

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INDUCTEV, INC.,
Petitioner,

v.

WITRICITY CORPORATION,
Patent Owner.

IPR2023-01182
Patent 8,461,719 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 16 and 17 (“the challenged claims”) of U.S. Patent No. 8,461,719 B2 (Ex. 1001, “the ’719 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. 82; Paper 3, 1.

C. *Related Matters*

The parties indicate that the ’719 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. 82; 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 IPR2023-01208. Pet. 82; Paper 3, 1. Petitioner indicates that a patent related to the ’719 patent was the subject of a petition for *inter partes* review in IPR2021-01166. Pet. 82.

D. The ’719 Patent

The ’719 patent relates to “wireless energy transfer.” Ex. 1001, 1:30–31. The ’719 patent states that “[a] known non-radiative, or near-field, wireless energy transfer scheme, often referred to as either induction or traditional induction, . . . uses an oscillating current passing through a primary coil, to generate an oscillating magnetic near-field that induces currents in a near-by receiving or secondary coil.” *Id.* at 1:57–62. According to the ’719 patent, “[t]raditional induction schemes have demonstrated the transmission of modest to large amounts of power, however only over very short distances, and with very small offset tolerances between the primary power supply unit and the secondary receiver unit.” *Id.* at 1:63–67. To address that problem, the ’719 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 3:25–30.

E. Illustrative Claim

Both challenged claims, claims 16 and 17, are independent. Claim 16 is reproduced below.

16. A system, comprising:

a source resonator having a Q-factor Q_1 and a characteristic size x_1 , and a second resonator having a Q-factor Q_2 and a characteristic size x_2 , and located a distance D from the source resonator;

wherein the source resonator and the second resonator are coupled to exchange energy wirelessly among the source resonator and the second resonator; and

wherein $\sqrt{Q_1 Q_2}$ is greater than 100, and wherein at least one of the resonators is enclosed in a low loss tangent material.

Ex. 1001, 98:60–99:3.

F. Evidence

Petitioner submits the following evidence:

Evidence	Exhibit No.
Declaration of Mark Allen (“Allen Declaration”)	1003
Cook, US 8,855,554 B2, issued Oct. 7, 2014 (“Cook ’554”)	1005
Cook, US 8,378,523 B2, issued Feb. 19, 2013 (“Cook ’523”)	1007
Lee, US 2007/0145830 A1, published June 28, 2007 (“Lee”)	1008
Pohjonen, WO 2007/101902 A1, published Sept. 13, 2007 (“Pohjonen”)	1009

G. Asserted Grounds

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

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
16	103	Cook ’554
16	103	Cook ’554, Pohjonen
17	103	Cook ’554
16	103	Cook ’523, Pohjonen
17	103	Lee, Cook ’523

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. 1–22; Sur-reply 1–5. 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 is the same as, or cumulative of, art previously presented to the Office. Prelim. Resp. 3–21; Sur-reply 1–5. 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 “[b]ecause ‘the record of the Office’s previous consideration of the art is not well developed or silent,’ and the art discloses the claim limitations for the reasons explained in the Petition, the Examiner erred at Step 2.” Reply 4; *see* Pet. 81. Patent Owner argues that “Petitioner did *not* make any allegation that the Examiner failed to consider, misapprehended, or overlooked the relevant *teachings*” of the asserted art. Prelim. Resp. 21–22.

On this record, we agree with Petitioner. During examination of the ’719 patent, the Examiner allowed claim 16 (then pending claim 22) because “none of the prior art of record discloses or suggests the square root of the product of the first and second Q-factors being greater than 100, and at least one of the resonators being enclosed in a low loss tangent material.” Ex. 1002, 581, 755; *see* Pet. 7. Even if we assume that the Examiner considered Cook ’554 and a reference cumulative to Pohjonen, 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 ’554 teaches “values for source resonator Q₁ of up to 300 or up to 600, and its second resonators having Q₂ up to 150 or up to 200—resulting in the claimed square-root value easily exceeding the

required ‘greater than 100.’” Pet. 31–32; Ex. 1003 ¶¶ 146–147; Ex. 1005, 4:35–38, 6:20–35, 8:26–32. Petitioner’s evidence also indicates that Pohjonen teaches enclosing a mobile device in a low loss tangent material. Pet. 36–37; Reply 2; Ex. 1009, 2, 6–7. Patent Owner does not dispute that the Cook ’554 and Pohjonen combination teaches the limitations that were the basis for allowing claim 16.

In addition, during examination of the ’719 patent, the Examiner allowed claim 17 (then pending claim 23) because

none of the prior art of record discloses or suggests at least one of the resonators including a coil of a plurality of turns of a conducting material connected to a network of capacitors, wherein the plurality of turns are in a common plane, and wherein a characteristic thickness of the at least one of the resonators is much less than a characteristic size of the at least one of the resonators.

