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Paper 10
Date: June 13, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD. and,
SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner,

v.

SCRAMOGE TECHNOLOGY LTD.,
Patent Owner.

IPR2022-00241
Patent 9,825,482 B2

Before JAMESON LEE, KARL D. EASTHOM, and
WESLEY B. DERRICK, *Administrative Patent Judges.*

DERRICK, *Administrative Patent Judge*.

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

I. INTRODUCTION

Samsung Electronics Co., LTD. And Samsung Electronics America, Inc. (collectively "Petitioner") filed a Petition (Paper 1, "Pet.") requesting an *inter partes* review of claims 1–21 of U.S. Patent No. 9,825,482 B2 (Ex. 1001, "the '482 patent"). Scramoge Technology Ltd. ("Patent Owner") filed a Preliminary Response (Paper 7, "Prelim. Resp."). The Board authorized, and the respective parties filed, Petitioner's Preliminary Reply (Paper 8, "Pet. Reply") and Patent Owner's Preliminary Sur-Reply (Paper 9, "PO Sur-Reply").

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted "unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition."[1] Upon consideration of the arguments and evidence presented by Petitioner and Patent Owner, we are persuaded that Petitioner has demonstrated, under 35 U.S.C. § 314(a), a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. Further, we are unpersuaded that we should exercise our discretion to deny institution. Accordingly, we institute an *inter partes* review of the challenged claims.

A. Real Parties in Interest

Petitioner identifies Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc., as real parties in interest. Pet. 2. Patent Owner identifies Scramoge Technology Ltd. as the real party-in-interest. Paper 5, 2.

[1] By regulation, the Director has delegated the decision whether to institute trial to the Board. 37 C.F.R. § 42.4(a).

B. Related Proceedings

The parties identify *Scramoge Technology Ltd. v. Samsung Elec. Co., Ltd.*, No. 6:21-cv-00454-ADA (W.D. Tex.) ("the district court litigation"), as a related proceeding.[2] Pet. 2; Paper 5, 3.

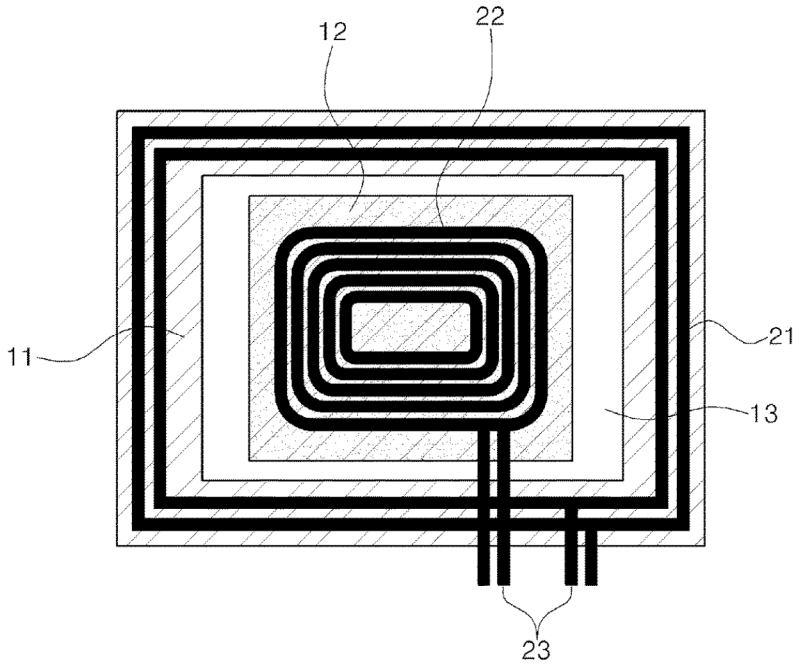
C. The '482 Patent

The '482 patent is titled "Electromagnetic Booster for Wireless Charging and Method of Manufacturing the Same" and is directed to an electromagnetic booster for wireless charging that includes a coil part disposed on a magnetic sheet composed of a first magnetic sheet member located at an edge portion and a second magnetic sheet member located in a center portion on the same plane, wherein the first magnetic sheet member and the second magnetic sheet member have different permeability rates. Ex. 1001, codes (54), (57).

The '482 patent discloses that "according to some embodiments . . . the coil part may be composed of a first coil member and a second coil member disposed on each of the surfaces of the first magnetic sheet member and of the second magnetic sheet member" (*id.* at 2:24–29) and that "according to some embodiments . . . a concave part corresponding to a shape of the coil part may be formed on a surface of the magnetic sheet, and the coil part [sic] may be partially or entirely filled with the concave part [sic] in a depth direction of the concave part (*id.* at 2:32–38).

Figure 3, reproduced below, depicts an embodiment of the electromagnetic booster.

[2] Patent Owner also lists a number of other *inter partes* review proceedings as "proceedings involving the patent-at-issue," however, these are challenges to other patents, not to the '482 patent. Paper 5, 2–3.



Ex. 1001, Fig. 3 (depicting a plan view of an electromagnetic booster). The depicted booster has a first magnetic sheet member 11 located at an edge portion and a second magnetic sheet member 12 located in a center portion, with magnetic sheet members 12, 13 separated by air gap 13. *Id.* at 5:16–22, 5:42–43, Fig. 3. The depicted booster also has a first coil member 21 and a second coil member 22, with the coils disposed, respectively, on first magnetic sheet member 11 and second magnetic sheet member 12. *Id.* at 5:44–49, Fig. 3. The depicted booster also includes a conducting wire 23. *Id.* at 5:49–50, Fig. 3.

D. Challenged Claims

Petitioner challenges claims 1–21 of the '482 patent. Pet. 1. Independent claims 1, 11, and 16 are illustrative of the subject matter at issue and are reproduced below:

> 1. An electromagnetic member for wireless charging, comprising:
>
> a first magnetic sheet member including a first coil member; and

a second magnetic sheet member disposed adjacent to the first magnetic sheet member and including a second coil member,

wherein the first magnetic sheet member and the second magnetic sheet member have different magnetic permeability rates, and

wherein the second magnetic sheet member is disposed at an inner side of the first magnetic sheet member.

Ex. 1001, 7:30–41.

11. An electromagnetic member for wireless charging, comprising:

a first magnetic sheet member including a first coil member; and

a second magnetic sheet member disposed adjacent to the first magnetic sheet member and including a second coil member,

wherein the first magnetic sheet member and the second magnetic sheet member lave [sic, have] different magnetic permeability rates, and

wherein the first magnetic sheet member is disposed at an edge portion on the same plane as the second magnetic sheet member.

