

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

THE NOCO COMPANY, INC.,
Petitioner,

v.

PILOT, INC.,
Patent Owner.

IPR2021-00777
Patent 10,046,653 B2

Before JEFFREY W. ABRAHAM, JULIA HEANEY, and
STEVEN M. AMUNDSON, *Administrative Patent Judges*.

ABRAHAM, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining Some Challenged Claims Unpatentable
35 U.S.C. § 318

I. INTRODUCTION

A. *Background and Summary*

The Noco Company, Inc. (“Petitioner”) filed a petition for an *inter partes* review (Paper 1 (“Pet.”)) challenging claims 1, 3–9, 11–18, and 20 of U.S. Patent No. 10,046,653 B2 (Ex. 1001 (“the ’653 patent”)). Pilot Inc. (“Patent Owner”) did not file a Preliminary Response.

On October 5, 2021, we instituted *inter partes* review of claims 1, 3–9, 11–18, and 20. Paper 7 (“Institution Decision” or “Inst. Dec.”). After institution, Patent Owner filed a Response to the Petition (Paper 10, “PO Resp.”), Petitioner filed a Reply to Patent Owner’s Response (Paper 13, “Reply”), and Patent Owner filed a Sur-reply (Paper 14, “Sur-reply”).

On July 6, 2022, the parties presented arguments at an oral hearing for this proceeding. We have entered a transcript of the hearing into the record. Paper 21 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. We issue this Final Written Decision pursuant to 35 U.S.C. § 318(a). Based on the record before us, we conclude that Petitioner has shown, by a preponderance of the evidence, that claims 1, 4–9, 11–18, and 20 of the ’653 patent are unpatentable, but has not shown that claim 3 is unpatentable.

II. BACKGROUND

A. *Related Matters*

The parties state that the ’653 patent is at issue in one currently pending district court litigation: *Pilot Inc. v. The NOCO Company, Inc.*, No. 2:20-cv-01452 (D. Ariz.) (“the District Court proceeding”). Pet. 1; Paper 3, 2. The parties also indicate that the ’653 patent was at issue in three other litigations that have been dismissed without prejudice. Pet. 2; Paper 3, 2–3.

B. The '653 Patent (Ex. 1001)

The '653 patent, titled "Automobile Charger," issued August 14, 2018, and is directed to "a novel automobile charger with a safe power supply charging quickly." Ex. 1001, codes (45), (54), 1:11–13. The '653 patent explains that prior-art automobile charging devices, i.e., devices for jump starting vehicles, suffered from various problems, including an inability to automatically detect whether a load (e.g., an automobile storage battery) is connected, whether an automobile engine or storage battery has a reverse current, and whether the battery state is suitable for heavy power generation. Ex. 1001, 1:18–24. The '653 patent aims to solve these problems, and depicts one solution in Figure 1, reproduced below.

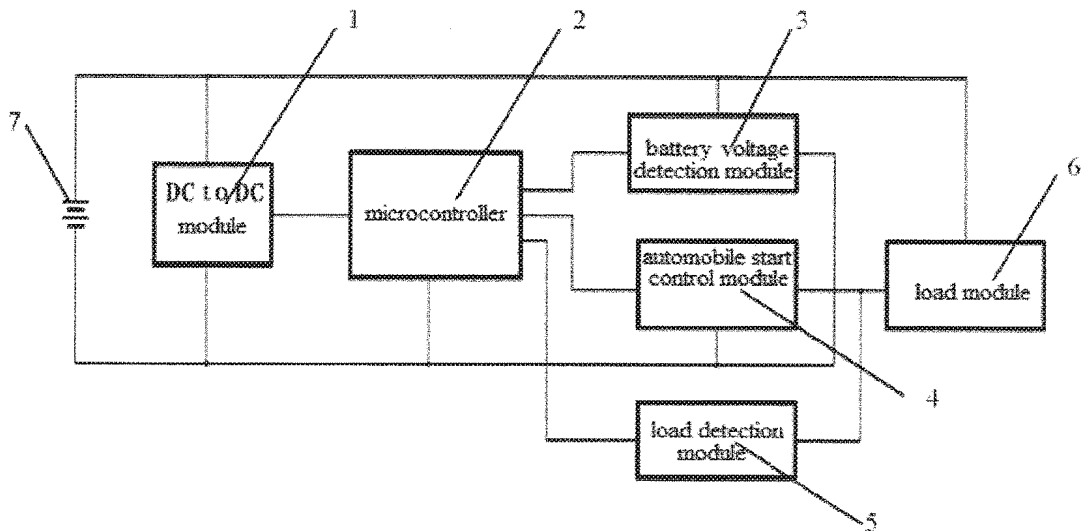


Figure 1 is a block diagram showing one embodiment of an automobile charger that includes DC to DC module 1, microcontroller 2, battery voltage detection module 3, automobile start control module 4, load detection module 5, load module 6, and direct current power supply 7 (the

jump starter battery). Ex. 1001, 2:55–58. Although not shown in Figure 1, the '653 patent states that load module 6 “comprises the automobile storage battery and the automobile engine is located on the end of the load module.” Ex. 1001, 3:23–25.

The '653 patent explains that the DC to DC module provides “the stable voltage for the microcontroller which collects relevant data” and “determines whether the automobile storage battery is connected with the automobile engine through the load detection module.” Ex. 1001, 4:4–16. When the load is correctly connected, the automobile start control module (an electronic switch) is automatically activated, and the battery starts to supply power to the load module. Ex. 1001, 2:18–19, 4:16–18. If the load is not connected, or positive and negative polarities are reversed, the automobile start control module is automatically deactivated, and the battery stops supplying power to the load module. Ex. 1001, 4:19–23.

The '653 patent explains that its automobile charger provides benefits over prior-art devices, including, *inter alia*, (1) controlling the supply power for the load, which protects the product and reduces the product size and material cost, (2) providing low voltage protection to prevent damage caused by over-discharging the battery, (3) preventing improper operations by the user, such as reversed polarity, which can cause damage to the automobile or direct current power supply, and (4) employing voltage backflow protection for an abnormal load, wherein the automobile start line is closed to protect the battery when an abnormal voltage is detected. Ex. 1001, 2:20–36.

C. *Illustrative Claims*

Of the challenged claims, claims 1, 7, and 17 are independent claims. Claims 1 and 7 are illustrative, and are reproduced below.

1. An automobile charger, comprising:

a first pole of a first battery connected with a first lead of a power converter, a first lead of a battery level detector, and a first lead of a load;

a second pole of the first battery connected with a second lead of the power converter, a first lead of a microcontroller, a first lead of a switching circuit and a second lead of the battery level detector;

a third lead of the power converter connected with a second lead of the microcontroller; and

three additional leads of the microcontroller connected with a third lead of the battery level detector, a second lead of the switching circuit and a first lead of a load detector, respectively,

wherein a second lead of the load detector is connected with a third lead of the switching circuit and a second lead of the load, and

wherein the load includes a second battery and a motor.