Ex. 1002, 581, 755; *see* Pet. 7; Reply 4. On this record, Petitioner demonstrates that the Examiner overlooked portions of Cook ’554 that are relevant to the above claim limitations. In particular, Petitioner’s evidence indicates that Cook ’554 teaches a resonator having a copper wire coil with multiple turns in the same plane that connects to a capacitor bank. Pet. 43–47; Ex. 1005, 13:12–16, 17:41–45, Figs. 13–14. Petitioner’s evidence also indicates that Cook ’554 teaches a flat resonator with thin coils and a large number of turns, which a person of ordinary skill in the art would have understood to have a characteristic thickness much less than a characteristic size. Pet. 47–49; Reply 4–5; Ex. 1003 ¶¶ 183–184; Ex. 1005, 13:30–41, 15:38–54. Patent Owner does not dispute that Cook ’554 teaches the limitations that were the basis for allowing claim 17.

As a result, on this record, Petitioner demonstrates that the Office erred in a manner material to the patentability of challenged claims.¹

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 to three years of industry of equivalent research experience in the field of wireless energy transfer.” Pet. 7–8 (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).

¹ Patent Owner argues that for the asserted grounds including Cook ’523, Petitioner “waived any argument that it met its burden for *Advanced Bionics* Part 2.” Sur-reply 1. As discussed above, Petitioner shows sufficiently that the Office erred in a manner material to patentability for the asserted grounds including Cook ’554. Thus, we need not address Patent Owner’s waiver argument for the asserted grounds including Cook ’523.

Petitioner proposes constructions for the term “characteristic size” in claims 16 and 17, and the term “characteristic thickness” in claim 17.

Pet. 8–9. Patent Owner does not dispute Petitioner’s proposed constructions or propose an express construction for any claim terms. 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 Claim 16 over Cook ’554, and over Cook ’554 and Pohjonen

Petitioner argues that claim 16 would have been obvious over Cook ’554, and over Cook ’554 and Pohjonen. Pet. 9–38. For the reasons discussed below, Petitioner demonstrates a reasonable likelihood of prevailing in showing that claim 16 would have been obvious over Cook ’554, and over Cook ’554 and Pohjonen.

1. Claim 16

Claim 16 recites “a source resonator having a Q-factor Q_1 and a characteristic size x_1 , and a second resonator having a Q-factor Q_2 and a characteristic size x_2 , and located a distance D from the source resonator.” Ex. 1001, 98:61–64. Petitioner presents evidence that Cook ’554 teaches a transmit resonator (i.e., a source resonator) having a Q-factor and a characteristic size. Pet. 22–26 (citing Ex. 1003 ¶ 129; Ex. 1005, 3:21–32, 4:26–38, 11:12–24, Fig. 1). Petitioner also presents evidence that Cook ’554 teaches a receive resonator (i.e., a second resonator) having a Q-factor and a characteristic size that is located a distance from the transmit resonator. *Id.* at 26–30 (citing Ex. 1003 ¶ 138; Ex. 1005, 6:14–19, 9:20–46, Figs. 2, 7). Patent Owner does not dispute that Cook ’554 teaches this limitation of

claim 16. On this record, Petitioner shows sufficiently that Cook '554 teaches this limitation of claim 16.

Claim 16 recites “wherein the source resonator and the second resonator are coupled to exchange energy wirelessly among the source resonator and the second resonator.” Ex. 1001, 98:65–67. Petitioner presents evidence that Cook '554 teaches exchanging energy wirelessly between the transmit resonator and the receive resonator. Pet. 30–31 (citing Ex. 1005, 9:29–65, 10:3–7, 15:23–26). Patent Owner does not dispute that Cook '554 teaches this limitation of claim 16. On this record, Petitioner shows sufficiently that Cook '554 teaches this limitation of claim 16.

Claim 16 recites “wherein $\sqrt{Q_1 Q_2}$ is greater than 100.” Ex. 1001, 99:1. Petitioner presents evidence that Cook '554's transmit resonator “would have Q factors ‘up to 300’ at low frequency (LF) and ‘up to 600 in the HF frequency range,’” and Cook '554's receive resonator “will have ‘Q-factors up to 150 . . . at LF and up to 200 in the HF.’” Pet. 31–32 (citing Ex. 1005, 4:35–38, 6:20–35, 8:26–32). Petitioner also presents evidence that the above Q-factors “result[] in the claimed square-root value easily exceeding the required ‘greater than 100.’” *Id.* at 32 (citing Ex. 1003 ¶¶ 146–147). Patent Owner does not dispute that Cook '554 teaches this limitation of claim 16. On this record, Petitioner shows sufficiently that Cook '554 teaches this limitation of claim 16.

