

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

R.J. REYNOLDS VAPOR COMPANY,

Petitioner,

v.

ALTRIA CLIENT SERVICES LLC,

Patent Owner.

IPR2021-00746

Patent 10,492,541 B2

Before GRACE KARAFFA OBERMANN, JAMES J. MAYBERRY, and
ELIZABETH M. ROESEL, *Administrative Patent Judges*.

OBERMANN, *Administrative Patent Judge*.

DECISION

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

I. INTRODUCTION

Petitioner filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claim 24 of U.S. Patent No. 10,492,541 B2 (Ex. 1003, “the ’541 Patent”). Patent Owner filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). With Board pre-authorization, Petitioner filed a stipulation entered in *Altria Client Services LLC et al. v. R.J. Reynolds Vapor Company*, No. 1:20-cv-00472-NCT-JLW (M.D.N.C. May 28, 2020) (“the District Court case”). See Paper 7 (“Stipulation”).

The Petition indicates that R.J. Reynolds Vapor Company, RAI Innovations Company, R.J. Reynolds Tobacco Company, and Reynolds Asia-Pacific Limited are real parties-in-interest for Petitioner. Pet. 38. Patent Owner’s Mandatory Notices indicate that Altria Client Services LLC and Altria Group, Inc. are real parties-in-interest for Patent Owner. Paper 4, 1.

The parties state that the District Court case involves the ’541 patent. Pet. 38, Paper 4, 1. The parties also identify IPR2021-00744, IPR2021-00745, and IPR2021-00747 as involving related patents, respectively, U.S. Patent Nos. 10,299,517, 10,485,269, and 10,588,357. Pet. 38; Paper 4, 1.

II. BACKGROUND

A. The ’541 Patent (Ex. 1003)

The ’541 patent is titled “Pod Assembly, Dispensing Body, and E-Vapor Apparatus Including the Same.” Ex. 1003, code (54). The challenged claim pertains to a pod assembly for an e-vapor device that comprises a pre-vapor formulation compartment, a device compartment, and a vapor channel. *Id.* at 28:54–29:3 (claim 24). The written description explains, “The pre-vapor formulation compartment is configured to hold a pre-vapor formulation therein,” such as “a liquid, solid, and/or gel formulation

including, but not limited to, water, beads, solvents, active ingredients, ethanol, plant extracts, natural or artificial flavors, and/or vapor formers such as glycerine and propylene glycol. *Id.* at 1:57–58, 6:13–17. The “device compartment” is “upstream from the pre-vapor formulation compartment” and, further, is “configured to heat the pre-vapor formulation to produce a vapor.” *Id.* at 28:64–67.

In an embodiment depicted in Figure 18, “the internal space of the pod assembly” is “divided into a plurality of compartments,” including “the pre-vapor formulation compartment” and “the device compartment,” which “may include the vaporizer.” *Id.* at 11:5–16. We reproduce Figure 18 below.

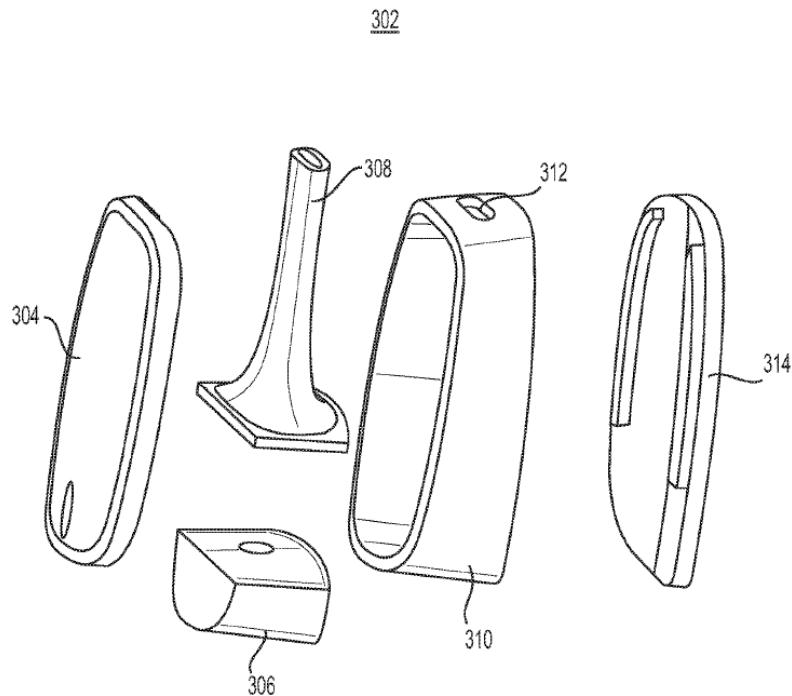


FIG. 18

Id. at Fig. 18. Figure 18 illustrates an exploded view of pod assembly 302 of an e-vapor apparatus according to the invention. *Id.* at 3:47, 3:55–56, 11:5.