Ex. 1001, 5:2–20.

7. A charging device, comprising:

a battery level detector to detect a level of a first battery;

a load detector to detect a type of connection of a load;

a microcontroller to generate an output signal based on the level of the first battery and the type of connection of the load; and

switching circuitry to selectively connect the first battery to the load based on the output signal.

Ex. 1001, 6:28–35. Independent claim 17 is a method claim containing limitations similar to those in claim 7. Ex. 1001, 7:6–13.

D. Reviewed Unpatentability Challenges

We review the following challenges from the Petition:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
7–9, 11, 12, 14–18, 20	102	Richardson ¹
13	103	Richardson, George ²
1, 3–6	103	Richardson, Krieger ³
7–9, 11, 12, 14–18, 20	102	Baxter ⁴
1, 3–6	103	Baxter, Krieger

Petitioner relies on declarations from Alex Z. Kattamis, Ph.D. Ex. 1008 (“Kattamis Declaration”); Ex. 1016 (“Kattamis Reply Declaration”). Patent Owner deposed Dr. Kattamis, and filed the transcript of the deposition as Exhibit 2002 in this proceeding.

Patent Owner relies on a declaration from Joseph McAlexander III. Ex. 2005. Petitioner deposed Mr. McAlexander, and filed the transcript of the deposition as Exhibit 1015.

III. ANALYSIS

A. Legal Standards

“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

¹ US 2009/0174362 A1, published July 9, 2009 (Ex. 1003).

² US 6,803,743 B2, issued Oct. 12, 2004 (Ex. 1006).

³ US 7,345,450 B2, issued Mar. 18, 2008 (Ex. 1005).

⁴ US 2010/0173182 A1, published July 8, 2010 (Ex. 1004).

petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”). This burden of persuasion never shifts to 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).

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. Inc., v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987); see also *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1334 (Fed. Cir. 2008) (to anticipate a patent claim under 35 U.S.C. § 102, “a single prior art reference must expressly or inherently disclose each claim limitation”). Moreover, “[b]ecause the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements ‘arranged as in the claim.’” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008) (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)).

Whether a reference anticipates is assessed from the perspective of one of ordinary skill in the art. See *Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368 (Fed. Cir. 2003) (“[T]he dispositive question regarding anticipation [i]s whether one skilled in the art would reasonably understand or infer from the [prior art reference’s] teaching’ that every claim element was disclosed in that single reference.” (alterations in original) (quoting *In re Baxter Travenol Labs.*, 952 F.2d 388, 390 (Fed. Cir. 1991))). Additionally, “[u]nder the principles of inherency, if the prior art necessarily

functions in accordance with, or includes, the claimed limitations, it anticipates.” *MEHL/Biophile Int’l Corp. v. Milgraum*, 192 F.3d 1362, 1365 (Fed. Cir. 1999) (citation omitted); *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349–50 (Fed. Cir. 2002).

A claim is unpatentable under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art” to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when present, objective evidence of nonobviousness.⁵ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

To show obviousness, it is not enough to merely show that the prior art includes separate references covering each separate limitation in a challenged claim. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). “This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *KSR*, 550 U.S. at 418–419. On the other hand, an obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences

⁵ The parties have not asserted or otherwise directed our attention to any objective evidence of nonobviousness.

and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418; *accord In re Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007).

B. Level of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art “would have had an undergraduate degree in electrical engineering (or equivalent subject) together with two or three years of experience in [the] automotive electrical systems industry.” Pet. 11–12 (citing Ex. 1008 ¶ 13). Patent Owner does not challenge Petitioner’s definition or offer its own. Mr. McAlexander indicated that he adopted Petitioner’s definition for purposes of his declaration. Ex. 2005 ¶ 16.

In light of the record before us, we adopt Petitioner’s proposal regarding the level of ordinary skill in the art. Based on our review of the ’653 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 and implement the teachings of the ’653 patent and the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (explaining that specific findings regarding ordinary skill level are not required “where the prior art itself reflects an appropriate level and a need for testimony is not shown”) (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985)).

C. Claim Construction

In an *inter partes* review, 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) (2022). Under *Phillips*, claim terms are afforded “their ordinary and customary meaning.” *Phillips*, 415

F.3d at 1312. “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Id.* at 1313. “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 argues that “most of the [claim] terms can be given . . . the ordinary meaning they would have to a person of ordinary skill in the art of automobile chargers and jump starters.” Pet. 14. Petitioner identifies two exceptions, and proposes constructions for (1) “conducts power supply or power outage for the load through the microprocessor” in claim 3 and (2) “recharging level” in claims 12 and 13. Pet. 15–17.

1. *“conducts power supply or power outage for the load through the microcontroller”*

Claim 3 depends from claim 1 and recites that “the switching circuit conducts power supply or power outage for the load through the microcontroller.” Ex. 1001, 6:13–14. Petitioner contends we should construe the term “conducts power supply or power outage for the load through the microcontroller” in claim 3, to mean “[t]he power for charging the load passes through the microcontroller,” arguing that, according to the plain meaning of the claim language, the actual power for charging the load must literally be conducted through the microprocessor chip. Pet. 15 (quoting Ex. 1010, 13–14; citing Ex. 1001, 1:62–65 and *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1373 (Fed. Cir. 2004)); Reply 3–6; Tr. 18:15–18. Petitioner argues that support for this construction is found at column 1, lines 62–65 of the ’653 patent. Petitioner states that this

construction is the same construction it proposed in the District Court proceeding, and acknowledges that if we adopt this construction, claim 3 would not be unpatentable based on the grounds set forth in the Petition. Pet. 15; Tr. 17:25–18:2, 18:18–20.

Patent Owner does not directly challenge Petitioner’s proposed construction or offer its own in this proceeding. *See* PO Resp. 3–4; Reply 6–7. In the District Court proceeding, however, Patent Owner proposed the phrase “the switching circuit conducts power supply or power outage for the load through the microcontroller” should be interpreted to mean that “the switching circuit connects power to, or disconnects power from, the load under the control of the microcontroller.” Pet. 15; Ex. 1012, 2. Petitioner contends that under Patent Owner’s proposed construction in the District Court proceeding, claim 3 is unpatentable based on the grounds set forth in the Petition. Pet. 15. Patent Owner criticizes Petitioner for asserting inconsistent claim construction arguments in this proceeding and the District Court proceeding. PO Resp. 3–4.

After considering the parties’ arguments and evidence, we adopt Petitioner’s proposed construction of the phrase “the switching circuit conducts power supply or power outage for the load through the microcontroller.” Petitioner’s construction is consistent with the plain language of the claim, and comports with the Federal Circuit’s decision in *Chef America*. Ex. 1001, 6:13–14; *Chef Am.*, 358 F.3d at 1373–74 (holding that courts may not redraft claims to make them operable or sustain their validity, and construing the claims “based on the patentee’s version of the claim as he himself drafted it”). Additionally, the Specification of the ’653 patent states that “the automobile start control module conducts the power

supply or power outage for the load module through the microcontroller.” Ex. 1001, 1:61–65. Furthermore, Patent Owner does not challenge Petitioner’s arguments or evidence, or present a competing construction. In view of this, we construe the phrase “the switching circuit conducts power supply or power outage for the load through the microcontroller” to mean “[t]he power for charging the load passes through the microcontroller.” Pet. 15; Reply 3–6.