Petitioner further presents evidence and reasoning that this limitation would have been obvious to one of ordinary skill in the art because Cook '554 discloses ranges of Q_1 and Q_2 which overlap with the claimed range. Pet. 32. Patent Owner does not dispute that assertion. On this record,

Petitioner shows sufficiently that Cook '554 would have suggested this limitation of claim 16.

Claim 16 recites “wherein at least one of the resonators is enclosed in a low loss tangent material.” Ex. 1001, 99:1–3. Petitioner asserts that one of ordinary skill in the art “would have found this element obvious in view of [Cook '554].” Pet. 32. Petitioner presents evidence that Cook '554 teaches integrating the receive resonator into a mobile device in a way that “caus[es] lower losses and provid[es] better penetration of magnetic fields.” *Id.* at 32–35 (citing Ex. 1005, 1:59–61, 9:29–10:10, 17:1–2, 19:30–35). Petitioner also presents evidence that a person of ordinary skill in the art would have understood Cook '554 to teach “integrating the antenna in a ‘low loss tangent material,’ because those were the materials that were known to be ‘suitable for allowing electromagnetic waves (e.g., from the antenna) to pass.’” *Id.* at 35–36 (citing Ex. 1003 ¶¶ 151–152). Patent Owner does not dispute that Cook '554 would have suggested this limitation of claim 16. On this record, Petitioner shows sufficiently that Cook '554 would have suggested this limitation of claim 16.

Alternatively, Petitioner presents evidence that Pohjonen teaches enclosing a mobile device in a low loss tangent material. *Id.* at 36–37 (citing Ex. 1009, 2, 6–7). Petitioner also presents evidence that it would have been obvious to enclose Cook '554's receive resonator in Pohjonen's low loss tangent material. *Id.* at 17–21 (citing Ex. 1003 ¶¶ 111–120). Patent Owner does not dispute that the Cook '554 and Pohjonen combination teaches this limitation of claim 16. On this record, Petitioner shows sufficiently that the Cook '554 and Pohjonen combination teaches this limitation of claim 16.

2. 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 '554 and Pohjonen. Pet. 17–21 (citing Ex. 1003 ¶¶ 111–120). Specifically, Petitioner presents evidence that a person of ordinary skill in the art “implementing [Cook '554's] integrated resonator in a portable device would have enclosed the resonator in Pohjonen's low loss tangent material because it would protect [Cook '554's] second resonator from damage during manufacturing or use while maintaining antenna efficiency.” *Id.* at 18 (citing Ex. 1003 ¶ 113). Petitioner also presents evidence that a person of ordinary skill in the art “would have had a reasonable expectation of success enclosing [Cook '554's] second resonator in Pohjonen's outer cover because it was designed to enclose antennas ‘made of good [] conductor materials,’ like the inductive component of [Cook '554's] second resonator.” *Id.* at 20 (citing Ex. 1003 ¶ 118). Patent Owner does not dispute that it would have been obvious to combine the cited teachings of Cook '554 and Pohjonen. On this record, Petitioner shows sufficiently that it would have been obvious to combine the cited teachings of Cook '554 and Pohjonen.

3. Summary

For the foregoing reasons, Petitioner demonstrates a reasonable likelihood of prevailing in showing that claim 16 would have been obvious over Cook '554, and over Cook '554 and Pohjonen.

E. Obviousness of Claim 17 over Cook '554

Petitioner argues that claim 17 would have been obvious over Cook '554. Pet. 38–53. For the reasons discussed below, Petitioner demonstrates

a reasonable likelihood of prevailing in showing that claim 17 would have been obvious over Cook '554.

1. Claim 17

Claim 17 recites “a source resonator having a Q-factor Q_1 and a characteristic size x_1 , and a second resonator having a Q-factor Q_2 and a characteristic size x_2 , and located a distance D from the source resonator.” Ex. 1001, 99:5–8. Petitioner presents evidence that Cook '554 teaches a transmit resonator (i.e., a source resonator) having a Q-factor and a characteristic size. Pet. 38–40 (citing Ex. 1003 ¶ 163; Ex. 1005, 3:21–32, 4:61–67, 10:32–44). Petitioner also presents evidence that Cook '554 teaches a receive resonator (i.e., a second resonator) having a Q-factor and a characteristic size that is located a distance from the transmit resonator. *Id.* at 41–42 (citing Ex. 1003 ¶ 167; Ex. 1005, 6:14–19, 15:23–26, Figs. 11–12). Patent Owner does not dispute that Cook '554 teaches this limitation of claim 17. On this record, Petitioner shows sufficiently that Cook '554 teaches this limitation of claim 17.

