

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Nu Mark LLC  
Petitioner

v.

Fontem Holdings 1 B.V.  
Patent Owner

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Case IPR. No. **Unassigned**  
U.S. Patent No. 9,326,550  
Title: ELECTRONIC CIGARETTE

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**Petition For *Inter Partes* Review of U.S. Patent No. 9,326,550 Under  
U.S.C §§ 311-319 and 37 C.F.R. §§ 42.1-.80, 42.100-.123**

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### Exhibit List

<i>Exhibit #</i>	<i>Description</i>
Ex.1001	U.S. Patent No. 9,326,550 (the “550 Patent”)
Ex.1002	File History for App. No. 13/754,521 (the “521 Application”) (issued as U.S. Pat. No. 9,370,205) (excerpt)
Ex.1003	Declaration of John M. Collins, Ph.D.
Ex.1004	<i>Curriculum Vitae</i> of Dr. John M. Collins
Ex.1005	U.S. Pat. App. Pub. No. 2009/0126745 (“Hon 745”)
Ex.1006	File History for App. No. 12/226,819 (“the 819 Application”) (issued as U.S. Pat. No. 8,375,957) (excerpt)
Ex.1007	U.S. Pat. No. 8,375,957 (“the 957 Patent”)
Ex.1008	Decision Instituting IPR2014-01300 (Paper 8)
Ex.1009	Certified Translation of CN 200620090805 (Chinese original included)
Ex.1010	Claim Construction Order, <i>Fontem Ventures B.V. et al. v. NJOY, Inc. et al.</i> , Civil Action No. 2:14-cv-1645 (C.D. Cal.), Jan. 29, 2015 [DI-65]
Ex.1011	Complaint, <i>Fontem Ventures B.V., et al. v. Nu Mark LLC</i> , Case No. 2:16-cv-04537 (excerpt)
Ex.1012	U.S. Patent No. 8,689,805 (the “805 Patent”)
Ex.1013	File History for App. No. 13/426,817 (issued as U.S. 8,689,805) (excerpt)
Ex.1014	Certified Translation of WO 2007/131450 (Chinese original included)
Ex.1015	Patent Owner Prelim. Resp., <i>Logic Technology Development, LLC v. Fontem Holdings 1 B.V.</i> , IPR2015-00098, Paper 7 (Feb. 18, 2015)

Petition for *Inter Partes* Review of U.S. Pat. No. 9,326,550

<i>Exhibit #</i>	<i>Description</i>
Ex.1016	U.S. Pat. App. Pub. No. 2009/0188490
Ex.1017	File History for App. No. 14/720,288 (the “288 Application”) (issued as U.S. Pat. No. 9,326,550)

## 1. INTRODUCTION

Nu Mark LLC (“Petitioner”), in accordance with 35 U.S.C. §§ 311-319 and 37 C.F.R. § 42.100, hereby requests *inter partes* review of claims 1-12 of United States Patent No. 9,326,550 titled “Electronic Cigarette” (Ex.1001, the “550 Patent”). According to USPTO records, the 550 Patent is assigned to Fontem Holdings 1 B.V (“Fontem” or “Patent Owner”).

Petitioner has previously filed petitions for *inter partes* review directed at continuation applications filed by Patent Owner that claim well beyond the scope of the parent application, yet at the same time claim priority to the parent application. As detailed in IPR2016-01283, -1288, -1438, -1641, -1642<sup>1</sup>, -1664, and -1668, these continuation applications are invalid as anticipated by an intervening publication because the broad child claims are not supported by the narrow parent disclosure. These petitions have also detailed Patent Owner’s practice of deleting limiting language from the specification during the pendency of the continuing applications, and improperly characterizing deletions as grammatical, punctuation, and/or redundancy corrections. The 550 Patent is yet another example of a continuation application filed by Patent Owner that is

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<sup>1</sup> IPR2016-01642 addresses U.S. 9,370,205 (“the 205 Patent”). The 550 Patent is a continuation of the 205 Patent.

anticipated by an intervening publication because the parent application does not support the broadened claims.

The 550 Patent claims a vaporizing device that includes a battery assembly, an atomizer assembly, and a “liquid supply.” Ex.1001 at claim 1. As explained in detail in this Petition, the claims of the 550 Patent are unpatentable as anticipated because the 550 Patent, which was filed on May 22, 2015, is not entitled to claim the benefit of the May 15, 2007 filing date of the U.S. parent application.

The 550 Patent is not entitled to the May 15, 2007 priority date because the parent application, which was published as U.S. 2009/0126745 (“Hon 745”) and issued as U.S. 8,375,957 (“the 957 Patent”), does not provide written description support for the overbroad claims of the 550 Patent. *See, e.g., PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306 (Fed. Cir. 2008) (“It is elementary patent law that a patent application is entitled to the benefit of the filing date of an earlier filed application only if the disclosure of the earlier application provides support for the claims of the later application, as required by 35 U.S.C. § 112.”). Instead, the disclosure in the parent application is plainly limited to a device that includes three assemblies—a battery assembly, an atomizer assembly, **and a bottle assembly**. The various parts of the parent application, including the Abstract, Contents of the Invention, Specific Mode for Carrying Out the Invention, and Figures are all limited to a device that includes a bottle assembly for storing liquid.

None of the original claims are directed to bottle-less devices<sup>2</sup> nor are any such variants otherwise disclosed or contemplated in the parent application. Therefore, the parent application does not support the bottle-less claims of the 550 Patent. *See, e.g., Anascape, Ltd. v. Nintendo of Am., Inc.*, 601 F.3d 1333, 1339 (Fed. Cir. 2010) (“A patentee is not deemed to disclaim every variant that it does not mention. However, neither is a patentee presumed to support variants that are not described.”); *PowerOasis, Inc.*, 522 F.3d at 1306 (“Entitlement to a filing date does not extend to subject matter which is not disclosed, but would be obvious over what is expressly disclosed.”) (citations omitted).

That the parent application does not provide support for a bottle-less device is evident from the prosecution history of the application that issued as the 205 Patent, App. No. 13/754,521 (the “521 Application”), which immediately precedes the 550 Patent in its claimed priority chain. The 521 Application, a continuation of the May 15, 2007 parent application, was filed with a “substitute specification”

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<sup>2</sup> The use of “bottle-less” here means the claims do not require a bottle, not that the claims exclude this structure. *See, e.g., ICU Med., Inc. v. Alaris Med. Sys.*, 558 F.3d 1368, 1377 (Fed. Cir. 2009) (“[W]e refer to these claims as spikeless not because they exclude the preferred embodiment of a valve with a spike but rather because they do not include a spike limitation--i.e., they do not require a spike.”).



that modified the original specification of the parent application by deleting limiting language that plainly characterized the “invention” as a device including three assemblies—a battery assembly, an atomizer assembly, **and** a cigarette bottle assembly. For example, the Summary of the Invention section was changed as follows:

~~The purpose of this invention is fulfilled with the following solution:~~

~~this invention includes~~ An improved electronic cigarette has a battery assembly, an atomizer assembly and a cigarette bottle assembly.

*Compare* Ex. 1002 at p.4 [0004] *with* Ex. 1005 at [0008]. In addition, all twelve instances of the phrase “this invention” were deleted from the Description of the Drawings, including from the description of Figures 4, 5A, 5B, and 12 (which illustrate the device including a bottle assembly). *Compare* Ex. 1002 at p.5 [0005]-[0018] *with* Ex. 1005 at [0011]-[0024].

Remarkably, the applicant told the Patent Office that the changes to the specification were “to correct various grammatical and punctuation errors; divide the text into paragraphs; to delete extraneous and redundant content; and to add paragraph numbers for reference, and with the substitute specification having further deletions,” and that “[n]o new matter has been added.” Ex. 1002 at p.2. This was clearly not the case. These changes were intended to broaden the scope of the original disclosure, and introduced new matter. *Anascape Ltd.*, 601 F.3d. at

1338 (“A description can be broadened by removing limitations. The limitation to a single input member capable of movement in six degrees of freedom was removed, in filing the ’700 application, and new claims were provided of commensurately broadened scope. This is classical new matter.”); *see also Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed. Cir. 2007) (“When a patent thus describes the features of the ‘present invention’ as a whole, this description limits the scope of the invention.”).

The bottle-less claims of the 550 Patent are not entitled to the filing date of the parent application. Accordingly, these claims are anticipated by U.S. 2009/0126745 (Ex. 1005, “Hon 745”), which is the May 21, 2009 publication of the 550 Patent’s parent application.

## **2. REQUIREMENTS FOR PETITION FOR INTER PARTES REVIEW**

### **2.1. Grounds for Standing (37 C.F.R. § 42.104(a))**

Petitioner certifies that the 550 Patent is available for *inter partes* review and that Petitioner is not barred or estopped from requesting *inter partes* review of the challenged claims of the 550 Patent on the grounds identified herein.

### **2.2. Notice of Lead and Backup Counsel and Service Information**

Pursuant to 37 C.F.R. §§ 42.8(b)(3), 42.8(b)(4), and 42.10(a), Petitioner provides the following designation of Lead and Backup counsel.

<b>Lead Counsel</b>	<b>Backup Counsel</b>
<p>Elizabeth Stotland Weiswasser  Registration No. 55,721  (elizabeth.weiswasser@weil.com)  (Numark.Fontem.WGM.Service@weil.com)</p> <p>Postal &amp; Hand-Delivery Address:  Weil, Gotshal &amp; Manges LLP  767 Fifth Avenue  New York, NY 10153  T: 212-310-8022; F: 212-310-8007</p>	<p>Anish R. Desai  Registration No. 73,760  (anish.desai@weil.com)</p> <p>Postal &amp; Hand-Delivery Address:  Weil, Gotshal &amp; Manges LLP  1300 Eye Street NW, Suite 900  Washington, DC 20005-5504  T: 202-682-7103; F: 202-812-6186</p> <p>Adrian C. Percer  Registration No. 46,986  (adrian.percer@weil.com)</p> <p>Jeremy Jason Lang  Registration No. 73,604  (jason.lang@weil.com)</p> <p>Brian C. Chang  Registration No. 74,301  (brian.chang@weil.com)</p> <p>Postal &amp; Hand-Delivery Address:  Weil, Gotshal &amp; Manges LLP  201 Redwood Shores Parkway  Redwood Shores, CA 94065  T: 650-802-3124; F: 650-802-3100</p>

Pursuant to 37 C.F.R. § 42.10(b), a Power of Attorney for the Petitioner is attached.

### **2.3. Notice of Real-Parties-in-Interest (37 C.F.R. § 42.8(b)(1))**

For purposes of 35 U.S.C. § 312(a)(2) and 37 C.F.R. § 42.8(b)(1) only, Petitioner, Nu Mark LLC, identifies the real-parties-in-interest as Nu Mark LLC

and Altria Client Services LLC. Nu Mark LLC further discloses that it is an indirect wholly owned subsidiary of Altria Group, Inc., and states that under the governing standard Altria Group, Inc. is not a real-party-in-interest. *See* Patent Trial Practice Guide 77 Fed. Reg., Vol. 77, No. 157 (2012) at 48759-60. Altria Group, Inc. nevertheless agrees to be bound by any final written decision in these proceedings. *See* 35 U.S.C. § 315(e).

**2.4. Notice of Related Matters (37 C.F.R. § 42.8(b)(2))**

Fontem has asserted U.S. Patent Nos. 8,490,628, 8,393,331, 8,893,726, 8,899,239, 8,365,742, 8,689,805, 8,375,957, and 8,863,752 against Nu Mark LLC in *Fontem Ventures B.V. et al. v. Nu Mark LLC*, 2:16-cv-02291 (C.D. Cal.) and U.S. Patent Nos. 9,364,027, 9,326,548, 9,326,549, 9,326,550, 9,326,551, 9,339,062, 9,370,205, and 9,320,300 in *Fontem Ventures B.V. et al v. Nu Mark LLC*, 2:16-cv-04537 (C.D. Cal.) (collectively with 2:16-cv-02291, the “Co-Pending Litigations”).<sup>3</sup> Fontem or its predecessors-in-interest have also asserted one or more of the patents asserted in the Co-Pending Litigations (the “Asserted Patents”), or patents related to the Asserted Patents, in the following actions:

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<sup>3</sup> The judge presiding over the Co-Pending Litigations has transferred both cases to the Middle District of North Carolina but, as of the filing of this Petition, the cases have not yet been docketed there.

