

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NJOY, INC.,
Petitioner,

v.

FONTEM HOLDINGS 1 B.V.,
Patent Owner.

Case IPR2014-01300
Patent 8,490,628 B2

Before JACQUELINE WRIGHT BONILLA, BRIAN J. McNAMARA, and
JO-ANNE M. KOKOSKI, *Administrative Patent Judges*.

BONILLA, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

NJOY, Inc. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–8 of U.S. Patent No. 8,490,628 B2 (“the ’628 patent”). Paper 2 (“Pet.”). Fontem Holdings 1 B.V. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

Upon consideration of the Petition and the Preliminary Response, and for the reasons explained below, we determine that Petitioner has shown that there is a reasonable likelihood that it would prevail with respect to at least one of the challenged claims. We institute an *inter partes* review of claims 1–5, 7, and 8, but not claim 6, of the ’628 patent.

A. *Related Proceedings*

The parties indicate that U.S. district court cases involving the ’628 patent include, among others in the Central District of California, *Fontem Ventures v. NJOY, Inc.*, cv14-1645 (C.D. Cal.) (filed March 5, 2014). Pet. 4–5; Paper 4, 2–3, Paper 7, 1–2. The parties also identify Case IPR2013-00387 (relating to U.S. Pat. No. 8,156,944, involving Patent Owner) and Case IPR2014-01289 (relating to U.S. Pat. No. 8,393,331, involving the same parties as in this proceeding). Pet. 5; Paper 4, 3.

B. *The ’628 Patent (Ex. 1001)*

The ’628 patent is directed to an electronic atomization cigarette that functions as a cigarette substitute. Ex. 1001, 1:56–57. The electronic cigarette comprises, among other components, a shell, a mouthpiece, an air

inlet, an electronic circuit board, a sensor, an atomizer, and a “liquid-supply” in contact with the atomizer. *Id.* at 1:56–67.

Figures 1 and 6 of the '628 patent are reproduced below.

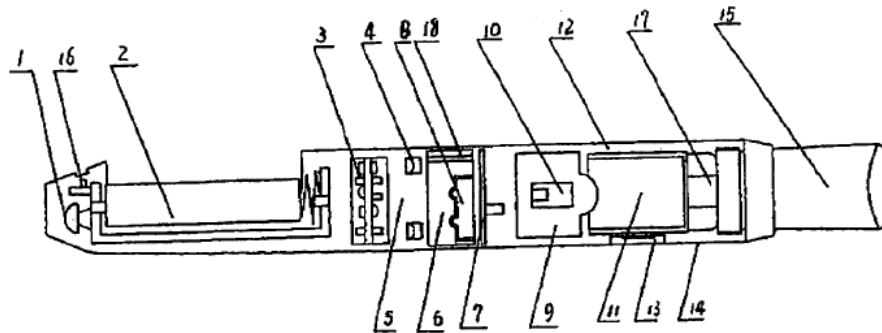


Fig. 1

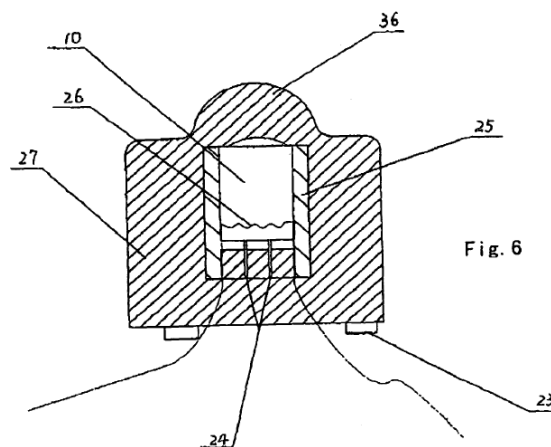


Fig. 6

Figure 1 depicts a schematic diagram of an embodiment of the electronic cigarette, and Figure 6 depicts a structural diagram of an atomizer within the electronic cigarette.

In Figure 1, the electronic cigarette comprises shell 14, as well as air inlet 4, LED 1, battery 2, electronic circuit board 3, normal pressure cavity 5, sensor 6, vapor-liquid separator 7, atomizer 9, liquid-supplying bottle 11, and mouthpiece 15, sequentially provided within shell 14. *Id.* at 2:31–37, 3:43–44. In Figure 6, the atomizer (shown as atomizer 9 in Figure 1) comprises heating element 26 and atomization cavity wall 25 surrounded by

porous body 27, which includes bulge 36. *Id.* at 2:43–64. As described in the '628 patent, “liquid-supplying bottle 11 is in contact with the bulge 36 on the atomizer 9, thereby achieving the capillary infiltration liquid-supplying.” *Id.* at 3:60–63.

