

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DONNER TECHNOLOGY, LLC,
Petitioner,

v.

PRO STAGE GEAR, LLC,
Patent Owner.

Case IPR2018-00707
Patent 6,459,023 C1

Before KEVIN C. TROCK, JOHN A. HUDALLA, and
STACY B. MARGOLIES, *Administrative Patent Judges*.

HUDALLA, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
Inter Partes Review
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

Petitioner, Donner Technology, LLC (“Petitioner”), filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–8 and 14–21 of U.S. Patent No. 6,459,023 C1 (Ex. 1001, “the ’023 patent”). Patent Owner, Pro Stage Gear, LLC (“Patent Owner”), filed a Preliminary Response (Paper 6, “Prelim. Resp.”). Taking into account the arguments presented in Patent Owner’s Preliminary Response, we determined that the

information presented in the Petition established that there was a reasonable likelihood that Petitioner would prevail with respect to its unpatentability challenges. Pursuant to 35 U.S.C. § 314, we instituted this proceeding on August 28, 2018, as to all challenged claims and all grounds of unpatentability. Paper 7 (“Dec. on Inst.”).

During the course of trial, Patent Owner filed a Patent Owner Response (Paper 26, “PO Resp.”), and Petitioner filed a Reply to the Patent Owner Response (Paper 34, “Pet. Reply”). Patent Owner also filed a Sur-Reply. Paper 38 (“PO Sur-Reply”). An oral hearing was held on May 30, 2019, and a transcript of the hearing is included in the record. Paper 48 (“Tr.”).

Petitioner filed declarations of Michael Stratton with its Petition (Ex. 1015) and Reply (Ex. 1051). Patent Owner filed a declaration of John Chandler (Ex. 2001) with its Preliminary Response and a declaration of Matthew Farrow with its Response (Ex. 2029). The parties also filed transcripts of the depositions of Mr. Stratton (Exs. 2033, 2034), Mr. Farrow (Exs. 1047, 1048), and Mr. Chandler (Ex. 1049).

Petitioner filed a motion to exclude certain exhibits and certain testimony from Mr. Farrow related to a commercial product. Paper 39. Petitioner’s motion also seeks to exclude certain testimony from Mr. Farrow related to secondary considerations of nonobviousness. *Id.* Patent Owner filed an opposition (Paper 42), and Petitioner filed a reply (Paper 44). Patent Owner filed an additional declaration of Mr. Farrow (Ex. 2054) with its opposition.

With our authorization (Paper 13, 2–4), Patent Owner filed a combined motion to submit supplemental information and motion to

terminate based on a failure to identify all real parties-in-interest. Paper 20. Petitioner filed an opposition. Paper 15.¹ We granted Patent Owner's motion to submit supplemental information, but denied Patent Owner's motion to terminate. Paper 24.

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–8 and 14–21 of the '023 patent. For the reasons discussed below, Petitioner has demonstrated by a preponderance of the evidence that claims 1–4, 6, 14–17, and 19 of the '023 patent are unpatentable. Petitioner has not demonstrated by a preponderance of the evidence that claims 5, 7, 8, 18, 20, and 21 of the '023 patent are unpatentable.

I. BACKGROUND

A. *Related Proceedings*

The parties identify the following proceedings related to the '023 patent (Pet. 5–6; Paper 5, 1):

Pro Stage Gear, LLC v. Guangzhou Rantion Trading Co., No. 1:17-cv-00030 (E.D. Tenn. filed Feb. 1, 2017);

Swift Distribution, LLC v. Pro Stage Gear, LLC, No. 1:17-cv-00585 (D. Colo. filed March 6, 2017); and

Case IPR2018-00708, in which Petitioner challenges different claims of the '023 patent. A Final Written Decision in IPR2018-00708 is being issued concurrently with this Decision.

¹ Due to an apparent filing error, the parties' papers related to the combined motion were not filed in chronological order. See Paper 19.

B. The '023 Patent

The '023 patent relates to mounting foot pedal controls, such as guitar effects, on a pedal board for foot operation. Ex. 1001, 1:8–11. Figure 7 of the '023 patent is reproduced below.

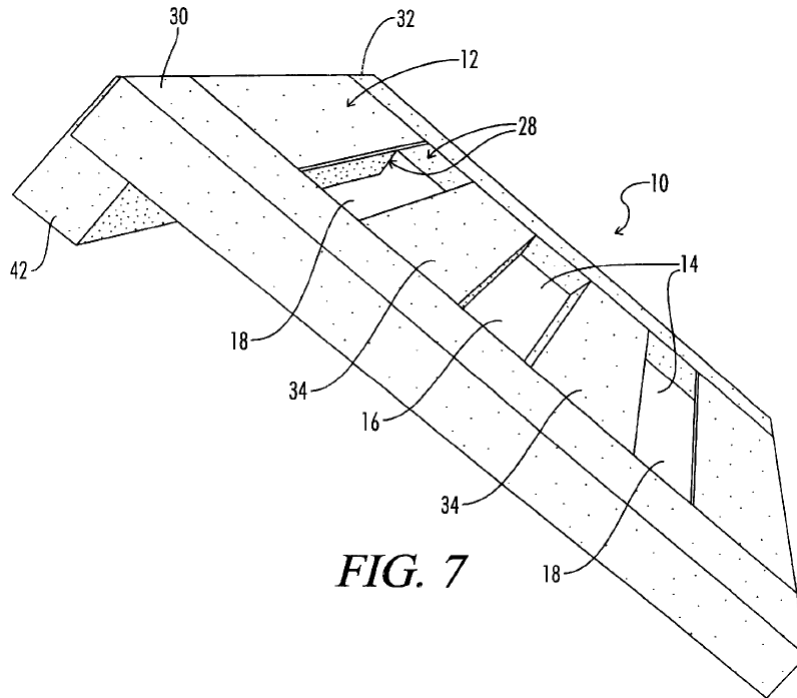


Figure 7 depicts effects support board 10 with effect mounting surface 12, frame or support structure 28, and frame base 42. *Id.* at 3:9–12, 3:61–62. Effect mounting surface 12 includes cable connection openings 14, which may be defined as side connection opening 18 or end connection opening 16. *Id.* at 3:28–31.

Figures 12 and 14 of the '023 patent are reproduced below.

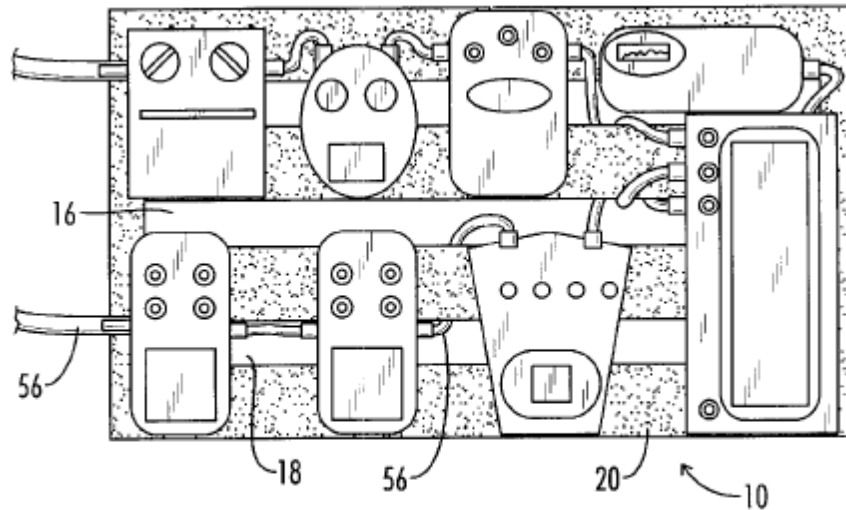


FIG. 12

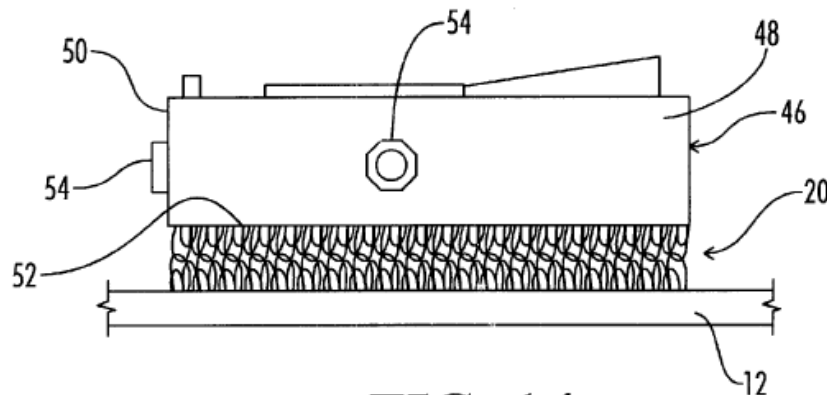


FIG. 14

Figure 12 depicts effects support board 10 with installed guitar effects. *Id.* at 2:66–67. Figure 14 depicts guitar effect 46 with side 48 and end 50 for supporting adapter 54. *Id.* at 4:44–45. Side connection opening 18 in Figure 12 allows for the connection of cable 56 to adapter 54 located on side 48 of guitar effect 46. *Id.* at 3:31–34. End connection opening 16 in Figure 12 allows for the connection of cable 56 to adapter 54 located on end 50 of guitar effect 46. *Id.* at 3:36–39. Friction surface 20, such as a hook and loop connection system, is connected to effect mounting

surface 12 and bottom surface 52 of guitar effect 46 to support guitar effect 46 on effect mounting surface 12. *Id.* at 3:43–46.

The '023 patent issued from an application that was filed September 7, 2000, which claims priority to a provisional application filed on September 7, 1999. *Id.* at [22], [60]. As discussed below, Petitioner attempts to establish that, at a minimum, its asserted references qualify as prior art relative to the September 7, 1999, filing date of the provisional application.

The '023 patent was reexamined after the Office granted a request for *ex parte* reexamination of claims 1–13 filed by Warwick GmbH & Co. Music Equipment KG on June 22, 2015. Ex. 1005, 255–69 (decision granting reexamination), 290–340 (reexamination request). The Office issued an Ex Parte Reexamination Certificate for the '023 patent on July 18, 2016. *Id.* at 1–4.² With respect to the challenged claims, the reexamination determined claims 1–3 and 7 to be patentable as amended; determined claims 4–6 and 8, which are dependent on an amended claim, to be patentable; and added new claims, including claims 14–21, which were determined to be patentable. *Id.* at 2 (1:12–22).

C. *Illustrative Claim*

Of the challenged claims, claims 1–3, 7, 14–16, and 20 of the '023 patent are independent. Claim 4 depends from claim 3; claims 5 and 6 depend from claim 2; claim 8 depends from claim 7; claim 17 depends from

² Petitioner included a copy of the Reexamination Certificate in two other exhibits. See Ex. 1001, 11–14; Ex. 1002. Hereinafter, we refer to the copy in Exhibit 1001.

claim 16; claims 18 and 19 depend from claim 15; and claim 21 depends from claim 20. Claim 14 is illustrative of the challenged claims and recites:

14. An effect support board mounting a guitar effect above an area, the guitar effect including a bottom surface and an adapter connected to a cable, the adapter located on an end of the guitar effect comprising:

an effect mounting surface having a top side to which is mounted the bottom surface of the guitar effect and an opposite bottom side,

the effect mounting surface defining a cable connection opening with the cable passing from the bottom side of the effect mounting surface through the cable connection opening to the top side to directly connect to the adapter on the end of the guitar effect on the top side of the effect mounting surface,

the cable connection opening thereby positioned as an end connection opening; and

a frame coupled to the effect mounting surface and adapted to support the effect mounting surface.

D. Prior Art

Petitioner relies on the following prior art:

Roland Corporation, Boss SCC-700C -700F Sound Control Center Owner's Manual (Ex. 1006, "SCC-700" or "SCC-700 manual");

U.S. Patent No. 3,585,893 to Arseneault, filed Nov. 15, 1968, issued June 22, 1971 (Ex. 1012, "Arseneault");

U.S. Patent No. 6,215,055 B1 to Saravis, filed Dec. 27, 1999, issued Apr. 10, 2001 (Ex. 1013, "Saravis"); and

U.S. Patent No. Des. 339,612 to Carter et al., filed Aug. 14, 1992, issued Sept. 21, 1993 (Ex. 1014, "Carter").

E. The Instituted Grounds

We instituted *inter partes* review of claims 1–8 and 14–21 of the ’023 patent on the following grounds (Dec. on Inst. 40), which are all of the grounds presented in the Petition (Pet. 8):

Reference(s)	Basis	Claims Challenged
SCC-700	35 U.S.C. § 102(b) ³	14 and 15
SCC-700 and Arseneault	35 U.S.C. § 103(a)	1, 18, and 19
SCC-700 and Saravis	35 U.S.C. § 103(a)	2, 16, and 17
SCC-700, Arseneault, and Saravis	35 U.S.C. § 103(a)	3–6
Carter and Saravis	35 U.S.C. § 103(a)	7 and 20
Carter, Saravis, and Arseneault	35 U.S.C. § 103(a)	8 and 21

F. Claim Interpretation

In an *inter partes* review based on a petition filed before November 13, 2018,⁴ we construe claims in an unexpired patent by applying

³ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011), amended 35 U.S.C. §§ 102 and 103. Because the ’023 patent was filed before the effective date of the relevant amendments, the pre-AIA versions of §§ 102 and 103 apply.

⁴ On October 11, 2018, the USPTO revised its rules to harmonize the Board’s claim construction standard with that used in federal district courts. Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (codified at 37 C.F.R. pt. 42 (2019)). This rule change, however, applies only to petitions filed on or after November 13, 2018. *Id.*

the broadest reasonable interpretation in light of the specification. 37 C.F.R. § 42.100(b) (2017); *see Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). Under the broadest reasonable interpretation standard, and absent any special definitions, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech. Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definitions for claim terms or phrases must be set forth “with reasonable clarity, deliberateness, and precision.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

1. “to which is mounted the bottom surface of the guitar effect”

Claims 14 and 15 recite “an effect mounting surface having a top side to which is mounted the bottom surface of the guitar effect.” Although Patent Owner cites dictionary definitions and contends that the broadest reasonable interpretation of “mounted” in this limitation is its ordinary and customary meaning (*see* PO Resp. 26 n.5 (citing Ex. 2051, 4; Ex. 2052, 3; Ex. 2053, 3), Patent Owner’s arguments reveal that it is urging a more specific interpretation. In particular, Patent Owner contends “mounted” means “attach[ment of] the bottom surface of an effect to the unit board.” *Id.* at 25–26 (citing Ex. 2029 ¶ 75); *see also* PO Sur-Reply 6 (discussing “attachment between the bottom surface of effects and the units board”). In other words, Patent Owner asserts that the bottom surface of the guitar effect itself must be attached to the effect mounting surface (such as by using the Velcro™ brand fastening system as disclosed in the ’023 patent), rather than

The revised claim construction standard therefore does not apply to this proceeding. *Id.*

attaching the guitar effect from its side or top to secure the bottom surface in place. PO Resp. 25–26.

Petitioner argues the claims do not “specify any means by which the bottom surface of a guitar effect is ‘mounted’ to the top side of the effect mounting surface.” Pet. Reply 10. Petitioner also argues that Patent Owner’s cited dictionary definitions “demonstrate the term ‘mount’ or ‘mounted’ only entails holding or fixing in place, regardless of the means used.” *Id.* at 11 (citing Ex. 2051, 4; Ex. 2052, 3).

Although the specification of the ’023 patent includes numerous instances of the terms “mounted,” “mounting,” and “effects mounting surface,” very little of the specification sheds light on what is meant by “mounted” in the claims. The primary example of how to mount effects is described as follows: “When mounting the effects 46 on the pedal board 10 by use of the Velcro™ brand fastening system as a frictional surface 20, the user can safely and securely organize, operate and transport any number of effects pedals 46 as a single multi-functional unit.” Ex. 1001, 5:10–15; *see also id.* at 5:7–9 (“In general, the Velcro™ brand fastening system includes an adhesive back for connection to the back support surface and the bottom of the guitar effect itself.”). The specification also describes the effect of mounting: “Once mounted, the effects pedals 46 cannot move out of place or be disconnected, even under the most extreme conditions or circumstances that can be considered normal use.” *Id.* at 5:20–23; *see also id.* at 3:54–57 (“The important characteristics for the friction surface 20 are that it maintains the guitar effect 46 in position on the effect mounting surface 12.”). Furthermore, the specification states that “[a]dditional positional support may be supplied by tightly interweaving the cable 56

within the cable connection openings 14 and around the frame or support structure 28 to tightly hold the guitar effect 46.” *Id.* at 3:57–60. Thus, according to the ’023 patent specification, mounting can be accomplished by directly attaching the bottom surface of the guitar effect to the effect mounting surface (e.g., via a frictional surface), but it also can be at least partially accomplished in other ways (e.g., cable interweaving), as well.

Patent Owner also puts forth dictionary definitions (“[T]o attach to a support or assemble for use”; “[T]o attach to or fix on or in a support, backing, setting, etc.”; “[S]et in or attach to a backing, setting, or other support”) to support its contention that “mounting” the bottom surface of the effect pedal requires attachment of the bottom surface. *See* PO Resp. 25–26 & n.5 (citing Ex. 2051, 4; Ex. 2052, 3; Ex. 2053, 3). Yet “attachment” is merely one alternative even in the definitions put forth by Patent Owner, and these definitions do not specify where or how the “attachment” is accomplished. We also agree with Petitioner (Pet. Reply 11) that other definitions in the same dictionaries support a broader construction, i.e., setting or fixing in place. *See, e.g.*, Ex. 2052, 3 (“to . . . fix on or in a support, backing, setting, etc.”); Ex. 2053, 3 (“set in . . . a backing, setting, or other support.”).

