



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
30.03.2016 Bulletin 2016/13

(51) Int Cl.:
A24D 3/02 (2006.01) A24D 3/04 (2006.01)

(21) Application number: **14186680.6**

(22) Date of filing: **26.09.2014**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
 Designated Extension States:
BA ME

(72) Inventors:
 • **Camus, Alexandre**
2013 Colombier (CH)
 • **BINASSI, Enrico**
1012 Lausanne (CH)

(71) Applicant: **Philip Morris Products S.A.**
2000 Neuchâtel (CH)

(74) Representative: **Civera, Andrea**
Reddie & Grose LLP
16 Theobalds Road
London WC1X 8PL (GB)

(54) **Smoking article having a modified mouth end cavity**

(57) A smoking article comprises an aerosol generating substrate and a mouthpiece in axial alignment with the aerosol generating substrate. The mouthpiece has a rod end adjacent the aerosol generating substrate and a mouth end opposite the rod end. Further, the mouthpiece comprises a tubular element defining a mouth end cavity.

In addition, the mouthpiece comprises a first wrapper circumscribing the tubular element around at least the mouth end cavity and one or more holes are provided in the tubular element at the mouth end cavity to expose one or more portions of the inner surface of first wrapper to the mouth end cavity.

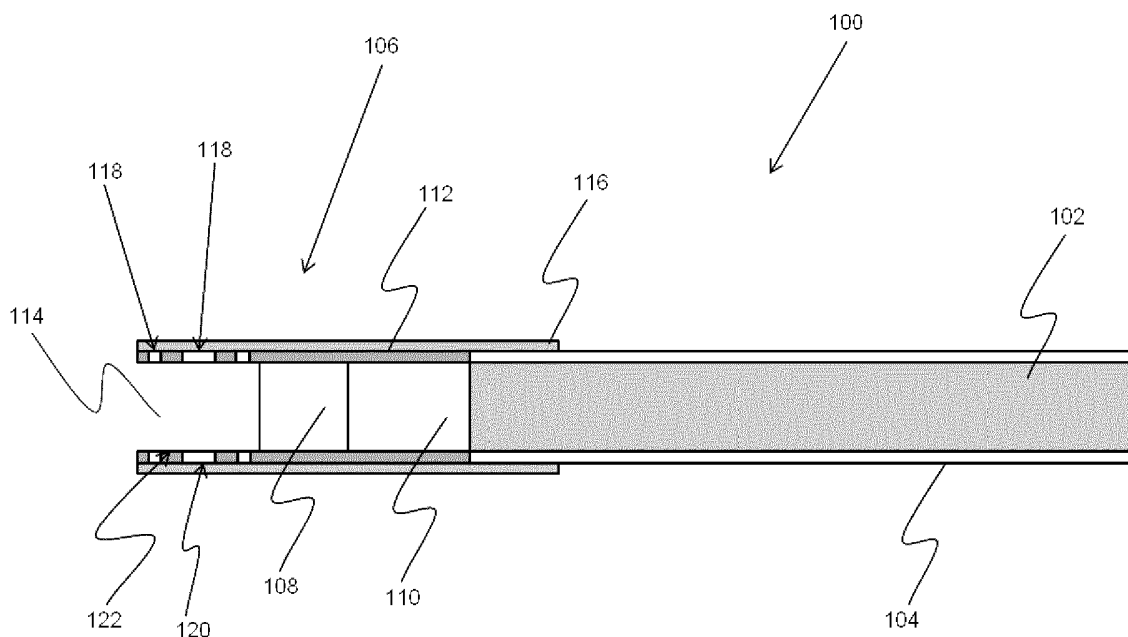


Figure 1

Description

[0001] The present invention relates to a smoking article including a wrapper forming a mouth end cavity.

[0002] Various types of smoking articles are known, including some smoking articles in which smoking material is combusted and other non-combustion smoking articles in which no combustion occurs. As an example of a combustion smoking article, filter cigarettes typically comprise a rod of tobacco cut filler surrounded by a paper wrapper and a mouthpiece axially aligned in an abutting end-to-end relationship with the wrapped tobacco rod. The mouthpiece typically comprises a segment of filtration material circumscribed by a paper plug wrap. Smoking articles having a cavity at the mouth end of their mouthpiece section have also been proposed. Conventionally, the wrapped tobacco rod and the mouthpiece are joined by a band of tipping wrapper, normally formed of a paper material that circumscribes the entire length of the mouthpiece and an adjacent portion of the wrapped tobacco rod. A filter cigarette is employed by a consumer by lighting the tobacco rod end thereof to burn the shredded tobacco rod. The consumer receives mainstream smoke by drawing on the mouth end of the cigarette.

