

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INDUCTEV, INC.,
Petitioner,

v.

WITRICITY CORPORATION,
Patent Owner.

IPR2023-01208
Patent 8,912,687 B2

Before JAMESON LEE, ROBERT J. WEINSCHENK, and
SCOTT RAEVSKY, *Administrative Patent Judges*.

WEINSCHENK, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background and Summary*

InductEV, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–18 (“the challenged claims”) of U.S. Patent No. 8,912,687 B2 (Ex. 1001, “the ’687 patent”). WiTricity Corporation (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”) to the Petition. With our authorization, Petitioner filed a Reply (Paper 7, “Reply”) to the Preliminary Response, and Patent Owner filed a Sur-reply (Paper 8, “Sur-reply”) to the Reply.

An *inter partes* review may not be instituted unless “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Further, when instituting an *inter partes* review, we “will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.” 37 C.F.R. § 42.108(a). Here, Petitioner demonstrates a reasonable likelihood of prevailing in showing that at least one of the challenged claims is unpatentable. Thus, we institute an *inter partes* review of the challenged claims on all the grounds of unpatentability in the Petition.

B. *Real Parties in Interest*

The parties identify themselves as the only real parties in interest. Pet. 68; Paper 3, 1.

C. *Related Matters*

The parties indicate that the ’687 patent is the subject of the following district court case: *WiTricity Corporation v. InductEV, Inc.*, No. 2:23-cv-

01099 (E.D. Pa.) (“District Court Litigation”). Pet. 68; Paper 3, 1. The parties also indicate that another patent asserted in the District Court Litigation is the subject of a petition for *inter partes* review in IPR2023-01182. Pet. 68; Paper 3, 1. Petitioner indicates that a patent related to the ’687 patent was the subject of a petition for *inter partes* review in IPR2021-01166. Pet. 68.

D. The ’687 Patent

The ’687 patent relates to “wireless energy transfer.” Ex. 1001, 2:52–53. The ’687 patent describes “systems and methods” that “provide for near-field wireless energy transfer via strongly coupled [high quality factor (‘Q-factor’)] resonators . . . with the potential to transfer power . . . over distances much larger than have been achieved using traditional induction techniques.” *Id.* at 4:47–52. The ’687 patent states that such systems and methods “may be sized and configured for . . . a car charging system.” *Id.* at 130:3–8. For example, a “source resonator may be mounted in an enclosure,” “placed on the floor of a garage or parking space,” and “connect[ed] to a power source” so as to “allow[] wireless power transfer . . . when a vehicle drives over” the enclosure. *Id.* at 130:29–36. A “device resonator . . . may be mounted on the underside of a vehicle” and “configured to receive energy from [the] source resonator” in order to “recharge batteries [and] power electronics or devices.” *Id.* at 130:8–14.

E. Illustrative Claim

Of the challenged claims, claims 1, 7, and 13 are independent. Claim 13 is reproduced below.

13. A vehicle wireless power system, comprising:

a power supply, the power supply configured to supply power at a rate sufficient to charge the battery of a vehicle that is driven at least in part by electrical power;

a first electromagnetic resonator coupled to the power supply and having a mode with a resonant frequency ω_1 , an intrinsic loss rate Γ_1 , and a first Q-factor $Q_1 = \omega_1/2\Gamma_1$, the first electromagnetic resonator housed in a housing configured to be disposed in proximity to the vehicle;

a load configured to power the drive system of the vehicle using electrical power;

a second electromagnetic resonator adapted to be housed upon the vehicle and configured to be coupled to the load, the second electromagnetic resonator having a mode with a resonant frequency ω_2 , an intrinsic loss rate Γ_2 , and a second Q-factor $Q_2 = \omega_2/2\Gamma_2$,

wherein the second electromagnetic resonator is configured to be wirelessly coupled to the first electromagnetic resonator to provide resonant, non-radiative wireless power to the second electromagnetic resonator from the first electromagnetic resonator; and

an authorization facility to confirm compatibility of the resonators and provide authorization for initiation of transfer of power.

Ex. 1001, 230:29–54.

F. Evidence

Petitioner submits the following evidence:

Evidence	Exhibit No.
Declaration of Mark Allen (“Allen Declaration”)	1003
Bennett, US 2010/0036773 A1, published Feb. 11, 2010 (“Bennett”)	1005
Cook, US 2009/0299918 A1, published Dec. 3, 2009 (“Cook”)	1007

G. Asserted Ground

Petitioner asserts that the challenged claims are unpatentable on the following ground:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–18	103	Cook, Bennett

II. ANALYSIS

A. 35 U.S.C. § 325(d)

Patent Owner argues that the Petition should be denied under 35 U.S.C. § 325(d). Prelim. Resp. 1–6; Sur-reply 1–4. In determining whether to deny institution under § 325(d), we use

the following two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of [the] first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential).

