



EUROPEAN PATENT APPLICATION
published in accordance with Art. 153(4) EPC

(43) Date of publication:
26.02.2014 Bulletin 2014/09

(51) Int Cl.:
A24F 47/00 (2006.01)

(21) Application number: **13776709.1**

(86) International application number:
PCT/CN2013/076656

(22) Date of filing: **03.06.2013**

(87) International publication number:
WO 2013/182024 (12.12.2013 Gazette 2013/50)

(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

(72) Inventor: **ZHANG, Guangjie**
Shenzhen, Guangdong 518000 (CN)

(30) Priority: **04.06.2012 CN 201220257646 U**

(74) Representative: **Hannke, Christian**
Hannke Bittner & Partner
Patent- und Rechtsanwälte
Prüfeneringer Strasse 1
93049 Regensburg (DE)

(71) Applicant: **Shenzhen Happy Vaping Technology Limited**
Shenzhen, Guangdong 518000 (CN)

(54) **INTEGRATED NON-COTTON DISPOSABLE ELECTRONIC CIGARETTE**

(57) The present invention relates to a one piece cotton free disposable electronic cigarette, comprising: a mouthpiece, an oil cup, a filter assembly, a heating unit and a power supply arranged in turn, and the power supply being electrically connected with the heating unit. The power supply, a controller unit and a vaporizer device all are directly integrated into the one piece cotton free disposable electronic cigarette of the present invention, therefore the electronic cigarette of the present invention is disposable, which is environment-friendly and hygienic. In addition, oil is directly stored in the oil cup of the one piece cotton free disposable electronic cigarette instead of being stored by cotton, in this way, burning taste can be avoided during inhalation and thereby improving the taste.

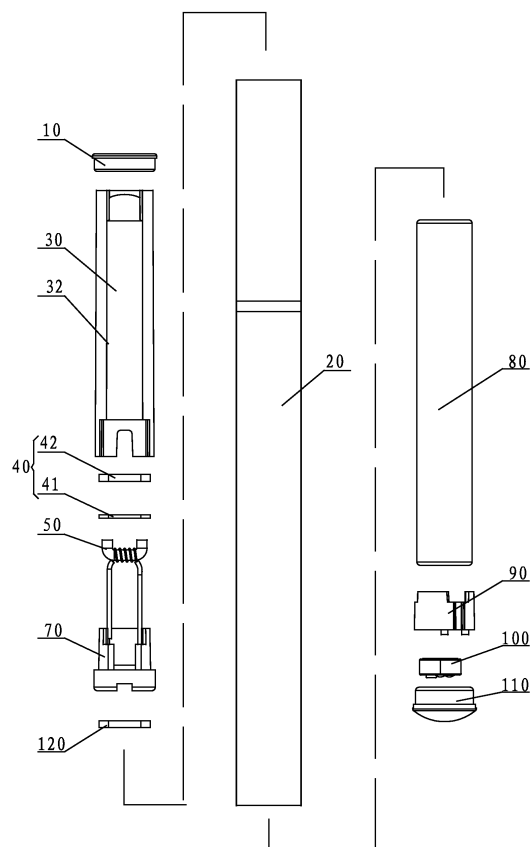


FIG.1

Description

FIELD OF THE INVENTION

[0001] The present invention relates to an electronic cigarette, more particularly to a one piece cotton free disposable electronic cigarette.

BACKGROUND OF THE INVENTION

[0002] Existing electronic cigarettes are usually repeatedly used, which is not hygienic. In addition, the oil of existing electronic cigarette is usually stored in cotton, which produces burning taste during inhalation and is neither environment-friendly nor hygienic. Besides, existing disposable electronic cigarettes have other disadvantages, for example, these electronic cigarettes have complex and incompact structures and have problems with oil leakage.

SUMMARY OF THE INVENTION

[0003] The present invention aims to provide a one piece cotton free disposable electronic cigarette, which will not produce any burning taste, and is environment-friendly and hygienic.

[0004] The present invention provides a technical solution of a one piece cotton free disposable electronic cigarette, comprising a mouthpiece, an oil cup, a filter assembly, a heating unit and a power supply arranged in turn, and the power supply being electrically connected with the heating unit.

[0005] Preferably, the oil cup comprises a barrel body with the interior of the barrel body being an oil storage chamber, and the external surface of the barrel body having a gap for forming a vapor flue.

[0006] Preferably, the filter assembly comprises an oil percolation piece and a filter piece.

[0007] Preferably, the one piece cotton free disposable electronic cigarette further comprises an indicator light and a controller unit, and the controller unit is connected with the indicator light.

[0008] Preferably, the one piece cotton free disposable electronic cigarette further comprises a light cap arranged outside the indicator light.

[0009] Preferably, the one piece cotton free disposable electronic cigarette further comprises a holder, on which the heating unit is supported.