C. The Challenged Claims

Petitioner challenges claims 1–8 of the '628 patent. Independent claims 1, 7, and 8 are reproduced below.

1. An electronic cigarette, comprising:
 - a housing having a longitudinal axis, an inlet and an outlet;
 - a liquid supply in the housing;
 - an air flow channel in the housing connecting the inlet to the outlet; and
 - an atomizer assembly in the housing between the inlet and the outlet, including:
 - a porous body projecting into the liquid supply; and
 - a heating wire in the atomizer having a central axis oriented substantially perpendicular to the longitudinal axis of the housing.
7. An electronic cigarette, comprising:
 - a housing having an inlet and an outlet;
 - a liquid supply in the housing;
 - an air flow channel through the housing connecting the inlet to the outlet, with part of the air flow channel extending alongside of the liquid supply; and
 - an atomizer in the housing between the inlet and the outlet, the atomizer including:
 - a porous body extending into the liquid supply;
 - a heating wire in the atomizer having a central axis oriented substantially perpendicular to a longitudinal axis of the housing; and

a battery, a sensor and an electronic circuit board within the housing, with the circuit board electrically connected to the battery, the sensor and the heating wire.

8. An electronic cigarette, comprising:

a housing having an inlet and an outlet;

a liquid supply, a battery, and an electronic circuit board in the housing;

an air flow channel in the housing between the inlet and the outlet; and

an atomizer in the housing including:

a porous body extending into the liquid supply;

a heating wire having a central axis generally perpendicular to a longitudinal axis of the housing; and

with the circuit board electrically connected to the battery and the heating wire.

Ex. 1001, 4:62–5:7, 5:21–6:22. Claims 2–6 depend from claim 1. Claim 6, for example, recites that the porous body projecting into the liquid supply comprises a porous bulge section.

D. Asserted Grounds of Unpatentability

Petitioner contends that the challenged claims are unpatentable under 35 U.S.C. § 103 based on the following obviousness grounds.

Reference(s)	Basis	Claims Challenged
Takeuchi (Ex. 1003) ¹	§ 103	1, 2, 3, 6, 7, and 8
Takeuchi in view of Gilbert (Ex. 1009) ²	§ 103	4

¹ Takeuchi, U.S. Patent No. 6,155,268, issued Dec. 5, 2000 (Ex. 1003).

² Gilbert, U.S. Patent No. 3,200,819, issued Aug. 17, 1965 (Ex. 1009).

Reference(s)	Basis	Claims Challenged
Takeuchi in view of Adiga (Ex. 1007) ³	§ 103	5
Susa (Ex. 1008) ⁴ in view of Whittemore (Ex. 1004) ⁵	§ 103	1–4 and 6–8
Susa in view of Whittemore and Adiga	§ 103	5
Voges (Ex 1011) ⁶ in view of Gehrler (Ex. 1012) ⁷	§ 103	1–8

Pet. 6–7.

II. ANALYSIS

A. Claim Construction

The Board interprets claims in an unexpired patent using the “broadest reasonable construction in light of the specification of the patent in which [they] appear[.]” 37 C.F.R. § 42.100(b); Office Patent Trial Practice Guide (“Practice Guide”), 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012). There is a “heavy presumption” that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002).

³ Adiga et al., U.S. Patent No. 6,598,607 B2, issued July 29, 2003 (Ex. 1023).

⁴ Susa et al., European Patent Application No. EP 0 845 220 B1, published Sept. 3, 2003 (Ex. 1008).

⁵ Whittemore, U.S. Patent No. 2,057,353, issued Oct. 13, 1936 (Ex. 1004).

⁶ Voges, U.S. Patent No. 5,894,841, issued Apr. 20, 1999 (Ex. 1011)

⁷ Gehrler et al., U.S. Patent No. 5,703,633, issued Dec. 30, 1997 (Ex. 1012).

1. “*Electronic cigarette*”

Petitioner contends that the term “electronic cigarette” in the preamble of the challenged claims refers to “a device for electrically generating nicotine based liquid aerosols, without tar, for inhalation by a user.” Pet. 8. Patent Owner counters that the term means “a device that simulates the feel and experience of a cigarette without burning.” Prelim. Resp. 3.

Patent Owner contends that Petitioner’s construction is too narrow because its function is limited to “nicotine delivery,” and is too broad because it encompasses any device that delivers nicotine. *Id.* at 4. Patent Owner cites a Webster’s dictionary that defines “cigarette” as “a slender roll of cut tobacco enclosed in paper and meant to be smoked; *also*: a similar roll of another substance (as marijuana).” *Id.* (citing Ex. 2001). According to Patent Owner, an “electronic cigarette” does not encompass a medical inhaler or any other device that does not “simulate the feel and experience of a traditional cigarette.” *Id.* at 4–8.