2. “recharging level”

Petitioner argues that the term “recharging level” in claims 12 and 13 refers to the voltage level of the jump starter battery (i.e., the “first battery” in claims 7, 12, and 13) after a jump start operation has begun. Pet. 16. In support of its argument, Petitioner directs us to a portion of the Specification discussing the automobile engine generating “abnormal voltage to recharge the direct current power supply after the automobile starts.” Pet. 16 (citing Ex. 1001, 4:37–43); Reply 6 (arguing again that “recharging level of the first battery” refers to “the recharging level of the jump starter battery, i.e., the power supply”). In view of this, Petitioner contends the term “recharging level” should be interpreted to mean “the level of the first battery after it is connected to the load.” Pet. 17.

Patent Owner does not directly challenge Petitioner’s proposed construction or offer its own in this proceeding. *See* PO Resp. 3–4; Reply 6–7.

After considering the parties’ arguments and evidence, we adopt Petitioner’s proposed construction of the term. Petitioner’s construction is consistent with the plain language of the claim and supported by the Specification. Ex. 1001, 4:37–43, 6:57–58. Furthermore, Patent Owner

does not challenge Petitioner’s arguments or evidence, or present a competing construction. In view of this, we construe the term “recharging level” to mean “the level of the first battery after it is connected to the load.” Pet. 17.

We determine that we do not need to expressly construe any other terms for purposes of this Decision. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”)).

D. The Kattamis Declaration

As noted above, Petitioner relies on the Kattamis Declaration (Ex. 1008) to support its unpatentability challenges.

In its Patent Owner Response, Patent Owner argues that we should give the opinions of Dr. Kattamis in the Kattamis Declaration little or no weight because Petitioner and Dr. Kattamis failed to disclose the origin and basis of Dr. Kattamis’ opinions. PO Resp. 6 (citing 37 C.F.R. § 42.65(a)). Specifically, Patent Owner contends that the Kattamis Declaration “is copied in significant part, word-for-word, from the declaration of” Dr. Souris in IPR2018-00488 (“the 488 IPR”), involving related U.S. Patent No. 9,525,297.⁶ According to Patent Owner, “[t]he precise appropriation is present not only in the background recital, but also in crucial analysis sections of the report, such as the alleged motivations to combine the referenced prior art.” PO Resp. 6–7.

⁶ Patent Owner submitted Dr. Souris’s declaration from IPR2018-00488 as Exhibit 2001 in this proceeding.

Patent Owner asserts that “the source of this copied analysis was not disclosed in the Petition,” and states that

Dr. Kattamis’ Declaration itself makes no reference to or disclosure of the apparent source of much of its text. . . . Dr. Kattamis failed to provide a specific list of the materials relied on in forming his opinion. Rather, Dr. Kattamis makes a general statement that he “relied on the ’653 Patent claims, disclosure and prosecution history, the prior art exhibits to the Petition for Inter Partes Review of the ’653 Patents, and my own experience, expertise and knowledge of a person of ordinary skill in the relevant art in the relevant timeframe.” Exhibit 1008 at 11. Obviously, this statement does not reveal reliance on the Declaration of Dr. Sourì or any other materials from IPR2018-00488. *Id.*

PO Resp. 10.

Additionally, Patent Owner states that Dr. Kattamis “did not or could not reveal” the source of his analysis when deposed. PO Resp. 10; *see also* PO Resp. 6–7 (“Notwithstanding the amount of text copied, even after his deposition, it is unclear whether Dr. Kattamis was aware of the source of the text that makes up a substantial and dispositive portion of his Declaration.”). In particular, Patent Owner asserts it questioned Dr. Kattamis about the similarities between the Kattamis and Sourì Declarations during the deposition of Dr. Kattamis. PO Resp. 11–12. According to Patent Owner, Dr. Kattamis testified that although there “may be background material that was similar,” he did not “rely on any materials” from the 488 IPR in preparing his own Declaration. PO Resp. 12. Patent Owner asserts this “strains credulity” considering “the record evidence shows that analysis in the Kattamis Declaration submitted by Petitioner is largely copied” from Dr. Sourì’s Declaration. PO Resp. 12–13, 17 (“Substantial analysis of the patent, the references themselves, and, most importantly, assertions of

motivations to combine those references are all copied with scarce editing from another's opinions on a different patent and different references.”).

Patent Owner further contends that despite being given multiple opportunities to correct his declaration and admit that he relied on materials from the 488 IPR, Dr. Kattamis “continued to deny the obvious copying.” PO Resp. 18. Patent Owner, therefore, argues that “Petitioner and Dr. Kattamis have failed to disclose the underlying basis for his opinion, as they were copied from another, meaning the declaration of Dr. Kattamis must be given ‘no weight.’” PO Resp. 18.

In addition to its repeated allegations of copying, Patent Owner states that

Perhaps the more charitable possible reading of the circumstances is that this is an instance of auto-plagiarism—Dr. Kattamis reusing materials that he wrote previously when working with Dr. Sourì. Even if this interpretation is correct though, the situation remains deeply troubling and warrants striking or giving no weight to the Kattamis’ Declaration. Despite attempts to interrogate the source of opinions in the Kattamis Declaration, Patent Owner and the Board simply cannot know the source and basis of the opinions expressed in the Kattamis Declaration.

PO Resp. 17; *see also* PO Resp. 7 n.1 (recognizing that “[t]his may be auto-plagerism [sic]” and “[i]t is possible Dr. Kattamis wrote the background on behalf of Dr. Sourì” because “Dr. Kattamis stated at his deposition that he previously did work for Dr. Sourì, who is more senior at Exponent, the company where both experts worked at the time.”); Sur-reply 8 (addressing the possibility of auto-plagiarism).

In its Reply, Petitioner confirms that Dr. Kattamis (not Dr. Sourì) wrote the material that Patent Owner alleges Dr. Kattamis copied from the

Souri Declaration and used in the Kattamis Declaration. Reply 7. Petitioner explains that Dr. Souri hired Dr. Kattamis to work at Exponent in 2007, and, in that capacity, Dr. Kattamis worked on the 488 IPR, for which Dr. Souri served as the expert declarant. Reply 8. Dr. Kattamis states that the material he prepared while working on the 488 IPR was “still on Exponent’s file servers when he was retained by Petitioner in this matter, and that it was these files that he reviewed and adapted, separate and apart from any files containing Dr. Souri’s executed declaration.” Reply 8 (citing Ex. 1016 ¶ 6).⁷ According to Petitioner, “[t]here simply is nothing unusual, let alone disqualifying, about an expert witness using material that he himself had prepared in connection with an earlier matter in a later, related proceeding.” Reply 9.

