

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DELTRAN USA LLC,
Petitioner,

v.

THE NOCO COMPANY,
Patent Owner.

IPR2024-01219
Patent 11,667,203 B2

Before JAMESON LEE, AVELYN M. ROSS, and
JASON M. REPKO, *Administrative Patent Judges*.

ROSS, *Administrative Patent Judge*.

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

I. INTRODUCTION

Deltran USA LLC (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1–11 (Pet. 4) of U.S. Patent No. 11,667,203 B2 (Ex. 1001, “the ’203 patent”). The NOCO Company (“Patent Owner”) filed a Preliminary Response to the Petition. Paper 7 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless the Director determines . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least [one] of the claims challenged in the petition.”

For the reasons set forth below, upon considering the Petition and Preliminary Response, we determine that Petitioner has established a reasonable likelihood of prevailing with respect to at least one challenged claim. Accordingly, we grant the Petition and institute/decline to institute an *inter partes* review.

A. *Real Parties-in-Interest*

Petitioner identifies “Deltran USA LLC,” “Deltran Operations, Inc.,” and “Deltona Transformer Corporation” and as the real parties-in-interest. Pet. 80.

Patent Owner identifies “The Noco Company” as the real party-in-interest. Paper 4 (Mandatory Notice), 1.

B. Related Proceedings

The parties both identify *The Noco Company v. Deltona Transformer Corporation, et al.*, Case No. 6:23-cv-02194 (M.D. Fla.) (“the parallel litigation”) as involving the ’203 Patent. Pet. 80; Paper 4, 1–2. Petitioner notes that “[r]elated patents also asserted in the above captioned litigation include U.S. Patent No. 11,447,023 (the ’023 patent) and U.S. Patent No. 11,584,243 (the ’243 Patent).” Pet. 80.

The parties also indicate that the ’023 patent is currently the subject of IPR2024-00577, and the ’243 patent is currently the subject of IPR2024-00671. Pet. 81; Paper 4, 2.

C. The ’203 patent (Ex. 1001)

The ’203 patent, titled “Portable Vehicle Battery Jump Start Apparatus With Safety Protection,” issued on June 6, 2023. *Id.* codes (45), (54). The “invention relates generally to apparatus for jump-starting a vehicle having a depleted or discharged battery.” *Id.* at 1:7–9.

The ’203 patent discloses a “handheld battery booster according to one aspect of the invention.” *Id.* at 4:22–23. “At the heart of the handheld battery booster is a lithium polymer battery pack 32, which stores sufficient energy to jump start a vehicle engine served by a conventional 12 volt lead-acid or valve regulated lead-acid battery.” *Id.* 4:23–27. Figure 3 reproduced below, depicts an exemplary handheld battery booster device. *Id.* at 7:57–58.

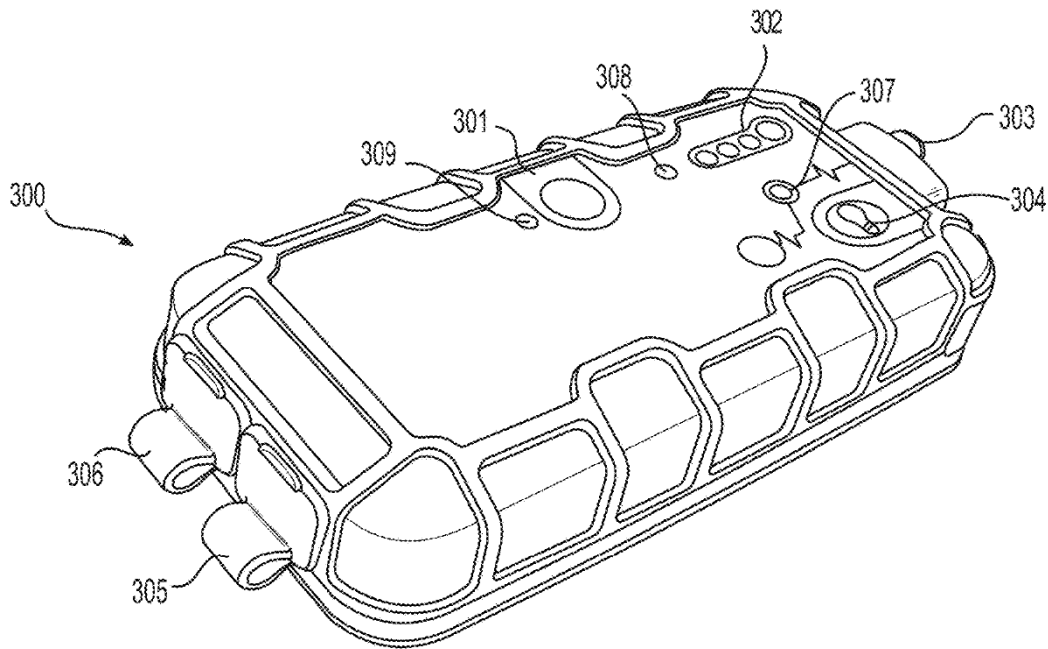


FIG. 3

Figure 3 “is a perspective view of a handheld jump starter booster device in accordance with one example embodiment of the invention.” *Id.* at 4:12–14. Figure 3 illustrates the following: power on switch 301; LED “fuel gauge” indicators 302; 12 volt output port 303 connectable to cable device 400; flashlight control switch 304 for activating flashlight LEDs; USB input port 305 for charging the internal lithium battery; USB output port 306 for providing charge from the lithium battery to other portable devices such as smartphones; “boost on” indicator 307 showing that power is being provided to 12 volt output port 303; “reverse” indicator 308 showing that the vehicle battery is improperly connected with respect to polarity; “power on” indicator 309 showing that device 300 is powered up for operation. *Id.* at 7:57–8:4.

Figure 4, reproduced below, depicts jumper cables useful for the handheld jump starter shown in Figure 3. *Id.* at 8:5–6.

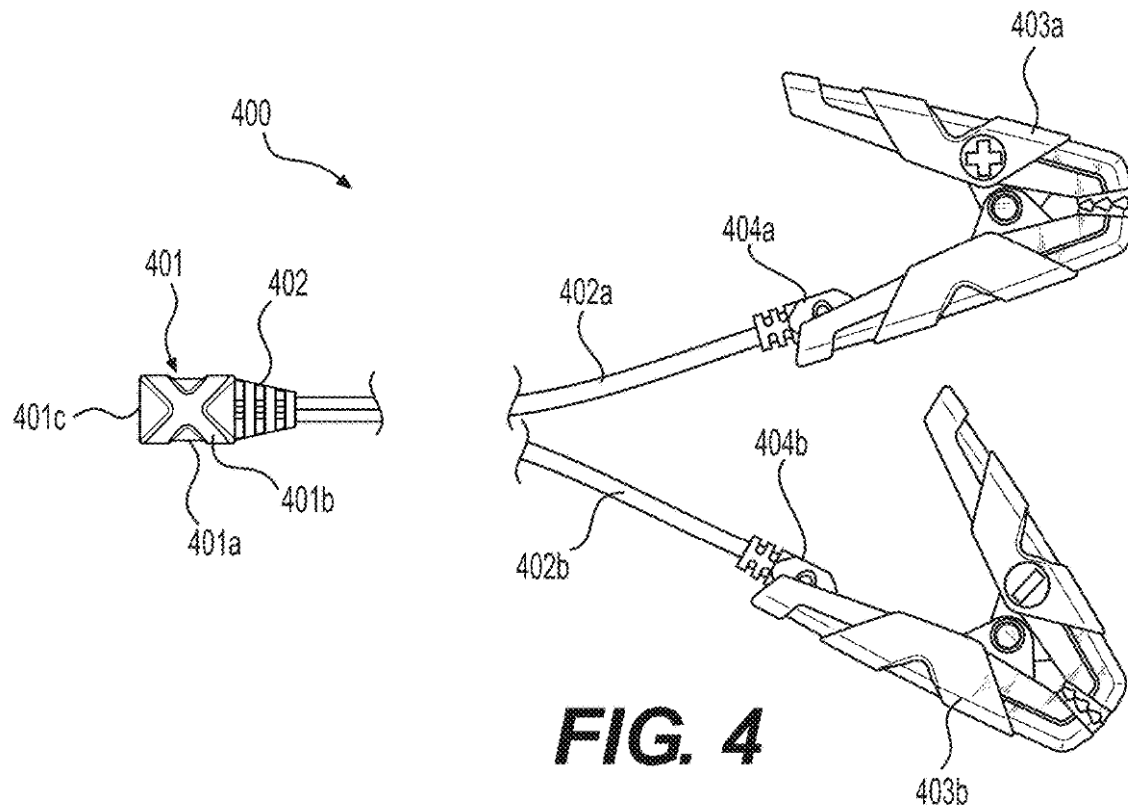


Figure 4 “is a plan view of a jumper cable.” *Id.* at 4:15–17. Figure 4 illustrates the following: plug 401 configured to plug into 12 volt output port 303 of handheld device 300; a pair of cables 402a, 402b integrated with plug 401 and respectively connected to positive and negative polarity battery terminal clamps 403a, 403b via ring terminals 404a, 404b. *Id.* at 8:5–11. Handheld booster device 300 is connected to a vehicle battery by connecting plug 401 into output port 303 and connecting battery clamps 403a, 403b to respective terminals of the battery. *Id.* at 8:11–18.

Figure 1, reproduced below, illustrates an exemplary embodiment.

