

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
Petitioner,

v.

MOJO MOBILITY INC.,
Patent Owner.

IPR2023-01088
Patent 9,577,440 B2

Before WILLIAM V. SAINDON, KARA L. SZPONDOWSKI, and
DAVID COTTA, *Administrative Patent Judges*.

COTTA, *Administrative Patent Judge*.

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

I. INTRODUCTION

On June 27, 2023, Samsung Electronics Co., Ltd. (“Petitioner”)¹ filed a Petition to institute *inter partes* review of claims 3 and 13 of U.S. Patent No. 9,577,440 B2 (Ex. 1001, “the ’440 patent”). Paper 1 (“Pet.” or “Petition”). Mojo Mobility Inc. (“Patent Owner”)² filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

Under 35 U.S.C. § 314(a), *inter partes* review may not be instituted unless 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.” Petitioner has not established a reasonable likelihood of prevailing on its assertion that the challenged claims are unpatentable based on the grounds advanced here. Thus, for reasons explained below, we deny institution of *inter partes* review of claims 3 and 13 of the ’440 patent.

A. Related Matters

The parties identify IPR2023-01088, which challenges claims 1 and 27 of the ’440 patent, as a related matter. Pet. 1; Paper 5, 2. The parties also identify *Mojo Mobility Inc. v. Samsung Electronics Co., Ltd.*, Case No. 2:22-cv-00398 (E.D. Tex.) (“the Samsung lawsuit”),³ in which Patent Owner

¹ Petitioner identifies itself and Samsung Electronics America, Inc. as the real party-in-interest. Pet. 1.

² Patent Owner identifies itself as the real party-in-interest. Paper 5, 2.

³ Patent Owner’s Mandatory Notices identify this litigation with earlier assigned case number 1:22-cv-00433. Paper 5, 1. This case number refers to the case Patent Owner initially filed in the Beaumont Division of the Eastern District of Texas. It was later transferred to the Marshall Division in

asserts infringement of the '440 patent and also U.S. Patent Nos. 7,948,208, 11,292,349, 11,316,371, 11,201,500, 11,342,777, and 11,462,942, as a related matter. Pet. 1; Paper 5, 2.

B. The '440 Patent

The '440 patent discloses “[a] portable inductive power source, power device, or unit, for use in powering or charging electrical, electronic, battery-operated, mobile, and other devices.” Ex. 1001, 3:36–38. The '440 patent describes an embodiment comprising: (1) “a pad or similar base unit that contains a primary, which creates an alternating magnetic field by means of applying an alternating current to a winding, coil, or any type of current carrying wire”; and (2) “a receiver that comprises a means for receiving the energy from the alternating magnetic field from the pad and transferring it to a mobile or other device.” *Id.* at 3:40–46. According to the '440 patent, “[t]he receiver may comprise coils, windings, or any wire that can sense a changing magnetic field, and rectify it to produce a direct current (DC) voltage, which is then used to charge or power the device.” *Id.* at 3:46–50. For example, a “mobile device can include a receiver that includes one or more coils or wires to receive the power from the mobile device charger.” *Id.* at 7:8–10.

Figure 1 of the '440 patent, reproduced below, shows “a pad using

the same district and re-assigned case number 2:22-cv-00398. *Mojo Mobility Inc. v. Samsung Electronics Co., Ltd.*, No. 1:22-cv-00433-MJT, ECF No. 5 (E.D. Tex. Oct. 11, 2022); *id.*, No. 2:22-cv-00398-JRG-RSP, ECF No. 5 (E.D. Tex. Oct. 11, 2022).

multiple receiver/energizer coils.” *Id.* at 6:55–56.

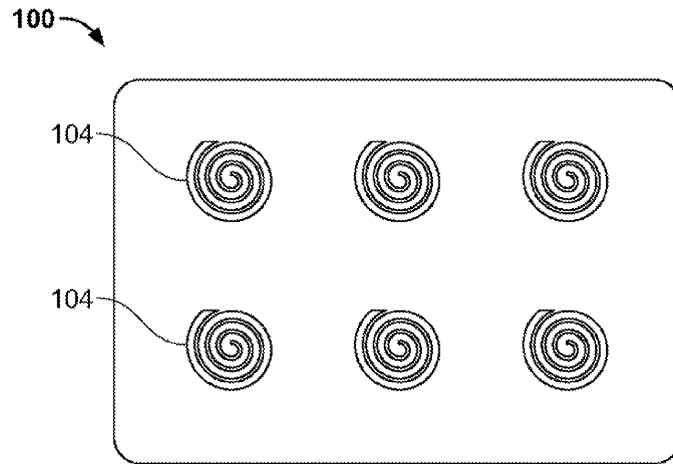


FIG. 1

According to the Specification, “[i]n its simplest format, the mobile device charger or power supply preferably has a substantially flat configuration, such as the configuration of a pad 100, and comprises multiple coils or sets of wires 104.” *Id.* at 6:56–59.

