

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NJOY, LLC, and NJOY HOLDINGS, INC.,
Petitioner,

v.

JUUL LABS, INC.,
Patent Owner.

IPR2024-00223
Patent 10,709,173 B2

Before, KRISTINA M. KALAN, KIMBERLY McGRAW, and
AVELYN M. ROSS, *Administrative Patent Judges*.

ROSS, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

NJOY, LLC and NJOY Holdings, Inc. (collectively, “Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–4, 6, 7, 15, 16, 18–25, 28, and 30 of U.S. Patent No. 10,709,173 B2 (Ex. 1001, “the ’173 patent”). JUUL Labs, Inc. (“Patent Owner”) filed a Preliminary Response to the Petition. Paper 7 (“Prelim. Resp.”). With our permission (Ex. 3001), Petitioner filed a Reply (Paper 11, “Reply”), and Patent Owner filed a Sur-reply (Paper 13, “Sur-reply”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2023). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless the Director determines . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least [one] of the claims challenged in the petition.”

For the reasons set forth below, upon considering the Petition, the Preliminary Response, the Reply, the Sur-reply, and evidence of record, we determine that Petitioner does not demonstrate a reasonable likelihood that it would prevail with respect to its challenge to at least one of the claims challenged in the Petition.

A. *Real Parties-in-Interest*

Petitioner identifies itself, as well as Altria Group, Inc., Altria Group Distribution Company, Altria Client Services LLC, and Shenzhen Smoore Technology Limited, as the real parties-in-interest. Pet. 1.

Patent Owner identifies itself as the real party-in-interest. Paper 5 (Patent Owner’s Mandatory Notices), 2.

B. Related Proceedings

The parties identify the following as related proceedings: (1) *Certain Vaporizer Devices, Cartridges Used Therewith, and Components Thereof*, 337-TA-1368 (ITC), and (2) *JUUL Labs, Inc. v. NJOY, LLC et al.*, 23-cv-01204 (D. Ariz.). Pet. 1; Paper 5, 2.

Patent Owner also identifies as related matters three additional petitions filed by Petitioner, which Petitioner indicated it planned to file: IPR2024-00231, IPR2024-00267, and IPR2024-00268. Pet. 1; Paper 5, 2.

C. The '173 patent

The '173 patent, titled "Vaporizer Apparatus," issued July 14, 2020. Ex. 1001, codes (45), (54). The '173 patent relates to vaporizers, such as electronic inhalable aerosol devices, or "vaping" devices, with compact cartridges that can be quickly inserted into, and released from, a vaporizer. *Id.* at 1:48–57. The '173 patent explains that though non-circular cross-sections of these devices may have advantages, such as to prevent rolling when set on a surface, this configuration may "cause instability in the electrical contacts, particularly with cartridges of greater than 1 cm length." *Id.* at 2:6–22. The patent also explains that:

there may be difficulties in determining the amount of vaporizable material within the cartridge, sufficiently cooling or otherwise processing the vapor generated by a heater located in the cartridge, and easily and quickly securing the cartridge into the vaporizer when force may be applied by a user's mouth at the proximal mouthpiece when a user holds the device either just by the mouth or using the mouth at the proximal end and a hand on the more distal body of the vaporizer.

Id. at 2:23–31.

Figure 7B, reproduced below, is an isometric exploded view diagram of an embodiment of the '173 patent.