After reviewing the parties’ arguments and evidence, we disagree with Patent Owner that the Kattamis declaration, in its entirety, should be afforded little or no weight pursuant to 37 C.F.R. § 42.62(a) because we are unable to “determine the basis for the opinions expressed in the Kattamis Declaration.” Sur-reply 8; PO Resp. 10. Contrary to Patent Owner’s assertion that Dr. Kattamis failed to state the source or basis for his opinions, Dr. Kattamis states in the Kattamis Declaration that

In forming my opinion, I have relied on the ’653 Patent claims, disclosure and prosecution history, the prior art exhibits to the Petition for *Inter Partes* Review of the ’653 Patents, and my own

⁷ Patent Owner argues this is improper reply evidence. Sur-reply 1, 5–6. We disagree. In its Reply, Petitioner is entitled to “respond to arguments raised in the corresponding . . . patent owner response.” 37 C.F.R. § 42.23(b). A party also may submit rebuttal evidence in support of its reply. *See Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1077–78 (Fed. Cir. 2015).

experience, expertise and knowledge of a person of ordinary skill in the relevant art in the relevant timeframe.

Ex. 1008 ¶ 12 (under the heading “Basis for My Opinion”). In addition to this general statement, Dr. Kattamis also cites to exhibits in specific paragraphs of the Kattamis Declaration to support the statements made therein. *See, e.g.*, Ex. 1008 ¶ 18 (citing Ex. 1013), ¶ 22 (citing Ex. 1014), ¶¶ 63–68 (citing Krieger and Richardson), ¶¶ 70–74 (citing Baxter and Krieger), ¶¶ 76–79 (citing Richardson and George). In view of this, we consider Dr. Kattamis to have provided a sufficient disclosure regarding the basis for his opinions to at least avoid a determination that the Kattamis Declaration, in its entirety, is entitled to little or no weight.

The fact that Dr. Kattamis, in preparing the Kattamis Declaration, re-used material he had previously written for an earlier proceeding involving a different patent does not justify a different outcome. To the extent Dr. Kattamis used previously prepared material in the Kattamis Declaration, he indicates that he “reviewed all of these passages in detail and confirmed that they were all still accurate and suitable for inclusion in his declaration in the current proceeding.” Reply 8; Ex. 1016 ¶ 6. Additionally, as Patent Owner demonstrates, Dr. Kattamis supplemented the re-used material by adding, where appropriate and necessary, language directed to the facts of this proceeding and specific citations to exhibits in this proceeding. *See* PO Resp. 8–9 (showing in redline the additions Dr. Kattamis included in the Kattamis Declaration).

Furthermore, Patent Owner acknowledges that “[h]ad Dr. Kattamis said at his deposition or in his report, for example, ‘I relied on materials that I wrote years ago for someone else about a different patent,’ there would be

no issue of failure to disclose.” Sur-reply 8. Although perhaps not recited using this exact language, Dr. Kattamis did provide testimony during his deposition suggesting he relied on material prepared previously for Dr. Souri:

Q: Okay. Did you use [the Souri Declaration] to draft your declaration in this case?

A: I mean so there is language in here that may be part of technical background that I may have initially assisted in the original draft when this document was written, and so there may be some similarities in background of the patents, that kind of thing.

Q: How much of it do you think is the same?

A: I don't know. In terms of word count or like -- in terms of the analysis and limitation by limitation analysis, I would say none. There may be similarities in, like I said, in background of each of the patents, that kind of thing.

Ex. 2002, 108:14–109:7 (objection omitted). This evidence undermines Patent Owner's argument that “[d]espite attempts to interrogate the source of opinions in the Kattamis Declaration,” the Board “could not determine the basis for the opinions expressed in the Kattamis Declaration from the Petition or deposition questioning.” Sur-reply 8 (alteration in original).

For all of the foregoing reasons, we disagree with Patent Owner's argument that Dr. Kattamis' Declaration is improper and should be given little or no credit. PO Resp. 13.

E. Claims 7–9, 11, 12, 14–18, and 20 – Anticipation by Richardson

Petitioner contends Richardson anticipates claims 7–9, 11, 12, 14–18, and 20 of the '653 patent. Pet. 19–30. Patent Owner argues that “[i]f the

Board agrees that Dr. Kattamis' Declaration is entitled to no weight, there is a lack of evidence supporting any of Petitioner's Grounds, which should now all be denied on this basis alone." PO Resp. 18–19. Patent Owner does not otherwise challenge Petitioner's contentions that Richardson anticipates claims 7–9, 11, 12, 14–18, and 20 of the '653 patent. PO Resp. 5 ("Patent Owner does not provide any further argument regarding anticipation under Grounds 1 and 4."); Reply 2.

1. Richardson (Ex. 1003)

Richardson discloses a "portable power source for a motor vehicle," (i.e., a jump starter), that "performs real-time monitoring of all system parameters to increase the safety and effectiveness of the unit's operation while providing additional parametric and diagnostic information obtained before, during and after the vehicle starting operation." Ex. 1003 ¶¶ 1, 5. Richardson explains that its method and apparatus include a programmable microprocessor that receives inputs and includes several outputs to provide information to the user and to control the application of power to the vehicle to be jump started. Ex. 1003 ¶¶ 11, 13. Richardson also discloses several sensors that monitor different parameters such as the voltage level of one or more jump starter batteries, the voltage of the vehicle battery, the polarity of the jumper cables, and the temperature of a shunt cable. Ex. 1003 ¶ 12. According to Richardson, "[t]he voltage is monitored to determine open circuit, disconnected conductive clamps, shunt cable fault, and solenoid fault conditions," and the "current through the shunt cable is monitored to determine if there is a battery explosion risk, and for excessive current conditions presenting an overheating condition, which may result in fire." Ex. 1003 ¶ 6.

2. *Analysis*

a. *Claim 7*

Petitioner first contends the preamble of claim 7, reciting “[a] charging device,” is not limiting, but even if it were treated as an element of the claim, Richardson describes certain situations when its jump starter “will start to charge the vehicle’s battery before any starting operation begins.” Pet. 20–21 (quoting Ex. 1003 ¶ 41).

Claim 7 next recites “a battery level detector to detect a level of a first battery.” Ex. 1001, 6:29. For this limitation, Petitioner directs us to Richardson’s statement that “battery voltage sensor 20 monitors the voltage level of one or more jump starter batteries 22.” Pet. 21 (quoting Ex. 1003 ¶ 12).

Petitioner also argues that reverse voltage sensor 24 in Richardson “is an electrical circuit that determines whether the load is correctly connected,” and, therefore, corresponds to “a load detector to detect a type of connection of a load” as claim 7 requires. Pet. 21 (citing Ex. 1003 ¶ 20; Ex. 1008 ¶¶ 86–87).

