US 20200253270A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2020/0253270 A1**

WHITTON et al. (43) **Pub. Date: Aug. 13, 2020**

(54) **A SMOKING ARTICLE OR AN AEROSOL GENERATING PRODUCT**

(71) Applicant: **British American Tobacco (Investments) Limited**, London (GB)

(72) Inventors: **Tina WHITTON**, London (GB); **Karl KALJURA**, London (GB)

(21) Appl. No.: **16/758,452**

(22) PCT Filed: **Oct. 23, 2018**

(86) PCT No.: **PCT/GB2018/053060**

§ 371 (c)(1),
(2) Date: **Apr. 23, 2020**

(30) **Foreign Application Priority Data**

Oct. 25, 2017 (GB) 1717568.8

Publication Classification

(51) **Int. Cl.**

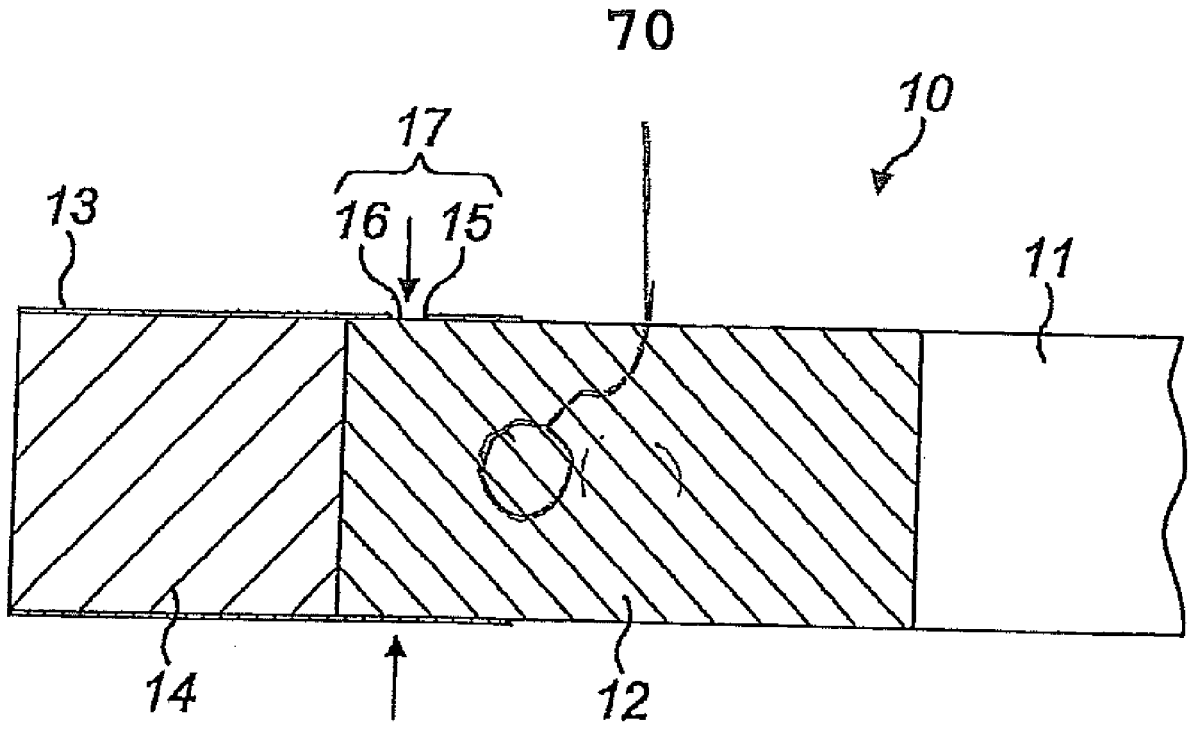
A24D 3/17	(2006.01)
A24D 3/04	(2006.01)
A24D 3/06	(2006.01)

(52) **U.S. Cl.**

CPC ***A24D 3/17*** (2020.01); ***A24D 3/043*** (2013.01); ***A24D 3/063*** (2013.01); ***A24D 3/061*** (2013.01); ***A24D 3/062*** (2013.01); ***A24D 3/048*** (2013.01)

(57) **ABSTRACT**

A smoking article or an aerosol generating product comprising a filter arrangement comprising a first filter section and a second filter section, the second filter section being located downstream of the first filter section; and a ventilation arrangement configured to provide a user controllable level of ventilation into the first filter section; wherein a resistance to gaseous flow through the length of the second filter section is lower than a resistance to gaseous flow through the length of the first filter section; and the first filter section comprising filter material and one or more capsules comprising an additive.