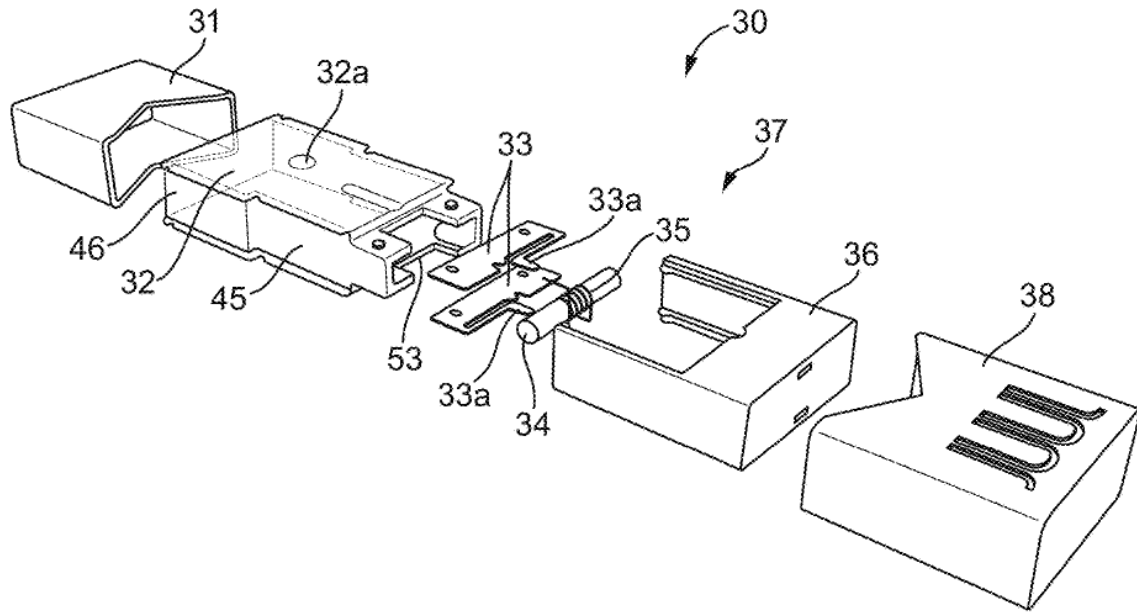


Figure 7B shows cartridge 30, to which mouthpiece 31 and protective cap 38 can be affixed. Ex. 1001, 35:36–38; 37:66–38:3. Cartridge 30 includes fluid storage compartment 32, heater contacts 33, fluid wick 34, resistive heating element 35, heater 36, heater chamber 37, condensation channel/chamber 45, and open-sided end 53. *Id.* at 34:25–35:9.

D. Illustrative Claims

Petitioner challenges claims 1–4, 6, 7, 15, 16, 18–25, 28, and 30 of the '173 patent. Independent claim 1 is representative of the challenged claims and is reproduced below.

1. An apparatus comprising:

a cartridge comprising a mouthpiece, a storage compartment configured to hold a vaporizable material, and a heater chamber comprising a resistive heating element configured to heat the vaporizable material, wherein the heating of the vaporizable material generates an aerosol comprising the vaporizable material and air passing along an airflow path; and

a body comprising a receptacle configured to insertably receive and couple to the cartridge, wherein the heater chamber is

disposed within the receptacle when the receptacle insertably receives and couples to the cartridge,

wherein the airflow path comprises:

an air inlet passage having a first side formed by an exterior surface of the cartridge and a second side formed by an internal surface of the receptacle when the receptacle insertably receives and couples to the cartridge, wherein the air inlet passage is configured to deliver the air to the heater chamber; and

a fluid connection in the cartridge, the fluid connection connecting the heater chamber and the mouthpiece.

Ex. 1001, 55:28–49.

E. The Asserted Unpatentability Challenges

Petitioner asserts that claims 1–4, 6, 7, 15, 16, 18–25, 28, and 30 would have been unpatentable based on the following grounds:

Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)/Basis
1–4, 6, 7, 15, 16, 18–25, 28, 30	103	Verleur ² , knowledge of a person of ordinary skill in the art
2, 4, 21, 23	103	Verleur, knowledge of a person of ordinary skill in the art, Plojoux ³

Pet. 5. Petitioner also relies on declaration testimony of Dr. William Singhose, Ph.D. (Ex. 1003). Patent Owner relies on declaration testimony of Dr. John Collins, Ph.D. (Ex. 2001).

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because applications from which the ’173 patent claims priority were filed before this date, the pre-AIA version of § 103 applies.

² U.S. Patent Pub. No. 2015/0128971 A1, published May 14, 2015 (Ex. 1005, “Verleur”).

³ WO 2013/076098 A2, published May 30, 2013 (Ex. 1016, “Plojoux”).

II. ANALYSIS

A. *Principles of Law*

“In an IPR [(*inter partes* review)], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (2012) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to the patent owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review). Furthermore, a petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

Obviousness is a question of law based on underlying determinations of fact. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966); *Richardson-Vicks, Inc. v. Upjohn Co.*, 122 F.3d 1476, 1479 (Fed. Cir. 1997). A claim is unpatentable as obvious, under 35 U.S.C. § 103, if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time of the invention to a person having ordinary skill in the art. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham*, 383 U.S. at 17–18. Consideration of the *Graham* factors “helps inform the ultimate obviousness determination.” *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016) (en

banc), *cert. denied*, 583 U.S. 963 (2017). To prevail in an *inter partes* review, Petitioner must explain how the proposed combinations of prior art would have rendered the challenged claims unpatentable. Subsumed within the *Graham* factors are the requirements that all claim limitations be found in the prior art references and that the skilled artisan would have had a reasonable expectation of success in combining the prior art references to achieve the claimed invention. *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1361 (Fed. Cir. 2007). “Obviousness does not require absolute predictability of success . . . all that is required is a reasonable expectation of success.” *In re O’Farrell*, 853 F.2d 894, 903–04 (Fed. Cir. 1988) (citations omitted).

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art would have at least a B.S. degree in Mechanical Engineering, Electrical Engineering, Industrial Design, Product Design, or similar field, with at least two years of industry experience in one of these fields, and such [person of ordinary skill in the art] would have been familiar with electrically powered vaporizing articles, their components, or the underlying technologies.

