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(54) **NOVEL CIGARETTE WITH REDUCED TOBACCO VAPOR TEMPERATURE AND IMPROVED TASTE**

(57) A cigarette with reduced tobacco vapor temperature and improved taste. The cigarette comprises: a tobacco section (1), a filter section, and a vapor flow section. An air inlet opening (3) communicating with the tobacco section (1) is provided on a part of the vapor flow section adjacent the tobacco section (1). An air outlet opening (6) communicating with the filter section is provided on a part of the vapor flow section adjacent to the filter section. A plurality of air flow obstruction members (5) are provided from top to bottom within the vapor flow section in an alternating arrangement to create a serpentine vapor flow path (4). One end of the vapor flow path (4) communicates with the air inlet opening (3), and another end of the vapor flow path is connected to the air outlet opening (6). A cigarette vapor enters the air inlet opening (3) and passes through the vapor flow path (4). The length of a vapor flow path of the vapor flow section is increased. The temperature of a hot vapor current is reduced by means of heat exchange with the air flow obstruction member (5) and an inner wall of the vapor flow section.

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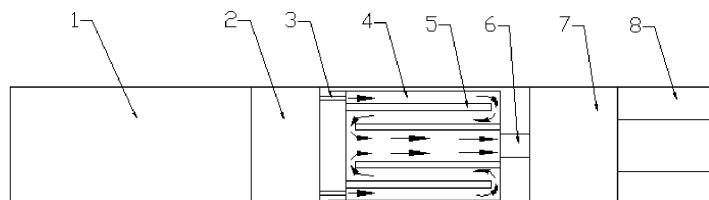


FIG. 1

Description**TECHNICAL FIELD**

[0001] The disclosure relates to the technical field of novel cigarettes, and specifically a novel cigarette with reduced tobacco vapor temperature and improved taste.

BACKGROUND

[0002] The novel cigarette heated through external heating but not the combustion of tobacco can obviously reduce a large number of hazardous substances generated during the combustion of the cigarette, so that the harm of passive smoking for non-smoking population is reduced. In the novel cigarette heated through an external heat source, one important constituent part is a cigarette of the heated cigarette, and the cigarette is a tobacco product capable of releasing a vapor aerosol under low temperature heating conditions. The tobacco product reaches an atomization temperature at the temperature of 200 to 400°C in general, the temperature of high temperature atomization vapor entering oral cavity through a filter tip can be higher than the temperature of ordinary cigarette combustion.

SUMMARY

[0003] In order to solve the disadvantages in the prior art, the disclosure provides a novel cigarette with reduced tobacco vapor temperature and improved taste.

[0004] A novel cigarette with reduced tobacco vapor temperature and improved taste comprises a tobacco segment, a filter tip segment, and a flue gas reflux segment arranged between the tobacco segment and the filter tip segment. An air inlet opening communicating with the tobacco segment is provided on a part of the flue gas reflux segment adjacent to the tobacco segment. An air outlet opening communicating with the filter tip segment is provided on a part of the flue gas reflux segment adjacent to the filter tip segment. A plurality of air flow baffles are provided from top to bottom within the flue gas reflux segment in an alternating arrangement to create a serpentine flue gas reflux path. One end of the flue gas reflux path communicates with the air inlet opening, and the other end of the flue gas reflux path is connected to the air outlet opening. Tobacco vapor enters the air inlet opening and passes through the flue gas reflux path. The length of a flue gas reflux path of the flue gas reflux segment is increased. The temperature of flue gas is reduced by means of heat exchange of a hot air flow with the air flow baffles and the inner wall of the flue gas reflux segment.

[0005] Furthermore, the novel cigarette also comprises a fragrance strengthening segment between the tobacco segment and the flue gas reflux segment.

[0006] Furthermore, the filter tip segment is also arranged between the tobacco segment and the flue gas

reflux segment.

[0007] Furthermore, the filter tip segment can be a hollow filter tip bar, an ordinary filter tip bar or a countersunk head filter tip bar.

[0008] Furthermore, the flue gas reflux segment can be various air flow structures for increasing the circulation extension of vapor inside the cigarette such as a spiral air flow structure or a serpentine vapor path structure.

[0009] Furthermore, an air inlet opening is provided on the upper side and the lower side of the flue gas reflux segment adjacent to the tobacco segment respectively, the flue gas reflux segment is provided with two flue gas reflux branched paths, the inlet of each flue gas reflux branched path corresponds to one air inlet opening, and the air outlet opening communicates with the outlets of the two flue gas reflux branched paths respectively.

