

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD,
Petitioner,

v.

MOJO MOBILITY INC.,
Patent Owner.

IPR2023-01089
Patent 11,292,349 B2

Before WILLIAM V. SAINDON, MICHAEL J. FITZPATRICK, and
KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

Opinion for the Board filed by *Administrative Patent Judge*
SZPONDOWSKI.

Opinion Concurring filed by *Administrative Patent Judge*
FITZPATRICK.

SZPONDOWSKI, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Samsung Electronics Co., Ltd. (“Petitioner”) filed a Petition (Paper 1, “Pet.” or “Samsung”) to institute an *inter partes* review of claims 1, 4, 5, 7, 10–12, and 26 of U.S. Patent 11,292,349 B2, issued on April 5, 2022 (Ex. 1001, “the ’349 patent”). Mojo Mobility Inc. (“Patent Owner”) filed a Preliminary Response (Paper 7, “Prelim. Resp.”). With our authorization, Petitioner filed a Preliminary Reply (Paper 8, “Reply”), and Patent Owner filed a Preliminary Sur-reply (Paper 10, “Sur-reply”).

After consideration of the parties’ arguments, we instituted an *inter partes* review of all challenged claims. Paper 11 (“Dec.”). During the trial, Patent Owner filed a Response to the Petition (Paper 13, “PO Resp.”). In the Response, Patent Owner states that the ’349 patent is no longer being asserted against Petitioner Samsung in the related district court litigation (*see* Section II.B. below), and “as a result, [Patent Owner] elects to not proffer additional arguments on the papers or through any hearings that may occur in this proceeding.” PO Resp. 1. Patent Owner reiterates, however, that Petitioner has the burden to prove unpatentability by a preponderance of the evidence. *Id.* Therefore, although Patent Owner raised various arguments in the Preliminary Response that were considered and addressed in our Institution Decision, those arguments have been waived because they were not raised in the Response. *See* Scheduling Order, Paper 12, 9 (cautioning Patent Owner that “any arguments not raised in the response may be deemed to be waived.”). Petitioner filed a Reply (Paper 14, “Pet. Reply”).

Petitioner filed a “Notice Regarding Oral Argument” stating that oral argument was not requested. Paper 15, 1. Patent Owner also did not request oral argument. Therefore, no oral argument was held in this proceeding.

We have jurisdiction under 35 U.S.C. § 6 (2018). This Decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of the claims on which we instituted trial. Petitioner has the burden of proving unpatentability of a claim by a preponderance of the evidence. 35 U.S.C. § 316(e).

As stated above, aside from reiterating the burden of proof, Patent Owner does not contest Petitioner’s contentions. We have reviewed Petitioner’s contentions and conclude that they show, by a preponderance of the evidence, that claims 1, 4, 5, 7, 10–12, and 26 of the ’349 patent are unpatentable.

II. BACKGROUND

A. Real Parties-in-Interest

Petitioner identifies Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. as the real party-in-interest. Pet. 1. Patent Owner identifies itself as the real party-in-interest. Paper 5, 2 (Mandatory Notices of Patent Owner).

B. Related Matters

The parties identify *Mojo Mobility Inc. v. Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc.*, Case No. 2:22-cv-00398 (E.D. Tex.) as a related case (“district court litigation”). Pet. 1; Paper 5, 2.¹ The

¹ Petitioner incorrectly identified Case No. 1:22-cv-00398. Pet. 1. Patent Owner identifies Case No. 1:22-cv-00433-JRJ (E.D. Tex.), which appears to be the original case number, before the case was transferred. Paper 5, 2.

parties also state that Petitioner has concurrently filed another petition for *inter partes* review of the '349 patent (IPR2023-01090). *Id.*

C. The '349 Patent (Ex. 1001)

The '349 patent is titled “System and Method for Powering or Charging Receivers or Devices Having Small Surface Areas or Volumes” and is generally directed to “systems and methods for enabling transfer of power, from a wireless charger or power supply, to one or more receivers placed on or near the wireless charger or power supply, including powering or charging one or multiple receivers or devices having small surface areas or volumes.” Ex. 1001, code (54), 1:54–58.

The '349 patent discloses various embodiments of a system for wireless powering or charging of devices. Generally, “an inductive power transmitter employs a magnetic induction coil(s) transmitting energy to a receiving coil(s) in or on a device or product.” *Id.* at 4:4–7. Figure 1, reproduced below, illustrates such a system.

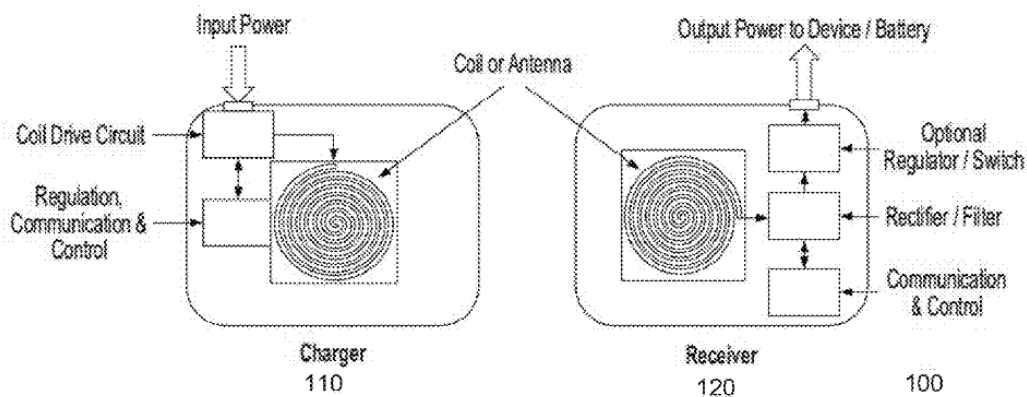


FIGURE 1

Figure 1, above, depicts a “wireless charger or power system 100,” which includes “a first charger or transmitter part 110 and a receiver 120 connected

to a mobile or stationary device.” Ex. 1001, 6:17–20. Both the charger or transmitter part 100 and the receiver 120 also include a coil. *Id.* at Fig. 1.

The transmitter (or charger) coil may be “constructed of Litz wire or patterned printed circuit board (PCB).” *Id.* at 7:42–44. “[T]he charger can operate continuously, and any appropriate receiver coil placed on or near its surface will bring it to resonance and will begin receiving power.” *Id.* at 7:65–8:1. The ’349 patent describes various geometries for the charger coils. *Id.* at 7:28–8:57.

Figure 5, reproduced below, illustrates a charger geometry.

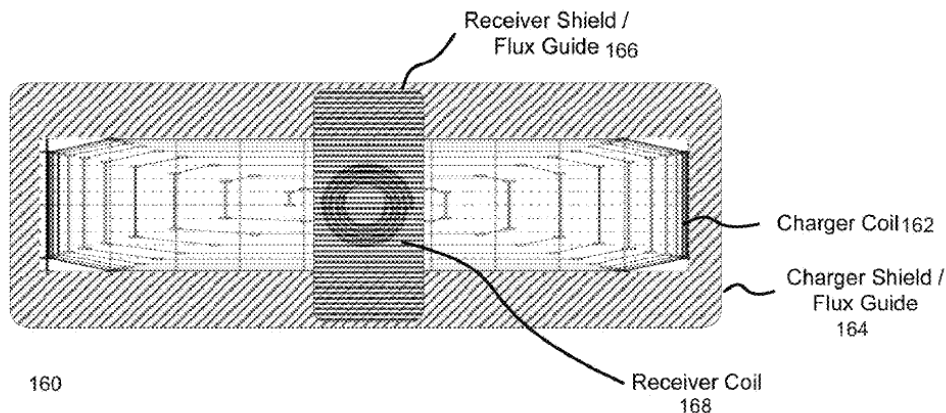


FIGURE 5

Figure 5, above, shows “geometry 160 whereby a charger coil 162 is placed on a magnetic flux guide/shielding layer 164 that extends beyond the edges of the coil.” *Id.* at 8:31–33. Additionally, receiver coil 168 “similarly has a magnetic flux/shielding layer 166 that extends beyond the size of the coil 168.” *Id.* at 8:33–35.

Figure 6, reproduced below, illustrates a return magnetic flux from a charger.

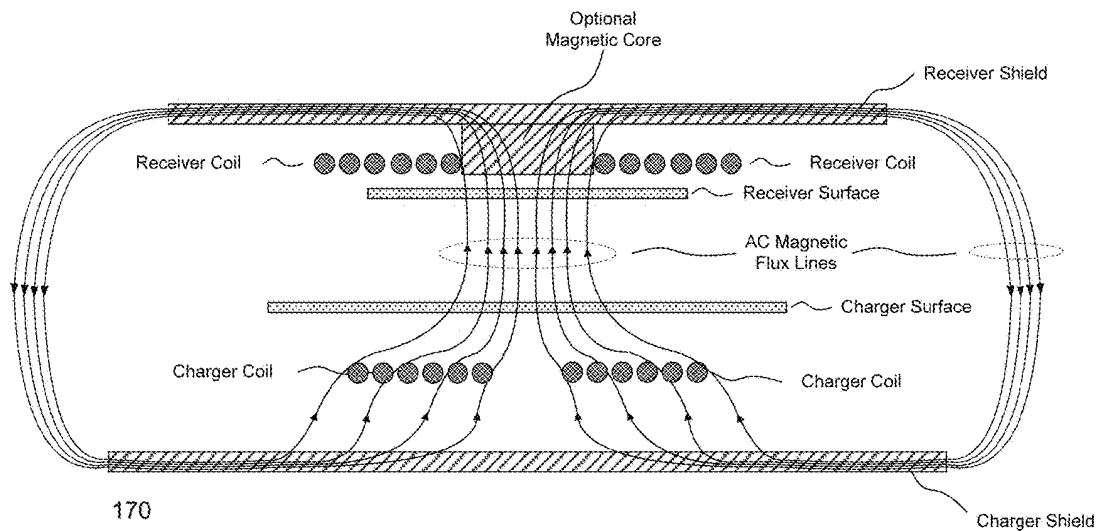


FIGURE 6

Figure 6, above, depicts, from top to bottom, a receiver shield, receiver coil, receiver surface, AC magnetic flux lines, charger surface, charger coil, and charger shield. The '349 patent further states that “the reluctance of the flux path in the receiver can be lowered by including high permeability material in the core of the receiver ring coil (similar to a solenoid).” Ex. 1001, 8:49–52. Additionally, a Litz wire receiver coil can be used. *Id.* at 8:54–57.