- a. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. NJOY, Inc.*, Civil Action No. 2:14-cv-1645 (C.D. Cal.);
- b. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. LOEC, Inc.*, Civil Action No. 2:14-cv-1648 (C.D. Cal.);
- c. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. CB Distributors, Inc. and DR Distributors, LLC*, Civil Action No. 2:14-cv-1649 (C.D. Cal.);
- d. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. Vapor Corp.*, Civil Action No. 2:14-cv-1650 (C.D. Cal.);
- e. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. FIN Branding Group, LLC and Victory Electronic Cigarettes Corporation*, Civil Action No. 2:14-cv-1651 GW (C.D. Cal.);
- f. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. Ballantyne Brands, LLC*, Civil Action No. 2:14-cv-1652 (C.D. Cal.);
- g. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. Spark Industries, LLC*, Civil Action No. 2:14-cv-1653 (C.D. Cal.);
- h. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. Logic Technology Development LLC*, Civil Action No. 2:14-cv-1654 (C.D. Cal.);
- i. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. VMR Products, LLC, dba V2Cigs*, Civil Action No. 2:14-cv-1655 (C.D. Cal.);

j. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. NJOY, INC.*,  
Civil Action No. 2:14-cv-8144 (C.D. Cal.);

k. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. LOEC, INC.*,  
Civil Action No. 2:14-cv-8149 (C.D. Cal.);

l. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. CB Distributors, Inc., et al*, Civil Action No. 2:14-cv-8154 (C.D. Cal.);

m. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. Vapor Corp.*,  
Civil Action No. 2:14-cv-8155 (C.D. Cal.);

n. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. FIN Branding Group, LLC and Electronic Cigarettes International Group, Ltd.*, Civil Action No. 2:14-cv-8156 (C.D. Cal.);

o. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. Ballantyne Brands, LLC*, Civil Action No. 2:14-cv-8157 (C.D. Cal.);

p. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. Spark Industries, LLC*, Civil Action No. 2:14-cv-8158 (C.D. Cal.);

q. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. Logic Technology Development LLC*, Civil Action No. 2:14-cv-8160 (C.D. Cal.);

r. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. VMR Products, LLC, dba V2CIGS*, Civil Action No. 2:14-cv-8161 (C.D. Cal.);

s. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. NJOY, INC.*,  
Civil Action No. 2:14-cv-9263 (C.D. Cal.);

t. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. LOEC, INC.*,  
Civil Action No. 2:14-cv-9265 (C.D. Cal.);

u. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. CB Distributors, Inc., and DR distributors, LLC, dba 21st Century Smoke, LLC*, Civil Action No. 2:14-cv-9266 (C.D. Cal.);

v. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. Vapor Corp.*,  
Civil Action No. 2:14-cv-9267 (C.D. Cal.);

w. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. FIN Branding Group, LLC and Electronic Cigarettes International Group, Ltd.*, Civil Action No. 2:14-cv-9268 (C.D. Cal.);

x. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. Ballantyne Brands, LLC*, Civil Action No. 2:14-cv-9269 (C.D. Cal.);

y. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. Spark Industries, LLC*, Civil Action No. 2:14-cv-9270 (C.D. Cal.);

z. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. Logic Technology Development LLC*, Civil Action No. 2:14-cv-9271 (C.D. Cal.);

aa. *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. VMR Products, LLC, dba V2CIGS*, Civil Action No. 2:14-cv-9273 (C.D. Cal.);

bb. *Ruyan Investment (Holdings) Limited v. Sottera, Inc.*, Civil Action No. 2:12-cv-5454 (C.D. Cal.);

cc. *Ruyan Investment (Holdings) Limited v. LOEC, Inc.*, Civil Action 2:12-cv-5455 (C.D. Cal.);

dd. *Ruyan Investment (Holdings) Limited v. CB Distributors, Inc., an Illinois corporation and DR Distributors, LLC, dba 21st Century Smoke, LLC*, Civil Action No. 2:12-cv-5456 (C.D. Cal.);

ee. *Ruyan Investment (Holdings) Limited v. The Safe Cig, LLC*, Civil Action No. 2:12-cv-5462 (C.D. Cal.);

ff. *Ruyan Investment (Holdings) Limited v. Vapor Corp.*, Civil Action No. 2:12-cv-5466 (C.D. Cal.);

gg. *Ruyan Investment (Holdings) Limited v. Finiti Branding Group, LLC*, Civil Action No. 2:12-cv-5468 (C.D. Cal.);

hh. *Ruyan Investment (Holdings) Limited v. Barjan LLC*, Civil Action No. 2:12-cv-5470 (C.D. Cal.);

ii. *Ruyan Investment (Holdings) Limited v. Spark Industries, LLC*, Civil Action No. 2:12-cv-5472 (C.D. Cal.);

jj. *Ruyan Investment (Holdings) Limited v. Nicotek LLC*, Civil Action No. 2:14-cv-5477 (C.D. Cal.);



kk. *Ruyan Investment (Holdings) Limited v. Logic Technology Development LLC*, Civil Action No. 2:14-cv-5482 (C.D. Cal.);

ll. *Fontem Ventures B.V. and Fontem Holdings I B.V. v. R.J. Reynolds Vapor Company*, Civil Action No. 2:16-cv-2286 (C.D. Cal.);

mm. *Fontem Ventures B.V. and Fontem Holdings I B.V. v. R.J. Reynolds Vapor Company*, Civil Action No. 2:16-cv-3049 (C.D. Cal.);

nn. *Fontem Ventures B.V. and Fontem Holdings I B.V. v. R.J. Reynolds Vapor Company*, Civil Action No. 2:16-cv-04534 (C.D. Cal.).

In addition to the present Petition, Petitioner has filed the following petitions for *inter partes* review of patents asserted in the Co-Pending Litigation: Petitions 1 and 2 for *Inter Partes* Review of U.S. Patent No. 8,490,628, IPR2016-01283, -01285; Petitions 1 and 2 for *Inter Partes* Review of U.S. Patent No. 8,893,726, IPR2016-01288, -01297; Petitions 1 and 2 for *Inter Partes* Review of U.S. Patent No. 8,393,331, IPR2016-01299, -01438, Petition for *Inter Partes* Review of U.S. Patent No. 8,899,239, IPR2016-01302; Petition for *Inter Partes* Review of U.S. Patent No. 8,365,742, IPR2016-01303; Petition for *Inter Partes* Review of U.S. Patent No. 8,689,805, IPR2016-01298; Petition for *Inter Partes* Review of U.S. Patent No. 8,375,957, IPR2016-01307; Petition for *Inter Partes* Review of U.S. Patent No. 8,863,752, IPR2016-01309; Petition for *Inter Partes* Review of U.S. Patent No. 9,326,548, IPR2016-01641; Petition for *Inter Partes* Review of U.S.

Patent No. 9,370,205, IPR2016-01642; Petition for *Inter Partes* Review of U.S. Patent No. 9,326,549, IPR2016-01664; Petition for *Inter Partes* Review of U.S. Patent No. 9,364,027, IPR2016-01668.

In addition to the *inter partes* review petitions above, Petitioner identifies the following related *inter partes* review proceedings and administrative matters:

- a. Petition for *Inter Partes* Review of U.S. Patent No. 8,375,957, Case No. IPR2015-00098, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed October 21, 2014 by Petitioner Logic Technology Development, LLC;
- b. Petition for *Inter Partes* Review of U.S. Patent No. 8,375,957, Case No. IPR2015-01513, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed June 26, 2015 by Petitioner JT International S.A.;
- c. Petition for *Inter Partes* Review of U.S. Patent No. 8,863,752, Case No. IPR2015-01604, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed July 20, 2015 by Petitioner JT International S.A.;
- d. Petition for *Inter Partes* Review of U.S. Patent No. 8,863,752, Case No. IPR2015-01301, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed May 29, 2015 by NJOY, Inc.; CB Distributors, Inc.; DR Distributors, LLC; FIN Branding Group, LLC; Electronic Cigarettes International Group, Ltd. f/k/a Victory Electronic Cigarettes Corporation; and, Logic Technology Development LLC;

e. Petition for *Inter Partes* Review of U.S. Patent No. 8,490,549, Case No. IPR2014-01300, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed August 15, 2014 by NJOY, Inc.;

f. Petition for *Inter Partes* Review of U.S. Patent No. 8,893,726, Case No. IPR2015-01302, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed May 29, 2015 by NJOY, Inc.; CB Distributors, Inc.; DR Distributors, LLC; FIN Branding Group, LLC; Electronic Cigarettes International Group, Ltd. f/k/a Victory Electronic Cigarettes Corporation; and, Logic Technology Development LLC;

g. Petition for *Inter Partes* Review of U.S. Patent No. 8,899,239, Case No. IPR2015-01304, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed May 29, 2015 by NJOY, Inc.; CB Distributors, Inc.; DR Distributors, LLC; FIN Branding Group, LLC; Electronic Cigarettes International Group, Ltd. f/k/a Victory Electronic Cigarettes Corporation; and, Logic Technology Development LLC;

h. Petition for *Inter Partes* Review of U.S. Patent No. 8,365,742, Case No. IPR2015-01587, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed July 14, 2015 by Petitioner JT International S.A.;

i. Petition for *Inter Partes* Review of U.S. Patent No. 8,365,742, Case No. IPR2015-00859, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed March 10, 2015 by Petitioner VMR Products, LLC;

j. Petition for *Inter Partes* Review of U.S. Patent No. 8,689,805, Case No. IPR2014-01529, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed September 22, 2015 by Petitioner CB Distributors, Inc. and DR Distributors, LLC;

k. Petition for *Inter Partes* Review of U.S. Patent No. 8,689,805, Case No. IPR2015-01578, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed July 15, 2015 by Petitioner JT International S.A.;

l. Petition for *Inter Partes* Review of U.S. Patent No. 8,689,805, Case No. IPR2015-01027, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed April 10, 2015 by Petitioner NJOY, Inc.;

m. Petition for *Inter Partes* Review of U.S. Patent No. 8,393,331, Case No. IPR2014-01289, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed August 14, 2014 by NJOY, Inc.

n. Petition for *Inter Partes* Review of U.S. Patent No. 8,365,742, Case No. IPR2016-01268, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed July 2, 2016 by R.J. Reynolds Vapor Company.

o. Petition for *Inter Partes* Review of U.S. Patent No. 8,893,726, Case No. IPR2016-01270, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed July 2, 2016 by R.J. Reynolds Vapor Company.

p. Petition for *Inter Partes* Review of U.S. Patent No. 8,899,239, Case No. IPR2016-01272, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed July 2, 2016 by R.J. Reynolds Vapor Company.

q. Petition for *Inter Partes* Review of U.S. Patent No. 8,490,628, Case No. IPR2016-01527, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed August 3, 2016 by R.J. Reynolds Vapor Company.

r. Petition for *Inter Partes* Review of U.S. Patent No. 8,365,742, Case No. IPR2016-01532, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed August 5, 2016 by R.J. Reynolds Vapor Company.

s. Petition for *Inter Partes* Review of U.S. Patent No. 9,326,548, Case No. IPR2016-01691, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed August 30, 2016 by R.J. Reynolds Vapor Company.

t. Petition for *Inter Partes* Review of U.S. Patent No. 9,326,548, Case No. IPR2016-01692, before the Patent Trial and Appeal Board at the U.S. Patent Office, filed August 30, 2016 by R.J. Reynolds Vapor Company.

The 550 Patent claims priority to a Chinese patent application filed on May 16, 2006 through the following chain of applications: continuation of App. No.

13/754,521, filed on January 30, 2013, now Patent No. 9,370,205, which is a continuation of App. No. 12/226,819, filed as PCT/CN2007/001576 on May 15, 2007, now Patent No. 8,375,957.

### **2.5. Fee for Inter Partes Review**

The Director is authorized to charge the fee specified by 37 C.F.R. § 42.15(a), and any other required fees, to Deposit Account No. 506499.

### **2.6. Proof of Service**

Proof of service of this Petition on the Patent Owner at the correspondence address of record for the 550 Patent is attached.

## **3. IDENTIFICATION OF CLAIMS BEING CHALLENGED (§ 42.104(B))**

**Ground #1:** Claims 1-12 of the 550 Patent (“the Challenged Claims”) are unpatentable under (pre-AIA) 35 U.S.C. § 102 as anticipated by U.S. 2009/0126745 (Ex.1005, “Hon 745”). The 550 Patent is not entitled to a priority date earlier than May 22, 2010, and, therefore, Hon 745, which was published on May 21, 2009, qualifies as prior art under § 102(b). This ground is explained below and is supported by the Declaration of Dr. John M. Collins (Ex. 1003, “Collins Decl.”).<sup>4</sup>

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<sup>4</sup> Claims 13-24 of the 550 Patent are likewise not entitled to a priority date earlier than May 22, 2010 for the same reasons as claims 1-12. However, these claims are

#### 4. CLAIM CONSTRUCTION

##### 4.1. Applicable Law

For a non-expired patent, a claim subject to *inter partes* review is interpreted according to the “broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b). Any ambiguity regarding the “broadest reasonable construction” of a claim term is resolved in favor of the broader construction absent amendment by the patent owner. Final Rule, 77 Fed. Reg. 48680, 48699 (Aug. 14, 2012).

##### 4.2. Construction of Claim Terms

Patent Owner submitted a preliminary response in IPR2015-00098 and proposed constructions for several claim terms in Patent No. 8,375,957, including the following terms:

- **electronic cigarette**: “a device that simulates the feel and experience of a cigarette or cigar without burning”
- **atomizer**: “a component that converts liquid into aerosol or vapor”

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not challenged in this ground because they contain a limitation regarding an air inlet in the battery assembly housing that is not disclosed in Hon 745, nor is there any written description support in the 550 Patent for this limitation.

- **porous component:** “a material that is full of interconnected pores into which liquid or gas is absorbed or diffused”

See Ex.1015 at pp.15-22. The claims of the 550 Patent require an “electronic cigarette”, an “atomizer” and a “porous body.” For the purposes of this Petition only, and under the broadest reasonable interpretation standard, Petitioner applies these constructions.

## **5. PERSON HAVING ORDINARY SKILL IN THE ART**

A person of ordinary skill in the art with respect to the technology described in the 550 Patent would be a person with a Bachelor of Science degree in mechanical engineering, or a similar technical degree, along with at least 3-5 years of experience in designing and developing handheld devices with thermal management and fluid handling technologies. A higher level of education may substitute for a lesser amount of experience, and vice versa. Ex.1003, ¶¶ 17-19.

