
UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

VMR PRODUCTS LLC

Petitioner

v.

FONTEM HOLDINGS 1 B.V.

Patent Owner

U.S. Patent No. 8,365,742
Issue Date: February 5, 2013
Title: AEROSOL ELECTRONIC CIGARETTE
Inventor: Lik Hon
Filed: April 5, 2011
U.S. Application Serial No. 13/079,937

PETITION FOR *INTER PARTES* REVIEW
UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.100, *et seq.*

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EXHIBIT LIST	
Exhibit	Exhibit Description
1001	U.S. Patent No. 8,365,742 (“’742 Patent”)
1002	Declaration of Gregory Buckner, Ph.D.
1003	Curriculum Vitae of Gregory Buckner, Ph.D.
1004	China Patent CN 2719043 (“Hon ‘043”) – issue date August 24, 2005
1005	Certified English translation of Hon (CN 2719043) pursuant to 37 C.F.R. 42.63(b)
1006	WO 2005/099494, which is the PCT application equivalent of Hon (CN 2719043) (“Hon ‘494”)
1007	Certified English translation of WO 2005/099494 pursuant to 37 C.F.R. 42.63(b)
1008	CA 2562581, which is the Canadian equivalent of Hon (CN 2719043) (“Hon ‘581”)
1009	US 2007/0267031, which is the U.S. equivalent of Hon (CN 271043) (“Hon ‘031”)
1010	EP 0845220 (“Susa”) – Published June 3, 1998
1011	U.S. Patent No. 5,144,962 (“Counts”) – issue date September 8, 1992
1012	WO 03/034847 (“Abhulimen”), Published May 1, 2003
1013	U.S. Patent No. 2,057,353 (“Whittemore”) – issue date October 13, 1936
1014	Litigation proceedings in CV 14-1645 – Rulings on Claims Construction
1015	WO 2007/131449, which is the PCT application for the ‘742 Patent
1016	‘742 Prosecution History, Preliminary Amendment

1017	‘742 Prosecution History, Non-final office action
1018	‘742 Prosecution History, Amendment
1019	‘742 Prosecution History, Supplemental Amendment
1020	‘742 Prosecution History, Examiner Interview Summary
1021	‘742 Prosecution History, Notice of Allowance
1022	‘742 Prosecution History, Certificate of Correction
1023	DECISION - Institution of <i>Inter Partes</i> Review in IPR2013-00387, Paper 7

Pursuant to 35 U.S.C. §§ 311-319 and 37 C.F.R. § 42.100, *et seq.*, the undersigned, on behalf of and acting in a representative capacity for petitioner, VMR Products LLC (“VMR” or “Petitioner”), hereby petitions for *inter partes* review of claims 1, 2 and 3 (all claims) of U.S. Patent No. 8,365,742 (“the ‘742 Patent”), issued to Fontem Holdings 1 B.V. (“Patent Owner”). The ‘742 Patent is attached as Exhibit 1001.

I. INTRODUCTION

Petitioner hereby asserts that there is a reasonable likelihood that Petitioner will prevail on at least one of the challenged claims as being unpatentable and respectfully requests institution of an *inter partes* review of the ‘742 Patent for judgment against claims 1, 2 and 3 (all claims) as unpatentable under 35 U.S.C. § 103.

II. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(a)(1)

A. REAL PARTY INTEREST UNDER 37 C.F.R. § 42.8(b)(1)

Petitioner VMR Products LLC is the real party in interest for the instant petition.

B. RELATED MATTERS UNDER 37 C.F.R. § 42.8(b)(2)

Pursuant to 37 C.F.R. § 42.8(b)(2), Petitioner identifies the following related litigation involving the ‘742 Patent. The ‘742 Patent is currently the subject of a patent infringement lawsuit brought by the Patent Owner against Petitioner in *Fontem Ventures B.V. and Fontem Holdings 1 B.V. v. VMR Products, LLC*, Case

No.: 2:14-cv-01655, filed on March 5, 2014, in the U.S. District Court for the Central District of California (now consolidated for discovery and pre-trial purposes with Case Nos. 2:14-cv-01645). In addition to the '742 Patent, Patent Owner has asserted U.S. Patent No. 8,375,957, U.S. Patent No. 8,393,331, U.S. Patent No. 8,490,628 and U.S. Patent No. 8,689,805 in this litigation.

The aforementioned patents, including the '742 Patent, are also the subject of patent infringement lawsuits brought by the Patent Owner against third party Defendants in (i) *Fontem Ventures BV and Fontem Holdings 1 B.V. v. NJOY, Inc.*, No. CV14-1645; (ii) *Fontem Ventures BV and Fontem Holdings 1 B.V. v. LOEC, Inc.*, No. CV14-1648; (iii) *Fontem Ventures BV and Fontem Holdings 1 B.V. v. CB Distributors, Inc. and DR Distributors, LLC*, No. CV14-1649; (iv) *Fontem Ventures BV and Fontem Holdings 1 B.V. v. Vapor Corp.*, No. CV14-1650; (v) *Fontem Ventures BV and Fontem Holdings 1 B.V. v. Fin Branding Group, LLC, and Victory Electronic Cigarettes Corp.*, No. CV14-1651; (vi) *Fontem Ventures BV and Fontem Holdings 1 B.V. v. BallantyneBrands, LLC.*, No. CV14-1652; (vii) *Fontem Ventures BV and Fontem Holdings 1 B.V. v. Spark Industries, LLC*, No. CV14-1653; and (viii) *Fontem Ventures BV and Fontem Holdings 1 B.V. v. Logic Technology Development LLC*, No. CV14-1654.

**C. NOTICE OF LEAD COUNSEL UNDER 37 C.F.R. §§ 42.8(b)(3)
and 42.10(a)**

Petitioner provides the following designation of counsel.

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D. SERVICE INFORMATION UNDER 37 C.F.R. §§ 42.8(b)(4)

Service information for lead counsel is provided in the designation of lead counsel above. Service of any documents via hand-delivery may be made at the postal mailing address of the respective lead or back-up counsel designated above.

III. PAYMENT OF FEES UNDER 37 C.F.R. § 42.103

The undersigned has satisfied the required fee required under 37 C.F.R. § 42.15(a) for this Petition. The undersigned further authorizes payment for any additional fees that might be due in connection with this Petition to be charged to Deposit Account No. 50-3632.

IV. REQUIREMENTS FOR *INTER PARTES* REVIEW UNDER 37 C.F.R. §§ 42.104

A. GROUND FOR STANDING UNDER 37 C.F.R. § 42.104(a)

Petitioner hereby certifies that the '742 Patent is available for *inter partes*

review and that the Petitioner is not barred or estopped from requesting *inter partes* review challenging the claims of the ‘742 Patent on the grounds identified herein.

B. IDENTIFICATION OF CHALLENGE UNDER 37 C.F.R. § 42.104(b)

The precise relief requested by Petitioner is that the Patent Trial and Appeal Board (“PTAB”) review, find invalid and cancel claims 1, 2 and 3 (all claims) of the ‘742 Patent.

1. The claims for which *inter partes* review is requested under 37 C.F.R. § 42.104(b)(1)

Petitioner requests *inter partes* review of claims 1, 2 and 3 (all claims) of the ‘742 Patent.

2. The statutory grounds and prior art on which the challenge is based under 37 C.F.R. § 42.104(b)(2)

The PTAB applies U.S. law in conducting an *inter partes* review. 35 U.S.C. §§ 311-319. Unpatentability is proven by a preponderance of the evidence. 35 U.S.C. § 316. *Inter partes* review of the ‘742 Patent is requested in view of the following prior art: first primary reference, Hon ‘043 (Ex. 1004, and English translation Ex. 1005) and/or its PCT equivalent, Hon ‘494 (Ex. 1006 and English Translation Ex. 1007) (collectively, “the Hon References”) with secondary references: Susa (Ex. 1010), Abhulimen (Ex. 1012), Whittemore (Ex. 1013) and Counts (Ex. 1011). *Inter partes* review of the ‘742 Patent is also requested in view of the following prior art: second primary reference Susa (Ex. 1010), alone, and

with secondary references Abhulimen (Ex. 1012) and Whittemore (Ex. 1013). The statutory grounds for the challenges are set forth below.

GROUND 1: Independent claims 1, 2 and 3 would have been obvious under 35 U.S.C. § 103(a) in view of Hon ‘043 (its equivalent Hon ‘494) in further view of Susa.

GROUND 2: Independent claims 1, 2 and 3 would have been obvious under 35 U.S.C. § 103(a) in view of Hon ‘043 (its equivalent Hon ‘494) in further view of Abhulimen.

GROUND 3: Independent claims 1, 2 and 3 would have been obvious under 35 U.S.C. § 103(a) in view of Hon ‘043 (its equivalent Hon ‘494) in further view of Whittemore.

GROUND 4: Independent claims 1, 2 and 3 would have been obvious under 35 U.S.C. § 103(a) in view of Hon ‘043 (its equivalent Hon ‘494) in further view of Counts.

GROUND 5: Independent claims 1, 2 and 3 would have been obvious under 35 U.S.C. § 103(a) in view of Susa alone.

GROUND 6: Independent claims 1, 2 and 3 would have been obvious under 35 U.S.C. § 103(a) in view of Susa in further view of Abhulimen.

GROUND 7: Independent claims 1, 2 and 3 would have been obvious under 35 U.S.C. § 103(a) in view of Susa in further view of Whittemore.

3. How the challenged claims are to be construed under 37 C.F.R. § 42.104(b)(3)

Claims subject to *inter partes* review receive the “broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b); *see also* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012). Although Petitioner’s construction of claim terms is not binding upon Petitioner in any related litigation, Petitioner submits that for the purposes of this *inter partes* review only, the claim terms take on their ordinary and customary meaning that the terms would have to one of ordinary skill in the art in view of the specification of the ‘742 Patent, except as specifically discussed below. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

a. Level of Ordinary Skill in the Art

“A person of ordinary skill in the art is a person of ordinary creativity, not an automaton.” *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 421 (2007). As confirmed by Dr. Gregory Buckner, the level of ordinary skill in the art of the ‘742 Patent is a person with at least a Bachelor’s degree in electrical engineering, mechanical engineering or biomedical engineering, along with at least five years of experience designing eletromechanical medical devices. Ex. 1002, Declaration of Gregory Buckner, Ph.D., ¶13.

b. Terms Construed

i. “Porous Component”

All three independent claims of the ‘752 Patent recite a “porous component.” Ex. 1001, col. 6, lns. 17, 33 and 46. While Petitioner believes this term is entitled to the broadest reasonable construction, this term received treatment when a Request for Trial was granted in connection with IPR2013-00387 regarding U.S. Patent No. 8,156,944 (“‘944 Patent”). Ex. 1023. The ‘742 Patent is a divisional of the application that led to the ‘944 Patent and therefore both patents share the same specification. In the Decision (“‘944 Patent Decision”) by the Patent Trial and Appeal Board, “porous component” was interpreted to be “a component of the atomizer assembly in the electronic cigarette that includes pores and is permeable to liquid, such as cigarette solution from the cigarette solution storage area.” Ex. 1023 at 11.

ii. “Frame”

All three independent claims of the ‘752 Patent recite a “frame.” Ex. 1001, col. 6, lns. 19, 34 and 45. The term “frame” was the subject of claim construction proceedings in *Fontem Ventures B.V. and Fontem Holdings I B.V. v. VMR Products, LLC*, Case No.: 2:14-cv-01655 (and related cases consolidated with Case No. 2:14-cv-01645). Ex. 1014, Court’s Rulings on Claims Construction. In those proceedings, the Patent Owner took the position that “frame” means “a support.” Ex. 1014, p. 5. The Court disagreed with this construction, holding that “frame”

need not be a structure on which the porous component is set. *Id.* at 5-7. Rather, “frame” means a “rigid structure.” *Id.* at 7.

iii. “Liquid Storage Component” or “Liquid Supply”

Claim 2 of the ‘742 Patent recites a “liquid storage component.” Ex. 1001, col. 6, ln 31. According to the Court’s Rulings on Claims Construction, this term did not require construction, but was not limited to a hollow, walled container for storing liquid. Ex. 1014, p. 19-21. Claim 3 of the ‘742 Patent recites a “liquid supply.” Ex. 1001, col. 6, ln. 51. According to the Court’s Rulings on Claims Construction, this term did not require construction, but was not limited to a liquid supply bottle. Ex. 1014, p. 19-21.