“[T]he internal space of” pod assembly 302 is “divided into a plurality of compartments by virtue of the components therein.” *Id.* at 11:6–8. A space bounded by first cap 304, vapor channel 308, pod trim 310, and second cap 314 represents “the pre-vapor formulation compartment.” *Id.* at 11:10–13. “Additionally,” the “bounded space under” vapor channel 308 is “the device compartment,” which includes vaporizer 306. *Id.* at 11:13–16. The heater “may be a wire coil surrounding a wick.” *Id.* at 18:51.

The specified pod assembly further comprises “a plurality of external surfaces,” including “a front face, a rear face opposite the front face,” and two “side” faces. *Id.* at 28:55–60 (claim 24). A vapor channel extends “through the pre-vapor formulation compartment” such that the vapor channel is “visible through at least the front face.” *Id.* at 29:1–3.

B. Challenged Claims

Petitioner challenges claim 24 of the ’541 patent. Pet. 6–7. We reproduced below claim 24.

24. A pod assembly for an e-vapor apparatus, comprising:
- a plurality of external surfaces including a front face, a rear face opposite the front face, a first side face between the front face and the rear face, a second side face opposite the first side face, a downstream end face, and an upstream end face opposite the downstream end face;
 - a pre-vapor formulation compartment configured to hold a pre-vapor formulation such that the pre-vapor formulation is visible through at least the front face;
 - a device compartment upstream from the pre-vapor formulation compartment, the device compartment configured to heat the pre-vapor formulation to produce a vapor; and
 - a vapor channel extending through the pre-vapor formulation compartment, the vapor channel being visible through at least the front face.

Ex. 1003, 28:54–29:3.

C. Asserted Grounds of Unpatentability

Petitioner asserts grounds under 35 U.S.C. § 103,¹ as follows:

Ground	Claims Challenged	Reference(s)
1	24	Juul 1, ² Juul 2, ³ Juul 3 ⁴
2	24	Verleur ⁵

Pet. 6–7.

For purposes of deciding whether to institute review, we accept Petitioner’s assertions, which Patent Owner does not oppose in the Preliminary Response, that Juul 1, Juul 2, and Juul 3 “were published and publicly available on April 21, 2015.” Pet. 6 n.1 (citing Exs. 1015–1018); *see* Prelim. Resp. 27 n.5 (Patent Owner, arguing only that none of the Juul Articles “predate the first public availability of the Juul device” and, further, averring that the device itself became available after the priority date of the ’541 patent). We further adopt Patent Owner’s convention of referring to

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284 (September 16, 2011), includes revisions to Section 103 that became effective on March 16, 2013. Because the ’517 patent issued from an application filed after March 16, 2013, we apply the AIA version.

² *This Might Just Be the First Great E-Cig*, WIRED (Apr. 21, 2015), <https://www.wired.com/2015/04/pax-juul-ecig/> (Ex. 1011).

³ *Startup behind the Lambo of vaporizers just launched an intelligent e-cigarette*, THE VERGE (Apr. 21, 2015) <https://www.theverge.com/2015/4/21/8458629/pax-labs-e-cigarette-juul> (Ex. 1012).

⁴ *PAX Labs, Inc. Introduces Revolutionary Technologies with Powerful E-Cigarette JUUL*, BUSINESSWIRE (Apr. 21, 2015) <https://www.businesswire.com/news/home/20150421005219/en/PAX-Labs-Inc.-Introduces-Revolutionary-Technologies-with-Powerful-E-Cigarette-JUUL> (Ex. 1013).

⁵ US Pub. No. 2015/0128976 A1, pub. May 14, 2015 (Ex. 1014).

these references collectively as “the Juul Articles.” Prelim. Resp. 2. When citing to the Juul Articles, we identify page numbers added by Petitioner.

Petitioner relies on the Declaration of Karl R. Leinsing. Ex. 1005. Patent Owner relies on the Declaration of Joseph C. McAlexander. Ex. 2001. Based on their statements of qualifications and *curricula vitae*, we find both Mr. Leinsing and Mr. McAlexander qualified to opine about the level of ordinary skill in the art at the time of the invention and to testify from the perspective of a person having such skill. See Ex. 1005 ¶¶ 5–8 (Mr. Leinsing’s statement of qualifications), Ex. 1006 (Mr. Leinsing’s *curriculum vitae*), Ex. 2001 ¶¶ 12–17 (Mr. McAlexander’s statement of qualifications), Ex. 2002 (Mr. McAlexander’s *curriculum vitae*).

