

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

G.B.T. INC.,
Petitioner,

v.

WALLETEX MICROELECTRONICS LTD.,
Patent Owner.

Case IPR2018-00326
Patent 7,458,825 B2

Before MICHAEL R. ZECHER, THOMAS L. GIANNETTI, and
JOHN D. HAMANN, *Administrative Patent Judges*.

HAMANN, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73
DISMISSING MOTION TO AMEND
35 U.S.C. § 316(d) and 37 C.F.R. § 42.121

I. INTRODUCTION

This *inter partes* review, instituted pursuant to 35 U.S.C. § 314, challenges the patentability of claims 1–13 and 16–24 (“the challenged claims”) of U.S. Patent No. 7,458,825 B2 (“the ’825 patent,” Ex. 1101), owned by Walletex Microelectronics Ltd. (“Patent Owner”). We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

For the reasons discussed herein, G.B.T Inc. (“Petitioner”) has not shown by a preponderance of the evidence that any of the challenged claims of the ’825 patent are unpatentable under 35 U.S.C. § 103(a). Patent Owner’s contingent motion to amend is *dismissed* as moot.

II. BACKGROUND

A. Procedural History

Petitioner filed a Petition requesting *inter partes* review of the challenged claims of the ’825 patent. Paper 1 (“Pet.”). The Petition is supported by the Declaration of James T. Geier (Ex. 1113). Patent Owner filed a corrected Preliminary Response. Paper 13.

We instituted *inter partes* review of all of the challenged claims of the ’825 patent on all of the grounds raised in the Petition. Paper 14 (“Dec. on Inst.”), 8, 25–26. Patent Owner filed a Response to the Petition. Paper 24 (“PO Resp.”). The Response is supported by the Declaration of Dr. Kenneth Fernald (Ex. 2002). Petitioner filed a corrected Reply to Patent Owner’s Response. Paper 42 (“Pet. Reply”). Patent Owner filed a Sur-Reply to Petitioner’s Reply. Paper 47 (“PO Sur-Reply”).

In addition, Patent Owner filed a contingent Motion to Amend certain of the challenged claims. Paper 25 (“Mot. to Amend”), 1. The Motion to

Amend is supported by a separate Declaration of Dr. Kenneth Fernald (Ex. 2010). Petitioner filed a corrected Opposition to Patent Owner’s Motion to Amend. Paper 43. Patent Owner filed a Reply to Petitioner’s Opposition to Patent Owner’s Motion to Amend. Paper 44. Petitioner filed a Sur-Reply to Patent Owner’s Reply to Petitioner’s Opposition to Patent Owner’s Motion to Amend. Paper 53.

Petitioner filed a Motion to Exclude Evidence. Paper 50 (“Mot. to Exclude”). Patent Owner filed an Opposition to Petitioner’s Motion to Exclude Evidence. Paper 52 (“Opp. to Exclude”). Petitioner filed a Reply to Patent Owner’s Opposition to Petitioner’s Motion to Exclude Evidence. Paper 54 (“Reply to Exclude”). We entered an Order denying Petitioner’s Motion to Exclude Evidence, our reasoning for which we provide below. Paper 55; *infra* Section X.

An oral hearing was held on March 27, 2019. A transcript of the oral hearing is included in the record. Paper 59 (“Tr.”).

B. Related Matters

The parties identify the following matters that may affect or would be affected by a decision in this proceeding:

1.	<i>Reversible Connections LLC</i> ¹ <i>v. G.B.T. Inc.</i>	2:17-CV05382-JVS	C.D. Cal.
2.	<i>Reversible Connections LLC v.</i> <i>AsRock Am., Inc.</i>	5:17-CV-01445-JVS	C.D. Cal.
3.	<i>Reversible Connections LLC v.</i> <i>MSI Comput. Corp.</i>	2:17-CV-05383-JVS	C.D. Cal.
4.	<i>Reversible Connections LLC v.</i> <i>Razer USA, Ltd.</i>	8:17- CV-01254-JVS	C.D. Cal.

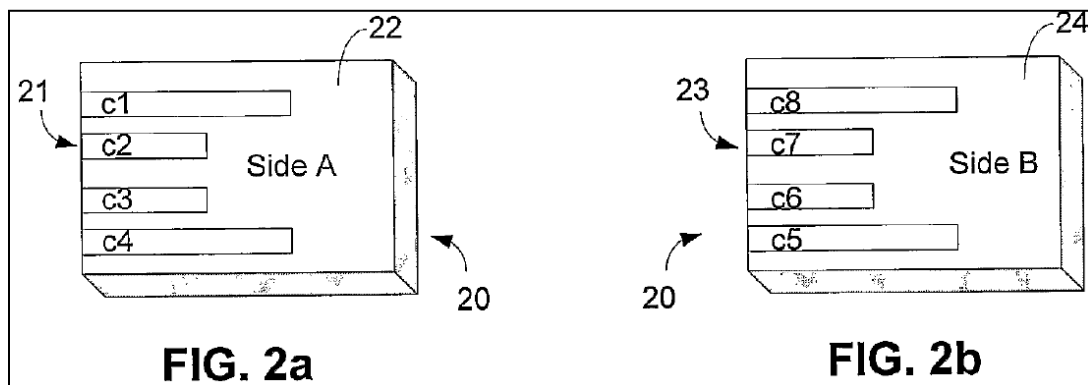
¹ Patent Owner states it “conveyed all substantial rights in the [’]825 Patent to Reversible Connections LLC via an exclusive license agreement.” Paper 6, 2.

5.	<i>Reversible Connections LLC. v. Toshiba Am. Info. Sys.</i>	8:17-CV-01252-JVS	C.D. Cal.
6.	<i>GBT, Inc. v. Wallelex Microelectronics Ltd.</i>	Case IPR2018-00325 ²	PTAB

Pet. 3, Paper 6, 2–3.

