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(54) **Tobacco combustor**

(57) A tobacco combustor, including a cigarette holder assembly; a combustor assembly; a battery assembly; a voltage generator; and a control assembly. The control assembly includes a plastic holder. The cigarette holder assembly is disposed at a front end of the combustor assembly and is connected to the combustor assembly via screws. The combustor assembly is connected to the voltage generator via the plastic holder. The voltage generator and the control assembly are fixed on the plastic holder. The battery assembly is connected to the voltage generator and the control assembly through the plastic holder.

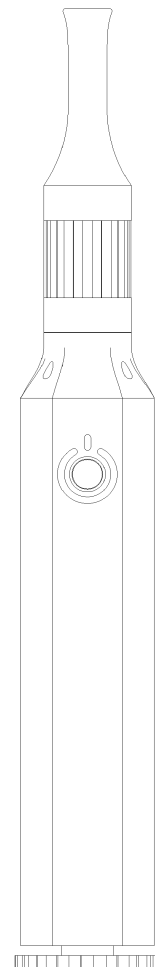


FIG. 1

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Description

[0001] The invention relates to a detachable tobacco combustor.

[0002] A typical tobacco combustor is ignited by an external fire source or by its own heating wires. The former ignition mode requires the user to carry the fire source, which brings about inconvenience. The latter ignition mode often results in incomplete combustion, which causes material waste and environmental pollution. In addition, the incomplete combustion of materials leads to the difficulty for cleaning the combustor.

[0003] In view of the above-described problems, it is one objective of the invention to provide a detachable tobacco combustor.

[0004] To achieve the above objective, in accordance with one embodiment of the invention, there is provided a detachable tobacco combustor comprising a cigarette holder assembly; a combustor assembly; a battery assembly; a voltage generator; and a control assembly, the control assembly comprising a plastic holder. The cigarette holder assembly is disposed at a front end of the combustor assembly and is connected to the combustor assembly via screw threads. The combustor assembly is connected to the voltage generator via the plastic holder. The voltage generator and the control assembly are fixed on the plastic holder. The battery assembly is connected to the voltage generator and the control assembly through the plastic holder.

[0005] In a class of this embodiment, the cigarette holder assembly comprises a ceramic filter, silicone, engineering plastics, and a first copper connector. The silicon sleeves the ceramic filter. The silicon and the ceramic filter are inserted into the engineering plastics; and the first copper connector is pressed on the engineering plastics by external force.

[0006] In a class of this embodiment, the combustor assembly comprises a housing, a ceramic combustion chamber, a second copper connector, an arc generator, and a sealing ring. The arc generator is inserted into the second copper connector. The second copper connector is fixed on the housing by screwing; and the ceramic combustion chamber is pressed by the sealing ring to insert into the housing.

[0007] In a class of this embodiment, the battery assembly comprises a steel pipe, a copper piece, an insulating rubber, a first copper contact, a core, a translucent panel, a silica pad, a button, a third copper connector, a press cover, a second copper contact, a spring, a copper base, a copper threaded member, and an aluminum alloy rod. The insulating rubber is sandwiched by the copper piece and the first copper contact to form an integrated structure. The integrated structure is pressed on one end of the steel pipe, and the third copper connector is pressed on the other end of the steel pipe. The steel pipe is inserted into the aluminum alloy rod and tightly fixed by the third copper connector. The press cover, the second copper contact, the spring, the copper base, and the

copper threaded member are integrated and connected to the aluminum alloy rod through the copper threaded member; and the translucent panel, the silica pad, and the button are integrated by hot riveting and are pressed on the aluminum alloy rod by external force.

[0008] In a class of this embodiment, the controller further comprises a fourth copper connector, a connection piece, a connection electrode, and a control plate. The fourth copper connector and the connection electrode are pressed on the connection piece to form a whole. The fourth copper connector is connected to the second copper connector by screw thread; a manual switch and a pneumatic switch are disposed on the control plate. The high voltage generator and the control plate are fixed in the plastic holder and then are pressed inside the aluminum alloy rod.

[0009] Advantages according to embodiments of the invention are summarized as follows. The tobacco combustor employs the high voltage arc to ignite the tobacco, which facilitates the complete combustion. The tobacco combustor has a simple structure, which is convenient for disassembly, assembly, and carrying.