Pet. 5.

Patent Owner contends that a person of ordinary skill in the art “would have had a B.S. in mechanical engineering, electrical engineering, or an equivalent degree, and either at least two years of experience designing electro-mechanical consumer products or an advanced degree in mechanical engineering, electrical engineering, or an equivalent field.” Prelim. Resp. 4 (citing Ex. 2001 ¶ 19). Patent Owner also states that “Patent Owner’s

arguments herein apply regardless of which definition of a [person of ordinary skill in the art] is adopted.” *Id.* (citing Ex. 2001 ¶¶ 20–21).

On this record, we determine that Petitioner’s proposed definition is consistent with the prior art of record, and apply it for this Decision. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (explaining that specific findings on ordinary skill level are not required “where the prior art itself reflects an appropriate level and a need for testimony is not shown” (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985))).

C. Claim Construction

We construe claim terms according to the standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–17 (Fed. Cir. 2005) (en banc); 37 C.F.R. § 42.100(b). Under *Phillips*, we give claim terms “their ordinary and customary meaning.” *Phillips*, 415 F.3d at 1312. “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Id.* at 1313. “Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.*

Petitioner “contend[s] the term ‘mouthpiece’ means a ‘separate component from the storage compartment to be used by a mouth.’” Pet. 6. Petitioner additionally contends the construction of the term “is not material to the grounds in the Petition.” *Id.*

Patent Owner contends that the term “mouthpiece” “means ‘portion to be used by a mouth.’” Prelim. Resp. 5. Patent Owner additionally “agrees

with Petitioners that, at least in this preliminary stage, it is not necessary for the Board to resolve this construction.” *Id.*

For purposes of this Decision, we need not expressly construe any claim terms. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that “only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy”); *see also Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs.* in the context of an *inter partes* review).

D. Challenge Based on Verleur and Knowledge of a Person of Ordinary Skill in the Art

Petitioner alleges that Verleur in view of the knowledge of a person of ordinary skill in the art would have rendered obvious claims 1–4, 6, 7, 15, 16, 18–25, 28, and 30 of the ’173 patent. Pet. 13–70. Petitioner relies on the testimony of Dr. Singhose to support its arguments. *See id.*

1. Overview of Verleur (Ex. 1005)

Verleur is titled “Vaporizer,” and describes an electronic cigarette. Ex. 1005, code (54), ¶¶ 2, 5, 6. Figure 1, reproduced below, illustrates a side-view diagram of one of Verleur’s embodiments.

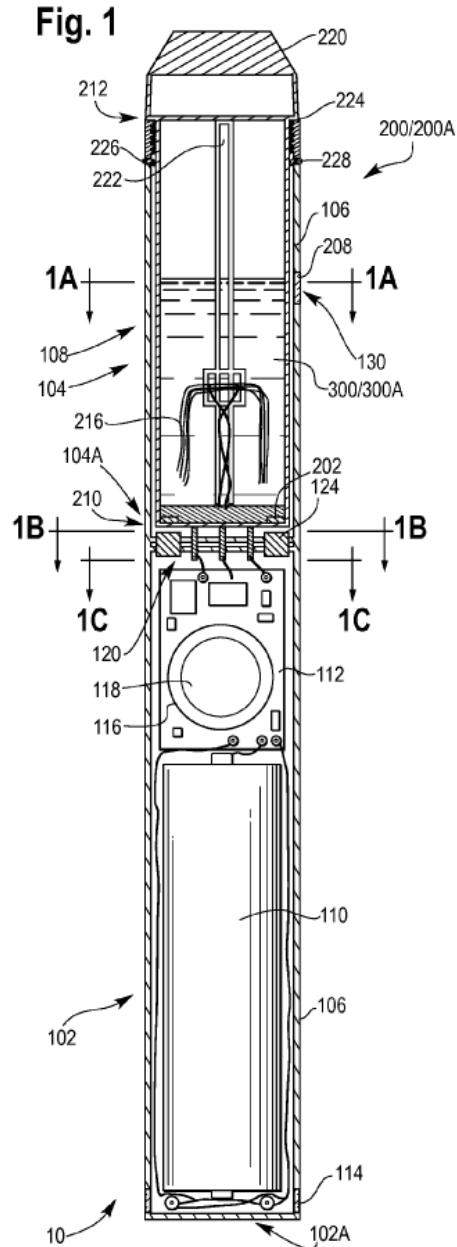


Figure 1 illustrates electronic cigarette 10, including cartomizer 200, vaporizable substance 300, battery housing segment 102, outer shell 106, cartomizer chamber 108, battery 110, printed circuit board 112, ring indicator 116, and activation button 118. *Id.* ¶¶ 30–32.