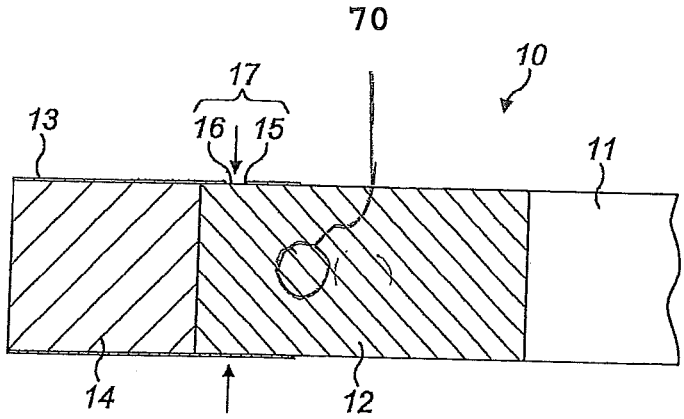


FIG. 1

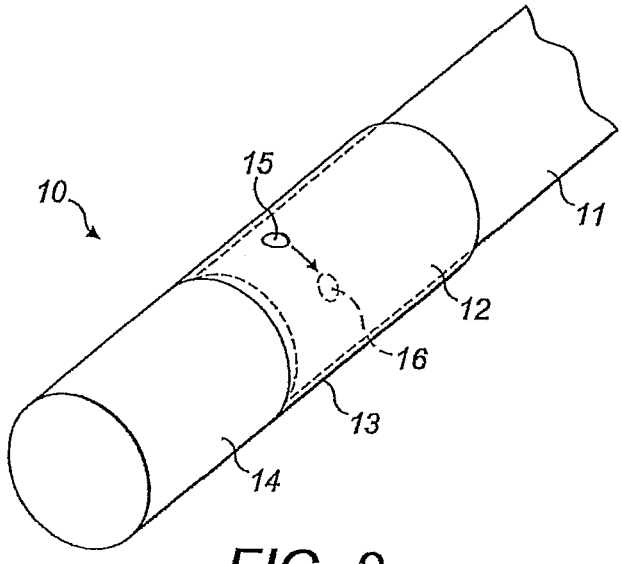


FIG. 2

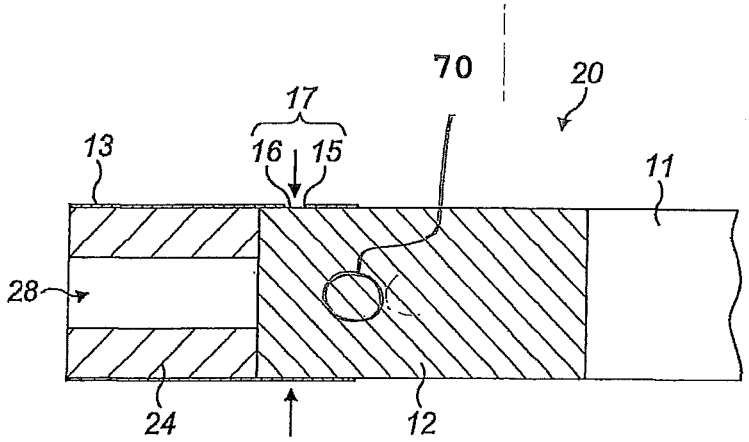


FIG. 3

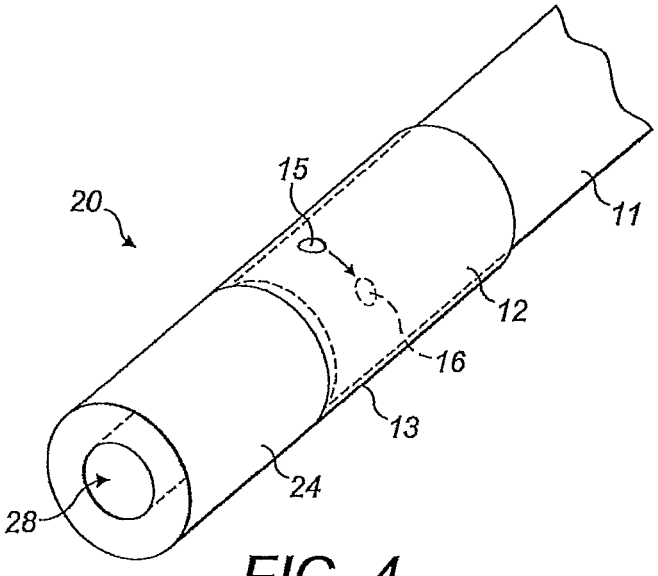


FIG. 4

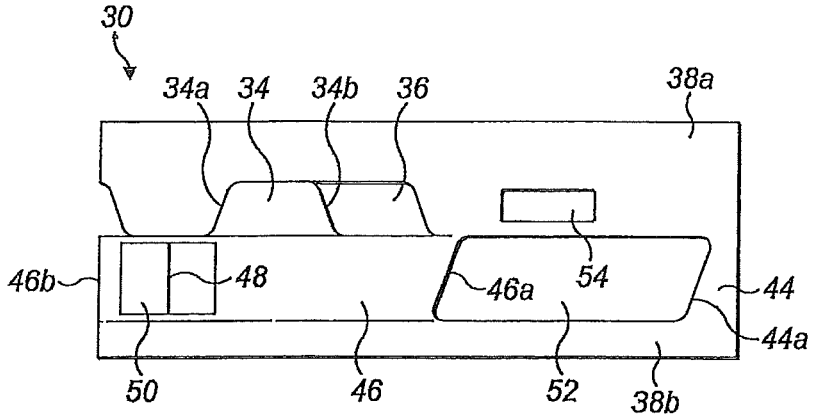

30
34a
34
34b
36
38a
46b
48
46a
54
44
44a
50
46
52
38b

FIG. 5a

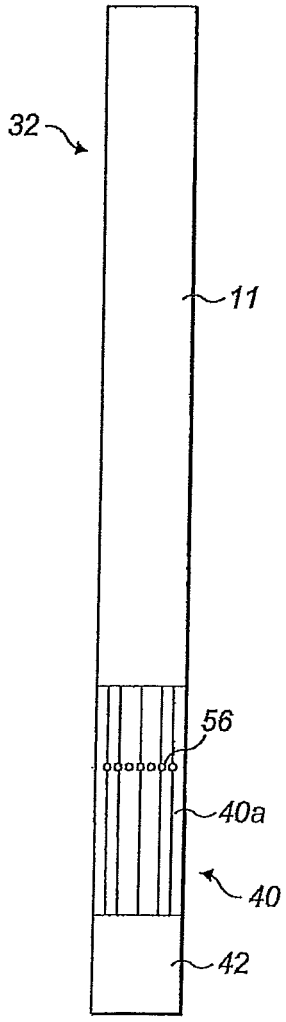

32
11
56
40a
40
42

FIG. 5b

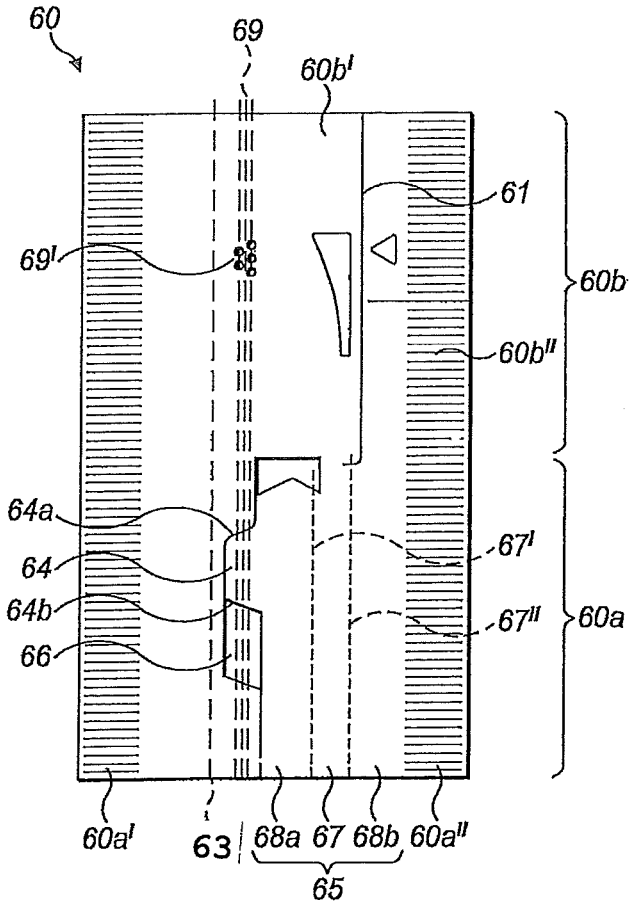

60
69
60b^I
61
69^I
60b
60b^II
64a
64
64b
66
67^I
67^II
60a
60a^I
63
68a
67
68b
60a^II
65

FIG. 6a

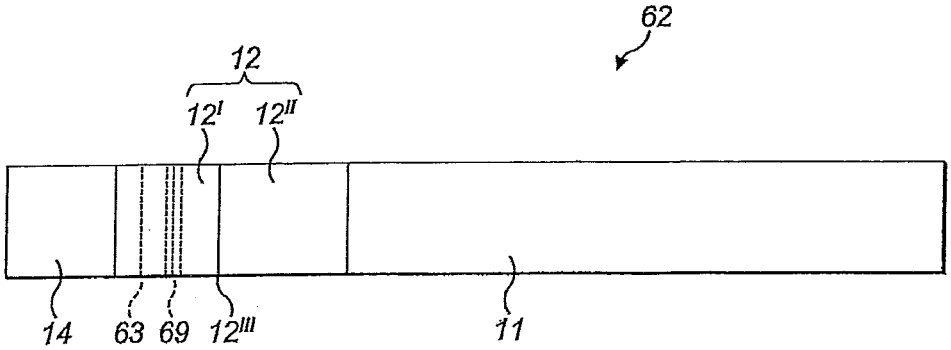

62
12
12^I
12^II
14
63
69
12^III
11

FIG. 6b

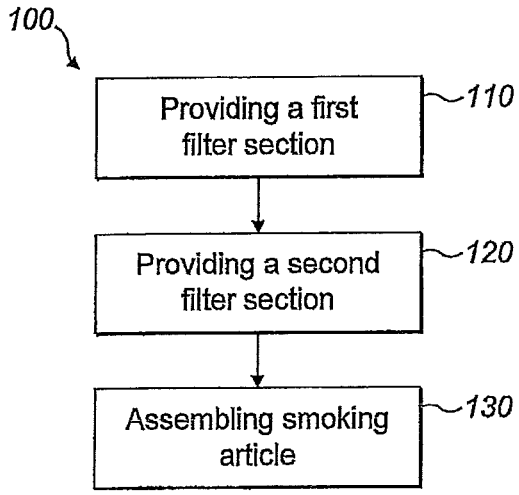

100
Providing a first filter section
110
Providing a second filter section
120
Assembling smoking article
130

FIG. 7

A SMOKING ARTICLE OR AN AEROSOL GENERATING PRODUCT

TECHNICAL FIELD

[0001] Embodiments of the invention relate to a smoking article or an aerosol generating product, and a filter.

BACKGROUND

[0002] The resistance to draw of a smoking article is a measure of the pressure required to force smoke through the smoking article at a certain specified rate. A smoking article can be configured by the manufacturing process to have a resistance to draw within a pre-defined range. The resistance to draw through a smoking article generally drops with increased ventilation.

SUMMARY

[0003] Embodiments of the invention provide, in a first aspect, a smoking article or an aerosol generating product comprising a filter arrangement comprising a first filter section and a second filter section, the second filter section being located downstream of the first filter section and a ventilation arrangement configured to provide a user controllable level of ventilation into the first filter section, wherein a resistance to gaseous flow through the length of the second filter section is lower than a resistance to gaseous flow through the length of the first filter section, and the first filter section comprising filter material and one or more capsules comprising additive.

[0004] The first filter section can have a first tow weight of fibrous filtration material, and the second filter section can have a second tow weight of fibrous filtration material and the second tow weight of fibrous filtration material is lower than the first tow weight of fibrous material.

[0005] In one embodiment, the resistance to gaseous flow through the length of the filter arrangement remains substantially constant as the level of ventilation is varied.

[0006] The pressure drop per unit length of the first filter section can be more than 5 mmH2O/mm, and the pressure drop per unit length of the second filter section can be less than 5 mmH2O/mm. The resistance to gaseous flow through the second filter section can be more than 15 times lower than the resistance to gaseous flow through the first filter section.

[0007] The first filter section can be formed from a first homogenous filtration material, and the second filter section can be formed from a second homogenous filtration material.

[0008] The second filter section can be separate from the first filter section, and/or moveable relative to the first filter section to control the ventilation into the first filter section.

[0009] The smoking article can further comprise a sleeve configured to move relative to the first filter section, wherein the second filter section is fixed within the sleeve, and the level of ventilation is varied by altering a position of the sleeve relative to the first filter section.

[0010] The sleeve can be rotatable with respect to the first filter section, and the level of ventilation can be varied by altering an angular position of the sleeve relative to the first filter section.

[0011] The first filter section can have a length of 5 to 25 mm, the second filter section can have a length of 5 to 25 mm, and/or the ventilation arrangement can provide ventilating air at 6 mm to 35 mm from a mouth end of the smoking article.

[0012] The first and second filter sections can comprise tow filaments, and the first filter section can differ from the second filter section by one or more of: tow weight, number of tow filaments in unit volume, cross-section of tow filaments and degree of crimping.

[0013] The second filter section can comprise at least one air passage extending longitudinally through the length thereof.

[0014] The air passage can have a diameter of between 1 and 7 mm.

[0015] The second filter section can comprise fibrous filtration material formed having an annular cross section.

[0016] The second filter section can comprise a tube of fibrous filtration material and the air passage can extend along a central longitudinal axis through the length of the second filter section.

[0017] The first filter section comprises one or more capsules comprising additives, such as flavourants.

[0018] The first filter section can comprise continuous filter material. The first filter section can comprise cellulose acetate filter material. The capsules can be embedded in the filter material. The capsules can be embedded in the cellulose acetate.

[0019] The capsule or capsules can be located within the first filter section at a position other than a longitudinally central position within the first filter section. The capsule can be located within the first filter section at a position from 1 mm to 10 mm from a longitudinally central position within the first filter section. Alternatively, the capsule or capsules can be located on or along the central longitudinal axis of the filter.

[0020] As described herein the second filter section can comprise at least one air passage extending longitudinally through the length of the second filter section. The capsule or capsules can be located in the first section on or along the longitudinal axis extending from the longitudinal axis of the air passage. In one embodiment, the air passage and the capsule or capsules are located in sequence along the central longitudinal axis of the filter.

[0021] The first filter section comprises one or more capsules containing additive. The additive, such as flavourant, is encapsulated within the capsule. The capsule or capsules allow the consumer to release the additive when the first filter section is subjected to an external force. Releasing the additive, such as flavourant, modifies the smoke passing through the filter. Encapsulating the additive can avoid unintentional release or migration of the additive during manufacture or storage.

[0022] The capsule or capsules can be frangible. Frangible capsules allow the consumer to crush the capsules and release the contents of the capsule, e.g. additive/flavourant. Two or more capsules can provide the consumer with a choice of which additive/flavourant to release and/or how much additive/flavourant to release. For example, in an embodiment in which two capsules contain the same additive/flavourant in the same amount, crushing both capsules releases double the amount of additive/flavourant compared to crushing just one capsule. Alternatively, in embodiments having two capsules containing different flavourants, the consumer is provided with a choice of which flavourant to release, or to release both flavourants, e.g. at the same time.

Two capsules also increases the range of pressure drops which the filter has to operate at (both capsules crushed, either capsule crushed, or both capsules crushed).

[0023] The capsule or capsules comprise an additive. For example, the capsules can comprise a flavourant. If two capsules are present, the two capsules can contain the same flavourant or different flavourants. Where the two capsules contain the same flavourant, the capsules can contain the same amount or different amounts of flavourant.

[0024] The flavourant can be a liquid.

[0025] The flavourant employed in the capsules can be any flavourant suitable for use in a smoking article filter. For example, the flavourant may enhance the user's experience. Suitable flavours or flavourings include, but are not limited to, menthol, mint, chocolate, liquorice, citrus, redberry, blueberry, mojito, vanilla, spice flavours, plant essential oils, or other fruit flavours. Specific combinations of flavours include, but are not limited to, blueberry and mojito, redberry and menthol, or menthol and blueberry.

[0026] The capsule or capsules can be of any suitable weight. For example, the capsules can weigh from about 9 mg to about 18 mg, from about 11 mg to about 16 mg, or from about 13 mg to about 14 mg.

[0027] The capsule may have any suitable structure in which the additive/flavourant is encapsulated in the capsule. The capsule can comprise an outer shell and an inner core containing the additive/flavourant. The outer shell can be substantially continuous. The outer shell seals the additive/flavourant inside the capsule but the capsule, for example the outer shell, is frangible or breakable to allow the additive/flavourant to be released when an external force is applied to the capsule.

[0028] The capsule or capsules can have a burst strength of from about 0.8 kp (8 N) to about 2.4 kp (24 N), from about 1.2 kp (12 N) to about 2.0 kp (20 N), from about 1.4 kp (14 N) to about 1.8 kp (18 N), or about 1.60 kp (16N).

[0029] The capsule or capsules can have any suitable shape, such as, spherical, spheroid, cylindrical, or ellipsoid. The cross section perpendicular to the axis of the filter can be circular.

[0030] The diameter of the capsules is measured as the longest dimension of its cross section perpendicular to the axis of the filter. The diameter of the capsule or capsules can be from about 2.0 mm to about 6.0 mm. Alternatively, the diameter of the capsules can be from about 2.2 mm to about 3.8 mm, about 2.4 mm to about 3.4 mm, about 2.6 mm to about 3.2 mm, about 2.7 mm to about 3.1 mm, about 2.8 mm to about 3.0 mm, or 2.8 mm, or 3.0 mm.