C. The Challenged Patent (Ex. 1101)

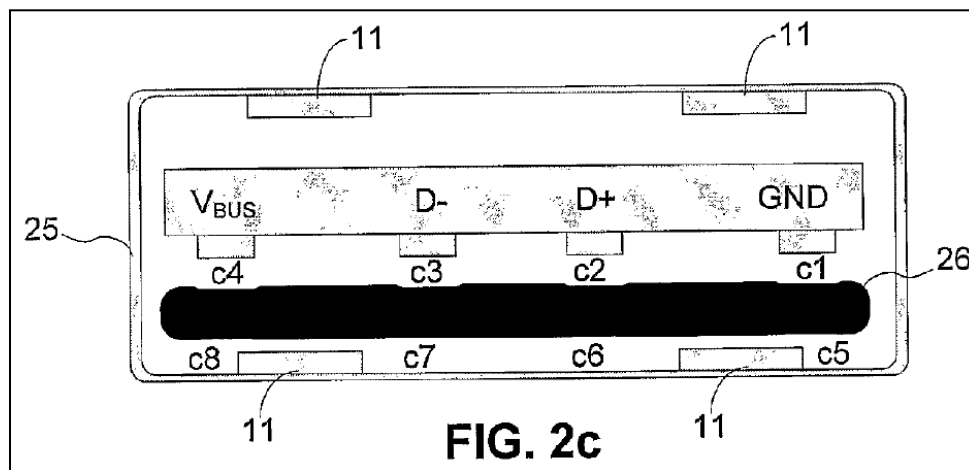
The '825 patent relates to connectors for connecting electrical devices. *E.g.*, Ex. 1101, [57], 1:8, 2:65–3:3, 3:11–13. More specifically, the '825 patent discloses male connectors that can be inserted in either direction (i.e., in opposite orientations) into compatible female connectors while obtaining identical functionality regardless of the male connector's orientation. *E.g.*, *id.* at [54] (“Double-Sided USB-Compatible Plug Connector Adapted for Insertion in Either Orientation Into a USB-Compatible Receptacle”), 3:22–29, 5:63–6:7. Figures 2a and 2b, shown below, illustrate an embodiment of these male connectors. *Id.* at 4:34–36.



² We denied institution in Case IPR2018-00325 because the information presented in the Petition did not demonstrate a reasonable likelihood that Petitioner would prevail in demonstrating that at least one of the challenged claims is unpatentable. *G.B.T. Inc. v. Wallelex Microelectronics, Ltd.*, Case IPR2018-00325 (PTAB July 3, 2018) (Paper 15).

Figures 2a and 2b illustrate a double-sided Universal Serial Bus (“USB”) male connector having a set of electrical contacts on each side of the connector (i.e., a first set of contacts (c1–c4) on *Side A* (see Fig. 2a) and a second set of contacts (c5–c8) on the opposite side, *Side B* (see Fig. 2b)). *Id.* at 5:42–51, Figs. 2a, 2b. The sets of contacts are situated on the male connector so that one contact in each pair of complementary contacts (i.e., c1 or c8, c2 or c7, c3 or c6, and c4 or c5) mates with its corresponding contact in the compatible female connector. *Id.* at 5:52–6:7, 6:23–36. The pairs of complementary contacts also are interconnected (i.e., c1 to c8, c2 to c7, c3 to c6, and c4 to c5) as part of providing identical functionality regardless of the male connector’s orientation. *E.g., id.* at 5:52–6:7, 6:23–36, 6:58–61, Fig. 2d.

Figure 2c, shown below, illustrates a female connector in accordance with the ’825 patent’s disclosure. *E.g., id.* at 5:52–62, 6:17–36, Fig. 2c.



More specifically, Figure 2c illustrates USB female connector 25 having slot 26 into which double-sided USB male connector 20 can be inserted. *Id.* at 5:52–62, 6:17–36. Female connector 25 has a single set of contacts (i.e., V_{BUS}, D⁻, D⁺, and GND (i.e., ground)). *Id.* at 5:52–62, 6:17–36, Fig. 2c. When male connector 20 is inserted with *Side A* face up, *Side*

A's contacts connect with female connector 25's single set of contacts (i.e., c4 to V_{BUS} , c3 to D-, c2 to D+, and c1 to GND). *Id.* Alternatively, when male connector 20 is inserted with *Side B* face up, *Side B*'s contacts connect with female connector 25's single set of contacts (i.e., c5 to V_{BUS} , c6 to D-, c7 to D+, and c8 to GND). *Id.* Male connector 20's contacts that are facing away from female connector 25's single set of contacts are referred to as "inactive" contacts. *E.g.*, Ex. 1102 (File History), 39.

Figure 2c also illustrates female connector 25's resilient leaves 11 that press against male connector 20's outer surface, "thereby maintaining the two connectors tightly coupled." Ex. 1101, 2:5–8. Leaves 11 usually are metallic and are grounded via female connector 25's rectangular frame. *Id.* at 6:36–39. Because (i) leaves 11 are grounded and (ii) male connector 20's V_{BUS} contacts (i.e., c4 and c5) are interconnected, a short circuit can occur when male connector 20 is inserted into female connector 25. *Id.* at 6:36–40. More specifically, a short circuit can occur between the V_{BUS} and GND contacts if male connector 20's inactive V_{BUS} contact touches a leaf. *Id.* at Fig. 2d, 6:36–67 (describing that the active V_{BUS} contact is connected to the inactive V_{BUS} contact which can touch a leaf which is connected to ground). To address this short circuit problem, the '825 patent discloses using devices such as diodes or relay units to prevent the short circuit. *Id.* at 6:41–7:7, Figs. 2d, 2e. Figure 2d, shown below, shows diodes employed to prevent the short circuit. *Id.* at 6:41–67, Fig. 2d.

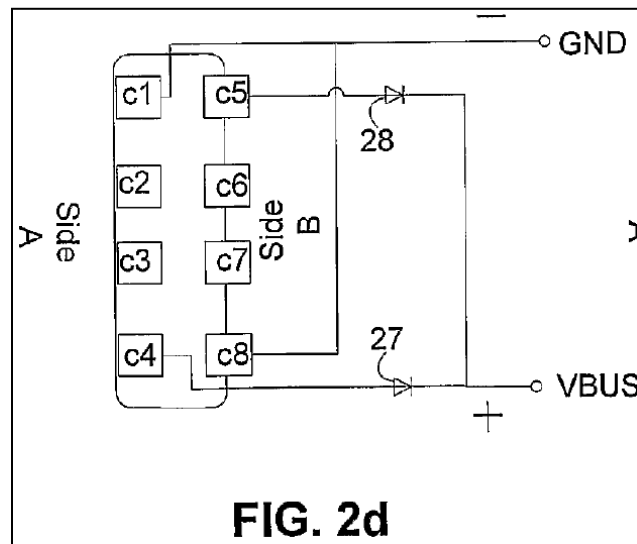


Figure 2d shows a schematic view of double-sided male connector 20, having contacts c1–c4 on *Side A* and contacts c5–c8 on *Side B*. *Id.* at 6:41–45. Also shown are diodes 27 and 28, each of which is placed between a V_{BUS} contact (i.e., c4 or c5) and where the V_{BUS} contacts are interconnected in male connector 20. *See id.* at 6:41–52, Fig. 2d. The arrangement of these diodes prevents the short circuit problem, as explained in more detail below. *Id.*

