

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BIZLINK TECHNOLOGY, INC.,
Petitioner,

v.

ANDERSON POWER PRODUCTS, INC.,
Patent Owner.

IPR2024-00687
Patent 8,808,017 B2

Before JAMESON LEE, SCOTT A. DANIELS, and LISA L. TSANG,
Administrative Patent Judges.

TSANG, *Administrative Patent Judge.*

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

I. INTRODUCTION

BizLink Technology, Inc. (“Petitioner”) filed a Petition (Paper 1 (“Pet.”)), seeking *inter partes* review of claims 1–4 and 7–12 of U.S. Patent No. 8,808,017 B2 (Ex. 1001 (“the ’017 patent”)). *See* Pet. 1. Anderson Power Products, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

Institution of an *inter partes* review is authorized when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); *see also* 37 C.F.R. § 42.108. Upon consideration of the Petition and the Preliminary Response, we conclude that the information presented shows there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of at least one challenged claim of the ’017 patent.

A. *Real Parties in Interest*

Petitioner identifies itself, BizLink Holding Inc., and BizLink International Corp. as the real parties in interest. Pet. 100. Patent Owner states that it is “the owner of the entire interest in [the ’017 patent] and thus is a real party-in-interest.” Paper 4, 2.

B. *Related Matters*

The parties identify that the ’017 patent is involved in *Anderson Power Products, Inc. v. BizLink Technology, Inc. et al.*, No. 3:23-cv-05436 (N.D. Cal. 2023) (“the related district court litigation”). Pet. 100; Paper 4, 2.

C. The '017 Patent (Ex. 1001)

The '017 patent is titled “Electrical Connector With Anti-Arcing Feature.” Ex. 1001, code (54). According to the '017 patent, electrical connectors that were inadvertently connected or disconnected while receiving an electrical load, especially direct current, experienced “electrical arcing between the separating contacts [that was] maintained over a substantial range of contact separations, creating a burn hazard for the user and reducing the useful life of the connector.” *Id.* at 1:19–31. One conventional solution of adding shorter contacts “increase[d] both the bulk and the cost of the system.” *Id.* at 1:39–41. Another solution, involving including an insulating barrier covering a leading end of one electrical contact, did not prevent arcing via “an indirect path that by-passes the insulating barrier.” *Id.* at 1:42–47.

Figure 1A, reproduced below, shows a partial cross-sectional view of a prior-art electrical connector pair during connection. Ex. 1001, 2:34–35.

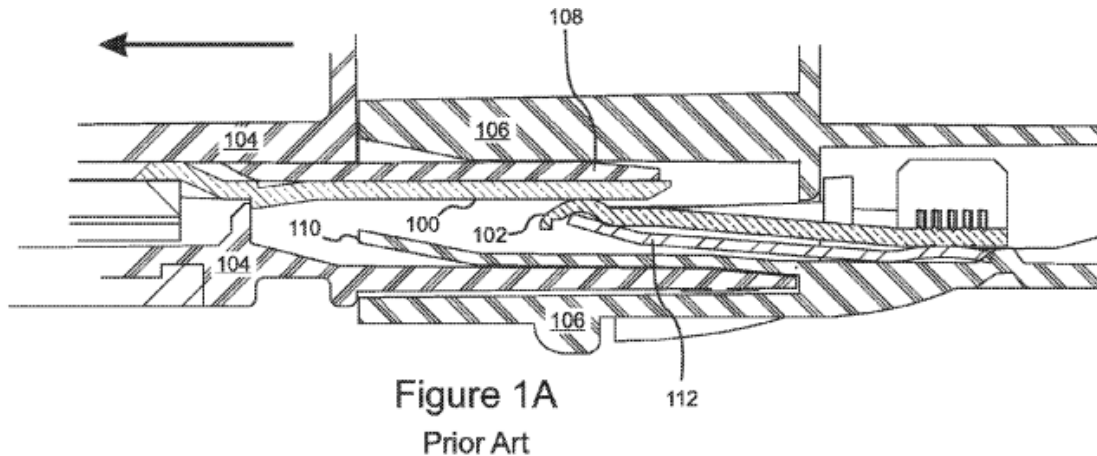


Figure 1A shows, in part, female contact 102 biased against a connecting surface of male contact 100. *Id.* at Fig. 1A, 2:62–3:2. Insulated housing 104 surrounds the male contact, and insulating support structure 108 is proximal to an outer face of the male contact. *Id.* at Fig. 1A, 3:2–10. Likewise,

insulated housing 106 surrounds the female contact, and insulating support structure 110 is proximal to an outer face of the female contact. *Id.*

Figure 1B, reproduced below, illustrates a partial cross-sectional view of the prior-art electrical connector pair during partial disconnection and application of voltage. *Id.* at 3:13–14.

