

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court United States District Court of Southern District of Florida on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 0:22-cv-61407	DATE FILED 7/28/2022	U.S. DISTRICT COURT United States District Court of Southern District of Florida
PLAINTIFF Shenzhen Happy Vaping Technology Ltd.		DEFENDANT Logic Technology Development LLC et al
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 9,924,744	3/27/2018	See Complaint
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4		
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1			
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK Angela E. Noble	(BY) DEPUTY CLERK Shanda Walker	DATE 7/28/2022
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

'744 Patent. Furthermore, the Infringing E-Cigarette Products, as imported, sold, and shipped, are material components to the arrangement covered by the '744 Patent.

27. Since at least March 27, 2018, Defendants have contributed to, and continue to contribute to, infringement of one or more claims of the '744 Patent, in violation of Title 35, United States Code, Section 271(c).

WILLFULNESS

28. On information and belief, since March 27, 2018, Defendants have been aware of the '744 Patent, and have known, or should have known, that its actions as described above, including in paragraphs 13 through 27, constitutes infringement of the claims of the '744 Patent, and that Defendants' provision of instructions and Infringing E-Cigarette Products to consumers, including as described in paragraphs 13 through 27 above, actively induces infringement of claims of the '744 Patent. Evidence of Defendants' awareness of the '744 Patent includes, but is not limited to, the striking resemblance between the appearance of the Infringing E-Cigarette Products and the figures in the '744 Patent. Further evidence includes the clear inclusion of each and every element of at least claims 1, 2, and 5 of the '744 Patent in the Infringing E-Cigarette Products. Moreover, Defendants are part of a sophisticated organization familiar with patents on e-cigarettes and similar products.

29. On information and belief, since at least on the date on which this Complaint was served informally on and received by Defendants, Defendants have had notice of the '744 Patent, and have known, or should have known, that its actions as described above, including in paragraphs 1 through 28, constitutes infringement of claims of the '744 Patent, and that Defendants' provision of instructions and Infringing E-

Cigarette Products to consumers, including as described in paragraphs 13 through 28 above, actively induces infringement of claims of the '744 Patent.

30. On information and belief, since at least March 27, 2018, Defendants' infringement of the '744 Patent has been, and continues to be, deliberate and willful.

INJURY

31. Plaintiff re-alleges and incorporates herein the allegations of paragraphs 1 through 30 above. As a result of the acts of infringement complained of herein, Vaping Technology has been damaged in its business and property in an amount not yet determined, and Vaping Technology will continue to be damaged by such acts in the future.

32. Plaintiff is entitled to recover damages adequate to compensate it for such infringement in an amount no less than a reasonable royalty under 35 U.S.C. Section § 284.

33. On information and belief, Defendants likely will continue to infringe claims of the '744 Patent, unless enjoined by order of this Court.

DEMAND FOR JURY TRIAL

34. Under Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiff hereby demands a jury trial on all issues.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff VAPING TECHNOLOGY respectfully requests:

(a) A judgment by this Court finding, declaring, and adjudging in favor of Plaintiff, and declaring Plaintiff's '744 Patent to be infringed by Defendants, not invalid, and enforceable;

(b) An injunction under 35 U.S.C. § 283 permanently enjoining Defendants, and its officers, agents, employees, servants, and all those acting in concert with them, from further acts of infringement of the '744 Patent;

(c) An accounting and an award of damages under 35 U.S.C. § 284 adequate to compensate Plaintiff for infringement of the '744 Patent by Defendants, and in no event less than a reasonable royalty, together with prejudgment interest and costs as fixed by the Court;

(d) A judgment by the Court that Defendants' infringement of the '744 Patent claims has been deliberate and willful and for a trebling of the damages found or assessed as a result of its infringement of said patent;

(e) A declaration that this case is exceptional, and an award to Plaintiff of reasonable attorneys' fees, expenses, and costs under 35 U.S.C. § 285; and

(f) An award of such other and further relief as the Court may deem just and proper.

Dated: July 28, 2022

Respectfully submitted,

Shenzhen Happy Vaping Technology Ltd.

By: /s/ Jeff Pearson

Jeff Pearson

Florida Bar No.: 30541

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Shenzhen Happy Vaping Technology Ltd.

Exhibit 1



US00924744B2

(12) **United States Patent**
Lin(10) **Patent No.:** **US 9,924,744 B2**
(45) **Date of Patent:** **Mar. 27, 2018**(54) **ELECTRONIC CIGARETTE HAVING THREE CONNECTION PORTIONS**(71) Applicant: **SHENZHEN HAPPY VAPING TECHNOLOGY LIMITED,**
Shenzhen, Guangdong (CN)(72) Inventor: **Guangrong Lin,** Guangdong (CN)(73) Assignee: **SHENZHEN HAPPY VAPING TECHNOLOGY LIMITED,** Shenzhen (CN)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **15/321,198**(22) PCT Filed: **Dec. 4, 2014**(86) PCT No.: **PCT/CN2014/093009**
§ 371 (c)(1),
(2) Date: **Dec. 22, 2016**(87) PCT Pub. No.: **WO2015/196737**
PCT Pub. Date: **Dec. 30, 2015**(65) **Prior Publication Data**
US 2017/0150754 A1 Jun. 1, 2017(30) **Foreign Application Priority Data**
Jun. 25, 2014 (CN) 2014 2 0341430 U(51) **Int. Cl.**
A24F 47/00 (2006.01)
H05B 3/03 (2006.01)(52) **U.S. Cl.**
CPC **A24F 47/008** (2013.01); **H05B 3/03** (2013.01); **H05B 2203/021** (2013.01)(58) **Field of Classification Search**None
See application file for complete search history.(56) **References Cited**

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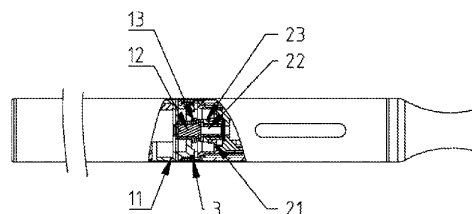
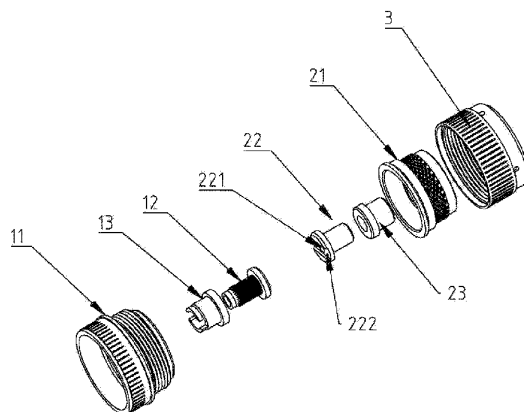
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Primary Examiner — Tho D Ta(57) **ABSTRACT**

Disclosed is an electronic cigarette, wherein a first connection portion (1) is arranged at an end of a casing tube (101) of a battery stick (10) adjacent to a vaporizer assembly, a second connection portion (2) is arranged at an end of a vaporizer tube body (201) adjacent to the battery stick (10), a third connection portion (3) is arranged at an end of a casing tube (30) of a vaporizer (20) adjacent to the battery stick (10). The second connection portion (2) and the first connection portion (1) abut against each other to be connected, the third connection portion (3) is detachably connected to the first connection portion (1) by means of a screw thread.

10 Claims, 4 Drawing Sheets

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(56)

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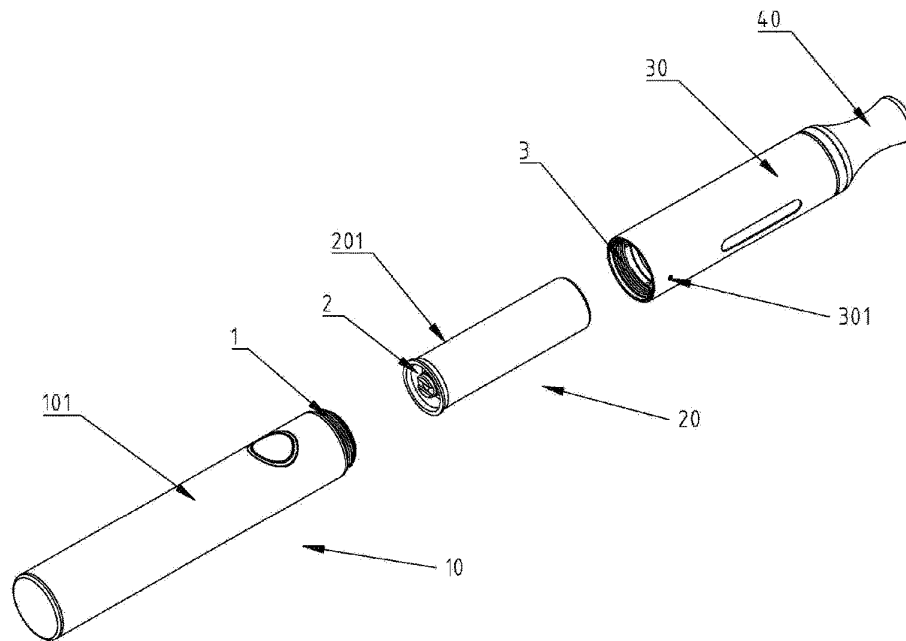


Figure 1

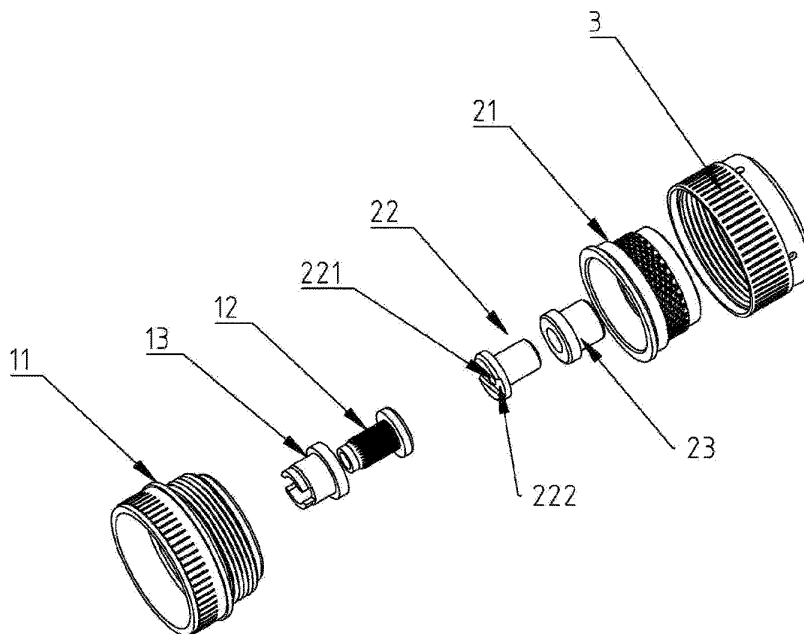


Figure 2

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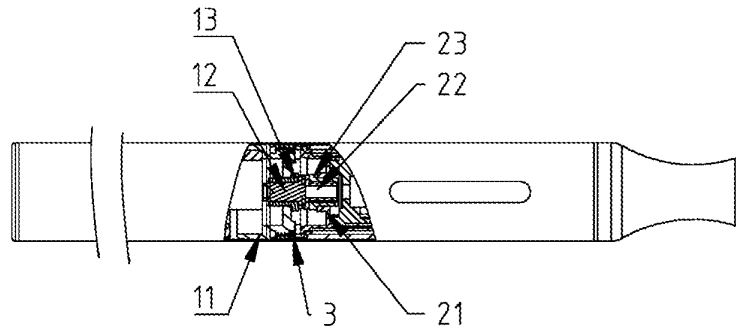


Figure 3

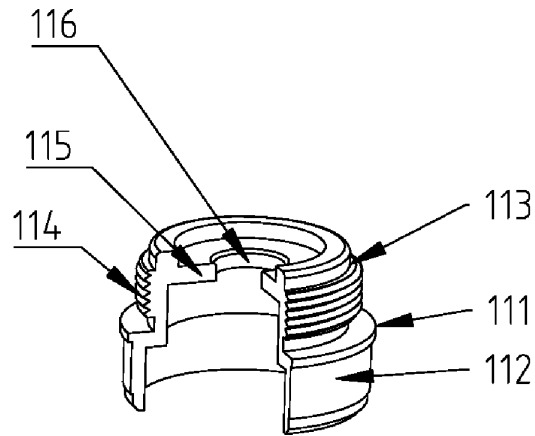


Figure 4

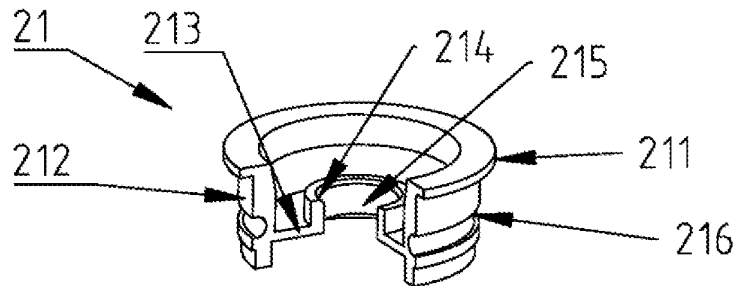


Figure 5

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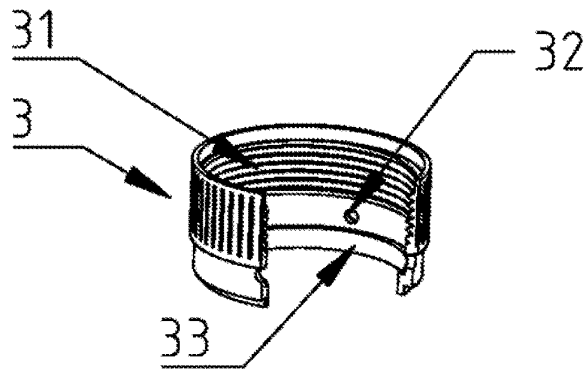


Figure 6

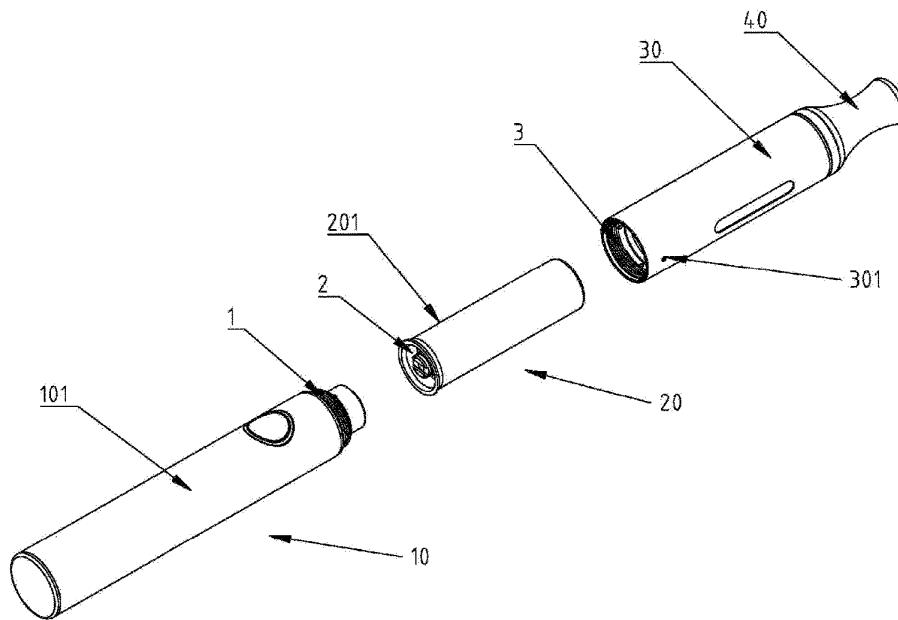


Figure 7

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF FLORIDA**

Civil Action No. 0:22cv61407

SHENZHEN HAPPY VAPING	)	
TECHNOLOGY LTD.,	)	
	)	
	)	
Plaintiff,	)	
	)	
v.	)	JURY TRIAL DEMANDED
	)	
LOGIC TECHNOLOGY	)	
DEVELOPMENT LLC, and	)	
JAPAN TOBACCO INTERNATIONAL	)	
U.S.A., INC.,	)	
	)	
Defendants.	)	
	)	

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Shenzhen Happy Vaping Technology Ltd. (hereinafter “Vaping Technology”), through its attorneys, complains against Defendants Logic Technology Development LLC (hereinafter “Logic Tech”) and Japan Tobacco International U.S.A., Inc. (hereinafter “JT Int’l”) (collectively hereinafter “Defendants”) and alleges the following:

PARTIES

1. Plaintiff Vaping Technology is a Chinese corporation organized and existing under the laws of China and having its principal place of business at 3A Building Shaer Lantian Tech Industrial Park, Ditang Road, Shajing Town, Bao’an District, Shenzhen City, China, 518102.

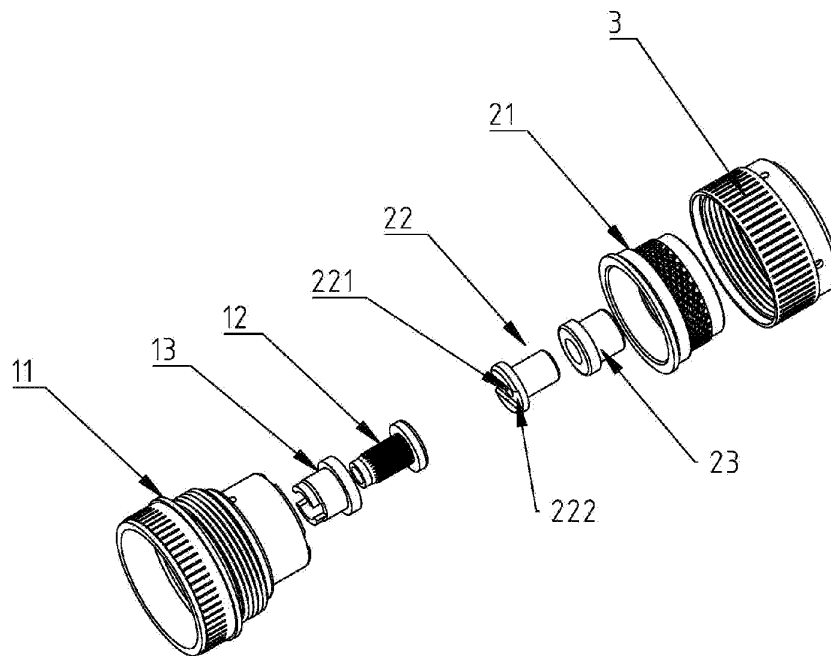


Figure 8

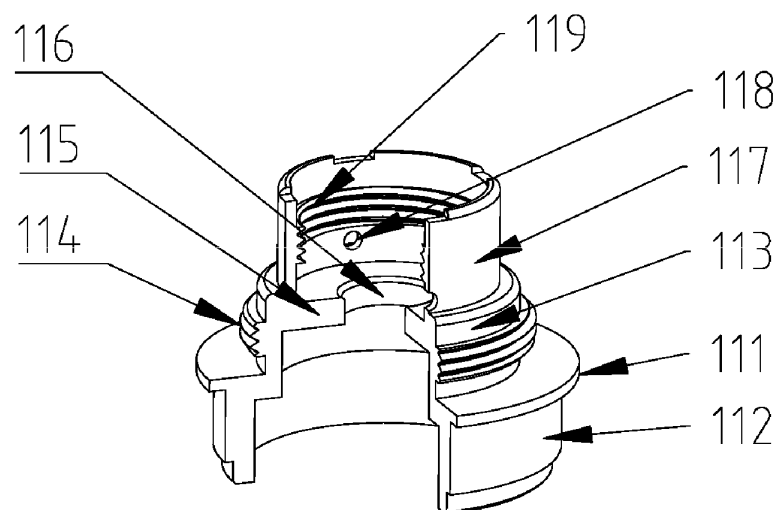


Figure 9

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**ELECTRONIC CIGARETTE HAVING THREE
CONNECTION PORTIONS****FIELD OF THE INVENTION**

The present invention relates to an electronic cigarette.

BACKGROUND OF THE INVENTION

Existing electronic cigarettes usually comprise a battery stick, a vaporizer and a mouth piece, wherein the vaporizer and a casing tube of the vaporizer are designed as an integral one-piece construction that has to be integrally replaced with a new one when cigarette liquid in the vaporizer is exhausted, which increases the costs for the manufacture and use of the vaporizer. In addition, the vaporizer and the battery stick are usually connected via a twist-lock connection structure or snap-fit connection structure, such connection structures are complicated and are thus inconvenient for the disassembly and replacement of the vaporizer, which worsens the user experience.

SUMMARY OF THE INVENTION

The present invention aims to provide an electronic cigarette designed to have a vaporizer and a casing tube of the vaporizer as two separate parts and have a simplified connection structure between the vaporizer and a battery stick. The electronic cigarette of the present application greatly reduces the costs for the manufacture and use of the vaporizer, and meanwhile facilitates the disassembly and replacement of the vaporizer, which improves the user experience.

The technical solution of the present application is an electronic cigarette comprising a battery stick, a vaporizer assembly and a mouth piece that are connected together, wherein the battery stick comprises a battery, a casing tube of the battery stick for sheathing the battery, and a first connection portion arranged at an end of the casing tube of the battery stick adjacent to the vaporizer assembly; the vaporizer assembly comprises a vaporizer, and a casing tube of the vaporizer for sheathing the vaporizer in an inner cavity of the casing tube; the vaporizer comprises a vaporizer tube body, and a second connection portion arranged at an end of the vaporizer tube body adjacent to the battery stick; a third connection portion is arranged at an end of the casing tube of the vaporizer adjacent to the battery stick; the second connection portion and the first connection portion abut against each other to be connected, the third connection portion is detachably connected to the first connection portion by means of a screw thread.

In this embodiment, the first connection portion comprises a first connection seat having an outer thread and serving as a negative electrode electrically connected to a negative electrode of the battery, a first positive electrode arranged at a centre of the first connection seat and electrically connected to a positive electrode of the battery, and a first insulation sleeve placed between the first positive electrode and the first connection seat; the second connection portion comprises a second connection seat serving as a negative electrode electrically connected to a heating coil of the vaporizer, a second positive electrode arranged at a centre of the second connection seat and electrically connected to the heating coil of the vaporizer, and a second insulation sleeve placed between the second positive electrode and the second connection seat; the second positive electrode has a central through hole along an axial direction

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of the second positive electrode for intercommunicating with a vaporizing cavity of the vaporizer, an end surface of the second positive electrode has a transversal groove along a radial direction of the end surface for intercommunicating with the central through hole; the third connection portion has an inner thread engaging with the outer thread of the first connection seat; the first positive electrode and the second positive electrode abut against each other to be electrically connected, the first connection seat and the second connection seat are electrically connected.

In this embodiment, the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter; one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick; the other side of the protruding step is provided with a second cylindrical wall having an outer diameter smaller than that of the protruding step and having the outer thread, one end of the second cylindrical wall is provided with a base wall having a central through hole, the central through hole is configured for installing the first positive electrode and the first insulation sleeve.

In this embodiment, the second connection seat is a cylindrical body having a protruding platform at one end thereof; an outer wall of the cylindrical body is sheathed with an inner wall of said end of the vaporizer tube body; an inner wall at a lower portion of the second connection seat is provided with a base wall, a tubular body is protruded from a center of the base wall, the tubular body is provided with a central through hole for installing the second insulation sleeve and the second positive electrode.

In this embodiment, the outer wall of the cylindrical body is provided with a circular groove configured for mounting a sealing ring.

In this embodiment, an outer diameter of the protruding platform is larger than an outer diameter of the vaporizer tube body; a bottom of the inner thread of the third connection portion has at least one airflow hole communicating with an air inlet hole opened in the casing tube of the vaporizer; the bottom of the inner thread of the third connection portion further has a protruding ring inwardly and radially protruding from an inner wall of the third connection portion; the protruding platform of the second connection seat terminates on the protruding ring of the third connection portion when the vaporizer is sheathed with the casing tube of the vaporizer.

In another embodiment, the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter; one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick; the other side of the protruding step of the first connection seat is provided with a second cylindrical wall and a third cylindrical wall, an outer diameter of the third cylindrical wall is smaller than an outer diameter of the second cylindrical wall, the outer diameter of the second cylindrical wall is smaller than the outer diameter of the protruding step of the first connection seat; the second cylindrical wall has the outer thread; the outer diameter of

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the third cylindrical wall is smaller than an inner diameter of the cylindrical body of the second connection seat; the third cylindrical wall has at least one air passage hole; an inner wall at a bottom of the third cylindrical wall is provided with a base wall, the base wall is provided with a central through hole configured for installing the first positive electrode and the first insulation sleeve.

In this embodiment, an inner wall of the third cylindrical wall has an inner thread configured for connecting to a connector of a battery charger.

The technical solutions of the present invention have advantages as follows. The electronic cigarette of the present invention is designed to have the vaporizer and the casing tube of the vaporizer as two separate parts, therefore the costs for the manufacture and use of the vaporizer is greatly reduced. In addition, the vaporizer and the battery stick abut against each other to be connected. After unscrewing the casing tube of the vaporizer, the vaporizer can be easily taken off. Thus it is very convenient for the disassembly and replacement of the vaporizer, which improves the user experience.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective exploded view of an electronic cigarette according to an embodiment of the present invention.

FIG. 2 is a perspective exploded view of three connection portions of an electronic cigarette according to an embodiment of the present invention.

FIG. 3 is a cross-sectional view of three connection portions of an electronic cigarette according to an embodiment of the present invention.

FIG. 4 is a schematic view showing a first connection seat of an electronic cigarette according to an embodiment of the present invention, with the first connection seat being partially sectioned.

FIG. 5 is a schematic view showing a second connection seat of an electronic cigarette according to an embodiment of the present invention, with the second connection seat being partially sectioned.

FIG. 6 is a schematic view showing a third connection portion of an electronic cigarette according to an embodiment of the present invention, with the third connection portion being partially sectioned.

FIG. 7 is a perspective exploded view of an electronic cigarette according to another embodiment of the present invention.

FIG. 8 is a perspective exploded view of three connection portions of an electronic cigarette according to another embodiment of the present invention.

FIG. 9 is a schematic view showing a first connection seat of an electronic cigarette according to another embodiment of the present invention, with the first connection seat being partially sectioned.

LIST OF REFERENCE NUMERALS OF MAIN COMPONENTS

10 battery stick
101 casing tube of battery stick
20 vaporizer
201 vaporizer tube body
30 casing tube of vaporizer
301 air inlet hole
40 mouth piece
1 first connection portion

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11 first connection seat
111 protruding step
112 first cylindrical wall
113 second cylindrical wall
114 outer thread
115 base wall
116 central through hole
117 third cylindrical wall
118 air passage hole
119 inner thread
12 first positive electrode
13 first insulation sleeve
2 second connection portion
21 second connection seat
211 protruding platform
212 cylindrical body
213 base wall
214 tubular body
215 central through hole
216 circular groove
22 second positive electrode
23 second insulation sleeve
3 third connection portion
31 inner thread
32 airflow hole

DETAILED DESCRIPTION OF ILLUSTRATED EMBODIMENTS

Various preferred embodiments will now be described with reference to the figures.

FIGS. 1-6 show an electronic cigarette according to an embodiment of the present invention.

Referring to FIG. 1, the electronic cigarette comprises a battery stick 10, a vaporizer assembly (not shown in Figures), and a mouth piece 40 that are connected together. The battery stick 10 comprises a battery (not shown in Figures), a casing tube 101 of the battery stick 10 for sheathing the battery, and a first connection portion 1 arranged at an end of the casing tube 101 of the battery stick 10 adjacent to the vaporizer assembly. The vaporizer assembly comprises a vaporizer 20, and a casing tube 30 of the vaporizer 20 for sheathing the vaporizer 20 in an inner cavity of the casing tube 30. The vaporizer 20 comprises a vaporizer tube body 201, and a second connection portion 2 arranged at an end of the vaporizer tube body 201 adjacent to the battery stick 10. A third connection portion 3 is arranged at an end of the casing tube 30 of the vaporizer 20 adjacent to the battery stick 10. The second connection portion 2 and the first connection portion 1 abut against each other to be connected, the third connection portion 3 is detachably connected to the first connection portion 1 by means of a screw thread.

Referring to FIGS. 2, 3, 4, 5 and 6, the first connection portion 1 comprises a first connection seat 11 having an outer thread 114 and serving as a negative electrode electrically connected to a negative electrode of the battery, a first positive electrode 12 arranged at a centre of the first connection seat 11 and electrically connected to a positive electrode of the battery, and a first insulation sleeve 13 placed between the first positive electrode 12 and the first connection seat 11. The second connection portion 2 comprises a second connection seat 21 serving as a negative electrode electrically connected to a heating coil of the vaporizer 20, a second positive electrode 22 arranged at a centre of the second connection seat 21 and electrically connected to the heating coil of the vaporizer 20, and a

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second insulation sleeve 23 placed between the second positive electrode 22 and the second connection seat 21. The second positive electrode 22 has a central through hole 221 along an axial direction of the second positive electrode 22 for intercommunicating with a vaporizing cavity of the vaporizer 20, an end surface of the second positive electrode 22 has a transversal groove 222 along a radial direction of the end surface for intercommunicating with the central through hole 221. The third connection portion 3 has an inner thread 31 engaging with the outer thread 114 of the first connection seat 11. The first positive electrode 12 and the second positive electrode 22 abut against each other to be electrically connected, the first connection seat 11 and the second connection seat 21 are electrically connected.

It should be understood that the first connection seat 11 and the second connection seat 21 both can be served as positive electrodes, while the first positive electrode 12 and the second positive electrode 22 both can be served as negative electrodes. It should be understood that the first connection seat 11 and the second connection seat 21 may directly abut against each other to achieve the electrical connection therebetween, alternatively, the first connection seat 11 and the second connection seat 21 may not directly abut against each other but both connect to the third connection portion 3 made of metal to achieve the electrical connection therebetween.

Referring to FIGS. 2 and 4, the first connection seat 11 has a step-like shape, a protruding step 111 is formed at a middle portion of the first connection seat 11 that has a maximum outer diameter. One side of the protruding step 111 is provided with a first cylindrical wall 112 having an outer diameter smaller than that of the protruding step 111, the first cylindrical wall 112 is sheathed with an inner wall of said end of the casing tube 101 of the battery stick 10, the outer diameter of the protruding step 111 equals an outer diameter of the casing tube 101 of the battery stick 10. The other side of the protruding step 111 is provided with a second cylindrical wall 113 having an outer diameter smaller than that of the protruding step 111 and having the outer thread 114, one end of the second cylindrical wall 113 is provided with a base wall 115 having a central through hole 116, the central through hole 116 is configured for installing the first positive electrode 12 and the first insulation sleeve 13.

Referring to FIGS. 2 and 5, the second connection seat 21 is a cylindrical body 212 having a protruding platform 211 at one end thereof. An outer wall of the cylindrical body 212 is sheathed with an inner wall of said end of the vaporizer tube body 201. An inner wall at a lower portion of the second connection seat 21 is provided with a base wall 213, a tubular body 214 is protruded from a center of the base wall 213, the tubular body 214 is provided with a central through hole 215 for installing the second insulation sleeve 23 and the second positive electrode 22.

Preferably, the outer wall of the cylindrical body 212 is provided with a circular groove 216 configured for mounting a sealing ring, such that cigarette liquid in the vaporizer 20 will not leak when the outer wall of the cylindrical body 212 is sheathed with the inner wall of the end of the vaporizer tube body 201.

Referring to FIGS. 2, 5 and 6, an outer diameter of the protruding platform 211 is larger than an outer diameter of the vaporizer tube body 201. A bottom of the inner thread 31 of the third connection portion 3 has at least one airflow hole 32 communicating with an air inlet hole 301 opened in the casing tube 30 of the vaporizer 20. The bottom of the inner thread 31 of the third connection portion 3 further has a protruding ring 33 inwardly and radially protruding from an

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inner wall of the third connection portion 3. The protruding platform 211 of the second connection seat 21 terminates on the protruding ring 33 of the third connection portion 3 when the vaporizer 20 is sheathed with the casing tube 30 of the vaporizer 20.

FIGS. 7-9 show an electronic cigarette according to another embodiment of the present invention.

The technical solution of the embodiment differs from the aforesaid embodiment in that the first connection seat further comprises a third cylindrical wall. Referring to FIGS. 7, 8 and 9, the other side of the protruding step 111 of the first connection seat 11 is provided with a second cylindrical wall 113 and a third cylindrical wall 117, an outer diameter of the third cylindrical wall 117 is smaller than an outer diameter of the second cylindrical wall 113, the outer diameter of the second cylindrical wall 113 is smaller than an outer diameter of the protruding step 111 of the first connection seat 11. The second cylindrical wall 113 has the outer thread 114. The outer diameter of the third cylindrical wall 117 is smaller than an inner diameter of the cylindrical body 212 of the second connection seat 21. The third cylindrical wall 117 has at least one air passage hole 118. An inner wall at a bottom of the third cylindrical wall 117 is provided with a base wall 115, the base wall 115 is provided with a central through hole 116 configured for installing the first positive electrode 12 and the first insulation sleeve 13.

In this embodiment, an inner wall of the third cylindrical wall 117 has an inner thread 119 configured for connecting to a connector of a battery charger, such that a battery charger carrying an universal connector can easily charge the battery of the electronic cigarette of the present invention.

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.

What is claimed is:

1. An electronic cigarette comprising a battery stick, a vaporizer assembly and a mouth piece that are connected together, characterized in that
 - the battery stick comprises a battery, a casing tube of the battery stick for sheathing the battery, and a first connection portion arranged at an end of the casing tube of the battery stick adjacent to the vaporizer assembly;
 - the vaporizer assembly comprises a vaporizer, and a casing tube of the vaporizer for sheathing the vaporizer in an inner cavity of the casing tube;
 - the vaporizer comprises a vaporizer tube body, and a second connection portion arranged at an end of the vaporizer tube body adjacent to the battery stick;
 - a third connection portion is arranged at an end of the casing tube of the vaporizer adjacent to the battery stick;
 - the second connection portion and the first connection portion abut against each other to be connected, the third connection portion is detachably connected to the first connection portion by means of a screw thread;
 - the first connection portion comprises a first connection seat having an outer thread and serving as a negative electrode electrically connected to a negative electrode of the battery, a first positive electrode arranged at a center of the first connection seat and electrically connected to a positive electrode of the battery, and a first insulation sleeve placed between the first positive electrode and the first connection seat;

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the second connection portion comprises a second connection seat serving as a negative electrode electrically connected to a heating coil of the vaporizer, a second positive electrode arranged at a center of the second connection seat and electrically connected to the heating coil of the vaporizer, and a second insulation sleeve placed between the second positive electrode and the second connection seat;

the second positive electrode has a central through hole along an axial direction of the second positive electrode for intercommunicating with a vaporizing cavity of the vaporizer, an end surface of the second positive electrode has a transversal groove along a radial direction of the end surface for intercommunicating with the central through hole;

the third connection portion has an inner thread engaging with the outer thread of the first connection seat;

the first positive electrode and the second positive electrode abut against each other to be electrically connected, the first connection seat and the second connection seat are electrically connected;

the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

the other side of the protruding step is provided with a second cylindrical wall having an outer diameter smaller than that of the protruding step and having the outer thread, one end of the second cylindrical wall is provided with a base wall having a central through hole, the central through hole is configured for installing the first positive electrode and the first insulation sleeve.

2. The electronic cigarette according to claim 1, characterized in that

the second connection seat is a cylindrical body having a protruding platform at one end thereof;

an outer wall of the cylindrical body is sheathed with an inner wall of said end of the vaporizer tube body;

an inner wall at a lower portion of the second connection seat is provided with a base wall, a tubular body is protruded from a center of the base wall, the tubular body is provided with a central through hole for installing the second insulation sleeve and the second positive electrode.

3. The electronic cigarette according to claim 2, characterized in that

the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

the other side of the protruding step of the first connection seat is provided with a second cylindrical wall and a third cylindrical wall, an outer diameter of the third cylindrical wall is smaller than an outer diameter of the second cylindrical wall, the outer diameter of the second cylindrical wall is smaller than the outer diameter of the protruding step of the first connection seat;

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second cylindrical wall, the outer diameter of the second cylindrical wall is smaller than the outer diameter of the protruding step of the first connection seat;

the second cylindrical wall has the outer thread;

the outer diameter of the third cylindrical wall is smaller than an inner diameter of the cylindrical body of the second connection seat;

the third cylindrical wall has at least one air passage hole;

an inner wall at a bottom of the third cylindrical wall is provided with a base wall, the base wall is provided with a central through hole configured for installing the first positive electrode and the first insulation sleeve.

4. The electronic cigarette according to claim 3, characterized in that an inner wall of the third cylindrical wall has an inner thread configured for connecting to a connector of a battery charger.

5. The electronic cigarette according to claim 2, characterized in that the outer wall of the cylindrical body is provided with a circular groove configured for mounting a sealing ring.

6. The electronic cigarette according to claim 4, characterized in that

an outer diameter of the protruding platform is larger than an outer diameter of the vaporizer tube body;

a bottom of the inner thread of the third connection portion has at least one airflow hole communicating with an air inlet hole opened in the casing tube of the vaporizer;

the bottom of the inner thread of the third connection portion further has a protruding ring inwardly and radially protruding from an inner wall of the third connection portion;

the protruding platform of the second connection seat terminates on the protruding ring of the third connection portion when the vaporizer is sheathed with the casing tube of the vaporizer.

7. The electronic cigarette according to claim 5, characterized in that

the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

the other side of the protruding step of the first connection seat is provided with a second cylindrical wall and a third cylindrical wall, an outer diameter of the third cylindrical wall is smaller than an outer diameter of the second cylindrical wall, the outer diameter of the second cylindrical wall is smaller than the outer diameter of the protruding step of the first connection seat;

the second cylindrical wall has the outer thread;

the outer diameter of the third cylindrical wall is smaller than an inner diameter of the cylindrical body of the second connection seat;

the third cylindrical wall has at least one air passage hole;

an inner wall at a bottom of the third cylindrical wall is provided with a base wall, the base wall is provided with a central through hole configured for installing the first positive electrode and the first insulation sleeve.

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8. The electronic cigarette according to claim 7, characterized in that an inner wall of the third cylindrical wall has an inner thread configured for connecting to a connector of a battery charger.

9. The electronic cigarette according to claim 6, characterized in that

the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

the other side of the protruding step of the first connection seat is provided with a second cylindrical wall and a third cylindrical wall, an outer diameter of the third

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cylindrical wall is smaller than an outer diameter of the second cylindrical wall, the outer diameter of the second cylindrical wall is smaller than the outer diameter of the protruding step of the first connection seat; the second cylindrical wall has the outer thread;

the outer diameter of the third cylindrical wall is smaller than an inner diameter of the cylindrical body of the second connection seat;

the third cylindrical wall has at least one air passage hole; an inner wall at a bottom of the third cylindrical wall is provided with a base wall, the base wall is provided with a central through hole configured for installing the first positive electrode and the first insulation sleeve.

10. The electronic cigarette according to claim 9, characterized in that an inner wall of the third cylindrical wall has an inner thread configured for connecting to a connector of a battery charger.

* * * * *

Exhibit 2

EXHIBIT 2 to Complaint

Claim Chart for U.S. Patent No. 9,924,744 / Logic Pro Electronic Cigarette

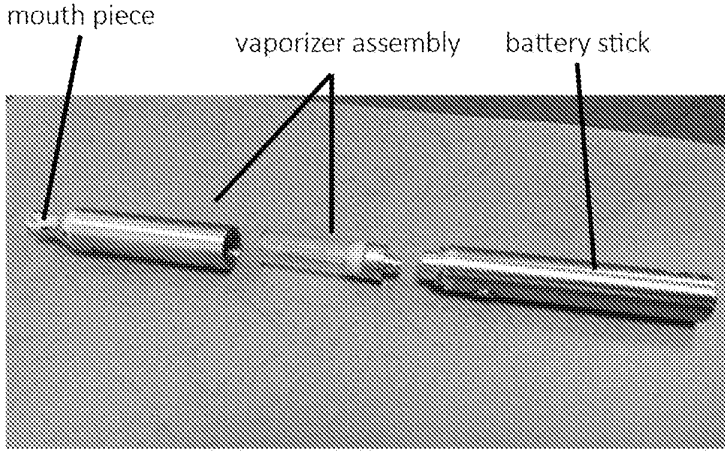
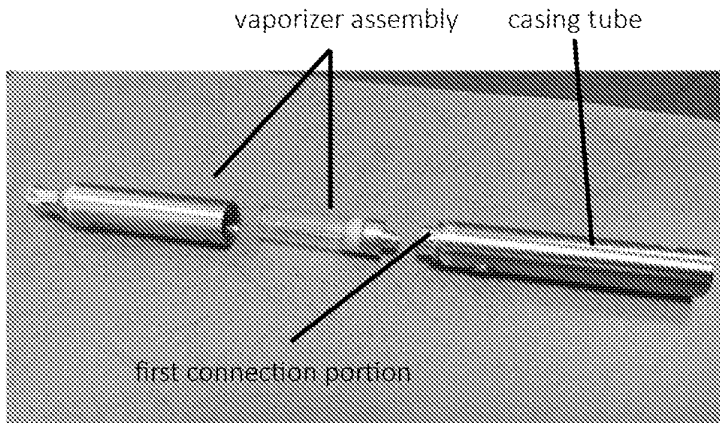
U.S. Patent No. 9,924,744 Claims 1, 2, & 5	Logic Pro E-Cigarette
1. An electronic cigarette comprising a battery stick, a vaporizer assembly and a mouth piece that are connected together, characterized in that	The Logic Pro electronic cigarette ("Logic Pro e-cigarette") comprises a battery stick, a vaporizer assembly and a mouth piece that are connected together. 
the battery stick comprises a battery, a casing tube of the battery stick for sheathing the battery, and a first connection portion arranged at an end of the casing tube of the battery stick adjacent to the vaporizer assembly;	The Logic Pro e-cigarette battery stick comprises a battery, a casing tube of the battery stick for sheathing the battery, and a first connection portion arranged at an end of the casing tube of the battery stick adjacent to the vaporizer assembly. 

EXHIBIT 2 to Complaint

Claim Chart for U.S. Patent No. 9,924,744 / Logic Pro Electronic Cigarette

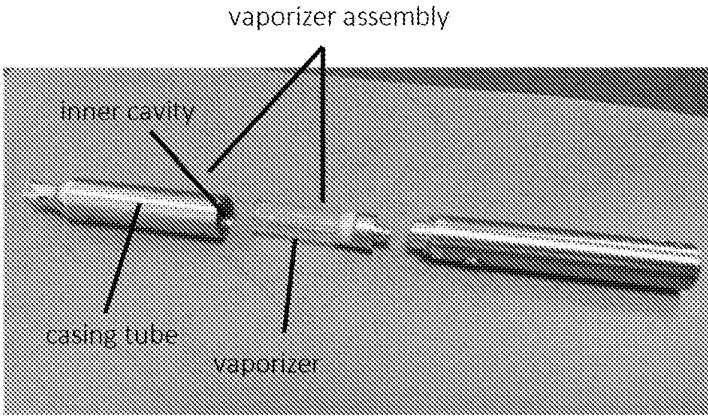
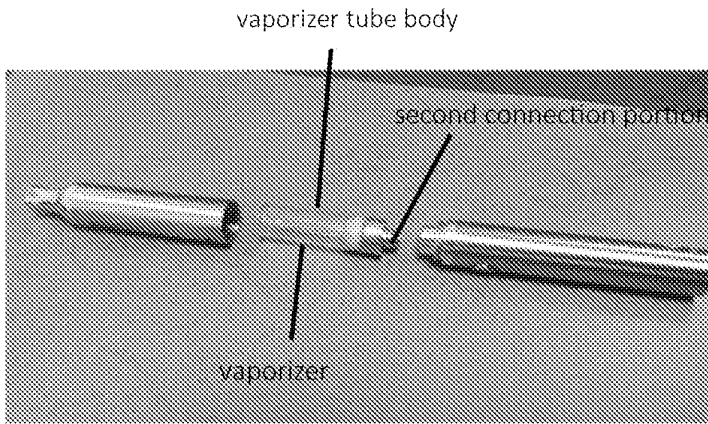
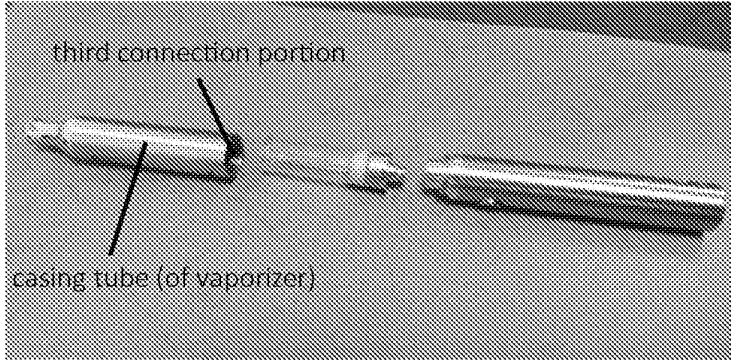
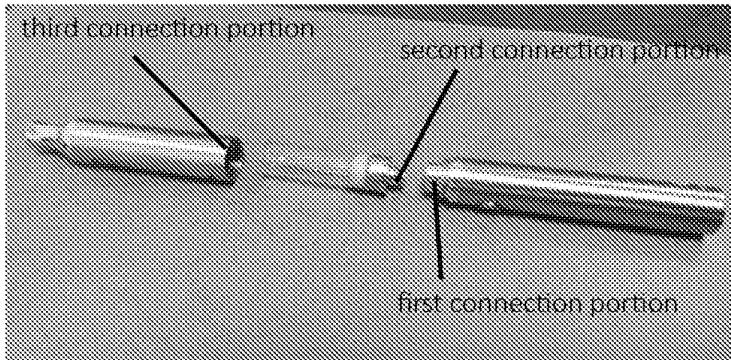
the vaporizer assembly comprises a vaporizer, and a casing tube of the vaporizer for sheathing the vaporizer in an inner cavity of the casing tube;	The Logic Pro e-cigarette comprises a vaporizer assembly with a vaporizer and a casing tube of the vaporizer for sheathing the vaporizer in an inner cavity of the casing tube. 
the vaporizer comprises a vaporizer tube body, and a second connection portion arranged at an end of the vaporizer tube body adjacent to the battery stick;	The Logic Pro e-cigarette includes a vaporizer with a vaporizer tube body and a second connection portion arranged at an end of the vaporizer tube body adjacent to the battery stick. 