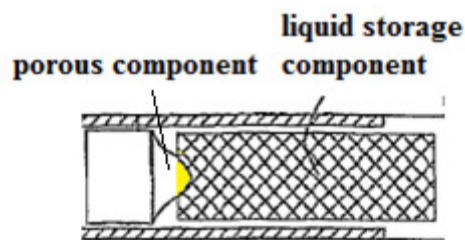
iv. “Integrally Formed”

Claim 1 of the ‘742 Patent recites a shell that is hollow and “integrally formed.” Ex. 1001, col. 6, lns. 8-9. According to the Court’s Rulings on Claims Construction, this term means “formed by parts that make up a whole.” Ex. 1014, p. 10. Petitioner does not believe that the Court’s construction excludes, or that the broadest construction would exclude, shells (or housings) made of one piece.

v. “Substantially”

All three independent claims of the ‘752 Patent recite the term “substantially.” Ex. 1001, col. 6, lns. 24, 37 and 49. Specifically, claims 1 and 3 require a porous component that is “substantially aligned with the run-through hole” and claim 2 requires a porous component that is “substantially surrounded by

the liquid storage component.” *Id.* According to the Court’s Rulings on Claims Construction, in the context of claims 1 (and therefore 3) and 2, “substantially” means “largely but not completely.” Ex. 1014, p. 26. Under this definition, the majority of the porous component need not be aligned with the run-through hole (claims 1 and 3), or surrounded by the liquid storage component (claim 2). Indeed, in the figures of the ‘742 Patent itself, the majority of the porous component is not surrounded by the liquid storage component (yellow). Ex. 1002, ¶¶31; Ex. 1001, ‘742 Patent, Fig. 1.



4. How the construed claims are unpatentable under the identified statutory grounds under 37 C.F.R. § 42.104(b)(4)

An explanation of how claims 1, 2 and 3 of the ‘742 Patent are unpatentable under the identified statutory grounds, including the identification of where each element of each claim is found in the prior art, is provided below in the form of discussion and graphics.

5. The exhibit number of the supporting evidence relied upon under 37 C.F.R. § 42.104(b)(5)

Patent or Publication	Abbreviation	Exhibit
CN 2719043	Hon ‘043	1004 (1005, certified English

Patent or Publication	Abbreviation	Exhibit
		translation)
WO 2005/099494 (PCT equivalent of Hon '043)	Hon '494	1006 (1007, certified English translation)
EP 0845220	Susa	1010
U.S. Patent No. 5,144,962	Counts	1011
WO 03/034847	Abhulimen	1012
U.S. Patent No. 2,057,353	Whittemore	1013

V. BACKGROUND

A. THE '742 PATENT

The '742 Patent is generally directed to an aerosol electronic cigarette. Ex. 1001, '742 Patent, Title. More particularly, the '742 Patent is directed to an electronic cigarette having a battery assembly, an atomizer assembly and a cigarette bottle assembly. Ex. 1001, col. 1, lns. 28-30. The basic configuration of the electronic cigarette described in the '742 Patent is shown in Figure 1 below.

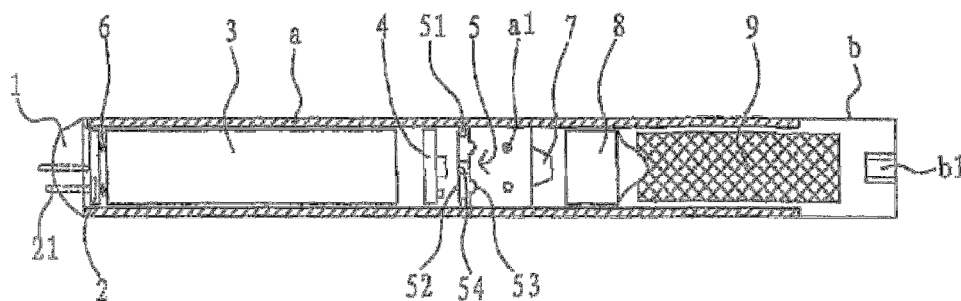


Figure 1

In this embodiment, hollow shell (a) contains removable bottle assembly (b). Ex. 1001, col. 2, lns. 30-37. The battery assembly in Figure 1 includes an operating indicator (1), a battery (3), an electronic circuit board (4) and an airflow sensor (5), all of which are located in the shell. Ex. 1001, col. 2, lns. 39-44.

The atomizer assembly in Figure 1 is depicted by atomizer (8), which includes a porous component. Several different atomizer assembly configurations are disclosed in the '742 Patent. The embodiment relevant to claims 1, 2 and 3 is shown in Figures 17 and 18, which are reproduced below.

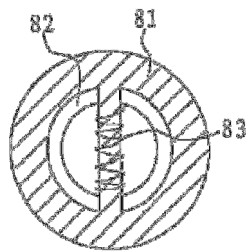


Figure 17

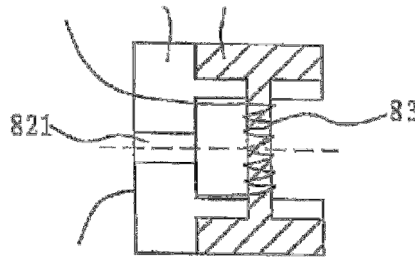


Figure 18

In this embodiment, a porous component (81) is set on a frame (82). Ex. 1001, Fig. 7, col. 5, lns. 42-46. A heating wire (83) is wound around the portion of the porous component which extends across the central opening of a run-through hole (821). Ex. 1001, Figs. 17 and 18, col. 5, lns. 42-49.

The '742 Patent includes three independent claims. Ex. 1001, col. 6, lns. 5-52. For ease of reference, the elements of the claims are broken down into subsections as set forth in the Declaration of Dr. Gregory Buckner. Ex. 1002, ¶24.

B. THE PROSECUTION HISTORY OF THE ‘742 PATENT

1. Preliminary Amendment

The application which led to the ‘742 Patent was filed on April 5, 2011 as U.S. Application Serial No. 13/079,937. The application was a divisional application of U.S. Patent Application No. 12/226,818, filed on October 29, 2008 (now U.S. Patent No. 8,156,944), which is the national stage entry of PCT Application No. PCT/CN2007/001575, filed on May 15, 2007, which claimed priority to CN Patent Application No. 2006/20090805, filed on May 16, 2006. Ex. 1015. The application was filed with 29 original claims. *Id.* In an April 5, 2011 Preliminary Amendment, the Applicant cancelled all 29 original claims, added one new claim, and amended the specification. Ex. 1016 at 2-3.¹

2. First Office Action Rejects Claim 30 as Indefinite

On July 19, 2012, the Examiner rejected the sole claim, claim 30. Ex. 1017. Specifically, claim 30 was rejected under 35 USC § 112 as being indefinite. *Id.* at 2. The Examiner found that it was unclear which “part” and “side” to which the Applicant was referring in the claim recitation of “the said porous component is wound with heating wire in the part that is on the side in the axial direction of the run through hole” *Id.* Although the Examiner indicated that Claim 30 would

¹ For ease of reference, and to avoid confusion, all citations to office actions or responses are to the numbered page on the original office action or response.

be allowable if the § 112 rejection was overcome, the Examiner explicitly stated that Hon ‘043 was the closest prior art and that only one limitation was lacking.

The Examiner believes that the closest prior art record, namely the CN 2719043 reference, neither teaches nor reasonably suggests an aerosol electronic cigarette having the claimed combination of structural features, including “*an atomizer, which includes a porous component and a heating body; the said heating body is heating wire . . . the heating wire is wound on the said porous component*”.

Id. at 2-3 (emphasis added).

3. Applicant Adds “Heating Wire Wound on a Porous Component”

In response to the first office action, on August 3, 2012 Applicant made amendments to claim 30 in which “porous component is wound with heating wire in the on the side in the axial direction of the run-through hole” was replaced with “the heating wire is wound on a part of the porous component that is substantially aligned with the run-through hole.” Ex. 1018 at 2 (claim 30) and 4 (Remarks).

Applicant also added new claims 31-32. *Id.* at 2-3. With respect to these new claims, Applicant argued that “[n]ew claim 31 is similar to claim 30 and includes the elements of claim 30, but written with more common English usage.” *Id.* at 4. Further, “[n]ew claim 32 is similar to claims 30 and 31 but describes a heating wire wound on a part of the porous component substantially aligned with the run-

through hole . . . and with the porous component in contact with a liquid supply in the housing . . .” *Id.* Finally, Applicant alleged that “[n]ew claims 31 and 32 are believed to be allowable for the same reason that claim 30 is indicated to be allowable at paragraph 4 of the Office Action.”

Four days later, on August 7, 2012 Applicant supplemented its response to the July 19, 2012 Office Action. Ex. 1019. In the supplemental response, the Applicant provided a substitute specification with numerous substantive changes from the previous version. *Id.* at 2.

4. Examiner Interview

Although the prosecution history does not show any additional rejections after the Applicant filed the August 7, 2012 response, Applicant conducted an examiner interview on August 14, 2012. Ex. 1020. The Examiner Interview Summary states that during the interview, the Examiner and the Applicant’s counsel discussed claims 30, 31 and 32 as well as the following prior art references: “Voges, U.S. Patent No. 6,196,218; Robinson, U.S. Patent No. 1,775,947; Counts, U.S. Patent No. 5,144,962; Brooks, U.S. Patent No. 4,947,875; Japan Tobacco, EP 0 845 220 B1; Hon Lik WO/2004/095855; and Hon Lik WO/2005/099494”. Ex. 1020. According to the Summary, “[n]o agreement was reached.” *Id.*

5. Notice of Allowance

On November 14, 2012, the USPTO issued a notice of allowance. Ex. 1021. The '742 Patent issued on February 5, 2013. Claims 30, 31 and 32 issued as claims 1, 2 and 3, respectively. Ex. 1001. On July 2, 2013, the USPTO issued a certificate of correction. Ex. 1022.

VI. THERE IS A REASONABLE LIKELIHOOD THAT AT LEAST ONE CLAIM OF THE '742 PATENT IS UNPATENTABLE

A. GROUND 1: CLAIMS 1, 2 AND 3 ARE UNPATENTABLE UNDER 35 U.S.C. § 103 AS BEING OBVIOUS IN VIEW OF HON '043 IN FURTHER VIEW OF SUSA

Hon '043 issued on August 24, 2005. Ex. 1005, Hon '043 (English translation), p. 1. The PCT application equivalent is Hon '494, which was published on October 27, 2005. Ex. 1007, Hon '494 (English translation), cover page.² Both references name as the inventor Lik Hon, who is the inventor named on the '742 Patent. Ex. 1001; Ex. 1007, Hon '494. Both references are directed to an electronic atomizing cigarette and discloses a shell 14, an air inlet 4, a battery 2,

² The English translation of Hon '043 (Ex. 1004) is Ex. 1005. However, because the translation does not have paragraph numbers or line numbers, citations will be made to the certified English translation of the PCT equivalent, Hon '494 (Exhibit 1007). For ease of reference, and to avoid confusion, all citations to the prior art will use the original page numbers where columns are not available.

an atomizer 9, a liquid-supplying bottle 11, a porous body 27, a cavity wall 25 and a heating element RL. Ex. 1002, ¶41; Ex. 1007, Hon ‘494, Fig. 1; p.1, lns. 4-5; p. 3, lns. 15-18, 35-37; p. 4, lns. 2 and 18-27.

As noted above, during prosecution of the application that led to the ‘742 Patent, Applicant agreed with the Examiner’s findings, and therefore conceded, that Hon ‘043 (and therefore Hon ‘494) was a close prior art reference that did not teach “an atomizer, which includes a porous component and a heating body; the said heating body is heating wire . . . the heating wire is wound on the said porous component”. In response to this finding, Applicant added this limitation to achieve patentability. This limitation, however, was long known in the prior art as reflected in several exemplary references provided herein. Accordingly, the single limitation allegedly not disclosed in Hon ‘043 is disclosed in other patents and publications that were well known, and the combinations would have been obvious to one of ordinary skill in the art, particularly given the prevalence of the feature. As explained in detail below, claims 1, 2 and 3 of the ‘742 Patent are unpatentable under 35 U.S.C. § 103(a) as being obvious in view of Hon ‘043 (Hon ‘494) in further view of several secondary references. Ex. 1002, ¶42.