III. ANALYSIS

A. Level of Ordinary Skill in the Art

The level of ordinary skill in the art at the time of the invention is a factual determination that provides a primary guarantee of objectivity in an obviousness analysis. *Al-Site Corp. v. VSI Int’l Inc.*, 174 F.3d 1308, 1324 (Fed. Cir. 1999) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966); *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991)). In Petitioner’s view, an ordinarily skilled artisan “would possess at least a Bachelor’s degree in mechanical engineering, electrical engineering, chemistry, or physics, or a related field, and over three years of relevant industry experience, or a Master’s degree” in such a field as well as “two years of industry experience.” Pet. 5 (citing Ex. 1005 ¶¶ 17–20). Additionally, according to Petitioner, an ordinarily skilled artisan “would have been familiar with electrically powered vaporizing articles and their components and underlying technologies or similar components and

technologies.” *Id.* “Patent Owner adopts this level of skill in the art for the purposes of responding to this Petition.” Prelim. Resp. 21.

On this record, we find the level of ordinary skill is reflected adequately in the asserted prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (specific findings on the 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))). To the extent a more specific definition is required for purposes of this Decision, we adopt Petitioner’s unopposed definition, which is consistent with the disclosures of the asserted prior art and the ’541 patent.

B. Claim Construction

Pursuant to the applicable rule, claims “shall 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) (2021). Under that standard, the “words of a claim ‘are generally given their ordinary and customary meaning,’” which 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, i.e., as of the effective filing date of the patent application.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). We construe terms in controversy only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Petitioner addresses the construction of the terms “front face, rear face, first side face, second side face, downstream end face, and upstream end face” in claim 24. Pet. 7; *see* Ex. 1003, 28:55–60 (appearance of those terms in claim 24). Petitioner relies on Patent Owner’s infringement contentions and the accused product as providing the meaning of these terms for purposes of the Petition. Pet. 7–9. Specifically, for purposes of the Petition, Petitioner proposes that the Board should construe the term “face” according to Patent Owner’s contentions in the District Court case, namely, to mean “‘the surface of an object,’ which does not need to be bounded by one or more edges.” *Id.* at 8 (quoting Ex. 1024, 29; Ex. 1026, 27–28).

After the filing of the Petition, but before the filing of the Preliminary Response, the District Court construed the terms “front face” and “rear face” in claim 24. Ex. 2008, 24. The District Court found, “[A] person of ordinary skill in the art would understand the terms ‘front face’ and ‘rear face’ to mean: front/rear surface bounded by one or more edges.” *Id.* at 26 (emphasis omitted). Patent Owner adopts the District Court’s construction for “the terms ‘front/rear face’” for purposes of this proceeding. Prelim. Resp. 21.

The District Court also addressed the meaning of the phrases “downstream end face” and “upstream end face,” which are among the claim terms that Petitioner contends should be defined by the Board. Pet. 7. Patent Owner does not expressly adopt, or direct us to, the District Court’s construction of those phrases, although the order construing those terms was available at the time of filing of the Preliminary Response. *See* Ex. 2008, 22–26 (District Court’s claim construction order, addressing those phrases).

We need not assign express constructions to these or any other terms to resolve whether to institute review. As further discussed below, without

specifically relying on the District Court’s construction that the specified faces are “bounded by one or more edges” (Ex. 2008, 26), we determine that Petitioner has not explained adequately how or why the asserted prior art (in particular, Verleur) would have suggested a pod assembly having faces.

C. Analysis of the Patentability Challenges

We organize our analysis into two parts, addressing first the ground based on the Juul Articles then the ground based on Verleur.

(1) Asserted Obviousness of Claim 24 over the Juul Articles

Claim 24 relates to “[a] pod assembly for an e-vapor apparatus.”

Ex. 1003, 28:54. The specified pod assembly includes “a pre-vapor formulation compartment” and “a device compartment.” *Id.* at 28:61, 28:64. Petitioner bears the burden of establishing that the asserted prior art would have suggested these two distinct compartments, wherein the device compartment is “configured to heat the vapor precursor to produce a vapor.” *Id.* at 28:65–67.

In Petitioner’s view, the subject matter of claim 24 would have been obvious over the Juul Articles. Pet. 18–25. The Juul Articles discuss the launch of an e-cigarette product having “a pocket-size vaporizer and nicotine juice cartridges you swap in and out.” Ex. 1011, 2. Petitioner argues that the Juul Articles disclose “a pod assembly” or “cartridge, known as the Juulpod,” which is intended for insertion into “an electronic vapor device.” Pet. 19. Petitioner asserts that the Juulpod includes “a liquid compartment that holds a liquid formulation.” *Id.* at 21. “Specifically,” according to Petitioner, the “Juulpod holds a vaporizable liquid.” *Id.* (citing Ex. 1011, 1, 2, 5; Ex. 1012, 2–4, Ex. 1013, 1). Petitioner further asserts, “Because this

liquid is vaporized, the liquid is a pre-vapor formulation and the liquid compartment is a pre-vapor formulation compartment.” *Id.* at 21.