The Specification of the ’628 patent describes that its electronic atomization cigarette “functions as substitutes for quitting smoking and cigarette substitutes.” Ex. 1001, 1:56–57. While the Specification describes certain embodiments of an electronic cigarette that are shaped like a traditional tobacco cigarette, the Specification and claims do not limit the recited electronic cigarette to one that simulates the feel and experience of a traditional cigarette. The Specification expressly indicates that the term includes devices that are “cigarette substitutes.” *Id.*

In the background section, the Specification describes “cigarette substitutes that contain only nicotine without tar,” such as nicotine patches, chewing gum, and liquids. *Id.* at 1:42–45. The Specification further

indicates, however, that such substitutes do not provide “an effective peak concentration” in the blood due to slow absorption of nicotine, and do not satisfy habitual actions of a smoker, such as inhalation. *Id.* at 1:45–52.

Under a broadest reasonable construction in light of the Specification, we agree with Patent Owner that the recited “electronic cigarette” is not limited to a device that delivers nicotine. For the purposes of institution, we construe the term to be a device for generating liquid droplets for inhalation by a user, where the device functions as a substitute for smoking, e.g., by providing “nicotine without tar,” even if the device is not shaped like a traditional slender rolled cigarette. Ex. 1001, 1:18–20. This definition is consistent with a dictionary definition provided by Patent Owner regarding the term “e-cigarette.” Prelim. Resp. 7 (citing Ex. 2006) (defining “e-cigarette” as “a device used to simulate the experience of smoking, having a cartridge with a heater that vaporizes liquid nicotine instead of burning tobacco”).

2. “*Longitudinal axis*”

The challenged independent claims recite a “longitudinal axis” in relation to a housing. Petitioner construes this term to mean “an axis along the functional length.” Pet. 9 (citing Ex. 1001, Fig. 1, 2). Patent Owner construes it to mean “an axis along the length.” Prelim. Resp. 8–10. Patent Owner contends that a Webster dictionary defines the term “longitudinal” as “1: placed or running lengthwise 2: of or relating to length or the lengthwise dimension,” and the term “length” as “the longer or longest dimension of an object.” Prelim. Resp. 9 (citing Ex. 2001, 734; Ex. 2004, 712).

The Specification of the ’628 patent does not define or use the term “longitudinal axis.” Based on its ordinary meaning, in view of dictionary

definitions similar to those provided by Patent Owner,⁸ we construe “longitudinal axis” to refer to the axis along the length, i.e., the longest dimension, of an object.

3. “*Atomizer*”

Petitioner construes “atomizer” in the challenged claims to refer to “a part of the electronic cigarette that includes components that convert liquid into aerosols.” Pet. 9. Patent Owner construes the term to mean “a component that converts liquid into aerosol or vapor.” Prelim. Resp. 12–14. Patent Owner contends that the “primary difference between the two constructions is that Petitioner’s construction attempts to expand the claimed ‘atomizer’ to include extra components that do not ‘convert[] liquid into aerosol or vapor.’” *Id.* at 13.

We disagree that the Specification limits an “atomizer” to a single component that converts liquid into a vapor. Figure 6 in the Specification, for example, depicts an “atomizer” embodiment having multiple components, e.g., heating element 26, atomization cavity 10, atomization cavity wall 25, and porous body 27. We construe “atomizer” to refer to a part of the electronic cigarette that includes components that participate in facilitating atomization, but not components included in other recited parts of the electronic cigarette, such as the liquid supply.

4. “*Projecting into*” and “*extending into*”

Petitioner construes “projecting into” in claims 1 and 6, and “extending into” in claims 7 and 8, to mean “positioned within.” Pet. 9.

⁸ Neither Ex. 2001 nor Ex. 2004 include pages 734 or 712 of a Webster Dictionary, but we note that Random House Webster’s College Dictionary 800, 776 (1995) (Ex. 3001) similarly defines “longitudinal” and “length.”

Patent Owner construes both terms to mean “having at least a portion that protrudes into.” Prelim. Resp. 16–17. We conclude that the broadest reasonable construction of both terms, in light of the Specification, is “having at least a portion that protrudes into.” *See, e.g.*, Ex. 1001, Figs. 1 and 6 (showing porous bulge 36 of atomizer 9 projecting/extending into liquid-supplying bottle 11).

5. “*Cavity*”

Petitioner construes “cavity” in challenged claim 3 to mean “a hollow space within the atomizer separate from air flow passage.” Pet. 9. Patent Owner construes the term to mean “a hollow space.” Prelim. Resp. 10–12. Under the broadest reasonable construction in light of the Specification and the claims themselves, we construe the term “cavity” to mean “a hollow space,” recognizing that other language in claim 3 limits the location of the cavity.

