

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

R.J. REYNOLDS VAPOR COMPANY,
Petitioner,

v.

HEALTHIER CHOICES MANAGEMENT CORP.
Patent Owner.

Case IPR2024-01458
U.S. Patent No. 9,538,788

PATENT OWNER RESPONSE UNDER 37 C.F.R. §42.120

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2002	<i>Curriculum Vitae</i> of Charles A. Garris
2003	Deposition Transcript of Kelly R. Kodama, dated March 30, 2025 ("Kodama Tr.")
2004	Exhibit F to Kodama Tr.
2005	Exhibit G to Kodama Tr.
2006	Exhibit H to Kodama Tr.

I. INTRODUCTION

Healthier Choices Management Corp. (“HCMC”) is the owner of U.S. Patent No. 9,538,788 (Ex. 1001, the “‘788 Patent”). HCMC submits this Response to the Petition of R.J. Reynolds Vapor Company (“Petitioner”) challenging the patentability of claims 1, 7, 8, and 11 of the ‘788 Patent (the “Challenged Claims”). Petitioner has failed to carry its burden of proof to prove by a preponderance of the evidence that any claim of the ‘788 Patent is unpatentable.

The Challenged Claims are directed to an electronic cigarette generally comprising a casing having a first and second chamber arranged sequentially and separated by a sealing member, a battery inside of the first chamber, a fluid containing member inside the second chamber, and a heating element in the second chamber. The heating element comprises a bulb containing a heating wire in communication with the battery. The electronic cigarette includes an air inlet provided on an external wall of the casing, a fluid passageway between the fluid containing member and the heating assembly, and a tube element. The tube element communicates between the first and second chambers. As recited in claim 1, the heating wire heats the bulb, and the bulb heats fluid introduced to and coming in contact with the bulb through the fluid passageway.

Petitioner challenges the claims on two grounds. Ground 1a alleges obviousness of claims 1 and 11 over Gilbert in view of Cohen. Ground 1b alleges obviousness of claims 7 and 8 over Gilbert in view of Cohen and Weigensberg.

Ground 2a alleges obviousness of claims 1 and 11 over Lee in view of Gilbert and Levin, and Ground 2b alleges obviousness of claims 7 and 8 over Gilbert in view of Gilbert, Levin, and Weigensberg.

Petitioner, however, fails to satisfy its burden that the prior art to Lee, Levin, Gilbert, and Cohen teaches all of the limitations of the Challenged Claims. The Petition also fails to establish by a preponderance of the evidence that a POSITA would have been motivated to combine the prior art to attain the claimed invention. The Petition relies upon conclusory statements from Petitioner's expert, which do nothing more than to rephrase or restate Petitioner's arguments. As such, and for other reasons discussed below, Petitioner has not shown by a preponderance of the evidence that any claim of the '788 Patent is unpatentable.

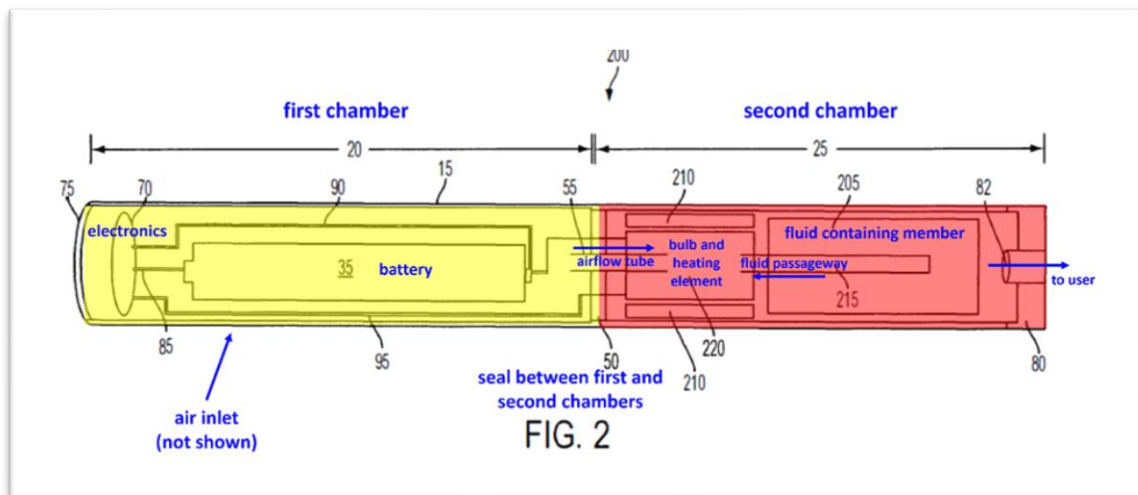
In support of this Response, Patent Owner has consulted Dr. Charles Garriss, Jr., a Professor in the Department of Mechanical and Aerospace Engineering at The George Washington University. Ex. 2001, "Garriss." Dr. Garriss has extensive experience in combustion, electric devices, heat transfer, and electronic cigarettes. Garriss, ¶¶ 4-12. Dr. Garriss' declaration explains in detail the deficiencies in the challenges set forth in the Petition.

II. THE '788 PATENT

The '788 Patent relates to an electronic cigarette comprising a cylindrical casing that includes a first chamber, and a second chamber, with the chambers located sequentially within the cylindrical casing. Ex. 1001, 2:60-67. A battery and the

electronics are located in the first chamber, and a fluid containing member and a bulb that contains a heating element are located in the second chamber. *Id.* at 5:1-14. The fluid is communicated from the fluid containing member to the bulb via a fluid passageway. *Id.* at 5:21-27.

The electronic cigarette is configured to allow airflow through a tube from the first chamber to the second chamber, where the heated bulb atomizes or vaporizes the fluid that is communicated to the bulb via the fluid passageway. *Id.* at 4:48-55; 5:25-27 (“[o]ne or more apertures [] allow the passage of the vapor that is produced when the fluid contacts the heated glass bulb.”). The vaporized fluid mixes with the air to provide a mixture that passes through the mouthpiece and into the user’s mouth. *Id.* at 4:52-55. Figure 2 of the ‘788 Patent depicts the structure of the claimed electronic cigarette.



Id. at Figure 2.

Claim 1 is an independent claim from which all other Challenged Claims

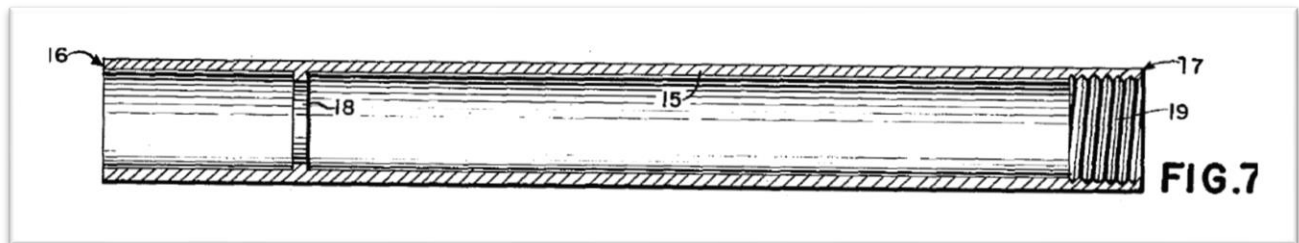
depend. Independent claim 1 is reproduced below with limitations 1a-1i identified.

1. An electronic cigarette, comprising:
 - [1a] a casing comprising a first chamber and a second chamber, **the two chambers located sequentially within the casing;**
 - [1b] a battery located in the first chamber;
 - [1c] a fluid containing member located in the second chamber;
 - [1d] a heating assembly located in the second chamber, **the heating assembly comprising a bulb containing a heating wire** in communication with the battery;
 - [1d] a fluid passageway communicating between the fluid containing member and the heating assembly;
 - [1f] **a tube element communicating between the first and second chambers, with a first distal end of the tube element located in the first chamber, and a second distal end of the tube element located in the second chamber and affixed to the bulb,** the tube element providing an air passage between the first and second chambers;
 - [1g] a sealing element forming a partition between the first and the second chambers; and
 - [1h] **an air inlet provided on an external wall of the casing;**
 - [1i] wherein the heating wire heats the bulb, and **wherein the bulb heats fluid introduced to and coming in contact with the bulb through the fluid passageway.**

III. OVERVIEW OF THE PRIOR ART

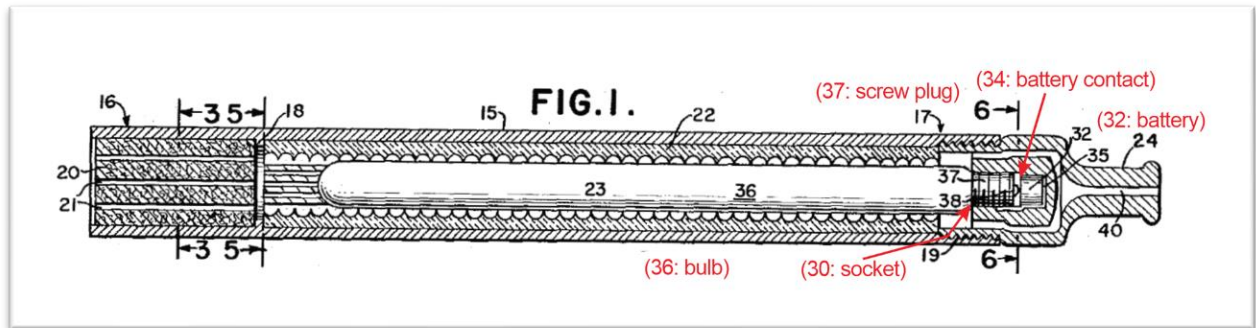
A. Gilbert

Gilbert is directed to an electric cigarette, notably, a smokeless non-tobacco cigarette. Ex. 1004, p. 1. Gilbert is not an electronic cigarette. The Gilbert electric cigarette device comprises an external tube 15 that is **subdivided into different chambers, by an internal shoulder 18**, which includes a relatively short and a substantially longer chamber. *Id.* at 1:62-71.