Figure 2, reproduced below, shows “a typical inductive power transfer system 110.” *Id.* at 8:43–44.

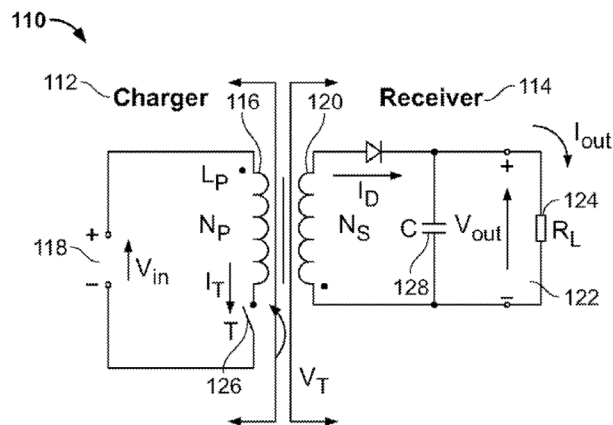


FIG. 2

The circuit illustrated in Figure 2 includes a “charger 112 compris[ing] a

power source 118, and a switch T 126 . . . that is switched at an appropriate frequency to generate an AC voltage across the primary coil Lp 116 and generate an AC magnetic field,” which, “in turn[,] generates a voltage in the coil 120 in the receiver 114 that is rectified and then smoothed by a capacitor to provide power 122 to a load RI 124.” *Id.* at 8:47–54.

Figure 6, reproduced below, shows a receiver 170 comprising a “battery 182, together with the secondary coil 172, and any rectifiers 174, capacitors 176, regulators 180 necessary for proper operation of the charging receiver.” *Id.* at 11:36–39.

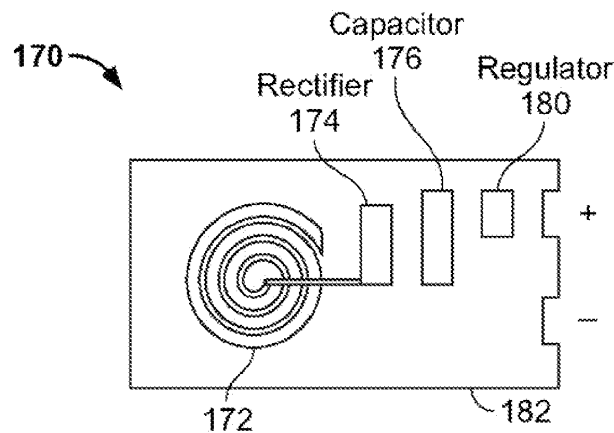


FIG. 6

The rectifier and capacitor “change the AC induced voltage to a DC voltage,” which “is then fed to a regulator chip which includes the appropriate information for the battery and/or the mobile device.” *Id.* at 8:61–64. According to the Specification:

To avoid overcharging the battery, a battery regulator chip can also be used. This circuit then measures the various parameters of the battery (voltage, degree of charging, temperature, etc.)

and uses an internal program to regulate the power drawn from the circuit to ensure over-charging does not occur.

Id. at 11:8–13.

C. Challenged Claims

The '440 patent includes 28 claims, of which claims 3 and 13 are challenged in the Petition. Claim 3 is an independent claim and reads as follows:

A system for use with a mobile device for charging or powering the mobile device inductively by a universal base unit for charging of different mobile devices and/or batteries of different charging characteristics associated therewith, comprising:

a universal base unit including one or more primary coils therein, each primary coil having a generally planar shape so that when a current is passed through the primary coil a magnetic field is generated in a direction substantially perpendicular to the plane of the primary coil;

wherein the perpendicular magnetic field inductively generates a current in a matching secondary coil or coils within a mobile device placed close to and aligned with the base unit, to charge or power the mobile device;

wherein one or both of the mobile device and a battery have

a receiver and particular charging characteristics associated therewith,

an identification component associated with the mobile device or battery, which is configured to provide wireless identification of the receiver to the base unit,

a means for avoiding overcharging one or both of the mobile device and battery inductively, and

a regulator, coupled to the output of the receiver or to the battery, that regulates an output voltage or output current provided by the receiver, to the mobile device or

battery, to be within a range of parameters for the mobile device or the battery;
wherein different mobile devices and batteries can have different charging characteristics associated therewith; and
wherein the receiver communicates with the base unit to detect, identify and authenticate the receiver with the base unit, as provided by the identification component,
determine and then activate one or more primary coils of the base unit which are aligned with the receiver coil,
verify the continued presence of the receiver near the base unit, and
communicate information describing the characteristics of the mobile device or the battery, for use by the base unit to provide power transfer to the receiver and to the mobile device and the battery according to their particular charging characteristics.