6. “*Liquid-supply*”

Neither party provides a construction for the claim term “liquid supply.” The Specification does not define this term per se, but describes that the “liquid-supply is in contact with the atomizer.” Ex. 1001, 1:66–67. The Specification also describes an embodiment where “atomizer 9 is in contact with the liquid-supplying bottle 11 via the bulge 36.” *Id.* at 2:43–45. Based on an ordinary meaning of “liquid-supply,” consistent with the Specification, we construe this term to refer to a part of the recited electronic cigarette that includes one or more components that supply liquid to the atomizer.

7. “*Bulge section*”

Petitioner construes “bulge section” in claim 6 to mean “an extension section.” Pet. 9. Patent Owner construes the term to mean “a round mass thrusting out from the porous body.” Prelim. Resp. 14–15. Patent Owner contends that a Webster dictionary defines the term “bulge” as “a protuberant or swollen part or place,” and defines the term “protuberant” as “thrusting out from a surrounding or adjacent surface often as a rounded mass.” *Id.* at 15 (citing Ex. 2001, 162, 1001).⁹ We note that another Webster’s dictionary defines “bulge” to mean “a rounded projection or protruding part.” Ex. 3001, 108 (page 4 of Ex. 3001).

The Specification of the ’628 patent does not define “bulge,” but depicts bulge 36 on atomizer 9, as shown in Figures 1 and 6. Ex. 1001, 2:43–45, 3:60–63, Figs. 1 and 6. Based on the record before us, taking into account what is shown in Figures 1 and 6 of the Specification, as well the dictionary definitions of the term “bulge,” we construe “bulge section” to refer to a section of the atomizer that protrudes or thrusts out from a surrounding surface in a rounded shape. For the purposes of institution, this is the broadest *reasonable* construction in view of the Specification.

B. Obviousness Ground Based on Voges and Gehrler

Petitioner contends that claims 1–8 of the ’628 patent would have been obvious over Voges in view of Gehrler. Pet. 43–60. Petitioner provides claim charts, and relies on a Declaration by Dr. John Collins (Ex. 1040). *Id.*

⁹ Ex. 2001 does not include pages 734 or 712 of the Webster Dictionary, but we note that Random House Webster’s College Dictionary 108, 1086 (1995) (Ex. 3001) similarly defines “bulge” and “protuberant.”

1. Voges (Ex. 1011)

Voges describes a “dispensing device” for the self-administration of active substances by inhalation. Ex. 1011, 1:11–14. In the background section, Voges discusses prior art cigarette substitutes. *Id.* at 2:12–3:15. In that context, Voges states that “[b]ecause the requirements for a cigarette substitute are particularly difficult to satisfy, the present invention is herein described primarily with reference to nicotine delivery. . . .” *Id.* at 3:7–15.

Figures 1 and 2 of Voges are reproduced below.

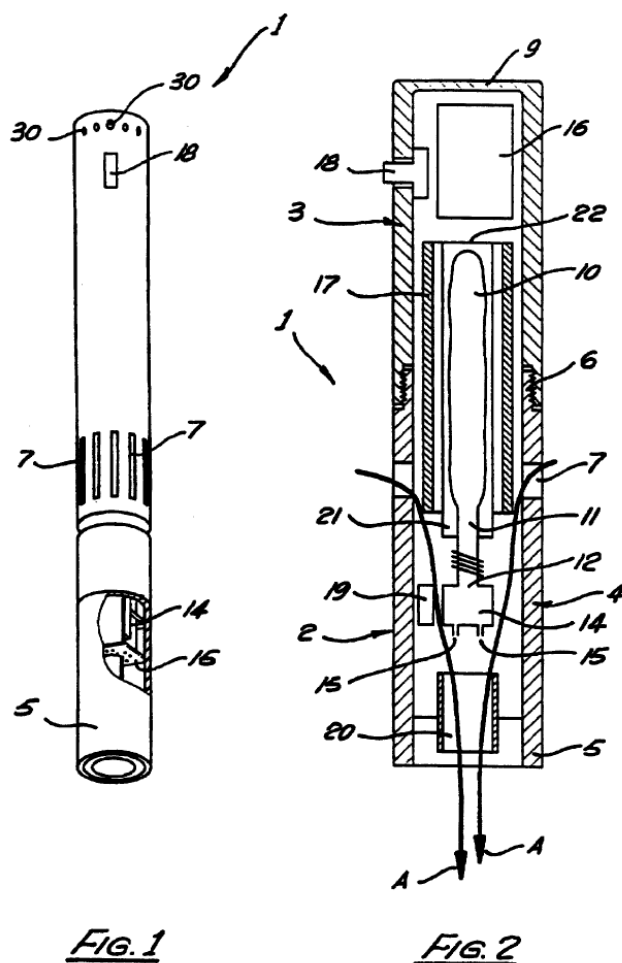


Figure 1 is schematic part sectional perspective view of a cigarette substitute, and Figure 2 is a schematic section of the cigarette substitute in