We reproduce below Petitioner’s annotated version of an image advanced in the Petition in support of those contentions.

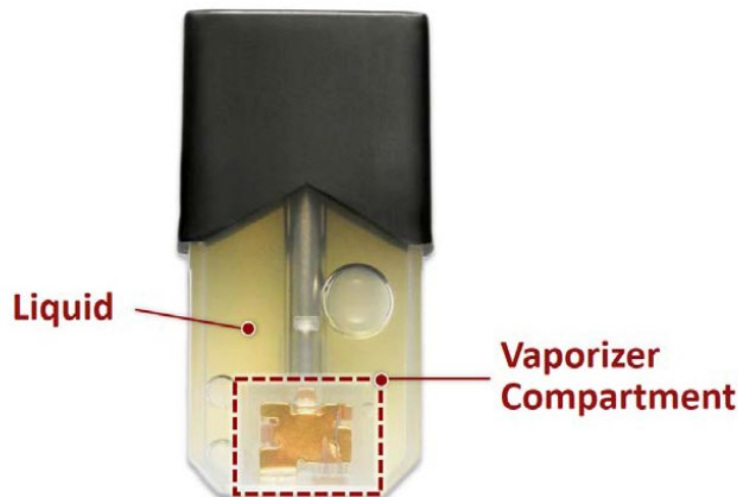


Pet. 22 (reproducing and annotating Ex. 1011, 5; Ex. 1012, 4). The above image reflects side-by-side views of two liquid nicotine cartridges or “Juulpods” referenced in the Juul Articles. Ex. 1011, 2; Ex. 1012, 2; Ex. 1013, 1. An image from Juul 1 appears on the left, whereas an image from Juul 2 appears on the right. None of the Juul Articles describes either image or identifies the components visible in the image. *See generally* Ex. 1011; Ex. 1012; Ex. 1013. Petitioner adds red labels to identify a liquid in both views of the Juulpod reflected in this image. Pet. 22.

The image suggests a Juulpod having a generally rectangular shape that includes an opaque black upper portion and a transparent lower portion. Pet. 22. The view provided in Juul 1 (on the left in the above image) reflects, within the transparent lower portion, three circular or spherical elements, which appear to be air bubbles floating within a liquid. Pet. 20; *see* Ex. 1011, 5. Those bubble-like elements support Petitioner’s view that the lower transparent portions of the devices depicted in this image contain a liquid. Pet. 22 (annotating this substance as “Liquid” in both views of the

Juulpod). The asserted liquid is golden yellow in color in the view from Juul 1 (on the left in this image) and a darker shade of golden brown in the view from Juul 2 (on the right in this image). *See* Ex. 1011, 5; Ex. 1012, 4.

Petitioner directs us to no disclosure in the Juul Articles from which we can identify, or discern the function of, any other component of the devices depicted in the above image. *See* Pet. 18–22 (Petitioner’s arguments pertaining to the image); *see generally* Exs. 1011–1013 (Juul Articles, nowhere identifying any feature of either device depicted in this image). Petitioner argues that the above side-by-side image shows the “pre-vapor formulation compartment (liquid compartment) configured to hold a pre-vapor formulation.” Pet. 21. Petitioner further asserts that an image from Juul 1, namely, the same view of a Juulpod that appears on the left in the above side-by-side image, shows “a vaporizer compartment having the heating mechanism and wick.” Pet. 22.⁶ We reproduce below Petitioner’s annotated version of that image.



⁶ Petitioner interchangeably refers to the specified “device compartment” of claim 24 as a “vaporizer compartment.” Pet. 23; *see* Prelim. Resp. 25 n.4.

Id. at 23 (reproducing and annotating the image from Ex. 1011, 5); *see id.* at 11 (reproducing this same image without annotations). This image appears to show a liquid nicotine cartridge or Juulpod. Petitioner adds red annotations to identify a liquid and a vaporizer compartment. Petitioner superimposes a red dashed line onto the outer edges of a square shaped frame area, which surrounds an irregularly shaped gold object within the device, and labels it “Vaporizer Compartment.” *Id.*

Petitioner argues that this “Vaporizer Compartment” is a “device compartment” within the meaning of claim 24. *See supra* 11 n.7. For reasons that follow, however, we find Petitioner does not show sufficiently that an ordinarily skilled artisan would have understood the Juul Articles to disclose a pod assembly having a device compartment distinct from a pre-vapor formulation compartment as specified in claim 24. *See* Pet. 21–24.

