

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD,
Petitioner,

v.

MOJO MOBILITY INC.,
Patent Owner.

IPR2023-01124
Patent 11,462,942 B2

Before WILLIAM V. SAINDON, BRIAN J. McNAMARA, and
KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

Opinion concurring filed by *Administrative Patent Judge* McNAMARA.

PER CURIAM.

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

I. INTRODUCTION

Samsung Electronics Co. Inc. (“Petitioner”) filed a petition, Paper 1 (“Petition” or “Pet.”), to institute an *inter partes* review (“IPR”) of claims 6, 9, 10, and 13 (the “challenged claims”) of U.S. Patent No. 11,462,942 B2 (Ex. 1001, “the ’942 patent”). 35 U.S.C. § 311. Mojo Mobility Inc. (“Patent Owner”) filed a Preliminary Response, Paper 7 (“Prelim. Resp.”), contending that the Petition should be denied as to all challenged claims. We authorized Petitioner’s filing of a Reply to Patent Owner’s Preliminary Response (Paper 8, “Prelim. Reply”) and Patent Owner’s filing of a Preliminary Sur-reply (Paper 10, “Prelim. Sur-reply”).

We have jurisdiction under 35 U.S.C. § 6. This Decision on Institution is issued pursuant to 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition “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.”

A decision to institute under § 314 may not institute on fewer than all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018). In addition, per Board practice, if the Board institutes trial, it will institute “on all of the challenged claims and on all grounds of unpatentability asserted for each claim.” *See* 37 C.F.R. § 42.108(a).

Having considered the arguments and the associated evidence presented in the Petition, the Preliminary Response, Petitioner’s Reply, and Patent Owner’s Sur-reply, for the reasons described below, we decline to institute *inter partes* review.

II. REAL PARTIES IN INTEREST

The Petition identifies Samsung Electronics co., Ltd and Samsung Electronics America, Inc. as real parties-in-interest. Pet. 1. Patent Owner identifies itself(Mojo Mobility Inc.) as the real party-in-interest. Paper 4, 2.

III. RELATED MATTERS

The parties identify the following related matters:

Mojo Mobility Inc. v. Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc., No. 1:22-cv-00433 (E.D. Tex.) (“the Texas Litigation”); *Samsung Electronics Co., Ltd. v. Mojo Mobility Inc.*, IPR2023-01099; *Samsung Electronics Co., Ltd. v. Mojo Mobility Inc.*, IPR2023-01100; *Samsung Electronics Co., Ltd. v. Mojo Mobility Inc.*, IPR2023-01098. Pet. 1; Paper 4, 2.

IV. THE '942 PATENT

The '942 patent concerns a system and method for inductive charging of portable devices, e.g., cellular phones, Bluetooth headsets, notebook computers and other such equipment. Ex. 1001, 1:51–2:7. Recognizing the rapid increase in the number and variety of mobile equipment with different charging requirements, the '942 patent observes that inductive charging, e.g., using pad-like inductive charging devices capable of charging different types of devices, reduces the inconvenience of users having multiple chargers or adapters. *Id.* at 2:9–3:28. The '942 patent also identifies limitations of such pad-like charging devices and observes that “to date, no device has been provided that is portable, and that allows for inductive charging of multiple devices with differing power requirements and which itself can be intermittently or occasionally charged either by an external power source, or by other means, or that is self-powered or includes its own power source.” *See id.* at 3:35–3:41.