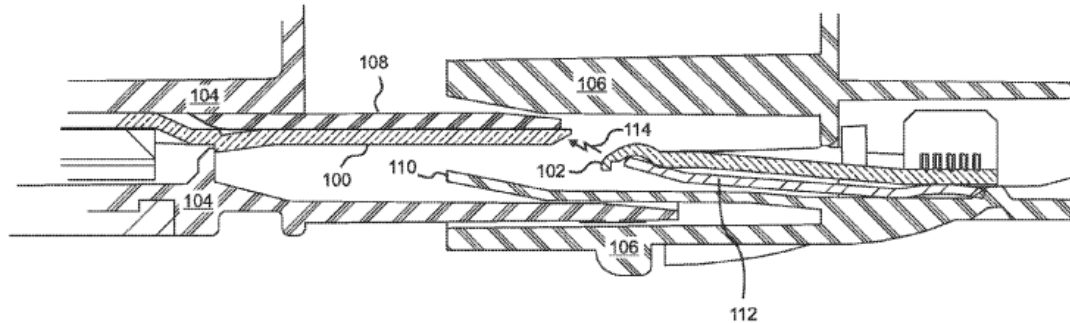


Figure 1B
Prior Art

Figure 1B shows the male contact and the female contact in a partially disconnected state. *See id.* at Fig. 1B. The '017 patent explains that because the prior-art male and female contacts' leading ends were “separated by a short gap,” as shown in Figure 1B above, through-air electrical arcing 114 occurred between the contacts. *Id.* at 3:13–17.

To solve this problem of electrical arcing, but without the purported disadvantages of conventional connectors, the '017 patent proposes an electrical connector that “suppresses electrical arcing between separated contacts during mating and un-mating of the connectors, without including an additional connection or switching device.” Ex. 1001, 1:55–58.

Figure 2A, below, depicts a partial cross-sectional view of an exemplary “male and female connector pair in a connected configuration.” *Id.* at 2:39–40.

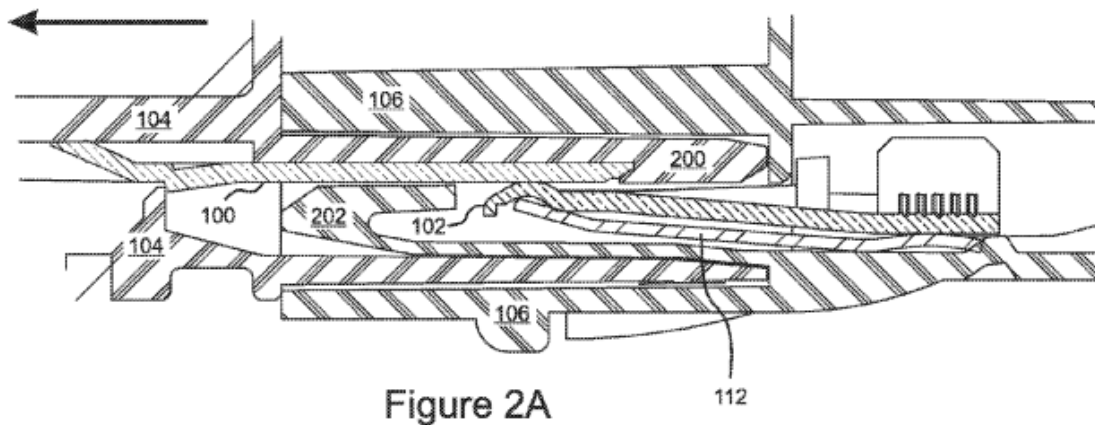


Figure 2A illustrates similar insulated housings 104, 106 and male and female contacts 100, 102 to those shown in prior-art Figures 1A and 1B. *Compare id.* at Fig. 1A, *with id.* at Fig. 2A; *see also id.* at 3:20–23. The '017 patent, however, replaced the prior-art insulating support structures with insulating barrier structures 200, 202. *Id.* at 3:20–23. Here, “male insulating barrier structure 200 extends beyond the male contact 100, and covers the leading end of the male contact 100.” *Id.* at 3:23–25. Likewise, female insulating barrier 202 extends beyond and “is in front of the leading end of the female contact.” *Id.* at 3:25–28.

Figure 2B of the '017 patent shows partial disconnection of the connectors of Figure 2A. Ex. 1001, 3:30–32.