Ex. 1001, 27:51–28:31.

D. Asserted Ground of Unpatentability

Petitioner asserts the following ground of unpatentability in this Petition (Pet. 2):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 27	103(a) ⁴	Nakamura, ⁵ Odendaal, ⁶ Calhoon ⁷

Petitioner relies on the declaration of Dr. R. Jacob Baker, among other evidence. Ex. 1002.

II. 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 pending Samsung lawsuit and based on the multiple related petitions filed by Petitioner. Prelim. Resp. 15–31. We need not address Patent Owner’s contentions concerning discretionary denial because, as discussed below, Petitioner has not

⁴ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102 and 103. Based on the filing date of the ’440 patent, we apply the pre-AIA versions of §§ 102 and 103.

⁵ Nakamura et al., U.S. Patent Application Publication No. 2005/0068019 A1, published Mar. 31, 2005 (Ex. 1005, “Nakamura”).

⁶ Odendaal et al., U.S. Patent No. 6,960,968 B2, issued Nov. 1, 2005 (Ex. 1008, “Odendaal”).

⁷ Calhoon et al., U.S. Patent Application Publication No. 2005/0127868 A1, published June 16, 2005 (Ex. 1006, “Calhoon”).

established a reasonable likelihood of prevailing in demonstrating the unpatentability of any challenged claim of the '440 patent.

III. PATENTABILITY ANALYSIS

A. Principles of Law

“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 Inc.*, 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”)).

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which that subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). 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) secondary considerations of nonobviousness when presented. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Person of Ordinary Skill in the Art (“POSA”)

In determining the level of skill in the art, we consider the problems encountered in the art, the art’s solutions to those problems, the rapidity with

which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986).

Petitioner contends:

A person of ordinary skill in the art as of the effective date of the '440 patent ("POSITA") would have had 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. More education can supplement practical experience and vice versa.

Pet. 3 (citing Ex. 1002 ¶¶ 20–21). Patent Owner does not challenge Petitioner's proposed definition of the POSA for purposes of its preliminary response. Prelim. Resp. 6.

Petitioner's definition appears to be consistent with the level of skill in the art reflected in the prior art of record and the disclosure of the '440 patent. Accordingly, for purposes of this Decision, we accept Petitioner's proposed definition of the person of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) ("the prior art itself [may] reflect[] an appropriate level" as evidence of the ordinary level of skill in the art) (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985)).

C. Claim Construction

We interpret a claim "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) (2020). Under this standard, we construe the claim "in accordance with the ordinary and customary meaning of such

claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *Id.*

Petitioner does not identify any claim terms as needing construction, other than “means for avoiding overcharging one or both of the mobile device and battery inductively” recited in claim 3, for which Petitioner sets forth a means-plus-function claim construction. Pet. 5–6 (citing Ex. 1001, 11:8–16). Patent Owner “does not dispute Petitioner’s statement on claim construction for purposes of this preliminary response.” Prelim. Resp. 6. Nor does Patent Owner currently dispute that the prior art that Petitioner relies upon meets the limitation requiring a “means for avoiding overcharging one or both of the mobile device and battery inductively.” *See generally* Prelim. Resp.; Pet. 44–57.

At this stage of the proceeding, there is no apparent need to construe the “means for avoiding overcharging” term to resolve the case. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe 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))); *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“[C]laim terms need only be construed ‘to the extent necessary to resolve the controversy’”).

Accordingly, we do not find it necessary to construe any claim terms in order to resolve this proceeding. *See Nidec*, 868 F.3d at 1017; *Wellman*, 642 F.3d at 1361.

D. Overview of the Asserted Prior Art

1. Nakamura

Nakamura is a U.S. Patent Publication published on March 31, 2005. Ex. 1005, code (43). Petitioner contends that Nakamura is prior art under pre-AIA 35 U.S.C. §§ 102(a), and 102(e). Pet. 3. Nakamura discloses “a power supply system for supplying power, in a non-contact manner, to power reception equipment from a power transmission apparatus to which a commercial power supply is fed,” including “a power adjusting section for adjusting a level of power to be transmitted according to power required by the power reception equipment.” Ex. 1005 ¶ 17. Relevant aspects of Nakamura are discussed in greater detail in our analysis of the merits of the Petition. *See infra* § III.E.1.

2. Odendaal

Odendaal is a U.S. Patent issued on November 1, 2005. Ex. 1008, code (45). Petitioner contends that Odendaal is prior art under pre-AIA 35 U.S.C. §§ 102(a), and 102(e). Pet. 3. Odendaal discloses the use of “a planar resonator for wireless power transfer in a contactless power transfer system.” Ex. 1008, 1:7–9; *see also id.* at Abstract. Relevant aspects of Nakamura are discussed in greater detail in our analysis of the merits of the Petition. *See infra* § III.E.1.