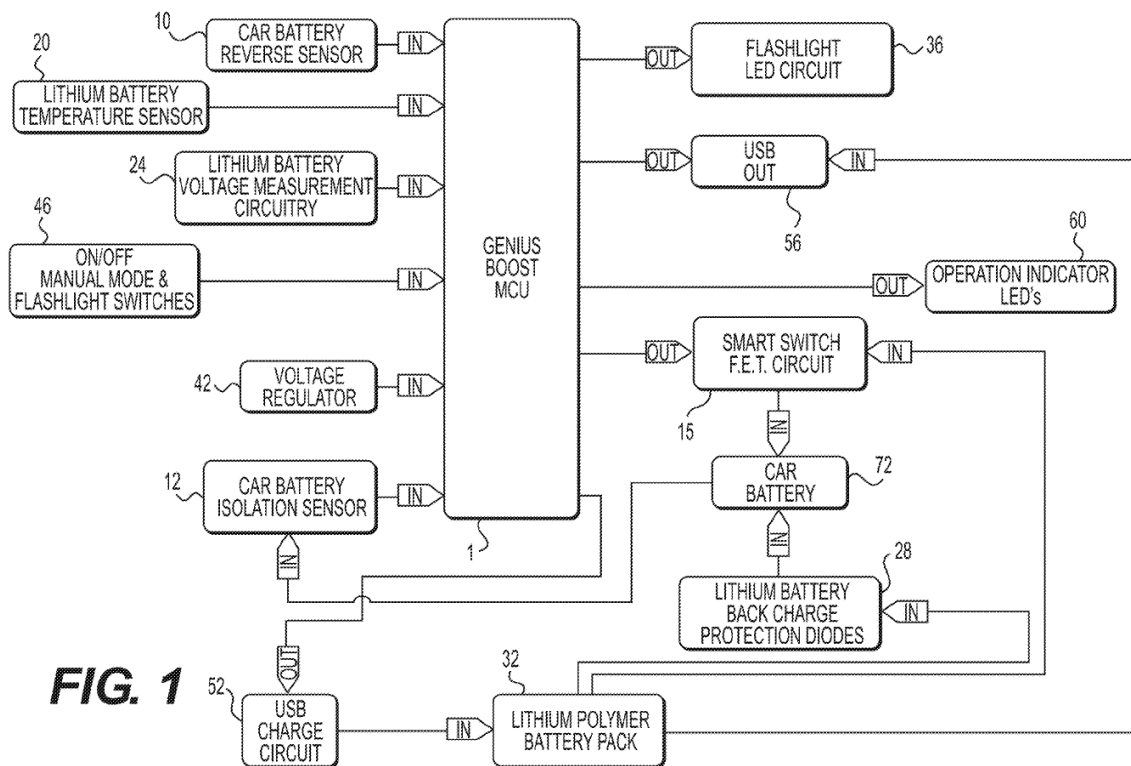


Figure 1 “is a functional block diagram of a handheld battery booster according to one aspect of the invention.” *Id.* at 4:22–23. Programmable microcontroller unit (MCU) 1 receives various inputs and produces informational as well as control outputs. *Id.* at 4:35–37. Car battery reverse sensor 10 detects, and informs MCU 1, whether the negative and positive terminals of booster device 300 are respectively and thus correctly connected to negative and positive terminals of the vehicle battery 72. *Id.* at 4:45–51.

USB charge circuit 52 converts power from “any USB charger power source, to charge voltage and current for charging the lithium battery pack 32.” *Id.* at 5:32–34. In a specific example of Figure 2C, the USB charge circuit 52 converts power of “a standard USB charger” to the charging power. *Id.* at 7:40–41. The input of the charge circuit 52 is a “standard micro-USB connector 48 allowing standard cables to be used.” *Id.*

at 7:42–43. “The 5V potential provided from standard USB chargers is up-converted to the 12.4 VDC voltage required for charging the internal lithium battery pack using a DC-DC converter 49.” *Id.* at 7:43–46.

D. Illustrative Claim

Petitioner challenges claims 1–11 of the ’203 patent. Independent claim 1 is representative of the challenged claims and is reproduced below with Petitioner’s annotations:¹

1. 1[PRE] A jump starter apparatus for jump starting a vehicle battery, comprising:

1[A] a power supply that includes one or more rechargeable batteries;

1[B] a USB port configured to receive power from an external power source for charging the one or more batteries;

1[C] a DC-DC converter coupled between the USB port and the one or more rechargeable batteries and configured to increase a voltage received from the external power source for charging the one or more rechargeable batteries;

1[D] a vehicle battery isolation sensor configured to detect presence of the vehicle battery connected to the jump starter apparatus;

1[E] a reverse polarity sensor, separate from the vehicle battery isolation sensor, configured to detect a proper polarity connection between the jump starter apparatus and the vehicle battery; and

1[F] a power switch configured to electrically connect the power supply to the vehicle battery,

1[G] wherein the power switch is controlled based on signals from the vehicle battery isolation sensor and the reverse polarity sensor such that the power supply is connected to the vehicle

¹ For convenience, we adopt Petitioner’s annotated claim format.

battery when both (i) the vehicle battery isolation sensor currently indicates that the vehicle battery is connected to the jump starter apparatus, and (ii) the reverse polarity sensor currently indicates that the jump starter and the vehicle battery are connected with the proper polarity connection.

Ex. 1001, 8:32–60.

E. The Asserted Unpatentability Challenges

Petitioner asserts that claims 1–11 would have been unpatentable based on the following grounds:

Claim(s) Challenged	35 U.S.C. §²	Reference(s)/Basis
1, 3–5, 9	103	Richardson, ³ Zhao ⁴
2, 10, 11	103	Richardson, Zhao, AAPA, Epower-20, ⁵ Epower-21 ⁶
6–8	103	Richardson, Zhao, Krieger ⁷
1, 3–5, 9	103	Yu, ⁸ Paparrizos ⁹

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. § 103, effective March 16, 2013.

Because the application from which the ’203 patent issued was filed after this date, the AIA version of § 103 applies.

³ US 2013/0154543 A1, published June 20, 2013 (Ex. 1005, “Richardson”).

⁴ US 9,391,467 B2, issued July 12, 2016 (Ex. 1006, “Zhao”).

⁵ Product Brochure for Model E-Power-20B, Shenzhen Carku Technology Co., Ltd., Allegedly Distributed April 15–May 5, 2014, at “2014 Canton Fair” (Ex. 1012, “Epower-20”).

⁶ Product Brochure for Model E-Power-21, Shenzhen Carku Technology Co., Ltd., Allegedly Distributed April 15–May 5, 2014, at “2014 Canton Fair” (Ex. 1013, “Epower-21”).

⁷ US 2004/0130298 A1, published July 8, 2004 (Ex. 1010, “Krieger”).

⁸ CN 203211234U, September 25, 2013 (Ex. 1008 (certified English translation), “Yu”).

⁹ US 9,219,372 B2, issued December 22, 2015 (Ex. 1009, “Paparrizos”).

Claim(s) Challenged	35 U.S.C. § ²	Reference(s)/Basis
2, 10, 11	103	Yu, Paparrizos, AAPA, Epower-20, Epower-21
6–8	103	Yu, Paparrizos, Krieger

Pet. 4. Petitioner also relies on declaration testimony of C. Arthur MacCarley. Ex. 1003 (the “MacCarley Declaration”).

II. ANALYSIS

A. *Principles of Law*

In an *inter partes* review, “the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (2012) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to the patent owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

Obviousness is a question of law based on underlying determinations of fact. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966); *Richardson-Vicks, Inc. v. Upjohn Co.*, 122 F.3d 1476, 1479 (Fed. Cir. 1997). A claim is unpatentable as obvious, under 35 U.S.C. § 103, if the differences between the claimed invention and the prior art are such that the claimed invention, as a whole, would have been obvious to a person having ordinary skill in the art, before the effective filing date of the claimed invention. *KSR*

Int’l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham*, 383 U.S. at 17–18. Consideration of the *Graham* factors “helps inform the ultimate obviousness determination.” *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016) (en banc), *cert. denied*, 138 S. Ct. 420 (2017). “Obviousness does not require absolute predictability of success[;] . . . all that is required is a reasonable expectation of success.” *In re O’Farrell*, 853 F.2d 894, 903–04 (Fed. Cir. 1988) (citations omitted). But, a petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

B. Level of Ordinary Skill in the Art

We review the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art before the effective filing date of the claimed invention. *Graham*, 383 U.S. at 17.

Petitioner contends that a person of ordinary skill in the art, “[a]s of the claimed priority date of July 3, 2014, . . . would have been a person with a bachelor’s degree in electrical engineering or its equivalent and two years of experience in the field of electrical engineering including some experience in design of battery charging systems.” Pet. 21 (citing Ex. 1003

¶¶ 19–30). Patent Owner “does not propose a different level of skill in the art[.]” Prelim. Resp. 22.

In light of the record before us, and for purposes of this Decision, we adopt Petitioner’s proposal regarding the level of ordinary skill in the art. Based on our review of the ’203 patent and the prior art of record, we determine that the definition offered by Petitioner comports with the qualifications a person would have needed to understand the ’203 patent and the prior art. We will make any final determination pertaining to the level of ordinary skill in the art, however, on the full trial record.

C. Claim Construction

We construe claim terms according to the standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–17 (Fed. Cir. 2005) (en banc); 37 C.F.R. § 42.100(b). Under *Phillips*, we give claim terms “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. “Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.*

“Petitioner submits there are no formal claim constructions necessary in this proceeding[.]” Pet. 22. Patent Owner also “does not propose any terms need to be construed.” Prelim. Resp. 18.

As neither party proposes an express construction for our consideration and because we determine that claim construction is not necessary to decide whether to institute, we do not expressly construe any

claim terms. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that “only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy”); *see also Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs.* in the context of an *inter partes* review).

Our determination that claim construction is not necessary is preliminary and we invite the parties to further brief claim construction issues—including alleged inconsistent positions—during trial, if desired. We will base any final claim constructions on the full trial record.

*D. Discretion to Deny Institution Under 35 U.S.C. § 314(a)*¹⁰

We have discretion to deny a petition for *inter partes* review under § 314(a). *See* 35 U.S.C. § 314(a) (stating “[t]he Director may not authorize an *inter partes* review to be instituted unless”); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) (“[T]he agency’s decision to deny a petition is a matter committed to the Patent Office’s discretion.”); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“First of all, the PTO is permitted, but never compelled, to institute an [inter partes review] proceeding.” (citing 35 U.S.C. § 314(a))). “[E]vents in other proceedings related to the same patent, either at the Office, in district courts, or the ITC,” may favor “denying a petition even though some claims meet the threshold standards for institution under 35 U.S.C. §§ 314(a).”

¹⁰ Petitioner also preemptively argues that the Board “should not exercise its discretion under § 325(d).” Pet. 22. Because Patent Owner does not address the applicability of § 325(d) (*see generally* Prelim. Resp.), we do not consider whether § 325(d) applies.