Mr. Farrow’s direct testimony references “the use of a hook and loop fastener to mount the bottom of the effects to the surface” and distinguishes the bottom surface of an effect being “mounted upon” a surface from an effect being “mounted to” the surface. Ex. 2029 ¶ 75 (citing Ex. 1001, 3:43–60, Figs. 12–14). Yet, to the extent Mr. Farrow’s testimony is purportedly based on the specification, we do not find the specification restrictive on that point, as discussed above. *See, e.g.*, Ex. 1001, 3:57–60 (discussing

additional positional support from cable interweaving). We also note that Mr. Farrow testified about a number of known means for mounting pedal effects, including the use of adhesive tape, hook-and-loop fastener, cable ties, zip ties, and screws. See Ex. 1047, 177:16–179:7. At least some of these methods do not require directly attaching the bottom of a guitar effect. For example, cable interweaving and zip ties could be used to mount an effect by wrapping a cable or zip tie around the side and top surfaces of the effect and under the mounting surface, which would fix the bottom surface in place.

Thus, after considering the evidence of record, we construe the term “mounted” in claims 14 and 15 only insofar as it does not require attachment of the bottom surface of a guitar effect to the top side of the effect mounting surface.

2. “*frame*”

Each of independent claims 1–3 and 14–16 recites a “frame.” In our Institution Decision, we preliminarily construed “frame” to mean “support structure.” Dec. on Inst. 9–11. In its Reply, Petitioner contends the broadest reasonable interpretation for “frame” is a structure that supports, which is consistent with our Institution Decision. Pet. Reply 11. According to Petitioner, “[n]othing in the intrinsic record supports a finding that the ‘frame’ is limited to the embodiment in the figures, or that the ‘frame’ is a specific type of ‘support structure.’” *Id.* Petitioner contends “frame” and “support structure” are used interchangeably in the specification of the ’023 patent and in claims 13 and 27 of the ’023 patent. *Id.* at 12 (citing

Ex. 1001, 3:11–12, 3:21, 3:59–60, 3:63, 3:65, 4:35–37, p. 12 (2:44, 2:53), p. 13 (4:38–39, 4:48)).

According to Patent Owner, the '023 patent specification uses “frame” to refer to “a type of support structure, and more particularly, the ‘frame’ shown in the figures.” PO Resp. 27 (citing Ex. 2029 ¶ 73). Patent Owner argues that Petitioner’s interpretation of frame is unreasonable because “the frame must not just provide support but ‘support the effect mounting surface’ and ‘take the rigors and impact associated with travel, playing, set-up, and teardown.’” PO Sur-Reply 7 (citing Ex. 1001, 2:20–24); *see also* PO Resp. 28 (arguing the same). Patent Owner also cites certain dictionary definitions as support that the frame must include “the structure surrounding or enclosing a pedalboard.” PO Resp. 28–29 (citing Ex. 2008, 3; Ex. 2009, 3; Ex. 2010, 3). In other words, Patent Owner asserts that “frame” must include a border and/or end members.

Figures 7 and 8 of the '023 patent illustrate an example of a frame. Figure 7 is reproduced below.

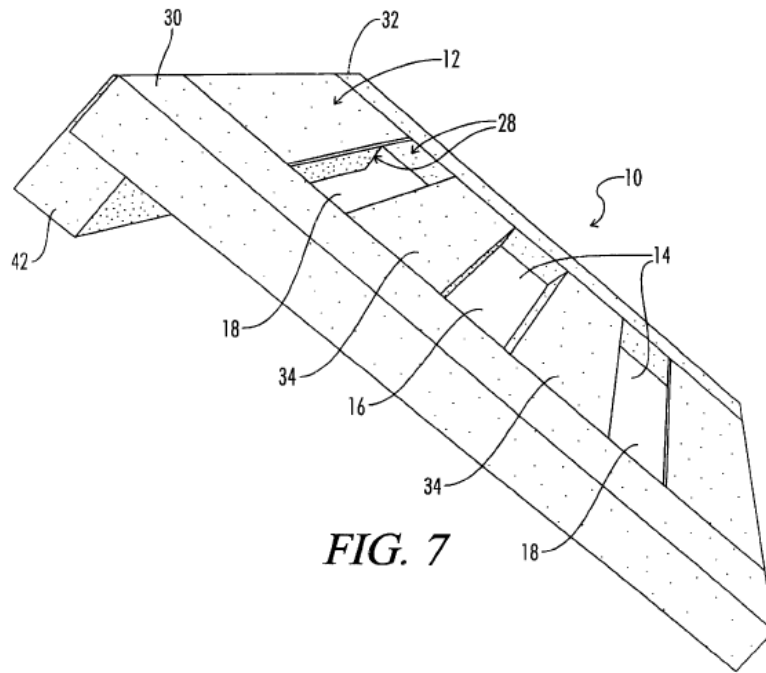


Figure 7 depicts a top view of the effects mounting board. *Id.* at 2:55–56. According to the '023 patent, “[t]he effect support board 10 is constructed on a frame or support structure 28 which supports the effect mounting surface 12.” *Id.* at 3:61–64. The specification of the '023 patent states that the frame supports the effect mounting surface. *Id.*; *see also id.* at 2:20–24. The specification also repeatedly uses the term “support structure” interchangeably with “frame.” *See, e.g., id.* at 3:10–13, 3:21–22, 3:57–60, 3:62–64. These passages from the specification do not indicate whether a frame must include a border and/or end members. In addition, we do not agree with Patent Owner’s argument (PO Resp. 27) that we should read in a requirement for a border or end members from the drawing figures, because “drawings in a patent need not illustrate the full scope of the invention.” *Arlington Indus., Inc. v. Bridgeport Fittings, Inc.*, 632 F.3d 1246, 1254 (Fed. Cir. 2011). We also do not agree with Patent Owner’s argument (PO Resp.

28; PO Sur-Reply 7) that the frame’s ability to take the rigors and impact of use (see Ex. 1001, 2:20–24) means that the frame necessarily must include a border. The record contains no persuasive evidence about why a border or end members—as opposed to any other particular structural arrangement—would be required in order for a frame to withstand the rigors and impact of use.

We also consider the usage of “frame” in the claims. Patent Owner cites the use of “frame” in claims 1–3 and 14–16 in contrast to “support structure” in claims 9, 12, and 13 and contends this difference should lead to a presumption that these terms have different meanings. PO Resp. 27 (citing *Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.*, 93 F.3d 1572, 1579 (Fed. Cir. 1996)). Nevertheless, we agree with Petitioner (Pet. Reply 12) that claims 13 and 27 each recite both “support structure” and “frame” and appear to use these terms interchangeably. Ex. 1001, 12 (2:44, 2:53), 13 (4:38–39, 4:48). And as explained above, the specification uses the terms interchangeably. See, e.g., *id.* at 3:10–13, 3:21–22, 3:57–60, 3:62–64. Considering both parties’ arguments about usage in the claims, we find the use of “frame” in one set of claims and the use of “support structure” in another set of claims inconclusive of a presumed difference between “frame” and “support structure.”

The record also includes extrinsic evidence regarding the meaning of “frame” from various dictionaries. As support for its surrounding structure requirement, Patent Owner cites certain definitions in its Response. See PO Resp. 28–29 (quoting Ex. 2008, 3) (“the case or border into which a window, door, etc. is set and which serves as a structural support”); (quoting Ex. 2009, 3) (“a case or border enclosing a picture, window, door, etc.”);

(quoting Ex. 2010, 3) (“a supporting or enclosing border or open case (as for a window or picture)”). Yet at least some of the other definitions in these same dictionaries comport with the notion that a frame need not include a border or end members. *See* Ex. 2008, 3 (“body structure in general”); Ex. 2009, 3 (“the basic rigid supporting structure of anything”); Ex. 2010, 3 (“an arrangement of structural parts that gives form or support”). As such, the wide-ranging dictionary evidence of record does not support the more limited interpretation proposed by Patent Owner.

We additionally have considered the testimony from Mr. Farrow on the construction of “frame.” He testifies that “[b]ased on [his] understanding of the ’023 Patent specification, the broadest reasonable interpretation of ‘frame’ is a structure that surrounds or encloses something, like a door frame, window frame, or picture frame.” Ex. 2029 ¶ 72. But Mr. Farrow conceded on cross-examination that this statement was not based on the specification of the ’023 patent and, rather, was based on his own understanding. Ex. 1047, 257:12–258:15, 260:18–261:23. As such, we discern no creditable basis for his testimony. Mr. Farrow also conceded that “the word ‘frame’ has innumerable dictionary definitions,” but he “d[id] not believe that a more expansive definition would be considered reasonable by a person of ordinary skill in the art reading the ’023 Patent.” Ex. 2029 ¶ 72. Yet Mr. Farrow provides no explanation why this is so. Thus, we accord Mr. Farrow’s testimony in support of Patent Owner’s proposed construction little or no weight.

Having considered the entire trial record, we do not agree that the broadest reasonable interpretation of “frame” in light of the ’023 patent

specification must include a border or end members. Thus, we maintain our initial construction that a “frame” is “support structure.”

3. *Other Terms*

We determine that no other terms require explicit construction. *See, e.g., Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

II. ANALYSIS

A. *Legal Standards*

A claim is anticipated if a single prior art reference either expressly or inherently discloses every limitation of the claim. *Orion IP, LLC v. Hyundai Motor Am.*, 605 F.3d 967, 975 (Fed. Cir. 2010). Although the elements must be arranged or combined in the same way as in the claim, “the reference need not satisfy an *ipsissimis verbis* test,” i.e., identity of terminology is not required. *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009) (citing *In re Bond*, 910 F.2d 831, 832–33 (Fed. Cir. 1990)).

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter 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. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

The question of obviousness is resolved on the basis of underlying factual

determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We also recognize that prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (citing *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)).

B. Level of Ordinary Skill in the Art

Citing testimony from Mr. Stratton, Petitioner contends a person having ordinary skill in the art would have had “approximately one year of practical experience mounting different types and arrangements of guitar effects on various types of boards and modifying, designing, and building boards for mounting guitar effects.” Pet. 19 (citing Ex. 1015 ¶ 29). We applied this definition in our Institution Decision. Dec. on Inst. 8.

Citing testimony from Mr. Farrow, Patent Owner contends an ordinarily skilled artisan would have been “a guitarist with some experience mounting different types and arrangements of guitar effects and power supplies on plywood or shelf boards and either rearranging the effects or moving selected effects to a new plywood board.”⁵ PO Resp. 21 (citing Ex. 2029 ¶ 34). Among other things, Patent Owner notes the low educational level of those active in the field. *Id.*

⁵ We note that Patent Owner’s proposed definition differs somewhat from the one proposed in its Preliminary Response. *See* Prelim. Resp. 10.

In reply, Petitioner criticizes Patent Owner's definition because it "does not include any experience modifying, designing, or buildings [sic] effects boards." Pet. Reply 6; *see also id.* at 1 (stating Patent Owner's definition "would exclude someone with experience designing effects boards—the subject of the prior art and invention"). Petitioner also criticizes Mr. Farrow's cross-examination testimony that an ordinarily skilled artisan would not have been "capable of going into a facility and constructing, designing their own pedalboard." *Id.* at 6 (quoting Ex. 1047, 244:1–245:14).

In its Sur-Reply, Patent Owner argues its "definition does not 'exclude someone with experience designing effects boards.'" PO Sur-Reply 2 (quoting Pet. Reply 1). Patent Owner explains that it simply disputes Petitioner's level of skill definition as being too high. *Id.*

We agree with both parties that ordinarily skilled artisans working on guitar effects boards would have had no particular educational background. We also agree that the level of ordinary skill was relatively low. Nonetheless, Patent Owner's proposal about an ordinarily skilled artisan merely having "some experience" is too amorphous to be useful in defining the level of ordinary skill. For example, a guitarist with 15 minutes of experience rearranging an effects board would fit Patent Owner's definition, but such a person could hardly be considered ordinarily skilled. The market for effects boards had developed to some degree by 1999, the earliest possible effective filing date of the challenged claims, which suggests that ordinarily skilled artisans would have had at least some meaningful experience designing, modifying, and/or building effects boards in that time frame. *See* Ex. 1001, 1:23–30, 1:39 (stating that guitar effects were

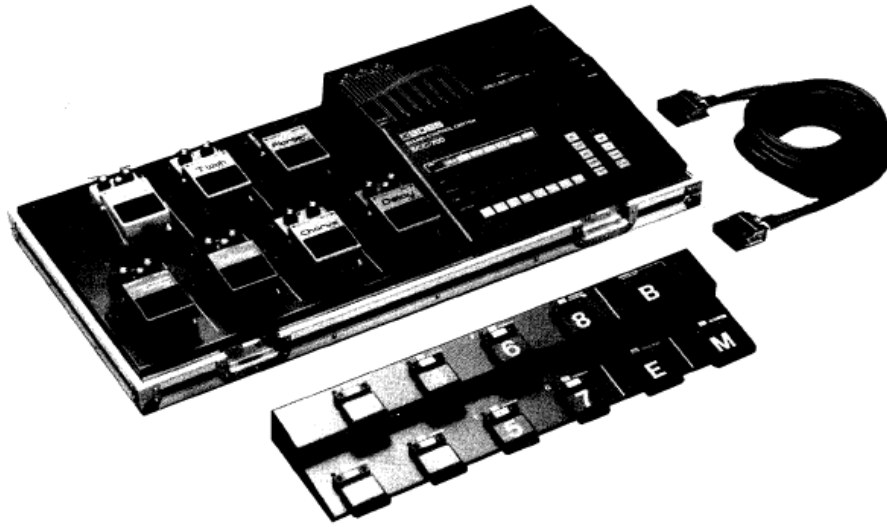
introduced in the late 1960s and that at least one effects pedal rack was in the prior art); Ex. 2001 ¶ 7 (Mr. Chandler testifying that “pedal mounting assemblies” were available in the 1990s). Petitioner’s proposal includes a relatively modest level of practical experience—only one year—which comports with the modest development of the art in the 1999/2000 time frame. Thus, we apply Petitioner’s definition of the level of ordinary skill in the art. We are satisfied that this definition comports with the level of skill necessary to understand and implement the teachings of the ’023 patent and the asserted prior art.

C. Anticipation Ground Based on SCC-700

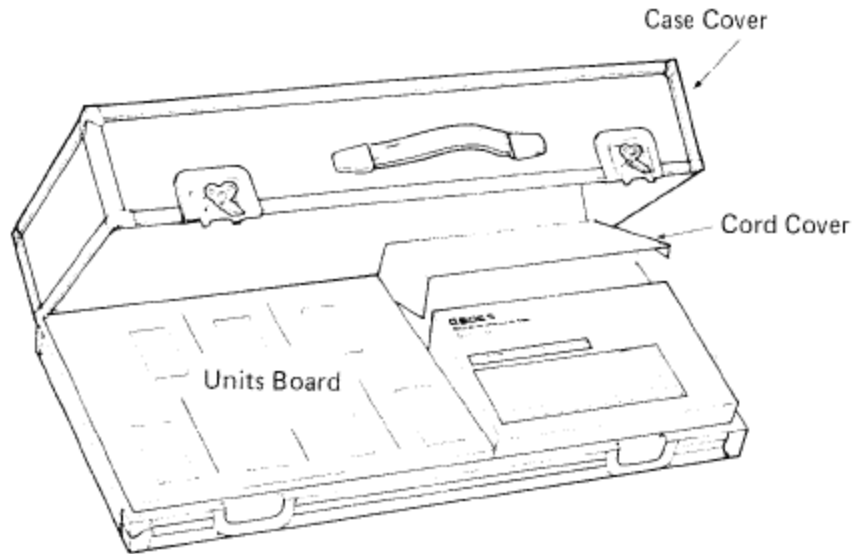
Petitioner contends that claims 14 and 15 are anticipated by SCC-700. Pet. 35–44; Pet. Reply 9–13. Patent Owner disputes Petitioner’s contentions. PO Resp. 24–31; PO Sur-Reply 5–8.

1. SCC-700

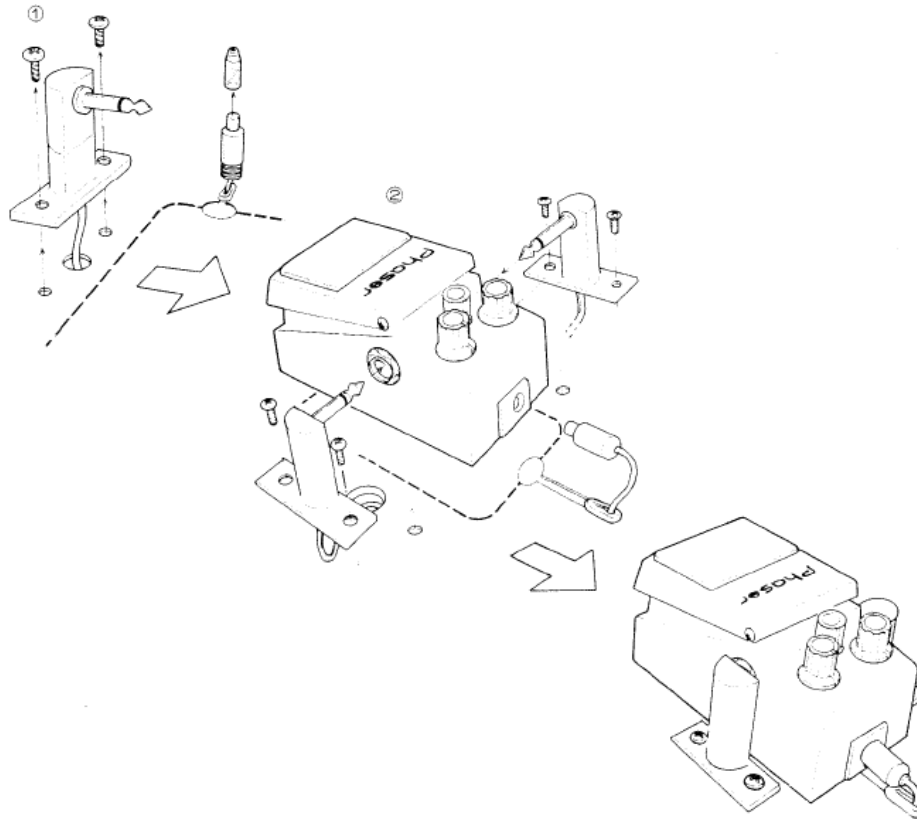
SCC-700 is an owner’s manual for the Boss SCC-700 Sound Control Center by Roland Corporation (“Roland”). Ex. 1006, 1. The Sound Control Center “is a computer controlled device to which [a] maximum of 7 effect units can be connected.” *Id.* at 2. A picture on the front cover of SCC-700 is reproduced below.