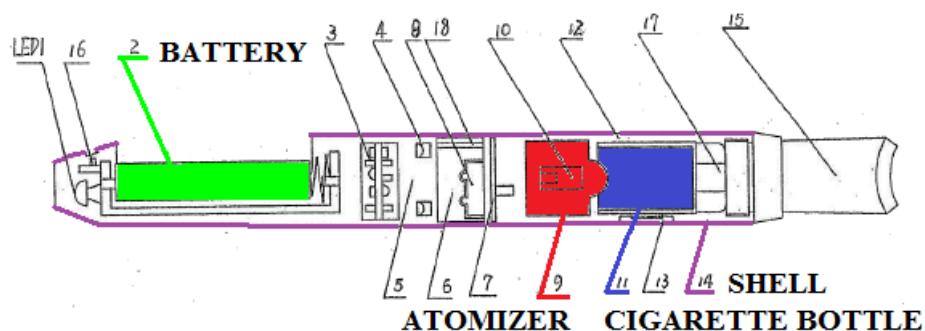
1. Independent claim 1

a. Preamble – [1] an aerosol electronic cigarette

The preamble of claim 1 recites “an aerosol electronic cigarette.” Ex. 1001, col. 6, ln. 6. Hon ‘494 discloses an aerosol electronic cigarette. Ex. 1002, ¶43. Hon ‘494 is entitled “An Aerosol Electronic Cigarette.” Ex. 1002, ¶43; Ex. 1007, Hon ‘494, cover page, Title.

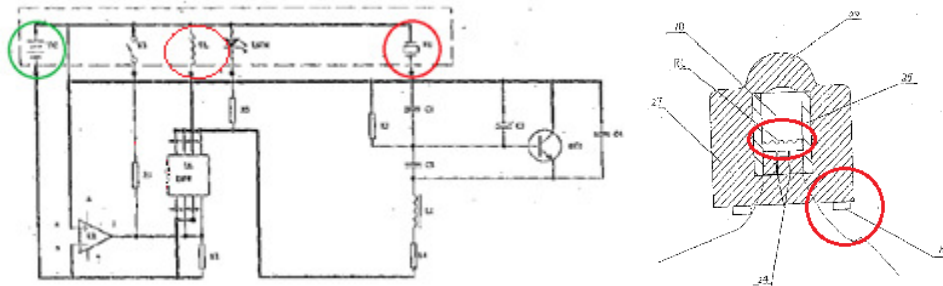
b. [1.1] a battery assembly, an atomizer assembly and a cigarette bottle assembly, and a shell that is hollow and integrally formed

Claim 1 recites “a battery assembly, an atomizer assembly and a cigarette bottle assembly, and a shell that is hollow and integrally formed.” Ex. 1001, col. 6, lns. 7-9. Hon ‘494 discloses this limitation. Ex. 1002, ¶44. As reflected in Figure 1, and the accompanying description, “A LED 1, a cell 2, an electronic circuit board 3, a normal pressure cavity 5, a sensor 6, a vapor-liquid separator 7, an atomizer 9, a liquid-supplying bottle 11 and a mouthpiece 15 are sequentially provided within the shell 14.” Ex. 1002, ¶44; Ex. 1007, Hon ‘494, p. 3, lns. 15-18.



c. [1.2] the battery assembly electrically connected with the atomizer assembly and both are located in the shell

Claim 1 recites “the battery assembly electrically connected with the atomizer assembly and both are located in the shell.” Ex. 1001, col. 6, ln. 10-11. Hon ‘494 discloses this limitation. Ex. 1002, ¶45. Figure 12 shows the electrical connection between the battery (circled in green) and the atomizer consisting of first piezoelectric element M1 and heating element RL (both circled in red). The locations of M1 and RL in the atomizer are shown in Fig. 6.



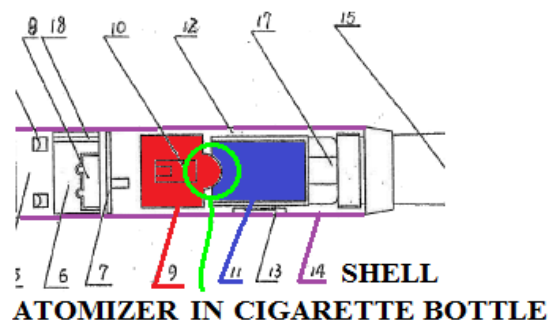
Ex. 1002, ¶45. Ex. 1007, , p. 3, ln. 50-p. 4, ln. 10. “Cell 2” and “atomizer 9” are “provided within the shell 14.” Ex. 1002, ¶46; Ex. 1007, Hon ‘494, p. 3, lns. 15-18; p. 6, lns. 1-18, claim 1.

d. [1.3] the cigarette bottle assembly is detachably located in one end of the shell, and fits with the atomizer assembly inside it

Claim 1 recites “the cigarette bottle assembly is detachably located in one end of the shell, and fits with the atomizer assembly inside it.” Ex. 1001, col. 6, lns. 12-14. Hon ‘494 discloses this limitation. Ex. 1002, ¶47. Hon ‘494 discloses

a detachable liquid supply bottle. “The mouthpiece 15 is threaded” so when the solution in the liquid-supplying bottle is used up, “users can screw the mouthpiece 15 out to take the liquid-supplying bottle 11 out, refill the liquid-supplying bottle 11 with the nicotine solution, put the liquid-supplying bottle 11 into the shell 14 again, and then screw the mouthpiece 15.” Ex. 1002, ¶47; Ex. 1007, Hon ‘494, Fig. 1, p. 4, lns 34-39.

Hon ‘494 not only discloses that the atomizer can be fit inside the liquid supply bottle, the disclosure of this aspect is virtually identical to the disclosure in the ‘742 Patent.

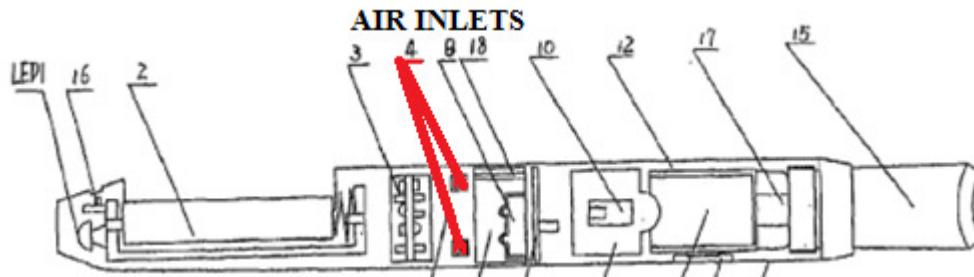


Ex. 1002, ¶48; Ex. 1007, Hon ‘494, Fig. 1. “The atomizer 9 is in contact with the liquid-supplying bottle 11 via the bulge 36.” (circled in green). Ex. 1002, ¶49; Ex. 1007, Hon ‘494, p. 3, lns. 24-26.

e. [1.4] the shell has through-air inlets

Claim 1 recites “the shell has through-air inlets.” Ex. 1001, col. 6, ln. 15. Hon ‘494 discloses this limitation. Ex. 1002, ¶50. According to Hon ‘494, “air

inlet 4 is provided on the external wall of the shell 14.” Ex. 1002, ¶50; Ex. 1007, Hon ‘494, Fig. 1, p. 3, ln. 15.



f. [1.5] the atomizer assembly is an atomizer, which includes a porous component and a heating body

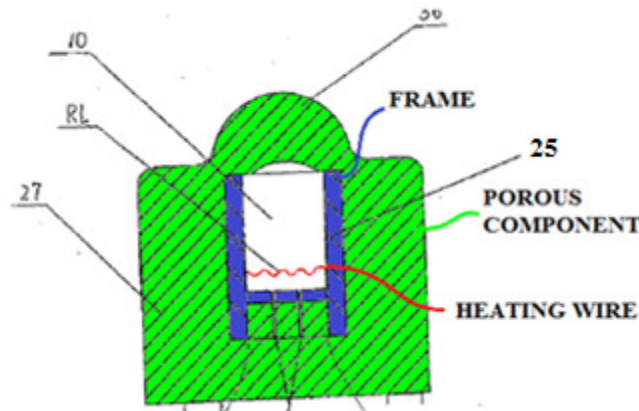
Claim 1 recites “the atomizer assembly is an atomizer, which includes a porous component and a heating body.” Ex. 1001, col. 6, ln. 16-17. Hon ‘494 discloses this limitation. Ex. 1002, ¶51. Figure 6 is a structural diagram of the atomizer. Ex. 1002, ¶51; Ex. 1007, Hon ‘494, Fig. 6, p. 2, ln. 48. In operation, the nicotine solution is driven into “porous body 27” and ejected into “atomization cavity 10,” where the solution is subjected to the “ultrasonic atomization” by the “first piezoelectric element M1” and atomized by the “heating element RL.” Ex. 1002, ¶51; Ex. 1007, Hon ‘494, p. 4, lns 24-27.

g. [1.6] the heating body is heating wire

Claim 1 recites “the heating body is heating wire.” Ex. 1001, col. 6, ln. 18. Hon ‘494 discloses this limitation. Ex. 1002, ¶52. The “heating element” can be made of platinum “wire,” nickel chromium alloy or iron chromium aluminum alloy wire with rare earth element. Ex. 1002, ¶52; Ex. 1007, Hon ‘494, p. 2, lns. 16-18.

- h. [1.7] the atomizer includes a frame; and
[1.8] the porous component is supported by the frame**

Claim 1 recites “the atomizer includes a frame” and “the porous component is supported by the frame.” Ex. 1001, col. 6, ln. 19-20. Hon ‘494 discloses these limitations. Ex. 1002, ¶53.

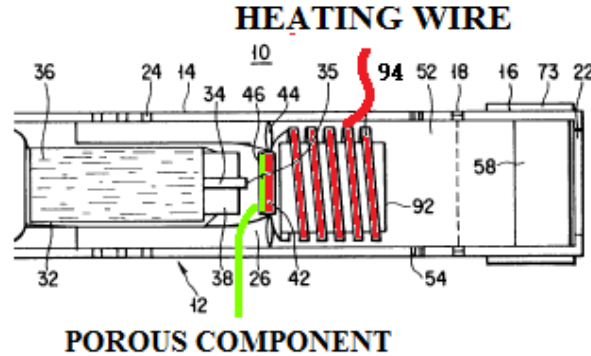


The “atomization cavity wall 25” is a frame which supports the porous component. Ex. 1002, ¶54; Ex. 1007, Hon ‘494, Fig. 6. The porous component is “arranged around the atomization cavity wall” which “can be made of aluminum oxide or ceramic.” Ex. 1002, ¶54; Ex. 1007, Hon ‘494, p. 2, lns. 12; p. 3, ln. 38. Alternatively, Hon ‘494 discloses that the atomizer includes a vapor-liquid separator (7), which also constitutes a frame that supports the porous component. Ex. 1002, ¶54; Ex. 1007, Hon ‘494, Figs. 9 and 10, p. 1, lns. 40-41. The vapor-liquid separator is “sequentially interconnected” with the atomizer and “can be made of plastic or silicon rubber.” Ex. 1002, ¶54; Ex. 1007, Hon ‘494, p. 1, lns. 47-49 and p. 2, lns. 19-20.

i. [1.9] the heating wire is wound on the porous component

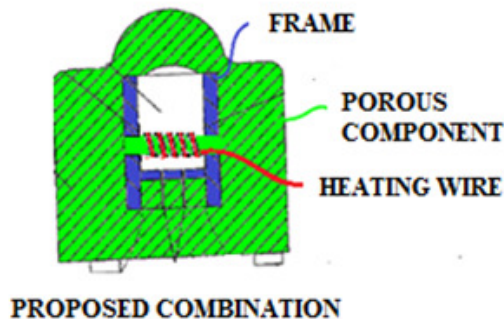
Claim 1 recites “the heating wire is wound on the porous component.” Ex. 1001, col. 6, ln. 21. This limitation would be an obvious modification of Hon ‘494 in view of Susa. Ex. 1002, ¶55. Susa was published on March 6, 1998. Susa is generally directed to a flavor generation article. Ex. 1002, ¶55; Ex. 1010, Susa, p. 1, Title. Like Hon ‘494, Susa discloses an electronic cigarette having a casing 12, air intake ports 24, a material container 32, a heater 42, a support member 44, a liquid-absorbing porous layer 46 and a power supply 62. Ex. 1002, ¶55; Ex. 1010, Susa, Fig. 1, col. 1, lns. 5-10; col. 5, lns. 15-17, 33-36, 48-58; col. 7, lns. 30-32, 50-55; col. 8, lns. 36-40.