When male connector 20 is inserted with *Side A* face up into female connector 25, male connector 20's (i) c4 V_{BUS} contact engages female connector 25's V_{BUS} contact and (ii) c5 V_{BUS} contact touches resilient leaf 11, which is grounded. *Id.* Thus, the c4 contact is at positive potential and the c5 contact is grounded. *Id.* Accordingly, diode 27 conducts current, whereas diode 28, which is reverse biased, opposes current flow. *Id.* Thus, the short circuit between the V_{BUS} and GND contacts is prevented. *Id.* When male connector 20 is inserted with *Side B* face up, the opposite occurs (i.e., contact c4 is grounded and contact c5 is at positive potential) with diode 28 allowing current flow and diode 27 opposing it. *Id.* at 6:53–57,

Fig. 2d. In this particular scenario, the short circuit between the V_{BUS} and GND contacts again is prevented. *Id.*

D. Illustrative Challenged Claim

Petitioner challenges claims 1–13 and 16–24 of the '825 patent. Claim 1 is the only independent claim. Claim 1 is illustrative of the challenged claims and is reproduced below:

1. A multi-contact connector supporting on opposite surfaces first and second sets of mutually opposed contacts wherein corresponding contacts in each set are electrically interconnected and are spatially aligned in a mutually opposed relationship allowing the connector to be connected in two opposed orientations to a corresponding FCCS-compatible receptacle supporting on an internal surface thereof a multi-contact data connector having only a single set of contacts that is compatible to either one of said sets of contacts such that identical functionality is obtained regardless of the orientation of the connector within the receptacle, said connector further comprising a short circuit prevention device to prevent an electric short circuit between contacts of the receptacle on inserting the connector therein.

Ex. 1101, 17:11–24.

E. Instituted Grounds of Unpatentability

We instituted trial based on the following grounds of unpatentability, which are all the grounds of unpatentability raised in the Petition:

	References³	Basis⁴	Challenged Claim(s)
1.	Yoo ⁵ and Admitted Prior Art (“APA”) of the ’825 patent ⁶	§ 103(a)	1, 2, 4–6, 8–12, 16, 17, 20, 21, 23, and 24 ⁷
2.	Yoo and Chen ⁸	§ 103(a)	1, 2, 4–6, 8–12, 16, 17, 20, 21, 23, and 24
3.	Yoo, Chen, and Flesher ⁹	§ 103(a)	3
4.	Yoo, Chen, and Lin ¹⁰	§ 103(a)	7
5.	Yoo, Chen, and Rubin ¹¹	§ 103(a)	13, 16, 18, and 24
6.	Yoo, Chen, and Abbott ¹²	§ 103(a)	16, 18, 19, and 22

Pet. 6, 18–75.

³ For clarity and ease of reference, we list only the first named inventor.

⁴ The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. § 103 effective on March 16, 2013. Because the ’825 patent issued from an application filed before March 16, 2013, we apply the pre-AIA version of this statutory basis for unpatentability.

⁵ U.S. Patent Appl. Pub. No. 2003/0171035 A1 (published Sept. 11, 2003) (Ex. 1107, “Yoo”).

⁶ Ex. 1101, 1:23–2:26, 2:60–3:3, Fig. 1.

⁷ The parties dispute whether the Petition alleges additional dependent claims are obvious in light of Yoo and APA. *See, e.g.*, PO Resp. 2–3; Pet. Reply 5, 9–10, 13–14. We need not reach this dispute, and thus do not, in light of our analysis of Petitioner’s showing for independent claim 1. For purposes of this Decision, we list the claims for each ground as enumerated on page 6 of the Petition.

⁸ U.S. Patent No. 6,564,275 B1 (issued May 13, 2003) (Ex. 1108, “Chen”).

⁹ U.S. Patent Appl. Pub. No. 2001/0031511 A1 (published Oct. 18, 2001) (Ex. 1109, “Flesher”).

¹⁰ U.S. Patent No. 6,733,328 B2 (issued May 11, 2004) (Ex. 1110, “Lin”).

¹¹ U.S. Patent No. 6,701,522 B1 (issued Mar. 2, 2004) (Ex. 1111, “Rubin”).

¹² U.S. Patent No. 6,671,808 B1 (issued Dec. 30, 2003) (Ex. 1112, “Abbott”).

III. LEVEL OF ORDINARY SKILL IN THE ART

To determine whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). In assessing the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). “[O]ne or more factors may predominate.” *Id.*

In our Decision on Institution, we adopted Patent Owner’s proposed definition for one having ordinary skill in the art at the time of the invention of the ’825 patent as one who would have at least a (i) “bachelor’s degree . . . [in] computer engineering or electrical engineering, and at least three years of experience in the design, development, and/or testing of hardware and software components involved with electrical connectors for the USB or other interface standards that allow devices to be connected to a computer” or, alternatively, (ii) “five or more years of experience in those technologies without a bachelor’s degree.” Dec. on Inst. 9–10 (citing Ex. 2002 ¶ 30).

The parties do not dispute our adoption of Patent Owner’s definition in lieu of Petitioner’s proposed definition. PO Resp. 2; *see generally* Pet. Reply; *see also* Pet. 7 (providing Petitioner’s proposed definition). Because Patent Owner’s definition of the level of skill in the art is consistent with the ’825 patent and the asserted prior art, we maintain Patent Owner’s definition for purpose of this Final Written Decision. *See Okajima v. Bourdeau*, 261

F.3d 1350, 1355 (Fed. Cir. 2001); *GPAC*, 57 F.3d at 1579; *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978). We apply Patent Owner’s definition in our claim construction analysis and obviousness evaluation below, but note that our conclusions would be the same under Petitioner’s proposed definition.

IV. CLAIM CONSTRUCTION

We interpret claims of an unexpired patent using the “broadest reasonable construction in light of the specification of the patent in which [the claims] appear[.]” 37 C.F.R. § 42.100(b) (2017).¹³ Under that standard, claim terms are presumed to be 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. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definition for a claim term must be set forth with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

We need only construe those claim limitations “that are in controversy, and only to the extent necessary to resolve the controversy.” *See, e.g., Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

The only term proposed for construction, and relevant to our analysis below, is “short circuit prevention device.” In its Petition, Petitioner proposes that we construe “short circuit prevention device” to mean “a

¹³ A different rule applies for petitions filed on or after November 13, 2018. 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) (amending 37 C.F.R. § 42.100(b)).

device that is configured to prevent a short circuit.” Pet. 15–18. During the oral hearing, however, Petitioner agreed that this term does not need to be construed. Tr. 33:17–24. Patent Owner does not address whether this term needs construction. *See generally* PO Resp. and PO Sur-Reply.

