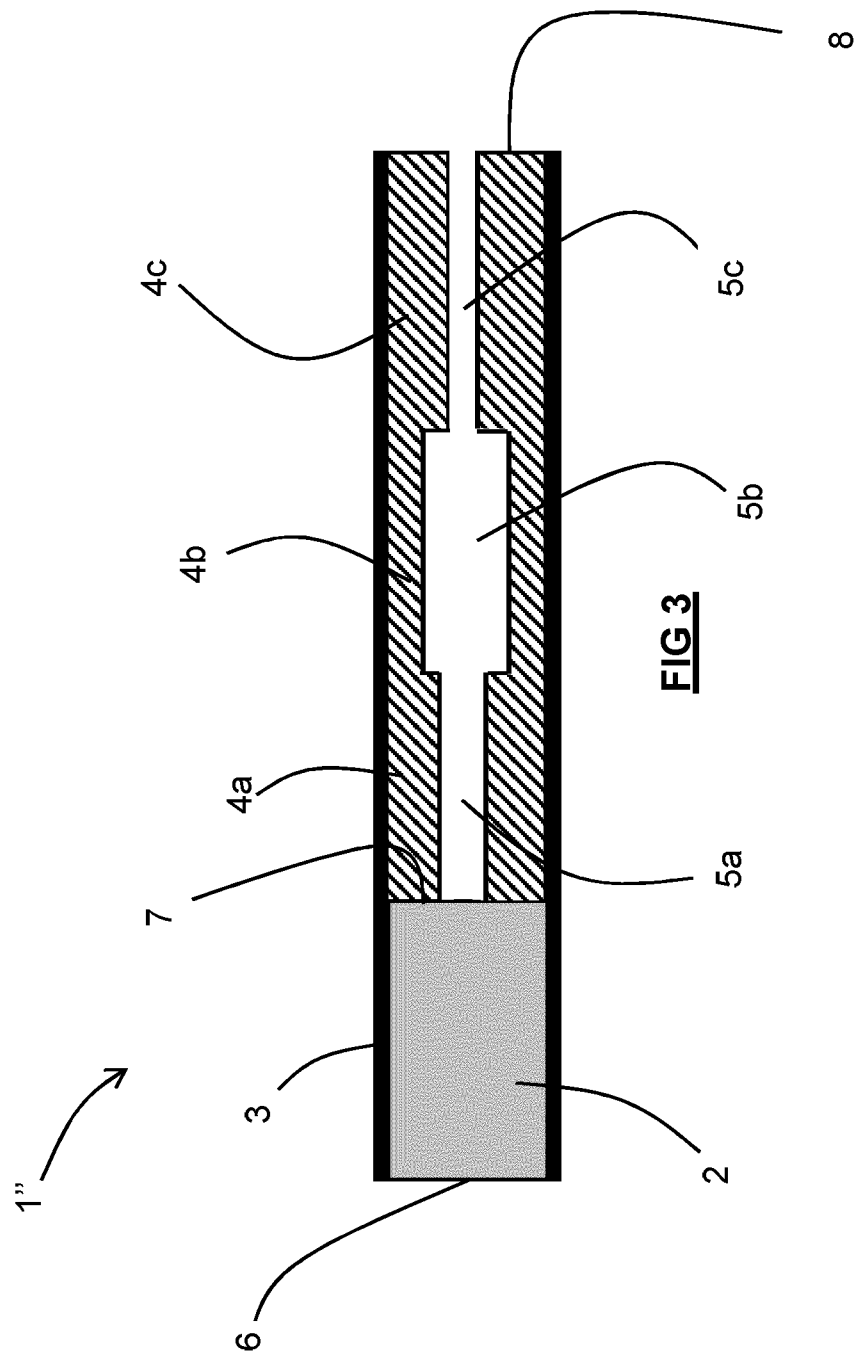
1. An aerosol-forming article comprising: an aerosol-forming substrate; and a filter element having a hollow bore extending from the downstream axial end of the substrate to the downstream axial end of the article.
- 5 2. An article according to claim 1 wherein the article is a heat not burn (HNB) consumable.
3. An article according to claim 1 or 2 wherein the axial length of the filter element is between 25 and 45 mm.
4. An article according to any one of the preceding claims wherein the hollow bore through the filter element is uniform along its axial length.
- 10 5. An article according to any one of claims 1 to 3 wherein the hollow bore through the filter element varies along the axial length.
6. An article according to claim 5 wherein the filter element comprises an upstream filter portion and a terminal filter portion and the bore diameter of the upstream filter portion is greater than the bore diameter of the terminal filter portion.
- 15 7. An article according to claim 5 wherein the filter element comprises an upstream filter portion and a terminal filter portion and the bore diameter of the upstream filter portion is equal to the bore diameter of the terminal filter portion.
8. An article according to claim 6 or 7 further comprising a filter portion axially interposed and adjacent the upstream and terminal filter portions.
- 20 9. An article according to claim 8 wherein the diameter of the bore within the intermediate portion is larger than the diameter in both the upstream and terminal filter portions.
10. An article according to claim 8 or 9 wherein the intermediate filter portion has a greater axial length than the upstream and terminal filter portions.
11. A system comprising a smoking substitute article according to any one of the preceding claims and
25 a device comprising a heating element.
12. A system according to claim 11 wherein the device comprises a main body for housing the heating element and the heating element comprises an elongated heating element.
13. A method of using the system according to claim 11 or 12, the method comprising:

