

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

R.J. REYNOLDS VAPOR COMPANY,
Petitioner,

v.

FONTEM HOLDINGS 1 B.V.,
Patent Owner.

Case IPR2016-01692
Patent 9,326,548 B2

Before JO-ANNE M. KOKOSKI, KRISTINA M. KALAN, and
KIMBERLY McGRAW, *Administrative Patent Judges*.

KALAN, *Administrative Patent Judge*.

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

I. INTRODUCTION

R.J. Reynolds Vapor Company (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–14 of U.S. Patent No. 9,326,548 B2 (Ex. 1001, “the ’548 patent”). Paper 2 (“Pet.”). Fontem Holdings 1 B.V. (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

We have jurisdiction under 35 U.S.C. § 314, 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 considering the Petition and the evidence of record, we determine that Petitioner has shown a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the claims challenged in the Petition. Accordingly, we institute *inter partes* review of those claims.

A. *Related Proceedings*

The parties indicate that the ’548 patent is asserted in *Fontem Ventures B.V. v. R.J. Reynolds Vapor Co.*, Case No. 2:16-cv-003049 (C.D. Cal. 2016). Pet. 3; Paper 4, 2. The ’548 patent also is challenged in IPR2016-01691. Pet. 4; Paper 4, 8.

B. *The ’548 Patent*

The ’548 patent, titled “Electronic Cigarette,” is directed to an electronic cigarette having a battery assembly and an atomizer assembly within a housing, with the battery assembly electrically connected to the atomizer assembly. Ex. 1001, Abstract. A liquid storage component is in contact with a porous component of the atomizer assembly, and a heating wire is in an air flow path through a run-through hole. *Id.* According to

the '548 patent, prior art devices had various disadvantages, including low atomizing efficiency, being structurally complicated, and not providing ideal aerosol effects. *Id.* at 1:36–38.

Figure 1 of the '548 patent is reproduced below:

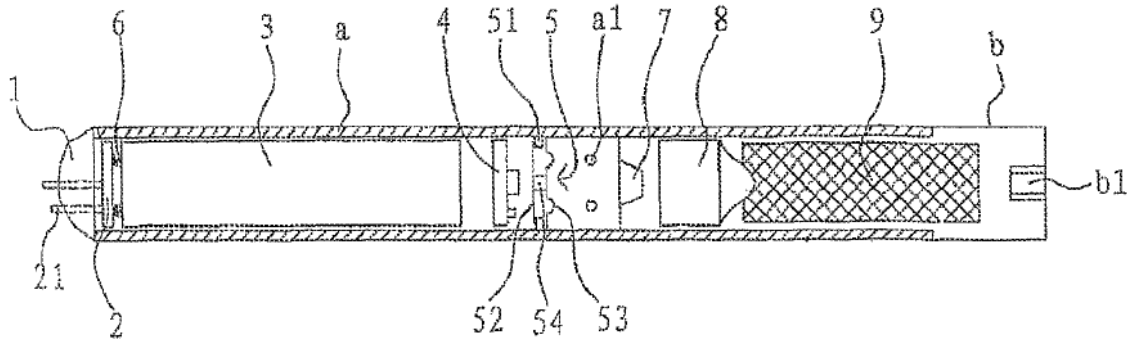


Figure 1

Figure 1 is a side section view of an electronic cigarette. *Id.* at 1:62. Hollow, integrally-formed shell (a) includes a battery assembly, atomizer assembly, and cigarette bottle assembly. *Id.* at 2:48–50. The battery assembly connects to the atomizer assembly in shell (a), and the detachable cigarette body assembly (which fits with the atomizer assembly) is located in one end of shell (a). *Id.* at 2:51–55. The battery assembly includes operating indicator 1, battery 3, electronic circuit board 4, and airflow sensor 5. *Id.* at 2:57–60. The atomizer assembly is atomizer 8, which includes a porous component and a heating rod. *Id.* at 3:25–27. The cigarette bottle assembly includes hollow cigarette shell holder (b), and perforated component for liquid storage 9. *Id.* at 4:2–4. Air channel b1 is located in the center on the surface of one end of cigarette shell holder (b), and extends inward. *Id.* at 4:12–14.