Claim 17 recites “wherein the source resonator and the second resonator are coupled to exchange energy wirelessly among the source resonator and the second resonator.” Ex. 1001, 99:9–11. Petitioner presents evidence that Cook '554 teaches exchanging energy wirelessly between the transmit resonator and the receive resonator. Pet. 42–43 (citing Ex. 1005, 10:32–60, 19:51–64). Patent Owner does not dispute that Cook '554 teaches this limitation of claim 17. On this record, Petitioner shows sufficiently that Cook '554 teaches this limitation of claim 17.

Claim 17 recites “wherein $\sqrt{Q_1 Q_2}$ is greater than 100.” Ex. 1001, 99:11–12. Petitioner presents evidence that Cook '554's transmit resonator

“would have Q factors ‘up to 300’ at low frequency (LF) and ‘up to 600 in the HF frequency range,’” and Cook ’554’s receive resonator “will have ‘Q-factors up to 150 . . . at LF and up to 200 in the HF.’” Pet. 31–32, 43 (citing Ex. 1005, 4:35–38, 6:20–35, 8:26–32, 10:32–45). Petitioner also presents evidence that the above Q-factors “result[] in the claimed square-root value easily exceeding the required ‘greater than 100.’” *Id.* at 32, 43 (citing Ex. 1003 ¶¶ 146–147, 172–173). Patent Owner does not dispute that Cook ’554 teaches this limitation of claim 17. On this record, Petitioner shows sufficiently that Cook ’554 teaches this limitation of claim 17.

Claim 17 recites “wherein at least one of the resonators includes a coil of a plurality of turns of a conducting material connected to a network of capacitors, wherein the plurality of turns are in a common plane.” Ex. 1001, 99:13–16. Petitioner presents evidence that Cook ’554 teaches a resonator having a copper wire coil with multiple turns in the same plane that connects to a capacitor bank. Pet. 43–47 (citing Ex. 1005, 13:12–16, 17:41–45, Figs. 13–14). Patent Owner does not dispute that Cook ’554 teaches this limitation of claim 17. On this record, Petitioner shows sufficiently that Cook ’554 teaches this limitation of claim 17.

Claim 17 recites “wherein a characteristic thickness of the at least one of the resonators is much less than a characteristic size of the at least one of the resonators.” Ex. 1001, 99:16–19. Petitioner presents evidence that Cook ’554 teaches a flat resonator with thin coils and a large number of turns, which a person of ordinary skill in the art would have understood to have a characteristic thickness much less than a characteristic size. Pet. 47–49 (citing Ex. 1003 ¶¶ 183–184; Ex. 1005, 13:30–41, 15:38–54). Patent Owner does not dispute that Cook ’554 teaches this limitation of claim 17. On this

record, Petitioner shows sufficiently that Cook '554 teaches this limitation of claim 17.

Petitioner alternatively asserts that this limitation “would have been obvious to a [person of ordinary skill in the art] implementing [Cook '554's] Wireless Power Bridge embodiment.” *Id.* at 52–53. Patent Owner does not dispute this assertion. On this record, Petitioner shows sufficiently that Cook '554 would have suggested this limitation of claim 17.

2. Summary

For the foregoing reasons, Petitioner demonstrates a reasonable likelihood of prevailing in showing that claim 17 would have been obvious over Cook '554.

F. Obviousness of Claim 16 over Cook '523 and Pohjonen

Petitioner argues that claim 16 would have been obvious over Cook '523 and Pohjonen. Pet. 53–63. Petitioner identifies evidence indicating that the Cook '523 and Pohjonen combination teaches the limitations of claim 16, and that a person of ordinary skill in the art would have had reason to combine these references. *Id.* Patent Owner does not raise any arguments relating to this asserted ground. On this record, Petitioner demonstrates a reasonable likelihood of prevailing in showing that claim 16 would have been obvious over Cook '523 and Pohjonen.

G. Obviousness of Claim 17 over Lee and Cook '523

Petitioner argues that claim 17 would have been obvious over Lee and Cook '523. Pet. 63–80. Petitioner identifies evidence indicating that the Lee and Cook '523 combination teaches the limitations of claim 17, and that a person of ordinary skill in the art would have had reason to combine these references. *Id.* Patent Owner does not raise any arguments relating to this

asserted ground. On this record, Petitioner demonstrates a reasonable likelihood of prevailing in showing that claim 17 would have been obvious over Lee and Cook '523.

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 16 and 17 of the '719 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 '719 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

IPR2023-01182
Patent 8,461,719 B2

For PETITIONER:

Jonathan M. Strang
Charles H. Sanders
David A. Zucker
Razi Safi
LATHAM & WATKINS LLP
jonathan.strang@lw.com
charles.sanders@lw.com
david.zucker@lw.com
razi.safi@lw.com

For PATENT OWNER:

Lance A. Lawson
Andrew T. Spence
Ryan M. Corbett
BURR & FORMAN LLP
llawson@burr.com
aspence@burr.com
rcorbett@burr.com

Misha Hill
WITRICITY CORPORATION
misha.hill@witricity.com