3. Calhoon

Calhoon is a U.S. Patent Publication published on June 16, 2005. Ex. 1006, code (43). Petitioner contends that Calhoon is prior art under pre-AIA 35 U.S.C. §§ 102(a), and 102(e). Pet. 3. Calhoon discloses “[a]n inductive

charging system [that] transfers energy by inductively coupling a source coil on a power source to a receiver coil for a battery charger.” Ex. 1006, Abstract. Calhoon also discloses features relating to the inductive charging system that “enable communication between an inductive power source and the battery,” “provide for wirelessly communicating operating parameters and protocol between an inductive power source and an inductive battery charger,” and “provide for authentication of devices that are allowed by the power source or trusted entity to be powered or otherwise charged.” *Id.* ¶ 22; *see also id.* ¶¶ 23–27.

E. Obviousness over Nakamura, Odendaal, and Calhoon

Petitioner asserts that claims 3 and 13 would have been obvious over the combination of Nakamura, Odendaal, and Calhoon and sets forth an element-by-element comparison of the asserted art to the challenged claims. Pet. 7–81. On the current record, Petitioner has not sufficiently shown that the combination of Nakamura, Odendaal, and Calhoon teaches or suggests each of the elements of claims 3 and 13. We focus our discussion on one of the aspects of Petitioner’s asserted combination disputed by Patent Owner: whether Nakamura and Odendaal render obvious the limitation of claim 3 requiring that “each primary coil hav[e] a generally planar shape so that when a current is passed through the primary coil a magnetic field is generated in a direction substantially perpendicular to the plane of the primary coil.” Ex. 1001, 27:57–61; Prelim. Resp. 31–49.

1. Claims 3 and 13

Claim 3 and claim 13, which depends from claim 3, each require that “the primary coil hav[e] a generally planar shape.” Ex. 1001, 27:57–58. Petitioner concedes that Nakamura does not disclose planar coils (Pet. 17), but contends that “*Odendaal* discloses the known use of planar-type inductor coils in a contactless/inductive power transfer system that transfers power via magnetic coupling for, *e.g.*, charging a battery of a cellphone/computer/wearable items, etc.” (Pet. 20). Petitioner, supported by the testimony of Dr. Baker, asserts that the POSA would have been motivated “to modify *Nakamura*’s configurations with planar coils to provide options with a thin and/or more compact power transmission apparatus (*e.g.*, apparatus 1) (and host objects)/ reception equipment (*e.g.*, device 2/3), consistent with features contemplated by *Nakamura*.” Pet. 24 (citing Ex. 1002 ¶ 135). Petitioner and Dr. Baker find further motivation for their proposed modification in that it would “increase coupling areas between primary and secondary/receiver coils to improve efficiency/effectiveness of inductive power transfer.” *Id.* (citing Ex. 1005 ¶¶ 79–82, 159; Ex. 1002 ¶ 132–133, 136). According to Petitioner and Dr. Baker, “[i]mplementing planar coils in apparatus 1 (and device 2/3) as discussed above would have predictably resulted in the *Nakamura-Odendaal* system/device to include features and perform functionalities like those described by *Nakamura*.” *Id.* at 25 (citing Ex. 1002 ¶ 137).

Patent Owner contends that Petitioner’s proposed modification would “fundamentally chang[e] the technology used for power transfer in *Nakamura*.” Prelim. Resp. 32. According to Patent Owner, Nakamura uses

a “multi-tap solenoid coil around a ferrite core” and “neither Odendaal nor the Petition provides any disclosure of a multi-tap planar coil, or one that uses a ferrite core.” *Id.* Patent Owner argues that replacing Nakamura’s multi-tap solenoid coil around a ferrite core with Odendaal’s planar coil “would create a number of issues that would be difficult or impossible for a [POSA] to solve, rendering Nakamura’s system inoperable.” *Id.* Patent Owner asserts that the Petition does not address these issues and, “[i]n fact, . . . fails to show how planar coils would be implemented in Nakamura’s system, let alone that it would have been obvious to do so.” *Id.*

We agree with Patent Owner that Petitioner has not carried its burden “to show with particularity why the patent it challenges is unpatentable.” *Harmonic*, 815 F.3d at 1363; 35 U.S.C. § 312(a)(3).

Nakamura discloses a non-contact power transmission system in which primary and secondary coils (11 and 12) are wound around ferrite cores (15 and 16) as depicted in Figure 2B (reproduced below). Ex. 1005 ¶¶ 64–65.