Id. at 8:8–20.

16. An electromagnetic member for wireless charging, comprising:

a base film;

a first magnetic sheet member including a first coil member; and

a second magnetic sheet member disposed adjacent to the first magnetic sheet member and including a second coil member,

wherein the first magnetic sheet member and the second magnetic sheet member have different magnetic permeability rates,

> wherein the first magnetic sheet member and the second magnetic sheet member have different thicknesses, and
>
> wherein a lower surface of the first magnetic sheet member and a lower surface of the second magnetic sheet member are disposed on the same plane of the base film.

Id. at 8:35–51.

E. The Asserted Grounds of Unpatentability

Petitioner asserts that claims 1–21 would have been unpatentable on the following grounds:

References/Basis	35 U.S.C. §[3]	Claim(s) Challenged
Kim,[4] Mizutani[5]	103(a)	1–4, 6, 7, 10, 11, 13, 14
Kim, Mizutani, Tabata[6]	103(a)	5, 9, 15–19, 21
Mizutani	103(a)	1, 8, 11, 12
Mizutani, Tabata	103(a)	16, 20

Petitioner relies on the Declaration of Gary Woods, Ph.D. (Ex. 1002) in support of its challenge.

[3] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the '482 patent relies on priority benefit from before this date, the pre-AIA version of § 103 applies. Ex. 1001, code (22); Pet. 9.

[4] Kim et al., Korea Patent Application Publication KR10-1163574, published July 6, 2012; Petitioner relies on a certified English language translation (Ex. 1005, "Kim") of the original Korean language document (Ex. 1006).

[5] Mizutani, Japan Patent 4924122, issued April 25, 2012; Petitioner relies on a certified English language translation (Ex. 1007, "Mizutani") of the original Japanese language document (Ex. 1008).

[6] Tabata, Japan Patent 5013019, issued August 29, 2012; Petitioner relies on a certified English language translation (Ex. 1009) of the original Japanese language document (Ex. 1010).

II. ANALYSIS

A. Discretion Under 35 U.S.C. § 314(a)

Patent Owner argues the Board should exercise its discretion under 35 U.S.C. § 314(a) and deny institution in light of the district court litigation involving the '482 patent. Prelim. Resp.; PO Sur-Reply. Petitioner argues the opposite. Pet. 70–79; Pet. Reply.

In assessing whether to exercise such discretion, the Board weighs six non-exclusive factors, known as the *Fintiv* factors. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 6 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv I*"). Recognizing that "there is some overlap among these factors" and that "[s]ome facts may be relevant to more than one factor," the Board "takes a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review." *Id.* We have considered Patent Owner's arguments in light of the *Fintiv* factors, together with Petitioner's opposition, and we decline to exercise our discretion to deny the Petition as explained further below.

1. Factor 1: Whether a Stay Exists or Is Likely to Be Granted if a Proceeding Is Instituted

No motion to stay the district court litigation has been filed or acted upon. Pet. 71; Prelim. Resp. 3. Patent Owner argues that a stay is unlikely given that the pending district court case is before Judge Albright who, Patent Owner contends, disfavors staying proceedings for pending *inter partes* reviews. Prelim. Resp. 4. Patent Owner also argues that "it is highly unlikely that Judge Albright would grant a stay" because the case will be at a "late juncture" by the time "the deadline for an institution decision (June 15, 2022)" has passed. *Id.* at 4–5. Patent Owner argues that this factor weighs

against institution. Prelim. Resp. 5; PO Sur-Reply 1. Petitioner argues "that this factor is neutral where no such stay motion has yet been filed." Pet. 71.

There is no evidence that a stay has been requested in the district court litigation. We decline to speculate on how the district court would rule on a stay, if one were requested. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 at 12 (PTAB May 13, 2020) (informative) ("*Fintiv II*") (explaining that factor 1 generally "does not weigh for or against discretionary denial" when neither party has requested a stay). Accordingly, this factor is neutral.

2. Factor 2: Proximity of the Court's Trial Date to the Board's Projected Statutory Deadline

The projected statutory deadline for a final written decision in this proceeding would be, at the latest, June 15, 2023.

The trial date in the district court litigation is set, with jury selection beginning March 3, 2023, and trial set for March 6, 2023. Ex. 3001 (Supplemental Scheduling Order, entered May 23, 2022).

Petitioner contends that estimated trial dates are uncertain and that, even if the earliest estimated trial date is met, the trial would not precede the expected due date of the final written decision in this proceeding by more than a few months.[7] Pet. 72. Petitioner argues that "where the [final written decision] is due within a few months of any district court trial, [it] weighs only slightly in favor of denial." *Id.* Petitioner also points to the district court *sua sponte* postponing the *Markman* hearing earlier (Pet. Reply 2), although this has not translated into significant delay as to the scheduled trial date (Ex. 3001).

[7] Petitioner relies on a final written decision issuing in May, 2023, rather than a year from the issuance of this decision in June, 2022.

This factor requires us to consider the proximity in time between the parallel district court litigation's trial date and the Board's projected statutory deadline for issuing the final written decision. This inquiry addresses the likelihood that the district court will reach a decision on validity issues before the Board reaches a final decision. In this circumstance, on this record, where the trial date is currently scheduled more than three months prior to the expected final written decision due date, this factor weighs slightly in favor of exercising discretion to deny institution.

3. Factor 3: Investment in the Parallel Proceeding by the Court and Parties

In the district court litigation, we understand that a *Markman* hearing was held on May 23, 2022, and fact discovery related to infringement and invalidity issues began on March 8, 2022. Ex. 2015 (district court's amended scheduling order entered February 14, 2022); *see also* Pet. 73–74 (discussing status of district court litigation); Prelim. Resp. 7–8 (discussing status of district court litigation). The parties have exchanged preliminary infringement and invalidity contentions, and final contentions are due June 14, 2022. Ex. 2010 (preliminary infringement contentions); Ex. 2011 (preliminary invalidity contentions); Ex. 2015 (amended scheduling order). We also understand that, as currently scheduled, fact discovery closes September 13, 2022, and expert discovery closes November 18, 2022.[8] Ex. 2013, 3. As such, the time period for fact discovery is approximately half run at this time.

