

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

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

DECLARATION OF KELLY R. KODAMA
IN SUPPORT OF PETITIONER'S REPLY

I declare that all statements made herein on my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

By: 
Kelly R. Kodama

I, Kelly Kodama, do hereby declare:

1. My name is Kelly Kodama. My opinions, as set forth herein, are based on my education and background in the fields discussed below.

2. I am making this declaration at the request of R.J. Reynolds Vapor Company (“Petitioner”) in the matter of the Inter Partes Review (“IPR”) of U.S. Patent No. 9,538,788 (“’788 Patent”). I have been asked to offer my opinions generally regarding the validity of the ’788 Patent.

3. My qualifications were set forth in my original declaration (EX1003, 2-5) and in my CV (EX1008).

4. I explained why claims 1, 7-8, and 11 the ’788 Patent would have been unpatentable in view of Gilbert, Lee, Cohen, and/or Weigensberg in my original declaration, including the underlying legal principles. *See* EX1003.

5. I understand from counsel that Patent Owner disagreed with some of my conclusions. Counsel asked me to opine on certain specific topics, and I do so in the following paragraphs.

6. In preparing this Declaration, I considered the materials identified in my original declaration, as well as the Institution Decision, the Patent Owner Response, and all exhibits cited therein, including the Declaration of Charles Garriss (EX2002), and the transcript of the August 29, 2025 deposition of Dr. Garriss.

7. For purposes of this Declaration, unless otherwise noted, my statements and opinions below reflect the perspective of a person of ordinary skill in the art (“POSA”) as of and prior to March 15, 2013, with respect to the ’788 Patent.

8. I summarized the ’788 Patent, as well as the scope and content of the prior art, in my original declaration, at ¶¶ 20-77.

I. ANALYSIS OF PRIOR ART

A. Claims 1 and 11: Gilbert in View of Cohen

(a) Element 1c: “a fluid containing member located in the second chamber”

9. I understand that HCMC contends that Gilbert does not disclose “a fluid containing member located in the second chamber.” Specifically, I understand that HCMC argues that the Petition’s identification of the first and second chambers is erroneous and inconsistent with Gilbert’s identification of “relatively short and substantially longer chambers” of tube 15. I disagree.

10. HCMC argues that Gilbert does not disclose the claimed “fluid containing member located in the second chamber” when the first and second chambers are defined in the manner described by Gilbert. But HCMC’s focus on Gilbert’s use of the term “chamber” is the incorrect approach. It is my understanding that the relevant question is whether a POSA would understand that Gilbert’s tube 15 is a “chamber” under that term’s plain and ordinary meaning in the context of the ’788 Patent. It is my opinion that the answer is yes.

11. As Reynolds acknowledged in the Petition, Gilbert does describe dividing tube 15 into additional, smaller chambers (Pet., 39n.4), but this does not mean that tube 15 itself is not also a chamber. A POSA would have understood that chambers, both generally and in the context of the '788 Patent, could also have sub-chambers. And nothing in the specification of the '788 Patent precludes this, or would lead a POSA to believe otherwise.

12. Further, I understand that at deposition, Dr. Garris stated that the common and ordinary meaning of the term “chamber,” in the context of the '788 patent, is an enclosure. Transcript at 29:7-11. I agree with Dr. Garris that the plain and ordinary meaning of the term “chamber” in the '788 patent is an enclosure, and I further agree with him that the '788 patent's chambers need not be enclosed on all sides. Transcript at 31:9-16. Gilbert's tube 15 is an enclosure having an open interior for enclosing components of the e-cigarette, and the tube 15 is therefore a “chamber,” as claimed.

13. For these reasons, it is my opinion that, in the context of the '788 Patent, a POSA would understand Gilbert's tube 15, in its entirety, to constitute the claimed “second chamber.”

(b) Element 1g: “a sealing element forming a partition between the first and second chambers”

14. I understand that HCMC argues that Gilbert does not disclose the limitation of “a sealing element forming a partition between the first and second

chambers.” While HCMC made a number of arguments for this limitation, counsel asked me to opine on only certain ones, which I do so below.

