

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ETN CAPITAL, LLC, d/b/a BEECH LANE,
Petitioner,

v.

FBA OPERATING CO.,
Patent Owner.

IPR2024-01445
Patent 10,890,925 B2

Before KEN B. BARRETT, MICHELLE N. WORMMEESTER, and
CYNTHIA M. HARDMAN, *Administrative Patent Judges*.

HARDMAN, *Administrative Patent Judge*.

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

I. INTRODUCTION

Petitioner ETN Capital, LLC, d/b/a Beech Lane, requests *inter partes* review of claims 1–20 of U.S. Patent No. 10,890,925 B2 (“the ’925 patent,” Ex. 1001). Paper 2 (“Pet.”). Patent Owner FBA Operating Co. filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). With our authorization, Petitioner filed a Reply to Patent Owner’s Preliminary Response (Paper 7, “Prelim. Reply”), and Patent Owner filed a Sur-Reply to Petitioner’s Reply (Paper 9, “Prelim. Sur-reply”).

We have authority under 35 U.S.C. § 314(a), which provides that 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.” After considering the briefing and cited evidence of record, we institute an *inter partes* review.

The following preliminary findings of fact and conclusions of law are made solely for determining whether to institute review. Any final decision will be based on the full trial record.

A. Real Parties in Interest

The parties each identify themselves as the real parties in interest. *See* Pet. 1; Paper 12 (Patent Owner’s Mandatory Notices¹).

B. Related Matters

The parties identify as related the following matters involving the ’925 patent:

¹ The Board acknowledges Patent Owner’s filing of Updated Mandatory Notices, Power of Attorney, and Response to Order to Show Cause. Papers 11–13. In view of Patent Owner’s filings, the Board considers the Order to Show Cause (Paper 10) resolved.

(i) *FBA Operating Co. v. ETN Capital, LLC d/b/a Beech Lane*, 2025-1402 (Fed. Cir.) (docketed Jan. 30, 2025);

(ii) *FBA Operating Co. v. ETN Capital, LLC d/b/a Beech Lane*, 2024-2070 (Fed. Cir.) (dismissed Aug. 30, 2024);

(iii) *FBA Operating Co. v. RNG International, Inc. d/b/a Renogy*, No. 5:24-cv-00797 (C.D. Cal.) (dismissed Jan. 10, 2025); and

(iv) *FBA Operating Co. v. ETN Capital, LLC d/b/a Beech Lane*, No. 5:23-cv-505 (E.D.N.C.) (dismissed Jan. 17, 2025).

Pet. 1; Paper 8 (Petitioner’s Updated Mandatory Notices), 2; Paper 12 (Patent Owner’s Mandatory Notices).

C. The ’925 Patent (Ex. 1001)

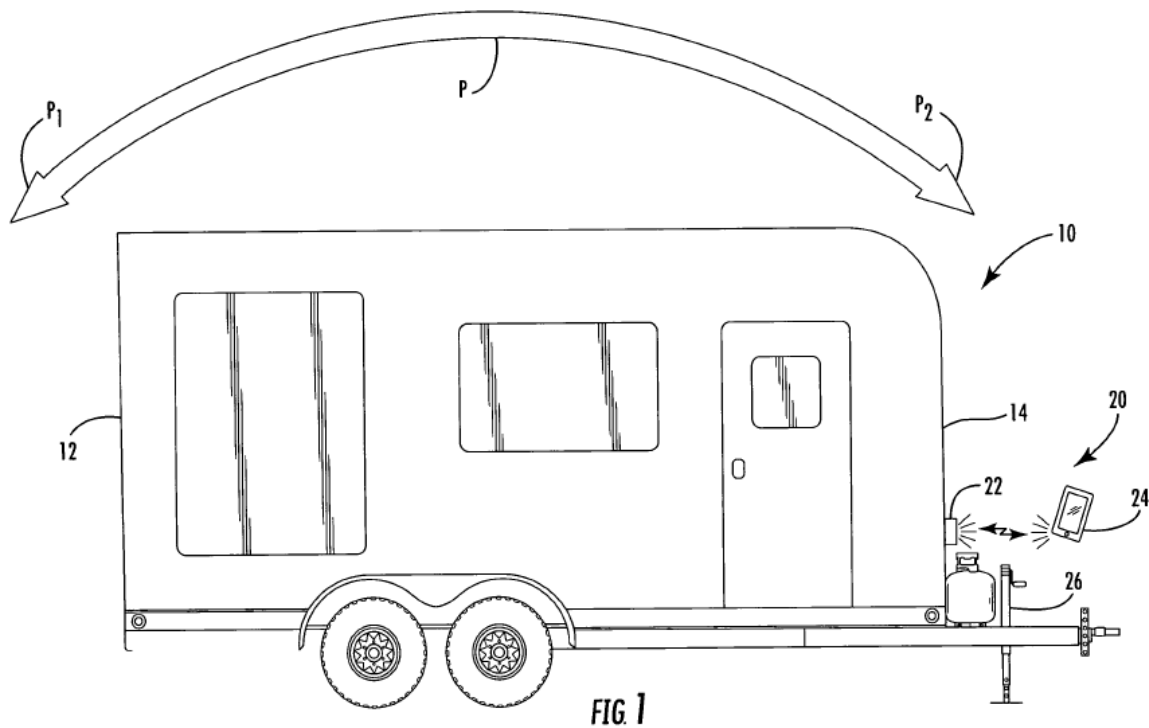
The ’925 patent, titled “Vehicle Leveling Systems, Devices and Methods and Computer Program Products for Leveling Vehicles Using Smart Devices,” issued on January 12, 2021, from U.S. Application 15/619,261, filed on June 9, 2017, and claims priority as a continuation-in-part to an application filed on December 7, 2015. Ex. 1001, codes (21), (22), (45), (54), (63). The ’925 patent also claims the benefit of provisional applications filed on January 8, 2015 and December 5, 2014. *Id.* at code (60).

The ’925 patent relates to providing leveling indications for the two main axes of a recreational vehicle (RV), where pitch is “defined as the angle of the RV from front to back,” and roll is “defined as the angle of the RV from side to side.” *Id.* at 1:44–49.

The ’925 patent observes that in the typical RV leveling method, for leveling the roll of the RV, the RV must be driven or towed onto a board or block to raise one side of the RV. *Id.* at 1:50–61. Through trial and error, the driver may make multiple attempts to raise the RV the appropriate amount to achieve a level position. *Id.* at 1:61–63. For leveling the pitch,

the driver either follows the same process (in the case of a drivable RV), or uses the front jack to raise or lower the RV (in the case of a towable RV). *Id.* at 2:11–2:28. “This process may require many attempts as in the case of leveling the roll of the RV.” *Id.* at 2:28–29. The ’925 patent aims to provide a system for easily and inexpensively leveling an RV (or other vehicle) in both the pitch and roll directions without requiring many attempts. *Id.* at 2:03–33, 1:18–22, 5:34–39.

Figures 1 and 2 of the ’925 patent, reproduced below, illustrate respective schematic side and front views of an embodiment of a leveling system.