Verleur also discloses that an “electrical current may be transmitted to heating element 214 through circuitry in electrical communication with

electrical contacts, which contact pins 122 (see FIG. 1A) when cartomizer 200A is inserted into chamber 108.” *Id.* ¶ 39. Verleur further discloses:

Once fluid 300A is heated to an optimal vaporizing temperature, the user may inhale the vaporized fluid 300A through a mouthpiece 220 provided on body 208 at or proximate to mouthpiece end 212. The vaporized fluid may travel through an inhalation tube 222 in fluid connection with heating element 214 and wick 216. Inhalation tube 222 may also be in fluid communication with one or more holes or ducts provided, for instance, in sides of outer shell 106 in order to permit air flow through cartomizer body 208.

Id. Verleur further discloses that mouth piece 220 may be removable from body 208, so that a user can refill fluid 300A. *Id.* ¶ 40.

2. *Analysis of Claim 1*

Petitioner alleges that Verleur in view of the knowledge of a person of ordinary skill in the art renders claim 1 of the ’173 patent unpatentable as obvious. Pet. 13–37. Patent Owner argues Petitioner fails to demonstrate that Verleur in view of the knowledge of a person of ordinary skill in the art renders obvious

an air inlet passage having a first side formed by an exterior surface of the cartridge and a second side formed by an internal surface of the receptacle when the receptacle insertably receives and couples to the cartridge, wherein the air inlet passage is configured to deliver the air to the heater chamber.

Prelim. Resp. 6–26. Focusing our analysis on Patent Owner’s arguments about the disputed claim limitations, we direct our discussion below to the aforementioned claim limitations.

a) *Petitioner’s Allegations*

Petitioner maps the claimed “air inlet” to Verleur’s disclosure of air flowing into “one or more holes or ducts . . . in sides of outer shell 106.” Pet. 27–28 (citing Ex. 1003 ¶ 121; Ex. 1005 ¶ 39, Fig. 1; Ex. 1006 ¶¶ 29, 30,

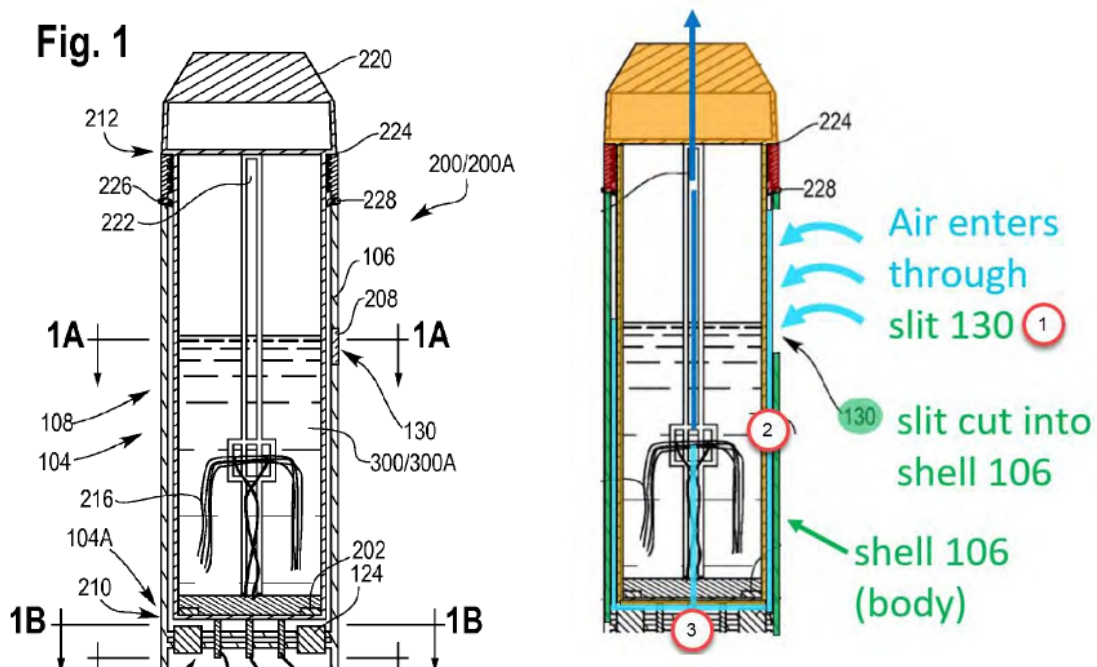
Fig. 1). Petitioner also contends that the outer shell 106 includes “window 130 [that] may provide the ‘one or more holes or ducts . . . to permit air flow through cartomizer body 208’ recited by Verleur.” *Id.* at 29–33 (citing Ex. 1003 ¶¶ 124–126; Ex. 1005 ¶¶ 37, 39, Fig. 1; Ex. 1006 ¶¶ 28–30, Figs. 1, 4–7) (second alteration in original). Petitioner also contends “[t]o the extent that window 130 is not a slit, but instead comprises glass or plastic, a hole would nonetheless be needed elsewhere in the shell to permit air into the gap between cartomizer 200/200A and outer shell 106.” *Id.* at 34 (citing Ex. 1003 ¶ 124; Ex. 1005 ¶ 39).

