

(54) **AEROSOL ELECTRONIC CIGARETTE**

(75) Inventor: **Li Han**, Hong Kong (CN)

(73) Assignee: **Ruyan Investments (Holdings) Limited**, Hong Kong (HK)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 395 days.

4,848,374 A	7/1989	Chard
4,945,929 A	8/1990	Egilmex
4,945,931 A	8/1990	Gori
5,042,470 A	8/1991	Kanesaka
5,060,671 A	10/1991	Counts et al.
5,080,114 A	1/1992	Rudolph et al.
5,095,921 A	3/1992	Losee
5,159,940 A	11/1992	Hayward et al.
5,190,060 A	3/1993	Gerding
5,249,586 A	10/1993	Morgan et al.

(Continued)

(21) Appl. No.: **12/226,818**

(22) PCT Filed: **May 15, 2007**

(86) PCT No.: **PCT/CN2007/001575**

§ 371 (c)(1),
(2), (4) Date: **Oct. 29, 2008**

(87) PCT Pub. No.: **WO2007/131449**

PCT Pub. Date: **Nov. 22, 2007**

(65) **Prior Publication Data**

US 2009/0095311 A1 Apr. 16, 2009

(30) **Foreign Application Priority Data**

May 16, 2006 (CN) 2006 2 0090805 U

(51) **Int. Cl.**

<i>A24F 47/00</i>	(2006.01)
<i>A24F 1/32</i>	(2006.01)
<i>A61M 15/06</i>	(2006.01)

(52) **U.S. Cl.** 131/273; 131/360; 131/194; 128/202.21

(58) **Field of Classification Search** 131/194,
131/270-273, 360; 128/200.14, 202.21
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,228,925 A	10/1980	Mendelovich
4,641,053 A	2/1987	Takeda

FOREIGN PATENT DOCUMENTS

CA 2562581 10/2005

(Continued)

OTHER PUBLICATIONS

State Intellectual Property Office (China), International Search Report for PCT/CN07/001575, Aug. 16, 2007.

State Intellectual Property Office (China), English Translation of the Written Opinion for PCT/CN07/001575, Jul. 20, 2007.

State Intellectual Property Office (China), International Search Report for PCT/CN07/001576, Aug. 16, 2007.

(Continued)

Primary Examiner — Richard Crispino

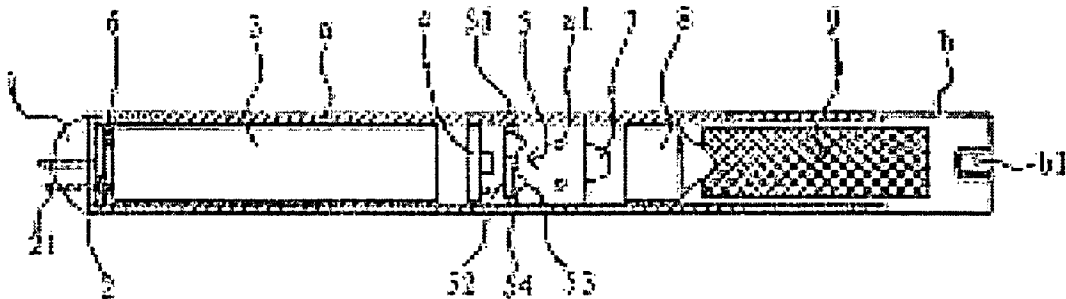
Assistant Examiner — Dionne Walls Mayes

(74) *Attorney, Agent, or Firm* — Perkins Coie LLP

(57) **ABSTRACT**

An aerosol electronic cigarette includes a battery assembly, an atomizer assembly and a cigarette bottle assembly and also includes a shell (a) which is hollow and integrally formed. Said battery assembly connects with said atomizer assembly and both are located in said shell (a). Said cigarette bottle assembly is located in one end of the shell (a), which is detachable. Said cigarette bottle assembly fits with said atomizer assembly. Said shell (a) has through-air-inlets (a1).