The “Summary” describes multiple embodiments in which a primary coil of a base unit inductively generates a current in a receiver coil of a portable device that is used to charge its battery. *Id.* at 3:45–7:60. The ’942 patent describes a system that has two parts, i.e., a unit containing a primary that creates an alternating magnetic field from current current applied to a winding and a receiver that receives energy from the alternating magnetic field and transfers it to the mobile or other device. *See id.* at 3:45–60. In one embodiment a primary coil that is substantially planar and substantially parallel to a charging surface provides power inductively to the portable device. *Id.* at 4:16–19. To provide power inductively to the portable device, a FET driver circuit applies alternating current to the primary in a range of operating frequencies near resonance of a circuit comprising the primary coil and a capacitor to generate an alternating magnetic field in a direction that is substantially perpendicular to the plane of the first primary coil and the charging surface of the system. *Id.* at 4:21–31. Increasing the operating frequency within the range corresponds to inducing a lower voltage or current in the receiver circuit. *Id.* at 4:31–34. A sense circuit having a low pass filter and an amplifier is coupled to the primary coil to detect communication of information induced in the primary coil by the receiver coil. *Id.* at 4:36–40. A communication and control circuit, including a microcontroller coupled to the first drive circuit and the sense circuit, detects the communication of information in the primary coil and operates the drive circuit to inductively transfer power from the primary coil to a receiver circuit that communicates the information detected in the first primary coil via the sense circuit. *Id.* at 4:40–50. The received communication of information includes information corresponding to the voltage or current induced by the first primary coil at the output of the receiver circuit, a

unique identification code, and a power requirement. *Id.* at 4:54–58. The communication and control circuit is configured to operate the first drive circuit according to the power requirement to provide the power from the first primary coil to the receiver coil to charge the battery of the portable device. *Id.* at 4:58–62.

The '942 patent states that “the coils can be formed in any number of different shapes, including, for example, flat or planar hexagonal shapes, or spirals.” *Id.* at 30:57–60. All of the challenged claims depend from claim 1, which recites a primary coil having a “substantially planar” shape.

V. ILLUSTRATIVE CLAIM

All challenged claims depend from claim 1.¹ As we decide all issues in their proceeding based on independent claim 1, we reproduce claim 1 below with paragraph designations used in the Petition.

[1(a)] A system for providing power inductively to a portable device comprising a battery and an inductive receiver unit including a receiver coil and a receiver unit, the system comprising:

[1(b)] a first primary coil that is substantially planar and substantially parallel to a charging surface of the system for providing power inductively to the portable device:

[1(c)(1)] a first drive circuit, including a FET driver, a capacitor, and a FET switch, coupled to a DC voltage input and coupled to the first primary coil,

[1(c)(2)] wherein during operation the first drive circuit is configured to apply an alternating electrical current to the first primary coil at an operating frequency and duty cycle to generate an alternating magnetic field in a direction substantially perpendicular to the plane of the first primary coil and the charging surface of the system to provide power inductively to the portable device,

¹ Petitioner challenges the patentability of independent claim 1 in IPR2023-01098.

[1(c)(3)] wherein the operating frequency is within a range of frequencies (i) that are near a resonance frequency of a circuit comprising the first primary coil and the capacitor, (ii) such that increasing values of the operating frequency within the range of frequencies would correspond to a lower voltage or current induced in an output of the receiver circuit and (iii) that allow activation and powering of the receiver unit and charging the battery of the portable device;

[1(d)] a first sense circuit, including a low pass filter and an amplifier, coupled to the first primary coil to detect communication of information induced in the first primary coil by the receiver coil; and

[1(e)] a communication and control circuit, including a microcontroller coupled to the first drive circuit and the first sense circuit, configured to:

[1(f)] detect, through the first sense circuit, a received communication of information in the first primary coil;

[1(g)] operate the first drive circuit to inductively transfer power from the first primary coil to the receiver coil to activate and power the receiver unit to enable the receiver circuit to communicate the information detected in the first primary coil via the first sense circuit, wherein the received communication of information includes information to enable the communication and control circuit to configure the inductive transfer of power to the portable device,

[1(h)] wherein the received communication of information includes:

information corresponding to a voltage or current induced by the first primary

coil at the output of the receiver circuit; a unique identification code; and a power requirement; and

[1(i)] operate the first drive circuit according to the power requirement to provide the power from the first primary coil to the receiver coil to power the receiver unit and charge the battery of the portable device,

[1(j)] wherein to charge the battery of the portable device the communication and control circuit is further configured to: receive additional information in the first primary coil corresponding to the voltage or current at the output of the

receiver circuit while charging the battery of the portable device;

[1(k)] regulate in a closed loop feedback manner the voltage or current at the output of the receiver circuit in accordance with the received additional information corresponding to the voltage or current at the output of the receiver circuit by adjusting at least one of the operating frequency, the duty cycle, and a DC voltage at the DC voltage input of the first drive circuit while charging the battery of the portable device; [1(l)] monitor for continued presence of the portable device and completion of the charging of the battery of the portable device detected by the communication and control circuit through the first sense circuit; and

[1(m)] if the portable device is no longer present or charging is complete, stop operation of the first drive circuit for the provision of power inductively to the portable device.