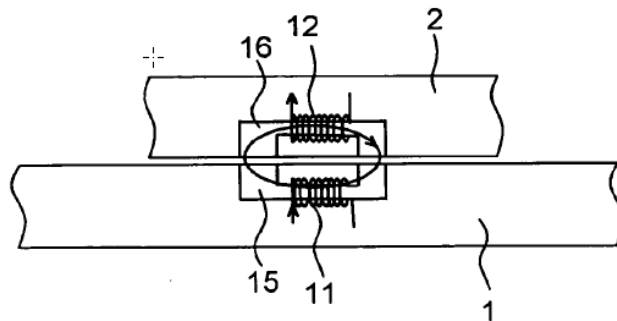
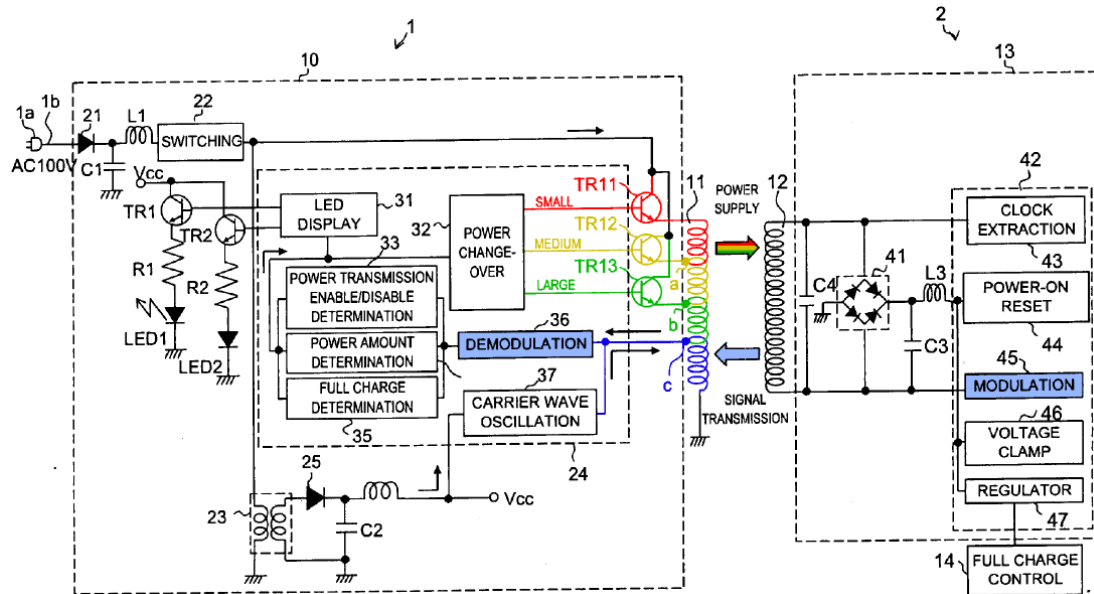


Figure 2B is a schematic diagram depicting the interiors of power “transmission apparatus 1” and “portable telephone 2.” *Id.* ¶ 64. When a pulse voltage “is applied across the primary side coil 11, a voltage is induced across the secondary side coil 12 by magnetic coupling.” *Id.* ¶ 65.

Nakamura's system includes multiple winding sections wound around a ferrite core. This is depicted, for example, in Figure 3 (reproduced below, as annotated by Patent Owner).



Prelim. Resp. 36. Figure 3 shows a power supply system of Nakamura's invention. Ex. 1005 ¶ 67. In the annotated Figure 3, different segments of primary side coil 11 are colored red, yellow, green, and blue. As depicted in Figure 3, "[a] pulse voltage . . . is supplied to the primary side coil 11 through transistors . . . TR11, TR12, and TR13." *Id.* ¶ 68. "The primary side coil 11 has taps a, b, and c in the descending order of a distance from the grounded coil end, i.e., in the descending order of the number of turns." *Id.* ¶ 69.

Nakamura explains that the configuration of multiple winding sections wound around a common ferrite core allows control over the level of power transmitted:

By selecting one from among the transistors TR11, TR12, and TR13, a location of the winding of the primary side

coil 11 at which a pulse voltage from the switching circuit is applied changes. That is, since an actual effective number of turns of the primary side coil changes, a turns ratio of the primary side coil 11 to the secondary side coil 12 changes. In such a way, power in accordance with the power required by the power reception equipment can be transmitted. Note that, although the present embodiment shows that the power transmission output is selected from among the three levels, large, medium, and small, the number of levels may be increased.

Id. ¶ 85.