[0010] Preferably, the one piece cotton free disposable electronic cigarette further comprises a protective tube, within which the oil cup, the filter assembly, the heating unit and the power supply are arranged.

[0011] Preferably, a storage slot is arranged inside the mouthpiece.

[0012] Preferably, the one piece cotton free disposable electronic cigarette further comprises a vapor filter piece arranged between the heating unit and the power supply.

[0013] Compared with existing electronic cigarettes,

the electronic cigarette of the present invention has the following advantages: the power supply, the controller unit and a vaporizer device all are directly integrated into a tube of the one piece cotton free disposable electronic cigarette of the present invention, therefore the electronic cigarette of the present invention is disposable, which is environment-friendly and hygienic. In addition, oil is directly stored in the oil cup of the one piece cotton free disposable electronic cigarette instead of being stored by cotton, in this way, burning taste can be avoided during inhalation and thereby improving the taste. A user may discard the electronic cigarette of the present invention when its power supply runs out, therefore, the use of electronic cigarette of the present invention is hygienic. Besides, the one piece cotton free disposable electronic cigarette is low-cost and has a simple structure. The filter piece of the present invention is fixed to the oil cup, such that the filter piece will not fall off, which avoids the leakage of oil.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014]

Figure 1 is an exploded view of a one piece cotton free disposable electronic cigarette of the present invention.

Figure 2 is a section view of an assembled one piece cotton free disposable electronic cigarette of the present invention.

DETAILED DESCRIPTION OF ILLUSTRATED EMBODIMENTS

[0015] Further description will now be described below in conjunction with the figures.

[0016] As shown in figures 1 and 2, a one piece cotton free disposable electronic cigarette of the present invention comprises a mouthpiece 10, an oil cup 30, a filter assembly 40, a heating unit 50 and a power supply 80 arranged in turn, and the power supply 80 is electrically connected with the heating unit 50.

[0017] In an embodiment of the present invention, the one piece cotton free disposable electronic cigarette further comprises a vapor filter piece 120, which is arranged between the heating unit 50 and the power supply 80.

[0018] When the electronic cigarette of the present invention is in use, the built-in power supply 80 directly drives the heating unit 50, thereby allowing the oil flowing from the oil cup 30 to pass through the filter assembly 40 and to be atomized.

[0019] In the embodiment of the present invention, the filter assembly 40 comprises an oil percolation piece 42 and a filter piece 41, wherein the filter piece 41 is fixed to the oil cup 30, such that the filter piece will not fall off, which avoids the leakage of oil.

[0020] The oil is directly stored in the oil cup 30 instead

of being stored by cotton, in this way, burning taste can be avoided during inhalation and thereby improving the taste. Besides, since the one piece cotton free disposable electronic cigarette does not contain any cotton, it is thus environment-friendly and hygienic.

[0021] In a preferred embodiment of the present invention, the oil cup 30 comprises a barrel body 32 with the interior of the barrel body 32 being an oil storage chamber, and the external surface of the barrel body 32 having a gap for forming a vapor flue. During inhalation, the oil flows out from the interior of the barrel body 32 of the oil cup 30 via the filter assembly 40, generates vapor under the function of the heating unit 50, and the generated vapor flows to the mouthpiece 10 via the vapor flue.

[0022] As shown in figures 1 and 2, the one piece cotton free disposable electronic cigarette further comprises a holder 70, on which the heating unit 50 is supported. The holder 70 is made of food grade silicon which is heat-resistant, thereby preventing the oil cup from being burned and resulting burning taste when the temperature gets too high.

[0023] In an embodiment of the present invention, the one piece cotton free disposable electronic cigarette further comprises a protective tube 20, within which the oil cup 30, the filter assembly 40, the heating unit 50 and the power supply 80 are arranged. The protective tube 20 is used for protecting internal components in the one piece cotton free disposable electronic cigarette.

[0024] In the embodiment, a storage slot 11 is arranged inside the mouthpiece 10 so as to collect and store filth produced during inhalation thereby bringing better hygiene.

[0025] In the embodiment, the one piece cotton free disposable electronic cigarette further comprises an indicator light 100 and a controller unit 90, and the controller unit 90 is connected with the indicator light 100. Furthermore, the one piece cotton free disposable electronic cigarette comprises a light cap 110, which is arranged outside the indicator light 100. The indicator light 100 could indicate working status of the electronic cigarette, for example, during inhalation, the indicator light 100 shines.

[0026] All the above are the preferred embodiments of the present invention, and the invention is intended to cover various modifications and equivalent arrangements included within the scope of the invention.