[0003] A number of smoking articles in which tobacco is heated rather than combusted have also been proposed in the art. In heated smoking articles, an aerosol is generated by heating an aerosol generating substrate, such as tobacco. Known heated smoking articles include, for example, smoking articles in which an aerosol is generated by electrical heating or by the transfer of heat from a combustible fuel element or heat source to an aerosol forming substrate. During smoking, volatile compounds are released from the aerosol forming substrate by heat transfer from the heat source and entrained in air drawn through the smoking article. As the released compounds cool they condense to form an aerosol that is inhaled by the consumer. Also known are smoking articles in which a nicotine-containing aerosol is generated from a tobacco material, tobacco extract or other nicotine source, without combustion and in some cases without heating, for example through a chemical reaction.

[0004] It has previously been proposed to provide wrappers on smoking articles which have been printed with a graphic design in order to provide the smoking article with a more aesthetically appealing appearance. This is typically limited to printing a repeating pattern covering all or a portion of a tobacco rod wrapper or tipping paper, or may be include discrete indicia or graphics. However, the available surface area of a standard size smoking article for providing indicia which communicate information to a consumer is limited.

[0005] It would be desirable to provide a smoking article with novel ways of displaying indicia such as text, images, letters, words, logos, patterns or the like. It would be particularly desirable to provide a smoking article having such novel ways of displaying graphics or indicia without significantly affecting the overall dimensions of the

smoking article. Furthermore, it would also be desirable if such a smoking article could be assembled using standard wrapping apparatus and techniques without the requirement for significant changes.

[0006] According to a first aspect of the invention, there is provided a smoking article comprising an aerosol generating substrate and a mouthpiece in axial alignment with the aerosol generating substrate. The mouthpiece has a rod end adjacent the aerosol generating substrate and a mouth end opposite the rod end. Further, the mouthpiece comprises at least a tubular element defining a mouth end cavity. In addition, the mouthpiece comprises a first wrapper circumscribing the tubular element around at least the mouth end cavity, and one or more holes are provided in the tubular element at the mouth end cavity to expose one or more portions of the inner surface of first wrapper to the mouth end cavity.

[0007] According to a second aspect of the invention, there is provided a method for the manufacture of a mouthpiece for a smoking article. The method comprises providing a first wrapper web material and a second wrapper web material and forming in a first portion of the first wrapper web material one or more holes. Further, the method comprises providing two mouthpiece segments and disposing the mouthpiece segments on the first wrapper web material so that the mouthpiece segments are spaced apart with the first portion of the first wrapper web material between the mouthpiece segments. According to the method, the first wrapper web material is wrapped around a portion of the mouthpiece segments such that the wrapper web material forms a tubular element defining a cavity between the aligned mouthpiece segments, with the one or more holes disposed at a position along the cavity. In addition, the second wrapper web material is wrapped at least around the first portion of the first wrapper web material with the one or more holes, so that one or more portions of the inner surface of second wrapper web material are exposed to the cavity.

[0008] It shall be appreciated that any features described with reference to one aspect of the present invention are equally applicable to any other aspect of the invention.

[0009] As used herein, the terms "upstream" and "downstream" are used to describe the relative positions of elements, or portions of elements, of the smoking article in relation to the direction in which a consumer draws on the smoking article during use thereof. Smoking articles as described herein comprise a downstream end and an opposed upstream end. In use, a consumer draws on the downstream end of the smoking article. The downstream end, which is also described as the mouth end, is downstream of the upstream end, which may also be described as the distal end.

[0010] Throughout this specification, the term "imperforate" is used to describe a portion of an element of the smoking article that has no hole, opening or aperture. In other words, the continuity of the material forming an el-

ement of the smoking article is not interrupted at least over the whole of an imperforate portion of said element. Thus, by way of example, if a portion of the first wrapper exposed to the mouth end cavity through a hole in the tubular element is imperforate, it shall be understood that the hole formed in the tubular element does not extend through the overlying first wrapper.

[0011] In smoking articles according to the present invention the mouthpiece comprises a tubular element and a first wrapper. The tubular element defines a mouth end cavity. The first wrapper surrounds at least the portion of the tubular element defining the mouth end cavity. In contrast to known smoking articles, one or more holes are provided in the tubular element at the mouth end cavity, so that one or more portions of the inner surface of the first wrapper are exposed to the mouth end cavity of the smoking article.