[0010] Furthermore, an air inlet opening is provided on a part of the flue gas reflux segment adjacent to the tobacco segment, an air outlet opening is provided on a

part of the flue gas reflux segment adjacent to the filter tip segment vertically respectively, the flue gas reflux path is provided with two flue gas reflux branched paths, the inlet of each flue gas reflux branch path corresponds to the air inlet opening, and the outlet of each flue gas reflux branch path corresponds to one air outlet opening.

[0011] Furthermore, the novel cigarette also comprises a fragrance strengthening segment between the tobacco segment and the flue gas reflux segment, the fragrance strengthening segment is internally provided with a tobacco flavor fragile capsule or an adsorbent carrier and flavors and fragrances adsorbed onto the adsorbent carrier, or the adsorbent carrier is paved on the surface layers of the air flow baffles, and the adsorbent carrier is adsorbed with the flavors and fragrances.

[0012] Furthermore, the adsorbent carrier is made from foam metals, plastic materials, molecular sieves, polypropylene, active carbon, Dacron, nylon fiber, porous ceramics, non-woven fabrics, carbon fiber, natural cellulose fiber or cellulose derivative fiber.

[0013] Furthermore, the tobacco segment consists of tobacco shreds, tobacco sheets, an atomizing agent, an auxiliary material, a tobacco extract and tobacco flavors and fragrances, the tobacco shreds account for 40% to 90% of the total weight of the tobacco product, the tobacco sheets account for 5% to 50% of the total weight of the tobacco product, the atomizing agent accounts for 2% to 35% of the total weight of the tobacco product, the auxiliary material accounts for 0 to 10% of the total weight of the tobacco product, the tobacco extract accounts for

0.1% to 20% of the total weight of the tobacco product, and the tobacco flavors and fragrances account for 0.01% to 8% of the total weight of the tobacco product.

[0014] Furthermore, the tobacco shreds account for 50% to 80% of the total weight of the tobacco product, the tobacco sheets account for 10% to 40% of the total weight of the tobacco product, the atomizing agent accounts for 5% to 30% of the total weight of the tobacco product, the auxiliary material accounts for 0.5% to 8%

of the total weight of the tobacco product, the tobacco extract accounts for 0.5% to 15% of the total weight of the tobacco product, and the tobacco flavors and fragrances account for 0.05% to 5% of the total weight of the tobacco product.

[0015] Furthermore, the air inlet opening is designed in the shape of a horn mouth.

[0016] Furthermore, the flue gas reflux segment accounts for 1/6 to 2/3 of the cigarette length of the whole novel cigarette, appropriate length of the flue gas reflux segment can obviously reduce the vapor temperature of the cigarette, and the cigarette is appropriate in draw resistance.

[0017] Furthermore, the cigarette length of the novel cigarette is 35 to 100 mm, and the outer diameter of the cigarette is 3 to 12 mm.

[0018] The novel cigarette has the beneficial effects that firstly, the designed flue gas reflux segment can change the circulation path of the flue gas reflux, the length of a flue gas reflux path of the flue gas reflux segment is increased, the heat exchange efficiency of vapor and the cigarette is increased, and the temperature of the flue gas reflux of the external heating type novel cigarette is reduced effectively; and secondly, the fragrance strengthening segment tightly adjacent to the tobacco product sufficiently utilizes the air flow heat of the tobacco segment, the vapor temperature is reduced, and simultaneously the comfort of the vapor is improved.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019]

FIG. 1 is a structure diagram of the embodiment I of the novel cigarette with reduced tobacco vapor temperature and improved taste in the disclosure;

FIG. 2 is a structure diagram of the embodiment II of the novel cigarette with reduced tobacco vapor temperature and improved taste in the disclosure;

FIG. 3 is a structure diagram of the embodiment III of the novel cigarette with reduced tobacco vapor temperature and improved taste in the disclosure;

FIG. 4 is a structure diagram of the embodiment IV of the novel cigarette with reduced tobacco vapor temperature and improved taste in the disclosure;

and FIG. 5 is a structure diagram of the embodiment V of the novel cigarette with reduced tobacco vapor temperature and improved taste in the disclosure.

[0020] In the figures, 1, tobacco segment; 2, fragrance strengthening segment; 3, 12, air inlet opening; 4, flue gas reflux path; 5, air flow baffle; 6, 13, air outlet opening; 7, 11, solid filter tip; 8, 10, hollow filter tip; 9, fragile capsule; and 10, tobacco segment

DESCRIPTION OF THE EMBODIMENTS

[0021] In combination with the accompanying draw-

ings, the technical scheme in the disclosure is described clearly and completely.