Consolidated Trial Practice Guide (“Practice Guide”)¹¹ at 58 n.2 (citing *NHK Spring Co., Ltd. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 at 11–21 (PTAB Sept. 12, 2018) (precedential) (footnote omitted)). In weighing whether to exercise discretion, we balance, *inter alia*, the following factors:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board’s exercise of discretion, including the merits.

Apple Inc. v. Fintiv, IPR2020-00019, Paper 11 at 6 (PTAB Mar. 20, 2020). “These factors relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding.” *Id.* In evaluating these factors, we take “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Id.* (citing Practice Guide 58).

Patent Owner argues the Board should not exercise its discretion and deny the Petition under 35 U.S.C. § 314(a). Prelim. Resp. 18.

We address the application of the *Fintiv* factors below.

¹¹ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

1. *whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted*

The first *Fintiv* factor requires consideration of whether the district court has stayed or will stay the proceeding pending *inter partes* review. “A district court stay of the litigation pending resolution of the PTAB trial allays concerns about inefficiency and duplication of efforts.” *See Fintiv*, Paper 11 at 6. Where a stay has been entered, we weigh this factor strongly against exercising discretion to deny instituting review. *Id.*

Patent Owner, in its Preliminary Response, states that “while Deltran (a named defendant in the district court case) moved for a stay on September 20, 2024, the district court has not issued a stay of the litigation pending resolution of this proceeding.” Prelim. Resp. 19.

Patent Owner’s statement that “the district court has not issued a stay of the litigation pending resolution of this proceeding,” was not entirely accurate as of the time of the filing of Patent Owner’s Preliminary Response.¹² *Id.* at 19. The district court granted a stay in the parallel litigation on December 18, 2024—5 days *before* the Preliminary Response was due. Ex. 3001 (“Order”). According to the district court, “On balance, . . . staying [the parallel litigation] promotes judicial efficiency and is not unduly burdensome or prejudicial to NOCO.” *Id.* at 7.

¹² In this instance, the panel views this as a mere oversight. But, the parties are reminded that when the representations a party makes change, the parties should notify the Board of those changes as soon as practicable. For example, the parties could have sought authorization to file the Order as an exhibit, to file a brief reply or sur-reply, or requested a conference with the Board.

Therefore, consistent with *Fintiv*, we determine that this factor strongly weighs against exercising our discretion to deny institution.

2. *proximity of the court's trial date to the Board's projected statutory deadline for a final written decision*

Under the second *Fintiv* factor, “[i]f the [district] court’s trial date is earlier than the projected statutory deadline, the Board generally has weighed this fact in favor of exercising authority to deny institution.” *See Fintiv*, Paper 11 at 9.

Patent Owner argues that trial in the parallel litigation is scheduled for February 2, 2026, which is before a final written decision will issue in this case.

We acknowledge Patent Owner’s arguments regarding the trial date but are not persuaded in view of the stay by the district court in the parallel litigation.

Accordingly, factor 2 weighs against exercising our authority to deny institution.

3. *investment in the parallel proceeding by the court and the parties*

Under this factor, we first consider Petitioner’s timing in filing the Petition. If a petitioner, “faced with the prospect of a looming trial date, waits until the district court trial has progressed significantly before filing a petition,” that decision “may impose unfair costs to a patent owner.” *Fintiv*, Paper 11 at 11. On the other hand, “[i]f the evidence shows that the petitioner filed the petition expeditiously, such as promptly after becoming aware of the claims being asserted, this fact has weighed against exercising the authority to deny institution.” *Id.* We then consider “the amount and type of work already completed in the parallel litigation by the [district]

court and the parties at the time of the institution decision. Specifically, if at the time of the institution decision, the district court has issued substantive orders related to the patent at issue in the petition, this fact favors denial.” *See Fintiv*, Paper 11 at 9–10 (footnote omitted). Thus, the more advanced the parallel proceeding, the less likely we are to institute an *inter partes* review. *Id.* at 10.

Patent Owner asserts that “Deltran waited 10 months from the filing of the complaint to file this petition—far advanced with both the court and parties heavily invested.” Prelim. Resp. 18. By way of example, Patent Owner explains that “discovery is well underway,” claim construction briefing is complete, and a hearing will be held on January 9, 2025. *Id.* at 19–20.

We are not persuaded by Patent Owner’s arguments. First, Petitioner filed its Petition within the time period permitted under our rules. Second, the district court has not issued any substantive orders relating to the challenged patent. Instead, the district court entered a stay in the parallel litigation. Ex. 3001.

Thus, we determine that *Fintiv* factor 3 is neutral in our analysis.

4. *overlap between issues raised in the petition and in the parallel proceeding*

The fourth *Fintiv* factor requires consideration of “inefficiency and the possibility of conflicting decisions.” *See Fintiv*, Paper 11 at 12. Therefore, “if the petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, this fact has favored denial.” *Id.* (footnote omitted). The *Fintiv* panel acknowledged that “the degree of overlap is highly fact dependent”

and encouraged the parties to “indicate whether all or some of the claims challenged in the petition are also at issue in [the] district court.” *Id.* at 13. This concern, however, may be mitigated where a petitioner agrees not to pursue in the parallel district court litigation the grounds advanced in the petition. *Sand Revolution II, LLC v. Continental Intermodal Group – Trucking, LLC*, IPR2019-01393, Paper 24 at 11 (PTAB June 16, 2020). The breadth of the stipulation affects the weight given in the discretionary denial analysis. For example, a petitioner stipulating not to pursue the “same grounds” presented in a petition only *marginally* favors not exercising our discretion to deny institution whereas a petitioner stipulating not to pursue “any ground raised or that could have been raised” weighs *strongly* in favor of not exercising discretionary denial. *Id.* at 11–12 n.5; *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 18–19 (PTAB December 1, 2020) (precedential as to § II.A) (“*Sotera*”).

Petitioner argues that “if this IPR is instituted, it will not pursue in the District Court Litigation any ground raised or that could have been reasonably raised in this Petition with respect to claims 1–11 of the ’203 patent.” Pet. 28.

Patent Owner argues that Petitioner “asserts virtually identical claims, arguments, and evidence as those presented” in the parallel litigation. Prelim. Resp. 21. Patent Owner acknowledges Petitioner’s stipulation but states that it is not as expansive as Petitioner suggests and that the scope of the stipulation is ambiguous because “Petitioner does not relinquish all grounds that it reasonably could have raised in this *inter partes* review.” *Id.* at 20–21. As a result, Patent Owner contends that the factors weigh in favor of the Board denying institution.

We acknowledge the difference in language adopted by Petitioner in its stipulation but determine it is sufficiently clear and limiting. For example, Petitioner states

Deltran and Deltran Operations hereby stipulate that if the Patent Trial and Appeal Board institutes IPR on IPR2024-01219, Deltran and Deltran Operations will not pursue in this case the specific grounds identified above in connection with the referenced prior art and challenged claims as originally issued on the instituted *inter partes* review petition, or on any other ground for which the Board institutes, that was raised or could have been reasonably raised in the IPR.

Ex. 1030, 2–3.

Accordingly, we determine that *Fintiv* factor 4 weighs strongly against exercising our authority to deny institution.

5. *whether the petitioner and the defendant in the parallel proceeding are the same party*

According to the fifth *Fintiv* factor, “If a petitioner is unrelated to a defendant in an earlier [district] court proceeding, the Board has weighed this fact against exercising discretion to deny institution.” *See Fintiv*, Paper 11 at 13–14.

When the petitioner and the defendant in the parallel proceeding are the same, this tends to support discretionary denial. *See Sotera* at 19. Based on the present record, we consider *Fintiv* factor 5 to favor discretionary denial.

6. *other circumstances that impact the Board’s exercise of discretion, including the merits*

Lastly, “all the relevant circumstances,” including the merits, are considered in assessing whether to exercise discretion to deny institution of *inter partes* review. *Fintiv*, Paper 11 at 14. “[A]ll the relevant

circumstances” may include the merits of Petitioner’s underlying challenges.
Id. at 14–15.

For example, if the merits of a ground raised in the petition seem particularly strong on the preliminary record, this fact has favored institution. In such cases, the institution of a trial may serve the interest of overall system efficiency and integrity because it allows the proceeding to continue in the event that the parallel proceeding settles or fails to resolve the patentability question presented in the PTAB proceeding.

Id. (footnotes omitted).

The Director has instructed “PTAB panels to only consider compelling merits if they first determined that *Fintiv* factors 1–5 favored a discretionary denial.” *CommScope Techs. LLC v. Dali Wireless, Inc.*, IPR2022-01242, Paper 23 at 4–5 (PTAB Feb. 27, 2023) (decision on Director review) (precedential).

Here, we determine that *Fintiv* factor 3 is neutral, factors 1, 2, and 4 all weigh against exercising our discretion to deny institution, and factor 5 weighs in favor of discretionary denial. Accordingly, when considered in combination, *Fintiv* factors 1–5 do not favor discretionary denial, and we do not consider the question of compelling merits.

7. *summary*

Therefore, we consider the above factors and take “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Fintiv*, Paper 11 at 6. On this record, after weighing all of the factors and taking a holistic view, we determine that the facts presented weigh against exercising our discretion to deny institution under 35 U.S.C. § 314(a).

E. Collateral Estoppel

According to Petitioner, each of the collateral estoppel elements is met because the relevant issues were fully litigated by the Patent Owner in IPR2020-00944, involving the '023 patent ("the -00944 IPR"). In particular, Petitioner asserts that each of the relevant claim limitations were "found to be invalid over Richardson" and that the Board determined that Epower-20 and Epower-21 qualify as a prior art printed publication. Pet. 29–30. Petitioner asserts that "to the extent any of the [claim] limitations include different or additional language, those differences are not substantial differences that would create a 'new issue of validity' for the Board to resolve." *Id.* at 30.