The irregularly shaped gold object is visible in the above image within the transparent lower portion near the center bottom of the device. Ex. 1011, 5. The square shaped area, which frames the gold object, appears to be somewhat lighter in color than the surrounding golden yellow liquid. A silver element, which appears to be cylindrical in shape, traverses the liquid and terminates at about the midpoint of the upper edge of the square shaped frame area. A gap in the frame area is visible between the gold object and the silver element. A rightward edge of the center left bubble-like element contacts a leftward edge of the silver element. *Id.*

Petitioner and its witness, Mr. Leinsing, make assumptions about these objects, elements, and shapes that are not supported adequately by disclosures in the prior art. Pet. 21–24 (arguments pertaining to this image, citing Ex. 1005 ¶¶ 224–228). For example, Petitioner asserts, “Juul discloses

that Juulpod has a heating mechanism and wick.” Pet. 22. Elsewhere, Petitioner reproduces the above image without annotations and similarly argues, “In addition to containing the nicotine juice, the cartridge has a heating mechanism having a heating coil adjacent the insertion end of the cartridge.” *Id.* at 11. By way of support, however, Petitioner directs us to no disclosure in the Juul Articles that indicates the location of a heating mechanism within the Juulpod. *Id.* at 11, 21 (citing Ex. 1011, 1, 2, 4–6; Ex. 1012, 2–4; Ex. 1013, 1). This is critical because the claims recite a “device compartment configured to heat the pre-vapor formulation,” as an element distinct from the “pre-vapor formulation compartment.” Ex. 1003, 28:61–67. Yet Petitioner directs us to no information from which we reasonably can determine whether the structure outlined by Petitioner in the annotated image of the Juulpod is a “device compartment” that is distinct from the pre-vapor formulation compartment and, further, is “configured to heat the pre-vapor formulation” as required by the claims. *Id.*

Petitioner’s obviousness challenge is based on the Juul Articles, not the subsequently launched Juulpod device. *See* Prelim. Resp. 27 n.5 (Patent Owner, explaining that the Juulpod device became available only after the critical date of the invention). On this record, we find that the scant disclosures of the Juul Articles are not sufficient to support Petitioner’s contentions regarding how the components reflected in the images from the Juul Articles correspond to components required by the claim 24.

In an *inter partes* review, the petitioner has the burden from the outset to show with particularity why a challenged patent claim is unpatentable. *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). As part of that initial burden, the petition must identify “with particularity” the

“evidence that supports the grounds for the challenge to each claim.”

35 U.S.C. § 312(a)(3). Petitioner fails to explain with any particularity how or why the image reproduced above supports its view that the Juul Articles disclose a vapor precursor compartment as well as a device compartment configured to heat the vapor precursor. Pet. 21–24 (and citations to evidence therein). At best, Petitioner argues that Juul 3 discloses a “liquid-to-wick cartridge system.” Ex. 1013, 1; Pet. 23. That phrase falls short of establishing adequately the identity, location, or function of any object, element, or shape in the Juulpod image.

Even if we accept that the device depicted in the Juul Articles “has a ‘liquid-to-wick’ cartridge system,” as discussed in Juul 3 (Ex. 1013, 1), we find Petitioner does not explain adequately how or why an ordinarily skilled artisan would have determined which, if any, components in the Juulpod image correspond to the specified “device compartment configured to heat.” Ex. 1003, 28:65–66; *see* Pet. 18–24; Ex. 1005 ¶¶ 217–228 (failing to direct us to any disclosure in the Juul Articles that indicates the location of a heating mechanism). On this record, as Patent Owner points out, “nothing in any of the Juul Articles describes the significance of” the irregularly shaped gold object in the image from Juul 1, which “Petitioner has labelled the ‘Vaporizer Compartment’” without adequate objective support. Prelim. Resp. 26. Petitioner and Mr. Leinsing “simply assume that this element” is a device compartment that contains “a heater and a wick.” *Id.*

Accordingly, on this record, we agree with Patent Owner that Petitioner does not identify adequately in the Juul Articles any disclosure of the specified “device compartment.” Ex. 1003, 28:64–67 (claim 24, reciting that limitation); *see* Prelim. Resp. 27 (Patent Owner’s observation that

Petitioner does not identify adequately “any disclosure in any of the Juul Articles describing a vaporizer compartment or its location” in the Juulpod). Given the absence of an alternative explanation, based on the information presented, we view Petitioner’s annotation, identifying the square shaped frame area as a vaporizer compartment (that is, the specified device compartment), as an impermissible exercise of hindsight reconstruction driven not by any prior art disclosure but, instead, by the description of the invention provided in the ’269 patent. *See supra* 11 (Petitioner’s annotated version of an image of the Juulpod from Juul 1).