Figures 17 and 18 of the '548 patent are reproduced below:

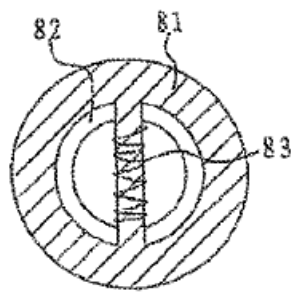


Figure 17

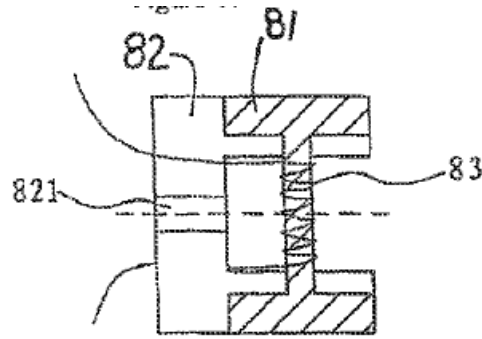


Figure 18

Figure 17 is a diagram of the axial structure of the atomizer in another embodiment, and Figure 18 is a side section view of the atomizer shown in Figure 17. *Id.* at 2:29–32. In this embodiment, the atomizer assembly includes “a frame (82), the porous component (81) set on the frame (82), and the heating wire (83) wound on the porous component (81).” *Id.* at 5:63–65. As described in the ’548 patent, the “frame (82) has a run-through hole (821) on it. The porous component (81) is wound with heating wire (83) in the part that is on the side in the axial direction of the run-through hole (821). One end of the porous component (81) fits with the cigarette bottle assembly.” *Id.* at 5:65–6:2.

C. Challenged Claims

Petitioner challenges claims 1–14 of the ’548 patent. Claim 1 is reproduced below:

1. An electronic cigarette, comprising:
a battery assembly having a cylindrical battery and an operating indicator;
an atomizer assembly in an elongated cylindrical housing, with the battery assembly electrically connected to the atomizer assembly, and with the cylindrical battery coaxial with the atomizer assembly;

- a liquid storage component in the housing;
- the atomizer assembly including a porous component set on a frame having a run-through hole;
- a heating wire coil electrically connected to the battery;
- an air flow path in the atomizer assembly parallel to a longitudinal axis of the housing, with the air flow path through the run-through hole to an outlet, with the heating wire coil wound on the porous component and in the air flow path and with the heating wire coil oriented perpendicular to the longitudinal axis; and
- the porous component in contact with the liquid storage component.

Ex. 1001, 6:12–30.

Of challenged claims 1–14, claims 1, 8, and 11 are independent.

Claims 2–7 depend, directly or indirectly, from claim 1. Claims 9 and 10 depend directly from claim 8. Claims 12–14 depend directly from claim 11.

D. The Asserted Ground of Unpatentability

Petitioner challenges the patentability of claims 1–14 of the '548 patent under 35 U.S.C. § 103 as being anticipated by Chinese Patent No. CN 2719043 Y (Ex. 1002 and 1003 (English translation)¹, “Hon ’043,”) and U.S. Patent No. 2,057,353 (Ex. 1004, “Whittemore”), and, if necessary, U.S.

¹ Hon ’043 is a Chinese patent, and Petitioner provided an English-language translation, as required by 37 C.F.R. § 42.63(b). Our citations are to that translation, which we assume for purposes of this Decision is accurate. However, although the translation of Hon ’043 is accompanied by a translator’s certificate attesting to the accuracy of the translation (Ex. 1003, 19), the certificate is not an “affidavit” as required by 37 C.F.R. § 42.63(b) and as defined by 37 C.F.R. §§ 1.68 and 42.2. Specifically, the translator’s certificate does not warn the translator “that willful false statements and the like are punishable by fine or imprisonment, or both.” 37 C.F.R. § 1.68. Petitioner must file, as a new exhibit, a satisfactory affidavit attesting to the accuracy of the translation within ten business days of this Decision.