The outer end portion 16 of the device is detachable and fitted with a flavor cartridge 20 of some suitable material, and includes longitudinally spaced passages 21 of a small diameter. *Id.* at 2:3-6. Within the substantially longer chamber, the device includes a battery 32 having an inner contact 33 and outer contact 34 with a contact strip 35 between the inner contact 33 and the socket 30 for enabling a circuit. *Id.* at 2:41-48. The heating element, **which comprises a vacuum tube or bulb 36 that includes a screw plug 37**, has an end contact 38 adapted to close against the outer battery contact 34, and the **heating element is preferably sized to fit the length of the second chamber**. *Id.* at 2:50-54. The bulb is attached to the socket to

complete the circuit. *Id.* at 2:70-3:3.



When a user inhales through the mouthpiece 24, “**air from the ambient atmosphere is drawn in through the passages 21 of the cartridge 20**, which has been impregnated with suitable flavoring material which is picked up by the inhaled air.” *Id.* at 3:10-14. The cartridge 20 is abutted against the other edge of the internal shoulder 18 and is fit snugly within portion 16 by friction. *Id.* at 2:6-10. **The cartridge 20 can be introduced and removed without regard to the other units of the device.** *Id.* at 2:55-57.

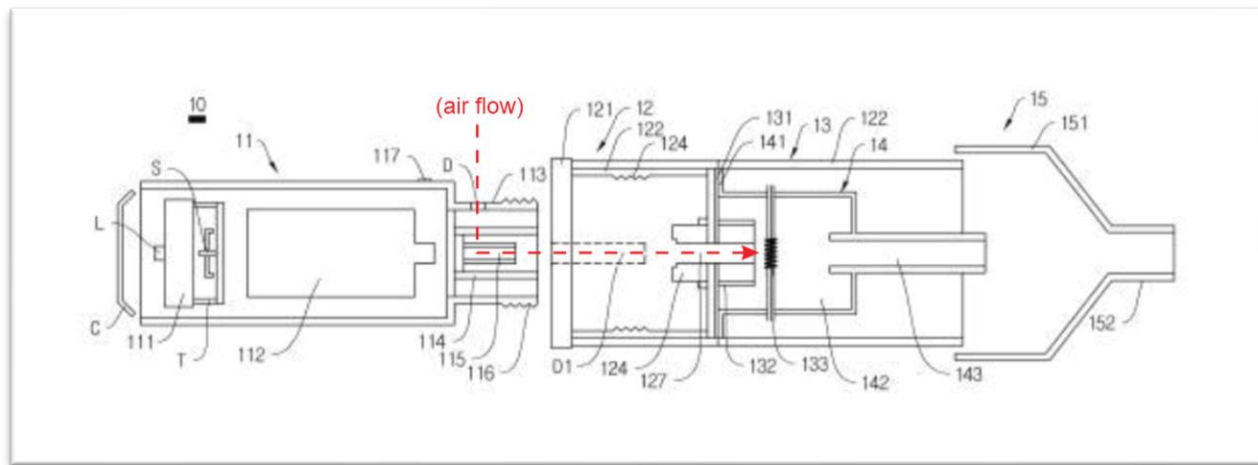
The impregnated air with flavoring “then passes into the heating chamber and is caused to flow around the heating bulb 36, **the heated and flavored air** finally passing through the mouthpiece 24 into the mouth” of the user. *Id.* at 3:15-17. **It is through convection, i.e., “the tumbling of air around the heat source,” that the uniformity of heat is transferred to the flavored air passing through the device.** *Id.* at 3:18-21.

B. Lee

Lee is directed to a complex structure for providing external air inflow into an electronic cigarette for vaporization of a nicotine solution. Ex. 1005, ¶ [0001]. The Lee device comprises a storage housing (13) that contains a nicotine solution, a heating element (133) installed inside of the vaporization chamber (142), a fiber assembly for wicking the nicotine solution to the heating element (133), and a discharge tube (144) extending from the vaporization chamber (142) to the outside storage housing (13). *Id.* at ¶ [0020]. **Lee's focus is on providing an external air flow structure** that provides an advantage of effectively transferring air to the heating element so that the solution can vaporize easily. *Id.* at ¶ [0013].

The battery assembly (11) includes an electric circuit board (111), a battery (112), and a connection chamber (113) connecting air to the other assembly. *Id.* at ¶ [0022]. The connection chamber (113) formed at the end of the battery assembly (11) includes a hollow cylindrical shape and a connecting screw surface (116) for securing the two chambers together. *Id.* An empty space is formed between the circumferential surfaces of the connection chamber (113) and the contact piece (114), and an inlet hold (D) is provided to penetrate the surface of the connection chamber (113) so that external air can be introduced into the connection chamber (113). *Id.* When the connection chamber (113) and the guide chamber (112) are coupled, the **external air flow flows along the guide groove (D1) to the inside of**

the connection chamber and toward the air inlet path (127) in the longitudinal direction, reaching the heating element. *Id.* at ¶ [0024]. The heating element heats the fiber assembly which has absorbed the nicotine solution causing it to vaporize through conduction. *Id.* at ¶ [0029].



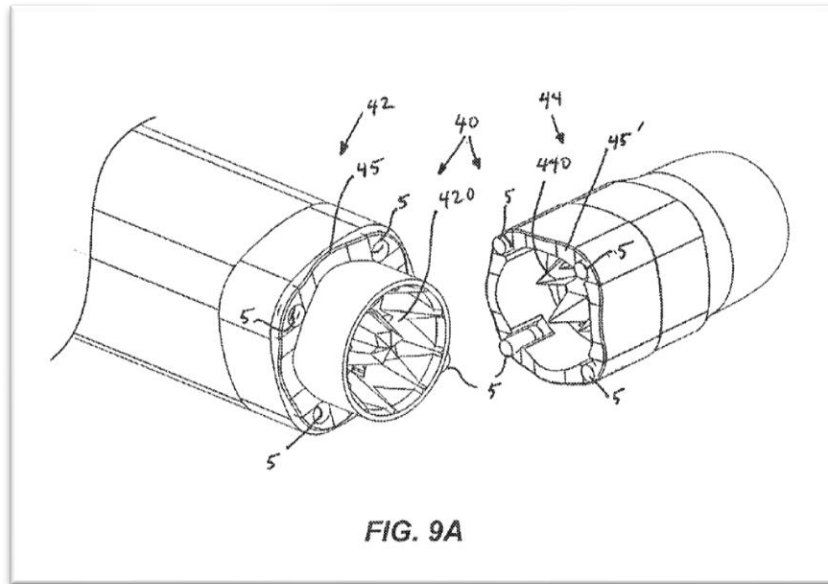
The vaporization unit (14) includes a fixed plate (141) rigidly coupled to the separating plate (131), supports (132), a vaporization chamber (142) that extends from the fixed plate (141), and a supply passage (143) for supplying the nicotine solution. *Id.* at ¶ [0032]. The supply passage (143) has a shape of a through-hole formed in the circumferential surface of the vaporization chamber (142), which supplies a nicotine solution to the heating element (133) from the storage housing (13) through a fiber wick assembly (F). *Id.* at ¶ [0032]. **The fiber nicotine supply structure passes from the nicotine storage housing (13) through a hole in the vaporization unit (14) and passes through the heating element (133), which can be, a nichrome wire configured as a cylindrical helical coil. *Id.* at ¶ [0029].**