Claims

1. A one piece cotton free disposable electronic cigarette, **characterized in that**, it comprises a mouthpiece (10), an oil cup (30), a filter assembly (40), a heating unit (50) and a power supply (80) arranged in turn; and the power supply (80) is electrically connected with the heating unit (50).
2. The one piece cotton free disposable electronic cigarette according to claim 1, **characterized in that**:

the oil cup (30) comprises a barrel body (32) with the interior of the barrel body (32) being an oil storage chamber, and the external surface of the barrel body (32) having a gap for forming a vapor flue.

3. The one piece cotton free disposable electronic cigarette according to claim 1, **characterized in that**: the filter assembly (40) comprises an oil percolation piece (42) and a filter piece (41).
4. The one piece cotton free disposable electronic cigarette according to claim 1, **characterized in that**: the one piece cotton free disposable electronic cigarette further comprises an indicator light (100) and a controller unit (90), and the controller unit (90) is connected with the indicator light (100).
5. The one piece cotton free disposable electronic cigarette according to claim 4, **characterized in that**: the one piece cotton free disposable electronic cigarette further comprises a light cap (110) arranged outside the indicator light (100).
6. The one piece cotton free disposable electronic cigarette according to claim 1, **characterized in that**: the one piece cotton free disposable electronic cigarette further comprises a holder (70), on which the heating unit (50) is supported.
7. The one piece cotton free disposable electronic cigarette according to any of claims 1 to 6, **characterized in that**: the one piece cotton free disposable electronic cigarette further comprises a protective tube (20), within which the oil cup (30), the filter assembly (40), the heating unit (50) and the power supply (80) are arranged.
8. The one piece cotton free disposable electronic cigarette according to any of claims 1 to 6, **characterized in that**: a storage slot (11) is arranged inside the mouthpiece (10).
9. The one piece cotton free disposable electronic cigarette according to any of claims 1 to 6, **characterized in that**: the one piece cotton free disposable electronic cigarette further comprises a vapor filter piece (120) arranged between the heating unit (50) and the power supply (80).