We find that, because the construction for this term is not in dispute, an express construction is not needed for this term to determine whether Petitioner satisfies the preponderance of evidence standard. *Nidec*, 868 F.3d at 1017.

V. LAW FOR DEMONSTRATING OBVIOUSNESS

To prevail in challenging Patent Owner’s claims, Petitioner must demonstrate by a preponderance of the evidence that the claims are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). “In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). Except in limited circumstances not present here, this burden of persuasion does not shift to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review).

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 of the invention to a person having ordinary skill in the art. *KSR Int’l Co. v. Teleflex, Inc.*, 550

U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of non-obviousness, if present.¹⁴ *Graham*, 383 U.S. at 17–18. When evaluating a claim for obviousness, we also must “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441, F.3d 977, 988 (Fed. Cir. 2006)).

VI. OBVIOUSNESS OVER YOO AND APA

Petitioner argues that the combination of Yoo and APA renders claims 1, 2, 4–6, 8–12, 16, 17, 20, 21, 23, and 24 of the ’825 patent obvious under 35 U.S.C. § 103(a). Pet. 6, 18–51. As we note above, claim 1 is the only independent claim. Patent Owner argues that Petitioner fails to show how the combination of Yoo and APA renders claim 1 obvious. PO Resp. 10–19.

We have reviewed the parties’ arguments and the evidence of record. For the reasons that follow, we determine that Petitioner has not shown by a preponderance of the evidence that claim 1 would have been obvious over the combination of Yoo and APA. By virtue of the dependency of claims 2, 4–6, 8–12, 16, 17, 20, 21, 23, and 24 from claim 1, we further determine that Petitioner has not shown by a preponderance of the evidence that those claims would have been obvious over the combination of Yoo and APA.

¹⁴ Patent Owner does not present arguments or evidence of such objective evidence of non-obviousness in its Response. *See generally* PO Resp.

A. Summary of Yoo

Yoo discloses a USB device and a USB connector that together are used to connect the USB device in either orientation (i.e., a normal or reverse position) to a computer's USB port. *E.g.*, Ex. 1107 ¶ 10. Figures 7a and 7b, shown below, illustrate exploded perspective views of the USB device connected via the USB connector to the computer in a normal position and in a reverse position, respectively. *Id.* ¶ 20.

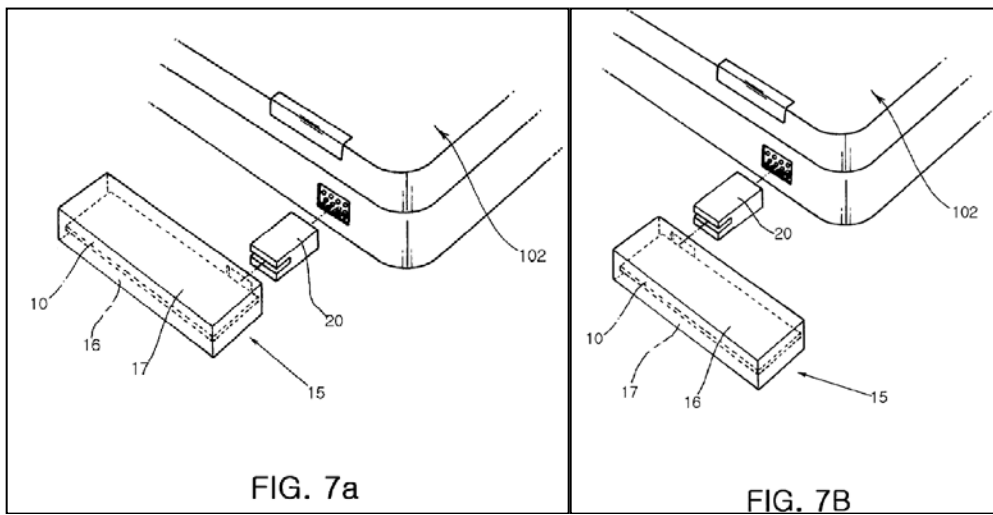


Figure 7a illustrates one end of USB connector 20 plugged into computer 102's USB port, and its other end connected to a normal positioned USB device 15. *Id.* ¶¶ 10, 27, 28, Fig. 7a. In contrast, Figure 7b illustrates that USB connector 20's other end is connected to a reverse positioned (i.e., flipped over) USB device 15. *Id.* ¶¶ 10, 27, 28, Fig. 7b.

Yoo's USB device 15 contains double-sided printed circuit board 10 with upper and lower surfaces, each surface having terminals (i.e., contacts) thereon. *E.g.*, *id.* ¶¶ 10, 28, 29. Figures 8 and 9, shown below, illustrate perspective views of printed circuit board 10 for connecting to USB connector 20 in a normal position and in a reverse position, respectively. *Id.* ¶ 27.

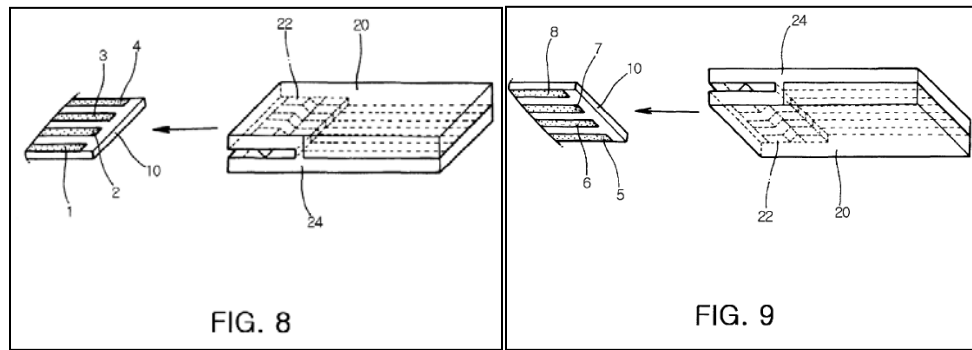


Figure 8 illustrates printed circuit board 10 in a normal position, with its upper surface terminals 1–4 aligned to electrically contact USB connector 20’s conductive strips 22 when printed circuit board 10 is inserted into USB connector 20. *Id.* ¶ 29. In contrast, Figure 9 illustrates printed circuit board 10 in a reverse position, with its lower surface terminals 5–8 aligned to electrically contact USB connector 20’s conductive strips 22 when printed circuit board 10 is inserted. *Id.* ¶ 30. Yoo discloses that the upper and lower surface terminals are “diagonally symmetrical” to each other so the conductive strips 22 always connect to at least one set of the terminals (i.e., terminals 1–4 or 5–8), regardless of printed circuit board 10’s orientation. *Id.* ¶ 32. Yoo also discloses that the complementary terminals (i.e., terminals 1, 5; 2, 6; 3, 7; and 4, 8) are interconnected. *Id.* ¶¶ 33, 34.