41 Claims, 8 Drawing Sheets



R.J. Reynolds Vapor

U.S. PATENT DOCUMENTS

5,261,424	A	11/1993	Sprinkel, Jr.	
5,285,798	A	2/1994	Banerjee	
5,322,075	A	6/1994	Deevi	
5,666,978	A	9/1997	Counts	
5,743,251	A	4/1998	Howell	
5,746,251	A	5/1998	Bullard	
5,878,752	A	3/1999	Adams et al.	
5,894,841	A	4/1999	Voges	
6,040,560	A	3/2000	Fleischhauer	
6,041,789	A	3/2000	Bankert	
6,164,287	A	12/2000	White	
6,178,969	B1	1/2001	St. Charles	
6,196,218	B1*	3/2001	Voges	128/200.14
6,357,671	B1	3/2002	Cewers	
6,443,146	B1	9/2002	Voges	
6,532,965	B1	3/2003	Abhulimen	
6,772,756	B2	8/2004	Shayan	
6,803,545	B2	10/2004	Blake	
6,854,461	B2	2/2005	Nichols	
7,131,599	B2	11/2006	Katase	
7,845,359	B2	12/2010	Montaser	
2003/0108342	A1	6/2003	Sherwood et al.	
2004/0261802	A1	12/2004	Griffin et al.	
2005/0016550	A1	1/2005	Katase	
2005/0236006	A1	10/2005	Cowan	
2006/0196518	A1*	9/2006	Hon	131/360
2007/0267031	A1*	11/2007	Hon	131/273
2008/0276947	A1	11/2008	Martzel	
2009/0151717	A1	6/2009	Bowen	
2009/0230117	A1	9/2009	Fernando	
2009/0260642	A1	10/2009	Monsees	
2009/0272379	A1	11/2009	Thorens	
2010/0031968	A1	2/2010	Sheikh	
2010/0126505	A1	5/2010	Rinker	
2010/0181387	A1	7/2010	Zaffaroni	
2010/0200008	A1	8/2010	Taieb	
2010/0242974	A1	9/2010	Pan	
2010/0307518	A1	12/2010	Wang	
2011/0005535	A1	1/2011	Xiu	
2011/0036346	A1	2/2011	Cohen	

FOREIGN PATENT DOCUMENTS

CN	2047485	U	11/1989
CN	2047485	U	11/1989
CN	1135860		11/1996
CN	1106812	C	10/1998
CN	2293957	Y	10/1998
CN	97216131		10/1998
CN	1252961		5/2000
CN	1530041	A	9/2004
CN	2643681		9/2004
CN	2648836		10/2004
CN	1541577	A	11/2004
CN	1575673	A	2/2005
CN	2719043	*	8/2005
CN	2719043	Y	8/2005
CN	2777995	Y	5/2006
CN	101084801		12/2007
CN	1196660		3/2010
DE	10051792		5/2002
EP	0295122		12/1988
EP	0342538		11/1989
EP	0545186		6/1993
EP	0824927	A	2/1998
EP	0845220	A1	6/1998
EP	0893071	A1	1/1999
EP	0970627	A1	1/2000
FP	1618803	A1	1/2006
EP	1736065	A1	12/2006
GB	1528391	A	10/1978
JP	64000498		1/1989
JP	06114105		4/1994
JP	07506999		8/1995
JP	09075058		3/1997
UA	47514		12/1997

WO	WO9748293		12/1997
WO	WO00049901		8/2000
WO	WO0050111		8/2000
WO	WO03034847		1/2003
WO	WO03022364		3/2003
WO	WO03055486		7/2003
WO	WO03101454		12/2003
WO	WO2004001407	A1	12/2003
WO	2004080216		9/2004
WO	WO2004080216		9/2004
WO	2004095955		11/2004
WO	WO 2004/095955	*	11/2004
WO	2005099494		10/2005
WO	2007131449		11/2005
WO	WO2006082571		8/2006
WO	WO2007078273		7/2007
WO	2007131450		11/2007
WO	2008055423		5/2008
WO	WO2008077271		7/2008
WO	WO2008130813		10/2008
WO	WO2009118085		10/2009
WO	WO2009135729		11/2009
WO	WO2010052323		5/2010
WO	WO2010145805		12/2010
WO	WO2011010334		1/2011
WO	WO2011022431		2/2011

OTHER PUBLICATIONS

State Intellectual Property Office (China), English Translation of the Written Opinion for PCT/CN07/001576, Aug. 3, 2007.

European Patent Office, extended European Search Report for EP 07721148, Dec. 6, 2010.