[8] The amended scheduling order (Ex. 2015) did not significantly alter the opening date for fact discovery, moving it from March 9, 2022 (Ex. 2013, 3) to March 8, 2022 (Ex. 2015).

The district court issued a claim construction order on May 23, 2023. Ex. 3002. The claim construction order is limited to a table showing the disputed claim terms, and the plaintiff's proposed construction for each, adopted by the district court, except where the district court determined the issue moot. *Id.* Of the terms construed in the order, only one is identified with the '482 patent and the claim construction adopted is simply stated as the "[p]lain and ordinary meaning." *Id.* at 1 ("The Court hereby adopts the following final constructions:"), 4 (identifying the term "disposed at an inner side of the first magnetic sheet member" as having its "[p]lain and ordinary meaning").

Patent Owner contends that the claim construction order entered by the district court favors denying institution in that "[c]laim construction orders . . . 'indicate that the court and parties have invested sufficient time in the parallel proceedings to favor denial.'" Prelim. Resp. 7 (citing *Fintiv I* at 10). Patent Owner also argues that the investment in the district court case has been significant, detailing that "[t]he parties have already exchanged preliminary infringement and invalidity contentions—including Samsung's 17 invalidity claim charts totaling more than 674 pages for the '482 patent alone" (*id.*) and that "by the . . . institution decision deadline, the parties will have exchanged final infringement and invalidity contentions, discovery will be underway, and more importantly, claim construction will be completed" (*id.* (citing Ex. 2015)).

Petitioner contends that "investment in the trial has been minimal and Samsung acted diligently" such that "this factor weighs against . . . discretionary denial." Pet. 73–75. Petitioner argues that "the most cost intensive period in the district court case will occur after the institution decision" (Pet. 73) and that "while the parties have expended some

resources, those resources are minimal and will stay that way by the time of institution" (Pet. Reply 2). Petitioner further contends that it "filed its petitions many months before the statutory deadline to do so." Pet. 74.

We recognize that much work remains to be done in the district court litigation as it relates to invalidity: fact discovery is still ongoing, expert reports are not yet due, and substantive motion practice is yet to come. *See* Ex. 2013; Ex. 2015. Also, as in *Sand Revolution*, the district court's claim construction order (Ex. 3002) does not demonstrate, on its face, a high level of investment of time and resources in issues pertaining to the '482 patent. *Sand Revolution II, LLC v. Continental Intermodal Group–Trucking LLC*, IPR2019-01393, Paper 24 at 10–11 (PTAB June 16, 2020) (informative) (contrasting two-page *Markman* order giving each disputed claim term its "plain and ordinary meaning" with the detailed 34-page *Markman* order construing seven claim terms in *Fintiv II*).

We also acknowledge Petitioner's diligence in filing the Petition within three months after being served with Patent Owner's preliminary infringement contentions. Pet. 74.

Under these circumstances, we determine that this factor is neutral.

4. Factor 4: Overlap Between Issues Raised in the Petition and in the Parallel Proceeding

Petitioner has "stipulate[d] that it will not pursue invalidity against the asserted claims in the District Court using any obviousness ground that includes the primary references in [the] petition." Pet. 75 (citing Ex. 1014). Petitioner contends that "[t]his stipulation weighs against discretionary denial." *Id.* Petitioner also relies on fewer than all the claims being at issue in the district court litigation—Patent Owner's Infringement Contentions only assert claims 1–5, 7, 9–11, 13, 15–19, and 21—and argues "challenging

additional claims [in the IPR] further weighs against denial" because it is "the only venue" in which the "invalidity challenges to the additional claims will be adjudicated." *Id.* at 76–77. Petitioner emphasizes that, having "stipulated . . . not [to] present obviousness arguments based on Kim and Mizutani . . . the issues in this proceeding and the district court do not overlap." Pet. Reply 3. Petitioner argues that this factor weighs strongly against discretionary denial. Pet. 77; Pet. Reply 3.

Patent Owner highlights that "[t]his factor looks at 'whether all or some of the claims challenged in the petition are also at issue in district court,' and whether the 'petition includes the same or substantially the same claims, grounds, arguments, and evidence' as the parallel district court case." Prelim. Resp. 8–9 (quoting *Fintiv I* at 12–13). Patent Owner contends that the overlap as to claims is substantial because there are only five dependent claims that are challenged by the petition and not subject to invalidity contentions in district court. *Id.* at 9 (citing Ex. 2010, 1; Pet. 1). Patent Owner also contends that Petitioner's "stipulation only applies to 'any obviousness ground,'" and that this falls short because "Petitioner's invalidity contentions in the district court case identify the same Kim and Mizutani references asserted in the petition as prior art that ***anticipates*** the asserted claims." Prelim. Resp. 9–10 (citing Ex. 2011, 16–17; Pet. 75; Ex. 1014 ("Petitioner reserves the right to present invalidity . . . aside from 'any obviousness ground.'")). Patent Owner argues that the stipulation is insufficient and that this factor weighs in favor of a discretionary denial against institution. Prelim. Resp. 10; PO Sur-Reply 3.

Overlap in the parallel proceeding appears significant. As set forth in the petition, Petitioner challenges two of three independent claims as obvious (i) over the combination of Kim and Mizutani and (ii) over Mizutani

alone. Pet. 3, 19–33, 54–60. In the combination of Kim and Mizutani, the petition only relies on Mizutani in the alternative for one element if the Board does not find the element is met by Kim. *Id.* at 27–30. Petitioner's reliance on Kim in this ground appears limited to a single embodiment (Kim's Figure 5), which Petitioner sets forth as disclosing every element of the two independent claims (as well as many of the dependent claims). *Id.* at 19–38. Similarly, in the ground over Mizutani alone, Petitioner's reliance on Mizutani appears limited to a single embodiment (Mizutani's Figure 2). *Id.* at 54–61. Thus, despite Petitioner's position that there is no overlap because of the stipulation to not raise obviousness in the district court, the grounds for two of the independent claims (and many dependent claims) in the IPR proceeding are, in effect, grounded on anticipation, despite being nominally obviousness grounds. Petitioner further relies on the district court invalidity challenge not including some of the dependent claims, but fails both to explain how the subject matter of those claims is significant and the import of not instituting review of those claims. Further, nearly all claims not challenged in the district court add limitations that appear to be met by the relied-on disclosure from Kim, i.e., Figure 5, for claims 6, 8, 12, and 14. It follows that concerns about duplicated effort and the potential for conflicting results are significant under the circumstances presented, notwithstanding Petitioner's stipulation. Accordingly, we find that this factor weighs in favor of exercising our discretion to deny institution.