B. Summary of APA Concerning Short Circuits

The ’825 patent discloses a previously known prior art device for preventing a short circuit. Ex. 1101, 1:63–2:2 (citing Staudt et al. (WO 2001/048994 A1; published July 5, 2001)). More specifically, this APA discloses “means to protect a USB circuit against short circuit using a comparison circuit configured to detect a shortcut to one or more predetermined voltage sources. Such an approach requires dedicated software to compare drive and transmit signals.” *Id.* at 1:65–2:2.

C. Independent Claim 1

Petitioner relies on Yoo as teaching the limitations of claim 1's multi-contact connector, except for claim 1's short circuit prevention device. Pet. 26–32. Petitioner turns to APA as teaching “a short circuit prevention device to prevent an electric short circuit between contacts of the receptacle on inserting the connector therein.” Pet. 32–34. Specifically, Petitioner argues that one of ordinary skill in the art would have known of APA's “‘means to protect a USB circuit against short circuit using a comparison circuit configured to detect a shortcut to one or more predetermined voltage sources,’ including ‘dedicated software to compare drive and transmit signals.’” Pet. 32–33 (quoting Ex. 1101, 1:65–2:2).

Petitioner argues that one of ordinary skill in the art “would have been motivated to incorporate the comparison circuit of APA with the multi-contact connector of Yoo to further detect and prevent short circuit.” *Id.* (citing Ex. 1113 ¶ 68). Petitioner argues that one of ordinary skill in the art “would have understood the importance of providing short circuit protection with connectors,” including “to ensure the safety of associated users and equipment.” *Id.* In addition, Petitioner argues that “[t]he [E]xaminer's statement of reasons for allowance notably did not include a short circuit prevention device” because it is APA. Pet. Reply 2 (citing Ex. 1102, 21). Similarly, Petitioner argues that, in our Decision on Institution, we found that “[t]he '825 patent discloses a previously known prior art device for preventing short circuits.” *Id.* at 3 (quoting Dec. on Inst. 14).

Patent Owner argues that Petitioner does not demonstrate that one of ordinary skill in the art would have combined the comparison circuit of APA with Yoo's multi-contact connector. PO Resp. 10–17. Stated differently,

Patent Owner argues that Petitioner does not explain how Yoo and APA would have been combined to meet the claimed short circuit prevention device. *See id.* at 11 (citing *ActiveVideo Networks, Inc. v. Verizon Comm., Inc.*, 694 F.3d 1312, 1327 (Fed. Cir. 2012)).

We agree with Patent Owner. We find that Petitioner does not demonstrate by a preponderance of the evidence that one of ordinary skill in the art would have combined the comparison circuit of APA with Yoo's multi-contact connector to meet the claimed "short circuit prevention device." Rather, Petitioner simply (i) identifies APA, and (ii) argues, based on Mr. Geier's declaration testimony, that one of ordinary skill in the art "would have understood the importance of providing short circuit protection with connectors," and, as a result, would have added APA's comparison circuit to Yoo's multi-contact connector "to further detect and prevent [a] short circuit," and "to ensure the safety of associated users and equipment." Pet. 32–33 (citing Ex. 1113 ¶ 68).

Mr. Geier's declaration testimony, however, is conclusory and factually unsupported. Notably, Mr. Geier does not explain "how [APA and Yoo] . . . could be combined, which combination(s) of elements in [APA and Yoo] . . . would yield a predictable result, or how any specific combination would operate or read on" claim 1. *ActiveVideo*, 694 F.3d at 1327 (finding an expert's testimony conclusory and factually unsupported because it failed to provide sufficient detail). In particular, Mr. Geier does not address how a comparison circuit that compares drive and transmit signals would have prevented "an electric short circuit *between contacts of [a] receptacle* on inserting [Yoo's] connector therein." Ex. 1101, 17:22–24 (emphasis added). Nor does he address what the drive and transmit signals constitute or to what

they are compared. Tr. 12:20–22 (Petitioner acknowledging that it “didn’t address transmit and drive signals, in particular, in particular detail” because of “page limits and stuff we . . . needed to deal with”).

In addition, Mr. Geier’s statements of understanding the *importance* of preventing short circuits and ensuring *safety* are generic and fail to provide necessary factual support; they are akin to stating in a conclusory fashion that the combination “would have been obvious.” *See In re Van Os*, 844 F.3d 1359, 1361 (Fed. Cir. 2017); *see also ActiveVideo*, 694 F.3d at 1328 (finding expert testimony of reasoning to combine “to build something better,” “more efficient, cheaper, or” something that “had more features” was generic and insufficient). Furthermore, even if one of ordinary skill in the art would have been aware of the importance of preventing short circuits, such knowledge, without more, is insufficient to support Mr. Geier’s testimony for combining the teachings of Yoo and APA. *See Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1373 (Fed. Cir. 2008) (“[K]nowledge of a problem and motivation to solve it are entirely different from motivation to combine particular references . . .”).

This lack of factual support is further underscored by Mr. Geier’s deposition testimony. Mr. Geier was asked repeatedly at his deposition about what detail he provided in his declaration to support his opinion that one of ordinary skill in the art would have combined the teachings of Yoo and APA to provide short circuit protection. *See, e.g.*, Ex. 2009, 62:4–6, 65:3–8, 65:22–66:2. The following deposition passage illustrates this questioning.

Q. Where in your declaration do you describe how the person of skill goes about doing what you just said in the context of Yoo;

going about taking the teaching of the admitted prior art and now using it in device 15 in Yoo for short circuit prevention?

...