Nicotine solution is wicked from the storage housing (13) to the heating element (133) through the porous fiber (F). *Id.* Lee discloses that the **fiber (F) passes through a supply passage (143), which comprises two through-holes formed on the circumferential surface of the device** to allow the fiber assembly (F) to pass through. *Id.* at ¶[0032]. Lee teaches **two supports (132)**, wherein in one embodiment, **the support (132) extending from the plate (131) supports the supply means of the nicotine solution for supplying the nicotine solution to the heating element (133)**. *Id.* at ¶ [0028]. Alternatively, one support (132) is connected to one terminal of the heating element, and the other support (132) is connected to the air conduit (127a). *Id.*

C. Levin

Levin is directed to an electronic vaporizing device comprising a portable power source, a heating portion, a variety of sensors, which include an inhalation sensor and a temperature sensor, a light source, and a grinding chamber. Ex. 1009, ¶¶ [0041], [0054 -57]. Levin discloses that a heating unit comprises a heating element and a reflector disposed at a distal end of the coil to reflect and direct radiant heat in the device. *Id.* at ¶ [0049]. **Levin discloses a heating unit that is a micro-convection heater that rapidly dissipates heat into the air passing over and through the reflector to reflect heat**, increasing the heating efficiency and further shortening lag time in heating the air to a desired temperature. *Id.*

Levin discloses that, in accordance with various embodiments, **vaporizing selected substances using convection “has significant advantages over vaporization methods used in conventional devices.”** *Id.* at ¶ [0035]. Levin goes on to further disclose that conventional devices utilize conduction, and that conduction as means for a heating source with “significant drawbacks” because it can cause uneven heat distribution, undesirable overheating of the substance to be vaporized, and/or “caking” or “baking” of the substance on the conductive material. *Id.* The Levin device includes a grinding chamber with a grinder 40 for substances that are solids, i.e., not fluids, for grinding intact pieces of plant material, such as tobacco. *Id.* at ¶¶ [0071-72], [0099]. The grinder also serves as the vaporization chamber for solid substances, **featuring holes that allow hot air to pass through the heater to the active ingredients within the ground substance** and to flow out of the grinder for inhalation. *Id.* at ¶ [0069]. Otherwise, heating the air flow through the device with the heating element is done using convection and radiative heating. *Id.* at ¶ [0099].



The grinder includes a mesh at the distal end of the grinder that retains the substance and “**prevent[s] ground debris** from falling out of the grinding chamber” and making contact with the heating unit. *Id.* at ¶ [0074]. The **heating element**, which is in contact with the mesh, **transfers heat by convection to the mesh**. *Id.* at ¶ [0087]. The heating element further includes a reflector, which is cone-shaped to reflect radiative heat emitted by the heating coil to improve heating efficiency. *Id.* Put differently, the **heating element heats the mesh** that is in contact with the ground debris, and consistent with Levin’s stated disadvantages with conductive heating discussed *supra*, the **heating bulb in the device does not make contact with the substance**.

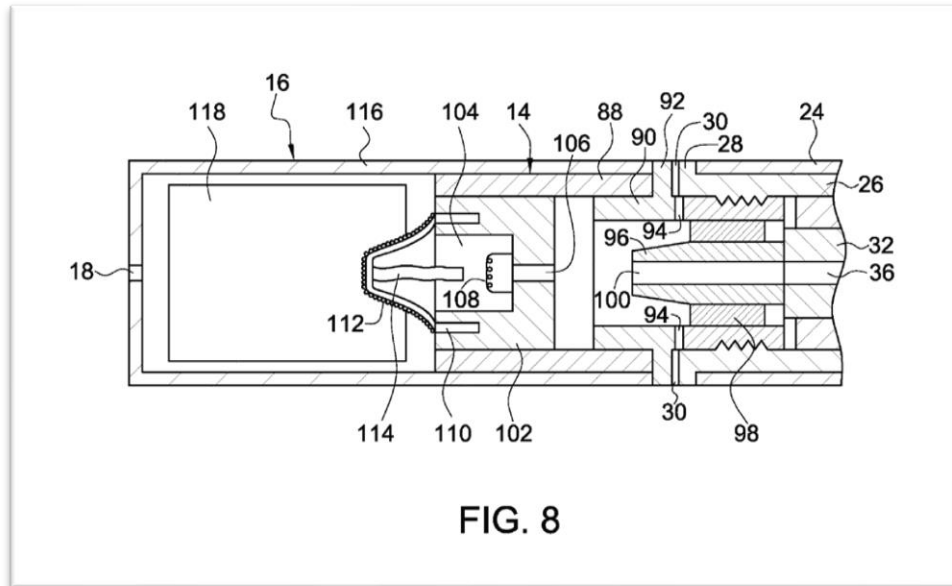
D. Cohen

Cohen is directed to a personal inhalation device that includes an outer shell

housing an electronic section 12, an atomizing unit 14, and a cartridge 16. Ex. 1007, ¶ [0017]. The operation of the inhalation device 10 is controlled by the micro-electronic components contained in the electronic section 12. *Id.* at ¶ [0018]. The electronics section includes a pressure transducer 38 comprising a reed switch disposed in a casing that is designed to react to a pressure increase due to air flow through the first housing 24 of the device and actuate the control electronics on the electronic circuit board 40 and the other electronic components of the device 10. *Id.* at ¶ [0021].

The electronic section 12 of the inhalation device is connected to the atomizing unit 14 with the use of a screw-on connection, and the cartridge of the device is connected to the electronic section on the opposing end of the atomizing unit 14 by an interference fit. *Id.* at ¶ [0018]. **The atomizing device 108 is a heating coil positioned adjacent to the air passage 106.** *Id.* at ¶ [0027]. **The atomizing device 108 described is “an ultrasonic atomizer.”** *Id.*

The cartridge 16 stores a deliverable medium that is atomized in the atomizing unit 14 when the user draws or puffs on the inhalation device 10. *Id.* at ¶ [0028]. The cartridge 16 includes a reservoir 118 mounted therein in such a manner as to allow air to flow around the reservoir 118 to the orifice 18. *Id.* A wick 114 is supported by a strut 110 that supports a metal mesh 112, and the strut supports the wick 114 extending into the atomization chamber 104. *Id.*

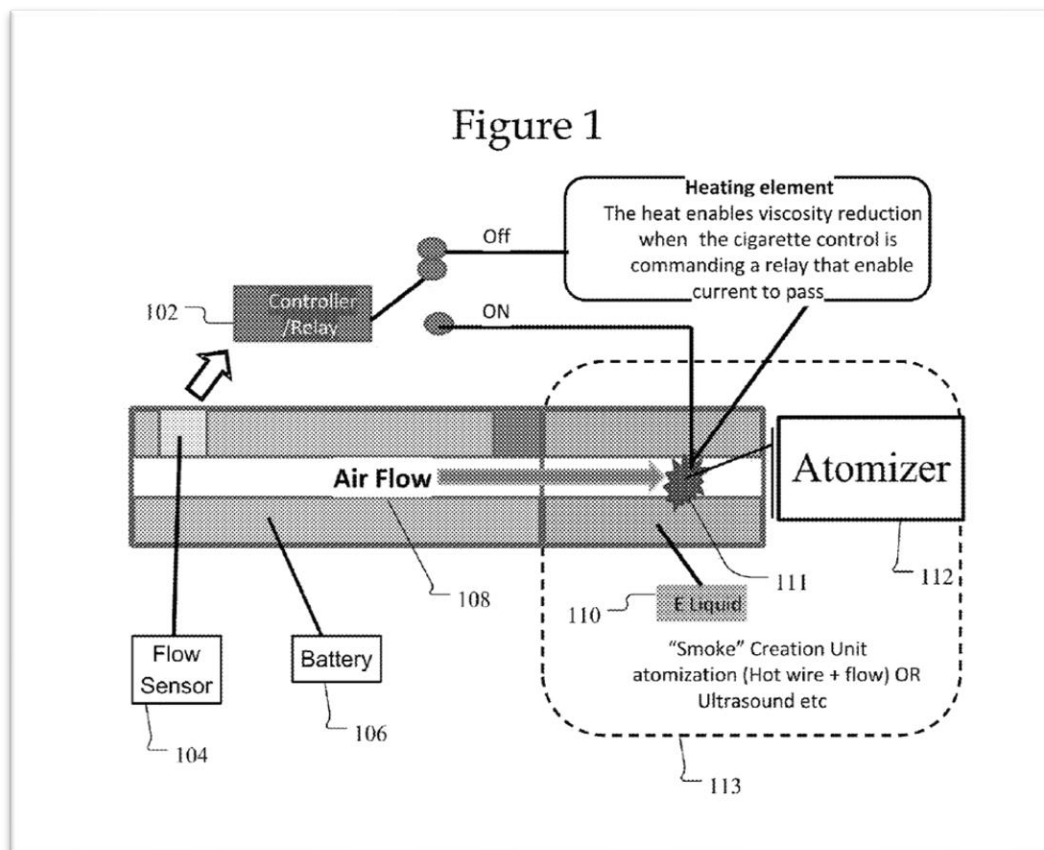


Cohen discloses that the combined air flow passes through the air passage 106 into the atomization chamber 104 and “[t]he air is heated as it flows over the atomizing heating coil 108.” *Id.* at ¶ [0031]. “The heated air then passes over the wick 114 causing the medium that has been absorbed into the wick 114 to be atomized, creating a vapor containing the deliverables from the medium. *Id.*

E. Weigensberg

Weigensberg discloses an electronic cigarette that includes flavor enhancements to add flavor to an e-cigarette. Ex. 1006, 1:12-15. **Weigensberg discloses a first compartment for a battery 106 and a cartomizer 113 containing an atomizer 112 and an e-liquid in a second compartment.** *Id.* at 3:43-65. The e-liquid 110 is atomized via air flow 108, generated by the inhalation of the user, which creates a pressure difference that removes e-liquid droplets from the e-liquid 110.