15. First, I disagree with Dr. Garris’s argument that Gilbert’s “bulb cannot be disposed of in separate chambers.” Garris Decl., ¶78. As Dr. Garris recognized at deposition, the claim language does not require the heating assembly to be located entirely within the second chamber. Transcript at 67:7-15. I understand that Dr. Garris pointed to claim limitation 1f and argued that this limitation supports his position that the bulb must be located exclusively in the second chamber. Transcript at 67:16-68:18. Limitation 1f recites: “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.”

16. I disagree with Dr. Garris. Limitation 1f includes no language requiring the heating assembly or its bulb to be located exclusively in the second chamber. Even when the heating assembly includes portions located in both chambers, the second distal end of the tube element can still be “affixed to the bulb,” as required by limitation 1f.

17. I understand that Dr. Garris further testified that “it wouldn't be proper design” to have the heating element in the first chamber because this “would tend to

heat up the battery and all of the electronics, and it wouldn't make any sense.” Transcript at 68:19-24. I disagree. Claim 1 of the '788 patent does not recite any electronics located in the first chamber, so Dr. Garriss's concern about heating up electronics is not valid. Further, Gilbert shows that having a portion of the heating assembly in the first chamber does not necessarily cause problematic heating of the battery. In Gilbert, only a small portion of the heating assembly, mostly the socket 30, is present in the mouthpiece constituting the first chamber. The rest of Gilbert's heating assembly is located in the second chamber, and this is where the majority of the heating occurs. Accordingly, Gilbert's battery 32 is not adversely affected by the presence of a small portion of the heating assembly in the mouthpiece. Additionally, the typical heater in an e-cigarette device ideally concentrates the heat only where necessary (i.e. where vaporization occurs) in order to minimize power usage, thereby maximizing battery life, and preventing the outer enclosure of the device from getting hot enough to potentially burn or damage a user's hand. Consequently, there is typically very little extraneous heat generated by an e-cigarette heater, so damage to electronics or the battery would not be possible during normal operation. A good example of this is the JUUL cartridge which I worked on at Ploom, which contains a coiled wire heater similar to that shown in Figure 3 of the '788 patent and Figure 1c of the Lee patent in close proximity to the

gold electrical contacts and the plastic cartridge housing. The plastic cartridge suffers no damage from the heater during normal operation.



(c) Element 1h: “an air inlet provided on an external wall of the casing”

18. Next, I understand that HCMC argues that Gilbert does not disclose the limitation of “an air inlet provided on an external wall of the casing.” Specifically, I understand that HCMC argues that Reynolds and I have identified the passages 21 of the cartridge 20 as the claimed “air inlet.” I further understand that the Board stated: “We have concerns with Petitioner’s contention as to limitation

[1h].... In view of Gilbert’s disclosure that its flavor cartridge is a separate unit of the cigarette and not part of the outer end portion of its external tube, the airflow passages in the flavor cartridge are not provided on the end portion of Gilbert’s external tube.” Institution Decision at 19. Respectfully, this was not my argument, and I therefore disagree.

19. To clarify my prior position, my opinion is that the large opening at the leftmost portion of tube 15, where the cartridge is inserted, constitutes the claimed “air inlet.” An image clarifying my position is provided below:



Gilbert, Figure 7 (“Air inlet” annotation added).

20. This is consistent with my prior declaration, where I distinguished between (i) the air inlets of the cartridge 20, and (ii) the external wall of the casing through which the air inlets would open, referring to them separately. EX1003, ¶ 97 (“The air inlets are shown in annotated Figure 2 below, and would open to the ambient air through the external wall of the casing.”). Although my declaration identified three air inlets by annotation, I did not expressly identify “passages 21” as the claimed “air inlet.” Rather, I identified these air inlets of cartridge 20 as passages that “open to the ambient air through the external wall of the casing.” In other words,

they open to the ambient air through an opening (the claimed “air inlet”) of the casing’s external wall.

21. Indeed, in order for the device to work properly, the Gilbert device must have an opening to the ambient air through an external wall of the casing; in other words, it must have an air inlet on the external wall of the casing. Otherwise air could not enter the device and it would not work properly.