Petitioner maps the claimed “passage” to Verleur’s disclosure of a “gap [that] exists between cartomizer 200/200A and outer shell 106.” Pet. 27–30 (citing Ex. 1003 ¶¶ 121–122; Ex. 1005, Figs. 1, 1A; Ex. 1006, Figs. 1, 1A). Petitioner additionally contends, “[b]ecause the gap runs the length of the interface between cartomizer 200/200A and outer shell 106, a [person of ordinary skill in the art] would have recognized that the one or more holes or ducts could be provided anywhere along the length of the outer shell.” *Id.* at 35 (citing Ex. 1003 ¶¶ 121–123; Ex. 1017, 5:1–2).

Petitioner contends that Verleur discloses that the air inlet passage is “configured to deliver the air to the heater chamber” because “when a consumer inhales on mouthpiece 220, air is drawn in through the holes, ducts, or window slits on outer shell 106, passes heating element 214 within the heater chamber, and continues along inhalation tube 222 to exit mouthpiece 220.” Pet. 36–37 (citing Ex. 1005 ¶ 39; Ex. 1006 ¶ 30, Figs. 1, 4, 6).

b) Patent Owner's Arguments

Patent Owner argues that Petitioner asserts that Verleur discloses the disputed claim limitations, which Patent Owner argues are not present in Verleur. Prelim. Resp. 6–7 (citing Ex. 2001 ¶ 38). Patent Owner argues that Petitioner’s theories rely on three incorrect assumptions, and discusses each with reference to the upper portion of Verleur’s Figure 1 (left) and Petitioner’s modified Verleur Figure 1 (right), shown below.



Id. ¶ 39. Window 130 may be provided in shell 106 to permit the user to view cartomizer 200 when inserted in cartomizer chamber 108. *Id.* ¶ 37. Petitioner’s modified Figure 1 (right) modifies Verleur Figure 1 by removing window 130 and labeling it as “slit 130.” Pet. 34. Petitioner’s modified Figure 1 additionally includes an airflow channel (light blue), between shell 106 (green) and body 208 (orange), that flows down the interior sides of shell 106 (green), under cartomizer body 208 (orange), up through inhalation tube 222, and out mouthpiece 220 (bright orange). *Id.*

Patent Owner argues that Petitioner’s first incorrect assumption is that air enters through “slit 130,” which is described by Verleur as “window 130.” Prelim. Resp. 8 (citing Pet. 33; Ex. 2001 ¶ 42). Patent Owner argues that Petitioner’s second incorrect assumption is that there is a gap between Verleur’s shell 106 and cartomizer 200. *Id.* (citing Ex. 2001 ¶ 43). Patent Owner argues that Petitioner’s third incorrect assumption is that there is a hole for airflow from the gap into the cartomizer 200 (i.e., heating chamber). *Id.* at 9–10 (citing Ex. 2001 ¶ 44). Patent Owner argues that the three incorrect assumptions prevent Verleur from satisfying the requirements of the claim. *Id.* at 10–11, 25–26 (citing Ex. 2001 ¶¶ 40, 45, 71, 72).

(1) Verleur allegedly does not disclose that window 130 is an air inlet

Patent Owner argues that Verleur does not disclose that its window 130 is an air inlet and that an ordinary artisan would not understand it as such. Prelim. Resp. 11 (citing Ex. 2001 ¶ 46). Patent Owner argues that Verleur’s window 130 is for looking into the device, such as to view its internal components or fluid. *Id.* (citing Ex. 1005 ¶ 37; Ex. 2001 ¶ 42). Patent Owner, through the testimony of Dr. Collins, argues that Verleur’s window 130 does not require airflow through the cartomizer because

Verleur's device produces vapor in an enclosed space for the user to inhale directly. *Id.* at 11–13 (citing Ex. 1005 ¶¶ 27, 37; Ex. 2001 ¶¶ 48–49).

Patent Owner argues that while an ordinary artisan (and the inventors of the '173 patent) would have understood that the details of air inlets must be carefully considered, Petitioner does not argue obviousness and Verleur's window does not disclose an inlet. *Id.* at 11–14 (citing Ex. 2001 ¶¶ 50–52; Ex. 2023 ¶ 50). Patent Owner argues that an ordinary artisan would not expect air to enter through Verleur's window. *Id.* at 14–15 (citing Ex. 1005 ¶ 5; Ex. 2001 ¶ 53).

