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 Amended claims in accordance with Rule 137(2) EPC.

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(54) **NOVEL ELECTRONIC CIGARETTE CARTRIDGE**

(57) The present invention provides a novel electronic cigarette cartridge. In use, the heat in the heating zone (1-2) is retained, and the granules will not fall out of the heating zone. The smoke generated after heating passes through a filter mechanism and then is divided into multiple groups to increase the contact area between the smoke and the filter, so as to cool the smoke. Then, the smoke enters the empty tube zone (1-3) to be cooled again, so that the temperature of the smoke is lowered to a moderate temperature for the human body, which greatly improves user experience. The novel electronic cigarette cartridge of the present invention has a simple structure, and can realize fully automated production during production, which greatly reduces product costs.

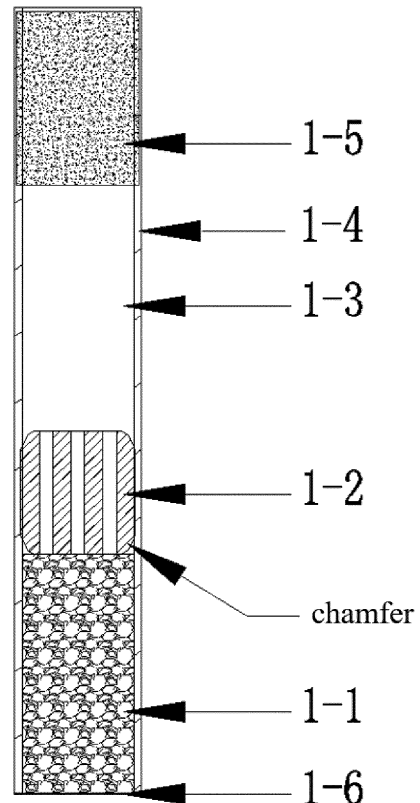


FIG. 1

Description

TECHNICAL FIELD

[0001] The present invention relates to the field of electronic cigarettes, in particular to a novel electronic cigarette cartridge.

BACKGROUND

[0002] China is the largest tobacco consumer and producer in the world, and China is one of the countries having the largest number of smokers. However, it is well known that smoking is harmful to health. Traditional cigarettes will produce tar and other poisonous substances under a high temperature (600°C-800°C). These poisonous substances not only irreversibly damage the respiratory system of humans, but also lower the immune response of humans, which causes human to suffer from serious diseases. In view of this, heat-not-burn products are developed, especially, the heat-not-burn products with herbs rather than tobacco are superior to those ordinary heat-not-burn tobacco products.

[0003] Currently, herbal cigarette cartridges available on the market have the following shortcomings: the smoke concentration is low during use, the herbal granules are likely to fall out of the heating zone, the smoke may burn the mouth due to its excessively high temperature, and the herbal cigarette cartridges have difficulties in automated production.

SUMMARY

[0004] The shortcomings of the heat-not-burn cigarette cartridges identified in the prior art include the smoke concentration is low during use, the herbal granules are likely to fall out of the heating zone, the smoke may burn the mouth due to its excessively high temperature, and the herbal cigarette cartridges have difficulties in automated production.

[0005] In view of the above-mentioned problems, the present invention provides a novel electronic cigarette cartridge. In use, the heat in the heating zone is well retained, and the herbal granules will not fall out of the heating zone. The smoke generated after heating passes through a filter mechanism and then is divided into multiple groups to increase the contact area between the smoke and the filter, so as to cool the smoke. Then, the smoke enters the air tube to be cooled again, so that the temperature of the smoke is cooled to a moderate temperature for the human body, which greatly improves user experience. The novel electronic cigarette cartridge of the present invention has a simple structure, and can realize fully automated production during production, which greatly reduces production costs.

[0006] The present invention provides a novel electronic cigarette cartridge, including a heating zone, a filter plug, an empty tube zone, a filter cotton, a peripheral

paper tube and a granule sealing paper. The heating zone is filled with granules, and the granule sealing paper is provided at the front end of the heating zone. The filter plug is located between the heating zone and the empty tube zone, and the filter cotton is provided at the rear end of the empty tube zone. The peripheral paper tube surrounds the outer peripheries of the heating zone, the filter plug, the empty tube zone and the filter cotton.

[0007] Further, the filter plug is provided with a vent channel. In this way, the smoke passing through the filter plug can be grouped by the vent channel to increase the contact area between the smoke and the filter plug to improve the filtering effect.