Claim 7 also requires “a microcontroller to generate an output signal based on the level of the first battery and the type of connection of the load.” Ex. 1001, 6:31–33. For this limitation, Petitioner asserts that Richardson discloses that microprocessor 12 generates contact relay control signal 58 based on, at least in part, input from battery level detector 20 and reverse voltage sensor 24. Pet. 22 (citing Ex. 1003, Figure 1; Ex. 1008 ¶ 89).

Finally, claim 7 recites “switching circuitry to selectively connect the first battery to the load based on the output signal.” Ex. 1001, 6:34–35. According to Petitioner, “Richardson also discloses that the microprocessor

12 controls the contact relay 34 based upon the reverse polarity sensor determining that the jump starter is correctly connected to the vehicle.” Pet. 22–23 (citing Ex. 1003 ¶ 20; Ex. 1008 ¶ 91).

As noted above, Patent Owner does not dispute that Richardson discloses the limitations in claim 7. After reviewing the evidence and arguments Petitioner presents in the Petition regarding claim 7, including the relevant portions of the supporting Kattamis Declaration,⁸ we agree, for the reasons explained in the Petition, that Richardson discloses a charging device comprising a battery level detector (battery voltage sensor 20), load detector (reverse voltage sensor 24), microcontroller (microprocessor 12), and switching circuitry (contact relay 34/contact relay control output 58), as claim 7 requires. Pet. 20–22; Ex. 1008 ¶¶ 82–91. Accordingly, Petitioner has established, by a preponderance of the evidence, that Richardson anticipates claim 7.

b. Claims 8, 9, 11, 12, 14–18, and 20

Claims 8, 9, 11, 12, and 14–16 depend directly or indirectly from claim 7. Petitioner directs us to portions of Richardson that disclose the additional limitations in these claims. Pet. 23–27.

Independent claim 17 contains limitations similar to those in claim 7, and Petitioner relies on the same arguments for claim 17 as it does for claim 7. Pet. 28–29. Claim 18 depends from claim 17, and claim 20 depends from claim 18. Petitioner directs us to portions of Richardson that disclose the additional limitations in these claims. Pet. 29.

⁸ For the reasons discussed above, we do not agree with Patent Owner’s argument that the Kattamis Declaration is entitled to no little or no weight.

Patent Owner does not dispute that Richardson discloses the limitations in claims 8, 9, 11, 12, 14–18, and 20. After reviewing the evidence and arguments Petitioner presents in the Petition regarding these claims, including the relevant portions of the supporting Kattamis Declaration, we agree, for the reasons explained in the Petition and Reply, that Richardson discloses all of the limitations in these claims. Pet. 23–29; Ex. 1008 ¶¶ 93–139. Accordingly, Petitioner has established, by a preponderance of the evidence, that Richardson anticipates claims 8, 9, 11, 12, 14–18, and 20.

3. Conclusion

For all of the foregoing reasons, we determine Petitioner has demonstrated, by a preponderance of the evidence, that Richardson anticipates claims 7–9, 11, 12, 14–18, and 20.

F. Claim 13 – Obviousness in view of Richardson and George

Petitioner argues that claim 13 is unpatentable in view of Richardson and George. Pet. 30–32. Patent Owner argues that Petitioner has not provided substantial evidence that a skilled artisan would have been motivated to combine these references. PO Resp. 21.

1. George (Ex. 1006)

George discloses a “jump start protection circuit having a normally open switch” and a controller that manipulates the switch between an open and closed position. Ex. 1006, code (57). The controller measures voltages at the battery and a jump start post, and moves the switch to a closed position, thereby connecting the jump start post to the battery, when it detects acceptable jump start conditions. Ex. 1006, code (57). According to George, its circuit “provides protection against attempts to charge a battery

with incorrect polarity connections and attempts to charge a battery from a potentially hazardous higher voltage power.” Ex. 1006, code (57). George explains that one example of a condition that would cause its switch to open includes the voltage at the battery or jump start post exceeding a predefined range for a predefined period of time. Ex. 1006, 5:55–64.

2. *Analysis*

Claim 13 depends from claim 12, and requires that “the microcontroller generates the output signal to cause the switching circuitry to disconnect the first battery from the load if the recharging level of the first battery is greater than a threshold.” Ex. 1001, 6:59–63.

Petitioner relies on its arguments and evidence demonstrating that Richardson discloses all of the elements in claim 12, and acknowledges that Richardson does not expressly disclose the additional limitation in claim 13. Pet. 30–31. Petitioner, however, contends that Richardson discloses that it will determine that a start cycle has been completed based on a measurement of the starting current, and will open the contact relay when the current drops below a threshold. Pet. 31 (citing Ex. 1003 ¶ 40; Ex. 1008 ¶ 142). Petitioner further contends that “George discloses that its switch will be opened if the voltage of the power source is too high as compared to the vehicle battery.” Pet. 31 (citing Ex. 1006, 5:64–6:2; Ex. 1008 ¶ 144).

According to Petitioner

It would have been obvious to a person of ordinary skill in the art to modify Richardson’s microcontroller programming to open the contact relay when the voltage level detector detects a voltage that is higher than a given level as described in George, either in place of or in addition to Richardson’s current sensing method. If in place of Richardson’s method, this would provide the advantage of simplifying the circuit and reducing cost by

avoiding the need for the current-sensing circuit elements; if in addition to Richardson’s method, this would provide the advantage of redundancy for safety purposes. (Kattamis ¶¶76-80, 145-146.).

Pet. 31–32; *see also* Reply 11 (noting that “Dr. Kattamis has testified that Richardson can be modified using the George reference to monitor for excess voltage using a voltage sensor rather than the convoluted current sensing mechanism of Richardson for determining when to open the switch”).

Patent Owner does not dispute that George discloses the additional limitation in claim 13, but challenges Petitioner’s proposed combination of Richardson and George. PO Resp. 27–28. In particular, Patent Owner asserts that Petitioner relies solely on four conclusory statements regarding the similarity of Richardson and George to support its obviousness challenge for claim 13. PO Resp. 27–28. According to Patent Owner, identifying similarities between prior-art references is not sufficient for establishing a *prima facie* case of obviousness. PO Resp. 28.

After considering the parties’ arguments and evidence, we find Petitioner has established, by a preponderance of the evidence, that claim 13 is unpatentable as obvious in view of Richardson and George. Petitioner presents undisputed evidence that Richardson and George teach or suggest all of the limitations in claim 13. Pet. 30–32. Petitioner also presents testimony from Dr. Kattamis that a person of ordinary skill in the art could and would have either modified Richardson in view of George to simplify the circuit and reduce cost, or would have substituted George’s method for Richardson’s to provide redundancy for safety purposes. Pet. 31; Reply 11; Ex. 1008 ¶¶ 145–146. Patent Owner and Mr. McAlexander do not challenge

or otherwise refute this testimony. PO Resp. 27–28; Sur-reply 2 (admitting that “Patent Owner did not attempt to contradict the substantive evidence presented by the Petitioner” in its Response); Ex. 1015, 52:19–53:19 (Mr. McAlexander conceding he did not refute Dr. Kattamis’ opinion regarding claim 13). Thus, contrary to Patent Owner’s assertions, Petitioner does not rely solely on conclusory statements regarding the similarities of Richardson and George to support its obviousness challenge.