See Pet. 5–59.

VI. ASSERTED GROUNDS

Petitioner asserts that claims 6, 9, 10, and 13 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
6, 9	103	Okada ² , Odendaal ³ , Kook ⁴
10	103	Okada, Odendaal, Kook, Symonds ⁵ , Shima ⁶ , Hui-027 ⁷
13	103	Okada, Odendaal, Kook, Symonds

² Translation of Japanese Patent Application Publication No. 2006-141170A (Ex. 1005).

³ U.S. Patent No. 6,960,968 (Ex. 1008).

⁴ U.S. Patent Application Publication No. 2009/0261778 (Ex. 1059).

⁵ U.S. Patent Application Publication No. 2008/0272889 (Ex. 1070).

⁶ U.S. Patent No. 5,808,587 (Ex. 1032).

⁷ U.S. Patent Application Publication No. 2003/0095027 (Ex. 1068).

VII. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner describes a person of ordinary skill in the art (“POSITA” or “ordinarily skilled artisan”) as one having “at least a master’s degree in electrical engineering, or a similar discipline, and two or more years of experience with wireless charging systems, including, for example, inductive power transfer systems.” Pet. 4 (citing Ex. 1002, Declaration of Dr. R. Jacob Baker (“Baker Decl.”) ¶¶ 20–21). Petitioner further states additional education can supplement practical experience and vice versa. *Id.* At this stage of the proceeding, Patent Owner does not challenge Petitioner’s description of an ordinarily skilled artisan. Prelim. Resp. 12.

The level of ordinary skill in the art may be evidenced by the references themselves. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978). As Petitioner’s description of a person of ordinary skill appears commensurate with the subject matter of the ’942 patent and the references, we apply it for purposes of this Decision.

VIII. CLAIM CONSTRUCTION

For petitions filed after November 13, 2018, we interpret claim terms using “the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b) (2019). In this context, claim terms “are generally given their ordinary and customary meaning” as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (citations omitted) (en banc). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written

description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence is “less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *Phillips*, 415 F.3d at 1317 (citations omitted).

Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

We construe only those claim terms that require analysis to determine whether to institute inter partes review. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

Neither party has proposed a special definition or explicit construction of any claim term. We do not perceive a need to expressly construe any term for purposes of this Decision.

IX. DISCRETION UNDER 35 U.S.C. § 314(A)

Under § 314(a), the Director has discretion to deny institution. *See Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) (“[T]he agency’s decision to deny a petition is a matter committed to the Patent Office’s discretion.”); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (same). Patent Owner argues that we should exercise our discretion and deny the Petition based on the Texas Litigation and based on the multiple related petitions filed by Petitioner. Prelim. Resp. 12–22. We need not address Patent Owner’s contentions concerning discretionary denial because, as discussed below, Petitioner has not established a

reasonable likelihood of prevailing in demonstrating the unpatentability of any challenged claim of the '942 patent.

X. ANALYSIS

A. *Legal Principles*

“In an [inter partes review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic*, 815 F.3d at 1363 (citing 35 U.S.C. § 312(a)(3) (requiring inter partes review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in inter partes review).

The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Additionally, the obviousness inquiry typically requires an analysis of “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”)); *see In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016) (citing *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006)).

An obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418; *accord In re Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007). Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). Instead, Petitioner must articulate a reason why a person of ordinary skill in the art would have combined the prior art references. *In re NuVasive*, 842 F.3d 1376, 1382 (Fed. Cir. 2016).

A reason to combine or modify the prior art may be found explicitly or implicitly in market forces; design incentives; the “interrelated teachings of multiple patents”; “any need or problem known in the field of endeavor at the time of invention and addressed by the patent”; and the background knowledge, creativity, and common sense of the person of ordinary skill. *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1328–29 (Fed. Cir. 2009) (quoting *KSR*, 550 U.S. at 418–21).