## **6. U.S. 2009/0126745 ANTICIPATES CLAIMS 1-12 OF THE 550 PATENT**

Claims 1-12 of the 550 Patent are anticipated by U.S. 2009/0126745 (“Hon 745”). Hon 745 was published on May 21, 2009, which is more than one year prior to the earliest possible effective filing date of the 550 Patent. As shown in the claim chart below, and as further explained in detail in the attached Declaration



of Dr. Collins (Ex.1003), Hon 745 discloses each and every limitation of claims 1-12.<sup>5</sup>

550 Patent, Claim 1	Disclosure in Hon 745 (Ex. 1005)
[1.P] A vaporizing device comprising:	<p><b>Ex. 1005 at Abstract</b> (“An emulation aerosol sucker includes a battery assembly, an atomizer assembly and a cigarette bottle assembly.”).</p> <p><b>Ex. 1005 at ¶ [0001]</b> (“This present invention relates to an electronic sucker unit, in particular, an emulation aerosol sucker that doesn't contain tar but nicotine.”).</p> <p><b>Ex. 1005 at ¶ [0006]</b> (“The purpose of this invention is to provide an emulation aerosol sucker that substitutes for cigarettes and helps the smokers to quit smoking. For this invention, the aerosol may be regarded as liquid drips suspended in the air.”).</p> <p><b>Ex. 1005 at ¶ [0026]</b> (“As shown in FIG. 1, the visual appearance of this invention is similar to a cigarette inserted into the cigarette holder, and includes a battery assembly, an atomizer assembly and a cigarette bottle assembly. An external thread electrode (209) is located in one end of the battery assembly, and an internal thread electrode (302) is located in one end of the atomizer assembly. The</p>

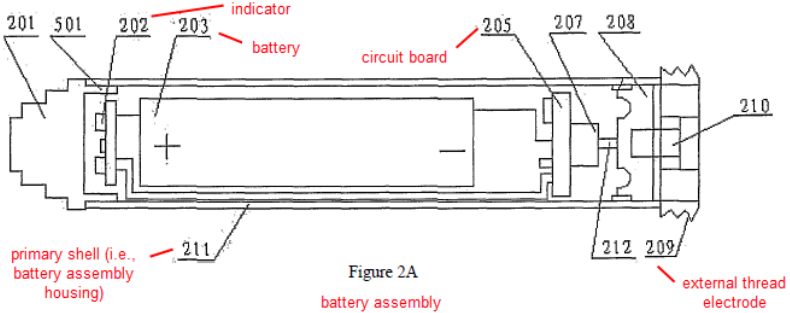
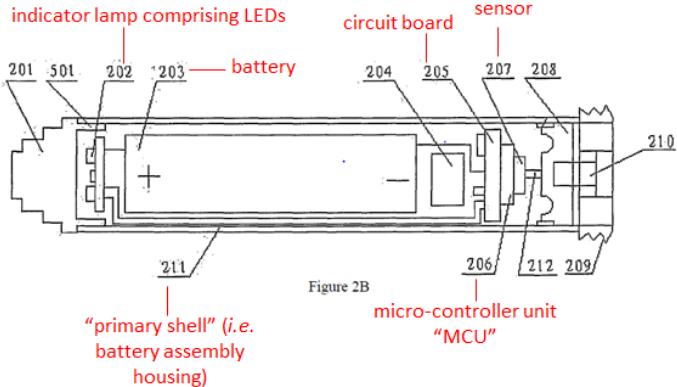
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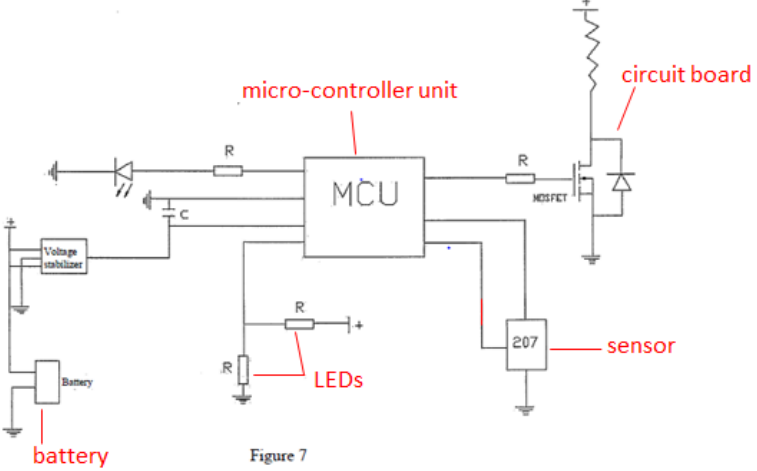
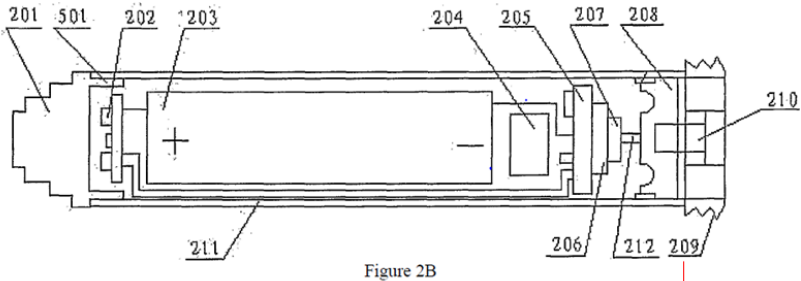
<sup>5</sup> Hon 745 and WO 2007/131450 include an identical set of figures. For reasons unknown to Petitioner, the figures in the copy of Hon 745 that can be retrieved from the Patent Office website, and in particular, the numerical labels, are blurred. Accordingly, the annotated figures in the claim chart have been taken from WO 2007/131450. *See* Ex.1014.

550 Patent, Claim 1	Disclosure in Hon 745 (Ex. 1005)
	<p>battery assembly and atomizer assembly are connected through the screwthread electrode into an emulation cigarette. The cigarette bottle assembly is inserted into the other end of atomizer assembly, to form one cigarette type emulation aerosol sucker.”).</p> <p><b>Ex. 1005 at ¶ [0032]</b> (“The fiber (402) inside the cigarette liquid bottle (401) contains cigarette liquid, which soaks the micro-porous ceramics (801) inside the atomizer through the fiber (402). The air enters through the air intake hole (502), passes through the run-through hole on the air-liquid separator (303), and helps to form air-liquid mixture in the spray nozzle (304) of the atomizer (307). The air-liquid mixture sprays onto the heating body (305), gets vaporized, and is quickly absorbed into the airflow and condensed into aerosol, which passes through the air intake hole (503) and suction nozzle (403) to form white mist type aerosol.”).</p> <p>Ex. 1003, ¶ 32.</p>
<p>[1.1] an electronic cigarette including:</p>	<p><b>Ex. 1005 at Abstract</b> (“An emulation aerosol sucker includes a battery assembly, an atomizer assembly and a cigarette bottle assembly.”).</p> <p><b>Ex. 1005 at ¶ [0001]</b> (“This present invention relates to an electronic sucker unit, in particular, an emulation aerosol sucker that doesn't contain tar but nicotine.”).</p> <p><b>Ex. 1005 at ¶ [0006]</b> (“The purpose of this invention is to provide an emulation aerosol sucker that substitutes for cigarettes and helps the smokers to quit smoking. For this invention, the aerosol may be regarded as liquid drips suspended in the air.”).</p> <p><b>Ex. 1005 at ¶ [0008]</b> (“The purpose of this invention is fulfilled with the following solution: this invention</p>

550 Patent, Claim 1	Disclosure in Hon 745 (Ex. 1005)
	<p>includes a battery assembly, an atomizer assembly and a cigarette bottle assembly. The battery assembly connects with one end of the atomizer assembly, and the cigarette bottle assembly is inserted into the other end of the atomizer assembly, thus forming one cigarette type or cigar type body.”).</p> <p><b>Ex. 1005 at ¶ [0026]</b> (“As shown in FIG. 1, the visual appearance of this invention is similar to a cigarette inserted into the cigarette holder, and includes a battery assembly, an atomizer assembly and a cigarette bottle assembly. An external thread electrode (209) is located in one end of the battery assembly, and an internal thread electrode (302) is located in one end of the atomizer assembly. The battery assembly and atomizer assembly are connected through the screwthread electrode into an emulation cigarette. The cigarette bottle assembly is inserted into the other end of atomizer assembly, to form one cigarette type emulation aerosol sucker.”).</p> <p>Ex. 1003, ¶ 33.</p>
<p>[1.2] a battery assembly comprising a tubular battery assembly housing having a first end and a second end, with a battery and a micro-controller unit electrically connected to a circuit board within the battery assembly housing;</p>	<p><b>Ex. 1005 at ¶ [0026]</b> (“As shown in FIG. 1, <u>the visual appearance of this invention is similar to a cigarette inserted into the cigarette holder</u>, and includes a <u>battery assembly</u>, an atomizer assembly and a cigarette bottle assembly.”).<sup>6</sup></p> <p><b>Ex. 1005 at ¶ [0027]</b> (“As shown in FIG. 2A, the <u>battery assembly includes the indicator (202), lithium ion battery (203), MOSFET electric circuit board (205), sensor (207), silica gel corrugated membrane (208), primary screwthread electrode (209), primary negative pressure cavity (210), and primary shell (211). On one end of the primary shell (211) is an</u></p>

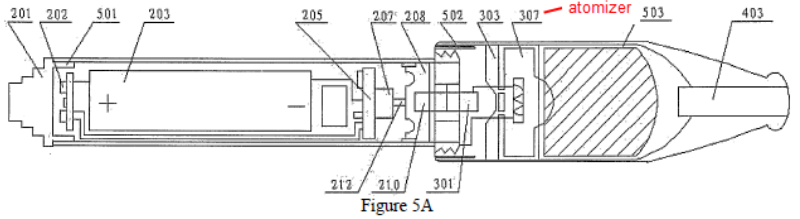
<sup>6</sup> All emphasis herein is added unless otherwise noted.

550 Patent, Claim 1	Disclosure in Hon 745 (Ex. 1005)
	<p>external thread electrode (209), while on the other end is an indicator (202), where there is an indicator cap (201) on one side, in which there is a fine hole (501). On the other side, the <u>lithium ion battery (203) and MOSFET (Metallic Oxide Semiconductor Field Effect Tube) electric circuit board (205) are connected successively.</u>”).</p>  <p style="text-align: center;">Figure 2A battery assembly</p> <p style="text-align: center;"><b>Ex. 1005 at Figure 2A (annotated).</b></p> <p><b>Ex. 1005 at ¶ [0039]</b> (“As shown in FIG. 2B, the differences of this example from example 1 are as follows: <u>MCU (206) is added between MOSFET electric circuit board (205) and sensor (207).</u> On the surface of the <u>primary shell (211)</u>, there is a screen (204) for display of the power of the lithium ion battery (203) and the sucking times.”).</p>  <p style="text-align: center;">Figure 2B micro-controller unit “MCU”</p> <p style="text-align: center;"><b>Ex. 1005 at Figure 2B (annotated).</b></p>

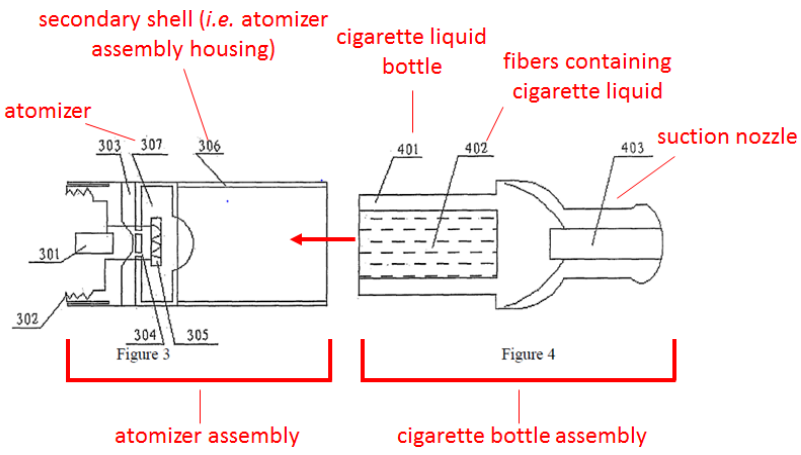
550 Patent, Claim 1	Disclosure in Hon 745 (Ex. 1005)
	 <p style="text-align: center;">Figure 7</p> <p style="text-align: center;"><b>Ex. 1005 at Figure 7 (annotated).</b></p> <p>Ex. 1003, ¶¶ 34-38.</p>
<p>[1.3] a first screw thread electrode on the first end of the battery assembly housing, with a first through hole at a center of the first screw thread electrode;</p>	<p><b>Ex. 1005 at ¶ [0027]</b> (“As shown in FIG. 2A, the <u>battery assembly includes the indicator (202), lithium ion battery (203), MOSFET electric circuit board (205), sensor (207), silica gel corrugated membrane (208), primary screwthread electrode (209), primary negative pressure cavity (210), and primary shell (211).</u> <u>On one end of the primary shell (211) is an external thread electrode (209)...</u>”).</p>  <p style="text-align: center;">Figure 2B</p> <p style="text-align: center;"><b>Ex. 1005 at Figure 2B (annotated).</b></p> <p><b>Ex. 1005 at ¶ [0009]</b> (“The battery assembly includes</p>

550 Patent, Claim 1	Disclosure in Hon 745 (Ex. 1005)
	<p>the indicator, battery, 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...”).</p> <p><b>Ex. 1005 at ¶ [0028]</b> (“The external thread electrode (209) is a gold-coated stainless steel or brass part with a hole drilled in the center.”).</p> <p><b>Ex. 1005 at ¶ [0029]</b> (“The said external thread electrode is a gold-coated stainless steel or brass part with a hole drilled in the center.”).</p> <p>Ex. 1003, ¶¶ 39-41.</p>
<p>[1.4] an atomizer assembly comprising:</p>	<p><b>Ex. 1005 at ¶ [0026]</b> (“As shown in FIG. 1, the visual appearance of this invention is similar to a cigarette inserted into the cigarette holder, and includes a battery assembly, <u>an atomizer assembly</u> and a cigarette bottle assembly.”).</p> <p><b>Ex. 1005 at ¶ [0029]</b> (“As shown in FIG. 3, the <u>atomizer assembly</u> includes the internal thread electrode (302), air-liquid separator (303), atomizer (307) and the secondary shell (306). One end of the secondary shell (306) is inserted into the cigarette bottle assembly for connection, while the other end has an internal thread electrode (302), in which there is the secondary negative pressure cavity (301).”).</p> <p>Ex. 1003, ¶ 42.</p>
<p>[1.5] a tubular atomizer assembly housing having a first end and a second end;</p>	<p><b>Ex. 1005 at ¶ [0026]</b> (“As shown in FIG. 1, the <u>visual appearance of this invention is similar to a cigarette inserted into the cigarette holder, and includes a battery assembly, an atomizer assembly and a cigarette bottle assembly. An external thread electrode (209) is located in one end of the battery</u></p>