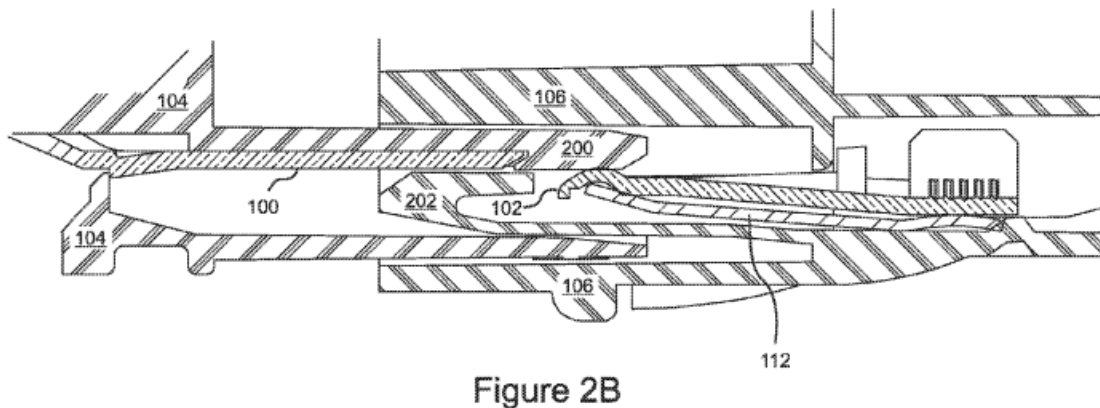


Figure 2B, reproduced above, illustrates the male and female contacts separated by a distance, similar to the male and female contacts of the prior-art connectors during disconnection. *Compare id.* at Fig. 1B, *with id.* at Fig. 2B; *see also id.* at 3:30–36. In contrast, however, here “the male insulating barrier 200 is very near to or physically in contact with the fema[le] insulating barrier 202, thereby blocking substantially all through-air arcing paths between the contacts 100, 102.” *Id.* at 3:33–36; *see also id.* at Fig. 2B.

D. Challenged Claims

Petitioner challenges claims 1–4 and 7–12 of the ’017 patent. Pet. 19–99. Of these, claim 1 is independent.

Independent claim 1 is illustrative of the challenged claims and is reproduced with bracketing as follows:

1. [1[pre]]¹ An electrical connector pair, comprising:
 - [1[a]] a first connector having a first insulating housing;
 - [1[b]] a first electrical contact supported within the first insulating housing, [1[c]] the first electrical contact having a connecting surface that is substantially parallel with a longitudinal axis of the insulating housing and terminates in a leading end of the first electrical contact;
 - [1[d]] a second connector having a second insulating housing;
 - [1[e]] a second electrical contact supported within the second insulating housing, [1[f]] the second electrical contact being configured to laterally engage with the connecting surface

¹ For consistency, the Board relies on Petitioner’s annotations 1[pre]–1[i] referencing particular claim 1 limitations. *See* Pet. 19–34, 63–83.

of the first electrical contact when the first connector is mated with the second connector;

[1[g]] a first insulating barrier within the first connector extending beyond and covering the leading end of the first electrical contact; and

[1[h]] a second insulating barrier extending beyond the second electrical contact within the second connector, [1[i]] the second insulating barrier being configured so as to be in close proximity with the first insulating barrier when the first and second connectors are partially disconnected and the first and second electrical contacts are separated by a short distance, thereby blocking substantially all through-air arcing paths between the first and second electrical contacts.

Ex. 1001, 4:20–44.

E. The Alleged Grounds of Unpatentability

The Petition sets forth proposed grounds of unpatentability of claims 1–4 and 7–12 of the '017 patent under 35 U.S.C. §§ 102 and 103 as follows (*see* Pet. 19–99):²

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–4, 9	102(b) ³	Winkler ⁴
7	103(a)	Winkler, Winkler2 ⁵
8, 10	103(a)	Winkler, Handbook ⁶

² Petitioner supports its challenge with the Declaration of Dr. Charles Eldering. Ex. 1003.

³ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284, 287–288 (2011), amended 35 U.S.C. §§ 102, 103, and 112. Because the application for the '017 patent was filed before March 16, 2013 (the effective date of the relevant amendments), the pre-AIA versions apply. *See* Ex. 1001, code (22).

⁴ U.S. Patent No. 2,838,739, issued June 10, 1958 (Ex. 1004).

⁵ U.S. Patent No. 3,909,099, issued September 30, 1975 (Ex. 1006).

⁶ Robert S. Mroczkowski, *Electronic Connector Handbook* (1998) (Ex. 1008).

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
11, 12	103(a)	Winkler, Poliak ⁷
1–4	102(a), (e)	Kataoka ⁸
7–10	103(a)	Kataoka, Handbook

II. ANALYSIS

A. Legal Standards

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)).

“A single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation.” *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1375–76 (Fed. Cir. 2005). To establish anticipation, each and every element in a claim, arranged as recited in the claim, must be found in a single prior art reference. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008); *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001).