In determining whether a claim is obvious in light of the prior art, when in evidence, we consider any relevant objective evidence of non-obviousness. *See Graham*, 383 U.S. at 17. Notwithstanding what the teachings of the prior art would have suggested to one of ordinary skill in the art at the time of the invention, the totality of the evidence submitted, including objective evidence of non-obviousness, may lead to a conclusion that the challenged claims would not have been obvious to one of ordinary skill. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984). At this stage of the proceeding Patent Owner does not present evidence of such objective considerations

We analyze the asserted grounds of unpatentability in accordance with these principles to determine whether Petitioner has met its burden to establish a reasonable likelihood of success at trial.

B. Petitioner's Contentions Common to All Grounds

As challenged claims 6, 9, 10, and 13 all depend from claim 1, we address the limitations of claim 1 and the relevant references. Petitioner challenges claim 6, which depends from claim 1, over the combination of Okada, Odendaal and Kook. Pet. 5–69; *see also* IPR2023-01098, Paper 1, 6–54 (challenges to claim 1 over Okada, Odendaal, and Kook).

1. Okada (Ex. 1005)

Okada is a Japanese patent application publication titled “Electric Power Supply System, Power Transmitting Device, and Power Receiving Device for System.” Ex. 1005, code (54). Okada discloses a power supply system that supplies power to different types of receivers. *Id.* at code (57). The system uses a common cradle having a power transmitting module including an internal coil that is supplied with a commercial voltage and a receiver having a power receiving module including an internal coil. *Id.* When a receiver such as a PDA (Personal Digital Assistant) is placed on the common cradle, magnetic coupling occurs between the coil in the receiver and the coil in the common cradle. *Id.* A voltage is induced at both ends of the coil in the receiver based on the commercial voltage supplied to the common cradle and this supplies power to the receiver. *Id.* According to Okada, after power transmission has begun, a carrier wave is periodically transmitted from the common cradle to determine whether the receiver is properly positioned and whether it is fully charged. *Id.* ¶¶ 74–76, Fig. 3. The common cradle can switch power over three levels (low, intermediate,

and high) depending on the power transmission requirements of the power receiving apparatus. *Id.* ¶¶ 51, 90.

Figure 2 of Okada, reproduced below, is a block diagram illustrating electrical connections of Okada's power supply system. *Id.* ¶ 154.