[0031] The filter material of the first filter section (and if present in the second filter section) may comprise any suitable material or materials, such as cellulose acetate.

[0032] The filter material can have any suitable circumference, including but not limited to, from about 16 mm to about 25 mm, from about 16 to about 18 mm, from about 19 mm to about 22 mm, or from about 23 mm to about 25 mm.

[0033] The fibers of the filter material can have a fiber denier of from about 3.0 denier per filament (dpf) to about 10.0 dpf, from about 3.0 dpf to about 8.0 dpf, from about 4.5 dpf to about 8.0 dpf, from about 3.0 dpf to about 5.0 dpf, or from about 4.0 dpf to about 5.0 dpf.

[0034] The combination of a filter material having a specific circumference with a specific fiber denier has been found to be particularly useful. Certain combinations provide acceptable levels of tar delivery whilst at the same time avoiding crushing of the capsules during the process employed to incorporate the capsules into the filter material.

[0035] In one embodiment, the circumference of the filter material of the first filter section can be from about 16 mm to about 18 mm, and the fibers of the filter material have a fiber denier of from about 4.5 dpf to about 10.0 dpf.

[0036] In another embodiment, the circumference of the filter material of the first filter section can be from about 19 mm to about 22 mm, and the fibers of the filter material have a fiber denier of from about 4.0 dpf to about 5.0 dpf. For example, the fiber denier can be about 5.0 dpf.

[0037] In another embodiment, the circumference of the filter material of the first filter section can be from about 23 mm to about 25 mm, and the fibers of the filter material have a fiber denier of from about 3.0 dpf to about 5.0 dpf. For example, the fiber denier can be about 3.0 dpf.

[0038] The filter material can have a total denier of from about 12,000 to about 40,000, from about 15,000 to about 40,000, from about 15,000 to about 23,000, from about 30,000 to about 35,000, or from about 35,000 to about 40,000.

[0039] The combination of a filter material having a specific circumference with a specific total denier has been found to be particularly useful. Certain combinations provide acceptable levels of tar delivery whilst at the same time avoiding crushing of the capsules during the process employed to incorporate the capsules into the filter material.

[0040] In one embodiment, the circumference of the filter material of the first filter section can be from about 16 mm to about 18 mm, and the filter material has a total denier of from about 15,000 to about 23,000.

[0041] In another embodiment, the circumference of the filter material of the first filter section can be from about 19 mm to about 22 mm, and the filter material has a total denier of from about 25,000 to about 35,000. For example, the total denier can be about 30,000.

[0042] In another embodiment, the circumference of the filter material of the first filter section can be from about 23 mm to about 25 mm, and the filter material has a total denier of from about 30,000 to about 40,000. For example, the total denier can be about 40,000.

[0043] The first filter section can have a resistance to draw (RTD), before the capsule is crushed, of from about 75 mm/Wg to about 100 mm/Wg, or from about 80 mm/Wg to about 95 mm/Wg.

[0044] The first filter section can have a resistance to draw (RTD), after the capsule is crushed, of from about 85 mm/Wg to about 110 mm/Wg, from about 90 mm/Wg to about 100 mm/Wg.

[0045] In one embodiment, the circumference of the filter material of the first filter section can be from about 16 mm to about 18 mm, and the RTD before the capsule is crushed is from about 110 mm/Wg to about 160 mm/Wg.

[0046] In another embodiment, the circumference of the filter, material of the first filter section can be from about 19 mm to about 22 mm, and the RTD before the capsule is crushed is from about 86 mm/Wg to about 94 mm/Wg, and/or the RTD after the capsule is crushed is from about 95 mm/Wg to about 100 mm/Wg.

[0047] In another embodiment, the circumference of the filter material of the first filter section can be from about 23 mm to about 25 mm, and the RTD before the capsule is crushed is from about 80 mm/Wg to about 85 mm/Wg,

and/or the RTD after the capsule is crushed is from about 86 mm/Wg to about 92 mm/Wg.

[0048] A plasticizer can also be added to the fibers. Examples of suitable plasticizers include, but are not limited to, triacetin. The amount of plasticizer added to the fibers can be from about 2% to about 10% or from about 3% to about 6% by weight (wt/wt) of the fibers.

[0049] The filter comprises a first filter section and a second filter section, the second filter section being located downstream of the first filter section. The first filter section comprises one or more capsules. For example, the first filter section can comprise two capsules (a first capsule and a second capsule) that are spaced in sequence along the axis of the filter. The second capsule is located downstream of the first capsule. In other words, the second capsule is located closest to the mouth end of the smoking article and the first capsule is located furthest from the mouth end of the smoking article. The capsules can be located in a single segment of the first filter section, or the capsules can be located in two separate segments of the first filter section.

[0050] The distance between the capsules, i.e. between the first capsule and the second capsules, can be any suitable distance. For example, the distance between the capsules can be from about 8 mm to about 12 mm, from about 7 mm to about 11 mm, from about 8 mm to about 10 mm, or about 9 mm.

[0051] The length of the first filter section can be from about 16 mm to about 24 mm, from about 18 to about 22 mm, or about 20 mm. The length of the first filter section is measured parallel to the axis of the filter.

[0052] The two capsules can be equally spaced within the first filter section. Alternatively, the capsules can be unevenly spaced within the first filter section. For example, the distance between the first and second capsules can be greater than the distance from the centre of the second capsule to the downstream end of the first filter section and/or greater than the distance from the first capsule to the upstream end of the first filter section.

[0053] For example, the distance from the first capsule to the second capsule can be from about 8 mm to about 10 mm, or about 9 mm. For example, the distance from the second capsule to the downstream end of the first filter section is from about 5 mm to about 7 mm, or about 6 mm. For example, the distance from the first capsule to the upstream end of the first filter section is from about 4 mm to about 6 mm, or about 5 mm. The distance from the second capsule to the downstream end of the first filter section can be greater than the distance from the first capsule to the upstream end of the first filter section. For example, the distance from the second capsule to the downstream end of the first filter section is greater than the distance from the first capsule to the upstream end of the first filter by about 0.5 mm to about 1.5 mm, or about 1 mm. In one embodiment, the distance between the first capsule and the second capsule is from about 8 mm to about 10 mm, the distance from the second capsule to the downstream end of the first filter section is from about 5 mm to about 7 mm, and the distance from the first capsule to the upstream end of the first filter section is from about 4 mm to about 6 mm, provided that the distance from the second capsule to the downstream end of the first filter section is greater than the distance from the first capsule to the upstream end of the first filter section. The length of the second filter section can be from about 4 mm to about 10 mm, from about 5 mm to about 9 mm, from about 6 mm to about 8 mm, or about 7 mm. The combined length of the first filter section and the second filter section can be from about 20 mm to about 34 mm, from about 21 mm about 33 mm, from about 23 mm to about 31 mm, from about 25 mm to about 29 mm, or about 27 mm.

[0054] In one embodiment, the filter material of the first filter section has a circumference of from about 16 mm to about 19 mm, has fibers having about 4.5 dpf to about 10.0 dpf, and has a total denier of from about 15,000 to about 23,000; and the capsules are spherical, have a diameter of from about 2.7 mm to about 3.1 mm, and have a burst strength of from about 14 N to about 18 N.

[0055] In one embodiment, the filter material of the first filter section has a circumference of from about 20 mm to about 22 mm, has fibers having about 4.0 dpf to about 5.0 dpf, and has a total denier of from about 30,000 to about 35,000; and the capsules are spherical, have a diameter of from about 2.7 mm to about 3.1 mm, and have a burst strength of from about 14 N to about 18 N.

[0056] In one embodiment, the filter material of the first filter section has a circumference of from about 23 mm to about 25 mm, has fibers having about 3.0 dpf to about 5.0 dpf, and has a total denier of from about 35,000 to about 40,000; and the capsules are spherical, have a diameter of from about 2.7 mm to about 3.1 mm, and have a burst strength of from about 14 N to about 18 N.

[0057] In one embodiment, the first filter section has a resistance to draw (RTD), before the capsule is crushed, of from about 80 mm/Wg to about 95 mm/Wg and a resistance to draw (RTD), after the capsule is crushed, of from about 90 mm/Wg to about 100 mm/Wg.

[0058] The capsules can be surrounded by filtration material.

[0059] The capsule can be elongate. The capsule can have a longitudinal axis which is parallel to an axial direction of the smoking article or filter in which the capsule is located. The capsule can be substantially tubular, and have a maximum cross-sectional area defined in a plane perpendicular to the longitudinal axis. The cross-sectional area of the capsule can be substantially constant along a majority of the length of the capsule. Alternatively, the cross-sectional area of the capsule may vary along its length. The term "elongate" may be considered to mean that the dimension of the capsule in one direction is substantially greater than the dimension of the capsule in the two perpendicular directions. The longer dimension is beyond manufacturing tolerances for a substantially spherical capsule. For example, the longer dimension may be at least 1.5 times the maximum lateral dimension, or at least two times the maximum lateral dimension.

[0060] The capsule can have an exterior surface which is substantially cylindrical. The longitudinal ends can be rounded, for example, such that the ends are substantially hemispherical. The capsule can comprise an outer wall and an inner volume filled with the fluid. The additive can be selectively released by the user of the smoking article into the adjacent filtration material by squeezing the outside of the filter to deform or rupture the outer wall of the capsule.

[0061] The capsule can be configured to release all of the additive contents when the outer wall is ruptured. Alternatively, the capsule can be configured to release only a part of the additive on inward pressure from a user, such that the capsule is configured to release the additive contents in a plurality of discrete deliveries.

[0062] A known smoking article can generally have a maximum lateral dimension, which is a diameter for a circular cross-section. In the case of a cigarette in the superslim format, or a filter therefor, the maximum lateral dimension, or diameter, may be 5-6 mm, for example, approximately 5.4 mm, which may be known as a superslim. The filter will normally be marginally smaller in diameter than the filter, in order to accommodate wrapping paper. A spherical capsule may have a diameter which is a relatively large proportion of the cross-sectional area of the filter. The capsule may cause an adverse effect on smoke flow rate and/or pressure drop. The capsule may have a relatively small diameter, such that the effect of the capsule on the properties of the filter is reduced. The capsule can be elongate, instead of spherical, such that a sufficient quantity of additive can be contained. The maximum lateral dimension of the capsule is less than 4 mm, or less than 3.5 mm, and preferably from 2.2 mm to 2.8 mm. Elongate capsules may have lengths of from 7 mm to 11 mm, e.g. from 8 mm to 10 mm or approximately 9 mm. Alternatively, the length may be from 5 mm to 7 mm, e.g. approximately 5.5 mm.

[0063] The combination of an capsule with a maximum lateral dimension (diameter) of less than 3.5 mm, in a smoking article or filter having a slim, demi-slim or superslim format provides a required quantity of additive and affects the smoke flow rate and/or pressure drop within an acceptable threshold. The particular dimensions (lateral and length) of the elongate capsule, in a smoking article of these small diameter formats provides an advantageous combination of parameters which provide the required quantity of additive without significantly affecting the pressure drop.