Patent No. 5,894,841 (Ex. 1021, “Voges”) and/or U.S. Patent No. 5,703,633 (Ex. 1023, “Gehrer”). Pet. 9.

II. ANALYSIS

A. 35 U.S.C. § 325(d)

Institution of *inter partes* review is discretionary. *See* 35 U.S.C. § 314(a); 37 C.F.R. § 42.108. Our discretion on whether to institute is guided by 35 U.S.C. § 325(d), which states that “the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.”

Patent Owner requests that the Board exercise its discretion under § 325(d) and decline to institute *inter partes* review of the ’548 patent because the ground presented in the Petition presents the same prior art and arguments presented in the Petition in Case IPR2015-00859 (“the 859 IPR”), in which the Board declined to institute *inter partes* review. Prelim. Resp. 5–11. Patent Owner notes that § 325(d) has been used to deny a petition “in part because ‘[a]llowing similar, serial challenges to the same patent, by the same petitioner, risks harassment of patent owners and frustration of Congress’s intent in enacting the Leahy-Smith America Invents Act,’” and argues that “[t]he same reasoning should apply even if the Petitioner is different.” *Id.* at 10 (quoting *Arista Networks v. Cisco Systems, Inc.*, Case IPR2015-01710, 2016 WL 1083023 at *5 (PTAB Feb. 16, 2016)).

The permissive language of § 325(d) does not prohibit instituting *inter partes* review based on prior art or arguments previously presented to the Office. Although the grounds in the Petition are similar to those asserted in the 859 IPR in that Hon ’043 and Whittemore are among the prior art

references relied upon in each, the '548 patent was not challenged in the 859 IPR. Petitioner is also asserting prior art (Voges and Gehrler) that was not asserted in the 859 IPR. Although we are mindful of the burden on Patent Owner and the Office to rehear the same or substantially the same prior art or arguments previously presented to the Office, we are persuaded, for the reasons that follow, that Petitioner's arguments have merit. Moreover, Patent Owner has not demonstrated that the Petition constitutes harassment or is part of a pattern by Petitioner of filing serial petitions against the '548 patent. Therefore, considering the totality of the circumstances, we do not exercise our authority to decline an *inter partes* review of the '548 patent under § 325(d).

B. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable constructions in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). Under the broadest reasonable construction standard, claim terms are presumed to have their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Only those terms in controversy need to be construed, and only to the extent necessary to resolve the controversy. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Petitioner proposes that we construe the term “frame” to mean “rigid structure,” and that we construe “porous component set on a frame having a

run-through hole” to mean that the porous component sits on the frame.

Pet. 15–17. Patent Owner states that it disagrees with Petitioner’s proposed constructions, “[b]ut, because those constructions are not relevant to” the Preliminary Response, it “does not dispute those construction[s] here.”

Prelim. Resp. 11. For purposes of this Decision, and based on the record before us, we determine that none of the claim terms require an explicit construction.

C. Obviousness over Hon ’043, Whittemore, and/or Voges and/or Gehrler

Petitioner contends that claims 1–14 would have been obvious under 35 U.S.C. § 103 over the combination of “Hon ’043 and Whittemore, and, if necessary, Voges and/or Gehrler.” Pet. 24–77. Petitioner relies on the Declaration of Dr. Robert H. Sturges (Ex. 1015) in support of its contentions. *Id.* Petitioner presents arguments and claim charts for each of the challenged independent claims 1, 8, and 11, as well as for the challenged dependent claims. *Id.* at 34–77. Patent Owner disagrees with Petitioner’s contentions and relies on the Declaration of Richard Meyst (Ex. 2001). Patent Owner does not separately challenge Petitioner’s arguments directed to the specific claims.