The configuration of multiple winding sections wound around a common ferrite core also allows Nakamura's system to receive information about the equipment being charged and to determine whether such equipment is properly aligned. Nakamura does this by using a segment of its winding—the segment connected to tap c (colored blue in Figure 3 above)—to apply a carrier wave and receive an information signal from the receiver coil. *Id.* ¶¶ 77–78. The information can include, for example, a code indicating “power reception equipment,” “information on consumed power,” and “information on full charge.” *Id.* ¶ 78. In addition, the information signal allows for determination of whether the equipment to be charged is placed in a position where “high power transmission efficiency in a non-contact power supply system is obtained.” *Id.* ¶ 79. To do this, Nakamura's system relies on the similarities in the transmission efficiencies of both the power and information signals. *Id.* ¶¶ 79–83. As reflected in Figures 11A and 11B (reproduced below), the efficiency of the information

signal transformation in Nakamura's system is strongly correlated with that of power transformation.

FIG. 11A

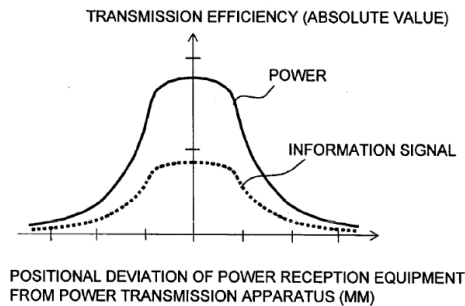
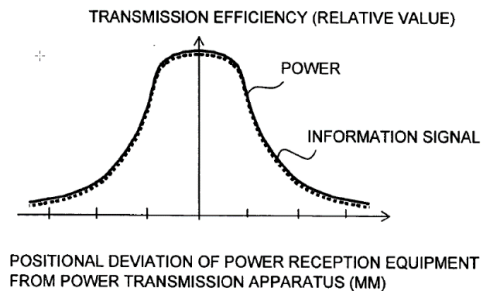
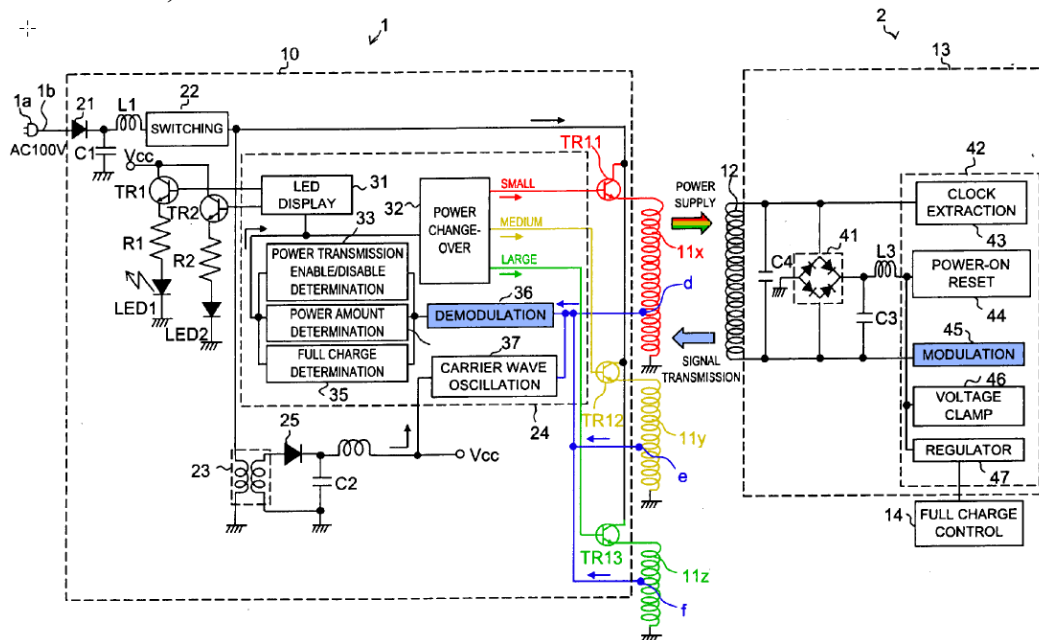


FIG. 11B



Figures 11A and 11B are “graphs showing relationships between a relative position of the portable telephone 2 to the power transmission apparatus 1 (a positional deviation of the portable telephone 2 from the power transmission apparatus 1) and a transmission efficiency of power and the information signal.” *Id.* ¶ 80. Figure 11A shows “the absolute values of the transmission efficiencies of power (in solid line) and the information signal (in broken line)” while Figure 11B shows the relative values. *Id.* Because the “transmission efficiencies of power and information signal[s] are . . . reduced at the same rate,” Nakamura’s information signal can be used to determine whether the equipment to be charged is positioned for optimal power transmission. *Id.* ¶¶ 81–83. Using the information signal to determine whether the charged device is optimally positioned, allows Nakamura’s system to optimize power transmission location “even in a state where the power transmission apparatus 1 transmits no power.” *Id.* ¶ 81.