Susa also discloses a coil heater 94. Ex. 1002, ¶56; Ex. 1010, Susa, Fig. 13; col. 15, lns. 31-34. The coil heater 94 is “disposed around the formed body 92,” which is adjacent to ceramic heater 42 and porous layer 46. Ex. 1002, ¶56, Ex. 1010, Susa, Fig. 13, col. 15, lns. 31-34. Formed body 92 has qualities and functions similar to the porous layer, for example, it is a “material that generates a flavor or the like to be inhaled by the user” including containing “an extracted material and/or the constituent components of various types of natural materials in accordance with the application purpose,” including a “tobacco component.” Ex. 1002, ¶56; Ex. 1010, Susa, col. 14, ln. 57-col. 15, ln. 12.



As shown above, the coil heater virtually envelopes the porous component.

Ex. 1002, ¶57; Ex. 1010, Susa, Fig. 13. It would have been obvious to one of ordinary skill in the art to wind the coil heater of Susa around the porous layer in Hon ‘494 to provide limitation [1.9]. Ex. 1002, ¶57. The proposed combination is demonstrated below (“Proposed Combination”).

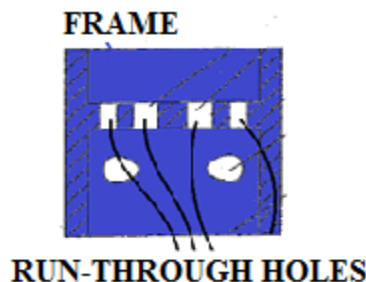


The modification is motivated by the interest of providing more efficient, uniform heating. The winding of the heating coil around the porous component increases the contact area between the component and the coil, in turn, improving heat transfer to the component. Ex. 1002, ¶58. Such an improvement would enhance commercial opportunities and make the product more desirable by increasing the efficiency of atomization. Ex. 1002, ¶58. The modification is

therefore common sense and would constitute combining known features, with a reasonable expectation of success, to yield predictable results. The modification is particularly obvious given that the heating wire in Susa is already being used in an atomizer assembly, demonstrating that the function and use of the technique is well known and applicable to the '742 Patent. Ex. 1002, ¶58.

j. [1.10] the frame has a run-through hole

Claim 1 recites “the frame has a run-through hole.” Ex. 1001, col. 6, ln. 22. Hon ‘494 discloses this limitation. Ex. 1002, ¶59. Hon ‘494 discloses several types of run-through holes in the atomization cavity wall (*i.e.*, the frame). Ex. 1002, ¶59; Ex. 1007, Hon ‘494, Fig. 7.

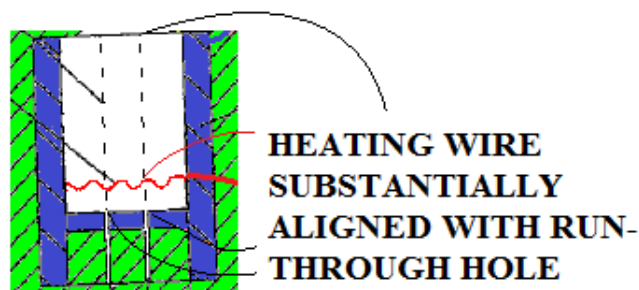


Specifically, an “ejection hole” is provided “on the side opposite to the heating element” and “can be determined to select either the long stream ejection hole 24 or the short stream ejection hole 30, depending on the material used for the atomization cavity wall 25.” Ex. 1002, ¶60; Ex. 1007, Hon ‘494, p. 3, lns. 29-32. To the extent the vapor-liquid separator (7) is considered the frame, “a through

hole is arranged on the vapor-liquid separator.” Ex. 1002, ¶¶60; Ex. 1007, Hon ‘494, p. 2, ln. 8.

k. [1.11] a heating wire wound on a part of the porous component that is substantially aligned with the run-through hole

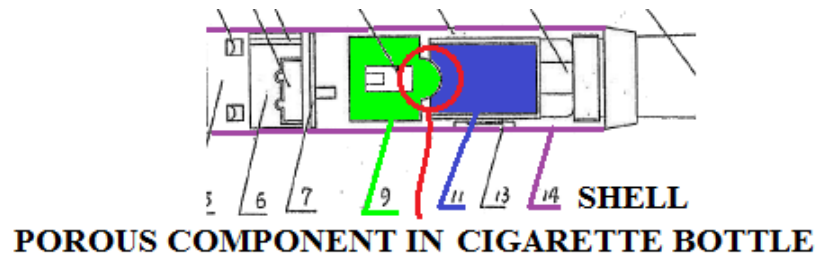
Claim 1 recites “a heating wire wound on a part of the porous component that is substantially aligned with the run-through hole.” Ex. 1001, col. 6, ln. 23-24. This limitation would be an obvious modification of Hon ‘494 in view of Susa. Ex. 1002, ¶¶61. As noted above, it would have been obvious to wind the coil heater described in Susa around the porous component in the ‘742 Patent (*see* discussion on limitation [1.9]) and the porous component of Hon ‘434 is already substantially aligned with the run-through hole (demonstrated through the addition of dashed lines). Ex. 1002, ¶¶61; Ex. 1007, Hon ‘494, Figs. 6.



l. [1.12] with the porous component also positioned substantially within the cigarette bottle assembly

Claim 1 recites “with the porous component also positioned substantially within the cigarette bottle assembly.” Ex. 1001, col. 6, ln. 20. Hon ‘494 discloses this limitation. Ex. 1002, ¶¶62. Regarding this aspect, the Hon disclosure is

virtually identical to the disclosure in the '742 Patent. Ex. 1002, ¶¶62; Ex. 1007, Hon '494, Fig. 1.



As shown above, the “atomizer 9 is in contact with the liquid-supplying bottle 11 via the bulge 36.” Ex. 1002, ¶¶63; Ex. 1007, Hon '494, p. 3, lns. 24-25.

In view of the foregoing, claim 1 of the '742 Patent is obvious in view of Hon '494 in further view of Susa. Ex. 1002, ¶¶64.

2. Independent claim 2

According to the Applicant, claim 2 is “similar to” claim 1 and “includes the elements of” claim 1, but is “written with more common English usage.” Ex. 1018 at 4 (Remarks). Given Applicant’s admissions, and the repetition of several claim elements from claim 1 in claim 2, reference is made to the discussion of the elements in claim 1 above, except where new limitations are introduced.

a. Preamble – [2] an electronic cigarette

The preamble of claim 2 reads “an electronic cigarette.” Ex. 1001, col. 6, ln. 27. Hon '494 discloses an aerosol electronic cigarette. *See* discussion, *supra*, VI.A.1.a, limitation [1], claim 1. Ex. 1002, ¶¶66.

b. [2.1] a battery assembly and an atomizer assembly within a housing with the battery assembly electrically connected to the atomizer assembly

Claim 2 recites “a battery assembly and an atomizer assembly within a housing with the battery assembly electrically connected to the atomizer assembly.” Ex. 1001, col. 6, lns. 28-30. Hon ‘494 discloses this limitation. Ex. 1002, ¶67. The term “housing” in claim 2 is equivalent to “shell” in claim 1. *See* discussion, *supra*, VI.A.1.b and c, limitation [1.1] and [1.2], claim 1. Ex. 1002, ¶67.

c. [2.2] a liquid storage component in the housing

Claim 2 recites “a liquid storage component in the housing.” Ex. 1001, col. 6, ln. 31. Hon ‘494 discloses this limitation. Ex. 1002, ¶68. The term “housing” in claim 2 is equivalent to “shell” in claim 1 and the term “liquid storage” in claim 2 is equivalent to (or encompasses) “cigarette bottle assembly” in claim 1. *See* discussion, *supra*, VI.A.1.b and d, limitations [1.1] and [1.3], respectively, claim 1. Ex. 1002, ¶68.

d. [2.3] with the housing having one or more through air-inlets

Claim 2 recites “with the housing having one or more through air-inlets.” Ex. 1001, col. 6, ln. 32. Hon ‘494 discloses this limitation. Ex. 1002, ¶69. The term “housing” in claim 2 is equivalent to “shell” in claim 1. *See* discussion, *supra*, VI.A.1.e, limitation [1.4], claim 1. Ex. 1002, ¶69.

e. [2.4] the atomizer assembly including a porous component supported by a frame having a run-through hole

Claim 2 recites “the atomizer assembly including a porous component supported by a frame having a run-through hole.” Ex. 1001, col. 6, ln. 33-34. Hon ‘494 discloses this limitation. Ex. 1002, ¶70. *See* discussion, *supra*, VI.A.1.f, h and j, limitations [1.5], [1.7], [1.8] and [1.10], respectively, claim 1. Ex. 1002, ¶70.

f. [2.5] a heating wire wound on a part of the porous component in the path of air flowing through the run-through hole

Claim 2 recites “a heating wire wound on a part of the porous component in the path of air flowing through the run-through hole.” Ex. 1001, col. 6, lns. 35-36. This limitation would be an obvious modification of Hon ‘494 in view of Susa. Ex. 1002, ¶71. Since the porous component is “substantially aligned with the run-through hole,” it is “in the air path flowing through the run-through hole.” *See*

discussion, *supra*, VI.A.1.g, i and k limitations [1.6], [1.9] and [1.11], respectively, claim 1. Ex. 1002, ¶71; Hon ‘494, Fig. 6.

g. [2.6] the porous component substantially surrounded by the liquid storage component

Claim 2 recites “the porous component substantially surrounded by the liquid storage component.” Ex. 1001, col. 6, lns. 37-38. Hon ‘494 discloses this limitation. Ex. 1002, ¶72. “The porous component substantially surrounded by the liquid storage component” in claim 2 is equivalent to “the porous component also positioned substantially within the cigarette bottle assembly” in claim 1. *See* discussion, *supra*, VI.A.1.1, limitation [1.12], claim 1. Ex. 1002, ¶72.

In view of the foregoing, claim 2 of the ‘742 Patent is obvious in view of Hon ‘494 in further view of Susa. Ex. 1002, ¶73.

3. Independent claim 3

According to the Applicant, claim 3 is “similar to” claims 1 and 2 but “describes a heating wire wound on a part of the porous component substantially aligned with the run-through hole . . . and with the porous component in contact with a liquid supply in the housing . . .” *Id.* Ex. 1018 at 4 (Remarks). Given Applicant’s admissions, and the repetition of several claim elements from claim 1 (and 2) in claim 3, reference is made to the discussion of the elements in those claims above, except where new limitation are introduced.

a. Preamble – [3] an electronic cigarette

The preamble of claim 3 reads “an electronic cigarette.” Ex. 1001, col. 6, ln. 39. Hon ‘494 discloses an electronic cigarette. *See* discussion, *supra*, VI.A.1.a, limitation [1], claim 1. Ex. 1002, ¶75.

b. [3.1] a battery assembly and an atomizer assembly within a housing with the battery assembly electrically connected to the atomizer assembly

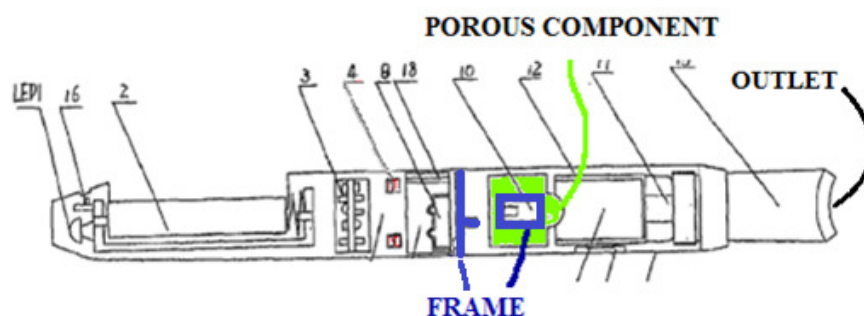
Claim 3 recites “a battery assembly and an atomizer assembly within a housing with the battery assembly electrically connected to the atomizer assembly.” Ex. 1001, col. 6, lns. 28-30. Hon ‘494 discloses this limitation. Ex. 1002, ¶76. The term “housing” in claim 3 is equivalent to “shell” in claim 1. *See* discussion, *supra*, VI.A.1.b and c, limitation [1.1] and [1.2], claim 1. Ex. 1002, ¶76.

c. [3.2] with the housing having one or more through-air-inlets and an outlet

Claim 3 recites “with the housing having one or more through-air-inlets and an outlet.” Ex. 1001, col. 6, lns. 43-44. Hon ‘494 discloses this limitation. Ex. 1002, ¶77. The term “housing” in claim 3 is equivalent to “shell” in claim 1. Hon ‘494 discloses an outlet, specifically, “a mouthpiece” through which aerosol must exit to the user after entering the air inlets. Ex. 1002, ¶77; Ex. 1007, Hon ‘494, Fig. 1, p. 1, lns. 39-41. The remaining limitations are discussed in connection with claim 1. Ex. 1002, ¶77. *See* discussion, *supra*, VI.A.1.e, limitation [1.4], claim 1.

d. [3.3] the atomizer assembly includes a frame having a run-through hole, and a porous component between the frame and the outlet

Claim 3 recites “the atomizer assembly includes a frame having a run-through hole, and a porous component between the frame and the outlet.” Ex. 1001, col. 6, ln. 48-49. Hon ‘494 discloses this limitation. Ex. 1002, ¶78. The “porous component” is “arranged outside around the atomization cavity wall” (*i.e.*, frame). The porous component is therefore between the frame and the outlet. Ex. 1002, ¶78; Ex. 1007, Hon ‘494, Fig. 1, p. 2, ln. 12.