In view of Petitioner’s undisputed evidence demonstrating where the prior-art references teach or suggest each limitation in the challenged claims, and explaining why a person of ordinary skill in the art would have had reason to combine the prior-art references with a reasonable expectation of success, we find Petitioner has established, by a preponderance of the evidence, that claim 13 is unpatentable as obvious in view of Richardson and George.

G. Claims 1 and 3–6 – Obviousness in view of Richardson and Krieger

Petitioner contends that claims 1 and 3–6 are unpatentable as obvious in view of Richardson and Krieger.⁹ Pet. 32–46. Patent Owner contends that Petitioner has failed to provide substantial evidence of obviousness. PO Resp. 20, 28–47.

1. Krieger (Ex. 1005)

Krieger discloses a “polarity protection circuit for a battery booster device.” Ex. 1005, code (57). The polarity protection circuit is electrically

⁹ Petitioner’s unpatentability challenge of claim 3 is based on the construction of “conducts power supply or power outage for the load through the microprocessor” that Patent Owner presented in the District Court proceeding, which, for the reasons discussed above, we do not adopt.

connected to the battery to be charged and to the boosting battery, and prevents current flow between the batteries unless proper polarity is achieved. Ex. 1005, code (57). Krieger explains that the device ensures that the connection of the two batteries is made correctly and in a safe manner to prevent damage to the batteries, the vehicle, or a person. Ex. 1005, 1:43–51.

Krieger discloses the use of a switch coupled to one of the wires or battery cables to be connected to the depleted battery, which is activated to complete the boosting circuit between the boosting battery and the depleted battery “only when a correct polarity connection between the batteries is attained.” Ex. 1005, 5:22–26. In one embodiment, a microprocessor controls a switch located between the negative pole of the boosting battery and the battery to be charged. Ex. 1005, 8:59–60, Fig. 1. In this configuration, the connection to the negative pole of the booster battery is made when the switch is closed. Ex. 1005, 8:59–9:10.

2. *Analysis*

a. *Claim 1*

Petitioner first contends the preamble of claim 1, reciting “[a]n automobile charger,” is not limiting, but even if it were treated as an element of the claim, Richardson discloses an automobile charger. Pet. 33 (citing Ex. 1008 ¶ 150 and referring to its analysis regarding the preamble of claim 7); *see also* Pet. 20–21 (containing Petitioner’s analysis of the preamble of claim 7 and quoting Ex. 1003 ¶ 41).

Claim 1 recites that its automobile charger comprises “a first pole of a first battery connected with a first lead of a power converter, a first lead of a battery level detector, and a first lead of a load,” and “a second pole of the first battery connected with a second lead of the power converter, a first lead

of a microcontroller, a first lead of a switching circuit and a second lead of the battery level detector.” Ex. 1001, 5:3–9. Petitioner contends that Richardson discloses a first battery (jump starter batteries 22), a power converter (shown in Richardson Figure 1), a battery level detector (the circuit formed by resistors 10.2K and 3.4K), a switching circuit (that includes contact relay 34), a microcontroller, and a load (including vehicle 28). Pet. 33 (citing Ex. 1008 ¶¶ 152–153; Ex. 1003, Fig. 2C), 37 (citing Ex. 1008 ¶ 160; Ex. 1003, Fig. 2C).

Petitioner further contends that Richardson discloses that the first pole of jump starter batteries 22 is connected to a first lead of the power converter and a first lead of the battery level detector. Pet. 34 (citing Ex. 1008 ¶ 154). Petitioner also argues that the second pole of jump starter battery 22 is the negative terminal, which is connected to a second lead of the power converter, a first lead of a microcontroller, and a second lead of the battery level detector, as claim 1 requires. Pet. 37 (citing Ex. 1008 ¶ 161).

Petitioner acknowledges that Richardson does not disclose that the first pole of the jump starter battery is connected to a first lead of the load, or that the second pole of the jump starter battery is connected to the first lead of the switching circuit. Pet. 34, 37. Petitioner explains that in Richardson, the first pole of the jump starter batteries is separated from the load by contact relay 34, which is normally open, and the second pole of the jump starter battery is connected to the second lead of the load via ground. Pet. 34. According to Petitioner, “[i]n effect, Richardson has the switching circuit . . . on the positive side of the load rather than the negative side as claimed in Claim 1.” Pet. 34 (citing Ex. 1008 ¶ 155).

Petitioner states that Krieger discloses a jump starter system in which the first pole of the jump starter battery is connected to the first pole of the load without any intervening components, and the second pole of the load is connected to a switching circuit, as claim 1 requires. Pet. 35 (citing Ex. 1008 ¶ 156; Ex. 1005, Fig. 1). Thus, Petitioner argues that when the switching circuit in Richardson is moved from the positive side to the negative side, as disclosed by Krieger, the modified device satisfies the limitations of claim 1. Pet. 35–38.

Petitioner contends that “[a]s there are only two possible general locations to provide the switch in a circuit such as this – the positive side or the negative side – it would have been obvious to try locating the switch on the negative side,” as disclosed in Krieger. Pet. 36 (citing Ex. 1008 ¶ 157). Petitioner adds that it is common in the automotive industry to instruct persons to connect the negative terminals last when performing a jump start because there will be some arc or spark wherever the final connection is made. Pet. 36. According to Petitioner, “[i]t is therefore advisable to have this connection be made away from the automobile battery, usually to ground via the engine block.” Pet. 36 (citing Ex. 1008 ¶¶ 63–69). Petitioner asserts this constitutes additional motivation for a person of ordinary skill to locate the switch in Richardson on the negative side, as disclosed in Krieger. Pet. 36.

Claim 1 additionally requires various connections (i) between the power converter and microcontroller; (ii) between the microcontroller and the battery level detector, the switching circuit, and a load detector, and (iii) between the load detector and the switching circuit and the load. Ex. 1001, 5:10–19. Petitioner directs us to portions of Richardson disclosing the

components and connections recited in claim 1. Pet. 38–41 (citing Ex. 1008 ¶¶ 163–164, 166–167, 169–170).

Lastly, claim 1 requires that “the load includes a second battery and a motor.” Ex. 1001, 5:20. Petitioner contends that Richardson discloses a vehicle as the load, which contains a battery and a motor. Pet. 41 (citing Ex. 1008 ¶ 171; Ex. 1003 ¶ 3).

Patent Owner does not dispute Petitioner’s arguments and evidence demonstrating that the combined teachings of Richardson and Krieger disclose or suggest all of the limitations in claim 1. *See* PO Resp. 20. Rather, Patent Owner argues Petitioner has failed to show a motivation to combine the prior-art references, including a failure to show any motivation to modify Richardson to use negative-side switching. PO Resp. 21–38. In particular, Patent Owner contends that Petitioner fails to point to any evidence in the asserted prior-art references themselves that provide a reason to combine their teachings, and therefore relies on statements in the Kattamis Declaration. Pet. 21. Patent Owner first states that Dr. Kattamis provides several rationales based on common characteristics in the prior art, which do not constitute substantial evidence of a motivation to combine. PO Resp. 22–27 (addressing paragraphs 63–66 of the Kattamis Declaration).