[0008] Further, both ends of the filter plug are provided with chamfers. In this way, the filter plug can play a guiding role when assembled in the peripheral paper tube, thereby realizing automated production.

[0009] Further, the filter plug is made of rubber or a silica gel material, and the filter plug is in an interference fit with the inner wall of the peripheral paper tube. In this way, the herbal granules will not fall into the empty tube zone, and the heat in the heating zone is retained during use, thereby increasing the produced amount of smoke. When being inhaled, the smoke is grouped and enters the empty tube zone only through the vent channel in the filter plug.

[0010] Further, the vent channel is arranged on the inside or/and the periphery of the filter plug.

[0011] Further, the vent channel is preferably circular.

[0012] Further, the filter cotton is made of polyester fibers or an organic cotton material, and the filter cotton is in an interference fit with the inner wall of the peripheral paper tube. In this way, in use, the smoke enters the empty tube zone and then is mixed with the air in the empty tube zone, and is thus cooled. Further, the granules are herbal granules.

[0013] The present invention has the following technical effects. The filter plug is employed to retain the heat in the heating zone during use, thereby increasing the produced amount of smoke. The filter plug is employed to prevent herbal granules from falling into other zones, and to group the smoke through the small holes in the filter plug to enter the empty tube zone. By arranging the filter plug, the contact area between the smoke and the filter is increased to improve the effect of cooling the smoke. The empty tube zone is designed to mix smoke and air to cool the smoke. The filter plug is provided with chamfers for guidance, thereby realizing automated production.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014]

FIG. 1 is a cross-sectional view of the structure of a novel electronic cigarette cartridge of the present invention; and

FIG. 2 is a schematic view of the internal structure

of the novel electronic cigarette cartridge of the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0015] The present invention will be further described below with reference to the drawings and embodiments.

Embodiment 1

[0016] As shown in FIG. 1, the present invention mainly includes the following components.

[0017] As shown in FIG. 1, 1-1 represents the heating zone, wherein the herbal granules are located in the heating zone, 1-2 represents the filter plug, 1-3 represents the empty tube zone, 1-4 represents the peripheral paper tube, and 1-5 represents the filter cotton, 1-6 represents the granule sealing paper.

[0018] As shown in FIG. 1, the filter plug 1-2 is made of rubber or a silica gel material, and is in an interference fit with the inner wall of the paper tube 1-4 to prevent granules from falling into the empty tube zone, while preventing the heat in the heating zone from dissipation during use, thereby increasing the produced amount of smoke. When being inhaled, the smoke can only enter the empty tube through the small holes in the filter plug.

[0019] As shown in FIG. 2, 2-1 represents the vent channel of the filter plug, the passing smoke is grouped by the vent channel to increase the contact area between the smoke and the filter plug to improve the filtering effect.

[0020] As shown in FIG. 1, the filter cotton 1-5 is made of polyester fibers or an organic cotton material, and is in an interference fit with the inner wall of the peripheral paper tube 1-4. In use, the smoke enters the empty tube zone 1-3 and is then mixed with the air in the empty tube zone 1-3, and is thus cooled.

[0021] As shown in FIG. 1, since the filter plug 1-2 is in an interference fit with the inner wall of the peripheral paper tube 1-4, the filter plug 1-2 is provided with chamfers to play a guiding role when assembled in the peripheral paper tube 1-4, thereby realizing automated production.

[0022] The foregoing descriptions are only preferred embodiments of the present invention, and are further detailed descriptions of the present invention in combination with the specific preferred embodiments. It cannot be considered that the specific implementation of the present invention is limited to these descriptions. Any modification, equivalent replacement and improvement made within the spirit and principle of the present invention shall fall within the scope of protection of the present invention.

Claims

1. A novel electronic cigarette cartridge, comprising a heating zone, a filter plug, an empty tube zone, a

filter cotton, a peripheral paper tube and a granule sealing paper; **characterized in that**, the heating zone is filled with granules, and the granule sealing paper is provided at a front end of the heating zone; the filter plug is located between the heating zone and the empty tube zone, and the filter cotton is provided at a rear end of the empty tube zone; and the peripheral paper tube surrounds an outer periphery of each of the heating zone, an outer periphery of the filter plug, an outer periphery of the empty tube zone and an outer periphery of the filter cotton.

2. The electronic cigarette cartridge according to claim 1, **characterized in that**, the filter plug is provided with a vent channel.