[0012] Thus, the inner surface of the mouth end cavity provides a novel tactile perception to the consumer. At the same time, the holes in the tubular element provide a novel way of presenting indicia or visual content to the consumer, since they can be arranged to form text, shapes, images, logos, patterns or the like. This can advantageously result in interesting, novel ways of displaying information to the consumer and in an unusual visual impact and provides a distinctive product. In addition, or as an alternative, the holes in the tubular element may advantageously provide a novel way of marking and authenticating smoking articles so that it can be checked that they have originated from a genuine source and are not a counterfeit product. By way of example, the holes in the tubular element may be arranged to form an identification code which may be associated with information regarding production, and can be used to authenticate the smoking articles. Further, smoking articles according to the invention can advantageously be produced using existing apparatus and methods, optionally with the inclusion of means for registering the position of the hole(s) in the first wrapper relative to the other components of the smoking article.

[0013] Smoking articles according to the present invention may be filter cigarettes or other smoking articles in which the tobacco material is combusted to form smoke. Alternatively, smoking articles according to the present invention may be articles in which the tobacco material is heated to form an aerosol, rather than combusted. In one type of heated smoking article, the tobacco material is heated by one or more electrical heating elements to produce an aerosol. In another type of heated smoking article, an aerosol is produced by the transfer of heat from a combustible or chemical heat source to a physically separate tobacco material, which may be located within, around or downstream of the heat source. The present invention further encompasses smoking articles in which a nicotine-containing aerosol is generated from a tobacco material without combustion or heating. In preferred embodiments, the aerosol generating substrate is provided as a tobacco rod comprising a charge

of tobacco cut filler circumscribed by a paper wrapper.

[0014] In some embodiments, to form the mouth end cavity, the mouthpiece may comprise a tubular element. By way of example, the tubular element may be a hollow tube comprising any suitable material or materials. In some embodiments, the hollow tube may be formed from a polymeric material or a paper material. For example, the hollow tube may be formed from extruded plastic tubes. As an alternative, the hollow tube may be formed from a plurality of overlapping paper layers, such as a plurality of parallel wound paper layers or a plurality of spirally wound paper layers, which can further increase the resistance of the tubular member to deformation or collapse. To inhibit the transfer of moisture from one paper layer to the next during smoking of a smoking article incorporating the filter, adjacent paper layers of a hollow tube may preferably be adhered together by an intermediate layer of adhesive, which provides a barrier to the transfer of moisture between layers. This may be in addition or as an alternative to a coating provided on an inner surface of the tubular member. Suitable coating materials include, but are not limited to, waxes, polymeric materials and combinations thereof. Particularly suitable waxes include vegetable waxes, and other particularly suitable materials are ethyl cellulose and nitrocellulose.

[0015] To assist in providing the required resiliency and resistance to deformation or crushing, the hollow tube preferably has a wall thickness of at least about 100 micrometres, more preferably at least about 150 micrometres. Alternatively, or in addition, the wall thickness is preferably less than about 500 micrometres, more preferably less than about 350 micrometres, most preferably less than about 250 micrometres.

[0016] In other embodiments, the mouthpiece may comprise at least a filter segment and the tubular element may be formed by a second wrapper circumscribing the filter segment and extending beyond a downstream end of the filter segment to define the mouth end cavity. In this case, the second wrapper may extend beyond the mouth end of the segment by at least about 2 millimetres, preferably at least about 4 millimetres. In addition, or as an alternative, the second wrapper may extend beyond the mouth end of the segment by less than about 10 mm, preferably less than about 7 millimetres. The visible internal surface area of the second wrapper may be between about 50 square millimetres and about 250 square millimetres, preferably between about 100 square millimetres and about 200 square millimetres, more preferably between about 100 square millimetres and about 175 square millimetres. The visible internal surface area of the second wrapper may be at least about 5 percent, preferably at least about 10 percent of the total visible surface of the mouthpiece.

[0017] The second wrapper may be formed from a sheet material having a basis weight of preferably at least about 60 grams per square meter (gsm), more preferably at least about 80 gsm. In the alternative, or in addition, the sheet material basis weight is preferably less than

about 150 gsm, and more preferably less than about 140 gsm. The sheet material basis weight is preferably between about 60 gsm and about 150 gsm, more preferably between about 80 gsm and about 140 gsm. In general, it is advantageous to use stiffer sheet material than for conventional smoking articles to reduce the possibility of the mouth end cavity collapsing upon smoking the smoking article.

[0018] The second wrapper may be formed from a sheet material having a thickness of preferably at least about 80 micrometres, more preferably at least about 100 micrometres. In addition, or as an alternative, the first wrapper may be formed from a sheet material having a thickness of preferably less than about 200 micrometres, more preferably less than about 160 micrometres. The sheet material thickness is preferably between about 80 micrometres and about 200 micrometres, more preferably between about 100 micrometres and about 160 micrometres.