Id. “The cartomizer 113 may include the atomizer and the e-liquid 110” and is addressed through out the disclosure as a “cartridge.” *Id.* at 3:54-56. A **“special external (removable) wrap or container or packaging for the flavored booster 602 or for the cartridge [i.e., the cartomizer 113 portion] that will seal in and preserve the flavor during storage or between uses.** *Id.* at 7:40-44.



IV. LEGAL STANDARDS

A. Obviousness

Obviousness under 35 U.S.C. §103(a) requires that “the differences between the subject matter sought to be patented and the prior art such that the subject matter

as a whole would have been obvious at the time the invention was made” to a skilled artisan. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). An obviousness determination must be based on four factual inquiries: (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the art; and (4) objective indicia of nonobviousness. *Id.* at 406 (citing *Graham v. John Deere Co. Kan. City*, 383 U.S. 1, 17-18 (1996)). A party alleging obviousness is “required to place themselves in the minds of those of ordinary skill in the relevant art at the time the invention was made, to determine whether that which is now plainly at hand would have been obvious at such earlier time.” *Millennium Pharms., Inc. v. Sandoz Inc.*, 862 F.3d 1356, 1367 (Fed. Cir. 2017)(citations omitted). A patent claim “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR*, 550 U.S. at 418. Obviousness is a question of law based on the underlying facts and in reaching this conclusion, “the court must avoid ‘hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.’” *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016).

An obviousness determination based on a combination of references requires finding “both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.’”

Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd., 821 F.3d 1359, 1367–68 (Fed. Cir. 2016) (citation omitted). An obviousness determination “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418 (“[I]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed invention does.”).

Aside from there being a motivation to combine, Petitioner cannot rely on conclusory statements or blanket assertions of common sense to fill gaps and missing information from the prior art. *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1362–63 (Fed. Cir. 2016). “It is not the Board’s job to cobble together assertions from different sections of a petition or citation of various exhibits in order to infer every possible permutation of a petitioner’s arguments.” *Microsoft Corp. v. FG SRC, LLC*, 860 Fed. App’x 708, 713 (Fed. Cir. 2021).

In an *inter partes* review, a Petitioner bears the burden of persuasion to prove “unpatentability by a preponderance of the evidence.” *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (quoting 35 U.S.C. § 316(e)). Petitioner was required to carry its burden in the Petition itself. *Intelligen Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) (“[T]he expedited nature of IPRs bring with it an obligation for petitioners to make

their case in their petition to institute.”). This burden never shifts to HCMC. *Dynamic Drinkware*, 800 F.3d at 1378 (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326-27 (Fed. Cir. 2008)).

V. PERSON OF ORDINARY SKILL IN THE ART

For the purposes of this Response, HCMC does not dispute Petitioner’s proposed level of skill in the art.

VI. CLAIM CONSTRUCTION

Claims should be construed “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. §282(b).” 37 C.F.R. §42.100(b). Thus, each claim term should be given its ordinary and customary meaning as understood by a Person of Ordinary Skill in the Art (“POSITA”) as of the priority date of the ‘788 Patent, in accordance with *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

There are two exceptions: “1) when a patentee sets out a definition and acts as his own lexicographer,” and “2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). Disavowal can be effectuated by language in the specification or the prosecution history. *PolyAmerica, L.P. v. API Indus., Inc.*, 839 F.3d 1131, 1136 (Fed. Cir. 2016). “In either case, the standard for disavowal is exacting, requiring clear and unequivocal evidence that the

claimed invention includes or does not include a particular feature.” *Id.*

Petitioner and Mr. Kodama interpret the meaning of the claims based on HCMC’s construction of the claims by its allegations of infringement in the ongoing litigation. Paper 1, p. 18. For the purposes of this response, HCMC agrees on how the claims are to be construed. HCMC does not waive, and expressly reserves, claim scope arguments, construction, and evidence it may raise in other proceedings.

VII. ALL CHALLENGED CLAIMS ARE VALID

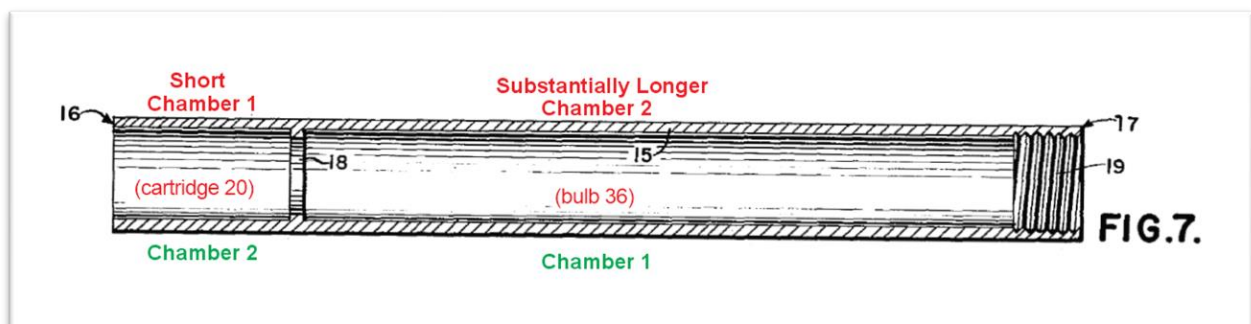
A. Ground 1a: Petitioner Fails to Demonstrate Gilbert and Cohen in Combination Renders Obvious Claims 1 and 11.

Petitioner fails to show that Gilbert and Cohen teach all of the limitations of Claim 1. Thus, the Petition fails to demonstrate, as is discussed in further detail below, that the Challenged Claims are rendered obvious in view of Gilbert and Cohen. The asserted prior art, at least, fails to disclose element **[1c]** “a fluid containing member located in the second chamber,” element **[1h]** “an air inlet provided on an external wall of the casing,” and element **[1i]** “the bulb heats fluid introduced to and coming in contact with the bulb through the fluid passageway.” As such, Petitioner has not shown by the preponderance of the evidence that Gilbert and Cohen, either alone or in combination, render Claim 1 and any of the Challenged Claims obvious.

i. Gilbert does not disclose “a fluid containing member located in the second chamber”

Petitioner has not shown by a preponderance of the evidence that Gilbert

discloses element [1c], which recites “a fluid containing member located in the second chamber” of the device. Ex. 1001, 8:64. Gilbert, however, does not teach the same. Indeed, Gilbert does not vaporize a fluid at all; rather, it is an electric device used to heat air that has been flavored by passing through a cartridge containing a porous material with flavoring. *Id.* at 3:10-14. This is altogether different than the electronic device described and claimed in the ‘788 Patent. Gilbert discloses a tube that includes an internal space subdivided by internal shoulders 18 into two chambers that include **(1) a relatively short chamber, and (2) a substantially longer chamber.** Ex. 1004, 1:65-71. **Within the “more forward chamber,” i.e., the second chamber,** the tube includes an insert 22 that **has a diameter to fit a bulb or tube 36,** similar to a light bulb. *Id.* at 2:11-54. **Within the first chamber, a cartridge 20, i.e., the fluid containing member,** is disposed and abutted against the outer edge of the internal shoulders 18 of the tube. *Id.* at 2:6-10; *see* Fig. 7 (annotated).