3. The electronic cigarette cartridge according to claim 2, **characterized in that**, both ends of the filter plug are provided with chamfers.

4. The electronic cigarette cartridge according to any one of claims 1-3, **characterized in that**, the filter plug is made of rubber or a silica gel material, and the filter plug is in an interference fit with an inner wall of the peripheral paper tube.

5. The electronic cigarette cartridge according to claim 4, **characterized in that**, the vent channel is arranged on an inside or/and a periphery of the filter plug.

6. The electronic cigarette cartridge according to claim 5, **characterized in that**, the vent channel is circular or square.

7. The electronic cigarette cartridge according to claim 4, **characterized in that**, the filter cotton is made of polyester fibers or an organic cotton material, and the filter cotton is in an interference fit with the inner wall of the peripheral paper tube.

8. The electronic cigarette cartridge according to any one of claims 5-7, **characterized in that**, the granules are herbal granules.

Amended claims in accordance with Rule 137(2) EPC.

1. A novel electronic cigarette cartridge, comprising a heating zone (1-1), a filter plug (1-2), an empty tube zone (1-3), a filter (1-5), a peripheral paper tube (1-4); wherein, the filter plug (1-2) is located between the heating zone (1-1) and the empty tube zone (1-3), and the filter (1-5) is provided at a rear end of the empty tube zone (1-3); and the peripheral paper tube (1-4) surrounds an outer periphery of each of the heating zone (1-1), an outer periphery of the filter

plug (1-2), an outer periphery of the empty tube zone (1-3) and an outer periphery of the filter (1-5); the filter plug (1-2) is provided with a vent channel (2-1); the filter plug (1-2) is made of rubber or a silica gel material, and the filter plug (1-2) is in an interference fit with an inner wall of the peripheral paper tube (1-4) **and characterized in that**

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the filter (1-5) is made of cotton; the heating zone (1-1) is filled with granules, and a granule sealing paper (1-6) is provided at a front end of the heating zone (1-1), wherein the vent channel (2-1) is arranged on a periphery of the filter plug (1-2).

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2. The electronic cigarette cartridge according to claim 1, **characterized in that**, both ends of the filter plug (1-2) are provided with chamfers.
3. The electronic cigarette cartridge according to claim 1, **characterized in that**, the vent channel (2-1) is arranged on an inside and a periphery of the filter plug (1-2).
4. The electronic cigarette cartridge according to claim 1 or 3, **characterized in that**, the vent channel (2-1) is circular or square.
5. The electronic cigarette cartridge according to claim 1, **characterized in that**, the filter (1-5) is made of polyester fibers or an organic cotton material, and the filter (1-5) is in an interference fit with the inner wall of the peripheral paper tube (1-4).
6. The electronic cigarette cartridge according to any one of claims 1, 3-5, **characterized in that**, the granules are herbal granules.

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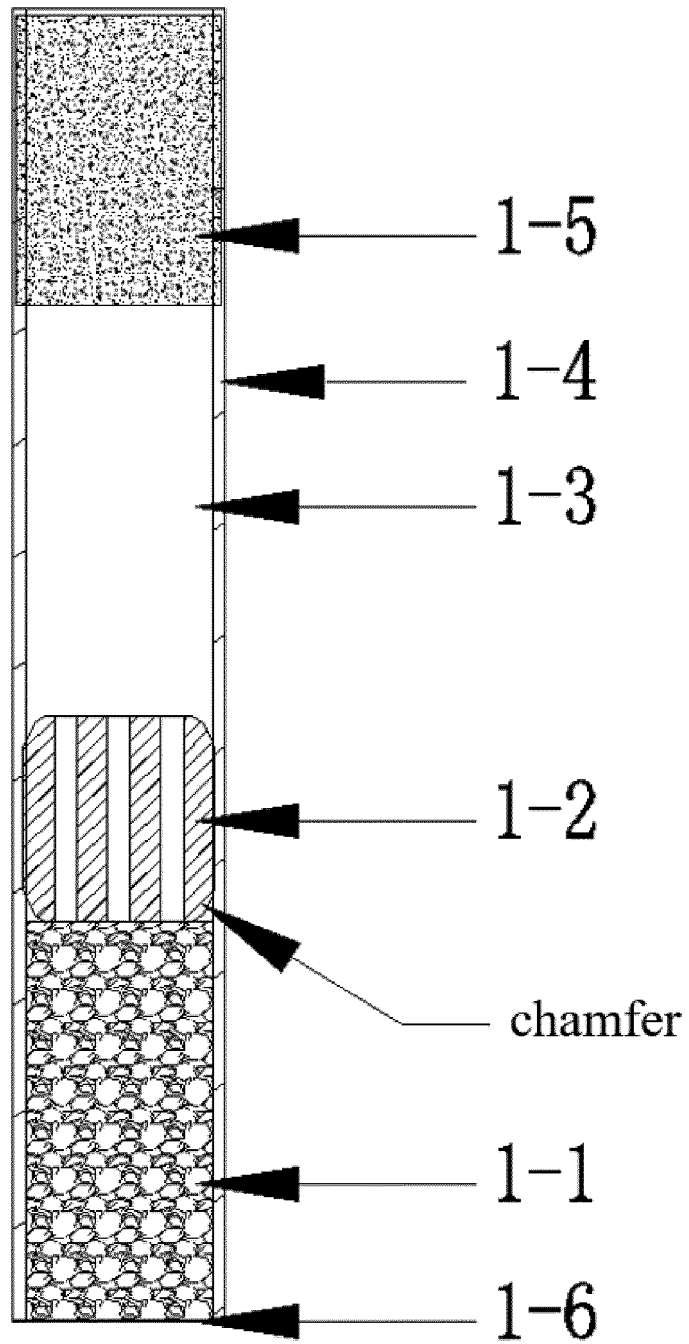


