

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE APPLICATION OF: LIK HON

APPLICATION No.: 12/226,819

FILED: JANUARY 15, 2009

FOR: **EMULATION AEROSOL SUCKER**

EXAMINER: DIONNE WALLS  
MAYES

ART UNIT: 1747

CONF. No: 4464

**AMENDMENT**

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

Sir:

In response to the non-final Office Action mailed 01/09/2012, please amend the above-identified application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 7 of this paper.

Remarks begin on page 18 of this paper.

[Continued on Next Page.]

Changes to the Specification

In the Title:

Please change the Title of the application from "Emulation Aerosol Sucker" to "Electronic Cigarette"

Please amend the previously filed substitute specification as follows:

[0001] The invention relates to an electronic cigarette containing nicotine but not tar ~~This present invention relates to an electronic sucker unit, in particular, an emulation aerosol sucker that doesn't contain tar but nicotine.~~

[0002] Today when it is known that "smoking is harmful to your health", there are still one billion people smoking cigarettes, and this figure is increasing every year. ~~On Mar. 1, 2003, the World Health Organization (WHO) concluded a global Framework Convention on Tobacco Control. According to the WHO's statistical data, smoking causes 4.9 million deaths each year.~~ Although smoking causes serious respiratory system diseases and cancers, it is still difficult for smokers to completely quit smoking.

[0003] Nicotine is the active ingredient of a cigarette. During smoking, nicotine produces a lot of tar mist as the cigarette burns. The tar mist accesses the smoker's pulmonary alveolus and is quickly absorbed into the blood. Nicotine thus acts on the receptors of the smoker's central nervous system, ~~bringing the euphoria feeling to the smokers.~~

[0005] Some cigarette substitutes do not contain harmful tar but do contain relatively pure nicotine. Such products include the "Cigarette Patch", "Nicotine Gargle", "Aerosol Packed in the High Pressure Tank with Propellant", "Nicotine Chewing Gum", and "~~Nicotine Beverage~~". These products are not as harmful as tar, but they are absorbed very slowly. As a result, the peak concentration of nicotine cannot be effectively established in blood, and the smokers are not satisfied in full. In addition, the substitutes do not satisfy the smokers "smoking" habit of repetitively inhaling and exhaling. Therefore, the substitute products are not effective as cigarette substitutes to quit smoking.

[0006] The purpose of this invention is to provide an electronic cigarette emulation ~~aerosol sucker~~ that substitutes for real cigarettes and helps smokers to quit smoking. For this invention, the aerosol may be regarded as liquid ~~drips~~ drops suspended in the air.

[0007] ~~The technical solution of this invention is the further innovation of the utility model called "Aerosol Electronic Cigarette" for which the inventor filed with the State Intellectual Property Office of the People's Republic of China on Apr. 14, 2000, with the application number of 20040031182.0, and the international application number of PCT/CN2005/000337.~~

[0009] ~~In another exemplary embodiment, an external thread electrode is located in one end of the battery assembly, and an internal thread electrode is located in one~~

~~end of the atomizer assembly. The battery assembly and atomizer assembly are connected through the screw thread electrode. The battery assembly includes the indicator, battery, Metal Oxide Semiconductor Field Effect Transistor (MOSFET) electric circuit board, sensor, silica gel corrugated membrane, primary screwthread electrode, primary negative pressure cavity, and primary shell. On one end of the primary shell is an external thread electrode, while on the other end is an indicator, where there is an indicator cap on one side, in which there is a fine hole. On the other side, the battery and MOSFET electric circuit board are connected successively. The sensor is located on MOSFET electric circuit board. Between the primary screwthread electrode and sensor is a silica gel corrugated membrane, on which there is the primary negative pressure cavity. The sensor is connected with the silica gel corrugated membrane through the switch spring. A microcontroller unit (MCU) is added between MOSFET electric circuit board and sensor. On the surface of the primary shell, there is a screen. The said MCU scans the sensor in the power-saving mode of pulse, and according to the signal parameters of the sensor, restricts the atomizing capacity with the integral function of frequency to single operation time. Also, the MCU accomplishes the pulse width modulation and over discharging protection for the constant power output, automatic cleansing for thousands of times per operation, step lighting/dying down control of the indicator, display of the operation times and battery capacity, automatic recovery after sensor malfunction shutdown, etc. The said sensor may be a switch sensor made fan elastic alloy slice, Hall element of linear output, semiconductor force-sensitive chip, semiconductor matrix thermoelectric bridge chip, capacitance or inductance sensor. The said indicators include two red LEDs. The said~~