1. Hon ’043

Hon ’043 is directed to an electronic atomization cigarette. Ex. 1003, 5. Figure 1 of Hon ’043 is reproduced below:

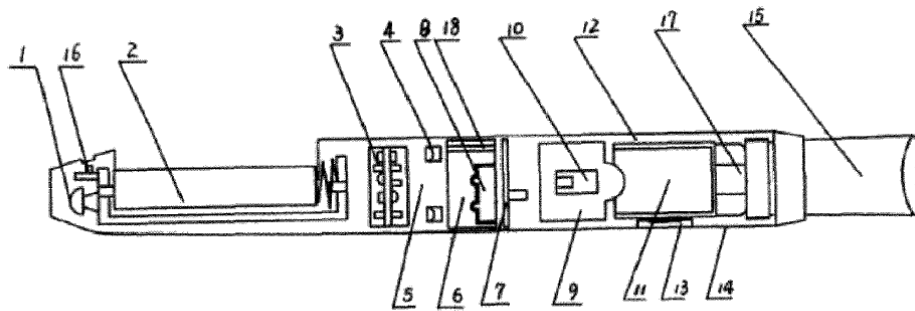


FIG. 1

Figure 1 is a schematic diagram of the structure of an electronic cigarette that includes air inlet 4, normal pressure cavity 5, sensor 6, vapor-liquid separator 7, atomizer 9, liquid-supplying bottle 11, and mouthpiece 15 within shell 14. *Id.* at 8–9.

Figure 6 of Hon '043 is reproduced below:

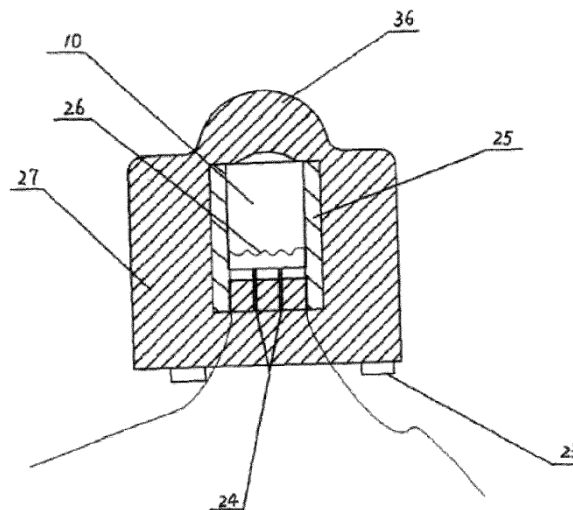


FIG. 6

Figure 6 is a structural diagram of an atomizer, which includes atomization cavity 10, long stream ejection hole 24, atomization cavity wall 25, heating element 26, porous body 27, and bulge 36. *Id.* at 9. Hon '043 states that “atomization cavity wall 25 is surrounded with the porous body 27, which can be made of foam nickel, stainless steel fiber felt, high molecule polymer

foam and foam ceramic,” and that “atomization cavity wall 25 can be made of aluminum oxide or ceramic.” *Id.*

Hon ’043 teaches that “[w]hen a smoker smokes, the mouthpiece 15 is under negative pressure, the air pressure difference or high speed stream between the normal pressure cavity 5 and the negative pressure cavity 8 will cause the sensor 6 to output an actuating signal,” which causes the cigarette to begin operating. *Id.* at 10. Air enters normal pressure cavity 5 through air inlet 4, proceeds through the through hole in vapor-liquid separator 7, and flows into atomization cavity 10 in atomizer 9. *Id.* The nicotine solution in porous body 27 is driven by the high speed stream passing through the ejection hole into atomization cavity 10 in the form of a droplet, where it “is subjected to the ultrasonic atomization by the first piezoelectric element 23 and is further atomized by the heating element 26.” *Id.* at 10–11. After atomization, large-diameter droplets stick to the wall and are reabsorbed by porous body 27 via overflow hole 29, and small-diameter droplets form aerosols that are sucked out via aerosol passage 12, gas vent 17, and mouthpiece 15. *Id.* at 11.