[0019] The one or more holes in the tubular element may be formed by any suitable method. Preferably, the holes in the tubular element are formed by laser perforation. The one or more holes may have any shape, including circular, square, oval, triangular, star-shaped, heart-shaped, drop-shaped, and so forth. The size of the one or more holes may be such that, on the whole, at least about 1 percent of the surface area of the inner surface of the first wrapper circumscribing the mouth end cavity is exposed to the mouth end cavity. Preferably, the size of the one or more holes is such that, on the whole, at least about 5 percent of the surface area of the inner surface of the first wrapper circumscribing the mouth end cavity is exposed to the mouth end cavity. Alternatively, or in addition, the size of the one or more holes is such that, on the whole, less than about 30 percent of the surface area of the inner surface of the first wrapper circumscribing the mouth end cavity is exposed to the mouth end cavity. More preferably, the size of the one or more holes is such that, on the whole, less than about 15 percent of the surface area of the inner surface of the first wrapper circumscribing the mouth end cavity is exposed to the mouth end cavity.

[0020] In embodiments in which the one or more holes are circular, the diameter of each hole may preferably be at least about 0.05 millimetres, more preferably at least about 0.1 millimetres. As an alternative, or in addition, the diameter of each circular hole may preferably be less than about 5 millimetres, more preferably less than about 0.5 millimetres. Preferably, for circular holes, the diameter of each hole is from about 0.05 millimetres to about 5 millimetres, more preferably from about 0.1 millimetres to 0.5 millimetres.

[0021] The filter segment may comprise filtration material in the form of a plug of fibrous filtration material, such as cellulose acetate tow or paper. A filter plasticiser may be applied to the fibrous filtration material in a conventional manner, by spraying it onto the separated fibres, preferably before applying any particulate material

to the filtration material. The fibrous filtration material in the filter segment is typically wrapped in a plug wrap.

[0022] In some embodiments, the mouthpiece may comprise one or more further filter segments aligned in the longitudinal direction. Thus, in some embodiments, the mouthpiece may comprise a tubular element consisting of a hollow tube and a segment of filtration material upstream of the hollow tube. In other embodiments, the mouthpiece may comprise a first filter segment circumscribed by a wrapper forming the tubular element and defining the mouth end cavity and at least a second filter segment upstream of the first filter segment.

[0023] Where two or more filter segments are provided, the filter segments may be of the same construction and materials as each other, but more preferably have a different construction, or contain different filtration material or additives. By way of examples, one or more of the filter segments may comprise a particulate material, such as a sorbent, or a flavourant material.

[0024] It shall be understood that smoking articles according to the present invention may include a variety of different types of filter segments or combinations of filter segments, including those described above as well as other types of filter segments that would be known to the skilled person, such as segments including restrictors and segments that are used for adjusting the resistance to draw (RTD).

[0025] Any or all of the segments may each be individually wrapped in a plug wrap. The two or more segments may be joined by a coupling plug wrap that couples the two or more segments to one another in an end-to-end relationship. This coupling plug wrap may be the second wrapper forming the mouth end cavity as described above, or there may be a subsequent wrapper that is disposed around the coupling plug wrap that forms the mouth end cavity.

[0026] The second wrapper is preferably a plug wrap. Thus, it is easier to form the mouth end cavity of the mouthpiece substantially while manufacturing the filter segment(s).

[0027] The first wrapper is preferably a tipping wrapper that at least partly circumscribes the mouthpiece and attaches the mouthpiece to the aerosol generating substrate. This is advantageous because novel tactile elements or visual indicia or both can be formed in smoking articles according to the invention by using standard equipment adapted to handle a plug wrap and tipping wrapper. Further, smoking articles that look like conventional smoking articles on the outside, yet that have a novel visual/sensory impact because of the holes in the mouth end cavity can be manufactured. In addition, the tipping wrapper advantageously further improves the stiffness of the mouth end cavity, which is thus made more resistant to compression and deformation.

[0028] Preferably, the inner surface of the first wrapper and the inner surface of the tubular element have different colours. This makes it easy for the consumer to visually detect the holes in the first wrapper and, accordingly, any

indicia that may be formed by the holes. The term "indicia" is used to refer to a discrete visual element, or repeating visual elements or patterns that provides an aesthetically pleasing representation. The indicia may be in the form of text, images, letters, words, logos, patterns or a combination thereof.

[0029] For example, the holes provided in the tubular element of a smoking article according to the present invention may be disposed to form a brand or manufacturer logo that allows the consumer to identify the type or origin of the smoking article.