Figure 7, reproduced below, illustrates a wire wrapped around a core to create a solenoid type receiver.

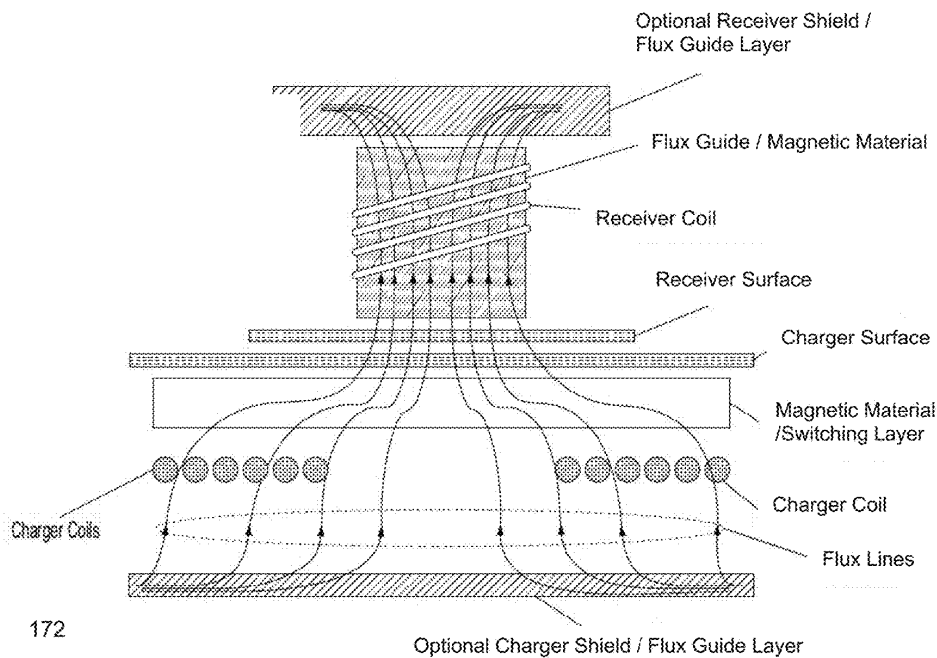


FIGURE 7

Figure 7, above, depicts, from top to bottom, an optional receiver shield/flux guide layer, flux guide/magnetic material, receiver coil, receiver surface, charger surface, magnetic material/switching layer, charger coil, flux lines, and optional charger shield/flux guide layer. Figure 7 shows Litz wire wrapped around the core of the receiver coil to create a solenoid type receiver. *Id.* at 8:64–65.

Figure 8, reproduced below, illustrates a ferrite lower magnetic shield or flux guide.

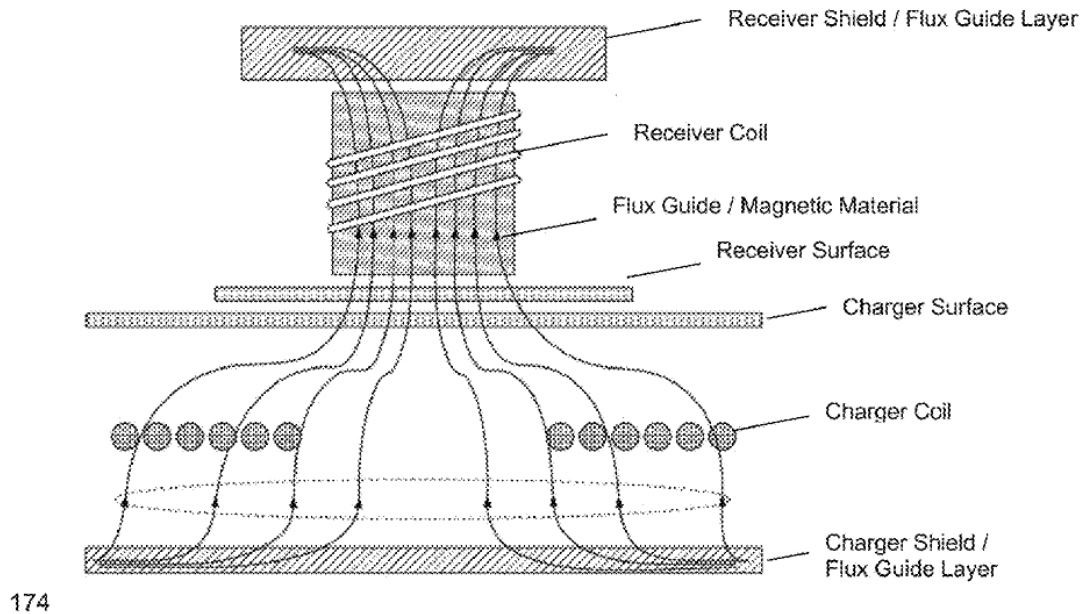


FIGURE 8

Figure 8, above, depicts, from top to bottom, a receiver shield/flux guide layer, receiver coil, flux guide/magnetic material, receiver surface, charger surface, charger coil, and charger shield/flux guide layer. Figure 8 shows an embodiment “with a thin (0.5 mm thick) ferrite lower magnetic shield/flux guide.” *Id.* at 9:11–13.

In addition, the ’349 patent describes that “the charger and or receiver can include means to provide more precise alignment between the charger and receiver coils or antennas.” *Id.* at 14:35–37. “These can include visual, physical, or magnetic means to assist the user in alignment of parts.” *Id.* at 14:37–38. “To implement more positioning freedom of the receiver on the charger, the size of the coils can also be mismatched.” *Id.* at 14:38–40.

D. Illustrative Claim

Independent claim 1 is reproduced below, with Petitioner’s identifiers in brackets.

1. [1(a)] A system for inductive power transfer comprising:

[1(b)] a charger, wherein the charger is an inductive charger, and the charger includes:

[1(c)] a printed circuit board having a charger coil, wherein the charger coil has a substantially planar charger surface;

[1(d)] a substantially planar magnetic layer under the charger coil opposite the charger surface; and

[1(e)] a charger drive circuit, wherein the charger drive circuit includes a resonant capacitor and a FET switch to apply an alternating voltage to the charger coil; and

[1(f)] a first mobile device that includes a receiver to inductively receive power for the first mobile device, wherein the receiver includes:

[1(g)] a solenoid, wherein the solenoid includes:

[1(h)] a magnetic core having a relative magnetic permeability exceeding 1 and having first and second ends; and

[1(i)] Litz wire wrapped around a section of the magnetic core forming a wire wound section around the magnetic core, with the magnetic core extending beyond the wire wound section; and

[1(j)] a receiver electronic circuit, wherein the receiver electronic circuit includes a resonant capacitor and a rectifier; and

wherein:

[1(k)] the charger further includes a means for positioning the receiver in a power transfer position, proximate to the charger surface, to inductively transfer power to the receiver of the first mobile device;

[1(l)] the charger drive circuit is configured to drive the charger coil at one or more operating frequencies to inductively transfer power

from the charger to the receiver when the receiver is positioned in the power transfer position, wherein when the receiver is positioned in the power transfer position, a tuned circuit, including the charger coil and the resonant capacitor of the charger drive circuit and the solenoid and the resonant capacitor of the receiver electronic circuit, has a resonant frequency that allows the charger to transfer the power to the receiver at the one or more operating frequencies;

[1(m)] the charger coil includes a conductor patterned to include multiple, substantially concentric turns for generating a magnetic flux through a first end of the solenoid when the receiver is placed in the power transfer position, wherein an outermost of the concentric turns defines a perimeter of a charger coil area;

[1(n)] the multiple concentric turns, when driven by the charger drive circuit, generate a magnetic field that is substantially perpendicular to the charger surface at a geometric center of the charger coil area,

[1(o)] the charger coil area is larger than an area of the first end and larger than an area of the second end of the magnetic core of the solenoid;

[1(p)] the magnetic layer of the charger extends beyond the charger coil area; and

[1(q)] when the receiver is in the power transfer position, the first end of the magnetic core is located proximate to the charger coil area above the charger surface to receive magnetic flux from the charger coil area and guide the magnetic flux in a closed magnetic loop from the charger coil area through the solenoid and return through the charger magnetic layer to the charger coil area to form the closed magnetic loop.

Ex. 1001, 23:24–24:22. Claim 26 is also independent, and recites similar limitations. *Id.* at 25:64–26:60.

E. Prior Art and Asserted Challenges to Patentability

Petitioner asserts that claims 1, 4, 5, 7, 10–12, and 26 are unpatentable based on the following challenges (Pet. 2–3):

Claims Challenged	35 U.S.C. § ²	Basis/References
1, 5, 7, 10–12, 26	103	Fells ³
4	103	Fells, Jung ⁴
1, 5, 7, 10–12, 26	103	Fells, Stoner, ⁵ Nakamura ⁶
4	103	Fells, Stoner, Nakamura, Jung

In support of its proposed challenges, Petitioner relies on the Declaration of R. Jacob Baker, Ph.D. *See* Ex. 1002.

III. ANALYSIS

A. Legal Standards

Petitioner bears the burden to demonstrate unpatentability, and that burden never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

² Leahy-Smith America Invents Act (“AIA”), Pub L. No. 112–29, 125 Stat. 284 (2011), revised 35 U.S.C. §§ 102 and 103 effective March 16, 2013. Because the earliest possible effective filing date of the ’349 patent is after March 16, 2013, patentability is governed by the AIA versions of §§ 102 and 103. *See* Pet. 3.