Patent Owner next criticizes paragraph 68 of the Kattamis Declaration, asserting that Dr. Kattamis simply indicates that Krieger discloses negative-side switching and then states a conclusion without a rationale, and relies on a known recommendation for safely using traditional jumper cables which provides no guidance to a designer of an integrated jump starter because “[t]he risks of traditional jumper cables are unlike the circumstances of using the devices of Richardson . . . or Krieger.” PO Resp.

31–35; *see also* Sur-reply 9 (“Ultimately, the Petition does not show that a skilled artisan would have ‘a good reason’ to modify the prior art devices, which already work fine, and therefore fails to present a *prima facie* case of obviousness on any ground.”). Patent Owner also challenges as conclusory Dr. Kattamis’ testimony in paragraph 68 that a person of ordinary skill in the art could reconfigure Richardson to provide the switching circuitry on the negative side. PO Resp. 42–47. Patent Owner asserts that Richardson’s self-test, self-diagnosis, and self-monitoring routines are complex and depend on its own connection solution that is opposite of what is disclosed in Krieger and the ’653 patent. PO Resp. 46. According to Patent Owner, “Dr. Kattamis chooses to ignore the complexity involved in re-engineering and the many design changes that would be required to force Richardson into to the opposite structure disclosed in Claim 1 of the ’653 Patent.” PO Resp. 47.

In its Reply, Petitioner responds to Patent Owner’s arguments challenging Dr. Kattamis’ testimony by pointing out that Mr. McAlexander, during his deposition, stated that “placing the switch on the negative side as opposed to the positive side was ‘*so obvious* to Richardson that he never covered it.”” Reply 15 (quoting Ex. 1015, 77). Additionally, in response to Mr. McAlexander’s arguments regarding the complexity of modifying Richardson in view of Krieger, Petitioner presents testimony from Dr. Kattamis (in the Kattamis Reply Declaration) indicating that moving the switch in Richardson requires “only a few straight-forward structural changes,” and that it took Dr. Kattamis less than an hour to determine how to modify the Richardson circuit. Reply 16–19 (citing Ex. 1016 ¶¶ 8–17).

Patent Owner argues that the testimony presented in the Kattamis Reply Declaration is improper because Patent Owner did not attempt to contradict the substantive evidence presented by Petitioner, but only pointed out deficiencies in the Petition. Sur-reply 2; *see also* Sur-reply 4 (“Ultimately, Patent Owner’s argument on this point is not that the Kattamis declaration is wrong—Mr. McAlexander agrees that substitution is possible with ‘many design changes.’”). According to Patent Owner, all of the evidence Petitioner presents in its Reply should have been included in the Petition. Sur-reply 10–11. To the extent we do consider the Reply evidence, Patent Owner characterizes the changes proposed by Dr. Kattamis as “extensive,” and argues that they “reinforce that Mr. McAlexander is correct in saying that there would be insufficient motivation [to] alter the working prior art devices.” Sur-reply 12.

After considering the parties’ arguments and evidence, we find Petitioner has established, by a preponderance of the evidence, that claim 1 is unpatentable as obvious in view of Richardson and Krieger. Petitioner presents undisputed evidence that Richardson and Krieger teach or suggest all of the limitations in claim 1. Pet. 33–41; Ex. 1008 ¶¶ 150, 152–156, 160–161; Ex. 1003 ¶ 41; Fig. 2C; Ex. 1005, Fig. 1.

The evidence of record also supports Petitioner’s contention that it would have been obvious to move the location of the electric switch from the positive side, as shown in Richardson, to the negative side, as shown in Krieger. Pet. 36; Reply 13–16; Ex. 1008 ¶ 157. In *KSR*, when discussing whether a combination of claimed elements would be obvious to try, the Supreme Court stated that

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill in the art has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.

KSR, 550 U.S. at 421.

Here, Petitioner presents undisputed testimony that both Richardson and Krieger are directed to solving the same problem – the safety of battery charging devices. Ex. 1008 ¶¶ 63–68; *see* PO Resp. 23 (“None of these statements are . . . disputed.”). Dr. Kattamis further testified that there are a limited number of general locations in which it would be possible to place the switch – the positive side or the negative side. Ex. 1008 ¶ 157; Pet. 36; Reply 13. Additionally, Mr. McAlexander, Patent Owner’s declarant, testified that “negative side switching was so obvious to Richardson that he never covered it.” Ex. 1015, 77:6–7. This evidence supports Petitioner’s assertion that it would have been obvious to a person of ordinary skill in the art to try locating the switch in Richardson on the negative side. Ex. 1008 ¶¶ 68; 157; Pet. 36; Reply 13–14.

Petitioner also presents evidence, in the form of testimony from Dr. Kattamis, that a person of ordinary skill in the art “would readily be able to reconfigure the Richardson system to provide switching circuitry on the negative side as opposed to the positive side.” Ex. 1008 ¶ 68. Although Patent Owner argues, based on testimony from Mr. McAlexander, that making this change would require modification and experimentation, Patent Owner acknowledges that it “did not attempt to contradict the substantive evidence presented by the Petitioner.” Sur-reply 2, 4. In addition, Patent Owner admits that its “argument on this point is not that the Kattamis

declaration is wrong—Mr. McAlexander agrees that substitution is possible with ‘many design changes.’” Sur-reply 4; Ex. 2005 ¶ 48; *see also* Tr. 43:20–44:16 (Q: “Patent Owner’s position is not that [Dr. Kattamis’] statement [regarding reconfiguring Richardson] is incorrect, your position is that this statement is not sufficient to support a *prima facie* case of obviousness, is that accurate? [A]: Yes, that’s correct.”).

Accompanying its Reply, Petitioner presented additional testimony detailing changes made to the Richardson circuit to successfully relocate the Richardson switch. Ex. 1016 ¶¶ 8–16; Reply 16–19. According to Dr. Kattamis, a person of ordinary skill in the art would have been able to accomplish the task in a few hours. Reply 18; Ex. 1016 ¶¶ 15–16. Once again, Patent Owner did not substantively dispute this evidence.¹⁰ Thus, the evidence of record¹¹ demonstrates that reconfiguring the Richardson system to provide switching circuitry on the negative side as opposed to the positive side switch was not beyond the capabilities of a person of ordinary skill in the art.

¹⁰ Patent Owner contends that the Kattamis Reply Declaration comprises improper evidence. Sur-reply 4–6. We disagree, as this testimony responds to issues raised in Patent Owner’s Response, namely the argument that “if the required structure of ‘a first pole of a first battery connected with . . . a first lead of a load’ is deployed in Richardson . . . [the] invention will not work or, at least, would not work without complex further modification unconsidered by Petitioner.” PO Resp. 43 (first alteration in original); *see* 37 C.F.R. § 42.23(b); *Belden*, 805 F.3d at 1077–78 (Fed. Cir. 2015).