~~silica gel corrugated membrane may be made of fluorinated rubber, butyronitrile rubber, or elastic alloy film. The said external thread electrode is a gold-coated stainless steel or brass part with a hole drilled in the center. The said battery is a lithium ion battery, which may be either a rechargeable polymer lithium ion battery or a rechargeable lithium ion battery. The said atomizer assembly includes the internal thread electrode, airliquid separator, atomizer and the secondary shell. One end of the secondary shell is inserted into the cigarette bottle assembly for connection, while the other end has an internal thread electrode, in which there is the secondary negative pressure cavity. The air-liquid separator and the atomizer are connected with the internal thread electrode successively. On the secondary shell, there is an air intake hole. The said internal thread electrode is a gold-coated stainless steel or brass part with a hole drilled in the center. The said air-liquid separator is made of stainless steel or plastic with a hole drilled. The said The atomizer may be a capillary impregnation atomizer or spray atomizer, inside which there is a heating body. The said spray atomizer has a spray hole on it. The said spray hole is made of foamed ceramics, micro-porous ceramics, foamed metal, stainless steel fiber felt, or chemical fiber molding, which are drilled for holes. The said heating body is made of the micro-porous ceramics on which nickel-chromium alloy wire, iron-chromium alloy wire, platinum wire, or other electrothermal materials are wound. Alternatively, it may be a porous component made of electrically conductive ceramics or PTC ceramics and associated with a sintered electrode. The surface of the heating body is sintered into high-temperature glaze to fix the zeolite grains, which are made of natural zeolite, artificial non-organic micro-porous ceramics or aluminum oxide grains. The said cigarette bottle~~

assembly includes the cigarette liquid bottle, fiber and suction nozzle. The fiber containing cigarette liquid is located on one end of the cigarette liquid bottle, and this end is inserted into the secondary shell and lies against the atomizer. The suction nozzle is located on the other end of the cigarette liquid bottle. Between the fiber and interior wall of the cigarette liquid bottle is an air intake hole. The said cigarette liquid bottle and suction nozzle are made of non-toxic plastic. The said fiber is made of polypropylene or nylon. The cigarette liquid in the said fiber for atomization contains 0.1-3.5% nicotine, 0.05-5% tobacco flavor, 0.1-3% organic acid, 0.1-0.5% stabilizer, and propanediol for the remaining. The said sucker and its connecting structure may be loaded with conventional drugs for delivery to the lung.

Amendments to the Claims:

This listing of claims will replace all prior versions of claims in the application.

1-32. (Canceled).

33. (Currently Amended) An electronic ~~emulation~~ cigarette or cigar comprising:

a battery assembly comprising: ~~which comprises~~

a battery assembly housing having a first end and a second end;

a battery~~[[;]]~~ and a Metallic Oxide Semiconductor Field Effect Transistor (MOSFET) electric circuit board within the battery assembly housing,  
and a sensor electrically connected ~~located in communication~~ with the MOSFET electric circuit board;

a first ~~primary~~ screwthread electrode located on the first end of the battery assembly housing, ~~and wherein~~ with the battery, the sensor, the first screwthread electrode, and the second end of the battery assembly housing electrically connected to ~~[[and]]~~ the MOSFET electric circuit board ~~are connected successively between the primary screwthread electrode and the second end of the battery assembly;~~

~~a primary negative pressure cavity; and~~

~~a primary shell;~~

an atomizer assembly attachable to the battery assembly, comprising:

an atomizer assembly housing having a first end and a second end, a second an  
~~atomizer, a secondary screwthread electrode, a secondary negative pressure cavity,~~  
~~and a secondary shell, the secondary screwthread electrode located on the second end~~  
of the atomizer assembly; and

a cigarette solution assembly comprising a first end and a second end, and a  
cigarette solution storage area, wherein the first end of the cigarette solution assembly  
is inserted into the first end of the atomizer assembly housing, thus forming a cigarette  
or cigar body.

34-62. (Canceled).

63. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim  
33, wherein the battery assembly and the atomizer assembly are connected via the first  
screwthread electrode threaded into or onto the second screwthread electrode ~~through~~  
~~the primary and secondary screwthread electrodes.~~

64. (Currently Amended) The electronic cigarette or cigar ~~emulation aerosol~~  
~~sucker~~ of claim 63, wherein the first ~~[[primary]]~~ screwthread electrode is an external  
screwthread electrode and the ~~second~~ ~~[[ary]]~~ screwthread electrode is an internal  
screwthread electrode.

65. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim  
33, wherein the battery assembly further comprises a membrane located between the  
~~[[primary]]~~ first screwthread electrode and the sensor.



66. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 65, wherein the membrane comprises ~~is made of~~ a fluorinated rubber, butyronitrile rubber, or elastic alloy film.

67. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 33, wherein the battery assembly further comprises a micro controller unit (MCU) electrically connected to the MOSFET electric circuit board.

68. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 67, wherein the battery assembly further includes:

an indicator cap on the second end of the battery assembly housing, and a hole in the indicator cap leading into the battery assembly housing ~~primary shell; and an indicator cap~~.

69-70. (Cancelled)

71. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 33, further comprising a display screen located on a surface of the battery assembly housing ~~primary shell~~.

72. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 33, wherein the sensor is a switch sensor, a Hall element, a semiconductor force-sensitive chip, a semiconductor matrix thermoelectric bridge chip, a capacitance sensor or an inductance sensor.

73. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 33, wherein the first screwthread electrode, the second ~~[[ary]]~~ screwthread electrode, or both have a hole through the center.

74-75. (Cancelled)

76. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 33, wherein the battery is rechargeable.

77. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 33, wherein the atomizer assembly has an air intake hole.

78-80. (Cancelled)

81. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 80, wherein the heating element comprises a wire wound in a coil electrically connected to the MOSFET electric circuit board ~~is a coil~~.

82-85. (Cancelled)

86. (Currently Amended) An electronic ~~emulation~~ cigarette or cigar comprising:

a battery assembly, which comprises comprising a battery assembly housing having a first end and a second end, with a battery, a micro-controller unit (MCU) and a sensor electrically connected to a circuit board within the battery assembly housing; a battery; a circuit board; a sensor;

a primary screwthread electrode ~~having a hole through its center electrode~~  
located on the first end of the battery assembly housing and having a  
hole through its center, with the primary screwthread electrode  
electrically connected to the circuit board; ~~wherein the battery and the~~  
~~circuit board are connected successively between the primary~~  
~~screwthread electrode and the second end of the battery assembly;~~

~~a primary negative pressure cavity, and~~

~~a primary shell;~~

~~an indicator located on the second end of the primary shell;~~

~~an indicator cap; and~~

~~a micro controller unit (MCU);~~

an atomizer assembly comprising

an atomizer assembly housing having a first end and a second end;

an atomizer, and a solution storage area in the atomizer assembly  
housing;

~~a secondary shell;~~

a secondary screwthread electrode located on the second end of the  
atomizer assembly housing and having a hole through its center, the

battery assembly and the atomizer assembly connected through the  
primary and secondary screwthread electrodes; and

~~a secondary negative pressure cavity; and~~

~~a solution assembly comprising a solution storage area.~~

87. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 86, ~~wherein~~ with the solution storage area in a the solution assembly having ~~comprises~~ a first end and a second end, and ~~a cigarette solution storage area, wherein the first end of the solution assembly is inserted into the first end of the atomizer assembly housing, thus forming a cigarette or cigar body.~~

88. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 86, wherein the primary screwthread electrode is an external screwthread electrode and the secondary screwthread electrode is an internal screwthread electrode.

89. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 86, wherein the battery assembly further comprises a membrane located between the primary screwthread electrode and the sensor.

90-92. (Cancelled)

93. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 86, further comprising a screen located on a surface of the battery assembly housing ~~primary shell~~.

94. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 86, wherein the sensor comprises a switch sensor, a Hall element, a semiconductor force-sensitive chip, a semiconductor matrix thermoelectric bridge chip, a capacitance sensor or an inductance sensor.

95-97. (Cancelled)

98. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 86, wherein the atomizer assembly has an air intake hole at the secondary screwthread electrode.

99-102. (Cancelled)

103. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 86 with the atomizer including a heater coil 102, ~~wherein the coil is wound around a~~ porous component.