Embodiment I

[0022] FIG. 1 shows a novel cigarette containing a fragrance strengthening segment provided by the disclosure, the novel cigarette comprises a tobacco segment 1, the fragrance strengthening segment 2, a flue gas reflux segment and a filter tip segment which are connected in sequence, the filter tip segment consists of a solid filter tip 7 and a hollow filter tip 8, wherein the solid filter tip 7 is connected with the flue gas reflux segment, and the hollow filter tip 8 is positioned at the outermost end. An air inlet opening 3 communicating with the fragrance strengthening segment 2 is provided on a part of the flue gas reflux segment adjacent to the fragrance strengthening segment 2, and an air outlet opening 6 communicating with the filter tip segment is provided on a part of the flue gas reflux segment adjacent to the filter tip segment. A plurality of air flow baffles 5 are provided from top to bottom within the flue gas reflux segment in an alternating arrangement to create a serpentine flue gas reflux path 4, one end of the flue gas reflux path 4 communicates with the air inlet opening 3, and the other end of the flue gas reflux path 4 is connected to the air outlet opening 6. As shown in FIG. 1, the embodiment is provided with four air flow baffles which comprise a first air flow baffle, a second air flow baffle, a third air flow baffle and a fourth air flow baffle from top to bottom in sequence.

[0023] An air inlet opening 3 is provided on the upper side and the lower side of the flue gas reflux segment adjacent to the fragrance strengthening segment 2 respectively, the first air flow baffle positioned at the uppermost end is arranged below the air inlet opening 3, one end is in contact with the fragrance strengthening segment 2 for sealing, the other end and the filter tip segment are arranged at an interval to form an opening, one end of the second air flow baffle positioned below the opening is in contact with the filter tip segment for sealing, the other end and the fragrance strengthening segment 2 are arranged at an interval to form an opening, so that the first air flow baffle and the second air flow baffle are arranged in a staggered manner, a serpentine flue gas reflux path 4 is formed by the opening formed by the first air flow baffle and the filter tip segment and the opening formed between the second air flow baffle and the fragrance strengthening segment 2 between the first air flow baffle and the upper side wall of the flue gas reflux segment, after the cigarette is heated, tobacco vapor enters the air inlet opening 3 and passes through the flue gas reflux path 4, the length of a flue gas reflux path of the flue gas reflux segment is increased, the temperature of flue gas is reduced by means of heat exchange

of a hot air flow with the air flow baffles and the inner wall of the flue gas reflux segment, after the flue gas flows out through the air outlet opening 6, the tobacco vapor enters into the solid filter tip 7 and the hollow filter tip 8

in sequence, and finally the temperature of flue gas is lowered below 45°C.

[0024] The arrangement of the third air flow baffle, the fourth air flow baffle and the air inlet opening 3 on the lower side is similar to the above description, and does not need to be described in details herein.

[0025] In the embodiment, the tobacco segment 1 consists of tobacco shreds, tobacco sheets, an atomizing agent, an auxiliary material, a tobacco extract and tobacco flavors and fragrances, wherein the tobacco shreds account for 70% of the total weight, the tobacco sheets account for 14% of the total weight, the atomizing agent consists of glycerinum and ethylene glycol in the mass ratio of 3: 1 and accounts for 12% of the total weight, the auxiliary material accounts for 1% of the total weight, the tobacco extract accounts for 2.8% of the total weight, and the flavors and fragrances account for 0.2% of the total weight.

[0026] In the embodiment, non-woven fabric serves as an adsorbing medium in the fragrance strengthening segment 2, a blended tobacco fragrance substance with low boiling point is added, and the addition amount accounts for 0.1% of the total weight of the tobacco segment.

[0027] According to the novel cigarette prepared in the embodiment, the tobacco vapor temperature of the cigarette can be reduced obviously, and the taste of the added fragrance strengthening segment 2 is coordinated with the tobacco vapor.

Embodiment II

[0028] FIG. 2 shows a novel cigarette without containing a fragrance strengthening segment provided by the disclosure and is basically similar to the structural form in the embodiment I, the novel cigarette comprises a tobacco segment 1, a flue gas reflux segment and a filter tip segment which are connected in sequence, the filter tip segment consists of a solid filter tip 7 and a hollow filter tip 8, wherein the solid filter tip 7 is connected with the flue gas reflux segment, and the hollow filter tip 8 is positioned at the outermost end. The solid filter tip 7 and the solid filter tip 8. Wherein, the flue gas reflux segment in the embodiment is the same as the flue gas reflux segment in the embodiment I, and just the flue gas reflux segment changes to be connected with the tobacco segment 1.