22. I understand that at deposition, Dr. Garris stated that the term “air inlet” should be interpreted as an “opening that allows air to come into the e-cigarette.” Transcript at 35:19-22. I agree with this statement, and I further agree with Dr. Garris that the ’788 patent does not impose any restrictions on the size of the air inlet. Transcript at 35:23-36:4. Because the opening at the leftmost portion of tube 15 is an “opening that allows air to come into [Gilbert’s] e-cigarette,” this further supports my opinion that it discloses the claimed “air inlet.”

23. Finally, I understand that HCMC argues that Gilbert does not include the claimed “air inlet” because such an air inlet would “allow the tumbling air around the heat source to escape and/or not heat up.” I disagree. As Gilbert’s air inlet is positioned at the leftmost end of the tube 15, separated from the portion of the chamber where the air/fluid mixture makes contact with the heat source, none of the heated air will escape through the air inlet. Indeed, when the air/fluid mixture is being heated, a user is inhaling from the opposite side of the device, and as Gilbert

explains, this air will pass into the heating chamber, around the heating bulb, and will ultimately pass through the mouthpiece into the user's mouth. EX1004, 3:9-18. Therefore, no heated or flavored air will escape through the air inlet. In addition, every e-cigarette and vaporizer currently on the market to my knowledge necessarily has an external air inlet in order to operate effectively, both to properly activate a pressure-sensor or some other mechanism that triggers power to flow to the heater, and to allow the user to inhale the vapor in a manner similar to a real cigarette.

(d) Element 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.”

24. I understand that HCMC argues that Gilbert does not disclose that “the bulb heats fluid introduced to and coming in contact with the bulb through the fluid passageway.” I disagree.

25. As I explained previously in my original declaration, Gilbert discloses that the air mixed with the flavoring material “passes into the heating chamber and is caused to flow around the heating bulb 36.” *Id.* at 3:12-15. Gilbert explains that an object of this invention is to “circulat[e] the fluid around the heating element in a turbulent manner to suitably raise the temperature of the inhalent mixture.” *Id.* at 1:23-29. Therefore, as I also explained previously, the device described in Gilbert allows a user to inhale on the device, causing external air flowing into the device to capture fluid stored inside the device in a detachable flavor cartridge, and the

air/fluid combination then contacts the bulb and gets heated up before being inhaled by the user. I explained that the Gilbert fluid, which is part of the “inhalant [sic] mixture,” has its “temperature” “raise[d]” as it contacts the bulb. EX1003, ¶¶ 48, 88, 98-99. I understand that HCMC did not address these disclosures in Gilbert or my related opinions.

26. I understand that HCMC argues that the fluid in Gilbert is heated only via convection, not conduction. I disagree. As molecules of the inhalant mixture directly contact the bulb, those molecules are heated by the bulb through conduction. Convection would also occur as the molecules that contact the bulb heat up and transfer their heat (energy) to molecules in the mixture that are not contacting the bulb at that time, but this occurs in combination with conduction heating. A simple analogy is a pot of water on the stove. The water molecules that are in contact with the hot pot heat up through conduction, and as the heated molecules move around, they also transfer energy to other water molecules through convection. Eventually all of the water molecules reach the same energy state (*i.e.*, boiling).

27. Additionally, Gilbert specifies that the fluid should be circulated in a “turbulent manner” to raise the temperature of the fluid. The turbulent nature of the circulation is to maximize the potential for the inhalant mixture to make direct contact with the heater. One other detail to note is the large size of the bulb shown in Gilbert figures 2 and 10 that is designed to “provide an elongated heating passage