Nakamura also discloses an embodiment that uses three separate windings. This is depicted in Figure 5 (reproduced below, as annotated by Patent Owner).



Prelim. Resp. 39. Figure 5 shows a power supply system of Nakamura's invention. Ex. 1005 ¶ 90. "The power supply system shown in FIG. 5 is different from the power supply system shown in FIG. 3 in that a primary side coils 11x, 11y, and 11z are provided instead of the primary side coil 11 of the power transmission apparatus 1." *Id.* In the annotated Figure 5, the different segments of primary side coil 11 are colored red, yellow, and green. In this embodiment it is possible to "transmit power in the same manner as in the case of the power transmission apparatus 1 shown in FIG. 3 where one primary side coil 11 is used." *Id.* ¶ 91. More specifically, "one of the transistors is selected by the power change-over circuit 32 according to the level of power to be transmitted determined from the signal containing the 'information on consumed power' received from the portable telephone

2.” *Id.* “[I]n a case where the power of the power reception equipment is small, a coil with a large number of turns is used. In a case where the power of the power reception equipment is large, a coil with a small number of turns is used.” *Id.*

Petitioner contends that it would have been obvious to replace Nakamura’s multiple windings sections around a ferrite core with Odendaal’s planar coils. *See e.g.*, Pet. 21–22 (“Upon considering *Odendaal* in context of state-of-art knowledge, a [POSA] would have been motivated, and found obvious, to modify the *Nakamura* system to use planar ‘**primary coil(s)**’ (11/11x/11y/11z) in apparatus 1 (‘**universal base unit.**’).”). Odendaal discloses spiral coils without taps in the coil, as shown, for example, in Figure 1A (reproduced below).



Figure 1A depicts an integrated resonator. Ex. 1008, 3:60–61; 4:44–45. As depicted in the figure, and as described in Odendaal, the resonator is “a basic spiral” and is “planar.” *Id.*⁸

⁸ Odendaal also discloses bi-filar and multi-filar spirals (*id.* at 2:51–55; Fig 1B) but Petitioner does not rely on those disclosures (*see, e.g.*, Ex. 1002 ¶¶ 75–77; 125–129 (discussing the disclosures of Odendaal relied upon for obviousness without discussing bi-filar and multi-filar spirals)). In addition, as Patent Owner explains (Prelim. Resp. 47–48), Odendaal does not describe

On the present record, we are not persuaded that Petitioner has shown that the POSA would have been motivated to modify Nakamura to include Odendaal's spiral coils in place of Nakamura's multiple winding sections wound around a ferrite core. As discussed above, the configuration of multiple winding sections wound around a common ferrite core allows Nakamura's system to provide multiple different power levels and to align charging and receiving equipment for optimal transmission. The Petition asserts that "the *Nakamura-Odendaal* system/device [would] include features and perform functionalities like those described by *Nakamura*." Pet. 25. But the Petition does not explain how it proposes to obtain multiple power level functionality using Odendaal's simple untapped planar coils. Nor does the Petition explain how it proposes to preserve Nakamura's alignment functionality using Odendaal's untapped planar coils. *See generally*, Pet. 13–26 (discussing "planar" limitation without addressing this issue).⁹

The Petition asserts, and Dr. Baker testifies, that the POSA "would have had the skills/knowledge/rationale . . . to implement the [planar coil] modification while taking into account design tradeoffs and

these bi- and multi-filar spirals as having the ability to act separately. Rather, Odendaal teaches that the spirals are placed on top of each other and separated by a dielectric film that forms a capacitor. Ex. 1008, 3:32–40. Thus, Odendaal's bi- and multi-filar spirals would act like a single coil. *Id.*
⁹ To the extent Petitioner contends that the combined Nakamura/Odendaal system would lack these functionalities, it undermines the POSA's motivation to use planar coils in Nakamura's system.

techniques/technologies, with a reasonable expectation of success that the modified system/device operated as intended consistent with *Nakamura*'s teachings/designs." Pet. 25–26 (citing Ex. 1002 ¶ 138). But Petitioner and Dr. Baker never explain what the combined system would look like or how it would work. Petitioner's omission to address how its combined system would work is illustrated in how it addresses the claim requirement that a magnetic field is generated "in a direction substantially perpendicular to the plane of the primary coil." Ex. 1001, 27:57–61 (claim limitation reciting "each primary coil having a generally planar shape so that when current is passed through the primary coil a magnetic field is generated in a direction substantially perpendicular to the plane of the primary coil"). To address this requirement, Petitioner relies not on a discussion of how the magnetic field in the proposed combined system of Nakamura and Odendaal would work (i.e., in the planar coil configuration), but on the magnetic field generated by Nakamura's multi-section winding and ferrite core – i.e., the very winding it proposes to replace with Odendaal's planar coils. Pet. 15–17.