European Patent Office, extended European Search Report for EP 11001479, Jul. 4, 2011.

Introduction to Selecting and Using Electronic Components, ISBN7-111-13752-3.

Manual for Electric Engineers, 2nd Edition, Mar. 2000.

Manual for Mechanical Designers, 4th Edition, Jan. 2002.

Materials Manual—Nonmetal, Jul. 1985.

Australian Patent Office, Examination Report for SG 200505930-8, May 4, 2006.

Australian Patent Office; Exam Report for AU2004234199, Aug. 14, 2009.

Australian Patent Office; Search and Examination Report for SG200604498-6, Apr. 16, 2008.

Australian Patent Office; Singapore Examination Report for Singapore Patent Application No. 0604498-6 SG 200505930-8, May 13, 2008.

Chinese Patent Office, International Search Report for International Application No. PCT/CN2004000182, Jun. 10, 2004.

Chinese Patent Office, International Search Report for International Application No. PCT/CN2005/000337, Jul. 14, 2005.

European Patent Office, Supplementary European Search Report for EP05729107, Jul. 31, 2007.

European Patent Office, Supplementary European Search Report for EP04718242, Jul. 27, 2007.

European Patent Office, Supplementary Partial European Search Report for EP04718242, May 22, 2007.

European Patent Office, Supplementary Partial European Search Report for EP05729107, May 22, 2007.

Japanese Patent Office; Office Action for JP2006504199, Oct. 30, 2009 (with English translation).

Korean Patent Office; Notice of Preliminary Rejection for KR1020057009767, Jul. 27, 2009.

Macau Patent Office; Official Communication for MOI121, Apr. 17, 2009.

Malaysia Intellectual Property Office; Examiners Report for Malaysian Application No. PI 20041407, Sep. 28, 2007.

Taiwan Intellectual Property Office; Official Letter for TW093111573, Apr. 24, 2009.

Ukrainian Patent Office; Examination Report for UA200511258, Feb. 4, 2009.