EXHIBIT 2 to Complaint

Claim Chart for U.S. Patent No. 9,924,744 / Logic Pro Electronic Cigarette

a third connection portion is arranged at an end of the casing tube of the vaporizer adjacent to the battery stick;	The Logic Pro e-cigarette includes a third connection portion that is arranged at an end of the casing tube of the vaporizer adjacent to the battery stick. 
the second connection portion and the first connection portion abut against each other to be connected, the third connection portion is detachably connected to the first connection portion by means of a screw thread;	The Logic Pro e-cigarette includes a second connection portion and a first connection portion that abut against each other. The second connection portion is to be connected to the first connection portion, for example, when the battery stick is connected to the vaporizer assembly. The third connection portion of the Logic Pro e-cigarette is detachably connected to the first connection portion by means of a screw thread. 

2. On information and belief, defendant JT Int'l is a corporation organized and existing under the laws of California and having its principal place of business at Glenpointe Centre East, 300 Frank W. Burr Blvd, Suite 70, Teaneck, New Jersey, 07666.

3. On information and belief, Logic Tech is a corporation organized and existing under the laws of Delaware and having its principal place of business at Glenpointe Centre East, 300 Frank W. Burr Blvd, Suite 70, Teaneck, New Jersey, 07666.

On information and belief, Logic Tech is a subsidiary of JT Int'l.

JURISDICTION

4. This is an action for patent infringement arising under the patent laws of the United States of America, Title 35 of the United States Code.

5. This Court has jurisdiction over the subject matter of this action under Title 28 of the United States Code, Sections 1331 and 1338(a).

6. This Court has personal jurisdiction over Defendants pursuant to due process and the Florida Long-Arm Statute, because, *inter alia*, this action arises from acts by Defendants directed toward Florida and because Defendants have purposefully availed themselves of the rights and benefits of Florida law by engaging in systematic and continuous contacts with Florida. Defendants regularly and continuously transact business within the State of Florida by selling electronic cigarettes (“e-cigarettes”) and other products in Florida, either on its own or through its affiliates. Upon information and belief, Defendants derive substantial revenue from the sale of those products in Florida and have availed themselves of the privilege of conducting business within the State of Florida.

EXHIBIT 2 to Complaint

Claim Chart for U.S. Patent No. 9,924,744 / Logic Pro Electronic Cigarette

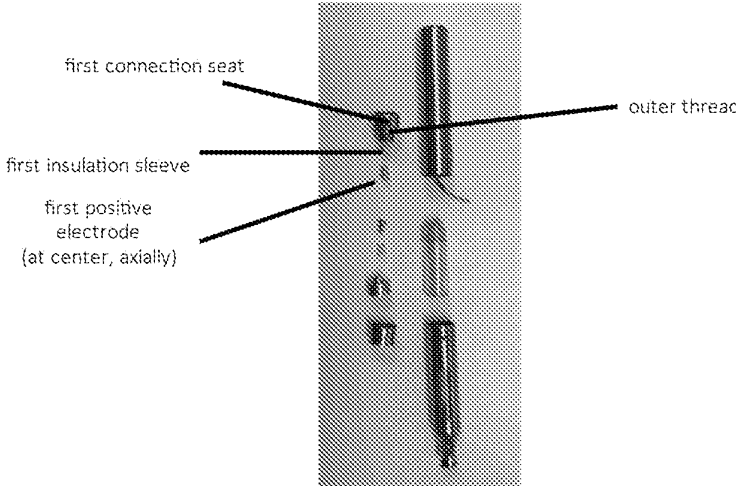
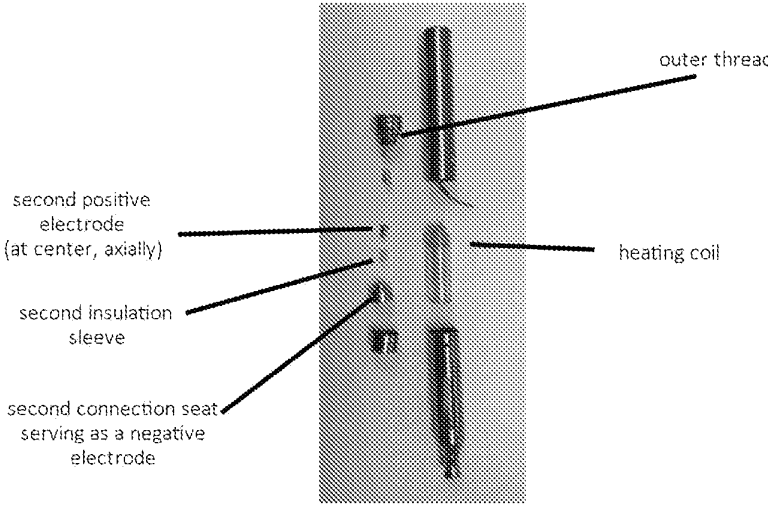
the first connection portion comprises a first connection seat having an outer thread and serving as a negative electrode electrically connected to a negative electrode of the battery, a first positive electrode arranged at a center of the first connection seat and electrically connected to a positive electrode of the battery, and a first insulation sleeve placed between the first positive electrode and the first connection seat;	The first connection portion of the Logic Pro e-cigarette comprises a first connection seat having an outer thread that serves as a negative electrode electrically connected to a negative electrode of the battery. The Logic Pro e-cigarette includes a first positive electrode arranged at a center of the first connection seat. The first positive electrode is electrically connected to a positive electrode of the battery. The Logic Pro e-cigarette includes a first insulation sleeve placed between the first positive electrode and the first connection seat. 
the second connection portion comprises a second connection seat serving as a negative electrode electrically connected to a heating coil of the vaporizer, a second positive electrode arranged at a center of the second connection seat and electrically connected to the heating coil of the vaporizer, and a second insulation sleeve placed between the second positive electrode and the second connection seat;	The Logic Pro e-cigarette includes a second connection portion, which comprises a second connection seat serving as a negative electrode electrically connected to a heating coil of the vaporizer. The Logic Pro e-cigarette includes a second positive electrode arranged at a center of the second connection seat and electrically connected to the heating coil of the vaporizer. The Logic Pro e-cigarette includes a second insulation sleeve placed between the second positive electrode and the second connection seat. 

EXHIBIT 2 to Complaint

Claim Chart for U.S. Patent No. 9,924,744 / Logic Pro Electronic Cigarette

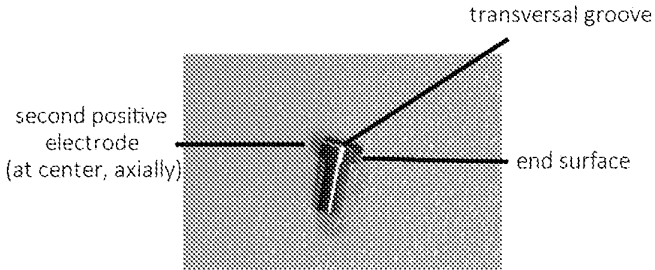
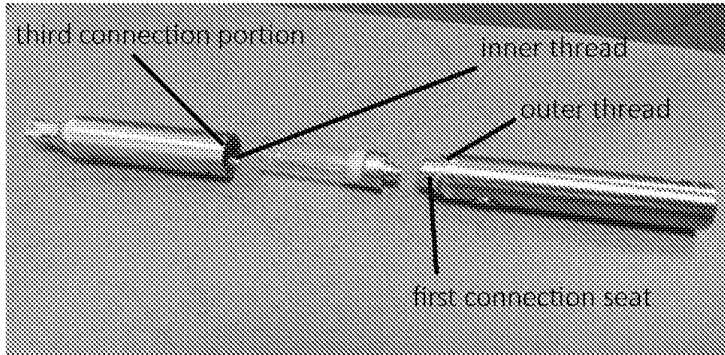
the second positive electrode has a central through hole along an axial direction of the second positive electrode for intercommunicating with a vaporizing cavity of the vaporizer, an end surface of the second positive electrode has a transversal groove along a radial direction of the end surface for intercommunicating with the central through hole;	The Logic Pro e-cigarette includes a second positive electrode with a central through hole along an axial direction of the second positive electrode for intercommunicating with a vaporizing cavity of the vaporizer. The Logic Pro e-cigarette includes an end surface of the second positive electrode with a transversal groove along a radial direction of the end surface for intercommunicating with the central through hole. 
the third connection portion has an inner thread engaging with the outer thread of the first connection seat;	The Logic Pro e-cigarette includes a third connection portion with an inner thread engaging with the outer thread of the first connection seat. 

EXHIBIT 2 to Complaint

Claim Chart for U.S. Patent No. 9,924,744 / Logic Pro Electronic Cigarette

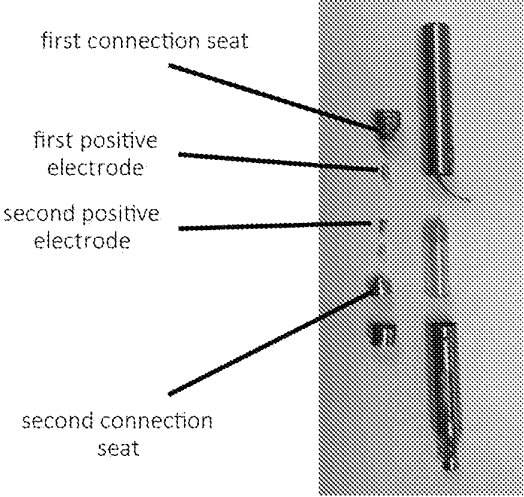
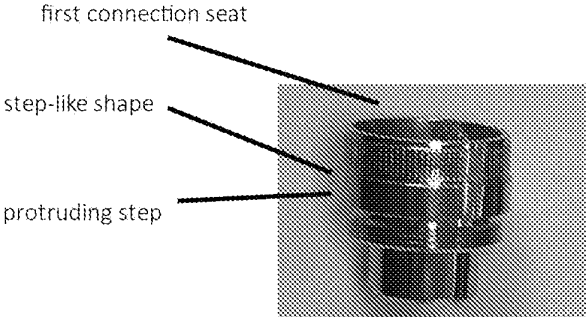
the first positive electrode and the second positive electrode abut against each other to be electrically connected, the first connection seat and the second connection seat are electrically connected;	The Logic Pro e-cigarette includes a first positive electrode and a second positive electrode that abut against each other to be electrically connected. The Logic Pro e-cigarette includes a first connection seat and a second connection seat that are electrically connected. 
the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;	The Logic Pro e-cigarette includes a first connection seat with a step-like shape. A protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter. 

EXHIBIT 2 to Complaint

Claim Chart for U.S. Patent No. 9,924,744 / Logic Pro Electronic Cigarette

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

The Logic Pro e-cigarette includes a protruding step where one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step. The first cylindrical wall of the Logic Pro e-cigarette is sheathed with an inner wall of the end of the casing tube of the battery stick. The outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick.

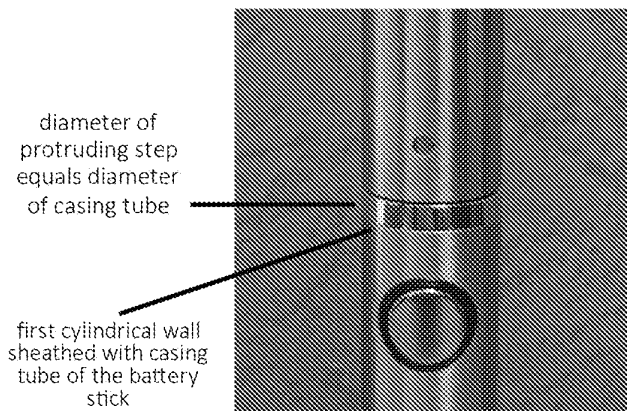
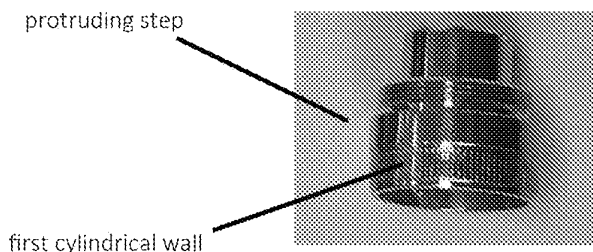


EXHIBIT 2 to Complaint

Claim Chart for U.S. Patent No. 9,924,744 / Logic Pro Electronic Cigarette

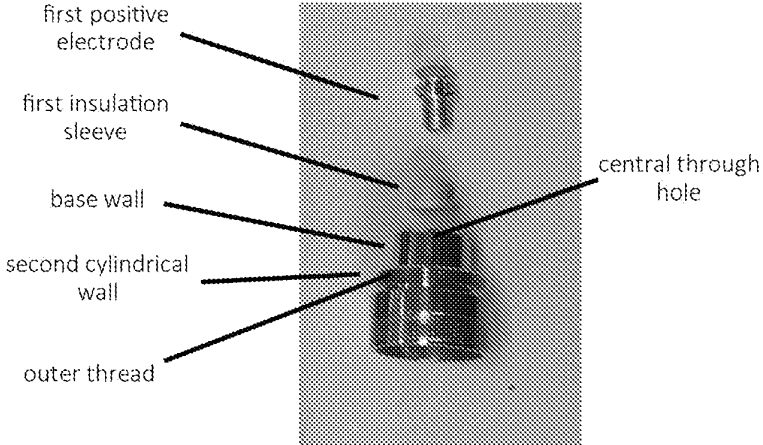
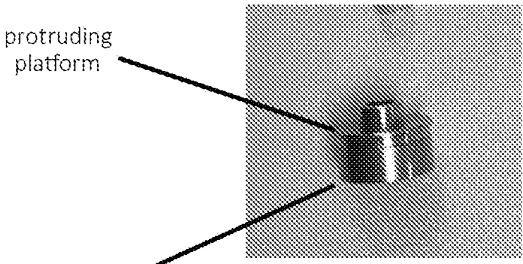
the other side of the protruding step is provided with a second cylindrical wall having an outer diameter smaller than that of the protruding step and having the outer thread, one end of the second cylindrical wall is provided with a base wall having a central through hole, the central through hole is configured for installing the first positive electrode and the first insulation sleeve.	The other side of the protruding step is provided with a second cylindrical wall having an outer diameter smaller than that of the protruding step and having an outer thread. One end of the second cylindrical wall is provided with a base wall having a central through hole. The central through hole is configured for installing the first positive electrode and the first insulation sleeve. 
2. The electronic cigarette according to claim 1, characterized in that the second connection seat is a cylindrical body having a protruding platform at one end thereof;	The second connection seat of the Logic Pro e-cigarette includes a cylindrical body having a protruding platform at one end. 

EXHIBIT 2 to Complaint

Claim Chart for U.S. Patent No. 9,924,744 / Logic Pro Electronic Cigarette

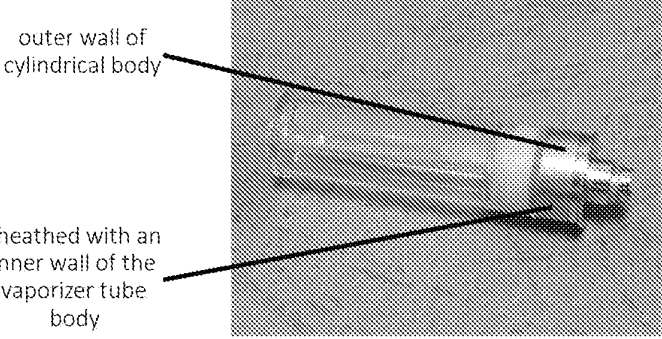
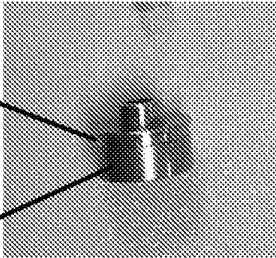
an outer wall of the cylindrical body is sheathed with an inner wall of said end of the vaporizer tube body;	In the Logic Pro e-cigarette arrangement, an outer wall of the cylindrical body is sheathed with an inner wall of the end of the vaporizer tube body.  outer wall of cylindrical body sheathed with an inner wall of the vaporizer tube body
an inner wall at a lower portion of the second connection seat is provided with a base wall, a tubular body is protruded from a center of the base wall, the tubular body is provided with a central through hole for installing the second insulation sleeve and the second positive electrode.	The Logic Pro e-cigarette includes an inner wall at a lower portion of the second connection seat with a base wall. A tubular body protrudes from a center of the base wall. The tubular body includes a central through hole for installing the second insulation sleeve and the second positive electrode.  inner wall at lower portion with a base wall tubular body second positive electrode second insulation sleeve

EXHIBIT 2 to Complaint

Claim Chart for U.S. Patent No. 9,924,744 / Logic Pro Electronic Cigarette

5. The electronic cigarette according to claim 2, characterized in that the outer wall of the cylindrical body is provided with a circular groove configured for mounting a sealing ring.	The Logic Pro e-cigarette includes an outer wall of the cylindrical body with a circular groove configured for mounting a sealing ring.  circular groove outer wall of the cylindrical body
--	--

7. Upon information and belief, both Defendants use the same registered agent in Florida, in particular, Corporation Service Company in Tallahassee, Florida, and both Defendants file annual reports with the Florida's Secretary of State. Upon information and belief, Defendant Logic Tech established and maintained, during at least a portion of the relevant timeframe, an office at 2004 NW 25th Avenue, Pompano Business Center, Pompano Beach, Florida.

8. Upon information and belief, during a portion of the relevant dates and at the time this complaint was filed, Defendant JT Int'l maintained a physical office at 9130 S. Dadeland Blvd in Miami, Florida.

9. Upon information and belief, Defendant JT Int'l represented, in filings with Florida's Secretary of State, that the address of its Title Director, Mr. John Colton, is located at 501 Brickell Key Drive in Miami, Florida.

10. For these reasons, and for other reasons that will be presented to the Court if jurisdiction is challenged, this Court has personal jurisdiction over Defendants.

VENUE

11. Venue is proper in this Judicial District under Title 28 of the United States Code, Sections 1391(b) and (c), and 1400(b). In addition, upon information and belief, Defendants have committed acts of infringement in this District, including having sold and offered to sell e-cigarettes, including the e-cigarette branded as Logic Pro, (collectively referenced hereinafter as "Infringing E-Cigarette Products"). Furthermore, upon information and belief, Defendants have established, and during at least a portion of the relevant dates, maintained a regular and physical place of business in this District as discussed in the paragraphs 6 through 10 above.

12. For these reasons, and for other reasons that will be presented to the Court if venue is challenged, venue in this District is proper.

FACTUAL BACKGROUND

13. Vaping Technology is the owner by assignment of all rights, title, and interest in and to United States Patent No. 9,924,744 (hereinafter “the ’744 Patent”), including all rights to enforce and prosecute actions for infringement and to collect damages for all relevant times against infringers of the ’744 Patent. Accordingly, Vaping Technology possesses the exclusive right and standing to prosecute the present action for infringement of the ’744 Patent by Defendants.

14. On March 27, 2018, the United States Patent and Trademark Office duly and lawfully issued the ’744 Patent, entitled “ELECTRONIC CIGARETTE HAVING THREE CONNECTION PORTIONS.” See Exhibit 1, which is attached hereto and is incorporated by reference as is fully set forth herein, and which is a true and correct copy of the ’744 Patent.

15. The ’744 Patent discloses an e-cigarette arrangement where a vaporizer can be removed from the e-cigarette casing tube, thereby allowing users to replace the vaporizer without replacing the e-cigarette casing tube.

16. Upon information and belief, Defendants have sold and continue to sell e-cigarettes that infringe the '744 Patent. One such e-cigarette has been sold under the name Logic Pro, as shown in the figure below.



17. The Logic Pro e-cigarette bears a striking resemblance to Figure 1 in the '744 Patent. As shown in the figures below, it appears as if Defendants used the '744 Patent to design the Logic Pro e-cigarette.

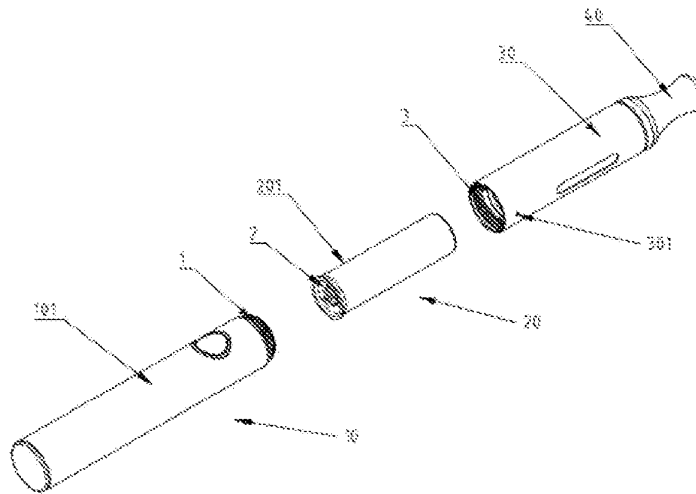
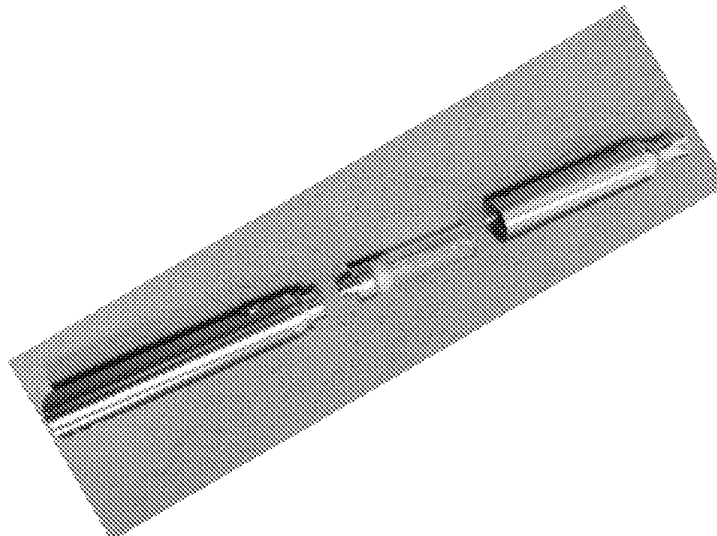


Figure 1

Figure 1 of the '744 Patent



The Logic Pro E-Cigarette

18. Upon information and belief, Defendant JT Int'l and Defendant Logic Tech are part of a single business enterprise because, *inter alia*, JT Int'l acquired Logic Tech in 2015; both JT Int'l and Logic Tech sell e-cigarettes; both JT Int'l and Logic Tech represent that their primary place of business is located in the same city and state (Teaneck, New Jersey), at the same address (300 Frank W Burr Road), and in the same suite (Suite 70); and both JT Int'l and Logic Tech have common officers and executives.

COUNT

PATENT INFRINGEMENT

19. Plaintiff re-alleges and incorporates herein the allegations of paragraphs 1-18 above. Defendants have infringed and continue to infringe the '744 Patent by selling, offering for sale in the United States (including in this District), and importing into the United States the Infringing E-Cigarette Products. See Exhibit 2, which contains claim charts analyzing how each element of Claims 1, 2, and 5 of the '744 Patent are found in one of the Infringing E-Cigarette Products, thereby providing one example of how at least these claims of the '744 Patent are infringed.

20. On information and belief, Defendants sell and offer to sell (and have sold and offered to sell) the Infringing E-Cigarette Products in this District and throughout various locations in the United States through both online and physical retailers.

21. On information and belief, Defendants also infringe the '744 Patent by inducing others to directly infringe the '744 Patent, including by providing consumers instructions on how to use the Infringing E-Cigarette Products in a way that directly infringes the '744 Patent.

22. On information and belief, consumers of Defendants' Infringing E-Cigarette Products use the Infringing E-Cigarette Products in a manner that directly infringes claims of the '744 Patent.

23. Upon information and belief, Defendants knew that the '744 Patent existed before selling the Infringing E-Cigarette Products.

24. Even if Defendants claim that they did not know of the '744 Patent before receiving this complaint, Defendants' actions constitute willful blindness to the existence of the '744 Patent. Upon information and belief, Defendants are part of Japan Tobacco, Inc., a sophisticated, well-funded organization familiar with the patent system. Upon information and belief, Defendants are wholly owned subsidiaries of Japan Tobacco, Inc., which owns numerous patents, including patents on e-cigarette products. Japan Tobacco has existed, in various forms, since the 19th Century. Upon information and belief, Japan Tobacco, Inc.'s brands include Camel, Salem, and Winston brands, among other well-known brands.

25. Since at least March 27, 2018, Defendants have knowingly and actively induced, and continue to knowingly and actively induce, direct infringement of one or more claims of the '744 Patent, with specific intent to encourage another's direct infringement, in violation of Title 35, United States Code, Section 271(b).

26. Upon information and belief, Defendants knew that combining the components in the Infringing E-Cigarette Products would be used in a manner that directly infringes the '744 Patent. The Infringing E-Cigarette Products have no substantial noninfringing use and are arranged for use as described in the claims of the



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE	REQUEST ID
15/321,198	12/22/2016	SHENZHEN HAPPY VAPING TECHNOLOGY LIMITED	SCH-1630-USPT	116713

Acknowledgement of Loss of Entitlement to Entity Status Discount

The entity status change request below filed through Private PAIR on 07/15/2020 has been accepted.

CERTIFICATIONS:

Change of Entity Status:

☒ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be notification of loss of entitlement to small or micro entity status, as applicable.

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

Signature:	/Charles Ho/
Name:	Charles Ho
Registration Number:	51807



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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/321,198	03/27/2018	9924744	SCH-1630-USPT	4394

137057 7590 03/07/2018
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General Post Office
Hong Kong,
HONG KONG

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Guangrong Lin, Shenzhen, Guangdong, CHINA;
SHENZHEN HAPPY VAPING TECHNOLOGY LIMITED, Shenzhen, Guangdong, CHINA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

PART B-FEE(S) TRANSMITTAL

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 (571)-273-2885

or Fax

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note Use Block 1 for any change of address)

BYIP
 P.O. Box 1484
 General Post Office
 Hong Kong,
 HONG KONG

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, EFS-Web transmitted, or facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's Name)
(S-signature)
(Date)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
15/321,198	12/22/2016	Guangrong Lin	SCH-1630-USPT	4394

TITLE OF INVENTION: ELECTRONIC CIGARETTE HAVING THREE CONNECTION PORTIONS

APPLN: TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480.00			\$480.00	03/27/2018

EXAMINER	ART UNIT	CLASS-SUBCLASS
TA, THO DAC	2831	131-329000

1. Change of correspondence address or indication of "Fee Address" (37CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered attorney or agent. If no name is listed, no name will be printed
- 1.
- 2.
- 3.

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

SHENZHEN HAPPY VAPING TECHNOLOGY LIMITED

Shenzhen, CN

Please check the appropriate assignee categories (will not be printed on the patent):

☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies

4b. Payment of Fees(s): (**Please first reapply and previously paid fee shown above**)

- ☐ A check is enclosed
- ☒ Payment by credit card. Form PTO-2038 is attached
- ☒ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number 50-5658 (enclose an extra copy of this form)

5. Change of Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature

/Charles Ho/

Date February 7, 2018

Typed or printed name

Charles Ho

Registration No.

51,807

Electronic Patent Application Fee Transmittal				
Application Number:		15321198		
Filing Date:		22-Dec-2016		
Title of Invention:		ELECTRONIC CIGARETTE HAVING THREE CONNECTION PORTIONS		
First Named Inventor/Applicant Name:		Guangrong Lin		
Filer:		Charles S. Ho		
Attorney Docket Number:		SCH-1630-USPT		
Filed as Small Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	480	480

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				480

Electronic Acknowledgement Receipt

EFS ID:	31721364
Application Number:	15321198
International Application Number:	
Confirmation Number:	4394
Title of Invention:	ELECTRONIC CIGARETTE HAVING THREE CONNECTION PORTIONS
First Named Inventor/Applicant Name:	Guangrong Lin
Customer Number:	137057
Filer:	Charles S. Ho
Filer Authorized By:	
Attorney Docket Number:	SCH-1630-USPT
Receipt Date:	08-FEB-2018
Filing Date:	22-DEC-2016
Time Stamp:	20:52:12
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$480
RAM confirmation Number	020918INTEFSW20552300
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Issue_Fee_Transmittal.pdf	34301	no	1
			b2b06bdc375fdad8067d6ba9af075643d13da4ed		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30427	no	2
			ec7739b0a613aae3736aece19cfe297497bb2e99		
Warnings:					
Information:					
Total Files Size (in bytes):			64728		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
15/321,198	12/22/2016	2831	740	SCH-1630-USPT	12	1

CONFIRMATION NO. 4394
CORRECTED FILING RECEIPT

137057
BYIP
P.O. Box 1484
General Post Office
Hong Kong,
HONG KONG



Date Mailed: 02/05/2018

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Guangrong Lin, Shenzhen, Guangdong, CHINA;

Applicant(s)

SHENZHEN HAPPY VAPING TECHNOLOGY LIMITED, Shenzhen, Guangdong, CHINA;

Power of Attorney: The patent practitioners associated with Customer Number 137057

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/CN2014/093009 12/04/2014

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.)
CHINA 201420341430.5 06/25/2014

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 02/22/2017

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/321,198**

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

ELECTRONIC CIGARETTE HAVING THREE CONNECTION PORTIONS

Preliminary Class

131

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

1st named inventor: Guangrong Lin	Examiner: TA, THO DAC
Application No.: 15/321,198	Docket No.: SCH-1630-USPT
Filing Date: December 22, 2016	Title: ELECTRONIC CIGARETTE HAVING THREE CONNECTION PORTIONS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir,

In relation to the above-identified application, I respectfully request to change the record of the Applicant. A corrected Application Data Sheet containing markings indicating the information that is being changed and a statement under 37 CFR 3.73(c) showing the chain of title are submitted with this letter for your further processing.

I hereby request that a corrected Filing Receipt be issued for the above-identified patent application. I additionally request that all pertinent U.S. Patent and Trademark Office records relating to the subject application be changed to reflect this change.

I believe no fee is due with this request. However, if a fee is due, please charge our Deposit Account No. 50-5658.

Dated: February 1, 2018

Respectfully submitted,
By: /Charles Ho/
Charles S. Ho, Reg. No. 51807
Charles_ho@barron-young.com

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: SHENZHEN HAPPY VAPING TECHNOLOGY LIMITED

Application No./Patent No.: 15/321,198 Filed/Issue Date: December 22, 2016

Titled: ELECTRONIC CIGARETTE HAVING THREE CONNECTION PORTIONS

SHENZHEN HAPPY VAPING
TECHNOLOGY LIMITED, a corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is _____ %. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of options A or B below):

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 044760, Frame 0787, or for which a copy thereof is attached.

- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

[Page 1 of 2]

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature /Charles Ho/

Date February 1, 2018

Printed or Typed Name Charles Ho

Title or Registration Number 51,807

[Page 2 of 2]

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SCH-1630-USPT
		Application Number	15/321,198
Title of Invention	ELECTRONIC CIGARETTE <u>HAVING THREE CONNECTION PORTIONS</u>		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor 1 Remove				
Legal Name				
Prefix	Given Name	Middle Name	Family Name	Suffix
	Guangrong		Lin	
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service				
City	Shenzhen, Guangdong		Country of Residence ⁱ	CN
Mailing Address of Inventor:				
Address 1		A1 Building, Shaer Lantian Science Park		
Address 2		Ditang Road, Shajing Town, Bao'an District		
City	Shenzhen, Guangdong		State/Province	
Postal Code	518000		Country ⁱ	CN
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button. Add				

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).	
☐ An Address is being provided for the correspondence information of this application.	
Customer Number	137057
Email Address	Add Email Remove Email

Application Information:

Title of the Invention	ELECTRONIC CIGARETTE <u>HAVING THREE CONNECTION PORTIONS</u>		
Attorney Docket Number	SCH-1630-USPT	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)		Suggested Figure for Publication (if any)	

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SCH-1630-USPT
		Application Number	<u>15/321,198</u>
Title of Invention	ELECTRONIC CIGARETTE <u>HAVING THREE CONNECTION PORTIONS</u>		

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	137057		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	a 371 of international	PCT/CN2014/093009	2014-12-04

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SCH-1630-USPT
		Application Number	<u>15/321,198</u>
Title of Invention	ELECTRONIC CIGARETTE <u>HAVING THREE CONNECTION PORTIONS</u>		

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Remove Access Code ^j (if applicable)
201420341430.5	CN	2014-06-25	

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SCH-1630-USPT
		Application Number	<u>15/321,198</u>
Title of Invention	ELECTRONIC CIGARETTE <u>HAVING THREE CONNECTION PORTIONS</u>		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SCH-1630-USPT
		Application Number	<u>15/321,198</u>
Title of Invention	ELECTRONIC CIGARETTE <u>HAVING THREE CONNECTION PORTIONS</u>		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant 1			
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
			
☒ Assignee	☐ Legal Representative under 35 U.S.C. 117		☐ Joint Inventor
☐ Person to whom the inventor is obligated to assign.		☐ Person who shows sufficient proprietary interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor:			
If the Applicant is an Organization check here. ☒			
Organization Name	<u>SHENZHEN HAPPY VAPING TECHNOLOGY LIMITED</u>		
Mailing Address Information For Applicant:			
Address 1	<u>A1 & 3A Bldg., Shaer Lantian Tech Industrial Park</u>		
Address 2	<u>Ditang Road, Shajing Town, Bao'an District</u>		
City	<u>Shenzhen, Guangdong</u>	State/Province	
Country	<u>CN</u>	Postal Code	<u>518000</u>
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button.			

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SCH-1630-USPT
		Application Number	<u>15/321,198</u>
Title of Invention	ELECTRONIC CIGARETTE <u>HAVING THREE CONNECTION PORTIONS</u>		

Assignee 1				
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
If the Assignee or Non-Applicant Assignee is an Organization check here. ☐				
Prefix	Given Name	Middle Name	Family Name	Suffix
Mailing Address Information For Assignee including Non-Applicant Assignee:				
Address 1				
Address 2				
City		State/Province		
Country i		Postal Code		
Phone Number		Fax Number		
Email Address				
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.				

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Charles Ho/		Date (YYYY-MM-DD)	~~2016-12-22~~ <u>2018-02-01</u>
First Name	Charles	Last Name	Ho	Registration Number
51,807				
Additional Signature may be generated within this form by selecting the Add button.				

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SCH-1630-USPT
		Application Number	<u>15/321,198</u>
Title of Invention	ELECTRONIC CIGARETTE <u>HAVING THREE CONNECTION PORTIONS</u>		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

- 1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
- 3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	31668212
Application Number:	15321198
International Application Number:	
Confirmation Number:	4394
Title of Invention:	ELECTRONIC CIGARETTE HAVING THREE CONNECTION PORTIONS
First Named Inventor/Applicant Name:	Guangrong Lin
Customer Number:	137057
Filer:	Charles S. Ho
Filer Authorized By:	
Attorney Docket Number:	SCH-1630-USPT
Receipt Date:	01-FEB-2018
Filing Date:	22-DEC-2016
Time Stamp:	05:47:43
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Corrected Filing Receipt	Ltr_to_USPTO.pdf	28554	no	1
			2a901122031ba555f96d4f19f5247104962456fa		
Warnings:					

Information:					
2	Assignee showing of ownership per 37 CFR 3.73	Statement_By_Assignee_to_Establish_Ownership_37_CFR_373c.pdf	27626	no	2
			2c795e4a10cbb2389ad3316da7e79f3ff74988bc		
Warnings:					
Information:					
3	Application Data Sheet	Corrected_ADS.pdf	140607	no	8
			cce4c0c66e99cfeab747bb17a35835bea9319417		
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
Total Files Size (in bytes):			196787		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

137057 7590 12/27/2017
BYIP
P.O. Box 1484
General Post Office
Hong Kong,
HONG KONG

EXAMINER

TA, THO DAC

ART UNIT

PAPER NUMBER

2831

DATE MAILED: 12/27/2017

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/321,198	12/22/2016	Guangrong Lin	SCH-1630-USPT	4394

TITLE OF INVENTION: ELECTRONIC CIGARETTE HAVING THREE CONNECTION PORTIONS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	03/27/2018

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

137057 7590 12/27/2017
BYIP
P.O. Box 1484
General Post Office
Hong Kong,
HONG KONG

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/321,198	12/22/2016	Guangrong Lin	SCH-1630-USPT	4394

TITLE OF INVENTION: ELECTRONIC CIGARETTE HAVING THREE CONNECTION PORTIONS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	03/27/2018

EXAMINER	ART UNIT	CLASS-SUBCLASS
TA, THO DAC	2831	131-329000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
☐ Applicant asserting small entity status. See 37 CFR 1.27
☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____
Typed or printed name _____ Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/321,198	12/22/2016	Guangrong Lin	SCH-1630-USPT	4394
137057	7590	12/27/2017	EXAMINER	
BYIP P.O. Box 1484 General Post Office Hong Kong, HONG KONG			TA, THO DAC	
			ART UNIT	PAPER NUMBER
			2831	
DATE MAILED: 12/27/2017				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 15/321,198	Applicant(s) LIN, GUANGRONG	
	Examiner THO D. TA	Art Unit 2831	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 11/29/17.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 1 and 4-12. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☒ All b) ☐ Some *c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has **THREE MONTHS FROM THE "MAILING DATE"** of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in **ABANDONMENT** of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ **CORRECTED DRAWINGS** (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ **DEPOSIT OF and/or INFORMATION** about the deposit of **BIOLOGICAL MATERIAL** must be submitted. Note the attached Examiner's comment regarding **REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL**.

Attachment(s)

- | | |
|--|---|
| 1. ☐ Notice of References Cited (PTO-892) | 5. ☐ Examiner's Amendment/Comment |
| 2. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 6. ☐ Examiner's Statement of Reasons for Allowance |
| 3. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 7. ☐ Other _____. |
| 4. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____. | |

/THO D TA/
Primary Examiner, Art Unit 2831

Search Notes 	Application/Control No. 15321198	Applicant(s)/Patent Under Reexamination LIN, GUANGRONG
	Examiner THO D TA	Art Unit 2831

CPC- SEARCHED		
Symbol	Date	Examiner
A24F 47/008 with text	9/19/17	tdt
updated	12/20/17	tdt

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

SEARCH NOTES		
Search Notes	Date	Examiner

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
see printout		12/20/17	tdt

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BIB DATA SHEET

CONFIRMATION NO. 4394

SERIAL NUMBER 15/321,198	FILING or 371(c) DATE 12/22/2016 RULE	CLASS 131	GROUP ART UNIT 2831	ATTORNEY DOCKET NO. SCH-1630-USPT		
APPLICANTS INVENTORS Guangrong Lin, Shenzhen, Guangdong, CHINA; ** CONTINUING DATA ***** This application is a 371 of PCT/CN2014/093009 12/04/2014 ** FOREIGN APPLICATIONS ***** CHINA 201420341430.5 06/25/2014 ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED *** SMALL ENTITY ** 02/22/2017						
Foreign Priority claimed ☒ Yes ☐ No 35 USC 119(a-d) conditions met ☒ Yes ☐ No Verified and Acknowledged <u>/THO DAC TA/</u> Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY CHINA	SHEETS DRAWINGS 4	TOTAL CLAIMS 12	INDEPENDENT CLAIMS 1
ADDRESS BYIP P.O. Box 1484 General Post Office Hong Kong, HONG KONG						
TITLE ELECTRONIC CIGARETTE HAVING THREE CONNECTION PORTIONS						
FILING FEE RECEIVED 740	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			☐ All Fees		
				☐ 1.16 Fees (Filing)		
				☐ 1.17 Fees (Processing Ext. of time)		
				☐ 1.18 Fees (Issue)		
				☐ Other _____		
				☐ Credit		

EAST Search History**EAST Search History (I nterference)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	3	((battery adj stick) and (electronic adj cigarette)).clm.	US-PGPUB; USPAT	OR	ON	2017/12/20 09:46

12/ 20/ 2017 9:47:04 AM**C:\ Users\ tta\ Documents\ EAST\ \ default.wsp**

Issue Classification 	Application/Control No. 15321198	Applicant(s)/Patent Under Reexamination LIN, GUANGRONG	
	Examiner THO D TA	Art Unit 2831	

CPC					
Symbol				Type	Version
A24F	47	/	008	F	2013-01-01
H05B	3	/	03	I	2013-01-01
H05B	2203	/	021	A	2013-01-01
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CPC Combination Sets				
Symbol	Type	Set	Ranking	Version

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	10	
/THO D TA/ Primary Examiner.Art Unit 2831	12/20/17	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2&3

Issue Classification 	Application/Control No. 15321198	Applicant(s)/Patent Under Reexamination LIN, GUANGRONG
	Examiner THO D TA	Art Unit 2831

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1														
	2														
	3														
2	4														
5	5														
6	6														
3	7														
4	8														
7	9														
9	10														
8	11														
10	12														

NONE		Total Claims Allowed:	
		10	
(Assistant Examiner)	(Date)		
/THO D TA/ Primary Examiner.Art Unit 2831	12/20/17	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2&3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Guangrong Lin

Atty. Ref.: SCH-1630-USPT; Confirmation NO.: 4394

Appl. No. 15/321,198

TC/A.U. 2831

Filed Date: 12/22/2016

Examiner: TA, THO DAC

FOR: ELECTRONIC CIGARETTE

* * * * *

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

AMENDMENT

Responsive to the Office Action dated September 26, 2017, please amend the above-identified application as follows:

Amendments to the Claims are reflected in the list of claims which begins on page 2 of this paper.

Amendment to the Title is reflected in the list of claims which begins on page 7 of this paper.

Arguments/Remarks begin on page 8 of this paper.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) An electronic cigarette comprising a battery stick, a vaporizer assembly and a mouth piece that are connected together, characterized in that

the battery stick comprises a battery, a casing tube of the battery stick for sheathing the battery, and a first connection portion arranged at an end of the casing tube of the battery stick adjacent to the vaporizer assembly;

the vaporizer assembly comprises a vaporizer, and a casing tube of the vaporizer for sheathing the vaporizer in an inner cavity of the casing tube;

the vaporizer comprises a vaporizer tube body, and a second connection portion arranged at an end of the vaporizer tube body adjacent to the battery stick;

a third connection portion is arranged at an end of the casing tube of the vaporizer adjacent to the battery stick;

the second connection portion and the first connection portion abut against each other to be connected, the third connection portion is detachably connected to the first connection portion by means of a screw thread[.];

the first connection portion comprises a first connection seat having an outer thread and serving as a negative electrode electrically connected to a negative electrode of the battery, a first positive electrode arranged at a centre of the first connection seat and electrically connected to a positive electrode of the battery, and a first insulation sleeve placed between the first positive electrode and the first connection seat;

the second connection portion comprises a second connection seat serving as a negative electrode electrically connected to a heating coil of the vaporizer, a second positive electrode arranged at a centre of the second connection seat and electrically connected to the heating coil of the vaporizer, and a second insulation sleeve placed between the second positive electrode and the second connection seat;

the second positive electrode has a central through hole along an axial direction of the second positive electrode for intercommunicating with a vaporizing cavity of the vaporizer, an end surface of the second positive electrode has a transversal groove along a radial direction of the end surface for intercommunicating with the central through hole;

the third connection portion has an inner thread engaging with the outer thread of the

first connection seat;

the first positive electrode and the second positive electrode abut against each other to be electrically connected, the first connection seat and the second connection seat are electrically connected;

the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

the other side of the protruding step is provided with a second cylindrical wall having an outer diameter smaller than that of the protruding step and having the outer thread, one end of the second cylindrical wall is provided with a base wall having a central through hole, the central through hole is configured for installing the first positive electrode and the first insulation sleeve.