Figure 1. *Id.* at 5:31–36. The electronic cigarette comprises body parts 2 and 3, LEDs 30, control means 16, slots 7, container 10, droplet ejection device 14, heating means 20, and mouthpiece 5. *Id.* at 5:48–6:41, 7:47:50.

Voges discloses that “the droplet ejection device (‘DED’),” depicted as DED 14 in Figures 1–2, is “a piezoelectric device of the kind used in ink jet printing or is a thermal ‘bubble jet’ device of the kind used in ink jet printing.” *Id.* at 3:62–65. Voges also discloses that, “[b]y way of example . . . thermal devices are broadly described in ‘Thermal Ink-Jet Print Cartridge Designers Guide’ (2nd Edition Hewlett Packard), [] incorporated herein by reference.” *Id.* at 3:66–4:5. Petitioner provides the “Thermal Ink-Jet Print Cartridge Designers Guide” (the “Ink-Jet Guide”) as Exhibit 1013.

2. The Ink-Jet Guide (Ex. 1013)

The Ink-Jet Guide describes a thermal ink-jet print cartridge comprising an ink supply, 12 nozzles, and 12 “thin film resistors.” Ex. 1013, 2. The Ink-Jet Guide discloses that each nozzle supplies a droplet of ink by energizing a corresponding resistor. *Id.* During the drop ejection process, the resistor heats and vaporizes the ink, and the ink is ejected through a nozzle. *Id.*

Figure 2 in the Ink-Jet Guide is reproduced below.

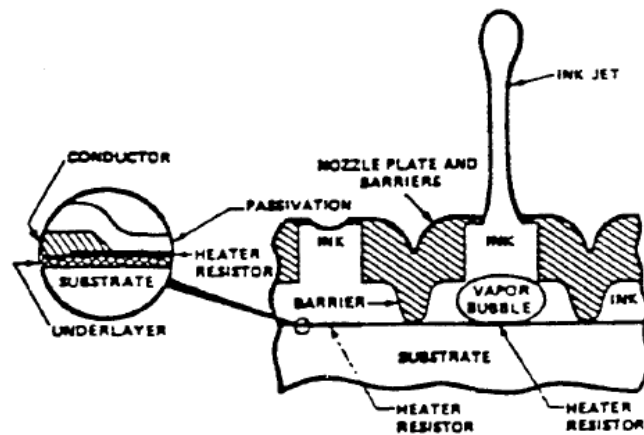


Figure 2 depicts a cross section of a thin-film structure for a thermal ink-jet print cartridge. *Id.*

3. *Gehrer (Ex. 1012)*

Gehrer describes an “ink container forming an ink reservoir for an ink supply.” Ex. 1012, 1:6–7. The container comprises a “capillary body and a capillary coupling member of readily available inexpensive capillary wicking materials such as open cell foam materials.” *Id.* at 2:4–6. Figure 3 of Gehrer is reproduced below.

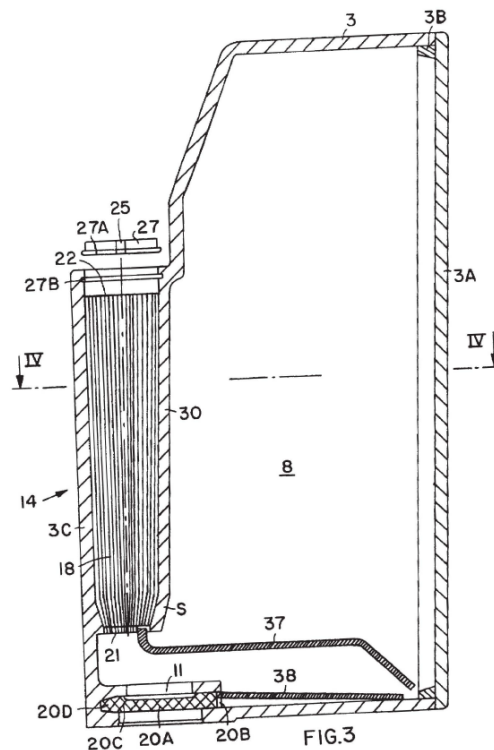


Figure 3 depicts a container comprising chamber 14 with capillary body 18, ink reservoir 8, capillary coupling member 20A, and wicking elements 37 and 38. *Id.* at 7:62–26.