- 1. Whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office*

Under the first part of the *Advanced Bionics* framework, we consider “whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office.” *Advanced Bionics*, Paper 6 at 8. Patent Owner argues that Petitioner relies on art that previously was presented to the Office. Prelim. Resp. 4. For purposes of this Decision, we need not decide whether the same or substantially the same art previously

was presented to the Office. As discussed below, even if we assume that the first part of the *Advanced Bionics* framework is satisfied, Petitioner demonstrates that the Office erred in a manner material to the patentability of the challenged claims in the second part of the framework.

2. *Whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims*

Under the second part of the *Advanced Bionics* framework, we consider “whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.” *Advanced Bionics*, Paper 6 at 8. Petitioner argues that “‘the record of the Office’s previous consideration of the art is not well developed or silent,’ and the Petition’s undisputed analysis shows that the Examiner erred by ‘misapprehending or overlooking specific teachings of the relevant prior art.’” Reply 1; *see* Pet. 67. Patent Owner argues that “mere silence regarding references presented to and considered during prosecution does not show material error by the Examiner,” and thus Petitioner “fails to explain how the Examiner made a material error.” Prelim. Resp. 4–6; *see* Sur-reply 1–3.

On this record, we agree with Petitioner. During examination of the ’687 patent, the Examiner allowed 1) claims 1–6 “because none of the prior art of record discloses or suggests a vehicle powering wireless receiver for use with a first electromagnetic resonator coupled to a power supply”; 2) claims 7–12 “because none of the prior art of record discloses or suggests a power source for wirelessly providing power to a wireless receiver of an at least partially electrically powered vehicle”; and 3) claims 13–18 “because none of the prior art of record discloses or suggests a vehicle wireless power

system.” Ex. 1002, 798; Reply 1–3. Even if we assume that the Examiner considered Cook and Bennett, on this record, Petitioner demonstrates that the Examiner overlooked teachings that are relevant to the above claim limitations. Specifically, Petitioner’s evidence indicates that Cook teaches a vehicle wireless power system that includes a first resonator coupled to a power supply for wirelessly providing power to a second resonator of an electric vehicle.¹ Pet. 30–34, 39–43, 45–47; Reply 1–3; Ex. 1007 ¶¶ 9–13. Patent Owner does not dispute that the Cook and Bennett combination teaches the limitations that were the basis for allowing claims 1–18.

Patent Owner contends that Petitioner’s discussion of “the Examiner’s separate reasons for its Notice of Allowance” in the Reply “are new and therefore improper” arguments. Sur-reply 1. We disagree. Petitioner states in the Petition that “the record is silent regarding the Examiner’s analysis of relevant teachings from Cook[] . . . or Bennett” (Pet. 67), and explains specifically how those relevant teachings meet all the limitations of claims 1–18 (*id.* at 30–67). Patent Owner then argues in the Preliminary Response that Petitioner “fails to explain how the Examiner . . . misapprehended[] or overlooked Petitioner’s two references.” Prelim. Resp. 6. Petitioner responds in the Reply by identifying portions of the Petition that show how Cook and Bennett teach the claim limitations discussed in the Examiner’s Notice of Allowance. Reply 1–3 (citing Pet. 30–33, 41–43, 50–52, 54–56). In other words, the Reply shows that Petitioner demonstrates in the Petition that the Examiner misapprehended or overlooked relevant teachings of Cook and Bennett. *Id.* Thus, Petitioner’s

¹ Petitioner’s evidence also indicates that the Cook and Bennett combination teaches the remaining limitations of the challenged claims. *See* Section II.D.

reliance on the Examiner's Notice of Allowance is a proper response to an argument raised by Patent Owner in the Preliminary Response, not a new theory. *See* 37 C.F.R. § 42.23(b); *Rembrandt Diagnostics, LP v. Alere, Inc.*, 76 F.4th 1376, 1384 (Fed. Cir. 2023) (“[A] reply may be proper if it is responsive and simply expands on previously raised arguments.”).

As a result, on this record, Petitioner demonstrates that the Office erred in a manner material to the patentability of the challenged claims.

3. *Summary*

For the reasons discussed above, we decline to exercise our discretion under § 325(d) to deny the Petition.