2-3. (Cancelled)

4. (Currently amended) The electronic cigarette according to claim [2]1, characterized in that

the second connection seat is a cylindrical body having a protruding platform at one end thereof;

an outer wall of the cylindrical body is sheathed with an inner wall of said end of the vaporizer tube body;

an inner wall at a lower portion of the second connection seat is provided with a base wall, a tubular body is protruded from a center of the base wall, the tubular body is provided with a central through hole for installing the second insulation sleeve and the second positive electrode.

5. (Original) The electronic cigarette according to claim 4, characterized in that the outer wall of the cylindrical body is provided with a circular groove configured for mounting a sealing ring.

6. (Original) The electronic cigarette according to claim 4, characterized in that an outer diameter of the protruding platform is larger than an outer diameter of the vaporizer tube body;

a bottom of the inner thread of the third connection portion has at least one airflow hole communicating with an air inlet hole opened in the casing tube of the vaporizer;

the bottom of the inner thread of the third connection portion further has a protruding ring inwardly and radially protruding from an inner wall of the third connection portion;

the protruding platform of the second connection seat terminates on the protruding ring of the third connection portion when the vaporizer is sheathed with the casing tube of the vaporizer.

7. (Previously presented) The electronic cigarette according to claim 4, characterized in that

the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

the other side of the protruding step of the first connection seat is provided with a second cylindrical wall and a third cylindrical wall, an outer diameter of the third cylindrical wall is smaller than an outer diameter of the second cylindrical wall, the outer diameter of the second cylindrical wall is smaller than the outer diameter of the protruding step of the first connection seat;

the second cylindrical wall has the outer thread;

the outer diameter of the third cylindrical wall is smaller than an inner diameter of the cylindrical body of the second connection seat;

the third cylindrical wall has at least one air passage hole;

an inner wall at a bottom of the third cylindrical wall is provided with a base wall, the base wall is provided with a central through hole configured for installing the first positive electrode and the first insulation sleeve.

8. (Original) The electronic cigarette according to claim 7, characterized in that an inner

wall of the third cylindrical wall has an inner thread configured for connecting to a connector of a battery charger.

9. (Previously presented) The electronic cigarette according to claim 5, characterized in that

the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

the other side of the protruding step of the first connection seat is provided with a second cylindrical wall and a third cylindrical wall, an outer diameter of the third cylindrical wall is smaller than an outer diameter of the second cylindrical wall, the outer diameter of the second cylindrical wall is smaller than the outer diameter of the protruding step of the first connection seat;

the second cylindrical wall has the outer thread;

the outer diameter of the third cylindrical wall is smaller than an inner diameter of the cylindrical body of the second connection seat;

the third cylindrical wall has at least one air passage hole;

an inner wall at a bottom of the third cylindrical wall is provided with a base wall, the base wall is provided with a central through hole configured for installing the first positive electrode and the first insulation sleeve.

10. (Previously presented) The electronic cigarette according to claim 6, characterized in that

the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

the other side of the protruding step of the first connection seat is provided with a

second cylindrical wall and a third cylindrical wall, an outer diameter of the third cylindrical wall is smaller than an outer diameter of the second cylindrical wall, the outer diameter of the second cylindrical wall is smaller than the outer diameter of the protruding step of the first connection seat;

the second cylindrical wall has the outer thread;

the outer diameter of the third cylindrical wall is smaller than an inner diameter of the cylindrical body of the second connection seat;

the third cylindrical wall has at least one air passage hole;

an inner wall at a bottom of the third cylindrical wall is provided with a base wall, the base wall is provided with a central through hole configured for installing the first positive electrode and the first insulation sleeve.

11. (Previously presented) The electronic cigarette according to claim 9, characterized in that an inner wall of the third cylindrical wall has an inner thread configured for connecting to a connector of a battery charger.

12. (Previously presented) The electronic cigarette according to claim 10, characterized in that an inner wall of the third cylindrical wall has an inner thread configured for connecting to a connector of a battery charger.

AMENDMENT TO THE TITLE:

Please amend the title of the invention as follows:

ELECTRONIC CIGARETTE HAVING THREE CONNECTION PORTIONS

REMARKS/ARGUMENTS

Claims 1-12 are pending. Claims 1 and 2 are rejected. Claims 3-12 are objected to.

Claims 1 and 4 are amended. Claims 2-3 are cancelled. The title of the invention is amended. No new matter has been introduced. In view of the amendments and remarks herein, favorable reconsideration and allowance of this application are respectfully requested.

Claim Rejections – 35 U.S.C. 102

Claim(s) 1, 2 is/are rejected under 35 U.S.C. 102 as being anticipated by Thompson (US2013/0192617A1).

Claim(s) 1, 2 is/are rejected under 35 U.S.C. 102 as being anticipated by Liu (US2014/0060556A1).

Claim 1 is rejected under 35 U.S.C. 102 as being anticipated by Liu (US2013/0319407A1).

In response, Applicant amends claim 1 by incorporating additional technical features of claim 2 and allowed claim 3 into claim 1.

Applicant believes, all of Thompson, Liu (US2014/0060556A1) and Liu (US2013/0319407A1) fail to disclose an electronic cigarette designed to have a vaporizer and a casing tube of the vaporizer as two separate parts. In any of Thompson, Liu (US2014/0060556A1) and Liu (US2013/0319407A1), the third connection portion is arranged at the centre with a (positive electrode) connector, so that the assembled vaporizer is fixed inside the sleeve and cannot be separately removed or disassembled to allow replacement.

For example, Thompson discloses that opposite ends of the outer terminal 36 and inner terminal 38 are connected to matching components in the battery base 14, i.e., anode and cathode, on which basis, the second connection portion 38 will not be arranged by those skilled in the art with a second connection seat serving as a negative electrode electrically connected to a heating coil of the vaporizer and a second positive electrode at a centre of the second connection seat and electrically connected to the heating coil of the vaporizer, and further will not be arranged with a second insulation sleeve placed between the second positive electrode and the second connection seat.

Therefore, in view of any or a combination of Thompson, Liu (US2014/0060556A1) and Liu (US2013/0319407A1), those skilled in the art would not be motivated to modify the existing electronic cigarettes to provide the vaporizer and the casing tube of the vaporizer as two separate parts.

On the contrary, with the connecting structure of the present application, the vaporizer can be separately removed from the casing tube or the sleeve of the vaporizer. The electronic cigarette of the present application which is designed to have a vaporizer and a casing tube of the vaporizer as two separate parts, have a simplified connection structure between the vaporizer and a battery stick, thereby greatly reducing the costs for the manufacture and for the use of the vaporizer, and meanwhile facilitating the disassembly and replacement of the vaporizer to improve user experience.

After such amendment, the newly-amended independent claim 1 possesses novelty and involves inventive steps over Thompson and/or Liu and should be allowable. The dependent claims should also be allowed by virtue of their dependences from the allowable independent claim 1.

In addition, the title of the invention is considered as being not descriptive. In response, Applicant amends it as *ELECTRONIC CIGARETTE HAVING THREE CONNECTION PORTIONS*.

Conclusion

Applicant believes this foregoing is fully responsive to all outstanding issues and places this application in condition for allowance.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-5658.

Respectfully submitted,

Dated: November 29, 2017

By: /charles ho/
Charles S. Ho, Reg. No. 51807
Charles_ho@barron-young.com

Electronic Acknowledgement Receipt

EFS ID:	31069487
Application Number:	15321198
International Application Number:	
Confirmation Number:	4394
Title of Invention:	ELECTRONIC CIGARETTE
First Named Inventor/Applicant Name:	Guangrong Lin
Customer Number:	137057
Filer:	Charles S. Ho
Filer Authorized By:	
Attorney Docket Number:	SCH-1630-USPT
Receipt Date:	29-NOV-2017
Filing Date:	22-DEC-2016
Time Stamp:	03:43:32
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	Response_to_non-final_OA_SCH-1630-USPT.pdf	38280 c5a9a969d67f614dc81c0422c032ef7aa93853e6	no	9

Warnings:

Information:	
Total Files Size (in bytes):	38280
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.	

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 15/321,198		Filing Date 12/22/2016		☐ To be Mailed	
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ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO									
APPLICATION AS FILED – PART I									
(Column 1)		(Column 2)							

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 = *		X \$ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 = *		X \$ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).		
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
TOTAL				

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II									
(Column 1)		(Column 2)		(Column 3)					

AMENDMENT	11/29/2017	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 10	Minus	** 20	= 0	x \$40 =	0
	Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	x \$210 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
TOTAL ADD'L FEE						0	

(Column 1)		(Column 2)		(Column 3)					
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AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
TOTAL ADD'L FEE							

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

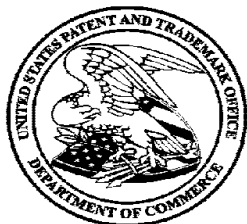
This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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**Courtesy Reminder for
Application Serial No: 15/321,198**

Attorney Docket No: SCH-1630-USPT

Customer Number: 137057

Date of Electronic Notification: 09/27/2017

This is a courtesy reminder that new correspondence is available for this application. If you have not done so already, please review the correspondence. The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

An email notification regarding the correspondence was sent to the following email address(es) associated with your customer number:

cho@barron-young.com

charlesho@barron-young.com

charles_ho@barron-young.com

To view your correspondence online or update your email addresses, please visit us anytime at **<https://sportal.uspto.gov/secure/myportal/privatepair>**. If you have any questions, please email the Electronic Business Center (EBC) at **EBC@uspto.gov** or call 1-866-217-9197.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/321,198	12/22/2016	Guangrong Lin	SCH-1630-USPT	4394
137057 BYIP P.O. Box 1484 General Post Office Hong Kong, HONG KONG	7590 09/26/2017		EXAMINER TA, THO DAC	
			ART UNIT 2831	PAPER NUMBER
			NOTIFICATION DATE 09/26/2017	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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charlesho@barron-young.com
charles_ho@barron-young.com

Office Action Summary	Application No. 15/321,198	Applicant(s) LIN, GUANGRONG	
	Examiner THO D. TA	Art Unit 2831	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) ☒ Claim(s) 1-12 is/are pending in the application.
5a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) _____ is/are allowed.
- 7) ☒ Claim(s) 1 and 2 is/are rejected.
- 8) ☒ Claim(s) 3-12 is/are objected to.
- 9) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☒ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 12/22/16 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☒ All b) ☐ Some** c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date 12/22/16
- 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 4) ☐ Other: _____

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

3. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

5. Claim(s) 1, 2 is/are rejected under 35 U.S.C. 102(a)(2) as being anticipated by Thompson (US 2013/0192617 A1).

In regard to claim 1, Thompson discloses an electronic cigarette 10 comprising a battery stick 14, a vaporizer assembly 12 and a mouth piece 28 that are connected together, characterized in that the battery stick 14 comprises a battery 20, a casing tube of the battery stick 14 for sheathing the battery 20, and a first connection portion 16

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arranged at an end of the casing tube of the battery stick 20 adjacent to the vaporizer assembly 12; the vaporizer assembly 12 comprises a vaporizer 42, and a casing tube 26 of the vaporizer for sheathing the vaporizer 42 in an inner cavity of the casing tube 26; the vaporizer 42 comprises a vaporizer tube body 53, and a second connection portion 38 arranged at an end of the vaporizer tube body 53 adjacent to the battery stick 14; a third connection portion 34 is arranged at an end of the casing tube 26 of the vaporizer adjacent to the battery stick 14; the second connection portion 38 and the first connection portion 16 abut against each other to be connected, the third connection portion 34 is detachably connected to the first connection portion 16 by means of a screw thread.

In regard to claim 2, Thompson discloses the first connection portion 16 comprises a first connection seat (see fig. 3) having an outer thread and serving as a negative electrode electrically connected to a negative electrode of the battery 20, a first positive electrode arranged at a centre of the first connection seat and electrically connected to a positive electrode of the battery 20, and a first insulation sleeve placed between the first positive electrode and the first connection seat; the second connection portion 38 comprises a second connection seat serving as a negative electrode electrically connected to a heating coil 43 of the vaporizer, a second positive electrode arranged at a centre of the second connection seat and electrically connected to the heating coil 43 of the vaporizer, and a second insulation sleeve 40 placed between the second positive electrode and the second connection seat; the second positive

electrode has a central through hole along an axial direction of the second positive electrode for intercommunicating with a vaporizing cavity of the vaporizer 42, an end surface of the second positive electrode has a transversal groove 36a along a radial direction of the end surface for intercommunicating with the central through hole; the third connection portion 34 has an inner thread (see figures 8 and 9) engaging with the outer thread of the first connection seat (adjacent 16); the first positive electrode and the second positive electrode abut against each other to be electrically connected, the first connection seat and the second connection seat are electrically connected.

6. Claim(s) 1, 2 is/are rejected under 35 U.S.C. 102(a)(2) as being anticipated by Liu (US 2014/0060556 A1).

In regard to claim 1, Liu discloses an electronic cigarette comprising a battery stick 91, a vaporizer assembly (adjacent 32) and a mouth piece 4 that are connected together, characterized in that the battery stick 91 comprises a battery 913, a casing tube 910 of the battery stick for sheathing the battery 913, and a first connection portion 6 arranged at an end of the casing tube 910 of the battery stick adjacent to the vaporizer assembly; the vaporizer assembly comprises a vaporizer 3, and a casing tube 1 of the vaporizer for sheathing the vaporizer in an inner cavity of the casing tube; the vaporizer 3 comprises a vaporizer tube body 32, and a second connection portion (adjacent 57) arranged at an end of the vaporizer tube body 32 adjacent to the battery stick 91; a third connection portion 5 is arranged at an end of the casing tube 1 of the vaporizer adjacent to the battery stick 91; the second connection portion (adjacent 57)

and the first connection portion 6 abut against each other to be connected, the third connection portion 5 is detachably connected to the first connection portion 6 by means of a screw thread.

In regard to claim 2, Liu discloses the first connection portion 6 comprises a first connection seat (see fig. 2) having an outer thread and serving as a negative electrode electrically connected to a negative electrode of the battery 913, a first positive electrode arranged at a centre of the first connection seat and electrically connected to a positive electrode of the battery 913, and a first insulation sleeve 69 placed between the first positive electrode and the first connection seat; the second connection portion (adjacent 57) comprises a second connection seat serving as a negative electrode electrically connected to a heating coil 211 of the vaporizer, a second positive electrode arranged at a centre of the second connection seat and electrically connected to the heating coil 211 of the vaporizer, and a second insulation sleeve 59 placed between the second positive electrode and the second connection seat; the second positive electrode has a central through hole along an axial direction of the second positive electrode for intercommunicating with a vaporizing cavity of the vaporizer 3, an end surface of the second positive electrode has a transversal groove (similar to the groove adjacent 67 in fig. 2) along a radial direction of the end surface for intercommunicating with the central through hole; the third connection portion 5 has an inner thread (see fig. 2) engaging with the outer thread of the first connection seat (adjacent 6); the first positive electrode and the second positive electrode abut against each other to be

electrically connected, the first connection seat and the second connection seat are electrically connected.

7. Claim(s) 1 is/are rejected under 35 U.S.C. 102(a)(2) as being anticipated by LIU (US 2013/0319407 A1).

In regard to claim 1, Liu discloses an electronic cigarette comprising a battery stick 91, a vaporizer assembly (adjacent 32) and a mouth piece 4 that are connected together, characterized in that the battery stick 91 comprises a battery 911, a casing tube 91 of the battery stick for sheathing the battery 911, and a first connection portion (adjacent 913, 912) arranged at an end of the casing tube 91 of the battery stick adjacent to the vaporizer assembly; the vaporizer assembly comprises a vaporizer 2, and a casing tube 1 of the vaporizer 2 for sheathing the vaporizer in an inner cavity of the casing tube; the vaporizer 3 comprises a vaporizer tube body 12, and a second connection portion 51 arranged at an end of the vaporizer tube body 12 adjacent to the battery stick 91; a third connection portion 5 is arranged at an end of the casing tube 1 of the vaporizer adjacent to the battery stick 91; the second connection portion (adjacent 51) and the first connection portion (adjacent 913, 912) abut against each other to be connected, the third connection portion 5 is detachably connected to the first connection portion (adjacent 913, 912) by means of a screw thread.

Allowable Subject Matter

8. Claims 3-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: In regard to claim 3, the prior art fails to provide, teach or suggest the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter; one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick; the other side of the protruding step is provided with a second cylindrical wall having an outer diameter smaller than that of the protruding step and having the outer thread, one end of the second cylindrical wall is provided with a base wall having a central through hole, the central through hole is configured for installing the first positive electrode and the first insulation sleeve. In regard to claim 4, the prior art fails to provide, teach or suggest the second connection seat is a cylindrical body having a protruding platform at one end thereof; an outer wall of the cylindrical body is sheathed with an inner wall of said end of the vaporizer tube body; an inner wall at a lower portion of the second connection seat is provided with a base wall, a tubular body is protruded from a center of the base wall, the

tubular body is provided with a central through hole for installing the second insulation sleeve and the second positive electrode.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THO D. TA whose telephone number is (571)272-2014. The examiner can normally be reached on M-F (8:00-5:30).

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tulsidas C. Patel can be reached on (571) 272-2098. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tdt
9/19/17

/THO D TA/
Primary Examiner, Art Unit 2831

Notice of References Cited	Application/Control No. 15/321,198	Applicant(s)/Patent Under Reexamination LIN, GUANGRONG	
	Examiner THO D. TA	Art Unit 2831	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2013/0192617 A1	08-2013	Thompson; Spencer	A24F47/008	131/329
*	B	US-2013/0319407 A1	12-2013	Liu; Qiuming	A61M15/06	128/202.21
*	C	US-2014/0060556 A1	03-2014	Liu; Qiuming	A24F47/008	131/329
*	D	US-2014/0373833 A1	12-2014	LIU; QIUMING	A61M11/042	128/202.21
*	E	US-2015/0335072 A1	11-2015	Giller; Boris	F21V33/0004	131/328
	F	US-				
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FOREIGN PATENT DOCUMENTS

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	N					
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
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BIB DATA SHEET

CONFIRMATION NO. 4394

SERIAL NUMBER 15/321,198	FILING or 371(c) DATE 12/22/2016 RULE	CLASS 131	GROUP ART UNIT 2831	ATTORNEY DOCKET NO. SCH-1630-USPT		
APPLICANTS INVENTORS Guangrong Lin, Shenzhen, Guangdong, CHINA; ** CONTINUING DATA ***** This application is a 371 of PCT/CN2014/093009 12/04/2014 ** FOREIGN APPLICATIONS ***** CHINA 201420341430.5 06/25/2014 ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED *** SMALL ENTITY ** 02/22/2017						
Foreign Priority claimed ☒ Yes ☐ No 35 USC 119(a-d) conditions met ☒ Yes ☐ No Verified and Acknowledged <u>/THO DAC TA/</u> Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY CHINA	SHEETS DRAWINGS 4	TOTAL CLAIMS 12	INDEPENDENT CLAIMS 1
ADDRESS BYIP P.O. Box 1484 General Post Office Hong Kong, HONG KONG						
TITLE ELECTRONIC CIGARETTE						
FILING FEE RECEIVED 740	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			☐ All Fees		
				☐ 1.16 Fees (Filing)		
				☐ 1.17 Fees (Processing Ext. of time)		
				☐ 1.18 Fees (Issue)		
				☐ Other _____		
				☐ Credit		

Search Notes 	Application/Control No. 15321198	Applicant(s)/Patent Under Reexamination LIN, GUANGRONG
	Examiner THO D TA	Art Unit 2831

CPC- SEARCHED		
Symbol	Date	Examiner
A24F 47/008 with text	9/19/17	tdt

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

SEARCH NOTES		
Search Notes	Date	Examiner

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	184	lin near2 guangrong	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/19 14:19
L2	136	1 and cigarette	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/19 14:19
L3	11108	a24f47/008.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/19 15:04
L4	2380	3 and vaporiz\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/19 15:04
L5	1466	4 and (battery or (power adj supply))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/19 15:05
L6	697	5 and thread\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/19 15:05

9/ 19/ 2017 4:32:44 PM**C:\Users\tta\Documents\EAST\default.wsp**

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)

Approved for use through 07/31/2016. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	
	Filing Date	
	First Named Inventor	Guangrong Lin
	Art Unit	N/A
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	SCH-1630-USPT

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	1	201430916	CN	Y	2010-03-31	LIU, Zheqi		
	2	203314099	CN	U	2013-12-04	LIU, Qiuming		
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		
	First Named Inventor	Guangrong Lin	
	Art Unit	N/A	
	Examiner Name	Not Yet Assigned	
	Attorney Docket Number	SCH-1630-USPT	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	International Search Report of PCT Patent Application No. PCT/CN2014/093009 issued on March 24, 2015	

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EXAMINER SIGNATURE

Examiner Signature	/THO D TA/	Date Considered	09/19/2017
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	
First Named Inventor	Guangrong Lin
Art Unit	N/A
Examiner Name	Not Yet Assigned
Attorney Docket Number	SCH-1630-USPT

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Charles Ho/	Date (YYYY-MM-DD)	2016-12-22
Name/Print	Charles Ho	Registration Number	51,807

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/321,198	12/22/2016	Guangrong Lin	SCH-1630-USPT

CONFIRMATION NO. 4394

PUBLICATION NOTICE



0000000091770523

137057
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Hong Kong,
HONG KONG

Title:ELECTRONIC CIGARETTE

Publication No.US-2017-0150754-A1

Publication Date:06/01/2017

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

U.S. APPLICATION NUMBER NO.	FIRST NAMED INVENTOR	ATTY. DOCKET NO.
15/321,198	Guangrong Lin	SCH-1630-USPT

137057
BYIP
P.O. Box 1484
General Post Office
Hong Kong,
HONG KONG

INTERNATIONAL APPLICATION NO.	
PCT/CN2014/093009	

I.A. FILING DATE	PRIORITY DATE
12/04/2014	06/25/2014

CONFIRMATION NO. 4394
371 ACCEPTANCE LETTER



Date Mailed: 02/24/2017

NOTICE OF ACCEPTANCE OF APPLICATION UNDER 35 U.S.C 371 AND 37 CFR 1.495

The applicant is hereby advised that the United States Patent and Trademark Office, in its capacity as a Designated / Elected Office (37 CFR 1.495), has ACCEPTED the above identified international application for national patentability examination in the United States Patent and Trademark Office.

The United States Application Number assigned to the application is shown above. A Filing Receipt will be issued for the present application in due course. **THE DATE APPEARING ON THE FILING RECEIPT AS THE "FILING DATE or 371(c) DATE" IS THE DATE ON WHICH THE LAST OF THE 35 U.S.C. 371 (c)(1) and (c)(2) REQUIREMENTS HAS BEEN RECEIVED IN THE OFFICE. THIS DATE IS SHOWN BELOW.** The filing date of the above identified application is the international filing date of the international application (Article 11(3) and 35 U.S.C. 363)

12/22/2016

DATE OF RECEIPT OF 35 U.S.C.
371(c)(1) and (c)(2) REQUIREMENTS

The following items have been received:

- Indication of Small Entity Status
- Copy of the International Application filed on 12/22/2016
- English Translation of the IA filed on 12/22/2016
- Copy of the International Search Report filed on 12/22/2016
- Preliminary Amendments filed on 12/22/2016
- Information Disclosure Statements filed on 12/22/2016
- Inventor's Oath or Declaration filed on 12/22/2016
- Request for Immediate Examination filed on 12/22/2016
- U.S. Basic National Fees filed on 12/22/2016
- Authorize Access to Search Results filed on 12/22/2016
- Priority Documents filed on 12/22/2016
- Power of Attorney filed on 12/22/2016
- Authorization to Permit Access filed on 12/22/2016
- Application Data Sheet (37 CFR 1.76) filed on 12/22/2016

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

MARIAN E DAY

Telephone: (703) 756-1142

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 15/321,198	
APPLICATION AS FILED - PART I							
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	140		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	240		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	12	minus 20 = *	x 40 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1	minus 3 = *	x 210 =	0.00	OR		
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	740		TOTAL	
APPLICATION AS AMENDED - PART II							
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)
	Total (37 CFR 1.16(i))	*	Minus **	=	x =	OR	x =
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =	OR	x =
	Application Size Fee (37 CFR 1.16(s))					OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR	
			TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)
	Total (37 CFR 1.16(i))	*	Minus **	=	x =	OR	x =
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =	OR	x =
	Application Size Fee (37 CFR 1.16(s))					OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR	
			TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.							

MULTIPLE DEPENDENT CLAIM FEE CALCULATION SHEET							Application Number		Filing Date		
Substitute for Form PTO-1360 (For use with Form PTO/SB/06)							15321198				
							Applicant(s) Guangrong Lin				
							* May be used for additional claims or amendments				
CLAIMS	AS FILED		AFTER FIRST AMENDMENT		AFTER SECOND AMENDMENT			*		*	
	Indep	Depend	Indep	Depend	Indep	Depend		Indep	Depend	Indep	Depend
1	1		1								
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3		1		1							
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Total Indep	1		1		0						
Total Depend	11	↙	11	↙	0	↙					
Total Claims	12		12		0						
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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
15/321,198	12/22/2016		740	SCH-1630-USPT	12	1

CONFIRMATION NO. 4394

FILING RECEIPT



137057
BYIP
P.O. Box 1484
General Post Office
Hong Kong,
HONG KONG

Date Mailed: 02/24/2017

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Guangrong Lin, Shenzhen, Guangdong, CHINA;

Applicant(s)

Guangrong Lin, Shenzhen, Guangdong, CHINA;

Power of Attorney: The patent practitioners associated with Customer Number 137057

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/CN2014/093009 12/04/2014

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.)
CHINA 201420341430.5 06/25/2014

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 02/22/2017

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/321,198**

Projected Publication Date: 06/01/2017

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

ELECTRONIC CIGARETTE

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

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This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

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NOT GRANTED

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TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A SUBMISSION UNDER 35 U.S.C. 371		Attorney Docket No. SCH-1630-USPT
International Application No. PCT/CN2014/093009		U.S. Application No. (if known, see 37 CFR 1.5)
International Filing Date 4 December 2014		Priority Date Claimed 25 June 2014
Title of Invention ELECTRONIC CIGARETTE		
First Named Inventor Guangrong Lin		
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information. 1. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). NOTE: The express request under 35 U.S.C. 371(f) will not be effective unless the requirements under 35 U.S.C. 371(c)(1), (2), and (4) for payment of the basic national fee, copy of the International Application and English translation thereof (if required), and the oath or declaration of the inventor(s) have been received. 2. ☒ A copy of the International Application (35 U.S.C. 371(c)(2)) is attached hereto (not required if the International Application was previously communicated by the International Bureau or was filed in the United States Receiving Office (RO/US)). 3. An English language translation of the International Application (35 U.S.C. 371(c)(2)) a. ☒ is attached hereto. b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4). 4. An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)) a. ☒ is attached. b. ☐ was previously filed in the international phase under PCT Rule 4.17(iv). Items 5 to 8 below concern amendments made in the international phase. <u>PCT Article 19 and 34 amendments</u> 5. ☐ Amendments to the claims under PCT Article 19 are attached (not required if communicated by the International Bureau) (35 U.S.C. 371(c)(3)). 6. ☐ English translation of the PCT Article 19 amendment is attached (35 U.S.C. 371(c)(3)). 7. ☐ English translation of annexes (Article 19 and/or 34 amendments only) of the International Preliminary Examination Report is attached (35 U.S.C. 371(c)(5)). <u>Cancellation of amendments made in the international phase</u> 8a. ☐ Do not enter the amendment made in the international phase under PCT Article 19. 8b. ☐ Do not enter the amendment made in the international phase under PCT Article 34. NOTE: A proper amendment made in English under Article 19 or 34 will be entered in the U.S. national phase application absent a clear instruction from applicant not to enter the amendment(s). The following items 9 to 17 concern a document(s) or information included. 9. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 10. ☒ A preliminary amendment. 11. ☒ An Application Data Sheet under 37 CFR 1.76. 12. ☐ A substitute specification. NOTE: A substitute specification cannot include claims. See 37 CFR 1.125(b). 13. ☒ A power of attorney and/or change of address letter. 14. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13^{ter}.3 and 37 CFR 1.821-1.825. 15. ☐ Assignment papers (cover sheet and document(s)). Name of Assignee: _____ 16. ☐ 37 CFR 3.73(c) Statement (when there is an Assignee).		

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

U.S. APPLN. No. (if known – see 37 CFR 1.5)		INTERNATIONAL APPLICATION No. PCT/CN2014/093009		ATTORNEY DOCKET No. SCH-1630-USPT	
17. ☐ Other items or information:					
The following fees have been submitted.				CALCULATIONS	PTO USE ONLY
18. ☒ Basic national fee (37 CFR 1.492(a)) \$280				\$ 280.00	
19. ☒ Examination fee (37 CFR 1.492(c)) If the written opinion prepared by ISA/US or the international preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4) \$0 All other situations \$720				\$ 720.00	
20. ☒ Search fee (37 CFR 1.492(b)) If the written opinion prepared by ISA/US or the international preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4) \$0 Search fee (37 CFR 1.445(a)(2)) has been paid on the international application to the USPTO as an International Searching Authority \$120 International Search Report prepared by an ISA other than the US and provided to the Office or previously communicated to the US by the IB \$480 All other situations \$600				\$ 480.00	
TOTAL OF 18, 19, and 20 =				\$ 1,480.00	
☐ Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing in compliance with 37 CFR 1.821(c) or (e) in an electronic medium or computer program listing in an electronic medium) (37 CFR 1.492(j)). Fee for each additional 50 sheets of paper or fraction thereof \$400					
Total Sheets	Extra Sheets	Number of each addition 50 or fraction thereof (round up to a whole number)		RATE	
- 100 =	/ 50 =			x \$400	\$
Surcharge of \$140.00 for furnishing any of the search fee, examination fee, or the oath or declaration after the date of commencement of the national stage (37 CFR 1.492(h)).				\$	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	- 20 =	0	x \$80	\$	
Independent claims	- 3 =	0	x \$420	\$	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$780	\$	
Processing fee of \$140.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(i)).				+	\$
TOTAL OF ABOVE CALCULATIONS =				\$ 1,480.00	
☒ Applicant asserts small entity status. See 37 CFR 1.27. Fees above are reduced by 1/2.				- 740.00	
☐ Applicant certifies micro entity status. See 37 CFR 1.29. Fees above are reduced by 3/4. Applicant must attach form PTO/SB/15A or B or equivalent.					
TOTAL NATIONAL FEE =				\$ 740.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property.				+	\$
TOTAL FEES ENCLOSED =				\$ 740.00	
				Amount to be refunded:	\$
				Amount to be charged:	\$

[Page 2 of 3]

{SCH-1630-USPT/00563589v1}

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

a. ☐ A check in the amount of \$ _____ to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees.

c. ☒ The Director is hereby authorized to charge additional fees which may be required, or credit any overpayment, to Deposit Account No. 50-5658 as follows:

i. ☐ any required fee.

ii. ☒ any required fee except for excess claims fees required under 37 CFR 1.492(d) and (e) and multiple dependent claim fee required under 37 CFR 1.492(f).

d. ☒ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038. The PTO-2038 should only be mailed or faxed to the USPTO. However, when paying the basic national fee, the PTO-2038 may NOT be faxed to the USPTO.

ADVISORY: If filing by EFS-Web, do **NOT** attach the PTO-2038 form as a PDF along with your EFS-Web submission. Please be advised that this is **not** recommended and by doing so your **credit card information may be displayed via PAIR**. To protect your information, it is recommended to pay fees online by using the electronic payment method.

NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013, and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE 1: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

NOTE 2: A U.S. national stage application may not claim priority to the international application of which it is the national phase. The filing date of a U.S. national stage application is the international filing date. See 35 U.S.C. 363.

Correspondence Address

☒ The address associated with Customer Number: 137057 OR ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country				Telephone	
Email					

Signature	/Charles Ho/	Date	December 22, 2016
Name (Print/Type)	Charles Ho	Registration No. (Attorney/Agent)	51,807

[Page 3 of 3]

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		
	First Named Inventor	Guangrong Lin	
	Art Unit	N/A	
	Examiner Name	Not Yet Assigned	
	Attorney Docket Number	SCH-1630-USPT	

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
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If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
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Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ² i	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	201430916	CN	Y	2010-03-31	LIU, Zheqi		
	2	203314099	CN	U	2013-12-04	LIU, Qiuming		
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		
	First Named Inventor	Guangrong Lin	
	Art Unit	N/A	
	Examiner Name	Not Yet Assigned	
	Attorney Docket Number	SCH-1630-USPT	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	International Search Report of PCT Patent Application No. PCT/CN2014/093009 issued on March 24, 2015	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		
	First Named Inventor	Guangrong Lin	
	Art Unit	N/A	
	Examiner Name	Not Yet Assigned	
	Attorney Docket Number	SCH-1630-USPT	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Charles Ho/	Date (YYYY-MM-DD)	2016-12-22
Name/Print	Charles Ho	Registration Number	51,807

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(12) 按照专利合作条约所公布的国际申请

(19) 世界知识产权组织
国际局



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- (72) 发明人: 及
- (71) 申请人: 林光榕 (LIN, Guangrong) [CN/CN]; 中国广东省深圳市宝安区沙井镇帝堂路沙二蓝天科技园 A1 栋, Guangdong 518000 (CN)。
- (74) 代理人: 深圳市惠邦知识产权代理事务所 (SHENZHEN HUIBANG INTELLECTUAL PROPERTY AGENCY FIRM); 中国广东省深圳市南山区科发路 8 号金融服务技术创新基地 1 栋 5C1, Guangdong 518057 (CN)。

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根据细则 4.17 的声明:

— 发明人资格(细则 4.17(iv))

[见续页]

(54) Title: ELECTRONIC CIGARETTE

(54) 发明名称: 电子烟

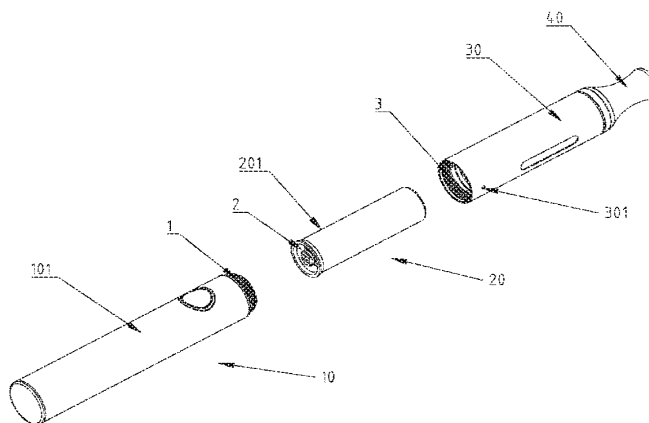


图1 / Fig. 1

(57) Abstract: Disclosed is an electronic cigarette, comprising a battery stick (10), an atomizer component, and a mouthpiece (40) that are interconnected. The electronic cigarette is characterized in that the battery stick (10) comprises a battery, a battery stick housing (101) sleeving the battery, and a first interconnection piece (1) provided at the end of the battery stick housing (101) close to the atomizer component. The atomizer component comprises an atomizer (20) and an atomizer housing (30) of the atomizer (20) sleeved in the inner cavity. The atomizer (20) comprises an atomizer tube body (201) and a second interconnection piece (2) provided at the end of the atomizer tube body (201) close to the battery stick (10). A third interconnection piece (3) is provided at the end of the atomizer housing (30) close to the battery stick (10). The second interconnection piece (2) is connected to the first interconnection piece (1), by being in contact with each other, and the third interconnection piece (3) is detachably connected to the first interconnection piece (1) by means of a screw thread. Such an electronic cigarette has the beneficial effects of reduction in the cost of manufacturing and using the atomizer (20) and convenient removal and replacement of the atomizer (20).

(57) 摘要:

[见续页]

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本国际公布:

— 包括国际检索报告(条约第 21 条(3))。

一种电子烟，包括相互连接的电池杆(10)、雾化器组件、吸嘴(40)，其特征在于：电池杆(10)包括电池、套装了电池的电池杆外套管(101)、电池杆外套管(101)在与雾化器组件相邻的一端设置的第一连接部(1)；雾化器组件包括雾化器(20)、内腔中套装雾化器(20)的雾化器外套管(30)，雾化器(20)包括雾化器管体(201)、雾化器管体(201)在与电池杆(10)相邻的一端设置的第二连接部(2)；雾化器外套管(30)与电池杆(10)相邻的一端设有第三连接部(3)；第二连接部(2)与第一连接部(1)相互抵触连接；第三连接部(3)与第一连接部(1)通过螺纹可拆卸连接。这样的电子烟具有降低雾化器(20)制造和使用成本并可以方便地拆装更换雾化器(20)的有益效果。

电子烟

技术领域

- [1] 本发明涉及一种电子烟。

背景技术

- [2] 现有的电子烟一般包括电池杆、雾化器和吸嘴，雾化器与雾化器外套管设计为一个整体，当雾化器中的烟液用完需要更换雾化器时，需要整体更换，导致雾化器制造和使用成本较高；又雾化器一般通过旋转连接或卡扣连接方式与电池杆连接、连接装置较为复杂，且拆装更换不便，给用户带来不好的使用体验。

对发明的公开

技术问题

- [3] 本发明的目的是提供一种将雾化器与雾化器外套管分开设计同时简化雾化器与电池杆连接方式的电子烟，使得电子烟的雾化器制造和使用成本大大降低并可以方便地拆装更换雾化器，改善用户的使用体验。

问题的解决方案

技术解决方案

- [4] 本发明的技术解决方案是所述电子烟，包括相互连接的电池杆、雾化器组件、吸嘴，其特殊之处在于：所述电池杆包括电池、套装了电池的电池杆外套管、电池杆外套管在与雾化器组件相邻的一端设置的第一连接部；所述雾化器组件包括雾化器、内腔中套装雾化器的雾化器外套管，所述雾化器包括雾化器管体、雾化器管体在与电池杆相邻的一端设置的第二连接部；所述雾化器外套管与电池杆相邻的一端设有第三连接部；所述第二连接部与第一连接部相互抵触连接；所述第三连接部与第一连接部通过螺纹可拆卸连接。
- [5] 本实施例中，所述第一连接部包括一端设有外螺纹且兼作负电极与电池负极电连接的第一连接座、设置于第一连接座中心且与电池正极电连接的第一正电极、设置于第一正电极与第一连接座之间的第一绝缘套；所述第二连接部包括兼作负电极并与雾化器的电热丝电连接的第二连接座、设置于第二连接座中心且

与雾化器的电热丝电连接的第二正电极、设置于第二正电极与第二连接座之间的第二绝缘套，所述第二正电极轴向设有与雾化器的雾化腔连通的中心通孔且端面径向设有与中心通孔连通的横槽；所述第三连接部设有与第一连接座外螺纹相配合的内螺纹；组装时，所述第一正电极与第二正电极抵触实现电连接，第一连接座与第二连接座实现电连接。

- [6] 本实施例中，所述第一连接座为阶梯形管状结构，外部中间直径最大处形成一个圆形的突肩，所述突肩一端为直径缩小的第一圆柱壁，所述第一圆柱壁套接于电池杆外套管一端内壁，所述突肩的外径等于电池杆外套管的外径，所述突肩另一端为直径缩小的第二圆柱壁，所述第二圆柱壁上设有所述外螺纹，所述第二圆柱壁端部设有底壁，所述底壁上开设供第一绝缘套和第一正电极穿套的中心通孔。
- [7] 本实施例中，所述第二连接座为一端向外设有凸台的圆管体，所述圆管体外壁套接于雾化器管体一端的内壁，所述第二连接座的内部底端设有底壁，所述底壁中心凸设有管状体，所述管状体设有供第二绝缘套和第二正电极穿套的中心通孔。
- [8] 本实施例中，所述圆管体外壁上设有便于安装密封令的环形凹槽。
- [9] 本实施例中，所述凸台的外径大于所述雾化器管体的外径，所述第三连接部的内螺纹底部设有至少一个通气口与雾化器外套管上开设的进气口相通，所述第三连接部内螺纹底端还设有向内凸起的凸环，所述雾化器套装于所述雾化器外套管内时，所述凸台即止位于所述凸环。
- [10] 本实施例中，所述第一连接座为阶梯形管状结构，外部直径最大处形成一个圆形突肩，所述突肩一端为直径缩小的第一圆柱壁，所述第一圆柱壁套接于电池杆外套管一端内壁，所述突肩的外径等于电池杆外套管的外径，所述突肩另一端为直径两次缩小的第二圆柱壁和第三圆柱壁，所述第二圆柱壁上设有所述外螺纹，所述第三圆柱壁外径小于所述第二连接座的圆管体内径，所述第三圆柱壁上设有至少一个通气孔，所述第三圆柱壁内部底端设有底壁，所述底壁上开设供第一绝缘套和第一正电极穿套的中心通孔。
- [11] 本实施例中，所述第三圆柱壁内壁上设有供充电器接头连接的内螺纹。

发明的有益效果

有益效果

- [12] 将电子烟的雾化器与雾化器外套管分开设计，使得雾化器制造和使用成本降低，同时简化雾化器与电池杆的连接方式为抵触连接方式，打开雾化器外套管后可以直接取出雾化器，从而可以方便地拆装更换雾化器，改善用户的使用体验。

对附图的简要说明

附图说明

- [13] 图1是本发明电子烟的结构示意图。
- [14] 图2是本发明电子烟连接部结构示意图。
- [15] 图3是本发明电子烟连接部剖视图。
- [16] 图4是本发明电子烟第一连接座结构示意图。
- [17] 图5是本发明电子烟第二连接座结构示意图。
- [18] 图6是本发明电子烟第三连接部结构示意图。
- [19] 图7是本发明电子烟另一实施例的结构示意图。
- [20] 图8是本发明电子烟另一实施例连接部结构示意图。
- [21] 图9是本发明电子烟另一实施例第一连接座的结构示意图。
- [22] 主要组件符号说明：
- [23] 电池杆10、电池杆外套管101、雾化器20、雾化器管体201、雾化器外套管30、进气口301、吸嘴40、第一连接部1、第一连接座11、突肩111、第一圆柱壁112、第二圆柱壁113、外螺纹114、底壁115、中心通孔116、第三圆柱壁117、通气孔118、内螺纹119、第一正电极12、第一绝缘套13、第二连接部2、第二连接座21、凸台211、圆管体外壁212、底壁213、管状体214、中心通孔215、环形凹槽216、第二正电极22、第二绝缘套23、第三连接部3、内螺纹31、通气口32。

实施该发明的最佳实施例

本发明的最佳实施方式

- [24] 本发明下面将结合附图作进一步详述：

- [25] 图1至图6示出了本发明一实施例的电子烟结构。
- [26] 请参阅图1所示，该电子烟，包括相互连接的电池杆10、雾化器组件（图中未示）、吸嘴40；所述电池杆10包括电池（图中未示）、套装了电池的电池杆外套管101、电池杆外套管101在与雾化器组件相邻的一端设置的第一连接部1；所述雾化器组件包括雾化器20、内腔中套装雾化器20的雾化器外套管30，所述雾化器20包括雾化器管体201、雾化器管体201在与电池杆10相邻的一端设置的第二连接部2；所述雾化器外套管30与电池杆10相邻的一端设有第三连接部3；所述第二连接部2与第一连接部1相互抵触连接；所述第三连接部3与第一连接部1通过螺纹可拆卸连接。
- [27] 请参阅图2、图3、图4、图5、图6所示，所述第一连接部1包括一端设有外螺纹114且兼作负电极与电池负极电连接的第一连接座11、设置于第一连接座11中心且与电池正极电连接的第一正电极12、设置于第一正电极与第一连接座之间的第一绝缘套13；所述第二连接部2包括兼作负电极并与雾化器的电热丝电连接的第二连接座21、设置于第二连接座21中心且与雾化器20的电热丝电连接的第二正电极22、设置于第二正电极22与第二连接座21之间的第二绝缘套23，所述第二正电极22轴向设有与雾化器20的雾化腔连通的中心通孔221且端面径向设有与中心通孔连通的横槽222；所述第三连接部3设有与第一连接座外螺纹114相配合的内螺纹31；组装时，所述第一正电极12与第二正电极22抵触实现电连接，第一连接座11与第二连接座21实现电连接。
- [28] 可以理解地，第一连接座11、第二连接座12可以兼作为正电极，而第一正电极12、第二正电极22可以作为负电极。可以理解地，第一连接座11与第二连接座21实现电连接的方式可以是两者直接抵触连接，也可以在两者不直接接触时通过分别与金属材料制成的第三连接部3连接实现电连接。
- [29] 请参阅图2、图4所示，所述第一连接座11为阶梯形管状结构，外部中间直径最大处形成一个圆形的突肩111，所述突肩111一端为直径缩小的第一圆柱壁112，所述第一圆柱壁112套接于电池杆外套管101一端内壁，所述突肩111的外径等于电池杆外套管101的外径，所述突肩111另一端为直径缩小的第二圆柱壁113，所述第二圆柱壁113上设有所述外螺纹114，所述第二圆柱壁端部设有底壁115，所