Gehrer discloses that capillary coupling member 20A and capillary body 18 “are provided with their respective ink conducting elements 38 and 37 such as a wick connected at one end . . . while the other end reaches to the lowest point in the reservoir 8 to keep the coupling member 20A and the front end or facing end 21 wetted with ink.” *Id.* at 8:19–26.

4. Analysis: Independent claims 1, 7, and 8

Petitioner contends that Voges teaches or suggests a device comprising all limitations recited in independent claims 1, 7, and 8, except the recited “porous body.” Pet. 43–52, 57–59. In relation to the recited heating wire having a central axis oriented substantially/generally “perpendicular to the longitudinal axis of the housing,” for example,

Petitioner contends that Voges teaches those limitations where it incorporates by reference the Ink-Jet Guide regarding thermal devices. According to Petitioner, if one used the structure shown in Figure 2 in the Ink-Jet Guide as DED 14 in Voges device (shown in Voges, Fig. 2), the heater resistors (wires) would be perpendicular to the longitudinal access of the housing (body parts 2 and 3) in Voges device. *Id.* at 49–50, 59.

Petitioner relies on Gehrer as disclosing the “porous body projecting into the liquid supply” recited in claim 1, and the “porous body extending into the liquid supply” recited in claims 7 and 8. *Id.* at 44–46, 48, 49, 51, 58–59. Petitioner also relies on Gehrer as disclosing a “liquid supply comprising a fiber material,” as recited in claim 5, and a porous body “comprising a porous bulge section,” as recited in claim 6. *Id.* at 55–57. Petitioner contends that Gehrer teaches “a simple, reliable, and economical ink delivery system,” where “the use of a capillary coupling member projecting into the liquid supply to reliably and economically feed liquid.” *Id.* at 45.

In relation to the combination of Voges and Gehrer, Petitioner argues that an ordinary artisan would have had reason to include Gehrer’s wicking element 38 connected to coupling member 20A in Voges’ device, so the wicking element would project/extend into the liquid supply “to maintain pressure equilibrium within a liquid supply that prevents leaking out of liquid when the device is inactive, and drying out of liquid facing surfaces.” *Id.* at 44–45.

Petitioner contends that Gehrer’s container is “simple in its structure and hence cost efficient in its manufacture,” and has “a substantial shelf life and it may be positioned in any desired or convenient orientation without

any special features against a rapid spilling of the ink.” *Id.* at 45 (citing Ex. 1012, 3:1–7). Thus, according to Petitioner, an ordinary artisan would have had reason to modify Voges’ liquid supply using Gehrer’s teachings “to control unwanted leaking and drying of liquid in Voges’ device.” *Id.* at 45–46 (citing Ex. 1040 ¶¶ 79–80). Petitioner argues that an ordinary artisan would have known that “such a combination would work and provide the expected functionality.” *Id.* at 46 (citing Ex. 1040 ¶¶ 33–34, 79–80).

In response, Patent Owner contends that Voges in view of Gehrer does not teach “an atomizer assembly in the housing between the inlet and the outlet,” as recited in claims 1 and 7. Prelim. Resp. 41–43. As noted above, Petitioner contends that DED 14 corresponds to the recited atomizer. Figure 2 in Voges, and marked-up versions of Figure 2 in both the Petition and Preliminary Response (Pet. 47, Prelim. Resp. 42) depict DED 14 between slots 7 (air intake) and an air outlet, as shown by arrow A (air flow) in Figure 2. We are not persuaded by Patent Owner’s contention that “the airflow channel in Voges goes from the inlet to the outlet, bypassing the alleged atomizer (device 14).” Prelim. Resp. 42. Petitioner has made a threshold showing that the atomizer in Voges (DED 14) is located between slot 7 (inlet) and an air outlet, as depicted in Figure 2 in Voges.

Patent Owner also contends that Voges in view of Gehrer does not teach “a porous body” projecting/extending into the liquid supply, as recited in claims 1, 7, and 8. *Id.* at 43–45. Patent Owner first contends that Gehrer, which relates to an ink container, is not analogous art to Voges, which describes an electronic cigarette and atomizer. *Id.* at 43. As Petitioner points out, however, Voges discusses droplet ejection devices (DEDs) in the

context of its cigarette substitute as those described in the Ink-Jet Guide, also relating to ink containers. *Id.* at 43–44.