Patent Owner argues that Petitioner's assertions misrepresent the proceedings in IPR2020-00944. Prelim. Resp. 13. According to Patent Owner, the Final Written Decision in the -00944 IPR ("’015 FWD") "finding all claims unpatentable (Ex. 1034, p. 2), with the exception of claim 11" which additionally included USB charging features. *Id.* at 14. Patent Owner explains that the Board found "that 'Petitioner's articulation of a motivation for one with ordinary skill in the art to incorporate a USB input charging port in Richardson based on Epower-20's or Epower-21's disclosure is conclusory" and that "Petitioner's expert did 'not identify any jump starter device having a USB input charging port.'" *Id.* at 15 (citing Ex. 1034, 92–93). Patent Owner contends that "[t]he '015-FWD, including its findings with respect to the USB charging features of claim 11, were subsequently affirmed as patentable by the Federal Circuit." *Id.* (citing Ex. 1015). Patent Owner asserts that the subject matter of claim 11 of the '015 patent was pursued in the application '831 application leading to the

issuance of the '203 patent. *Id.* at 16. Patent Owner explains that it successfully argued over Richardson and Epower-20 and that in the reasons for allowance, “the examiner explained that the prior art failed to teach or suggest a ‘jump starter apparatus’ having both a ‘USB port’ and a ‘DC-DC converter,’ two features that were emphasized by the examiner.” *Id.* at 17 (citing Ex. 1002, 1069, 1097, 6235–6143, 6239–6249, 6311; Ex. 2001 ¶¶ 50–53).

We agree with Patent Owner that Petitioner has not demonstrated sufficiently that collateral estoppel should apply here as to the “USB port.” Prelim. Resp. 13–14. But, Petitioner does not appear to be requesting collateral estoppel with respect to the “USB port.” Instead, Petitioner argues there is no dispute that the claim limitations 1[PRE], 1(A), 1(D)–1(G) were fully litigated in IPR2020-00944—identifying each limitation of claim except those with a “USB port.” Pet. 35, 37, 42, 43, 46, 48. Petitioner also appears to argue collateral estoppel precludes Patent Owner from disputing “the Board’s findings regarding the prior art and printed publication status of Epower-20 and Epower-21.” *Id.* at 30.

In its Preliminary Response, Patent Owner does not dispute that the above-identified limitations (i.e., limitations 1[PRE], 1(A), 1(D)–1(G)) were fully litigated nor does Patent Owner dispute that Epower-20 and Epower-21 are prior art printed publications. *See generally* Prelim. Resp.

Because Patent Owner’s arguments, at this stage of the proceeding, do not implicate collateral estoppel, we need not address whether Petitioner has demonstrated sufficiently that collateral estoppel applies here. The parties are encouraged to further develop this issue over the course of trial

including, such as, questions such as whether estoppel should be applied on a limitation by limitation basis, claim by claim basis, or otherwise.

F. Challenges Based on Richardson and Zhao

Petitioner alleges that claims 1, 3–5, and 9 of the ’203 patent are rendered obvious by Richardson and Zhao. Pet. 4, 31–54. Petitioner further alleges that claims 2, 10, and 11 would have been obvious over Richardson, Zhao, AAPA or Empower-20/Empower-21. *Id.* at 4, 54–57. In addition, Petitioner contends that claims 6–8 of the ’203 patent would have been obvious over the combination of Richardson and Zhao in further view of Krieger. *Id.* at 4, 57–59.

1. Overview of the Prior Art

a) Richardson (Ex. 1005)

Richardson is titled “Method and Apparatus for Providing Supplemental Power to an Engine. Ex. 1005, code (54). Richardson “relates to a portable power source for a motor vehicle and, more particularly, to a method and apparatus to provide supplemental power to start internal combustion and turbine engines.” *Id.* ¶ 2. Richardson explains that if “the batteries [of a motor vehicle] are cross-connected or the clamps inadvertently contact each other when one end of the jumper cables is connected to a battery, sparking can occur resulting in . . . a potential for the batteries exploding and fire[.]” *Id.* ¶ 5.

Richardson states that

[t]he present invention monitors the voltage of the battery of the vehicle to be jump started and the current delivered by the jump starter . . . to determine if a proper connection has been established and to provide fault monitoring. For safety purposes, only if the proper polarity is detected can the system operate. . . .

The system includes one or more internal batteries and capacitors to provide the power to the battery of the vehicle to be jump started. Once the vehicle is started, the vehicle's electrical system may recharge the batteries and capacitors before the unit automatically electrically disconnects from the vehicle's battery.

Id. ¶ 7.

An example jump starter 10 (illustrated by a schematic of Figure 1 and by circuit diagrams of Figures 2A–D) includes microprocessor 12, sensors, LED indicators, capacitors 21 and batteries 22 that collectively supply charging power for charging a vehicle battery, two in-series shunt cables 36, 37 that carry the charging power to the vehicle battery, and contact relay 34 that selectively gates the charging power to the vehicle battery (relaying between the shunt cables 36, 37). *Id.* ¶¶ 12, 14, 16, Fig. 1. When jump starter 10 is powered on, microprocessor 12 initializes the hardware, reads all system parameters and variables, and initializes an interrupt service routine. *Id.* ¶ 22. As part of the routine, a voltage is measured to determine whether cables 36, 37 have been reverse connected to the vehicle. *Id.* ¶ 27. If so, then microprocessor 12 prevents jump starting until the reverse polarity condition is corrected. *Id.* Similarly, another voltage is measured to determine whether jump starter batteries 22 are not sufficiently charged. *Id.* ¶ 28. Microprocessor 12 prevents jump starting until jump starter batteries 22 are sufficiently charged. *Id.* ¶¶ 28–29.

When the jump starter has been successfully initiated, contact relay 34 is closed and jump starter capacitors 21 and batteries 22 connect to the vehicle battery. *Id.* ¶ 21. Contact relay 34 is opened if the start cycle has successfully completed, a start fault occurs, or the operator interrupts the start cycle. *Id.*

Jump starter 10 may be selectively configured for 12, 18, 24, 30, 36, 42, or 48 volts. *Id.* ¶ 34. For example, if batteries 23 are both 12-volt batteries, the system may be configured for 12-volt or 24-volt operation. *Id.*

b) Zhao (Ex. 1006)

Zhao is titled “Step-up Battery Charging Management System and Control Method Thereof.” Ex. 1006, code (54). Zhao states that

Battery charging systems typically utilize . . . an input supplied by a power supply adapter[] and an output coupled to a single-cell battery[] or multi-cell batteries. A universal serial bus (USB) power supply system usually has a rating power supply voltage of 5V. A single-cell lithium battery can employ . . . step-down topology to charge the single-cell battery. Step-up topology can be used in battery management systems with series connected multi-cell lithium batteries. However, in some circumstances, such as high input current or short-circuit at the output, if relatively large current is used directly for charging, the electronic device and/or its battery can be damaged.

Id. at 1:19–30. Figure 1, reproduced below, is an exemplary charger.

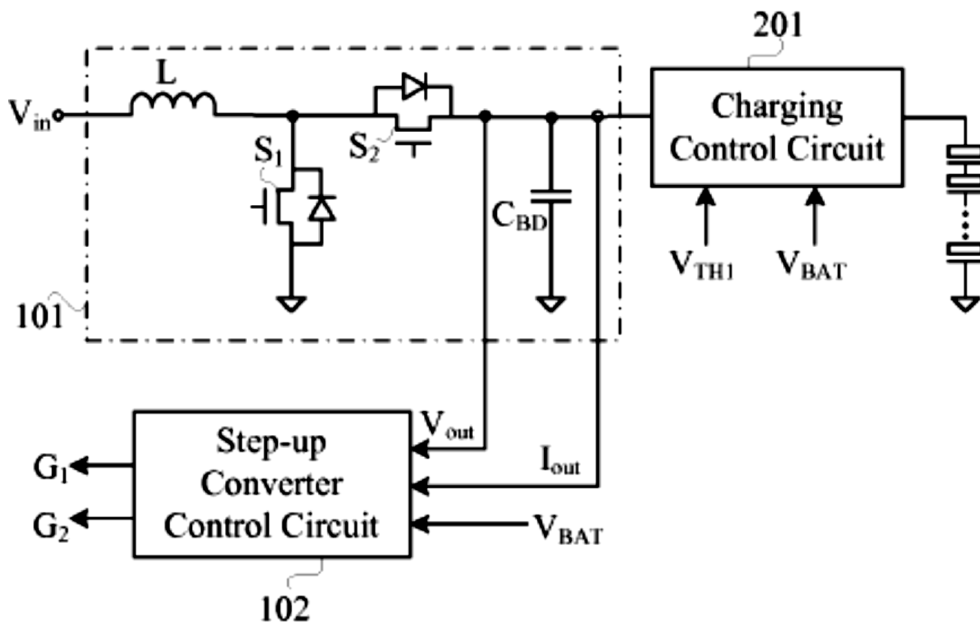


Figure 1 “is a schematic block diagram of a first example step-up battery charger in accordance with embodiments of the present invention.” *Id.* at

1:59–61. Step-up battery charger 100 principally includes step-up converter control circuit 102, charging control circuit 201, and power stage circuit 101. *Id.* at 2:63–3:39. Step-up converter portion 101, 102 of charger 100 receives and boosts a DC input voltage V_{in} to generate and output a boosted output signal to charging control circuit 201 for charging of in-series lithium batteries. *Id.* at 3:1–7. DC input voltage V_{in} is provided by a “universal serial bus (USB) charger[] or any other suitable low voltage power supply system.” *Id.* at 3:8–11.

2. *Analysis of Claim 1*

Petitioner argues that the combination of Richardson and Zhao renders claim 1 obvious. Pet. 31–49. Petitioner contends that the Board previously determined each of claim limitations 1[PRE], 1[A], and 1[D]–1[G] were taught by Richardson and are subject to collateral estoppel. Pet. 35, 37, 42, 43, 46, 48. Petitioner further alleges that even if collateral estoppel does not attach, Richardson teaches each of these limitation.