This is equally true if the vapor-liquid separator is treated as the frame. Ex. 1002, ¶79; Ex. 1007, Hon ‘494, Fig. 1. The remaining limitations are discussed in connection with claim 1. *See* discussion, *supra*, VI.A.1.f, h and j, limitations [1.5], [1.7], [1.8] and [1.10], respectively, claim 1. Ex. 1002, ¶79.

e. [3.4] a heating wire wound on a part of the porous component which is substantially aligned with the run-through hole

Claim 3 recites “a heating wire wound on a part of the porous component which is substantially aligned with the run-through hole.” Ex. 1001, col. 6, ln. 33-34. This limitation would be an obvious modification of Hon ‘494 based on the

features disclosed by Susa. Ex. 1002, ¶80. *See* discussion, *supra*, VI.A.1.k, limitation [1.11], claim 1.

f. [3.5] with the porous component in contact with a liquid supply in the housing

Claim 3 recites “with the porous component in contact with a liquid supply in the housing.” Ex. 1001, col. 6, lns. 51-52. Hon ‘494 discloses this limitation. Ex. 1002, ¶81. “Housing” in claim 3 is equivalent to “shell” in claim 1 and “the porous component in contact with a liquid storage in the housing” in claim 3 is equivalent to “the porous component also positioned substantially within the cigarette bottle assembly” in claim 1. *See* discussion, *supra*, VI.A.1.d and 1, limitations [1.3] and [1.12], respectively, claim 1. Ex. 1002, ¶81.

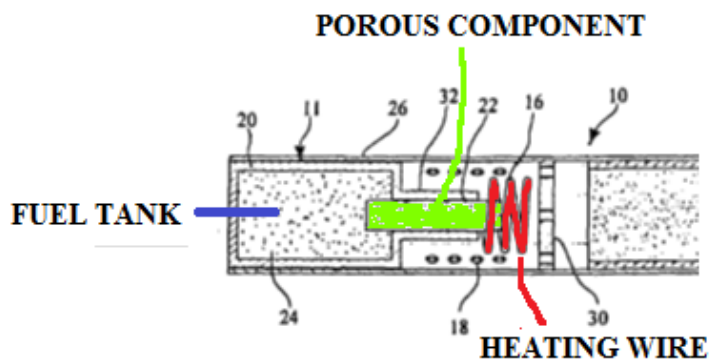
In view of the foregoing, claim 3 of the ‘742 Patent is obvious in view of Hon ‘494. Ex. 1002, ¶82.

B. GROUND 2: CLAIMS 1, 2 AND 3 ARE UNPATENTABLE UNDER 35 U.S.C. § 103 AS BEING OBVIOUS IN VIEW OF HON ‘043 IN FURTHER VIEW OF ABHULIMEN

Abhulimen published May 1, 2003 and is directed to a simulated smoking article. Ex. 1002, ¶83; Ex. 1012, Abhulimen, cover page, Title. Abhulimen discloses, among other things, a fuel tank 20, a wick 22 and a glow element 16 that may be a coil made of wire. Ex. 1002, ¶83; Ex. 1012, Abhulimen, p 4, ¶3. The wick resides in the fuel tank and the glow element is wound around the wick. Ex. 1002, ¶83; Ex. 1012, Abhulimen, Fig. 2.

1. Abhulimen discloses “a heating wire wound on a part of the porous component”

As noted above, Hon ‘494 discloses each limitation of claims 1, 2 and 3 with the exception of “a heating wire wound on a part of the porous component.” *See* discussion, *supra*, VI.A.1-3. Abhulimen expressly discloses this well-known structure. Ex. 1002, ¶84. According to Abhulimen, “[t]he fuel element is encased in one end of the tubular wrapper 26, which wrapper is provided with a plurality of puffing air inlets 18 which are located slightly upstream of the glow element 16, so that during use puffing air is brought in through the inlets 18 and provides oxygen for the burning of the fuel in the wick 22.” Ex. 1002, ¶84; Ex. 1012, Abhulimen, p. 4, ¶3.



Accordingly, Abhulimen teaches that a heating wire can be wound on a part of the porous component as recited in limitation [1.9] of claim 1. Since Hon ‘494 discloses a porous component “substantially aligned with the run-through hole” (claims 1 and 3) and a porous component “in the path of air flowing through the run-through hole, limitations [1.11], [2.5] and [3.4] of claims 1, 2 and 3,

respectively, are met by the combination of Hon ‘494 and Abhulimen. Ex. 1002, ¶85.

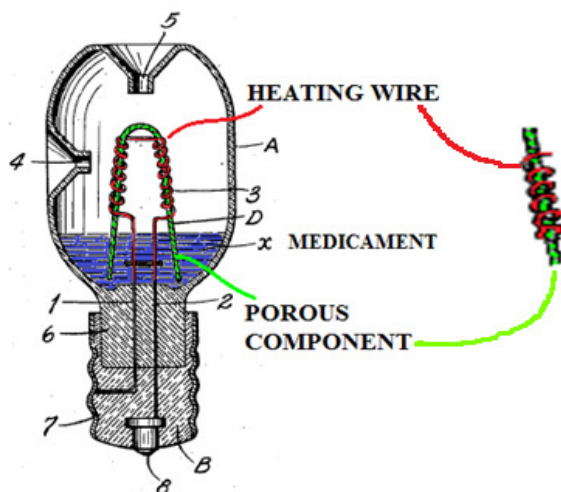
It would have been obvious to one of ordinary skill in the art to wind the heating wire of Abhulimen around the porous layer in Hon ‘494 to yield the Proposed Combination discussed, *supra*. Ex. 1002, ¶86; *see* VI.A.1.i, limitation [1.9]. The modification is motivated for the same reasons explained regarding Hon ‘494 and Susa (*e.g.*, to provide more efficient, uniform heating). Ex. 1002, ¶86; *Id.* In view of the foregoing, the subject matter of claims 1, 2 and 3 of the ‘742 Patent would be obvious as a whole in view of Hon ‘494 in further view of Abhulimen. Ex. 1002, ¶86.

**C. GROUND 3: CLAIMS 1, 2 AND 3 ARE UNPATENTABLE
UNDER 35 U.S.C. § 103 AS BEING OBVIOUS IN VIEW OF
HON ‘043 IN FURTHER VIEW OF WHITTEMORE**

Whittemore issued on October 13, 1936 and is directed to a vaporizing unit. Ex. 1002, ¶87; Ex. 1013, Whittemore, col. 1, lns. 1-4. Whittemore discloses medicament (x), a wick (D) and a heating element (3). Ex. 1002, ¶87; Ex. 1013, Whittemore, col. 1, ln. 50–col. 2, ln. 11. The wick resides in the medicament and the heating element is wound around the wick. Ex. 1002, ¶87; Ex. 1013, Whittemore, Fig. 2.

1. Whittemore discloses “a heating wire wound on a part of the porous component”

As noted above, Hon ‘494 discloses each limitation of claims 1, 2 and 3 with the exception of “a heating wire wound on a part of the porous component.” *See* discussion, *supra*, VI.A.1-3. Whittemore expressly discloses this well-known structure. Ex. 1002, ¶88 According to Whittemore, the vaporizing unit is combined with the “heating element or filament 3” in such a way that “a portion of said wick is always in contact or approximate contact with the heating element or filament 3” whereby the “medicament will be carried by capillary action to a point where it will be vaporized by the heat from the filament 3.” Ex. 1002, ¶88; Ex. 1013, Whittemore, Fig. 2, col. 1, ln. 50 – col. 2, ln. 8.



Accordingly, Whittemore teaches that a heating wire can be wound on a part of the porous component as recited in limitation [1.9] of claim 1. Since Hon ‘494 discloses a porous component “substantially aligned with the run-through hole”

(claims 1 and 3) and a porous component “in the path of air flowing through the run-through hole, limitations [1.11], [2.5] and [3.4] of claims 1, 2 and 3, respectively, are met by the combination of Hon ‘494 and Whittemore. Ex. 1002, ¶89.

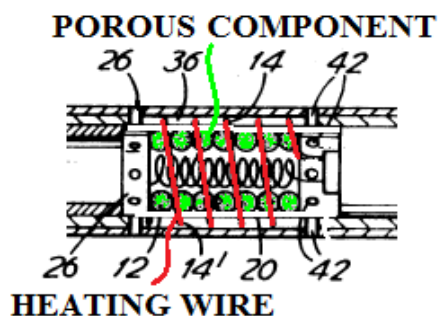
It would have been obvious to one of ordinary skill in the art to wind the coil heater of Whittemore around the porous layer in Hon ‘494 to yield the Proposed Combination discussed, *supra*. Ex. 1002, ¶90; *see* VI.A.1.i, limitation [1.9]. The modification is motivated for the same reasons explained above regarding Hon ‘494 and Susa (*e.g.*, to provide more efficient, uniform heating). Ex. 1002, 90; *Id*. In view of the foregoing, the subject matter of claims 1, 2 and 3 of the ‘742 Patent would be obvious as a whole in view of Hon ‘494 in further view of Whittemore. Ex. 1002, ¶90.

**D. GROUND 4: CLAIMS 1, 2 AND 3 ARE UNPATENTABLE
UNDER 35 U.S.C. § 103 AS BEING OBVIOUS IN VIEW OF
HON ‘034 IN FURTHER VIEW OF COUNTS**

Counts issued in September 8, 1992 and is directed to electrically-heated flavor-delivery articles. Ex. 1002, ¶91; Ex. 1011, Counts, col. 1, lns. 5-8. Counts discloses a power source 16, flavor generating medium (12) and a heating element (14), where the heating element (14) may be a wire coil surrounding the flavor generating medium (12). Ex. 1002, ¶91; Ex. 1011, Counts, Fig. 1-3 and 6; col. 3, lns. 16-29; col. 3, lns. 53-col. 4, ln. 12.

1. Counts discloses “a heating wire wound on a part of the porous component”

As noted above, Hon ‘494 discloses each limitation of claims 1, 2 and 3 with the exception of “a heating wire wound on a part of the porous component.” See discussion, *supra*, VI.A.1-3. Counts expressly discloses this well-known structure. Ex. 1002, ¶92. As shown below, “the heating element may surround the flavor-generating medium.” Ex. 1002, ¶92; Ex. 1011, Counts, Fig. 6, col. 3, lns. 53-55.



Accordingly, Counts teaches that a heating wire (14') can be wound on a part of the porous component (12) as recited in limitation [1.9] of claim 1. Since Hon ‘494 discloses a porous component “substantially aligned with the run-through hole” (claims 1 and 3) and a porous component “in the path of air flowing through the run-through hole, limitations [1.11], [2.5] and [3.4] of claims 1, 2 and 3, respectively, are met by the combination of Hon ‘494 and Counts. Ex. 1002, ¶93.

It would have been obvious to one of ordinary skill in the art to wind the heating wire of Counts around the porous layer in Hon ‘494 to yield the Proposed

Combination discussed, *supra*. Ex. 1002, ¶94; *see* VI.A.1.i, limitation [1.9]. The modification is motivated for the same reasons explained above regarding Hon ‘494 and Susa (*e.g.*, to provide more efficient, uniform heating). Ex. 1002, ¶94; *Id.* In view of the foregoing, the subject matter of claims 1, 2 and 3 of the ‘742 Patent would be obvious as a whole in view of Hon ‘494 in further view of Counts. Ex. 1002, ¶94.

**E. GROUND 5: CLAIMS 1, 2 AND 3 ARE UNPATENTABLE
UNDER 35 U.S.C. § 103 AS BEING OBVIOUS IN VIEW OF
SUSA**

As explained in detailed below, claims 1, 2 and 3 of the ‘742 Patent are unpatentable under 35 U.S.C. § 103(a) as being obvious in view of Susa. Ex. 1002, ¶95.