Patent Owner also contends that while Verleur discloses that its inhalation tube 222 is in fluid communication with holes or ducts, Verleur depicts that the window as a solid piece rather than a hole or duct, and Petitioner did not argue that it would be obvious for the window to be a hole or duct. Prelim. Resp. 15 (citing Ex. 1005 ¶ 39; Ex. 2001 ¶ 54). Patent Owner argues that because Verleur does not disclose where the holes or ducts would be located, an ordinary artisan would not understand where they are located. *Id.* at 15–16 (citing Pet. 35; Ex. 2001 ¶ 55). Patent Owner argues that the location of the holes or ducts cannot be arbitrary for the device to function and satisfy the claims. *Id.* at 16–17 (citing Pet. 35; Ex. 2001 ¶ 56). Patent Owner also submits that while Petitioner explicitly declined to rely on Verleur's second embodiment (*see* Pet. 26–27), this second embodiment indicates that the holes are located at the bottom of the cartomizer. *Id.* at 17–19 (citing Ex. 1005 ¶¶ 11, 13, 43; Ex. 2001 ¶¶ 43, 57–59). Patent Owner argues that if the holes are at the bottom, then an ordinary artisan would understand that the holes are not where Petitioner

arranges them and that the window 130 is not a hole or duct. *Id.* at 19 (citing Ex. 1005 ¶ 13; Ex. 2001 ¶ 59).

(2) *Verleur allegedly does not disclose an air inlet passage between the cartomizer and the outer shell*

Patent Owner, through the testimony of Dr. Collins, argues that an ordinary artisan would understand that Verleur's gap between outer shell 106 and the cartomizer is not for airflow, but for clearance between the cartomizer into the shell. Prelim. Resp. 19, 21–22 (citing Ex. 2001 ¶¶ 60, 64). Moreover, Patent Owner submits that Verleur's figures do not label the gap, and that Verleur's specification does not describe the gap. *Id.* at 20–21 (citing Ex. 2001 ¶¶ 61–63). Patent Owner also argues that airflow must be controlled, but Petitioner has not established why an ordinary artisan would use the gap to control airflow when Verleur already discloses that the second embodiment can control airflow via aligned holes without a gap. *Id.* at 22–23 (citing Ex. 1005 ¶¶ 13, 43; Ex. 2001 ¶¶ 65–66; Ex. 2003, 26).

(3) *Verleur allegedly does not disclose a central airflow hole at the bottom of the cartomizer*

Patent Owner argues that what Petitioner depicts as an airflow hole at the bottom of the cartomizer is actually a solid electrical contact. Prelim. Resp. 23–24 (citing Ex. 1006 ¶¶ 33, 57, Figs. 1, 1B; Ex. 2001 ¶¶ 67–69). Patent Owner argues that because the electrical contact provides current to power the heating element, it would not be obvious to modify Verleur to place an air inlet in this location. *Id.* at 25 (citing Ex. 1006 ¶ 39; Ex. 2001 ¶ 70).

c) *Analysis*

(1) *whether Petitioner has shown an air inlet passage having a first side formed by an exterior surface of the cartridge and a second side formed by an internal surface of the receptacle when the receptacle insertably receives and couples to the cartridge*

We agree with Patent Owner that Petitioner fails to demonstrate that Verleur teaches an “air inlet passage” as claimed. Petitioner offers two theories in support of its contention that Verleur renders obvious the claimed “air inlet passage”—one, that window 130 is an air inlet passage (Pet. 29–30), and two, that holes and ducts provided in outer shell 106 teach the claimed air inlet passage (*id.* at 34).

Petitioner’s initial theory is that Verleur’s window 130 may provide the “one or more holes or ducts . . . to permit air flow through cartomizer body 208.” Pet. 29–30 (alteration in original). Petitioner reasons that “the parties have agreed that ‘window’ . . . means ‘opening or slit [on or proximate to]/[in] the shell through which the cartomizer is viewed’” and therefore window 130 may include holes or ducts. *Id.* (emphasis omitted, second and third alterations in original). In particular, Petitioner asserts that “air enters at window 130 (inlet passage), travels down a gap (channel) formed by the exterior surface of 200/200A and the interior surface of outer shell 106, passes the heater chamber, travels up the inhalation tube, and exits through the mouthpiece.” *Id.* at 33.

Petitioner’s position is unpersuasive. It is not evident from the record that the skilled artisan would have understood that a window equates to a hole or “air inlet passage” as claimed. Indeed, the record suggests otherwise. For example, Verleur explains that:

The shell may include a window provided at the cartomizer receiving segment so that a portion of the chamber is visible from outside the shell. [Ex. 1005 ¶ 27].