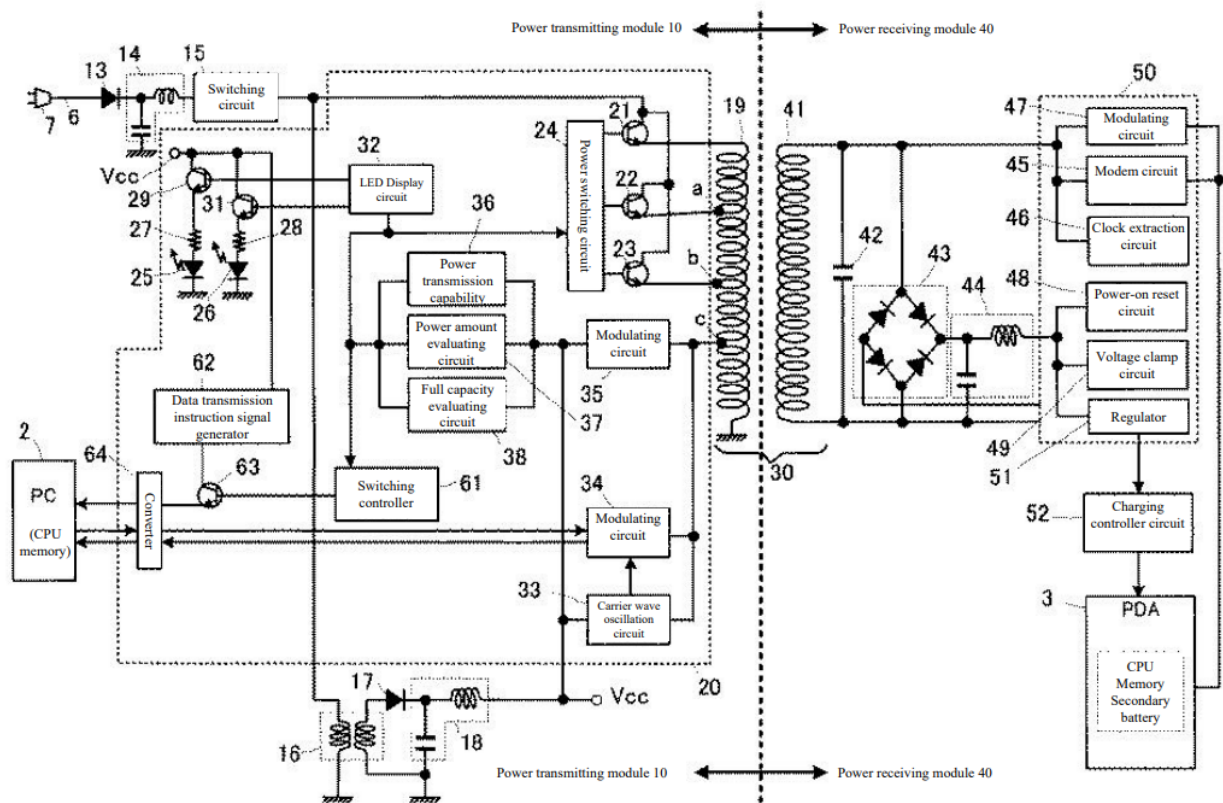


FIG. 2

Id. at Fig. 2. As shown in Figure 2, on the left side of the dashed vertical line Okada's system includes a power transmitting module 10 with primary-side coil 19; on the right side of the dashed vertical line Okada's system includes power receiving module 40 with secondary-side coil 41. *Id.* ¶¶ 40, 50–51. Together, primary-side coil 19 and secondary-side coil 41 constitute transformer 30, such that magnetic coupling induces a voltage on both sides of secondary-side coil 41 when a voltage is applied to the primary-side coil. *Id.* ¶¶ 40, 51. Primary-side coil 19 has taps a, b, and c in order of the

number of turns; taps a, b, and c are connected to the emitters of transistors 21, 22, and 23, respectively. *Id.* ¶¶ 40, 50–51. The magnitude of the voltage generated is affected by the transformation ratio of primary-side coil 19 and secondary side coil 41. *Id.* ¶¶ 40, 51. The transformation ratio (and the magnitude of the generated voltage) is different depending on which of transistors 21, 22, and 23 are switched ON by power switching circuit 24. *Id.* ¶¶ 40, 51.

Carrier wave oscillating circuit 33 on the primary side generates a carrier wave that is provided to tap c of primary coil 19, such that magnetic coupling occurs between primary side coil 19 and secondary side coil 41. *Id.* ¶ 57. The induced voltage is converted to a DC voltage that is applied to power on-reset circuit 48 and recognized by power receiving control circuit 50 of power receiving module 40. *Id.* Clock extracting circuit 46 extracts a clock signal from the carrier wave; modulating circuit 47 uses that clock signal to modulate the carrier wave based on information from PDA 3, e.g., with codes indicating the PDA is capable of receiving power, power consumption information, and full capacity information. *Id.* A modulated wave generated by this information is applied to secondary-side coil 41. *Id.* Demodulating circuit 35 connected to tap c of primary-side coil 19 receives and demodulates the transmitted wave modulated by the code information. *Id.* ¶ 64. For example, demodulated power consumption information is used by power evaluating circuit 37 of power transmitting module 10 to determine the amount of power to supply to the PDA in the cradle and to instruct power switching circuit 24 to change the turn ratio of transformer 30 by switching transistors 21, 22, and 23. *Id.* ¶¶ 57, 64. As Okada points out

because a clock signal necessary for modulation is extracted from the carrier wave transmitted from the power transmitting

module 10, an oscillating circuit does not need to be provided in the PDA 3, which is a power receiving apparatus. Furthermore, because DC voltage generated by a carrier wave provided by the carrier wave oscillating circuit 33 can be used as a driving power source for the clock extracting circuit 46 and the modulating circuit 47, a driving power source is not needed in the power receiving module 40, which enables the circuit configuration to be simplified.

Id. ¶ 58.