[0029] In the embodiment, the tobacco segment 1 consists of tobacco shreds, tobacco sheets, an atomizing agent, a tobacco extract and tobacco flavors and fragrances, wherein the tobacco shreds account for 65% of the total weight, the tobacco sheets account for 17% of the total weight, the atomizing agent consists of glycerinum and ethylene glycol in the mass ratio of 4: 1 and accounts for 15% of the total weight, the tobacco extract accounts for 2.5% of the total weight, and the flavors and fragrances account for 0.5% of the total weight. Due to the fact that the cigarette is internally free of the fragrance strengthening segment, flavors and fragrances inside the

tobacco product are appropriately added, so that the taste of the smoke vapor is improved.

[0030] Preferably, an adsorbent carrier can be paved on the surface layers of the air flow baffles 5, and the adsorbent carrier is adsorbed with the flavors and fragrances, so that the fragrance strengthening effect can be reached for tobacco vapor.

[0031] According to the novel cigarette structure prepared in the embodiment, the tobacco vapor temperature of the cigarette can be reduced obviously, and the fragrance of the tobacco is obvious.

Embodiment III

[0032] FIG. 3 shows a novel cigarette with a fragrance strengthening segment containing a fragile capsule, the novel cigarette comprises a tobacco segment 1, the fragrance strengthening segment 2, a flue gas reflux segment and a filter tip segment which are connected in sequence, the filter tip segment consists of a solid filter tip 7 and a hollow filter tip 8, wherein the solid filter tip 7 is connected with the flue gas reflux segment, and the hollow filter tip 8 is positioned at the outermost end. Wherein, the flue gas reflux segment in the embodiment is the same as the flue gas reflux segment in the embodiment I.

[0033] In the embodiment, the tobacco segment 1 consists of tobacco shreds, tobacco sheets, an atomizing agent, a tobacco extract and tobacco flavors and fragrances, wherein the tobacco shreds account for 60% of the total weight, the tobacco sheets account for 15% of the total weight, the atomizing agent consists of glycerinum, ethylene glycol and water in the mass ratio of 10: 10: 1 and accounts for 20% of the total weight, the tobacco extract accounts for 4.9% of the total weight, and the flavors and fragrances account for 0.1% of the total weight.

[0034] In the embodiment, the fragrance strengthening segment 2 is internally provided with the fragile capsule 9, containing the blended tobacco flavors and fragrances, wrapped by cellulose acetate fiber, before the tobacco segment 1 is heated, the fragile capsule 9 is broken, the flavors and fragrances are released, and the flavors and fragrances are brought out by using a hot flow of the tobacco segment 1, so that the fragrance plumpness of the tobacco vapor is increased.

[0035] According to the novel cigarette structure prepared in the embodiment, the tobacco vapor temperature of the cigarette can be reduced obviously, and the fragrance of the substance contained in the capsule is obvious.

Embodiment IV

[0036] FIG. 4 is a novel cigarette containing a fragrance strengthening segment provided by the disclosure, the novel cigarette comprises a tobacco segment 1, the fragrance strengthening segment 2, a flue gas reflux segment and a filter tip segment which are connected

in sequence, the filter tip segment consists of a solid filter tip 10 and a hollow filter tip 11, wherein the solid filter tip 10 is connected with the flue gas reflux segment, and the hollow filter tip 11 is positioned at the outermost end.

[0037] Wherein, the flue gas reflux segment in the embodiment is the same as the flue gas reflux segment in the embodiment I, but a structural form arranged in an opposite direction in the embodiment I is adopted, the air inlet opening is 12, the air outlet opening is 13, namely the air inlet opening 12 is provided on a part of the flue gas reflux segment adjacent to the fragrance strengthening segment 2, and an air outlet opening 13 is provided on a part of the flue gas reflux segment adjacent to the filter tip segment, a plurality of air flow baffles 5 are provided from top to bottom within the flue gas reflux segment in an alternating arrangement to create a serpentine flue gas reflux path 4, one end of the flue gas reflux path 4 communicates with the air inlet opening 12, and the other end of the flue gas reflux path is connected to the air outlet opening 13. In the embodiment, the two air flow baffles 5 are arranged vertically respectively, a flue gas reflux branched path is formed by one upper air flow baffle 5 and the corresponding lower air flow baffle 5 respectively, and the outlet of each flue gas reflux branched path communicates with the corresponding air outlet opening 13 respectively.

[0038] The air inlet openings 12 are positioned between the upper air flow baffles and the lower air flow baffles, after the tobacco vapor enters from the air inlet openings 12, the tobacco vapor enters into the two flue gas reflux branched paths from the passages between the upper air flow baffles and the lower air flow baffles respectively, and then the flue gas flows out from the air outlet opening 13 after passing through the flue gas reflux branched paths.