One or more windows 130 may be provided in outer shell 106 (see FIG. 1). Windows 130 may be made of a translucent material, such as glass or substantially clear plastic, in order to view internal components of battery portion 100. [*Id.* ¶ 37]

For instance, in one embodiment, window 130 may be provided on or proximate to cartomizer receiving segment 104 and, more particularly, cartomizer chamber 108 so as to permit a user of electronic cigarette 10 to view the cartomizer 200 when it is inserted into cartomizer chamber 108. [*Id.*].

At least a portion of body 208 may be composed of translucent or substantially translucent material, such as glass or plastic, so that a user may see fluid 300A held within. The portion of body 208 composed of translucent material may be alignable with window 130 [*Id.* ¶ 38].

Petitioner itself acknowledges that window 130 of Verleur “may be made of a translucent material, such as glass or substantially clear plastic” and that the purpose of window 130 is “to view internal components of battery portion 100.” Pet. 29 (quoting Ex. 1005 ¶ 37). Thus, Verleur provides that window 130 may be translucent to allow a user to view internal components, and Verleur makes no mention that window 130 is a hole or slit that allows air to enter. Ex. 1005 ¶¶ 37–38. Neither Petitioner nor its declarant Dr. Singhose adequately explains why the ordinarily skilled artisan would have understood window 130 to be an air inlet passage that allows air to enter gap “formed by an exterior surface of the cartridge and . . . an internal surface of the receptacle.” In contrast, Patent Owner, through the testimony of Dr. Collins, persuasively explains that the skilled artisan would have understood that Verleur’s window 130 is not an air inlet passage. Ex. 2001 ¶¶ 48–49; Prelim. Resp. 11–13. Dr. Collins explains that “[w]indow 130 is a

window . . . ‘to view internal components of battery portion 100,’ such as ‘to permit a user . . . to view the cartomizer 200 when it is inserted into cartomizer chamber 108.’” Ex. 2001 ¶¶ 46–47 (third alteration in original). Dr. Collins further testifies that “Verleur knew how to describe an air inlet on the outside of the shell, since one is described in a different embodiment.” *Id.* ¶ 45.

Alternatively, Petitioner contends that “to the extent window 130 is not a slit, but instead comprises glass or plastic, a hole would nonetheless be needed elsewhere in the shell to permit air into the gap between the cartomizer 200/200A and the outer shell 106.” Pet. 34. Petitioner points to Verleur paragraph 39, which describes holes or ducts in the outer shell. *Id.* However, where Verleur describes the existence of holes or ducts for air flow, the air flow is described as flowing through the cartomizer body itself and not through the gap or channel formed where the cartomizer is inserted into the shell chamber. Ex. 1005 ¶ 39 (stating that “[i]nhalation tube 222 may also be in fluid communication with *one or more holes or ducts provided, for instance, in sides of outer shell 106 in order to permit air flow through cartomizer body 208*” (emphasis added)). This is consistent with Dr. Collins’s testimony that “[s]uch a mechanism would allow air to flow *directly into the cartomizer* through aligned holes.” Ex. 2001 ¶ 66 (emphasis added).

In addition, Petitioner fails to demonstrate that an air inlet passage “formed by an exterior surface of the cartridge and a second side formed by an internal surface of the receptacle when the receptacle insertably receives and couples to the cartridge” in fact exists in Verleur. *See generally* Ex. 1005. Petitioner simply labels a purported gap in Verleur’s figures, and

asserts that this gap discloses the claimed “air inlet passage.” *See* Pet. 27–30. However, Verleur is entirely silent in this regard. Verleur’s figures do not label this gap as a passage, and Verleur’s specification does not discuss this gap. *See generally* Ex. 1005. Furthermore, neither Petitioner nor Dr. Singhose adequately explains why Verleur’s gap would have been viewed by an ordinarily skilled artisan as an “air inlet passage.” Dr. Collins, however, testifies a person of ordinary skill in the art “would not understand such a gap to be provided for the purpose of airflow.” Ex. 2001 ¶ 60. Instead, he explains that “[t]o the extent a gap exists, a [person of ordinary skill in the art] would understand that its purpose is to provide clearance to allow for the insertion of the cartomizer into the shell’s chamber.” *Id.*; *see also id.* ¶ 64 (explaining that a person of ordinary skill in the art “would understand the gap is merely to illustrate that the cartridge is physically separate from chamber 108 and the former is insertable into the latter”).

Accordingly, Petitioner fails to demonstrate that Verleur discloses or renders obvious the claimed “air inlet passage having a first side formed by an exterior surface of the cartridge and a second side formed by an internal surface of the receptacle when the receptacle insertably receives and couples to the cartridge.”