FIG. 1

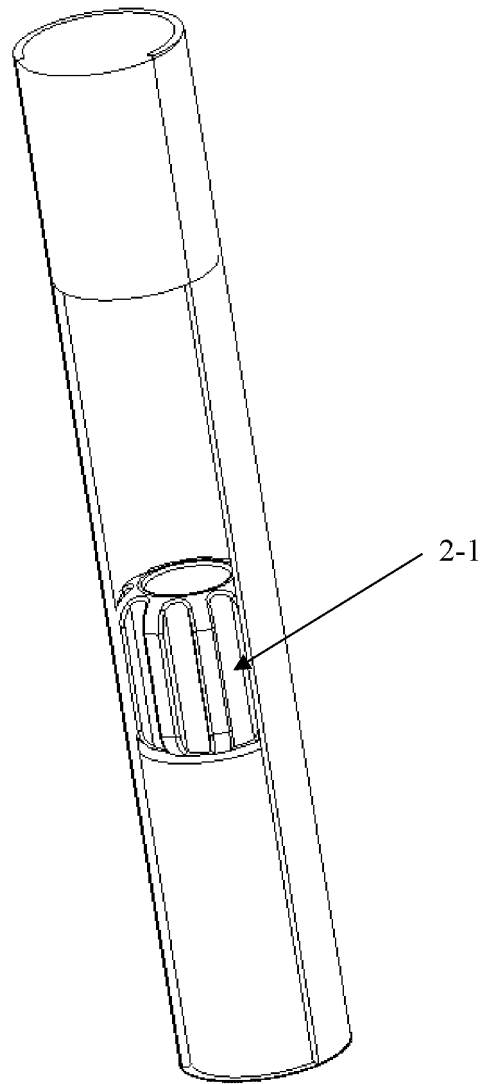


FIG. 2



EUROPEAN SEARCH REPORT

Application Number
EP 21 16 7064

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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	CN 112 401 318 A (HENGXIN YONGJI TECH SHENZHEN CO LTD) 26 February 2021 (2021-02-26) * paragraphs [0001], [0020] - [0024]; figures 1,2 *	1-8	INV. A24F40/42
X	----- US 2020/397047 A1 (ZHANG JIANPING [CN] ET AL) 24 December 2020 (2020-12-24) * paragraphs [0002], [0025] - [0028]; figures 1,2,7 *	1-8	
A	----- CN 110 584 217 A (CHINA TOBACCO YUNNAN IND CO LTD) 20 December 2019 (2019-12-20) * paragraphs [0026] - [0045]; figures 1,2 *	1-8	
			TECHNICAL FIELDS SEARCHED (IPC)
			A24F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 22 October 2021	Examiner Escudero, Raquel
CATEGORY OF CITED DOCUMENTS 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		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	

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EPO FORM 1503 03.82 (P04C01)

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

EP 21 16 7064

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
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22-10-2021

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82