Petitioner and Mr. Kodama, however, arbitrarily select which portions of the

tube comprise the first and second chambers in the Petition, ignoring Gilbert's explicit teachings that the internal shoulders 18 are what subdivide the tube 15 into its chambers. See Pet. 39-40; Ex. 1003, pp. 42-43.¹ As illustrated in Figures 2 and 7 in Gilbert, "the bulb 36 [is] mounted to the socket 30 while the mouthpiece 24 is detached from the tube 15 [and] the bulb 36 [is] introduced into the insert 22 as the mouthpiece 24 is put into place and rotated to effect attachment of the mouthpiece to the other tube 15." Ex. 1004, 2:61-66. The bulb 36 includes a screw plug 37 that makes direct contact with the battery contact 38. *Id.* at 2:46-50. Put differently, the substantially longer chamber disclosed by Gilbert is not partitioned by the adaptation of the mouthpiece, as proposed by Petitioner. On the contrary, as evidenced in Figure 1, (*see* Section III(A), *supra*), and annotated Figure 7 above, the substantially longer chamber is designed and otherwise configured to receive the bulb 36, the bulb's contact screw plug 37, and battery 32. There is no partition dividing the bulb from the battery, and a POSITA would understand that no partition could exist as described by Petitioner because Gilbert teaches that the bulb's "screw plug 37 has

¹ Petitioner argues that the second chamber can be further divided into additional chambers to support the erroneous and misleading proposition that Gilbert's fluid containing member is in the second chamber. See Pet. 39 n. 4. An unequivocal reading of Gilbert, which Petitioner cites in its footnote, provides that the internal shoulder 18 of the tube divides the tube into (1) relatively short and (2) substantially longer chambers. The word "chambers" in the referenced sentence appears in the plural form because grammatically it is denoting the two chambers disclosed by Gilbert, i.e., the short chamber and the substantially longer chamber.

an end contact 38 adapted to close against the outer battery contact 34.” *Id.* **If the bulb were partitioned into a different chamber from the battery, as alleged by Petitioner, the bulb would not make contact with the battery as taught by Gilbert.** Consequently, Petitioner’s position that the hollow shank 25 of the mouthpiece, which mates the internal threads 19 in the inner end portion of the outer tube 15, is “the sealing element” of element [1g] is erroneous. Pet. 46; Ex. 1004, 2:16-20. The shank is not a sealing element forming a partition between the chambers. Ex. 2001, ¶¶75-80.

To the extent an argument to the inverse is raised to purport that a POSITA would find that the substantially longer chamber is the **first chamber** and the shorter chamber is the **second chamber** to address Gilbert’s deficiencies mentioned above (see image above and markings in green), such a proposition would nevertheless result in Gilbert failing to disclose element [1d] “a heating element in the second chamber.” Ex. 1001, 8:65; *see also* Fig. 7 (annotated). Such a proposition would then position the heating element in the first chamber, as opposed to the second chamber.

ii. Gilbert does not disclose “an air inlet provided on an external wall of the casing”

Petitioner concedes in its Petition that Gilbert’s outer end portion 16 and its inner end portion 17 comprise external tube 15, which, together with the mouthpiece 24, comprises the casing recited in limitation [1a] of claim 1. Pet. 38-39 (citing Ex. 1004, 1:62-65, 1:72-2:2, Figs. 1-2). “In the outer end portion 16” of the tube 15, a

“detachably fitted flavor cartridge 20” is disposed. Ex. 1004, 2:3-6. **The cartridge, not the outer casing, includes “longitudinal spaced passages 21, and the cartridge is detachable from the casing.** *Id.* Based on the plain reading of Gilbert, a POSITA would understand that Gilbert does not and would not disclose an air inlet on its casing because it would otherwise allow the tumbling air around the heat source to escape and/or not heat up. Ex. 2001, ¶¶ 81-86. Petitioner and Mr. Kodama admit as much, stating that Gilbert discloses an elongated passage through the length of the bulb to heat the air tumbling through the elongated tubular liner around the heat source, which provides for uniformity of heat transfer. Pet. 43-42, Ex. 1003, ¶¶92-93.

Contrary to the teachings of Gilbert, element [1h] states that the electronic cigarette includes “an air inlet provided on an external wall of the casing.” Ex. 1001, 9:11. “[E]very word in a claim limitation [] is presumed to have meaning[.]” *Square, Inc. v. Think Comput. Corp.*, CBM2014-00159, Paper 47, p. 8 (PTAB Nov. 27, 2015); *see Bicon, Inc. v. Strauman Co.*, 441 F.3d 945, 950 (Fed. Circ. 2006) (“[C]laims are interpreted with an eye toward giving effect to all terms in the claim.”). Petitioner’s allegation that Gilbert teaches element [1h] is inconsistent both with the rule of claim interpretation and the broadest reasonable interpretation.

Petitioner’s statement that Gilbert’s casing includes air inlets on the external wall casing is also inconsistent with its statements that Gilbert’s outer end portion

16 and its inner end portion 17 comprise external tube 15. Pet. 38-39 (citing Ex. 1004, 1:62-65, 1:72-2:2, Figs. 1-2), Ex. 1003, ¶97. Petitioner's latter statement is undermined by the former. Such inconsistency is a fact that the Board has correctly addressed in its Institution Decision. Paper 7, p. 19 (“[w]e have concerns with Petitioner's contention as to limitation [1h]...[provided that Gilbert's] flavor cartridge is a separate unit of the cigarette and not part of the outer end portion of its external tube, [therefore] **the airflow passages in the flavor cartridge are not provided on the end portion of Gilbert's external tube.**”). Accordingly, Gilbert does not disclose element [1h]. Ex. 2001, ¶ 86.

Cohen does teach a device that includes a number of slots 30 formed in the flange 28 to create air passages into the interior of the first coupling 26 of the device. Ex. 1007, ¶ [0020]. Combining Cohen with Gilbert, however, would not have been obvious. As discussed above, and affirmed by Petitioner and Mr. Kodama in his Declaration, **Gilbert requires that its external casing be devoid of any openings to allow the tumbling air around the heat source to heat up** as it traverses the elongated tube before escaping. Pet. 43-42, Ex. 1003, ¶¶92-93; Ex. 2005, ¶¶80-85. Accordingly, the modification of Gilbert with Cohen would not be obvious. Ex. 2001, ¶¶ 84-86.

- iii. **Gilbert does not disclose “wherein the bulb heats fluid introduced to and coming in contact with the bulb through the fluid passageway”**

Element [1i] of claim 1 states that “the bulb heats fluid introduced to and

coming in contact with the bulb through the fluid passageway.” Ex. 1001, 9:12-14. Gilbert, however, does not teach the same, and it cannot be modified to do the same either. Gilbert discloses that **“air from the ambient atmosphere is drawn in through the passages 21 of the cartridge 20 which has been impregnated with suitable flavoring material which is picked up by the inhaled air and such air then passes into the heating chamber and is caused to flow around the heating bulb 36.”** Ex. 1004, 3:10-15. Put differently, **a mixture** of atmospheric air with the suitable flavoring **is what flows into the heating chamber** to be heated up by the bulb. Ex. 2001, ¶¶87-92. This is different than element [1i] of claim 1, which requires that the **fluid from the fluid containing member** in the second chamber **make contact with the bulb**.

Indeed, Mr. Kodama, Petitioner’s expert, acknowledges this difference in the Gilbert device, i.e., that it is not the fluid in the fluid containing member that enters the heating chamber, but rather it is the mixture. *See* Ex. 1003, ¶ 99 (“The device described in Gilbert allows a user to inhale on the device, causing external air flow into the device to capture fluid stored inside the device, and **the air/fluid combination then contacts the bulb and gets heated up before being inhaled by the user.**”) (emphasis added). Petitioner also acknowledges and admits that it is not the fluid in the fluid containing member that makes contact with the bulb, and instead it is “the air mixed with the flavoring material” that goes into the heating chamber.

Pet. p. 47 (citing Ex. 1004, 2:46-47, 3:2-3, 3:12-15). Therefore, Gilbert does not teach element [1i] and cannot be modified to teach the same. Ex. 2001, ¶¶ 90-92.

Because there is no basis to support the purported allegation that Gilbert, either alone or in combination with Cohen teaches all of the elements of claim 1 of the ‘788 Patent, Petitioner has failed to carry its burden to set forth its *prima facie* case of obviousness that Gilbert in view of Cohen renders claim 1 of the ‘788 Patent obvious.

B. Ground 1b: Petitioner Fails to Demonstrate Gilbert, Cohen, and Weigensberg in Combination Renders Obvious Claims 7 and 8.

For the reasons set forth above, the Petition fails to set forth a *prima facie* case of obviousness to attain the claimed invention. Petitioner has failed to carry its burden that Gilbert, either alone or in combination with Cohen renders claim 1 of the ‘788 Patent obvious. Therefore, dependent claims 7 and 8, which depend directly or indirectly from independent claim 1, are also not obvious.

C. Ground 2a: Petitioner Fails to Demonstrate Lee, Gilbert, and Levin in Combination Renders Obvious Claims 1 and 11.

Petitioner fails to carry its burden that it would have been obvious to combine Lee, Gilbert, and Levin to attain claim 1 and has failed to demonstrate that Lee, Gilbert, and Levin, either alone or in combination, teach all of the limitations of Claim 1. Therefore, the Challenged Claims, as discussed in further detail below, cannot be rendered obvious in view of Lee, Gilbert, and Levin.