(2) *whether Petitioner has shown that the air inlet passage is configured to deliver the air to the heater chamber*

Petitioner argues that Verleur describes the claimed “air inlet passage . . . configured to deliver the air to the heater chamber.” Pet. 36. Petitioner draws an air flow pathway in Figure 1 of Verleur (*see supra* p. 13) to illustrate its contention that “when a consumer inhales on mouthpiece 220,

air is drawn in through the holes, ducts, or window slits on outer shell 106, passes heating element 214 within the heater chamber, and continues along inhalation tube 222 to exit mouthpiece 220.” *See* Pet. 36–37; *see also id.* at 34 (depicting Petitioner’s modified Figure 1).

We agree with Patent Owner that Petitioner does not demonstrate that Verleur discloses that the claimed “air inlet passage is configured to deliver the air to the heater chamber.” Verleur’s figures and specification do not disclose an air flow hole at the bottom of the cartomizer for air to be delivered to the heater chamber. *See* Ex. 1005, Fig. 1; Ex. 2001 ¶¶ 67–69; *see also* Prelim. Resp. 23–24 (same). Furthermore, Petitioner does not propose modifying Verleur to include a hole at the bottom of the chamber—rather, Petitioner simply states that “Verleur discloses this limitation.” Pet. 36–37. Patent Owner, relying on the testimony of Dr. Collins, persuasively argues that the bottom of the cartomizer has an electrical contact that provides current to power the heating element, and it would not have been obvious to modify Verleur to place an air inlet in this location. Ex. 2001 ¶¶ 67–70; Ex. 1005 ¶ 33, Figs. 1, 1B; Prelim. Resp. 23–25. Accordingly, Petitioner fails to establish that the bottom of Verleur’s cartomizer discloses that the claimed “air inlet passage is configured to deliver the air to the heater chamber.”

3. *Remaining Claims (Claims 2–4, 6, 7, 15, 16, 18–25, 28, and 30)*

Petitioner also asserts that Verleur and the knowledge of a person of ordinary skill in the art would have rendered claims 2–4, 6, 7, 15, 16, 18–25, 28, and 30 obvious. Pet. 38–70. Independent claim 20 recites limitations substantially similar to limitations discussed above for claim 1 (*see* Ex. 1001, 57:23–29), and Petitioner relies on the same deficient analysis to

support its contentions regarding claim 20 (*see* Pet. 67–68). Petitioner does not present any arguments or evidence with respect to claims 2–4, 6, 7, 15, 16, 18–25, 28, and 30 that would remedy the defects detailed above with respect to independent claims 1 and 20. Thus, Petitioner fails to demonstrate that the subject matter of claims 2–4, 6, 7, 15, 16, 18–25, 28, and 30 would have been obvious over Verleur and the knowledge of a person of ordinary skill in the art.

Accordingly, Petitioner has not established that there is a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition based on Verleur and the knowledge of a person of ordinary skill in the art.

E. Challenge based on Verleur, Knowledge of a Person of Ordinary Skill in the Art, and Plojoux

Petitioner also contends Verleur, the knowledge of a person of ordinary skill in the art, and Plojoux would have rendered claims 2, 4, 21, and 23 obvious. Pet. 70–78.

Petitioner does not present any arguments or evidence with respect to claims 2, 4, 21, and 23 that would remedy the defects noted above with respect to independent claims 1 and 20. Thus, Petitioner fails to demonstrate that the subject matter of claims 2, 4, 21, and 23 would have been obvious over the combined disclosures of Verleur, the knowledge of a person of ordinary skill in the art, and Plojoux.

F. Discretionary Denial Under 35 U.S.C. § 314(a) or § 325(d)

Petitioner preemptively argues that the Board should not exercise its discretion to deny institution under either 35 U.S.C. § 314(a) or § 325(d). Pet. 79–80. Patent Owner does not raise any discretionary arguments in its Preliminary Response. *See generally* Prelim. Resp. Because we deny the

Petition on the merits, we do not address the arguments regarding discretionary denial under either of 35 U.S.C. § 314(a) or § 325(d).

G. Objective Indicia of Nonobviousness

Patent Owner argues that “there is strong and indisputable objective evidence of non-obviousness.” Prelim. Resp. 27; *see also id.* at 26–60 (providing detail of such evidence); Sur-reply 1–5. Petitioner, for its part, argued in reply that Patent Owner’s evidence is inapplicable. Reply 1–5. Because we deny the Petition on the merits, we do not address Patent Owner’s arguments relating to objective indicia of nonobviousness.

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner does not demonstrate a reasonable likelihood that it would prevail with respect to its challenge to at least one of the claims challenged in the Petition. Accordingly, we deny the Petition and do not institute an *inter partes* review of the ’173 patent.

IV. ORDER

It is ORDERED that the Petition is denied as to all challenged claims of the ’173 patent and no trial is instituted.

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