5. *Factor 5: Whether the Petitioner and the Defendant in the Parallel Proceeding Are the Same Party*

The Petitioner here is a defendant in the district court litigation and, thus, this factor weighs in favor of exercising our discretion to deny institution under § 314(a). *Fintiv II* at 15 ("Because the petitioner and the

defendant in the parallel proceeding are the same party, this factor weighs in favor of discretionary denial.").

6. Factor 6: Other Circumstances that Impact the Board's Exercise of Discretion, Including the Merits

Petitioner contends that the merits of the challenge set forth in the Petition are strong. Pet. 78; Pet. Reply 3.

Patent Owner contends that Petitioner combines three references together with largely conclusory statements to support its challenge for a majority of the claims. Prelim. Resp. 10–11.

As the Board explained in *Fintiv I*, we consider this factor as "part of a balanced assessment of all the relevant circumstances in the case." *Fintiv I* at 14. The assessment requires consideration of the "strengths or weaknesses regarding the merits," but this "is not to suggest that a full merits analysis is necessary to evaluate this factor." *Id.* at 15–16.

We discuss the merits of this case below, finding Petitioner's evidence and arguments to be very strong on the merits. We note also that Patent Owner presented no argument to the contrary on the merits. Thus, we determine that this factor weighs against exercising our discretion to deny institution.

7. Conclusion

We have considered the circumstances and facts before us in view of the *Fintiv I* factors. We take "a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review." *Fintiv I* at 6. Having evaluated all of the factors, we determine that the circumstances presented here do not support exercising our discretion under § 314(a) to deny institution.

Accordingly, we decline to exercise our discretion to deny institution under § 314(a).

B. Level of Ordinary Skill in the Art

In determining the level of skill in the art, we consider the type of problems encountered in the art, the prior art 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. *See Custom Accessories, Inc. v. Jeffrey-Allan Industries, Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986); *Orthopedic Equip. Co. v. U.S.*, 702 F.2d 1005, 1011 (Fed. Cir. 1983).

Petitioner contends that a person of ordinary skill in the art "would have had a bachelor's degree in electrical engineering, computer engineering, applied physics, or a related field, and at least one year of experience in the research, design, development, and/or testing of wireless charging systems, or the equivalent, with additional education substituting for experience and vice versa." Pet. 9 (citing Ex. 1002 ¶¶ 46–49). Patent Owner declined to address the level of ordinary skill in its Preliminary Response. *See* Prelim. Resp. Petitioner's contended level of ordinary skill, thus, stands uncontested.

On this record, we find Petitioner's definition of the level of ordinary skill reasonable and, therefore, adopt it for the purposes of this Decision.

C. Claim Construction

We apply the claim construction standard articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). *See* 37 C.F.R. § 42.100(b) (2020). Under *Phillips*, claim terms are afforded "their ordinary and customary meaning." *Phillips*, 415 F.3d at 1312. "[T]he ordinary and customary meaning of a claim term is the meaning that the term would have

to a person of ordinary skill in the art in question at the time of the invention." *Id.* at 1313. Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Petitioner contends that it "does not believe that any term requires explicit construction to resolve the issues presented in this Petition." Pet. 9–10. Patent Owner Patent declined to address claim construction in its Preliminary Response. *See* Prelim. Resp.

On this record, we decline to construe any claim terms beyond the limited extent we do so below in our analysis, because it is not necessary to do so in reaching our Decision on Institution.

D. Principles of Law

Petitioner challenges claims under 35 U.S.C. § 103. A claim is unpatentable under 35 U.S.C. § 103 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) if in evidence, objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

"In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is

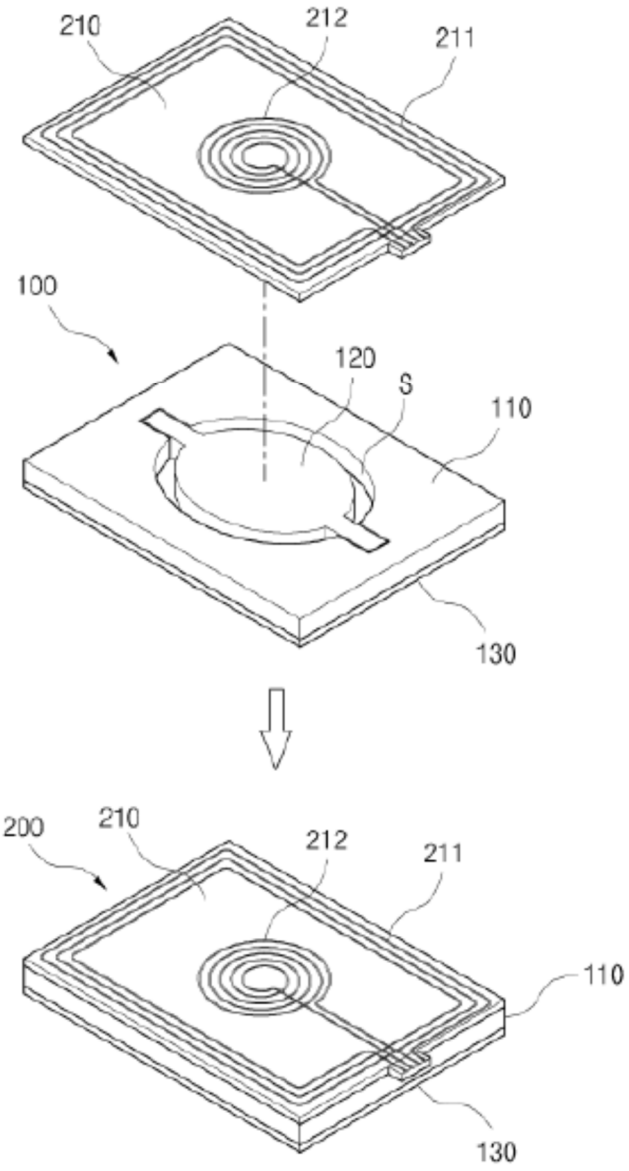
unpatentable." *Harmonic Inc. v. Avid Tech, Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) as "requiring [*inter partes* review] petitions to identify 'with particularity . . . the evidence that supports the grounds for the challenge to each claim'"). When challenging claims based on obviousness, the Petitioner must show 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." *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016) (citations omitted). The burden of persuasion, whether for anticipation or for unpatentability for obviousness, never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review).