550 Patent, Claim 1	Disclosure in Hon 745 (Ex. 1005)
	<p>assembly, and an internal thread electrode (302) is located in one end of the atomizer assembly. The battery assembly and atomizer assembly are connected through the screwthread electrode into an emulation cigarette. <u>The cigarette bottle assembly is inserted into the other end of atomizer assembly, to form one cigarette type emulation aerosol sucker.”).</u></p> <p><b>Ex. 1005 at ¶ [0029]</b> (“As shown in FIG. 3, the <u>atomizer assembly</u> includes the internal thread electrode (302), air-liquid separator (303), atomizer (307) and the <u>secondary shell (306)</u>. <u>One end of the secondary shell (306)</u> is inserted into the cigarette bottle assembly for connection, while <u>the other end</u> has an internal thread electrode (302), in which there is the secondary negative pressure cavity (301).”).</p> <div data-bbox="634 974 1430 1518"> <p>secondary shell (i.e. atomizer assembly housing)</p> <p>first end</p> <p>second end</p> <p>301</p> <p>302</p> <p>303</p> <p>304</p> <p>305</p> <p>306</p> <p>307</p> <p>Figure 3</p> <p>atomizer assembly</p> </div> <p><b>Ex. 1005 at Figure 3 (annotated).</b></p>

550 Patent, Claim 1	Disclosure in Hon 745 (Ex. 1005)
	 <p style="text-align: center;"><b>Ex. 1005 at Figure 5A (annotated).</b></p> <p>Ex. 1003, ¶¶ 43-44.</p>
<p>[1.6] an atomizer having a porous body, and a liquid supply in the tubular atomizer assembly housing;</p>	<p><b>Ex. 1005 at ¶ [0008]</b> (“The said <u>atomizer assembly</u> includes the internal thread electrode, air-liquid separator, <u>atomizer</u> and the secondary shell.... The said <u>atomizer</u> may be capillary impregnation atomizer or spray atomizer, <u>inside which there is a heating body</u>....The <u>said heating body is made of the micro-porous ceramics</u> on which nickel-chromium alloy wire, iron-chromium alloy wire, platinum wire, or other electrothermal materials are wound. Alternatively, <u>it may be a porous component</u> made of electrically conductive ceramics or PTC ceramics and associated with a sintered electrode.”).</p> <p><b>Ex. 1005 at ¶ [0029]</b> (“As shown in FIG. 3, the <u>atomizer assembly</u> includes the internal thread electrode (302), air-liquid separator (303), <u>atomizer (307)</u> and the secondary shell (306). <u>One end of the secondary shell (306) is inserted into the cigarette bottle assembly for connection</u>, while the other end has an internal thread electrode (302), in which there is the secondary negative pressure cavity (301).”).</p> <p><b>Ex. 1005 at ¶ [0031]</b> (“As shown in FIG. 4, the cigarette bottle assembly includes the cigarette liquid bottle (401), fiber (402) and suction nozzle (403). The fiber (402) containing cigarette liquid is located on <u>one end of the cigarette liquid bottle (401), and this</u></p>

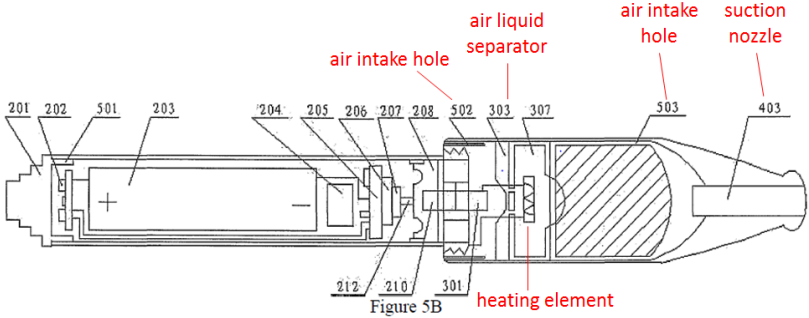
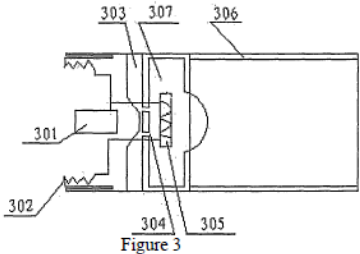
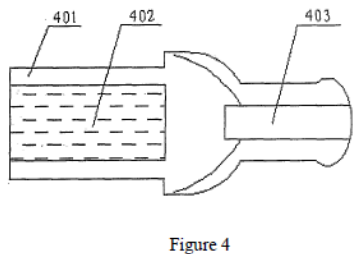


550 Patent, Claim 1	Disclosure in Hon 745 (Ex. 1005)
	<p>end is inserted into the secondary shell (306) and lies against the atomizer (307). The suction nozzle (403) is located on the other end of the cigarette liquid bottle (401). Between the fiber (402) and interior wall of the cigarette liquid bottle (401) is an air intake hole (503)”).</p>  <p><b>Ex. 1005 at Figures 3 and 4 (annotated).</b></p> <p><b>Ex. 1005 at ¶ [0032]</b> (“As shown in FIG. 5A, the standby state of this invention has the fully charged battery assembly shown on FIG. 2A <u>fastened onto the atomizer assembly shown on FIG. 3, which is then inserted into the cigarette bottle assembly shown on FIG. 4.</u>”)</p> <p><b>Ex. 1005 at ¶ [0015]</b> (“FIG. 4 is the diagram of the cigarette bottle assembly of this invention.”)</p> <p>Petitioner notes that Hon 745 discloses that cigarette liquid bottle (401) and the liquid-containing fibers within the bottle are part of the cigarette bottle assembly, and that the cigarette bottle assembly is inserted into the atomizer assembly housing. Accordingly, Hon 745 discloses a “liquid supply in the tubular atomizer assembly housing” when the cigarette bottle assembly is inserted within the atomizer assembly housing.</p>

550 Patent, Claim 1	Disclosure in Hon 745 (Ex. 1005)
	<p><b>Ex. 1003</b>, ¶¶ 45-47.</p>
<p>[1.7] with the atomizer including a heater wire wound on a part of the porous body which is perpendicular to a longitudinal axis of the tubular atomizer assembly housing;</p>	<p><b>Ex. 1005 at ¶ [0020]</b> (“FIG. 8 is the diagram of the structure of the capillary impregnation atomizer of this invention.”).</p> <p><b>Ex. 1005 at ¶ [0034]</b> (“The heating body (305) is made of the micro-porous ceramics on which <u>nickel-chromium alloy wire, iron-chromium alloy wire, platinum wire, or other electrothermal materials are wound.</u>”).</p> <p><b>Ex. 1005 at ¶ [0032]</b> (“The fiber (402) inside the cigarette liquid bottle (401) contains cigarette liquid, which soaks the <u>micro-porous ceramics (801)</u> inside the atomizer through the fiber (402).”).</p> <div data-bbox="623 1003 1377 1457" data-label="Image"> <p>Figure 8 is a cross-sectional diagram of a capillary impregnation atomizer. It shows a central microporous ceramic body (801) with a heater wire wound around it. A dashed line indicates the longitudinal axis of the atomizer assembly housing, and another dashed line indicates the axis of the microporous ceramic, which is perpendicular to the longitudinal axis.</p> </div> <p><b>Ex. 1005 at Figure 8 (annotated).</b></p> <div data-bbox="662 1554 1380 1768" data-label="Image"> <p>Figure 5B is a longitudinal cross-sectional diagram of the atomizer assembly. It shows various components labeled with reference numerals (201, 202, 301, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000). A dashed line indicates the longitudinal axis of the atomizer assembly housing, and another dashed line indicates the axis of the microporous ceramic, which is perpendicular to the longitudinal axis.</p> </div> <p><b>Ex. 1005 at Figure 5B (annotated).</b></p>

550 Patent, Claim 1	Disclosure in Hon 745 (Ex. 1005)
	Ex. 1003, ¶ 48.
[1.8] an airflow path through an opening in the atomizer to a suction nozzle at the second end <sup>7</sup> of the tubular atomizer assembly housing;	<b>Ex. 1005 at ¶ [0040]</b> (“ <u>When the user slightly sucks the suction nozzle (403), the negative pressure forms on the silica gel corrugated membrane (208) through the air intake hole (503) and the primary and secondary negative pressure cavities (210, 301), and the silica gel corrugated membrane (208), under the action of suction pressure difference, distorts to drive the switch spring (212) and sensor (207), thus invoking MCU (206) and MOSFET electric circuit board (205). At this moment, the indicators (202) are lit gradually; the lithium ion battery (203) electrifies the heating body (305) inside the atomizer (307) through MOSFET electric circuit board (205) as well as the internal and external thread electrodes (302, 209), so that the heating body (305) inside the atomizer (307) produces heat. The fiber (402) inside the cigarette liquid bottle (401) contains cigarette</u> ”

<sup>7</sup> Petitioner’s analysis assumes that the phrase “second end” can be corrected to read “first end” (but takes no position as to whether Patent Owner should be permitted to amend the claim). Limitation [1.9] requires the screw thread electrode on the “second end” of the atomizer assembly. There is no support in the specification of the 550 Patent for a device that has the suction nozzle and the screw thread electrode on the same end of the atomizer assembly. Instead the description in the 550 Patent shows that the suction nozzle (which is part of the cigarette bottle assembly that is inserted into the atomizer assembly) and screw thread electrode are at opposite ends. Ex.1001 at 2:33-54, Figs. 3, 4, 5A, 5B, 12.

550 Patent, Claim 1	Disclosure in Hon 745 (Ex. 1005)
	<p>liquid, which soaks the micro-porous ceramics (801) inside the atomizer through the fiber (402). <u>The air enters through the air intake hole (502), passes through the run-through hole on the air-liquid separator (303), and helps to form air-liquid mixture in the spray nozzle (304) of the atomizer (307). The air-liquid mixture sprays onto the heating body (305), gets vaporized, and is quickly absorbed into the airflow and condensed into aerosol, which passes through the air intake hole (503) and suction nozzle (403) to form white mist type aerosol.”</u></p>  <p><b>Ex. 1005 at Figure 5B (annotated).</b></p>   <p><b>Ex. 1005 at Figures 3-4.</b></p> <p>Petitioner notes that suction nozzle 403 (the outlet) and the air intake hole 503 forming the airflow path disclosed in Hon 745 are part of the cigarette bottle assembly, which is inserted into the atomizer assembly housing. As explained in <b>Section 7.3</b>, the disclosure in the 550 Patent is a subset of the disclosure in Hon 745, and therefore, to the extent that the specification of the 550 Patent discloses this</p>

550 Patent, Claim 1	Disclosure in Hon 745 (Ex. 1005)
	<p>limitation, then so does Hon 745.</p> <p>Ex. 1003, ¶¶ 49-51.</p>
<p>[1.9] a second screw thread electrode on the second end of the atomizer assembly housing, with a second through hole at a center of the second screw thread electrode; and</p>	<p><b>Ex. 1005 at ¶ [0029]</b> (“As shown in FIG. 3, the <u>atomizer assembly includes the internal thread electrode (302)</u>, air-liquid separator (303), atomizer (307) and the secondary shell (306). <u>One end of the secondary shell (306) is inserted into the cigarette bottle assembly for connection, while the other end has an internal thread electrode (302)</u>, in which there is the secondary negative pressure cavity (301)... <u>The internal thread electrode (302) is a gold-coated stainless steel or brass part with a hole drilled in the center.</u>”)</p> <div data-bbox="792 919 1295 1381" data-label="Image"> </div> <p><b>Ex. 1005 at Figure 3 (annotated).</b></p> <p>Ex. 1003, ¶¶ 52-53.</p>
<p>[1.10] the battery assembly and the atomizer assembly mechanically connected to form the electronic cigarette by engagement of the first</p>	<p><b>Ex.1005 at ¶ [0008]</b> (“The battery assembly connects with one end of the atomizer assembly, and the cigarette bottle assembly is inserted into the other end of the atomizer assembly, thus forming one cigarette type or cigar type body.”).</p>

550 Patent, Claim 1	Disclosure in Hon 745 (Ex. 1005)
<p>screw thread electrode with the second screw thread electrode, and with electricity conducted from the battery to the heater wire through the first and second screw thread electrodes for heating the heater wire.</p>	<p><b>Ex. 1005 at ¶ [0009]</b> (“The battery assembly and atomizer assembly are connected through the screwthread electrode.”).</p> <p><b>Ex. 1005 at ¶ [0026]</b> (“An external thread electrode (209) is located in one end of the battery assembly, and an internal thread electrode (302) is located in one end of the atomizer assembly. <u>The battery assembly and atomizer assembly are connected through the screwthread electrode into an emulation cigarette.</u>”).</p> <p><b>Ex. 1005 at ¶ [0032]</b> (“At this moment, the indicators (202) are lit gradually; <u>the lithium ion battery (203) electrifies the heating body (305) inside the atomizer (307) through MOSFET electric circuit board (205) as well as the internal and external thread electrodes (302, 209), so that the heating body (305) inside the atomizer (307) produces heat.</u>”).</p> <p>Ex. 1003, ¶¶ 54-56.</p>