Id. at 1. The picture above shows seven effect units on the Sound Control Center. A diagram from page 29 of SCC-700 is reproduced below.



Id. at 29. This diagram of the SCC-700B Roland Effects Board from page 29 identifies the area where the effect units are located as a “Units Board.” A diagram from page 31 of SCC-700 is reproduced below.



Id. at 31. This diagram from page 31 depicts how to mount an effect unit on the effects board. *Id.* As can be seen, cables are shown coming through holes in the mounting surface. *See id.*

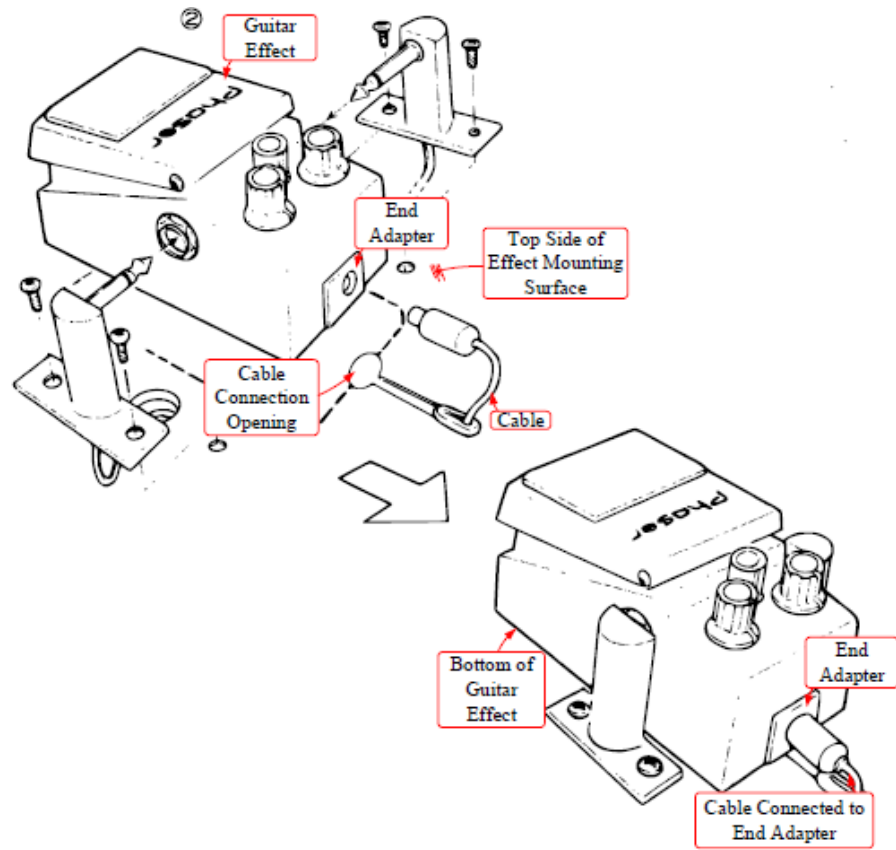
Petitioner contends SCC-700 qualifies as prior art under 35 U.S.C. § 102(b). Pet. 19–23. Citing testimony from two Roland Corporation employees, Petitioner contends SCC-700 “is a true and correct copy of the instruction manual for the SCC-700 product that Roland distributed with the SCC-700 product in the early 1980s.” *Id.* at 19–20 (citing Ex. 1009 ¶ 8; Ex. 1010 ¶ 8). Petitioner also notes that SCC-700 includes an “’82 July” inscription and cites testimony of the former Roland employees to establish “that the SCC-700 manual was distributed in the United States by Roland at least as early as July, 1982.” *Id.* at 21–23 (citing Ex. 1006, 28; Ex. 1009 ¶¶ 7–8; Ex. 1010 ¶¶ 8–9). Petitioner additionally cites testimony from the

former Roland employees that SCC-700 manuals were made available “to interested persons or parties that requested them by telephone or mail . . . in the ordinary course of its regularly conducted business activities.” *Id.* at 22 (citing Ex. 1009 ¶ 10; Ex. 1010 ¶ 10). Petitioner also filed copies of industry periodicals from the early 1980s showing advertisements for the SCC-700 product. *Id.* at 22 (Ex. 1007, 4; Ex. 1008, 2). Patent Owner does not dispute the prior art status of SCC-700.

We determine that SCC-700 qualifies as prior art under § 102(b) based on Petitioner’s evidence of public dissemination of the SCC-700 manual during the 1980s. *See* Pet. 19–23. The public dissemination of the SCC-700 manual occurred more than one year before the earliest possible effective filing date of the challenged claims, which is September 7, 1999. Ex. 1001, [60].

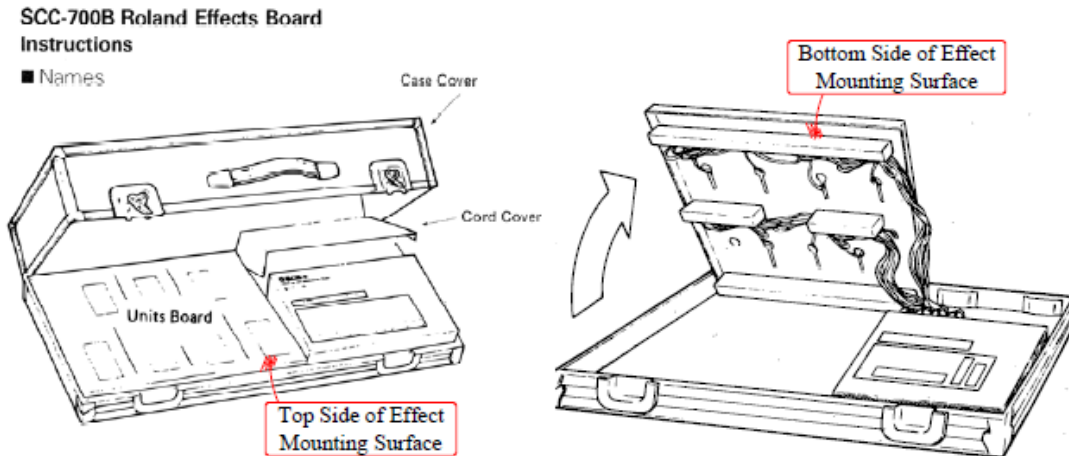
2. *Claim 14*

The preamble of claim 14 recites “[a]n effect support board mounting a guitar effect above an area, the guitar effect including a bottom surface and an adapter connected to a cable, the adapter located on an end of the guitar effect.” Petitioner maps the recited effect support board to SCC-700’s units board for mounting guitar effects. Pet. 35 (citing Ex. 1006, 1, 29, 31). For the bottom surface and adapter, Petitioner provides the following annotated version of a portion of the diagram appearing on page 31 of SCC-700.



Pet. 36 (reproducing and annotating a portion of Ex. 1006, 31). As shown in this annotated diagram, Petitioner has indicated the bottom of the guitar effect, an end adapter, and the cable connected to the end adapter. *Id.* Based on this evidence, we find that SCC-700 discloses the preamble of claim 14, which Patent Owner does not dispute.

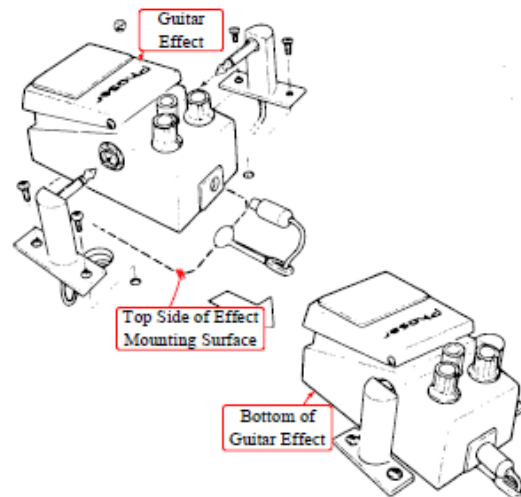
Claim 14 further recites “an effect mounting surface having a top side to which is mounted the bottom surface of the guitar effect and an opposite bottom side.” For this limitation, Petitioner provides the following annotated versions of diagrams appearing on pages 29 and 32 of SCC-700.



Pet. 37 (reproducing and annotating portions of Ex. 1006, 29, 32). As shown in these annotated diagrams, Petitioner has indicated the top and bottom sides of the effect mounting surface. *Id.* Petitioner also contends “[t]he ‘Units Board’ shown in the SCC-700 manual is an effect mounting surface having a top side to which is mounted the bottom surface of a guitar effect.” *Id.* at 36–37. In its Reply, Petitioner quotes instructions from SCC-700 on “How to mount the Effect Unit” and provides an annotated diagram from page 31 of SCC-700, both of which are reproduced below.

■ How to mount the Effect Unit

- First of all, read “9V DC OUT jacks” on P.5 in the SCC-700C owner’s manual.
- ① Unscrew the Fixing Plug and remove the Rubber Cap of the DC Plug.
 - ② Connect the plugs to the units and fasten the Fixing Plugs with the screws.

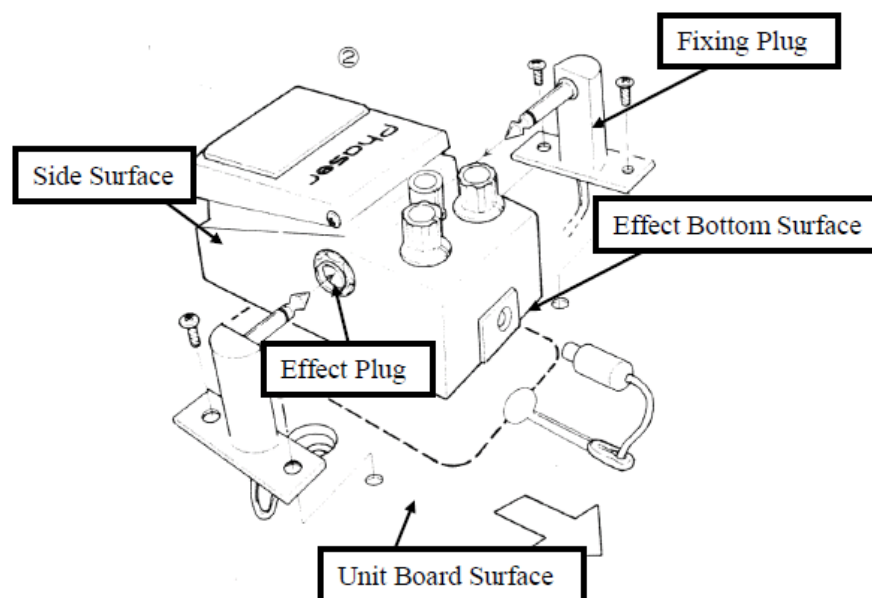


Pet. Reply 10 (reproducing and annotating portions of Ex. 1006, 31).
Petitioner notes that quoted instructions “use[] the word ‘mount’ to reference

how the bottom surfaces of effects are held in place on the top surface of the SCC-700B.” *Id.* Citing testimony from Mr. Stratton, Petitioner contends an ordinarily skilled artisan “would have considered the bottom surface of the effect shown at page 31 of the SCC-700 manual to be mounted to the top surface of the SCC-700B.” *Id.* (citing Ex. 1051 ¶¶ 13–15).

Patent Owner argues Petitioner has not established that SCC-700 discloses the recited mounting. In particular, Patent Owner argues SCC-700 does not use word “mount” on page 31 to characterize the relationship between the bottom surface of the effects and the top surface of the units board. PO Sur-Reply 5–6. Patent Owner further contends SCC-700 “does not i) reference the bottom surface of effects at all, ii) teach any attachment between the bottom surface of effects and the units board, or iii) clearly show that the bottom surface of effects rest[s] on the units board.” *Id.* at 6 (citing Ex. 1006, 31).

To explain its argument, Patent Owner provides an annotated version of a diagram of how to mount an effect unit from page 31 of SCC-700, which is reproduced below.



PO Resp. 25 (reproducing and annotating a portion of Ex. 1006, 31). In this annotated diagram, Patent Owner has indicted the effect bottom surface, effect plug, fixing plug, and unit board surface. Patent Owner contends “[t]he fixing plugs screw into the board, thereby attaching the effect and positioning it between the plugs.” *Id.* (citing Ex. 2029 ¶ 75). As such, Patent Owner contends an ordinarily skilled artisan “would [have] underst[ood] that SCC-700 discloses mounting side adapters of the effect to position the effect upon the unit board surface and not mounting a bottom surface of the effect to the effect mounting surface.” *Id.* Petitioner further contends “the SCC-700 Manual does not teach anything that is intended to attach the bottom surface of an effect to the unit board.” *Id.* at 25–26 (citing Ex. 2029 ¶ 75).

As discussed above, we do not agree with Patent Owner’s interpretation of “mounted” as requiring that the bottom surface of the effects pedal itself must be attached to the effect mounting surface. See *supra* § I.F.1. We observe that SCC-700 uses the word “mount” to describe the relationship between the effect unit and the units board. Ex. 1006, 31–32. Although the mounting is accomplished by screwing down the fixing plugs, which themselves are connected to output or input jacks of the effect unit, this still results in the bottom surface of the effects pedal being mounted to the units board.⁶ See Ex. 1051 ¶ 15 (Mr. Stratton testifying that

⁶ In its Sur-Reply, Patent Owner presents a new argument about a screw that is allegedly “raised above the effect mounting surface” such that it “would prevent the effects from resting on the units board.” PO Sur-Reply 6 (citing Ex. 1006, 31–32; Ex. 1047, 285:22–286:12). But neither the cited diagram nor the cited testimony establishes that the screw is raised in this way. See Ex. 1047, 285:22–286:12 (discussing how the SCC-700 effects board is mounted in a case via screws, but not addressing whether the screw is

“the bottom surface of the guitar effect shown at page 31 of the SCC-700 manual is maintained in position on and, thus, mounted to the SCC-700B effects board”). Mr. Farrow’s contrary testimony is based on a requirement that the bottom surface of the effect itself must be attached to the units board (see Ex. 2029 ¶ 75), but we reject such a requirement as a matter of claim construction. See *supra* § I.F.1.

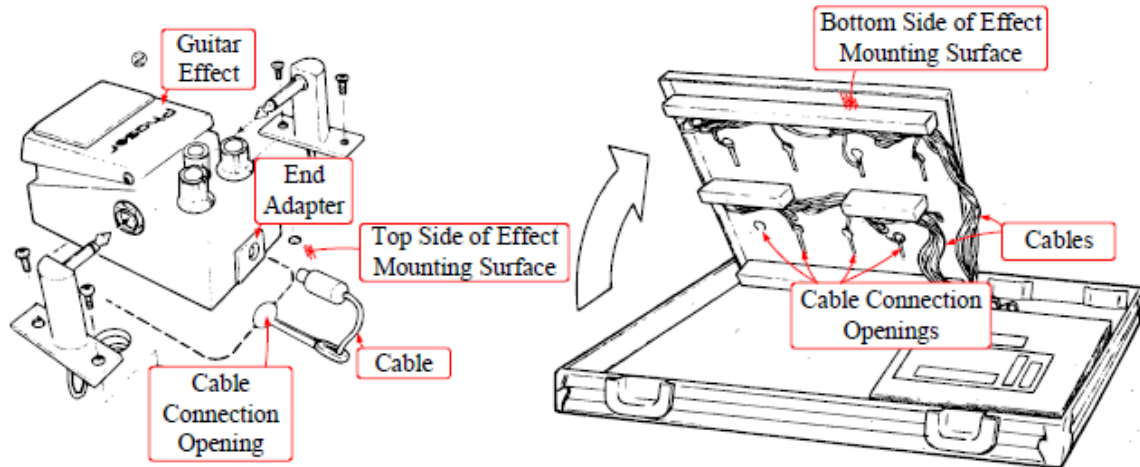
Based on this evidence, we find that SCC-700 discloses “an effect mounting surface having a top side to which is mounted the bottom surface of the guitar effect and an opposite bottom side.”

Claim 14 further recites:

the effect mounting surface defining a cable connection opening with the cable passing from the bottom side of the effect mounting surface through the cable connection opening to the top side to directly connect to the adapter on the end of the guitar effect on the top side of the effect mounting surface, the cable connection opening thereby positioned as an end connection opening.

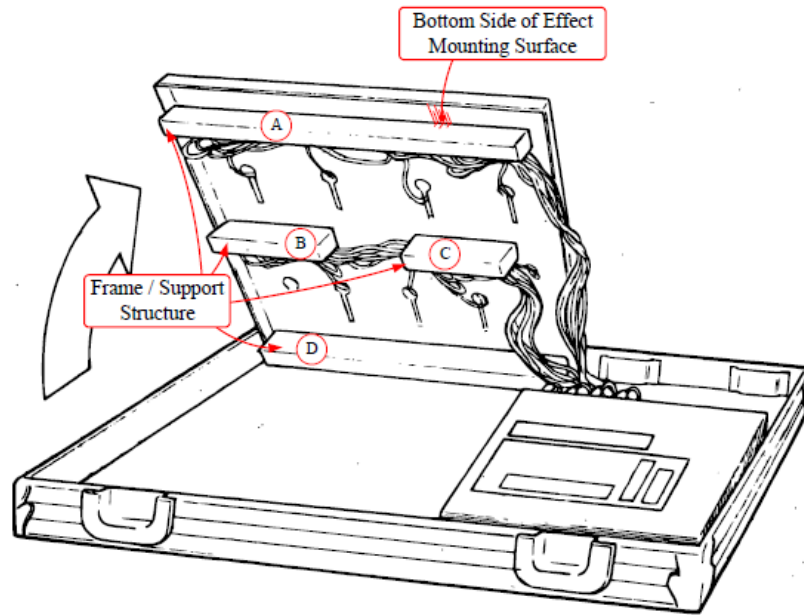
For this limitation, Petitioner provides the following annotated versions of diagrams appearing on pages 31 and 32 of SCC-700.

raised). As such, Patent Owner’s argument amounts to unsupported speculation that does not outweigh Petitioner’s persuasive evidence showing that SCC-700 discloses that the bottom surface of the effect is mounted on the top side of the board.