E. Asserted Obviousness over Kim and Mizutani

Petitioner challenges claims 1–4, 6, 7, 10, 11, 13, and 14 as unpatentable for obviousness over the combination of Kim and Mizutani. Pet. 19–38.

1. Overview of Kim (Ex. 1005)

Kim is titled "Electromagnetic Wave Absorber for Dual Use of Both Radio Frequency Identification and Wireless Charging, and a Wireless Antenna for Dual Use of Both Radio Frequency Identification and Wireless Charging Containing It, and Manufacturing Method Thereof" and relates to the same. Ex. 1005, codes (54), (57). Kim discloses "wireless antenna 200 for dual use of both radio frequency identification and wireless charging," which is depicted in Figure 5, reproduced below.



Ex. 1005, Fig. 5 (depicting exploded and assembled views of wireless antenna 200). Kim discloses that wireless antenna 200 includes:

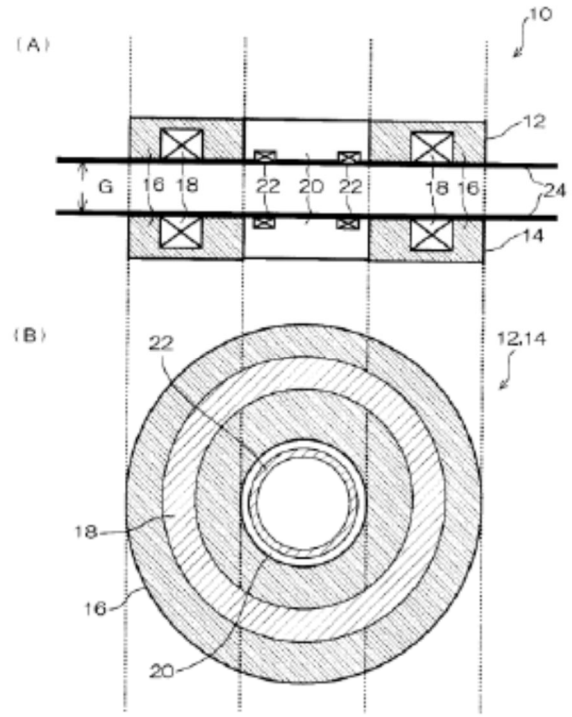
"(i) sheet-type electromagnetic wave absorber 100 for dual use of both radio frequency identification and wireless charging in which a first absorbing sheet 110 and a second absorbing sheet 120 are mutually coupled together . . . on the same plane" with second absorbing sheet 120 positioned in niche space S within first absorbing sheet 110, with protective sheet 130

that enhances coupling of first absorbing sheet 110 and second absorbing sheet 120; and (ii) "flexible antenna 210," laminated on top of electromagnetic wave absorber 100, that includes radio frequency identification antenna pattern 211, laminated onto first absorbing sheet 110, and wireless charging antenna pattern 212, laminated onto second absorbing sheet 120. Ex. 1005 ¶¶ 14–17, 22–23, 40–42, 60, 65, Fig. 5.

2. Overview of Mizutani (Ex. 1007)

Mizutani is titled "Non-Contact Transmission Device" and relates to "contactlessly transmit[ting] electric power and signals by electromagnetic induction." Ex. 1007, codes (54), (57). Mizutani discloses an antenna 10 for transmitting both power and data, which is disclosed as a schematic in Figure 2, reproduced below.

FIG. 2



Ex. 1007, Figs. 2A and 2B (depicting a schematic side-view and top-view, respectively, of antenna 10 that includes a transmitting core 12 and receiving core 14 separated by a distance G), ¶¶ 23, 59–60. Both transmitting core 12 and receiving core 14 include corresponding elements arranged in the same manner, with power core 16 arranged circumferentially about centrally located data core 20. *Id.* ¶¶ 23, 60, Figs. 2A, 2B. Each power core 16 includes annular power coil 16, exposed on the facing surfaces of transmitting core 12 and receiving core 14. *Id.* Likewise, each data core 20 includes annular data coil 22, exposed on the facing surfaces of transmitting core 12 and receiving core 14. *Id.* Data core 20 has a lower specific magnetic permeability than that of power core 16, allowing interference to data coil 22 by power coil 18 to be suppressed, and signal transmission errors reduced. *Id.* ¶ 40.

3. Motivation to Combine

Petitioner contends that "Kim and Mizutani are in the same field of invention and teach similar wireless charging techniques." Pet. 19 (citing Ex. 1002 ¶ 86; Ex. 1005 ¶ 1; Ex. 1007 ¶ 2). Petitioner also contends that "Kim and Mizutani . . . both seek to solve similar, well-known problems in wireless charging systems, including reducing frequency interference between wireless power and wireless communication coils." *Id.* at 20–21 (citing Ex. 1002 ¶¶ 87–88; Ex. 1005 ¶¶ 12–13, 29; Ex. 1007 ¶¶ 2–3, 9). Based on this, Petitioner contends that a person of ordinary skill in the art "would have been motivated to combine the teachings of Kim and Mizutani at least because [they] would have recognized a benefit of including magnetic sheets with different permeability rates, as taught by Mizutani, to further prevent frequency interference between wireless data and power coils in a system such as Kim's." *Id.* at 21 (citing Ex. 1002 ¶ 89). Petitioner also

contends that a person of ordinary skill in the art "would . . . have had a reasonable expectation of success in combining the teachings of Kim and Mizutani." *Id.* (citing Ex. 1002 ¶¶ 90–91).

4. Independent Claims 1 and 11

Claims 1 and 11: *An electromagnetic member for wireless charging, comprising:*

Petitioner relies on "Kim disclos[ing] an 'electromagnetic wave absorber for both radio frequency identification and wireless charging," as depicted in Figure 5. Pet. 22–23 (citing Ex. 1002 ¶¶ 93–97; Ex. 1005 ¶¶ 1,13–17, 22, 40–42, 60, Abstract).

On this record, and for purposes of institution, Petitioner's showing is sufficient.