[0039] In the embodiment, the tobacco segment 1 consists of tobacco shreds, tobacco sheets, an atomizing agent, a tobacco extract, a non-tobacco extract and tobacco flavors and fragrances, wherein the tobacco shreds account for 50% of the total weight, the tobacco sheets account for 28% of the total weight, the auxiliary material accounts for 2% of the total weight, the atomizing agent consists of glycerinum, ethylene glycol and water in the mass ratio of 10: 10: 0.5 and accounts for 15% of the total weight, the tobacco extract and the non-tobacco extract account for 4.5% of the total weight, and the tobacco flavors and fragrances account for 0.5% of the total weight.

[0040] In the embodiment, non-woven fabric serves as an adsorbing medium in the fragrance strengthening segment 2, a fragrance substance prepared by a Maillard reaction intermediate is added, and the addition amount accounts for 0.1% of the total weight of the tobacco segment.

[0041] According to the novel cigarette structure prepared in the embodiment, the tobacco vapor temperature of the cigarette can be reduced obviously, and the fragrance, generated by Maillard reaction, of the tobacco is

obvious, and the fragrance strengthening effect is obvious and is coordinated with the tobacco vapor.

Embodiment V

[0042] FIG. 5 is a novel cigarette containing a fragrance strengthening segment provided by the disclosure, the novel cigarette comprises a tobacco segment 1, the fragrance strengthening segment 2, a flue gas reflux segment and a filter tip segment which are connected in sequence, the filter tip segment consists of a solid filter tip 10 and a hollow filter tip 11, wherein the solid filter tip 10 is connected with the flue gas reflux segment, and the hollow filter tip 11 is positioned at the outermost end.

[0043] Wherein, the flue gas reflux segment in the embodiment is the same as the flue gas reflux segment in the embodiment IV, and the air inlet openings 12 are in the forms of horn mouths, so that the draw resistance can be reduced obviously.

[0044] In the embodiment, the tobacco segment 1 consists of tobacco shreds, tobacco sheets, an atomizing agent, a tobacco extract, a non-tobacco extract and tobacco flavors and fragrances, wherein the tobacco shreds account for 65% of the total weight, the tobacco sheets account for 15% of the total weight, the auxiliary material accounts for 1% of the total weight, the atomizing agent consists of glycerinum and ethylene glycol in the mass ratio of 3: 2 and accounts for 15% of the total weight, the tobacco extract and the non-tobacco extract account for 3.5% of the total weight, and the tobacco flavors and fragrances account for 0.5% of the total weight.

[0045] In the embodiment, non-woven fabric serves as an adsorbing medium in the fragrance strengthening segment 2, a fragrance substance prepared by a mint ester substance is added, and the addition amount accounts for 0.2% of the total weight of the tobacco segment.

[0046] According to the novel cigarette structure prepared in the embodiment, the tobacco vapor temperature of the cigarette can be reduced obviously, and the precursor-flavor substances such as mint esters can be heated to decompose flavor substances with mint flavor, so that the taste of the smoke vapor is improved.

[0047] The foregoing descriptions are merely specific embodiments of the disclosure, but are not intended to limit the protection scope of the disclosure. Any variation or replacement readily figured out by a person skilled in the art within the technical scope disclosed in the disclosure shall fall within the protection scope of the disclosure. Therefore, the protection scope of the disclosure shall be subject to the protection scope of the claims.

Claims

1. A novel cigarette with reduced tobacco vapor temperature and improved taste comprising a tobacco segment and a filter tip segment, **characterized by** comprising a flue gas reflux segment arranged be-

tween the tobacco segment and the filter tip segment; an air inlet opening communicating with the tobacco segment is provided on a part of the flue gas reflux segment adjacent to the tobacco segment; an air outlet opening communicating with the filter tip segment is provided on a part of the flue gas reflux segment adjacent to the filter tip segment; a plurality of air flow baffles are provided from top to bottom within the flue gas reflux segment in an alternating arrangement to create a serpentine flue gas reflux path; one end of the flue gas reflux path communicates with the air inlet opening, and the other end of the flue gas reflux path is connected to the air outlet opening; tobacco vapor enters the air inlet opening and passes through the flue gas reflux path; the length of a flue gas reflux path of the flue gas reflux segment is increased; the temperature of flue gas is reduced by means of heat exchange of a hot air flow with the air flow baffles and the inner wall of the flue gas reflux segment.

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2. The novel cigarette with reduced tobacco vapor temperature and improved taste according to claim 1, **characterized in that** an air inlet opening is provided on the upper side and the lower side of the flue gas reflux segment adjacent to the tobacco segment respectively, the flue gas reflux segment is provided with two flue gas reflux branched paths, the inlet of each flue gas reflux branched path corresponds to one air inlet opening, and the air outlet opening communicates with the outlets of the two flue gas reflux branched paths respectively.