In particular, Petitioner alleges that “Richardson describes ‘[j]ump starter 10’ which includes ‘microprocessor 12’ to control the system, thereby allowing the jump starter to boost or charge a vehicle battery by connecting the internal batteries of the jump starter to the positive and negative terminals of a vehicle battery,” and meeting limitation 1[PRE]. *Id.* at 35 (citing Ex. 1005 ¶¶ 4, 7, 14, 16, 21, 35, Fig. 1, Fig. 2C, Figs. 3–8; Ex. 1003 ¶¶ 80–81). Petitioner contends that “Richardson teaches its jump-starting apparatus has ‘one or more batteries,’” as described in limitation 1[A]. *Id.* at 35–37 (citing Ex. 1005 ¶¶ 7, 16, 21, 35, 55, Abstr., Figs. 1, 2A; Ex. 1003 ¶¶ 83–85). In addition, Petitioner asserts that “Richardson’s system uses vehicle voltage sensor 30 to monitor voltage received from the vehicle

system on line 37 to determine the plugged or unplugged status of the jumper cables, indicating whether a vehicle battery is present (*i.e.*, connected to the jump starter) or absent (*i.e.*, disconnected),” and a reverse voltage sensor to determine if the cables have been properly connected thereby disclosing the vehicle battery isolation sensor and reverse polarity sensor of limitations 1[D] and 1[E], respectively. *Id.* at 41–46 (citing Ex. 1005 ¶¶ 7, 16, 20, 27, 34, 41, Figs. 1, 3–6; Ex. 1003 ¶¶ 101–106, 116). According to Petitioner, Richardson includes a power switch, or contact relay, to turn on power and the power supply is controlled by receiving separate signals from the isolation sensor and reverse polarity sensors, as described by limitations 1[F] and 1[G], respectively. *Id.* at 46–49 (citing Ex. ¶¶ 21, 35–36, 54, Figs. 1, 3, 6; Ex. 1003 ¶¶ 107–111).

Petitioner further alleges that limitations 1[B] and 1[C] are met by the combination of Richardson and Zhao. *Id.* at 37–41. For example, Petitioner asserts that “Richardson does not describe the type of input connector utilized for charging the jump starter batteries,” but “Zhao teaches using a USB input to receive power from an external power source” and that a person of ordinary skill in the art would understand that “a USB charging circuit would necessarily include a USB port.” *Id.* at 37–38 (citing Pet. §§ XI.A.1, XI.A.2.b; Ex. 1003 ¶ 86). In addition, Zhao describes a step-up DC-DC converter to boost the input signal to a higher output voltage. *Id.* at 38–39 (citing Ex. 1005 ¶¶ 20, 28–29; Ex. 1006, 1:22–27, 1:34–55, 2:51–3:11, 4:39–41, Abstr.; Ex. 1003 ¶¶ 87–89). Petitioner contends that a person of ordinary skill in the art would have had reason to combine Zhao’s USB port and DC-DC boost converter because both references share the same architecture and describe systems for charging battery-powered devices

using multicell series-connected battery pack. *Id.* at 31 (citing Ex. 1005 ¶ 34; Ex. 1006, 2:63–3:11; Ex. 1003 ¶ 75). Petitioner further argues that including “USB charging via a DC-DC boost converter” in Richardson would effectively charge the batteries of the jump starter using ubiquitous, widely-available technology. *Id.* (citing Ex. 1003 ¶ 74); *see id.* at 39 (citing Ex. 1003 ¶¶ 89–90; Ex. 1006, 3:6–11, 4:39–41). Specifically Petitioner explains that implementing its proposed modification amounts to including a known technique—i.e., charging a battery rated above 5V with a 5B USB input—to achieve a predictable result of charging 12V batteries of Richardson. *Id.* at 32 (citing Ex. 1003 ¶ 77). The combination results in a reliable and easy way for users to charge the batteries of a jump starter. *Id.* Petitioner acknowledges that charging may be slower but would be suitable and would provide an alternative charging means. *Id.* at 33 (citing Ex. 1003 ¶¶ 78–79); *see also id.* at 39 (stating that “the jump starter batteries can be charged via a traditional high-voltage input . . . [and] when an AC power-outlet is unavailable—the user can rely on a USB technology power outlet”). Petitioner explains that USB technology has been widely-adopted and very popular, is supported by billions of consumer devices, provides convenience to the user, and has become standard equipment on vehicles. *Id.* at 39–40 (citing Ex. 1003 ¶¶ 90–91; Ex. 1025, 6; Ex. 1024 ¶¶ 1–4, 8; Ex. 1049, 1; Ex. 1031; Ex. 1032; 1016 ¶ 2; Ex. 1009, 1:18–23). Petitioner also asserts that USB charging of jump starter batteries would have been known by a person of ordinary skill in the art at the time of invention, as reflected in Chinese Patent No. CN203788026, filed on April 18, 2024. *Id.* at 41 (citing Ex. 1022; Ex. 1023 ¶¶ 3–9, 13, 16–17, Fig. 1, claim 1; Ex. 1003 ¶¶ 92–98). Petitioner asserts a person of ordinary skill in the art would have had a

reasonable expectation of success in the combination of Richardson and Zhao because (1) a person of ordinary skill in the art “would have been familiar with the relevant USB standards . . . when designing a portable battery-powered device,” (2) “Zhao describes the details of the USB charging circuit in sufficient detail . . . to implement the circuit in Richardson’s system,” and (3) “the ’203 patent inventors believed that others in the industry would be readily able to produce a jump-starter that includes USB charging.” *Id.* at 33–34 (citing Ex. 1003 ¶¶ 78–79; Ex. 1053, 159).

Patent Owner, at this time, does not challenge many of Petitioner’s allegations regarding the teachings of Richardson and Zhao. *See generally* Prelim. Resp. Instead, Patent Owner argues that Petitioner fails to establish a reason to combine Richardson and Zhao and a person of ordinary skill in the art would not have had a reasonable expectation of success in the combination. On this preliminary record, Petitioner’s unchallenged arguments and evidence are sufficient for purposes of institution. We address Patent Owner’s arguments below.

a) Whether Petitioner Has Shown a Reason to Combine Richardson and Zhao

Patent Owner argues that “Petitioner has failed to demonstrate that a [person of ordinary skill in the art] would have combined the teachings of Richardson and Zhao.” Prelim. Resp. 27–36.

(1) Alleged deficiency of Petitioner’s reason to combine Richardson and Zhao

Patent Owner argues that Petitioner’s position relying on use of a known technique to improve similar devices does not apply because if true, “it would have been obvious to charge a full-size electric vehicle battery (*e.g.*, a Tesla Model 3’s battery) using USB, since it is similarly formed of

modules of ‘multicell battery pack[s] of series-connected cells.’” Prelim. Resp. 28–29. According to Patent Owner, “one cannot simply ignore the capacity of the battery pack being charged.” *Id.* at 29 (citing Ex. 2001). Patent Owner contends that “Zhao does not teach or suggest applying its techniques at voltages above 8.4V or to devices having large-capacity batteries.” *Id.* (citing Ex. 1006, 4:39–41). Patent Owner argues that the Petition fails to demonstrate boosting a 5V USB to charge high voltage larger capacity batteries like those required for jump starting a vehicle. *Id.* Patent Owner states that “charging such a large-capacity battery with [a] USB was counterintuitive, not because boost converting an input voltage was not understood in the art, but instead because it was well understood that the limited charging current that traditional USB provided was not capable of quickly charging high-capacity battery systems.” *Id.* at 30 (citing Ex. 2001 ¶ 91). Patent Owner argues that “[b]y failing to address even the primary reason—better capacity, not voltage—that a [person of ordinary skill in the art] would not have applied a USB charging circuit to a jump starter,” Petitioner has failed to show a reason to combine. *Id.*

On this record, we are not persuaded by Patent Owner’s arguments that Petitioner ignores the capacity of the battery pack being charged in Richardson. Though Richardson expresses some desire to start a fleet of vehicles (Ex. 1005 ¶ 55), voltages up to 48 volts (*id.* ¶¶ 34, 54), and rapid recharging (*id.* ¶ 54), Richardson’s teachings are not so limited. Indeed, Richardson broadly describes a battery charger for charging a vehicle battery and voltages ranging from 12 to 48 volts. *Id.* ¶¶ 2, 6, 34, 54. Furthermore, Richardson does not discuss any specific capacity requirements. *See generally id.* We acknowledge Dr. Fayed’s testimony that because of the

high battery capacity of Richardson, a person of ordinary skill in the art would not have used a USB port to charge a Richardson's system. Ex. 2001 ¶ 91. But, missing from Dr. Fayed's testimony is evidentiary support for his testimony, including the specific limits of charging by USB at the relevant time, or an understanding of what capacity is required.

Instead, on this record, we determine Petitioner's allegations are adequately supported for purposes of institution. For example, Petitioner has shown that an ordinary artisan would have understood that Zhao's step-up converter can "charge a plurality of series connected (e.g., lithium) batteries" (Pet. 39; *see* Ex. 1006, 3:6–11) and that Zhao would "be well-suited for starting a traditional lead-acid vehicle starter battery" like the one in Richardson (*see* Pet. 44–45; Ex. 1003 ¶ 89). Zhao describes an example that "8.4V [can be achieved] if two lithium batteries are connected in series" (*id.*) and Zhao teaches using series connected multi-cell batteries in its battery management system. Ex. 1006, 1:25–27, 3:6–8. Similarly, Dr. MacCarley testifies that "Zhao's system is suitable for use with a battery such as a 4S (4 cells in series) pack of lithium-ion cells nominally rated at 14.8V (which would be well-suited for starting a traditional lead-acid vehicle having an electrical system nominally rated at 12V)." Ex. 1003 . ¶ 89 (citing Ex. 1006, 3:6–11). Thus, record evidence suggests that a person of ordinary skill in the art desiring voltages greater than 8.4 volts would have understood voltage output could be increased using additional batteries in series.

(2) That Richardson's system would suffer in performance if combined with USB charging

Patent Owner also argues that the Petition fails because “Richardson is not a traditional portable jump starter, but rather a heavy-duty jump starter with very powerful internal batteries that, despite their large charge capacity demands, can be recharged in a short period of time and then used to jump a fleet of vehicles, such as a commercial truck fleet.” Prelim. Resp. 30 (citing Ex. 1005 ¶¶ 7, 55; Ex. 2001 ¶92). While Richardson acknowledges that normal vehicles have charging voltages of 12, 18, 24, 30, 36, 42 and 48 volts, “its jump starter has to be powerful enough to accommodate the demands of batteries up to 48 volts by appropriately configuring the batteries in the jump starter and selecting voltage outputs.” *Id.* at 31 (citing Ex. 1005 ¶¶ 34–35, 54). Patent Owner contends that “[a] 48 volt battery pack would require four times the number of series-connected battery cells of a typical 12V vehicle charger, assuming peak current is maintained” and “[c]harging Richardson’s system would therefore take at least four times longer than a jump starter designed to jump start only 12 volt vehicle batteries.” *Id.* (citing Ex. 2001 ¶ 93). Patent Owner therefore asserts that a person of ordinary skill in the art “would have recognized that it would have been nonsensical to charge Richardson’s massive internal battery with a USB, as it would have drastically increased the charging time of the device.” *Id.* at 32 (citing Ex. 2001 ¶ 94).