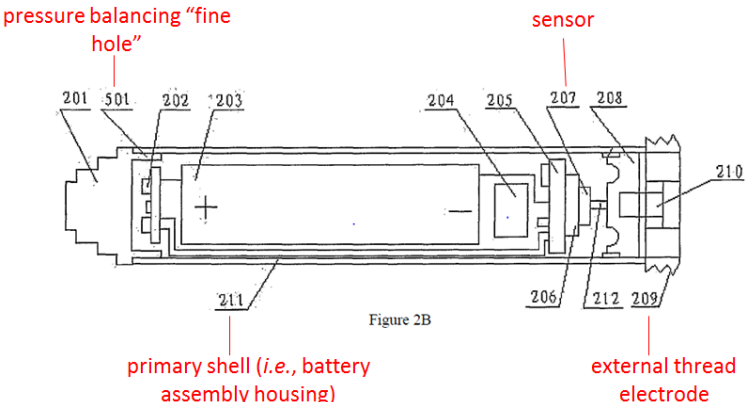
550 Patent, Claim 2	Disclosure in Hon 745 (Ex. 1005)
<p>[2] The device of claim 1 further including a sensor in the battery assembly housing, with the sensor electrically connected to the micro-controller unit.</p>	<p><b>Ex. 1005 at ¶ [0027]</b> (“As shown in FIG. 2A, the <u>battery assembly includes the indicator (202), lithium ion battery (203), MOSFET electric circuit board (205), sensor (207), silica gel corrugated membrane (208), primary screwthread electrode (209), primary negative pressure cavity (210), and primary shell (211).</u> On one end of the primary shell (0211) is an external thread electrode (209), while on the other end is an indicator (202), where there is an indicator cap (201) on one side, in which there is a fine hole (501). On the other side, the <u>lithium ion battery (203) and MOSFET (Metallic Oxide Semiconductor Field Effect Tube) electric circuit board (205) are connected successively.</u> The <u>sensor (207) is located</u></p>

550 Patent, Claim 2	Disclosure in Hon 745 (Ex. 1005)
	<p data-bbox="621 243 1268 279">on MOSFET electric circuit board (205).”).</p> <p data-bbox="621 327 1398 621"><b>Ex. 1005 at ¶ [0039]</b> (“As shown in FIG. 2B, the differences of this example from example 1 are as follows: <u>MCU (206)</u> is added between MOSFET electric circuit board (205) and sensor (207). On the surface of the primary shell (211), there is a screen (204) for display of the power of the lithium ion battery (203) and the sucking times.”).</p> <div data-bbox="621 663 1414 1115"> <p data-bbox="727 1024 922 1115">“primary shell” (i.e. battery assembly housing)</p> <p data-bbox="1060 1024 1279 1066">micro-controller unit “MCU”</p> </div> <p data-bbox="751 1163 1300 1199"><b>Ex. 1005 at Figure 2B (annotated).</b></p> <div data-bbox="662 1241 1409 1713"> <p data-bbox="695 1686 768 1713">battery</p> <p data-bbox="906 1686 971 1713">Figure 7</p> </div> <p data-bbox="764 1761 1287 1797"><b>Ex. 1005 at Figure 7 (annotated).</b></p> <p data-bbox="621 1845 911 1881">Ex. 1003, ¶¶ 57-59.</p>

550 Patent, Claim 3	Disclosure in Hon 745 (Ex. 1005)
<p>[3] The device of claim 2 further including a pressure balancing hole in the battery assembly housing.</p>	<p><b>Ex. 1005 at ¶ [0034]</b> (“In the battery assembly, there is a <u>fine hole (501) on the indicator cap (201) for balancing the pressure difference on both sides of the silica gel corrugated membrane (208).</u>”).</p> <p><b>Ex. 1005 at ¶ [0027]</b> (“As shown in FIG. 2A, the <u>battery assembly includes the indicator (202), lithium ion battery (203), MOSFET electric circuit board (205), sensor (207), silica gel corrugated membrane (208), primary screwthread electrode (209), primary negative pressure cavity (210), and primary shell (211).</u> On one end of the primary shell (211) is an external thread electrode (209), while on the other end is an indicator (202), where there is an indicator cap (201) on one side, in which there is a <u>fine hole (501).</u>”).</p> <div data-bbox="649 997 1396 1407"> <p style="text-align: center;">Figure 2B</p> </div> <p><b>Ex. 1005 at Figure 2B (annotated).</b></p> <p>Ex. 1003, ¶¶ 60-62.</p>

550 Patent, Claim 4	Disclosure in Hon 745 (Ex. 1005)
<p>[4] The device of claim 3 with the pressure balancing hole at the</p>	<p><b>Ex. 1005 at ¶ [0034]</b> (“In the battery assembly, there is a <u>fine hole (501) on the indicator cap (201) for balancing the pressure difference on both sides of the</u></p>

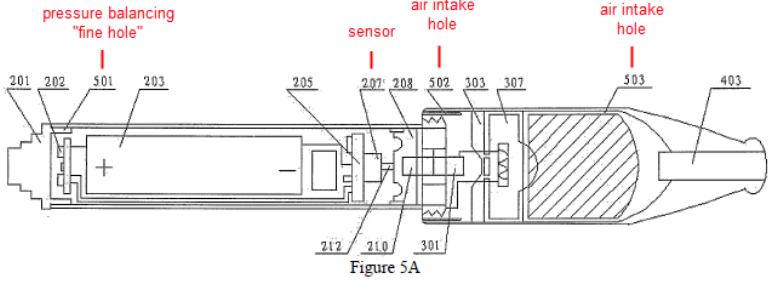


550 Patent, Claim 4	Disclosure in Hon 745 (Ex. 1005)
<p>second end of the battery assembly housing.</p>	<p>silica gel corrugated membrane (208).”).</p> <p><b>Ex. 1005 at ¶ [0027]</b> (“As shown in FIG. 2A, the <u>battery assembly includes the indicator (202), lithium ion battery (203), MOSFET electric circuit board (205), sensor (207), silica gel corrugated membrane (208), primary screwthread electrode (209), primary negative pressure cavity (210), and primary shell (211).</u> On one end of the primary shell (211) is an external thread electrode (209), while <u>on the other end is an indicator (202), where there is an indicator cap (201) on one side, in which there is a fine hole (501).</u>”).</p>  <p style="text-align: center;">Figure 2B</p> <p><b>Ex. 1005 at Figure 2B (annotated).</b></p> <p>Ex. 1003, at ¶¶ 63-65.</p>

550 Patent, Claim 5	Disclosure in Hon 745 (Ex. 1005)
<p>[5] The device of claim 3 further including an air inlet at the second screw thread electrode.</p>	<p>See limitation [1.9].</p> <p><b>Ex. 1005 at ¶ [0029]</b> (“As shown in FIG. 3, the <u>atomizer assembly includes the internal thread electrode (302), air-liquid separator (303), atomizer (307) and the secondary shell (306).</u> <u>One end of the secondary shell (306) is inserted into the cigarette</u></p>

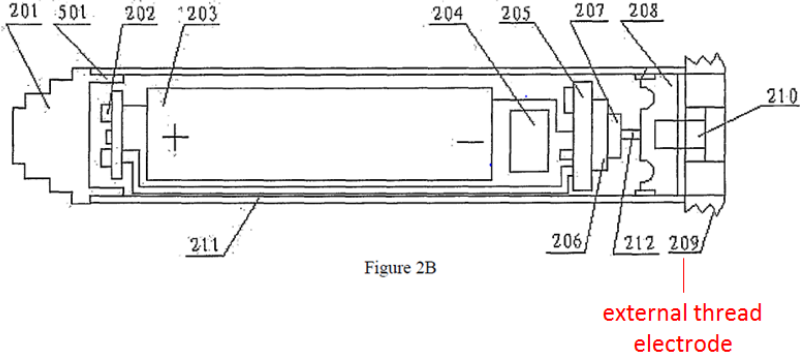
550 Patent, Claim 5	Disclosure in Hon 745 (Ex. 1005)
	<p>bottle assembly for connection, <u>while the other end has an internal thread electrode (302), in which there is the secondary negative pressure cavity (301)."</u></p> <div data-bbox="792 451 1291 913"> <p style="color: red;">"secondary shell" (i.e. atomizer assembly housing)</p> <p style="color: red;">internal thread electrode</p> <p style="text-align: center;">Figure 3</p> </div> <p style="text-align: center;"><b>Ex. 1005 at Figure 3 (annotated).</b></p> <p><b>Ex. 1005 at ¶ [0029]</b> ("The air-liquid separator (303) and the atomizer (307) are connected with the internal thread electrode (302) successively. <u>On the secondary shell (306), there is an air intake hole (502).</u> The air-liquid separator (303) is made of stainless steel or plastic with a hole drilled. The internal thread electrode (302) is a gold-coated stainless steel or brass part with a hole drilled in the center.")</p> <div data-bbox="625 1417 1388 1669"> <p style="color: red;">internal thread electrode</p> <p style="color: red;">air intake hole</p> <p style="text-align: center;">Figure 5B</p> </div> <p style="text-align: center;"><b>Ex. 1005 at Figure 5B (annotated).</b></p> <p>Ex. 1003, ¶¶ 66-67.</p>

550 Patent, Claim 6	Disclosure in Hon 745 (Ex. 1005)
<p>[6] The device of claim 5 with the pressure balancing hole on a first side of the sensor and the air inlet on a second side of the sensor, opposite from the first side of the sensor.</p>	<p><b>Ex.1005 at ¶ [0034]</b> (“In the battery assembly, <u>there is a fine hole (501) on the indicator cap (201) for balancing the pressure difference on both sides of the silica gel corrugated membrane (208).</u>”).</p> <p><b>Ex.1005 at ¶ [0027]</b> (“<u>On one end of the primary shell (211) is an external thread electrode (209), while on the other end is an indicator (202), where there is an indicator cap (201) on one side, in which there is a fine hole (501).</u> On the other side, the lithium ion battery (203) and MOSFET (Metallic Oxide Semiconductor Field Effect Tube) electric circuit board (205) are connected successively. <u>The sensor (207) is located on MOSFET electric circuit board (205).</u>”).</p> <p><b>Ex.1005 at ¶ [0029]</b> (“On the secondary shell (306), there is an air intake hole (502).”).</p> <p><b>Ex.1005 at ¶ [0031]</b> (“Between the fiber (402) and interior wall of the cigarette liquid bottle (401) is an air intake hole (503).”).</p> <p><b>Ex.1005 at ¶ [0032]</b> (“When the user slightly sucks the suction nozzle (403), the negative pressure forms on the silica gel corrugated membrane (208) through the air intake hole (503) and the primary and secondary negative pressure cavities (210, 301), and the silica gel corrugated membrane (208), under the action of suction pressure difference, distorts to drive the switch spring (212) and sensor (207), thus invoking MOSFET electric circuit board (205).”).</p> <p><b>Ex.1005 at ¶ [0032]</b> (“The air enters through the air intake hole (502), passes through the run-through hole on the air-liquid separator (303), and helps to form air-liquid mixture in the spray nozzle (304) of the atomizer (307). The air-liquid mixture sprays onto the heating body (305), gets vaporized, and is quickly</p>

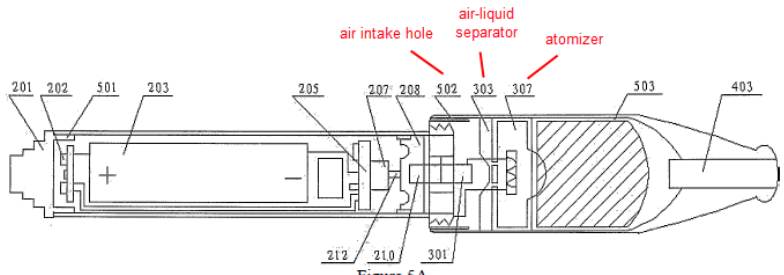
550 Patent, Claim 6	Disclosure in Hon 745 (Ex. 1005)
	<p>absorbed into the airflow and condensed into aerosol, which passes through the air intake hole (503) and suction nozzle (403) to form white mist type aerosol.”).</p>  <p style="text-align: center;"><b>Ex. 1005 at Figure 5A (annotated).</b></p> <p>Ex. 1003, ¶¶ 68-69.</p>

550 Patent, Claim 7	Disclosure in Hon 745 (Ex. 1005)
<p>[7] The device of claim 1 with the porous body comprising a fiber material.</p>	<p>See limitation [1.6].</p> <p><b>Ex. 1005 at ¶ [0034]</b> (“Besides the micro-porous ceramics, the liquid supply material of the atomizer (307) may also be foamed ceramics, micro-porous glass, foamed metal, stainless steel fiber felt, terylene fiber, nylon fiber, nitrile fiber, aramid fiber or hard porous plastics.”)</p> <p>Ex. 1003, ¶¶ 70-71.</p>

550 Patent, Claim 8	Disclosure in Hon 745 (Ex. 1005)
<p>[8] The device of claim 1 with the first screw thread electrode having external screw threads on an outside surface of the</p>	<p><b>Ex. 1005 at Abstract</b> (“An <u>external thread electrode</u> is located in one end of <u>battery assembly</u>.”).</p> <p><b>Ex. 1005 at ¶ [0027]</b> (“As shown in FIG. 2A, the <u>battery assembly</u> includes the indicator (202), lithium</p>

550 Patent, Claim 8	Disclosure in Hon 745 (Ex. 1005)
<p>tubular battery assembly housing.</p>	<p>ion battery (203), MOSFET electric circuit board (205), sensor (207), silica gel corrugated membrane (208), <u>primary screwthread electrode (209)</u>, primary negative pressure cavity (210), <u>and primary shell (211)</u>. <u>On one end of the primary shell (211) is an external thread electrode (209)...</u>”).</p>  <p style="text-align: center;">Figure 2B</p> <p style="text-align: center;"><b>Ex. 1005 at Figure 2B (annotated).</b></p> <p><b>Ex. 1005 at ¶ [0009]</b> (“The <u>battery assembly</u> includes the indicator, battery, MOSFET electric circuit board, sensor, silica gel corrugated membrane, <u>primary screwthread electrode</u>, primary negative pressure cavity, and <u>primary shell</u>. <u>On one end of the primary shell</u> is an external thread electrode...”).</p> <p>Ex. 1003, ¶¶ 72-73.</p>

550 Patent, Claim 9	Disclosure in Hon 745 (Ex. 1005)
<p>[9] The device of claim 5 further including a separator between the air inlet and the atomizer, with the separator having a run-through hole, and with the air flow path passing through the run-through</p>	<p><b>Ex. 1005 at ¶ [0029]</b> (“As shown in FIG. 3, the <u>atomizer assembly</u> includes the internal thread electrode (302), <u>air-liquid separator (303)</u>, <u>atomizer (307)</u> and the secondary shell (306). One end of the secondary shell (306) is inserted into the cigarette bottle assembly for connection, while the other end has an internal thread electrode (302), in which there is the secondary negative pressure cavity (301). The</p>