Claims 1 and 11: *a first magnetic sheet member including a first coil member; and*

Petitioner relies on Kim's "disclos[ure] [of] . . . 'a first absorbing sheet 100' [as] disclos[ing] a 'first magnetic sheet member,'" where Kim's "sheet-type electromagnetic wave absorber 100" includes "a first absorbing sheet 110 and a second absorbing sheet 120 . . . mutually coupled together." Pet. 23–24 (citing Ex. 1002 ¶¶ 98–102; Ex. 1005 ¶¶ 14–17, 22, 40). Petitioner relies on Kim's "disclos[ure] [of] an 'antenna pattern 211 for radio frequency identification' . . . 'laminated on' the first absorbing sheet 110 . . . [as] disclos[ing] . . . 'a first coil member' included in the 'first magnetic sheet.'" *Id.* at 25 (citing Ex. 1002 ¶¶ 101–102; Ex. 1005 ¶¶ 40–42, 60, Fig. 5).

On this record, and for purposes of institution, Petitioner's showing is sufficient.

> Claims 1 and 11: *a second magnetic sheet member disposed adjacent to the first magnetic sheet member and including a second coil member,*

Petitioner relies on Kim's disclosure of "a second absorbing sheet 120," discussed above, "that is 'positioned inside said first absorbing sheet 110,'" as disclosing the "second magnetic sheet member." Pet. 25–26 (citing Ex. 1002 ¶¶ 103–108; Ex. 1005 ¶¶ 14, 22, 23, 33, 40, Fig. 5). Petitioner relies on Kim's disclosure of "absorbing sheet 120" and "a 'wireless-charging antenna pattern 212 for wireless charging' . . . 'formed on the absorbing sheet 120,'" as "disclos[ing] 'a second magnetic sheet member disposed adjacent to the first magnetic sheet member and including a second coil member.'" *Id.* at 26–27 (citing Ex. 1002 ¶¶ 107–108; Ex. 1005 ¶¶ 40, 60).

On this record, and for purposes of institution, Petitioner's showing is sufficient.

> Claims 1 and 11: *wherein the first magnetic sheet member and the second magnetic sheet member have different magnetic permeability rates; and*

Petitioner relies on "Kim disclos[ing] that the first absorbing sheet 110 . . . may be made from 'a metal system ferromagnetic material represented by ferrite or a mixture thereof" and that "[t]he second absorbing sheet . . . may be made from 'iron or iron-containing alloy or a mixture thereof such as Fe[,] Fe-Si system, Fe-Al system, Fe-Ni system, Fe-Al-Si system, Fe-B-Si system, and Fe-Co-Ni system.'" Pet. 27 (citing Ex. 1005 ¶¶ 30–31, 33). Petitioner contends that a person of ordinary skill in the art "would have understood that Kim's magnetic sheets may be made from different materials" and "that these different materials have different magnetic permeability rates." *Id.* at 27–28 (citing Ex. 1002 ¶¶ 111–114).

Petitioner also relies, in the alternative, on Mizutani disclosing a "non-contact transmission device" that includes a first magnetic sheet member and a second magnetic sheet member having different magnetic permeability rates. *Id.* at 28–29 (citing Ex. 1002 ¶¶ 115–119; Ex. 1007 ¶¶ 1, 38, 40, Fig. 2). Petitioner sets forth that the disclosed "'non-contact transmission device' . . . includes a 'power core 16' and a 'data core 20 disposed in the center portion of the power core 16'" and the "data core 20 'is formed so that the relative magnetic permeability is lower than at least the relative magnetic permeability of the power core 16.'" *Id.* (citing Ex. 1007 ¶¶ 1, 38, 40, Fig. 2). Petitioner also relies on Mizutani's explanation that interference of the power coil and data coil can be suppressed, reducing the occurrence of signal transmission errors, by setting the ratio of relative magnetic permeability of the data core to the power core to be less than 1/10. *Id.* at 29 (citing Ex. 1007 ¶ 40). Based on Mizutani's teaching, Petitioner contends that a person of ordinary skill in the art "would have find [sic] it desirable to modify Kim's magnetic sheets to have different magnetic permeability rates, and would have had a reasonable expectation of success." *Id.* at 29–30 (citing Ex. 1002 ¶¶ 118–119).

As set forth, both Kim alone and Kim as modified on the basis of Mizutani's teaching reasonably disclose or suggest this claim element. On this record, and for purposes of institution, Petitioner's showing is sufficient.

> Claim 1: *wherein the second magnetic sheet member is disposed at an inner side of the first magnetic sheet member.*
>
> Claim 11: *wherein the first magnetic sheet member is disposed at an edge portion on the same plane as the second magnetic sheet member.*

Petitioner relies on Kim's Figure 5, in which "Kim's first absorbing sheet 110 is disposed at the edge portion of the second absorbing sheet 120, and the second absorbing sheet is disposed on the inner side of the first absorbing sheet 110" (Pet. 31 (citing Ex. 1002 ¶ 121; Ex. 1005 ¶¶ 14, 22, 23, 40, Fig. 5)), and the teaching "that the first and second absorbing sheets are placed 'on the same plane' to 'augment functionality . . .' and 'reduce thickness . . .'" (*id.* at 31–32 (citing Ex. 1005 ¶¶ 19, 40)).

On this record, and for purposes of institution, Petitioner's showing is sufficient.

Conclusion

On this record, and in the absence of argument to the contrary by Patent Owner, we find Petitioner's contentions that the combination of Kim and Mizutani renders claims 1 and 11 obvious to be well-supported. Petitioner has directed us to portions of Kim and Mizutani that teach or suggest all of the limitations in claims 1 and 11, and has provided a sufficiently persuasive reason why a person of ordinary skill in the art would have had reason to modify the disclosed apparatus to arrive at the subject matter of both independent claims. Thus, we are persuaded Petitioner has established a reasonable likelihood of prevailing on this challenge with respect to both claim 1 and claim 11.

Having determined that Petitioner demonstrates a reasonable likelihood of success in proving that at least one claim of the '482 patent is

unpatentable, the statutory threshold for instituting trial as to all challenged claims on all grounds has been met. *See SAS Inst. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018); 37 C.F.R. § 42.108(a).

We offer the following views on other claims subject to this ground and on the remaining grounds for the parties' consideration.

5. Claims 2–4, 6, 7, 10, 13, and 14

Petitioner contends that the additional limitations of claims 2–4, 6, 7, 10, 13, and 14 are taught or suggested by the combination of Kim and Mizutani. Pet. 32–38.

On this record, Petitioner's unrebutted contentions and positions as to claims 2–4, 6, 7, 10, 13, and 14 appear reasonably well-founded.

F. Asserted Obviousness over Kim, Mizutani, and Tabata

Petitioner challenges claims 5, 9, 15–19, and 21 as unpatentable for obviousness over the combination of Kim, Mizutani, and Tabata. Pet. 38–53.