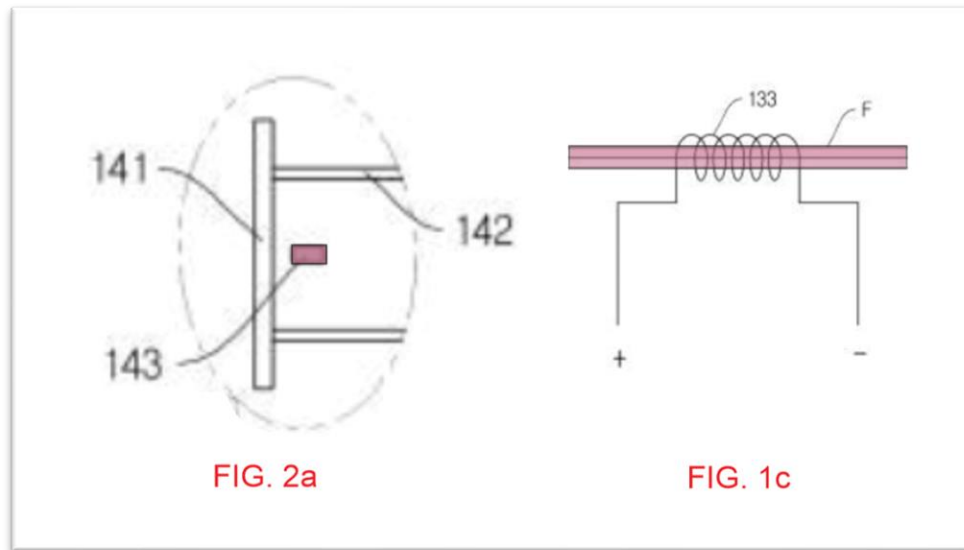
i. The Petition fails to show that a POSITA would have found it obvious to implement the heating element of a vacuum tube with a screw plug of Gilbert to the Lee device

Claim 1 of the ‘788 Patent recites an electronic cigarette that includes, *inter alia*, a heating assembly located in the second chamber, and a heating assembly comprising a bulb containing a heating wire in communication with the battery. Ex. 1001, 8:65-67. The claimed electronic cigarette requires a tube element 55 that extends into the heating assembly 220 to allow air to pass from the first chamber 20 into the second chamber 25. *Id.* at 5:12-14. A fluid passageway that connects the fluid container 205 with the heating assembly 220 allows fluid that is introduced into the heating assembly to make contact with the heated glass bulb 230. *Id.* at 5:15-35. Put differently, it is when the fluid makes contact with the heating assembly that vapor is created and expelled from the electronic cigarette through the end cap aperture. *Id.* at 5:28-29.

Petitioner cites to Lee in combination with Gilbert as disclosing “a heating element comprising a bulb containing a heating wire,” and argues that it would have been obvious to a POSITA to implement Gilbert’s bulb heater in the Lee device. Pet. 55-58 (citing Ex. 1003, ¶ 119). The Petition, however, fails to establish by a preponderance of the evidence that the combination is obvious because, as discussed in length below, Petitioner fails to explain “how” the combination would work and circumvents the clear signs of “why” a POSITA would be dissuaded from combining Gilbert with Lee. *See Whatfix Inc. v. Walkme Ltd.*, IPR2024-00065, Paper 34, p. 60

(Mar. 28, 2025); *see also Personal Web Tecs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Circ. 2017) (“Petitioner’s reasoning fails to explain “how the combination of the two references was supposed to work.”).

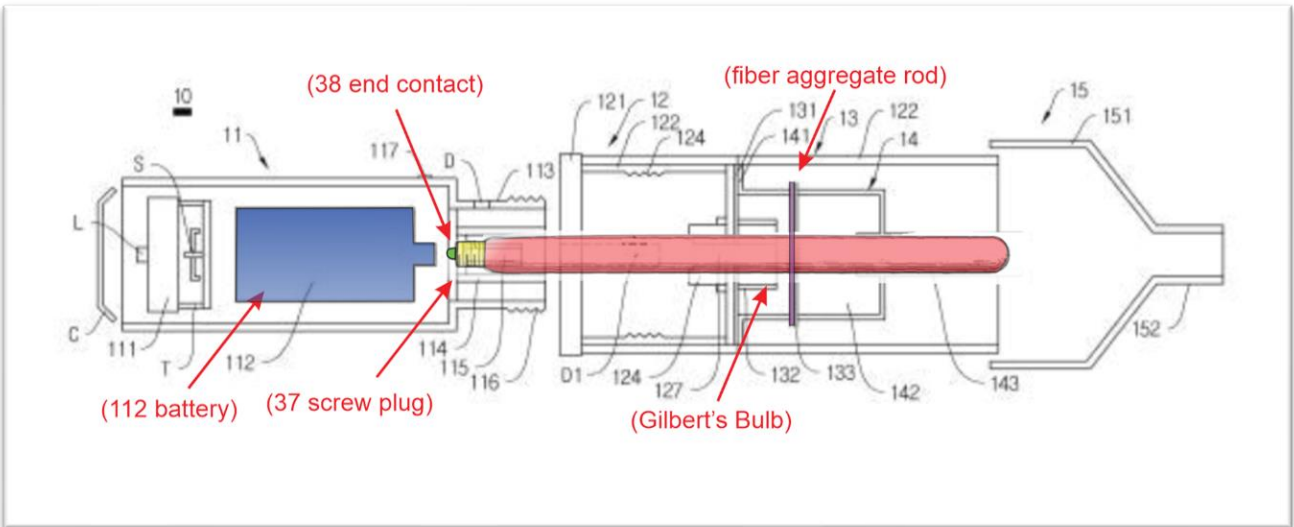
Lee discloses an e-cigarette that includes a first chamber for a battery (112), an electronic circuit board (111), a pressure switch (117), and an LED (L). Ex. 1005, ¶ [0024]. Adjacent the first chamber at its distal end is a tubular connection chamber 113. *Id.* On the outer cylindrical surface of the connection chamber 113 is an air inlet hole (D) that allows air to enter into a guide groove (D1) and into a vaporization chamber (142) through an air inlet (127). *Id.* at ¶¶ [0029-33]. The air introduced into the vaporization chamber (142) through the air inlet (127) is supplied to the heating element (133). *Id.* Lee’s heating element, which is described as a nichrome wire, and shown as a cylindrical helical coil, is **wrapped around a porous fiber aggregate rod (F) that traverses the nichrome wire and passes through a supply passage (143), which comprises two through-holes formed on the circumferential surface of the vaporization chamber (142) to allow the fiber assembly (F) to pass through.** *Id.* at ¶[0032].



Ex. 1005, Figs. 2a, 1c.

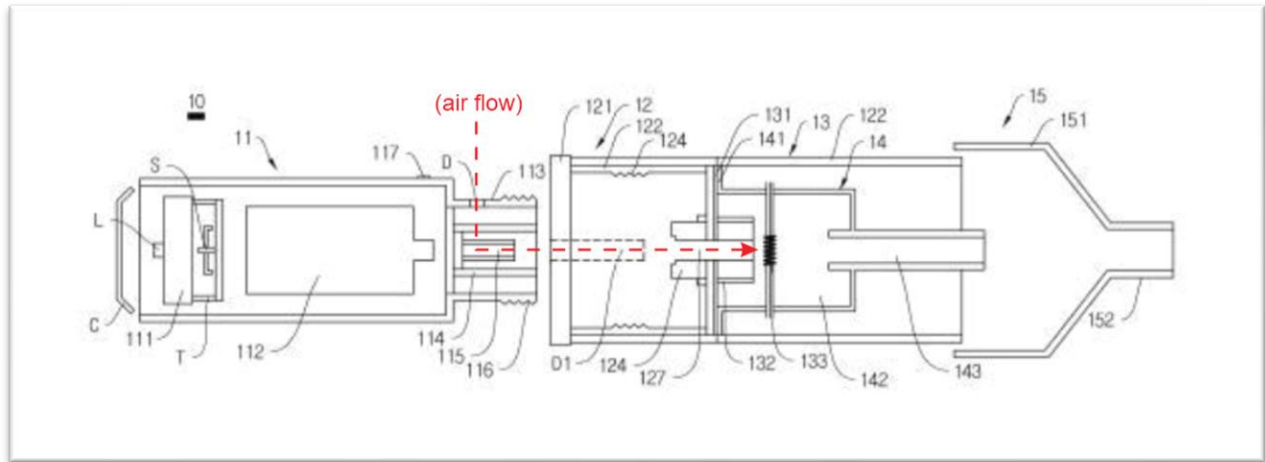
Despite Lee's design to include the fiber aggregate rod (F) traversing through the nichrome wire and supply passages (143) on the circumferential surface of the device, Petitioner concludes that it would have been obvious to modify Lee with Gilbert without articulating "how" one would go about doing such modification. Indeed, there is no discussion of how Lee could have been modified to **"include a bulb structure like that of Gilbert,"** because it cannot be done without rendering Lee inoperable. Ex. 2001, ¶¶ 100-105. All that is provided in support of the modification are conclusory statements from both Petitioner and Mr. Kodama that it could be done. Pet. 56, Ex. 1003, ¶116.