2. *Whittemore*

Whittemore is directed to vaporizing units for a therapeutic apparatus. Ex. 1004, 1:1–2. Figure 2 of Whittemore is reproduced below:

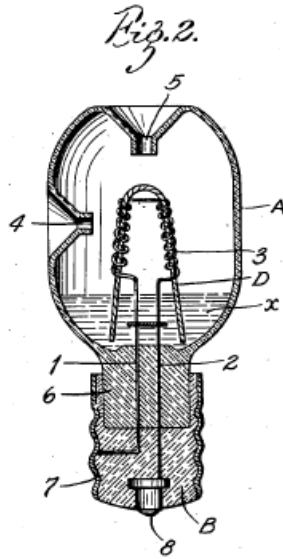


Figure 2 is an enlarged sectional view of a therapeutic apparatus with a vaporizing unit as taught by Whittemore. *Id.* at 1:15–16. Vaporizing vessel A is a hollow glass container that holds liquid medicament x. *Id.* at 1:19–23. Conductors 1 and 2 are combined with heating element 3 such that, when conductors 1 and 2 are energized, heating element 3 is heated. *Id.* at 1:24–27. Wick D is combined with heating element 3 so that a portion of wick D is always in contact, or in approximate contact, with heating element 3, and a portion of wick D is also in contact with liquid medicament x. *Id.* at 1:53–2:5.

According to Whittemore, medicament x is carried on wick D by capillary action to a point where it will be vaporized by the heat from heating element 3. *Id.* at 2:5–8. Whittemore states that “wick D consists of a thread, string or [strand] of some suitable wick material doubled intermediate its ends so as to form a substantially inverted V-shaped device whose side portions are encased in and surrounded by coiled or looped portions” of heating element 3, with “the lower ends or free ends of the side pieces of the wick projecting downwardly into the medicament and

terminating at or in close proximity to the closed bottom 6 of the vessel.” *Id.* at 2:9–18.

3. *Voges*

Voges discloses an electronic cigarette substitute having a “cigarette-shaped hollow tubular body 1 comprising connected body parts 2, 3,” container 10 holding nicotine in a suitable solvent, droplet ejection device 14, which can be “of the kind used in a bubble jet printer,” and a “hollow cylindrical battery 17.” Ex. 1021, 5:48–6:1. Voges discloses that the droplet ejection device may be a piezo electric device of the kind used in ink jet printing or a thermal “bubble jet” device of the kind used in ink jet printing. *Id.* at 3:62–4:5.

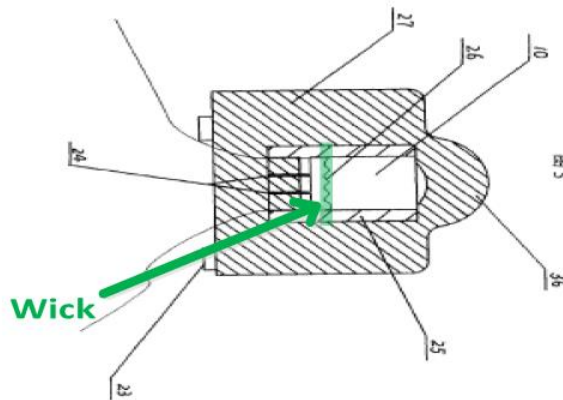
4. *Gehrer*

Gehrer is directed to an ink container with a capillary member for use in ink jet printers. Ex. 1023, at [54]. Gehrer’s container includes ink reservoir 8, capillary body 18 connected to porous wick 37, and porous coupling member 20A at the liquid withdrawal port connected to porous wick 38. *Id.* at Fig. 3. Porous wicks 37 and 38, capillary body 18, and coupling member 20A are made from wicking materials such as fibers. *Id.* at 2:4–7, 3:7–15, 10:1–4.