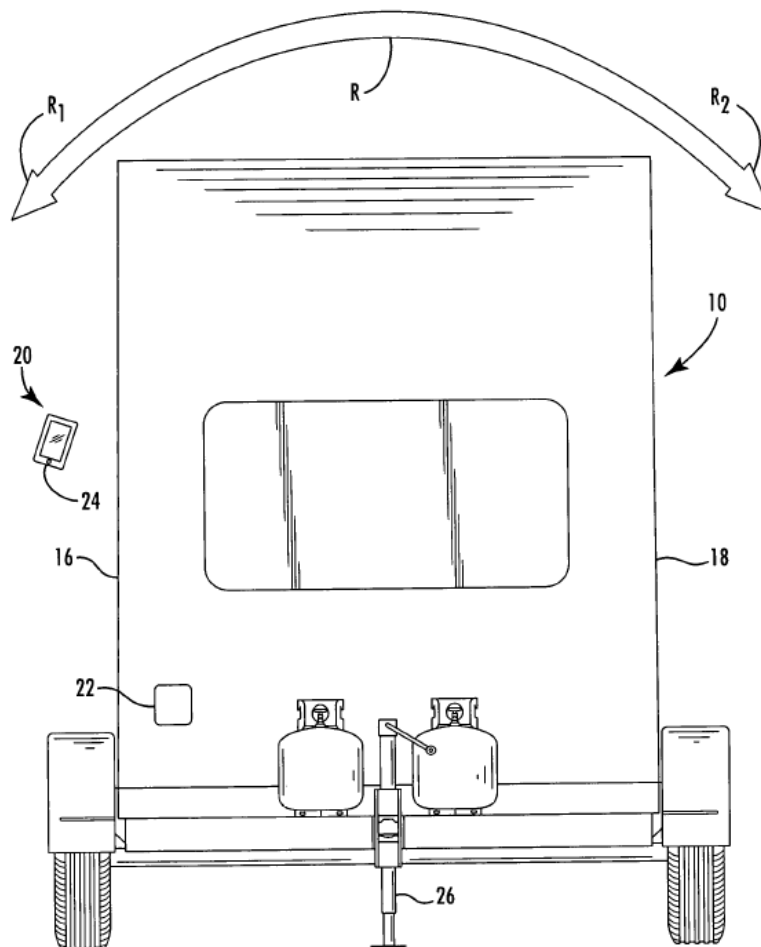


FIG. 2

Figure 1 of the '925 shows RV 10 with leveling system 20, including sensor device 22 secured to RV 10 and smart device 24 in communication with sensor device 22. Ex. 1001, 6:24–35. Smart device 24 “can have a specific software application thereon that allows information received from the sensor device 22 about the inclination and/or orientation of the RV 10 to be processed to provide measurements to a user and to determine the amount of adjustments needed to the RV 10.” *Id.* at 6:35–40. Figure 1 further shows pitch rotational directions P, where RV 10 may require adjustment in either the P1 direction or P2 direction, depending on whether RV 10 is inclined

forward or backward. *Id.* at 6:5–14. Similarly, Figure 2 shows roll rotational directions R, where RV 10 may require adjustment in either the R1 direction or R2 direction, depending on whether RV 10 is inclined to one side or the other. *Id.* at 6:14–23.

Figure 5A, reproduced below, illustrates a screenshot of an embodiment of a software application on a smart device for use in a leveling system.

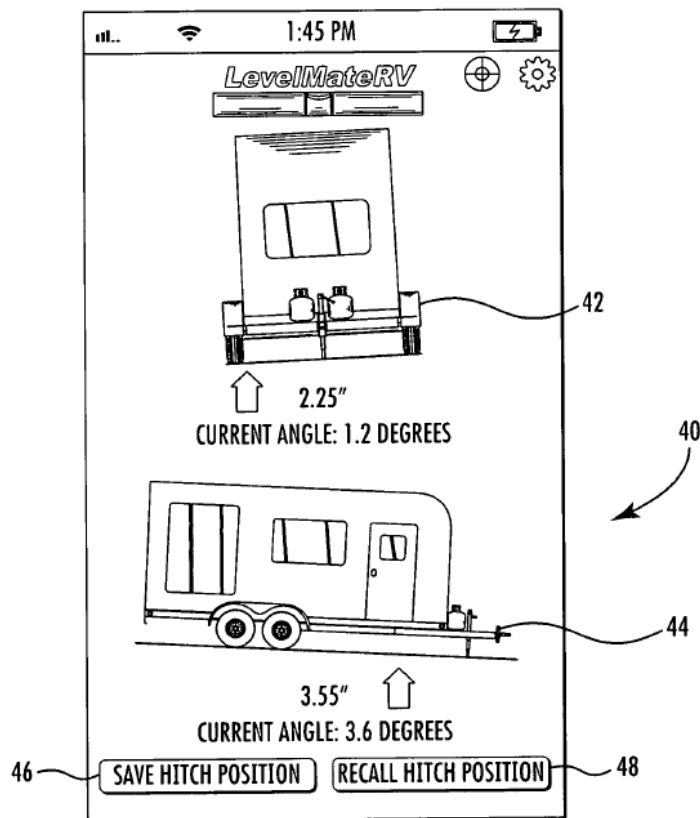


FIG. 5A

As shown in Figure 5A, smart device 24 may display screenshot 40, which includes roll display 42 and pitch display 44. Ex. 1001, 10:9–31.

Specifically, “roll display 42 can provide, for example, the current angle

from level for the roll directions measured in degrees 43A and the amount of elevation change 45A in inches or millimeters needed on a given side to level the RV in the roll directions.” *Id.* at 10:31–37. Similarly, “pitch display 44 can, for example, provide the current angle from level for the pitch directions measured in degrees 47A and the amount of elevation change 49A in inches or millimeters needed on either the front or the back to level the RV in the pitch direction.” *Id.* at 10:42–47. Using the displayed information, RV 10 can be raised the needed amount on either side in the roll direction, for example, using a jack or other mechanism, and then can be raised or lowered the needed amount in the pitch direction using the front jack of RV 10. *Id.* at 13:62–14:11. As the roll and pitch angles change, roll display 42 and pitch display 44 may change “in real time or near real time.” *Id.* at 11:39–50.

D. The Challenged Claims

Petitioner challenges claims 1–20 of the ’925 patent. *See* Pet. 2. Claims 1, 10, and 15 are independent claims. Claim 1 is illustrative and is reproduced below with bracketed lettering added:²

1. [1.0] A system for leveling a vehicle, the system comprising:

[1.1] a sensor device secured to a vehicle to sense an inclination of the vehicle in both a pitch direction and a roll direction when the vehicle is parked on an uneven surface of the ground, [1.2] the sensor device comprising a printed circuit board that includes:

[1.2.1] a digital accelerometer that permits calculation in both the pitch direction and roll direction, and

² For ease of reference, we use the same bracketed lettering Petitioner uses in the Petition. *See* Pet. xiv.