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3. The novel cigarette with reduced tobacco vapor temperature and improved taste according to claim 1, **characterized in that** an air inlet opening is provided on a part of the flue gas reflux segment adjacent to the tobacco segment, an air outlet opening is provided on a part of the flue gas reflux segment adjacent to the filter tip segment vertically respectively, the flue gas reflux path is provided with two flue gas reflux branched paths, the inlet of each flue gas reflux branch path corresponds to the air inlet opening, and the outlet of each flue gas reflux branch path corresponds to one air outlet opening.

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4. The novel cigarette with reduced tobacco vapor temperature and improved taste according to claim 1, **characterized in that** the novel cigarette also comprises a fragrance strengthening segment between the tobacco segment and the flue gas reflux segment, the fragrance strengthening segment is internally provided with a tobacco flavor fragile capsule or an adsorbent carrier and flavors and fragrances adsorbed onto the adsorbent carrier, or the adsorbent carrier is paved on the surface layers of the air flow baffles, and the adsorbent carrier is adsorbed with the flavors and fragrances.

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5. The novel cigarette with reduced tobacco vapor temperature and improved taste according to claim 4, **characterized in that** the adsorbent carrier is made from foam metals, plastic materials, molecular sieves, polypropylene, active carbon, Dacron, nylon fiber, porous ceramics, non-woven fabrics, carbon fiber, natural cellulose fiber or cellulose derivative fiber.

6. The novel cigarette with reduced tobacco vapor temperature and improved taste according to claim 1, **characterized in that** the tobacco segment consists of tobacco shreds, tobacco sheets, an atomizing agent, an auxiliary material, a tobacco extract and tobacco flavors and fragrances, the tobacco shreds account for 40% to 90% of the total weight of the tobacco product, the tobacco sheets account for 5% to 50% of the total weight of the tobacco product, the atomizing agent accounts for 2% to 35% of the total weight of the tobacco product, the auxiliary material accounts for 0 to 10% of the total weight of the tobacco product, the tobacco extract accounts for 0.1% to 20% of the total weight of the tobacco product, and the tobacco flavors and fragrances account for 0.01% to 8% of the total weight of the tobacco product.

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7. The novel cigarette with reduced tobacco vapor temperature and improved taste according to claim 6, **characterized in that** the tobacco shreds account for 50% to 80% of the total weight of the tobacco product, the tobacco sheets account for 10% to 40% of the total weight of the tobacco product, the atomizing agent accounts for 5% to 30% of the total weight of the tobacco product, the auxiliary material accounts for 0.5% to 8% of the total weight of the tobacco product, the tobacco extract accounts for 0.5% to 15% of the total weight of the tobacco product, and the tobacco flavors and fragrances account for 0.05% to 5% of the total weight of the tobacco product.

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8. The novel cigarette with reduced tobacco vapor temperature and improved taste according to any one of claims 1 to 3, **characterized in that** the air inlet opening is designed in the shape of a horn mouth.

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9. The novel cigarette with reduced tobacco vapor temperature and improved taste according to claim 1, **characterized in that** flue gas reflux segment accounts for 1/6 to 2/3 of the cigarette length of the whole novel cigarette.