104-106. (Cancelled)

107. (Currently Amended) An electronic ~~emulation~~ cigarette or cigar comprising:

a battery assembly, ~~which comprises~~ housing having a first end and a second end;

a battery connected to a circuit board within the battery assembly housing;

~~a battery;~~

~~a circuit board;~~

~~a sensor;~~

~~a primary screwthread electrode having a hole through its center and~~  
located on the first end of the battery assembly housing;

~~a primary negative pressure cavity; and~~

~~a primary shell;~~

an atomizer assembly comprising

an atomizer assembly housing having a first end and a second end;

~~an atomizer;~~

a secondary screwthread electrode located on the second end of the  
atomizer assembly housing with ~~and having a hole through its center,~~  
the battery assembly and the atomizer assembly ~~[[are]]~~ connected  
through the primary and secondary screwthread electrodes;

~~a secondary negative pressure cavity~~ an atomizer in the atomizer  
assembly housing; and

~~a secondary shell; and~~

a solution assembly, which comprises, a suction nozzle at a first end of the solution assembly, and a solution storage area with a liquid containing fiber material in the solution storage area

~~a solution storage area;~~

~~a fiber wherein the fiber contains a liquid and is located on a first end of the solution storage area; and~~

~~a suction nozzle.~~

108. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 107, wherein the first end of the solution assembly is inserted into the first end of the atomizer assembly, thus forming a cigarette or cigar body.

109-111. (Cancelled)

112. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 107, wherein the circuit board is a Metallic Oxide Semiconductor Field Effect Transistor **[[tube]]** (MOSFET) circuit board.

113. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 107, wherein the primary screwthread electrode is an external screwthread electrode and the secondary screwthread electrode is an internal screwthread electrode.

114. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 107, wherein the battery assembly further comprises a membrane located between the primary screwthread electrode and the sensor.

115. (Cancelled)

116. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 107, wherein the battery assembly further comprises a micro controller unit (MCU) electrically connected to the circuit board.

117-124. (Cancelled)

125. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 107, wherein the atomizer assembly has an air intake hole.

126. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 125, wherein the air intake hole is at the secondary screwthread.

127-129. (Cancelled)

130. (Currently Amended) The electronic ~~emulation~~ cigarette or cigar of claim 107 with atomizer including a heater coil 129, wherein the coil is wound around a porous component.

131. (Previously presented) The emulation cigarette or cigar of claim 129, wherein the coil comprises nickel-chromium alloy wire, iron-chromium alloy wire, platinum wire or another electrothermal material.



132. (Previously presented) The emulation cigarette or cigar of claim 129, wherein the heating element comprises a plurality of zeolite grains.

133. (Previously presented) The emulation cigarette or cigar of claim 107, wherein the primary screwthread electrode connects to a charger.

134. (New) The electronic cigarette of claim 107 with at least one of the primary and the secondary screwthread electrodes having a hole through its center.

**REMARKS**

Responsive to paragraph 4 of the Office Action, claims 33, 86 and 107 have been amended to more positively recite relationships and connections between the elements and to delete various elements. Responsive to paragraph 5 of the Office Action, claim 86 has been amended as suggested. Several of the dependent claims have been cancelled. Further examination is requested.

Dated: May 9, 2012

Customer No. 34055  
Perkins Coie LLP  
Patent - LA  
P.O. Box 1208  
Seattle, WA 98111-1208  
Phone: (310) 788-9900  
Fax: (206) 332-7198

Respectfully submitted,

PERKINS COIE LLP

By: KennethHOhriner/  
Kenneth H. Ohriner  
Reg. No. 31,646

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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APPLICATION No.: 12/226,819  
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ART UNIT: 1747  
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**REQUEST FOR EXTENSION OF TIME**

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

Sir:

A one-month extension of time up to and including 05/09/2012 is respectfully requested for responding to the non-final Office Action mailed 01/09/2012. The extension fee of \$75.00 (small entity), along with any deficiency or overpayment, is authorized to be charged to our Deposit Account No. 50-2586 and is paid herewith.

Dated: May 9, 2012

Respectfully submitted,

Customer No. 34055  
Perkins Coie LLP  
Patent - LA  
P.O. Box 1208  
Seattle, WA 98111-1208  
Phone: (310) 788-9900  
Fax: (206) 332-7198

PERKINS COIE LLP

By: /KennethHOhriner/  
Kenneth H. Ohriner  
Reg. No. 31,646