[1.2.2] a processor to process data collected by the digital accelerator; and

[1.3] a smart device in wireless communication with the sensor device, the smart device including a display screen;

[1.4] wherein, based on the inclination of the vehicle as sensed by the sensor device, at least one of the sensor device and smart device is configured to determine adjustment pairs, each adjustment pair including a height adjustment amount and a corresponding adjustment direction needed to level a respective section of the vehicle by movement of the respective section of the vehicle with respect to the uneven surface of the ground by the height adjustment amount in the corresponding adjustment direction;

[1.5] wherein the display device of the smart device is configured to display at least one image representative of the vehicle and showing the respective sections of the vehicle and [1.6] to simultaneously display the height adjustment amount and corresponding adjustment direction of each adjustment pair adjacent to each respective section of the vehicle shown in the at least one image; and

[1.7] wherein the smart device is further configured to update the display screen, substantially in real time, as one or more of the height adjustment amounts are changed.

Ex. 1001, 23:27–59.

Independent claim 10 is directed to a “method for leveling a recreational vehicle,” and independent claim 15 is directed to a “non-transitory computer readable medium comprising computer executable instructions,” and both claims recite limitations similar to those recited in claim 1. *Id.* at 24:60–25:19, 25:64–26:23.

E. Asserted Grounds of Unpatentability

Petitioner asserts that claims 1–20 are unpatentable on the following six grounds:

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis ³
1	1–3, 6, 8–11, 13, 15, 16, 19	103	Thorpe ⁴ , Clark ⁵ , Garceau ⁶
2	1–6, 8–13, 15–19	103	Thorpe, TealLevel ⁷ , Garceau
3	7, 14, 20	103	Thorpe, Clark, Garceau
4	7, 14, 20	103	Thorpe, TealLevel, Garceau

³ Petitioner also included “common knowledge” in Grounds 3, 4, and 6. *See* Pet. 3. Because an obviousness analysis under 35 U.S.C. § 103 always considers information commonly known to a person of ordinary skill in the art, we do not include “common knowledge” in the table above. *See, e.g., KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (noting that in evaluating obviousness, a tribunal may consider “the background knowledge possessed by a person having ordinary skill in the art” and “the inferences and creative steps that a person of ordinary skill in the art would employ”). Although we list every ground for clarity, with this modification, Grounds 1 and 3 collapse into a single ground (Thorpe, Clark, Garceau), as do Grounds 2 and 4 (Thorpe, TealLevel, Garceau) and Grounds 5 and 6 (Garceau, TealLevel).

⁴ Thorpe et al., U.S. Patent App. Pub. 2008/0142768 A1, published June 19, 2008 (“Thorpe,” Ex. 1005).

⁵ Clark et al., U.S. Patent 7,305,772 B2, issued December 11, 2007 (“Clark,” Ex. 1006).

⁶ Garceau, U.S. Patent App. Pub. 2016/0075311 A1, published March 17, 2016 (“Garceau,” Ex. 1007).

⁷ Petitioner asserts that “TealLevel is a software application developed for Palm devices by a software developer called TealPoint,” and that the “TealLevel User Manual ([“TealLevel,” Ex. 1018]) was published on or about January 9, 2010 and was publicly available on the TealPoint website.” Pet. 4 (citing Ex. 1014 ¶¶ 6–7; Ex. 1015 ¶¶ 4, 10, 12, 18–21).

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis ³
5	10–13, 15–19	103	Garceau, TealLevel
6	1–9, 14, 20	103	Garceau, TealLevel

Pet. 3. Petitioner supports its contentions with the Declaration of James E. Grimes (Ex. 1004), among other evidence.

II. DISCRETIONARY DENIAL

A. Discretionary Denial Under § 314(a)

The parties dispute whether the Board should discretionarily deny the Petition under 35 U.S.C. § 314(a) in view of a now-dismissed district court litigation.⁸ *See* Prelim. Resp. 30–35; Pet. 70–72; Prelim. Reply 1; Prelim. Sur-reply 1–3.

Institution of an *inter partes* review is discretionary. *See* 35 U.S.C. § 314(a); *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018). When determining whether to exercise discretion to deny institution in view of a parallel litigation, we consider the factors set forth in the Board’s precedential “*Fintiv*” case. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 6 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”); *see also* Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (USPTO June 21, 2022) (“Memorandum”).⁹

⁸ *FBA Operating Co. v. ETN Capital, LLC d/b/a Beech Lane*, 5-23-cv-505 (E.D.N.C.) (the “district court litigation”).

⁹ Available at www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_2022_0621_.pdf.

After the filing of the Petition and Preliminary Response in this case, the district court litigation was dismissed with prejudice on January 17, 2025. Prelim. Reply 1; Ex. 3001, 10. Accordingly, there is presently no parallel litigation to consider under *Fintiv*.

Nevertheless, Patent Owner argues that “the dismissal of the complaint does not eliminate the relevance of the many *Fintiv* factors.” Prelim. Sur-reply 1. We disagree. *Fintiv* indicates that “[a] district court stay of the litigation pending resolution of the PTAB trial allays concerns about inefficiency and duplication of efforts.” *Fintiv*, Paper 11 at 6 (emphasis added). Here, we have not a stay of the district court litigation, but its dismissal with prejudice. See Ex. 3001, 10. Thus, concerns about inefficiency and duplication of efforts are not merely allayed, but are instead obviated.

Patent Owner has appealed the dismissal of the district court litigation.¹⁰ See Prelim. Sur-reply 2–3. It argues that “issues such as claim construction—seriously impacting if not deciding patent validity—could still be addressed on appeal or in subsequent litigation once the appeal is decided,” and that “the appeal could be decided and the district court case be resumed before a decision on the IPR—resulting in potential conflicting opinions.” *Id.* at 2, 3. These arguments are not persuasive on the record, because Patent Owner is merely speculating about the outcome of the appeal and timing of any subsequent district court case.

¹⁰ Federal Circuit Appeal 2025-1402, docketed January 30, 2025. See Paper 12 (Patent Owner’s Updated Mandatory Notices).

Even if the now-dismissed district court litigation were relevant, on this record we find that it does not compel discretionary denial of the Petition. We acknowledge that the parties and district court expended some investment during the course of the litigation. There appears, however, to be no dispute that the investment (including with respect to claim construction) concerned infringement issues. *See, e.g.*, Prelim. Resp. 34 (“The substantial briefing . . . and significant amendments to the complaint all have developed the parties’ positions with respect to claim construction and further clarified the issues with respect to infringement related thereto.”); Prelim. Sur-reply 2 (“the district court case involved significant judicial consideration of *infringement* arguments prior to dismissal”); Prelim. Reply 2 (“Neither party has filed any motion or other paper related to the issue of invalidity.”). Thus, even if the past investment in the now-dismissed district court litigation remained relevant to our consideration of discretionary denial, on this record, there appears to be little overlap between the efforts expended in the district court and the efforts that will be expended here. Moreover, the district court litigation “never proceeded beyond the pleading stage,” meaning that the efforts expended in the district court were limited. Prelim. Reply 2.

For the reasons above, we are not persuaded that the interests of efficiency and integrity of the system would be best served by invoking our authority under 35 U.S.C. § 314(a) to deny institution in view of the now-dismissed district court litigation.