[0010] The invention is described hereinbelow with reference to accompanying drawings, in which:

FIG. 1 is a front view of a detachable tobacco combustor according to one embodiment of the invention;

FIG. 2 is a stereograph of a detachable tobacco combustor according to one embodiment of the invention;

FIG. 3 is a cross sectional view of a detachable tobacco combustor according to one embodiment of the invention; and

FIG. 4 is an exploded view of a detachable tobacco combustor according to one embodiment of the invention.

[0011] As shown in FIGS. 1 - 4, a tobacco combustor, comprises: a cigarette holder assembly; a combustor assembly; a battery assembly; a high-voltage generator 12a; and a control assembly. The cigarette holder assembly is disposed at a front end of the combustor assembly and is connected to the combustor assembly via screw threads. The combustor assembly is connected to the battery assembly via screw threads.

[0012] The cigarette holder assembly comprises a ceramic filter 3, silicone 2, engineering plastics 1, and a first copper connector 4. The silicon sleeves the ceramic filter and then the silicon 2 and the ceramic filter 3 are inserted into the engineering plastics 1. The first copper connector 4 is pressed on the engineering plastics 1 by external force.

[0013] The combustor assembly comprises a housing 6, a ceramic combustion chamber 7, a second copper

connector 8, an arc generator 9, and a sealing ring 10. The arc generator 9 is inserted into the second copper connector 8. The second copper connector 8 is fixed on the housing 6 by screwing. The ceramic combustion chamber 7 is pressed by the sealing ring 10 and is inserted into the housing.

[0014] The battery assembly comprises a steel pipe 11, a copper piece 13, an insulating rubber 14, a first copper contact 15, a core 16, a translucent panel 17, a silica pad 18, a button 19, a third copper connector 20, a press cover 21, a second copper contact 22, a spring 23, a copper base 24, a copper threaded member 25, and an aluminum alloy rod 26. The insulating rubber 14 is sandwiched by the copper piece 13 and the first copper contact 15 to form an integrated structure. The integrated structure is pressed on one end of the steel pipe 11. The third copper connector 20 is pressed on the other end of the steel pipe 11. The steel pipe 11 is inserted into the aluminum alloy rod 26 and tightly fixed by the third copper connector 20. The press cover 21, the second copper contact 22, the spring 23, the copper base 24, and the copper threaded member 25 are integrated and connected to the aluminum alloy rod 26 through the copper threaded member 25. The core is detachable. The translucent panel 17, the silica pad 18, and the button 19 are integrated by hot riveting and are pressed on the aluminum alloy rod 26 by external force.

[0015] The control assembly comprises a fourth copper connector 27, a connection piece 28, a connection electrode 29, a plastic holder 30, and a control plate 12b. The fourth copper connector 27 and the connection electrode 29 are pressed on the connection piece 28 to form a whole. The fourth copper connector 27 is connected to the second copper connector 8 by screw thread. A manual switch 12c and a pneumatic switch 12d are disposed on the control plate 12b. The high voltage generator 12a and the control plate 12b are fixed in the plastic holder 30 and then are pressed inside the aluminum alloy rod 26.

[0016] The cigarette holder assembly is connected to the combustor assembly via the first copper connector 4 and the screw thread of the housing 6. The combustor assembly is connected to the high voltage generator via the plastic holder 30 and the second copper connector 8. The high voltage generator is connected to the control assembly via the plastic holder 30. The battery assembly, the high voltage generator, and the control plate communicate with each other through the plastic holder 30.

[0017] While particular embodiments of the invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from the invention in its broader aspects, and therefore, the aim in the appended claims is to cover all such changes and modifications as fall within the true spirit and scope of the invention.

Claims

1. A tobacco combustor, comprising:

- a) a cigarette holder assembly;
- b) a combustor assembly;
- c) a battery assembly;
- d) a voltage generator; and
- e) a control assembly, the control assembly comprising a plastic holder;

characterized in that

the cigarette holder assembly is disposed at a front end of the combustor assembly and is connected to the combustor assembly via screw threads; the combustor assembly is connected to the voltage generator via the plastic holder; the voltage generator and the control assembly are fixed on the plastic holder; and the battery assembly is connected to the voltage generator and the control assembly through the plastic holder.

2. The tobacco combustor of claim 1, **characterized in that** the cigarette holder assembly comprises a ceramic filter, silicone, engineering plastics, and a first copper connector; the silicon sleeves the ceramic filter; the silicon and the ceramic filter are inserted into the engineering plastics; and the first copper connector is pressed on the engineering plastics by external force.