述底壁115上开设供第一绝缘套13和第一正电极12穿套的中心通孔。

[30] 请参阅图2、图5所示，所述第二连接座21为一端向外设有凸台211的圆管体212，所述圆管体212的外壁套接于雾化器管体201一端的内壁，所述第二连接座21的内部底端设有底壁213，所述底壁213中心凸设有管状体214，所述管状体214设有供第二绝缘套23和第二正电极22穿套的中心通孔215。

[31] 优选地，所述圆管体212外壁上设有环形凹槽216，在此凹槽上加设安装密封令，以便所述圆管体212的外壁套接于雾化器管体201一端的内壁后，加强密封效果，防止烟液渗出。

[32] 请参阅图2、图5、图6所示，所述凸台211的外径大于所述雾化器管体201的外径，所述第三连接部3的内螺纹31底部设有至少一个通气口32与雾化器外套管上开设的进气口301相通，所述第三连接部内螺纹31底端还设有向内径向凸起的凸环33，所述雾化器20套装于所述雾化器外套管30内时，所述凸台211即止位于所述凸环33。

发明实施例

本发明的实施方式

[33] 图7至图9示出了本发明另一实施例的电子烟结构。

[34] 该实施例与前述实施例的区别在于第一连接座增加了第三圆柱壁。请参阅图7、图8、图9所示，所述第一连接座11的突肩111另一端为直径两次缩小的第二圆柱壁113和第三圆柱壁117，所述第二圆柱壁113上设有所述外螺纹114，所述第三圆柱壁117外径小于所述第二连接座21的圆管体212内径，所述第三圆柱壁117上设有至少一个通气孔118，所述第三圆柱壁117内部底端设有底壁115，所述底壁115上开设供第一绝缘套13和第一正电极12穿套的中心通孔116。

[35] 本实施例中，所述第三圆柱壁117内壁上设有供充电器接头连接的内螺纹119，以方便带有通用接头的充电器对该电子烟进行充电连接。

[36] 以上所述是本发明的优选实施方式，应当指出，对于本技术领域的普通技术人员来说，在不脱离本发明原理的前提下，还可以做出若干改进和润饰，这些改进和润饰也视为本发明的保护范围。

工业实用性

[37]

序列表自由内容

[38]

权利要求书

- [权利要求 1] 一种电子烟，包括相互连接的电池杆、雾化器组件、吸嘴，其特征在于：所述电池杆包括电池、套装了电池的电池杆外套管、电池杆外套管在与雾化器组件相邻的一端设置的第一连接部；所述雾化器组件包括雾化器、内腔中套装雾化器的雾化器外套管，所述雾化器包括雾化器管体、雾化器管体在与电池杆相邻的一端设置的第二连接部；所述雾化器外套管与电池杆相邻的一端设有第三连接部；所述第二连接部与第一连接部相互抵触连接；所述第三连接部与第一连接部通过螺纹可拆卸连接。
- [权利要求 2] 根据权利要求1所述的电子烟，其特征在于：所述第一连接部包括一端设有外螺纹且兼作负电极与电池负极电连接的第一连接座、设置于第一连接座中心且与电池正极电连接的第一正电极、设置于第一正电极与第一连接座之间的第一绝缘套；所述第二连接部包括兼作负电极并与雾化器的电热丝电连接的第二连接座、设置于第二连接座中心且与雾化器的电热丝电连接的第二正电极、设置于第二正电极与第二连接座之间的第二绝缘套，所述第二正电极轴向设有与雾化器的雾化腔连通的中心通孔且端面径向设有与中心通孔连通的横槽；所述第三连接部设有与第一连接座外螺纹相配合的内螺纹；组装时，所述第一正电极与第二正电极抵触实现电连接，第一连接座与第二连接座实现电连接。
- [权利要求 3] 根据权利要求2所述的电子烟，其特征在于：所述第一连接座为阶梯形管状结构，外部中间直径最大处形成一个圆形的突肩，所述突肩一端为直径缩小的第一圆柱壁，所述第一圆柱壁套接于电池杆外套管一端内壁，所述突肩的外径等于电池杆外套管的外径，所述突肩另一端为直径缩小的第二圆柱壁，所述第二圆柱壁上设有所述外螺纹，所述第二圆柱壁端部设有底壁，所述底壁上开设供第一绝缘套和第一正电极穿套的中心通孔。
- [权利要求 4] 根据权利要求2所述的电子烟，其特征在于：所述第二连接座为一

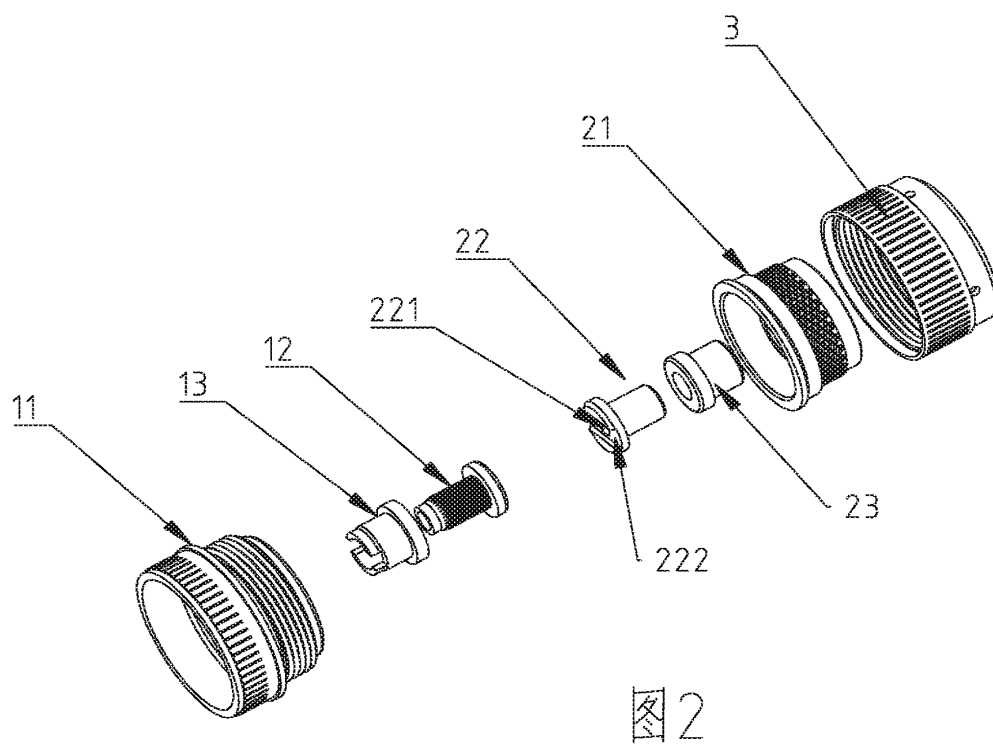
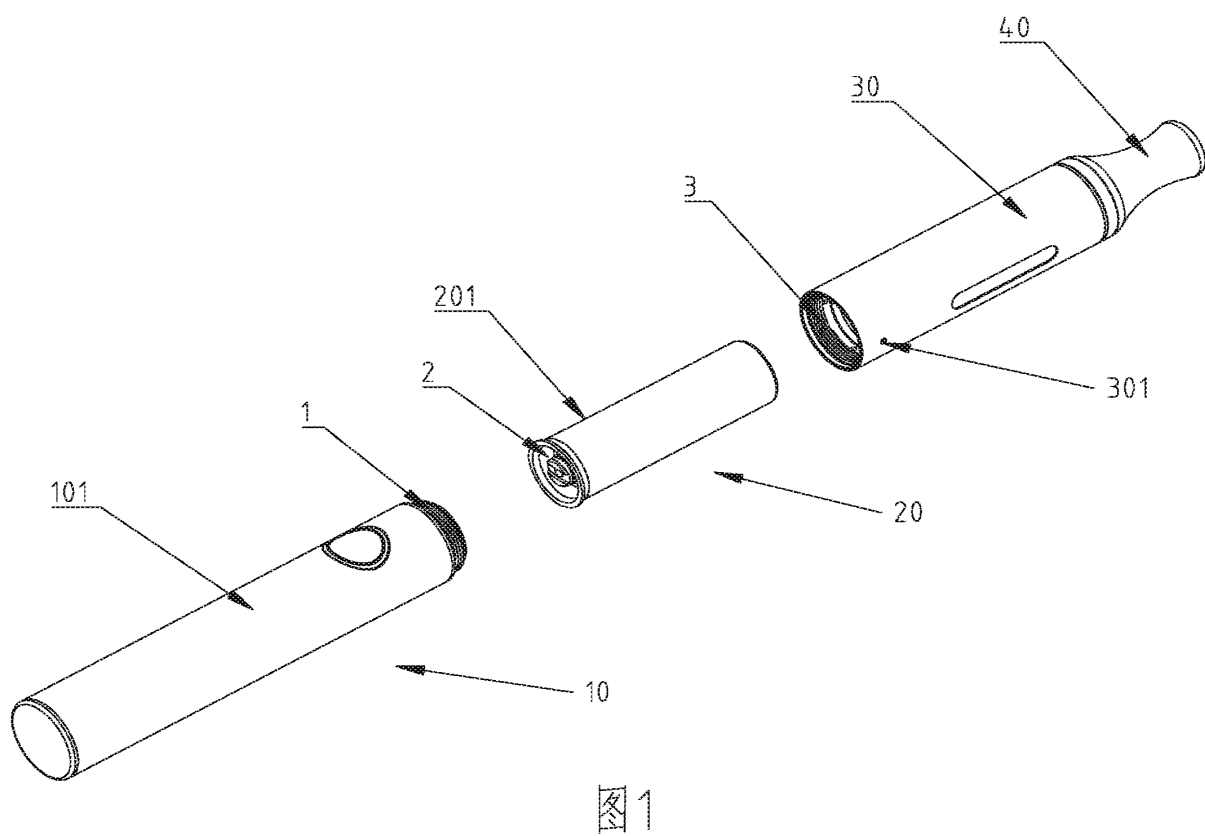
端向外设有凸台的圆管体，所述圆管体外壁套接于雾化器管体一端的内壁，所述第二连接座的内部底端设有底壁，所述底壁中心凸设有管状体，所述管状体设有供第二绝缘套和第二正电极穿套的中心通孔。

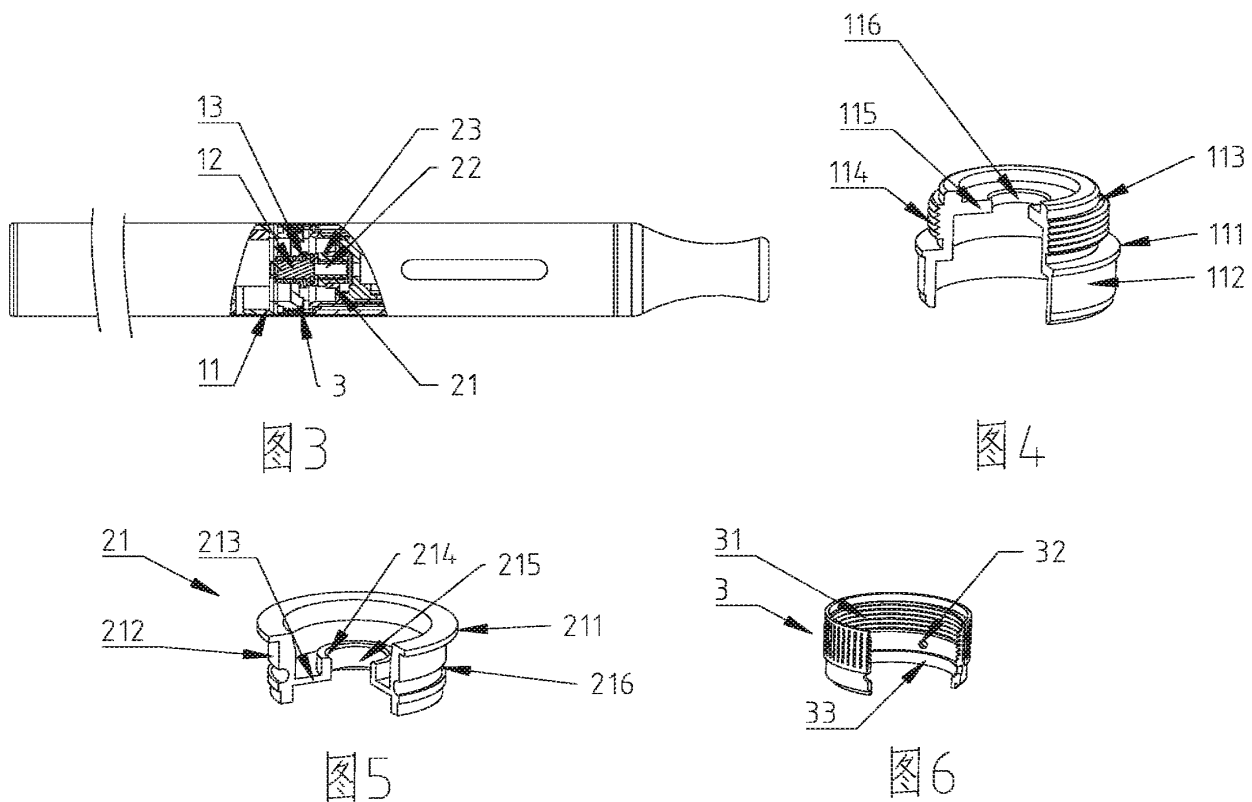
[权利要求 5] 根据权利要求4所述的电子烟，其特征在于：所述圆管体外壁上设有便于安装密封令的环形凹槽。

[权利要求 6] 根据权利要求4所述的电子烟，其特征在于：所述凸台的外径大于所述雾化器管体的外径，所述第三连接部的内螺纹底部设有至少一个通气口与雾化器外套管上开设的进气口相通，所述第三连接部内螺纹底端还设有向内凸起的凸环，所述雾化器套装于所述雾化器外套管内时，所述凸台即止位于所述凸环。

[权利要求 7] 根据权利要求4-6任一项所述的电子烟，其特征在于：所述第一连接座为阶梯形管状结构，外部直径最大处形成一个圆形突肩，所述突肩一端为直径缩小的第一圆柱壁，所述第一圆柱壁套接于电池杆外套管一端内壁，所述突肩的外径等于电池杆外套管的外径，所述突肩另一端为直径两次缩小的第二圆柱壁和第三圆柱壁，所述第二圆柱壁上设有所述外螺纹，所述第三圆柱壁外径小于所述第二连接座的圆管体内径，所述第三圆柱壁上设有至少一个通气孔，所述第三圆柱壁内部底端设有底壁，所述底壁上开设供第一绝缘套和第一正电极穿套的中心通孔。

[权利要求 8] 根据权利要求7所述的电子烟，其特征在于：所述第三圆柱壁内壁上设有供充电器接头连接的内螺纹。





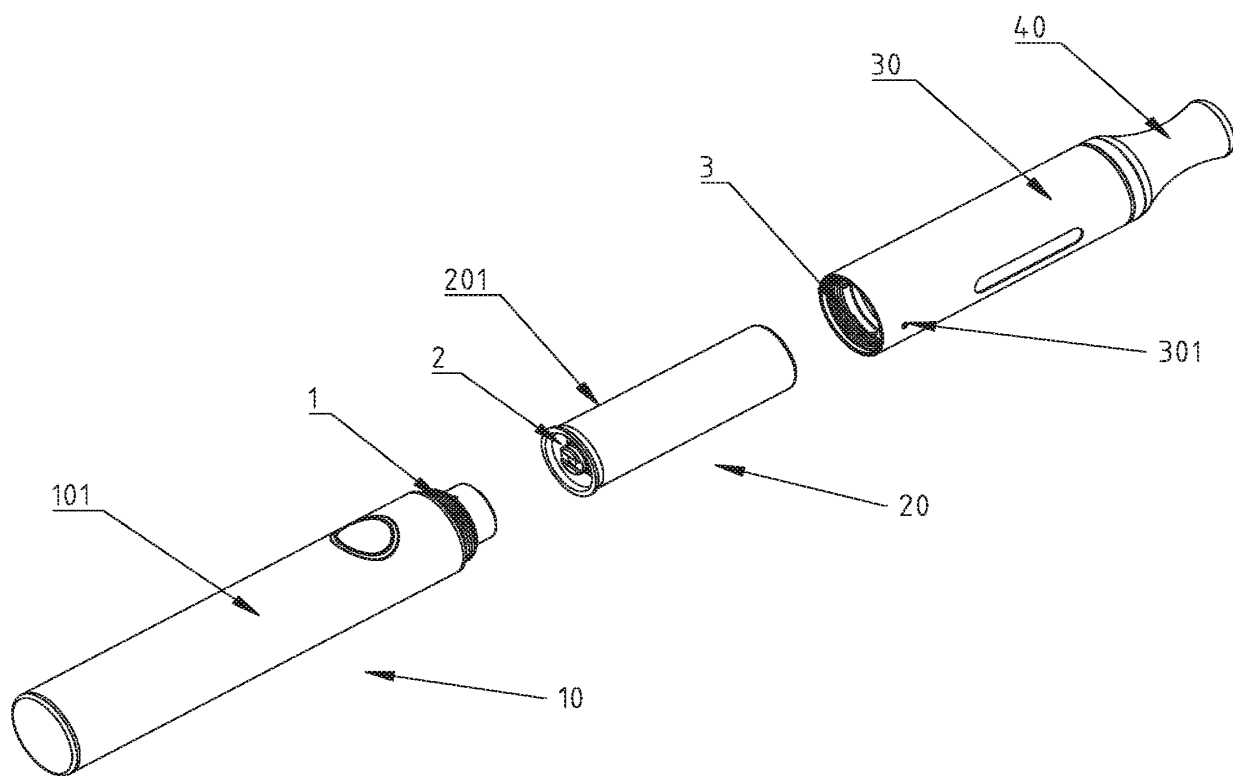


图 7

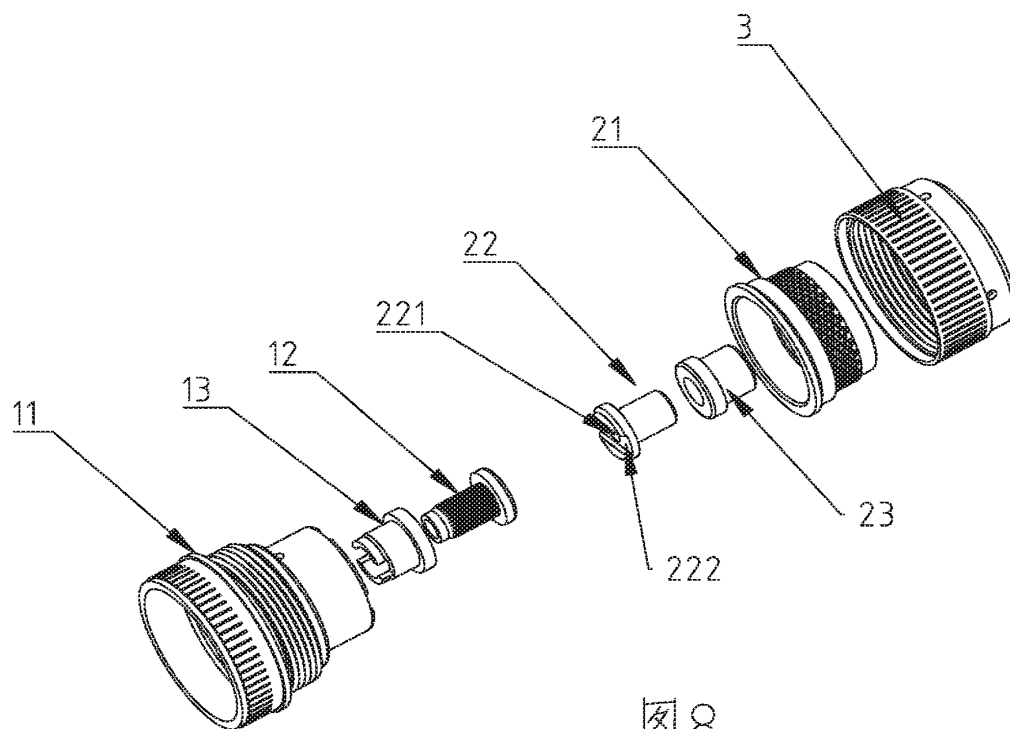


图 8

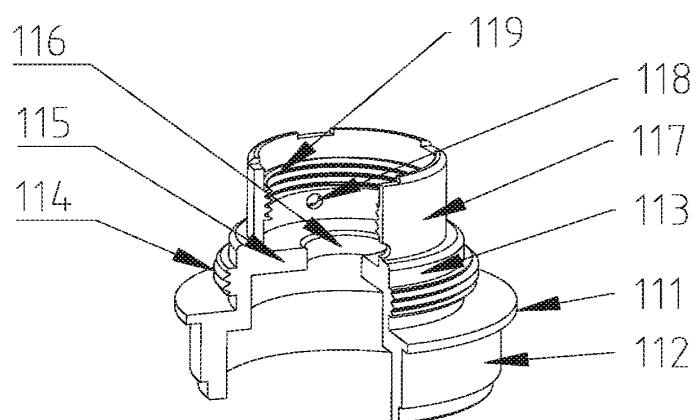


图 9

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2014/093009

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)

A24, A61

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)

JPABS, CNKI, TWABS, CNTXT, USTXT, WOTXT, EPTXT, VEN, CNABS: cigarette, electronic, smoke, simulation, liquid, atomization tube, atomization core

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 203952447 U (LIN, Guangrong), 26 November 2014 (26.11.2014), claims 1-8	1-8
X	CN 201430916 Y (LIU, Zheqi), 31 March 2010 (31.03.2010), description, pages 1-7, claims 1-10, and figures 1-5	1-8
X	CN 203314099 U (LIU, Qiuming), 04 December 2013 (04.12.2013), description, pages 1-5, claims 1-10, and figures 1-9	1-8
A	WO 2013159245 A1 (RUYAN INVESTMENT HOLDINGS LTD. et al.), 31 October 2013 (31.10.2013), the whole document	1-8
A	US 2012006346 A1 (INAGAKI, M.), 12 January 2012 (12.01.2012), the whole document	1-8

☐ 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 14 January 2015 (14.01.2015)	Date of mailing of the international search report 24 March 2015 (24.03.2015)
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, Bin Telephone No.: (86-10) 62085693

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2014/093009

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 203952447 U	26 November 2014	None	
CN 201430916 Y	31 March 2010	None	
CN 203314099 U	04 December 2013	US 2014299140 A1	09 October 2014
WO 2013159245 A1	31 October 2013	CA 2870469 A1	31 October 2013
US 2012006346 A1	12 January 2012	WO 2010110226 A1	30 September 2010
		EP 2412396 A1	01 February 2012
		US 8459271 B2	11 June 2013
		JP 2014000420 A	09 January 2014
		TW 201039762 A	16 November 2010

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

国际检索报告

国际申请号

PCT/CN2014/093009

A. 主题的分类 A24F 47/00 (2006.01) i 按照国际专利分类 (IPC) 或者同时按照国家分类和 IPC 两种分类		
B. 检索领域 检索的最低限度文献 (标明分类系统和分类号) A24, A61 包含在检索领域中的除最低限度文献以外的检索文献 在国际检索时查阅的电子数据库 (数据库的名称, 和使用的检索词 (如使用)) JPABS, CNKI, TWABS, CNTXT, USTXT, WOTXT, EPTXT, VEN, CNABS: cigarette, electronic, smoke, simulation, 液, 雾化管, 雾化芯, 烟, 仿真, 模拟		
C. 相关文件		
类 型*	引用文件, 必要时, 指明相关段落	相关的权利要求
PX	CN 203952447 U (林光榕) 2014年 11月 26日 (2014 - 11 - 26) 权利要求1-8	1-8
X	CN 201430916 Y (柳哲琦) 2010年 3月 31日 (2010 - 03 - 31) 说明书1-7, 利要求1-10, 图1-5	1-8
X	CN 203314099 U (刘秋明) 2013年 12月 4日 (2013 - 12 - 04) 说明书1-5, 利要求1-10, 图1-9	1-8
A	WO 2013159245 A1 (RUYAN INVESTMENT HOLDINGS LTD 等) 2013年 10月 31日 (2013 - 10 - 31) 全文	1-8
A	US 2012006346 A1 (INAGAKI MICHIMIRO) 2012年 1月 12日 (2012 - 01 - 12) 全文	1-8
☐ 其余文件在C栏的续页中列出。 ☒ 见同族专利附件。		
* 引用文件的具体类型: “A” 认为不特别相关的表示了现有技术一般状态的文件 “E” 在国际申请日的当天或之后公布的在先申请或专利 “L” 可能对优先权要求构成怀疑的文件, 或为确定另一篇引用文件的公布日而引用的或者因其他特殊理由而引用的文件 (如具体说明的) “O” 涉及口头公开、使用、展览或其他方式公开的文件 “P” 公布日先于国际申请日但迟于所要求的优先权日的文件 “T” 在申请日或优先权日之后公布, 与申请不相抵触, 但为了理解发明之理论或原理的在后文件 “X” 特别相关的文件, 单独考虑该文件, 认定要求保护的发明不是新颖的或不具有创造性 “Y” 特别相关的文件, 当该文件与另一篇或者多篇该类文件结合并且这种结合对于本领域技术人员为显而易见时, 要求保护的发明不具有创造性 “&” 同族专利的文件		
国际检索实际完成的日期 2015年 1月 14日		国际检索报告邮寄日期 2015年 3月 24日
ISA/CN的名称和邮寄地址 中华人民共和国国家知识产权局 (ISA/CN) 北京市海淀区蓟门桥西土城路6号 100088 中国 传真号 (86-10) 62019451		授权官员 李彬 电话号码 (86-10) 62085693

表 PCT/ISA/210 (第2页) (2009年7月)

国际检索报告
关于同族专利的信息

国际申请号

PCT/CN2014/093009

检索报告引用的专利文件			公布日 (年/月/日)	同族专利			公布日 (年/月/日)
CN	203952447	U	2014年 11月 26日	无			
CN	201430916	Y	2010年 3月 31日	无			
CN	203314099	U	2013年 12月 4日	US	2014299140	A1	2014年 10月 9日
WO	2013159245	A1	2013年 10月 31日	CA	2870469	A1	2013年 10月 31日
US	2012006346	A1	2012年 1月 12日	WO	2010110226	A1	2010年 9月 30日
				EP	2412396	A1	2012年 2月 1日
				US	8459271	B2	2013年 6月 11日
				JP	2014000420	A	2014年 1月 9日
				TW	201039762	A	2010年 11月 16日

表 PCT/ISA/210 (同族专利附件) (2009年7月)



Espacenet

Bibliographic data: CN201430916 (Y) — 2010-03-31

Simulated electric cigarette

Inventor(s): ZHEQI LIU ± (LIU ZHEQI)
Applicant(s): ZHEQI LIU ± (LIU ZHEQI)
Classification: - **international:** **A24F47/00**
 - **cooperative:**
Application number: CN20092130902U 20090423
Priority number(s): CN20092130902U 20090423
Also published as: JP3160708 (U)

Abstract of CN201430916 (Y)

The utility model provides a simulated electric cigarette, which comprises a cigarette holder, a liquid loader, an atomizer and a cigarette stem. The atomizer consists of an atomizer sleeve, a high-temperature resistant insulation body, an atomizing head, a porous permeating piece, an electric heating wire and an absorption body, wherein the atomizer sleeve is provided with a hollow cavity body and placed inside a casing body of the cigarette holder; the high-temperature resistant insulation body is arranged inside the atomizer sleeve and provided with an atomizing cavity inside; the atomizing head connected onto the outer circumference of the high-temperature resistant insulation body is connected with the liquid loader and can guide liquid; the electric heating wire contained inside the atomizing cavity is electrically connected onto a battery inside a cigarette stem pipe and connected to a control circuit; the absorption body is contained inside the atomizing cavity, wound on the electric heating wire and is connected with the porous permeating piece; the atomizer sleeve, the high-temperature resistant insulation body, the atomizing head and the cigarette stem pipe are all equipped with ventilation holes for forming a gas passage with a vent hole. Accordingly, atomized liquid using efficiency is improved, the atomized liquid is prevented from leaking, and working control and charging mode of a rechargeable battery are simplified.

[19] 中华人民共和国国家知识产权局

[51] Int. Cl.
A24F 47/00 (2006.01)



[12] 实用新型专利说明书

专利号 ZL 200920130902.1

[45] 授权公告日 2010 年 3 月 31 日

[11] 授权公告号 CN 201430916Y

[22] 申请日 2009.4.23

[21] 申请号 200920130902.1

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[72] 发明人 柳哲琦

权利要求书 2 页 说明书 7 页 附图 3 页

[54] 实用新型名称

仿真电子烟

[57] 摘要

本实用新型提供了一种仿真电子烟，其包括：烟嘴、液体承载器、雾化器以及烟杆，雾化器包括：雾化器套管，具有中空腔体且设置于烟嘴的壳体中；耐高温绝缘体，设置于雾化器套管内且内设置有雾化腔；雾化头，连接于所述耐高温绝缘体的外周面上，与液体承载器相连接并导流液体；多孔渗透件，设置于雾化头以及所述耐高温绝缘体的外周面上；电热丝，容置于雾化腔内，电连接于烟杆管内的电池及控制电路；以及吸附体，容置于所述雾化腔内，缠绕于电热丝上且与多孔渗透件连接；雾化器套管、耐高温绝缘体、雾化头及烟杆管均设置有与出烟孔形成气体通路的通气开孔。由此，提高了雾化液使用效率并防止泄露、简化工作控制及充电电池的充电方式。



1. 一种仿真电子烟，其包括：
烟嘴，包括壳体并设有出烟孔；
液体承载器，设置于所述烟嘴内并承载有液体，且所述液体承载器与所述出烟孔气体连通；
雾化器，可拆装地连接于所述液体承载器；以及
烟杆，包括可拆卸地连接于所述雾化器上的烟杆管以及设置在所述烟杆管内的电池及控制电路；
其特征在于，所述雾化器包括：
雾化器套管，具有中空腔体且设置于所述烟嘴的壳体中；
耐高温绝缘体，设置于所述雾化器套管内且内设置有雾化腔；
雾化头，连接于所述耐高温绝缘体的外周面上，并与所述液体承载器相连接并导流所述液体；
多孔渗透件，设置于所述雾化头以及所述耐高温绝缘体的外周面上；
电热丝，容置于所述雾化腔内，且电连接于所述电池和所述控制电路；
以及
吸附体，容置于所述雾化腔内，缠绕于所述电热丝上且与所述多孔渗透件连接；
其中，所述雾化器套管、所述耐高温绝缘体、所述雾化头以及所述烟杆管均设置有与所述出烟孔形成气体通路的通气开孔。
2. 如权利要求 1 所述的仿真电子烟，其特征在于，所述烟杆设置有与外界空气连通并与所述雾化器套管的通气开孔连通的开孔，所述控制电路包括有可选择地与所述电池电连通的气压电子开关。
3. 如权利要求 1 所述的仿真电子烟，其特征在于，所述的雾化头形成有可刺穿所述液体承载器以使所述多孔渗透件与所述液体形成液体连通的突出部。
4. 如权利要求 1 所述的仿真电子烟，其特征在于，所述仿真电子烟还包括有设置于所述烟杆端部的可拆装的透光灯帽，所述烟杆内设置有与所述控制电路以及所述电池电连接的灯。

5. 如权利要求 2 所述的仿真电子烟, 其特征在于, 所述电池为充电电池。

6. 如权利要求 5 所述的仿真电子烟, 其特征在于, 所述烟杆还包括与所述控制电路以及所述充电电池的正负极分别电连接的正极顶杆以及负极顶杆, 所述正极顶杆以及负极顶杆在所述仿真电子烟工作时电连接于所述加热丝的正负极而在所述仿真电子烟充电时与外部电源的正负极电连接。

7. 如权利要求 5 所述的仿真电子烟, 其特征在于, 所述仿真电子烟还包括设置于所述烟杆端部的可拆装的透光灯帽, 所述烟杆内设置有与所述控制电路以及所述电池电连接的充电指示灯。

8. 如权利要求 6 所述的仿真电子烟, 其特征在于, 所述雾化器还包括与所述电热丝以及所述电池和控制电路形成电连接的且固定于所述雾化器套管内的正极弹簧和负极弹簧。

9. 如权利要求 1 所述的仿真电子烟, 其特征在于, 所述多孔渗透件为镍网, 所述吸附体为玻纤绳。

10. 如权利要求 1 所述的仿真电子烟, 其特征在于, 所述烟杆还包括有与所述电池电连接的且在吸烟时与所述电热丝电连接的插头或 USB 插口。

仿真电子烟

技术领域

本实用新型涉及一种电子烟，特别涉及一种提高雾化液的使用效率并有效地防止泄露的仿真电子烟。

背景技术

吸烟有害健康是一种公知常识，吸烟每年造成数百万人的死亡，并引发多种疾病，戒烟是一种全球化的趋势，各国政府都在积极倡导戒烟，但让吸烟者戒烟是一种非常困难的事情，且烟民的数量在全球呈增长的趋势，首次吸烟烟民的年龄越来越小。另外，随着烟民数量的增加，全球每年需要的烟叶量也在增长，需要使用大量的耕地来种植烟叶，满足烟厂生产卷烟的需求，虽然烟草行业能够为政府带来巨额的税收，但对全民健康会造成巨大的隐患，特别是对于非烟民来说，二手烟造成的危害更大。

香烟中含有烟碱和焦油，烟碱就是我们俗称的尼古丁，吸烟时烟碱随着香烟的燃烧产生焦油进入肺部而被吸收，作用于人的中枢神经系统，使吸烟者产生兴奋。烟碱在小剂量时对人体无害，其在血液里的半衰期很短，一般情况下都能够很快被降解，香烟中主要的有害物质是焦油，焦油的组成非常复杂，经过研究得知，焦油是导致吸烟者产生各种疾病的罪魁祸首，也是导致吸烟者肺癌发病率高的主要原因。

为了避免吸烟造成的危害，世界各国的研究人员都在努力寻找香烟的替代品，首先制造出了低烟碱含量和低焦油含量的卷烟，但低烟碱含量和低焦油含量的卷烟对于吸烟者来说，口感淡没有味道，烟民不喜欢；其次，研究人员研发了很多卷烟的替代品，如戒烟贴、烟碱口香糖、烟碱饮料等，这些产品虽然不包含焦油，又具有烟的口感，但这些产品改变了吸烟者的习惯，也解决不了烟瘾上来时烟民过瘾的问题，因此，不能够被称为真正的香烟替代品；第三，研究人员推出了电子烟产品，依靠其设计的电路，瞬间将放置于烟嘴中的液体雾化，产生烟雾，而烟嘴中液体的配方可以按照需求和口感

的要求进行配制，能够解决烟民的需求。目前电子烟产品存在的主要问题是：1、产品结构复杂，如 CN201197839Y 和 CN201079011Y 的结构；2、采用电池充电或电网的 220v 交流电来进行充电，电池的更换会给使用者带来不便，交流电属于强电，对于电子烟的限压、稳压要求高，并可能造成短路，使电子烟产品不能使用；3、液体的雾化采用的是喷射雾化和超声波雾化，这种雾化方式对烟嘴中液体的流出不易控制，会产生漏液的问题，例如 CN201197839Y 和 CN201079011Y 就可能存在着这个问题；4、在现有的电子烟产品中，采用的是气动膜指南针式点火开关，该开关结构复杂，采用金属片进行接触，使用一段时间后会造造成接触效果不好，影响使用。

发明内容

鉴于现有技术存在的上述缺陷，本实用新型的目的在于提高雾化液的使用效率并有效地防止泄露。

本实用新型的另一个目的在于，电子烟的使用更简捷，易于控制，效果更佳。

本实用新型还有的目的在于，改变电子烟的充电模式，以可使用弱电进行充电，从而提高安全可靠性能。

为了实现本实用新型的上述目的，本实用新型提供了一种仿真电子烟，其包括：烟嘴，包括壳体并设有出烟孔；液体承载器，设置于所述烟嘴内并承载有液体，且所述液体承载器与所述出烟孔气体连通；雾化器，可拆装地连接于所述液体承载器；以及烟杆，包括可拆卸地连接于所述雾化器上的烟杆管以及设置在所述烟杆管内的电池及控制电路。其中，所述雾化器包括：雾化器套管，具有中空腔体且设置于所述烟嘴的壳体中；耐高温绝缘体，设置于所述雾化器套管内且内设置有雾化腔；雾化头，连接于所述耐高温绝缘体的外周面上，并与所述液体承载器相连接并导流所述液体；多孔渗透件，设置于所述雾化头以及所述耐高温绝缘体的外周面上；电热丝，容置于所述雾化腔内，且电连接于所述电池和所述控制电路；以及吸附体，容置于所述雾化腔内，缠绕于所述电热丝上且与所述多孔渗透件连接。其中，所述雾化器套管、所述耐高温绝缘体、所述雾化头以及所述烟杆管均设置有与所述出烟孔形成气体通路的通气开孔。

针对实用新型的上述目的，优选地，所述烟杆设置有与外界空气连通并与所述雾化器套管的通气开孔连通的开孔，所述控制电路包括有可选择地与所述充电电池电连通的气压电子开关。

针对实用新型的上述目的，所述电池优选为充电电池。优选地，所述烟杆还包括与所述控制电路以及所述充电电池的正负极分别电连接的正极顶杆以及负极顶杆，所述正极顶杆以及负极顶杆在所述仿真电子烟工作时电连接于所述加热丝的正负极而在所述仿真电子烟充电时与外部电源的正负极电连接。

在本实用新型的仿真电子烟中，优选地，所述的雾化头形成有可刺穿所述液体承载器以使所述多孔渗透件与所述液体形成液体连通的突出部。

在本实用新型的仿真电子烟中，优选地，所述仿真电子烟还包括有设置于所述烟杆端部的可拆装的透光灯帽，所述烟杆内设置有与所述控制电路以及所述电池电连接的灯。

在本实用新型的仿真电子烟中，优选地，所述仿真电子烟还包括设置于所述烟杆端部的可拆装的透光灯帽，所述烟杆内设置有与所述控制电路以及所述电池电连接的充电指示灯。

在本实用新型的仿真电子烟中，优选地，所述雾化器还包括与所述电热丝以及所述电池和控制电路形成电连接的且固定于所述雾化器套管内的正极弹簧和负极弹簧。

在本实用新型的仿真电子烟中，优选地，所述多孔渗透件为镍网，所述吸附体为玻纤绳。

在本实用新型的仿真电子烟中，优选地，所述烟杆还包括有与所述电池电连接的且在吸烟时与所述电热丝电连接的插头或 USB 插口。

基于本实用新型的仿真电子烟，提高了雾化液的使用效率并有效地防止泄露；电子烟的使用更简捷，易于控制，效果更佳；改变电子烟的充电模式，以可使用弱电进行充电，从而提高安全可靠。

此外，使用本实用新型的产品具有逼真的仿真效果，该烟既对吸烟者无害，又具有吸烟时吞云吐雾的效果，由于液体是按照需要配制的，对人体和环境无害，该烟无需点燃，安全性很高，能够为消费者所接受。另外，该产品的推广使用，会减少社会对烟叶的需求，能够保护耕地。

附图说明

图 1 为依据本实用新型的仿真电子烟的整体结构图；

图 2 为依据本实用新型的仿真电子烟的烟嘴和液体承载器的结构示意图；

图 3 是依据本实用新型一实施方式的雾化器的构件的分解图；

图 4 是依据本实用新型一实施方式的烟杆的构件的分解图；

图 5 是依据本实用新型的仿真电子烟的灯帽的结构示意图。

具体实施方式

下面参照附图来详细说明依据本实用新型的仿真电子烟。

参照图 1 至图 5，依据本实用新型的仿真电子烟包括：烟嘴 10，包括壳体 101 并设有出烟孔 102；液体承载器 20，设置于烟嘴 10 的壳体 101 内并承载有液体（图未示出），且液体承载器 20 与出烟孔 102 气体连通；雾化器 30，可拆装地连接于液体承载器 20；以及烟杆 40，包括可拆卸地连接于所述雾化器 30 上的烟杆管 470 以及设置在所述烟杆管 470 内的电池 450 及控制电路 460。

其中，烟雾化器 30 包括：雾化器套管 310，具有中空腔体且设置于烟嘴 10 的壳体 101 中；耐高温绝缘体 320，设置于雾化器套管 310 内且内设置有雾化腔；雾化头 330，连接于耐高温绝缘体 320 的外周面上，并与液体承载器 20 相连接，以导流液体；多孔渗透件（图未示出），设置于雾化头 330 以及耐高温绝缘体 320 的外周面上；电热丝（图未示出），容置于所述雾化腔内，且电连接于所述电池和所述控制电路；以及吸附体（图未示出），容置于所述雾化腔内，缠绕于所述电热丝上且与所述多孔渗透件连接。其中，雾化器套管 310、耐高温绝缘体 320、雾化头 330、以及所述烟杆管 470 均设置有与出烟孔 102 形成气体通路的通气开孔或开口（例如附图标记 3101、3301、3201 所示）。

在上述实施方式中，则当雾化头 330 与液体承载器 20 相连接时，则液体承载器 20 内的液体将被引导并保留在所述多孔渗透件上，而由于在所述雾化腔内设置有缠绕于所述电热丝上且与所述多孔渗透件 330 连接的吸附体，所述液体将通过渗流作用被吸附到所述吸附体上，以在电热丝加热时将

所述液体雾化,从而形成烟雾。这样就可以避免直接对保留在所述多孔渗透件上的液体进行时导致的雾化量过大、液体承载器 20 中的液体使用时间短的缺陷。此外,由于吸附体和所述多孔渗透件之间的连接,通过它们二者之间的渗透所用,可以防止所述多孔渗透件上保留的液体通过雾化器套管 310 和烟嘴 10 的壳体 101 之间的间隙泄露出,从而进一步提高了液体承载器 20 的使用效率。

在上述实施方式中,所述耐高温绝缘体 320 可以为陶瓷绝缘材料,以承受所述加热丝工作时所产生的高温。

在上述实施方式中,所述多孔渗透件可以为镍网,所述吸附体可以为玻纤绳。

在上述实施方式中,液体承载器所含的液体可包含各种符合要求的成分,以满足不同口感和各种治疗的需求,例如加入各种治疗口腔疾病和提神醒脑作用的中医成分。

在上述实施方式中,雾化头 330 形成有突出部 3302,其可刺穿液体承载器 20 以使所述多孔渗透件与所述液体形成液体连通,如图 3 所示。此时液体承载器 20 可在相应部位设置有可被突出部 3302 穿破、以使液体流出的铝箔(图未示出)。

在上述实施方式中,在雾化器套管 310、耐高温绝缘体 320 以及雾化头 330 设置的与出烟孔 102 形成气体通路的通气开孔或开口,由于其与外界空气连通,使得抽吸本实用新型的仿真电子烟时更容易,从而与抽吸普通香烟时的抽吸阻力大体相当。

针对本实用新型的仿真电子烟,为了使电子烟的使用更简捷,易于控制,效果更佳,控制电路 460 还可设置有气压电子开关,其通过感测烟杆管内的气流变化来导通电池 450、控制电路 460 以及加热丝之间的电连通。此时烟杆 40 设置有与外界空气连通并与所述套管的通气开孔连通的开孔(图未示出)。在吸仿真电子烟时,通过这些开孔实现了将外部空气导入并引导至出烟孔 102,同时致动气压电子开关以启动雾化操作,所述空气与雾化产生的气体一起被从出烟孔 102 吸出。

为了更进一步地逼近抽吸普通香烟时的视觉,所述仿真电子烟还可包括有设置于烟杆 40 端部的可拆装的透光灯帽 50,烟杆 40 内设置有与控制电路

460 以及电池 450 电连接的灯（未示出）。所述灯发出红光，以模拟普通香烟点燃的烟头部分。

此外，为了实现将外部空气引入到烟杆管 470 中，灯帽 50 的周边缘可设置有通气孔 501。

在依据本实用新型的仿真电子烟中，电池 450 可以为充电电池。优选地，为了能无需将充电电池拆下而直接进行充电，烟杆 40 还包括与控制电路 460 以及充电电池的正负极分别电连接的正极顶杆 410 以及负极顶杆 420，正极顶杆 410 以及负极顶杆 420 在所述仿真电子烟工作时电连接于所述加热丝的正负极、而在所述仿真电子烟充电时与外部电源（图未示出）的正负极电连接。正极顶杆 410 以及负极顶杆 420 之间的绝缘可以采用各种方式，在一个实施方式中，如图 4 所示的形式，具体而言，正极顶杆 410 置于绝缘套管 430 的腔体内，而绝缘套管 430 置于负极顶杆 420 的腔体内，或者采用相反的顺序进行套装。此外，为了降低吸烟时的阻力，可使得安装在最里面的相应顶杆设置有通孔（例如附图标记 4401 所示），以与雾化头 330 的开口及出烟孔 102 气体连通。此时，控制电路中设置有相应的与吸烟操作匹配的工作电路以及与给充电电池进行充电相匹配的充电控制电路。