5. *Analysis*

Petitioner contends that “Hon ’043 discloses an electronic cigarette with every element of claims 1–14 of the ’548 patent, except that Hon ’043’s heating wire coil 26 is not wound on the porous body 27.” Pet. 24. Petitioner further contends that “Whittemore is directed to a vaporizing unit with a heating wire coil 3 wound around a porous wick D.” *Id.* Petitioner argues that it would have been obvious “to incorporate Whittemore’s wick D

into the electronic cigarette of Hon '043 for transporting liquid via capillary action from the porous body 27 to the heating coil 26” as demonstrated in Petitioner’s annotated Figure 6 from Hon '043, reproduced below:



Id. at 25–26 (citing Ex. 1015 ¶¶ 55–69). Petitioner further argues that it would have been obvious to make the porous wick from fiber material, because Whittemore discloses that the wick can be “made of any suitable material” (Ex. 1004, 1:54–2:6) and one of ordinary skill in the art would have considered using Gehrler’s “inexpensive capillary wicking materials [such as] fibers, especially linear fiber materials” (Ex. 1023, 2:4–7) as a matter of routine design choice. Pet. 26. Petitioner relies on Voges to support its argument that one of ordinary skill in the art would have consulted the ink jet printing art. *Id.* at 26–27 n.4.

Petitioner argues that the proposed combination is (1) the combination of prior art elements according to known methods to yield predictable results; (2) the simple substitution of one known element for another to obtain predictable results; (3) use of a known technique to improve similar devices in the same way; (4) the application of a known technique to a known device ready for improvement to yield predictable results; and (5) obvious to try. *Id.* at 27–29 (citing Ex. 1015 ¶¶ 57–61). Petitioner also

argues that one of ordinary skill in the art readily would have appreciated that Whittemore's porous wick/heating coil wire configuration provides more efficient heating than Hon '043's configuration, and that the proposed modification would not have destroyed the operation of Hon '043's electronic cigarette. *Id.* at 30–32 (citing Ex. 1015 ¶¶ 62–66). Finally, to the extent that there may be ambiguity about whether Hon '043's housing and battery are cylindrical, Petitioner relies on the conventional cigarette shape taught by Voges. *Id.* at 33 (citing Ex. 1021, Figs. 1, 2).

Patent Owner argues that the modification proposed in the Petition is indistinguishable from the proposed modification previously rejected in the 859 IPR. Prelim. Resp. 16. However, having reviewed the arguments and evidence presented in the 859 IPR, and having found them to be distinguishable from the arguments and evidence in this case, we do not find that our determination in the 859 IPR precludes us from instituting *inter partes* review in this case.

Patent Owner further argues that the proposed combination requires numerous changes to Hon '043, separately enumerating and discussing the changes to Hon '043 based on Whittemore that Patent Owner believes would need to be made. *Id.* at 19. Bodily incorporation, however, is not the standard for obviousness. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (“The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. . . . Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.”). On the record before us, we are persuaded that Petitioner has provided sufficient evidence at this stage of the proceeding to demonstrate that one of ordinary

skill in the art would have been motivated to make the combination proposed by Petitioner.