550 Patent, Claim 9	Disclosure in Hon 745 (Ex. 1005)
hole.	<p>air-liquid separator (303) and the atomizer (307) are connected with the internal thread electrode (302) successively. On the secondary shell (306), there is an air intake hole (502). The air-liquid separator (303) is made of stainless steel or plastic with a hole drilled. The internal thread electrode (302) is a gold-coated stainless steel or brass part with a hole drilled in the center.”).</p> <p><b>Ex. 1005 at ¶¶ [0032], [0040]</b> (“The air enters through the air intake hole (502), passes through the run-through hole on the air-liquid separator (303), and helps to form air-liquid mixture in the spray nozzle (304) of the atomizer (307). The air-liquid mixture sprays onto the heating body (305), gets vaporized, and is quickly absorbed into the airflow and condensed into aerosol, which passes through the air intake hole (503) and suction nozzle (403) to form white mist type aerosol.”).</p>  <p style="text-align: center;">Figure 5A</p> <p><b>Ex. 1005 at Figure 5A (annotated).</b></p> <p>Ex. 1003, ¶¶ 74-75.</p>

550 Patent, Claim 10	Disclosure in Hon 745 (Ex. 1005)
[10] The device of claim 1 wherein the first screw thread electrode surrounds and is concentric with the second screw thread	<p><b>Ex. 1005 at ¶ [0026]</b> (“An external thread electrode (209) is located in one end of the battery assembly, and an internal thread electrode (302) is located in one end of the atomizer assembly. The battery assembly and atomizer assembly are connected</p>

550 Patent, Claim 10	Disclosure in Hon 745 (Ex. 1005)
<p>electrode.</p>	<p><u>through the screwthread electrode into an emulation cigarette.”).</u></p> <div data-bbox="636 365 1354 554" data-label="Image"> <p style="text-align: center;">Figure 12</p> </div> <p><b>Ex. 1005 at Figure 12 (annotated).</b></p> <p>Neither the 550 Patent nor Hon 745 describes that the first screw thread electrode is “concentric” with the second screw thread electrode. To the extent that these limitations are implicitly described in the portions of the text and figures of the 550 Patent that relate to the “internal thread electrode” and “external thread electrode”, they are also disclosed by Hon 745 because, as explained in <b>Section 7.3</b> below, the disclosure in the 550 Patent is a subset of the disclosure in Hon 745. <i>Compare</i> Ex. 1005 at ¶ [0029] (“As shown in FIG. 3, <u>the atomizer assembly includes the internal thread electrode (302), air-liquid separator (303), atomizer (307) and the secondary shell (306).</u> One end of the secondary shell (306) is inserted into the cigarette bottle assembly for connection, <u>while the other end has an internal thread electrode (302),</u> in which there is the secondary negative pressure cavity (301)... <u>The internal thread electrode (302) is a gold-coated stainless steel or brass part with a hole drilled in the center.</u>”) <i>with</i> Ex. 1001 at 2:33-45 (same). Accordingly, Hon 745 anticipates claim 10 to the extent this claim has written description support in the specification of the 550 Patent.</p> <p>Ex. 1003, ¶¶ 76-78.</p>

550 Patent, Claim 11	Disclosure in Hon 745 (Ex. 1005)
<p>[11] The device of claim 10 with the heater wire having a first lead connected to the inner electrode and a second lead connected to the outer electrode.</p>	<p>Neither the specification of the 550 Patent nor the written disclosure of Hon 745 disclose wire leads that are connected to inner or outer electrodes. To the extent that the claimed “heater wire having a first lead connected to the inner electrode and a second lead connected to the outer electrode” is implicitly described in the text and figures of the 550 Patent, it is also disclosed by Hon 745 because, as explained in <b>Section 7.3</b> below, the disclosure in the 550 Patent is a subset of the disclosure in Hon 745. <i>Compare, e.g.,</i> Ex. 1005 at ¶ [0034] (“The heating body (305) 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.”) <i>with</i> Ex. 1001 at 3:28-31 (same). Accordingly, Hon 745 anticipates claim 11 to the extent claim 11 has written description support in the 550 Patent.</p> <p>Ex. 1003, ¶¶ 79-80.</p>

550 Patent, Claim 12	Disclosure in Hon 745 (Ex. 1005)
<p>[12] The device of claim 11 with the first and second through holes leading into the airflow path.</p>	<p><b>Ex. 1005 at ¶ [0028]</b> (“The <u>external thread electrode (209)</u> is a gold-coated stainless steel or brass part with a <u>hole drilled in the center.</u>”).</p> <p><b>Ex. 1005 at ¶ [0029]</b> (“As shown in FIG. 3, the atomizer assembly includes the internal thread electrode (302... The <u>internal thread electrode (302)</u> is a gold-coated stainless steel or brass part with a <u>hole drilled in the center.</u>”).</p> <p><b>Ex. 1005 at ¶ [0029]</b> (“As shown in FIG. 3, the <u>atomizer assembly includes</u> the internal thread electrode (302), <u>air-liquid separator (303)</u>, atomizer (307) and the secondary shell (306)...<u>The air-liquid separator (303) is made of stainless steel or plastic</u>”).</p>



550 Patent, Claim 12	Disclosure in Hon 745 (Ex. 1005)
	<p>with a hole drilled. The internal thread electrode (302) is a gold-coated stainless steel or brass part with a hole drilled in the center.”)</p> <p><b>Ex. 1005 at ¶ [0032]</b> (“The air enters through the air intake hole (502), <u>passes through the run-through hole on the air-liquid separator (303), and helps to form air-liquid mixture in the spray nozzle (304) of the atomizer (307). The air-liquid mixture sprays onto the heating body (305), gets vaporized, and is quickly absorbed into the airflow and condensed into aerosol, which passes through the air intake hole (503) and suction nozzle (403) to form white mist type aerosol.</u>”)</p> <p>Ex. 1003, ¶¶ 81-83.</p>

## 7. PRIORITY DATE OF THE 550 PATENT

As shown above, Hon 745 discloses each and every limitation of claims 1-12 of the 550 Patent. Hon 745 was published on May 21, 2009, which is more than one year before the May 22, 2015 filing date of App. No. 14/720,288 that issued as the 550 Patent. As a result, in order to avoid anticipation by Hon 745 under § 102(b), Patent Owner bears the burden of demonstrating that the 550 Patent is entitled to an effective filing date of May 21, 2010 or earlier. *See Research Corp. Techs. v. Microsoft Corp.*, 627 F.3d 859, 870 (Fed. Cir. 2010) (“The challenger has the burden of going forward with invalidating prior art. ... The patentee then has the burden of going forward with evidence to the contrary, *i.e.*, the patentee must

show that the prior art does not actually invalidate the patent or that it is not prior art because the asserted claim is entitled to the benefit of an earlier filing date.”) (citations omitted); *see also Core Survival, Inc. v. S & S Precision, LLC*, PGR2015–00022, Paper 8 (Feb. 19, 2016) at 8. As explained in detail below, Patent Owner cannot meet this burden because the parent application of the 550 Patent—PCT/CN2007/001576 filed on May 15, 2007—does not provide written description support for the broad claims of the 550 Patent.<sup>8</sup>

### **7.1. The Board May Rule on Priority Issues**

The Board has held, and the Federal Circuit has confirmed, that it is within the statutory authority of the Board to rule on priority issues relating to whether an earlier application supports the issued claims of a later application. *See, e.g.,*

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<sup>8</sup> Petitioner notes that Hon 745 is the publication of the parent application of the 550 Patent. There is no contradiction between the fact that the narrow disclosure in Hon 745 anticipates the broad claims of the 550 Patent, while at the same time does not provide written description support for those broad claims. For example, in *Research Corp. Techs. v. Microsoft Corp.*, the Federal Circuit held that the broader claims of U.S. 5,726,772 were not entitled to the priority date of the parent application, and, as a result, the patent that resulted from the same parent application anticipated those claims. 627 F.3d 859, 870-71 (Fed. Cir. 2010).

*Samsung Electronics Co., Ltd., et al. v. Affinity Labs of Texas, LLC*, IPR2014-01181, Paper 36 (Final Decision, Jan. 28, 2016) at 49-54 (rejecting Patent Owner’s argument that the Board cannot determine “whether an involved patent is entitled to the benefit date of an earlier filed application,” and finding that the claims at issue were not entitled to a parent application’s priority date because the earlier disclosure did not support the claim); *Munchkin, Inc., et al. v. Luv N’ Care, Ltd.*, IPR2013-00072, Paper 28 (Final Decision, Apr. 21, 2014), *aff’d*, 599 Fed. Appx. 958 (Fed. Cir. 2015) (affirming PTAB decision that challenged claims were not entitled to earlier priority date of parent application).

## **7.2. Legal Standards**

“[A] patent’s claims are not entitled to an earlier priority date merely because the patentee claims priority.” *In re NTP, Inc.*, 654 F.3d at 1276-1277. On the contrary, “[i]t is elementary patent law that a patent application is entitled to the benefit of the filing date of an earlier filed application only if the disclosure of the earlier application provides support for the claims of the later application, as required by 35 U.S.C. § 112.” *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306 (Fed. Cir. 2008) (citations omitted). The Federal Circuit has explained that “[t]o satisfy the written description requirement the disclosure of the prior application must convey with reasonable clarity to those skilled in the art that, as of

the filing date sought, [the inventor] was in possession of the invention.” *Id.* at 1306 (citations omitted).

“It is not sufficient for purposes of the written description requirement of § 112 that the disclosure, when combined with the knowledge in the art, would lead one to speculate as to modifications that the inventor might have envisioned, but failed to disclose.” *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). “The purpose of the written description requirement is to ensure that the scope of the right to exclude, as set forth in the claims, does not overreach the scope of the inventor’s contribution to the field of art as described in the patent specification.” *ICU Med., Inc. v. Alaris Med. Sys.*, 558 F.3d 1368, 1376 (Fed. Cir. 2009) (citations omitted). Thus, “[e]ntitlement to a filing date does not extend to subject matter which is not disclosed, but would be obvious over what is expressly disclosed.” *PowerOasis, Inc.*, 522 F.3d at 1306; *see also Automotive Data Solutions, Inc. v. AAMP Of Florida, Inc.*, IPR2016-00061, Paper 23 (Institution Decision, May 13, 2016) at 13 (“...a disclosure that renders the claimed subject matter obvious is not sufficient to demonstrate written description support.”).

There have been numerous cases where the Federal Circuit has held that later-filed broad claims are not supported, under § 112, by a narrow disclosure. *See, e.g., Research Corps. Techs.*, 627 F.3d at 871-872 (holding that claims of later-filed application, which were not limited to a “blue noise mask,” were not

entitled to the filing date of parent application whose disclosure was limited to “a blue noise mask”); *ICU Med.*, 558 F.3d at 1377-78 (holding that “spikeless” claims “added years later during prosecution” were not supported by a specification that “describe[d] only medical valves with spikes.”); *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1158-60 (Fed. Cir. 1998) (holding that the generic shaped cup claims of the later filed child application were not entitled to the filing date of the parent application that “disclosed only a trapezoidal cup and nothing more”).

Written description issues can arise when an applicant attempts, during prosecution, to broaden a later-in-time child disclosure in order to cover subject matter that is not described in the parent disclosure. *See, e.g., PowerOasis, Inc.*, 522 F.3d at 1307-10 (“The 2000 CIP [later-in-time] Application added language describing a vending machine with a user interface located remotely from the vending machine, such as on a user’s laptop.... Because none of this support was present in the [Parent] Application and because the [Parent] Application did not disclose a customer interface apart from the vending machine, the asserted claims [construed to include a user interface apart from the vending machine] are only entitled to the 2000 CIP Application filing date of June 15, 2000.”). Importantly, the Federal Circuit has found that such broadening can occur when an applicant removes limiting language from the relevant specification(s). *See, e.g., Anascape*,

601 F.3d. at 1338-1341 (citation removed) (“A description can be broadened by removing limitations. The limitation to a single input member capable of movement in six degrees of freedom was removed, in filing the '700 application, and new claims were provided of commensurately broadened scope. This is classical new matter. ... [T]he district court erred in its ruling that, as construed, the broadened scope of the '700 claims is entitled to the filing date of the [parent] '525 patent.”).