³ Fells et al., US 8,587,154 B2, issued Nov. 19, 2013 (Ex. 1005) (“Fells”). Petitioner contends Fells is prior art under at least 35 U.S.C. § 102(a)(2). Pet. 3.

⁴ Jung et al., US 9,178,376 B2, issued Nov. 3, 2015 (Ex. 1016). Petitioner contends Jung is prior art under at least 35 U.S.C. § 102(a)(2). Pet. 3.

⁵ Stoner, Jr. et al., US 8,912,686 B2, issued Dec. 16, 2014 (Ex. 1011) (“Stoner”). Petitioner contends Stoner is prior art under at least 35 U.S.C. § 102(a)(2). Pet. 3.

⁶ Nakamura et al., US 2005/0068019 A1, published Mar. 31, 2005 (Ex. 1010). Petitioner contends Nakamura is prior art under at least 35 U.S.C. §§ 102(a)(1) and 102(a)(2). Pet. 3.

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 said 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 skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

A patent claim “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. An obviousness determination requires finding “both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.’” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367–68 (Fed. Cir. 2016) (citation omitted); *see KSR*, 550 U.S. at 418. Further, an assertion of obviousness “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418; *In re NuVasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016) (a finding of a motivation to combine “must be supported by a ‘reasoned explanation’”).

B. Level of Ordinary Skill in the Art

Petitioner asserts a person of ordinary skill in the art “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.” Pet. 3–4 (citing Ex. 1002 ¶¶ 20–21). Petitioner further asserts that “[m]ore education can supplement practical experience and vice versa.” *Id.* Patent Owner has not proposed a level of ordinary skill in the art. *See* PO Resp.

Because nothing in the record persuades us that our preliminary finding in the Institution Decision (Dec. 12) adopting Petitioner’s proposal was incorrect, we maintain our adoption of Petitioner’s proposed level of ordinary skill in the art.

C. Claim Construction

Petitioner provides a construction for the term “means for positioning [the/a] receiver in a power transfer position, [which is] proximate to the charger surface, to inductively transfer power to the receiver [of the first mobile device],” as recited in limitations 1(k) and 26(e). Pet. 5 (bolding omitted). Petitioner contends this term should be construed as a means-plus-function term, and that the underlined portion identified above identifies the function. *Id.* at 5–6. Petitioner contends that the corresponding structure is described in the Specification and in dependent claims 24 and 25. *Id.* at 6 (citing Ex. 1001, 14:35–38 (“[T]he charger and or receiver can include means to provide more precise alignment between the charger and receiver coils and antennas. These can include **visual, physical, or magnetic means to assist the user in alignment of parts.**”); 25:56–63 (claim 24: “the means for position includes **one or more magnets** to position the receiver in the

power transfer position”, claim 25: “means for positioning includes one or more members of a group consistent of **visual, physical, or magnetic means** to assist in the positioning the receiver in the power transfer position.”)).

Patent Owner does not contest Petitioner’s position on this term. *See* PO Resp.

Our decision does not require an express construction of any particular claim terms. *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))).

D. Ground 1: Obviousness Over Fells

Petitioner contends claims 1, 5, 7, 10–12, and 26 would have been obvious over Fells. Pet. 7–76. Patent Owner does not dispute Petitioner’s contentions. *See* PO Resp. Having considered the arguments and evidence before us, we find that Petitioner has shown, by a preponderance of the evidence, that claims 1, 5, 7, 10–12, and 26 would have been obvious over Fells. We agree with and adopt Petitioner’s contentions as our own.

1. Fells (Ex. 1005)

Fells is titled “Inductive Power Supply” and generally describes an inductive power transfer system that includes a primary unit and a secondary device. Ex. 1005, codes (54), (57). Fells states:

To make recharging more convenient a recharging pad has been proposed in which there is a surface upon which devices may be placed in order to receive power wirelessly. This removes the need to physically connect a power cable to the portable

device. It may also be designed such that a range of different models and types of device[s] can share the same charger. Further, it may be large enough to accommodate more than one device, so that multiple devices can be recharged simultaneously. However, it is particularly advantageous if it is possible to simply drop the device onto the pad without having regard for the position or orientation of the device on the pad.

Id. at 1:4–15. Fells discloses various embodiments for transferring power from a charger to a portable device.

Figure 1, reproduced below, shows a system for transferring power from a charger to a portable device:

Fig. 1

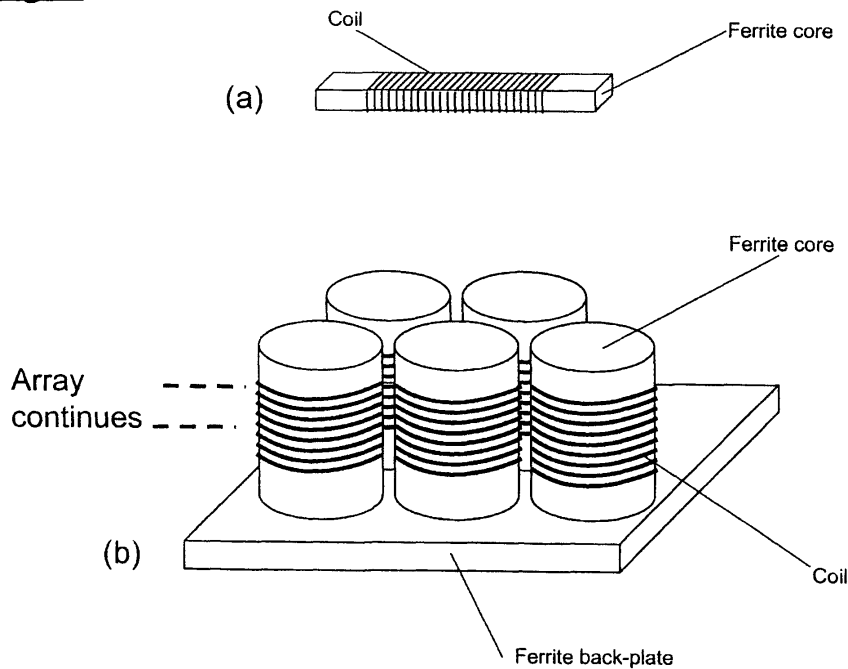


Figure 1(a), above, shows a power receiver with a ferrite core and coil wound around the core. Figure 1(b), above, shows part of a charging pad for transmitting power to the receiver. “The pad consists of an array of coils,

each wound around a ferrite core. These cores are attached to a ferrite backplate. A charging surface is formed across the ends of the cores, such that the coil axes are perpendicular to the charging surface.” *Id.* at 6:61–65. “Preferably Litz wire is used for both the primary and secondary coils.” *Id.* at 7:3–4.

Figure 2, reproduced below, also shows a system for transferring power from a charger to a portable device:

Fig. 2

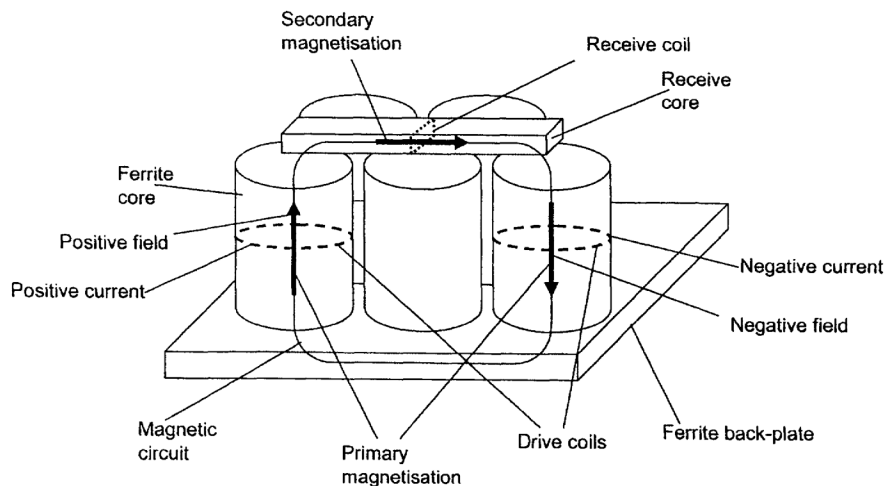


Figure 2, above, shows “the magnetic circuit formed when the power receiver is placed on the charging surface.” *Id.* at 7:9–10. Fells describes that “[a] coil in proximity to one end of the receiver is driven with current in a positive sense and a coil in proximity to the other end is driven in a negative sense.” *Id.* at 7:10–13. “The field is concentrated in the ferrite and forms a magnetic circuit from the first coil, through the receiver core,

through the second coil and through the ferrite backplate to complete the circuit.” *Id.* at 7:13–16.

Figure 4, reproduced below, shows a configuration for transferring power to a power receiver.