B. Discretionary Denial Under § 325(d)

The parties dispute whether the Board should discretionarily deny the Petition under 35 U.S.C. § 325(d). *See* Pet. 73–75; Prelim. Resp. 11–16.

Section 325(d) provides that the Director¹¹ may “reject the petition” if “the same or substantially the same prior art or arguments previously were presented to the Office.” 35 U.S.C. § 325(d). The Board analyzes this issue under the following two-part framework set forth in the precedential *Advanced Bionics* case:

(1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of [the] first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6, 8 (PTAB Feb. 13, 2020) (precedential).

As an initial matter, there is no dispute that at least Garecau and TealLevel were not previously presented to the Office. *See* Prelim. Reply 2 (“Grounds 5 and 6 are based entirely on new references and therefore could not mirror [the prior art combinations asserted] by the Examiner.”); *see generally* Prelim. Resp. Garecau and TealLevel are the only two references in Grounds 5 and 6. *See* Pet. 3. Patent Owner does not argue that Garecau and TealLevel, or the arguments presented in these grounds, are the same or substantially the same as art or arguments previously before the Office. *See generally* Prelim. Resp. 10–16 (making no § 325(d) arguments based on Garecau or TealLevel or directed to Grounds 5, 6). Accordingly, because there is no dispute that Grounds 5 and 6 present art and arguments that were not previously before the Office, in this case we find that § 325(d) is not

¹¹ The Board institutes trial on behalf of the Director. 37 C.F.R. § 42.4(a).

sufficiently implicated such that its statutory purpose would be undermined by instituting the Petition. *See* SAS Q&As (June 5, 2018),¹²

Question/Answer D1 (explaining that “[i]n view of the Office’s policy to institute on all challenges or none,” where “only some of the challenges fall within” the scope of § 325(d), “[t]he panel will evaluate the challenges and determine whether § 325(d) is sufficiently implicated that its statutory purpose would be undermined by instituting on all challenges”).

For completeness, we address the parties’ arguments regarding Grounds 1–4. Both parties acknowledge that Thorpe, which Petitioner uses in Grounds 1–4, was before the Office during prosecution. *See, e.g.*, Pet. 73; Prelim. Resp. 13. Patent Owner argues that Petitioner “modifies Thorpe using references that are similar to those used during prosecution,” but specifically addresses only Clark. Prelim. Resp. 13. Patent Owner argues that Clark “is substantially the same as Zhong, which was previously considered by the Office.” *Id.* at 14. Patent Owner explains that in rejecting the claims during prosecution, the Examiner cited Zhong’s teachings regarding displaying an icon representative of a drone and information regarding the drone’s spatial orientation relative to a remote terminal. *Id.* Patent Owner argues that Petitioner “substitutes Zhong for Clark,” because Petitioner cites Clark for its graphical display of an image of the vehicle, together with pitch and roll indicators for sections of the vehicle. *Id.* at 14–15.

¹² Available at https://www.uspto.gov/sites/default/files/documents/sas_qas_20180605.pdf.

Petitioner responds that each of the references it combines with Thorpe (i.e., Clark, TealLevel, and Garceau) were not considered by the Examiner and thus “raise new issues not previously considered by the Patent Office.” Prelim. Reply 2–3. Petitioner also explains that during prosecution, Patent Owner distinguished Zhong “as being non-analogous art” because it related to drones and did not teach “display[ing] an image of a vehicle ‘parked on an uneven surface of the ground as claimed.’” Pet. 73 (quoting Ex. 1004 (prosecution history) 496–97). Petitioner argues that Clark (and TealLevel and Garceau) teach leveling vehicles (like RVs) and graphically representing the vehicle on a display. *See id.* at 73–74. Accordingly, Petitioner argues that these references are “more pertinent than Zhong.” *Id.* at 74.

Given the material differences between Zhong and Clark (namely, that Zhong relates to flying drones, whereas Clark relates to leveling vehicles (including RVs) on the ground (*see* Ex. 1006 (Clark), 1:18–27, 2:41–50, 5:3–6), we disagree with Patent Owner that “the combinations in the IPR mirror the combinations during prosecution.” Prelim. Sur-reply 3. Indeed, Patent Owner asserts that during prosecution, it “successfully advanced” the theory that Zhong is not analogous because it relates to airplane technology, not RVs, leading to allowance of the ’925 patent. *See* Prelim. Resp. 20 (citing Ex. 1003 (prosecution history), 468, 495–97, 511). The same argument does not apply to Clark, which expressly teaches leveling a vehicle (including an RV) that is on the ground. *See* Ex. 1006 (Clark), 1:18–27, 2:44–50, 5:3–6; *see also infra* Section III.E.2 (discussing Patent Owner’s erroneous argument that Clark relates to airplane, not RV, technology). Given the material differences between Zhong and Clark, we find that the

same or substantially the same art or arguments were not previously presented to the Office.

For the above reasons, we decline to exercise our discretion to deny *inter partes* review under § 325(d).

III. ANALYSIS OF UNPATENTABILITY GROUNDS

A. Principles of Law

In an *inter partes* review, “the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). Petitioner ultimately bears the burden of persuasion to prove unpatentability of each challenged claim by a preponderance of the evidence. 35 U.S.C. § 316(e). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). The Board may authorize an *inter partes* review if we determine that the information presented in the Petition and Patent Owner’s Preliminary Response (and any additional authorized briefing of record) shows a reasonable likelihood that Petitioner will prevail with respect to at least one of the claims challenged in the petition. 35 U.S.C. § 314(a).

Under 35 U.S.C. § 103, a claim is unpatentable as obvious if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective

filing date¹³ to a person having ordinary skill in the art to which the claimed invention pertains. 35 U.S.C. § 103; *see also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved based on underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art;¹⁴ and (4) any objective indicia of nonobviousness.¹⁵ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). An obviousness determination requires finding a reason to combine accompanied by a reasonable expectation of achieving what is claimed in the challenged patent. *See Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016). “[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *KSR*, 550 U.S. at 419–20.

B. Level of Ordinary Skill in the Art

We consider the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art (sometimes abbreviated herein as “POSITA” or “PHOSITA”) at the time the invention was made. *See Graham*, 383 U.S. at 17–18. Petitioner did not explicitly propose a level of ordinary skill in the art in the Petition. *See generally* Petition. Nevertheless, its declarant Mr. Grimes states that a person of ordinary skill

¹³ Petitioner states that the earliest effective filing date for the challenged claims is December 5, 2014. *See* Pet. 3.

¹⁴ *See infra* Section III.B.

¹⁵ Patent Owner does not presently assert any objective indicia of nonobviousness. *See generally* Prelim. Resp.

in the art “would have been a person having a Bachelor of Science degree in a relevant field of science or engineering with one to two years of experience as an engineer and a working knowledge of sensor design and application development.” Ex. 1003 (Grimes Decl.) ¶ 17.