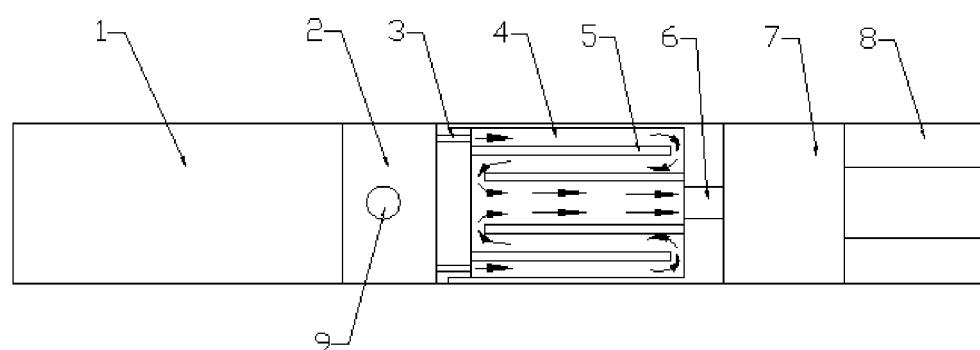
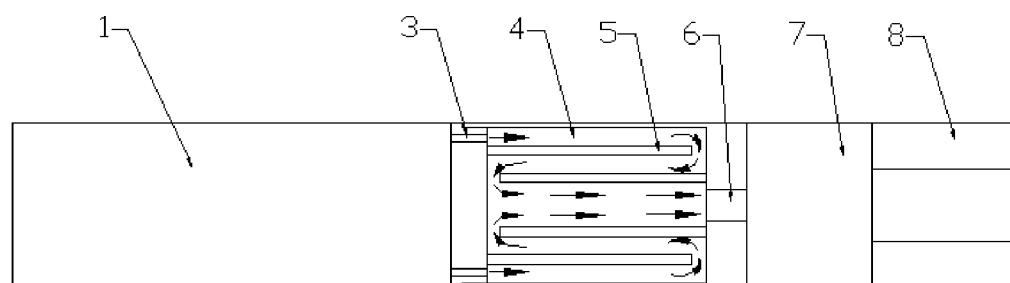
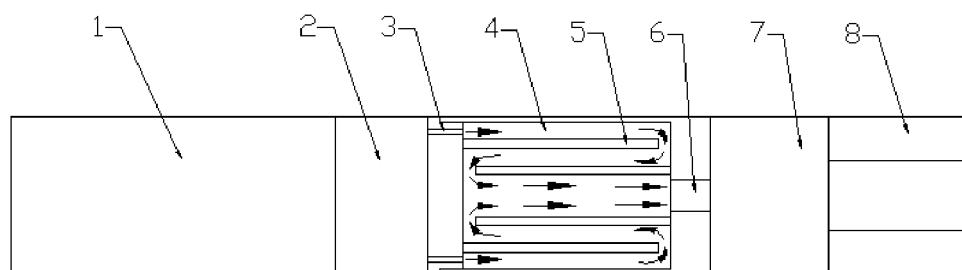
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10. The novel cigarette with reduced tobacco vapor temperature and improved taste according to claim 1, **characterized in that** the cigarette length of the novel cigarette is 35 to 100 mm, and the outer diameter of the cigarette is 3 to 12 mm.

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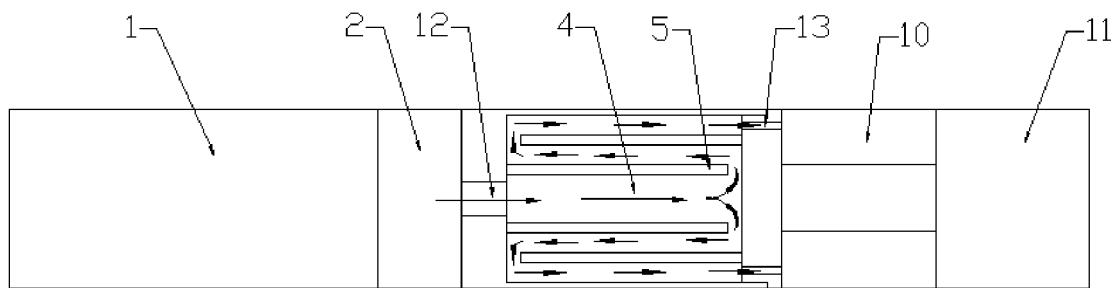