Fig. 4

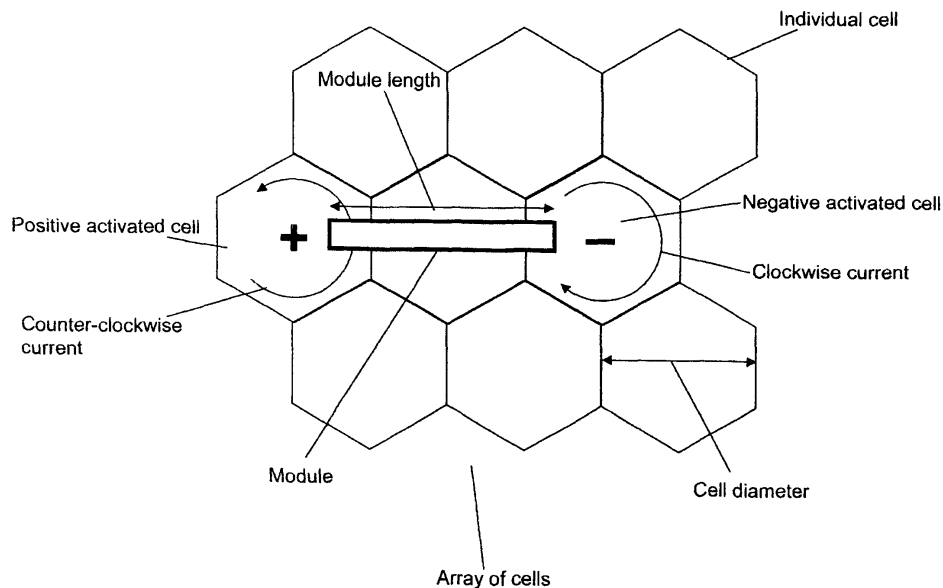


Figure 4, above, “illustrates the dimensional relationship between the power receiver and the charger coils.” *Id.* at 7:31–32. The coil positions are represented by hexagonal cells, and the energized coils are represented by a “+” for current flowing in a counter clockwise direction and a “-” for current flowing in a clockwise direction. *Id.* at 7:32–36.

Figure 16, reproduced below, shows a charger formed using a PCB implementation.

Fig. 16

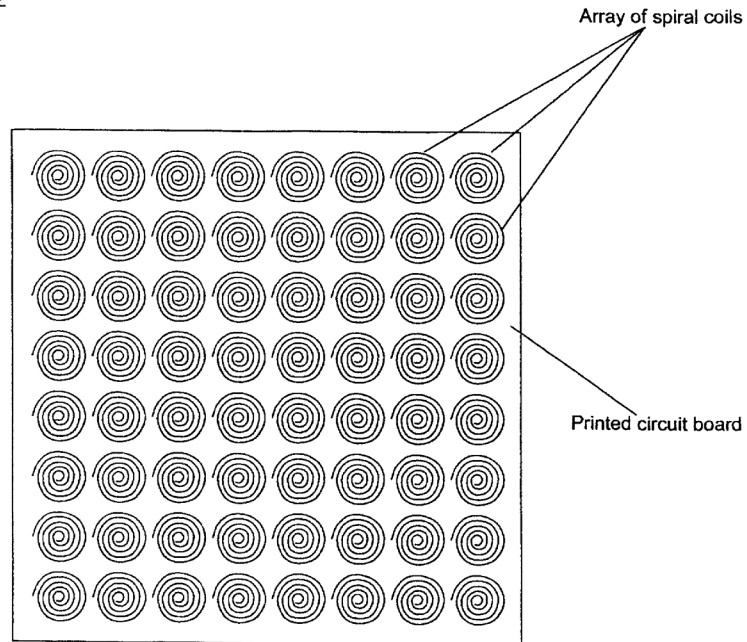


Figure 16, above, shows an array of planar spiral coils used to generate vertical fields. *Id.* at 10:27–28. “A ferrite back plate would typically be [used] to complete the magnetic circuit.” *Id.* at 10:31–32.

Figure 17, reproduced below, shows another charger configuration using a PCB implementation.

Fig. 17

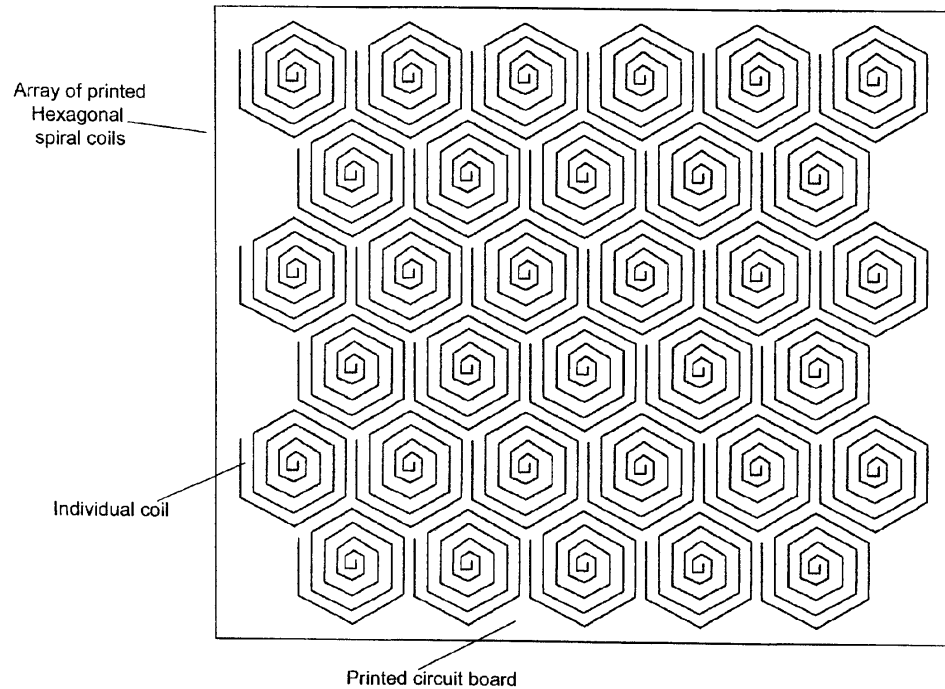


Figure 17, above, shows an array of hexagonal coils which are close-packed together. *Id.* at 10:35–37.

Figure 18, reproduced below, shows a hybrid charger system that allows two different types of receivers within the portable device to be used. *Id.* at 10:38–40.

Fig. 18

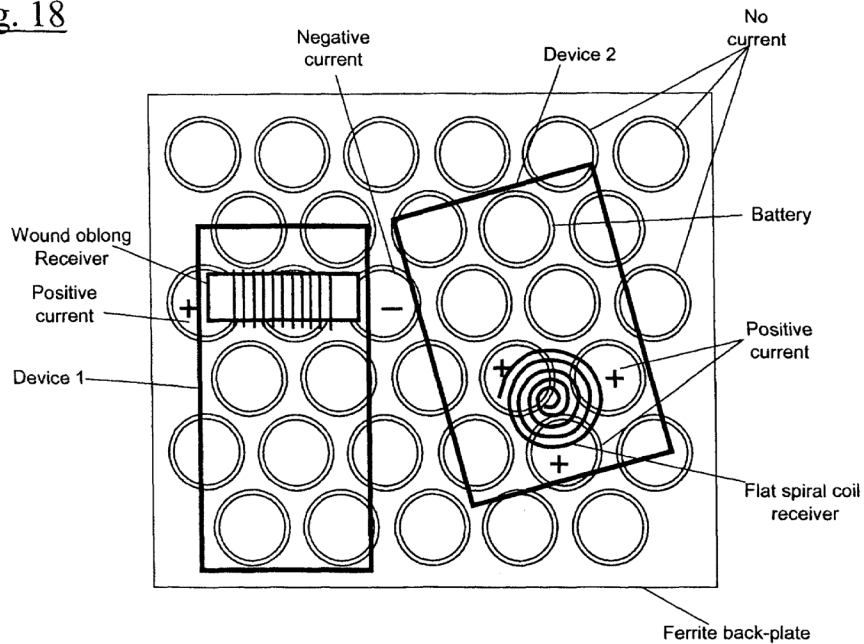


Figure 18, above, shows device 1 with a horizontal coil axis wound around magnetic material, and device 2 with a flat spiral coil as its power receiver. *Id.* at 10:40–42.

Figure 23, reproduced below, shows another charger configuration, that is described as “a simpler and lower cost alternative to a flat pad charger.” *Id.* at 11:45–46.

Fig. 23

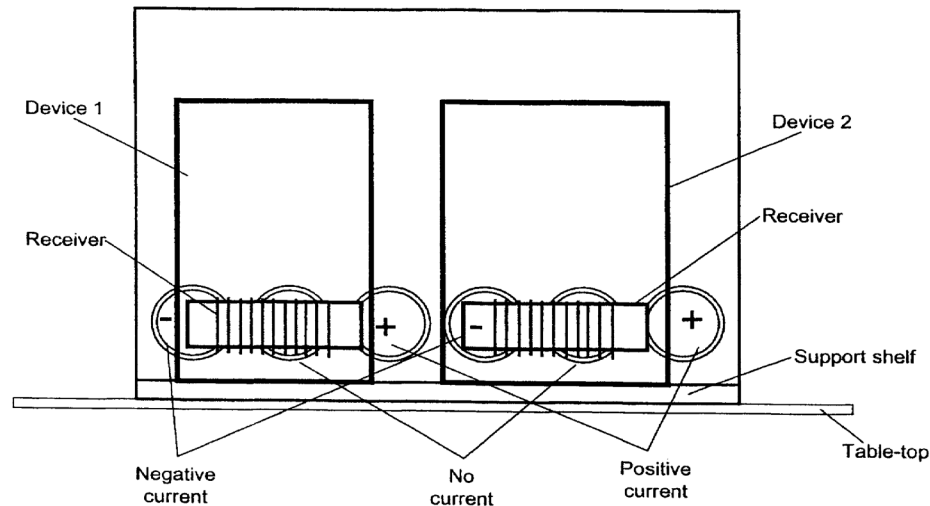


Figure 23, above, shows a charger in the form of a shelf such that the device stands upright on a ledge, with a single line of charger coils. *Id.* at 11:46–48. “The receiver is positioned in the portable device a set distance away from the bottom edge. Thus, there is always alignment in one dimension.” *Id.* at 11:48–51. “Depending on which part of the shelf the device is placed, different coils are accordingly activated. The shelf allows devices to be placed anywhere along a line.” *Id.* at 11:51–54. Fells further states:

Wound Litz-wire primaries are the ultimate solution for low primary losses. Wound components with or without ferrite cores can be used. Ferrite cores can be added to give a small shape-factor benefit (if cost-effective) and to produce an even flatter coupling factor. However, overall cost and manufacturability is less attractive. Other planar coil technologies such as PCB coils or watch-spring coils can be

used to reduce cost, but typically exhibit higher losses (lower coil Qs).