Patent Owner asserts that Petitioner’s “failure to define the POSITA” in the Petition “constitutes an impermissible attempt to avoid having to set forth its full position in the Petition.” Prelim. Resp. 2. Patent Owner argues that “the Board should find that Petitioner has waived its arguments as to the level of knowledge and skill of the POSITA.” *Id.*; *see also* Prelim. Sur-reply 5. Patent Owner proposes that

a POSITA would have a Bachelor’s degree in engineering or computer science, or a related field, and 1 year of industry experience or academic research in commercial app development, including some experience with programming devices that can communicate with a display device. Additional education can compensate for less experience and vice versa.

Prelim. Resp. 3.

In its Preliminary Reply, Petitioner acknowledges it “inadvertently omitted a citation to ¶¶ 17 and 18 of the Grimes Declaration,” and asserts that the Petition “contains numerous references to the knowledge of a PHOSITA, which are based on the definition in ¶17 of the Grimes Declaration.” Prelim. Reply 4–5. Petitioner argues (and Patent Owner does not dispute) that “the level of ordinary skill proposed by Patent Owner is substantially the same as the level of ordinary skill set forth in the Grimes Declaration.” *Id.*

On this record, we disagree with Patent Owner that Petitioner has waived any argument as to the level of knowledge and skill of a person of

ordinary skill in the art. *See* Prelim. Resp. 2. This is because Petitioner in fact provided a level of skill in the art at the time it submitted its Petition (via the Grimes Declaration), and failure to cite that proposal in the Petition was harmless here, given that the prior art itself reflects an appropriate skill level in this case. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (indicating that the prior art itself may reflect an appropriate skill level).

We additionally agree with Petitioner that the level of skill proposed by both parties is substantially the same. Specifically, both parties propose a similar education level (Bachelor’s degree in a relevant field of science or engineering) and similar experience (1–2 years of industry experience, including knowledge of sensor design and application development). We observe that in Patent Owner’s proposal, the recited experience is possibly a bit more specific than in Petitioner’s proposal (e.g., it recites “*commercial* app development” experience and some programming experience). *See* Prelim. Resp. 3 (emphasis added).

However, at this stage and absent argument to the contrary, we discern no material difference between the parties’ proposals. Petitioner’s proposal is consistent with the level of ordinary skill reflected in the prior art references of record, and unlike Patent Owner’s proposal at this stage, is supported by declarant testimony. *See Okajima*, 261 F.3d at 1355. Accordingly, for purposes of this decision, we apply Petitioner’s definition of the person of ordinary skill in the art. We note, however, that were we to adopt Patent Owner’s proposal, the outcome of this Decision would be the same.

C. Claim Construction

In AIA proceedings we interpret a claim “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b). Under this standard, we construe the claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *Id.*

Petitioner proposes claim constructions for three claim limitations: (1) “adjustment pairs”; (2) “simultaneously display the height adjustment amount and corresponding adjustment direction of each adjustment pair”; and (3) “smart device.” Pet. 10–12. Patent Owner responds that Petitioner’s constructions “are not necessary” and “appear to be directed to establishing constructions that will aid them in their non-infringement arguments.” Prelim. Resp. 3.

We find it unnecessary to construe any claim term to decide whether Petitioner satisfies the “reasonable likelihood” standard for instituting trial. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (noting that “we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))). We note, however, that the ’925 patent provides an express definition of the term “smart device.” Ex. 1001, 5:4–7. If a party addresses the construction of this term in future briefing, that party shall address the effect of this express definition on the proper construction of the term.

Any final written decision entered in this case may include express claim constructions, or may include discussion of claim scope that differs from that provided in our analysis below. Any final claim construction will be based on the full trial record.

D. Overview of Asserted Prior Art

1. Thorpe (Ex. 1005)

Thorpe, titled “Leveling System for Recreational Vehicles,” is the June 19, 2008, published version of U.S. Application 11/638,607, filed on December 13, 2006. Ex. 1005, codes (21), (22), (43), (54). Thorpe “relates to leveling systems that are utilized in conjunction with the vehicle’s jack or other leveling mechanisms to level the vehicle when it is stationary.” *Id.*

¶ 3.

Figures 5 and 6 of Thorpe, reproduced below, illustrate a level unit and a control unit of a leveling system.

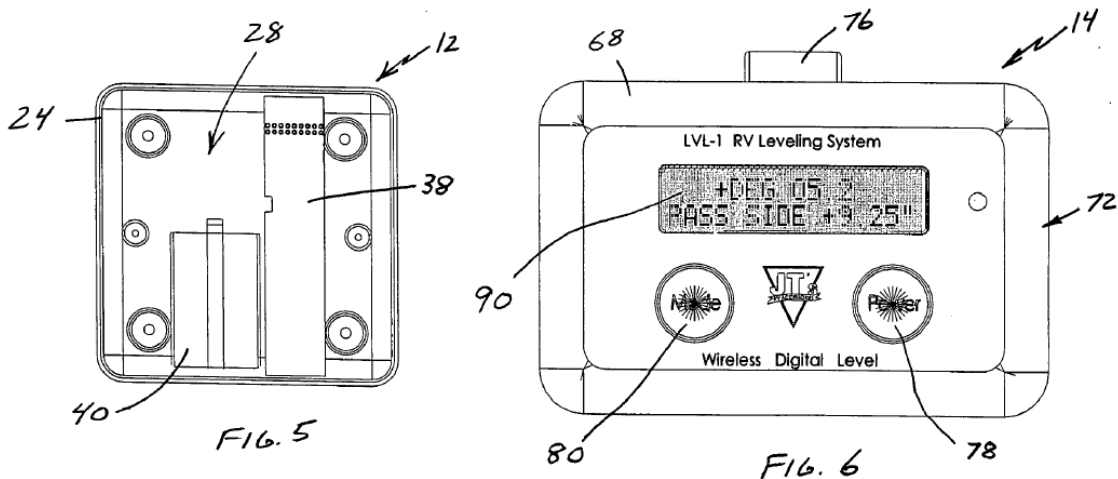


Figure 5 depicts a top view of level unit 12 “with the top cover removed to show the interior chamber.” Ex. 1005 ¶ 26. “[L]evel unit 12 is placed on a flat surface inside recreational vehicle 16 [(not shown in the above figures)] . . . to allow the components disposed in interior chamber 28 of level unit 12

to measure the pitch and roll tilt . . . [to] determine the adjustment necessary to neutralize that tilting.” *Id.* ¶ 37. Level unit 12 includes level sensing means 38, which “comprises one or more tilt sensors that are configured to detect the amount of pitch and roll of” a recreational vehicle. *Id.* “[L]evel sensing means 38 includes an integrated circuit interface that takes the information from the sensing element of sensing means [3]8 to deliver an analog signal for conversion and then use by control unit 14,” depicted in Figure 6. *Id.* ¶ 38.

As shown in Figure 6, display panel 90 of control unit 14 “can display the amount of pitch or roll in degrees and the amount in inches or other measurement units, based on a known length or width of recreational vehicle 16, that one end or side . . . must be raised to place recreational vehicle 16 in level condition.” Ex. 1005 ¶ 40. An operator uses one or more leveling mechanisms to raise an end or side of the recreational vehicle based on the displayed information. *Id.*

2. Clark (Ex. 1006)

Clark, titled “Graphical Clinometer Display System and Method,” issued on December 11, 2007, and relates to “[a] system for monitoring the inclination of a vehicle” that “comprises a clinometer in communication with a computer,” where the computer presents a graphical display with “at least one representation of the vehicle which rotates in real-time as the at least one inclination angle changes.” Ex. 1006, codes (45), (54), (57).