Patent Owner also contends that Voges teaches away from the recited porous body. *Id.* Pointing to a particular passage in Voges, Patent Owner contends that “Voges criticizes those devices [with a porous carrier] as not providing ‘a satisfactory means of adjusting both the quantity of nicotine delivered in each puff’” *Id.* at 44 (citing Ex. 1011, 3:1–6). What Voges actually says in that cited passage, however, is that “[t]o date no device has provided a satisfactory means of adjusting both the quantity of nicotine delivered in each puff in response to user demand and/or maintaining adequate precision and accuracy.” Ex. 1011, 3:1–6. We are not persuaded that such a general statement constitutes a teach away from using a porous component in the device of Voges.

Based on the record before us, we are persuaded that Petitioner provides a threshold showing that an ordinary artisan would have had reason to include a porous wick (“wicking material such as foam materials”) in the liquid container 10 of Voges’ device to prevent leaking or drying out of liquid in the container. Pet. 45–46; Ex. 1012, 3:7:11.

Patent Owner also contends that Voges and Gehrler do not teach “a heating wire,” including one “having a central axis oriented substantially [or generally] perpendicular to the longitudinal axis of the housing,” as recited in claims 1, 7, and 8. Prelim. Resp. 46–48. Patent Owner contends that Voges describes thin film resistors, not heating wires. *Id.* at 46. As noted by Patent Owner, however, Kanke, for example, teaches that a “heating resistor is constructed by winding a platinum wire around a bobbin and then coating the wire with glass” *Id.* (citing Ex. 1034, 1:23–26). We are persuaded

that Petitioner makes a threshold showing that an ordinary artisan would have understood that thin film resistors included heating wires, such as a platinum wire, and/or that a heating wire would have been an obvious design choice for a heater resistor. Pet. 51–52 (citing Ex. 1040 ¶¶ 40 (citing Ex. 1034), 74–75).

Based on the record before us, we are persuaded that Petitioner has shown that there is a reasonable likelihood that it would prevail with respect to the ground that challenged claims 1, 7, and 8 would have been obvious over Voges in view of Gehrler.

5. Analysis: Claims 2–5

Petitioner contends that Voges, or Voges and Gehrler together, teaches the different elements of dependent claims 2–4. Pet. 52–56. Patent Owner contends that dependent claims 2–4 would not have been obvious over Voges in view of Gehrler “for the reasons set forth with respect to claim 1.” Prelim. Resp. 48–49.

In relation to claim 5, which recites that the liquid supply comprises “a fiber material,” Petitioner contends that Gehrler teaches a “liquid supply (e.g., 8 in Fig. 3) comprising a fiber material (e.g., 18)” i.e., capillary body 18. Pet. 55–56. Petitioner notes that Gehrler teaches that the “capillary body may be advantageously made of any suitable wicking material such as foam materials, felts, or fibrous materials, especially linear or elongated fiber material.” *Id.* (citing Ex. 1012, 3:7–15). Patent Owner responds that capillary body 18 “is not in the liquid supply (reservoir 8)” in Gehrler. Prelim. Resp. 49. In other words, Patent Owner indicates that capillary body 18 cannot be a component of the liquid supply in Gehrler because it is

separate from the liquid supply (reservoir 8), as described by Petitioner in relation to claim 1 (Pet. 48), from which claim 5 depends.

As noted by Petitioner, Gehrer teaches that capillary body 18 “may be advantageously made of any suitable wicking material such as . . . linear or *elongated fiber material to form a storage for ink.*” Pet. 56 (citing Ex. 1012, 3:7–15) (emphasis added). We are persuaded that Petitioner has made a threshold showing that capillary body 18 and/or reservoir 8 may correspond to a liquid supply, and one would have had a reason to add the fiber material of capillary body 18 to liquid container 10 in Voges, in addition to wicking element 37 (porous body projecting into the liquid supply), based on teachings in Gehrer.

Based on the record before us, and for the reasons stated above in relation to claim 1, we are persuaded that Petitioner has shown that there is a reasonable likelihood that it would prevail with respect to the ground that challenged claims 2–5 would have been obvious over Voges in view of Gehrer.

6. Analysis: Claim 6

Petitioner contends that the porous body (wicking element 38 connected to capillary coupling member 20A) comprises a porous bulge section, i.e., wicking element 38. Pet. 56–57. Petitioner contends that Gehrer teaches that the capillary coupling member “may have different configurations” and coupling member 20A, as shown in Figure 3, “has a disk shape with a slight depression 20C in its center facing into the container and with a tapered edge 20D fitting into a respective groove in the housing wall.” *Id.* at 57 (quoting Ex. 1012, 8:44–49).

Patent Owner responds that “no bulge is shown or suggested in Gehrler.” Prelim. Resp. 50. We agree.

As discussed above, we construe “bulge section” in claim 6 to refer to a section of the atomizer that protrudes or thrusts out from a surrounding surface in a rounded shape. We do not construe the term “bulge section” so broadly that it encompasses any shape or component that extends out of the porous body. Rather, it must be rounded in shape, i.e., bulge out, in some fashion.