Taking account of the information presented, we find Petitioner does not show sufficiently, for purposes of instituting review, how or why the Juul Articles would have suggested to an ordinarily skilled artisan a “device compartment” that is “configured to heat the pre-vapor formulation to produce a vapor” – as an element distinct from the “pre-vapor formulation compartment.” Ex. 1003, 28:61–67 (claim 24); *see* Pet. 18–25 (failing to address adequately these issues); Prelim. Resp. 24–29 (Patent Owner’s counter information on point). Accordingly, Petitioner is not reasonably likely to prevail in showing that the subject matter of claim 24 would have been obvious over the Juul Articles.

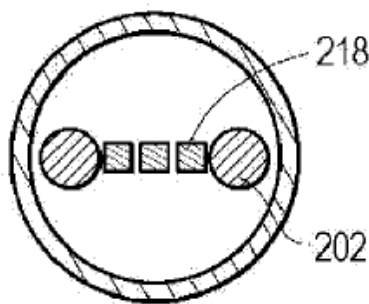
(2) Asserted Obviousness of Claim 24 over Verleur

We next turn to Petitioner’s assertion that the subject matter of claim 24 would have been obvious over the disclosure of Verleur. Pet. 26–34. Claim 24 requires a pod assembly having “a plurality of external surfaces including a front face, a rear face opposite the front face, a first side face between the front face and the rear face,” and “a second side face opposite the first side face.” Ex. 1003, 28:55–58.

In addition, claim 24 requires that the pod assembly have “a downstream end face, and an upstream end face opposite the downstream end face.” *Id.* at 28:58–60. In other words, claim 24 requires a pod assembly having “a plurality of external surfaces” that define at least six faces. *Id.* at 28:54–60. In Petitioner’s view, Verleur’s cartomizer 200A is a pod assembly having the requisite plurality of external surfaces. Pet. 27–29.

By way of support, Petitioner directs us to Verleur’s Figures 1, 6, 12, and 15. Pet. 27. Petitioner does not explain adequately how or why any of those figures would have suggested a pod assembly characterized by the six discrete faces specified in claim 24. *Id.* For example, as Patent Owner points out, Verleur’s Figure 1 plainly indicates “a cartomizer with a cylindrical cross-section.” Prelim. Resp. 34. We reproduce below Verleur’s Figure 1B, which supports Patent Owner’s view.

Fig. 1B

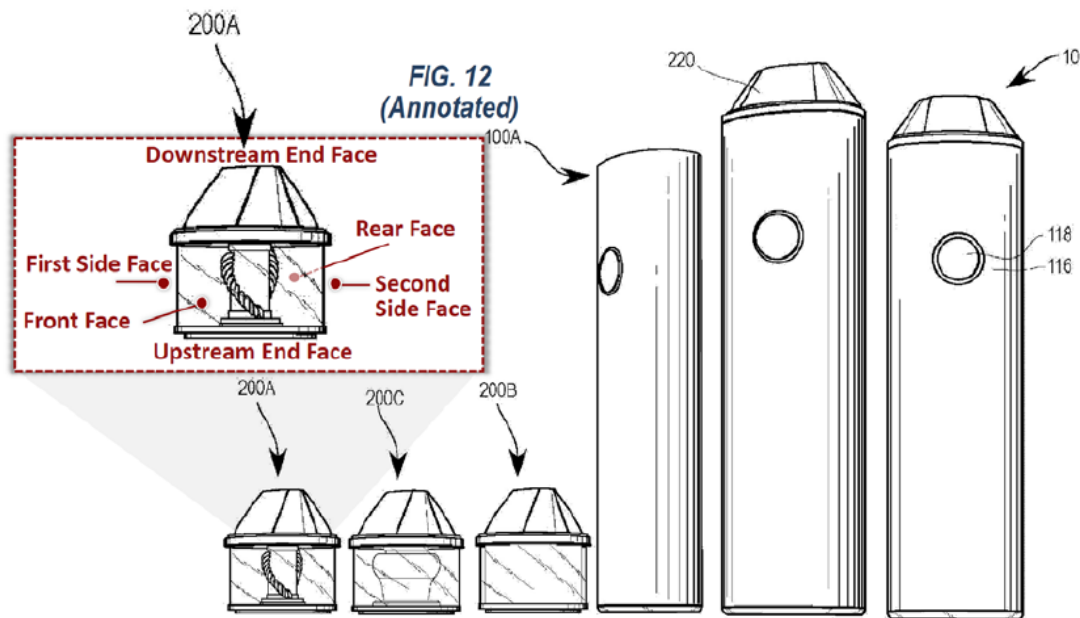


Ex. 1014, Fig. 1B; Prelim. Resp. 35 (reproducing Verleur’s Figure 1B).

Figure 1B illustrates “a lateral cross sectional view of” Verleur’s “electronic cigarette,” specifically, “the end of the inserted cartomizer.” Ex. 1014 ¶ 8.

The cross section is circular, suggesting one external surface.