[0030] Alternatively, the holes may be arranged in a repeating pattern. In some preferred embodiments, the one or more holes are arranged in parallel rows extending across the inner surface of the portion of the tubular element defining the mouth end cavity. In more detail, the holes may be generally aligned with the axis of the smoking article, generally perpendicular to the axis of the smoking article, or at an angle other than parallel or perpendicular with the smoking article.

[0031] In addition, holes arranged so as to form different indicia could be provided on a number of smoking articles that are sold together. For example, in one package the smoking articles may include two or more different types of indicia. In addition, the indicia could be presented in a way that presents a message, for example with the holes in the tubular elements of adjacent smoking articles in a package forming indicia that are visible when the packaging is opened and the visible indicia spelling a word or otherwise collectively conveying a message.

[0032] In some embodiments, the inner surface of the first wrapper and the inner surface of the tubular element may be of different shades of a same colour, or of supplementary colours. In other preferred embodiments, the inner surface of the first wrapper and the inner surface of the tubular element may be of contrasting colours, more preferably of complementary colours. When placed next to each other, complementary colours create the strongest contrast and reinforce each other, so that the indicia formed by the holes in the tubular element are particularly easy to detect for the consumer and have a strong visual impact. In some other embodiments, one of the inner surface of the first wrapper and the inner surface of the tubular element may be white or black.

[0033] Preferably, one or more printed indicia are disposed on the inner surface of the portion of the tubular element defining the mouth end cavity. Thus, smoking articles can be manufactured where the novel visual and tactile impact of the indicia provided by exposing a portion of the inner surface of the second wrapper through the holes in the tubular element is advantageously combined with indicia printed directly on the inner surface of the mouth end cavity. Preferably, the indicia in the mouth end cavity comprise a continuous pattern or image printed within the mouth end cavity. In some other embodiment, the printed indicia may combine with the exposed portion(s) of inner surface of the second wrapper to form a complex pattern, logo or image.

[0034] The holes may be formed in the tubular element, particularly when formed by the second wrapper, online or offline. Similarly, indicia may be printed on the first wrapper online or offline. As used herein, the term "online" refers to carrying out the forming of the hole or the printing of the indicia as a step during the manufacture of the mouthpiece or of the smoking article. The term "offline" refers to carrying out the forming of the holes or the printing of the indicia as a separate process. In the case of offline forming or printing, the process may be conducted using separate machinery in the same manufacturing plant as the manufacture of the mouthpiece, or smoking article. Alternatively, the offline forming or printing may be conducted using separate machinery in an alternate location to the manufacture of the mouthpiece or smoking article.

[0035] Where the tubular element is formed by the second wrapper, the one or more holes may be formed in discrete areas of a wrapper web material that are spaced apart such that they can be wrapped around a portion of the mouthpiece segment(s) such that the wrapper web material forms a cavity adjacent to an end of the mouthpiece segment and the one or more holes are in the portion of the wrapper web material defining the mouth end cavity. Accordingly, the wrapper web material and the mouthpiece segment(s) must be disposed so that, when the first wrapper is wrapped around the mouthpiece segment and the second wrapper, the exposed portion(s) of the inner surface of the first wrapper is (are) visible in the mouth end cavity. Preferably, the position of the mouthpiece(s) relative to the areas of the wrapper web material comprising the holes is registered using an optical device to enable the correct positioning of the tactile indicia in the mouth end cavity of the smoking article.

[0036] However, other suitable methods shall be conceivable for the skilled person. By way of example, these may include the offline production of holes in a hollow paper tube prior to assembling the smoking article by attaching the mouthpiece including the hollow paper tube to a tobacco rod by a tipping wrapper. As a further example, where the tubular element is formed by a wrapper circumscribing a filter element, the holes may alternatively be formed over the whole of the wrapper web material from which the wrapper is formed, so that no particular arrangement is required for registering the holes with the mouth end cavity of the smoking article.

[0037] The invention will now be further described, by way of example only, with reference to the accompanying drawings in which:

Figure 1 shows a schematic side sectional view of a smoking article in accordance with the present invention;

Figure 2 shows a perspective view of the smoking article of Figure 1; and

Figure 3 shows a schematic top view of a wrapper for the manufacture of a smoking article in accordance with the present invention.

[0038] Figures 1 and 2 illustrate a smoking article 100 in accordance with the present invention. The smoking article 100 comprises an aerosol generating substrate in the form of a rod 102 of tobacco cut filler circumscribed by a paper wrapper 104. The circumscribed rod is attached at one end to an axially aligned mouthpiece 106.