B. Level of Ordinary Skill in the Art

Petitioner argues that a person of ordinary skill in the art would have had “at least a bachelor’s degree in electrical engineering (or equivalent) and at least two years of industry or equivalent research experience in the field of wireless energy transfer.” Pet. 6 (citing Ex. 1003 ¶¶ 37–41). Petitioner’s description of the level of ordinary skill in the art is supported by the testimony of Petitioner’s declarant, Dr. Mark Allen. Ex. 1003 ¶¶ 37–41. Patent Owner does not dispute Petitioner’s description at this stage of the proceeding. We adopt Petitioner’s description for purposes of this Decision.

C. Claim Construction

In an *inter partes* review proceeding, a patent claim is construed using the same standard used in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of the claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b). Neither party proposes an express construction for any claim terms. Pet. 7. We

determine that no claim terms require express construction for purposes of this Decision. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”).

D. Obviousness of Claims 1–18 over Cook and Bennett

Petitioner argues that claims 1–18 would have been obvious over Cook and Bennett. Pet. 10–67. For the reasons discussed below, Petitioner demonstrates a reasonable likelihood of prevailing in showing that claims 1–18 would have been obvious over Cook and Bennett.

1. Claim 13

Claim 13 recites “[a] vehicle wireless power system.” Ex. 1001, 230:29. Petitioner presents evidence that Cook teaches a system for “wirelessly charging the batteries of ‘electrically powered automobile[s].’” Pet. 30 (citing Ex. 1007 ¶¶ 1, 9–12). Patent Owner does not dispute that Cook teaches the preamble of claim 13. On this record, Petitioner shows sufficiently that Cook teaches the preamble of claim 13.²

Claim 13 recites “a power supply, the power supply configured to supply power at a rate sufficient to charge the battery of a vehicle that is driven at least in part by electrical power.” Ex. 1001, 230:30–32. Petitioner presents evidence that Cook teaches a charging circuit that provides power for charging the battery of an electric vehicle. Pet. 30–31 (citing Ex. 1007 ¶¶ 9–11, 13, 15). Patent Owner does not dispute that Cook teaches this

² We need not decide whether the preamble of claim 13 is limiting because Petitioner presents evidence that the prior art teaches the recitations in the preamble.

limitation of claim 13. On this record, Petitioner shows sufficiently that Cook teaches this limitation of claim 13.

Claim 13 recites “a first electromagnetic resonator coupled to the power supply and having a mode with a resonant frequency ω_1 , an intrinsic loss rate Γ_1 , and a first Q-factor $Q_1 = \omega_1 / 2\Gamma_1$, the first electromagnetic resonator housed in a housing configured to be disposed in proximity to the vehicle.” Ex. 1001, 230:33–37. Petitioner presents evidence that Cook teaches a first electromagnetic resonator coupled to the charging circuit and embedded in the ground near a parking space. Pet. 32–34, 37–39 (citing Ex. 1007 ¶¶ 1, 11–13, Fig. 1). Petitioner also presents evidence that Cook’s first resonator has a resonant frequency and a Q-factor, and a person of ordinary skill in the art would have understood that the first resonator has an intrinsic loss rate. *Id.* at 34–37 (citing Ex. 1003 ¶¶ 137–155; Ex. 1007 ¶¶ 1, 11–13, cl. 6). Patent Owner does not dispute that Cook teaches or suggests this limitation of claim 13. On this record, Petitioner shows sufficiently that Cook teaches or suggests this limitation of claim 13.

Claim 13 recites “a load configured to power the drive system of the vehicle using electrical power.” Ex. 1001, 230:39–40. Petitioner presents evidence that Cook teaches a battery and a motor for powering the drive system of the electric vehicle. Pet. 39–41 (citing Ex. 1007 ¶¶ 4, 9–11, Fig. 1). Patent Owner does not dispute that Cook teaches this limitation of claim 13. On this record, Petitioner shows sufficiently that Cook teaches this limitation of claim 13.

Claim 13 recites “a second electromagnetic resonator adapted to be housed upon the vehicle and configured to be coupled to the load, the second electromagnetic resonator having a mode with a resonant frequency ω_2 , an

intrinsic loss rate Γ_2 , and a second Q-factor $Q_2 = \omega_2/2\Gamma_2$.” Ex. 1001, 230:41–45. Petitioner presents evidence that Cook teaches a second electromagnetic resonator housed in the electric vehicle and coupled to the vehicle’s battery and motor. Pet. 41–43 (citing Ex. 1007 ¶¶ 9–12, Fig. 1). Petitioner also presents evidence that Cook’s second resonator has a resonant frequency and a Q-factor, and a person of ordinary skill in the art would have understood that the second resonator has an intrinsic loss rate. *Id.* at 43–45 (citing Ex. 1003 ¶¶ 166–172; Ex. 1007 ¶¶ 1, 11). Patent Owner does not dispute that Cook teaches or suggests this limitation of claim 13. On this record, Petitioner shows sufficiently that Cook teaches or suggests this limitation of claim 13.