此外，可替代地，可以在电池上设置有一个与其相连接的插头或 USB 插口（图未示出），所述插头或 USB 插口可以与外部电源或电热丝实现电连接。

此外，为了显示充电状态，还可在烟杆 40 的烟杆管 470 的端部设置可拆装的透光灯帽 50，所述烟杆内 40 内设置与控制电路 460 以及电池 450 电连接的充电指示灯。此时，吸烟时的模拟点燃烟头的灯和充电时的充电指示灯可以为同一灯，或者为具有不同颜色的灯。当吸烟时的模拟点燃烟头的灯和充电时的充电指示灯为同一灯时，需要对控制电路进行改变，以实现吸烟和充电时不同电路之间的切换，这个属于本领域的公知常识，在此不再赘述。

在依据本实用新型的仿真电子烟中，为了克服公知电子烟在电热丝电连接时由于采用硅胶所带来的老化问题，雾化器 30 还可包括与所述电热丝以及所述电池和控制电路形成电连接的且固定于雾化器套管 310 内的正极弹簧 340 和负极弹簧 350，如图 3 所示。在此所述电连接可以通过正极弹簧 340 和负极弹簧 350 锡焊、钎焊、缠结等方式来实现。

此外，在依据本实用新型的仿真电子烟中，雾化器 30 与烟杆 40 之间的结合方式可以为插接、螺接等。在一优选实施方式中，如图 3 和图 4 所示，可采用螺接方式，通过设置在雾化器套管 310 内的螺套 360 以及设置在烟杆管 470 中并置于烟杆管 470 一端的螺杆 440 来实现雾化器 30 与烟杆 40 之间的结合。当然，也可以反过来，螺套可以设置在烟杆中而螺杆设置在雾化器套管中。

此外，当采用螺杆和螺套连接时，可在螺杆或螺套的边缘设置与外界空气连通的开口，以与雾化头 330 的开口及出烟孔 102 气体连通；或者如图 4 中所示，在螺杆 440 的本体凸缘上设置与外界空气连通的开口 4401，以与安装在烟杆管 470 中的各相应部件设置的开口或孔形成气体连通。同时，安装在烟杆管 470 中的螺杆或螺套还可以与外部的充电器的相应部件连接，以实现普通插头式的电连接或 USB 式的电连接，从而在不同电压进行不同模式的充电。

此外，为了增加雾化头的稳定性，还可设置有固定座 370，如图 3 所示。此时前述设置在耐高温绝缘件 320 的雾化头 310 卡在固定座 370 的两个凸部 3701 上。同时固定座 370 中间设置有上下贯通孔 3702，以与雾化头 310 的开孔 3301 气体连通。

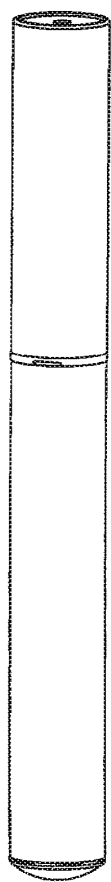


图 1

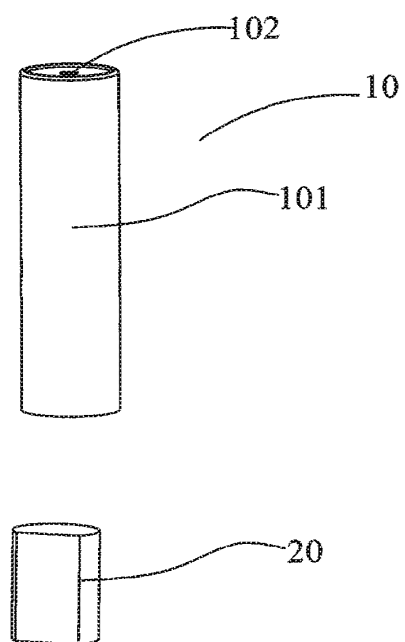


图 2

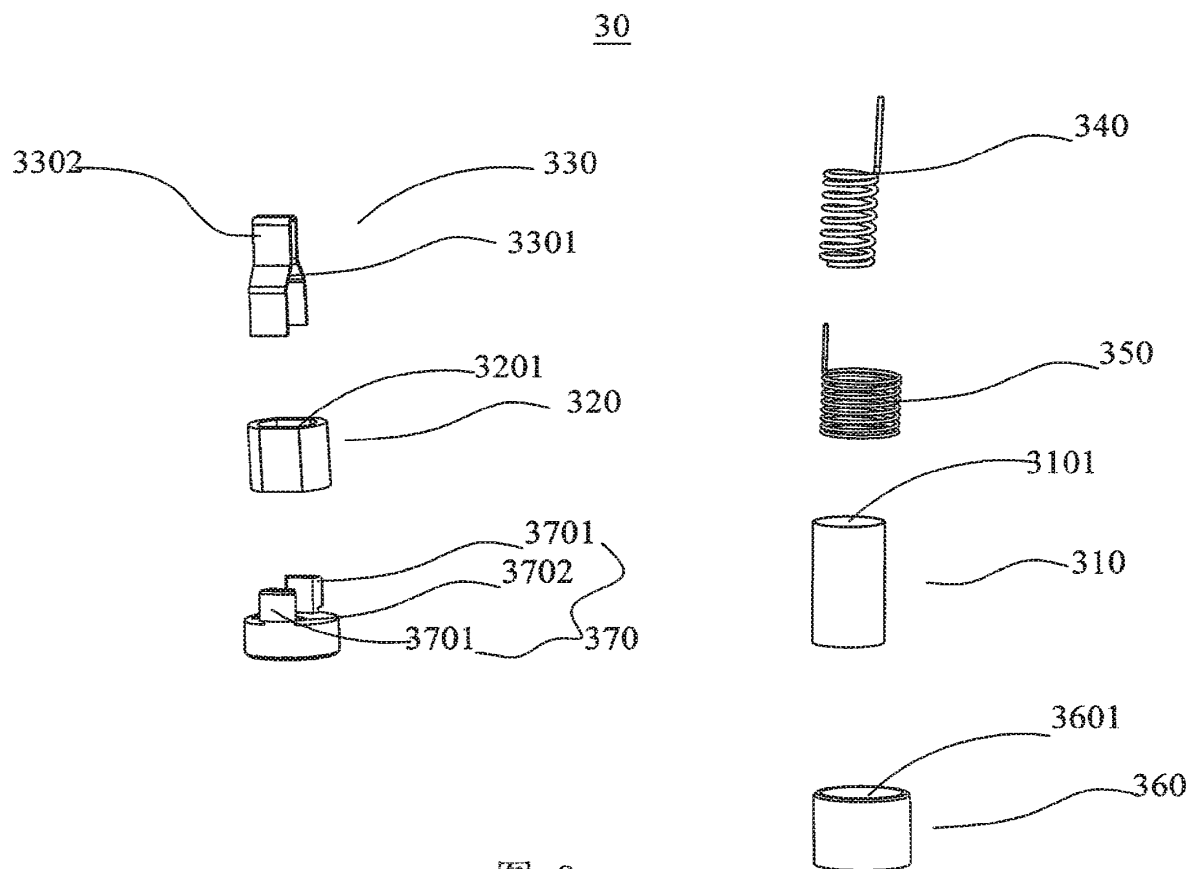


图 3



图 5

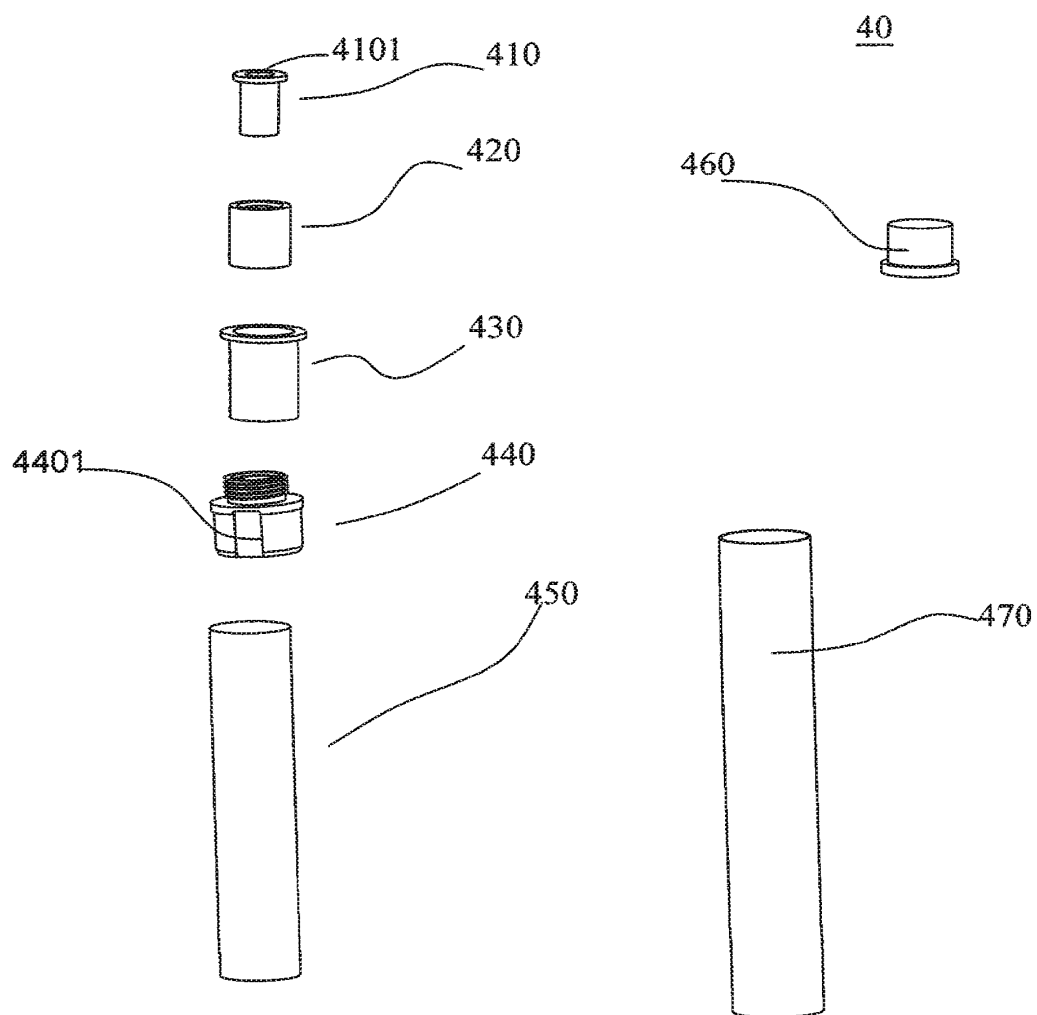


图 4



Espacenet

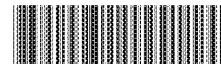
Bibliographic data: CN203314099 (U) — 2013-12-04

Electronic cigarette

Inventor(s): LIU QIUMING ± (LIU QIUMING)
Applicant(s): LIU QIUMING ± (LIU QIUMING)
Classification: - international: A24F47/00
- cooperative: A24F47/008; A61M15/06
Application number: CN20132165796U 20130403
Priority number(s): CN20132165796U 20130403
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Abstract of CN203314099 (U)

The utility model relates to an electronic cigarette, which includes an atomizer (1) and a battery rod (2), wherein one end of the atomizer (1) is fixedly connected with a tip assembly (3); a battery cavity is arranged inside the atomizer (1); the battery rod (2) is fixedly inserted in the battery cavity (4); an atomizing core assembly (7) is further arranged inside the atomizer (1) and is detachably placed between the battery rod (2) and the tip assembly (3). The electronic cigarette provided by the utility model is portable, enables an atomizing core to be replaced, and is convenient to use.



(12) 实用新型专利

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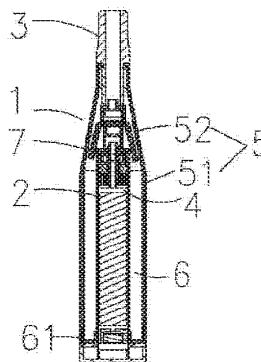
权利要求书2页 说明书5页 附图5页

(54) 实用新型名称

一种电子烟

(57) 摘要

本实用新型涉及一种电子烟,具有雾化器(1)以及电池杆(2),所述雾化器(1)一端固定连接吸嘴组件(3),所述雾化器(1)内设有电池腔,所述电池杆(2)固插于所述电池腔(4)内;所述雾化器(1)内还设有雾化芯组件(7),所述雾化芯组件(7)可拆卸的置于所述电池杆(2)以及所述吸嘴组件(3)之间。采用本实用新型电子烟,携带方便,且可更换雾化芯,使用方便。



1. 一种电子烟,具有雾化器(1)以及电池杆(2),所述雾化器(1)一端固定连接有吸嘴组件(3),其特征在于,所述雾化器(1)内设有电池腔(4),所述电池杆(2)固插于所述电池腔(4)内;所述雾化器(1)内还设有雾化芯组件(7),所述雾化芯组件(7)可拆卸的置于所述电池杆(2)以及所述吸嘴组件(3)之间。

2. 根据权利要求1所述的电子烟,其特征在于,所述雾化器(1)具有套筒(5),所述套筒(5)具有第一套筒(51)以及沿远离所述第一套筒(51)相反方向轴向延伸的第二套筒(52);所述吸嘴组件(3)设于所述第二套筒(52)的远离所述第一套筒(51)的一端;

所述电池腔(4)的外壁与所述套筒(5)的内壁共同围成用于储油的储油腔(6),所述储油腔(6)下端设有储油腔盖(61)。

3. 根据权利要求2所述的电子烟,其特征在于,所述第一套筒(51)与所述第二套筒(52)一体成型;所述储油腔盖(61)与所述第一套筒(51)可拆卸连接;

所述储油腔盖(61)与所述第一套筒(51)通过螺纹旋合或者过盈配合的方式进行连接。

4. 根据权利要求2所述的电子烟,其特征在于,所述第一套筒(51)与所述第二套筒(52)可拆卸连接;所述储油腔盖(61)与所述第一套筒(51)一体成型;

所述第一套筒(51)与所述第二套筒(52)通过螺纹旋合或者过盈配合的方式进行连接。

5. 根据权利要求2所述的电子烟,其特征在于,所述第一套筒(51)与所述第二套筒(52)之间、所述储油腔盖(61)与所述第一套筒(51)之间均为可拆卸连接;

所述第一套筒(51)与所述第二套筒(52)之间、所述储油腔盖(61)与所述第一套筒(51)之间通过螺纹旋合或者过盈配合的方式进行连接。

6. 根据权利要求2所述的电子烟,其特征在于,所述吸嘴组件(3)与所述雾化芯组件(7)之间还设有密封套(77),所述密封套(77)套置于所述雾化芯组件(7)的外侧;且所述密封套(77)的上部紧贴于所述吸嘴组件(3)的下部。

7. 根据权利要求6所述的电子烟,其特征在于,所述雾化芯组件(7)下端设有第一连接件(74),所述第一连接件(74)下部插置有上电极(81),所述第一连接件(74)的下部可拆卸连接于所述电池腔(4)的上部。

8. 根据权利要求7所述的电子烟,其特征在于,所述电池杆(2)上端固定有磁铁(21),通过所述磁铁(21)与所述电池腔(4)的吸合实现所述电池杆与所述雾化器(1)的连接;所述磁铁(21)中贯穿有下电极(82),所述上电极(81)与所述下电极(82)相抵接。

9. 根据权利要求8所述的电子烟,所述电池杆(2)上端插设有下电极,所述上电极(81)与所述下电极(82)相抵接;所述电池杆(2)底端固定连接有电池盖(24);所述电池盖(24)朝向所述吸嘴组件(3)的一侧凸出有第一连接部(25),所述储油腔盖(61)远离所述第一套筒(51)的一侧延伸出第二连接部(62),所述第一连接部(25)以及所述第二连接部(62)螺纹旋合,以实现所述电池杆(2)与所述雾化器(1)的连接。

10. 根据权利要求1-9任一项所述的电子烟,其特征在于,所述电池杆(2)中部固设有电池(22),下部设有集成咪头(23),所述电池(22)、所述集成咪头(23)均与所述电池杆(2)内壁之间设有间隙,所述电池盖(24)上设有至少一第二通孔;

所述吸嘴组件(3)、密封套(77)、雾化芯组件(7)、上电极(81)以及下电极(82)均呈中

空结构且相互连通并与所述间隙以及所述第二通孔共同形成用于通气的气道。

一种电子烟

技术领域

[0001] 本实用新型涉及电加热产品领域,尤其涉及一种电子烟。

背景技术

[0002] 电子烟包括雾化器和电子杆,现有技术中的雾化器以及电池杆均是串行连接的,雾化器与电池杆串行连接烟体太长,不方便携带。且置于雾化器内部的雾化芯组件是不能更换的,多次使用雾化器长时间用容易损坏,容易脏,口味会变。

实用新型内容

[0003] 本实用新型要解决的技术问题在于为解决现有技术中的烟体太长,不方便携带,雾化芯不可更换的缺陷,提供一种将电池杆置于雾化器内部的且可更换雾化芯组件的电子烟。

[0004] 本实用新型解决其技术问题所采用的技术方案是:提供一种电子烟,具有雾化器以及电池杆,所述雾化器一端固定连接有吸嘴组件,所述雾化器内设有电池腔,所述电池杆固插于所述电池腔内;所述雾化器内还设有雾化芯组件,所述雾化芯组件可拆卸的置于所述电池杆以及所述吸嘴组件之间。

[0005] 所述雾化器具有套筒,所述套筒具有第一套筒以及沿远所述离第一套筒相反方向轴向延伸的锥台状第二套筒;所述吸嘴组件设于所述第二套筒的远离所述第一套筒的一端。

[0006] 所述电池腔的外壁与所述套筒的内壁共同围成用于储油的储油腔,所述储油腔下端设有储油腔盖。

[0007] 所述第一套筒与所述第二套筒一体成型;所述储油腔盖与所述第一套筒可拆卸连接;所述储油腔盖与所述第一套筒通过螺纹旋合的方式进行连接。

[0008] 所述第一套筒与所述第二套筒可拆卸连接;所述储油腔盖与所述第一套筒一体成型;所述第一套筒与所述第二套筒通过螺纹旋合的方式进行连接。

[0009] 所述第一套筒与所述第二套筒之间、所述储油腔盖与所述第一套筒之间均为可拆卸连接;所述第一套筒与所述第二套筒之间、所述储油腔盖与所述第一套筒之间通过螺纹旋合的方式进行连接。

[0010] 所述雾化芯组件从上到下依次设有雾化盖、雾化芯、雾化座以及第一连接件,还包括雾化管,所述雾化盖的下部,所述雾化座的全部,以及第一连接件的上部均固插于所述雾化管的内部;所述第一连接件下部插置有上电极;

[0011] 所述雾化管两侧相对贯穿有一对第一通孔,所述雾化芯支撑于所述雾化座的上方,且两端穿过所述第一通孔伸入到所述储油腔内部。

[0012] 所述雾化芯的外侧套置有用于雾化烟油的电热丝。

[0013] 所述吸嘴组件与所述雾化芯组件之间还设有密封套,所述密封套套置于所述雾化芯组件的外侧;且所述密封套的上部紧贴于所述吸嘴组件的下部。

- [0014] 所述第一连接件的下部可拆卸连接于所述电池腔的上部。
- [0015] 所述电池杆中部固设有电池,下部设有集成咪头,底端固定连接有电池盖;
- [0016] 所述电池、所述集成咪头均与所述电池杆内壁之间设有间隙,所述电池盖上设有至少一个第二通孔。
- [0017] 所述电池杆上端固定有磁铁,通过所述磁铁与所述电池腔的吸合实现所述电池杆与所述雾化器的连接;所述磁铁中贯穿有下电极,所述上电极与所述下电极相抵接。
- [0018] 所述电池杆上端插设有下电极,所述上电极与所述下电极相抵接;所述电池盖朝向所述吸嘴组件的一侧凸出有第一连接部,所述储油腔盖远离所述第一套筒的一侧延伸出第二连接部,所述第一连接部以及所述第二连接部螺纹旋合,以实现所述电池杆与所述雾化器的连接。
- [0019] 所述吸嘴组件、密封套、雾化芯组件、上电极以及下电极均呈中空结构且相互连通并与所述间隙以及所述第二通孔共同形成用于通气的气道。
- [0020] 所述间隙的宽度为 0.1-10 毫米。
- [0021] 所述第二通孔的面积为 2-7 平方毫米。
- [0022] 采用本实用新型的电子烟的有益效果:通过将第一套筒与第二套筒、储油腔盖与套筒其中至少一种连接方式设为可拆卸连接,则可以达到使雾化芯组件从套筒中取出,从而可方便进行雾化芯的更换。且通过将电池杆插置雾化器内部,使得电子烟的总长度减小,携带方便。

附图说明

- [0023] 下面将结合附图及实施例对本实用新型作进一步说明,附图中:
- [0024] 图 1 是本实用新型的电子烟的第一实施例的内部结构示意图;
- [0025] 图 2 是本实用新型的电子烟的第二实施例的内部结构示意图;
- [0026] 图 3 是本实用新型的电子烟的雾化芯组件的结构示意图;
- [0027] 图 4 是本实用新型的电子烟的第一实施例的电池杆的内部结构示意图;
- [0028] 图 5 是本实用新型的电子烟的第二实施例的电池杆的内部结构示意图;
- [0029] 图 6 是与图 5 所示的电池杆配合连接的套筒的结构示意图;
- [0030] 图 7 是本实用新型的电子烟的吸嘴组件的结构示意图;
- [0031] 图 8 是本实用新型的电子烟的一个实施例的电池腔的结构示意图;
- [0032] 图 9 是与图 8 所示的电池腔配合连接的套筒的结构示意图。

具体实施方式

- [0033] 为了使本实用新型的目的、技术方案及优点更加清楚明白,以下结合附图及实施例,对本实用新型进行进一步详细说明。应当理解,此处所描述的具体实施例仅仅用以解释本实用新型,并不用于限定本实用新型。
- [0034] 如图 1、图 2 所示,本实用新型涉及一种电子烟,具有雾化器 1 以及电池杆 2,雾化器 1 一端固定连接吸嘴组件 3,雾化器 1 内设有电池腔 4,电池杆 2 固插于电池腔 4 内;雾化器 1 内部还设有雾化芯组件 7,雾化芯组件 7 可拆卸的置于电池杆 2 与吸嘴组件 3 之间。
- [0035] 雾化器 1 具有套筒 5,套筒 5 具有第一套筒 51 以及沿远离第一套筒 51 相反方向轴

向延伸的第二套筒 52, 吸嘴组件 3 设于第二套筒 52 的远离第一套筒 51 的一端。

[0036] 具体的, 第一套筒 51 既可以呈圆柱状也可以呈圆锥状, 第二套筒 52 可以呈沿第一套筒 51 相反方向轴向延伸的, 直径逐渐减小的锥台状, 也可以呈沿第一套筒 51 相反方向轴向延伸的圆柱状。电池腔 4 的外壁与套筒 5 的内壁共同围成用于储油的储油腔 6, 储油腔 6 下端固定连接储油腔盖 61。

[0037] 实现雾化芯组件 7 可拆卸地设置于所述雾化器 1 中, 可以通过以下方式来实现, 一: 将第一套筒 51 以及第二套筒 52 一体成型设置, 使储油腔盖 61 与第一套筒 51 可拆卸连接。二: 使第一套筒 51 与第二套筒 52 可拆卸连接; 将储油腔盖 61 与第一套筒 51 一体成型。三: 将第一套筒 51 与第二套筒 52、储油腔盖 61 与第一套筒 51 之间均设为可拆卸连接。

[0038] 通过将第一套筒 51 与第二套筒 52、储油腔盖 61 与第一套筒 51 其中至少一种连接方式设为可拆卸连接, 则可以实现将雾化芯组件 7 从套筒中取出; 当从雾化器 1 上部取出时则使第一套筒 51 与第二套筒 52 可拆卸连接, 通过将第一套筒 51 取下, 从而从上部取出雾化芯组件 7。当从雾化器 1 下部取出雾化芯组件 7 时, 则使储油腔盖 61 与第一套筒 51 可拆卸连接, 通过将储油腔盖 61 从第一套筒 51 取下再取出电池腔 4, 进而同时取出雾化芯组件 7。

[0039] 当第一套筒 51 与第二套筒 52 可拆卸连接时, 如图 2 所示是, 通过螺纹连接或者是过盈配合等方式实现的, 当为螺纹连接时, 为防止烟油从套筒 5 渗出, 则需要在连接处设置密封垫。当在第一套筒 51 上设置外螺纹时, 则在第二套筒 52 上设置内螺纹, 通过内外螺纹旋合的方式进行连接。此时在设有内螺纹的连接处的端部设置密封垫, 用于防止烟油从套筒 5 渗出。同样, 可以在第一套筒 51 上设置内螺纹, 在第二套筒 52 上设置外螺纹来实现螺纹连接。

[0040] 与第一套筒 51 以及第二套筒 52 可拆卸连接的方式一样, 储油盖与套筒 5 为可拆卸连接时, 图 8 所示的储油腔盖 61 与图 9 所示的第一套筒 51 相连接, 可以是通过螺纹连接或者是过盈配合等方式实现的, 当为螺纹连接时, 为防止烟油从连接处渗出, 则需要在连接处设置密封垫。同样密封垫是设于内螺纹所在的连接处的端部, 可以是在储油盖上设置外螺纹第一套筒 51 上设置内螺纹, 也可以是在储油盖上设置内螺纹在第一套筒 51 上设置外螺纹。

[0041] 如图 3 所示, 雾化芯组件 7 从上到下依次设有雾化盖 71、雾化芯 72、雾化座 73 以及第一连接件 74, 还包括雾化管 75, 雾化盖 71 的下部, 雾化座 73 的全部, 以及第一连接件 74 的上部均固插于雾化管 75 的内部; 第一连接件 74 下部插置有上电极 81; 雾化管 75 两侧相对贯穿有一对第一通孔 78, 雾化芯 72 支撑于雾化座 73 的上方, 且两端穿过第一通孔 78 伸入到储油腔 6 内部。雾化芯 72 的外侧套置有用于雾化烟油的电热丝 76。

[0042] 如图 1 以及图 4 所示, 吸嘴组件 3 与雾化芯组件 7 之间还设有密封套 77, 密封套 77 套置于雾化芯组件 7 的外侧; 且密封套 77 的上部紧贴于吸嘴组件 3 的下部。

[0043] 具体的, 密封套 77 套置于雾化管 75 外侧, 密封套 77 延伸至第一通孔 78, 且可遮住第一通孔 78 的一部分, 通过使密封套 77 遮住第一通孔 78 的一部分并挤压雾化芯 72 使得第一通孔 78 所留的面积大小刚好能使雾化芯 72 通过, 而不存在可以使烟油流入的缝隙。可以理解的是遮住第一通孔 78 的面积的大小与雾化芯 72 的横截面积有关, 留有刚好使雾

化芯 72 通过的面积即可。

[0044] 具体的,支撑座支撑雾化芯 72 的方式是通过在支撑座上径向设置一对与第一通孔 78 对应的缺口,雾化芯 72 放置于缺口上。

[0045] 如图 1、图 2、图 3 所示,第一连接件 74 的下部与电池腔 4 的上部可拆卸地进行连接,具体的是通过螺纹旋合的方式进行连接。可以理解的是第一连接件 74 也可以使用过盈配合或者是卡接的方式与电池腔 4 相连接。当为螺纹连接时,需要在连接处设置用于防止烟油由连接处流入到电池腔 4 内的密封垫。可以是在第一连接件 74 的下部设置外螺纹在电池腔 4 的上部设置内螺纹,也可以是在第一连接件 74 的下部设置内螺纹,在电池腔 4 的上部设置外螺纹(本实用新型的上部、下部或者上端、下端均定义为从吸嘴组件 3 至储油腔盖 61 的方向看从上至下来定义方位)。

[0046] 如上所述该第一连接件 74 下部中插置有上电极 81。具体的,上电极 81 与第一连接件 74 之间设有第二绝缘套 208。该第二绝缘套 208 不仅起到绝缘的作用,还具有弹性,在安装时,通过使第二绝缘套 208 处于挤压状态从而实现上电极 81 与第一连接件 74 的固定。

[0047] 如图 1、图 2、图 7 所示,本实用新型中,吸嘴组件 3 以及第二套筒 52 采用螺纹旋合的方式进行连接,吸嘴组件 3 具有根部,在根部上套置具有外螺纹的螺纹圈 31,在第二套筒 52 上设置内螺纹,通过螺纹旋合的方式进行连接。可以理解的是,为了防止烟油漏出,需要在吸嘴组件 3 以及第二套筒 52 的连接处设置密封垫。

[0048] 通过使吸嘴组件 3 可拆卸地与第二套筒 52 连接,使得在烟油不足时可以将吸嘴组件 3 取下,并由第二套筒 52 的开口处注油,使用方便。可以理解的是,第一套筒 51 以及第二套筒 52 为透明件,通过为透明件的第一套筒 51 以及第二套筒 52 则可以方便观察油量。

[0049] 如图 4、图 5 所示,电池杆 2 中部固设有电池,下部固设有咪头,底部固定连接有电池盖 24;电池 22、集成咪头 23 均与电池杆 2 内壁之间设有间隙,电池盖 24 上设有至少一个第二通孔(未在图中示出)。

[0050] 电池杆 2 与雾化器 1 连接的方式可以是磁力连接也可以是螺纹连接。以下为第一实施例—电池杆 2 与雾化器 1 之间为磁力连接的情况:

[0051] 如图 1、图 4 所示,此时,电池杆 2 上端固定有磁铁 21,通过磁铁 21 与电池腔 4 的吸合实现电池杆 2 与雾化器 1 的连接。具体的,是通过磁铁 21 与第一连接件 74 以及电池腔 4 的连接处的吸合实现的。磁铁 21 中部贯穿有下电极 82,上电极 81 与下电极 82 相抵接。

[0052] 具体的,磁铁 21 固定于电池杆 2 上端的方式,是通过在在磁铁 21 顶端设置第一固定套 201,在固定套内部设置一与第一固定套 201 过盈配合的第一绝缘套 202,第一绝缘套 202 中部嵌置有一中空的绝缘套筒,绝缘套筒上部外侧与第一固定套 201 顶端形成一刚好能够容纳磁铁 21 的空间,磁铁 21 由此得到固定。绝缘套筒的下端固定有电极盖 203。此时第一绝缘套 202 不仅起到绝缘作用还具有固定作用;绝缘套筒下部过盈配合有电极盖 203;下电极 82 穿过第一固定套 201、第一绝缘套 202 以及电极盖 203 并固定。

[0053] 如图 3 所示,下电极 82 固定于电池杆 2 中的方式是通过在绝缘套筒上部向内设置第一凸缘 204,在下电极 82 上部设置第二凸缘 205,第二凸缘 205 置于第一凸缘 204 的下方并与第一凸缘 204 相抵接,在第二凸缘 205 与电极盖 203 之间设置弹簧 206,通过使弹簧 206

处于压缩状态来实现下电极 82 在电池杆 2 中的固定。

[0054] 当电池杆 2 与雾化器 1 通过磁力连接时,电池杆 2 的下部则不需要设置其它连接装置与雾化器 1 进行连接,仅仅在底部设置有电池盖 24 使得方便取下并更换电池 22。电池盖 24 与电池杆 2 的连接方式可以是过盈配合也可以是通过其它方式进行连接,例如是螺纹连接以及卡接的形式。

[0055] 以下为第二实施例一电池杆 2 与雾化器 1 之间为螺纹连接,具体是通过储油腔 6 与电池杆 2 之间的螺纹连接来实现的。

[0056] 如图 2、图 5 所示,此时,在电池杆 2 的顶端并未设置磁铁 21,仅仅在电池杆 2 的上端设置第二固定套 207,在第二固定套 207 中插设下电极 82。

[0057] 下电极 82 固定于电池杆 2 顶端的方式,是通过在电池杆 2 顶端通过过盈配合的方式连接第二固定套 207,下电极 82 插置于第二固定套 207 中,第二固定套 207 与下电极 82 之间设有绝缘环,通过将绝缘环套置于下电极 82 的外侧,并使绝缘环处于被压缩状态则可以实现下电极 82 在第二固定套 207 中的固定。

[0058] 在储油腔与电池杆 2 之间设置螺纹连接。图 6 所示的储油腔盖 61 与图 5 所示的电池盖 24 通过螺纹连接的方式进行连接。

[0059] 电池盖 24 朝向吸嘴组件 3 的一侧凸出有第一连接部 25,储油腔盖 61 远离第一套筒 51 的一侧延伸出第二连接部 62,第一连接部 25 以及第二连接部 62 通过螺纹旋合,以实现电池杆 2 与雾化器 1 的连接。

[0060] 具体的,电池杆 2 下端截面呈两对称设置的钩状结构,钩状结构的最外侧内壁上设有内螺纹(即第一连接部 25)。储油盖向下延伸出第二连接部 62,第二连接部 62 上设有外螺纹,通过将第二连接部 62 插置于钩状结构内部,并螺纹旋合实现电池杆 2 与雾化器 1 的连接。

[0061] 以上的磁力连接以及螺纹连接的两个实施例中,吸嘴组件 3、密封套 77、雾化芯组件 7、上电极 81 以及下电极 82 均呈中空的结构且相互连通,并与间隙以及第二通孔共同形成用于通气的气道,为吸烟过程提供气体的通道。可以理解的是,间隙的宽度为 0.1—10 毫米,通孔的面积为 2—6 平方毫米使得气体可以顺利从上述通道中导通。

[0062] 综上,通过将第一套筒 51 与第二套筒 52、储油腔盖 61 与第一套筒 51 其中至少一种连接方式设为可拆卸连接,则可以使达到使雾化芯组件 7 从套筒中取出,从而可方便进行雾化芯 72 的更换。且通过将电池杆 2 插置雾化器 1 内部,使得电子烟的总长度减小,携带方便。

[0063] 虽然本实用新型是通过具体实施例进行说明的,本领域技术人员应当明白,在不脱离本实用新型范围的情况下,还可以对本实用新型进行各种变换及等同替代。另外,针对特定情形或材料,可以对本实用新型做各种修改,而不脱离本实用新型的范围。因此,本实用新型不局限于所公开的具体实施例,而应当包括落入本实用新型权利要求范围内的全部实施方式。

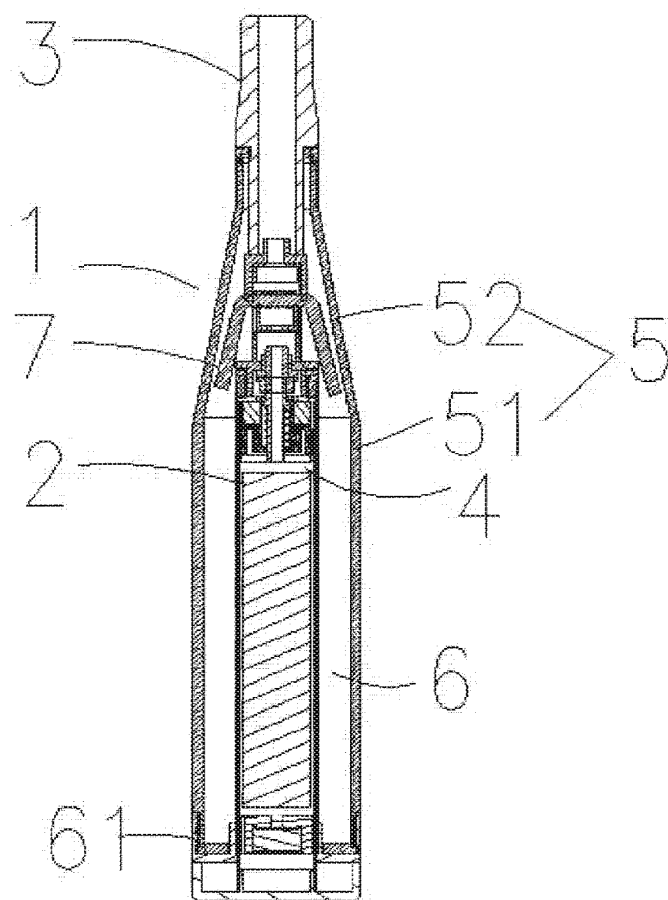


图 1

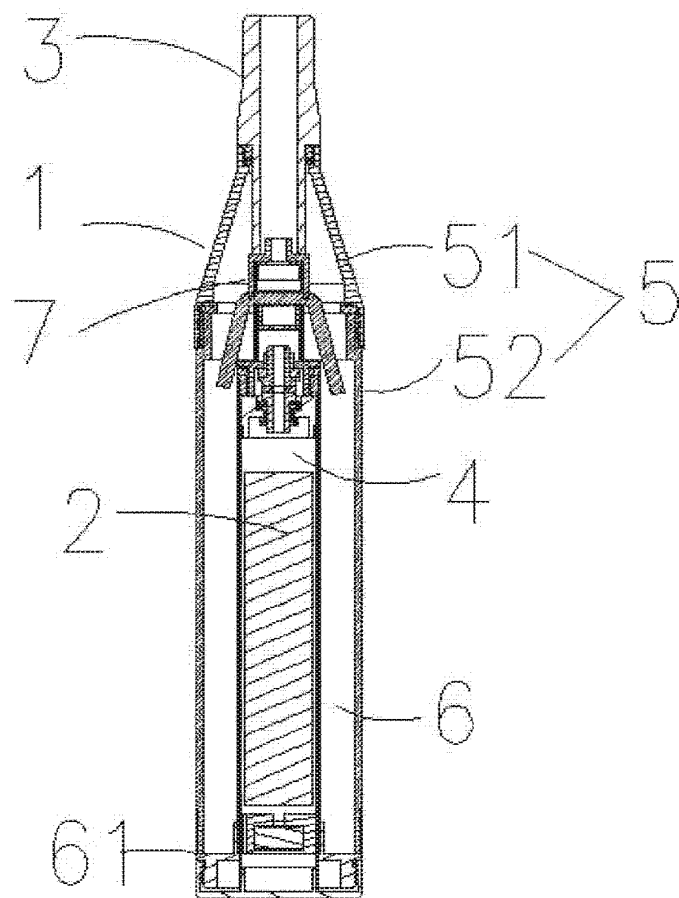


图 2

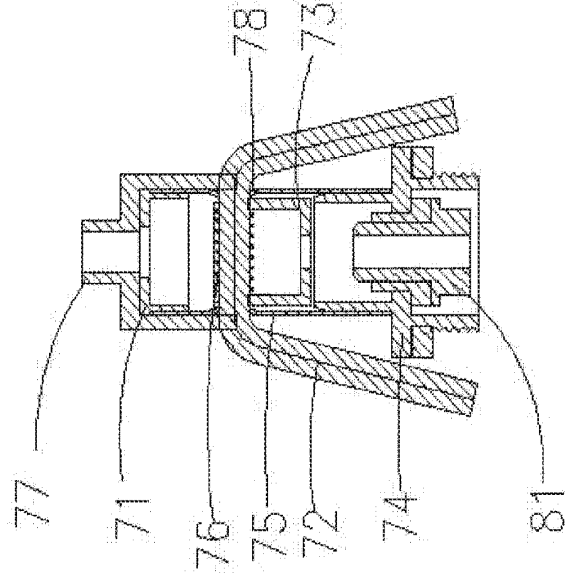


图 3

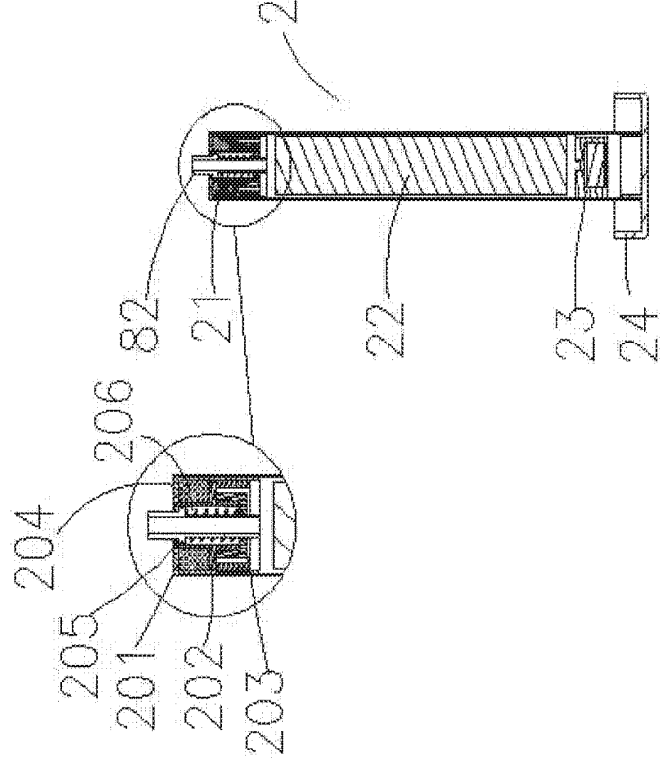


图 4

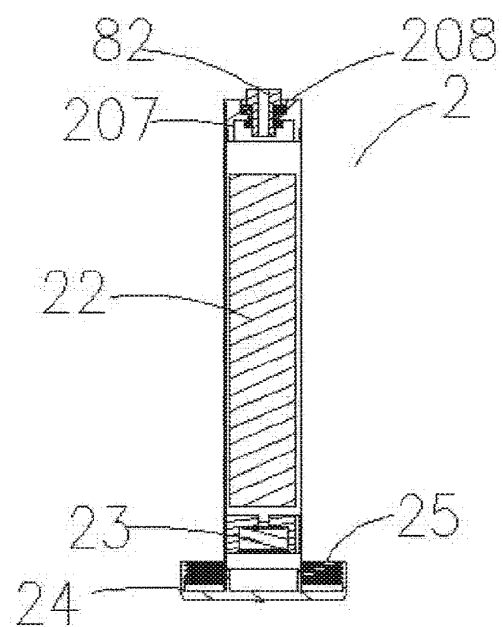


图 5

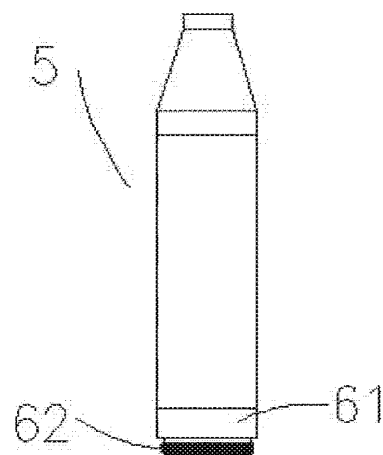


图 6

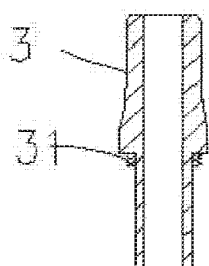


图 7

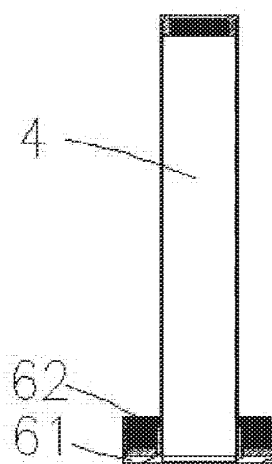


图 8

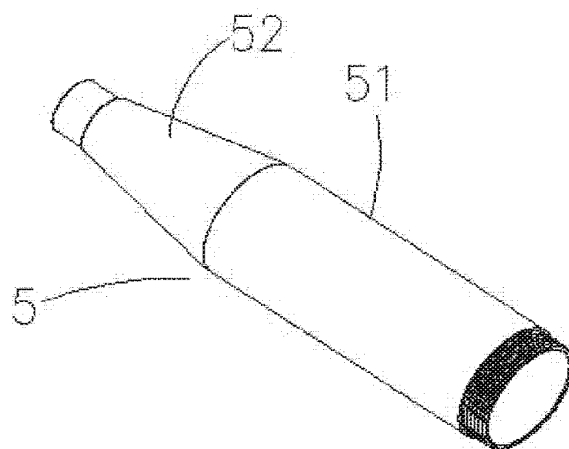


图 9

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

**Title of
Invention**

ELECTRONIC CIGARETTE

As the below named inventor, I hereby declare that:

This declaration ☐ The attached application, or
is directed to:

☒ United States application or PCT international application number PCT/CN2014/093009
filed on 12/04/2014.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

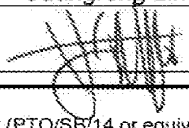
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001
by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Guangrong Lin Date (Optional) : _____

Signature:  _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	Not Yet Assigned		
Filing Date	Concurrently Herewith		
First Named Inventor	Guangrong Lin		
Title	ELECTRONIC CIGARETTE		
Art Unit	N/A		
Examiner Name	Not Yet Assigned		
Attorney Docket Number	SCH-1630-USPT		
SIGNATURE of Applicant or Patent Practitioner			
Signature	/Charles Ho/	Date (Optional)	December 19, 2016
Name	Charles Ho	Registration Number	51,807
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			
NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.			
☐ *Total of <u>1</u> forms are submitted.			

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date
Not Yet Assigned	Concurrently Herewith

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☒ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

- ☒ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☐ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	
Name	Guangrong Lin		
Title			

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of 1 forms are submitted.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First named Inventor: **Guangrong LIN**

For: **ELECTRONIC CIGARETTE**

Docket No.: **SCH-1630-USPT**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Preliminary Amendment

Please amend the above-identified application as follow:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Amendments to the Abstract begin on page 8 and a replacement abstract is enclosed herewith.