[0064] Alternatively, the capsule can have a shape which is not elongate. In some aspects, the capsule may be spherical or substantially spherical. For a particular maximum lateral dimension (diameter), a spherical capsule may be able to contain less quantity of additive than an elongate capsule. For a smaller diameter of filter or smoking article, the reduced quantity of additive can be substantially as effective as a higher quantity of additive in a larger diameter filter or smoking article. The smaller diameter of filter or smoking article can have a maximum lateral dimension less than 7.6 mm or less than 7 mm, or any range specified in any embodiment. The diameter of the spherical capsule can be less than 3.5 mm, or any range of diameter specified in any embodiment. The radial dimensions apply to both elongate and spherical capsules.

[0065] A length of the capsule can be from 4 mm to 15 mm. The capsule has an exterior length from 7 mm to 11 mm, and in some aspects, from 8 mm to 10 mm, or approximately 9 mm.

[0066] Alternatively, the capsule can have an exterior length from 4 mm to 15 mm, and in some aspects, from 5 mm to 7 mm, or from 5 mm to 6 mm. In some aspects, the capsule length is approximately 5.5 mm. The capsule maximum lateral extent can be from 2.2 mm to 2.8 mm, and is preferably approximately 2.5 mm.

[0067] Alternatively, the length of the capsule is from 11 mm to 15 mm, or from 12 to 14 mm, or approximately 13.6 mm. The capsule maximum lateral extent can be from 2.2 mm to 2.8 mm, and is approximately 2.5 mm.

[0068] Alternatively, the exterior maximum lateral extent, or diameter for a circular cross-section, of the capsule of any type or embodiment may be within the range 4.5 mm to 7 mm. The maximum lateral extent may be less than 7 mm, less than 6 mm, less than 5 mm or less than 4 mm. The maximum lateral extent may be between 3 mm and 4 mm. In particular, the maximum lateral extent of the capsule may be between 3 mm and 4 mm (e.g. approximately 3.5 mm) in combination with a filter/smoking article having a diameter of between 5 mm and 6 mm (e.g. approximately 5.4 mm). The maximum lateral extent may be greater than 1 mm, in combination with any upper limit, capacity or relative cross-sectional area.

[0069] These dimensions may apply to any type of capsule. The larger length additive release component can be used with an capsule comprising a substrate. The substrate may contain approximately 40% of additive by volume.

[0070] The diameter and length of the capsule determines the maximum volume of additive which can be contained. Therefore, the selection of a relatively small diameter can be used in combination with a relatively high length in order to contain a required quantity of additive. Any combination of dimensions, including dimensions outside of the ranges indicated, may be used. The outer shell of any embodiment can have a thickness of approximately 0.2 mm.

[0071] The smoking articles or filters containing the capsule can have a diameter of from 4 mm to 10 mm, for example from 5 mm to 7 mm, or y from 5 mm to 6 mm, or from 5.1 mm to 6 mm (superslim). In some aspects, from 5.2 mm to 5.6 mm, or from 5.3 mm to 5.5 mm, for example approximately 5.4 mm. Where the smoking article or filter is in the slim, demislim, superslim or microslim format, it can have a diameter of less than about 7.6, 7.0, 6.0 and 5.1 mm respectively (corresponding approximately to circumferences less than 24, 22, 19 and 16 mm respectively). Where the smoking article or filter is in the regular format, it can have a diameter of 7.6-8.0 mm (corresponding approximately to a circumference of 24-25 mm) So called "wide" formats can have, diameters larger than 8.0 mm (corresponding approximately to circumferences greater than 25 mm).

[0072] The small lateral extent of the capsule may be advantageous for reducing pressure drop in any diameter smoking article, although the advantage has a particular effect for the smaller diameter smoking article. The invention is applicable to any diameter of smoking article or filter in combination with a relatively sized capsule. For example, the smoking article may have a diameter of from one of: 5 mm, 5.3 mm, 5.5 mm, 6 mm, 6.5 mm, 7 mm, 7.3 mm, 7.5 mm, 7.7 mm, 8 mm to one of 5.5 mm, 6 mm, 6.5 mm, 7 mm, 7.5 mm, 7.9 mm, 8.5 mm, in an any combination.

[0073] The capsule may have an additive capacity from 3 μL to 50 μL, or from 3 μL to 10 μL, or from 10 μL to 30 μL, and optionally from 15 μL to 25 μL or from 20 μL to 30 μL or from 8 μL to 20 μL, or approximately 20 μL or approximately 30 μL. Any upper or lower value of capacity may be used in combination. In particular, the capacity of the capsule may be from one of: 8 μL, 5 μL, 8 μL, 10 μL, 15 μL, 20 μL, 25 μL, 30 μL, 35 μL, 40 μL to one of: 5 μL, 8 μL, 10 μL, 15 μL, 20 μL, 25 μL, 30 μL, 35 μL, 40 μL, 45 μL, 50 μL.

[0074] Alternatively, the maximum lateral extent of the capsule may be one of from: 1.5 mm to 2.5 mm, 1.5 mm to 3 mm, 1.5 mm to 3.5 mm, 2 mm to 2.5 mm, 2 mm to 3 mm, 2 mm to 3.5 mm, 2.5 mm to 3 mm, 2.5 mm to 3.5 mm, 3 mm to 4 mm, 3.5 mm to 4 mm. The maximum lateral extent of the additive release component may be from a lower lateral extent of one of 1.0 mm, 1.1 mm, 1.2 mm, 1.3 mm, 1.4 mm, 1.5 mm, 1.6 mm, 1.7 mm, 1.8 mm, 1.9 mm, 2.0 mm, 2.1 mm,

2.2 mm, 2.3 mm, 2.4 mm, 2.5 mm, 2.6 mm, 2.7 mm, 2.8 mm, 2.9 mm, 3.0 mm, 3.1 mm, 3.2 mm, 3.3 mm, 3.4 mm, 3.5 mm, 3.6 mm, 3.7 mm, 3.8 mm, 3.9 mm, 4.0 mm, 4.1 mm, 4.2 mm, 4.3 mm, 4.4 mm and to a higher lateral extent of one of: 1.6 mm, 1.7 mm, 1.8 mm, 1.9 mm, 2.0 mm, 2.1 mm, 2.2 mm, 2.3 mm, 2.4 mm, 2.5 mm, 2.6 mm, 2.7 mm, 2.8 mm, 2.9 mm, 3.0 mm, 3.1 mm, 3.2 mm, 3.3 mm, 3.4 mm, 3.5 mm, 3.6 mm, 3.7 mm, 3.8 mm, 3.9 mm, 4.0 mm, 4.1 mm, 4.2 mm, 4.3 mm, 4.4 mm, 4.5 mm, 4.6 mm, 4.7 mm, 4.8 mm, 4.9 mm, 5.0 mm, 5.1 mm, 5.2 mm, 5.3 mm, 5.4 mm, 5.5 mm, 5.6 mm, 5.7 mm, 5.8 mm, 5.9 mm, 6.0 mm, 6.1 mm, 6.2 mm, 6.3 mm, 6.4 mm, 6.5 mm, 6.6 mm, 6.7 mm, 6.8 mm, 6.9 mm, 7.0 mm, 7.1 mm, 7.2 mm, 7.3 mm, 7.4 mm, 7.5 mm, 7.6 mm, 7.7 mm, 7.8 mm, 7.9 mm, 8.0 mm in any combination.

[0075] These ranges are not, however, intended to be limiting and the skilled person would understand that larger or smaller filter or capsules could be employed. References to diameter indicate the maximum lateral dimension of the capsule. For a capsule which is not circular in cross-section, the diameter values above indicate the maximum lateral dimension of the capsule.

[0076] The capsule has a maximum radial cross-sectional area. The area of the capsule relative to the radial cross-sectional area of the section of the smoking article containing the capsule may determine whether the restriction of smoke flow or pressure drop due to the capsule is within acceptable limits. In some aspects, the capsule can be less than 50% of the radial cross-sectional area of the section containing the capsule, for example less than 45%, less than 40%, less than 35%, less than 30%, less than 25%, less than 20%, less than 15%, or less than 10%. Alternatively, maximum radial cross-sectional area of the capsule may be less than 65%, less than 60%, or less than 55% of that of the section of the cigarette of filter containing the component. The cross-sectional area of the capsule may be higher than 5%, 10%, 15%, 20%, 25%, 30%, 35%, 40%, or 45% of the filter or smoking article, in combination with any upper limit.

[0077] Alternatively, the maximum radial cross-sectional area of the capsule, expressed as a percentage of the radial cross-sectional area of the section of the smoking article or filter containing the additive release component, may be more than 50%. The ratio may be less than 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90% or 95%. Alternatively, the ratio may be more than 5%, 10%, 15%, 20% 25%, 30%, 35%, 40%, 45%, 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90% or 95%.

[0078] The invention may comprise filters and smoking articles, particularly cigarettes, in which the maximum radial cross-sectional area of the capsule expressed as a percentage of the radial cross-sectional area of the section containing the capsule lies in a range between any two values described above.

[0079] This range may be from 15% to 50%, or In some aspects, from 20% to 35%, or from 30% to 45%, or from 25% to 40%, or from 30% to 40%.

[0080] In particular, where a capsule has the above area relative to a section of the smoking article containing the capsule, the diameter of that section may be less than 8 mm, less than 7.5 mm, less than 7 mm, or less than 6 mm. For example, the section of the smoking article containing the capsule may have a diameter of from 5 mm to 6 mm, or from 6 mm to 7 mm, or from 5 mm to 7.5 mm. Alternatively, the diameter of this section of the smoking article may be greater than 8 mm.

[0081] The capsule may have a maximum lateral cross-sectional area of less than 40 mm^2, less than 30 mm^2, less than 20 mm^2, less than 15 mm^2, and in some aspects, less than 10 mm^2, less than 8 mm^2, less than 6 mm^2, less than 5 mm^2. The lateral cross-sectional area may be greater than 1 mm^2, 2 mm^2, 3 mm^2, 4 mm^2, 5 mm^2 or 6 mm^2, in combination with any upper limit.

BRIEF DESCRIPTION OF THE DRAWINGS

[0082] Various embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

[0083] FIG. **1** is a longitudinal cross-sectional view of a part of a smoking article according to a first embodiment of the invention;

[0084] FIG. **2** is a perspective view of the smoking article illustrated in FIG. **1**;

[0085] FIG. **3** is a longitudinal cross-sectional view of a part of a smoking article according to a second embodiment of the invention;

[0086] FIG. **4** is a perspective view of the smoking article illustrated in FIG. **3**;

[0087] FIG. **5***a* is a plan view of a blank forming a wrapper for a smoking article according to a third embodiment of the invention;

[0088] FIG. **5***b* is a plan view of a rod article to which the blank of FIG. **6***a* is applied to form the smoking article according to the third embodiment of the invention;

[0089] FIG. **6***a* is a plan view of a blank for forming a wrapper for a smoking article according to a fourth embodiment;

[0090] FIG. **6***b* is a longitudinal cross-sectional view of the smoking article according to the fourth embodiment; and

[0091] FIG. **7** is a schematic flow diagram showing a method of manufacturing a smoking article.