Claim 13 recites “wherein the second electromagnetic resonator is configured to be wirelessly coupled to the first electromagnetic resonator to provide resonant, non-radiative wireless power to the second electromagnetic resonator from the first electromagnetic resonator.” Ex. 1001, 230:46–50. Petitioner presents evidence that Cook’s first resonator provides non-radiative wireless power to the second resonator. Pet. 45–47 (citing Ex. 1007 ¶¶ 1, 11, 13). Patent Owner does not dispute that Cook teaches this limitation of claim 13. On this record, Petitioner shows sufficiently that Cook teaches this limitation of claim 13.

Claim 13 recites “an authorization facility to confirm compatibility of the resonators and provide authorization for initiation of transfer of power.” Ex. 1001, 230:51–53. Petitioner presents evidence that Cook teaches a controller that verifies the vehicle’s identification and enables charging. Pet. 47–48 (citing Ex. 1007 ¶¶ 14, 15, 18). Petitioner presents evidence that Bennett teaches a tuning mechanism that confirms capability of two

resonators. *Id.* at 48–50 (citing Ex. 1005 ¶¶ 15, 29, 30, 37–39, 41, 52, 67, 72, 87). Petitioner also present evidence that it would have been obvious to implement Cook’s wireless charging system using Bennett’s tuning mechanism. *Id.* at 21–29 (citing Ex. 1003 ¶¶ 107–123). Patent Owner does not dispute that the Cook and Bennett combination teaches this limitation of claim 13. On this record, Petitioner shows sufficiently that the Cook and Bennett combination teaches this limitation of claim 13.

For the foregoing reasons, Petitioner shows sufficiently that the Cook and Bennett combination teaches or suggests the limitations of claim 13.

2. Claims 1–12 and 14–18

Independent claims 1 and 7 recite limitations similar to those discussed above for claim 13. Ex. 1001, 229:30–49, 229:61–230:17. Dependent claims 2–6, 8–12, and 14–18 depend, directly or indirectly, from claims 1, 7, or 13. *Id.* at 229:50–60, 230:18–28, 230:54–64. Petitioner presents evidence that the Cook and Bennett combination teaches the limitations of claims 1–12 and 14–18. Pet. 50–67. Patent Owner does not dispute that the Cook and Bennett combination teaches the limitations of these claims. On this record, Petitioner shows sufficiently that the Cook and Bennett combination teaches the limitations of claims 1–12 and 14–18.

3. Reason to Combine

Petitioner argues that a person of ordinary skill in the art would have had reason to combine the cited teachings of Cook and Bennett. Pet. 21–29 (citing Ex. 1003 ¶¶ 107–123). Specifically, Petitioner presents evidence that a person of ordinary skill in the art “implementing Cook would have turned to Bennett for details on how to tune Cook’s wireless charging system to different frequencies for compatibility with different vehicles.” *Id.* at 21–22

(citing Ex. 1003 ¶¶ 113–114). According to Petitioner, “Cook explained that its wireless car charger could . . . encounter ‘different forms’ . . . ‘of electric automobiles,’” but Cook did not “describe how to implement a charger that could adjust to different compatible frequencies.” *Id.* at 24 (citing Ex. 1003 ¶ 114). Petitioner’s evidence indicates that “Bennett’s dynamic frequency tuning capability would have improved Cook’s wireless car charger, making it compatible with the different forms of electric automobiles it might encounter.” *Id.* at 25 (citing Ex. 1003 ¶ 114). Petitioner also presents evidence that a person of ordinary skill in the art “combining Cook and Bennett would have had a reasonable expectation of success.” *Id.* at 28 (citing Ex. 1003 ¶¶ 120–123). Patent Owner does not dispute that it would have been obvious to combine the cited teachings of Cook and Bennett. On this record, Petitioner shows sufficiently that it would have been obvious to combine the cited teachings of Cook and Bennett.

4. *Summary*

For the foregoing reasons, Petitioner demonstrates a reasonable likelihood of prevailing in showing that claims 1–18 would have been obvious over Cook and Bennett.

III. CONCLUSION

Petitioner demonstrates a reasonable likelihood of prevailing in showing that at least one of the challenged claims is unpatentable. Accordingly, we institute an *inter partes* review on all grounds of unpatentability in the Petition. At this stage of the proceeding, we have not made a final determination with respect to the patentability of any of the challenged claims.

IV. ORDER

It is hereby

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–18 of the '687 patent is instituted with respect to all grounds of unpatentability set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '687 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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