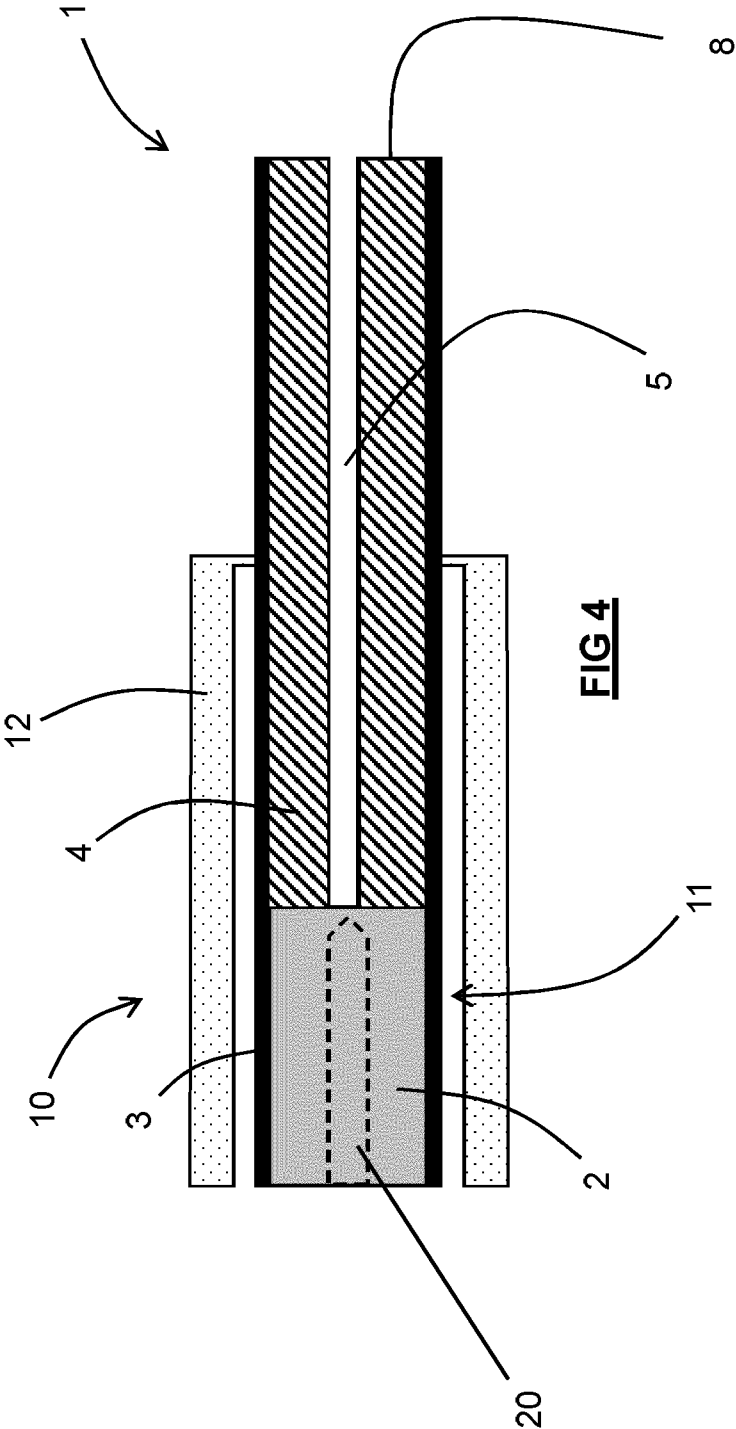
inserting the article into the device; and
heating the article using the heating element.

14. A method according to claim 13 comprising inserting the article into a cavity within a main body of the device and penetrating the article with the heating element upon insertion of the article.









INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2019/079186

A. CLASSIFICATION OF SUBJECT MATTER
INV. A24D1/20 A24D3/04
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A24D A24F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2015/166245 A2 (BRITISH AMERICAN TOBACCO CO [GB]) 5 November 2015 (2015-11-05) page 20, line 11 - line 26; figures 10,12,13	1,2,5,7, 8,10-14
A	----- CN 106 954 893 A (YUNNAN CHINA TOBACCO NEW MATERIAL TECH CO LTD [CN]) 18 July 2017 (2017-07-18) paragraph [0006] - paragraph [0017]; figures	9
X	----- WO 2017/207586 A1 (PHILIP MORRIS PRODUCTS SA [CH]) 7 December 2017 (2017-12-07) page 36, line 24 - page 39, line 6; claims; figures	1-3,5,6, 8-14
X	----- SA [CH]) 7 December 2017 (2017-12-07) page 36, line 24 - page 39, line 6; claims; figures	1-3,5, 11-14
	----- -/-	



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

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INTERNATIONAL SEARCH REPORT

International application No

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