Pet. 38 (reproducing and annotating portions of Ex. 1006, 31, 32). As shown in these annotated diagrams, Petitioner has indicated various cables and cable connection openings. *Id.* Petitioner contends the effects mounting surface includes openings through which cables pass from the bottom side to the top side of the mounting surface. *Id.* at 37–38. Regarding the recited “end connection opening,” Petitioner contends “[t]he above-identified cable connection opening is one through which a cable can be (and is) passed to connect to an adapter on an end of a guitar effect (*i.e.*, an end connection opening).” *Id.* at 38. Based on this evidence, we find that SCC-700 discloses the recited cable connection opening limitation, which Patent Owner does not contest.

Claim 14 further recites “a frame coupled to the effect mounting surface and adapted to support the effect mounting surface.” For this limitation, Petitioner provides the following annotated version of a portion of the diagram appearing on page 32 of SCC-700.



Pet. 40 (reproducing and annotating a portion of Ex. 1006, 32). In this annotated diagram, Petitioner has indicated a “Frame/Support Structure” including “cross members A-D.” *Id.* Petitioner contends “cross members A-D are adapted to support the effect mounting surface of the ‘Units Board’ shown in the SCC-700 manual because they constitute an underlying structure that supports or holds up the effect mounting surface.” *Id.* at 40–41.

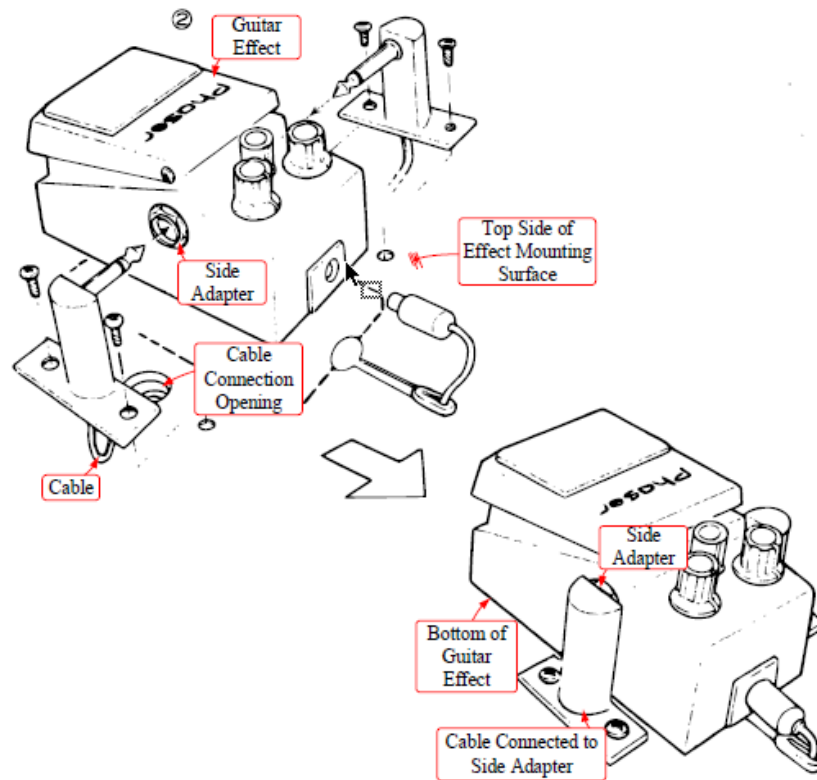
Patent Owner argues that SCC-700 does not disclose a “frame.” PO Resp. 29–31; PO Sur-Reply 7–8. Patent Owner’s arguments are based solely on its proposed construction of “frame,” which we reject above. *See supra* § I.F.2. Applying our construction (*see id.*), we find that the cross members A–D identified by Petitioner in SCC-700 constitute support structure commensurate with the recited “frame,” particularly because they are attached to and support the units board. *See* Pet. 39–41; Ex. 1006, 32. Based on this evidence, we find that SCC-700 discloses the recited “frame

coupled to the effect mounting surface and adapted to support the effect mounting surface.”

On the entire trial record, we are satisfied that SCC-700 describes each limitation of claim 14, combined in the same way as in claim 14. Thus, we determine Petitioner has shown by a preponderance of the evidence that claim 14 is anticipated by SCC-700.

3. *Claim 15*

Claim 15 is similar in scope to claim 14. With certain minor exceptions, Petitioner relies on the same contentions from claim 14. *See* Pet. 41–44. In particular, claim 15 recites the adapter is located on a *side* of the guitar effect rather than on the *end* of the guitar effect. In addition, claim 15 recites that the “cable connection opening” allows a connection to the *side* of the guitar effect rather than on the *end* of the guitar effect and is positioned as a *side* rather than an *end* connection opening. To explain its contentions relative to the side of the guitar effect, Petitioner provides an annotated version of a drawing from page 31 of SCC-700, which is reproduced below.



Id. at 42 (reproducing and annotating a portion of Ex. 1006, 31). In this annotated drawing, Petitioner has indicated the side adapter and its associated cable and cable connection opening. *Id.* Petitioner contends that the side adapter is located on a side of the guitar effect and is connected to a cable. *Id.* Petitioner further contends a cable passes through the side cable connection opening to the side adapter. *Id.* at 43–44.

Patent Owner relies on the same arguments from claim 14, which we have discussed above. *See* PO Resp. 24–31. Petitioner persuasively shows that SCC-700 discloses the limitations in claim 15 that differ from those in claim 14. *See* Pet. 41–44 (reproducing and annotating figures from pages 31 and 32 of SCC-700 regarding limitations directed to the “side of the guitar effect”). On the entire trial record, we are persuaded that SCC-700 describes each limitation of claim 15, combined in the same way as in claim 15. Thus,

we determine Petitioner has shown by a preponderance of the evidence that claim 15 is anticipated by SCC-700.

D. Obviousness Ground Based on SCC-700 and Arseneault

Petitioner contends the subject matter of claims 1, 18, and 19 would have been obvious over SCC-700 and Arseneault. Pet. 45–57; Pet. Reply 15–19. Patent Owner disputes Petitioner’s contentions. PO Resp. 34–41; PO Sur-Reply 8–14.

1. Arseneault

Arseneault is a U.S. patent directed to a foot-operated musical instrument. Ex. 1012, 1:4–5. Figure 1 of Arseneault is reproduced below.

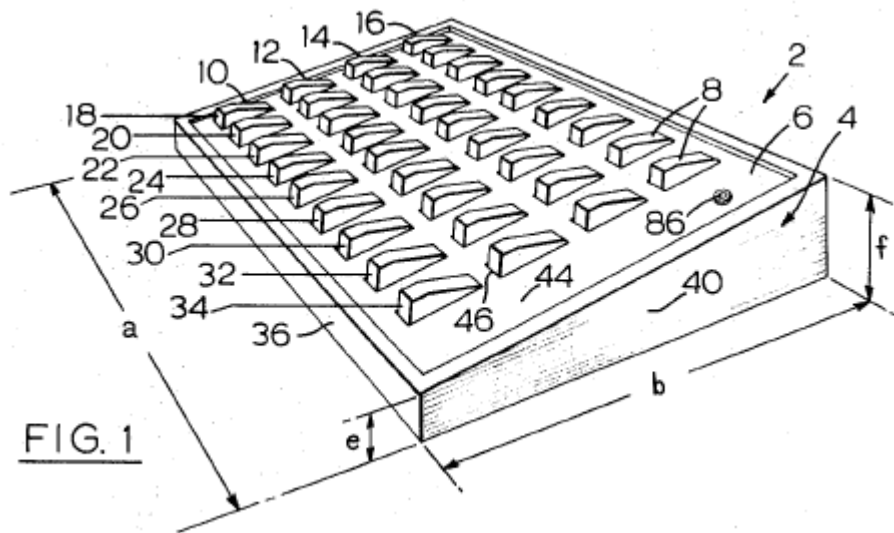


Figure 1 depicts musical instrument 2 having thin, rectangular transportable housing 4 with sloping upper surface 6, from which project a number of foot pedals 8. *Id.* at 1:61–65. Sloping upper surface 6 slopes upwardly away from the player’s feet to facilitate his or her feet reaching pedals 8. *Id.* at 4:43–46.

Figure 3 of Arseneault is reproduced below.

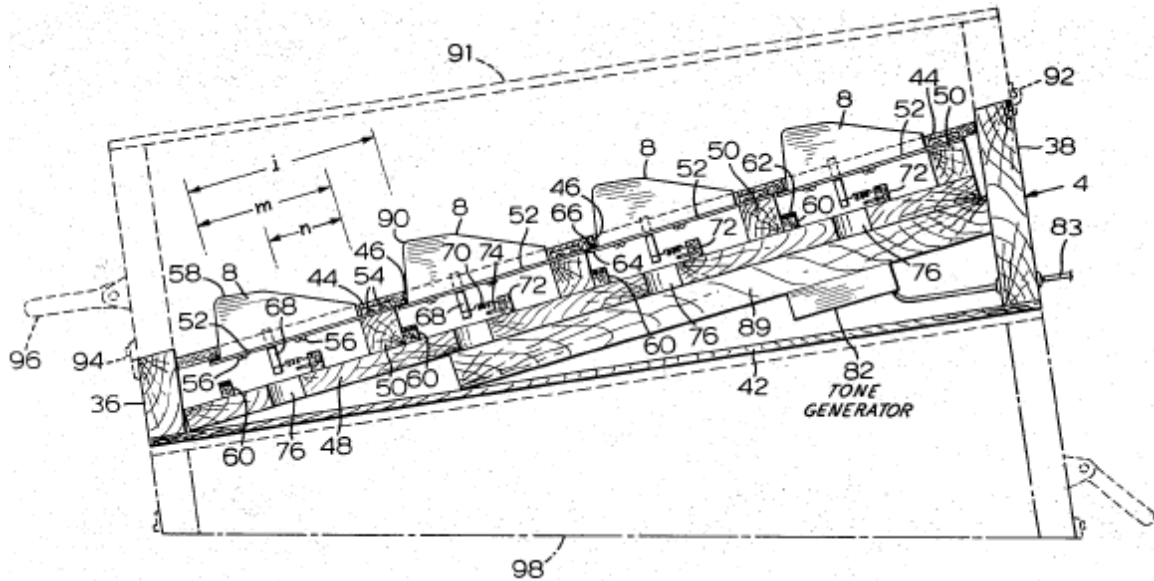


Figure 3 depicts a side sectional view of instrument 2. *Id.* at 1:57.

Housing 4 includes low front wall 36, higher backwall 38, a pair of sidewalls 40 (shown in Figure 1 above), and flat bottom plate 42 covering the bottom of instrument 2. *Id.* at 1:71–75. Foot pedals 8 are mounted on main support plate 48, which supports four elongated wooden strips 50, one for each row of pedals. *Id.* at 2:6–10. Pedals 8 are mounted on spaced strips of spring metal 52, one for each pedal, which in turn are fastened to wooden strips 50. *Id.* at 2:10–14.

Petitioner contends Arseneault qualifies as prior art under 35 U.S.C. § 102(b) based on its issue date of June 22, 1971. Pet. 27. We agree. Arseneault’s issue date of June 22, 1971, is more than one year before the earliest possible effective filing date of the challenged claims, which is September 7, 1999. Ex. 1001, [60]; Ex. 1012, [45].

Patent Owner contends Arseneault is nonanalogous art. PO Resp. 34–38; PO Sur-Reply 9–12. There are two separate tests that define the scope of analogous prior art: “(1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the

field of the inventor’s endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.” *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

Patent Owner contends “Arseneault and the ’023 Patent are not from the same field of endeavor because they are structurally and functionally different.” PO Resp. 34. According to Patent Owner, Arseneault is not a pedalboard but is a pedal-operated electrical musical instrument. *Id.* at 35 (citing Ex. 2029 ¶ 77). Patent Owner also argues “Arseneault does not have pedals mounted on the surface but rather embedded within the instrument.” *Id.* Patent Owner additionally emphasizes that the ’023 patent is directed to *mounting* guitar effects, not the effects pedals themselves. PO Sur-Reply 10 (citing Ex. 1001, 1:8–11).

The ’023 patent “pertains to the mounting of guitar effects on a pedal board for heavy duty applications.” Ex. 1001, 1:9–11. Arseneault is directed to “a foot operated musical instrument.” Ex. 1012, 1:4–5. We note that both Arseneault and the ’023 patent relate to foot controls, which makes aspects of both structurally similar. In addition, the foot controls discussed in Arseneault and the ’023 patent are used to control musical instruments. As such, Arseneault and the ’023 patent have similar purposes. Although Patent Owner points (*see* PO Resp. 34–36) to specific differences in Arseneault and the ’023 patent, “[t]he field of endeavor of a patent is not limited to the specific point of novelty, the narrowest possible conception of the field, or the particular focus within a given field.” *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1001 (Fed. Cir. 2016). Patent Owner’s focus on a particular aspect of the ’023 patent—namely, the mounting of effects pedals—is an overly narrow conception of the ’023 patent’s field of

endeavor. For these reasons, we determine that Arseneault and the '023 patent are in the same field of endeavor, which is foot controls for musical instruments.⁷ Therefore, contrary to Patent Owner's argument, Arseneault qualifies as analogous art.

2. *Claim 1*

a. Comparison of SCC-700 and Arseneault to Claim 1

Claim 1 is similar to claim 14 except that claim 1 recites the frame “support[s] the effect mounting surface at an inclined angle.” With certain minor exceptions, Petitioner relies on the same contentions from its anticipation ground based on SCC-700 for claim 14. *See* Pet. 45–50. Regarding the limitation that the frame supports the effect mounting surface “at an inclined angle,” Petitioner acknowledges that SCC-700 does not expressly disclose this feature. *Id.* at 51. Instead, Petitioner relies on Arseneault for teaching a foot-operated bass guitar having rows of foot pedals 8 on a sloping upper surface 6 of housing 4 that slope “upwardly away from [the user’s] feet to facilitate his feet reaching the various pedals.” *Id.* (quoting Ex. 1012, 4:43–46 (alteration by Petitioner) and citing Ex. 1012, Abstract, 1:60–67, Figs. 1, 3). Petitioner notes that Arseneault’s housing 4 is inclined via “a low front wall 36, a higher backwall 38, and a pair of sidewalls 40.” *Id.* at 51–52 (citing Ex. 1012, 1:72–75).

Patent Owner does not dispute Petitioner’s analysis for any limitation in claim 1, except for the recitation regarding “a frame coupled to the effect

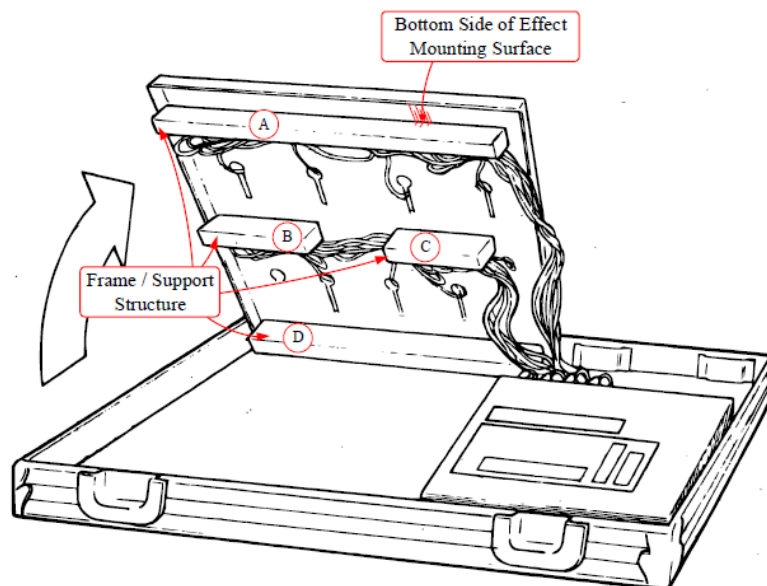
⁷ Because we determine that Arseneault and the '023 patent are in the same field of endeavor, we need not consider the second prong of the test from *Bigio*.

mounting surface.” *See* PO Resp. 38. For that limitation, Patent Owner relies on the same argument from the claim 14 anticipation ground, which we have discussed above. *See supra* §§ I.F.2, II.C.2.

Based on Petitioner’s analysis as discussed here and with reference to claim 14 (*see supra* § II.C.2), we find that the combination of SCC-700 and Arseneault teaches all of the limitations in claim 1.

b. Rationale for Combining SCC-700 and Arseneault

Petitioner’s rationale for combining Arseneault with SCC-700 is premised on Arseneault’s teaching that sloping upper surface 6 “upwardly away from [the user’s] feet” would “facilitate his feet reaching the various pedals.” Pet. 51; Ex. 1015 ¶ 43 (both quoting Ex. 1012, 4:43–46). Petitioner notes that Arseneault’s main support plate 48 “supports four elongated wooden strips 50, one for each row of pedals.” Pet. 52 (quoting Ex. 1012, 4:15–18). Petitioner then draws analogies between Arseneault and SCC-700 with reference to an annotated figure from SCC-700, which is reproduced below.



Id. at 50 (reproducing and annotating a portion of Ex. 1006, 32). In this annotated figure, Petitioner has indicated “Frame/Support Structure” with letters A through D. *Id.* Citing Mr. Stratton’s testimony, Petitioner contends “[t]he wooden strips 50 of Arseneault are functionally and structurally analogous to the cross members A-D shown in the SCC-700 manual.” *Id.* at 52 (citing Ex. 1015 ¶ 45). As such, Petitioner contends an ordinarily skilled artisan “would have been motivated to use a frame base, such as the higher backwall 38 of Arseneault, to incline the effect mounting surface shown in the SCC-700 manual.” *Id.* at 53 (citing Ex. 1015 ¶ 46). According to Petitioner, the incline “could help a user to reach the pedals secured to the effect mounting surface as taught by Arseneault.” *Id.* (citing Ex. 1015 ¶ 46). Petitioner further contends Arseneault’s higher backwall 38 could be connected to SCC-700’s cross member D “to lift the back of the effect mounting surface up with respect to the front, creating an incline.” *Id.* (citing Ex. 1015 ¶ 47).