Petitioner also directs us to Verleur's Figures 6, 12, and 15, but fails to articulate adequately why those disclosures would have suggested a cartomizer having "a plurality of external surfaces." Pet. 27. Those figures, in fact, consistently illustrate a cartomizer having one continuous cylindrical external surface. Ex. 1014, Figs. 6, 12, 15. Figure 12 is illustrative. We reproduce below Petitioner's annotated version of Verleur's Figure 12, which, according to Petitioner, would have suggested that cartomizer 200A "has a front face, a rear face, two side faces, a downstream end face and an upstream end face." Pet. 27.



Id. Figure 12 illustrates embodiments of an electronic cigarette according to the disclosure of Verleur. *See* Ex. 1014 ¶¶ 16–18, 20. Figure 12 illustrates three views of cartomizer 200. In each, the cartomizer has one continuous cylindrical external surface.

Petitioner annotates Figure 12 to include an exploded view of cartomizer 200A. In the exploded view, Petitioner adds labels to two points on the cylindrical external surface of cartomizer 200A to identify a “Front

Face” and a “Rear Face.” Pet. 28. Petitioner also adds labels to two additional points on the cylindrical external surface to identify a “First Side Face” and “Second Side Face.” *Id.* Petitioner adds additional labels that appear to identify a bottom surface of cartomizer 200A as an “Upstream End Face” and an upper surface of mouthpiece 220 (unlabeled in Figure 12) as a “Downstream End Face.” *Id.*; *see* Ex. 1014, Fig. 10, ¶¶ 55, 57 (Verleur, explaining that Figure 12 illustrates embodiments of Figure 10, which illustrates the relationship between “mouthpiece 220” and cartomizer 200A).

Petitioner does not explain adequately why the annotations added to Verleur’s Figure 12 in the above illustration are effective to demarcate a front face, a rear face, or two side faces as specified in claim 24. *See, e.g.*, Pet. 27–29; *see* Prelim. Resp. 38 (“Petitioner inexplicably annotates the embodiment of Figure 12 to purportedly identify the required front and rear faces.”). For example, in connection with the front, rear, and side faces allegedly identifiable in Verleur’s cartomizer 200A, Petitioner does not explain where one surface ends or another begins, and no explanation is self-evident upon review of Figure 12. Pet. 27–29; *see* Ex. 1014, Fig. 12.

On that point, both Petitioner and Mr. McAlexander suggest that each point on the cylindrical external surface of Verleur’s cartomizer “is ‘the surface of an object,’” but that proposition is ineffective to transform the single external surface plainly visible in Verleur’s figures into a “plurality of external surfaces.” Ex. 1005 ¶ 239; Pet. 29. Each figure in Verleur, upon which Petitioner relies, makes “readily apparent” that Verleur’s cartomizer 200A “has one continuous, undivided” external surface. Prelim. Resp. 38; *see* Pet. 27 (citing Ex. 1014, Figs. 1, 6, 12, 15).

Petitioner argues that three paragraphs in Verleur support the proposition that Verleur's cartomizer has "sides." Pet. 27–29 (citing Ex. 1014 ¶¶ 34, 42, 43). The first two paragraphs cited by Petitioner do not refer to sides at all. Ex. 1014 ¶¶ 34, 42; *see* Prelim. Resp. 39 and n.9 (providing Patent Owner's related argument). Petitioner does not explain adequately why those disclosures would have suggested a cartomizer having the plurality of external surfaces required by claim 24, and no explanation is evident upon review of the disclosures themselves. Pet. 27–29; *see* Ex. 1014 ¶¶ 34, 42.

The third paragraph refers to "holes or ducts provided, for instance, in sides of" an "outer shell" in Verleur's device. Ex. 1014 ¶ 43; *see id.* at Fig. 1 (illustrating "outer shell 106"). Petitioner does not explain adequately the significance of that disclosure. Pet. 29 (relying on Ex. 1014 ¶ 43). For example, Petitioner argues, "[T]o the extent the accused product has faces as Patent Owner contends" in the District Court case, "the cartomizer of Verleur has faces" as well. *Id.* at 28–29. Verleur, however, consistently indicates that cartomizer 200 has one continuous, undivided cylindrical external surface. Ex. 1014, Figs. 1A–1C, 2A–B, 4, 5, 12, 15 (illustrations depicting the external surface of cartomizer 200). It is not clear on this record, and Petitioner does not explain adequately, how or why Patent Owner's extrinsic contentions in the District Court case are sufficient to support Petitioner's contention that Verleur's single continuous external surface has faces as recited in claim 24. Pet. 28–29. For example, Petitioner does not compare the shape of the accused product with the shape of cartomizer 200 as disclosed in Verleur. Even if Petitioner had made such a comparison, however, the Petition is deficient for failure to explain why the

Board should view Patent Owner’s District Court infringement contentions as sufficient to show that the claim limitation reads on the prior art.