FIG. 4

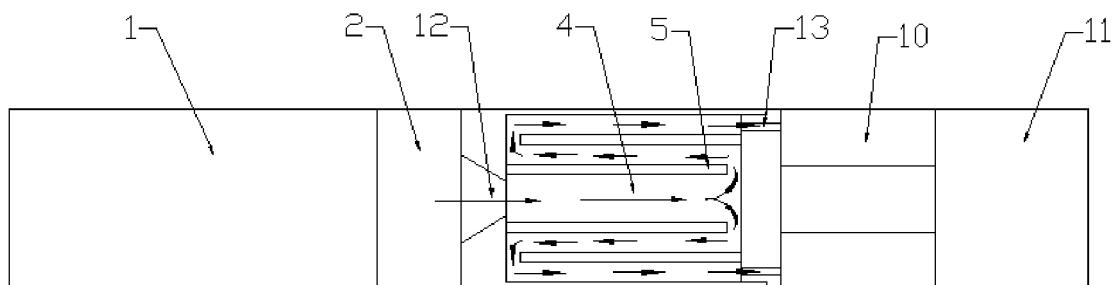


FIG. 5

INTERNATIONAL SEARCH REPORT		International application No. PCT/CN2017/081183																								
5	A. CLASSIFICATION OF SUBJECT MATTER																									
	A24D 3/04 (2006.01) i; A24D 3/06 (2006.01) n; A24D 1/04 (2006.01) n According to International Patent Classification (IPC) or to both national classification and IPC																									
10	B. FIELDS SEARCHED																									
	Minimum documentation searched (classification system followed by classification symbols)																									
	A24D																									
15	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched																									
	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)																									
20	CNABS, VEN, CNKI, WPI, EPODOC: HUBEI CHINA TOBACCO INDUSTRY CO., LTD.; LIU, Huachen; CHEN, Yikun; KE, Weichang; LIU, Xianghao; LUO, Chenghao; filter tip, cooling, runner, passageway, backflow, fragrance, spice, aroma enhancement, cigarette, pimp stick, cigar, tobacco, baccy?, clapboard?, board?, plate?, smoke, temperature																									
25	C. DOCUMENTS CONSIDERED TO BE RELEVANT																									
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 2px;">Category*</th> <th style="text-align: left; padding: 2px;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="text-align: left; padding: 2px;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;">PX</td> <td style="padding: 2px;">CN 105768209 A (HUBEI CHINA TOBACCO INDUSTRY CO., LTD.), 20 July 2016 (20.07.2016), claims 1-10, and figures 1-5</td> <td style="padding: 2px;">1-10</td> </tr> <tr> <td style="padding: 2px;">PX</td> <td style="padding: 2px;">CN 205512325 U (HUBEI CHINA TOBACCO INDUSTRY CO., LTD.), 31 August 2016 (31.08.2016), claims 1-8, and description, paragraph [0023], and figures 1-5</td> <td style="padding: 2px;">1-10</td> </tr> <tr> <td style="padding: 2px;">X</td> <td style="padding: 2px;">CN 101658328 A (WANG, Yongming), 03 March 2010 (03.03.2010), description, embodiment 1, and figures 1-2</td> <td style="padding: 2px;">1-10</td> </tr> <tr> <td style="padding: 2px;">A</td> <td style="padding: 2px;">CN 101720977 A (CAO, Xueqiang), 09 June 2010 (09.06.2010), the whole document</td> <td style="padding: 2px;">1-10</td> </tr> <tr> <td style="padding: 2px;">A</td> <td style="padding: 2px;">CN 2417721 Y (HUANG, Fuxing), 07 February 2001 (07.02.2001), the whole document</td> <td style="padding: 2px;">1-10</td> </tr> <tr> <td style="padding: 2px;">A</td> <td style="padding: 2px;">CN 105072937 A (PHILIP MORRIS PRODUCTS S.A.), 18 November 2015 (18.11.2015), the whole document</td> <td style="padding: 2px;">1-10</td> </tr> <tr> <td style="padding: 2px;">A</td> <td style="padding: 2px;">GB 2289612 B (BRADY, A.), 04 June 1997 (04.06.1997), the whole document</td> <td style="padding: 2px;">1-10</td> </tr> </tbody> </table>		Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	PX	CN 105768209 A (HUBEI CHINA TOBACCO INDUSTRY CO., LTD.), 20 July 2016 (20.07.2016), claims 1-10, and figures 1-5	1-10	PX	CN 205512325 U (HUBEI CHINA TOBACCO INDUSTRY CO., LTD.), 31 August 2016 (31.08.2016), claims 1-8, and description, paragraph [0023], and figures 1-5	1-10	X	CN 101658328 A (WANG, Yongming), 03 March 2010 (03.03.2010), description, embodiment 1, and figures 1-2	1-10	A	CN 101720977 A (CAO, Xueqiang), 09 June 2010 (09.06.2010), the whole document	1-10	A	CN 2417721 Y (HUANG, Fuxing), 07 February 2001 (07.02.2001), the whole document	1-10	A	CN 105072937 A (PHILIP MORRIS PRODUCTS S.A.), 18 November 2015 (18.11.2015), the whole document	1-10	A	GB 2289612 B (BRADY, A.), 04 June 1997 (04.06.1997), the whole document	1-10
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30	<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.																									
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40	<p>Date of the actual completion of the international search 04 July 2017 (04.07.2017)</p> <p>Date of mailing of the international search report 19 July 2017 (19.07.2017)</p>																									
45	<p>Name and mailing address of the ISA/CN: State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No.: (86-10) 62019451</p> <p>Authorized officer ZHANG, Yongqiu</p> <p>Telephone No.: (86-10) 010-62414183</p>																									
50	<p>Form PCT/ISA/210 (second sheet) (July 2009)</p>																									

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2017/081183

5	Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
10	CN 105768209 A	20 July 2016	None	
	CN 205512325 U	31 August 2016	None	
	CN 101658328 A	03 March 2010	CN 101658328 B	19 January 2011
15	CN 101720977 A	09 June 2010	None	
	CN 2417721 Y	07 February 2001	None	
20	CN 105072937 A	18 November 2015	RU 2015138105 A EP 2967137 A2 WO 2014140273 A3 KR 20150132111 A WO 2014140273 A2 US 2015313281 A1 JP 2016509852 A AR 095307 A1 TW 201442651 A	19 April 2017 20 January 2016 30 October 2014 25 November 2015 18 September 2014 05 November 2015 04 April 2016 07 October 2015 16 November 2014
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