Remarks begin on page 9 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) An electronic cigarette comprising a battery stick, a vaporizer assembly and a mouth piece that are connected together, characterized in that

the battery stick comprises a battery, a casing tube of the battery stick for sheathing the battery, and a first connection portion arranged at an end of the casing tube of the battery stick adjacent to the vaporizer assembly;

the vaporizer assembly comprises a vaporizer, and a casing tube of the vaporizer for sheathing the vaporizer in an inner cavity of the casing tube;

the vaporizer comprises a vaporizer tube body, and a second connection portion arranged at an end of the vaporizer tube body adjacent to the battery stick;

a third connection portion is arranged at an end of the casing tube of the vaporizer adjacent to the battery stick;

the second connection portion and the first connection portion abut against each other to be connected, the third connection portion is detachably connected to the first connection portion by means of a screw thread.

2. (Original) The electronic cigarette according to claim 1, characterized in that

the first connection portion comprises a first connection seat having an outer thread and serving as a negative electrode electrically connected to a negative electrode of the battery, a first positive electrode arranged at a centre of the first connection seat and electrically connected to a positive electrode of the battery, and a first insulation sleeve placed between the first positive electrode and the first connection seat;

the second connection portion comprises a second connection seat serving as a negative electrode electrically connected to a heating coil of the vaporizer, a second positive electrode arranged at a centre of the second connection seat and electrically

connected to the heating coil of the vaporizer, and a second insulation sleeve placed between the second positive electrode and the second connection seat;

the second positive electrode has a central through hole along an axial direction of the second positive electrode for intercommunicating with a vaporizing cavity of the vaporizer, an end surface of the second positive electrode has a transversal groove along a radial direction of the end surface for intercommunicating with the central through hole;

the third connection portion has an inner thread engaging with the outer thread of the first connection seat;

the first positive electrode and the second positive electrode abut against each other to be electrically connected, the first connection seat and the second connection seat are electrically connected.

3. (Original) The electronic cigarette according to claim 2, characterized in that

the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

the other side of the protruding step is provided with a second cylindrical wall having an outer diameter smaller than that of the protruding step and having the outer thread, one end of the second cylindrical wall is provided with a base wall having a central through hole, the central through hole is configured for installing the first positive electrode and the first insulation sleeve.

4. (Original) The electronic cigarette according to claim 2, characterized in that

the second connection seat is a cylindrical body having a protruding platform at one end thereof;

an outer wall of the cylindrical body is sheathed with an inner wall of said end of the vaporizer tube body;

an inner wall at a lower portion of the second connection seat is provided with a base wall, a tubular body is protruded from a center of the base wall, the tubular body is provided with a central through hole for installing the second insulation sleeve and the second positive electrode.

5. (Original) The electronic cigarette according to claim 4, characterized in that the outer wall of the cylindrical body is provided with a circular groove configured for mounting a sealing ring.

6. (Original) The electronic cigarette according to claim 4, characterized in that an outer diameter of the protruding platform is larger than an outer diameter of the vaporizer tube body;

a bottom of the inner thread of the third connection portion has at least one airflow hole communicating with an air inlet hole opened in the casing tube of the vaporizer;

the bottom of the inner thread of the third connection portion further has a protruding ring inwardly and radially protruding from an inner wall of the third connection portion;

the protruding platform of the second connection seat terminates on the protruding ring of the third connection portion when the vaporizer is sheathed with the casing tube of the vaporizer.

7. (Currently amended) The electronic cigarette according to ~~any one of~~ claims 4 to 6, characterized in that

the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

the other side of the protruding step of the first connection seat is provided with a second cylindrical wall and a third cylindrical wall, an outer diameter of the third cylindrical wall is smaller than an outer diameter of the second cylindrical wall, the outer

diameter of the second cylindrical wall is smaller than the outer diameter of the protruding step of the first connection seat;

the second cylindrical wall has the outer thread;

the outer diameter of the third cylindrical wall is smaller than an inner diameter of the cylindrical body of the second connection seat;

the third cylindrical wall has at least one air passage hole;

an inner wall at a bottom of the third cylindrical wall is provided with a base wall, the base wall is provided with a central through hole configured for installing the first positive electrode and the first insulation sleeve.

8. (Original) The electronic cigarette according to claim 7, characterized in that an inner wall of the third cylindrical wall has an inner thread configured for connecting to a connector of a battery charger.

9. (Newly added) The electronic cigarette according to claim 5, characterized in that the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

the other side of the protruding step of the first connection seat is provided with a second cylindrical wall and a third cylindrical wall, an outer diameter of the third cylindrical wall is smaller than an outer diameter of the second cylindrical wall, the outer diameter of the second cylindrical wall is smaller than the outer diameter of the protruding step of the first connection seat;

the second cylindrical wall has the outer thread;

the outer diameter of the third cylindrical wall is smaller than an inner diameter of the cylindrical body of the second connection seat;

the third cylindrical wall has at least one air passage hole;

an inner wall at a bottom of the third cylindrical wall is provided with a base wall, the base wall is provided with a central through hole configured for installing the first positive electrode and the first insulation sleeve.

10. (Newly added) The electronic cigarette according to claim 6, characterized in that

the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

the other side of the protruding step of the first connection seat is provided with a second cylindrical wall and a third cylindrical wall, an outer diameter of the third cylindrical wall is smaller than an outer diameter of the second cylindrical wall, the outer diameter of the second cylindrical wall is smaller than the outer diameter of the protruding step of the first connection seat;

the second cylindrical wall has the outer thread;

the outer diameter of the third cylindrical wall is smaller than an inner diameter of the cylindrical body of the second connection seat;

the third cylindrical wall has at least one air passage hole;

an inner wall at a bottom of the third cylindrical wall is provided with a base wall, the base wall is provided with a central through hole configured for installing the first positive electrode and the first insulation sleeve.

11. (Newly added) The electronic cigarette according to claim 9, characterized in that an inner wall of the third cylindrical wall has an inner thread configured for connecting to a connector of a battery charger.

12. (Newly added) The electronic cigarette according to claim 10, characterized in that an inner wall of the third cylindrical wall has an inner thread configured for connecting to a connector of a battery charger.

Amendments to the Abstract

Please amend the abstract as follows:

Disclosed is an electronic cigarette, ~~wherein comprising a battery stick (10), a vaporizer assembly, and a mouth piece (40) that are connected together. The battery stick (10) comprises a battery, a casing tube (101) of the battery stick (10) for sheathing the battery, and~~ a first connection portion (1) is arranged at an end of ~~the a~~ casing tube (101) of ~~the a~~ battery stick (10) adjacent to ~~the a~~ vaporizer assembly. ~~The vaporizer assembly comprises a vaporizer (20), and a casing tube (30) of the vaporizer (20) for sheathing the vaporizer (20) in an inner cavity of the casing tube (30). The vaporizer (20) comprises a vaporizer tube body (201), and~~ a second connection portion (2) is arranged at an end of ~~the a~~ vaporizer tube body (201) adjacent to the battery stick (10). ~~A a~~ third connection portion (3) is arranged at an end of ~~the a~~ casing tube (30) of ~~the a~~ vaporizer (20) adjacent to the battery stick (10). The second connection portion (2) and the first connection portion (1) abut against each other to be connected, the third connection portion (3) is detachably connected to the first connection portion (1) by means of a screw thread. ~~The electronic cigarette enables the costs for the manufacture and use of the vaporizer (20) to be greatly reduced. It is also very convenient for the disassembly and replacement of the vaporizer (20) of the electronic cigarette.~~

REMARKS

Claim 7 is amended. Claims 9-12 are newly added. No new matter is added. After the amendment, there is no multiple dependent claim in the current patent application.

Abstract is amended to not exceeding 150 words. No new matter is added.

Dated: December 21, 2016

Respectfully submitted,

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REPLACEMENT

Abstract

Disclosed is an electronic cigarette, wherein a first connection portion (1) is arranged at an end of a casing tube (101) of a battery stick (10) adjacent to a vaporizer assembly, a second connection portion (2) is arranged at an end of a vaporizer tube body (201) adjacent to the battery stick (10), a third connection portion (3) is arranged at an end of a casing tube (30) of a vaporizer (20) adjacent to the battery stick (10). The second connection portion (2) and the first connection portion (1) abut against each other to be connected, the third connection portion (3) is detachably connected to the first connection portion (1) by means of a screw thread.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2014/093009

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)

A24, A61

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)

JPABS, CNKI, TWABS, CNTXT, USTXT, WOTXT, EPTXT, VEN, CNABS: cigarette, electronic, smoke, simulation, liquid, atomization tube, atomization core

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 203952447 U (LIN, Guangrong), 26 November 2014 (26.11.2014), claims 1-8	1-8
X	CN 201430916 Y (LIU, Zheqi), 31 March 2010 (31.03.2010), description, pages 1-7, claims 1-10, and figures 1-5	1-8
X	CN 203314099 U (LIU, Qiuming), 04 December 2013 (04.12.2013), description, pages 1-5, claims 1-10, and figures 1-9	1-8
A	WO 2013159245 A1 (RUYAN INVESTMENT HOLDINGS LTD. et al.), 31 October 2013 (31.10.2013), the whole document	1-8
A	US 2012006346 A1 (INAGAKI, M.), 12 January 2012 (12.01.2012), the whole document	1-8

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

“A” document defining the general state of the art which is not considered to be of particular relevance

“E” earlier application or patent but published on or after the international filing date

“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)

“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

“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

“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

“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

“&” document member of the same patent family

Date of the actual completion of the international search

14 January 2015 (14.01.2015)

Date of mailing of the international search report

24 March 2015 (24.03.2015)

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2014/093009

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 203952447 U	26 November 2014	None	
CN 201430916 Y	31 March 2010	None	
CN 203314099 U	04 December 2013	US 2014299140 A1	09 October 2014
WO 2013159245 A1	31 October 2013	CA 2870469 A1	31 October 2013
US 2012006346 A1	12 January 2012	WO 2010110226 A1	30 September 2010
		EP 2412396 A1	01 February 2012
		US 8459271 B2	11 June 2013
		JP 2014000420 A	09 January 2014
		TW 201039762 A	16 November 2010

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

ELECTRONIC CIGARETTE

FIELD OF THE INVENTION

[0001] The present invention relates to an electronic cigarette.

BACKGROUND OF THE INVENTION

[0002] Existing electronic cigarettes usually comprise a battery stick, a vaporizer and a mouth piece, wherein the vaporizer and a casing tube of the vaporizer are designed as an integral one-piece construction that has to be integrally replaced with a new one when cigarette liquid in the vaporizer is exhausted, which increases the costs for the manufacture and use of the vaporizer. In addition, the vaporizer and the battery stick are usually connected via a twist-lock connection structure or snap-fit connection structure, such connection structures are complicated and are thus inconvenient for the disassembly and replacement of the vaporizer, which worsens the user experience.

SUMMARY OF THE INVENTION

[0003] The present invention aims to provide an electronic cigarette designed to have a vaporizer and a casing tube of the vaporizer as two separate parts and have a simplified connection structure between the vaporizer and a battery stick. The electronic cigarette of the present application greatly reduces the costs for the manufacture and use of the vaporizer, and meanwhile facilitates the disassembly and replacement of the vaporizer, which improves the user experience.

[0004] The technical solution of the present application is an electronic cigarette comprising a battery stick, a vaporizer assembly and a mouth piece that are connected together, wherein the battery stick comprises a battery, a casing tube of the battery stick for sheathing the battery, and a first connection portion arranged at an end of the casing tube of the battery stick adjacent to the vaporizer assembly; the vaporizer assembly comprises a vaporizer, and a casing tube of the vaporizer for sheathing the vaporizer in an inner cavity of the casing tube; the vaporizer comprises a vaporizer tube body, and a second connection portion arranged at an end of the vaporizer tube body adjacent to the battery stick; a third connection portion is arranged at an end of the casing tube of the vaporizer adjacent to the battery stick; the second connection portion and the first connection portion abut against each other to be connected, the third connection portion is detachably connected to the first connection portion by means of a screw thread.

[0005] In this embodiment, the first connection portion comprises a first connection seat having an outer thread and serving as a negative electrode electrically connected to a negative electrode of the battery, a first positive electrode arranged at a centre of the first connection seat and electrically connected to a positive electrode of the battery, and a first insulation sleeve placed between the first positive electrode and the first connection seat; the second connection portion comprises a second connection seat serving as a negative electrode electrically connected to a heating coil of the vaporizer, a second positive electrode arranged at a centre of the second connection seat and electrically connected to the heating coil of the vaporizer, and a second insulation sleeve placed between the second positive electrode and the second connection seat; the second positive electrode has a central through hole along an axial direction of the second positive electrode for intercommunicating with a vaporizing cavity of the vaporizer, an end surface of the second positive electrode has a transversal groove along a radial direction of the end surface for intercommunicating with the central through hole; the third connection portion

has an inner thread engaging with the outer thread of the first connection seat; the first positive electrode and the second positive electrode abut against each other to be electrically connected, the first connection seat and the second connection seat are electrically connected.

[0006] In this embodiment, the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter; one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick; the other side of the protruding step is provided with a second cylindrical wall having an outer diameter smaller than that of the protruding step and having the outer thread, one end of the second cylindrical wall is provided with a base wall having a central through hole, the central through hole is configured for installing the first positive electrode and the first insulation sleeve.

[0007] In this embodiment, the second connection seat is a cylindrical body having a protruding platform at one end thereof; an outer wall of the cylindrical body is sheathed with an inner wall of said end of the vaporizer tube body; an inner wall at a lower portion of the second connection seat is provided with a base wall, a tubular body is protruded from a center of the base wall, the tubular body is provided with a central through hole for installing the second insulation sleeve and the second positive electrode.

[0008] In this embodiment, the outer wall of the cylindrical body is provided with a circular groove configured for mounting a sealing ring.

[0009] In this embodiment, an outer diameter of the protruding platform is larger than an outer diameter of the vaporizer tube body; a bottom of the inner thread of the third connection portion has at least one airflow hole communicating with

an air inlet hole opened in the casing tube of the vaporizer; the bottom of the inner thread of the third connection portion further has a protruding ring inwardly and radially protruding from an inner wall of the third connection portion; the protruding platform of the second connection seat terminates on the protruding ring of the third connection portion when the vaporizer is sheathed with the casing tube of the vaporizer.

[0010] In another embodiment, the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter; one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick; the other side of the protruding step of the first connection seat is provided with a second cylindrical wall and a third cylindrical wall, an outer diameter of the third cylindrical wall is smaller than an outer diameter of the second cylindrical wall, the outer diameter of the second cylindrical wall is smaller than the outer diameter of the protruding step of the first connection seat; the second cylindrical wall has the outer thread; the outer diameter of the third cylindrical wall is smaller than an inner diameter of the cylindrical body of the second connection seat; the third cylindrical wall has at least one air passage hole; an inner wall at a bottom of the third cylindrical wall is provided with a base wall, the base wall is provided with a central through hole configured for installing the first positive electrode and the first insulation sleeve.

[0011] In this embodiment, an inner wall of the third cylindrical wall has an inner thread configured for connecting to a connector of a battery charger.

[0012] The technical solutions of the present invention have advantages as follows. The electronic cigarette of the present invention is designed to have the vaporizer and the casing tube of the vaporizer as two separate parts, therefore the costs for the manufacture and use of the vaporizer is greatly reduced. In addition, the

vaporizer and the battery stick abut against each other to be connected. After unscrewing the casing tube of the vaporizer, the vaporizer can be easily taken off. Thus it is very convenient for the disassembly and replacement of the vaporizer, which improves the user experience.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] Figure 1 is a perspective exploded view of an electronic cigarette according to an embodiment of the present invention.

[0014] Figure 2 is a perspective exploded view of three connection portions of an electronic cigarette according to an embodiment of the present invention.

[0015] Figure 3 is a cross-sectional view of three connection portions of an electronic cigarette according to an embodiment of the present invention.

[0016] Figure 4 is a schematic view showing a first connection seat of an electronic cigarette according to an embodiment of the present invention, with the first connection seat being partially sectioned.

[0017] Figure 5 is a schematic view showing a second connection seat of an electronic cigarette according to an embodiment of the present invention, with the second connection seat being partially sectioned.

[0018] Figure 6 is a schematic view showing a third connection portion of an electronic cigarette according to an embodiment of the present invention, with the third connection portion being partially sectioned.

[0019] Figure 7 is a perspective exploded view of an electronic cigarette according to another embodiment of the present invention.

[0020] Figure 8 is a perspective exploded view of three connection portions of an electronic cigarette according to another embodiment of the present invention.

[0021] Figure 9 is a schematic view showing a first connection seat of an electronic cigarette according to another embodiment of the present invention, with the first connection seat being partially sectioned.

[0022] List of reference numerals of main components:

[0023]

10	battery stick
101	casing tube of battery stick
20	vaporizer
201	vaporizer tube body
30	casing tube of vaporizer
301	air inlet hole
40	mouth piece
1	first connection portion
11	first connection seat
111	protruding step
112	first cylindrical wall
113	second cylindrical wall
114	outer thread
115	base wall
116	central through hole
117	third cylindrical wall
118	air passage hole
119	inner thread
12	first positive electrode

13	first insulation sleeve
2	second connection portion
21	second connection seat
211	protruding platform
212	cylindrical body
213	base wall
214	tubular body
215	central through hole
216	circular groove
22	second positive electrode
23	second insulation sleeve
3	third connection portion
31	inner thread
32	airflow hole

DETAILED DESCRIPTION OF ILLUSTRATED EMBODIMENTS

[0024] Various preferred embodiments will now be described with reference to the figures.

[0025] Figures 1-6 show an electronic cigarette according to an embodiment of the present invention.

[0026] Referring to Figure 1, the electronic cigarette comprises a battery stick **10**, a vaporizer assembly (not shown in Figures), and a mouth piece **40** that are connected together. The battery stick **10** comprises a battery (not shown in

Figures), a casing tube **101** of the battery stick **10** for sheathing the battery, and a first connection portion **1** arranged at an end of the casing tube **101** of the battery stick **10** adjacent to the vaporizer assembly. The vaporizer assembly comprises a vaporizer **20**, and a casing tube **30** of the vaporizer **20** for sheathing the vaporizer **20** in an inner cavity of the casing tube **30**. The vaporizer **20** comprises a vaporizer tube body **201**, and a second connection portion **2** arranged at an end of the vaporizer tube body **201** adjacent to the battery stick **10**. A third connection portion **3** is arranged at an end of the casing tube **30** of the vaporizer **20** adjacent to the battery stick **10**. The second connection portion **2** and the first connection portion **1** abut against each other to be connected, the third connection portion **3** is detachably connected to the first connection portion **1** by means of a screw thread.

[0027] Referring to Figures 2, 3, 4, 5 and 6, the first connection portion **1** comprises a first connection seat **11** having an outer thread **114** and serving as a negative electrode electrically connected to a negative electrode of the battery, a first positive electrode **12** arranged at a centre of the first connection seat **11** and electrically connected to a positive electrode of the battery, and a first insulation sleeve **13** placed between the first positive electrode **12** and the first connection seat **11**. The second connection portion **2** comprises a second connection seat **21** serving as a negative electrode electrically connected to a heating coil of the vaporizer **20**, a second positive electrode **22** arranged at a centre of the second connection seat **21** and electrically connected to the heating coil of the vaporizer **20**, and a second insulation sleeve **23** placed between the second positive electrode **22** and the second connection seat **21**. The second positive electrode **22** has a central through hole **221** along an axial direction of the second positive electrode **22** for intercommunicating with a vaporizing cavity of the vaporizer **20**, an end surface of the second positive electrode **22** has a transversal groove **222** along a radial direction of the end surface for intercommunicating with the central through hole **221**. The third connection portion **3** has an inner thread **31** engaging with the outer thread **114** of the first connection seat **11**. The first positive electrode **12** and

the second positive electrode **22** abut against each other to be electrically connected, the first connection seat **11** and the second connection seat **21** are electrically connected.

[0028] It should be understood that the first connection seat **11** and the second connection seat **21** both can be served as positive electrodes, while the first positive electrode **12** and the second positive electrode **22** both can be served as negative electrodes. It should be understood that the first connection seat **11** and the second connection seat **21** may directly abut against each other to achieve the electrical connection therebetween, alternatively, the first connection seat **11** and the second connection seat **21** may not directly abut against each other but both connect to the third connection portion **3** made of metal to achieve the electrical connection therebetween.

[0029] Referring to Figures 2 and 4, the first connection seat **11** has a step-like shape, a protruding step **111** is formed at a middle portion of the first connection seat **11** that has a maximum outer diameter. One side of the protruding step **111** is provided with a first cylindrical wall **112** having an outer diameter smaller than that of the protruding step **111**, the first cylindrical wall **112** is sheathed with an inner wall of said end of the casing tube **101** of the battery stick **10**, the outer diameter of the protruding step **111** equals an outer diameter of the casing tube **101** of the battery stick **10**. The other side of the protruding step **111** is provided with a second cylindrical wall **113** having an outer diameter smaller than that of the protruding step **111** and having the outer thread **114**, one end of the second cylindrical wall **113** is provided with a base wall **115** having a central through hole **116**, the central through hole **116** is configured for installing the first positive electrode **12** and the first insulation sleeve **13**.

[0030] Referring to Figures 2 and 5, the second connection seat **21** is a cylindrical body **212** having a protruding platform **211** at one end thereof. An outer wall of the cylindrical body **212** is sheathed with an inner wall of said end of the vaporizer tube body **201**. An inner wall at a lower portion of the second connection

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seat **21** is provided with a base wall **213**, a tubular body **214** is protruded from a center of the base wall **213**, the tubular body **214** is provided with a central through hole **215** for installing the second insulation sleeve **23** and the second positive electrode **22**.

[0031] Preferably, the outer wall of the cylindrical body **212** is provided with a circular groove **216** configured for mounting a sealing ring, such that cigarette liquid in the vaporizer **20** will not leak when the outer wall of the cylindrical body **212** is sheathed with the inner wall of the end of the vaporizer tube body **201**.

[0032] Referring to Figures 2, 5 and 6, an outer diameter of the protruding platform **211** is larger than an outer diameter of the vaporizer tube body **201**. A bottom of the inner thread **31** of the third connection portion **3** has at least one airflow hole **32** communicating with an air inlet hole **301** opened in the casing tube **30** of the vaporizer **20**. The bottom of the inner thread **31** of the third connection portion **3** further has a protruding ring **33** inwardly and radially protruding from an inner wall of the third connection portion **3**. The protruding platform **211** of the second connection seat **21** terminates on the protruding ring **33** of the third connection portion **3** when the vaporizer **20** is sheathed with the casing tube **30** of the vaporizer **20**.

[0033] Figures 7-9 show an electronic cigarette according to another embodiment of the present invention.

[0034] The technical solution of the embodiment differs from the aforesaid embodiment in that the first connection seat further comprises a third cylindrical wall. Referring to Figures 7, 8 and 9, the other side of the protruding step **111** of the first connection seat **11** is provided with a second cylindrical wall **113** and a third cylindrical wall **117**, an outer diameter of the third cylindrical wall **117** is smaller than an outer diameter of the second cylindrical wall **113**, the outer diameter of the second cylindrical wall **113** is smaller than an outer diameter of the protruding step **111** of the first connection seat **11**. The second cylindrical wall **113**

has the outer thread **114**. The outer diameter of the third cylindrical wall **117** is smaller than an inner diameter of the cylindrical body **212** of the second connection seat **21**. The third cylindrical wall **117** has at least one air passage hole **118**. An inner wall at a bottom of the third cylindrical wall **117** is provided with a base wall **115**, the base wall **115** is provided with a central through hole **116** configured for installing the first positive electrode **12** and the first insulation sleeve **13**.

[0035] In this embodiment, an inner wall of the third cylindrical wall **117** has an inner thread **119** configured for connecting to a connector of a battery charger, such that a battery charger carrying an universal connector can easily charge the battery of the electronic cigarette of the present invention.

[0036] 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.

What is claimed is:

1. An electronic cigarette comprising a battery stick, a vaporizer assembly and a mouth piece that are connected together, characterized in that

the battery stick comprises a battery, a casing tube of the battery stick for sheathing the battery, and a first connection portion arranged at an end of the casing tube of the battery stick adjacent to the vaporizer assembly;

the vaporizer assembly comprises a vaporizer, and a casing tube of the vaporizer for sheathing the vaporizer in an inner cavity of the casing tube;

the vaporizer comprises a vaporizer tube body, and a second connection portion arranged at an end of the vaporizer tube body adjacent to the battery stick;

a third connection portion is arranged at an end of the casing tube of the vaporizer adjacent to the battery stick;

the second connection portion and the first connection portion abut against each other to be connected, the third connection portion is detachably connected to the first connection portion by means of a screw thread.

2. The electronic cigarette according to claim 1, characterized in that

the first connection portion comprises a first connection seat having an outer thread and serving as a negative electrode electrically connected to a negative electrode of the battery, a first positive electrode arranged at a centre of the first connection seat and electrically connected to a positive electrode of the battery, and a first insulation sleeve placed between the first positive electrode and the first connection seat;

the second connection portion comprises a second connection seat serving as a negative electrode electrically connected to a heating coil of the vaporizer, a second positive electrode arranged at a centre of the second connection seat and

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electrically connected to the heating coil of the vaporizer, and a second insulation sleeve placed between the second positive electrode and the second connection seat;

the second positive electrode has a central through hole along an axial direction of the second positive electrode for intercommunicating with a vaporizing cavity of the vaporizer, an end surface of the second positive electrode has a transversal groove along a radial direction of the end surface for intercommunicating with the central through hole;

the third connection portion has an inner thread engaging with the outer thread of the first connection seat;

the first positive electrode and the second positive electrode abut against each other to be electrically connected, the first connection seat and the second connection seat are electrically connected.

3. The electronic cigarette according to claim 2, characterized in that

the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

the other side of the protruding step is provided with a second cylindrical wall having an outer diameter smaller than that of the protruding step and having the outer thread, one end of the second cylindrical wall is provided with a base wall having a central through hole, the central through hole is configured for installing the first positive electrode and the first insulation sleeve.

4. The electronic cigarette according to claim 2, characterized in that

the second connection seat is a cylindrical body having a protruding platform at one end thereof;

an outer wall of the cylindrical body is sheathed with an inner wall of said end of the vaporizer tube body;

an inner wall at a lower portion of the second connection seat is provided with a base wall, a tubular body is protruded from a center of the base wall, the tubular body is provided with a central through hole for installing the second insulation sleeve and the second positive electrode.

5. The electronic cigarette according to claim 4, characterized in that the outer wall of the cylindrical body is provided with a circular groove configured for mounting a sealing ring.

6. The electronic cigarette according to claim 4, characterized in that

an outer diameter of the protruding platform is larger than an outer diameter of the vaporizer tube body;

a bottom of the inner thread of the third connection portion has at least one airflow hole communicating with an air inlet hole opened in the casing tube of the vaporizer;

the bottom of the inner thread of the third connection portion further has a protruding ring inwardly and radially protruding from an inner wall of the third connection portion;

the protruding platform of the second connection seat terminates on the protruding ring of the third connection portion when the vaporizer is sheathed with

the casing tube of the vaporizer.

7. The electronic cigarette according to any one of claims 4 to 6, characterized in that

the first connection seat has a step-like shape, a protruding step is formed at a middle portion of the first connection seat that has a maximum outer diameter;

one side of the protruding step is provided with a first cylindrical wall having an outer diameter smaller than that of the protruding step, the first cylindrical wall is sheathed with an inner wall of said end of the casing tube of the battery stick, the outer diameter of the protruding step equals an outer diameter of the casing tube of the battery stick;

the other side of the protruding step of the first connection seat is provided with a second cylindrical wall and a third cylindrical wall, an outer diameter of the third cylindrical wall is smaller than an outer diameter of the second cylindrical wall, the outer diameter of the second cylindrical wall is smaller than the outer diameter of the protruding step of the first connection seat;

the second cylindrical wall has the outer thread;

the outer diameter of the third cylindrical wall is smaller than an inner diameter of the cylindrical body of the second connection seat;

the third cylindrical wall has at least one air passage hole;

an inner wall at a bottom of the third cylindrical wall is provided with a base wall, the base wall is provided with a central through hole configured for installing the first positive electrode and the first insulation sleeve.

8. The electronic cigarette according to claim 7, characterized in that an inner wall of the third cylindrical wall has an inner thread configured for connecting to a connector of a battery charger.

{SCH-1630-USPT/00562931v1}

ABSTRACT

Disclosed is an electronic cigarette comprising a battery stick (10), a vaporizer assembly, and a mouth piece (40) that are connected together. The battery stick (10) comprises a battery, a casing tube (101) of the battery stick (10) for sheathing the battery, and a first connection portion (1) arranged at an end of the casing tube (101) of the battery stick (10) adjacent to the vaporizer assembly. The vaporizer assembly comprises a vaporizer (20), and a casing tube (30) of the vaporizer (20) for sheathing the vaporizer (20) in an inner cavity of the casing tube (30). The vaporizer (20) comprises a vaporizer tube body (201), and a second connection portion (2) arranged at an end of the vaporizer tube body (201) adjacent to the battery stick (10). A third connection portion (3) is arranged at an end of the casing tube (30) of the vaporizer (20) adjacent to the battery stick (10). The second connection portion (2) and the first connection portion (1) abut against each other to be connected, the third connection portion (3) is detachably connected to the first connection portion (1) by means of a screw thread. The electronic cigarette enables the costs for the manufacture and use of the vaporizer (20) to be greatly reduced. It is also very convenient for the disassembly and replacement of the vaporizer (20) of the electronic cigarette.

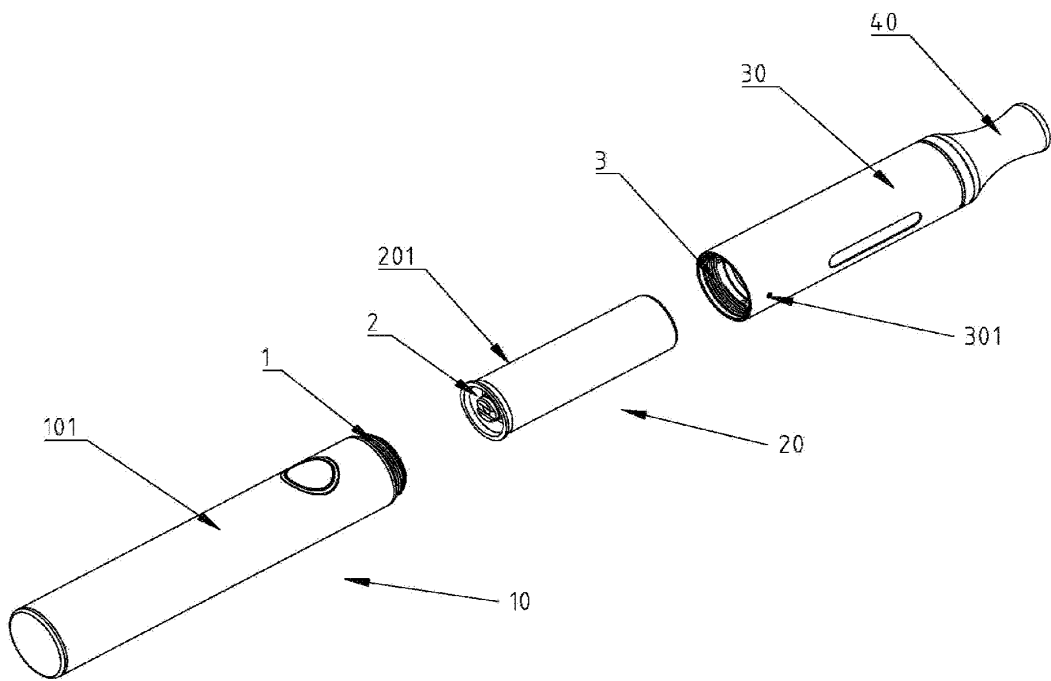


Figure 1

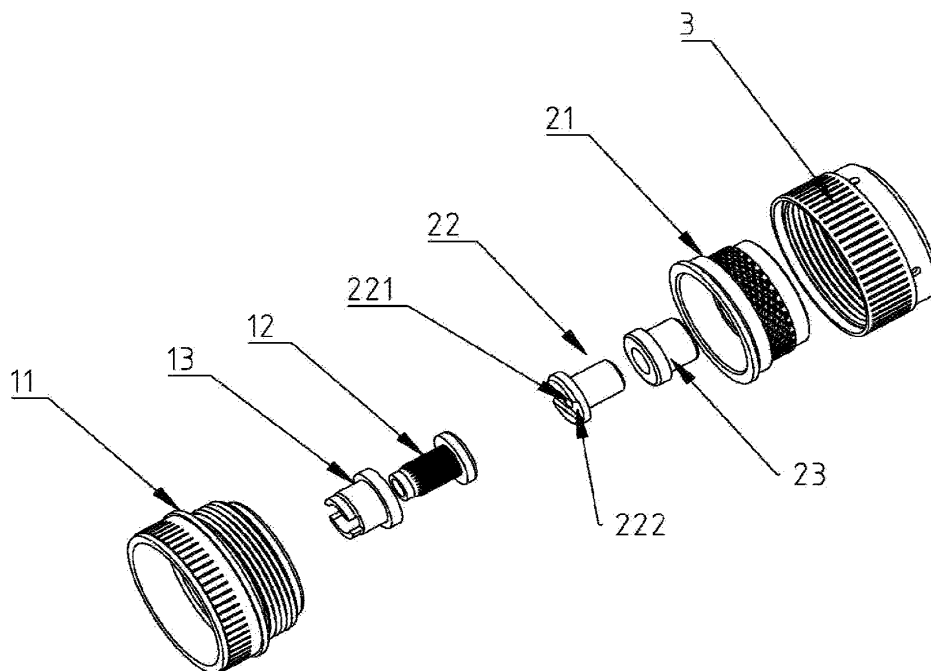


Figure 2

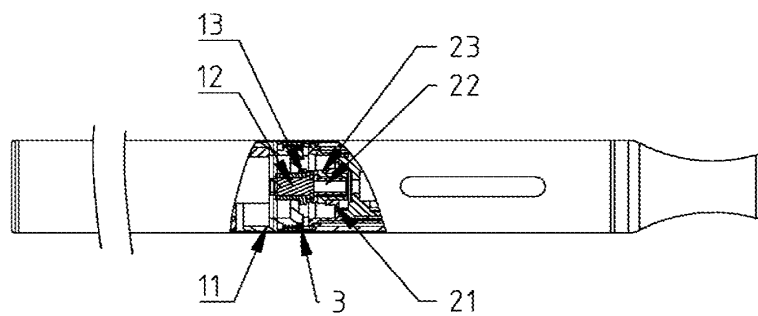


Figure 3

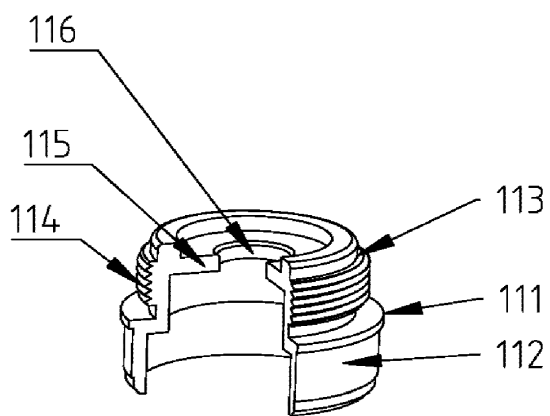


Figure 4

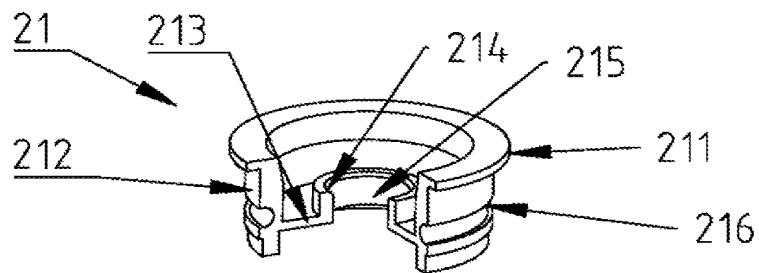


Figure 5

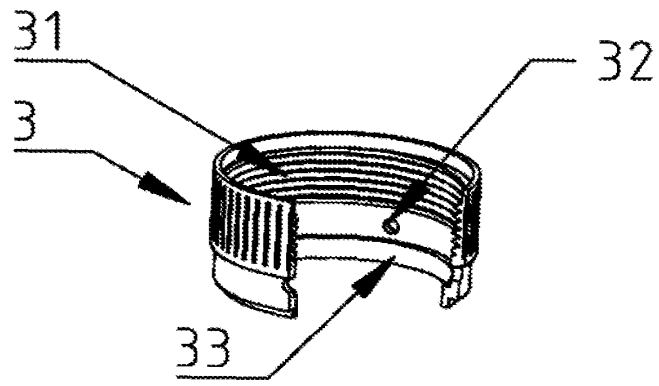


Figure 6

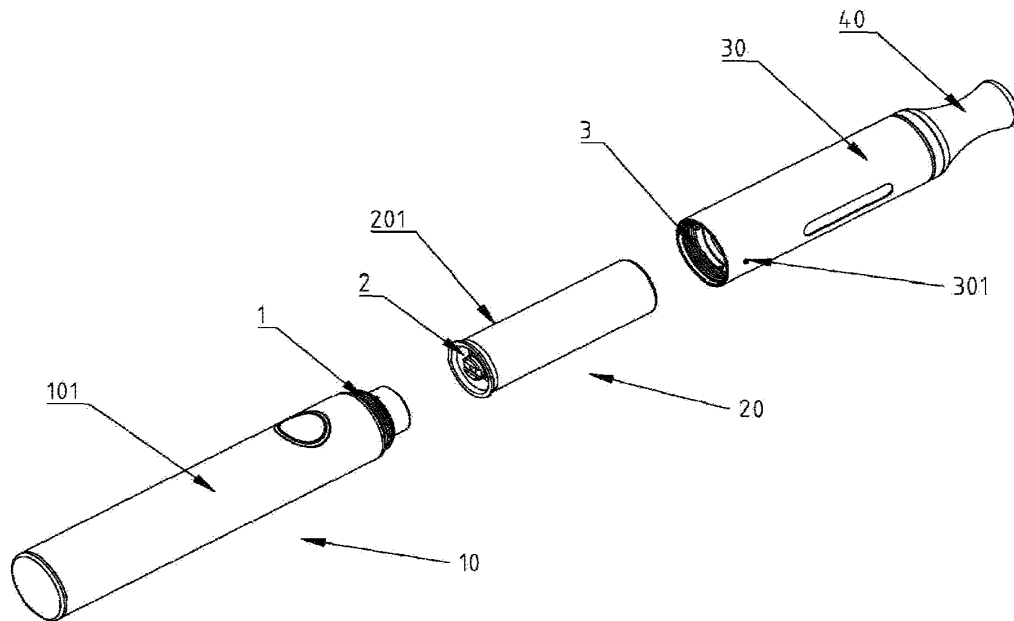


Figure 7

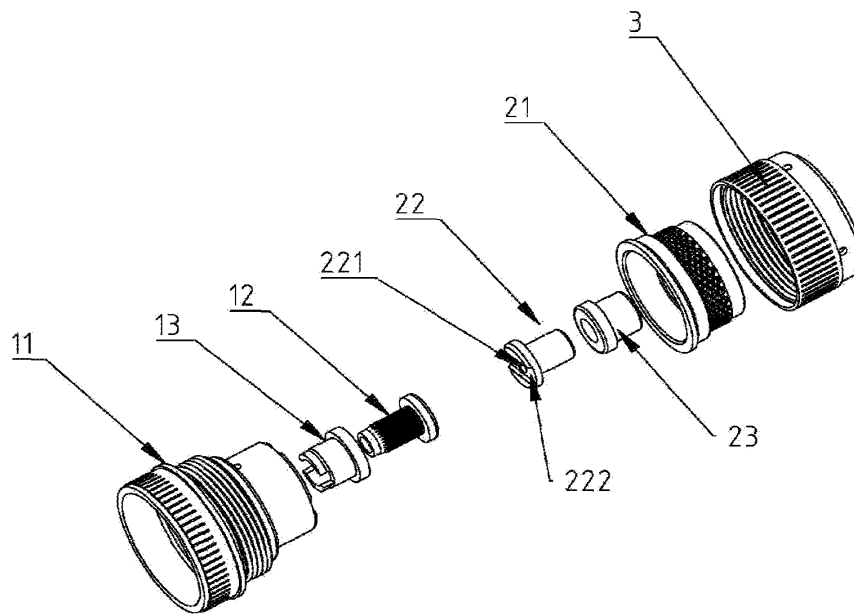


Figure 8

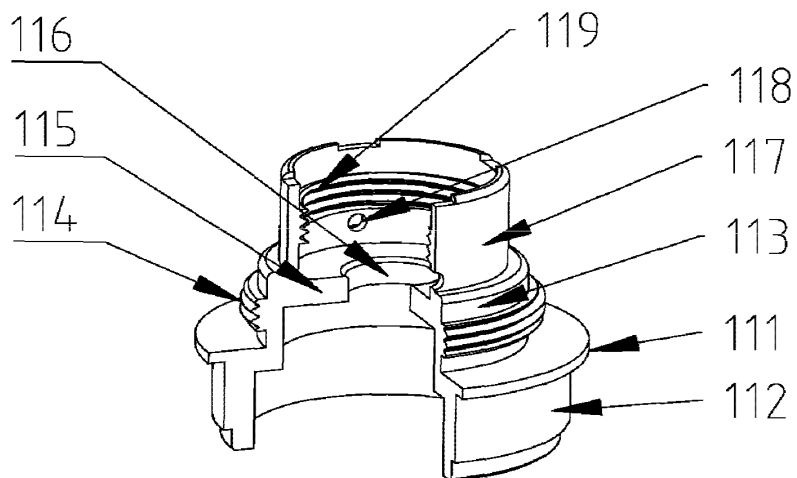


Figure 9

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		ELECTRONIC CIGARETTE		
First Named Inventor/Applicant Name:		Guangrong Lin		
Filer:		Charles S. Ho		
Attorney Docket Number:		SCH-1630-USPT		
Filed as Small Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
BASIC NATIONAL STAGE FEE	2631	1	140	140
NATL STAGE SEARCH FEE - REPORT PROVIDED	2642	1	240	240
NATL STAGE EXAM FEE - ALL OTHER CASES	2633	1	360	360
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				740

Electronic Acknowledgement Receipt

EFS ID:	27872461
Application Number:	15321198
International Application Number:	PCT/CN2014/093009
Confirmation Number:	4394
Title of Invention:	ELECTRONIC CIGARETTE
First Named Inventor/Applicant Name:	Guangrong Lin
Customer Number:	137057
Filer:	Charles S. Ho
Filer Authorized By:	
Attorney Docket Number:	SCH-1630-USPT
Receipt Date:	22-DEC-2016
Filing Date:	
Time Stamp:	05:27:52
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 740
RAM confirmation Number	122216INTEFSW05313400
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	Application_Data_Sheet_Fillable_PDF.PDF	1822493	no	8
			5fb7aadf48c2b058a1413bde08512b6a5007c051		
Warnings:					
Information:					
2	Transmittal of New Application	Transmittal_Letter_to_the_United_States_Designated-Elected_Office.pdf	51160	no	3
			1f38c039bda7113efad5ad1e6dc3f652a2f3a09c		
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Form (SB08)	Information_Disclosure_Statement_Fillable_PDF.PDF	1035135	no	4
			54f9c8b57b9f9793a52b5fe3dbed5cb1db4f353e		
Warnings:					
Information:					
A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
4	Documents submitted with 371 Applications	PCT_Publication.pdf	1834429	no	18
			9777854892bc9986e4da5bc25b0a3f6dbee84b03		
Warnings:					
Information:					
5	Foreign Reference	Cited_ref_CN201430916Y.pdf	2055829	no	14
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Warnings:					
Information:					

6	Foreign Reference	Cited_ref_CN203314099U.pdf	1700179	no	14
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8	Power of Attorney	Executed_POA.pdf	1130028	no	2
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10	Non Patent Literature	International_Search_Report.pdf	313412	no	2
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11		Spec.pdf	796016	yes	20
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	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	11	
	Claims		12	15	
	Abstract		16	16	

	Drawings-only black and white line drawings	17	20				
Warnings:							
Information:							
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55b2d75723b6d28c9a4f29f57f336db3ee85f158							
Warnings:							
Information:							
Total Files Size (in bytes):			12668721				
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.							