Figure 4 of Clark, reproduced below, illustrates a screenshot of a graphical display. Ex. 1006, 2:20.

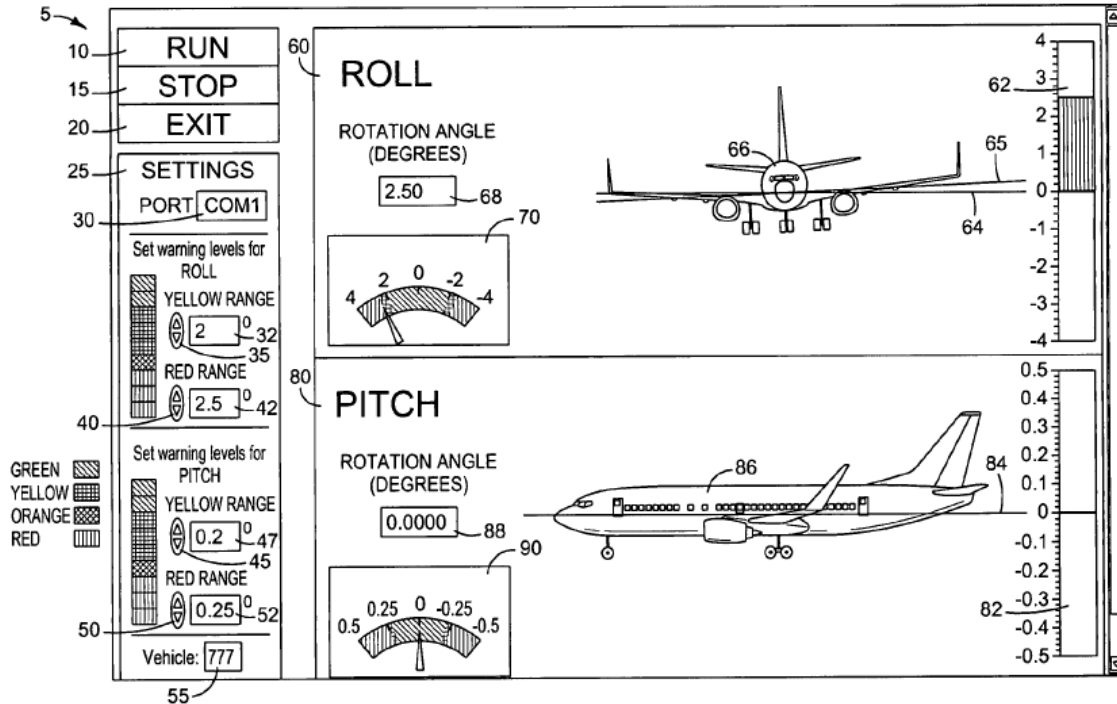


FIG. 4

In Figure 4, graphical display 5 depicts an aircraft with pitch and roll information. Clark states that different vehicles such as “an automobile, ship, bus, or train” may also be depicted. *Id.* at 5:1–6.

Graphical display 5 may include various buttons, as well as ROLL box 60 and PITCH box 80. Ex. 1006, 5:6–9. “ROLL box 60 may comprise a front view vehicle icon 66, a zero roll angle line 64, a numerical roll angle display box 68, a roll angle dial box 70, and a roll angle meter 62.” *Id.* at 6:29–31. When the roll angle is non-zero, ROLL box 60 may include off-zero roll angle line 65. *Id.* at 6:32–33. “PITCH box 80 may comprise a side view vehicle icon 86, a zero pitch angle line 84, a numerical pitch angle display box 88, a pitch angle dial box 90, and a pitch angle meter 82.” *Id.* at 7:20–23. When the pitch angle is non-zero, PITCH box 80 may include off-zero pitch angle line 85 (not shown in Figure 4). *Id.* at 7:23–25.

3. Garceau (*Ex. 1007*)

Garceau, titled “Vehicle Leveling Assembly with Digital Sensor,” is the March 17, 2016, published version of U.S. Application 14/854,871, filed on September 15, 2015. *Ex. 1007*, codes (21), (22), (43), (54). Garceau “relate[s] to using a 6-axis digital sensor for feedback for controlling the extension or retraction of jacks for control of the angular orientation of a structure.” *Id.* at code (57). The system is useful for leveling RVs. *Id.* ¶ 17.

Figure 1 of Garceau, reproduced below, illustrates an isometric view of a vehicle leveling system installed on the frame of a vehicle, such as an RV. *Ex. 1007* ¶ 7.

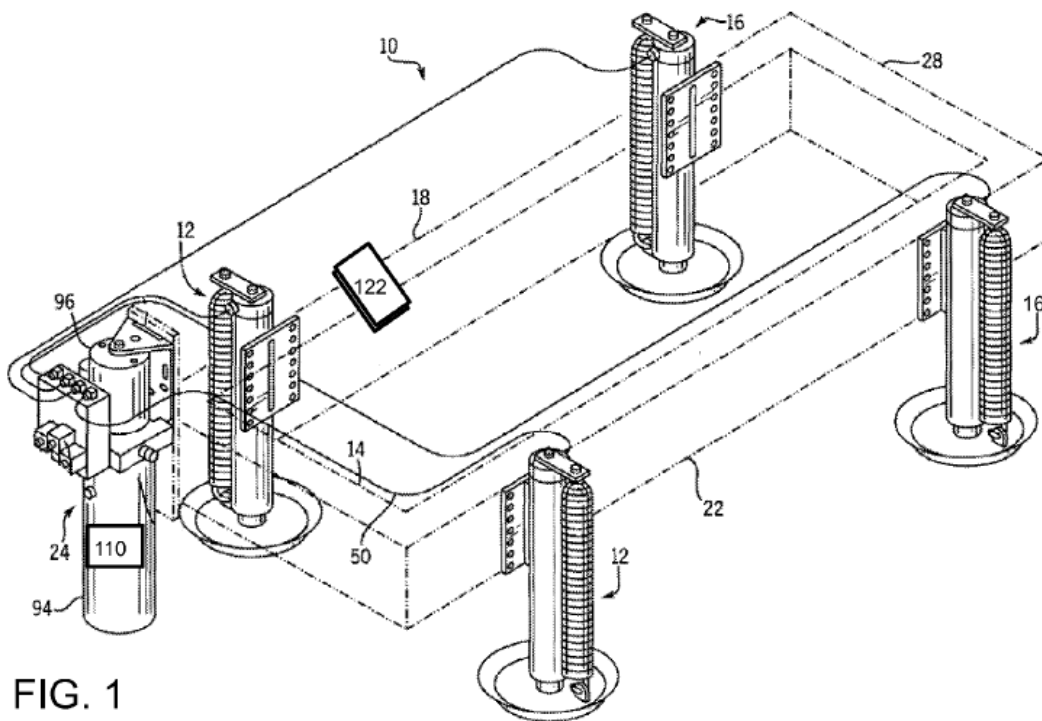


FIG. 1

As shown in Figure 1, “system 10 includes pairs of jacks 12 and 16 for leveling a structure.” *Id.* ¶ 36. System 10 also includes multi-axis digital sensor 122 mounted to frame member 18 of a vehicle. *Id.* ¶ 37. “[S]ensor

122 can be physically or logically interposed between actuator assembly 24 and a controller” and can “provide[] data about the angular orientation and rates of change with respect to the structure to a controller.” *Id.* In particular, actuator assembly 24 includes controller 110 for receiving signals from sensor 122 and providing control signals to motor assembly 96 for control of pairs of jacks 12 and 16. *Id.* ¶ 38.