Id. at 11:56–64. Further, “[a] ferrite back-plate may be used behind the vertical cores to act as a flux return path, and this improves the coupling factor.” *Id.* at 11:67–12:2. “The permeable material from which the cores and/or back-plate are manufactured is preferably Mn–Zn ferrite, but other magnetic materials . . . could be used.” *Id.* at 12:3–8.

2. *Analysis of Independent Claims 1 and 26*

Petitioner contends that Fells teaches each limitation of independent claims 1 and 26. Pet. 7–63. In support, and as set forth below, Petitioner identifies certain passages and figures in the references and explains their significance with respect to the corresponding claim limitation. *Id.* We agree with and adopt Petitioner’s analysis as our own.

a) *1(a): A system for inductive power transfer comprising:*

Petitioner contends, and we agree, that Fells “discloses ‘an **inductive power transfer system** including a primary unit and a secondary device,’ where the primary unit includes a ‘power transfer surface’ and ‘field generators’ (e.g., primary coils) and where the secondary device (which can be a mobile device) includes a ‘power receiver having a secondary coil.’” Pet. 7 (citing Ex. 1005, code (57)). As persuasively argued by Petitioner, Fells discloses various configurations of such an inductive power transfer system, and a person of ordinary skill in the art would have understood “that the various arrangements, materials, configurations, etc. described in connection with the exemplary figures are related to a ‘system’ like that claimed” and that Fells’ “system is described as versatile in configuration, where different arrangements/features are described to be related to each

other (where applicable).” *Id.* at 7–10 (citing, e.g., Ex. 1002 ¶¶ 94–98, Ex. 1005, Figs. 1–27).

After considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches the recited elements.⁷

b) 1(b): a charger, wherein the charger is an inductive charger, and the charger includes:

26(a): A charger for inductive charging, the charger comprising:

Petitioner contends, and we agree, that Fells’ system includes a primary unit (charger) that transfers power to the secondary unit (mobile device) via electromagnetic induction. Pet. 10. According to Petitioner, Fells “discloses a ‘**charger**’ by a portion of the primary unit including one or more of the charging coil(s) and associated circuitry/components discussed herein.” *Id.* at 11 (citing Ex. 1002 ¶¶ 101–103). Petitioner contends that a “charger” is exemplified in, for example, Figure 23 of Fells. *Id.* at 11–12. We are persuaded by Petitioner’s arguments.

After considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitation 1(b) and the recited elements in claim 26⁸.

⁷ Petitioner does not argue that the preamble limits claim 1. Although we find the evidence supports that the prior art teaches the preamble, we make no determination whether the preamble of claim 1 is limiting.

⁸ Similarly, Petitioner does not argue that the preamble limits claim 26. Although we find the evidence supports that the prior art teaches the preamble of claim 26, we make no determination whether the preamble of claim 26 is limiting.

- c) 1(c)/26(b): a printed circuit board having a charger coil, wherein the charger coil has a substantially planar charger surface;*

Petitioner contends that Fells’ “‘charger’ can include one or more planar primary coils (‘**charger coil** [having] **a substantially planar charger surface**’) on a ‘**printed circuit board**’ (PCB).” Pet. 12. Petitioner contends that Fells’ charger “can be formed ‘using a *PCB* implementation’ where ‘an array of *planar spiral coils* [are] used to generate the vertical fields.” *Id.* (citing Ex. 1005, 10:26–28, 10:28–37, 11:45–64, Figs. 16, 17, 23; Ex. 1002 ¶¶ 105–106).

We adopt Petitioner’s analysis as our own. For example, as shown above in Section III.D.1 (description of Fells), Figures 16 and 17 of Fells shows a charger using a PCB implementation with an array of planar coils used to generate the vertical fields. Ex. 1005, 10:26–37.

Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(c) and 26(b).

- d) 1(d)/26(c): a substantially planar magnetic layer under the charger coil opposite the charger surface; and,*

We agree with Petitioner that Fells’ charger “can include a ferrite backplate (‘**substantially planar magnetic layer**’) under the primary coil(s) (‘**charger coil(s)**’) that is ‘**opposite to the charger surface**’ since it is positioned under the surface of the primary coil(s) that generate the magnetic field used to inductively transfer power.” Pet. 13–14 (citing Ex. 1005, 10:26–34 (PCB planar spiral coil implemented charger of Fig. 16 where “[a] *ferrite back plate* would typically be required to complete the magnetic

circuit”), 11:65–12:9, 6:57–63, 7:9–21, 8:26–32, Figs. 1(b), 3, 8, 16–18, 23; Ex. 1002 ¶ 108).

Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(d) and 26(c).

e) 1(e)/26(d): a charger drive circuit, wherein the charger drive circuit includes a resonant capacitor and a FET switch to apply an alternating voltage to the charger coil; and

Petitioner contends that Fells discloses a relationship between the charger coils and the power receiver (i.e., the mobile device), such that the receiver can be powered by activating multiple coils even when placed in different positions. Pet. 14–17 (citing, e.g., Ex. 1005, Figs. 4–8, 7:25–8:9). Petitioner also contends that Fells’ charger includes driver circuitry, including components for sensing the position of the device coil and switching/activating appropriate primary coils on the charging pad, which requires AC voltage signals. *Id.* at 18 (citing Ex. 1005, Figs. 9, 13, 6:27, 31–32, 8:10–13, 9:46–48; Ex. 1002 ¶ 115); *see also id.* at 19. Petitioner also relies on Figure 26 of Fells, which Petitioner contends describes a configuration where “[a] resonant capacitor may be placed at either the driver side or the coil side of the switch,” and an “FET” switch may be used. *Id.* at 20 (citing Ex. 1005, Fig. 26, 13:57–59, 14:32–35). We are persuaded by Petitioner’s analysis and adopt it as our own.

Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(e) and 26(d).

f) 1(f): a first mobile device that includes a receiver to inductively receive power for the first mobile device, wherein the receiver includes:

26(e): . . . a receiver . . . , wherein the receiver is included in a mobile device to inductively receive power for the mobile device, and the receiver includes:

We agree with Petitioner that Fells' system inductively charges a mobile device via a power receiver in the device. Pet. 21–24 (citing, e.g., Ex. 1005, Figs. 1, 2, 5–8, 18–23, 6:57–60 (“FIG 1(a) shows a power receiver suitable for embedding in a portable device”), 6:25–26 (“FIG. 8 shows portable devices being charged . . .”). Petitioner contends that the mobile device's “receiver” inductively receives power from the charger coils. *Id.*

Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(f) and 26(e).

g) 1(g)/26(f): a solenoid, wherein the solenoid includes:

We agree with Petitioner that Fells discloses that the power receiver in the mobile device can be configured in different ways, including as a “solenoid,” consistent with that described in the '349 patent. Pet. 24–27 (citing, e.g., Ex. 1001, Figs. 7–10; Ex. 1005, Figs. 1(a), 19, 21).

Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(g) and 26(f).

h) 1(h)/26(g): a magnetic core having a relative magnet permeability exceeding 1 and having first and second ends:

Petitioner contends that the mobile device receiver in Fells includes a secondary coil formed of a solenoid including a magnetic core that has first

and second ends and facilitates the inductive charging of the mobile device. Pet 27 (citing, e.g., Ex. 1005, Fig. 1(a), 6:57–60 (receiver “has a ferrite core and coil wound around the core”), 12:3–8 (discussing that the “permeable material” of the primary cores can be “Mn–Zn ferrite, but other magnetic materials . . . could be used”), 11:15–21 (referring to the “high effective permeability”). Petitioner contends that a person of ordinary skill in the art “would have understood that a magnetic core with ‘high effective permeability’ necessarily discloses a ‘magnetic core having a relative magnetic permeability exceeding 1,’ because it was known ferrite material-based cores would have a relative permeability over 1, especially given the permeability of air is close to 1.” *Id.* at 28–29 (citing, e.g., Ex. 1002 ¶¶ 143, 144); *see also id.* at 29–30. Petitioner’s analysis is persuasive and we adopt it as our own.

Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(h) and 26(g).

- i) 1(i)/26(h): Litz wire wrapped around a section of the magnetic core forming a wire wound section around the magnetic core, with the magnetic core extending beyond the wire wound section; and*

Petitioner contends that Fells’ magnetic core of the receiver “solenoid” is wrapped with a wire wound section, and that Fells discloses that “[p]referably Litz wire is used for both the primary and secondary coils.” Pet. 30 (citing, e.g., Ex. 1005, Figs. 18–20, 22, 23, 7:3–4) (emphasis omitted). Petitioner contends that Fells describes secondary core/coil configurations where “the magnetic core extend[s] beyond the wire wound section” of the magnetic core. *Id.* at 30–31 (citing, e.g., Ex. 1005, Figs. 1,

18–20, 22, 23, 11:1–4 (“It is preferable that the coil winding does not go all the way to the ends of the magnetic material.”)) (emphasis omitted).

Petitioner’s analysis is persuasive and we adopt it as our own.

Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(i) and 26(h).

j) 1(j)/26(i): a receiver electronic circuit, wherein the receiver electronic circuit includes a resonant capacitor and a rectifier; and

Petitioner contends that Figure 14 of Fells teaches this limitation. Pet. 32–33. Figure 14, which shows a block diagram of the electronics within the portable device, is reproduced below.