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SCH-1630-USPT
		Application Number	
Title of Invention	ELECTRONIC CIGARETTE		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor	1				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Guangrong		Lin			
Residence Information (Select One) US Residency • Non US Residency Active US Military Service						
City	Shenzhen, Guangdong		Country of Residence ⁱ	CN		
Mailing Address of Inventor:						
Address 1		A1 Building, Shaer Lantian Science Park				
Address 2		Ditang Road, Shajing Town, Bao'an District				
City	Shenzhen, Guangdong		State/Province			
Postal Code	518000		Country ⁱ	CN		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.						
Add						

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ An Address is being provided for the correspondence Information of this application.			
Customer Number	137057		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	ELECTRONIC CIGARETTE		
Attorney Docket Number	SCH-1630-USPT	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)		Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SCH-1630-USPT
		Application Number	
Title of Invention	ELECTRONIC CIGARETTE		

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	137057		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	a 371 of international	PCT/CN2014/093009	2014-12-04
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SCH-1630-USPT
		Application Number	
Title of Invention	ELECTRONIC CIGARETTE		

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ^j (if applicable)
201420341430.5	CN	2014-06-25	

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SCH-1630-USPT
		Application Number	
Title of Invention	ELECTRONIC CIGARETTE		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SCH-1630-USPT
		Application Number	
Title of Invention	ELECTRONIC CIGARETTE		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant	1	Remove		
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section. Clear				
Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor		
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest		
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:				
Name of the Deceased or Legally Incapacitated Inventor:				
If the Applicant is an Organization check here. ☐				
Prefix	Given Name	Middle Name	Family Name	Suffix
Mailing Address Information For Applicant:				
Address 1				
Address 2				
City		State/Province		
Country		Postal Code		
Phone Number		Fax Number		
Email Address				
Additional Applicant Data may be generated within this form by selecting the Add button. Add				

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SCH-1630-USPT
		Application Number	
Title of Invention	ELECTRONIC CIGARETTE		

Assignee	1			
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
				Remove
If the Assignee or Non-Applicant Assignee is an Organization check here. ☐				
Prefix	Given Name	Middle Name	Family Name	Suffix
Mailing Address Information For Assignee including Non-Applicant Assignee:				
Address 1				
Address 2				
City		State/Province		
Country i		Postal Code		
Phone Number		Fax Number		
Email Address				
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.				Add

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the **INITIAL** filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a juristic entity (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Charles Ho/		Date (YYYY-MM-DD)	2016-12-22
First Name	Charles	Last Name	Ho	Registration Number
				51,807
Additional Signature may be generated within this form by selecting the Add button.				Add

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SCH-1630-USPT
		Application Number	
Title of Invention	ELECTRONIC CIGARETTE		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ADVANCE E-MAIL

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

SHENZHEN HUIBANG INTELLECTUAL PROPERTY
AGENCY FIRM
5C1,1 Building, Finance Base
NO.8, Kefa Road, High-Tech Park
Shenzhen, Guangdong 518057
CHINE

Date of mailing (day/month/year) 19 December 2016 (19.12.2016)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference PCT14021MQ	
International application No. PCT/CN2014/093009	International filing date (day/month/year) 04 December 2014 (04.12.2014)

1. The following indications appeared on record concerning:			
☒ the applicant	☒ the inventor	☐ the agent	☐ the common representative
Name and Address LIN, Guangrong A1 Building Shaer Lantian Tech Industrial park Shajing Town, Bao'an District Shenzhen, Guangdong 518000 China		State of Nationality CN	State of Residence CN
		Telephone No. 0755-29888454	
		Facsimile No. 0755-29692438	
		E-mail address steven@happyvaping.net	
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:			
☐ the person	☐ the name	☒ the address	☐ the nationality ☐ the residence
Name and Address LIN, Guangrong A1 Building, Shaer Lantian Science Park Ditang Road, Shajing Town, Bao'an District Shenzhen, Guangdong 518000 China		State of Nationality CN	State of Residence CN
		Telephone No. 0755-29888454	
		Facsimile No. 0755-29692438	
		E-mail address steven@happyvaping.net ☒ Notifications by e-mail authorized	
3. Further observations, if necessary:			
4. A copy of this notification has been sent to:			
☒ the receiving Office	☐ the International Preliminary Examining Authority		
☐ the International Searching Authority	☒ the designated Offices concerned		
☐ the Authority(ies) specified for supplementary search	☐ the elected Offices concerned		
	☐ other:		

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Zhou Shujiang e-mail pt02.pct@wipo.int Telephone No. +41 22 338 74 02
Facsimile No. +41 22 338 89 65	

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference PCT14021MQ	FOR FURTHER ACTION	See item 4 below
International application No. PCT/CN2014/093009	International filing date (<i>day/month/year</i>) 04 December 2014 (04.12.2014)	Priority date (<i>day/month/year</i>) 25 June 2014 (25.06.2014)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant LIN, Guangrong		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 5 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	This report contains indications relating to the following items: <table style="width: 100%; border: none;"> <tr> <td style="width: 5%; text-align: center;">☒</td> <td style="width: 30%;">Box No. I</td> <td style="width: 65%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;">☒</td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;">☒</td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	☒	Box No. I	Basis of the report	☒	Box No. II	Priority	☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	☐	Box No. IV	Lack of unity of invention	☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	☐	Box No. VI	Certain documents cited	☐	Box No. VII	Certain defects in the international application	☐	Box No. VIII	Certain observations on the international application
☒	Box No. I	Basis of the report																							
☒	Box No. II	Priority																							
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☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																							
☐	Box No. VI	Certain documents cited																							
☐	Box No. VII	Certain defects in the international application																							
☐	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Date of issuance of this report 27 December 2016 (27.12.2016) Authorized officer Lingfei Bai e-mail: pt02.pct@wipo.int
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Form PCT/IB/373 (January 2004)

专 利 合 作 条 约

发信人：国际检索单位

收信人： 518057 中国 广东省深圳市南山区科发路8号金融服务技术创新 基地1栋5C1 深圳市惠邦知识产权代理事务所		PCT 国际检索单位书面意见 (PCT细则43之二 . 1)	
申请人或代理人的档案号 PCT14021MQ		发文日 (年/月/日) 2015年 3月 24日	
国际申请号 PCT/CN2014/093009		关于后续行为 见下面第2段	
国际申请日 (年/月/日) 2014年 12月 4日	国际申请号 PCT/CN2014/093009	优先权日 (年/月/日) 2014年 6月 25日	关于后续行为 见下面第2段
国际专利分类 (IPC) 或国家分类及IPC A24F 47/00 (2006. 01) i			
申请人 林光榕			

1. 本意见包括关于下列各项标明的内容：	
☒ 第I栏	意见的基础
☒ 第II栏	优先权
☐ 第III栏	不做出关于新颖性、创造性和工业实用性的意见
☐ 第IV栏	缺乏发明的单一性
☒ 第V栏	按照细则43之二. 1 (a) (i) 关于新颖性、创造性或工业实用性的推断性声明；支持这种声明的引证和解释
☐ 第VI栏	某些引用的文件
☐ 第VII栏	国际申请中的某些缺陷
☐ 第VIII栏	对国际申请的某些意见
2. 后续行为	
如果提出初步审查要求书，本次意见将被视为国际初步审查单位 (IPEA) 的一次书面意见，除非申请人选择的国际初步审查单位非本机构，而且所选国际初步审查单位已按照细则66. 1之二 (b) 通知国际局将不考虑国际检索单位的书面意见时例外。	
如本书面意见被视为国际初步审查单位的书面意见，则请申请人在自PCT/ISA/220表发文日起3个月或自优先权日起22个月内（以后届满者为准）向国际初步审查单位提交书面答复并提交修改（如适用）。	
进一步的选择参见PCT/ISA/220表。	

ISA/CN的名称和邮寄地址 中华人民共和国国家知识产权局 100088 中国 北京市海淀区蓟门桥西土城路6号	完成本意见的日期 2015年 3月 9日	受权官员 李彬
传真号 (86—10) 62019451		电话号码 (86—10) 62085693

表 PCT/ISA/237 (扉页) (2011年7月)

第I栏

意见的基础

1. 关于语言，本意见的制定基于：
☒ 国际申请提交时使用的语言。
☐ 该国际申请的_____语言译文，为了国际检索的目的提供该种语言的译文(细则12.3(a)和23.1(b))。
2. ☐ 本意见的制定考虑了本单位许可或被通知的根据细则91所做出的明显错误更正(细则43之二1(a))。
3. 关于国际申请中所公开的任何对要求保护的发明必要的核苷酸和/或氨基酸序列，本意见是在下列基础上制定的：
 - a. (提交提供)
☐ 纸件形式
☐ 电子形式
 - b. (提交时间)
☐ 含在申请提交时的国际申请中
☐ 以电子形式与国际申请一起提交
☐ 为检索之用随后提交本单位
4. ☐ 另外，在提交/提供了多个版本或副本的序列表的情况下，提供了随后或附加副本中的信息与申请时提交的申请中的信息相同或未超出申请时提交的申请中的信息范围(如适用)的所需声明。
5. 补充意见：

第II栏

优先权

1. ☐ 没有考虑优先权的有效性，因为国际检索单位没有获得被要求优先权的在先申请的副本，或需要时该在先申请的译本。然而本意见是在假定所称优先权日是相关日的情况下作出的（细则43之二.1和64.1）。
2. ☐ 由于发现所要求的优先权是无效的，因此本意见是按照如同没有要求优先权的情况下做出的（细则43之二.1和64.1），因而，为了本意见的目的，上面指明的国际申请日被认为是相关日。
3. 补充意见（如必要时）：
[1] 经核实本申请的优先权成立。

第V栏 按细则43之二.1(a)(i)关于新颖性、创造性或工业实用性的推测性声明；支持这种声明的引证和解释

1. 声明

新颖性 (N)	权利要求	1-8	是
	权利要求	无	否
创造性 (IS)	权利要求	无	是
	权利要求	1-8	否
工业实用性 (IA)	权利要求	1-8	是
	权利要求	无	否

2. 引证和解释:

[1] D1: CN201430916Y 31.03.2010

[2] 1. 新颖性 (PCT条约33(2))

[3] D1是最接近的现有技术，其(参见说明书1-7, 权利要求1-10, 图1-5)公开一种电子烟，其包括烟杆(相当于电池杆)、吸嘴。烟杆包括烟杆管(相当于电池杆外套管)及设在烟杆管内的电池。电子烟具有雾化器以及在内腔设有雾化器的雾化器套管，这两部件构成了雾化器组件。烟杆管可拆卸地连接在相邻雾化器上，所以烟杆管上具有与雾化器相邻一端的连接部。雾化器包括有管状耐高温绝热体(见附图5；相当于雾化器管体)，由于电热丝容置于雾化腔内且电连接于电池和控制电路，又雾化器与电池杆相邻，所以认为耐高温绝缘体在与电池相邻的一端设有第二连接部。雾化器套管通过螺套与烟杆管内的一端的螺杆相连接(相当于雾化器外套管与电池杆相邻的一端设有第三连接部，相当于第三连接部与第一连接部通过螺纹可拆卸连接)。

[4] 权利要求1与D1的区别在于:D1没公开第二连接部与第一连接部相互抵触连接。由此可见，D1没公开权利要求1的技术方案，因此，权利要求1及从属权利要求2-8符合PCT条约33(2)新颖性的规定。

[5] 2. 创造性 (PCT条约33(3))

[6] 权利要求1与D1间存在上述的区别技术特征“第二连接部与第一连接部相互抵触连接”，由于第二连接部在雾化器管体上，第一连接部在烟杆管上，又雾化器管体内的电热丝与电池杆外套内的电池杆(烟杆管)电连接，采用抵触连接的电连接方式是本领域常用的技术手段。由此可见，在D1的基础上结合本领域的常用手段获得的权利要求1的技术方案对于本领域技术人员来说是显而易见的，因此不符合PCT条约33(3)创造性的规定。

[7] 权利要求2-8的附加技术特征分别限定第一连接部、第二连接部、第三连接部、第一连接座、第二连接座、圆管体外壁、凸台、第三圆柱壁的结构，这些附加技术特征是本领域技术人员在具体安装雾化器组件与电池杆时根据实际需要自行设计的本领域可以选择的常用的技术手段。因此，权利要求2-8的技术方案对于本领域技术人员来说是显而易见的，因此它们不符合PCT条约33(3)创造性的规定。

[8] 3. 工业实用性 (PCT条约33(4))

[9] 权利要求1-8能够在工业上制造或使用，因此符合PCT条约33(4)工业实用性的规定。

(12) 按照专利合作条约所公布的国际申请

(19) 世界知识产权组织
国际局



(43) 国际公布日
2015 年 12 月 30 日 (30.12.2015) WIPO | PCT

(10) 国际公布号
WO 2015/196737 A1

- (51) 国际专利分类号:
A24F 47/00 (2006.01)
- (21) 国际申请号: PCT/CN2014/093009
- (22) 国际申请日: 2014 年 12 月 4 日 (04.12.2014)
- (25) 申请语言: 中文
- (26) 公布语言: 中文
- (30) 优先权:
201420341430.5 2014 年 6 月 25 日 (25.06.2014) CN
- (72) 发明人: 及
- (71) 申请人: 林光榕 (LIN, Guangrong) [CN/CN]; 中国广东省深圳市宝安区沙井镇帝堂路沙二蓝天科技园 A1 栋, Guangdong 518000 (CN)。
- (74) 代理人: 深圳市惠邦知识产权代理事务所 (SHENZHEN HUIBANG INTELLECTUAL PROPERTY AGENCY FIRM); 中国广东省深圳市南山区科发路 8 号金融服务技术创新基地 1 栋 5C1, Guangdong 518057 (CN)。

(81) 指定国 (除另有指明, 要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW。

(84) 指定国 (除另有指明, 要求每一种可提供的地区保护): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), 欧亚 (AM, AZ, BY, KG, KZ, RU, TJ, TM), 欧洲 (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG)。

根据细则 4.17 的声明:

— 发明人资格(细则 4.17(iv))

[见续页]

(54) Title: ELECTRONIC CIGARETTE

(54) 发明名称: 电子烟

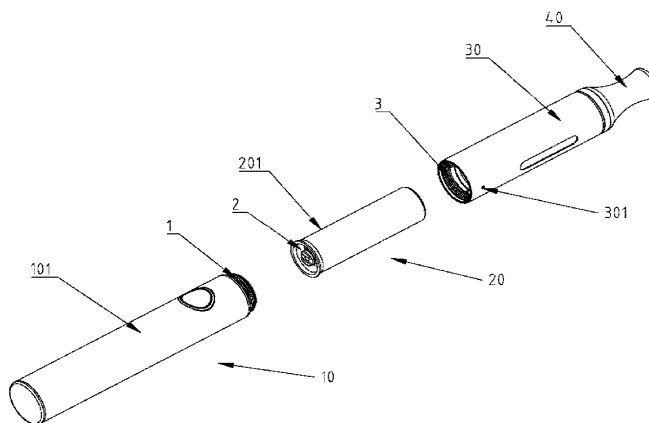


图1 / Fig. 1

(57) Abstract: Disclosed is an electronic cigarette, comprising a battery stick (10), an atomizer component, and a mouthpiece (40) that are interconnected. The electronic cigarette is characterized in that the battery stick (10) comprises a battery, a battery stick housing (101) sleeving the battery, and a first interconnection piece (1) provided at the end of the battery stick housing (101) close to the atomizer component. The atomizer component comprises an atomizer (20) and an atomizer housing (30) of the atomizer (20) sleeved in the inner cavity. The atomizer (20) comprises an atomizer tube body (201) and a second interconnection piece (2) provided at the end of the atomizer tube body (201) close to the battery stick (10). A third interconnection piece (3) is provided at the end of the atomizer housing (30) close to the battery stick (10). The second interconnection piece (2) is connected to the first interconnection piece (1), by being in contact with each other, and the third interconnection piece (3) is detachably connected to the first interconnection piece (1) by means of a screw thread. Such an electronic cigarette has the beneficial effects of reduction in the cost of manufacturing and using the atomizer (20) and convenient removal and replacement of the atomizer (20).

(57) 摘要:

[见续页]

WO 2015/196737 A1

本国际公布:

— 包括国际检索报告(条约第 21 条(3))。

一种电子烟，包括相互连接的电池杆(10)、雾化器组件、吸嘴(40)，其特征在于：电池杆(10)包括电池、套装了电池的电池杆外套管(101)、电池杆外套管(101)在与雾化器组件相邻的一端设置的第一连接部(1)；雾化器组件包括雾化器(20)、内腔中套装雾化器(20)的雾化器外套管(30)，雾化器(20)包括雾化器管体(201)、雾化器管体(201)在与电池杆(10)相邻的一端设置的第二连接部(2)；雾化器外套管(30)与电池杆(10)相邻的一端设有第三连接部(3)；第二连接部(2)与第一连接部(1)相互抵触连接；第三连接部(3)与第一连接部(1)通过螺纹可拆卸连接。这样的电子烟具有降低雾化器(20)制造和使用成本并可以方便地拆装更换雾化器(20)的有益效果。

电子烟

技术领域

- [1] 本发明涉及一种电子烟。

背景技术

- [2] 现有的电子烟一般包括电池杆、雾化器和吸嘴，雾化器与雾化器外套管设计为一个整体，当雾化器中的烟液用完需要更换雾化器时，需要整体更换，导致雾化器制造和使用成本较高；又雾化器一般通过旋转连接或卡扣连接方式与电池杆连接、连接装置较为复杂，且拆装更换不便，给用户带来不好的使用体验。

对发明的公开

技术问题

- [3] 本发明的目的是提供一种将雾化器与雾化器外套管分开设计同时简化雾化器与电池杆连接方式的电子烟，使得电子烟的雾化器制造和使用成本大大降低并可以方便地拆装更换雾化器，改善用户的使用体验。

问题的解决方案

技术解决方案

- [4] 本发明的技术解决方案是所述电子烟，包括相互连接的电池杆、雾化器组件、吸嘴，其特殊之处在于：所述电池杆包括电池、套装了电池的电池杆外套管、电池杆外套管在与雾化器组件相邻的一端设置的第一连接部；所述雾化器组件包括雾化器、内腔中套装雾化器的雾化器外套管，所述雾化器包括雾化器管体、雾化器管体在与电池杆相邻的一端设置的第二连接部；所述雾化器外套管与电池杆相邻的一端设有第三连接部；所述第二连接部与第一连接部相互抵触连接；所述第三连接部与第一连接部通过螺纹可拆卸连接。
- [5] 本实施例中，所述第一连接部包括一端设有外螺纹且兼作负电极与电池负极电连接的第一连接座、设置于第一连接座中心且与电池正极电连接的第一正电极、设置于第一正电极与第一连接座之间的第一绝缘套；所述第二连接部包括兼作负电极并与雾化器的电热丝电连接的第二连接座、设置于第二连接座中心且

与雾化器的电热丝电连接的第二正电极、设置于第二正电极与第二连接座之间的第二绝缘套，所述第二正电极轴向设有与雾化器的雾化腔连通的中心通孔且端面径向设有与中心通孔连通的横槽；所述第三连接部设有与第一连接座外螺纹相配合的内螺纹；组装时，所述第一正电极与第二正电极抵触实现电连接，第一连接座与第二连接座实现电连接。

- [6] 本实施例中，所述第一连接座为阶梯形管状结构，外部中间直径最大处形成一个圆形的突肩，所述突肩一端为直径缩小的第一圆柱壁，所述第一圆柱壁套接于电池杆外套管一端内壁，所述突肩的外径等于电池杆外套管的外径，所述突肩另一端为直径缩小的第二圆柱壁，所述第二圆柱壁上设有所述外螺纹，所述第二圆柱壁端部设有底壁，所述底壁上开设供第一绝缘套和第一正电极穿套的中心通孔。
- [7] 本实施例中，所述第二连接座为一端向外设有凸台的圆管体，所述圆管体外壁套接于雾化器管体一端的内壁，所述第二连接座的内部底端设有底壁，所述底壁中心凸设有管状体，所述管状体设有供第二绝缘套和第二正电极穿套的中心通孔。
- [8] 本实施例中，所述圆管体外壁上设有便于安装密封令的环形凹槽。
- [9] 本实施例中，所述凸台的外径大于所述雾化器管体的外径，所述第三连接部的内螺纹底部设有至少一个通气口与雾化器外套管上开设的进气口相通，所述第三连接部内螺纹底端还设有向内凸起的凸环，所述雾化器套装于所述雾化器外套管内时，所述凸台即止位于所述凸环。
- [10] 本实施例中，所述第一连接座为阶梯形管状结构，外部直径最大处形成一个圆形突肩，所述突肩一端为直径缩小的第一圆柱壁，所述第一圆柱壁套接于电池杆外套管一端内壁，所述突肩的外径等于电池杆外套管的外径，所述突肩另一端为直径两次缩小的第二圆柱壁和第三圆柱壁，所述第二圆柱壁上设有所述外螺纹，所述第三圆柱壁外径小于所述第二连接座的圆管体内径，所述第三圆柱壁上设有至少一个通气孔，所述第三圆柱壁内部底端设有底壁，所述底壁上开设供第一绝缘套和第一正电极穿套的中心通孔。
- [11] 本实施例中，所述第三圆柱壁内壁上设有供充电器接头连接的内螺纹。

发明的有益效果

有益效果

- [12] 将电子烟的雾化器与雾化器外套管分开设计，使得雾化器制造和使用成本降低，同时简化雾化器与电池杆的连接方式为抵触连接方式，打开雾化器外套管后可以直接取出雾化器，从而可以方便地拆装更换雾化器，改善用户的使用体验。

对附图的简要说明

附图说明

- [13] 图1是本发明电子烟的结构示意图。
- [14] 图2是本发明电子烟连接部结构示意图。
- [15] 图3是本发明电子烟连接部剖视图。
- [16] 图4是本发明电子烟第一连接座结构示意图。
- [17] 图5是本发明电子烟第二连接座结构示意图。
- [18] 图6是本发明电子烟第三连接部结构示意图。
- [19] 图7是本发明电子烟另一实施例的结构示意图。
- [20] 图8是本发明电子烟另一实施例连接部结构示意图。
- [21] 图9是本发明电子烟另一实施例第一连接座的结构示意图。
- [22] 主要组件符号说明：
- [23] 电池杆10、电池杆外套管101、雾化器20、雾化器管体201、雾化器外套管30、进气口301、吸嘴40、第一连接部1、第一连接座11、突肩111、第一圆柱壁112、第二圆柱壁113、外螺纹114、底壁115、中心通孔116、第三圆柱壁117、通气孔118、内螺纹119、第一正电极12、第一绝缘套13、第二连接部2、第二连接座21、凸台211、圆管体外壁212、底壁213、管状体214、中心通孔215、环形凹槽216、第二正电极22、第二绝缘套23、第三连接部3、内螺纹31、通气口32。

实施该发明的最佳实施例

本发明的最佳实施方式

- [24] 本发明下面将结合附图作进一步详述：

- [25] 图1至图6示出了本发明一实施例的电子烟结构。
- [26] 请参阅图1所示，该电子烟，包括相互连接的电池杆10、雾化器组件（图中未示）、吸嘴40；所述电池杆10包括电池（图中未示）、套装了电池的电池杆外套管101、电池杆外套管101在与雾化器组件相邻的一端设置的第一连接部1；所述雾化器组件包括雾化器20、内腔中套装雾化器20的雾化器外套管30，所述雾化器20包括雾化器管体201、雾化器管体201在与电池杆10相邻的一端设置的第二连接部2；所述雾化器外套管30与电池杆10相邻的一端设有第三连接部3；所述第二连接部2与第一连接部1相互抵触连接；所述第三连接部3与第一连接部1通过螺纹可拆卸连接。
- [27] 请参阅图2、图3、图4、图5、图6所示，所述第一连接部1包括一端设有外螺纹114且兼作负电极与电池负极电连接的第一连接座11、设置于第一连接座11中心且与电池正极电连接的第一正电极12、设置于第一正电极与第一连接座之间的第一绝缘套13；所述第二连接部2包括兼作负电极并与雾化器的电热丝电连接的第二连接座21、设置于第二连接座21中心且与雾化器20的电热丝电连接的第二正电极22、设置于第二正电极22与第二连接座21之间的第二绝缘套23，所述第二正电极22轴向设有与雾化器20的雾化腔连通的中心通孔221且端面径向设有与中心通孔连通的横槽222；所述第三连接部3设有与第一连接座外螺纹114相配合的内螺纹31；组装时，所述第一正电极12与第二正电极22抵触实现电连接，第一连接座11与第二连接座21实现电连接。
- [28] 可以理解地，第一连接座11、第二连接座12可以兼作为正电极，而第一正电极12、第二正电极22可以作为负电极。可以理解地，第一连接座11与第二连接座21实现电连接的方式可以是两者直接抵触连接，也可以在两者不直接接触时通过分别与金属材料制成的第三连接部3连接实现电连接。
- [29] 请参阅图2、图4所示，所述第一连接座11为阶梯形管状结构，外部中间直径最大处形成一个圆形的突肩111，所述突肩111一端为直径缩小的第一圆柱壁112，所述第一圆柱壁112套接于电池杆外套管101一端内壁，所述突肩111的外径等于电池杆外套管101的外径，所述突肩111另一端为直径缩小的第二圆柱壁113，所述第二圆柱壁113上设有所述外螺纹114，所述第二圆柱壁端部设有底壁115，所

述底壁115上开设供第一绝缘套13和第一正电极12穿套的中心通孔。

[30] 请参阅图2、图5所示，所述第二连接座21为一端向外设有凸台211的圆管体212，所述圆管体212的外壁套接于雾化器管体201一端的内壁，所述第二连接座21的内部底端设有底壁213，所述底壁213中心凸设有管状体214，所述管状体214设有供第二绝缘套23和第二正电极22穿套的中心通孔215。

[31] 优选地，所述圆管体212外壁上设有环形凹槽216，在此凹槽上加设安装密封令，以便所述圆管体212的外壁套接于雾化器管体201一端的内壁后，加强密封效果，防止烟液渗出。

[32] 请参阅图2、图5、图6所示，所述凸台211的外径大于所述雾化器管体201的外径，所述第三连接部3的内螺纹31底部设有至少一个通气口32与雾化器外套管上开设的进气口301相通，所述第三连接部内螺纹31底端还设有向内径向凸起的凸环33，所述雾化器20套装于所述雾化器外套管30内时，所述凸台211即止位于所述凸环33。

发明实施例

本发明的实施方式

[33] 图7至图9示出了本发明另一实施例的电子烟结构。

[34] 该实施例与前述实施例的区别在于第一连接座增加了第三圆柱壁。请参阅图7、图8、图9所示，所述第一连接座11的突肩111另一端为直径两次缩小的第二圆柱壁113和第三圆柱壁117，所述第二圆柱壁113上设有所述外螺纹114，所述第三圆柱壁117外径小于所述第二连接座21的圆管体212内径，所述第三圆柱壁117上设有至少一个通气孔118，所述第三圆柱壁117内部底端设有底壁115，所述底壁115上开设供第一绝缘套13和第一正电极12穿套的中心通孔116。

[35] 本实施例中，所述第三圆柱壁117内壁上设有供充电器接头连接的内螺纹119，以方便带有通用接头的充电器对该电子烟进行充电连接。

[36] 以上所述是本发明的优选实施方式，应当指出，对于本技术领域的普通技术人员来说，在不脱离本发明原理的前提下，还可以做出若干改进和润饰，这些改进和润饰也视为本发明的保护范围。

工业实用性

[37]

序列表自由内容

[38]

权利要求书

- [权利要求 1] 一种电子烟，包括相互连接的电池杆、雾化器组件、吸嘴，其特征在于：所述电池杆包括电池、套装了电池的电池杆外套管、电池杆外套管在与雾化器组件相邻的一端设置的第一连接部；所述雾化器组件包括雾化器、内腔中套装雾化器的雾化器外套管，所述雾化器包括雾化器管体、雾化器管体在与电池杆相邻的一端设置的第二连接部；所述雾化器外套管与电池杆相邻的一端设有第三连接部；所述第二连接部与第一连接部相互抵触连接；所述第三连接部与第一连接部通过螺纹可拆卸连接。
- [权利要求 2] 根据权利要求1所述的电子烟，其特征在于：所述第一连接部包括一端设有外螺纹且兼作负电极与电池负极电连接的第一连接座、设置于第一连接座中心且与电池正极电连接的第一正电极、设置于第一正电极与第一连接座之间的第一绝缘套；所述第二连接部包括兼作负电极并与雾化器的电热丝电连接的第二连接座、设置于第二连接座中心且与雾化器的电热丝电连接的第二正电极、设置于第二正电极与第二连接座之间的第二绝缘套，所述第二正电极轴向设有与雾化器的雾化腔连通的中心通孔且端面径向设有与中心通孔连通的横槽；所述第三连接部设有与第一连接座外螺纹相配合的内螺纹；组装时，所述第一正电极与第二正电极抵触实现电连接，第一连接座与第二连接座实现电连接。
- [权利要求 3] 根据权利要求2所述的电子烟，其特征在于：所述第一连接座为阶梯形管状结构，外部中间直径最大处形成一个圆形的突肩，所述突肩一端为直径缩小的第一圆柱壁，所述第一圆柱壁套接于电池杆外套管一端内壁，所述突肩的外径等于电池杆外套管的外径，所述突肩另一端为直径缩小的第二圆柱壁，所述第二圆柱壁上设有所述外螺纹，所述第二圆柱壁端部设有底壁，所述底壁上开设供第一绝缘套和第一正电极穿套的中心通孔。
- [权利要求 4] 根据权利要求2所述的电子烟，其特征在于：所述第二连接座为一

端向外设有凸台的圆管体，所述圆管体外壁套接于雾化器管体一端的内壁，所述第二连接座的内部底端设有底壁，所述底壁中心凸设有管状体，所述管状体设有供第二绝缘套和第二正电极穿套的中心通孔。

[权利要求 5] 根据权利要求4所述的电子烟，其特征在于：所述圆管体外壁上设有便于安装密封令的环形凹槽。

[权利要求 6] 根据权利要求4所述的电子烟，其特征在于：所述凸台的外径大于所述雾化器管体的外径，所述第三连接部的内螺纹底部设有至少一个通气口与雾化器外套管上开设的进气口相通，所述第三连接部内螺纹底端还设有向内凸起的凸环，所述雾化器套装于所述雾化器外套管内时，所述凸台即止位于所述凸环。

[权利要求 7] 根据权利要求4-6任一项所述的电子烟，其特征在于：所述第一连接座为阶梯形管状结构，外部直径最大处形成一个圆形突肩，所述突肩一端为直径缩小的第一圆柱壁，所述第一圆柱壁套接于电池杆外套管一端内壁，所述突肩的外径等于电池杆外套管的外径，所述突肩另一端为直径两次缩小的第二圆柱壁和第三圆柱壁，所述第二圆柱壁上设有所述外螺纹，所述第三圆柱壁外径小于所述第二连接座的圆管体内径，所述第三圆柱壁上设有至少一个通气孔，所述第三圆柱壁内部底端设有底壁，所述底壁上开设供第一绝缘套和第一正电极穿套的中心通孔。

[权利要求 8] 根据权利要求7所述的电子烟，其特征在于：所述第三圆柱壁内壁上设有供充电器接头连接的内螺纹。

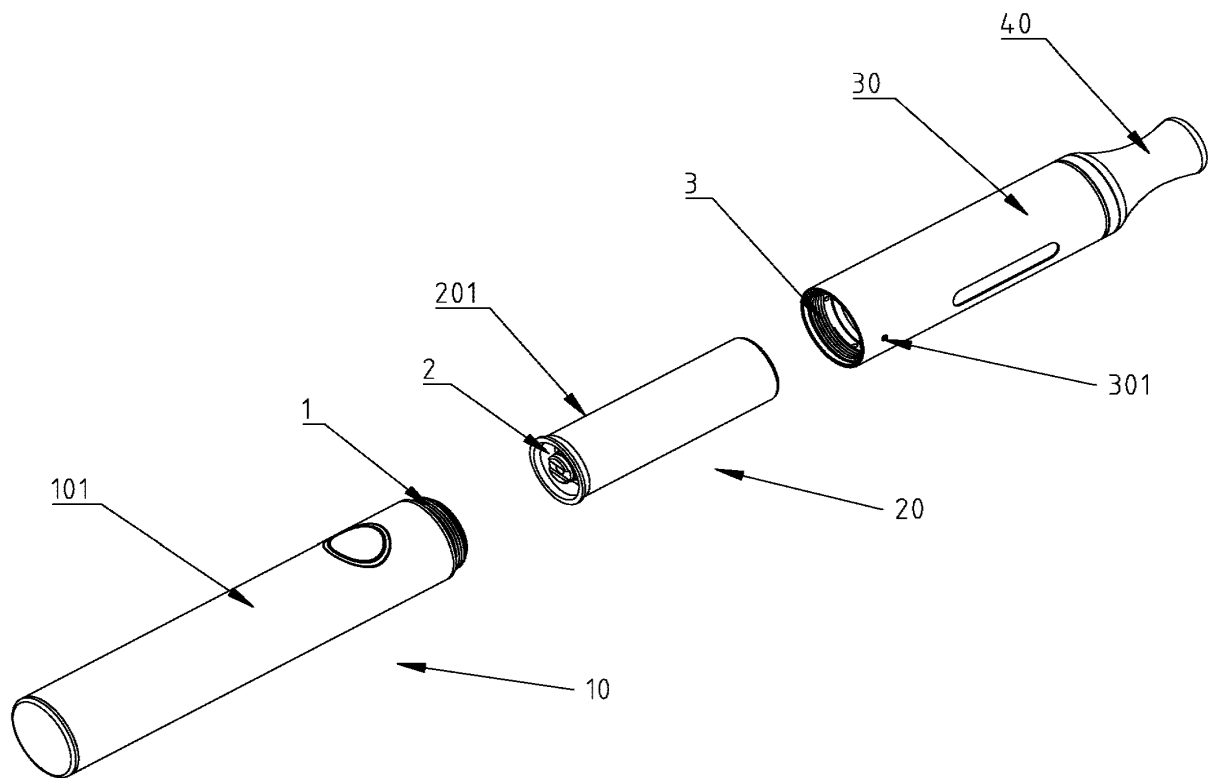


图 1

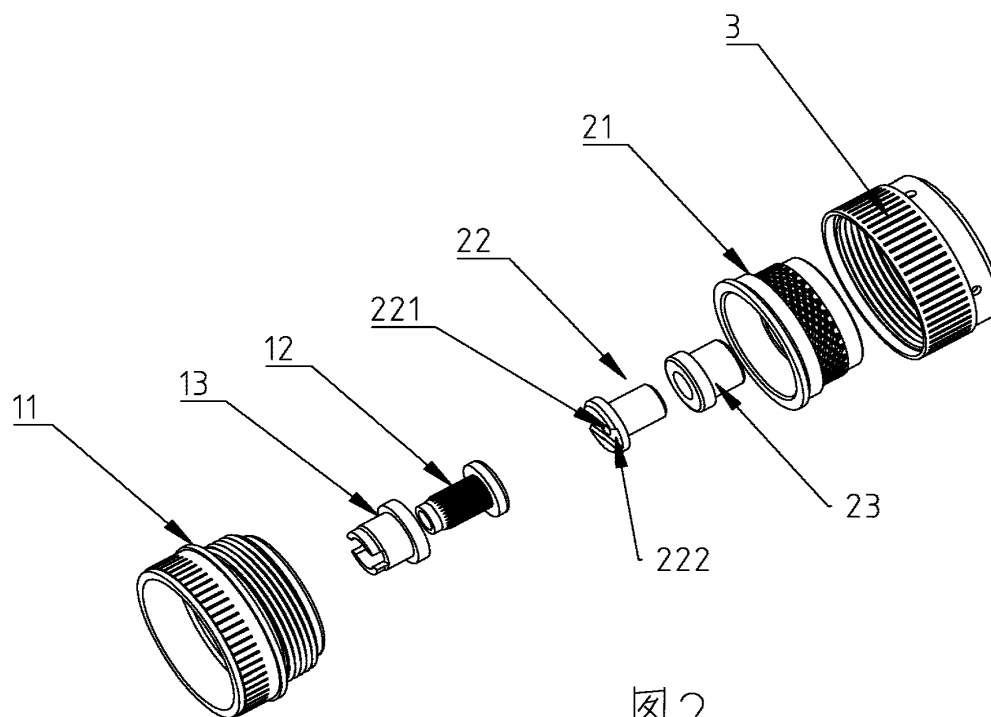


图 2

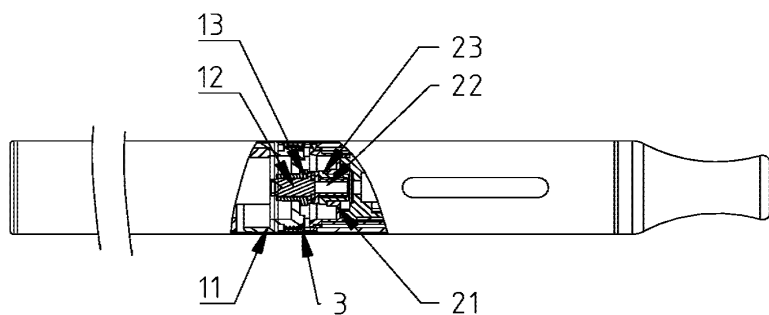


图3

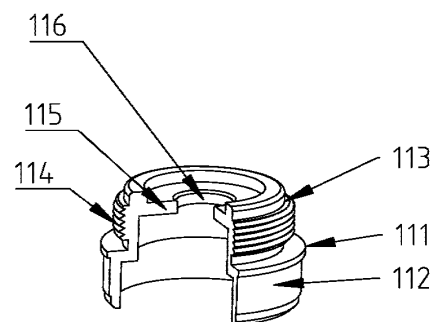


图4

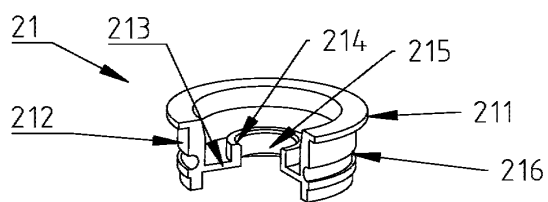


图5

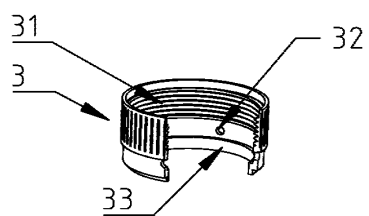


图6

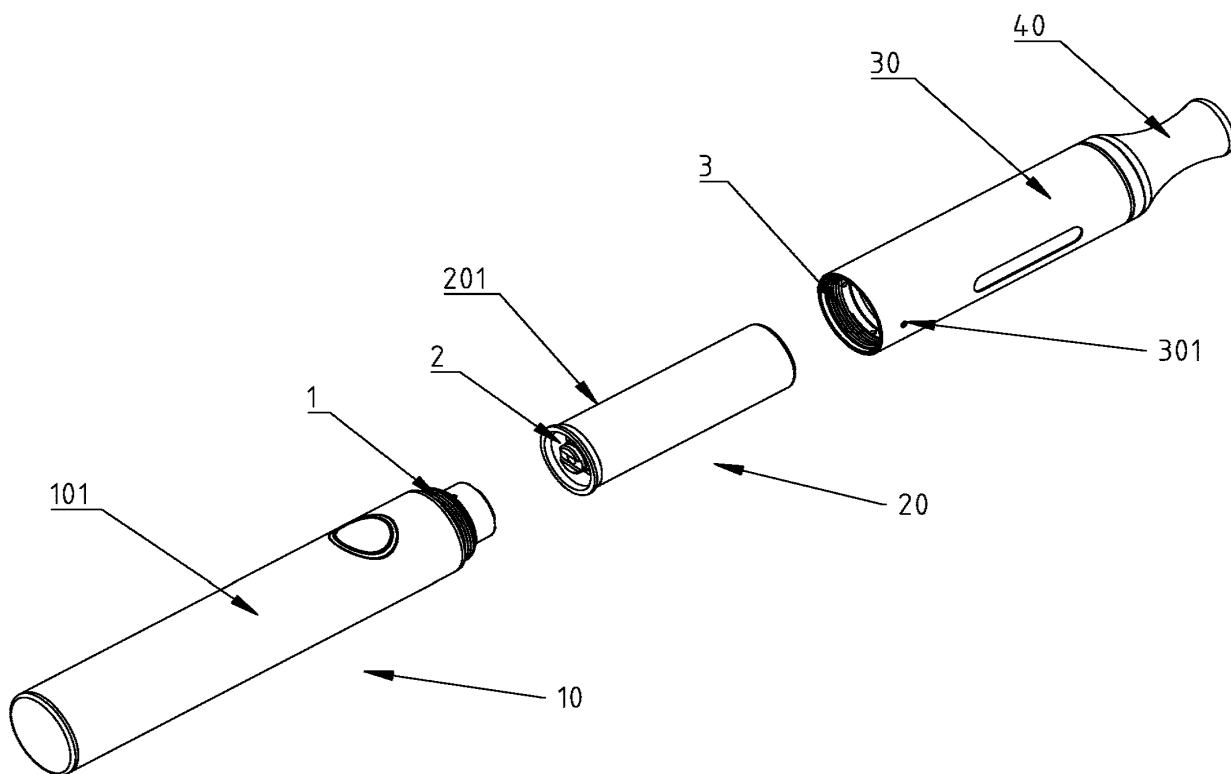


图7

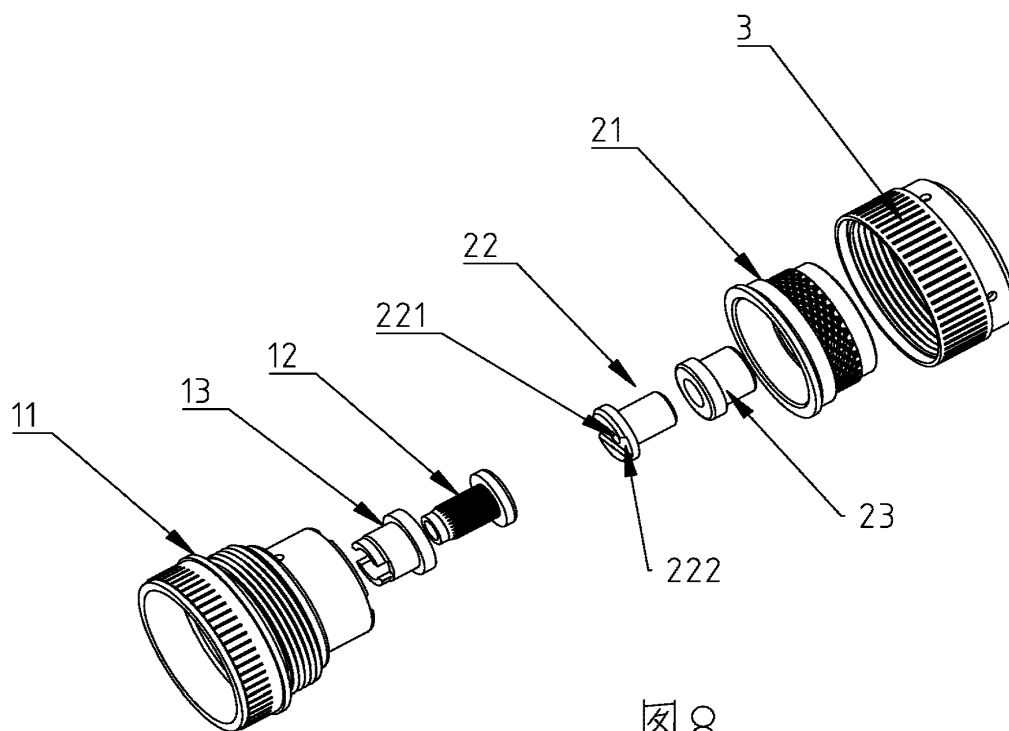


图8

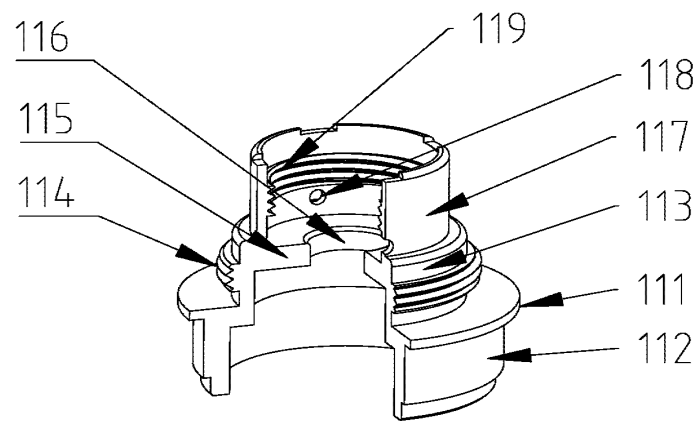


图 9

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2014/093009

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)

A24, A61

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)

JPABS, CNKI, TWABS, CNTXT, USTXT, WOTXT, EPTXT, VEN, CNABS: cigarette, electronic, smoke, simulation, liquid, atomization tube, atomization core