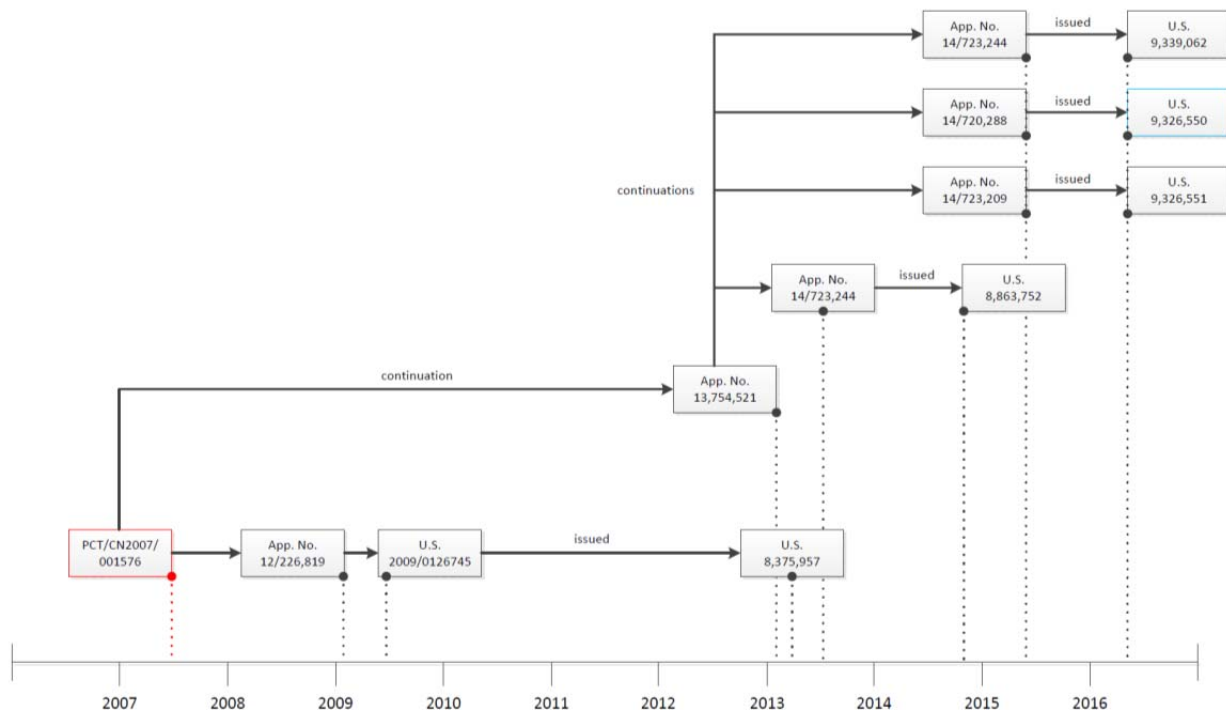
The relevant § 112 analysis in determining entitlement to an earlier filing date is between the later-filed claims and the *originally filed* written description of the parent application to which priority is being claimed:

Anascope points to some of the issued claims of the '525 patent, which recite an "input member moveable on at least two axes," and argues that this adequately describes, for priority purposes, use of more than a single input member in order to obtain movement in six degrees of freedom. We need not decide the significance of the words "at least two," for, as Nintendo points out, this text was not part of the specification and claims as filed in 1996, but was added to the claims by amendment in August 2000. **This text was not present in the original '525 specification, and cannot contribute written description support for the '700 claims as of the '525 filing date.**

*Id.* at 1337 (citations omitted).

### 7.3. Factual Background

The 550 Patent was filed as App. No. 14/720,288 (the “288 Application”) on May 22, 2015. The 288 Application is a continuation of App. No. 13/754,521 (“the 521 Application”) which was filed on January 30, 2013 and issued as U.S. 9,370,205 on June 21, 2016. The 521 Application is a continuation of App. No. 12/226,819 (“the 819 Application”), which was filed as PCT/CN2007/001576 (the “Parent Application”) on May 15, 2007, and issued as U.S. 8,375,957 on February 19, 2013. *See* Ex.1001. The chain of applications is illustrated in the timeline below. The Parent Application is highlighted in red, while the 550 Patent is highlighted in blue:



The issued claims of the 550 Patent are discussed below in **Section 7.3.1**. The original disclosure of the Parent Application is discussed below in **Section 7.3.2**. And the changes made to the specification during the prosecution of the 521 Application prior to the issuance of the 550 Patent are discussed in **Section 7.3.3** below.

### **7.3.1. Issued Claims of the 550 Patent**

The Challenged Claims of the 550 Patent include one independent claim (claim 1) and eleven dependent claims. Independent claim 1 is reproduced below:

1. A vaporizing device comprising:
  - an electronic cigarette including:
    - a battery assembly comprising a tubular battery assembly housing having a first end and a second end, with a battery and a micro-controller unit electrically connected to a circuit board within the battery assembly housing;
    - a first screw thread electrode on the first end of the battery assembly housing, with a first through hole at a center of the first screw thread electrode;
  - an atomizer assembly comprising:
    - a tubular atomizer assembly housing having a first end and a second end;
    - an atomizer having a porous body, and a liquid supply in the tubular atomizer assembly housing;



with the atomizer including a heater wire wound on a part of the porous body which is perpendicular to a longitudinal axis of the tubular atomizer assembly housing;

an airflow path through an opening in the atomizer to a suction nozzle at the second end of the tubular atomizer assembly housing;

a second screw thread electrode on the second end of the atomizer assembly housing, with a second through hole at a center of the second screw thread electrode; and

the battery assembly and the atomizer assembly mechanically connected to form the electronic cigarette by engagement of the first screw thread electrode with the second screw thread electrode, and with electricity conducted from the battery to the heater wire through the first and second screw thread electrodes for heating the heater wire.

As is apparent from claim 1, the claimed vaporizing device has only two required “assemblies”—a battery assembly and an atomizer assembly. There is no limitation in claim 1—or any of the claims that depend from it—requiring a “cigarette bottle assembly” or similar structure. Instead, claim 1 and its dependents require only a generic “liquid supply” without any defined structure that—rather than being located within a separate “cigarette bottle assembly”—is recited as being within the atomizer assembly housing. *See* Ex. 1001 at claims 1-12. Patent Owner, moreover, has asserted the challenged claims of the 550 Patent against bottle-less devices. *See* Ex. 1011 at pp.3-4. Accordingly, none of the

claims of the 550 Patent are limited to vaporizing devices including a “cigarette bottle assembly” or similar structure. *See* Ex.1003 at ¶¶ 84-87.

As will be explained in detail below, the bottle-less claims of the 550 Patent are not entitled to the filing date of the parent application.

### **7.3.2. The Parent Application**

The original specification and claims of the Parent Application were filed as international patent application PCT/CN2007/001576 (the “576 Application”) on May 15, 2007, which claimed priority to a Chinese application—CN 200620090805. *See* Ex. 1014, *see also* Ex. 1009. U.S. Application No. 12/226,819 (“the 819 Application”) was filed on October 29, 2008 as the U.S. National Stage application, pursuant to 35 U.S.C § 371, of the 576 Application. The PTO issued a notice on February 6, 2009 stating that the 819 Application completed the requirements of § 371 on January 15, 2009 and that it would be accorded the filing date of its associated international application—May 15, 2007. Ex. 1006 at pp. 27-28. Accordingly, consistent with § 371, the specification and claims of the 576 Application constitute the original disclosure of the 819 Application, and thus are the relevant point of analysis for determining whether later-filed claims have written description support in the original application. *See, e.g., Synthes USA, LLC v. Spinal Kinetics, Inc.*, 734 F.3d 1332, 1342 (Fed. Cir. 2013) (assessing written description compliance of patent that issued as U.S.

National Stage of PCT application by comparing issued claims to the written disclosure of the originally filed PCT application). Accordingly, this Petition refers to the 576 Application as the “Parent Application.”

The PTO published the 819 Application as Hon 745 (U.S. Pub. No. 2009/0126745) on May 21, 2009. The specification, figures, and claims of Hon 745 are substantially identical to those that the applicant originally submitted on October 29, 2008, and in turn are identical in substance to the PCT application.<sup>9</sup> Accordingly, for ease of reference and in order to better illustrate changes in the specification over time, petitioner cites Hon 745 below when referring to the specification and claims of the Parent Application. As is explained below, the Parent Application is plainly directed and limited to a three-assembly device that requires a battery assembly, an atomizer assembly, **and** a cigarette bottle assembly. *See also* Ex.1003, ¶¶ 88-101. The Parent Application does not disclose or contemplate any other alternate embodiment. *Id.*

First, both the Abstract and the “Contents of the Invention” section of the Parent Application make clear that the invention requires a “cigarette bottle assembly”:

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<sup>9</sup> WO 2007/131450 is the International Publication of PCT/CN2007/001576. A certified translation of WO 2007/131450 is attached as Ex. 1014.

“An emulation aerosol sucker includes a battery assembly, an atomizer assembly **and a cigarette bottle assembly**. An external thread electrode is located in one end of battery assembly. An internal thread electrode is located in one end of atomizer assembly. Said battery assembly and said atomizer assembly are connected by the screwthread electrode. **Said cigarette bottle assembly is inserted into the other end of said atomizer assembly** and both form one cigarette type or cigar type body.”

Ex. 1005 at Abstract.

The purpose of **this invention is fulfilled with the following solution: this invention includes** a battery assembly, an atomizer assembly **and a cigarette bottle assembly**. The battery assembly connects with one end of the atomizer assembly, and **the cigarette bottle assembly is inserted into the other end of the atomizer assembly**, thus forming one cigarette type or cigar type body

*Id.* at ¶ [0008].

“The said atomizer assembly includes the internal thread electrode, air-liquid separator, atomizer and the secondary shell. **One end of the secondary shell is inserted into the cigarette bottle assembly for connection...**”

*Id.* at ¶ [0009].

“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.

*Id.*

Second, in the Description of the Drawings section, the Parent Application consistently describes the figures as depicting features of “this invention.” Ex.1005 at ¶¶ [0011]-[0024]. Figure 4, depicted below, is described as “the diagram of the **cigarette bottle assembly of this invention.**” *Id.* at ¶ [0015]. Notably, the descriptions of the figures specified the few instances in which alternate embodiments were disclosed, *see id.* at ¶¶ [0016]-[0017] (indicating that Figures 5A and 5B depict alternative ‘internal structure[s] of this invention’), but made no such suggestion with respect to the cigarette bottle assembly. *Id.* at ¶ [0015].

Third, the body of the written description of the Parent Application makes clear that every contemplated embodiment of the device described included a cigarette bottle assembly. The Parent Application describes two alternative examples of the device (“Example 1” and Example 2”), and both expressly include the cigarette bottle assembly of Figure 4. *See* Ex.1005 at ¶¶ [0031] (“As shown in FIG. 4, the cigarette bottle assembly includes the cigarette liquid bottle (401), fiber (402) and suction nozzle (403).”), [0039] (“As shown in FIG. 5B, the standby state of this invention has the fully charged battery assembly shown on FIG. 2B fastened

onto the atomizer assembly, **which is then inserted into the cigarette bottle assembly shown on FIG. 4.**”); *see also id.* at ¶¶ [0026], [0029] [0034], [0040]. No alternative embodiment that lacks a cigarette bottle assembly is disclosed or contemplated.<sup>10</sup> Ex.1003, ¶¶ 88-101.

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<sup>10</sup> The reference in the Parent Application to “the liquid supply material of the atomizer” is not a disclosure of an alternative to the bottle assembly. *See* Ex. 1005 at ¶ [0034] (“Besides the micro-porous ceramics, the liquid supply material of the atomizer (307) may also be foamed ceramics, micro-porous glass, foamed metal, stainless steel fiber felt, terylene fiber, nylon fiber, nitrile fiber, aramid fiber or hard porous plastics.”). This sentence refers to the “micro-porous ceramics” of the atomizer that the Parent Application describes as *receiving* liquid from the bottle. *Id.* at ¶¶ [0032], [0040]; *see also* Ex.1003, ¶ 94. Nothing in the Parent Application indicates that the micro-porous ceramics receives liquid other than through the liquid bottle. Ex.1003, ¶ 94. Accordingly, the “liquid supply material of the atomizer” is not a substitute for the liquid bottle, but is instead a conduit for delivering liquid from the bottle assembly to the heating component. *Id.* Patent Owner has interpreted this structure in the same way. *See* Ex.1015 at pp.20-21.

Finally, every one of the 32 originally filed claims of the Parent Application required a cigarette bottle assembly that included a cigarette liquid bottle (dependent claims 2-32 all depend from claim 1):

1. An emulation aerosol sucker includes a battery assembly, an atomizer assembly **and a cigarette bottle assembly**; the **said cigarette bottle assembly includes the cigarette liquid bottle**; the said atomizer assembly includes an atomizer; **the cigarette bottle assembly is inserted into one end of the atomizer assembly**, thus forming one cigarette type or cigar type body.

Ex.1005 at claim 1; *see also* claims 2-32.

There is simply no disclosure in the Parent Application of a vaporizing device that does not include a cigarette bottle assembly. As Dr. Collins opines, a person of ordinary skill in the art reading the Parent Application as of its 2007 filing date would not understand it to convey possession of a vaporizing device that did not include a cigarette bottle assembly. Ex.1003, ¶¶ 88-101.

### **7.3.3. App. No. 13/754,521**

The 550 Patent is also a continuation of App. No. 13/754,521 (“the 521 Application”), which was filed on January 30, 2013 and issued on June 21, 2016 as U.S. Patent No. 9,370,205 (“the 205 Patent”). Between the filing of the Parent Application and the issuance of the 550 Patent, the applicant made multiple changes to the specification. This included the filing of a substitute specification with the initial filing of the 521 Application on January 30, 2013. Ex.1002 at p.2.

The changes to the specification included a number of deletions that were aimed at broadening the scope of the disclosure. Specifically, changes were made to remove the language characterizing the three-part assembly, including the cigarette bottle assembly, as “the invention.”

First, the Summary of the Invention section was modified by deleting the language that characterized the three-part assembly, including the cigarette bottle assembly, as “the invention.” Below is a blackline comparison of the “Contents of Invention” section in the Parent Application with the “Summary of the Invention” section in the substitute specification of the 521 Application:

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

~~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.~~

~~The purpose of this invention is fulfilled with the following solution:~~  
~~this invention includes~~ An improved electronic cigarette has a battery assembly, an atomizer assembly and a cigarette bottle assembly. The battery assembly connects with one end of the atomizer assembly, and



the cigarette bottle assembly is inserted into the other end of the atomizer assembly, thus forming one cigarette type or cigar type body.  
Use of the electronic cigarette reduces cancer risks and fire hazards while providing a simulated smoking experience.

*Compare* Ex.1002 at pp.4-5 ¶ [0004] *with* Ex.1005 at ¶¶ [0006]-[0008].

In addition, the Description of the Drawings was modified to delete the language characterizing the figures as illustrating “the invention.” Below is a blackline comparison of the Description of the Drawings section in the Parent Application with the same section in the substitute specification of the 521 Application:

FIG. 1 is a side view of an electronic cigarette ~~the visual appearance of the cigarette type of this invention.~~

FIG. 2A is ~~the diagram of one structure~~ a view of the battery assembly ~~of this invention.~~

FIG. 2B is ~~the diagram~~ a view of another ~~structure of the~~ battery assembly ~~of this invention.~~

FIG. 3 is the diagram of the ~~diagram of the~~ atomizer assembly ~~of this invention.~~

FIG. 4 is the diagram of the cigarette bottle assembly ~~of this invention.~~

FIG. 5A is ~~the diagram of one internal structure of this invention~~ a section view of an electronic cigarette.