* cited by examiner

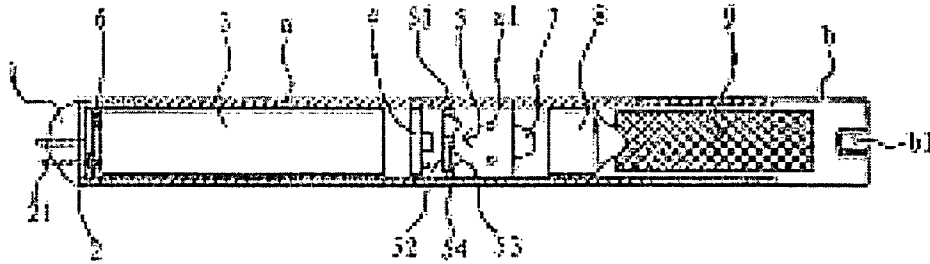


Figure 1

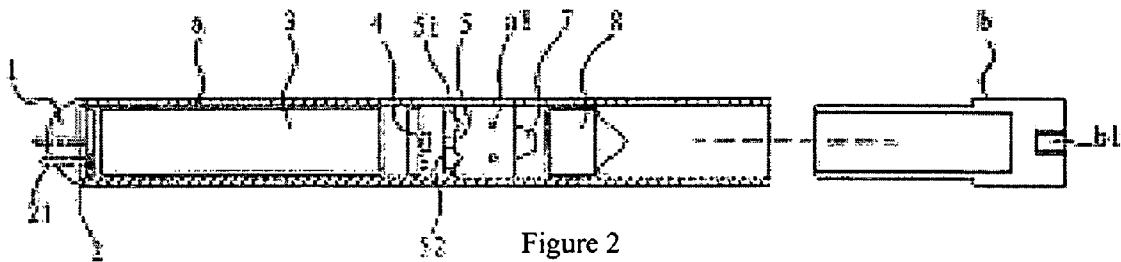


Figure 2

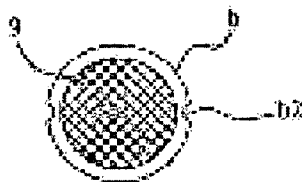


Figure 3

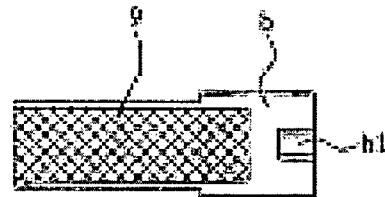


Figure 4

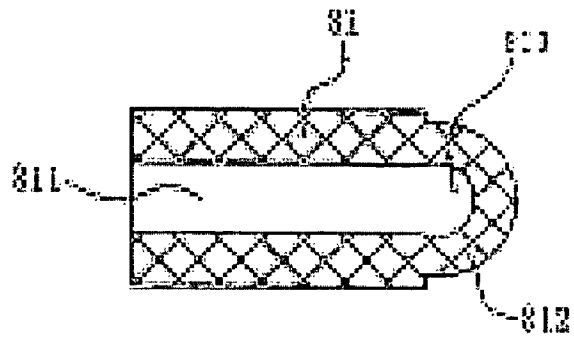


Figure 5

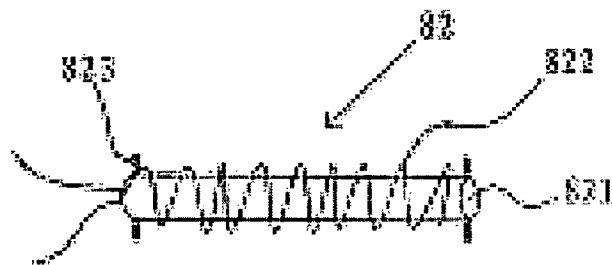


Figure 6

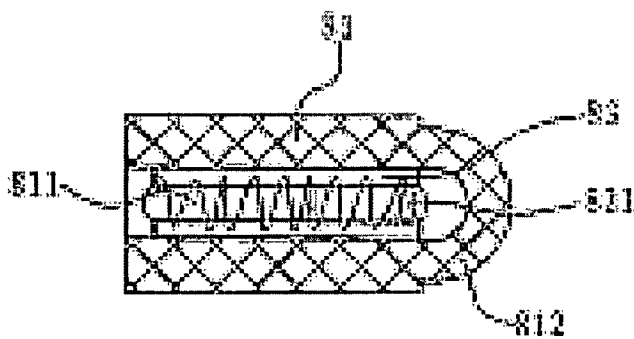


Figure 7

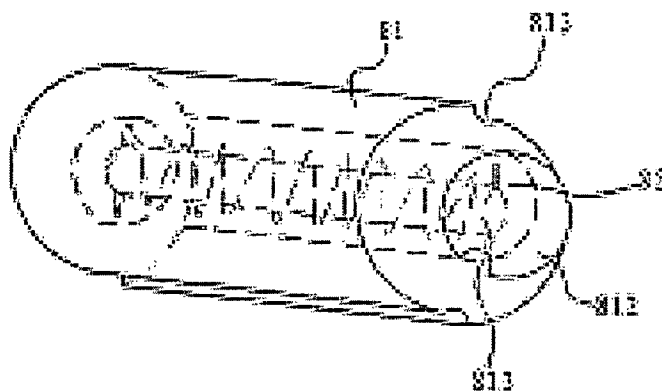


Figure 8

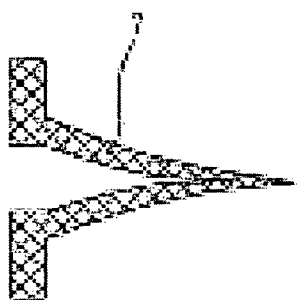


Figure 9

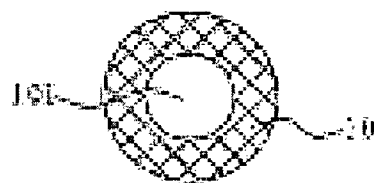


Figure 10

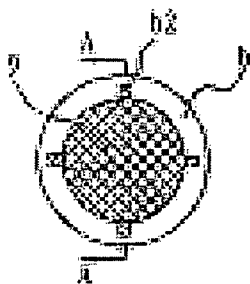


Figure 11

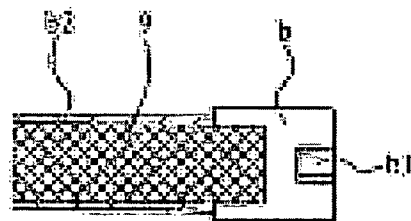


Figure 12

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.