THE WITNESS: Reading through, I don't necessarily address that explicitly, but a person of ordinary skill in the art would understand how to do that. I mean, there is a circuit described in the associated prior art that can be used with Yoo with very little modification. I mean, it's something that someone of ordinary skill in the art could do. It's not beyond what someone of ordinary skill in the art would understand.

Ex. 2009, 65:22–66:13. This portion of Mr. Geier's deposition testimony, for example, demonstrates that his rationale for combining Yoo and APA is conclusory and does not have the factual support necessary to guard against impermissible hindsight. *See InTouch Tech., Inc. v. VGO Comm., Inc.*, 751 F.3d 1327, 1352 (Fed. Cir. 2014) (finding hindsight bias in expert testimony that "primarily consisted of conclusory references to [the] belief that one of ordinary skill in the art *could* combine these references, not that they *would* have been motivated to do so").

Accordingly, we do not credit the above cited declaration testimony of Mr. Geier because it is conclusory and lacks factual support and, therefore, is entitled to little, if any, weight. *See* 37 C.F.R. § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.").

In addition, we find Petitioner's argument that the Examiner did not rely on the short circuit prevention device limitation in allowing the original claims inapposite. Pet. Reply 2 (citing Ex. 1102, 21) (listing the Examiner's reason for allowance). The fact that the Examiner relied on references other than Yoo, which did not disclose other elements of claim 1, has no bearing

on whether the Examiner considered APA to teach the short circuit prevention device limitation. *See* Ex. 1102, 21 (“The following is an [E]xaminer’s statement of reasons for allowance: Prior art does not [disclose] a multi-contact connector having two sets of contacts interconnected, spatially aligned and mutually opposed relationship wherein the connector could be connected to a receptacle in two opposed orientations and provide identical functions.”).

We also are not persuaded by Petitioner’s reliance on our preliminary findings from our Institution Decision. Pet. Reply 2–3. We explicitly stated there that “[a]ny discussion of facts in this [Institution] Decision are made only for the purposes of institution and are not dispositive of any issue related to any ground on which we institute review.” Dec. on Inst. 25–26; *see also Trivascular, Inc., v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016) (“At th[e Institution] point, the Board is considering the matter preliminarily without the benefit of a full record. The Board is free to change its view of the merits after further development of the record”). Moreover, “there is a significant difference between a petitioner’s burden to establish a ‘reasonable likelihood of success’ at institution, and actually proving [unpatentability] by a preponderance of the evidence at trial.” *Id.* (citing 35 U.S.C. §§ 314(a) and 316(e)).

Lastly, we find the attempt in Petitioner’s Reply to incorporate a portion of a later filed Petition improper and, therefore, we do not consider this material. Pet. Reply 3 (attempting to incorporate arguments from the Petition filed by another party in Case IPR2018-01538); *see also* 37 C.F.R. § 42.6(a)(3) (“Arguments must not be incorporated by reference from one document into another document.”); *Intelligent Bio-Systems, Inc. v.*

Illumina Cambridge Ltd., 821 F.3d 1359, 1369 (Fed. Cir. 2016) (“[T]he expedited nature of [*inter partes* reviews] bring with it an obligation for petitioners to make their case in their petition to institute.”).

Accordingly, based on a review of the entire record, we find that Petitioner has not demonstrated by a preponderance of the evidence that the combination of Yoo and APA would have rendered claim 1 obvious.

D. Dependent Claims

In our analysis above, we determine that Petitioner has not shown by a preponderance of the evidence that claim 1 is obvious over the combined teachings of Yoo and APA. Furthermore, Petitioner’s arguments for the challenged dependent claims do not cure the above discussed deficiencies for claim 1. Pet. 34–50. Accordingly, we also determine that Petitioner has not shown by a preponderance of the evidence that any claims that depend, directly or indirectly, from claim 1 (i.e., claims 2, 4–6, 8–12, 16, 17, 20, 21, 23, and 24) are obvious. *See In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992) (“[D]ependent claims are nonobvious if the independent claims from which they depend are nonobvious.”).

VII. OBVIOUSNESS OVER YOO AND CHEN

Petitioner argues that the combination of Yoo and Chen renders claims 1, 2, 4–6, 8–12, 16, 17, 20, 21, 23, and 24 of the ’825 patent obvious under 35 U.S.C. § 103(a). Pet. 6, 18–51. We again focus our analysis on independent claim 1. For this asserted ground, Petitioner again relies on Yoo for teaching the limitations of claim 1’s multi-contact connector, except for claim 1’s short circuit prevention device. Pet. 26–32. Petitioner, however, relies on Chen in lieu of APA to teach “a short circuit prevention

device to prevent an electric short circuit between contacts of the receptacle on inserting the connector therein.” *Id.* at 32–34.

We have reviewed the parties’ arguments and the evidence of record. For the reasons that follow, we determine that Petitioner has not shown by a preponderance of the evidence that claim 1 would have been obvious over the combination of Yoo and Chen. By virtue of the dependency of claims 2, 4–6, 8–12, 16, 17, 20, 21, 23, and 24 from claim 1, Petitioner also has not shown by a preponderance of the evidence that those claims would have been obvious over the combination of Yoo and Chen.

A. Summary of Chen

Chen discloses an electronic device for switching between USB interfaces which are connected to different electronic devices. Ex. 1108, [57]. Figure 2, shown below, illustrates a circuit diagram of Chen’s switching device. *Id.* at 1:46–47, 2:34–35.