FIG. 5B is ~~the diagram~~ a section view of another ~~internal structure of this invention~~ embodiment.

FIG. 6 is ~~the~~ a diagram of ~~the structure of the~~ a charger of this invention.

FIG. 7 is the electric circuit diagram ~~of MCU and MOSFET of this invention~~.

FIG. 8 is ~~the diagram of the structure of the capillary impregnation atomizer of this invention~~ a side of an atomizer.

FIG. 9 is ~~the left~~ an end view of the atomizer shown in FIG. 8.

FIG. 10 is ~~the~~ a diagram ~~of the structure of the~~ a spray atomizer of this invention.

FIG. 11 is ~~the left~~ an end view of the atomizer shown in FIG. 10.

FIG. 12 is ~~the diagram of the structure of the cigar type of this invention~~ a section view of another embodiment.

*Compare* Ex.1002 at p.2 ¶¶ [0005]-[0018] *with* Ex. 1005 at ¶¶ [0011]-[0024].

This systematic deletion of limiting language identifying “the invention” hardly lines up with how the applicant described the changes to the Patent Office: “to correct various grammatical and punctuation errors; divide the text into paragraphs; to delete extraneous and redundant content; and to add paragraph numbers for reference, and with the substitute specification having further deletions.” Ex.1002 at 2. Moreover, contrary to the applicant’s certification that

“[n]o new matter has been added,” *id.*, as discussed below, such broadening of the specification by deletion of limiting language constitutes new matter.<sup>11</sup>

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<sup>11</sup> Patent Owner may suggest that the Examiner allowed the substitute specification, and, therefore, deemed the amendments proper. However, there is no evidence in the prosecution history that the Examiner considered whether the amendments to the specification included new matter, or whether the parent application provided written description support for the broadened claims. *In re NTP, Inc.*, 654 F.3d at 1278-79 (“Whether an examiner considered an issue must be context-specific, and here, there is no evidence that the examiner actually considered whether the claims of the ‘592 Patent satisfy the requirements of § 112.”). The silence in the prosecution history suggests that the Examiner did not substantively consider these issues, but instead relied on the applicant’s representation that the amendments were made for purposes such as eliminating “grammatical and punctuation” errors and “extraneous and redundant content.” Additionally, as required by 37 CFR 1.125(b), the Applicant included a statement that the substitute specification contained “no new matter.” *See* Ex.1002 at p.2. MPEP 608.01(q) provides that, in light of that statement, “[t]here is no obligation on the examiner to make a detailed comparison between the old and the new specifications for determining whether or not new matter has been added.”

**7.4. The Parent Application Does Not Provide Written Description Support for the Bottle-less Claims of the 550 Patent**

The claims of the 550 Patent encompass a vaporizing device that includes battery and atomizer assemblies, but lacks a bottle assembly for storing liquid. This is plain from the language of the claims themselves which contain a generic “liquid supply” limitation. *See* Section 7.3.1, *supra*.

The original disclosure and claims of the Parent Application, however, are clearly limited to a device that includes a bottle assembly containing a liquid bottle. *See* Section 7.3.2, *supra*; Ex.1005 at Abstract, ¶¶ [0008], [0009], [0015], [0026], [0029], [0031], [0032], [0034], [0040], claims 1-32; *see also* Ex.1003, ¶¶ 88-101. One of ordinary skill in the art reading the Parent Application as of its filing date in 2007 would not have understood the inventor to be possession of a device that included any other structure for storing liquid other than a liquid bottle contained in a bottle assembly. Ex.1003, ¶¶ 88-101. Moreover, as Dr. Collins opines, a person of ordinary skill would recognize the bottle assembly to be one of the three assemblies required to make a structurally complete device as described in the Parent Application—it can no more be omitted than can the atomizer assembly or the battery assembly. *Id.* The Parent Application does not disclose or suggest that the cigarette bottle assembly may be omitted from the invention or replaced with some other structure. *Id.* Accordingly, any argument by Patent Owner regarding how a person of ordinary skill might have modified the Parent

Application's disclosure amounts to nothing more than mere speculation regarding potentially obvious—but non-disclosed—variants. The Federal Circuit has expressly stated that this is not sufficient for purposes of the written description requirement. *Lockwood*, 107 F.3d at 1572; *see also PowerOasis, Inc.*, 522 F.3d at 1306.

Any argument by Patent Owner that the disclosure of a cigarette liquid bottle located within a “cigarette bottle assembly” is sufficient to describe a broader class of electronic cigarettes that store liquid using bottle-less structures would be inconsistent with prior statements made by the applicant and inventor to the Patent Office during prosecution of U.S. 8,689,805 (“the 805 Patent”) (Ex.1012). The 805 Patent, which also identifies Hon Lik as the sole inventor, claims priority to a Chinese application filed in 2009 and is directed to an electronic cigarette that includes a bottle-less liquid storage component that allows for air flow to pass through the liquid storage component. Ex.1012 at 4:20-31; *see also* Ex.1013 (805 Patent file history) at p.8; *see also* Ex.1003, ¶ 98. During prosecution of the 805 Patent, the applicant argued, with a supporting declaration from the inventor Hon Lik, that prior art disclosing a “liquid-supplying bottle” in which airflow passed around the bottle did not disclose or suggest the bottle-less liquid storage component described in the 805 Patent. Ex. 1013 at pp.7-10; *see also* Ex.1003, ¶¶ 99-101.

Neither the inventor's declaration, nor applicant's arguments that accompanied it, even entertained the possibility that the prior art disclosure of a liquid bottle amounted to a disclosure of a broader class of liquid supplying structures. On the contrary, Hon Lik's sworn statement made clear that the liquid bottle disclosure in the prior art should be understood to describe the single embodiment it expressly disclosed—and nothing more. The Board should hold Patent Owner to the same standard with respect to the similarly limited disclosure of a bottle assembly in the Parent Application of the 550 Patent, and reject any argument that the bottle assembly disclosed in the Parent Application provides written description support for a device including a bottle-less structure for storing liquid.

The facts here are remarkably similar to three Federal Circuit cases in which the Court held that later-filed claims were not supported by an earlier-filed and narrower disclosure. As previously noted, the Parent Application filed on May 15, 2007 included a bottle assembly (containing a liquid bottle) in every claim. Over the ensuing 9 years of prosecution of the Parent Application and follow-on continuations, the applicant deleted limiting portions of the specification that unambiguously characterized "the invention" as including a cigarette bottle assembly. The applicant submitted—and was ultimately granted—broad claims directed to a device that did not include a bottle assembly. As the cases below

demonstrate, these bottle-less claims do not have written description support in a priority application that consistently and pervasively describes the invention as a device that includes a bottle assembly.

First, in *ICU Medical*, the specification “describe[d] only medical valves with spikes” and the original claims were likewise limited to medical valves with spikes.<sup>12</sup> 558 F.3d at 1378. But years later during prosecution, the patentee filed an amendment to include “spikeless” claims. *Id.* at 1377. The patentee argued that the figures and descriptions that include spikes supported claims that were neutral regarding whether the valve included a spike. *Id.* The Federal Circuit flatly rejected this argument, noting that “a person of skill in the art would not understand the inventor of the [] patents to have invented a spikeless medical valve.” *Id.* at 1378. The Court further noted that “[i]t is not enough that it would have been obvious to a person of ordinary skill that [the valve] could be used without a spike.” *Id.* at 1379.

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<sup>12</sup> In *ICU Medical*, the ultimate issue being determined was whether the later-added claims were invalid under § 112 for lack of written description support. Although the issue to be decided here is one of priority, the same analysis applies—*i.e.*, whether or not a disclosure provides written description support for the claims under § 112.

Similarly, in the present case, the specification, figures, and claims of the Parent Application are uniformly limited to a device including a bottle assembly. Years after the filing of the Parent Application, Patent Owner broadened the claims in the Parent Application to cover a bottle-less device, and then broadened the claims even further in the application that issued as the 550 Patent. Just as in *ICU Medical*, where the disclosure of a medical valve with spikes could not support claims that were spikeless, the figures and specification in the Parent Application that exclusively describe an electronic cigarette with a bottle assembly cannot support the bottle-less claims of the 550 Patent.

Next, in *Research Corp. Techs.*, the Federal Circuit examined whether the claims of a child application that did not require a “blue noise mask” were entitled to claim the benefit of the parent application.<sup>13</sup> 627 F.3d at 871-872. The Federal Circuit explained that the specification of the parent application “repeatedly refer[s] to a blue noise mask as ‘the present invention,’” the figures all disclosed a blue noise mask, and all of the approved claims of the parent application recited a blue noise mask. *Id.* at 871-872. For those reasons, the Federal Circuit concluded that certain claims of the child application, which did not require a blue noise

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<sup>13</sup> The issued patent resulting from the parent application was the invalidating prior art reference. 627 F.3d at 871.



mask, were not entitled to claim the benefit of the parent application's filing date. *Id.*

Similarly, the Parent Application here repeatedly describe the “cigarette bottle assembly” as part of “the present invention” or “this invention,” the figures depicting the entire device all include a “cigarette bottle assembly,” and all of the originally filed claims require a “cigarette bottle assembly.” Ex.1005 at Abstract, ¶¶ [0008], [0009], [0011]-[0024], [0026], [0029], [0031], Fig.4, Fig. 5A, Fig. 5B, claims 1-32; *see also* Ex.1003, ¶¶ 88-101. The claims of the 550 Patent, which do not require a “bottle assembly,” are not entitled to claim the benefit of the Parent Application's filing date. And therefore, like the child patent in *Research Corp. Techs.*, the claims of the 550 Patent are anticipated by the publication of the Parent Application.

Finally, in *Anascope, Ltd.*, the Federal Circuit held that a child application, in which the specification was broadened by deletions, was not entitled to the priority date of the parent application. 601 F.3d. at 1334, 1340. The issue turned on “whether the specification of the [parent application] support[ed]...controllers having multiple input members that...operate in six degrees of freedom, as described and claimed in the [child application].” *Id.* at 1335. The Court found that the specification and drawings of the parent were plainly limited to a single input member, and that the description was broadened by removing limitations in

the child specification. *Id.* at 1338-39. In particular, the Court noted that “[i]n the ‘Background of the Invention’ and ‘Summary of the Invention’ sections, every occurrence of ‘hand operable single input member’ in the [child patent] was replaced with ‘hand operable input member(s)’...or ‘at least one hand operable input member.’” *Id.* at 1338.

Patent Owner engaged in similar, if more subtle, deletions during prosecution of the application for the 205 Patent, which preceded the application for the 550 Patent. As noted above, Patent Owner made numerous deletions of “the present invention” or “this invention” from the specification. These deletions removed limiting language that characterized the invention as including a bottle assembly. Thus, the deletions appear to have been made by the applicant to create the impression that the three-assembly device, including a cigarette bottle assembly, was only an embodiment, as opposed to the invention. This broadening by deletion “is classical new matter.” *Anascape*, 601 F.3d at 1338.

The Federal Circuit’s recent decision in *ScriptPro LLC v. Innovation Associates, LLC* is in accord with Petitioner’s contention that the Parent Application does not support the broad claims of the 550 Patent. In *ScriptPro LLC*, the defendant argued that the specification limited the invention to sorting and storing prescription containers by patient-identifying information, and therefore, did not support the broad claims that were not so limited. *ScriptPro*,

*LLC v. Innovation Assocs., Inc.*, No. 2015-1565, slip op. at 5-7 (Fed. Cir. August 15, 2016). The Federal Circuit rejected this argument and found that the specification was not so limited because it *expressly* contemplated other embodiments. *Id.* at 6 (“the ’601 Patent expressly states that containers can be sorted and stored ‘by patient, prescription, **or other predetermined storage scheme** without input or handling by the operator.”) (emphasis in original). The Federal Circuit further noted that “[t]he ’601 patent’s express disclosure that sorting and storing can be done in a number of ways distinguishes this case from *Gentry Gallery* and *ICU Medical*.” *Id.* at 9. In the present case, the Parent Application of the 550 Patent categorically **does not** contemplate an embodiment without a cigarette bottle assembly. *ScriptPro LLC* is thus the latest in a long line of Federal Circuit cases confirming that a specification—like that of the Parent Application—that limits the invention to a particular design, without disclosing or suggesting alternatives, fails to provide written description support for claims broader than that limited description.

In sum, the Federal Circuit decisions in at least *ICU Medical*, *Research Corp. Techs.*, and *Anascope* compel a finding that the bottle-less claims of the 550 Patent are not entitled to claim the benefit of the filing date of the Parent Application, which has a disclosure that is clearly limited to a device including a

bottle assembly. As a result, the claims of the 550 Patent are anticipated by Hon 745.

**8. CONCLUSION**

For the reasons set forth above, *inter partes* review of claims 1-12 of the 550 Patent is requested.

Respectfully submitted,

Dated: August 31, 2016

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**CERTIFICATE OF COMPLIANCE**

The undersigned certifies that this brief complies with the type-volume limitations of 37 CFR § 42.24(a)(1)(i). This brief contains 12,746 words as calculated by the “Word Count” feature of Microsoft Word 2010, the word processing program used to create it.

The undersigned further certifies that this brief complies with the typeface requirements of 37 CFR § 42.6(a)(2)(ii) and typestyle requirements of 37 CFR § 42.6(a)(2)(iii). This brief has been prepared in a proportionally spaced typeface using Microsoft Word 2010 in Times New Roman 14 point font.

Dated: August 31, 2016

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**CERTIFICATE OF SERVICE**

The undersigned certifies, in accordance with 37 C.F.R. § 42.105 and § 42.6(e), that service was made on the Patent Owner as detailed below.

*Date of service*      August 31, 2016

*Manner of service*      EXPRESS MAIL

*Documents served*      Petition for *Inter Partes* Review of U.S. Pat. No. 9,326,550  
   with Nu Mark's Exhibit List  
   Power of Attorney  
   Exhibits Ex.1001 through Ex.1017

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