2. *Odendaal (Ex. 1008)*

Odendaal is a United States Patent titled “Planar Resonator for Wireless Power Transfer.” Ex. 1008, code (54). Odendaal discloses coils arranged in spirals “on opposite sides of each other” to form a wireless connection, “so that a battery of a cellphone could be charged without physical wires connecting the cellphone to a charger.” *Id.* at 1:64–67. “According to an aspect of the present invention, a signal applied to the first spiral-shaped conductor can be transferred to the second spiral-shaped conductor by coupling of magnetic flux of the first and second spiral-shaped conductors.” *Id.* at 2:65–3:2. Odendaal’s coils are spiral-shaped conductors that are “integrated into a planar (flat/thin) structure.” *Id.* at 3:3–5.

3. *Claim Limitations 1(a) and 1(b)*

Petitioner designates the preamble of claim 1 as claim limitation 1(a). Pet. 5–6. The preamble reads “[a] system for providing power inductively to a portable device comprising a battery and an inductive receiver unit including a receiver coil and a receiver circuit.” *Id.* To the extent that the subject matter of the preamble is limiting, Petitioner cites Okada as disclosing the features recited in limitation 1(a). *Id.* at 5–13 (citing, e.g., Ex. 1005, code (57), ¶¶ 1, 34–36, 38–59, 47, 49, Figs. 2).

Petitioner designates as claim limitation 1(b) the recitation “a first primary coil that is substantially planar and substantially parallel to a charging surface of the system for providing power inductively to the portable device.” *Id.* at 13. Petitioner cites Okada’s primary-side coil 19 as disclosing a primary coil that is substantially parallel to a surface of the system, as claimed. *Id.* at 13–14. Petitioner acknowledges that Okada does not expressly state that the first primary coil is substantially planar, as also required by limitation 1(b). *Id.* at 15. Instead, noting that planar coils positioned parallel to the surface of a power transfer system were known, Petitioner argues it would have been obvious to an ordinarily skilled artisan to configure Okada’s system using a planar primary coil (and secondary coil). *Id.* at 15–16. Petitioner states that Odendaal discloses such known planar-type inductors (resonators) for inductive power transfer include spiral shaped conductors integrated into a planar (flat/thin) structure to transfer energy across an interface-of-energy-transfer in magnetic form to wirelessly charge a cell phone battery. *Id.* at 16–17 (citing Ex. 1008, Figs. 1A–1B, 2A, 2C, 8E, 1:58–2:43, 2:55–3:5, 3:65–67, 4:44–5:8, 6:1–18; Ex. 1002, Baker Decl. ¶¶ 50–53, 135–137). Petitioner contends that such modifications would have provided options that reduce device size and weight and reduce the distance between primary and secondary coils, thereby promoting close proximity coupling to improve power transmission efficiency, reduce energy waste, and shorten charging time. *Id.* at 18 (citing Ex. 1002, Baker Decl. ¶ 129; Ex. 1008, 2:29–44; Ex. 1005 ¶¶ 66–68, 112; Figs. 4(a), 4(b); Ex. 1036, 24:19–22).

Noting that Okada does not mention planar coils, Patent Owner contends Petitioner’s argument that a person of ordinary skill would have had reason to modify Okada to incorporate Odendaal’s planar coils is a

conclusory assertion inadequate to support institution. Prelim. Resp. 34–35. According to Patent Owner, neither the Petition nor Odendaal explains how to replace Okada’s multi-section solenoid coil formed by taps along the coil’s length with a planar coil without losing functionality. *Id.* at 35, 39–40.

Patent Owner contends that Okada’s non-planar solenoid coils 19 and 41 provide common magnetic coupling and alignment that is fundamental to Okada’s system design and operation. *Id.* at 35–36. Patent Owner cites Okada’s teaching that, based on the power requirements of receiving module 40, switching circuit 15 supplies an AC signal to different primary-side coil sections using taps that apply low, intermediate, and high power to receiving module 40. *Id.* at 36–37. Patent Owner emphasizes that, via the portion of the coil from tap “c” to ground, Okada sends a communication carrier wave to the secondary side, receives back information about the requirements of the connected device and, switches FETs 21, 22, 23 to select primary transformer taps that adjust the primary to secondary coil ratio thereby aligning the power transfer to the requirements of the device to be charged. *Id.* at 36–40 (citing Ex. 1005 ¶¶ 42, 50, 63–67, Figs 2, 3).