The significant differences between Nakamura's multiple winding sections and Odendaal's simple planar coil make it difficult to discern, on this record, how Odendaal's coils would be incorporated in Nakamura's system without compromising functionality.¹⁰ Absent further explanation as

¹⁰ Petitioner extensively relies on internal cross-references in both the Petition and in Dr. Baker's Declaration. For example, paragraph 138 of Dr. Baker's Declaration, refers to "my analysis and discussions above in this

to how the combined system of Nakamura and Odendaal would preserve Nakamura's functionality, we give little weight to Dr. Baker's conclusory testimony that the POSA would have known how to do so. Ex. 1002 ¶ 138; 37 C.F.R. § 42.65(a) ("expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight."); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 (PTAB Aug. 24, 2022) (precedential) (holding declaration is entitled to little weight when it contains an exact restatement of the petition's unsupported,

section," "my analysis and discussions in Sections IX.A.1(a)-1(b)," and "my analysis and discussions in Sections VIII.A-B, IX.A.1(a)-(b)." As another example, paragraph 137 of Dr. Baker's Declaration refers to "my analysis and discussions above in this section," "my analysis and discussions above regarding state of art disclosures such as those in Exs. 1006–1007, 1009–1011, 1015, 1024–1030," "my discussions above in Section V.B and those above where I reference state-of-art references supporting such understanding," and "my analysis and discussions in Sections IX.A.1(a)–(m)." Similarly, the Petition states that "[o]ther disclosed features would have been included in *Nakamura-Odendaal* (including as further modified below) for reasons explained," and provides a citation to "§ IX.A.1(a)–(m)." Pet. 25. Although there is no rule against internal cross-referencing, and we recognize that it can be useful to avoid duplication, Petitioner's cross-referencing here results in a lack of clarity. Our *Consolidated Trial Practice Guide* (Nov. 2019) (available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>) provides that "parties should avoid submitting a repository of all of the information that a judge could possibly consider, and instead focus on concise, well-organized arguments, easy-to-follow arguments supported by readily identifiable evidence of record." Petitioner has failed to follow this guidance, which has made it difficult to discern Petitioner's precise contentions as to the combination of Nakamura and Odendaal, and further supports that Petitioner has not shown "with particularity" why the '440 patent is unpatentable over Nakamura, Odendaal, and Calhoon.

conclusory assertions without any additional supporting evidence or reasoning).

We recognize the evidence of record that planar coils were known in the art. *See, e.g.*, Ex. 1002 ¶¶ 50–53 (testimony of Dr. Baker citing prior art that employs planar coils); Pet. 18–19. But obviousness requires more than proving that each of the elements recited in a claim were present in the prior art. *KSR*, 500 U.S. at 401 (“A patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art.”). We further recognize that obviousness does not require bodily incorporation. *In Re Bozek*, 416 F.2d. 1385, 1390 (C.C.P.A. 1969) (“The test for obviousness is not whether the features of one reference may be bodily incorporated into the other to produce the claimed subject matter but simply what the combination of references makes obvious to one of ordinary skill in the pertinent art.”). But here, the Petition is premised on the assertion that the POSA would have sought to combine Nakamura’s multi-tap system with Odendaal’s planar coils and Petitioner does not persuasively address the readily-apparent issues that combination creates. In particular, Petitioner does not persuasively explain how Nakamura and Odendaal would be combined in such a manner that the combined system “include[s] features and perform[s] functionalities like those described by *Nakamura*.” Pet. 25.¹¹

¹¹ Petitioner does not rely on Calhoon to cure the deficiencies noted with respect to Nakamura and Odendaal.

For the reasons discussed above, we find that Petitioner has not established a reasonable likelihood that it will prevail on its assertion that the challenged claims are unpatentable based on the grounds advanced here. *Harmonic Inc.*, 815 F.3d at 1363; 35 U.S.C. § 312(a)(3).

2. Conclusion

Based on the record before us, Petitioner has not presented adequate reasoning to show a reasonable likelihood that one having ordinary skill in the art would have been led to modify Nakamura with the teachings of Odendaal in the manner claimed. Having considered all of the arguments and evidence currently of record, we determine that Petitioner has not shown a reasonable likelihood of that it will prevail in establishing that claims 3 and 13 would have been obvious over the combination of Nakamura, Odendaal, and Calhoon.

IV. CONCLUSION

On this preliminary record, Petitioner has not demonstrated a reasonable likelihood of prevailing in showing that at least one of the challenged claims is unpatentable based on the ground advanced in the Petition.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is *denied*, and an *inter partes* review of the challenged claims is not instituted in this proceeding.

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