[0039] The mouthpiece 106 comprises a first filter segment 108. Further, the mouthpiece 106 comprises a second filter segment 110 upstream of the first filter segment 108. In addition, the mouthpiece 106 comprises a wrapper 112 circumscribing the first and the second filter segments 108, 110 and extending downstream of the first segment 108 to define a mouth end cavity 114. In more detail, the wrapper 112 is a plug wrap.

[0040] Further, the mouthpiece comprises a further wrapper 116 circumscribing the plug wrap 112 and the filter segments 108, 110. The further wrapper 116 is tipping wrapper that circumscribes the mouthpiece 106 and attaches the mouthpiece 106 to the aerosol generating substrate. Holes 118 are provided in the plug wrap 112 such that portions of the inner surface 120 of the further wrapper 116 are exposed to the mouth end cavity 114. The inner surface 122 of the plug wrap 112 and the inner surface 120 of the further wrapper 116 have different colours. As shown in Figure 2, the holes 118 are arranged to form indicia in the mouth end cavity. The consumer can detect these indicia both tactually and visually.

[0041] Figure 3 shows the inner surface of a wrapper web 200 comprising portions perforated by holes 118 in a recurring pattern. During the continuous manufacture of the smoking articles, filter segments are disposed on the wrapper web 200 in axial alignment and spaced apart from one another such that the perforated portions are disposed between filter segments. The wrapper web 200 is wrapped around the filter segments so as to circumscribe the filter segments and form cavities between the segments, the holes 118 being disposed at a position along the cavities. A further wrapper web (not shown) is then wrapped around the filter segments circumscribed by the first wrapper web (plug wrap). Portions of the inner surface of the second wrapper web are thus exposed to the cavities. By cutting along the dashed lines in Figure 3, separate mouthpieces are produced that have an exposed mouth end cavity. These mouthpieces can then be attached to respective aerosol generating substrates.

[0042] It will be appreciated that whilst the specific embodiments described above relate to smoking articles comprising a filter and a tobacco rod, a similar arrangement of the mouth end cavity could also be used on a non-combustible smoking article, as described above.

Claims

1. A smoking article comprising:

- an aerosol generating substrate;
- a mouthpiece in axial alignment with the aerosol

generating substrate, the mouthpiece having a rod end adjacent the aerosol generating substrate and a mouth end opposite the rod end, the mouthpiece comprising:

- a tubular element defining a mouth end cavity, and;
- a first wrapper circumscribing the tubular element around at least the mouth end cavity, wherein one or more holes are provided in the tubular element at the mouth end cavity to expose one or more portions of the inner surface of first wrapper to the mouth end cavity.

2. A smoking article according to claim 1, wherein the mouthpiece comprises at least one filter segment and a second wrapper circumscribing the at least one filter segment to form the tubular element, the mouth end cavity being defined downstream of the at least one segment.
3. A smoking article according to claim 2, wherein the second wrapper is a plug wrap.
4. A smoking article according to claim 3, wherein the second wrapper is formed from a sheet material having a basis weight of at least about 60 grams per square meter (gsm).
5. A smoking article according to claim 3 or 4, wherein the second wrapper is formed from a sheet material having a thickness of preferably at least about 80 micrometres.
6. A smoking article according to any of the preceding claims, wherein the first wrapper is a tipping wrapper that at least partly circumscribes the mouthpiece and attaches the mouthpiece to the aerosol generating substrate.
7. A smoking article according to any one of the preceding claims, wherein the inner surface of the first wrapper and the inner surface of the tubular element have different colours.
8. A smoking article according any one of the preceding claims, wherein the one or more holes are arranged in parallel rows extending across the inner surface of the portion of the tubular element defining the mouth end cavity.
9. A smoking article according to any one of the preceding claims, wherein the one or more holes are arranged to form indicia on the inner surface of the portion of the tubular element defining the mouth end cavity.

10. A smoking article according to any one of the preceding claims, wherein the one or more portions of the first wrapper exposed to the mouth end cavity by the holes in the tubular element are imperforate. 5
11. A smoking article according to any one of the preceding claims, wherein one or more printed indicia are disposed on the inner surface of the portion of the tubular element defining the mouth end cavity. 10
12. A smoking article according to any one of the preceding claims, wherein the mouthpiece comprises one or more further filter segments.
13. A method for the manufacture of a mouthpiece for a smoking article, the method comprising the steps of: 15
- providing a first wrapper web material and a second wrapper web material;
- forming in a first portion of the first wrapper web material one or more holes; 20
- providing two mouthpiece segments;
- disposing the mouthpiece segments on the first wrapper web material so that the mouthpiece segments are spaced apart with the first portion of the first wrapper web material between the mouthpiece segments; 25
- wrapping the first wrapper web material around a portion of the mouthpiece segments such that the wrapper web material forms a tubular element defining a cavity between the aligned mouthpiece segments with the one or more holes disposed at a position along the cavity; and 30
- wrapping the second wrapper web material at least around the first portion of the first wrapper web material with the one or more holes, so that one or more portions of the inner surface of second wrapper web material are exposed to the cavity. 35 40
14. A method according to claim 13, further comprising printing one or more indicia on the first portion of the first wrapper web material. 45
15. A method according to claim 13 or 14, further comprising cutting along the cavity to produce two separate mouthpieces having an exposed mouth end cavity. 50