At this stage of the proceeding, Patent Owner’s arguments are not persuasive. Patent Owner stresses that Richardson is a powerful jump starter and focuses on requirements of 48 volts (Prelim. Resp. 31), but Richardson’s jump starter charges batteries of varying voltages, including 12, 18, 24, 30,

36, 42, and 48 volts. Ex. 1005 ¶¶ 34, 54. Claim 1 of the '203 patent recites “a USB port” and “a DC-DC converter coupled between the USB port and the one or more rechargeable batteries and configured to increase a voltage received from the external power source for charging the one or more rechargeable batteries” (Ex. 1001, 8:36–42), which Petitioner has adequately shown is suggested by the combined teachings of Richardson and Zhao. Pet. 37–41. We also disagree that limitation 1[C] requires increasing to a particular power voltage or battery capacity. See Ex. 1001, 8:40–9:6, 11:4–6, 11:46–12:49, 13:29–65, 14:11–15:12. Furthermore, though a USB port may have resulted in increased charging time, a person of ordinary skill in the art would have considered the relative advantages, including convenience and availability, against these disadvantages in assessing the combination. “The fact that the motivating benefit comes at the expense of another benefit, however, should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another.” *Winner Int’l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000). One of ordinary skill in the art would have considered both the advantages and disadvantages and balanced the relative tradeoffs in making the proposed combination. *Id.* Here, Petitioner recognizes the tradeoff and states that “when a non-depleted vehicle battery is not available [i.e., Richardson’s disclosed charging technique], a user could charge the jump starter batteries using a USB input (e.g., leaving it charging overnight).” Pet. 32–33.

(3) *That Richardson focuses on rapid recharging*

Patent Owner argues that “[e]ven though Richardson’s system includes a huge battery pack, the main focus of the disclosure is to provide a

jump starter than may be rapidly recharged.” Prelim. Resp. 32 (citing Ex. 2001 ¶ 96). Because of its ability to rapidly recharge its large-capacity batteries, Patent Owner argues that Richardson is particularly “‘useful when starting fleets of vehicles with dead batteries,’ since the device may be ‘rapidly recharged to start many vehicles in a row.’” *Id.* at 32–33 (citing Ex. 1005 ¶ 55). Therefore, Patent Owner reasons that a person of ordinary skill in the art would not have “modified Richardson’s jump starter to include a traditional USB charger which, again, had much lower power capabilities than other charging options available at the time” *Id.* at 33 (citing Ex. 2001 ¶ 97).

On this record, we are unpersuaded by Patent Owner’s arguments relating rapid recharging. Though Richardson discusses rapid recharging in its next to last paragraph, Richardson does not mandate rapid recharging. Ex. 1005 ¶ 55.

Furthermore, Petitioner’s combination does not remove any existing capability of Richardson; Richardson remains capable of rapid recharging using its original circuitry under Petitioner’s combination. Indeed, Petitioner’s proposed combination *adds* USB functionality to the Richardson system. For example, Petitioner explains that

the inclusion of a standardized power input port such as USB would provide a reliable and ubiquitous power input for users to easily charge the batteries. Although USB charging may be slower than charging via the vehicle’s battery taught by Richardson, the addition of a USB charging to Richardson’s system would allow the jump starter batteries to be charged in [different] ways.

Pet. 32. Petitioner further explains that the USB would have been advantageous “when a non-depleted vehicle battery is not available [i.e.,

Richardson’s disclosed charging technique], a user could charge the jump starter batteries using a USB input (e.g., leaving it charging overnight).” *Id.* at 32–33. Thus Petitioner does not propose a substituting USB charging for Richardson’s existing charging method, but instead proposes an additional, alternate charging method, as a backup. *Id.*

(4) *That Richardson relies on recharging from a connected vehicle*

Patent Owner asserts that “the Petition also oversimplifies the complexities associated with adding a second charging means to Richardson’s system” which already includes red and black shunt cable ports. Prelim. Resp. 33 (citing Ex. 2001 ¶ 98). No other method of charging the batteries is shown in Richardson. *Id.* at 33–34 (citing Ex. 1005, Figs. 2A, 2C. Patent Owner contends that adding a second charging path “would add additional cost and complexity to the device,” “would have been a less common design choice, and one that would have required additional circuitry to address the safety risk of a user plugging in two chargers at the same time.” *Id.* at 34–35 (Ex. 2001 ¶¶ 99). Furthermore, Patent Owner argues that because Richardson’s system “is already capable of being recharged either by connecting its red and black shunt cable ports to a vehicle battery or to a battery charger,” a person of ordinary skill in the art would not have had reason to include a USB port. *Id.* at 35 (citing Ex. 1005 ¶¶ 28, 55). And, according to Patent Owner, if an additional charging mechanism was desirable, a person of ordinary skill in the art would have chosen other suitable charging arrangements available at the time that focus on quick charging. *Id.* (citing Ex. 2001 ¶¶ 88–102).

We are similarly unpersuaded by Patent Owner’s arguments based on Richardson’s existing charging methodology. As discussed above, Petitioner proposes *adding* a USB input port as an alternative charging means to Richardson’s red and black shunt cables. To be sure, a second charging path would likely add cost and complexity to the existing device. But a person of ordinary skill in the art would have understood such disadvantages may be offset by advantages of flexibility, availability, and convenience. Ex. 1003 ¶ 77; *Winner*, 202 F.3d at 1349 n.8. Petitioner explains that USB technology is widely-available, reliable, and ubiquitous and “would [have] drastically increase the availability of power sources (i.e., USB outlets) that could be used to charge the jump starter’s batteries.” Pet. 31–32, 39–40 (citing Ex. 1003 ¶¶ 77, 90).

Thus, Petitioner’s proposed reasons to combine Richardson and Zhao are supported by rational underpinnings.

b) Whether Petitioner Has Established a Reasonable Expectation of Success in the Combination of Richardson and Zhao

Patent Owner argues that Petitioner has failed “to demonstrate **how** the step-up converter of Zhao would allegedly be incorporated into Richardson’s jump starter” with a reasonable expectation of success. Prelim. Resp. 36–41.

Patent Owner alleges that “[t]he Petition provides no explanation as to how a [person of ordinary skill in the art] would have actually incorporated Zhao’s step-up charging system into Richardson’s jump starter.” Prelim. Resp. 37. Patent Owner states that “Richardson’s schematics do not show any other way to charge the batteries 22 other than the path through the jumper cables 60” and that Petitioner only “superficially argues that ‘Zhao

describes the details of the USB charging circuit in sufficient detail for a [person of ordinary skill in the art] to implement the circuit in Richardson’s system.” *Id.* at 37–38 (citing Ex. 1005, Figs. 2A, 2C; Ex. 2001 ¶ 105; Pet. 33).

Patent Owner also argues that “the Petition provides no evidence demonstrating that Zhao’s system could be successfully implemented in Richardson’s specific jump starter system.” Prelim. Resp. 40 (citing Ex. 2001 ¶ 108). In particular, Patent Owner asserts that the Petitioner fails to “address whether Zhao’s boost converter could have boosted a 5V input voltage to a voltage suitable to charge a 48 volt battery.” *Id.* at 40–41. Instead, Patent Owner contends that “the only relevant evidence that Petitioner provides shows that boost converters have limited output voltage capabilities” and “given that Zhao only describes boosting an input voltage up to ‘8.4 volts,’ it was unreasonable for Petitioner to simply assume that Zhao’s step-up converter could properly function in Richardson’s jump starter.” *Id.* at 41 (citing Ex. 2001 ¶ 109); *see* Ex. 2001 ¶¶ 104–110.

On this record, Petitioner sufficiently establishes a reasonable expectation of success in the combination of Richardson and Zhao. For example, Petitioner states that USB technology was widely-known and a person of ordinary skill in the art “would have been familiar with the relevant USB standards” and “would have necessarily relied upon their knowledge regarding the implementation of commercially available USB receptables (such as a micro-USB receptable) when designing a USB charging feature.” Pet. 33 (citing Ex. 1003 ¶ 78). Furthermore, Petitioner directs our attention to the teachings of Zhao which Petitioner alleges “describes the details of the USB charging circuit in sufficient detail for a

[person of ordinary skill in the art] to implement the circuit in Richardson’s system.” *Id.*; see Ex. 1003 ¶¶ 78–79 (citing Ex. 1006, 3:3–26, 8:21–24).

Furthermore as discussed above, Zhao suggests voltages sufficient to charge a vehicle battery. Though Zhao exemplifies a boost converter with a threshold voltage of about 8.4 volts, a person of ordinary skill in the art would have understood higher voltages could be achieved. For example, Zhao explains that series connected multi-cell batteries can be used to step-up an output voltage that is greater than the input voltage. Ex. 1006, 1:25–45; 2:51–54, 2:63–3:11; Ex. 1003 ¶¶ 75–76. Zhao’s example utilizes 2 serially connected lithium batteries to achieve about 8.4 volts; but, the skilled artisan would have known that to increase output voltage, additional batteries could be included in series. Ex. 1003 ¶¶ 88–89. Dr. MacCarley testifies that “Zhao’s system is suitable for use with a battery such as a 4S (4 cells in series) pack of lithium-ion cells nominally rated at 14.8V (which would be well-suited for starting a traditional lead-acid vehicle having an electrical system nominally rated at 12V).” *Id.* ¶ 89 (citing Ex. 1006, 3:6–11).

Accordingly, we are persuaded that Petitioner has shown sufficiently at this stage of the proceeding that the ordinarily skilled artisan would have had a reason to combine Richardson and Zhao with a reasonable expectation of success in the combination.

3. *Remaining Claims 2–11*

Petitioner also alleges that the subject matter of dependent claims 3–5, and 9 is rendered obvious by the combination of Richardson and Zhao. Pet. 49–54. Petitioner further asserts that claims 2, 10, and 11 would have been obvious over the combination of Richardson, Zhao, in further view of

applicant admitted prior art (“AAPA”) or Epower-20/Epower-21 and that that claims 6–8 would have been obvious over the combination of Richardson, Zhao, and Krieger. Pet. 4, 54–59. Patent Owner does not separately address remaining claims 2–11 beyond what is argued for independent claim 1. *See generally* Prelim. Resp. Having determined that Petitioner satisfies the threshold showing under 35 U.S.C. § 314(a) for institution of trial with respect to at least one challenged claim of the ’203 patent, we order that trial shall proceed on all claims and all challenged grounds. *SAS Institute Inc. v. Iancu*, 584 U.S. 357, 360–361 (2018).