Patent Owner argues that an ordinarily skilled artisan would not have been motivated to combine Arseneault with SCC-700 and that a skilled artisan would not have had a reasonable expectation of success in making the combination. *See* PO Resp. 39–40. Patent Owner argues that Petitioner has not established how to connect SCC-700’s cross-member/spacer block D to the higher backwall of Arseneault given that “[s]pacer block ‘D’ is spaced inward from the edge of the case that holds the board to which it is attached.” *Id.* at 40 (citing Ex. 2029 ¶ 86). Patent Owner also argues that raising spacer block D would result in spacer block D no longer being “positioned to be fastened in the bottom of the case,” which would diminish “the dimensions available to hold the effects and additional equipment.” *Id.*

We do not agree with Patent Owner’s arguments. Citing testimony from Mr. Stratton, Petitioner posits connecting Arseneault’s higher backwall 38 to cross-member D of SCC-700. Pet. 53 (citing Ex. 1015 ¶¶ 46–47). To the extent that Patent Owner is arguing that an ordinarily skilled artisan would not have known how to make this connection and re-fasten the newly higher backwall to the bottom of the SCC-700 case, we disagree. Under the level of ordinary skill in the art that we adopt above (*see supra* § II.B), such modifications are commensurate with an ordinarily skilled artisan’s experience “modifying . . . and building boards for mounting guitar effects.” *Id.* Accordingly, we credit Mr. Stratton’s testimony, and we are persuaded that an ordinarily skilled artisan would have known how to make these modifications. In addition, even if we were to credit Mr. Farrow’s testimony about the combination resulting in diminished dimensions in the case (*see* Ex. 2029 ¶ 86), the record does not reflect that such a change in dimensions would render the combination unworkable.

Patent Owner also argues that Petitioner’s proposed modification is “insufficient and nonsensical” because “the SCC-700 is intended to be used on a table top and not with a user’s feet, and for foot operation, a guitarist may use the optional foot controller (SCC-700F).” PO Resp. 39 (citing Ex. 2029 ¶¶ 69–70); *see also* PO Sur-Reply 12. Mr. Farrow’s supporting testimony refers to a “Boss Products Catalog” that Petitioner included as Exhibit 1011. Mr. Farrow cites the catalog’s statement that the SCC-700B effects board is “to be placed on a tabletop, keeping the controls of the effects in easy reach, and keeping them firmly in place so that they can be easily adjusted.” Ex. 2029 ¶ 69 (citing Ex. 1011, 13). Mr. Farrow also notes

that the same catalog mentions an “ancillary SCC-700F remote footswitch type controller could be connected to the controller using a 24 pin multi-core connecting cable.” Ex. 2029 ¶ 70 (citing Ex. 1011, 13). As such, Patent Owner contends an ordinarily skilled artisan would have had “no need to incline the SCC-700 to aid in foot operation because the incline would not aid in table operation.” PO Resp. 39 (citing Ex. 2029 ¶ 83).

In reply, Petitioner argues the SCC-700 reference itself does not say anything about tabletop use. Pet. Reply 17. In addition, Petitioner cites Mr. Farrow’s cross-examination testimony for the proposition that the effects mounted on the SCC-700B effects board are intended to be operated by foot on the floor. *Id.* at 17–18 (citing Ex. 1047, 90:2–22, 94:4–23). Petitioner also cites Mr. Farrow’s testimony that the SCC-700B effects board itself could be used on the floor. *Id.* at 17 (citing Ex. 1047, 284:7–18). Petitioner sums up its arguments as follows: “the *ability* for tabletop use does not amount to an *inability* for floor use.” *Id.*

In its sur-reply, Patent Owner argues that tabletop use of the SCC-700B effects board is “contraindicated.” PO Sur-Reply 13. Patent Owner also argues that ordinarily skilled artisans would have understood the SCC-700 as encompassing “a wholly different use than typical operation by foot” for individual pedal effects in standalone fashion. *Id.* at 13–14. Thus, Patent Owner contends Petitioner’s motivation to combine Arseneault with SCC-700, which Patent Owner characterizes as facilitating a user’s feet in reaching various pedals, is “irrelevant and should be disregarded.” *Id.* at 14 (citing Pet. 51).

Having considered the entire trial record, we are persuaded by Petitioner’s showing that an ordinarily skilled artisan would have been

motivated to add Arseneault's incline to SCC-700's frame base "to help a user reach pedals secured to the effect mounting surface." Ex. 1015 ¶ 46. Arseneault expressly teaches that the incline would help in this way. Ex. 1012, 4:43–46. The only potential problem with Petitioner's posited motivation is whether it is undermined by Patent Owner's alleged limitation that the SCC-700 effects board is meant for tabletop use. The evidence of record does not support such a limitation, however. In particular, we do not agree with Patent Owner that floor operation of the SCC-700 effects board is "contraindicated." PO Sur-Reply 13. Patent Owner's cited products catalog mentions tabletop use (Ex. 1011, 13), but it does not say that the SCC-700 effects board *should not* be used on the floor. In fact, Mr. Farrow testified that effects pedals are meant for floor use and that the SCC-700 effects board could be used on the floor. Ex. 1047, 90:2–22, 94:4–23, 284:7–18. In light of this evidence, we do not agree that an ordinarily skilled artisan would have considered the catalog's mention of tabletop operation as an impediment to the combination.

Furthermore, the SCC-700 reference itself does not discuss tabletop operation. And, even if tabletop usage were a requirement of SCC-700, Petitioner's stated motivation would be equally applicable to tabletop usage insofar as it would improve a user's ability to reach the effects pedals. See Ex. 1015 ¶ 46. We additionally credit Mr. Stratton's testimony that an ordinarily skilled artisan considering SCC-700 would have had a reasonable expectation of success in implementing Arseneault's incline in the SCC-700 effects board. See *id.* ¶¶ 47–49. Mr. Farrow's contrary testimony (Ex. 2029 ¶¶ 86–87) underestimates the knowledge and experience of an ordinarily skilled artisan in modifying effects boards, as discussed above. For these

reasons, we are persuaded that an ordinarily skilled artisan would have been motivated to combine Arseneault with SCC-700 in the manner suggested by Petitioner.

Having considered the entire trial record, we are persuaded by Petitioner's showing that an ordinarily skilled artisan would have had reasons to combine Arseneault with SCC-700.

c. Secondary Considerations of Nonobviousness

(1) *Commercial Success*

As a secondary consideration of nonobviousness, Patent Owner contends that its PEDALTRAIN pedalboards are a commercial success. See PO Resp. 53–57. Patent Owner cites Mr. Farrow's testimony as evidence that these pedalboards “meet the limitations of the claims of the '023 Patent” and have done so since 2001. *Id.* at 54 (citing Ex. 2029 ¶ 48). Patent Owner also lists a number of claim limitations that “are the determining factors in the commercial success of the PEDALTRAIN® products.” *Id.* at 54–55. As evidence of commercial success, Patent Owner cites Mr. Farrow's testimony about sales of \$30 million for the PEDALTRAIN brand from 2001–2016. *Id.* at 55 (citing Ex. 2029 ¶ 47). Patent Owner also cites Mr. Farrow's testimony about large sales increases over that time frame. *Id.* at 55–56 (citing Ex. 2029 ¶ 47).

Petitioner argues Patent Owner has failed to show there is a nexus to the merits of the claimed invention. Pet. Reply 24. Petitioner criticizes Patent Owner's listing of claim limitations as “determining factors” because they “are cobbled together from various claims (some not at-issue in this proceeding), and there is no evidence any PEDALTRAIN® product

embodies one or more claims of the '023 Patent.” *Id.* at 24–25. Petitioner also calls into question Mr. Farrow’s testimony about PEDALTRAIN products meeting the claims, because he “does not reference any specific models and testified he did not perform any analysis to determine whether any PEDALTRAIN® products practice the patent.” *Id.* at 25 (citing Ex. 1047, 25:10–14; Ex. 1048, 402:22–403:3).

Regarding Mr. Farrow’s testimony on \$30 million in sales for PEDALTRAIN products, Petitioner argues that this figure is “for the PEDALTRAIN® brand,” and that Mr. Farrow “did not review or provide any underlying sales data, and has no knowledge of what products sold under the brand . . . are included in that figure.” *Id.* at 26 (citing Ex. 1048, 379:14–382:11). Petitioner also notes that Mr. Farrow “has no knowledge of Patent Owner’s market share or advertising budget, and has no underlying facts or data to support any of his statements” on sales. *Id.* (citing Ex. 1048, 393:15–394:17, 391:25–392:17).

In its Sur-Reply, Patent Owner contends “the claimed combination as a whole . . . serves as a nexus for secondary considerations.” PO Sur-Reply 18 (citing PO Resp. 52, 54–55). Patent Owner also provides annotated photographs of the “PEDALTRAIN® Classic 1” product purporting to show how it is “self-evident” that certain claim limitations are embodied in the product. *Id.* at 18–19. Patent Owner additionally argues “Petitioner has cited no case authority requiring Patent Owner to make an express comparison of the PEDALTRAIN® boards to the claims.” *Id.* at 18. Patent Owner also references evidence from the reexamination history that allegedly “support[s] and bolster[s] Farrow’s opinions on secondary considerations.” *Id.* at 19–20 (citing Ex. 1005, 60–63, 217–222).

We agree with Petitioner that Patent Owner has not established a nexus between the claimed invention and the alleged commercial success. For secondary considerations to have probative value, there must be a nexus between the merits of the claimed invention and the secondary considerations. *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 305 n.42 (Fed. Cir. 1985). Although it is possible for a patent owner to establish a presumption of a nexus “when [it] shows that the asserted objective evidence is tied to a specific product and that product is the invention disclosed and claimed in the patent,” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1329 (Fed. Cir. 2016) (internal quotation omitted), Patent Owner has not done that here. The arguments in Patent Owner’s Response attempt to tie the purported commercial success to a generic grouping of PEDALTRAIN products. See PO Resp. 49–50, 54–55. Patent Owner cites Mr. Farrow’s declaration, in which he testifies as follows:

The unique combination of features in the ‘023 Patent claims, including an effect mounting surface to which guitar effects can be attached while having cable connection openings adapted to allow audio cables to pass from beneath the mounting surface for connection to guitar effects mounted to the surface, and connected to a frame that protects and supports the mounting surface so that the guitar effect can be mounted above an area, provided a novel solution for guitarists. Since their introduction in 2000-2001, the PEDALTRAIN® pedalboards have met these claim limitations with their slatted designs.

Ex. 2029 ¶ 48. As can be seen, this testimony does not indicate that Mr. Farrow compared any specific products to the claims.⁸ On cross-

⁸ Although Patent Owner need not put forth a limitation-by-limitation analysis in order to establish that its product is the invention recited in the challenged claims where the claimed subject matter is relatively simple, the record does not establish that Mr. Farrow performed a comparison of the

examination, Mr. Farrow conceded that he had not performed any such comparisons. *See* Ex. 1047, 25:10–14; Ex. 1048, 402:22–403:3. Thus, Mr. Farrow’s testimony on the purported nexus between PEDALTRAIN products and the claimed invention is entitled to little or no weight. Furthermore, Patent Owner’s listing of “determining factors” (*see* PO Resp. 54–55) is just a sampling of claim limitations from various claims that is devoid of analysis linking these limitations to any particular product.

Regarding the statement in Patent Owner’s Sur-Reply about the “claimed combination as a whole” serving as a nexus (PO Sur-Reply 18), neither this statement, nor its cited support (PO Resp. 52, 54–55), establishes that a particular product embodies the claimed invention. We also observe that Patent Owner’s allusion to (and annotated drawings of) a “PEDALTRAIN® Classic 1” product in the Sur-Reply (*see* PO Sur-Reply 18–19) represents the first analysis of a specific product in conjunction with Patent Owner’s evidence of secondary considerations. This new analysis exceeds the scope of a proper reply, particularly because it could have been raised in Patent Owner’s Response (given Patent Owner’s burden of production) and because Petitioner had no opportunity to respond. *See* 37 C.F.R. § 42.23(b) (“A reply may only respond to arguments raised in the corresponding opposition”); Trial Practice Guide Update (Aug. 2018)⁹, 15 (“‘[R]espond,’ in the context of § 42.23(b), does not mean embark in a new direction with a new approach as compared to positions taken in a prior filing It is . . . improper to present in reply new evidence (including

claims with *any* product, unlike the facts of *Polaris Industries, Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1071–74 & n.7 (Fed. Cir. 2018).

⁹ Available at <https://go.usa.gov/xU7GP>.

new expert testimony) that could have been presented in a prior filing”). And, even if we were to agree with Patent Owner that it is “self-evident” that the PEDALTRAIN® Classic 1 product embodies the claimed features (see PO Sur-Reply 18), the record is devoid of evidence showing that the product itself was a commercial success.

We also find unavailing Patent Owner’s allusions to “evidence on the record” from the reexamination history. See PO Sur-Reply 19–20 (citing Ex. 1005, 60–63, 217–22). Patent Owner’s citation refers to an amendment filed by Patent Owner (see Ex. 1005, 60–63) and a declaration of Mr. Chandler (see *id.* at 217–22). But Patent Owner’s only purported evidence of commercial success within these materials is in Mr. Chandler’s declaration (see *id.* at 217–18), and it is not tied to any particular PEDALTRAIN product. See *id.* at 218 (Mr. Chandler’s testimony regarding “sales . . . under the PEDALTRAIN® brand”).

Furthermore, even if Patent Owner had been able to establish a nexus between any particular PEDALTRAIN product and the claimed invention, Patent Owner’s evidence of commercial success is also flawed. Patent Owner cites Mr. Farrow’s testimony as supporting a sales figure of \$30 million (PO Resp. 55 (citing Ex. 2029 ¶ 47); see also Ex. 1005, 217–18), but he admitted on cross-examination that he had no knowledge of what products are included in that figure. Ex. 1048, 379:14–382:11. We also agree with Petitioner (Pet. Reply 26) that Mr. Farrow’s further testimony on sales increases is not based on any underlying facts or data, as he admitted under cross-examination.¹⁰ See Ex. 1048, 391:25–392:17, 393:15–394:17.

¹⁰ As discussed below, we deny Petitioner’s motion to exclude Mr. Farrow’s testimony on sales. See *infra* § II.I. Rather, we accord it little or no weight.

We accord Mr. Farrow's testimony little or no weight based on this cross-examination testimony.

For these reasons, Patent Owner has failed to establish a nexus between any particular PEDALTRAIN product and its alleged commercial success. In addition, Patent Owner's evidence of commercial success is based solely on the testimony of Mr. Farrow, but this testimony is not based on facts or data. Thus, we accord Patent Owner's evidence of commercial success little or no weight.

(2) *Industry Praise*

Patent Owner puts forth evidence of praise regarding PEDALTRAIN® pedal boards from various industry publications. *See* PO Resp. 59 (citing Exs. 2044–2049). In reply, Petitioner argues that other products got similar praise in at least one of Patent Owner's exhibits. *See* Pet. Reply 29 (citing Ex. 2044).

Petitioner's argument (Pet. Reply 29) that other products were praised in one of the publications put forth by Patent Owner does not negate the fact that Patent Owner's PEDALTRAIN products have received genuine praise. *See* Exs. 2044–2049. The problem with Patent Owner's arguments regarding industry praise is that Patent Owner relies on the same contentions about a nexus to the claims that we find to be deficient above. *See* PO Resp. 59 (“As discussed above, the PEDALTRAIN® pedal boards embody the claims of the '023 Patent”); *see also supra* § II.D.2.c.1 (discussing nexus evidence). Notwithstanding, the underlying evidence of praise itself tends to show some nexus to the claims. *See, e.g.,* Ex. 2044, 2 (discussing the PEDALTRAIN product's “ergonomically tilted playing surface,” which is

similar to claim 1’s recitation “supporting the effect mounting surface at an inclined angle”); Ex. 2046, 2 (also discussing how the frame is angled and further discussing how the PEDALTRAIN product allows “protruding interconnects or adaptor cables” to be “neatly wrapped around the bars and through the gaps,” which is commensurate with claim 1’s recitations about “cable connection opening[s]”); Ex. 2047, 2 (mentioning angle of the pedalboard); Ex. 2049, 2 (stating “[t]he open frame allows cable threading around and through the gaps”). Considering Patent Owner’s evidence of praise in light of this underlying evidence of a nexus to the claimed invention, we accord this Patent Owner’s evidence of industry praise moderate weight.

(3) *Long-Felt Need*

Patent Owner contends the invention of the ’023 patent solved a long-felt need for “an unpowered pedalboard that could accommodate the performance preferences of guitar players while solving issues with cable routing and withstanding the rigors of use.” PO Resp. 50 (citing Ex. 2029 ¶¶ 19–20). Patent Owner contends the ’023 patent claims the following unique features that met the alleged need:

[A]n effect mounting surface on which guitar effects can be mounted, having cable connection openings adapted to allow a cable to pass from beneath the effect mounting surface for connection to the guitar effect and connected to a frame supporting the effect mounting surface such that a guitar effect can be mounted above an area.

Id. at 52 (citing Ex. 2029 ¶¶ 48, 61).

Petitioner contends the needs articulated by Patent Owner were known and solved before the time of the ’023 patent. Pet. Reply 26–27.

Petitioner points to Saravis, which “provided the releasable attachment/positioning of effects using Velcro®, accommodated a variety of effects of different shapes and sizes, and was adaptable and portable.” *Id.* at 27 (citing Ex. 1013, 2:50–4:16; Ex. 1047, 124:22–125:9); *see infra* § II.E.1 (description of Saravis). Petitioner also cites SCC-700 as having provided “effective cable management, using openings in the board to route all of the cables beneath the board.” Pet. Reply 27 (citing Ex. 1006, 32; Ex. 1049, 128:21–129:9).

We agree with Petitioner that Saravis’s and SCC-700’s features had already met the alleged needs articulated by Patent Owner at the time that the ’023 patent was filed. The only aspect of the purported need not addressed by Petitioner is the “unpowered” nature of the pedalboard, but the challenged claims do not address whether the support board is powered. Because Petitioner persuasively shows that the needs articulated by Patent Owner were already met by the prior art, we accord Patent Owner’s evidence of long-felt need no weight.