Fig. 14

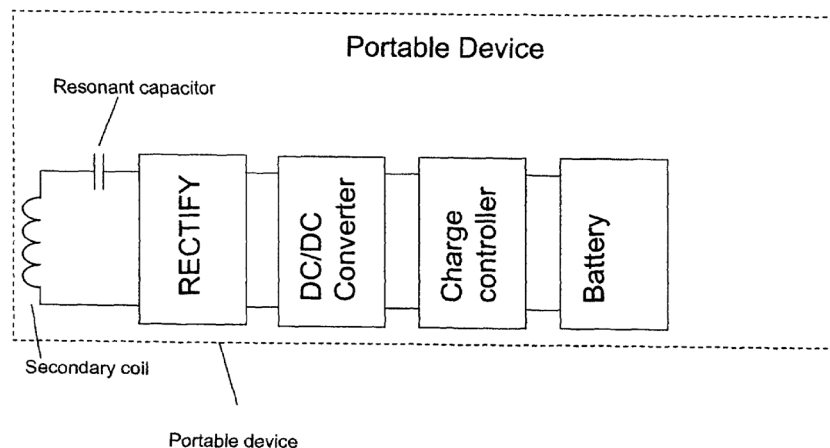


Figure 14 of Fells, above, shows a circuit that includes a rectifier and a resonant capacitor. *See, e.g., Ex. 1005, 9:54–10:6.*

Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(j) and 26(i).

k) 1(k): the charger further includes a means for positioning the receiver in a power transfer position, proximate to the charger surface, to inductively transfer power to the receiver of the first mobile device;

26(e): means for positioning a receiver in a power transfer position, which is proximate to the charger surface, to inductively transfer power to the receiver . . .

Petitioner contends that Fells “discloses charger configurations that ensure mobile devices placed proximate to the charger surface are aligned to facilitate the inductive transfer of power to the ‘receiver.’” Pet. 33.

Petitioner relies on the configuration depicted in Figure 23, which “describes a variation to a horizontal flat pad charger, where the charger is configured to sit upright (at a slight angle) to allow mobile device(s) to be placed thereon (**‘proximate to the charger surface’**).” *Id.* Petitioner contends that Fells’ charger “can thus be configured ‘in the form of a shelf’ so the device stands slightly titled [sic] back and upright on a ledge so that ‘there is **always alignment in one dimension**’ with the ‘receiver positioned in the portable device a set distance away from the bottom edge.’” *Id.* at 34 (citing Ex. 1005, 11:45–51). Petitioner contends that Fells “discloses the **‘charger’** including a **‘means for positioning’** (e.g., ‘support shelf’ (FIG. 23) or ‘ledge’ (11:46–51) is a physical mechanism/means to assist the user in alignment of the mobile devices on the charger) as claimed.” *Id.* at 35 (citing Ex. 1002 ¶ 157).

Petitioner also contends that it would have been obvious to a person of ordinary skill in the art to modify Fells’ charger with other forms of physical/visual mechanisms to assist alignment. Pet. 35 (citing Ex. 1002 ¶ 158). Petitioner asserts that such forms of mechanical, magnetic, or

visual-based mechanisms to guide a user's placement of power receiving devices (e.g., mobile devices) on an inductive charging system was well-known. *Id.* (citing Ex. 1002 ¶ 159; Ex. 1010 (Nakamura), Figs. 8, 9, ¶¶ 102–103; Ex. 1011 (Stoner), code (57), Figs. 1–4, 8, 11, 1:6–46, 2:14–4:62, 5:38–7:34, 10:46–12:35). According to Petitioner, a person of ordinary skill in the art would have been motivated to consider and implement well-known mechanisms for aiding a user in aligning the mobile devices onto the charger of Fells' system, and such modifications with these known alignment aid mechanisms would have provided benefits and advantages beyond those provided by Fells' shelf application in Figure 23, and thus would have improved Fells' system. *Id.* at 35–36 (citing Ex. 1003 ¶¶ 160–164). Petitioner asserts that the modification would have involved applying known technologies/techniques consistent with those taught by Fells to yield the predictable result of providing an efficient inductive charging system consistent with that contemplated by Fells. *Id.* at 36 (citing Ex. 1002 ¶ 165).

Petitioner's analysis is persuasive and we adopt it as our own. Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(k) and 26(e).

- l) 1(l)/26(j): the charger drive circuit is configured to drive the charger coil at one or more operating frequencies to inductively transfer power from the charger to the receiver when the receiver is positioned in the power transfer position, wherein when the receiver is positioned in the power transfer position, a tuned circuit, including the charger coil and the resonant capacitor of the charger drive circuit and the solenoid and the resonant capacitor of the receiver electronic circuit, has a resonant frequency that allows the charger to*

transfer the power to the receiver at the one or more operating frequencies;

Petitioner contends that Fells' charger drive circuit (*see* limitation 1(e)) above, drives the charger coils to inductively transfer power from the charger to the receiver when the receiver is positioned in the power transfer position. Pet. 37 (citing, e.g., the contentions for limitations 1(a)–1(k); Ex. 1005, Figs. 10–12). Petitioner contends that a person of ordinary skill in the art “would have understood that the ‘resonance capacitor’ in the ‘charger’ would have caused the ‘charger drive circuit’ to ‘drive the charger coil at one or more operating frequencies to inductively transfer power’ to the mobile device receiver.” *Id.* at 38 (citing the contentions for limitation 1(e); Ex. 1002 ¶ 169) (emphasis omitted). Petitioner further contends that a person of ordinary skill in the art would have “understood that the power is transferred from the charger to the receiver at the resonant frequency designed for efficient power transfer.” *Id.* (citing Ex. 1002 ¶ 170; Ex. 1005, 8:33–41). Petitioner also argues that Fells' system operates such that “a tuned circuit” is formed. *Id.* at 38–39 (citing, e.g., contentions for limitations 1(e)–1(j); Ex. 1002 ¶ 171; Ex. 1005, 9:46–67, 25:40–26:32).

Petitioner's analysis is persuasive and we adopt it as our own. Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(l) and 26(j).

m) 1(m)/26(k): the charger coil includes a conductor patterned to include multiple, substantially concentric turns for generating a magnetic flux through a first end of the solenoid when the receiver is placed in the power transfer position, wherein the

outmost of the concentric turns defines a perimeter of a charger coil area;

Petitioner contends that Fells' charger coils can be planar spiral coils, which includes a "conductor patterned to include multiple, substantially concentric turns." Pet. 39–40 (citing, e.g., Ex. 1005, Figs. 16–17, 10:26–36). Petitioner further contends that, as exemplified in Figures 16, 17, and 23, "an outermost of the concentric turns" of the conductor in a charger coil "defines a perimeter of a charger coil area." *Id.* at 39–41. Petitioner contends that such charger coils "generat[e] a magnetic flux through a first end of the solenoid when the receiver is placed in the power transfer position." *Id.* at 42 (citing, e.g., contentions for limitations 1(c), 1(f)–1(l); Ex. 1005, 1:55–57 ("magnetic flux from at least one field generator flows through the secondary coil, supplying power to the secondary device")).

Petitioner's analysis is persuasive and we adopt it as our own. Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(m) and 26(k).

n) 1(n)/26(l): the multiple concentric turns, when driven by the charger drive circuit, generate a magnetic field that is substantially perpendicular to the charger surface at a geometric center of the charger coil area,

Petitioner contends that the charger coil, including planar spiral type coils with "substantially concentric turns," is "driven by the charger drive[r] circuit." Pet. 44 (citing, e.g., contentions for limitations (a)–(m)). Petitioner further contends that, when driven, the charger coil "generate[s] a magnetic field that is substantially perpendicular to the charger surface at a geometric center of the charger coil area." *Id.* at 44–46 (citing, e.g., Ex. 1005, 1:41–49

(“a plurality of field generators, each able to generate a field substantially perpendicular to the power transfer surface”), 1:55–57 (“magnetic flux from at least one field generator flows through the secondary coil”), 7:9–21, Fig. 2; Ex. 1002 ¶¶ 180–182); *see also id.* at 47–49.

Petitioner’s analysis is persuasive and we adopt it as our own. Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(n) and 26(l).

- o) 1(o)/26(m): the charger coil area is larger than an area of the first end and larger than an area of the second end of the magnetic core of the solenoid;*

Petitioner contends that Fells discloses configurations, including those relating to coil and receiver configurations, charger configurations, and dimensional relationships between charger coils and power receiver, which teach this limitation. Pet. 49–53 (citing, e.g., Ex. 1005, 7:22–24, 7:31–8:9, 10:60–12:8, 12:15–19, 13:14–14:31, Figs. 1, 7, 9, 10, 16, 17, 19, 21, 23; Ex. 1002 ¶¶ 185–191). In addition, Petitioner argues that to the extent that Fells does not disclose this limitation, it would have been obvious to a person of ordinary skill in the art to configure/implement a mobile device with a power receiver having a solenoid having a magnetic core with ends having an area smaller than the charger coil area. *Id.* at 53–57 (citing, e.g., Ex. 1002 ¶¶ 192–194; Ex. 1005, Figs. 5–8, 18, 23).

Petitioner’s analysis is persuasive and we adopt it as our own. Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(o) and 26(m).

p) 1(p)/26(n): the magnetic layer of the charger extends beyond the charger coil area; and

Petitioner contends that, although Fells does not expressly state the dimensions of the ferrite backplate, it “shows examples of the backplate that are clearly beyond the charger coil area (of not just one charger coil, but others in the charger).” Pet. 57–58 (citing, e.g., Ex. 1005, Figs. 1(b), 2, 3; Ex. 1002 ¶¶ 196–197). In addition, Petitioner contends that it would have been obvious to a person of ordinary skill in the art to consider and implement a ferrite backplate that extends beyond the “charger coil area” to ensure the charger coil has a magnetic layer to “complete the magnetic circuit” that is “formed when the power receiver is placed on the charging surface.” *Id.* at 59 (citing Ex. 1005, 7:9–16; Ex. 1002 ¶ 198).

Petitioner’s analysis is persuasive and we adopt it as our own. Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(p) and 26(n).

q) 1(q)/26(o): when the receiver is in the power transfer position, the first end of the magnetic core is located proximate to the charger coil area above the charger surface to receive magnetic flux from the charger coil area and guide the magnetic flux in a closed magnetic loop from the charger coil area through the solenoid and return through the charger magnetic layer to the charger coil area to form the closed magnetic loop.