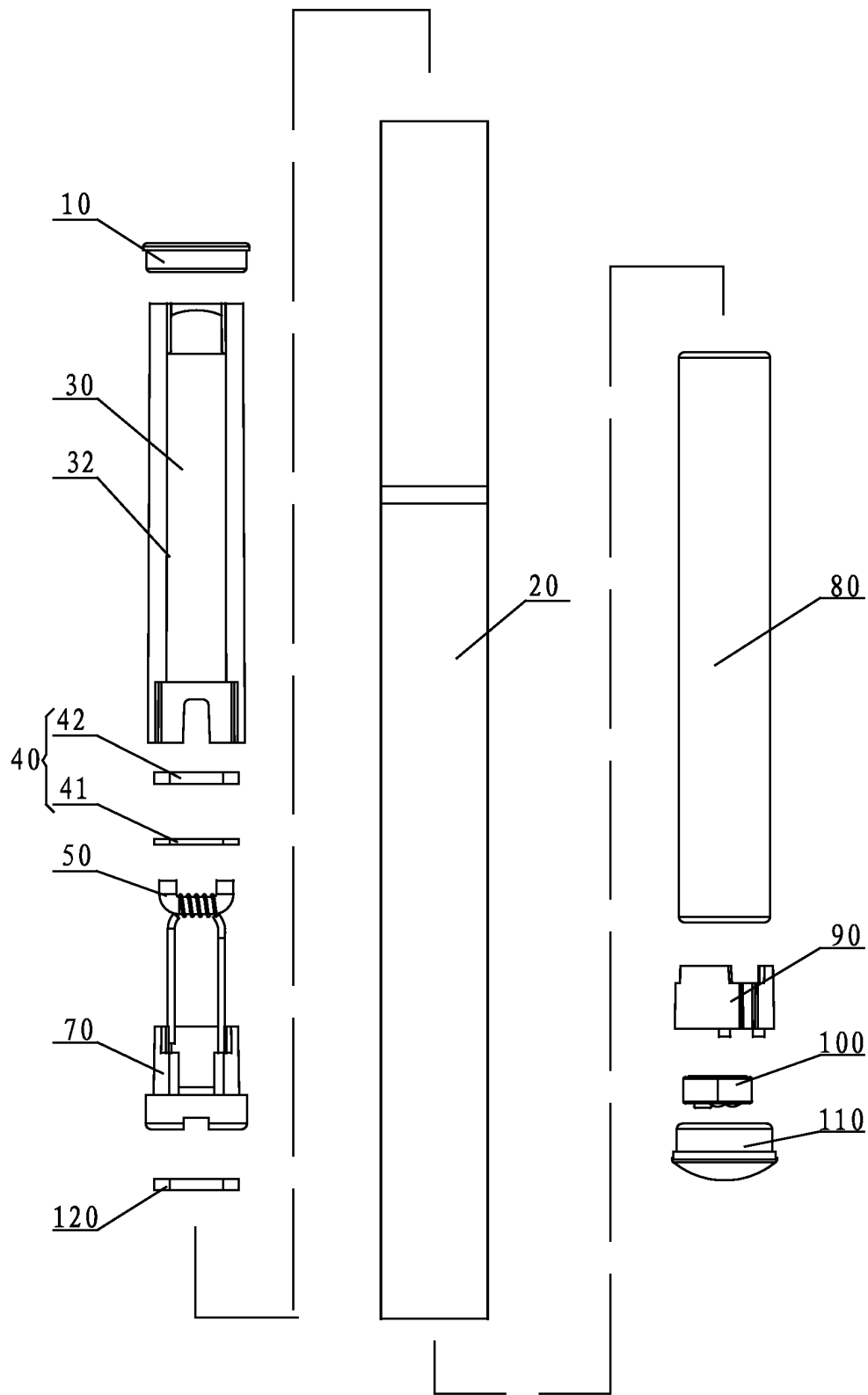


FIG.1

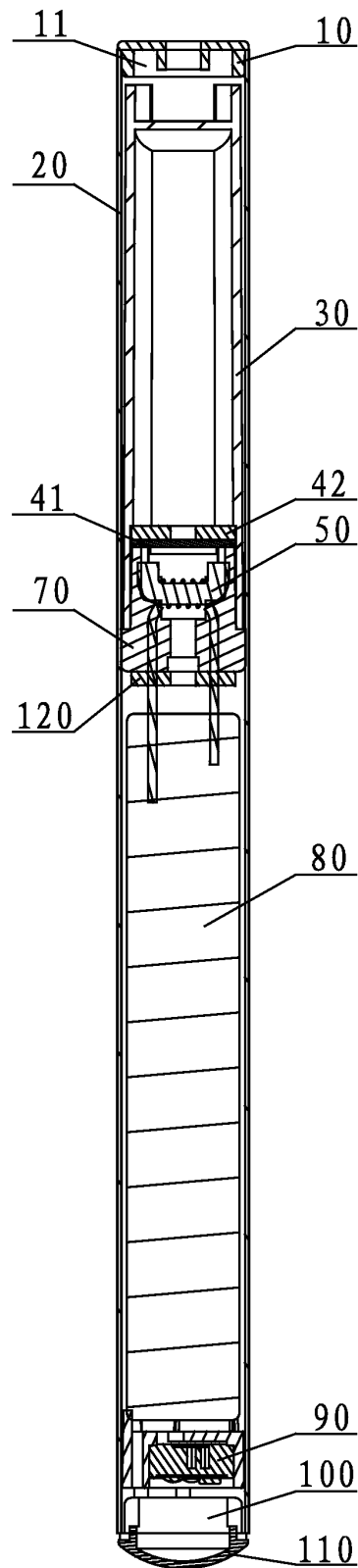


FIG.2

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2013/076656

A. CLASSIFICATION OF SUBJECT MATTER

A24F 47/00 (2006.01) i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: A24F 1/-, 47/00

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)

EPODOC, WPI, CNKI, CNPAT: electronic, electrical, cigarette, filt+, chamber, cotton

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 202714190 U (SHENZHEN KANGHONGWEI TECHNOLOGY CO., LTD.), 06 February 2013 (06.02.2013), claims 1-9	1-9
PX	CN 202714191 U (SHENZHEN KANGHONGWEI TECHNOLOGY CO., LTD.), 06 February 2013 (06.02.2013), claims 1-9	1-9
Y	CN 202077578 U (CHEN, Guoyan), 21 December 2011 (21.12.2011), description, paragraphs 0014-0015, and figures 1 and 2	1-9
Y	CN 201640457 U (CHEN, Zhenqiu), 24 November 2010 (24.11.2010), description, paragraphs 0002-0009, and figures 1-3	1-9
A	CN 201479920 U (HUA, Jian), 26 May 2010 (26.05.2010), the whole document	1-9
A	CN 201188868 Y (WANG, Decai), 04 February 2009 (04.02.2009), the whole document	1-9
A	CN 201341435 Y (LIU, Zheqi), 11 November 2009 (11.11.2009), the whole document	1-9

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
13 August 2013 (13.08.2013)Date of mailing of the international search report
12 September 2013 (12.09.2013)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

Authorized officer

LI, JingTelephone No.: (86-10) **82245764**

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2013/076656

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 202714190 U	06.02.2013	None	
CN 202714191 U	06.02.2013	None	
CN 202077578 U	21.12.2011	None	
CN 201640457 U	24.11.2010	None	
CN 201479920 U	26.05.2010	None	
CN 201188868 Y	04.02.2009	None	
CN 201341435 Y	11.11.2009	None	

Form PCT/ISA/210 (patent family annex) (July 2009)