1. Overview of Tabata (Ex. 1009)

Tabata is titled "Non-Contact Charging Module and Mobile Terminal Equipped with the Same" and discloses "achiev[ing] miniaturization" of the device. Ex. 1009, 2 (Title), ¶ 9. Tabata discloses that its "non-contact charging module" combines "a non-contact charging coil" and a "Near Field Communication (NFC)] antenna." *Id.* ¶ 1. Tabata also discloses that since both "communicate (transmit power) by electromagnetic induction, they tend to mutually interfere" (*id.* ¶ 5), but that this can be overcome by disposing the "non-contact charging coil" on a first magnetic sheet, and disposing the "NFC antenna" on a second magnetic sheet that is, itself, disposed on the first magnetic sheet within the bounds of the "non-contact charging coil" (*id.* ¶¶ 8, 11). Tabata also discloses that it is important for the

first magnetic sheet to have a high magnetic permeability, that is, "of 250 or more" (*id.* ¶ 66) and that the second magnetic sheet to have a "magnetic permeability [of] at least 100 to 200" (*id.* ¶ 74). Tabata also discloses a first magnetic sheet thickness of "between 0.4 mm and 0.55 mm" and second magnetic sheet thickness of "roughly 0.07 mm to 0.5 mm." *Id.* ¶¶ 59, 74.

2. Motivation to Combine

Petitioner contends that "Tabata is in the same field of invention as Kim and Mizutani" and that a person of ordinary skill in the art would have been motivated to combine the teachings of all three references with a reasonable expectation of success. Pet. 38–39 (citing Ex. 1002 ¶¶ 85–91, 146–155; Ex. 1005, Abstract, ¶¶ 1, 18–19; Ex. 1007 ¶¶ 8, 18; Ex. 1009 ¶ 1). Petitioner contends, citing details of each reference, how they all "recognize[] and seek[] to solve similar problems" and how there was motivation to combine their teachings. *Id.* at 39–41 (citing Ex. 1002 ¶¶ 148–155; Ex. 1005 ¶¶ 13, 29; Ex. 1007 ¶¶ 2, 3, 9; Ex. 1009 ¶¶ 55, 93).

3. Independent Claim 16

Petitioner relies on Kim and Mizutani for most claim elements, as applied to claims 1 and 11, discussed above. *Compare* Pet. 45–50, *with id.* at 22–32. Petitioner contends the claim elements in claim 16 not in common with those claims are met as follows.

a base film

Petitioner relies on Kim disclosing "a protective sheet 130" and that it "can be laminated and equipped on the bottom surface of the first absorbing sheet 110 and the second absorbing sheet 120 to be couple . . . being placed on the same plane." Pet. 45–46 (citing Ex. 1002 ¶¶ 170–173; Ex. 1005 ¶¶ 16, 35, 45, Fig. 2). Petitioner contends that "[p]rotective sheet 130 is a base film" and identifies what it can be made of and its functions, including

to "enhance[] the coupling force between the first absorbing sheet and the second absorbing sheet" and for coupling the wireless antenna to a "mobile device . . . and to protect the electromagnetic wave absorber 100 from external elements such as heat, moisture, and humidity.'" *Id.* at 47–48 (citing Ex. 1002 ¶¶ 172–173; Ex. 1005 ¶¶ 16, 36–38, 45, claims 6, 8).

On this record, Petitioner's showing appears reasonably well-founded.

> *wherein the first magnetic sheet member and the second magnetic sheet member have different thicknesses; and*

Petitioner relies on Tabata disclosing first magnetic sheet and second magnetic sheet having different thicknesses and on it being obvious to a person of ordinary skill in the art to include magnetic sheets with different thicknesses in a system such as Kim's to obtain improved performance and efficiency of either the wireless charging or NFC/RFID functions. Pet. 48 (citing *id.* at 43–45 (Section XIII.B.2.b); *id.* at 43–45 (citing Ex. 1002 ¶¶ 164–168; Ex. 1009 ¶¶ 57, 59, 93, 96–97, Fig. 5; Ex. 1005); Ex. 1002 ¶ 177).

On this record, Petitioner's showing appears reasonably well-founded.

> *wherein a lower surface of the first magnetic sheet member and a lower surface of the second magnetic sheet member are disposed on the same plane of the base film.*

Petitioner relies on Kim disclosing its "protective sheet 130" "laminated . . . on the bottom surface of the first absorbing sheet 110 and second absorbing sheet 120," including as in Figure 5, with the first and second absorbing sheets being disposed on the same plane of the base film. Pet. 49–50 (citing *id.* at 45–48 (Section XIII.B.3.b); Ex. 1002 ¶¶ 178–180; Ex. 1005 ¶¶ 16, 35, 45, Figs. 2, 5).

On this record, Petitioner's showing appears reasonably well-founded.

4. Claims 5, 9, 15, 17–19, and 21

Petitioner contends that the additional limitations of claims 5, 9, 15, 17–19, and 21 are taught or suggested by the combination of Kim, Mizutani, and Tabata. Pet. 41–45, 50–53.

On this record, Petitioner's unrebutted contentions and positions as to claims 5, 9, 15, 17–19, and 21 appear reasonably well-founded.

G. Asserted Obviousness over Mizutani

Petitioner challenges claims 1, 8, 11, and 12 as unpatentable for obviousness over Mizutani. Pet. 54–61.

1. Independent Claims 1 and 11

> Claims 1 and 11: *An electromagnetic member for wireless charging, comprising:*

Petitioner relies on Mizutani disclosing an electromagnetic member for wireless charging, as depicted in Figure 2, having "two magnetic sheets, 'power core 16' and 'data core 20,' that each include a coil, [respectively,] 'power coil 18 for transmitting power' and 'data coil 22 for transmitting data.'" Pet. 54–55 (citing Ex. 1002 ¶¶ 189–192; Ex. 1007 ¶¶ 1, 7, 38, Fig. 2).

On this record, Petitioner's showing appears reasonably well-founded.

> Claims 1 and 11: *a first magnetic sheet member including a first coil member; and*

Petitioner relies on Mizutani disclosing "an annular power core 20 [sic, 16] . . . made of a material with a specific magnetic permeability of 100-1000 in order to increase the efficiency of power transmission'" Pet. 55–56 (citing Ex. 1007 ¶¶ 38–39). Petitioner contends that "Mizutani's 'power core 20 [sic, 16]" discloses 'a first magnetic sheet member.'" *Id.* at 56 (citing Ex. 1002 ¶ 194). Petitioner also relies on Mizutani's power

core 16 including a power coil 18 for transmitting power, such that Mizutani discloses this claim element. *Id.* at 56 (citing Ex. 1002 ¶ 196).