A visual depiction of what the Petitioner proposes as an implementation of Gilbert's bulb in the Lee device is exemplarily reproduced below. Pet. 57.



Gilbert's bulb, as disclosed, is "preferably elongated and of a diameter to fit within the insert 22" in order to "provide an elongated heating passage through the length of the bulb." Ex. 1004, 2:50-54. The heating element, **which comprises a vacuum tube or bulb 36 that includes a screw plug 37, has an end contact 38 adapted to close against the outer battery contact 34, and the heating element is preferably sized to fit the length of the second chamber.** *Id.* at 2:50-54. **The bulb's purpose is to heat the flavored air (not a liquid) passing through the heating chamber,** which then passes through the mouthpiece into the user's mouth. *Id.* at 3:15-17. In the Kodama Declaration, Mr. Kodama simply proffers a conclusory statement that "it would have been obvious to **modify the Lee device to include a bulb structure similar to that of the bulb structure described in the Gilbert device.**" Ex. 1003, ¶116. But as shown above, this is not the case. The bulb of Gilbert, which is designed to **fit the length of the second chamber,** cannot be

disposed inside Lee for apparent reasons. Ex. 2001, ¶¶ 94-105.



A glaring defect of the proposed combination is the fact that Gilbert’s bulb would obstruct the internal space of the second chamber of Lee, otherwise frustrating Lee’s guide groove (D1), as shown above, which is specifically designed to feed air from the first housing to the second housing, and into the vaporization chamber (142) through the air inlet (127) to be supplied to the heating element (133). See Ex. 2001, ¶ 103. Indeed, Lee is entitled “External Air Inlet Structure Applied to An E-Cigarette,” and Lee’s “invention is about an external air inflow structure applied to an e-cigarette.” Ex. 1003, Title, and Summary. To attempt to make the proposed modification doable, *in arguendo*, in a way that would avoid obstructing Lee’s airway pathway, Lee would have to be significantly modified or reimagined in some unstated way to adopt Gilbert’s bulb or a bulb similar to that disclosed. Ex. 2001, at ¶ 104. Such a modification would change the basic principles under which Lee was designed to operate – i.e., “[t]his invention is about an external air inflow

structure...specifically relates to an external air inflow structured applied to an e-cigarette capable of inducing external air required for vaporization of a nicotine solution to a heating element. Ex. 1005 Summary; *Microsoft Corp. v. Philips*, IPR2018-00185, Paper 7, p. 12 (citing *In re Ratti*, 270 F.2d 810, 813 (C.C.P.A. 1959)) (if there is a substantial reconstruction and redesign of the elements of the prior art, as well as a change in the basic principles under which the prior art reference construction was designed to operate, the proposed combination is not obvious). To this end, the substitution of the Gilbert bulb for Lee's heating wire would render Lee inoperable. Ex. 2001, ¶¶ 103-105. Mr. Kodama's Declaration on how Lee might be modified to accommodate Gilbert's bulb offers no more than what the Petition provides in paragraph 56. See Ex. 1003, ¶ 116. Therefore, Mr. Kodama's conclusory statements should be entitled to little to no weight. *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9, p. 15 (Aug. 24, 2022) (Precedential).

Moreover, Gilbert's bulb requires that the bulb's end make contact with the battery and be mounted within a socket. Ex. 1004, 2:46-50, 2:61-66 ("the bulb 36 [is] mounted to the socket 30 while the mouthpiece 24 is detached from the tube 15"...the bulb 36 includes a screw plug 37 that makes direct contact with the battery contact 38). Therefore, any attempt to incorporate Gilbert's bulb into Lee, assuming it is possible, would require a significant modification or redesign of Lee to include, amongst other things, an attachment socket to affix the bulb in contact with the

battery. Ex. 2001, ¶ 104. Therefore, in considering a modification of Lee, a POSITA would have been dissuaded from including Gilbert’s bulb in the Lee device. Thereby rendering the combination non-obvious. *Cargill v. Bunge Lodgers Croklaan USA, LLC*, IPR2024-01360, Paper 18, p. 4 (“obviousness concerns whether a skilled artisan not only could have made but would have been motivated to make the combinations or modifications of prior art to arrive at the claimed invention.”)

ii. The Petition fails to show that a POSITA would have found it obvious to implement the convective heating element of Levin in the Lee device, which heats by conduction

Levin discloses “[c]onduction can cause uneven heat distributions, undesirable overheating of the substance to be vaporized, and/or “caking” or “baking” of the substance on the conductive material that often results in build-up of the “caked” substance requiring cleaning or replacement of the heating component.” Ex. 1009, ¶ [0035]. Consequently, “[v]aporizing a selected substance using convection and radiation, in accordance with various embodiments of the present invention, has significant advantages over vaporization methods used in conventional devices...[that] utilize conduction, either as a primary or a secondary heating method. *Id.*

Despite Levin’s express teachings dissuading a POSITA from the utilization of conduction devices because of their significant drawbacks, Petitioner argues that it would have been obvious for one of ordinary skill to combine the heating elements of Levin with the Lee device. Pet. 59. This is not so, as Levin specifically

discourages the use of a conductive heating device as being inferior to the significant advantages of using convection and radiation. *Deere & Co. v David's Dozer V-Loc System, Inc.*, IPR2024-01442, Paper 10, p. 10 (“a sufficient reason to combine reference teachings is absent, if a reference teaches away from its combination...”). “A reference teaches away from a combination, if ‘a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.’” *Id.* (citing *In re Gurly*, 27 F.3d 551, 553 (Fed. Cir. 1994)). As such, Levin discourages modifying Lee with a bulb that makes contact with a fluid substance.

Moreover, the heating element² taught by Levin is a micro-convection heater that includes a heating coil and a reflector, designed to rapidly heat the air passing over and through it. Ex. 1009, ¶ [0049]. Levin’s heating element is therefore not designed or otherwise configured to rapidly heat fluid making contact with the bulb.

² “In an example embodiment, such as that shown in **FIG. 3B**, the device includes a heating unit comprising a heating element 51, such as a coil, and a reflector 52, distal of the coil so as to reflect and direct radiant heat so as to increase the efficiency of heating the air drawn through the device. The heating element may be a Nickel Chromium alloy wire, which may be miniaturized and optimized for maximum surface area and minimized mass, or may be a heater bulb, such as a Tungsten filament in quartz bulb... **In the example embodiment of FIG. 3B, the heating unit is a micro-convection heater** that rapidly dissipates heat into the air passing over and through it and includes a sculpted reflector 52 distal of the heating element to reflect heat, increasing heating efficiency and further shortening lag time in heating the air to a temperature suitable for vaporization of the selected substance.” Ex. 1009, ¶ [0049].

Id. at ¶ [0035]. Therefore, a POSITA would not have been motivated to combine Lee's nichrome wire wrapped around a fiber rod with a micro-convection heater and radiator that is not meant or otherwise designed to make direct contact with a fiber rod or the substance being heated as required by claim 1 of the '788 patent. Ex. 2001, ¶ 112.

Despite Levin's express teachings to the contrary, Petitioner alleges that a POSITA would have nevertheless been persuaded and motivated to combine Levin's heating element, designed for convection and radiation, with Lee's heating nichrome wire, which heats by conduction. Pet. 59. There are at least two reasons why the proposed combination is improper.

First, the inclusion of a bulb encapsulating the nichrome wire taught in Lee would also encapsulate the fiber assembly that is supplying the nicotine solution from the fluid container. Ex. 2001, ¶ 113 (citing to Ex. 1005 at ¶ [0028]). Any attempt to encapsulate the nichrome wire of Lee would result in the device becoming non-functional. *Id.* The proposed modification would prevent the nicotine solution from the fluid container from reaching the heating bulb that encapsulates the fiber rod traversing the nichrome wire. *Id.* A POSITA might wish to design around this difficulty. One way of doing so would be to uncouple the fiber assembly from the heating element. *Id.* at ¶¶ 111-115. This approach, however, would require a substantial reconstruction of Lee. *Id.* As such, such approach would not render the

Patent Owner's claim obvious. *Microsoft Corp. v. Philips*, IPR2018-00185, Paper 7, p. 12 (citing *In re Ratti*, 270 F.2d 810, 813 (C.C.P.A. 1959)) (if there is a substantial reconstruction and redesign of the elements of the prior art, as well as a change in the basic principles under which the prior art reference construction was designed to operate, the proposed combination is not obvious).