We agree with Patent Owner that Petitioner directs us to no disclosure in Verleur that “makes any mention of multiple surfaces, faces, or even a front and rear of the device.” Prelim. Resp. 37. Petitioner rests instead on Mr. Leinsing’s opinion that an ordinarily skilled artisan would have viewed Verleur’s cartomizer as having “faces corresponding to the vaporizer’s sides.” Ex. 1005 ¶ 239; *see* Pet. 29 (citing Ex. 1005 ¶¶ 238–240); Ex. 1014, Fig. 1, ¶ 43. For support, however, Mr. Leinsing directs us to two of the same three paragraphs in Verleur cited in the Petition, as well as the accused product in the District Court case. Ex. 1005 ¶¶ 55, 238–239 (citing Ex. 1014 ¶¶ 34, 43, as well as Patent Owner’s contentions about “the accused product” in the District Court case (*see* Exs. 1019–1022, 1028)).

These paragraphs in Verleur relate to Figure 1, which unambiguously illustrates cartomizer 200/200A as having “a cylindrical cross section.” Prelim. Resp. 37; *see* Ex. 1014, Figs. 1A–C, ¶¶ 6–9. Mr. Leinsing does not explain adequately why an ordinarily skilled artisan would have interpreted these disclosures as suggesting a plurality of external surfaces. *See* Ex. 1005 ¶¶ 55, 238–240. Mr. Leinsing simply repeats conclusory assertions made in the Petition. *Compare* Pet. 27–29, *with* Ex. 1005 ¶¶ 238–240. Without adequate objective proof, Mr. Leinsing’s bare opinion that Verleur would have suggested a cartomizer having front and rear faces is entitled to little weight. *See Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294 (Fed. Cir. 1985) (“Lack of factual support” underpinning an expert’s opinion “may render the testimony of little probative value in a validity determination.”).

Even if we accept that the “outer shell” of Verleur’s vaporizer may have external “sides,” as arguably suggested by Verleur’s Figure 15, Mr. Leinsing does not explain adequately why that would have suggested that the cartomizer, designed for insertion into an internal chamber of that “outer shell,” also has a plurality of sides. Ex. 1014 ¶ 43; *see* Ex. 1005 ¶¶ 238–240 (Mr. Leinsing’s testimony, citing Ex. 1014, Fig. 15, ¶ 43). On the contrary, Mr. Leinsing, in a single sentence unsupported by a citation to any objective proof, posits that an ordinarily skilled artisan “would have known that for the cartomizer to be inserted into and engaged with the vaporizer, the cartomizer would have faces corresponding to the vaporizer’s sides.” Ex. 1005 ¶ 239. Patent Owner disagrees, arguing, “Even if the vaporizer has external ‘sides,’ that does not necessarily mean that the *internal* surfaces that mate with the cartomizer must share those sides.” Prelim. Resp. 39 n.9 (emphasis in original).

Patent Owner’s argument, on that crucial point, is consistent with the disclosure of Verleur. *See, e.g.*, Ex. 1014 ¶¶ 42, 43 (Verleur, explaining that “outer shell 106” may have “sides,” and “cartomizer 200A is inserted into chamber 108” “defined by outer shell 106 and electrical connector 120”). Like Verleur’s Figure 12, Figure 15 illustrates a cartomizer that appears to have one continuous cylindrical external surface. *See* Ex. 1014, Fig. 15 (cartomizer 200A–C), ¶¶ 58, 59 (describing Figure 15 and disclosing that cartomizer 200/200A/200B/200C may be inserted into chamber 108). Neither Petitioner nor Mr. Leinsing directs us to any disclosure in Verleur suggesting that cartomizer 200/200A/200B/200C, as illustrated in Figure 15, has a different shape from cartomizer 200/200A/200B/200C, as illustrated in Figure 12. On that point, we note that a single vertical line is visible in the

external surface of cartomizer 200 in one of three views of that element illustrated in Figure 15. *See id.* at Fig. 15 (cartomizer 200A). Neither Petitioner nor Mr. Leinsing, however, addresses that line, much less explains why it would have suggested a cartomizer having a front face and a rear face within the scope of claim 24. Pet. 27–29; Ex. 1005 ¶ 238–240.

On this record, we find Petitioner does not show sufficiently that Verleur discloses a cartomizer having “a plurality of external surfaces” as specified in claim 24. Ex. 1003, 28:55. Accordingly, Petitioner is not reasonably likely to prevail at trial in showing that the subject matter of claim 24 would have been obvious over Verleur.

IV. CONCLUSION

For the above reasons, we *deny* the Petition and do not institute an *inter partes* review.

V. ORDER

It is

ORDERED that the Petition is *denied* and no *inter partes* review is instituted.

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