DETAILED DESCRIPTION

[0092] FIG. **1** illustrates a smoking article **10** according to a first embodiment. The smoking article **10** is a cigarette in the present example. However, other smoking articles can be used, and the term smoking article is used to also refer to cigars or cigarillos, whether based on tobacco, tobacco derivatives, expanded tobacco, reconstituted tobacco or tobacco substitutes and also heat-not-burn/tobacco heating products and aerosol generating products such as e-cigarettes. For convenience, these will be referred to as "smoking articles" in this specification. The term "aerosol" covers smoke, e.g. tobacco smoke. Such smoking articles may be provided with a filter for the gaseous flow drawn by the smoker.

[0093] The term "smoking article" includes cigarettes, cigars and cigarillos as well as roll-your-own-products and make-your-own products.

[0094] Smoking articles such as cigarettes and their formats are often named according to the cigarette length: "regular" (typically in the range 68-75 mm, e.g. from about 68 mm to about 72 mm), "short" or "mini" (68 mm or less), "king-size" (typically in the range 75-91 mm, e.g. from about 79 mm to about 88 mm), "long" or "super-king" (typically in the range 91-105 mm, e.g. from about 94 mm

to about 101 mm) and "ultra-long" (typically in the range from about 110 mm to about 121 mm).

[0095] They are also named according to the cigarette circumference: "regular" (about 23-25 mm), "wide" (greater than 25 mm), "slim" (about 22-23 mm), "demi-slim" (about 19-22 mm), "super-slim" (about 16-19 mm), and "micro-slim" (less than about 16 mm). Accordingly, a cigarette in a king-size, super-slim format will, for example, have a length of about 83 mm and a circumference of about 17 mm. Cigarettes in the regular, king-size format are preferred by many customers, namely with a circumference of from 23 to 25 mm and an overall length of from 75 to 91 mm.

[0096] Each format may be produced with filters of different lengths, smaller filters being generally used in formats of smaller lengths and circumferences. Typically the filter length will be from 15 mm, associated with short, regular formats, to 30 mm, associated with ultra-long super-slim formats. The tipping paper will have a greater length than the filter, for example from 3 to 10 mm longer.

[0097] Smoking articles and filters described hereinafter can be manufactured in any of the above formats. The smoking article can, for instance, be from 70 to 100 mm in length and from 14 to 25 mm in circumference.

[0098] The terms 'upstream' and 'downstream' used herein are relative terms defined in relation to the direction of mainstream smoke (or other aerosol) drawn though a smoking article in use.

[0099] Herein, the units "mm/Wg" refer to millimetres/water gauge (also known as mm H_2O). Herein, these measurements were carried out on individual filter sections.

[0100] The smoking article **10** of the example of FIG. **1** comprises a source of smokable material, such as tobacco, attached to a filter arrangement which comprises a first filter section **12** and a second filter section **14**. The source of smokable material is in the form of a tobacco rod **11**, which is attached to the first filter section **12**.

[0101] The first filter section contains an additive-containing capsule **70**. The capsule **70** is spherical and has a diameter of 2.8 mm, although other shapes and sizes of capsule can be used, and contain a fluid additive which modifies properties of mainstream smoke passing through the smoking article **1**. The capsule **70** can be manufactured and inserted into the first filter section **12** using existing processes and machinery. In the present example, the capsule **70** contains menthol flavourant, although other fluids or granular additives could be contained within the capsule **70**. The capsule **70** can be ruptured by a consumer to release the fluid additive into the absorbent filter material.

[0102] In the present example, the capsule **70** is located in an 'axial region' of the first filter section **12**. The capsule **70** can be located such that the centre of the capsule is closer to the axis of the smoking article **10** than to the outer periphery of the smoking article **10**. In the present example, the capsule **70** is located with its centre substantially along said axis. In the present example, the capsule **70** is offset from the longitudinal centre of the first filter section **12**. The capsule **70** can, for instance, be located within the first filter section **12** at a position from 1 mm to 10 mm from a longitudinally central position within the first filter section **12**. The capsule **70** is located within a portion of the first filter section **12** closer to the downstream end of the first filter section **12**. The capsule **70** is therefore closer to the second filter section **14** than to the tobacco rod **11**. In particular, the distance between the centre of the capsule **70** and the downstream end of the first filter section **12** is less than half of the total longitudinal length of the first filter section **12**. In some embodiments, said distance is less than 40%, less than 30% or less than 25% of the total longitudinal length of the first filter section **12**. In the present example, said distance is approximately 30% of the total longitudinal length of the first filter section **12**. In alternative embodiments, the capsule **70** can be located longitudinally centrally within the first filter section **12** or closer to the upstream end of the first filter section **1** than to the downstream end.

[0103] In use, the tobacco rod **11** of the smoking article **10** is lit by a consumer in the conventional manner and tobacco smoke is drawn from burning coal of the tobacco rod **11** through the filter. The channel **28** in the second filter section **14** has a lower resistance to mainstream smoke passing through the filter than the surrounding tubular filter material , and therefore a greater proportion of mainstream smoke is directed through the channel **28**. This, in turn, results in a greater flow of mainstream smoke in the axial region around the axis of the first filter section **12**, in which the capsule **70** is located. When the consumer breaks the capsule **70** either prior to or in the course of smoking the smoking article **10**, the additive contained therein, in the present case menthol, is released in greater concentration into the axial region of the first filter section **12** through which an increased flow of mainstream smoke is directed, as a result of the second filter section **14**. Accordingly, the increased flow of mainstream smoke enhances the delivery of the smoke modifying additive to the consumer and the smoking article **10** can therefore exhibit improved delivery of a smoke modifying additive to a consumer compared to conventional smoking articles.

[0104] The use of the tubular second section **24** at the mouth end of the smoking article **10** enables the capsule **70** to be located closer to the mouth-end of the smoking article **10** than would be possible if the first section **12** containing the capsule **70** was at the mouth end of the smoking article **10**. This is because the tube separates the first section **12** from the consumer's mouth, preventing the content from capsule **70** from contacting the consumer's mouth.

[0105] The second filter section **14** is located downstream of the first filter section **12** and tobacco rod **11**. A ventilation arrangement **17** provides a user controllable variable level of ventilation into the first filter section **12**, as described in more detail below.

[0106] The resistance to gaseous flow through the length of the second filter section is lower than the resistance to gaseous flow through the length of the first filter section; and the resistance to gaseous flow through the length of the filter arrangement remains substantially constant as the level of ventilation is varied. The reduced resistance of the second filter section **14** results in the first filter section **12** having a greater influence on the overall resistance to gaseous flow of the filter arrangement. As ventilation is increased into the second filter section **14**, a lower resistance path is created for flow through the filter arrangement, therefore significantly reducing the resistance to draw experienced by the consumer, when compared to lower levels of ventilation. The reduced resistance of the second filter section **14** when compared to the first filter section therefore enhances the change in the resistance to draw experience by the consumer as the ventilation is altered, providing the consumer with a greater sensory indication that the ventilation has been changed.

[0107] The smoking article **10** comprises a first part comprising the tobacco rod **11** and the first filter section **12**. The tobacco rod **11** and first filter section **12** are connected with a covering layer to affix the first filter section to the tobacco rod, which is formed of tipping paper. The tobacco rod **11** and first filter section **12** are referred to as a tobacco unit. The elongate tobacco rod **11** and first filter section **12** define a longitudinal axis of the smoking article.

[0108] A second part of the smoking article comprises the second filter section **14** and a sleeve **13** which is movable relative to the first part of the smoking article. The sleeve is in the form of a tube extending around the circumference of the tobacco rod **11** and/or first filter section **12**. The tube can be cylindrical. The sleeve **13** is formed of paper. The second filter section **14** is securely attached and fixed within the sleeve. The first and second filter sections **12**,**14** each comprise filtration material which is wrapped in a sheet material, which may be paper, e.g. plugwrap. The first and second filter sections form a filter arrangement. The first filter section **12** is upstream of the second filter section **14**. The second filter section **14** is at a mouth end of the sleeve **13**, adjacent to, and separate from, the first filter section **12**. Alternatively, the first and second filter sections are connected.

[0109] The tobacco rod **11** and attached first filter section **12** are described as connected by tipping paper (not shown). The tipping paper is a standard tipping paper, or a relatively thick recessed tipping paper, or a board type tipping paper.

[0110] The smoking article to is provided with the ventilation arrangement **17** configured to allow adjustment of a ventilation of the smoking article **10**. The ventilation arrangement **17** comprises one or more second ventilation area **15** on the sleeve **13**, upstream of the second filter section **14**. The smoking article further comprises one or more first ventilation area **16** around the first filter section **12**. For example, the one or more first ventilation area **16** is defined by a layer(s) of sheet material around the first filter section or around the filtration material of the first filter section. The ventilation arrangement **17** provides for ventilating air to enter into the first filter section. The terms "upstream" and "downstream" are relative to the direction of the passage of smoke along the longitudinal axis of the smoking article **10**, i.e. "downstream" indicates in a direction toward the mouth end of the smoking article **10**.

[0111] Ventilation areas **15**,**16** are formed as ventilation apertures or air permeable material. In some embodiments, when ventilation areas **15** on the sleeve **13** are exposed, air can flow into the body of the smoking article to. When second ventilation areas **15** on the sleeve **13** and the corresponding first ventilation areas **16** around the first filter section **12** are aligned, air can flow into the body of the smoking article **10**. Ventilation areas **15**,**16** are aligned by rotation of the first part of the smoking article relative to the second part. In particular, the ventilation is controlled by rotation of the sleeve **13** relative to the first filter section **12**. The ventilation arrangement **17** provides a selectable variable level of ventilation controlled by adjusting the overlap of the second ventilation area **15** with the first ventilation area **16**. The amount of ventilation depends on the effective ventilating area, which is determined by the area of the overlap of the first and second ventilation areas. The level of ventilation can be selected by selecting a position of the second part relative to the first part e.g. by rotation of the second part relative to the first part. Thus, the ventilation arrangement **17** provides for a variable size of effective ventilation area, providing a variable intake of air, substantially upstream of the second filter section.

[0112] The first filter section **12** and second filter section **14** are made of a known filtration material. The filtration material for both filter sections can be tow, for example, cellulose acetate tow. The filtration material of the first filter section is homogenous, and independently, the filtration material of the second filter section is homogenous. The term "homogenous" is used to mean that the filtration material is substantially uniform throughout each filter section, and in particular, is uniform in a longitudinal and/or radial direction through each of the first and second filter sections **12**,**14**. At least one physical property of the homogenous first filter section is different to the homogenous second filter section.

[0113] The first filter section **12** provides a first resistance to gaseous flow through the length thereof. The resistance to gaseous flow through the length of the first filter section is determined by the filtration material of the first filter section. The resistance to gaseous flow indicates the pressure required to draw smoke through the length of the first filter section **12** at a particular rate. The term "pressure drop" can be used in place of "resistance to gaseous flow". Pressure drop can be given in units of distance height of water (mmH_2o). The first filter section has a first pressure drop per unit length, or resistance to gaseous flow per unit length, which is constant in a longitudinal direction through the first filter section **12**. Pressure drop per unit length is given per millimetre, i.e. in units of mmH_2o/mm. The first pressure drop per unit length is determined by the filtration material of the first filter section.