Secondly, Petitioner's reasoning for the combination of Lee and Gilbert or Lee and Levin is misguided and inadequately supported by Mr. Kodama, who states that a POSITA would have been naturally inclined at the time of filing to explore alternative heating-conducting materials that were safe when heated to temperatures required for vaporization, "and an obvious material would have been glass." Ex. 1003, ¶ 117. To begin,¹ the Petition cites paragraphs 116-119 of Mr. Kodama's Declaration in support of its basis for modifying Lee. The declaration paragraphs, however, are conclusory in nature and are nothing more than a copy of the corresponding Petition paragraphs. "Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight." 37 C.F.R. § 42.65(a); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9, p. 15 (Aug. 24, 2022) (Precedential) ("[T]he cited declaration testimony is conclusory and unsupported, adds little to the conclusory assertion for which it is offered to support, and is entitled to little weight.").

Next, Mr. Kodama cites three online web sources in his declaration supporting

his position and concludes that “users were concerned with possible inhalation risks and metallic taste issues with the use of metal wire heating elements much earlier... and a glass covered heating element would have solved these issues as well.”. *Id.* at ¶ 118. Mr. Kodama’s support references, however, which form the basis of his opinion, do not amount to prior art as they were unavailable at the time of the invention,³ and cannot be used as a basis to support the proposition that a POSITA at the time of filing would have used those motivating factors as motivation to combine Lee with Levin. Indeed, none of the online sources Mr. Kodama references suggest, teach, or otherwise discuss the utilization of a bulb in lieu of a wire.

The first reference Mr. Kodama cites is a 2016 NIH (National Institute of Health) publication (<https://pubmed.ncbi.nlm.nih.gov/27810679/>) (the “Rule Publication”), which was published approximately 3 years after the priority date of the ‘788 Patent. Ex. 1003, ¶ 118; Ex. 2004. The Rule Publication, however, does not discuss or otherwise inform a POSITA about the utilization of a heating bulb in lieu of a wire as a motivating factor to combine Lee with Levin. A fact that Mr. Kodama himself affirms despite his limited review of the Rule Publication.

³ Whether particular subject matter can be considered prior art for the purpose of making an obviousness determination under § 103 is defined by the various subparts of § 102. *Riverwood Int’l Corp. v. R.A. Jones & Co.*, 324 F.3d 1346, 1354 (Fed. Cir. 2003) (“The term ‘prior art’ as used in section 103 refers at least to the statutory material named in 35 U.S.C. § 102.”). Section § 102 states, *inter alia*, that subject matter is prior art if it was in public use, on sale, described in a prior patent, or described in a printed publication more than one year before the filing date of the application describing the claimed invention in question. 35 U.S.C. § 102.

Q: Did you actually review the entire journal article to which this abstract relates?

A: No.

Q: And you would agree that nothing in that text relates to or references a glass covered heating bulb or any sort of covered heating element?

A: **There's nothing on this page that discusses the construction of the e-cigarette.**

Q: And having not reviewed the entire journal article, **you don't have any reason to believe that anything in the journal article relates to glass heating bulbs or covered coils?**

A: **No. I don't know one way or the other, no.**

Deposition of Kelly Kodama, May 30, 2025, 18:9-19:1 (Ex. 2003).

The second reference concerns a Reddit forum discussing the utilization of wires (https://www.reddit.com/r/electronic_cigarette/comments/2jsbdc/dangers_of_nichrome)(the "Reddit Forum"). Ex. 2005. The Reddit Forum was available to the public as of 2014, which postdates the priority date of the '788 Patent by at least a year.⁴ Despite the Reddit Forum not being prior art, the reference itself does not support Mr. Kodama's position that a POSITA at the time of the '788 Patent was looking to replace the nichrome wire of Lee with a bulb. A fact that Mr. Kodama himself admits:

Q: Would you agree that nothing in the Reddit thread describes the use of a bulb or a covered coil for an e-cigarette?

A: I didn't see the words "bulb" in the Reddit thread.

Q: Would you agree there's nothing in the Reddit post related to covering the coil or the heating wire?

A: **I don't believe there's a discussion about covering the heating**

⁴ The '788 Patent has a priority filing date of March 15, 2013.

wire.

Ex. 2003, 24:24-25:7

Finally, the third publication Mr. Kodama relies upon for his opinion that a POSITA would have been motivated to combine Lee with Levin is a forum on the use of a nichrome wire versus a kanthal wire (<https://vapingunderground.com/threads/new-builder-kanthal-vs-nichrome-help-i-don't-understand.226/>) (the “Underground Forum”). Ex. 2006. The Underground Forum is defective as prior art and cannot be used to evidence a POSITA’s motivation to combine – just like the Reddit Forum and the Rule Publication – because it postdates the ‘788 Patent, having a publication date of June 4, 2014. In addition, the Underground Forum is devoid of any discussion regarding the replacement of a wire with a bulb. A fact that Mr. Kodama also admits.

Q: And looking at the Vaping Underground thread, would you agree that there’s nothing in that thread discussing the use of a glass bulb or a covered coil?

A: There was a mention of some[one] being a glass blower, but I don’t think that was related to a glass bulb.

Q: You would agree that nothing there is referring to a glass bulb heater for an e-cigarette, right?

A: Correct.

Ex. 2003, 25:8-13, 26:3-5.

In addition to there being no motivation to modify Lee with the micro-convection heater described in Levin, Petitioner fails to address “how” Lee might be modified to include the heating element 51 and the cone-shaped reflector 52

described in Levin. Ex. 1009, ¶ [0087]. As discussed above, the combination would either render Lee inoperable or require a significant reconstruction and/or redesign of the Lee device. Ex. 2001, ¶¶ 106-115. To this end, Petitioner's brief is devoid of any explanation or justification for how the combination of Levin's micro convection heater and cone-shaped reflector might work with Lee's fiber rod traversing its nichrome wire conductive heating design. *In re Kahn*, 441 F.3d 977, 986 (Fed. Cir. 2006) (“[M]ere identification in the prior art of each element is insufficient to defeat the patentability of the combined subject matter as a whole”). Weigensberg does not cure any of the foregoing deficiencies of Lee, Gilbert, and Levin.

Because there is no basis to support the purported allegation that Lee, either alone or in combination with Gilbert or Levin teaches all of the elements of claim 1 of the '788 Patent, and because a POSITA would not have been motivated to modify Lee with either Gilbert or Levin, the Petitioner has failed to carry its burden to set forth a *prima facie* case of obviousness that Lee in view of Gilbert or Levin renders claim 1 of the '788 Patent obvious.

D. Ground 2b: Reynolds Fails to Demonstrate Lee, Gilbert, Levin, and Weigensberg in Combination Renders Obvious Claims 7 and 8.

For the reasons set forth above, the Petition fails to set forth a *prima facie* case of obviousness. Accordingly, Petitioner has failed to carry its burden that Lee, either alone or in combination with Levin or Gilbert renders claim 1 of the '788 Patent

obvious. Therefore, dependent claims 7 and 8, which depend directly or indirectly from independent claim 1, are also not obvious.

VIII. CONCLUSION

For the reasons stated herein, Petitioner fails to carry its burden to demonstrate that any of the challenged claims are unpatentable.

Dated: June 18, 2025

Respectfully submitted,

/Geoffrey Lottenberg/

Geoffrey Lottenberg

Reg. No. 65,925

BERGER SINGERMANN LLP

201 East Las Olas Blvd

Suite 1500

Fort Lauderdale, FL 33301

glottenberg@bergersingerman.com

Telephone: (954) 712-5158

CERTIFICATE OF SERVICE

I hereby certify that on June 18, 2025, a true and correct copy of the foregoing PATENT OWNER RESPONSE UNDER 37 C.F.R. §42.120 was served on counsel of record for Petitioner by filing this document through the P-TACTS System as well as delivering a copy via electronic mail to the following addresses on the service list.

/Geoffrey Lottenberg/
Geoffrey Lottenberg

SERVICE LIST

John A. Marlott
JONES DAY
110 N. Wacker Dr., Suite 4800
Chicago, IL 60606
jamarlott@jonesday.com

David M. Maiorana
Kenneth S. Luchesi
JONES DAY
901 Lakeside Ave., North Point
Cleveland, OH 44114
dmaiorana@jonesday.com
kluchesi@jonesday.com

Joshua R. Nightingale
JONES DAY
500 Grant Street, Suite 4500
Pittsburgh, PA 15219
jrnightingale@jonesday.com

CERTIFICATE OF WORD COUNT UNDER 37 C.F.R. § 42.24(b)

Pursuant to 37 C.F.R. § 42.24(b)(2), I hereby certify that the foregoing Patent Owner Response contains 9459 words, as measured by the Word Count function of Microsoft Word for Microsoft 365. This is less than the limit of 14,000 words as specified by 37 C.F.R. § 42.24(b)(2).

/Geoffrey Lottenberg/
Geoffrey Lottenberg
Reg. No. 65,925
BERGER SINGERMANN LLP
201 East Las Olas Blvd.
Suite 1500
Fort Lauderdale, FL 33301
Lead Counsel for Patent Owner