Patent Owner acknowledges that the challenged claims do not require taps, but argues that Petitioner has failed to show how Okada’s system could be adapted to use planar coils as claimed while remaining operable. *Id.* at 40. As Patent Owner points out, the “the Petition does not identify any prior art that shows the use of a planar coil with a tap for selecting a sub-length of the planar coil” and “does not even attempt to show how Okada could be implemented with planar coils—with or without taps (i.e., by some other method)—let alone that it would have been obvious to do so.” *Id.*

Patent Owner persuasively argues that Odendaal’s planar coil is not a simple drop-in replacement for Okada’s tapped solenoid, as the Petition

seems to suggest. *Id.* at 41. The Petition states only that a person of ordinary skill would have had reason to modify Okada to use a primary coil that is substantially planar and substantially parallel to the surface to expand or complement Okada's thin-form charging applications. Pet. 17–18 (citing Ex. 1002, Baker Decl. ¶ 129; Ex. 1005, Figs 1, 9, 10–16, ¶¶ 33–34, 116–146). Petitioner's argument that reducing the distance between the primary and secondary coils would promote close proximity coupling, reduce energy waste, and shorten charging time fails to address salient issues underlying the combination. *Id.* (citing Ex. 1002, Baker Decl. ¶¶ 129–130; Ex. 1008 2:29–44; Ex. 1005 ¶¶ 66–68, 112, Figs. 4(a)–4(b); Ex. 1036, 24:19–22).

Although Okada is premised on a multi-section primary coil, the Petition does not identify any multi-tap planar coil or explain why a person of ordinary skill would have had reason to modify Odendaal's planar coil to add taps to it. Moreover, the Petition does not explain how a person of ordinary skill attempting to exchange Okada's multi-section solenoid coil with a planar coil could add multiple taps to said primary coil to create multiple sections and access those sections. As Patent Owner points out, in utilizing multi-tap solenoid coils, Okada relies on detection of the degree of coupling/alignment between the communication section of the primary side of the coil and a secondary coil to determine whether there is correct alignment for power delivery sections of the primary and secondary sections of the coil. *See* Prelim. Resp. 38. The Petition does not address how Odendaal's planar coil would be incorporated to provide this functionality of Okada. On this record it appears that Petitioner's proposed modification would render Okada's primary-side coil inoperable for communicating carrier waves or controlling the level of power at which it induces a current in the secondary-side coil. *See Shimano, Inc. v. Globetide, Inc.*, IPR2015-

00273, Paper 40 at 12 (Final Written Decision) (PTAB Jun. 16, 2016) (citing *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984) as standing for the proposition that a case of obviousness is undermined if modifying the prior art would render that prior art inoperable for its intended purpose).

In consideration of the above, we are not persuaded that Petitioner has cited sufficient evidence to support its contention that a person of ordinary skill would have had reason to combine the teachings of Okada and Odendaal.

4. *Conclusion*

Claims 6, 9, 10, and 13 all depend from claim 1. In view of our determination concerning claim 1, we determine that the Petition has not put forth compelling evidence of unpatentability of claims 6, 9, 10, and 13 for the same reasons. We therefore decline to institute *inter partes* review of claims 1, 6, 9, 10, and 13.

XI. ORDER

In consideration of the foregoing, it is hereby:
ORDERED that the Petition is denied.

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McNAMARA, *Administrative Patent Judge*, concurring.

This Decision determines that Petitioner has not demonstrated a reasonable likelihood of prevailing in its challenges to claims 6, 9, 10, and 13. I write separately to state that, consistent with the decision in *Samsung Electronics Co., Ltd. v. Mojo Mobility Inc.*, IPR2023-01098, I would decide this case exercising discretion to deny institution under 35 U.S.C. § 314(a). Consistent with the decision in IPR2023-01098, I am not persuaded that Petitioner has put forth compelling evidence of unpatentability of the challenged claims.

Therefore, I concur in the result that denies institution.

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