[0114] The second filter section **14** provides a second resistance to gaseous flow through the length thereof. The resistance to gaseous flow through the length of the second filter section is determined by the filtration material of the second filter section **14**. The resistance to gaseous flow through the length of the second filter section **14** defines a second pressure drop. The second pressure drop or resistance to gaseous flow indicates the pressure required to draw smoke through the length of the second filter section **14** at a particular rate. The second resistance to gaseous flow (or pressure drop) per unit length is substantially constant in a longitudinal direction through the second filter section **14**. The second filter section **14** can be considered as comprising a filtration material having a second pressure drop per unit length.

[0115] In aspects of the present invention, the resistance to gaseous flow through the length of the first filter section **12** is greater than the resistance to gaseous flow through the length of the second filter section **14**. In another aspect, the tow weight of the second filter section **14** is lower than the tow weight of the first filter section **12**. The second density provided by the second filter section **14** is lower than the first density provided by the first filter section **12**. Optionally, the first pressure drop across the first filter section **12** is greater than the second pressure drop across the second filter section **14**.

[0116] The one or more ventilation areas **15**,**16** allowing selectable ventilation are upstream of the second filter section **14**. The relatively low resistance to draw through the length of the filter arrangement downstream of the ventila-

tion area **15** provides an increased variation in an overall resistance to draw from the mouth end of the smoking article **10**, as ventilation is varied.

[0117] The ventilation arrangement **17** is located substantially upstream of the second filter section **14**. Ventilation of a smoking article **10** reduces the resistance to draw from the mouth end of the smoking article **10**. The ingress of ventilating air reduces the volume of air drawn through the length of smoking article **10** upstream of the ventilation areas, reducing the volume of air which experiences the resistance to gaseous flow upstream of the ventilating areas. The ventilating air enters directly with substantially no resistance, so the overall resistance to draw is reduced. In particular, the ingress of air through the ventilation areas **15** reduces the effect of the resistance to gaseous flow through the section of the smoking article **10** upstream of the ventilation areas **15**. The effect of the resistance to gaseous flow through the smoking article **10** downstream of the ventilation areas **15** is unchanged by variations in ventilation.

[0118] The relatively low resistance to gaseous flow provided by the lower density of the second filter section **14** (relative to the first filter section **12**) downstream of the ventilation areas **15** defines a minority of the resistance to gaseous flow through the full length of the filter arrangement. Alternatively, the second filter section **14** provides a relatively small contribution to the overall resistance to draw from the mouth end of the smoking article **10**. The contribution of the one or more sections upstream of the ventilation area **15** on the overall resistance to draw is greater by comparison. The ingress of air reduces the effect of the pressure drop or resistance to gaseous flow through the upstream section only, and the downstream section with a lower resistance to gaseous flow or pressure drop is unaffected by the ventilation. Therefore, a relatively large proportion of the overall resistance to draw from the mouth end of the smoking article **10** is affected by the change in ventilation of the smoking article **10**. The decreased density of the second filter section **14** downstream of the ventilation areas **15** increases the proportion of the resistance to draw which is affected by the change in ventilation of the smoking article **10**. The decreased density of the second filter section **15** provides an increase in the effect of an increased ventilation on the overall resistance to draw from the mouth end of the smoking article **10**.

[0119] As the level of ventilation is varied, the resistance to draw from the mouth end of the smoking article **10** also changes. As the amount of ventilating air entering the smoking article **10** increases, the overall resistance to draw decreases. The relatively low pressure drop or resistance to gaseous flow through the second filter section **14** (e.g. achieved with a relatively low density of filter material) provides a relatively large change in overall resistance to draw caused by an increased level of ventilation. Therefore, as the level of ventilation is varied over a range selectable by the user, the resistance to draw from the mouth end of the smoking article **10** varies over a relatively large range as a result of the lower density of the second filter section **14**. Thus, the variation in resistance to draw from the mouth end of the smoking article is accentuated as the ventilation is varied. This can give the user a greater sensory indication that the ventilation level has been varied.

[0120] In some examples of the invention, the second filter section has a pressure drop per unit length of less than 5 mmH_2O/mm. Alternatively, the second filter section has a pressure drop per unit length of less than a value selected from: 4 mmH_2O/mm, 3 mmH_2O/mm, 2 mmH_2O/mm, 1.5 mmH_2O/mm, and 1 mmH_2O/mm.

[0121] In some examples of the invention, the first filter section has a pressure drop per unit length of more than 5 mmH_2O/mm. Alternatively, the first filter section has a pressure drop per unit length of more than a value selected from: 6 mmH_2O/mm, 7 mmH_2O/mm, 8 mmH_2O/mm, 9 mmH_2O/mm, 10 mmH_2O/mm, 11 mmH_2O/mm, and 12 mmH_2O/mm.

[0122] In some aspects, the pressure drop per unit length of the second filter section is between 1 and 5 mmH_2O/mm, and the pressure drop per unit length of the first filter section is between 5 and 15 mmH_2O/mm. In some examples, the pressure drop per unit length of the second filter section is less than 5 mmH_2O/mm, and the pressure drop per unit length of the first filter section is more than 5 mmH_2O/mm. The upstream filter section has a pressure drop per unit length which is higher than a pressure drop per unit length of the downstream filter section. The upstream filter section has a pressure drop per unit length which is higher than any of the example values specified, and a pressure drop per unit length of the downstream filter section is lower than any of the example values specified.

[0123] In some examples, the resistance to gaseous flow through the length of the second filter section is lower than the first filter section by at least a multiple value selected from one of: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 15.

[0124] For example, the resistance to gaseous flow through the length of the second filter section is between 2 and 15 times lower than through the length of the first filter section. Optionally, the second pressure drop per unit length of the second filter section is between 5 and 12 times lower than the first pressure drop per unit length of the first filter section.

[0125] In some aspects, the ventilation arrangement **17** is located at a downstream end of the first filter section **12**. In some examples, the ventilation arrangement is located less than 10 mm from the downstream end of the first filter section **12**.

[0126] The pressure drop per unit length of the first and second filter sections is determined (at least partially) by the physical structure of the filtration material forming the filter sections. The first and second filter sections can both comprise fibrous material, comprising tow filaments. For a filtration material comprising tow filaments, the pressure drop per unit length can be determined by the amount or number of tow filaments in a particular volume or length. The tow weight is a measure of the amount of tow fibres in a certain volume. The pressure drop per unit length can also be determined by the cross-section of the tow filaments. For example, the tow filaments can have an X-shaped cross-section or a Y-shaped cross-section. The cross-sectional area can also affect the pressure drop per unit length. The tow weight can provides an indication of the density of a fibrous material within the filter section. The pressure drop per unit length can also be determined by the amount or degree of crimping (i.e. folding) of the filaments, during the manufacturing processes. These factors affecting the pressure drop per unit length of the filter sections are known, and can be selected to obtain the required pressure drop per unit length for each of the first and second filter sections individually. Thus, the first and second filter sections comprise

filtration material which has a physical property determined by a different selection of any one or more of the above characteristics. The first and second filter sections are manufactured using filtration material formed or treated to have the required properties, for example as above, providing the different pressure drop per unit length for the first and second filter sections.

[0127] FIG. **2** is a perspective view of the part of the smoking article **10** illustrated in FIG. **1**. As illustrated in FIG. **2**, the tobacco rod **11** and first filter section **12** are dimensioned to rotate as a unit around a longitudinal axis within the sleeve **13**. A restraining means (not shown) retains the first part and second part in a fixed longitudinal arrangement, and prevents extension of the smoking article **10**. Thus, the first part cannot slide longitudinally relative to the second part, i.e. the sleeve is not movable longitudinally relative to the tobacco unit.

[0128] The level of ventilation can be selected by selecting an angular position of the sleeve **13** relative to the first filter section **12**.

[0129] In some examples, the ventilation areas **15** are configured to increase in size non-linearly with respect to angular position. The ventilation areas **15** are configured such that the level of ventilation has a substantially linear dependence on the angular position of the sleeve **13** relative to the first filter section **12**.

[0130] In some aspects, the one or more ventilation areas **15** maintain a fixed longitudinal position relative to the first and second filter sections, when the sleeve **13** is rotated relative to the first filter section **12**.

[0131] In the present embodiment, the second filter section **14** is securely attached and fixed within the sleeve **13**. Rotation of the second filter section **14** causes a corresponding rotation of the sleeve **13** relative the first filter section **12**.

[0132] By selecting a different angular position of the second filter section **14** relative to the first filter section **12**, the registry between the ventilation areas **15** in the sleeve **13** and the ventilation areas **16** in the sheet material or plugwrap around the first filter section **12** can be selectively increased or decreased. The level of ventilation in the smoking article **10** can therefore be increased or decreased.

[0133] FIG. **3** is a longitudinal cross-sectional view of a part of a smoking article according to a second embodiment of the invention. The overall layout is similar to the example of FIGS. **1** and **2** described above, the same parts having the same reference numerals, and parts other than those described remaining unchanged.

[0134] In the embodiment of FIG. **3**, the second filter section **24** is formed to have an air passage **28** passing longitudinally through its centre. The second filter section **24** and air passage **28** form a tubular filter section extending along the longitudinal axis of the smoking article **20**. The second filter section **24** is formed from fibrous filtration material having an annular cross-section. Alternatively, the air passage **28** may pass longitudinally along a non-central path through the second filter section. Optionally, the second filter section may be formed to have a plurality of air passages which pass longitudinally therethrough.

[0135] The air passage **28** reduces the resistance to gaseous flow through the length of the second filter section **24**. The resistance to gaseous flow through the length of the second filter section **24** is lower than the resistance to gaseous flow through the length of the first filter section **12**.

[0136] The dimensions of the second filter section **24** will depend on various factors such as the desired resistance to draw or the second filter section **24** relative to the first filter section **12**, the properties of the filter tow and the level of plasticiser, such as triacetin, added to the filter tow. However, in examples herein, the outer circumference of the second filter section is between 15 and 25 mm, for instance between 22 mm and 25 mm, or 23.95 mm. The internal diameter of the air passage **28** is preferably between 1 mm and 7 mm, for instance between 3 mm and 6 mm, or 4.8 mm.

[0137] FIG. **4** is a perspective view of the smoking article illustrated in FIG. **3**. As illustrated in FIG. **4**, the air passage **28** is located to pass longitudinally through the centre of the second filter section **24**. Alternatively, the air passage **28** may pass longitudinally along a non-central path through the second filter section **24**. Optionally, the second filter section **24** may be formed to have a plurality of air passages which pass longitudinally therethrough.

[0138] In some embodiments, the pressure drop downstream of the ventilation arrangement **17** is decreased further by reducing the distance between the mouth end of the smoking article and the one or more ventilation areas.

[0139] In some examples of the invention, the ventilation areas allow the ingress of air at a distance from the mouth end which is less than 15 mm. Alternatively, the distance from the mouth end of the ventilation are is less than a value selected from: 14 mm, 13 mm, 12 mm, 11 mm, and 10 mm.

[0140] FIG. **5***a* is a plan view of a blank **30** forming a wrapper for a smoking article according to a third embodiment of the invention. FIG. **5***b* is a plan view of a rod article **32** to which the blank **30** of FIG. **5***a* is applied to form the smoking article. The smoking article comprising the blank **30** has substantially the same functions as described above. Features have the same arrangement and function unless otherwise described.

[0141] The blank **30** is configured to wrap twice only around the whole circumference of the rod article **32**. The blank **30** is configured to define two complete layers extending around the circumference of the rod article **32**, and comprises areas to define an inner layer and an outer layer.