55

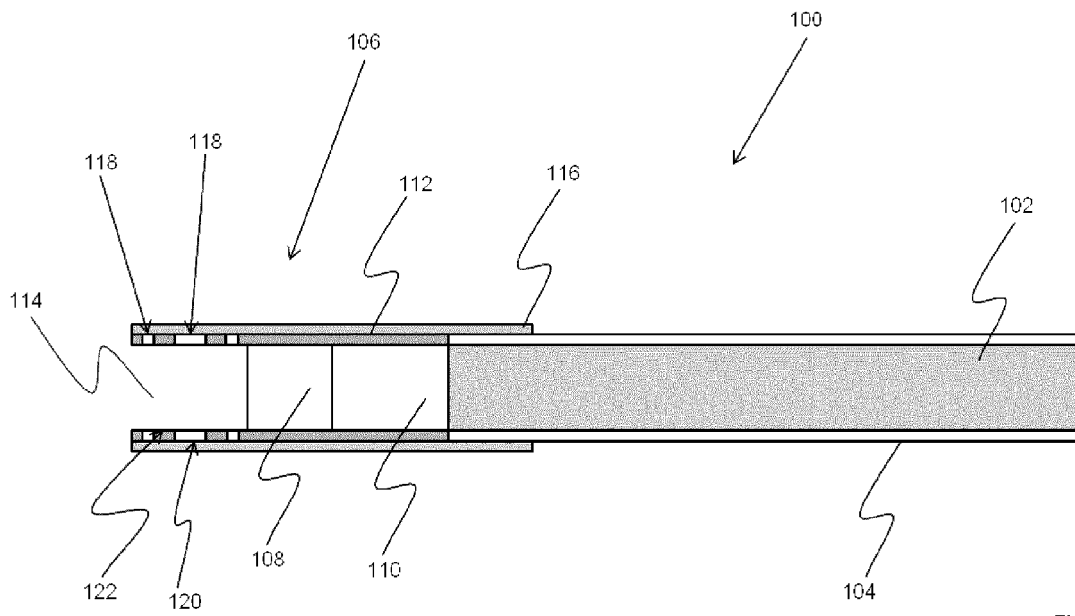


Figure 1

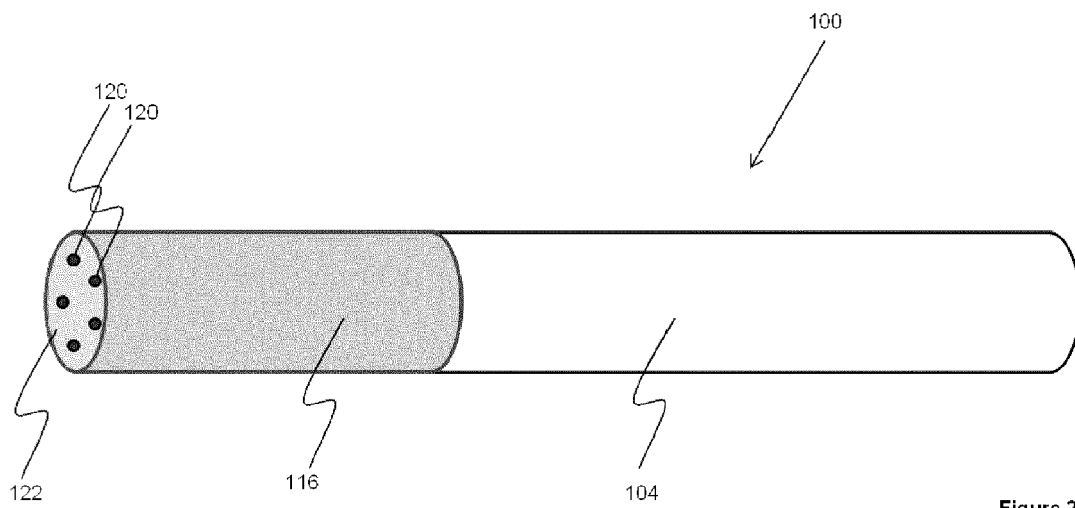


Figure 2

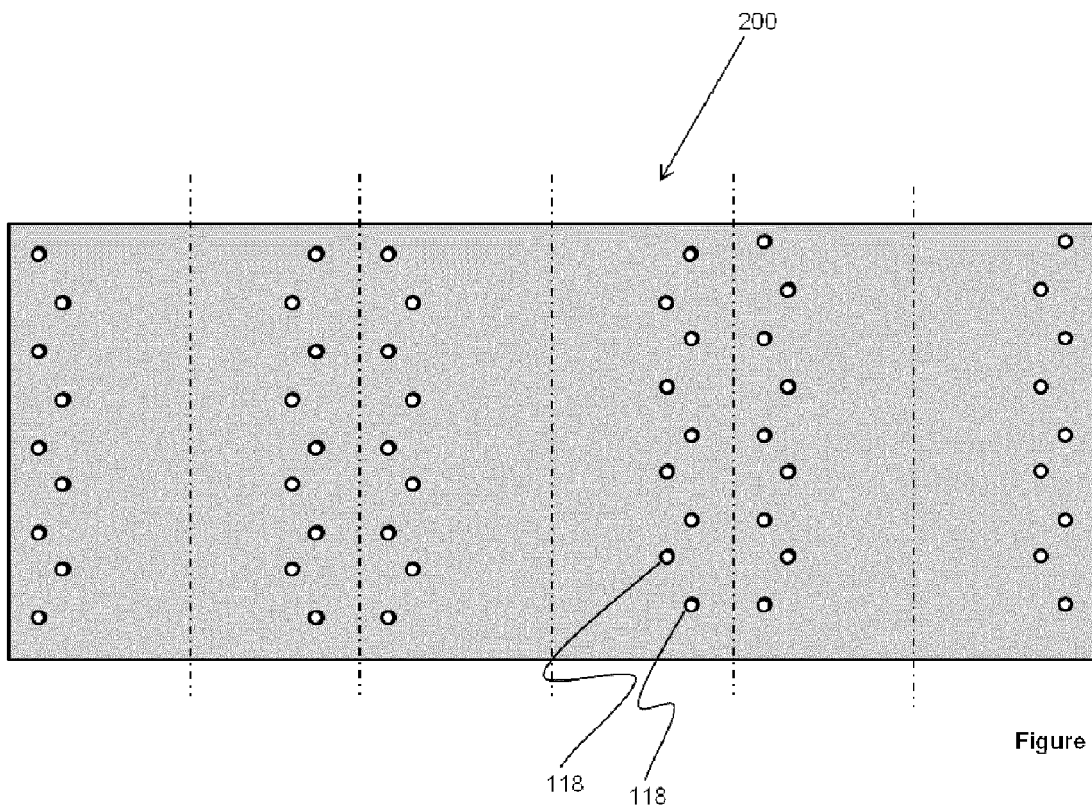


Figure 3



EUROPEAN SEARCH REPORT

Application Number
EP 14 18 6680

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2013/079645 A1 (PHILIP MORRIS PROD [CH]) 6 June 2013 (2013-06-06) * the whole document * -----	1-15	INV. A24D3/02 A24D3/04
X	US 5 423 336 A (MENTZEL EDGAR [DE] ET AL) 13 June 1995 (1995-06-13) * the whole document * -----	1-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			A24D A24F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 11 March 2015	Examiner Cardan, Cosmin
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03/02 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 14 18 6680

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

11-03-2015

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2013079645 A1	06-06-2013	AR 089183 A1	06-08-2014
		AU 2012343801 A1	17-07-2014
		CN 104039180 A	10-09-2014
		EP 2785207 A1	08-10-2014
		JP 2015500011 A	05-01-2015
		KR 20140098764 A	08-08-2014
		PH 12014501125 A1	04-08-2014
		US 2014318562 A1	30-10-2014
		WO 2013079645 A1	06-06-2013
		-----	-----
US 5423336 A	13-06-1995	AT 166768 T	15-06-1998
		CA 2090090 A1	26-08-1993
		CZ 9300235 A3	17-11-1993
		DE 4205658 A1	26-08-1993
		DE 59308624 D1	09-07-1998
		DK 0558166 T3	22-03-1999
		EP 0558166 A2	01-09-1993
		ES 2117092 T3	01-08-1998
		HU 217452 B	28-01-2000
		JP 3023037 B2	21-03-2000
		JP H05336943 A	21-12-1993
		PL 297678 A1	06-09-1993
		SI 9300089 A	30-09-1993
		SK 12293 A3	09-09-1993
		US 5423336 A	13-06-1995
		-----	-----