3. The tobacco combustor of claim 2, **characterized in that** the combustor assembly comprises a housing, a ceramic combustion chamber, a second copper connector, an arc generator, and a sealing ring; the arc generator is inserted into the second copper connector; the second copper connector is fixed on the housing by screwing; and the ceramic combustion chamber is pressed by the sealing ring to insert into the housing.

4. The tobacco combustor of claim 3, **characterized in that**

the battery assembly comprises a steel pipe, a copper piece, an insulating rubber, a first copper contact, a core, a translucent panel, a silica pad, a button, a third copper connector, a press cover, a second copper contact, a spring, a copper base, a copper threaded member, and an aluminum alloy rod; the insulating rubber is sandwiched by the copper piece and the first copper contact to form an integrated structure; the integrated structure is pressed on one end of the steel pipe, and the third copper connector is pressed on the other end of the steel pipe; the steel pipe is inserted into the aluminum alloy rod and tightly fixed by the third copper connector;

the press cover, the second copper contact, the spring, the copper base, and the copper threaded member are integrated and connected to the aluminum alloy rod through the copper threaded member; and

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the translucent panel, the silica pad, and the button are integrated by hot riveting and are pressed on the aluminum alloy rod by external force.

5. The tobacco combustor of claim 4, **characterized in that**

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the controller further comprises a fourth copper connector, a connection piece, a connection electrode, and a control plate;

the fourth copper connector and the connection electrode are pressed on the connection piece from two ends thereof;

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the fourth copper connector is connected to the second copper connector by screw thread;

a manual switch and a pneumatic switch are disposed on the control plate; and

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the voltage generator and the control plate are fixed in the plastic holder and then are pressed inside the aluminum alloy rod.

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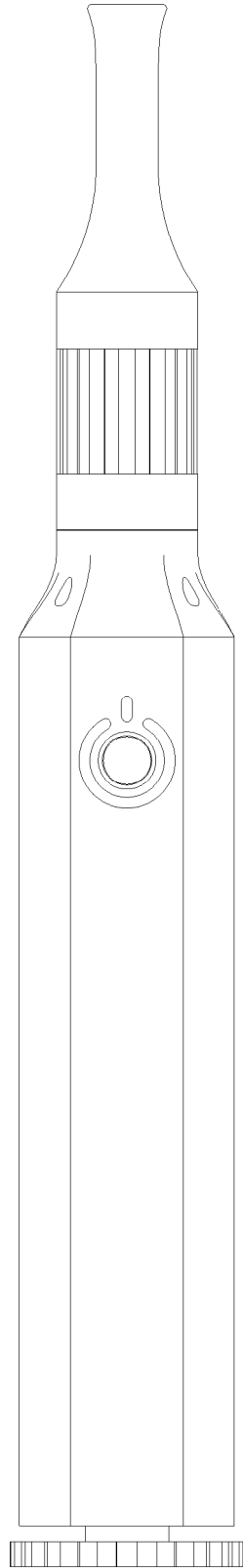