(4) Copying

Patent Owner contends “[t]he pedalboard designs of the ’023 Patent have been the subject of widespread and persistent copying.” PO Resp. 58. Patent Owner cites Mr. Farrow’s testimony exclusively for the proposition that “multiple competitors . . . have released slatted pedalboard designs that infringe the ’023 Patent.” *Id.* (citing Ex. 2029 ¶¶ 63–66). Petitioner argues that “Farrow lists what he characterizes as ‘Asian knockoffs’ and asserts they copied various features of the PEDALTRAIN® boards . . . , but has not analyzed any of the ‘knockoffs’ to determine whether they practice the

patent.” Pet. Reply 27 (citing Ex. 1048, 400:3–402:4) (internal citation omitted).

Paragraph 64 of Mr. Farrow’s initial declaration lists various alleged copies and accuses the Donner DB-3 product of being “a functionally identical copy” (see Ex. 2029 ¶¶ 64, 66), but Mr. Farrow conceded under cross-examination that he had only analyzed a product named Ultimate Support¹¹ to determine whether it met the claims of the ’023 patent. Ex. 1048, 400:3–402:4. Because Mr. Farrow’s testimony is the only evidence of copying put forth by Patent Owner, we find unpersuasive Patent Owner’s assertions of copying for all products other than the Ultimate Support. As to that one product, we are mindful that “[n]ot every competing product that arguably falls within the scope of a patent is evidence of copying Rather, copying requires the replication of a specific product.” *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004). In this case, the only indication that the Ultimate Support product replicated Patent Owner’s products is Mr. Farrow’s unsubstantiated assertion that the Ultimate Support is a copy. See Ex. 2029 ¶¶ 63–64. Although the record does not contain contrary evidence regarding the Ultimate Support, we find Mr. Farrow’s testimony only marginally persuasive. Accordingly, we accord minimal weight to Patent Owner’s evidence of copying as a secondary consideration of nonobviousness.

¹¹ Paragraph 64 of Mr. Farrow’s initial declaration lists the product’s name as “Unlimited Support” (see Ex. 2029 ¶ 64), but on cross-examination Mr. Farrow appeared to refer to the same product as “Ultimate Support.” See Ex. 1048, 400:3–402:4; see also Ex. 1047, 22:12–24:9 (additional cross-examination testimony from Mr. Farrow about analyzing the “Ultimate Support” product).

d. Conclusion Regarding Claim 1

Based on Petitioner’s contentions and evidence, summarized above, we find that the combination of SCC-700 and Arseneault teaches every limitation of claim 1. Petitioner also has provided persuasive reasons for its proposed combination based on Dr. Stratton’s testimony (*see* Ex. 1015 ¶¶ 41–50) and Arseneault’s teaching of inclined pedal controls for a musical instrument (*see* Ex. 1012, 4:15–18). We have considered the secondary considerations of nonobviousness and accorded them appropriate weight along with all of the *Graham* factors. On the entire trial record, we determine Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 1 would have been obvious over the combination of SCC-700 and Arseneault.

3. Claim 18

Claim 18 depends from claim 15 and further recites “a frame base supporting the frame above the surface and allowing the cable to pass beneath the frame.”¹² Petitioner’s obviousness analysis builds upon its

¹² Petitioner contends claim 18 “is invalid under 35 U.S.C. § 112, second paragraph, because the ’023 Patent provides no support for the frame in Claim 15 being supported *above* the effect mounting surface in Claim 18.” Pet. 55 n.8. Petitioner adds that it “reserves the right to challenge the validity of all claims” under section 112 “before other tribunals.” *Id.* We do not address here any purported section 112 issue regarding claim 18. *See* 35 U.S.C. § 311(b) (limiting a request to cancel a claim in an *inter partes* review to “ground[s] that could be raised under section 102 or 103 and only on the basis of prior art consisting of patents or printed publications”); *see also Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2141–42 (2016) (noting that cancelling a claim for indefiniteness is outside the statutory authority of the USPTO in an *inter partes* review).

analysis of claim 15 in the SCC-700 anticipation ground. *See* Pet. 54. Petitioner acknowledges that SCC-700 “does not expressly show a frame base supporting the frame and allowing a cable to pass beneath the frame.” *Id.* at 54–55. Thus, Petitioner cites Arseneault for teaching the recited frame base. *Id.* at 55–56 (citing, *inter alia*, Ex. 1012, 3:25–30, Fig. 3).

Petitioner provides no evidence or explanation as to how its proposed combination teaches a frame base that “support[s] the frame *above* the surface.” Rather, Petitioner focuses merely on how the frame is supported in Arseneault with reference to its analysis for claim 1 in this ground. *See id.* at 55–56. But Petitioner’s claim 1 analysis does not establish that Arseneault teaches “a frame base supporting the frame *above* the surface” commensurate with the language of claim 18. In the absence of any evidence or analysis addressing this limitation, Petitioner has not shown, by a preponderance of the evidence, that the subject matter of claim 18 would have been obvious over the combination of SCC-700 and Arseneault.

4. Claim 19

Claim 19 depends from claim 15 and further recites “a frame base adapted to support the frame at an inclined angle.” Petitioner’s obviousness analysis builds upon its analysis of claim 15 in the SCC-700 anticipation ground. *See* Pet. 56. Petitioner acknowledges that SCC-700 “does not expressly show a frame base adapted to support the frame at an inclined angle.” *Id.* at 56–57. Thus, Petitioner cites Arseneault for teaching higher backwall 38 or frame base with an incline based on the same analysis it put forth for claim 1 in this ground. *Id.* at 51–53 (citing, *inter alia*, Ex. 1012, 1:72–75, 4:15–18, Fig. 3; Ex. 1015 ¶ 45), 57. Petitioner contends an

ordinarily skilled artisan “would have been motivated to use a frame base similar to the higher backwall 38 and/or the plates 48 and 89 of Arseneault to incline the effect mounting surface shown in the SCC-700 manual.” *Id.* at 57 (citing Ex. 1015 ¶¶ 46–50).

Patent Owner relies on the same arguments it made with respect to claim 1: (1) that Arseneault is nonanalogous art; (2) that SCC-700’s cross members A–D do not constitute a “frame”; and (3) that Petitioner’s rationale for combining Arseneault with SCC-700 is deficient. *See* PO Resp. 34–41. We have discussed these arguments above. *See supra* § II.D.1 (analogous art), §§ I.F.2, II.C.2 (“frame” arguments), § II.D.2.b (rationale for the combination). Patent Owner also relies on the same evidence of secondary considerations of nonobviousness discussed above. *See supra* § II.D.2.c.

Based on Petitioner’s contentions and evidence, we find that the combination of SCC-700 and Arseneault teaches the added frame base limitation of claim 19. *See, e.g.*, Ex. 1012, 1:72–75 & Fig. 3 (higher backwall 38), 4:15–18 (inclined pedal controls); Ex. 1015 ¶ 45 (Mr. Stratton testifying that higher backwall 38 is functionally and structurally analogous to a frame base). Petitioner also has provided persuasive reasons for its proposed combination based on Dr. Stratton’s testimony (*see* Ex. 1015 ¶¶ 41–50) and Arseneault’s teaching of inclined pedal controls for a musical instrument (*see* Ex. 1012, 4:15–18). We have considered the secondary considerations of nonobviousness and accorded them appropriate weight along with all of the *Graham* factors. On the entire trial record, we determine Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 19 would have been obvious over the combination of SCC-700 and Arseneault.

E. Obviousness Ground Based on SCC-700 and Saravis

Petitioner contends the subject matter of claims 2, 16, and 17 would have been obvious over SCC-700 and Saravis. Pet. 58–67; Pet. Reply 19–21. Patent Owner disputes Petitioner’s contentions. PO Resp. 41–43; PO Sur-Reply 4–5.

1. Saravis

Saravis is a U.S. patent directed to a pedal board for releasably retaining foot-pedal-operated sound effect generators used in conjunction with musical instruments. Ex. 1013, Abstract. Figure 1 of Saravis is reproduced below.

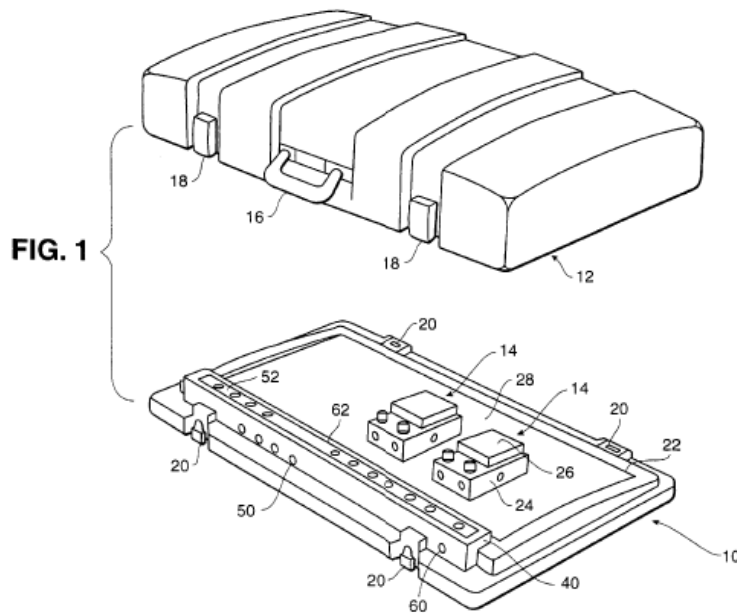


Figure 1 depicts pedal board 10 having carrying case 12. *Id.* at 4:61–5:1. One or more pedal operated sound effect generators 14 are disposed on top plate 22 of pedal board 10. *Id.* at 5:24–26. Top plate 22 is provided with a releasable attachment mechanism, such as fiber fastening surface 28. *Id.* at 5:35–36. Each pedal operated sound effect generator 14 includes base

housing 24 having cooperative fiber fastening attachment strip 32 (not shown) on its underside. *Id.* at 5:36–39. When sound effect generator 14 is placed upon fiber fastening surface 28, it will immediately and physically adhere to fiber fastening attachment surface 28. *Id.* at 5:40–42. One type of fiber fastening surface disclosed in Saravis is “offered under the name and mark ‘Velcro.’” *Id.* at 5:47–50.

Petitioner contends Saravis qualifies as prior art under 35 U.S.C. § 102(e) because Saravis issued from an application that was a continuation of an earlier application filed on August 6, 1997. Pet. 30. Patent Owner does not contest the prior art status of Saravis.

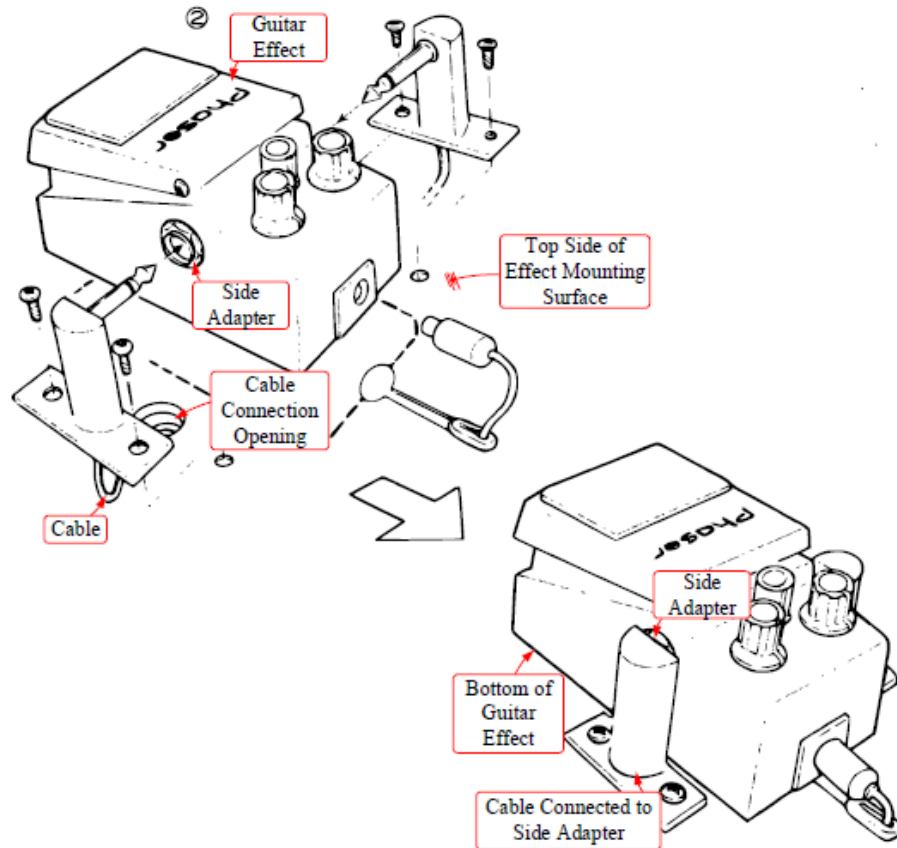
We have no evidence of an invention date other than the earliest possible effective filing date of the challenged claims. Thus, we determine that Saravis qualifies as prior art under 35 U.S.C. § 102(e), because Saravis’s August 6, 1997, filing date is before the earliest possible effective filing date of the challenged claims, which is September 7, 1999. Ex. 1001, [60]; Ex. 1013, [63].

2. *Claim 2*

Claim 2 recites a number of limitations that are the same as those in claim 1. Petitioner relies on the same analysis based on SCC-700 from claim 1 of the SCC-700–Arseneault ground for teaching the common limitations in claim 2. Pet. 58. We have discussed that analysis above. *See supra* § II.D.2.

Claim 2 also recites that the “adapter for connection to a cable” is “located on a side of the guitar effect” rather than the end. Claim 2 additionally recites a “side connection opening” rather than an “end

connection opening” as in claim 1. For these limitations, Petitioner provides the following annotated version of a portion of the diagram appearing on page 31 of SCC-700.



Pet. 59 (reproducing and annotating a portion of Ex. 1006, 31). As shown in this annotated diagram, Petitioner has indicated a side adapter connected to a cable and a cable connection opening through which a cable can be passed to connect to an adapter on a side of a guitar effect. *Id.* at 58–60.

Claim 2 further recites “the effect mounting surface includ[es] a side of a hook and loop fastening system.” Petitioner acknowledges that SCC-700 utilizes “fixing plugs” to mount guitar effects to the effect mounting surface rather than the recited “hook and loop fastening system” of claim 2. *Id.* at 60 (citing Ex. 1006, 29, 31). Citing testimony from Mr. Stratton, Petitioner contends fixing plugs are unsuitable for certain types

of guitar effects that have audio and power adapters on different sides than those shown in SCC-700. *Id.* at 60–61 (citing Ex. 1015 ¶¶ 60–62, 65–66); *see also* Ex. 1013, 6:45–7:3, 7:27–45, Fig. 7 (Saravis disclosing effects with different sides than SCC-700). Thus, Petitioner contends that an ordinarily skilled artisan “would have been motivated (and found it necessary) to find other ways to mount guitar effects to the effects mounting surface shown in the SCC-700 manual.” *Id.* at 62 (citing Ex. 1015 ¶¶ 65–67). Petitioner notes that SCC-700 itself contemplates the use of “effects units other than” the type depicted in SCC-700. *Id.* (quoting Ex. 1006, 5).

As such, Petitioner cites Saravis for teaching “fiber fastening attachment layers” such as “Velcro” to releasably attach foot pedal effects generators to the upper surface of a pedal board. *Id.* at 62–64 (citing Ex. 1013, 3:23–29, 3:31–44, 6:10–14). Petitioner contends an ordinarily skilled artisan would have been motivated to add Saravis’s fiber fastening system to SCC-700’s effect mounting surface based on “the deficiencies of the mounting solution shown in the SCC-700 manual for certain types of guitar effects.” *Id.* at 64 (citing Ex. 1015 ¶ 71). In particular, Petitioner notes that Saravis’s fiber fastening system allows for releasable mounting of “essentially any commercially available type of pedal . . . not limited to any particular model or size.” Pet. Reply 20 (quoting Ex. 1013, 3:49–53).

To the extent claim 2 recites a side adapter location and side connection opening rather than the end adapter location and end connection opening of claim 1, Petitioner persuasively shows that SCC-700 discloses the differences in the annotated diagram reproduced above. *See* Pet. 59 (reproducing and annotating a portion of Ex. 1006, 31). Petitioner also establishes that Saravis discloses the recited “hook and loop fastening

system.” See Ex. 1013, 3:23–29, 3:31–44, 6:10–14. Patent Owner does not dispute that the combination of SCC-700 and Saravis teaches the limitations of claim 2 with one exception: Patent Owner again argues SCC-700’s cross members A–D do not constitute a “frame.” PO Resp. 41. We have discussed this argument above. See *supra* §§ I.F.2, II.C.2. Based on Petitioner’s analysis as discussed here and with reference to claim 1 (see *supra* § II.C.2), we find that the combination of SCC-700 and Saravis teaches all of the limitations in claim 2.

Patent Owner disputes Petitioner’s posited rationale for the combination. Patent Owner argues an ordinarily skilled artisan “would not have been motivated to modify the SCC-700B with the hook-and-loop fasteners taught in Saravis” because “this is not simple substitution of one mounting mechanism (fixing plugs) for another (Velcro®).” PO Resp. 41–42. Patent Owner notes that SCC-700’s fixing plugs “serve a dual purpose of both mounting the effect and transmitting an audio signal between the effects to link the effects to the central control unit.” *Id.* at 42 (citing Ex. 2029 ¶ 75). As such, Patent Owner contends that removing the fixing plugs would prevent audio signals from being transmitted, which would render SCC-700 units board unsatisfactory for its intended purpose. *Id.* at 42–43 (citing Ex. 2029 ¶ 75).

In reply, Petitioner argues that SCC-700 teaches its cables are “user-serviceable and replaceable” (Pet. Reply 21 (citing Ex. 1006, 32)), and notes that Mr. Farrow testified about alternative wiring arrangements using the SCC-700 effects pedal board (*id.* (citing Ex. 1047, 300:16–25)).