Petitioner contends that a person of ordinary skill in the art would have understood that when Fells’ receiver (i.e., the mobile device) is in the “power transfer position” (as discussed in association with limitation 1(k)/26(e) above), “inductive power transfer takes place between the charger coil(s) and the receiver coil, consistent with that known in the art, resulting

in magnetic flux flowing between the charger coils and the magnetic core of the receiver solenoid.” Pet. 60 (citing Ex. 1002 ¶ 201). Petitioner additionally relies on the configurations in Fells in Figures 2, 4 and 23 to support the contentions for this limitation. *Id.* at 60–63.

Petitioner’s analysis is persuasive and we adopt it as our own. Therefore, after considering the evidence and arguments of the complete record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells teaches limitations 1(q) and 26(o).

r) Conclusion for Independent Claims 1 and 26

Based on our review and consideration of the current record, we determine that Petitioner has shown, by a preponderance of the evidence, that Fells renders obvious claims 1 and 26 for the reasons given by Petitioner.

3. Dependent Claims 5, 7, and 10–12

Petitioner contends that dependent claims 5, 7, 10–12, which depend from claim 1, would have been obvious over Fells. Pet. 64–76. In support, Petitioner identifies certain passages and figures in Fells and explains their significance with respect to the corresponding claim limitations. *Id.* Patent Owner does not dispute Petitioner’s contentions. *See* PO Resp.

These dependent claims recite further limitations relating to the size of the charger coil area (claim 5), the size of the magnetic core of the solenoid (claim 7), the composition of the magnetic core of the solenoid (claim 10), the positioning of the solenoid and the charger surface (claim 11), and the positioning of the receiver, magnetic core of the solenoid, and charger magnetic layer (claim 12). We have reviewed Petitioner’s contentions, which we find persuasive and adopt as our own. Therefore, we determine

that Petitioner has also shown those claims to be unpatentable by a preponderance of the evidence. *Id.*

E. Ground 2: Obviousness over Fells and Jung

Petitioner contends that claim 4, which depends from claim 1, would have been obvious over Fells and Jung. Pet. 76–85. In support, and as set forth below, Petitioner identifies certain passages and figures in Fells and Jung and explains their significance with respect to the corresponding claim limitations. *Id.* Patent Owner does not dispute Petitioner’s contentions. *See* PO Resp. Having considered the arguments and evidence before us, we find that Petitioner has shown, by a preponderance of the evidence, that claim 4 would have been obvious over Fells and Jung. We agree with and adopt Petitioner’s contentions as our own.

1. Jung (Ex. 1016)

Jung is titled “Non-Contact Charging Station With Power Transmission Planar Spiral Core, Non-contact Power-receiving Apparatus, and Method for Controlling the Same.” Ex. 1016, code (54). Among other things, Jung discloses that “[a] primary core of the non-contact charging station transmitting a power signal to a portable device using an induced magnetic field and a secondary core of the non-contact power-receiving apparatus are configured as a power transmission Printed Circuit Board (PCB) core in which a planar-spiral core structure is formed on a core base” in order to simplify its shape and improve applicability to facilitate mounting on a non-contact charger. *Id.* at code (57). In addition, throughout, Jung discloses aspects of its system for improving power efficiency, including power efficiencies relative to the primary and secondary side that exceed 50%. *E.g., id.* at 9:12–30, 12:4–8, 13:21–17:47, Table 2, Table 3, Fig. 12.

2. *Analysis of Dependent Claim 4*

Claim 4 recites

The system of claim 1, wherein when the receiver is positioned in the power transfer position and when the charger is operated at an operating frequency near the resonance frequency of the tuned circuit to inductively transfer power from the charger to the receiver, the transfer of power from the charger to the receiver has a power transfer efficiency that exceeds 50%, wherein the power transfer efficiency is defined by power out of a rectifier in the receiver electronic circuit divided by power into the charger drive circuit.

Ex. 1016, 24:28–37.

Petitioner generally points to its contentions for independent claim 1 to teach “wherein when the receiver is positioned in the power transfer position and when the charger is operated at an operating frequency near the resonance frequency of the tuned circuit to inductively transfer power from the charger to the receiver,” and relies on the combination of Fells and Jung to teach “the transfer of power from the charger to the receiver has a power transfer efficiency that exceeds 50%, wherein the power transfer efficiency is defined by power out of a rectifier in the receiver electronic circuit divided by power into the charger drive circuit.” Pet. 77–85. Petitioner contends that Fells does not expressly disclose “power transmission efficiency,” but a person of ordinary skill in the art would have been motivated to configure Fells’ system to operate as efficiently as possible. *Id.* at 77–78 (citing Ex. 1002 ¶ 231). Petitioner additionally contends that a person of ordinary skill in the art would have found it beneficial to be concerned with power transfer efficiency from the perspective of the charger relative to the induced power

provided to the mobile device's components. *Id.* at 78 (citing Ex. 1002 ¶ 232).

Petitioner contends that Jung teaches “the transfer of power from the charger to the receiver has a power transfer efficiency that exceeds 50%, wherein the power transfer efficiency is defined by power out of a rectifier in the receiver electronic circuit divided by power into the charger drive circuit.” Pet. 79–83. Petitioner contends that a person of ordinary skill in the art would have considered Jung in context of Fells given Jung's disclosure, which has techniques, technologies, and configurations similar and related to those of Fells, and would have been motivated to configure Fells' system such that the “power transfer efficiency” exceeds 50% “in order to maximize/ensure efficient transfer of power during charging operations.” *Id.* at 78–79, 83. Petitioner contends that this modification would have been a predictable modification, and that a person of ordinary skill in the art would have had a reasonable expectation of success. *Id.* at 84

Petitioner's analysis is persuasive and we adopt it as our own. Pet. 76–85. Therefore, we determine that Petitioner has shown, by a preponderance of the evidence, that claim 4 would have been obvious over Fells and Jung.

F. Ground 3: Obviousness Over Fells, Stoner, and Nakamura

Petitioner contends claims 1, 5, 7, 10–12, and 26 would have been obvious over Fells, Stoner, and Nakamura. Pet. 86–88. Patent Owner does not dispute Petitioner's contentions. *See* PO Resp. Having considered the arguments and evidence before us, we find that Petitioner has shown, by a preponderance of the evidence, that claims 1, 5, 7, 10–12, and 26 would

have been obvious over Fells, Stoner, and Nakamura. We agree with and adopt Petitioner's contentions as our own.

1. Stoner (Ex. 1011)

Stoner is titled "Wireless Power System and Method with Improved Alignment," and is generally directed to a wireless power system "for aligning a portable device with an inductive power supply, and more particularly to such systems that use magnetic attraction to align a portable device on an induction charging service." Ex. 1011, code (54), 1:6–10.

Figure 2(b), reproduced below, shows a physical configuration of an embodiment of the DC coil drive system.

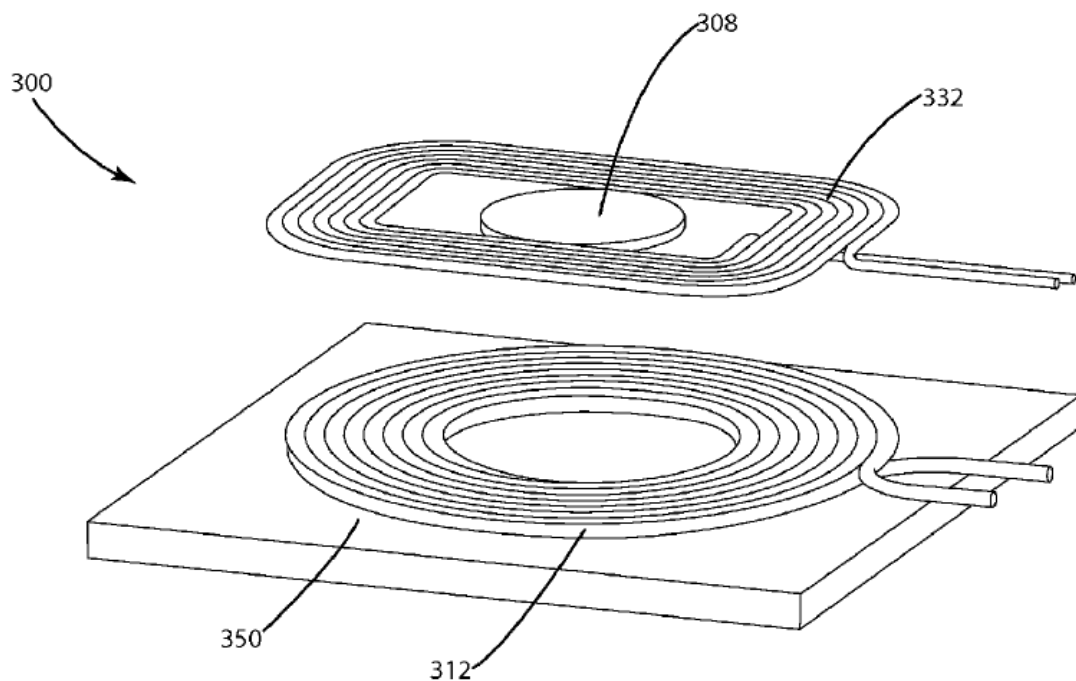


Fig. 2B

Figure 2(b), above, shows DC coil drive system 300, including inductive power supply that includes primary inductor 312 and primary shielding 350, and an electronic portable device with secondary inductor 332 and

secondary magnet 308. Primary inductor 312 may also include primary magnets. *Id.* at 8:37–39.

2. *Nakamura (Ex. 1010)*

Nakamura is titled “Power Supply System” and is generally directed to “a power supply system that supplies power to mobile electronic equipment.” Ex. 1010, code (54), ¶ 3. Stoner discloses embodiments to enable positioning of the mobile electronic equipment on the power transmission apparatus. *Id.* ¶¶ 102, 103. Figure 8, reproduced below, shows an embodiment of a power supply system.