When considering how an ordinary artisan might have added a porous body (wicking element 38 connected to capillary coupling member 20A) to the atomizer in Voges’ device, we are not persuaded that wicking element 38 would have constituted or suggested a “bulge section.” We are not persuaded that wicking element 38 would have protruded or thrust out from a surrounding surface of a porous body in a rounded shape, or that it would have suggested such a shape. We are not persuaded that Petitioner has shown that there is a reasonable likelihood that it would prevail with respect to the ground that claim 6 of the ’628 patent would have been obvious over Voges in view of Gehrler.

C. Other Obviousness Grounds

In addition to the above-mentioned grounds, Petitioner further contends that the challenged claims would have been obvious over other references. Pet. 6–7, 10–43.

1. Claims 1–5, 7, and 8

In relation to claims 1–5, 7, and 8 of the ’628 patent, limitations and contentions for which Petitioner cites other references are similarly asserted by Petitioner as being met by references cited in the grounds discussed

above. Given the discussion above with regard to the grounds on which we institute review of the same claims, we exercise our discretion and decline to institute trial based on those other asserted grounds of unpatentability. *See* 37 C.F.R. § 42.108(a). Pet. 6–7, 10–43.

2. *Claim 6*

Petitioner argues that claim 6 would have been obvious over Takeuchi (Ex. 1003), or over Susa (Ex. 1008) in view of Whittemore (Ex. 1004). Pet. 6, 23–24, 40–41. Those grounds suffer the same deficiency discussed above regarding the challenge of claim 6 based on Voges in view of Gehrler.

Regarding the ground based on Takeuchi, Petitioner contends that capillary tube 36 in Takeuchi’s device constitutes a “bulge section.” Pet. 23–24. Petitioner contends that an ordinary artisan would have understood the capillary tube to be a bulge section “because it is an extension section— with two walls and a front section.” *Id.* at 24.

As noted above, we do not construe “bulge section” as broadly as Petitioner proposes. Petitioner does not persuade us that capillary tube 36 would have constituted or suggested a “bulge section” because we are not persuaded that it would have protruded or thrust out from a surrounding surface of a porous body in a rounded shape. We also are not persuaded that Petitioner makes a threshold showing that it would have been obvious to ordinary artisan to include a bulge section in particular, even assuming one had reason “to vary the shape [of capillary tube 36] with a larger front section in order to increase contact area with the liquid supply.” Pet. 24 (citing Ex. 1040 ¶¶ 26, 53).

Regarding the ground based on Susa in view of Whittemore, Petitioner contends that wick D in Whittemore’s device, as depicted in

Figure 2 of Wittemore, constitutes a “bulge section” as recited in claim 6. Pet. 40–41. Again, Petitioner does not persuade us that wick D would have constituted or suggested a “bulge section,” because we are not persuaded that it would have protruded or thrust out in a rounded shape. We also are not persuaded that Petitioner makes a threshold showing that it would have been obvious to an ordinary artisan to include a bulge section in particular, even assuming one had reason “to modify the shape and dimension of the extension section [wick D] as needed to increase contact area between the porous body and the liquid supply.” *Id.* at 41 (citing Ex. 1040 ¶¶ 33–34, 38, 65).

Thus, we are not persuaded that Petitioner has shown that there is a reasonable likelihood that it would prevail with respect to the grounds that claim 6 of the ’628 patent would have been obvious over Takeuchi, or over Susa in view of Whittemore.

III. CONCLUSION

For the foregoing reasons, we are persuaded that Petitioner has demonstrated that there is a reasonable likelihood that it would prevail on the grounds that claims 1–5, 7, and 8 would have been obvious over Voges in view of Gehrer. We have not made a final determination on the patentability of the challenged claims.

IV. ORDER

For the reasons given, it is

ORDERED that *inter partes* review is instituted with respect to the alleged ground, under 35 U.S.C. § 103, that claims 1–5, 7, and 8 of the ’628 would have been obvious over Voges in view of Gehrer;

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(a), *inter partes* review of the '628 patent is hereby instituted commencing on the entry date of this Order, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; and

FURTHER ORDERED that no ground other than that specifically granted above is authorized for the *inter partes* review as to the challenged claims of the '628 patent.

PETITIONER:

J. Steven Baughman
Charles Larsen
ROPES & GRAY LLP
steven.baughman@ropesgray.com
charles.larsen@ropesgray.com

PATENT OWNER:

Michael J. Wise
Joseph P. Hamilton
PERKINS COIE LLP
MWise@perkinscoie.com
JHamilton@perkinscoie.com