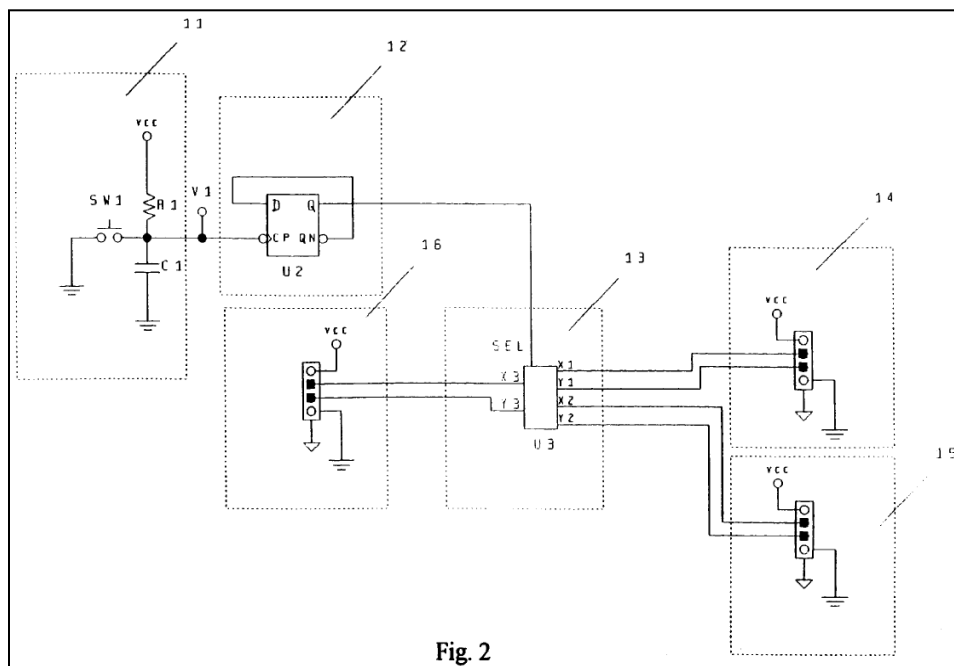


Fig. 2

Figure 2 illustrates multiplexor U3 having three sets of terminals (i.e., X1 and Y1, X2 and Y2, and X3 and Y3). *Id.* at 3:13–19, Fig. 2. The first

set (X1 and Y1) is connected to USB interface 14, the second set (X2 and Y2) is connected to USB interface 15, and the third set (X3 and Y3) is connected to USB interface 16. *Id.* Multiplexor U3 also has a terminal labeled “SEL,” for selecting which of interface 14 or interface 15 is connected to interface 16. *Id.* at 3:13–36, Fig. 2. Figure 2 also shows that each of the USB interfaces has a terminal connected to the VCC power supply. *Id.* at Fig. 2. Chen discloses that the “VCC [power supply] will be used as the HIGH voltage of the present invention, . . . and a diode can be connected between VCC and each USB interface to avoid the reverse current flowing from [a] USB interface to VCC.” *Id.* at 5:33–37.

B. Independent Claim 1

Petitioner argues Chen discloses claim 1’s “short circuit prevention device to prevent an electric short circuit between contacts of the receptacle on inserting the connector therein.” Pet. 32–34. More specifically, Petitioner argues Chen’s switching device employs “diode[s], as a short circuit prevention device, connected between V[CC] and each USB interface to avoid current flowing in reverse from a USB interface to V[CC].” *Id.* at 32 (citing Ex. 1108, [12], [57], 5:32–36, claim 12; Ex. 1113 ¶¶ 51, 67–69). Petitioner argues one of ordinary skill in the art would have applied this teaching from Chen to Yoo by placing diodes “between the positive voltage contacts and the positive voltage supply lines of the USB connectors (of USB device 15) of Yoo.” *Id.* at 34 (citing Ex. 1113 ¶ 70).

Patent Owner argues that Chen fails to disclose preventing an *electric short circuit*, as required by this limitation. PO Resp. 4–10. Rather, according to Patent Owner, Chen’s diode allows a forward current along a connection and prevents a reverse current along that same connection. *Id.* at

8 (citing Ex. 2002 ¶ 88). Patent Owner argues a person of ordinary skill in the art “would [have understood] that the reverse current flow problem of Chen is not an ‘electric short circuit,’ and that Chen does not teach the use of a diode ‘to prevent an electric short circuit,’ as the patent’s claims require.” *Id.* at 8–9.

Chen discloses using a diode to solve a *reverse current flow* problem along a connected path. See Ex. 1108, Fig. 2, 5:32–36, 10:8–13. For example, Chen uses a diode to prevent current flowing in the wrong direction (i.e., into the VCC power supply) on the same circuit path (i.e., between the VCC power supply and the VCC terminal of a USB interface) on which the forward current flows. *Id.* The direction of current flow depends on which voltage source is at higher potential — current flows “forward” when the VCC power supply is at higher potential than the VCC terminal, and flows in “reverse” when the VCC power supply is at lower potential than the VCC terminal. *Id.* In contrast, the claimed short circuit is between two contacts (e.g., V_{BUS} and GND) of the receptacle along a circuit path created when the male connector is inserted into the receptacle. Ex. 1101, 17:22–24. Accordingly, Chen’s disclosure does not teach using a diode to prevent this electric short circuit.

Additionally, Petitioner’s contention that one of ordinary skill in the art would have applied Chen’s teaching to Yoo by placing diodes “between the positive voltage contacts and the positive voltage supply lines of the USB connectors (of USB device 15) of Yoo” (Pet. 34) is both (i) vague as to the exact placement of the diodes; and (ii) insufficient to address how the diodes would prevent an electric short circuit between contacts (e.g., V_{BUS} to GND) of the receptacle.

Accordingly, based on a review of the entire record, we find that Petitioner has not demonstrated by a preponderance of the evidence that the combination of Yoo and Chen would have rendered claim 1 obvious.

C. Dependent Claims

In our analysis above, we determine that Petitioner has not shown by a preponderance of the evidence that claim 1 is obvious over the combined teachings of Yoo and Chen. Furthermore, Petitioner's arguments for the challenged dependent claims do not cure the above discussed deficiencies for claim 1. Pet. 34–50, 54–55, 58–59, 61–66, 69–75. Accordingly, we also determine that Petitioner has not shown by a preponderance of the evidence that any claims that depend, directly or indirectly, from claim 1 (i.e., claims 2, 4–6, 8–12, 16, 17, 20, 21, 23, and 24) are obvious. *See Fritch*, 972 F.2d at 1266.

VIII. REMAINING OBVIOUSNESS GROUNDS

Petitioner argues that (i) the combination of Yoo, Chen, and Flesher renders claim 3 of the '825 patent obvious under 35 U.S.C. § 103(a); (ii) the combination of Yoo, Chen, and Lin renders claim 7 of the '825 patent obvious under § 103(a); (iii) the combination of Yoo, Chen, and Rubin renders claims 13, 16, 18, and 24 of the '825 patent obvious under § 103(a); and (iv) the combination of Yoo, Chen, and Abbott renders claims 16, 18, 19, and 22 obvious under § 103(a). Pet. 51–75. As applied by Petitioner, none of Flesher, Lin, Rubin, or Abbott remedy the deficiencies in the asserted combination of Yoo and Chen (or Yoo and APA) identified above in the context of claim 1. Accordingly, we also determine that Petitioner has not demonstrated by a preponderance of the evidence that these claims that

depend, directly or indirectly, from claim 1 (i.e., claims 3, 7, 13, 16, 18, 19, 22, and 24) for these grounds are obvious. *See Fritch*, 972 F.2d at 1266.