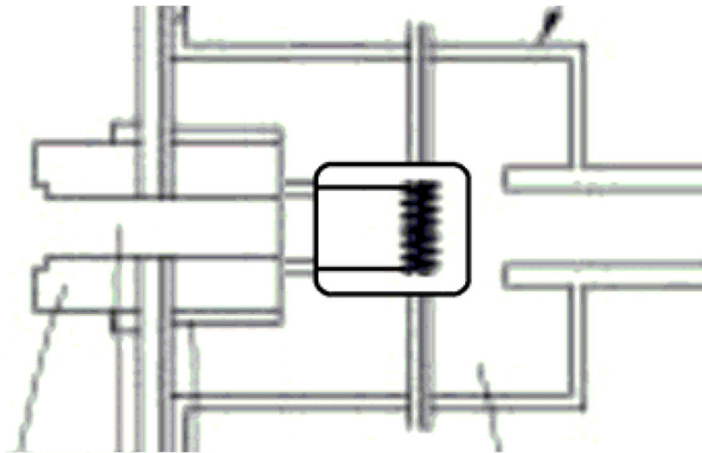
throughout the length of the bulb and around the complete circumference of the bulb 36.” (Gilbert 52-54) A POSA would readily interpret this as intending to maximize the contact surface area between fluid and heater in order to better facilitate conduction heating.

B. Claims 1 and 11: Lee In View Of Gilbert and Levin

- (a) Element 1d: “a heating assembly located in the second chamber, the heating assembly comprising a bulb containing a heating wire in communication with the battery;”**

28. I understand that HCMC contends that it would not have been obvious to a POSA to combine a heating bulb with the device described in Lee. First, I would note that I have personally been involved in the design of vaporizers and e-cigarettes during the course of my career, and one of the options that we considered while working at Ploom—specifically in the context of prolonging heater life and avoiding dry hits—was a bulb surrounding a wire heater. While the prototype was intended to vaporize solid cannabis material via a halogen light bulb, the goal and intent was similar to what a POSA would propose for replacing an exposed wire heater with a wire heater enclosed inside a glass bulb on an e-cigarette. While this work occurred in late 2013 and early 2014, it is reflective of the knowledge of the POSA at the relevant time, and the skilled artisan would have more than likely been addressing the same considerations earlier in 2013, at the time of filing of the ’788 Patent.

29. Next, I understand that HCMC contends that in the proposed modification, the device would be non-functional because the fiber rod would be encapsulated within the bulb. The combination that I proposed, however, did not include encapsulating the fiber rod inside the bulb. As can be seen in the figure that I provided on page 62/paragraph 118 of my original declaration, the fiber rod extends to, and makes contact with, the outside of the bulb, thus putting the fluid into direct contact with the bulb, with no part of the fiber rod residing inside the bulb.



30. While this demonstrates one method in which this could be accomplished, a POSA would understand that there are a number of other simple ways that the fluid would be put into contact with the bulb, all of which would be easily implemented by a POSA. For example, the fiber rod could be a tube shape that encapsulates the bulb; the rod could wrap around the bulb in a spiral; or the rod could be in-line and touching the bulb, all of which would allow a large amount of surface contact between the fluid-carrying fiber rod and the bulb heater, and easily fit within the confines of a typical e-cigarette device.

31. A POSA would have understood that these modifications are an elementary swapping of one heater configuration for another, and it would have been well within the POSA's skill to address these types of minor implementation details.

32. Finally, I understand that Dr. Garris contends that the conductive heating described in Levin is only used to vaporize dry matter broken down by a grinder, not fluid. Dr. Garris's analysis is incorrect. In the described embodiment, the mesh is heated by the bulb heater through conduction, and the contents of the grinder are in contact with the mesh and therefore also heated through conduction. The fact that there is an intermediary component (the mesh) between the bulb heater and contents does not change the fact that the heating method is via conduction.

33. Additionally, Levin also discloses that in some embodiments, its grinder holds liquids, such that when “the bulb heater is disposed in the grinding cavity ... to contact the contents of the grinder,” the bulb heater is in contact with liquid to vaporize it. EX1009, ¶¶58, 12 (“a cartridge containing a liquid vaporizing solution ... may be placed directly into the grinding cavity”). Levin also discloses that its bulb heater may be “included in a device without a grinding chamber” (*id.*, ¶58), and Levin describes vaporizing a “wide variety of substances,” including liquids. *Id.*, Abstract, ¶¶36-38, 42.