G. Challenges Based on Yu and Paparrizos

Petitioner alleges that claims 1, 3–5, and 9 of the ’203 patent are rendered obvious by Yu and Paparrizos. Pet. 4, 59–76. Petitioner further alleges that claims 2, 10, and 11 would have been obvious over Yu, Paparrizos, and AAPA or Empower-20/Empower-21. *Id.* at 4, 76–77. In addition, Petitioner contends that claims 6–8 of the ’203 patent would have been obvious over the combination of Yu and Paparrizos in further view of Krieger. *Id.* at 4, 77–78.

1. Overview of the Prior Art

Petitioner alleges that claims 1, 3–5, and 9 of the ’203 patent are rendered obvious by Yu and Paparrizos. Pet. 4, 59–76. Petitioner further alleges that claims 2, 10, and 11 would have been obvious over Yu, Paparrizos, and AAPA or Empower-20/Empower-21. *Id.* at 4, 76–77. In addition, Petitioner contends that claims 6–8 of the ’203 patent would have been obvious over the combination of Yu and Paparrizos in further view of Krieger. *Id.* at 4, 77–78.

a) *Yu (Ex. 1008)*

Yu is titled “Automotive Emergency Starting Device.”

Ex. 1008, code (54). Yu “relates to an automotive starting device [and], specifically, an emergency automotive starting device” (*id.*, Abstr.), i.e., jump starter. Yu states

A common emergency automotive starting power supply is a lead-acid battery that replaces the original car battery. . . . [T]he lead-acid battery itself is relatively heavy and large, . . . lacks a polarity detection function, [and, if] the polarity of the connected emergency starting power supply is opposite to that of the original automobile battery, . . . damage to the battery may occur[] and even an explosion in severe cases. Additionally, . . . [s]parks can be generated instantly when the emergency power supply is connected or disconnected.

Id. ¶ 2. Yu explains that

The emergency automotive starting power supply in the present invention will not power on when the emergency starting power supply is connected to the automobile circuit with reversed polarity. In addition, the emergency automotive starting power supply in the present invention can effectively prevent the generation of electric sparks when connecting or disconnecting from the vehicle, improving safety.

Id. ¶ 3.

An example of the jump starter (illustrated by a schematic of Figure 1 and circuit diagrams of Figures 2–5) is described as follows:

[The jump starter principally] consist[s] of an internal battery 1, a charging input 10 interface, a display module 5, a control module 4, a relay 2, input buttons 6 and an output terminal 3[.] . . . [T]he main contacts of the relay 2 are connected to the internal battery 1 and the output terminal 3[. T]he control module 4 includes a microprocessor 42, which controls the opening and closing of the relay 2 through the relay switch circuit 41 to control current output from the internal battery 1 to the

output terminal 3[. The control module 4 also includes an external battery reverse connection detection circuit 44 that provides a signal [indicating] correct or incorrect [connection of the internal battery 1 to the external battery, i.e., vehicle battery].

Id. ¶ 21. The jump starter also includes voltage detection circuits 43, 45 respectively for the internal battery 1 and the external battery. *Id.* ¶¶ 22–23. The jump starter has an additional input and outputs as follows: a charging input 10 (only perspective view shown; no internal schematics presented) for charging of the internal battery 1 (*id.* ¶ 28, Fig. 8); and 5V, 19V, and 12V output terminals 8, 9, 11 for supplying power to “other electrical equipment” (*id.* ¶¶ 25, 28).

During a jump start operation, output terminal 3 is connected to the vehicle battery. *Id.* ¶ 26. Depending on whether output terminal 3 is connected to the vehicle battery with incorrect polarity or correct polarity, microprocessor 42 accordingly controls connection of internal battery 1 to the vehicle battery by keeping open relay 2 (incorrect polarity) or closing relay 2 (correct polarity). *Id.* Once output terminal 3 is correctly connected to the vehicle battery (correct polarity), microprocessor 42 closes relay 2, the vehicle is started, and microprocessor 42 then opens relay 2. *Id.*

b) Paparrizos (Ex. 1009)

Paparrizos is titled “Buck Boost Charging for Batteries.” Ex. 1009, code (54). Paparrizos describes “a battery charging circuit having several operating modes includ[ing] boost and buck mode, and forward and reverse mode.” *Id.*, Abstr. Paparrizos explains that “[c]onsumers are used to . . . battery charging from a USB power source. However, since a large majority of USB devices are defined at 5V, it may not be possible to charge high

voltage (>5V) [Li-ion cell stacks] using a typical[] USB power source.” *Id.* at 1:9–26. The battery charger of Paparrizos, therefore,

include[]s first and second terminals . . . [whereby] power received at the first terminal (e.g., via a power source) may be delivered to a device at the second terminal (e.g., electronics or a battery), and vice-versa. The battery charging circuit may operate in buck mode (power stepped down) or boost (power stepped up) mode, and in the forward mode (power from first terminal delivered to second terminal) or reverse mode (power from the second terminal delivered to the first terminal).

Id. at 1:30–39. Paparrizos explains that “the electronic device 22*b* may be a USB device that outputs only 5V[] but must charge an 8.4V battery” and whereby “the battery 14 may supply 8.4V to electronic device 22*b* which is rated to operate at . . . 5V per the USB specification.” *Id.* at 3:58–4:14. Voltages higher than 8.4V are contemplated by Paparrizos. *Id.* at 2:32–40 (“The battery voltage of such batteries typically range from 6–8.4V but can provide lower or higher voltages.”).

2. *Analysis of Claim 1*

Petitioner argues that the combination of Yu and Paparrizos renders claim 1 obvious. Pet. 59. Petitioner contends that limitations 1(preamble) and 1(A) are taught by Yu’s disclosure of a jump-starting device and an “internal battery,” i.e., a power supply. *Id.* at 61 (citing Ex. 1008, Abstr., claim 1, ¶¶ 1, 3–4, 9, 21, 26, Figs. 1, 8; Ex. 1003 ¶¶ 143–144). Petitioner contends that limitation 1(D) is taught by Yu’s control system consisting of a microprocessor connected to sensors which include “an external battery voltage detection circuit.” Pet. 66 (citing Ex. 1008, claim 3, ¶¶ 6, 9, 23, 26–27, Figs 1–2). Petitioner contends limitation 1(E) is taught by Yu’s external battery reverse connection detection circuit which is a reverse polarity sensor. *Id.* at 69 (citing Ex. 1008, Abstr., claim 1, claim 3, ¶¶ 3, 4, 6, 21, 23,

26–27, Figs. 1–2; Ex. 1003 ¶¶ 161–162). Petitioner also contends that Yu describes relay 2 that is opened and closed by a relay switch circuit to control current output from the internal battery to the output terminal. Pet. 71–72 (citing Ex. 1008, Abstr., claim 1, ¶¶ 4, 9, 1, Figs. 1–2; Ex. 1003 ¶ 163).

With respect to the USB connector, i.e., limitation 1(B), Petitioner asserts that “Yu discloses a charging input interface, which can be a 12V/1A barrel-style receptacle” and that a person of ordinary skill in the art would have been motivated to include the widely-adopted USB input feature of Paparrizos as an alternative charging option. *Id.* at 63 (citing Ex. 1008, Abstr., Fig. 9; Ex. 1009, Abstr., 7:66–67, 8:7–9; Ex. 1003 ¶¶ 147–149). Petitioner also argues that Paparrizos describes “USB charging features includ[ing] a battery charging circuit which can operate in a ‘boost (power stepped up mode)’ and a ‘forward mode’” to enhance USB input/output to charge an internal battery. *Id.* at 65 (citing Ex. 1009, 1:34–38). Petitioner explains that a person of ordinary skill in the art would have understood that the “buck boost circuit [] operates ‘as a boost converter’” when in forward mode and is therefore equivalent with a DC-DC converter because “it converts a DC 5V USB input to a higher voltage DC output to charge a rechargeable battery.” *Id.* (citing Ex. 1009, 4:36–39, 3:11–23; Ex. 1003 ¶¶ 153–154).

Petitioner explains that a person of ordinary skill in the art would have modified Yu with Paparrizos as an alternative so that Yu’s device could be “charged with a 12V power input (if available) and the 5V USB input when an outlet providing 12V is not available.” Pet. 63. Petitioner contends that Paparrizos “teaches charging high voltage batteries using a 5V USB input”

and that “Paparrizos recognizes the convenien[t] benefits of utilizing the ‘very popular [USB specification]’ to allow consumers ‘to charge their USB devices from universal USB power sources.’” *Id.* (citing Ex. 1009, 7:66–67, 8:7–9; Ex. 1003 ¶¶ 147–148). Petitioner contends the USB charging circuit “activate[s] the DC-DC boost circuit when the input voltage is detected to be lower than the charged voltage charging level (i.e., the fully-charged voltage level of the battery)” acknowledging that “different input voltages can be used.” *Id.* at 63–64 (citing Ex. 1009, 8:10–28). Therefore, Petitioner explains that a person of ordinary skill in the art would have understood the benefits of allowing for multiple different input voltages and would have been “motivated to include the additional USB input” based on knowledge in the art of USB charging of high-voltage batteries, such as jump-starters. Pet. 63–64 (citing Ex. 1003 ¶ 149).

Patent Owner, at this time, does not challenge many of Petitioner’s allegations regarding the teachings of Yu and Paparrizos. *See generally* Prelim. Resp. Instead, Patent Owner argues that Petitioner

(1) fails to address why a [person of ordinary skill in the art] would have modified a jump starter system having a large-capacity battery to include a USB charging input, and (2) completely ignores teachings in Yu that weaken the proposed combination [and in] doing so, [] fail[s] to meet its burden to demonstrate that a [person of ordinary skill in the art] would have combined the specific teachings of Yu and Paparrizos.

Prelim. Resp. 42.