FIG. 8

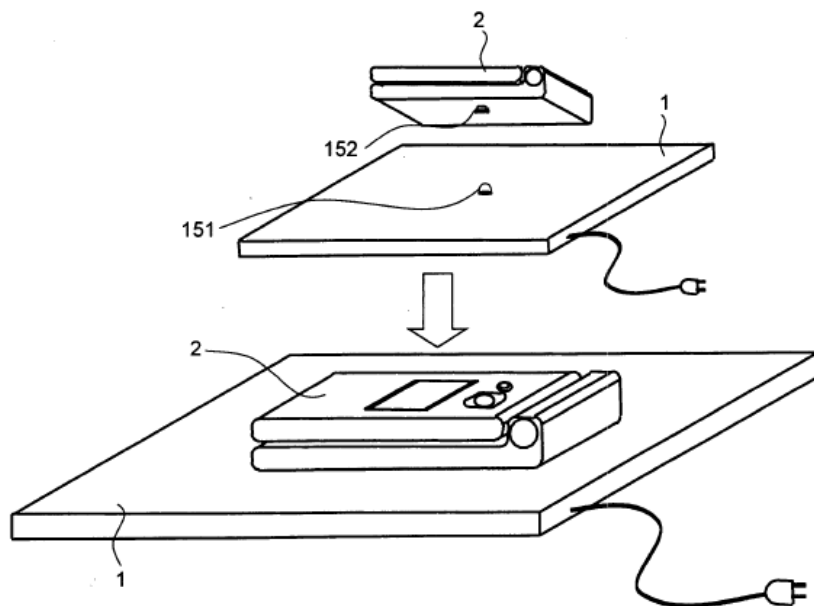


Figure 8, above, shows a state where power transmission apparatus 1 and portable telephone 2 are separated away from each other and a state where portable telephone 2 is placed on the power transmission apparatus 1. *Id.* ¶ 102. There is a protrusion 151 on the power transmission apparatus 1, and a depression 152 on the portable telephone 152, such that the protrusion 151

and depression 152 are engaged with each other to enable positioning of the power transmission apparatus 1 and the portable telephone 2. *Id.*

Figure 9, reproduced below, shows another embodiment of power supply system.

FIG. 9

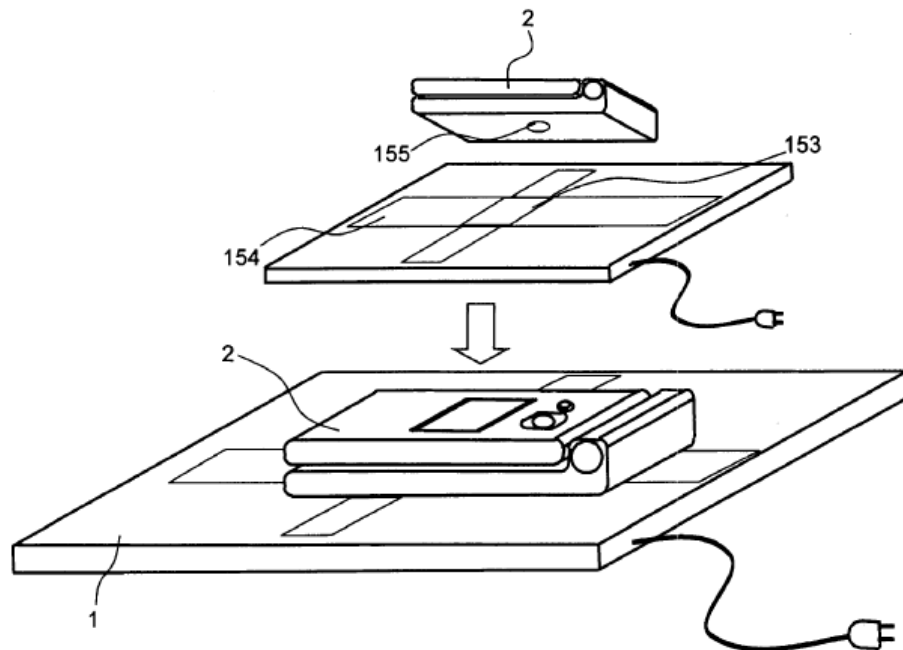


Figure 9, above, similarly shows a state where power transmission apparatus 1 and portable telephone 2 are separated away from each other and a state where portable telephone 2 is placed on the power transmission apparatus 1. *Id.* ¶ 103. A mark 153 indicating a chargeable region and an auxiliary mark 154 for positioning are provided on the power transmission apparatus 1, and a mark 155 for positioning is provided on the portable telephone 2. *Id.* The portable telephone 2 is placed on the power transmission apparatus 1 so that

the mark 155 of the portable telephone is included in the chargeable region.
Id.

3. *Analysis*

Petitioner's contentions are the same as those set forth above for Ground 1 (obviousness over Fells), except for limitations 1(k) and 26(e). Although Petitioner refers to Stoner and Nakamura in its analysis of limitation 1(k) in Ground 1 (*see* Pet. 35) to establish what was known in the art, both references are explicitly included in the combination in Ground 3. Pet. 86–88. Specifically, Petitioner contends that a person of ordinary skill in the art “would have been motivated to consider the teachings/suggestions from Stoner and Nakamura to modify Fells to include [a] magnetic and/or visual-based mechanism for assisting a user to align/position the receiver of the mobile device,” to teach the “means for positioning” limitation. *Id.* at 86. Petitioner contends that the same motivation, rationale, skills, knowledge, and expectation of success as explained in Ground 1 for limitation 1(k) applies. *Id.* For example, Petitioner contends that a person of ordinary skill in the art would have been motivated to modify Fells’ “charger to include similar alignment assistance mechanisms/means to ensure proper and efficient coupling occurs when the mobile device is placed on the charger surface.” *Id.* at 87 (citing Ex. 1002 ¶ 245).

Petitioner's analysis is persuasive and we adopt it as our own. Therefore, having considered the arguments and evidence before us, we find that Petitioner has shown, by a preponderance of the evidence, that claims 1, 5, 7, 10–12, and 26 would have been obvious over Fells, Stoner, and Nakamura.

G. Ground 4: Obviousness over Fells, Stoner, Nakamura, and Jung

Petitioner contends that claim 4, which depends from claim 1, would have been obvious over Fells, Stoner, Nakamura, and Jung. Pet. 88–89. In support, Petitioner identifies certain passages and figures in Fells, Stoner, Nakamura, and Jung and explains their significance with respect to the corresponding claim limitations. *Id.* Petitioner’s contentions are essentially the same as those set forth above for Grounds 1–3. *Id.*

Patent Owner does not dispute Petitioner’s contentions. *See* PO Resp. Petitioner’s analysis is persuasive and we adopt it as our own. Pet. 88–89. Therefore, we determine that Petitioner has shown, by a preponderance of the evidence, that claim 4 would have been obvious over Fells, Stoner, Nakamura, and Jung.

IV. CONCLUSION⁹

For the foregoing reasons, we are persuaded that Petitioner has established by a preponderance of the evidence that 1, 4, 5, 7, 10–12, and 26 of the ’349 patent are unpatentable.

⁹ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

Claims	35 U.S.C. §	Reference/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 5, 7, 10–12, 26	103	Fells	1, 5, 7, 10–12, 26	
4	103	Fells, Jung	4	
1, 5, 7, 10–12, 26	103	Fells, Stoner, Nakamura	1, 5, 7, 10–12, 26	
4	103	Fells, Stoner, Nakamura, Jung	4	
Overall Outcome			1, 4, 5, 7, 10– 12, 26	

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1, 4, 5, 7, 10–12, and 26 of the '349 patent have been shown to be unpatentable; and

FURTHER ORDERED that, because this is a final written decision, parties to this proceeding seeking judicial review of our Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD,
Petitioner,

v.

MOJO MOBILITY INC.,
Patent Owner.

IPR2023-01089
Patent 11,292,349 B2

FITZPATRICK, *Administrative Patent Judge*, concurring.

I join the entirety of the majority’s opinion. I write separately to address Petitioner’s Ground 1 challenge to claim 1.

When we instituted this proceeding, I was of the view that the *Fintiv*¹ factors weighed in favor of discretionary denial. Dec. (Fitzpatrick, J., concurring at 2). However, I concurred in the majority’s decision to institute, because I was of the additional view that the Petition met the compelling merits standard for Petitioner’s Ground 1 challenge to claim 1.

¹ *Apple Inc. v. Fintiv, Inc.*, No. IPR2020-00019, Paper 11 at 5–6 (Mar. 20, 2020) (precedential) (“*Fintiv*”).

Id.; see *Commscope Techs. LLC v. Dali Wireless Inc.*, No. IPR2022-01242, Paper 23 at 4–5 (Feb. 27, 2023) (precedential) (“*Commscope*”) (“In circumstances where . . . the Board’s analysis of *Fintiv* factors 1–5 favors denial of institution, the Board shall then assess compelling merits.”).

“[T]he compelling merits standard is a higher standard than the standard for institution set by statute.” *Commscope* at 3 (referring to 35 U.S.C. § 314(a)). “[W]hen determining whether there is a compelling unpatentability challenge, the Board evaluates whether the Petition presents challenges in which the evidence, if unrebutted in trial, would plainly lead to a conclusion that one or more claims are unpatentable by a preponderance of the evidence.” *Id.* (emphasis added).

This is the standard I previously applied to Petitioner’s Ground 1 challenge to claim 1. Dec. (Fitzpatrick, J., concurring at 2). During trial, all of Petitioner’s challenges went unrebutted, including Petitioner’s Ground 1 challenge to claim 1. See PO Resp. 1 (Patent Owner “elects to not proffer additional argument on the papers or through any hearings that may occur in this proceeding.”). Thus, because I previously determined Petitioner’s Ground 1 challenge to claim 1 presented compelling merits and because Patent Owner did not rebut that challenge during trial, I conclude that Petitioner has necessarily met its burden of proving claim 1 unpatentable by a preponderance of the evidence.

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