1. Independent claim 1

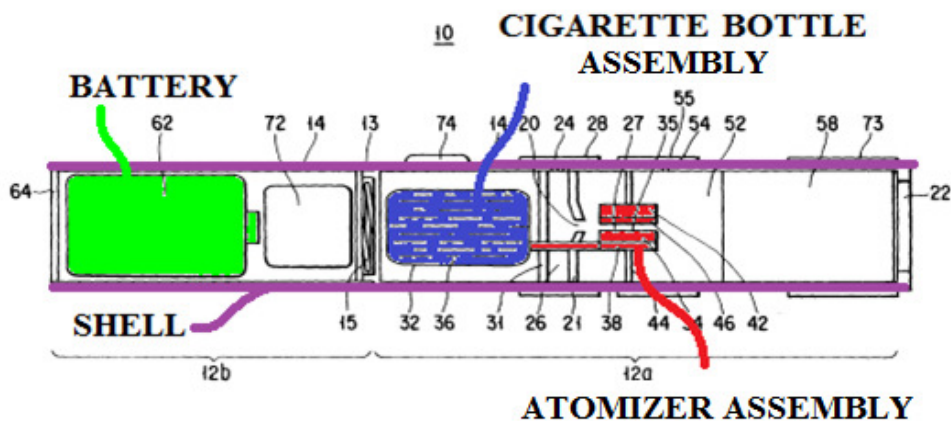
a. Preamble – [1] an aerosol electronic cigarette

The preamble of claim 1 recites “an aerosol electronic cigarette.” Ex. 1001, col. 6, ln. 6. Susa discloses an aerosol electronic cigarette. Ex. 1002, ¶96.

According to Susa, the invention relates to “a flavor generation article employed for enjoying inhalation of a flavor and simulated smoking” as an “inhalation target by heating a liquid material with an electric heater.” Ex. 1002, ¶96; Ex. 1010, Susa, col. 1, lns. 5-10.

b. [1.1] a battery assembly, an atomizer assembly and a cigarette bottle assembly, and a shell that is hollow and integrally formed

Claim 1 recites “a battery assembly, an atomizer assembly and a cigarette bottle assembly, and a shell that is hollow and integrally formed.” Ex. 1001, col. 6, lns. 7-9. Susa discloses this limitation. Ex. 1002, ¶97. As shown below in Figure 1, Susa discloses “a battery assembly.” Ex. 1002, ¶97; Ex. 1010, Susa, Fig. 1. Namely, “[a] power supply 62” is used to “supply electric energy” to . . . “the control circuit 72.” Ex. 1002, ¶97; Ex. 1010, Susa, col. 8, lns. 36-40. The power supply 62 can be a “DC power supply, e.g., a commercially available dry cell or rechargeable cell.” Ex. 1002, ¶97; Ex. 1010, Susa, col. 8, lns. 43-45.



Susa discloses an “atomizer assembly.” Ex. 1002, ¶98; Susa, Fig. 1. Specifically, Susa refers to “atomizer 86.” Ex. 1002, ¶98; Ex. 1010, Susa, col. 14, ln. 14. A “ceramic heater 42” is fixed on the inner surface of the casing main body 14. Ex. 1002, ¶98; Ex. 1010, Susa, col. 7, lns. 30-32. “A liquid-absorbing porous

layer 46” is “formed on a surface of the ceramic heater 42 that receives the liquid splash of the material, i.e., a surface of the ceramic heater 42 that serves as the catch pan.” Ex. 1002, ¶98; Ex. 1010, Susa, col. 7, lns. 50-55. “The discharge head 34 and the discharge drive portion 38 comprise a liquid discharge mechanism,” utilizing, “a piezoelectric element.” Ex. 1002, ¶98; Ex. 1010, Susa, col. 6, lns. 34-39.

Susa discloses a “cigarette bottle assembly.” Ex. 1002, ¶99; Ex. 1010, Susa, Fig. 1. “A material container 32 for storing a liquid material 36 for generating a flavor or the like to be inhaled by the user is detachably fixed in a space which is deep in the first portion 12a of the case.” Ex. 1002, ¶99; Ex. 1010, Susa, col. 5, lns. 51-58.

Susa discloses “a shell that is hollow and integrally formed.” “A flavor generation article 10 has a cylindrical casing 12” (made up of 12a and 12b) having “an outer diameter that the user can hold the casing 12 in his mouth.” Ex. 1002, ¶100; Ex. 1010, Susa, col. 5, lns. 15-17.

c. [1.2] the battery assembly electrically connected with the atomizer assembly and both are located in the shell

Claim 1 recites “the battery assembly electrically connected with the atomizer assembly and both are located in the shell.” Ex. 1001, col. 6, ln. 10-11. Susa discloses this limitation. Ex. 1002, ¶101. As seen in Figure 1, the “casing 12” comprises a “first portion 12a” and “a second portion 12b.” Ex. 1002, ¶101;

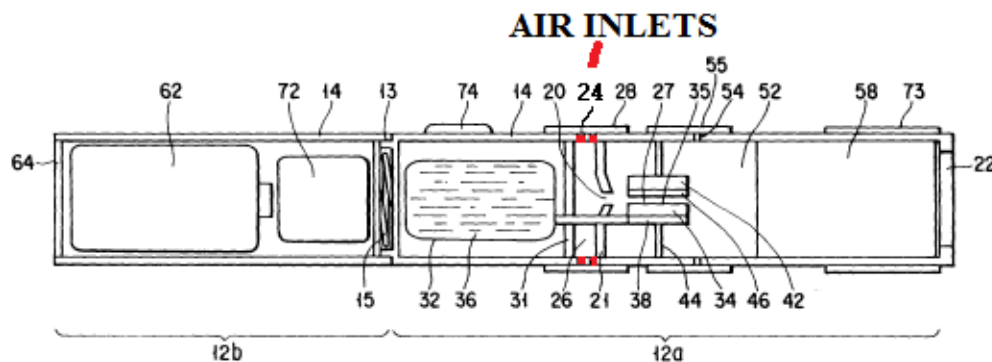
Ex. 1010, Susa, Fig. 1, cover page, abstract; col. 5, lns. 17-21. The second portion 12b is for “incorporating a power supply.” *Id.* The first portion 12a contains the atomizer assembly. Ex. 1002, ¶101; Ex. 1010, Susa, Fig. 1, cover page, abstract. “The two portions 12a and 12b are electrically connected to each other through a cable 15 stored in a space formed in the casing main body 14 to correspond to the connecting portion 13.” Ex. 1002, ¶101; Ex. 1010, Susa, Fig. 1, col. 5, lns. 22-26. The power supply 62 is “used to supply electric energy” to the ceramic heater 42. Ex. 1002, ¶101; Ex. 1010, Susa, col. 8, lns. 37-40.

d. [1.3] the cigarette bottle assembly is detachably located in one end of the shell, and fits with the atomizer assembly inside it

Claim 1 recites “the cigarette bottle assembly is detachably located in one end of the shell, and fits with the atomizer assembly inside it.” Ex. 1001, col. 6, lns. 12-14. Susa discloses this limitation. Ex. 1002, ¶102. “A material container 32 for storing a liquid material 36” is “detachably fixed in a space which is deep in the first portion 12a” of the case. Ex. 1002, ¶102; Fig. 1; Ex. 1010, Susa, col. 5, lns. 51-55. “The discharge head 34 and the discharge drive portion 38 comprise a liquid discharge mechanism.” Ex. 1002, ¶102; Ex. 1010, Susa, col. 6, lns. 34-36. Given that liquid travels from material container 32 to discharge head 34 through driver portion 38, a portion of the atomizer assembly (portion 38) is inside the cigarette bottle assembly. Ex. 1002, ¶102; Ex. 1010, Susa, Fig. 4.

e. [1.4] the shell has through-air inlets

Claim 1 recites “the shell has through-air inlets.” Ex. 1001, col. 6, ln. 15. Susa discloses this limitation. Ex. 1002, ¶103. Susa describes “a plurality of air intake ports 24 for taking in air into the casing 12 are formed in the intermediate portion of the first portion 12a.” Ex. 1002, ¶103; Ex. 1010, Susa, Fig. 1, col. 5, lns. 33-36.



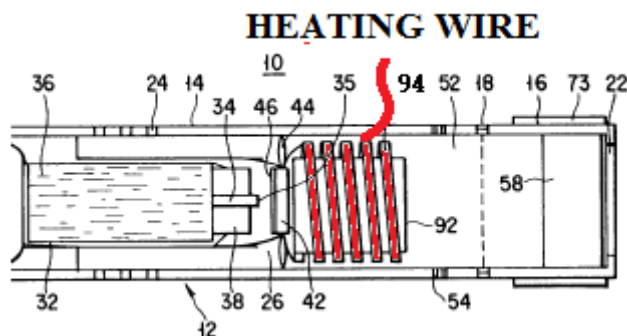
f. [1.5] the atomizer assembly is an atomizer, which includes a porous component and a heating body

Claim 1 recites “the atomizer assembly is an atomizer, which includes a porous component and a heating body.” Ex. 1001, col. 6, ln. 16-17. Susa discloses this limitation. Ex. 1002, ¶104. Susa refers to “atomizer 86.” Ex. 1002, ¶104; Ex. 1010, Susa, col. 14, ln. 14. “A liquid-absorbing porous layer 46” is “formed on a surface of the ceramic heater 42 that receives the liquid splash of the material.” Ex. 1002, ¶104; Ex. 1010, Susa, Fig. 1, col. 7, ln. 50–col. 8, ln. 1. The porous layer 46 not only protects the surface of the ceramic heater 42 but also relaxes heat

conduction from the ceramic heater 42, thereby stabilizing gasification of the splash of the material. *Id.*

g. [1.6] the heating body is heating wire

Claim 1 recites “the heating body is a heating wire.” Ex. 1001, col. 6, ln. 18. Susa discloses this limitation. Ex. 1002, ¶105. In a preferred embodiment, “a coil heater 94 for heating a formed body 92 is disposed around the formed body 92.” Ex. 1002, ¶105; Ex. 1010, Susa, Fig. 13, col. 15, lns. 31-34. “The coil heater 94, together with a ceramic heater 42, can be controlled by control circuit 72 so that power is supplied to them in accordance with the inhaling operation of the user.” Ex. 1002, ¶105; Ex. 1010, Susa, Fig. 13, col. 15, lns. 37-40.



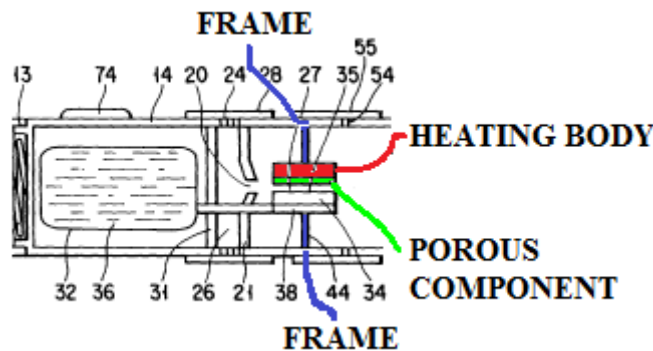
h. [1.7] the atomizer includes a frame; and

[1.8] the porous component is supported by the frame

Claim 1 recites “the atomizer includes a frame” and “the porous component is supported by the frame.” Ex. 1001, col. 6, ln. 19-20. Susa discloses these limitations. Ex. 1002, ¶106. As noted above, the “liquid-absorbing porous layer 46” is “formed on a surface of the ceramic heater 42.” Ex. 1002, ¶106; Ex. 1010,

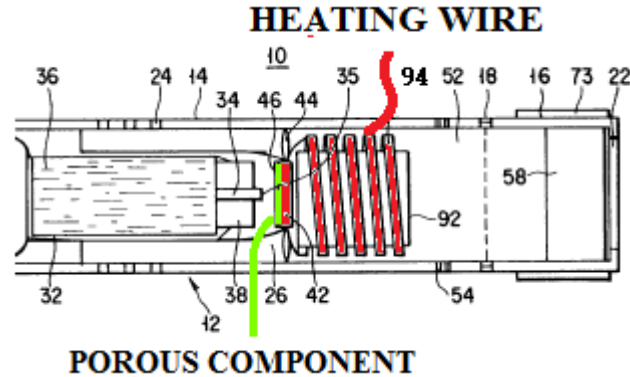
Susa, Fig. 1, col. 7, ln. 50–55. In turn, “the ceramic heater 42 is fixed on the inner surface of the casing main body 14 through a support member 44” (*i.e.*, frame).