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 203952447 U (LIN, Guangrong), 26 November 2014 (26.11.2014), claims 1-8	1-8
X	CN 201430916 Y (LIU, Zheqi), 31 March 2010 (31.03.2010), description, pages 1-7, claims 1-10, and figures 1-5	1-8
X	CN 203314099 U (LIU, Qiuming), 04 December 2013 (04.12.2013), description, pages 1-5, claims 1-10, and figures 1-9	1-8
A	WO 2013159245 A1 (RUYAN INVESTMENT HOLDINGS LTD. et al.), 31 October 2013 (31.10.2013), the whole document	1-8
A	US 2012006346 A1 (INAGAKI, M.), 12 January 2012 (12.01.2012), the whole document	1-8

☐ 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
14 January 2015 (14.01.2015)

Date of mailing of the international search report
24 March 2015 (24.03.2015)

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, Bin

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2014/093009

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 203952447 U	26 November 2014	None	
CN 201430916 Y	31 March 2010	None	
CN 203314099 U	04 December 2013	US 2014299140 A1	09 October 2014
WO 2013159245 A1	31 October 2013	CA 2870469 A1	31 October 2013
US 2012006346 A1	12 January 2012	WO 2010110226 A1	30 September 2010
		EP 2412396 A1	01 February 2012
		US 8459271 B2	11 June 2013
		JP 2014000420 A	09 January 2014
		TW 201039762 A	16 November 2010

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

国际检索报告

国际申请号

PCT/CN2014/093009

A. 主题的分类 A24F 47/00 (2006. 01) i 按照国际专利分类 (IPC) 或者同时按照国家分类和IPC两种分类		
B. 检索领域 检索的最低限度文献 (标明分类系统和分类号) A24, A61 包含在检索领域中的除最低限度文献以外的检索文献 在国际检索时查阅的电子数据库 (数据库的名称, 和使用的检索词 (如使用)) JPABS, CNKI, TWABS, CNTXT, USTXT, WOTXT, EPTXT, VEN, CNABS: cigarette, electronic, smoke, simulation, 液, 雾化管, 雾化芯, 烟, 仿真, 模拟		
C. 相关文件		
类 型*	引用文件, 必要时, 指明相关段落	相关的权利要求
PX	CN 203952447 U (林光榕) 2014年 11月 26日 (2014 - 11 - 26) 权利要求1-8	1-8
X	CN 201430916 Y (柳哲琦) 2010年 3月 31日 (2010 - 03 - 31) 说明书1-7, 利要求1-10, 图1-5	1-8
X	CN 203314099 U (刘秋明) 2013年 12月 4日 (2013 - 12 - 04) 说明书1-5, 利要求1-10, 图1-9	1-8
A	WO 2013159245 A1 (RUYAN INVESTMENT HOLDINGS LTD 等) 2013年 10月 31日 (2013 - 10 - 31) 全文	1-8
A	US 2012006346 A1 (INAGAKI MICHIHIRO) 2012年 1月 12日 (2012 - 01 - 12) 全文	1-8
☐ 其余文件在C栏的续页中列出。 ☒ 见同族专利附件。		
* 引用文件的具体类型: “A” 认为不特别相关的表示了现有技术一般状态的文件 “E” 在国际申请日的当天或之后公布的在先申请或专利 “L” 可能对优先权要求构成怀疑的文件, 或为确定另一篇引用文件的公布日而引用的或者因其他特殊理由而引用的文件 (如具体说明的) “O” 涉及口头公开、使用、展览或其他方式公开的文件 “P” 公布日先于国际申请日但迟于所要求的优先权日的文件 “T” 在申请日或优先权日之后公布, 与申请不相抵触, 但为了理解发明之理论或原理的在后文件 “X” 特别相关的文件, 单独考虑该文件, 认定要求保护的发明不是新颖的或不具有创造性 “Y” 特别相关的文件, 当该文件与另一篇或者多篇该类文件结合并且这种结合对于本领域技术人员为显而易见时, 要求保护的发明不具有创造性 “&” 同族专利的文件		
国际检索实际完成的日期 2015年 1月 14日		国际检索报告邮寄日期 2015年 3月 24日
ISA/CN的名称和邮寄地址 中华人民共和国国家知识产权局 (ISA/CN) 北京市海淀区蓟门桥西土城路6号 100088 中国 传真号 (86-10) 62019451		授权官员 李彬 电话号码 (86-10) 62085693

表 PCT/ISA/210 (第2页) (2009年7月)

国际检索报告
关于同族专利的信息

国际申请号
PCT/CN2014/093009

检索报告引用的专利文件			公布日 (年/月/日)	同族专利			公布日 (年/月/日)
CN	203952447	U	2014年 11月 26日	无			
CN	201430916	Y	2010年 3月 31日	无			
CN	203314099	U	2013年 12月 4日	US	2014299140	A1	2014年 10月 9日
WO	2013159245	A1	2013年 10月 31日	CA	2870469	A1	2013年 10月 31日
US	2012006346	A1	2012年 1月 12日	WO	2010110226	A1	2010年 9月 30日
				EP	2412396	A1	2012年 2月 1日
				US	8459271	B2	2013年 6月 11日
				JP	2014000420	A	2014年 1月 9日
				TW	201039762	A	2010年 11月 16日

表 PCT/ISA/210 (同族专利附件) (2009年7月)

PCT

打印件(原件为电子形式)

VIII-4-1	声明：发明人资格(仅为指定美国目的) 发明人资格声明(细则4.17(iv)和51之二.1(a)(iv)) (以美国为指定国)：	我在此声明我相信我是本申请中要求保护的发明的原始发明人或者共同的原始发明人。 本声明是关于本国际申请的，且是本国际申请的一部分。 我在此声明上述国际申请由我申请或由我授权他人申请。 我在此承认本申请中任何故意作假的声明将依据《美国法典》第18篇第1001条 (United States Code (U. S. C.)) 受到罚款或不多于五 (5) 年的监禁或二者并罚的惩罚。
VIII-4-1-1-1	姓名： Name (LAST, First)：	林 光榕 LIN, Guangrong
VIII-4-1-1-2	居所： (城市，美国的州（如适用）或国家）	深圳市，中国
VIII-4-1-1-3	邮寄地址： Mailing Address：	中国广东省深圳市 宝安区沙井镇帝堂路沙二蓝天科技园A1栋 518000 A1 Building Shaer Lantian Tech Industrial park, ShaJing Town, Bao'an District, Shenzhen, Guangdong 518000, China
VIII-4-1-1-4	发明人的签字： (该签字必须是发明人的签字，而不是代理人的签字)	/林光榕/
VIII-4-1-1-5	日期：	2014年 12月 04日 (04. 12. 2014)



证 明

本证明之附件是向本局提交的下列专利申请文件副本。

申 请 号： 201420341430.5

申 请 类 型： 实用新型专利

发 明 创 造 名 称： 电子烟

申 请 日： 2014.06.25

申 请 人： 林光榕

发明人或设计人： 林光榕

局长
申长雨

2015 年 01 月 23 日

权 利 要 求 书

1. 一种电子烟，包括相互连接的电池杆、雾化器组件、吸嘴，其特征在于：所述电池杆包括电池、套装了电池的电池杆外套管、电池杆外套管在与雾化器组件相邻的一端设置的第一连接部；所述雾化器组件包括雾化器、内腔中套装雾化器的雾化器外套管，所述雾化器包括雾化器管体、雾化器管体在与电池杆相邻的一端设置的第二连接部；所述雾化器外套管与电池杆相邻的一端设有第三连接部；所述第二连接部与第一连接部相互抵触连接；所述第三连接部与第一连接部通过螺纹可拆卸连接。
2. 根据权利要求 1 所述的电子烟，其特征在于：所述第一连接部包括一端设有外螺纹且兼作负电极与电池负极电连接的第一连接座、设置于第一连接座中心且与电池正极电连接的第一正电极、设置于第一正电极与第一连接座之间的第一绝缘套；所述第二连接部包括兼作负电极并与雾化器的电热丝电连接的第二连接座、设置于第二连接座中心且与雾化器的电热丝电连接的第二正电极、设置于第二正电极与第二连接座之间的第二绝缘套，所述第二正电极轴向设有与雾化器的雾化腔连通的中心通孔且端面径向设有与中心通孔连通的横槽；所述第三连接部设有与第一连接座外螺纹相配合的内螺纹；组装时，所述第一正电极与第二正电极抵触实现电连接，第一连接座与第二连接座实现电连接。
3. 根据权利要求 2 所述的电子烟，其特征在于：所述第一连接座为阶梯形管状结构，外部中间直径最大处形成一个圆形的突肩，所述突肩一端为直径缩小的第一圆柱壁，所述第一圆柱壁套接于电池杆外套管一端内壁，所述突肩的外径等于电池杆外套管的外径，所述突肩另一端为直径缩小的第二圆柱壁，所述第二圆柱壁上设有所述外螺纹，所述第二圆柱壁端部设有底壁，所述底壁上开设供第一绝缘套和第一正电极穿套的中心通孔。
4. 根据权利要求 2 所述的电子烟，其特征在于：所述第二连接座为一端向外设有凸台的圆管体，所述圆管体外壁套接于雾化器管体一端的内壁，所述第二连接座的内部底端设有底壁，所述底壁中心凸设有管状体，所述管状体设有供第二绝缘套和第二正电极穿套的中心通孔。
5. 根据权利要求 4 所述的电子烟，其特征在于：所述圆管体外壁上设有便于安装密封令的环形凹槽。
6. 根据权利要求 4 所述的电子烟，其特征在于：所述凸台的外径大于所述雾化器管体的外径，所述第三连接部的内螺纹底部设有至少一个通气口与雾化器外套管上开设的进气口相通，所述第三连接部内螺纹底端还设有向内凸起的凸环，所述雾化器套装于所述雾化器外套管内时，所述凸台即止位于所述凸环。
7. 根据权利要求 4-6 任一项所述的电子烟，其特征在于：所述第一连接座为阶梯形管状结



权 利 要 求 书

构，外部直径最大处形成一个圆形突肩，所述突肩一端为直径缩小的第一圆柱壁，所述第一圆柱壁套接于电池杆外套管一端内壁，所述突肩的外径等于电池杆外套管的外径，所述突肩另一端为直径两次缩小的第二圆柱壁和第三圆柱壁，所述第二圆柱壁上设有所述外螺纹，所述第三圆柱壁外径小于所述第二连接座的圆管体内径，所述第三圆柱壁上设有至少一个通气孔，所述第三圆柱壁内部底端设有底壁，所述底壁上开设供第一绝缘套和第一正电极穿套的中心通孔。

8. 根据权利要求 7 所述的电子烟，其特征在于：所述第三圆柱壁内壁上设有供充电器接头连接的内螺纹。



说明书

电子烟

技术领域

[0001] 本实用新型涉及一种电子烟。

背景技术

[0002] 现有的电子烟一般包括电池杆、雾化器和吸嘴，雾化器与雾化器外套管设计为一个整体，当雾化器中的烟液用完需要更换雾化器时，需要整体更换，导致雾化器制造和使用成本较高；又雾化器一般通过旋转连接或卡扣连接方式与电池杆连接、连接装置较为复杂，且拆装更换不便，给用户带来不好的使用体验。

发明内容

[0003] 本实用新型的目的是提供一种将雾化器与雾化器外套管分开设计同时简化雾化器与电池杆连接方式的电子烟，使得电子烟的雾化器制造和使用成本大大降低并可以方便地拆装更换雾化器，改善用户的使用体验。

[0004] 本实用新型的技术解决方案是所述电子烟，包括相互连接的电池杆、雾化器组件、吸嘴，其特殊之处在于：所述电池杆包括电池、套装了电池的电池杆外套管、电池杆外套管在与雾化器组件相邻的一端设置的第一连接部；所述雾化器组件包括雾化器、内腔中套装雾化器的雾化器外套管，所述雾化器包括雾化器管体、雾化器管体在与电池杆相邻的一端设置的第二连接部；所述雾化器外套管与电池杆相邻的一端设有第三连接部；所述第二连接部与第一连接部相互抵触连接；所述第三连接部与第一连接部通过螺纹可拆卸连接。

[0005] 作为优选：所述第一连接部包括一端设有外螺纹且兼作负电极与电池负极电连接的第一连接座、设置于第一连接座中心且与电池正极电连接的第一正电极、设置于第一正电极与第一连接座之间的第一绝缘套；所述第二连接部包括兼作负电极并与雾化器的电热丝电连接的第二连接座、设置于第二连接座中心且与雾化器的电热丝电连接的第二正电极、设置于第二正电极与第二连接座之间的第二绝缘套，所述第二正电极轴向设有与雾化器的雾化腔连通的中心通孔且端面径向设有与中心通孔连通的横槽；所述第三连接部设有与第一连接座外螺纹相配合的内螺纹；组装时，所述第一正电极与第二正电极抵触实现电连接，第一连接座与第二连接座实现电连接。

[0006] 作为优选：所述第一连接座为阶梯形管状结构，外部中间直径最大处形成一个圆形的突肩，所述突肩一端为直径缩小的第一圆柱壁，所述第一圆柱壁套接于电池杆外套管一端内壁，所述突肩的外径等于电池杆外套管的外径，所述突肩另一端为直径缩小的第二圆柱



说明书

壁，所述第二圆柱壁上设有所述外螺纹，所述第二圆柱壁端部设有底壁，所述底壁上开设供第一绝缘套和第一正电极穿套的中心通孔。

[0007] 作为优选：所述第二连接座为一端向外设有凸台的圆管体，所述圆管体外壁套接于雾化器管体一端的内壁，所述第二连接座的内部底端设有底壁，所述底壁中心凸设有管状体，所述管状体设有供第二绝缘套和第二正电极穿套的中心通孔。

[0008] 作为优选：所述圆管体外壁上设有便于安装密封令的环形凹槽。

[0009] 作为优选：所述凸台的外径大于所述雾化器管体的外径，所述第三连接部的内螺纹底部设有至少一个通气口与雾化器外套管上开设的进气口相通，所述第三连接部内螺纹底端还设有向内凸起的凸环，所述雾化器套装于所述雾化器外套管内时，所述凸台即止位于所述凸环。

[0010] 作为优选：所述第一连接座为阶梯形管状结构，外部直径最大处形成一个圆形突肩，所述突肩一端为直径缩小的第一圆柱壁，所述第一圆柱壁套接于电池杆外套管一端内壁，所述突肩的外径等于电池杆外套管的外径，所述突肩另一端为直径两次缩小的第二圆柱壁和第三圆柱壁，所述第二圆柱壁上设有所述外螺纹，所述第三圆柱壁外径小于所述第二连接座的圆管体内径，所述第三圆柱壁上设有至少一个通气孔，所述第三圆柱壁内部底端设有底壁，所述底壁上开设供第一绝缘套和第一正电极穿套的中心通孔。

[0011] 作为优选：所述第三圆柱壁内壁上设有供充电器接头连接的内螺纹。

[0012] 与现有技术相比，本实用新型的优点：将电子烟的雾化器与雾化器外套管分开设计，使得雾化器制造和使用成本降低，同时简化雾化器与电池杆的连接方式为抵触连接方式，打开雾化器外套管后可以直接取出雾化器，从而可以方便地拆装更换雾化器，改善用户的使用体验。

附图说明

[0013] 图1是本实用新型电子烟的结构示意图。

[0014] 图2是本实用新型电子烟连接部结构示意图。

[0015] 图3是本实用新型电子烟连接部剖视图。

[0016] 图4是本实用新型电子烟第一连接座结构示意图。

[0017] 图5是本实用新型电子烟第二连接座结构示意图。

[0018] 图6是本实用新型电子烟第三连接部结构示意图。

[0019] 图7是本实用新型电子烟另一实施例的结构示意图。

[0020] 图8是本实用新型电子烟另一实施例连接部结构示意图。



说明书

[0021] 图 9 是本实用新型电子烟另一实施例第一连接座的结构示意图。

[0022] 主要组件符号说明：

电池杆 10、电池杆外套管 101、雾化器 20、雾化器管体 201、雾化器外套管 30、进气口 301、吸嘴 40、第一连接部 1、第一连接座 11、突肩 111、第一圆柱壁 112、第二圆柱壁 113、外螺纹 114、底壁 115、中心通孔 116、第三圆柱壁 117、通气孔 118、内螺纹 119、第一正电极 12、第一绝缘套 13、第二连接部 2、第二连接座 21、凸台 211、圆管体外壁 212、底壁 213、管状体 214、中心通孔 215、环形凹槽 216、第二正电极 22、第二绝缘套 23、第三连接部 3、内螺纹 31、通气口 32。

具体实施方式

[0023] 本实用新型下面将结合附图作进一步详述：

请参阅图 1 所示，本实用新型一实施例的电子烟，包括相互连接的电池杆 10、雾化器组件（图中未示）、吸嘴 40；所述电池杆 10 包括电池（图中未示）、套装了电池的电池杆外套管 101、电池杆外套管 101 在与雾化器组件相邻的一端设置的第一连接部 1；所述雾化器组件包括雾化器 20、内腔中套装雾化器 20 的雾化器外套管 30，所述雾化器 20 包括雾化器管体 201、雾化器管体 201 在与电池杆 10 相邻的一端设置的第二连接部 2；所述雾化器外套管 30 与电池杆 10 相邻的一端设有第三连接部 3；所述第二连接部 2 与第一连接部 1 相互抵触连接；所述第三连接部 3 与第一连接部 1 通过螺纹可拆卸连接。

[0024] 请参阅图 2、图 3、图 4、图 5、图 6 所示，所述第一连接部 1 包括一端设有外螺纹 114 且兼作负电极与电池负极电连接的第一连接座 11、设置于第一连接座 11 中心且与电池正极电连接的第一正电极 12、设置于第一正电极与第一连接座之间的第一绝缘套 13；所述第二连接部 2 包括兼作负电极并与雾化器的电热丝电连接的第二连接座 21、设置于第二连接座 21 中心且与雾化器 20 的电热丝电连接的第二正电极 22、设置于第二正电极 22 与第二连接座 21 之间的第二绝缘套 23，所述第二正电极 22 轴向设有与雾化器 20 的雾化腔连通的中心通孔 221 且端面径向设有与中心通孔连通的横槽 222；所述第三连接部 3 设有与第一连接座外螺纹 114 相配合的内螺纹 31；组装时，所述第一正电极 12 与第二正电极 22 抵触实现电连接，第一连接座 11 与第二连接座 21 实现电连接。

[0025] 可以理解地，第一连接座 11、第二连接座 12 可以兼作为正电极，而第一正电极 12、第二正电极 22 可以作为负电极。可以理解地，第一连接座 11 与第二连接座 21 实现电连接的方式可以是两者直接抵触连接，也可以在两者不直接接触时通过分别与金属材料制成的第三连接部 3 连接实现电连接。

说明书

[0026] 请参阅图 2、图 4 所示，所述第一连接座 11 为阶梯形管状结构，外部中间直径最大处形成一个圆形的突肩 111，所述突肩 111 一端为直径缩小的第一圆柱壁 112，所述第一圆柱壁 112 套接于电池杆外套管 101 一端内壁，所述突肩 111 的外径等于电池杆外套管 101 的外径，所述突肩 111 另一端为直径缩小的第二圆柱壁 113，所述第二圆柱壁 113 上设有所述外螺纹 114，所述第二圆柱壁端部设有底壁 115，所述底壁 115 上开设供第一绝缘套 13 和第一正电极 12 穿套的中心通孔。

[0027] 请参阅图 2、图 5 所示，所述第二连接座 21 为一端向外设有凸台 211 的圆管体 212，所述圆管体 212 的外壁套接于雾化器管体 201 一端的内壁，所述第二连接座 21 的内部底端设有底壁 213，所述底壁 213 中心凸设有管状体 214，所述管状体 214 设有供第二绝缘套 23 和第二正电极 22 穿套的中心通孔 215。

[0028] 优选地，所述圆管体 212 外壁上设有环形凹槽 216，在此凹槽上加设安装密封令，以便所述圆管体 212 的外壁套接于雾化器管体 201 一端的内壁后，加强密封效果，防止烟液渗出。

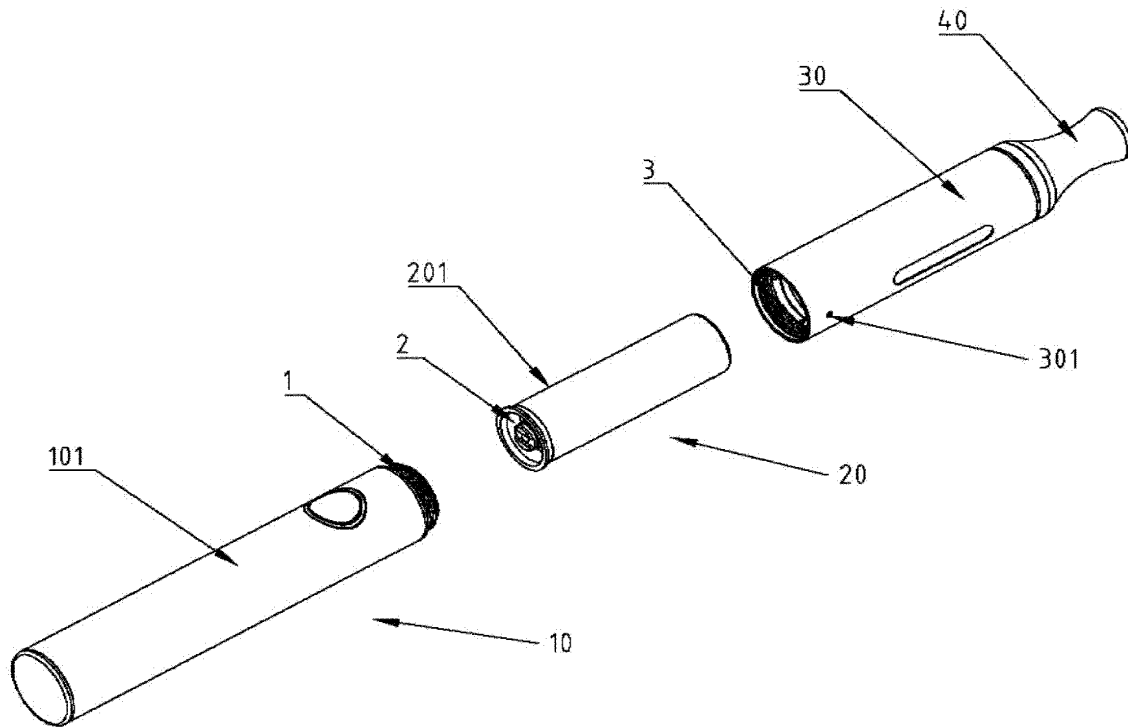
[0029] 请参阅图 2、图 5、图 6 所示，所述凸台 211 的外径大于所述雾化器管体 201 的外径，所述第三连接部 3 的内螺纹 31 底部设有至少一个通气口 32 与雾化器外套管上开设的进气口 301 相通，所述第三连接部内螺纹 31 底端还设有向内径向凸起的凸环 33，所述雾化器 20 套装于所述雾化器外套管 30 内时，所述凸台 211 即止位于所述凸环 33。

[0030] 图 7 出示了本实用新型另一实施例电子烟的结构，该实施例与前述实施例的区别在于第一连接座增加了第三圆柱壁。请参阅图 7、图 8、图 9 所示，所述第一连接座 11 的突肩 111 另一端为直径两次缩小的第二圆柱壁 113 和第三圆柱壁 117，所述第二圆柱壁 113 上设有所述外螺纹 114，所述第三圆柱壁 117 外径小于所述第二连接座 21 的圆管体 212 内径，所述第三圆柱壁 117 上设有至少一个通气孔 118，所述第三圆柱壁 117 内部底端设有底壁 115，所述底壁 115 上开设供第一绝缘套 13 和第一正电极 12 穿套的中心通孔 116。

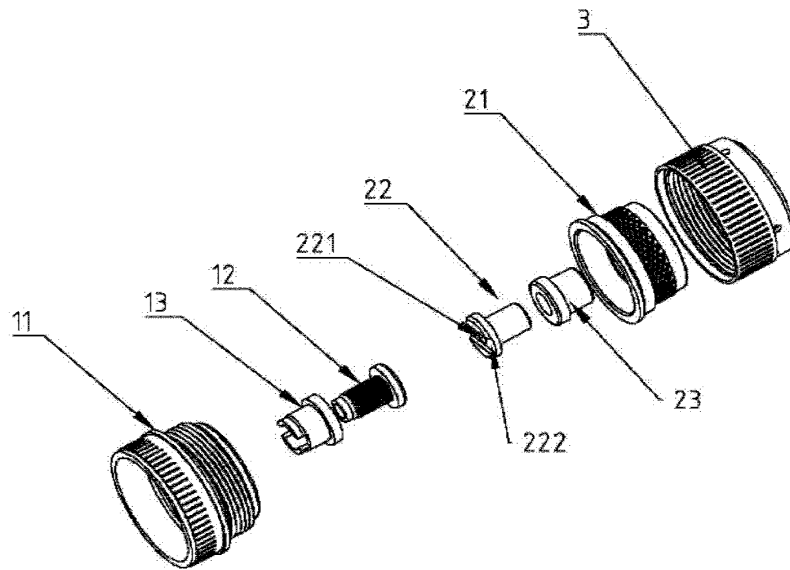
[0031] 优选地，所述第三圆柱壁 117 内壁上设有供充电器接头连接的内螺纹 119，以方便带有通用接头的充电器对该电子烟进行充电连接。

[0032] 以上所述仅为本实用新型的较佳实施例，凡依本实用新型权利要求范围所做的均等变化与修饰，皆应属本实用新型权利要求的涵盖范围。

说明书附图

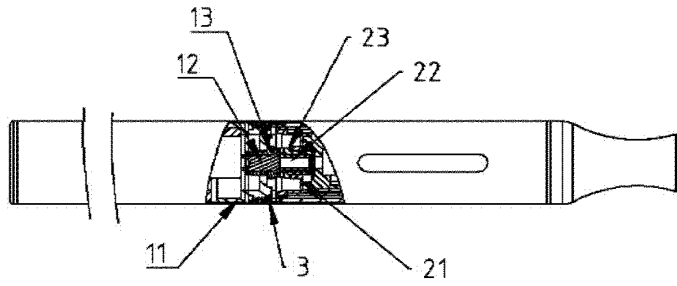


【图号】 图 1

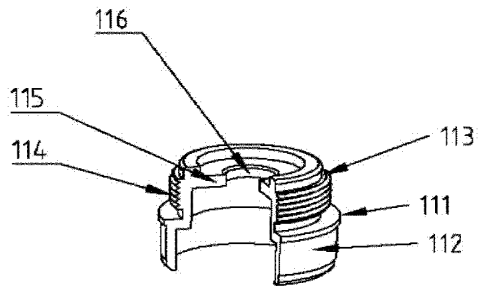


【图号】 图 2

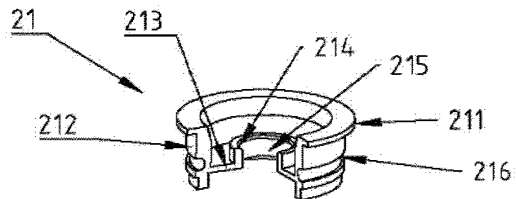
说明书附图



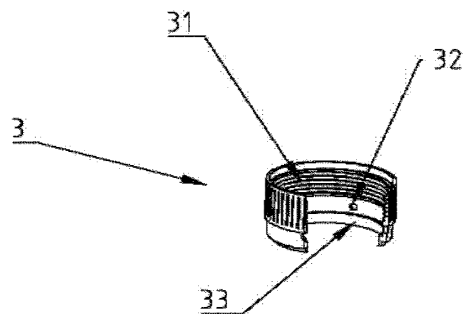
【图号】 图 3



【图号】 图 4

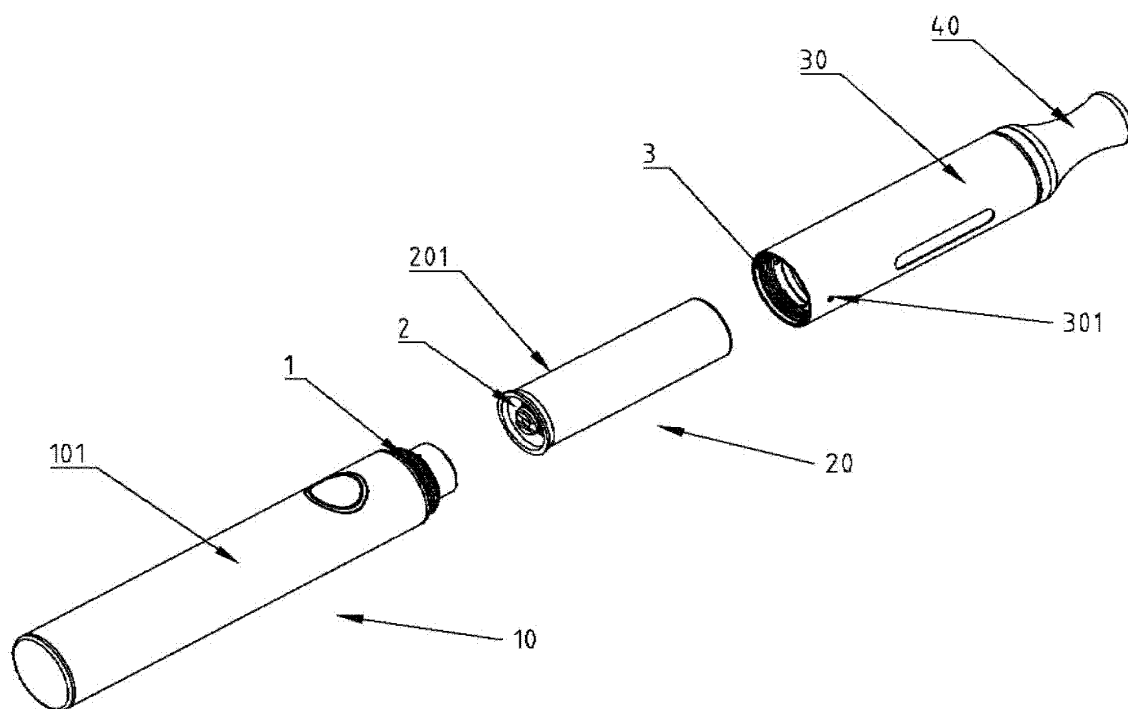


【图号】 图 5

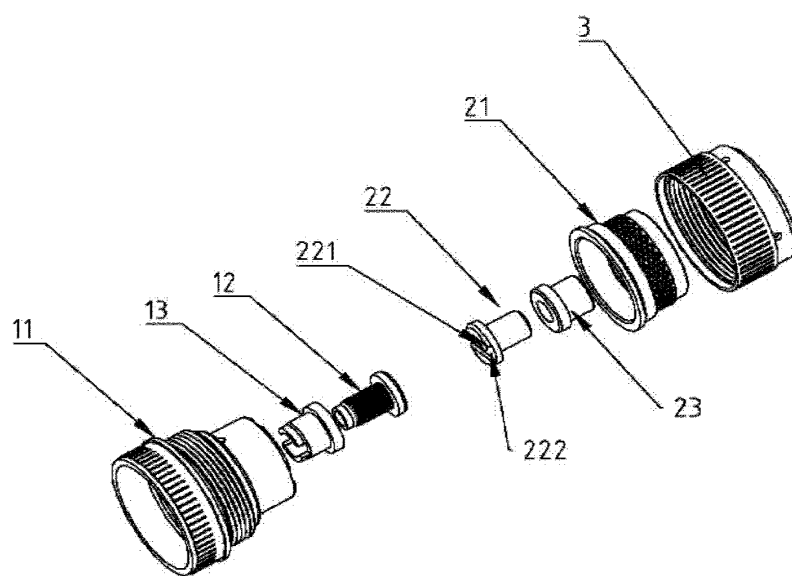


【图号】 图 6

说明书附图

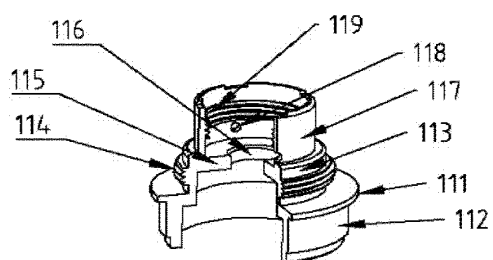


【图号】 图 7



【图号】 图 8

说明书附图



【图号】 图9

**DOCUMENT MADE AVAILABLE UNDER THE
PATENT COOPERATION TREATY (PCT)**

International application number:	PCT/CN2014/093009
International filing date:	04 December 2014 (04.12.2014)
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Date of receipt at the International Bureau:	31 January 2015 (31.01.2015)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a),(b) or (b-bis)

PCT请求书

打印件(原件为电子形式)

0	由受理局填写	
0-1	国际申请号	PCT/CN2014/093009
0-2	国际申请日	2014年 12月 04日 (04. 12. 2014)
0-3	受理局名称和“PCT国际申请”	RO/CN
0-4	PCT/RO/101表 PCT请求书	
0-4-1	软件版本	PCT-SAFE 版本 3. 51. 061. 237 MT/FOP 20140101/0. 20. 5. 21
0-5	请求 下列签字人请求按照专利合作条约的规定 处理本国际申请	
0-6	申请人指定的受理局	中华人民共和国国家知识产权局 (RO/CN)
0-7	申请人或代理人的档案号	PCT14021MQ
I	发明名称	电子烟
II	申请人	
II-1	该人是	申请人和发明人 (applicant and inventor)
II-2	是对下列国家的申请人	所有指定国 (all designated States)
II-4zh	姓名:	林 光榕
II-4en	Name (LAST, First):	LIN, Guangrong
II-5zh	地址	中国广东省深圳市 宝安区沙井镇帝堂路沙二蓝天科技园A1栋 518000
II-5en	Address	A1 Building Shaer Lantian Tech Industrial park , ShaJing Town, Bao'an District Shenzhen, Guangdong 518000 China
II-6	国籍	中国 CN
II-7	居所	中国 CN
II-8	电话号码	0755-29888454
II-9	传真号码	0755-29692438
II-10	电子邮址	steven@happyvaping. net
II-10(a)	电子邮件授权) 授权受理局、国际检索单位、国际局和国 际初步审查单位, 如果其愿意, 使用本电 子邮件地址发送有关本国际申请的通知书 :	作为随后纸件通知书的预送本

PCT请求书

打印件(原件为电子形式)

IV-1	代理人, 共同代表或通信地址 下列人员被委托/已经被委托为代表申请人在主管国际单位办理事务的	代理人 (agent)
IV-1-1zh	名称	深圳市惠邦知识产权代理事务所
IV-1-1en	Name:	SHENZHEN HUIBANG INTELLECTUAL PROPERTY AGENCY FIRM
IV-1-2zh	地址	中国广东省深圳市 南山区科发路8号金融服务技术创新基地1栋5C1 518057
IV-1-2en	Address:	5C1, 1 Building, Finance Base NO. 8, Kefa Road, High-Tech Park Shenzhen, Guangdong 518057 China
IV-1-3	电话号码	0755-86627089-808
IV-1-4	传真号码	0755-86627055-802
IV-1-5	电子邮址	manqun@hbpat.com
IV-1-5(a)	电子邮件授权 授权受理局、国际检索单位、国际局和国际初步审查单位, 如果其愿意, 使用本电子邮件地址发送有关本国际申请的通知书:	作为随后纸件通知书的预送本
IV-1-6	代理人登记号	44271
V	国家的指定	
V-1	根据细则4.9(a), 提交本请求书即为, 指定在国际申请日受PCT约束的所有成员国, 以要求获得可以获得的所有保护类型, 适用情况下, 要求获得地区专利和国家专利。	
VI-1	要求在先国家申请的优先权	
VI-1-1	申请日	2014年 6月 25日 (25. 06. 2014)
VI-1-2	号码	201420341430. 5
VI-1-3	国家	中国 CN
VI-2	优先权文件请求 请受理局准备并向国际局送交上述在先申请中标号如下的在先申请的证明副本:	VI-1
VI-3	援引加入: 如果条约11(1)(iii)(d)或(e)规定的国际申请的某一项目, 或者细则20.5(a)规定的说明书, 权利要求书或附图的某一部分不包含在本国际申请中, 但是全部包含在一个在先申请中, 并且在受理局首次收到条约11(1)(iii)规定的一个或多个项目之日要求了该在先申请的优先权, 则该项目或该部分可以依据细则20.6确认, 为细则20.6的目的援引加入到该国际申请中。	
VII-1	选定的国际检索单位	中华人民共和国国家知识产权局 (ISA/CN)

PCT请求书

打印件(原件为电子形式)

VIII	声明	声明数目	
VIII-1	关于发明人身份的声明	—	
VIII-2	关于申请人在国际申请日有权申请和被授予专利的声明	—	
VIII-3	关于申请人在国际申请日有权要求在先申请的优先权的说明	—	
VIII-4	发明人资格声明(仅为指定美国目的)	1	
VIII-5	关于不影响新颖性的公开或缺乏新颖性的例外的声明	—	

PCT请求书

打印件(原件为电子形式)

VIII-4-1	声明：发明人资格(仅为指定美国目的) 发明人资格声明(细则4.17(iv)和51之二.1(a)(iv)) (以美国为指定国)：	我在此声明我相信我是本申请中要求保护的发明的原始发明人或者共同的原始发明人。 本声明是关于本国际申请的，且是本国际申请的一部分。 我在此声明上述国际申请由我申请或由我授权他人申请。 我在此承认本申请中任何故意作假的声明将依据《美国法典》第18篇第1001条 (United States Code (U. S. C.)) 受到罚款或不多于五 (5) 年的监禁或二者并罚的惩罚。
VIII-4-1-1-1	姓名： Name (LAST, First):	林 光榕 LIN, Guangrong
VIII-4-1-1-2	居所： (城市，美国的州（如适用）或国家）	深圳市，中国
VIII-4-1-1-3	邮寄地址： Mailing Address:	中国广东省深圳市 宝安区沙井镇帝堂路沙二蓝天科技园A1栋 518000 A1 Building Shaer Lantian Tech Industrial park, ShaJing Town, Bao'an District, Shenzhen, Guangdong 518000, China
VIII-4-1-1-4	发明人的签字： (该签字必须是发明人的签字，而不是代理人的签字)	/林光榕/
VIII-4-1-1-5	日期：	2014年 12月 04日 (04. 12. 2014)

PCT请求书

打印件(原件为电子形式)

IX	清单	页数	附以电子文档
IX-1	请求书(包括声明页)	5	✓
IX-2	说明书	6	✓
IX-3	权利要求	2	✓
IX-4	摘要	1	✓
IX-5	附图	4	✓
IX-7	共计	18	
	附件	附以纸件	附以电子文档
IX-8	费用计算页	-	✓
IX-9	单独委托书原件	-	✓
IX-18	PCT-SAFE 物理载体	-	-
IX-20	应与摘要一起公布的附图图号	1	
IX-21	国际申请所用语言	中文	
X-1	申请人, 代理人或共同代表的签字	/满群/	
X-1-1	名称	深圳市惠邦知识产权代理事务所	
X-1-2	签字人姓名	满群	
X-1-3	还要注明此人是以什么名义签字的	代理人	

由受理局填写

10-1	据称的国际申请文件的实际收到日期	2014年 12月 04日 (04. 12. 2014)
10-2	附图:	
10-2-1	收到	
10-2-2	未收到	
10-3	由于随后在期限内收到补充国际申请的文件或附图, 更改的实际收到日期	
10-4	在期限内收到根据PCT第11(2)条所进行的改正的日期	
10-5	国际检索单位	ISA/CN
10-6	检索本的传送推迟到缴纳检索费后	

由国际局填写

11-1	国际局收到登记本的日期	
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference PCT14021MQ	FOR FURTHER ACTION	See item 4 below
International application No. PCT/CN2014/093009	International filing date (<i>day/month/year</i>) 04 December 2014 (04.12.2014)	Priority date (<i>day/month/year</i>) 25 June 2014 (25.06.2014)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant LIN, Guangrong		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 7 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	This report contains indications relating to the following items: <table style="width: 100%; border: none;"> <tr> <td style="width: 5%; text-align: center;">☒</td> <td style="width: 30%;">Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td style="text-align: center;">☒</td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;">☒</td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;">☐</td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	☒	Box No. I	Basis of the report	☒	Box No. II	Priority	☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	☐	Box No. IV	Lack of unity of invention	☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	☐	Box No. VI	Certain documents cited	☐	Box No. VII	Certain defects in the international application	☐	Box No. VIII	Certain observations on the international application
☒	Box No. I	Basis of the report																							
☒	Box No. II	Priority																							
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability																							
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☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																							
☐	Box No. VI	Certain documents cited																							
☐	Box No. VII	Certain defects in the international application																							
☐	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Date of issuance of this report 27 December 2016 (27.12.2016) Authorized officer Lingfei Bai e-mail: pt02.pct@wipo.int
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Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

PCT
TRANSLATION

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference PCT14021MQ		Date of mailing (day/month/year)	24.03.2015
		FOR FURTHER ACTION See paragraph 2 below	
International application No. PCT/CN2014/093009	International filing date (day/month/year) 04.12.2014	Priority date (day/month/year) 25.06.2014	
International Patent Classification (IPC) or both national classification and IPC A24F47/00 (2006.01) i			
Applicant LIN, Guangrong			

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| ☒ | Box No. I | Basis of the opinion |
| ☒ | Box No. II | Priority |
| ☐ | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| ☐ | Box No. IV | Lack of unity of invention |
| ☒ | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| ☐ | Box No. VI | Certain documents cited |
| ☐ | Box No. VII | Certain defects in the international application |
| ☐ | Box No. VIII | Certain observations on the international application |

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/CN	Date of completion of this opinion	Authorized officer
Facsimile No.		Telephone No.

Form PCT/ISA/237 (cover sheet) (July 2011)

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/CN2014/093009

Box No. I

Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:
 - a. (means)
☐ on paper
☐ in electronic form
 - b. (time)
☐ in the international application as filed
☐ together with the international application in electronic form
☐ subsequently to this Authority for the purposes of search
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

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Box No. II

Priority

1. ☐ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43*bis*.1 and 64.1) is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

[1] Upon verification, the right of priority of the
present application is established.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/CN2014/093009

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-8	YES
	Claims	None	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-8	NO
Industrial applicability (IA)	Claims	1-8	YES
	Claims	None	NO
2. Citations and explanations:			
[1] D1: CN 201430916 Y, 31 March 2010 [2] 1. Novelty under PCT Article (2) [3] D1 is the closest prior art, and discloses (see the description, pages 1-7, claims 1-10, and figures 1-5) an electronic cigarette comprising a cigarette rod (equivalent to a battery rod) and a suction nozzle. The cigarette rod comprises a cigarette rod tube (equivalent to a battery rod outer sleeve) and a battery provided therein. The electronic cigarette comprises an atomizer and an atomizer sleeve inside an inner cavity of which the atomizer is provided, the two components constituting an atomizer assembly. The cigarette rod tube is connected to the adjacent atomizer in a detachable manner, and therefore, the cigarette rod tube has a connecting portion at the end adjacent to the atomizer. The atomizer comprises a tubular high-temperature resistant insulator (see figure 5; equivalent to an atomizer tube body); and since an electric heating wire is accommodated in an atomization cavity and is electrically			

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Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	connected to the battery and a control circuit, and the atomizer is adjacent to the battery rod, the high-temperature resistant insulator is considered to have a second connecting portion at the end adjacent to the battery. The atomizer sleeve is connected to a screw at one end inside the cigarette rod tube via a nut (equivalent to the atomizer outer sleeve being provided with a third connecting portion at the end adjacent to the battery rod, and equivalent to the third connecting portion being detachably connected to the first connecting portion via threads). [4] Claim 1 differs from D1 in that D1 does not disclose that the second connecting portion is abutted against and connected to the first connecting portion. It can be seen therefrom that D1 does not disclose the technical solution of claim 1, and therefore, claim 1 and its dependent claims 2-8 comply with the requirement of novelty under PCT Article 33(2). [5] 2. Inventive step under PCT Article 33(3) [6] With regard to the technical feature distinguishing claim 1 from D1, i.e., "the second connecting portion being abutted against and connected to the first connecting portion", since the second connecting portion is located on the atomizer tube body, the first connecting portion is located on the cigarette rod tube, and the electric heating wire in the atomizer tube body is electrically connected to the battery rod (the cigarette rod tube) in the battery rod outer sleeve, it is a common technical means in the art

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

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Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	to employ an electrically connecting method using an abutting connection. It can be seen therefrom that, on the basis of D1 combined with common technical means in the art, it would have been obvious to a person skilled in the art to arrive at the technical solution of claim 1; therefore, said claim does not comply with the requirement of inventive step under PCT Article 33(3).
[7]	The additional technical features of claims 2-8 respectively define the structures of the first connecting portion, the second connecting portion, the third connecting portion, a first connecting base, a second connecting base, an outer wall of a round tube, a boss and a third cylindrical wall; however, these additional technical features are common technical means in the art that can be selected and designed by a person skilled in the art when specifically installing an atomizer assembly and a battery rod according to actual demands. Therefore, the technical solutions of claims 2-8 would have been obvious to a person skilled in the art, and thus do not comply with the requirement of inventive step under PCT Article 33(3).
[8]	3. Industrial applicability under PCT Article 33(4)
[9]	Claims 1-8 can be made or used in industry, and therefore comply with the requirement of industrial applicability under PCT Article 33(4).