¹¹ Petitioner states that it does not rely on Dr. Kattamis’ redesign testimony in the Kattamis Reply Declaration as part of its *prima facie* case of obviousness. Tr. 6:20–24. Nevertheless, it constitutes unchallenged evidence of record confirming a person of ordinary would have been able to modify Richardson in view of Krieger.

In view of the foregoing, and consistent with the analytical framework set forth in *KSR*, we find that Petitioner has demonstrated by a preponderance of the evidence that locating Robinson’s switch on the negative side is “likely the product not of innovation but of ordinary skill and common sense.” *KSR*, 550 U.S. at 421.

Furthermore, we disagree with Patent Owner’s assertion that Petitioner has failed to establish a prima facie case of obviousness. PO Resp. 41; Sur-reply 1, 2, 4. Although Patent Owner argues that “Petitioner does not point to any teaching, suggestion, or motivation found in the prior art references themselves as providing the skilled artisan a reason to combine their teachings,” Patent Owner also acknowledges that under *KSR*, “a teaching, suggestion, or motivation to make the claimed invention need not be found explicitly in the prior art.” PO Resp. 21, 24 (citing *KSR*, U.S. 550 at 418). And while we agree in general with Patent Owner’s assertion that common characteristics in the prior art do not constitute substantial evidence of a motivation to combine (PO Resp. 22–27), Petitioner relies on more than just common characteristics to support its obviousness challenge. *E.g.*, Pet. 36 (arguing it would be obvious to try locating Richardson’s switch on the negative side); Ex. 1008 ¶ 157. Indeed, Patent Owner recognizes that

In certain limited circumstances, common components or features can go toward showing that a combination would be obvious to try. *See Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1361 (Fed. Cir. 2011) (“[A] combination is only obvious to try if a person of ordinary skill has ‘a good reason to pursue the known options.’” (quoting *KSR*, 550 U.S. at 421)).

PO Resp. 26.

Petitioner’s evidence demonstrates that Richardson and Krieger disclose the limited “known options” for placing the switch—on the positive terminal or negative terminal. Pet. 33–36; Ex. 1008 ¶¶ 152–156; Ex. 1003, Fig. 2C; Ex. 1005, Fig. 1, 8:59–9:10. Furthermore, the undisputed evidence showing that Richardson and Krieger share the goal of creating safe jump starter devices demonstrates that a person of ordinary skill in the art would have had reason to pursue the known option disclosed in Krieger. Ex. 1008 ¶ 64; Ex. 1003 ¶ 4; Ex. 1005, 1:47–51; *KSR*, 550 U.S. at 421. Accordingly, we disagree with Patent Owner’s assertion that Petitioner fails to show that a skilled artisan would have a “good reason” to modify the prior art devices. Sur-reply 9.

For all of the foregoing reasons, we find that Petitioner has demonstrated by a preponderance of the evidence that claim 1 is unpatentable as obvious in view of Richardson and Krieger.

b. Claims 4–6

Claims 4–6 depend directly or indirectly from claim 1. Petitioner directs us to portions of Richardson and Krieger that disclose the additional limitations in these claims. Pet. 44–46. Petitioner also relies on its arguments regarding the combination of Richardson and Krieger discussed above with regard to claim 1.

Patent Owner does not separately challenge the arguments and evidence Petitioner presents for claims 4–6. *See* PO Resp. 5, 20–22. Instead, Patent Owner relies on the same arguments for these claims as it does for claim 1. *See* PO Resp. 28–48; *see generally* Sur-reply.

After reviewing the evidence and arguments Petitioner presents in the Petition regarding these claims, including the relevant portions of the

supporting Kattamis Declaration, we agree, for the reasons explained in the Petition, that Richardson and Krieger disclose or suggest all of the limitations in these claims. Pet. 44–46. We also find, for the reasons discussed above, that it would have been obvious to modify Richardson in view of Krieger. As a result, we determine Petitioner has established by a preponderance of the evidence that claims 4–6 are unpatentable as obvious in view of Richardson and Krieger.

c. Claim 3

As discussed above, we construe the phrase “the switching circuit conducts power supply or power outage for the load through the microcontroller” in claim 3 to mean “[t]he power for charging the load passes through the microcontroller.” Pet. 15; Reply 3–6. Petitioner admits that under this construction claim 3 is not unpatentable. Pet. 15. As a result, we determine that Petitioner has not demonstrated by a preponderance of the evidence that claim 3 is unpatentable as obvious in view of Richardson and Krieger.

H. Petitioner’s Remaining Patentability Challenges

Having determined that Petitioner establishes by a preponderance of the evidence that Richardson anticipates claims 7–9, 11, 12, 14–18, 20, that claim 13 is unpatentable as obvious in view of Richardson and George, and that claims 1 and 4–6 are unpatentable as obvious in view of Richardson and Krieger, we do not address Petitioner’s additional grounds challenging claims 1, 4–9, 11–18, and 20. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *Boston Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (nonprecedential)

(“We agree that the Board need not address [alternative grounds] that are not necessary to the resolution of the proceeding.”).

Additionally, Petitioner admits that under the construction of the phrase “the switching circuit conducts power supply or power outage for the load through the microcontroller” we have adopted, claim 3 is not unpatentable. Pet. 15. As a result, we determine that Petitioner has not demonstrated by a preponderance of the evidence that claim 3 is unpatentable as obvious in view of Baxter and Krieger.

IV. CONCLUSION

After reviewing the complete record developed during the course of the trial, we conclude that Petitioner has satisfied its burden of demonstrating, by a preponderance of the evidence, that claims 1, 4–9, 11–18, and 20 of the ’653 patent are unpatentable.¹² Petitioner, however, has not demonstrated by a preponderance of the evidence that claim 3 of the ’653 patent is unpatentable.

¹² Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

V. ORDER

In consideration of the foregoing, it is hereby

ORDERED that Petitioner established by a preponderance of the evidence that claims 1, 4–9, 11–18, and 20 of the '653 patent are unpatentable;

FURTHER ORDERED that Petitioner has not established by a preponderance of the evidence that claim 3 of the '653 patent is unpatentable; and

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

In summary:

Claim(s)	35 U.S.C. §	References/ Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
7–9, 11, 12, 14– 18, 20	102	Richardson	7–9, 11, 12, 14–18, 20	
13	103	Richardson, George	13	
1, 3–6	103	Richardson, Krieger	1, 4–6	3
7–9, 11, 12, 14– 18, 20	102	Baxter ¹³		
1, 3–6	103	Baxter and Krieger		3

¹³ As explained above, we do not reach this ground, or the ground involving Baxter and Krieger, with the exception of claim 3, in view of our determination that Petitioner has otherwise established claims 1, 4–9, 11–18, and 20 are unpatentable.

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Claim(s)	35 U.S.C. §	References/ Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
Overall Outcome			1, 4-9, 11-18, 20	3

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