[0142] The blank **30** comprises a control element **34** movable in a channel **36**, configured to control ventilation and limit movement.

[0143] The control element **34** is movable circumferentially within a limited range. The control element **34** is movable between a first engaging surface and a second engaging surface. The first engaging surface and second engaging surface define a circumferentially extending channel **36** in which the control element **34** is movable.

[0144] The control element **34** defines first and second limiting surfaces **34***a*, **34***b* at the edges of the control element in the direction of movement, i.e. at the circumferential edge of the control element **34**. Contact of the first and second limiting surfaces **34***a*, **34***b* of the control element **34** between the first engaging surface and the second engaging surface limits relative rotation between the first and second parts of the smoking article.

[0145] The first and second limiting surfaces **34***a*, **34***b* extend at an angle to a longitudinal axis of the smoking article. The first and second engaging surfaces also extend at an angle to the longitudinal axis of the smoking article, and/or at an angle to the axis of movement of the control element. The first and second engaging surfaces extend at

the same angle and/or have a complementary shape to the first and second limiting surfaces **34***a*, **34***b*.

[0146] The blank **30** comprises the first and second spacing sections **38***a*, **38***b*. The first and second spacing sections **38***a*, **38***b* are configured to directly attach to and circumscribe the rod articles. The first and second spacing sections **38***a*, **38***b* have the function of spacing a plurality of optional indexing surfaces at a correct radial distance to allow indexing. The first and second spacing sections **38***a*, **38***b* are longitudinally spaced apart.

[0147] The control element **34** is configured to directly overlie one of the spacing sections **38***a*, **38***b*. The control element is movable over the spacing section **38***a*, the spacing section providing a substantially smooth exterior surface over which the control element is easily moved.

[0148] Referring to FIG. **5***b*, the rod article **32** includes a tobacco rod **11**, similar to those previously described, and first and second filter sections **40**, **42** downstream of the tobacco rod **11**. The second filter section **42** is provided, as a tubular section substantially similar to the second filter section **24** described in relation to the second embodiment, downstream of the first filter section **41** and tobacco rod **11**, at the mouth end of the smoking article. The first filter section **40** is provided between the second filter section **42** and the tobacco rod **11**. When the blank **30** is wrapped around the rod article **32**, the control element **34** is spaced by the spacing section from the first filter section **40**. The first filter section **40** optionally defines a first indexing surface **40***a*, and so does not provide a smooth surface for the control element.

[0149] The first and second spacing sections **38***a*, **38***b* are optionally connected by a spacer connection **44**. The first and second spacing sections **38***a*, **38***b* extend circumferentially over the two layers of the first blank **30**. The spacer connection **44** is adjacent a leading edge of the first blank **30**, i.e. the point on the blank **30** first wrapped around the rod article **32**.

[0150] The spacer connection **44** and longitudinally adjacent areas of the spacing sections **38***a*, **38***b* are initially affixed to the rod article to begin wrapping of the first blank **30**, for example, with adhesive. The spacer connection **44** provides for the blank **30** to have a single initial area of attachment to the rod article **32**. The spacing sections **38***a*, **38***b* are not affixed as independent elongate sections of sheet material, requiring separate attachment to the rod article **32**. Thus, the connection of the leading edges of the spacing sections **38***a*, **38***b* improves initial attachment of the blank **30** to the rod articles.

[0151] The spacer connection **44** has a trailing edge **44***a* at a circumferentially opposite end of the spacer connection **44** to the leading edge. The spacer connection trailing edge **44***a* extends between the first and second spacing sections **38***a*, **38***b*. The spacer connection trailing edge **44***a* extends at an angle to a longitudinal axis of the smoking article.

[0152] The control element **34** is formed on a support section **46** of the blank **1401**. The control element **34** defines the longitudinally extreme area of the section to which the control element is attached. Thus, the first and second limiting surfaces **34***a*, **34***b* of the control element **34** extend longitudinally beyond the section to which the control element is attached. The support section **44** is attached to the first and second spacing sections with frangible connections. The frangible connections are circumferentially extending line of perforations. The support section **46** extends one time around the whole circumference of the smoking article, e.g. to form a tube. The control element is curved as a part of that tube.

[0153] The support section **46**, optionally supports a second indexing surface **48**. In particular, the second indexing surface optionally comprises a pawl **48** formed on a pawl support unit **50**, which is attached to the support section **46**. The pawl **48** is configured to extend between the first and second spacing sections **38***a*, **38***b*, and engage with the optional first indexing surface **40***a*.

[0154] The support section **46** comprises a support section leading edge **46***a*. The support section leading edge **46***a* defines the initial point of the support section **46** which is first wrapped around the rod article **32**. The support section leading edge **46***a* extends at an angle to a longitudinal axis of the smoking article.

[0155] A trailing edge **46***b* of the support section **46** extends substantially parallel to the longitudinal axis of the smoking article.

[0156] The spacer connection trailing edge **44***a*, support section leading edge **46***a* and first and second spacing sections **38***a*, **38***b* define an aperture **52** in the blank **30**. The aperture **52** provides a space in which the support section **46** is movable.

[0157] In some examples, the aperture **52** has a circumferential extent which is greater than a circumferential extent of movement of the control element **34**. Thus, the spacer connection trailing edge **44**a does not determine the range of movement of the control element **34**.

[0158] The area of blank **30** forming the inner layer, e.g. on the first spacing section **38***a*, comprises a ventilation area **54**. In some examples, the ventilation area **54** comprises a single aperture. Alternatively, the ventilation area **54** comprises a plurality of discrete permeable areas or apertures. For example, the apertures are formed by electroperforation (EP).

[0159] The control element **34** has a further function in controlling the ventilation of the smoking article. In particular, the control element **34** directly controls the ventilation of the smoking article by selectively covering one or more ventilation areas. The control element **34** is configured to be movable over one or more ventilation areas in a radially adjacent, and integrally formed, part of the smoking article. The control element **34** is formed of a material which is substantially impermeable to air, in particular, paper which is not permeable to air. The control element **34** is configured to cover the one or more ventilation areas of the smoking article, such that ventilation air cannot enter the smoking article through an area which is covered by the control element **34**. The control element is impermeable to air between the first and second limiting surfaces **34***a*, **34***b*. The first and second limiting surfaces **34***a*, **34***b* define both the limits of rotation and define the amount of ventilation area which is covered or uncovered.

[0160] Thus, the control element **34** has the dual function of both directly controlling a level of ventilation by covering a part of a ventilation area and limiting relative movement of the first and second parts of the smoking article between maximum and minimum levels of ventilation.

[0161] In some aspects, the smoking article comprises a further ventilation area **56**. For example, the first filter section **40** comprises the further ventilation area **56**. The ventilation area **54** is arranged to at least partially coincide with the further ventilation area **56**. The further ventilation

area **56** comprises a plurality of discrete ventilation areas or apertures, for example, in a circumferentially extending line. The further ventilation area **56** can be formed by a laser. Generally, one or more of the ventilation areas **54**, **56** comprise a plurality of discrete ventilation areas or apertures. FIG. **6***a* is a plan view of a blank **60** forming a wrapper for a smoking article according to a fourth embodiment. FIG. **6***b* is longitudinal cross-sectional view of a smoking article **62** to which the blank **60** of FIG. **6***a* has been applied. The smoking article **62** comprising the blank **60** has substantially the same functions as described above. Features have the same arrangement and function unless otherwise described.

[0162] Referring to FIG. **6***b*, the rod article **62** includes a tobacco rod **11**, similar to that previously described, and first and second filter sections **12**, **14** downstream of the tobacco rod **11**. The second filter section **14** is provided downstream of the first filter section **12** and tobacco rod **11**, at the mouth end of the smoking article. The first filter section **12** is provided between the second filter section **14** and the tobacco rod **11**. The first filter section **12** is divided into a first part **12'** and a second part **12"** by a cut **12'"**, allowing the first part **12'** of the first filter section **12** to move relative to the second part **12"**.

[0163] The blank **60** is configured to wrap twice, and in the present example twice only, around the whole circumference of the rod article **62**. The blank **60** has a first section **60***a* which first wraps around the rod article **62** forming an inner layer and a second section **60***b* which then wraps around the first section **60***a*, forming an outer layer. The blank **60** is therefore configured to define two complete layers extending around the circumference of the rod article **62**, and comprises areas **60***a*, **60***b* to define an inner layer and an outer layer.

[0164] The first section **60***a* of the blank **60** comprises a first end portion **60***a'* connected to the second filter section **14** and to the first part **12'** of the first filter section **12**, and therefore connecting the second filter section **14** and the first part **12'** of the first filter section **12** together. The first section **60***a* of the blank **60** also comprises a second end portion **60***a"* connected to the second part **12"** of the first filter section **12**. The second section **60***b* of the blank **60** is separated into a first part **60***b'* and a second part **60***b"* by a cut **61**.

[0165] The blank **60** comprises, on the first section **60***a*, a control element **64** movable in a circumferentially extending channel **66**, configured to control ventilation and limit movement.

[0166] The control element **64** is movable circumferentially within a limited range. The control element **64** is movable between a first engaging surface and a second engaging surface. The first engaging surface and second engaging surface define the circumferentially extending channel **66** in which the control element **64** is movable.

[0167] The control element **64** defines first and second limiting surfaces **64***a*, **64***b* at the edges of the control element in the direction of movement, i.e. at the circumferential edge of the control element **64**. Contact of the first and second limiting surfaces **64***a*, **64***b* of the control element **64** with the first engaging surface and the second engaging surface of the circumferentially extending channel **66** limits relative rotation between the first and second parts of the smoking article.

[0168] The first and second limiting surfaces **64***a*, **64***b* extend at an angle to a longitudinal axis of the smoking article. The first and second engaging surfaces also extend at an angle to the longitudinal axis of the smoking article, and/or at an angle to the axis of movement of the control element. The first and second engaging surfaces extend at the same angle and/or have a complementary shape to the first and second limiting surfaces **64***a*, **64***b*.

[0169] A longitudinal movement restricting arrangement **65** comprises a sliding element **67** which is arranged to move between first and second restricting elements **68***a* and **68***b*. Sliding element **67** is attached to first and second restricting elements **68***a* and **68***b* with a frangible connection. The frangible connection is a circumferentially extending line of perforations. The part of the blank including the sliding element **67**, control element **64**, first and second restricting elements **68***a* and **68***b* and circumferentially extending channel **66** extends one time around the whole circumference of the smoking article, e.g. to form a tube. The sliding element **67** is attached to first part **60***b'* of the second section **60***b* of the blank **60**, together with the first part **60***a'* of the first section **60***a* of the blank, and therefore moves, together with the first part **60***a'* of the first section **60***a*, the second filter section **14** and the first part **12'** of the first filter section **12**, relative to the second part **60***a"* of the first section **60***a* of the blank **60** and the second part **12"** of the first filter section **12**.

[0170] The second section **60***b* of the blank **60** forming the outer layer, comprises a ventilation area **69'** at a location **69** on the blank. In some examples, the ventilation area **69'** comprises a single aperture. Alternatively, the ventilation area **69'** comprises a plurality of discrete permeable areas or apertures. For example, the apertures are formed by electroperforation (EP). The ventilation area **69'** is arranged to align with the channel **66** when the blank **60** is wrapped around the rod article **62**.