Ex. 1002, ¶106; Ex. 1010, Susa, Fig. 1, col. 7, lns. 30-32.



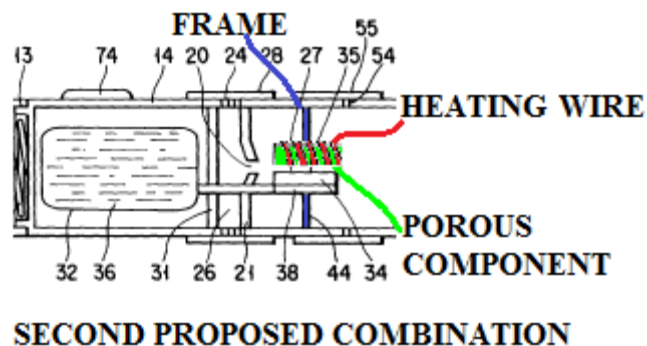
i. [1.9] the heating wire is wound on the porous component

Claim 1 recites “the heating wire is wound on the porous component.” Ex. 1001, col. 6, ln. 20. Susa discloses this limitation, or at least, it would be an obvious modification of the features disclosed. Ex. 1002, ¶107. Although the coil heater 94 is “disposed around the formed body 92,” the formed body 92 is adjacent to the ceramic heater 42 and porous layer 46. Ex. 1002, ¶107, Ex. 1010, Susa, Fig. 13. Formed body 92 has qualities and functions similar to the porous layer, for example, it is a “material that generates a flavor or the like to be inhaled by the user” including “an extracted material and/or the constituent components of various types of natural materials in accordance with the application purpose,” including a “tobacco component.” Ex. 1002, 107; Ex. 1010, Susa, col. 14, lns. 57- col. 15, ln. 12.



As shown above, the coil heater virtually envelopes the porous component.

Ex. 1002, ¶108; Ex. 1010, Susa, Fig. 13. Given that the coil heater 94 works together with a ceramic heater 42 (containing porous layer 46), it would have been obvious to one of ordinary skill in the art to wind the coil heater around the porous layer to provide the second proposed combination (“Second Proposed Combination”). Ex. 1002, ¶108.



The modification is motivated by the interest of providing more efficient, uniform heating. The winding of the heating coil around the porous component increases the contact area between the porous component and heating coil, in turn, improving heat transfer to the component. Ex. 1002, ¶109. Such an improvement

would enhance commercial opportunities and make the product more desirable by increasing the efficiency of atomization. Ex. 1002, ¶109. The modification is therefore common sense and would constitute combining known features, with a reasonable expectation of success, to yield predictable results.

Such modifications are motivated by Susa which explains that the “characteristic features can be appropriately combined in accordance with the object.” Ex. 1002, ¶110; Ex. 1010, Susa, col. 17, lns. 11-19. Moreover, “the present invention can be practiced in various embodiments other than those shown in the drawings within the spirit and scope of the invention.” *Id.* This is reflected in the various embodiments provided using different configurations of the same features. Ex. 1002, ¶110; Ex. 1010, Susa, Figs. 8-16. In sum, the modification would require nothing more than common sense and the combining of known features, with a reasonable expectation of success, to yield predictable results. Ex. 1002, ¶110.

j. [1.10] the frame has a run-through hole

Claim 1 recites “the frame has a run-through hole.” Ex. 1001, col. 6, ln. 22. Susa discloses this limitation. Ex. 1002, ¶111. “A gap 27 between the discharge ports 35 of the discharge head 34 and the ceramic heater 42 is set such that air from the throttle hole 20 can flow through it.” Ex. 1002, ¶111; Ex. 1010, Susa, Fig. 1, col. 7 lns. 32-35.

k. [1.11] a heating wire wound on a part of the porous component that is substantially aligned with the run-through hole

Claim 1 recites “a heating wire wound on a part of the porous component that is substantially aligned with the run-through hole.” Ex. 1001, col. 6, ln. 23-24. Susa discloses this limitation, or at least, it would be an obvious modification of the features disclosed. Ex. 1002, ¶112. As noted above, it would be obvious to wind the coil heater described in Susa around the porous component (*see* discussion, [1.9]) and the porous component is substantially aligned with the run-through hole. Ex. 1002, ¶112; Ex. 1010, Susa, Fig. 1. Specifically, the ceramic heater 42 (containing porous layer 46) is disposed in the gas flow path 26, which travels through the run-through hole. Ex. 1002, ¶112; Ex. 1010, Susa, col. 7 lns. 29-30.

l. [1.12] with the porous component also positioned substantially within the cigarette bottle assembly

Claim 1 recites “with the porous component also positioned substantially within the cigarette bottle assembly.” Ex. 1001, col. 6, ln. 20. This limitation would be an obvious modification of the features disclosed by Susa. Ex. 1002, ¶113. The porous layer 46 is formed on a surface of the ceramic heater 42 which forms part of the atomizer assembly. Ex. 1002, ¶113; Ex. 1010, Susa, Fig. 1, col. 7, ln. 55–col. 8, ln. 1. The liquid is discharged from the cigarette bottle assembly via the discharge drive portion 38. Ex. 1002, ¶113; Ex. 1010, Susa, col. 6, lns. 34-

36. Given that a portion of the atomizer assembly (portion 38) is inside the cigarette bottle assembly, it would have been obvious to one of ordinary skill in the art to use the porous component to draw liquid out of the cigarette bottle assembly. Ex. 1002, ¶113; Ex. 1010, Susa, col. 7, lns. 50-55.

Such modifications are contemplated by Susa. Ex. 1010, Susa, Figs. 8-16, col. 17, lns. 11-19. In sum, the modification would require nothing more than common sense and the combining of known features, with a reasonable expectation of success, to yield predictable results. Ex. 1002, ¶114.

In view of the foregoing, claim 1 of the '742 Patent is obvious in view of Susa. Ex. 1002, ¶115.

2. Independent claim 2

According to the Applicant, claim 2 is “similar to” claim 1 and “includes the elements of” claim 1, but is “written with more common English usage.” Ex. 1018 at 4 (Remarks). Given Applicant’s admissions, and the repetition of several claim elements from claim 1 in claim 2, reference may be made to the discussion of the elements in claim 1 above, except where new limitations are introduced.

a. Preamble – [2] an electronic cigarette

The preamble of claim 2 reads “an electronic cigarette.” Ex. 1001, col. 6, ln. 27. Susa discloses an aerosol electronic cigarette. *See* discussion, *supra*, VI.E.1.a, limitation [1], claim 1. Ex. 1002, ¶117.

b. [2.1] a battery assembly and an atomizer assembly within a housing with the battery assembly electrically connected to the atomizer assembly

Claim 2 recites “a battery assembly and an atomizer assembly within a housing with the battery assembly electrically connected to the atomizer assembly.” Ex. 1001, col. 6, lns. 28-30. Susa discloses this limitation. Ex. 1002, ¶118. The term “housing” in claim 2 is equivalent to “shell” in claim 1. *See* discussion, *supra*, VI.E.1.b and c, limitation [1.1] and [1.2], respectively, claim 1. Ex. 1002, ¶118.

c. [2.2] a liquid storage component in the housing

Claim 2 recites “a liquid storage component in the housing.” Ex. 1001, col. 6, ln. 31. Susa discloses this limitation. Ex. 1002, ¶119. The term “housing” in claim 2 is equivalent to “shell” in claim 1 and the term “liquid storage” in claim 2 is equivalent to “cigarette bottle assembly” in claim 1. *See* discussion, *supra*, VI.E.1.b and d, limitations [1.1] and [1.3], respectively, claim 1. Ex. 1002, ¶119.

d. [2.3] with the housing having one or more through air-inlets

Claim 2 recites “with the housing having one or more through air-inlets” Ex. 1001, col. 6, ln. 32. Susa discloses this limitation. Ex. 1002, ¶120. The term “housing” in claim 2 is equivalent to “shell” in claim 1. *See* discussion, *supra*, VI.E.1.e, limitation [1.4], claim 1. Ex. 1002, ¶120.

e. [2.4] the atomizer assembly including a porous component supported by a frame having a run-through hole

Claim 2 recites “the atomizer assembly including a porous component supported by a frame having a run-through hole.” Ex. 1001, col. 6, ln. 33-34. Susa discloses this limitation. Ex. 1002, ¶121. *See* discussion, *supra*, VI.E.1.f, h and j, limitations [1.5], [1.7], [1.8] and [1.10], respectively, claim 1. Ex. 1002, ¶121.

f. [2.5] a heating wire wound on a part of the porous component in the path of air flowing through the run-through hole

Claim 2 recites “a heating wire wound on a part of the porous component in the path of air flowing through the run-through hole.” Ex. 1001, col. 6, lns. 35-36. Susa discloses this limitation, or at least, it is an obvious modification of the features disclosed. Ex. 1002, ¶122. Since the porous layer 46 is “substantially aligned with the run-through hole,” it is “in the air path flowing through the run-through hole.” *See* discussion, *supra*, VI.E.1.g, i and k, limitations [1.6], [1.9] and [1.11], respectively, claim 1. Ex. 1002, ¶122; Ex. 1010, Susa, Fig. 1.

g. [2.6] the porous component substantially surrounded by the liquid storage component

Claim 2 recites “the porous component substantially surrounded by the liquid storage component.” Ex. 1001, col. 6, lns. 37-38. This limitation would have been an obvious modification of the features disclosed by Susa. “The porous component substantially surrounded by the liquid storage component” in claim 2 is

equivalent to “the porous component also positioned substantially within the cigarette bottle assembly” in claim 1. *See* discussion, *supra*, VI.E.1.1, limitation [1.12], claim 1. Ex. 1002, ¶123.

In view of the foregoing, claim 2 of the ‘742 Patent is obvious in view of Susa. Ex. 1002, ¶124.

3. Independent claim 3

According to the Applicant, claim 3 is “similar to” claims 1 and 2 but “describes a heating wire wound on a part of the porous component substantially aligned with the run-through hole . . . and with the porous component in contact with a liquid supply in the housing . . .” *Id.* Ex. 1018 at 4 (Remarks). Given Applicant’s admissions, and the repetition of several claim elements from claims 1 and 2 in claim 3, reference may be made to the discussion of the elements in those claims above.

a. Preamble – [3] an electronic cigarette

The preamble of claim 3 reads “an electronic cigarette.” Ex. 1001, col. 6, ln. 39. Susa discloses an aerosol electronic cigarette. *See* discussion, *supra*, VI.E.1.a, limitation [1], claim 1. Ex. 1002, ¶126.

b. [3.1] a battery assembly and an atomizer assembly within a housing with the battery assembly electrically connected to the atomizer assembly

Claim 3 recites “a battery assembly and an atomizer assembly within a housing with the battery assembly electrically connected to the atomizer assembly.” Ex. 1001, col. 6, lns. 28-30. Susa discloses this limitation. Ex. 1002, ¶127. The term “housing” in claim 3 is equivalent to “shell” in claim 1. *See* discussion, *supra*, VI.E.1.b and c, limitation [1.1] and [1.2], respectively, claim 1. Ex. 1002, ¶127.

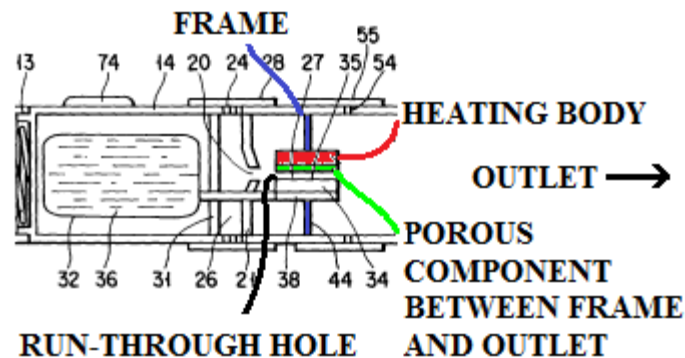
c. [3.2] with the housing having one or more through-air-inlets and an outlet

Claim 3 recites “with the housing having one or more through-air-inlets and an outlet.” Ex. 1001, col. 6, lns. 43-44. Susa discloses this limitation. Ex. 1002, ¶128. The term “housing” in claim 3 is equivalent to “shell” in claim 1. Susa discloses an outlet, specifically, “a suction port 22 is formed in the mouthpiece 16.” Ex. 1002, ¶128; Ex. 1010, Fig. 1, col. 13, lns. 5-8. The remaining limitations are discussed in connection with claim 1. *See* discussion, *supra*, VI.E.1.e, limitation [1.4], claim 1. Ex. 1002, ¶128.

d. [3.3] the atomizer assembly includes a frame having a run-through hole, and a porous component between the frame and the outlet

Claim 3 recites “the atomizer assembly includes a frame having a run-through hole, and a porous component between the frame and the outlet.” Ex.