We do not agree with Patent Owner’s arguments. SCC-700 expressly contemplates using effects units other than those depicted in SCC-700 (see

Ex. 1006, 5), and we credit Mr. Stratton's un rebutted testimony that an ordinarily skilled artisan would have known of effects units with different sizes and shapes that were not compatible with SCC-700's fixing plugs. Ex. 1015 ¶¶ 61–63; *see also* Ex. 1017 (collection of prior art patents showing guitar effects of different shapes and sizes). In light of this, we credit Mr. Stratton's testimony that ordinarily skilled artisans "would have been motivated to find other ways to mount and secure guitar effects units to the effects mounting surface shown in the SCC-700 manual, to accommodate effects of different sizes, shapes, and having adapters at different locations." Ex. 1015 ¶ 67. Saravis itself teaches that its fiber fastening system releasably mounts any model or size of effect pedal to a pedal board. *See* Ex. 1013, 3:49–53. Based on this evidence, we are persuaded that an ordinarily skilled artisan would have had a reason to implement Saravis's fiber fastening system on the SCC-700 units board.

The only remaining issue relative to the combination is whether an ordinarily skilled artisan would have known how to reconnect audio and/or power cables when using Saravis's fiber fastening system in place of SCC-700's fixing plugs. Mr. Statton testified during cross-examination that an ordinarily skilled artisan would have known to use his or her own cables given the use of fiber fastening. Ex. 1047, 300:8–21. SCC-700 also contemplates "replacement of the Unit Fixing Cord or DC cord," which indicates that ordinarily skilled artisans were aware of how to connect cords. Ex. 1006, 32. We additionally note that our definition of the level of ordinary skill contemplates experience "modifying . . . and building boards for mounting guitar effects." *See supra* § II.B. Connecting cables is necessarily part of modifying and building effects boards. *See, e.g.,*

Ex. 1013, 1:58–61 (“[E]ach of these foot pedals must be connected by a plurality of cables, either to one another or to the amplifier and to the guitar or other instrument.”). Thus, even when considering the dual purpose of SCC-700’s fixing plugs, we are satisfied that an ordinarily skilled artisan would have known to reconnect cables after implementing Saravis’s fiber fastening system in place of fixing plugs. This is consistent with Mr. Stratton’s testimony that ordinarily skilled artisans would have had a reasonable expectation of success in implementing the combination and that the combination would have worked for its intended purpose. See Ex. 1015 ¶¶ 74–75. On the entire trial record, we are persuaded by Petitioner’s showing that an ordinarily skilled artisan would have had reasons to combine Saravis with SCC-700 with a reasonable expectation of success.

Patent Owner also relies on the same evidence of secondary considerations of nonobviousness discussed above. See *supra* § II.D.2.c.

Based on Petitioner’s contentions and evidence, summarized above, we find that the combination of SCC-700 and Saravis teaches every limitation of claim 2. Petitioner also has provided persuasive reasons for its proposed combination. We have considered the secondary considerations of nonobviousness and accorded them appropriate weight along with all of the *Graham* factors. On the entire trial record, we determine Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 2 would have been obvious over the combination of SCC-700 and Saravis.

3. *Claim 16*

Claim 16 is similar to claim 14 except that claim 16 does not specify that the adapter is located “on an end of the guitar effect.” Petitioner relies on much of the same analysis from claim 14 of its anticipation ground based on SCC-700. Pet. 65; *see supra* § II.C.2.

Claim 16 additionally recites that the effect mounting surface includes “a friction surface adapted to engage the bottom surface of the guitar effect to maintain the positioning of the guitar effect on the friction surface.” Petitioner again cites Saravis’s fiber fastening system. Pet. 65–66 (citing Ex. 1013, 3:39–42, 6:10–14). Patent Owner relies on the same argument from claim 2 that SCC-700’s cross members A–D do not constitute a “frame.” *See* PO Resp. 41–43. We have discussed that argument above. Based on Petitioner’s analysis as discussed here and with reference to claims 2 and 14 (*see supra* §§ II.C.2, II.E.2), we find that the combination of SCC-700 and Saravis teaches all of the limitations in claim 16.

Petitioner relies on the same rationale for combining Saravis with SCC-700 that we have discussed above. *Id.* at 66 (citing Ex. 1015 ¶ 71). Patent Owner relies on the same argument that Petitioner’s rationale for combining Saravis with SCC-700 is deficient. *See* PO Resp. 41–43. We have discussed that argument above. *See supra* § II.E.2. We are persuaded by Petitioner’s reasons for the combination for the same reasons discussed above. *See id.*

Patent Owner also relies on the same evidence of secondary considerations of nonobviousness discussed above. *See supra* § II.D.2.c. We have considered the secondary considerations of nonobviousness and accorded them appropriate weight along with all of the *Graham* factors. On

the entire trial record, we determine Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 16 would have been obvious over the combination of SCC-700 and Saravis.

4. *Claim 17*

Claim 17 depends from claim 16 and further recites that “the friction surface includes a hook and loop connection system with a first side and a second side.” For the first and second sides, Petitioner cites Saravis’s teaching that its “fiber fastening attachment surface 28, as well as the attachment strip 32, will be cooperative with one another such that one will have a loop-type arrangement and the other will have a hook-type arrangement so that the two can be releasably hooked to one another.” Pet. 66 (citing Ex. 1013, 5:42–47).

Claim 17 additionally recites the first side is “fixably positioned in relation to the frame” and that the second side “fixably attached to the bottom surface of the guitar effect such that the guitar effect may be changeably positioned on the effect support board.” For the positioning of the first side, Petitioner cites Saravis’s teaching of a “fiber fastening strip on the upper surface of the plate.” *Id.* at 67 (citing Ex. 1013, 3:39–42). For the attachment of the second side, Petitioner cites Saravis’s teaching of “fiber fastening attachment layers on the underside of the foot pedals.” *Id.* Petitioner additionally notes Saravis’s teaching that “a fiber fastening cooperative layer . . . is [also] used for attachment to the underside of the sound effect generators.” *Id.* at 66–67 (quoting Ex. 1013, 3:36–38) (alterations by Petitioner).

Based on Petitioner’s contentions and evidence, summarized above, we find that the combination of SCC-700 and Saravis teaches the added limitations of claim 17. Patent Owner relies on the same arguments discussed above with respect to claim 16 (see PO Resp. 41–43), which we have discussed above. Patent Owner also relies on the same evidence of secondary considerations of nonobviousness discussed above. *See supra* § II.D.2.c. We have considered the secondary considerations of nonobviousness and accorded them appropriate weight along with all of the *Graham* factors. On the entire trial record, we determine Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 17 would have been obvious over the combination of SCC-700 and Saravis.

F. Obviousness Ground Based on SCC-700, Arseneault, and Saravis

Petitioner contends the subject matter of claims 3–6 would have been obvious over SCC-700, Arseneault, and Saravis. Pet. 67–71; Pet. Reply 21. Patent Owner disputes Petitioner’s contentions. PO Resp. 43.

1. Claim 3

Claim 3 is similar to claim 1 except that claim 3 does not specify that the adapter is located “on an end of the guitar effect.” Claim 3 also differs slightly in the way that it recites the “inclined angle” limitation, specifically: “a frame . . . adapted to support the effect mounting surface at an inclined angle.” For limitations directed to the effect mounting surface, frame, and inclined angle, Petitioner relies on the same analysis from claim 1 of the SCC-700–Arseneault obviousness ground regarding how SCC-700 teaches

these limitations, as discussed above with respect to claim 1. Pet. 67; *see supra* § II.D.2. Petitioner also relies on the same reasons for combining Arseneault with SCC-700 that we discussed with respect to that ground. *Id.*

Claim 3 additionally recites that the effect mounting surface includes “a friction surface adapted to engage the bottom surface of the guitar effect to maintain the positioning of the guitar effect on the friction surface.” Petitioner cites the same teachings from Saravis discussed above regarding a fiber fastening system. Pet. 68 (citing Ex. 1013, 3:39–42, 6:10–14). Petitioner’s reasons for combining Saravis with SCC-700 and Arseneault are the same as Petitioner’s reasons for combining Saravis with SCC-700, as discussed above with respect to claim 2. *Id.* (citing Ex. 1015 ¶ 71); *see also supra* § II.E.2.

Patent Owner relies on the same arguments it made with respect to claim 1: (1) that Arseneault is nonanalogous art; (2) that SCC-700’s cross members A–D do not constitute a “frame”; and (3) that Petitioner’s rationale for combining Arseneault or Saravis with SCC-700 is deficient. *See* PO Resp. 43. We have discussed these arguments above. *See supra* § II.D.1 (analogous art), §§ I.F.2, II.C.2 (“frame” arguments), §§ II.D.2.b, II.E.2 (rationale for the combination). Patent Owner also relies on the same evidence of secondary considerations of nonobviousness discussed above. *See supra* § II.D.2.c.

Based on Petitioner’s contentions and evidence, summarized above, we find that the combination of SCC-700, Arseneault, and Saravis teaches every limitation of claim 3. Petitioner also has provided persuasive reasons for its proposed combination based on Dr. Stratton’s testimony. *See* Ex. 1015 ¶¶ 41–50, 71–74. We have considered the secondary

considerations of nonobviousness and accorded them appropriate weight along with all of the *Graham* factors. On the entire trial record, we determine Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 3 would have been obvious over the combination of SCC-700, Arseneault, and Saravis.

2. *Claim 4*

Claim 4 depends from claim 3 and recites:

friction surface including a hook and loop connection system with a first side and a second side, the first fixably positioned in relation to the frame and the second side fixably attached to the bottom surface of the guitar effect such that the guitar effect may be changeably positioned on the effect support board.

Petitioner cites the same teachings from Saravis discussed above that a “hook and loop fastening system could be used to securely but releaseably [sic] mount guitar effects units to a surface.” Pet. 68 (citing Ex. 1013, 3:39–42, 6:10–14 in connection with claim 3).

Based on Petitioner’s contentions and evidence, summarized above, we find that the combination of SCC-700, Arseneault, and Saravis teaches the added limitations of claim 4. *See supra* § II.E.4 (analysis for similar limitations in claim 17). Patent Owner relies on the same arguments discussed above with respect to claim 3 (*see* PO Resp. 43), which we have discussed above. Patent Owner also relies on the same evidence of secondary considerations of nonobviousness discussed above. *See supra* § II.D.2.c. We have considered the secondary considerations of nonobviousness and accorded them appropriate weight along with all of the *Graham* factors. On the entire trial record, we determine Petitioner has shown, by a preponderance of the evidence, that the subject matter of

claim 4 would have been obvious over the combination of SCC-700, Arseneault, and Saravis.

3. *Claim 5*

Claim 5 depends from claim 2 and further recites “a frame base adapted to support the frame above the surface to allow the cables to pass beneath the frame.” Petitioner’s analysis builds upon its analysis of claim 2 in the SCC-700–Saravis obviousness ground. *See* Pet. 69. Petitioner acknowledges that SCC-700 “does not expressly show a frame base adapted to support the frame and allow a cable to pass beneath the frame.” *Id.* Thus, Petitioner cites Arseneault for teaching the recited frame base. *Id.* at 69–70 (citing, *inter alia*, Ex. 1012, 3:25–30, Fig. 3).

Just as above with respect to claim 18 in the SCC-700–Arseneault ground, Petitioner provides no evidence or explanation as to how its proposed combination teaches a frame base that is “adapted to support the frame *above* the surface” in claim 5. In the absence of any evidence or analysis addressing this limitation, Petitioner has not shown, by a preponderance of the evidence, that the subject matter of claim 5 would have been obvious over the combination of SCC-700, Arseneault, and Saravis.

4. *Claim 6*

Claim 6 depends from claim 2 and further recites “a frame base adapted to support the frame at an inclined angle.” Petitioner’s analysis builds upon its analysis of claim 2 in the SCC-700–Saravis obviousness ground. *See* Pet. 71. Petitioner acknowledges that SCC-700 “does not expressly show a frame base adapted to support the frame at an inclined

angle.” *Id.* Thus, Petitioner cites Arseneault’s frame base with an incline based on the same analysis it put forth for claim 1 in the SCC-700–Arseneault ground. *Id.* at 51–53 (citing, *inter alia*, Ex. 1012, 1:72–75, 4:15–18, Fig. 3; Ex. 1015 ¶ 45), 71.

Based on Petitioner’s contentions and evidence, summarized above, we find that the combination of SCC-700, Arseneault, and Saravis teaches the added limitation of claim 6. *See supra* § II.D.2 (analysis for similar limitation in claim 1). Patent Owner relies on the same arguments discussed above with respect to claim 3. *See* PO Resp. 43. Patent Owner also relies on the same evidence of secondary considerations of nonobviousness discussed above. *See supra* § II.D.2.c. We have considered the secondary considerations of nonobviousness and accorded them appropriate weight along with all of the *Graham* factors. On the entire trial record, we determine Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 6 would have been obvious over the combination of SCC-700, Arseneault, and Saravis.

G. Obviousness Ground Based on Carter and Saravis

Petitioner contends the subject matter of claims 7 and 20 would have been obvious over Carter and Saravis. Pet. 72–78; Pet. Reply 22–24. Patent Owner disputes Petitioner’s contentions. PO Resp. 44–48; PO Sur-Reply 14–16.

1. Carter

Carter is a U.S. design patent directed to a video game foot pedal controller. Ex. 1014, [57]. Figure 1 of Carter is reproduced below.

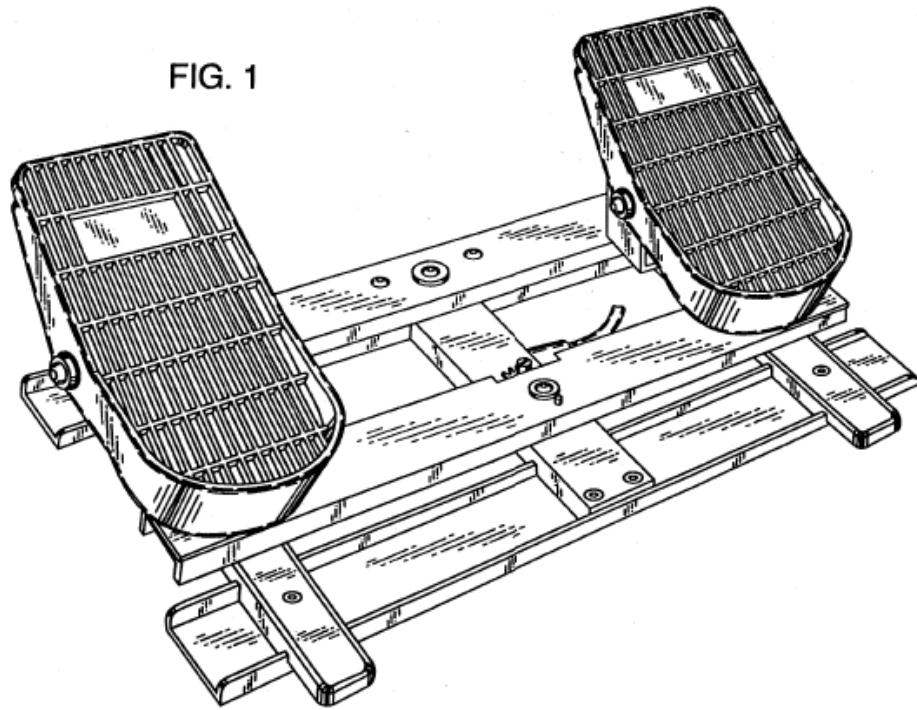
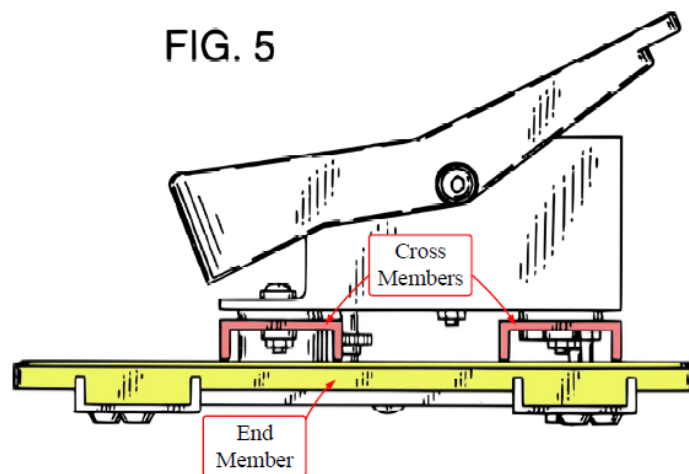
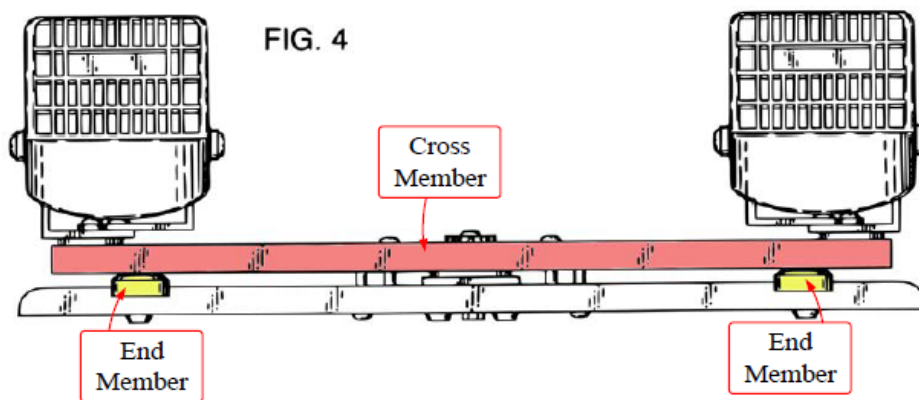
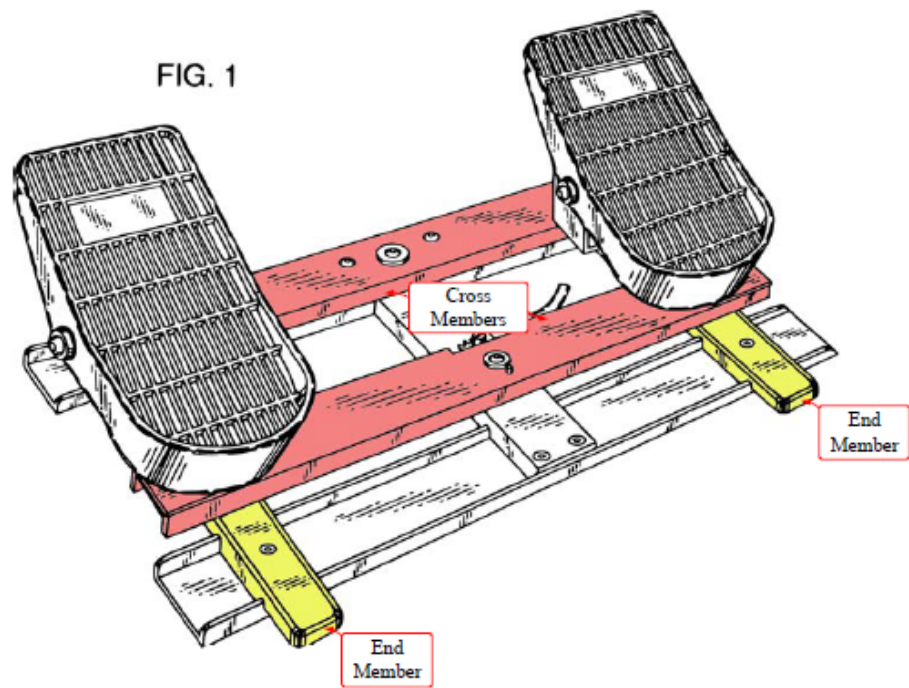


Figure 1 depicts a top perspective view of a video game foot pedal controller. *Id.* at 1.