IX. PATENT OWNER’S MOTION TO AMEND

As discussed above, Petitioner has not demonstrated by a preponderance of the evidence that any of the challenged claims are unpatentable. We, therefore, dismiss Patent Owner’s contingent Motion to Amend certain of the original claims as moot because the contingency (i.e., that “the Board finds any original claim unpatentable”) did not occur. Mot. to Amend 1.

X. MOTION TO EXCLUDE EVIDENCE

Petitioner’s Motion to Exclude Evidence sought the exclusion of Exhibit 2002 (Declaration of Dr. Kenneth Fernald), Exhibit 2010 (Declaration of Dr. Kenneth Fernald in Support of Petitioner’s Motion to Amend), and Paper 25 (Patent Owner’s Motion to Amend). Mot. to Exclude 1. We previously denied this Motion (Paper 55), and now provide our reasoning for this denial.

Petitioner sought to exclude Exhibit 2002 “for containing opinions on legal standards and conclusory opinions which are inadmissible under Federal Circuit precedent, and for relying upon inapplicable and/or incorrect legal standards rendering the opinions irrelevant and unreliable under at least Fed. R. Evid. 401, 402, and 702.” Mot. to Exclude 4–5; Reply to Exclude 4. Petitioner argued that Dr. Fernald couching his declaration testimony as his understanding (i.e., “I understand”) of patent law and practice does not negate that Dr. Fernald is providing opinions on legal standards (i.e., it “is a distinction without a difference”). Reply to Exclude 4.

Patent Owner argued that Dr. Fernald does not provide “legal testimony, but [rather] an explanation of some of the legal standards that [he] . . . applied in his analysis.” Opp. to Exclude 4 (citing Ex. 2002 ¶¶ 17, 25–27). Patent Owner argued that Petitioner does not identify which legal standards are incorrect, nor how they allegedly are incorrect. *Id.* at 4–5.

We agree with Patent Owner that Dr. Fernald does not provide opinion testimony regarding patent law or practice, but rather these paragraphs provide a legal backdrop against which he offers his technical opinions. *See* Opp. to Exclude 4. Dr. Fernald clearly states as much: “I offer no opinions on the law. But counsel has informed me of the following legal standards relevant to my analysis here. I have applied these standards in arriving at my conclusions.” Ex. 2002 ¶ 17. We also agree with Patent Owner that “Petitioner’s Motion [to Exclude] does not indicate which paragraphs contain incorrect standards or which standards are incorrect or inapplicable.” Opp. to Exclude 4–5. This same reasoning applies to Petitioner’s assertion (Mot. to Exclude 1) that Dr. Fernald “again provided testimony on United States patent law and patent examination practice” in paragraphs 19–21 and 25–27 of Exhibit 2010. Regardless, Petitioner’s arguments go more to the weight to be afforded to Dr. Fernald’s supporting testimony, rather than its admissibility. *See Neptune Generics v. Eli Lilly & Co.*, Case IPR2016-00240, slip op. at 69–70 (PTAB Oct. 5, 2017) (Paper 82) (denying portion of a petitioner’s motion to exclude asserting that expert opinion “used incorrect legal standards” as going to the weight of evidence—not admissibility).

Petitioner also sought to exclude “at least paragraphs 36–116 of Exhibit 2010” and “at least portions of sections IV, IV.A, and IV.B on pages

7–18 of the Motion to Amend” (Paper 25) “for failing to state the relevance of and/or identify specific portions of the evidence such that Petitioner could determine the allegations of the Patent Owner,” under Fed. R. Evid. 401, 402 and 702. Mot. to Exclude 5–7; Reply to Exclude 4–5. We disagree that these portions of the documents are so devoid of content that Petitioner could not meaningfully respond. See Opp. to Exclude 8–13 (arguing that the portions are factually supported). Rather, Petitioner’s arguments are directed to the sufficiency rather than admissibility and are improperly advanced in a motion to exclude. See Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,767 (August 14, 2012) (stating that a motion to exclude may not be used to challenge the sufficiency of the evidence to prove a particular fact); see also *Neptune*, Case IPR2016-00240, Paper 82 at 69–70 (denying portion of a petitioner’s motion to exclude asserting that expert opinion “is unsubstantiated” as going to the weight of the evidence).

We also denied Petitioner’s request to file its Objections to Paper 25 and Exhibit 2010 because Petitioner did not provide good cause to excuse a late filing. See Paper 55. Although Petitioner served these Objections on Patent Owner on October 23, 2018, Petitioner did not file these Objections. The applicable rule clearly states that, “[o]nce a trial has been instituted, any objection must be *filed within five business days of service of evidence to which the objection is directed.*” 37 C.F.R. § 42.64(b) (emphasis added). Petitioner argues that, when it served these Objections on October 23, 2018, that it did not have access to PTAB E2E so that it could file the Objections, and it did not obtain such access until October 31, 2018. Reply to Exclude 2–4. Petitioner, however, did not provide good cause as to why it waited from October 31, 2018, when it purportedly gained access to PTAB E2E,

until March 2019, when Petitioner requested our authorization to file its Objections.

XI. CONCLUSION

Based on the full record before us, we determine that Petitioner has not demonstrated by a preponderance of the evidence that (i) claims 1, 2, 4–6, 8–12, 16, 17, 20, 21, 23, and 24 are unpatentable under 35 U.S.C. § 103(a) in light of Yoo and APA; (ii) claims 1, 2, 4–6, 8–12, 16, 17, 20, 21, 23, and 24 are unpatentable under 35 U.S.C. § 103(a) in light of Yoo and Chen; (iii) claim 3 is unpatentable under 35 U.S.C. § 103(a) in light of Yoo, Chen, and Flesher; (iv) claim 7 is unpatentable under 35 U.S.C. § 103(a) in light of Yoo, Chen, and Lin; (v) claims 13, 16, 18, and 24 are unpatentable under 35 U.S.C. § 103(a) in light of Yoo, Chen, and Rubin; and (vi) claims 16, 18, 19, and 22 are unpatentable under 35 U.S.C. § 103(a) in light of Yoo, Chen, and Abbott. We also dismiss Patent Owner’s Motion to Amend as moot.

XII. ORDER

Accordingly, it is:

ORDERED that claims 1–13 and 16–24 of U.S. Patent No. 7,458,825 B2 have not been shown to be unpatentable;

FURTHER ORDERED that Patent Owner’s Motion to Amend is *dismissed* as moot;

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

IPR2018-00326
Patent 7,458,825 B2

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