FIG. 1

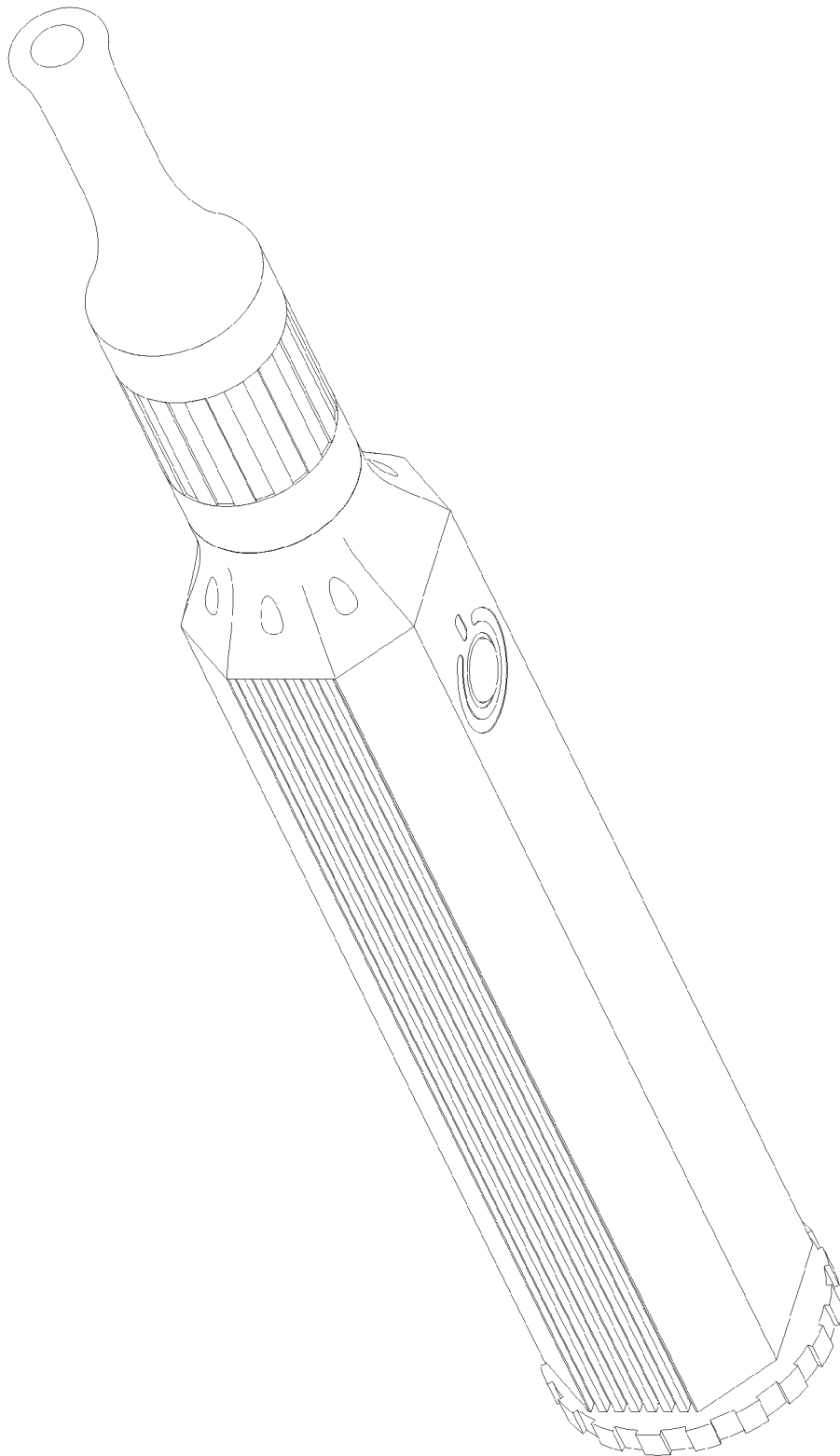


FIG. 2

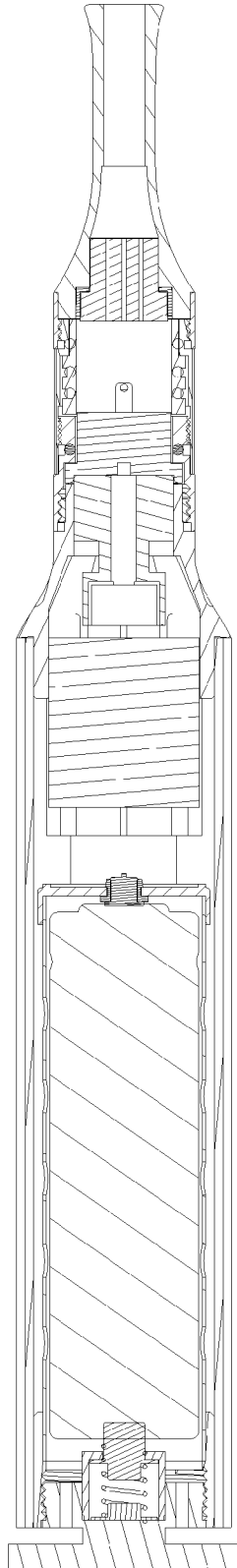


FIG. 3

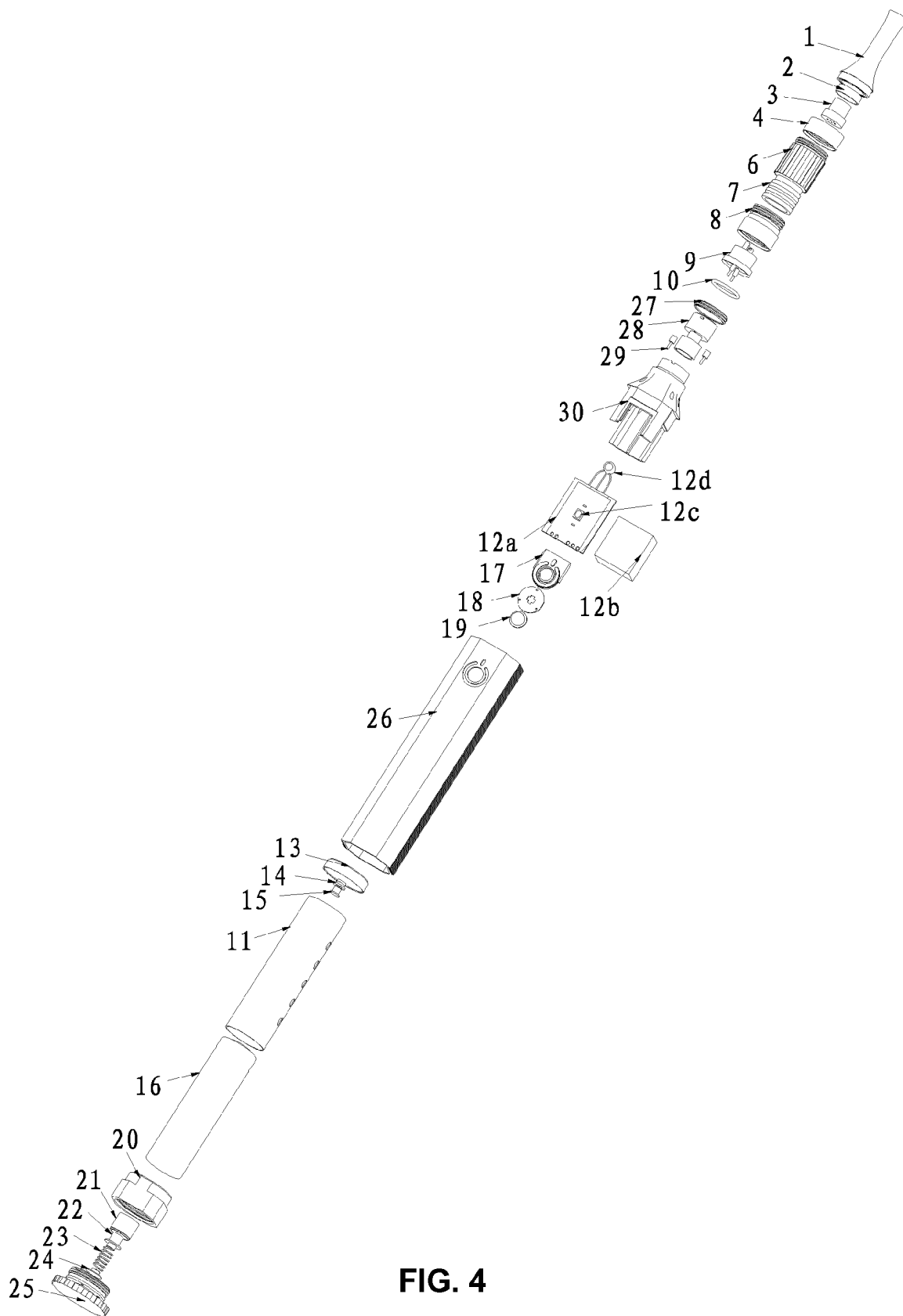


FIG. 4



EUROPEAN SEARCH REPORT

Application Number
EP 14 16 8074

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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 203 341 010 U (HUBEI CHINA TOBACCO IND CO LTD; WUHAN YELLOW CRANE TOWER NEW MATERIAL) 18 December 2013 (2013-12-18) * the whole document *	1	INV. A24F13/02
A	----- CN 103 610 232 A (HUA JIAN) 5 March 2014 (2014-03-05) * the whole document *	1-5	
A	----- GB 2 491 358 A (BRITISH AMERICAN TOBACCO CO [GB]) 5 December 2012 (2012-12-05) * the whole document *	1-5	
			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 14 August 2015	Examiner MacCormick, Duncan
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 14 16 8074

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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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14-08-2015

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