The multi-axis digital sensor “can include a 3-axis gyroscope and 3-axis accelerometer and a processor for interpreting motion data from the gyroscope and accelerometer.” Ex. 1007 ¶ 12. “Using data from the gyroscope and accelerometer, the attitude (e.g., pitch, roll, or other relative metrics) of the structure can be calculated, and the accelerometer can be used to determine the rate of change of the attitude.” *Id.* “[A] cellular telephone or smart phone ‘app’ can be installed to communicate with a controller and/or the six-axis digital sensor . . . and text or graphics depicting the attitude of the structure can be provided in real-time when the structure is static or in motion.” *Id.* ¶ 35.

4. TealLevel (Ex. 1018)

TealLevel is a software application user manual that describes “a vehicle and RV leveler that calculates the necessary jacking or blocking heights for each tire.” Ex. 1018, 2. After calibration, a user can use vehicle mode, illustrated below, “to help level an RV or other vehicle.” *Id.* at 3.

Vehicle Mode



Id. The graphic reproduced above shows TealLevel’s vehicle mode, which displays an image of a vehicle together with information on how far each wheel must be lowered to level the vehicle. TealLevel states that a user can “[s]imply lay the phone [with TealLevel installed] flat in a vehicle and it will calculate how high the three lower wheels must be raised,” as shown in the illustration above. *Id.*

E. Grounds 1–4

For Grounds 1 and 3, Petitioner asserts that claims 1–3, 6–11, 13–16, 19, and 20 are unpatentable as obvious over Thorpe, Clark, and Garceau. *See* Pet. 3; *see also supra* n.2 (addressing overlap among the grounds). For Grounds 2 and 4, Petitioner asserts that claims 1–20 are unpatentable as obvious over Thorpe, TealLevel, and Garceau. *See* Pet. 3. Thus, the

difference between Grounds 1 and 3 and Grounds 2 and 4 is that the former use Clark, whereas the latter use TealLevel.

Petitioner argues that Thorpe discloses a vehicle leveling system for use with RVs, but has a “character-based display that displays the height adjustments for leveling the vehicle one at a time.” Pet. 19. Petitioner asserts that Garceau teaches a vehicle leveling system comprising a digital accelerometer and a remote unit such as a smartphone. *Id.* Petitioner argues that in view of Garceau, a person of ordinary skill in the art would have “implement[ed] the remote unit (i.e., smart device) of a vehicle leveling system as an application on a computer or smartphone,” because doing so “avoids the need to manufacture a special purpose control unit and therefore reduces costs and saves time.” *Id.* at 19–20 (citing Ex. 1004 (Grimes Decl.) ¶ 58).

Petitioner additionally asserts that Clark (in Grounds 1, 3) and TealLevel (in Grounds 2, 4) “both disclose graphical displays for vehicle leveling systems that display an image of the vehicle and simultaneously display pitch and roll measurements for leveling the vehicle.” Pet. 19. Petitioner argues that a person of ordinary skill in the art would have “use[d] a graphical display as taught by Clark or TealLevel that displays an image representative of the vehicle and that simultaneously displays the adjustment pairs,” because (1) “Clark discloses that the graphical representation of the vehicle in the display provides the user with ‘an intuitive understanding of the measurements taken by the clinometer 2, such as the roll and pitch conditions of the vehicle 1’ and enables the vehicle to be ‘jacked and leveled with few persons and in less time’”; and (2) “Wilson teaches that simultaneous display of height adjustment amounts is ‘greatly needed’ in

vehicle leveling systems.” *Id.* at 19–20 (citing Ex. 1004 (Grimes Decl.) ¶¶ 58, 59; citing and quoting Ex. 1006 (Clark), 3:57–63, 8:66–9:7 and Ex. 1010 (Wilson), 1:54–57).

Petitioner provides a claim-by-claim analysis as to how the asserted prior art combinations teach or suggest each and every limitation of the challenged claims. *See* Pet. 18–49.

After fully considering all of Petitioner’s and Patent Owner’s arguments and cited evidence (discussed below), we find that for purposes of institution, Petitioner has shown a reasonable likelihood of prevailing on Grounds 1–4.

We now turn to discussing Patent Owner’s arguments. Patent Owner does not direct its arguments to any specific challenged claim. Accordingly, we consider Patent Owner’s arguments vis-à-vis the limitations of claim 1.

1. Whether Thorpe Teaches Away

Patent Owner argues that “Thorpe teaches away from being modified as suggested by the Petitioner” because Thorpe’s control unit is a “beeper-like device” that first displays information to level the vehicle’s roll, then separately displays information to level the vehicle’s pitch. Prelim. Resp. 17–18 (citing Ex. 1005 (Thorpe) ¶ 44). Patent Owner argues that the modifications Petitioner proposes “all involve making the device in Thorpe something that would operate in real time and allow for adjustments of pitch and roll on the RV in real time,” and that Thorpe teaches away from such modifications. *Id.* at 19.

We disagree that Thorpe teaches away. “A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or

would be led in a direction divergent from the path that was taken by the [Patent Owner].” *See In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). Even if Thorpe teaches a different approach than the claims as Patent Owner suggests (i.e., serial presentation of pitch and roll information instead of simultaneous presentation), mere disclosure of an alternative design does not teach away. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). Here, there is no teaching away because Thorpe “does not criticize, discredit, or otherwise discourage the solution” claimed in the challenged claims. *See id.*

2. *Whether Clark is Analogous Art*

Patent Owner further argues that Clark (used in Grounds 1 and 3) “is not analogous art because it pertains to airplane technology” (not RVs) and is a “safety device,” whereas the claimed system is for making camping more comfortable. Prelim. Resp. 20 (citing Ex. 1006 (Clark), 7–8), 23; *see also* Prelim. Sur-reply 4–5 (“The problem Clark seeks to solve—ensuring safe aircraft maintenance—is unrelated to the problem addressed by the ’925 Patent—improving the leveling process for RV owners so they can have a more comfortable experience camping . . .”).

“Two separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor’s endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.” *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004) (citations and internal quotes omitted).