1001, col. 6, ln. 48-49. Susa discloses this limitation. Ex. 1002, ¶129. As shown below, the “porous layer 46” is between the “support member 44” and the “suction port 22.” Ex. 1002, ¶129; Ex. 1010, Susa, Fig. 1, col. 7, lns. 29-38 and 50-55.



The remaining limitations are discussed in connection with claim 1. *See* discussion, *supra*, VI.E.1.f, h and j, limitations [1.5], [1.7], [1.8] and [1.10], respectively, claim 1. Ex. 1002, ¶130.

e. [3.4] a heating wire wound on a part of the porous component which is substantially aligned with the run-through hole

Claim 3 recites “a heating wire wound on a part of the porous component which is substantially aligned with the run-through hole.” Ex. 1001, col. 6, ln. 33-34. Susa discloses this limitation, or at least it would have been an obvious modification based on the features disclosed. Ex. 1002, ¶131. *See* discussion, *supra*, VI.E.1.g, i and k, limitations [1.6], [1.9] and [1.11], respectively, claim 1.

f. [3.5] with the porous component in contact with a liquid supply in the housing

Claim 3 recites “with the porous component in contact with a liquid supply in the housing.” Ex. 1001, col. 6, lns. 51-52. Susa discloses this limitation, or at least, renders it obvious. Ex. 1002, ¶132. “Housing” in claim 3 is equivalent to “shell” in claim 1 and “the porous component in contact with a liquid storage in the housing” in claim 3 is equivalent to “the porous component also positioned substantially within the cigarette bottle assembly” in claim 1. *See* discussion, *supra*, VI.E.1.1, limitation [1.12], claim 1. Ex. 1002, ¶132.

In view of the foregoing, claim 3 of the ‘742 Patent is obvious in view of Susa. Ex. 1002, ¶133.

F. GROUND 6: CLAIMS 1, 2 AND 3 ARE UNPATENTABLE UNDER 35 U.S.C. § 103 AS BEING OBVIOUS IN VIEW OF SUSA IN FURTHER VIEW OF ABHULIMEN

1. Abhulimen Discloses “a heating wire wound on a part of the porous component”

As noted above, Susa discloses or renders obvious each limitation of claims 1, 2 and 3. *See* discussion, *supra*, VI.E.1-3. To the extent Susa does not disclose “a heating wire wound on a part of the porous component” as recited in claims 1, 2, 3, or constitute an obvious modification of the disclosed features, Abhulimen expressly discloses this well-known structure. Ex. 1002, ¶134. According to Abhulimen, “[t]he fuel element is encased in one end of the tubular wrapper 26,

which wrapper is provided with a plurality of puffing air inlets 18 which are located slightly upstream of the glow element 16, so that during use puffing air is brought in through the inlets 18 and provides oxygen for the burning of the fuel in the wick 22. Ex. 1002, ¶134; Ex. 1012, Abhulimen, p. 4, ¶3.

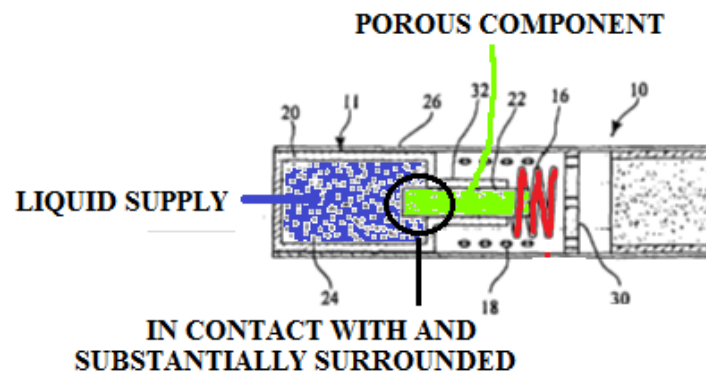
Abhulimen teaches that a heating wire can be wound on a part of the porous component as recited in limitation [1.9] of claim 1. Since Susa discloses a porous component “substantially aligned with the run-through hole” (claims 1 and 3) and a porous component “in the path of air flowing through the run-through hole, limitations [1.11], [2.5] and [3.4] of claims 1, 2 and 3, respectively, are met by the combination of Susa and Abhulimen. Ex. 1002, ¶135.

It would have been obvious to one of ordinary skill in the art to wind the coil heater of Abhulimen around the porous layer in Susa to yield the Second Proposed Combination discussed, *supra*. Ex. 1002, ¶136; *see* VI.E.1.i, limitation [1.9]. The modification is motivated for the same reasons explained above regarding Susa (*e.g.*, to provide more efficient, uniform heating). Ex. 1002, ¶136; *Id.* In view of the foregoing, the subject matter of claims 1, 2 and 3 of the ‘742 Patent would be obvious as a whole in view of Susa in further view of Abhulimen. Ex. 1002, ¶136.

2. Abhulimen Discloses the Remaining “Porous Component” Limitations

As noted above, Susa discloses or renders obvious each limitation of claims 1, 2 and 3. *See* discussion, *supra*, VI.E.1-3. To the extent Susa does not disclose

“the porous component also positioned substantially within the cigarette bottle assembly” (claim 1); “the porous component substantially surrounded by the liquid storage component” (claim 2); or “the porous component in contact with a liquid supply in the housing” (claim 3); or constitute an obvious modification of the disclosed features, Abhulimen expressly discloses these well-known features. Ex. 1002, ¶137 According to Abhulimen, “[f]uel tank 20 is provided with an open end located at the upstream end of the fuel tank, which open end receives a ceramic tube 32, or the like, which surrounds the wick 22. Ex. 1002, ¶137; Ex. 1012, Abhulimen, Fig. 2, pg. 4, ¶3.



Since Abhulimen teaches that a porous component (wick) can be substantially within the bottle assembly, and substantially in contact with the liquid supply, limitations [1.12], [2.6] and [3.5] of claims 1, 2 and 3 are met by Abhulimen. Ex. 1002, ¶138. Since the porous component is part of the atomizer assembly, Abhulimen also teaches limitation [1.3] of claim 1 (atomizer inside the cigarette bottle assembly). Ex. 1002, ¶138.

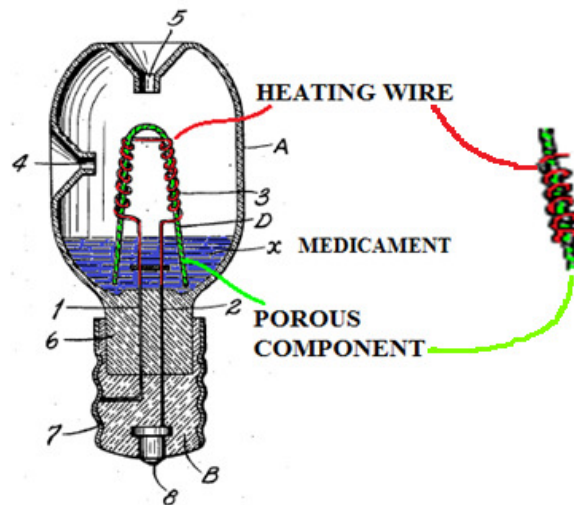
The rationale supporting a combination of Susa and Abhulimen is that the combination uses a known technique of saturating a porous component so that the liquid can be drawn up and atomized by a wound heating coil and the result of the combination is predictable. Ex. 1002, ¶139. Such an improvement would enhance commercial opportunities and make the product more desirable by increasing the efficiency of atomization. Ex. 1002, ¶139. In view of the foregoing, the subject matter of claims 1, 2 and 3 of the ‘742 Patent would be obvious as a whole in view of Susa in further view of Abhulimen. Ex. 1002, ¶139.

**G. GROUND 7: CLAIMS 1, 2 AND 3 ARE UNPATENTABLE
UNDER 35 U.S.C. § 103 AS BEING OBVIOUS IN VIEW OF
SUSA IN FURTHER VIEW OF WHITTEMORE**

**1. Whittemore Discloses “a heating wire wound on a part of
the porous component”**

As noted above, Susa discloses or renders obvious each limitation of claims 1, 2 and 3. *See* discussion, *supra*, VI.E.1-3. To the extent Susa does not disclose “a heating wire wound on a part of the porous component” as recited in claims 1, 2, 3, or constitute an obvious modification of the disclosed features, Whittemore expressly discloses this well-known structure. Ex. 1002, ¶140. According to Whittemore, the vaporizing unit is combined with the “heating element or filament 3” in such a way that “a portion of said wick is always in contact or approximate contact with the heating element or filament 3” whereby the “medicament will be carried by capillary action to a point where it will be vaporized by the heat from

the filament 3.” Ex. 1002, ¶140; Ex. 1013, Whittemore, Fig. 2, col. 1, ln. 50 – col. 2, ln. 8.



Accordingly, Whittemore teaches that a heating wire can be wound on a part of the porous component as recited in limitation [1.9] of claim 1. Since Susa discloses a porous component “substantially aligned with the run-through hole” (claims 1 and 3) and a porous component “in the path of air flowing through the run-through hole,” limitations [1.11], [2.5] and [3.4] of claims 1, 2 and 3, respectively, are met by the combination of Susa and Whittemore. Ex. 1002, ¶141.

It would have been obvious to one of ordinary skill in the art to wind the heating wire of Whittemore around the porous layer in Susa to yield the Second Proposed Combination discussed, *supra*. Ex. 1002, ¶142; *see* VI.E.1.i, limitation [1.9]. The modification is motivated for the same reasons explained above regarding Susa (*e.g.*, to provide more efficient, uniform heating). Ex. 1002, ¶142; *Id.* In view of the foregoing, the subject matter of claims 1, 2 and 3 of the ‘742

Patent would be obvious as a whole in view of Susa in further view of Whittemore. Ex. 1002, ¶142.

2. Whittemore Discloses the Remaining “Porous Component” Limitations

As noted above, Susa discloses or render obvious each limitation of claims 1, 2 and 3. *See* discussion, *supra*, VI.E.1-3. To the extent Susa does not disclose “the porous component also positioned substantially within the cigarette bottle assembly” (claim 1); “the porous component substantially surrounded by the liquid storage component” (claim 2); or “the porous component in contact with a liquid supply in the housing” (claim 3); or constitute an obvious modification of the disclosed features, Whittemore expressly discloses these well-known features. Ex. 1002, ¶143. “A portion of said wick is always in contact with the medicament in the vaporizing vessel.” Ex. 1002, ¶143, Ex. 1013, Whittemore, Fig. 2, col. 2, lns. 3-5.

Since Whittemore teaches that a porous component (wick) can be substantially within the bottle assembly (vaporizing vessel), and substantially in contact with the liquid supply, limitations [1.12], [2.6] and [3.5] of claims 1, 2 and 3 are met by Whittemore. Ex. 1002, ¶144. Since the porous component is part of the atomizer assembly, Whittemore also teaches limitation [1.3] (atomizer inside the cigarette bottle assembly). Ex. 1002, ¶144. The rationale supporting a combination of Susa and Whittemore are the same as explained for Susa and

Albhulimen (*i.e.*, saturating a porous wicking component so that the liquid can be atomized by a wound heating coil). Ex. 1002, ¶145, *see* discussion, *supra*, VI.F.2. Thus, the combination of Susa and Whittemore renders the subject matter of claims 1, 2 and 3 obvious as a whole. Ex. 1002, ¶145.

VII. CONCLUSION

For the reasons set forth in this Petition, it is respectfully requested that the *Inter Partes* Review of claims 1, 2 and 3 in the ‘742 Patent be granted.

Dated: March 10, 2015

Respectfully submitted,

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VIII. CERTIFICATE OF SERVICE UNDER 37 C.F.R. § 42.6(e)(4)

The undersigned hereby certifies that the above captioned “Petition for Inter Partes Review of U.S. Patent No. 8,365,742 Under 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.100, et seq.,” including its supporting evidence (Exhibits 1001-1023) and all other papers filed therewith was served in its entirety on March 10, 2015 by U.S. Express Mail upon the following party:

PERKINS COIE LLP – LOS General
P.O. Box 1247
Seattle, WA 98111-1247

Patent Owner’s correspondence address of record for U.S. Patent No. 8,365,742

March 10, 2015

s/ Gregory L. Hillyer