On this record, Petitioner's showing appears reasonably well-founded.

> Claims 1 and 11: *a second magnetic sheet member disposed adjacent to the first magnetic sheet member and including a second coil member,*

Petitioner relies on "Mizutani disclos[ing] a 'data core 20' . . . disposed 'in the center portion of the power core [16]' . . . [and] made to have a specific magnetic permeability that is at least lower than the specific magnetic permeability of the power core 16." Pet. 57 (citing Ex. 1002 ¶¶ 197–201; Ex. 1007 ¶¶ 38, 40, Fig. 2). Petitioner contends that "Mizutani's data core 20, . . . disposed in a 'center portion' of the power core 16, discloses a 'second magnetic sheet member disposed adjacent to the first magnetic sheet member.'" *Id.* at 58 (citing Ex. 1002 ¶ 199). Petitioner also relies on Mizutani's data core 20 "includ[ing] a 'data coil 22 for transmitting data,'" such that Mizutani discloses this claim element. *Id.* (citing Ex. 1002 ¶ 201; Ex. 1007 ¶ 38).

On this record, Petitioner's showing appears reasonably well-founded.

> Claims 1 and 11: *wherein the first magnetic sheet member and the second magnetic sheet member have different magnetic permeability rates; and*

Petitioner relies on Mizutani disclosing that "[t]he data core 20 is made to have a specific magnetic permeability that is at least lower than the specific magnetic permeability of the power core," such that Mizutani discloses this claim element. Pet. 58 (citing Ex. 1002 ¶¶ 202–203; Ex. 1007 ¶ 40). Petitioner also relies on Mizutani's disclosure as to the specific magnetic permeability of power core 16 and that by having a data core with a lower specific magnetic permeability than the power core "'interference to

the data coil 22 by the power coil 18 can be suppressed' and 'the occurrence of signal transmission errors can be reduced.'" *Id.* (citing ¶¶ 39–40).

On this record, Petitioner's showing appears reasonably well-founded.

> Claim 1: *wherein the second magnetic sheet member is disposed at an inner side of the first magnetic sheet member.*
>
> Claim 11: *wherein the first magnetic sheet member is disposed at an edge portion on the same plane as the second magnetic sheet member.*

Petitioner relies on "Mizutani disclos[ing] that 'the data core [is] disposed in the center portion of the power core,'" as depicted in Figure 2, with "the data core 20, the 'second magnetic sheet member,' . . . disposed 'at an inner side' and 'at an edge portion on the same plane' as the power core 16, the 'first magnetic sheet member,'" such that Mizutani discloses these elements. Pet. 59–60 (citing Ex. 1002 ¶¶ 204–205; Ex. 1007 ¶¶ 38, 41, Fig. 2).

On this record, Petitioner's showing appears reasonably well-founded.

2. Claims 8 and 12

Petitioner contends that the additional limitations of claims 8 and 12 are disclosed and taught by Mizutani. Pet. 60–61.

On this record, Petitioner's unrebutted contentions and positions as to claims 8 and 12 appear reasonably well-founded.

H. Asserted Obviousness over Mizutani and Tabata

Petitioner challenges claims 16 and 20 as unpatentable for obviousness over the combination of Mizutani and Tabata. Pet. 62–70.

1. Motivation to Combine

Petitioner sets forth how Mizutani and Tabata are in the same field of invention and how one of ordinary skill in the art would have been

motivated to combine the teachings of the references in much the same manner as for the combination of Kim, Mizutani, and Tabata. *Compare* Pet. 62–63, *with id.* at 38–41.

2. Independent Claim 16

Petitioner relies on Mizutani, in the same manner as discussed above for Mizutani alone, as applied to claims 1 and 11, for most claim elements. *Compare* Pet. 64–65, *with id.* at 54–60. Petitioner contends the claim elements not in common with those claims are met as follows.

a base film

Petitioner relies on Mizutani's disclosed "base material 24" as meeting this claim element. Pet. 64–65 (citing Ex. 1002 ¶¶ 217–220; Ex. 1007 ¶ 41, Fig. 2).

On this record, Petitioner's showing appears reasonably well-founded.

wherein the first magnetic sheet member and the second magnetic sheet member have different thicknesses, and

Petitioner relies on Tabata's disclosed first magnetic sheet member 10 and second magnetic sheet 20 having different thicknesses and that having different thicknesses having been obvious for the improved performance and as a simple design choice. Pet. 65–67 (citing Ex. 1002 ¶¶ 224–227; Ex. 1009 ¶¶ 57, 59, 93, 96, Fig. 5).

On this record, Petitioner's showing appears reasonably well-founded.

wherein a lower surface of the first magnetic sheet member and a lower surface of the second magnetic sheet member are disposed on the same plane of the base film.

Petitioner relies on Mizutani's Figure 2 as depicting the embodiment relied on having "a lower surface of the power core ('first magnetic sheet member') and a lower surface of the data core ('second magnetic sheet

member') [being] disposed on the same plane of the base material." Pet. 68 (citing Ex. 1002 ¶¶ 228–229; Ex. 1007 ¶ 41, Fig. 2).

On this record, Petitioner's showing appears reasonably well-founded.

3. Claim 20

Petitioner contends that the additional limitations of claim 20 are disclosed and taught by Mizutani. Pet. 69–70 (citing Ex. 1002 ¶¶ 230–231; Ex. 1007 ¶ 38, Fig. 2).

On this record, Petitioner's unrebutted contentions and positions as to claim 20 appear reasonably well-founded.

III. CONCLUSION

Based on the arguments and evidence before us, we determine Petitioner demonstrates a reasonable likelihood of prevailing in showing that at least one claim of the '482 patent is unpatentable. Accordingly, we institute an *inter partes* review on all the challenged claims and all of the grounds presented in the Petition. *See* 37 C.F.R.§ 42.108(a). At this stage of the proceeding, we have not made a final determination as to the patentability of the challenged claims. Our final decision will be based on the record as fully developed during trial.

IV. ORDER

Accordingly, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is hereby instituted as to claims 1–21 of the '482 patent with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), notice is hereby given of the institution of a trial commencing on the entry date of this decision.

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