On the current record, we find that Clark is analogous art under both tests. First, we find that Clark is in the same field of endeavor as the challenged patent because it expressly discloses a leveling system that can

be used with a variety of vehicles, including “*recreational vehicles*.” Ex. 1006 (Clark), 2:44 (emphasis added); *see also id.* at 5:3–6; Pet. 26; Prelim. Reply 3–4. Patent Owner’s suggestion that Clark relates only to “airplane technology” is incorrect. Prelim. Resp. 20. Clark relates to leveling vehicles (including airplanes) that are “jacked up off the ground,” and explains that it describes the invention “primarily with reference to an aircraft” only “[f]or purposes of illustration.” Ex. 1006 (Clark), 1:18–27, 2:47–50. Moreover, Patent Owner has not explained how, in the context of the pertinent issues in this proceeding, leveling an airplane that is on the ground materially differs from leveling an RV that is on the ground.

Patent Owner asserts that “Petitioner essentially admits that Clark is not in the same field of endeavor” as the ’925 patent and that Petitioner purportedly characterized Clark as being in the same field of endeavor as Zhong, a reference that relates to airplane technology. *See* Prelim. Resp. 21. Patent Owner creates these alleged admissions by deleting critical words from a sentence it quotes from the Petition. *See id.* Contrary to Patent Owner’s misleading quote, Petitioner actually stated the opposite, i.e., that Clark is “in the same field of endeavor (i.e. leveling vehicles parked on the ground)” as the ’925 patent, thus is “more pertinent than Zhong.”¹⁶ Pet. 74.

In view of Clark’s express disclosures, we find that Clark is analogous art because it is from the same field of endeavor.

Second, we find that Clark is reasonably pertinent to the particular problem with which the inventor is involved. Patent Owner’s effort to

¹⁶ Patent Owner is reminded of its “duty of candor and good faith to the Office during the course of [this] proceeding.” 37 C.F.R. § 42.11.

narrowly construe the problem relating to the '925 patent as “a leveling process for RV owners so they can have a more comfortable experience camping” is belied by the Specification, which speaks more broadly to systems for leveling “vehicles” (including but not limited to RVs), and to achieving benefits beyond comfort, such as reducing the number of “attempts to achieve a level balance.” *See* Ex. 1001, 1:18–22, 2:32, 5:34–39 (defining “vehicle” to include vehicles that are not typically used for camping, such as “medical trailers, transport trailers, boo[m] trucks, [and] backhoes”). Like the '925 patent, Clark is similarly addressed to reducing the number of “attempts to achieve a level balance,” i.e., it teaches leveling vehicles “with fewer persons and in less time.” Ex. 1006 (Clark), 8:66–92.

For the reasons discussed above, we find that Clark is analogous art both because it is from the same field of endeavor as the '925 patent and because it is reasonably pertinent to the particular problem with which the inventor is involved.

3. Whether TealLevel Teaches Away

Regarding Grounds 2 and 4, Patent Owner argues that TealLevel teaches away because it “does not teach adjustments of pitch and roll,” but rather “describes adjustments made at each of the four corners of the vehicle, which correspond to shifts in the suspension rather than the pitch and roll adjustments claimed in the '925 Patent.” Prelim. Resp. 25. Patent Owner contends that “[t]he difference between the adjustments at the four corners of the vehicle in TealLevel compared to the axes as claimed . . . are mathematically incompatible.” *Id.* at 29.

On this record, we are not persuaded by Patent Owner’s attorney argument that TealLevel’s approach is a “fundamentally different

mechanism of adjustment.” Prelim. Resp. 25. The asserted claims recite display of “adjustment pairs,” which include “a height adjustment direction needed to level a respective section of the vehicle,” which appears to be the same information displayed in TealLevel. *See, e.g.,* Ex. 1018 (TealLevel), 3. And even if TealLevel teaches a materially different approach, as noted above, mere disclosure of an alternative design does not teach away. *See In re Fulton*, 391 F.3d at 1201. TealLevel “does not criticize, discredit, or otherwise discourage the solution” claimed in the challenged claims. *Id.* Patent Owner’s argument is additionally unpersuasive because Petitioner proposes using TealLevel’s graphical display of a vehicle image and adjustment pairs—not its methods for mathematically calculating adjustments. *See, e.g.,* Pet. 20–21, 26–29.

Patent Owner additionally argues that “TealLevel’s technology is centered around a single device (a Palm Pilot),” which “teaches away from use of two separate devices for sensing and displaying as in the ‘925 Patent.” Prelim. Resp. 29–30. We disagree. TealLevel “does not criticize, discredit, or otherwise discourage” use of separate devices for sensing and displaying; it merely teaches alternative design, and thus does not teach away from the solution in the challenged claims. *In re Fulton*, 391 F.3d at 1201.

Patent Owner further argues that the Petition “does not provide any compelling reason why a POSITA would modify TealLevel to function in conjunction with additional devices.” Prelim. Resp. 30. This argument is unavailing, because it misconstrues Petitioner’s proposed combinations. The Petition describes modifying the system of Thorpe (in Grounds 2, 4) or Garceau (in Grounds 5, 6) to use TealLevel’s graphical display, which does not require implementing TealLevel’s system on two devices. *See, e.g.,*

Pet. 20–21 (“Replacing the character-based display of Thorpe with a graphical display as taught by Clark or TealLevel is a simple substitution of one known element (character-based display) for another known element (graphical display) that yields no more than predictable results.”), 51 (“Combining the graphical display as taught by TealLevel with the vehicle leveling system as taught by Garceau would have been obvious to a PHOSITA as of the Critical Date.”).

4. Conclusion on Grounds 1–4

In sum and as stated above, after fully considering all of Petitioner’s and Patent Owner’s arguments and cited evidence, we find that for purposes of institution, Petitioner has shown a reasonable likelihood of prevailing on Grounds 1–4.

F. Grounds 5 and 6

For Grounds 5 and 6, Petitioner asserts that claims 1–20 are unpatentable as obvious over Garceau and TealLevel.¹⁷ *See* Pet. 50–70. At this stage, Patent Owner’s arguments for Grounds 5 and 6 concern only whether TealLevel teaches away, and we addressed those arguments above. *See, e.g.*, Prelim. Resp. 30 (applying arguments regarding TealLevel to Grounds 5 and 6); *supra* Section III.E.3.

After fully considering all of Petitioner’s and Patent Owner’s arguments and cited evidence, we find that for purposes of institution, Petitioner has shown a reasonable likelihood of prevailing on Grounds 5 and 6.

¹⁷ *See supra* n.2 (addressing overlap among the grounds).

IV. CONCLUSION

For the foregoing reasons, we determine that the information presented establishes a reasonable likelihood that Petitioner would prevail in showing that at least one of the challenged claims of the '925 patent is unpatentable.

At this preliminary stage, we have not made a final determination regarding the patentability of any challenged claim or any underlying factual or legal issue. *See TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016) (noting that “there is a significant difference between a petitioner’s burden to establish a ‘reasonable likelihood of success’ at institution, and actually proving invalidity by a preponderance of the evidence at trial”). Any final decision in this proceeding will be based on the full trial record.

The Board will deem forfeited any issue not raised by Patent Owner in a timely response to the Petition, or as permitted in another manner during trial, even if asserted in the Preliminary Response or discussed in this Decision.

Nothing in this Decision authorizes Petitioner, in a manner not otherwise permitted by the Board’s rules, to supplement the information pertaining to any ground advanced in the Petition.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted based on all grounds asserted in the Petition; and

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

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