Regarding Petitioner's argument for modifying Hon '043 to include the wick of Whittemore to provide a "reliable means for transporting liquid", Patent Owner contends that neither Hon '043 nor Whittemore mentions any difficulty in transporting liquid or a need for a reliable means for doing so. Prelim. Resp. 20. Patent Owner relies on Mr. Meyst's testimony that, due to the different configurations of the Hon '043 and Whittemore devices, a person of ordinary skill would not have found the proposed transformation of Whittemore's wick to be obvious. *Id.* at 22 (citing Ex. 2011 ¶ 39). However, Petitioner provides testimony from Dr. Sturges that one skilled in the art would have found the modification obvious, and that Whittemore's wick could be converted into part of the porous body of Hon '043. Ex. 1015 ¶ 83. For purposes of deciding whether to institute an *inter partes* review, we must view any issues of material fact created by testimonial evidence in the light most favorable to Petitioner. 37 C.F.R. § 42.108(c). Thus, only for purposes of this Decision, we must resolve the dispute between Dr. Sturges and Mr. Meyst in Petitioner's favor.

Regarding Petitioner's "more efficient heating" argument, Patent Owner states that this argument was rejected in the 859 IPR, and refers back to its substantial modification arguments. Prelim. Resp. 22–23. However, the arguments and evidence presented here differ from the arguments and evidence presented in the 859 IPR. Moreover, Patent Owner's substantial modification arguments rely at least in part on the principle of bodily incorporation, which, as set forth above, is not the standard for obviousness.

Finally, Patent Owner argues that Petitioner's proposed modification changes the principle of operation of Hon '043, in that "presumably air flow does not participate in atomization, no droplets of liquid are formed, and no droplets of liquid are moved into the atomization chamber via a high speed stream" in the proposed modification. *Id.* at 25. This argument, however, is based on Patent Owner's presumption; no supporting testimony is presented. It is well settled that arguments of counsel cannot take the place of factually supported objective evidence. *See, e.g., In re Huang*, 100 F.3d 135, 139–40 (Fed. Cir. 1996). Although Patent Owner cites to Hon '043, Whittemore, and the MPEP, these citations do not adequately support the otherwise speculative nature of Patent Owner's argument.

At this stage of the proceeding, having considered the evidence and arguments presented by Petitioner and Patent Owner, we determine that the record before us establishes a reasonable likelihood that Petitioner would prevail in showing that the subject matter of independent claims 1, 8, and 11 would have been obvious over the combined teachings of Hon '043 and Whittemore, and, if necessary, Voges and/or Gehrler. We also have considered the arguments and evidence with respect to the challenged dependent claims, and are persuaded on the present record that Petitioner has established a reasonable likelihood that it would prevail as to those claims as well.

III. CONCLUSION

Based on the arguments in the Petition and Preliminary Response, and the evidence of record, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail on its challenge that claims 1–14 of the '548 patent are unpatentable.

At this stage of the proceeding, the Board has not made a final determination as to the construction of any claim term or the patentability of claims 1–14.

IV. ORDER

In consideration of the foregoing, it is hereby

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted as to claims 1–14 of the '548 patent with respect to the following grounds:

Whether claims 1–10 are unpatentable under 35 U.S.C. § 103 as obvious over the combined teachings of Hon '043, Whittemore, and Voges; and

Whether claims 11–14 are unpatentable under 35 U.S.C. § 103 as obvious over the combined teachings of Hon '043, Whittemore, Voges; and Gehrler; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 315(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial commencing on the entry date of this Decision;

FURTHER ORDERED that Petitioner shall file as an exhibit, within ten business days of this Decision, an affidavit attesting that Exhibit 1003 is an accurate translation of Hon '043, in compliance with 37 C.F.R. §§ 1.68, 42.2, and 42.63(b); and

FURTHER ORDERED that no ground other than that specifically granted above is authorized for *inter partes* review as to the claims of the '548 patent.

IPR2016-01692
Patent 9,326,548 B2

FOR PETITIONER:

Ralph Gabric
rgabric@brinksgilson.com

Robert Mallin
rmallin@brinksgilson.com

Yuezhong Feng
yfeng@brinksgilson.com

FOR PATENT OWNER:

Michael J. Wise
mwise@perkinscoie.com

Joseph P. Hamilton
jhamilton@perkinscoie.com

Tyler Bowen
tbowen@perkinscoie.com