2. *Claim 7*

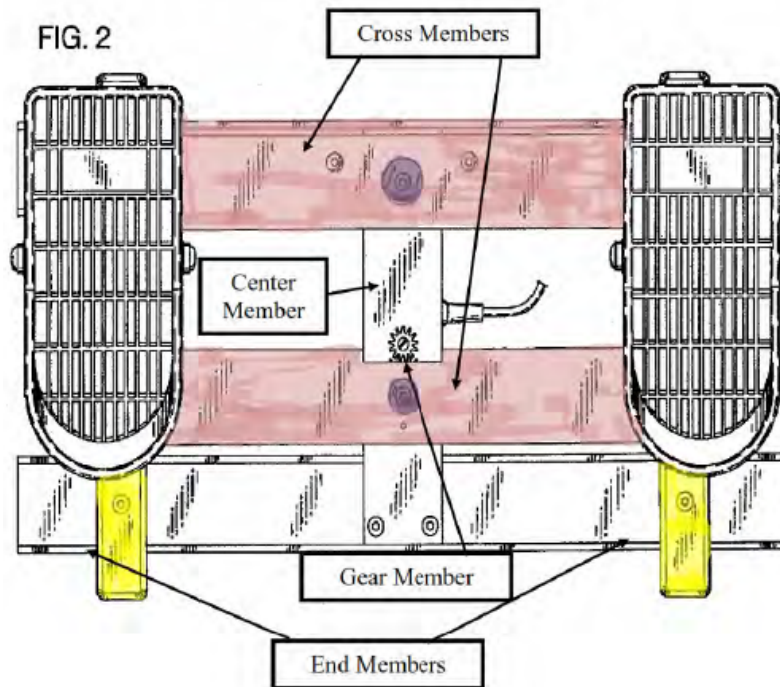
Claim 7 recites “[a] method of constructing an effect support board adapted to support a guitar effect with a bottom surface and an adapter for connection to a cable.” Petitioner contends “Carter discloses a method of constructing a support board that may be used to support a guitar effect, and Saravis discloses guitar effects having a bottom surface and an adapter for connection to a cable.” Pet. 72. For “providing at least two end members and at least two cross members,” Petitioner provides annotated versions of Figures 1, 4, and 5 of Carter, as reproduced below.



Id. at 73–74. In these annotated figures from Carter, Petitioner has indicated end members in yellow and cross members in red. *Id.* at 72. Petitioner contends one of ordinary skill in the art would have recognized the illustrated members as end and cross members, respectively. *Id.* (citing Ex. 1015 ¶ 82).

For “rigidly connecting the end members and cross members,” Petitioner contends “[t]he end and cross members of Carter are rigidly connected or joined, as Carter illustrates them being held together using screws or rivets.” *Id.* at 74 (citing Ex. 1014, Fig. 5; Ex. 1015 ¶ 86). In his supporting testimony, Mr. Stratton testifies that “the foot pedals appear to be secured to the support board of Carter using rivets, screws, or some similar type of fastener.” Ex. 1015 ¶ 86.

In its Response, Patent Owner argues that Petitioner has not presented any evidence that Carter discloses the “rigidly connecting” limitation. PO Resp. 46. To explain its argument, Patent Owner provides an annotated version of Carter’s Figure 2, which is reproduced below.



Id. at 47. In this annotated version of Figure 2, Patent Owner has indicated end members in yellow and cross members in red. *Id.* Patent Owner also indicates a gear member and a center member with callouts. *Id.* Patent Owner contends an ordinarily skilled artisan “would [have] underst[oo]d that the gear member is used to cause pivoting of the cross members with respect to the center member” because “the cross members are connected pivotally at connection points [indicated in purple] along the center member.” *Id.* (citing Ex. 2029 ¶¶ 91, 93).

In its Reply, Petitioner argues “[Mr.] Farrow’s testimony was improperly informed by his review of an irrelevant commercial product, the THRUSTMASTER Rudder Control System.”¹³ Pet. Reply 23. Petitioner cites cross-examination testimony from Mr. Farrow in which he admitted that he did not know whether the cross-members in Carter pivoted until he

¹³ As discussed below, Petitioner moves to exclude evidence related to the THRUSTMASTER commercial product. *See infra* § II.I.

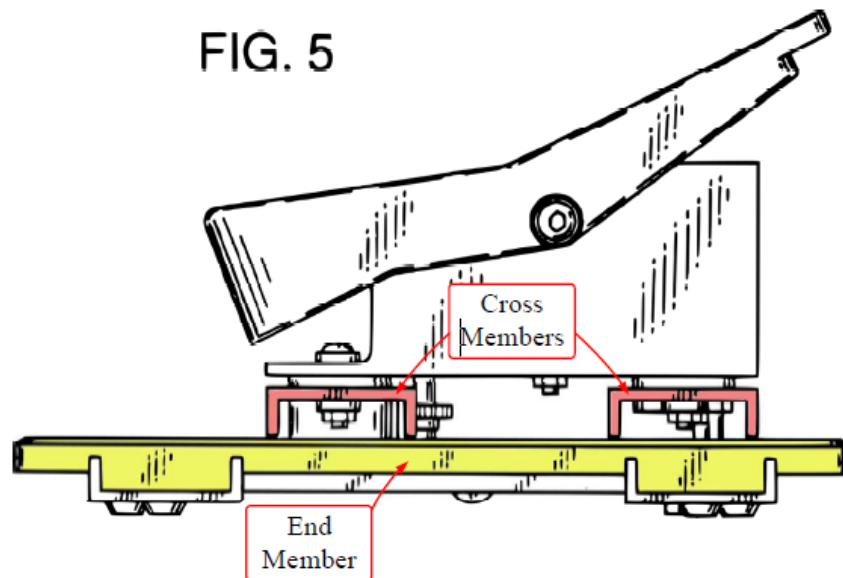
reviewed the THRUSTMASTER manual and a sample of the product. *Id.* (citing Ex. 1047, 83:22–84:10; Ex. 1048, 353:8–20). Petitioner also cites testimony from Mr. Stratton’s supplemental declaration in which he contends the cross members and the end members are rigidly connected based on mechanical fasteners depicted for other connections in Carter. *Id.* (citing, *inter alia*, Ex. 1051 ¶¶ 20–23). Mr. Stratton’s supporting testimony cites Carter’s alleged depiction of “screw and nut fasteners [that] rigidly hold the base structures of the foot pedals down to the cross members.” Ex. 1051 ¶ 23. Petitioner also offers a new, alternative theory regarding the alleged rigid connection in Carter: that an ordinarily skilled artisan “could have easily made a rigid connection between the cross members and end-members using the same fasteners that are disclosed in Carter.”¹⁴ Pet. Reply 24 (citing, *inter alia*, Ex. 1051 ¶ 26).

In its Sur-Reply, Patent Owner argues that Petitioner presents no evidence that Carter discloses “rigidly connecting the end members and cross members.” PO Sur-Reply 14. Patent Owner notes that the testimony from Mr. Stratton cited by Petitioner pertains to a rigid connection between “‘the base structures of the foot pedals’ and the ‘cross members,’ not ‘end

¹⁴ At oral argument, Petitioner offered yet another new theory for the “rigidly connecting” limitation of claim 7. See Tr. 15:20–16:2, 16:25–17:1, 20:10–22:6 (Petitioner’s counsel arguing that the recited cross members and end members “don’t need to be rigidly connected to each other” and that, in Carter, “they’re rigidly connected together based off of the center member which joins them together”). Petitioner does not mention this theory in its papers. Accordingly, we do not consider Petitioner’s new theory. See 35 U.S.C. § 312(a)(3) (requiring Petitioner to “identif[y], in writing and with particularity, . . . the grounds on which the challenge to each claim is based” in the Petition).

members’ and ‘cross members.’” *Id.* (citing Ex. 1051 ¶ 23). Patent Owner also cites the presence of the gear member as evidence that the device depicted in Carter pivots. *Id.* at 14–15.

On the entire trial record, we agree with Patent Owner (*see* PO Sur-Reply 14–15) that Petitioner has failed to prove that Carter teaches or suggests this limitation. In the Petition, Petitioner cites two things to support its contention that Carter shows the “rigidly connecting” limitation: Figure 5 of Carter and paragraph 86 of Mr. Stratton’s first declaration. Pet. 74. In particular, Petitioner provides an annotated version of Figure 5, which is reproduced below.



Id. In this annotated version of Figure 5, which depicts a right side elevational view of a video game foot pedal controller, Petitioner has indicated the cross members in red and an end member in yellow. *Id.*; Ex. 1014, 1. Having reviewed this annotated figure, we do not agree with Petitioner that it depicts “[t]he end and cross members of Carter . . . being held together using screws or rivets.” Pet. 74. We discern no screws or rivets connecting the red cross members and the yellow end member. In

fact, it is not apparent from Figure 5 that the cross members and end member are connected at all, let alone “rigidly” connected.

Mr. Stratton’s supporting testimony fares no better. He testifies that “*the foot pedals* appear to be secured to the support board of Carter using rivets, screws, or some similar type of fastener, and I think one of ordinary skill in the art would recognize them as being ‘rigidly connected.’” Ex. 1015 ¶ 86 (emphasis added). But this testimony misses the point, because the relevant connection does not pertain to how the foot pedals are secured. Rather, Petitioner must establish that the end members and cross members are “rigidly connect[ed].” Thus, Mr. Stratton’s testimony does not support Petitioner’s mapping of claim 7 as depicted in Petitioner’s annotated version of Carter’s Figure 5 above.

Petitioner’s analysis of the “rigidly connecting” limitation in its Reply is similarly flawed. Petitioner references paragraphs 20–23 of Mr. Stratton’s supplemental declaration and contends that his understanding of the “rigidly connecting” limitation is “based on mechanical fasteners in Carter.” Pet. Reply 23. Mr. Stratton testifies that his opinion is “based on the numerous fasteners shown in Figures 1-7 of Carter and the manner in which many of the members in Carter are interconnected with mechanical interferences between them.” Ex. 1051 ¶ 22. Mr. Stratton further testifies that “Figure 5 of Carter shows screw and nut fasteners holding the foot pedal down to the cross members.” *Id.* ¶ 23. Mr. Stratton believes an ordinarily skilled artisan “would have found that those screw and nut fasteners rigidly hold the base structures of the foot pedals down to the cross members.” *Id.* Again, however, this analysis is not consistent with Petitioner’s mapping of the claim limitations to Carter’s Figure 5. Because Petitioner does not contend

the base structure of Carter’s foot pedal is an “end member,” the alleged fastening of the foot pedal base to the cross members is irrelevant to the issue of whether the end members and cross members are rigidly connected. For these reasons, Petitioner’s cited evidence does not persuasively show a rigid connection between the end members and cross members of Carter.

Petitioner’s Reply also includes a new rationale for Petitioner’s contention that Carter teaches the “rigidly connecting” limitation: that an ordinarily skilled artisan “could have easily made a rigid connection between the cross members and end-members using the same fasteners that are disclosed in Carter.” Pet. Reply 24 (citing, *inter alia*, Ex. 1051 ¶ 26). Mr. Stratton testifies that an ordinarily skilled artisan “would have used any suitable type(s) of fastener(s), such as such as screws, bolts, rivets, *etc.*, and/or welds positioned through and/or between the members, as necessary.” Ex. 1051 ¶ 26. Mr. Stratton further testifies that “the selection and the placement of such fasteners and/or welds would have been well within the level of ordinary skill in the art to form rigid connections.” *Id.*

Regarding this new theory, Patent Owner argues “Petitioner presents no evidence to suggest that a[n ordinarily skilled artisan] would have been motivated” to make a rigid connection between the cross members and end members using fasteners depicted elsewhere in Carter’s video game foot pedal controller. PO Sur-Reply 15–16. We agree. “[O]bviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.” *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015). Even if Petitioner’s proposed modifications were possible, Petitioner provides no reason why an ordinarily skilled artisan would have

applied fasteners from other locations to the interface between Carter’s cross members and end members. Thus, Petitioner’s new obviousness rationale from the Reply is unpersuasive.

For these reasons, Petitioner has not established that the combination of Carter and Saravis teaches “rigidly connecting the end members and cross members,” as recited in claim 7. On the entire trial record, we determine Petitioner has not shown, by a preponderance of the evidence, that the subject matter of claim 7 would have been obvious over the combination of Carter and Saravis.

3. *Claim 20*

Claim 20 is another independent claim reciting “[a] method of constructing an effect support board” and “rigidly connecting the end members and cross members” just like claim 7. Petitioner relies on the same analysis of the “rigidly connecting” limitation from claim 7. *See* Pet. 77. As such, Petitioner’s analysis for claim 20 does not cure the deficiencies discussed above with respect to claim 7. On the entire trial record, we determine Petitioner has not shown, by a preponderance of the evidence, that the subject matter of claim 20 would have been obvious over the combination of Carter and Saravis.

H. *Obviousness Ground Based on Carter, Saravis, and Arseneault*

Petitioner contends claims 8 and 21 would have been obvious over Carter, Saravis, and Arseneault. Pet. 78–82. Patent Owner relies on the same arguments it makes for the Carter–Saravis obviousness ground. *See* PO Resp. 44–48.

Claims 8 and 21 depend from claims 7 and 20, respectively. Petitioner's analysis for these claims does not cure the deficiencies discussed above with respect to claims 7 and 20. *See* Pet. 78, 81 (incorporating Petitioner's analysis from claims 7 and 20). On the entire trial record, we determine Petitioner has not shown, by a preponderance of the evidence, that the subject matter of claims 8 and 21 would have been obvious over the combination of Carter and Saravis.

I. Petitioner's Motion to Exclude

Petitioner moves to exclude paragraphs 94–95 of Exhibit 2029 (Farrow Decl.), Exhibit 2037 (THRUSTMASTER Manual), and Exhibit 2038 (Photos of THRUSTMASTER Packaging), which all relate to a commercial product known as THRUSTMASTER. Paper 39, 1–2. As to these exhibits (or portions thereof), Petitioner's motion is dismissed as moot because we do not rely on them. *See supra* § II.G.2 (finding Petitioner has failed to establish that Carter teaches the “rigidly connecting” limitation of claim 7 regardless of Patent Owner's submitted evidence).

Petitioner also moves to exclude paragraphs 45–54, 61, and 63–66 of Exhibit 2029 (Farrow Decl.), which relate to secondary considerations of nonobviousness. Paper 39, 6. Petitioner contends Mr. Farrow's testimony is irrelevant, likely to confuse the issues, or misleading under FRE 401-403, lacks sufficient evidence to support a finding that Farrow has personal knowledge of the issues under FRE 602, is not based on sufficient facts or data, facts or data that Farrow has been made aware of or personally observed, or is the product of reliable principles and methods under FRE 702-704.

Id. at 6–7.

We decline to exclude the paragraphs in Mr. Farrow's declaration pertaining to secondary considerations and instead have given his testimony more or less persuasive value depending on the degree to which his testimony is supported by reasoning, fact, and his expertise. *See supra* § I.D.2.c. Thus, we deny Petitioner's motion to exclude as to paragraphs 45–54, 61, and 63–66 of Exhibit 2029.

III. CONCLUSION

Petitioner has shown, by a preponderance of the evidence, that:

- A. claims 14 and 15 are anticipated by SCC-700;
- B. the subject matter of claims 1 and 19 would have been obvious over the combination of SCC-700 and Arseneault;
- C. the subject matter of claims 2, 16, and 17 would have been obvious over the combination of SCC-700 and Saravis; and
- D. the subject matter of claims 3, 4, and 6 would have been obvious over the combination of SCC-700, Arseneault, and Saravis;

Petitioner has not shown, by a preponderance of the evidence, that:

- E. the subject matter of claim 18 would have been obvious over the combination of SCC-700 and Arseneault;
- F. the subject matter of claim 5 would have been obvious over the combination of SCC-700, Arseneault, and Saravis;
- G. the subject matter of claims 7 and 20 would have been obvious over the combination of Carter and Saravis; or
- H. the subject matter of claims 8 and 21 would have been obvious over the combination of Carter, Saravis, and Arseneault.

IV. ORDER

Accordingly, it is:

ORDERED that claims 1–4, 6, 14–17, and 19 of the '023 patent are held to be unpatentable;

FURTHER ORDERED that Petitioner's Motion to Exclude is *dismissed as moot* as to paragraphs 94–95 of Exhibit 2029, Exhibit 2037, and Exhibit 2038;

FURTHER ORDERED that Petitioner's Motion to Exclude is *denied* as to paragraphs 45–54, 61, and 63–66 of Exhibit 2029; and

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

IPR2018-00707
Patent 6,459,023 C1

For PETITIONER:

Jason Perilla
Robert Gravois
THOMAS HORSTMAYER, LLC
jason.perilla@thomashorstemeyer.com
robert.gravois@thomashorstemeyer.com

For PATENT OWNER:

Douglas Johnson
Pharan Evans
MILLER & MARTIN PLLC
djohnson@millermartin.com
pharan.evans@millermartin.com