At this stage of the proceeding, Petitioner’s arguments and evidence are sufficient to show that each limitation of claim 1 of the ’203 patent are present in the combination of Yu and Paparrizos. We address Patent Owner’s argument below.

*a) Whether Petitioner Has Shown a Reason to
Combine Yu and Paparrizos*

Patent Owner asserts that Petitioner failed to demonstrate that a person of ordinary skill in the art would have combined the teachings of Yu and Paparrizos. Prelim. Resp. 42.

*(1) Alleged deficiency of Petitioner’s reason to
combine Yu and Paparrizos*

Patent Owner argues that the Petition is insufficient to support the modification of Yu’s jump-starter to include a USB input system based upon Petitioner’s assertion of a known technique to improve similar devices. Prelim. Resp. 42–43. Specifically, Patent Owner contends a person of ordinary skill in the art would not consider the “small battery systems contemplated by Paparrizos and the vehicle jump starter described by Yu to be ‘similar devices.’” Prelim. Resp. 43. Patent Owner explains that Paparrizos does not teach or suggest charging “high-capacity battery systems” such as jump starters or comparable devices. *Id.* at 43–44 (citing Ex. 2001 ¶ 114; Ex. 1009, 4:48–58). According to Patent Owner, the limits of traditional USB capabilities were well understood and a person of ordinary skill in the art would not have relied on USB charging circuits because USB circuits are “not capable of quickly charging high-capacity battery systems.” *Id.* at 44 (citing Ex. 2001 ¶ 115). According to Patent Owner,

Paparrizos’ techniques relate to charging of “[c]omputer tablets and other mobile devices, such as mobile phones, digital SLR cameras, video recorders, audio devices” with battery packs that “typically range from 3.0V to 8.4V,” not to charging jump starters or comparable devices. In fact, Paparrizos expressly notes that “the USB specification imposes current limits for various devices that can be connected to the battery charging

circuit,” which further confirms that its charging circuit is not intended for charging large-capacity battery systems.

Prelim. Resp. 43 (internal citations omitted).

Based on this rationale, Patent Owner contends that Petitioner fails to demonstrate why a person of ordinary skill in the art would have applied the low current charging of traditional USB systems in combination with a high-capacity battery system. Prelim. Resp. 44.

Patent Owner’s arguments are unpersuasive based on the current record. Patent Owner’s argument that Paparrizos is limited to small electronics and low charging voltages is inconsistent with the objectives described in Paparrizos to address USB 5V limitation through use of a “buck boost circuit” to boost voltage. *See* Ex. 1009, 1:9–26; 8:22–28. Paparrizos describes outputting voltages higher than 8.4V—including in the 12V range, necessary for jump starting a vehicle. *See* Pet. 62; *see also* Ex. 1009, 3:31–35; 4:1–4; 8:22–28 (expressly disclosing an output of 12V); *see also* Ex. 1003 ¶¶ 69–70). On this record, Petitioner’s proposed reasons to combine Yu and Paparrizos have rational underpinnings. Furthermore, Patent Owner’s argument that Paparrizos’ small electronic technologies are not equivalent to the technology described by Yu because it is “not capable of quickly charging high-capacity battery systems,” i.e., jump starters (*see* Prelim. Resp. 43–44) is similarly unpersuasive as this argument is undeveloped and not tied to claim language.

(2) That Yu already considered USB charging, yet still relies on a barrel charger

Patent Owner contends Petitioner used impermissible hindsight in the application of Yu’s system in combination with the USB boost conversion techniques of Paparrizos to arrive at the claimed invention. Prelim. Resp.

44. Patent Owner asserts that a person of ordinary skill in the art would not have made the proposed combination because Yu considered USB charging and boost conversion but still “chose to rely on a separate barrel charger over a USB outlet for its input charging.” *Id.* at 44–45, 48 (citing Ex. 2001 ¶ 119). Patent Owner explains that “Yu’s inventors chose to include a separate barrel charger and incorporated USB only as an output port to charge other smaller devices” citing the “likely . . . disadvantages associated with charging jump starters via USB” as the rationale behind their argument. *Id.* at 44–45 (citing Ex. 2001 ¶ 116).

Additionally, Patent Owner contends Petitioner made similar arguments that were rejected by the Board in the challenge of the related ’015 patent in the -00944 IPR. Prelim. Resp. 48 (citing Ex. 1034, 92).¹³ Patent Owner states that the Board rejected Petitioner’s argument, recognizing that “[t]he matter is much more complicated than what [p]etitioner’s argument makes it out to be,” further rejecting the alleged motivation to combine as “conclusory.” *Id.* at 48–49 (citing Ex. 1034, 93).

Patent Owner’s argument that Petitioner uses impermissible hindsight reconstruction to naturally arrive at the claimed invention is undeveloped and not persuasive. Patent Owner’s argument that Yu included a separate barrel charger and therefore implicitly rejects USB charging is unpersuasive because the addition of a secondary input does not negate the capability of a USB nor prove the assumption made by Patent Owner that Yu viewed USB input to be problematic.

¹³ Patent Owner cites Ex. 1014 but the description matches the final written description of IPR2020-00944 included in the record as Ex. 1034.

Lastly, Patent Owner's argument that Petitioner was unsuccessful in advancing similar arguments based on similar disclosures in the -00944 IPR, fails to account for the full scope of the Board's reasoning in the final written decision. Although the Board found the "Petitioner has oversimplified the analysis and ignored the specific teachings of the prior art being relied upon" (*see* Prelim. Resp. 49; *see* Ex. 1034, 93), Patent Owner fails to explain the Board's rationale. The Board determined "[t]he matter is much more complicated than what Petitioner's argument makes it out to be," because Petitioner's expert at the time failed to identify jump starter devices with USB capability, failed to explain USB output/input charging capability, and failed to provide support for its assertions regarding the ubiquitous nature of USB charging. *See* Ex. 1034, 93. Patent Owner's argument regarding the -00944 IPR is not applicable where here Petitioner has provided adequate argument and evidence for purposes of institution. *See generally* Pet.

b) Whether Petitioner Has Established a Reasonable Expectation of Success in the Combination of Yu and Paparrizos

In addition, Patent Owner argues Petitioner, "fails to demonstrate **how** the battery changing circuit of Paparrizos would allegedly be incorporated into the system of Yu." Prelim. Resp. 49. In particular, Patent Owner contends Petitioner fails to provide an explanation that would have provided a person of ordinary skill in the art with enough information to integrate the charging input circuit of Yu with the operating system of Paparrizos. *Id.* at 50. According to Patent Owner, Petitioner fails to explain how the Yu system could be modified to include Paparrizos complex charging circuit, asserting that Yu "does not specify its internal battery type and provides

very limited disclosure of its charging input circuit.” *Id.* at 49–50 (citing Ex. 1008 ¶ 28, Fig. 8). Conversely, the charging circuit of Paparrizos has multiple operating modes which Patent Owner states would be useless to the system of Yu (e.g., forward buck mode). *Id.* at 50 (citing Ex. 1009, 4:42–47). Therefore, Patent Owner reasons that Petitioner fails to explain how to integrate these systems to ensure the correct operating mode is applied. *Id.* (citing Ex. 2001 ¶ 22).

In addition, Patent Owner contends that Petitioner improperly argues that implementing the charging circuit of Paparrizos requires nothing more than well-known circuit implementation. Prelim. Resp. 50. Patent Owner asserts that the Petitioners proposed implementation of this charging circuit is not so straightforward due to the “added complexity and the safety risks associated with adding a second input charging circuit.” *Id.*

Patent Owner’s argument that Petitioner fails to demonstrate how the battery charging circuit of Paparrizos would allegedly be incorporated into Yu is unpersuasive because Petitioner explains how an ordinary artisan would be motivated to provide additional charging capability to implement boost conversion charging circuit of Paparrizos to the voltage of Yu’s device (*see* Pet. 61–62), which would have been within the ordinary skilled artisan’s skill set. *See* Pet. 62 (“[A person of ordinary skill in the art] would have had a reasonable expectation of success in combining the teachings of Yu and Paparrizos and would have yielded predictable results.”). For example, Petitioner states that the skilled artisan would have had a reasonable expectation of success because “because Paparrizos employs well-known and widely utilized concepts of using 5V USB input and a DC-DC boost converter to charge higher voltage batteries.” *Id.* at 60 (citing

Ex. 1003 ¶ 141). Petitioner explains that “the Yu-Paparrizos combination would have required nothing more than the addition of known ports (i.e., USB port) and known circuit components(i.e., the USB charging circuits).” *Id.* at 64 (citing Ex. 1003 ¶ 150). Dr. MacCarley testifies that “because USB is a well-known and standardized specification for which application specific integrated circuits were readily available, and complete circuit design suggestions were published by manufacturers” a person of ordinary skill in the art would have had a reasonable expectation of success in adding the USB charging features of Paparrizos to Yu. Ex. 1003 ¶ 150 (citing Ex. 1050). Therefore, we determine Petitioner’s allegations are sufficient for purposes of institution.

Accordingly, we are persuaded that Petitioner has shown sufficiently at this stage of the proceeding that the ordinarily skilled artisan would have had a reason to combine Yu and Paparrizos with a reasonable expectation of success in the combination.

3. *Remaining Claims 2–11*

Petitioner asserts that claims 3–5, and 9 would have been obvious over the combination of Yu and Paparrizos. Pet. 72–76. Petitioner also asserts that that claims 2, 10, and 11 would have been obvious over the combination of Yu and Paparrizos with AAPA or Epower-20/Epower-21. Pet. 76–77. Petitioner also asserts that claims 6–8 would have been obvious over the combination of Yu and Paparrizos with Krieger. Pet. 77–78. Patent Owner does not separately address remaining claims 2–11 beyond what is argued for independent claim 1. *See generally* Prelim. Resp. Having determined that Petitioner satisfies the threshold showing under 35 U.S.C. § 314(a) for institution of trial with respect to at least one challenged claim of

the '203 patent, we order that trial shall proceed on all claims and all challenged grounds. *SAS Institute Inc. v. Iancu*, 584 U.S. 357, 360–361 (2018).

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition. Accordingly, we institute an *inter partes* review of the '203 patent.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–11 of U.S. Patent No. 11,667,203 B2 is instituted 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, notice is hereby given of the institution of a trial, which will commence on the entry date of this Decision.

ORDERED that an *inter partes* is not instituted.

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