[0171] The control element **64** has a further function in controlling the ventilation of the smoking article. In particular, the control element **64** directly controls the ventilation of the smoking article by selectively blocking one or more ventilation areas. The control element **64** is configured to be movable relative to one or more ventilation areas in a radially adjacent, and integrally formed, part of the smoking article. The control element **64** is formed of a material which is substantially impermeable to air, in particular, paper which is not permeable to air. The control element **64** is configured to move between the ventilation area **69'** and the underlying rod article **62** of the smoking article, such that ventilation air cannot enter the smoking article through the channel **66** which is blocked by the control element **64**. The control element is impermeable to air between the first and second limiting surfaces **64***a*, **64***b*. The first and second limiting surfaces **64***a*, **64***b* define both the limits of rotation and define the amount of ventilation area which is covered or uncovered.

[0172] Thus, the control element **64** has the dual function of both directly controlling a level of ventilation by covering a part of a ventilation area and limiting relative movement of the first and second parts of the smoking article between maximum and minimum levels of ventilation.

[0173] In some embodiments, the first filter section **12** comprises flavourant in the form of botanical particles. However, the first filter section **12** can comprise other forms of flavourant, such as one or more capsules, a thread loaded with flavourant, flavourant dispersed in filter tow, flavour

impregnated particles or a sheet material comprising a flavourant, which lie upstream of the ventilation area **69'**. The level of ventilation in the smoking article **10** controls the dilution of smoke which passes through the first part of the smoking article **10** with air which enters the smoking article **10** through the ventilation area **69'**. Therefore the level of ventilation also controls the dilution of flavoured smoke which has passed through the flavourant with unflavoured air which enters the smoking article through the ventilation area **69'**. The level of flavour in the smoking article can therefore be increased or decreased.

[0174] In some aspects, the blank **60** comprises a further ventilation area (not shown) at a location **63** on the blank downstream of the variable ventilation arrangement **69'**. The further ventilation area comprises a plurality of discrete ventilation areas or apertures, for example, in a circumferentially extending line. The further ventilation area can be formed by a laser. Generally, one or more of the ventilation areas comprise a plurality of discrete ventilation areas or apertures. The further ventilation area provides a constant minimum level of ventilation which is unaffected by the variable amount of ventilation from the ventilation area **69'**. The amount of ventilation provided by the further ventilation area can be predetermined in the manufacture of the smoking article **10** and is, for instance, between 5% to 50% of the volume of smoke and/or other aerosol generated by said smoking article passing through the filter section when said variable ventilation is at its minimum level. The variable ventilation arrangement **69'**, **66** can be arranged to provide ventilation which is user controllable within a sub-range within the range of from 0% to 90% of the volume of smoke and/or other aerosol generated by said smoking article passing through the filter section, for instance from 0% to 50% ventilation.

[0175] FIG. **7** illustrates schematically a method **100** of manufacturing smoking articles according to the invention. The method **100** comprises forming a first filter section with a first resistance to gaseous flow or pressure drop (step **110**). The first filter section is formed from a known filtration material, for example, cellulose acetate tow. A second filter section is separately produced (step **120**). The second filter section is also formed from cellulose acetate tow. The resistance to gaseous flow through the length of the second filter section is lower than the resistance to draw through the length of the first filter section. Optionally, the pressure drop of the second filter section is lower than the pressure drop of the first filter section.

[0176] The different pressure drop properties of the first and second filter sections are determined during manufacturing of the first and second filter sections. In some aspects, the fibrous filtration material, i.e. tow elements are configured differently for the first and second filter sections. For example, the second filter section is formed with a different diameter tow, compressed more than the first filter section, different cross-section, to obtain the different properties (i.e. lower density). The pressure drop properties of the first and second filter sections are not substantially changed or modified during use of the smoking article.

[0177] In an embodiment, the second filter section is formed with an annular cross section, to obtain a lower density. The first and second filter sections is formed from the same fibrous filtration material, and formed to have different cross sections in order to obtain the different properties. In some examples, the filter arrangement is formed of a single piece including the first filter section and the second filter section.

[0178] The first filter section and second filter section are assembled with one or more additional components to form the filter arrangement of the smoking article (step **130**). The first and second filter sections may be longitudinally aligned with a source of smokeable material. Any other known filter components can be added to the smoking article. Examples of further filter components include a third filter section, for instance a filter section with particulate material (e.g. carbon, activated charcoal) or an additional hollow section. The first and/or second filter sections can each be considered as comprising one or more discrete filter sections. The filter sections can be considered as generally upstream and downstream of the variable ventilation area. The one or more upstream filter section has a higher resistance to gaseous flow than the one or more downstream filter section.

[0179] Wrapping material is applied to the smoking article assembly to attach the component parts. The paper wrapping material is tipping paper. In addition, a sleeve is wrapped around the smoking article. The sleeve is configured to move relative to the first filter section and, optionally, is securely attached to the second filter section.

[0180] The smoking article is configured to allow the ingress of a selectively variable amount of air upstream of the second filter section. For example, ventilation apertures are formed in the outermost layer of paper wrap and/or the paper sleeve. The ventilation apertures are formed by a mechanical cutting tool or a laser. The ventilation apertures are formed in the wrapping material prior to the assembly of the smoking article (i.e. pre-perforated apertures) or, optionally, when the smoking article is assembled.

[0181] The ventilation has been described by entering the smoking article upstream of the second filter section, and in particular, into the first filter section. Alternatively, the ventilation can be at least partially into the second filter section, e.g. adjacent an upstream end of the second filter section. A ventilating position for ingress of air which includes both upstream of the second filter section and optionally an upstream part (e.g. upstream quarter) of the second filter section is termed as located substantially upstream of the second filter section.

[0182] The properties of the filter sections can be defined in terms of any of: pressure drop per unit length, resistance to gaseous flow per unit length, pressure drop, resistance to gaseous flow, tow weight, or density. The filter sections can be defined in terms of the filtration material having a resistance to gaseous flow, which can be considered as independent of the length of the filter section.

[0183] The smoking article can comprise one or more ventilation areas providing a base level of ventilation. Such ventilation areas (not shown) are not variable in size.

[0184] In order to address various issues and advance the art, the entirety of this disclosure illustrates by way of illustration various embodiments in which the claimed invention(s) may be practiced and provide for a superior smoking article. The advantages and features of the disclosure are of a representative sample of embodiments only, and are not exhaustive and/or exclusive. They are presented only to assist in understanding and teach the claimed features. It is to be understood that advantages, embodiments, examples, functions, features, structures, and/or other aspects of the disclosure are not to be considered limitations

on the disclosure as defined by the claims or limitations on equivalents to the claims, and that other embodiments may be utilised and modifications may be made without departing from the scope and/or spirit of the disclosure. Various embodiments may suitably comprise, consist of, or consist essentially of, various combinations of the disclosed elements, components, features, parts, steps, means, etc. In addition, the disclosure includes other inventions not presently claimed, but which may be claimed in future.

1.-**34**. (canceled)

35. A filter for a smoking article or an aerosol generating product comprising:

a filter arrangement comprising a first filter section and a second filter section, the second filter section being located downstream of the first filter section; and

a ventilation arrangement configured to provide a user controllable level of ventilation into the first filter section;

wherein a resistance to gaseous flow through the length of the second filter section is lower than a resistance to gaseous flow through the length of the first filter section; and

the first filter section comprising filter material and one or more capsules comprising additive.

36. A smoking article or aerosol generating product comprising a filter as claimed in claim **35**.

37. The smoking article or aerosol generating product as claimed in claim **36**, wherein the first filter section has a first tow weight of fibrous filtration material, and the second filter section has a second tow weight of fibrous filtration material; and

the second tow weight of fibrous filtration material is lower than the first tow weight of fibrous material.

38. The smoking article or aerosol generating product as claimed in claim **36**, wherein the pressure drop per unit length of the first filter section is more than 5 mmH2O/mm, and the pressure drop per unit length of the second filter section is less than 5 mmH2O/mm.

39. The smoking article or aerosol generating product as claimed in claim **36**, wherein the resistance to gaseous flow through the second filter section is more than 15 times lower than the resistance to gaseous flow through the first filter section.

40. The smoking article or aerosol generating product as claimed in claim **36**, wherein the first filter section is formed from a first homogenous filtration material, and the second filter section is formed from a second homogenous filtration material.

41. The smoking article or aerosol generating product as claimed in claim **36**, wherein the second filter section is separate from the first filter section, and/or moveable relative to the first filter section to control the ventilation into the first filter section.

42. The smoking article or aerosol generating product as claimed in claim **36**, further comprising a sleeve configured to move relative to the first filter section, wherein:

(a) the second filter section is fixed within the sleeve, and the level of ventilation is varied by altering a position of the sleeve relative to the first filter section, and/or

(b) the sleeve is rotatable with respect to the first filter section, and the level of ventilation is varied by altering an angular position of the sleeve relative to the first filter section.

43. The smoking article or aerosol generating product as claimed in claim **36**, wherein the first filter section has a length of 5 to 25 mm, the second filter section has a length of 5 to 25 mm, and/or the ventilation arrangement provides ventilating air at 6 to 35 mm from a mouth end of the smoking article.

44. The smoking article or aerosol generating product as claimed in claim **36**, wherein the first and second filter sections comprise tow filaments, and the first filter section differs from the second filter section by one or more of: tow weight, number of tow filaments in unit volume, cross-section of tow filaments and degree of crimping.

45. The smoking article or aerosol generating product as claimed in claim **36**, wherein the second filter section comprises at least one air passage extending longitudinally through the length thereof.

46. The smoking article or aerosol generating product as claimed in claim **45**, wherein the air passage has a diameter of between 1 and 7 mm.

47. The smoking article or aerosol generating product as claimed in claim **36**, wherein the second filter section comprises fibrous filtration material formed having an annular cross section.

48. The smoking article or aerosol generating product as claimed in claim **36**, wherein the second filter section comprises a tube of fibrous filtration material and the air passage extends along a central longitudinal axis through the length of the second filter section.

49. The smoking article or aerosol generating product of claim **36**, wherein the capsule or capsules contain flavourants.

50. The smoking article or aerosol generating product as claimed in claim **49**, wherein the flavourant is liquid.

51. The smoking article or aerosol generating product as claimed in any claim **36**, wherein the filter material of the first filter section has fibers having about 3.0 denier per filament (dpf) to about 10.0 dpf and/or a total denier of from about 12,000 to about 40,000.

52. The smoking article or aerosol generating product as claimed in claim **36**, wherein the pressure drop of the first filter section, before the capsule is burst, is from about 85 mm/Wg to about 100 mm/Wg.

53. The smoking article or aerosol generating product as claimed in claim **36**, wherein the circumference of the filter material of the first filter section is from about 14 mm to about 28 mm, from about 16 mm to about 18 mm, from about 19 mm to about 22 mm, or from about 23 mm to about 25 mm.

54. The smoking article or aerosol generating product as claimed in claim **36**, wherein the capsules:

(a) have a burst strength of from about 14 N to about 18 N;

(b) have a diameter of from about 2.8 mm to about 3.0 mm; or

(c) are spherical and have a diameter of from about 2.7 mm to about 3.1 mm.

* * * * *