The legal question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence,

⁷ U.S. Patent No. 4,634,211, issued January 6, 1987 (Ex. 1007).

⁸ U.S. Patent No. 8,182,278 B2, issued May 22, 2012 (Ex. 1005).

objective evidence of nonobviousness.⁹ *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966). One seeking to establish obviousness based on more than one reference must articulate sufficient reasoning with rational underpinnings to combine teachings. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

B. Level of Ordinary Skill in the Art

Relying on the Declaration of Dr. Eldering for support, Petitioner contends a person of ordinary skill in the art (“POSITA”) “would have had at least a bachelor’s degree in electrical engineering or a similar field and at least two years of experience working with electrical circuits or electrical connectors, including power connectors. Additional relevant work experience can compensate for less education, and vice versa.” Pet. 19 (citing Ex. 1003 ¶¶ 24–26). At this juncture, Patent Owner does not dispute the level of ordinary skill in the art. Prelim. Resp. 7.

For purposes of this Decision, we adopt the level of ordinary skill in the art as articulated by Petitioner because, based on the current record, it is not disputed and is consistent with our review and understanding of the technology and descriptions in the ’017 patent and prior art of record. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). We note, however, that the open-ended language “at least” expands the range of education and experience indefinitely with no upper bound. Therefore, we do not adopt this aspect of Petitioner’s formulation.

⁹ The current record does not include allegations or evidence of objective indicia of nonobviousness.

C. Claim Construction

We apply the claim construction standard used to construe the claims in a civil action under 35 U.S.C. § 282(b), as articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). 37 C.F.R. § 42.100(b) (2023). Under the *Phillips* standard, claim terms must be given “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Phillips*, 415 F.3d at 1313.

Petitioner submits that no claim terms need express construction.
Pet. 12.

Patent Owner argues, however, that the term “insulating” should be construed to mean “electrically insulating,” such that independent claim 1’s recited “a first insulating housing,” “a second insulating housing,” “a first insulating barrier,” and “a second insulating barrier” must all be “electrically insulating.” Prelim. Resp. 11–15. To support its argument, Patent Owner points to the language of independent claim 1, the Specification of the ’017 patent, and the Petition. *Id.*

Specifically, Patent Owner contends that claim 1’s limitations regarding “a first insulating barrier” and “a second insulating barrier” that “block[] substantially all through-air arcing paths between the first and second electrical contacts” necessarily require that these insulating barriers be electrically insulating. *Id.* at 11–12. According to Patent Owner, the first and second housings must be similarly electrically insulating. *Id.* at 12 (citing *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1345 (Fed. Cir. 1998); *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1310 (Fed. Cir. 1999)). Patent Owner further argues that the Specification of the ’017 patent discloses that the insulating barriers and housings protect users

from burns and arcing because they have high electrical resistance. *Id.* at 12–14. Relatedly, Patent Owner contends that the Specification distinguishes the ’017 patent’s connector pair from those of the prior art, which did not include this feature of suppressing electrical arcing. *Id.* Additionally, Patent Owner argues that the Petition’s discussion of insulating barriers also confirms that Patent Owner’s proffered construction is correct. *Id.* at 14–15 (citing Pet. 7, 16, 50).

At this juncture, we preliminarily agree with Patent Owner’s proffered claim construction. In particular, we agree with Patent Owner’s argument that the insulating barriers would be unable to be configured to “block[] substantially all through-air arcing paths between the first and second electrical contacts,” as claimed, unless they were electrically insulating. *See* Ex. 1001, 4:36–44. Moreover, as Patent Owner avers, our interpretation of “insulating” as it applies to the first and second insulating barriers should be the same as for the first and second housings. *See Digital Biometrics*, 149 F.3d at 1345 (“whatever interpretation we assign [to a word used in a claim] should encompass both uses because the same word appearing in the same claim should be interpreted consistently” (citation omitted)).

Although “a patent’s written description can set forth more than one definition of a claim term,” we do not discern that to be the case here. *See Pitney Bowes*, 182 F.3d at 1310. The portions of the Specification of the ’017 patent that Patent Owner cites use “insulating” and its associated tenses to mean suppressing electrical arcing and protecting from electrical burns, i.e., electrically insulating. *See, e.g.,* Ex. 1001, code (57), 1:58–2:3, 2:42–44, 3:2–6, 3:30–40, 3:63–4:10, *cited in* Prelim. Resp. 12–14.

Accordingly, for purposes of this Decision, we interpret “insulating”

as recited in the claims to mean “electrically insulating.”

D. Asserted Art

1. Winkler (Ex. 1005)

Winkler is titled “Electrical Connector.” Ex. 1004, 1. Figure 1, below, shows two identical two-pole electrical cable connectors. *Id.* at 1:67–70.

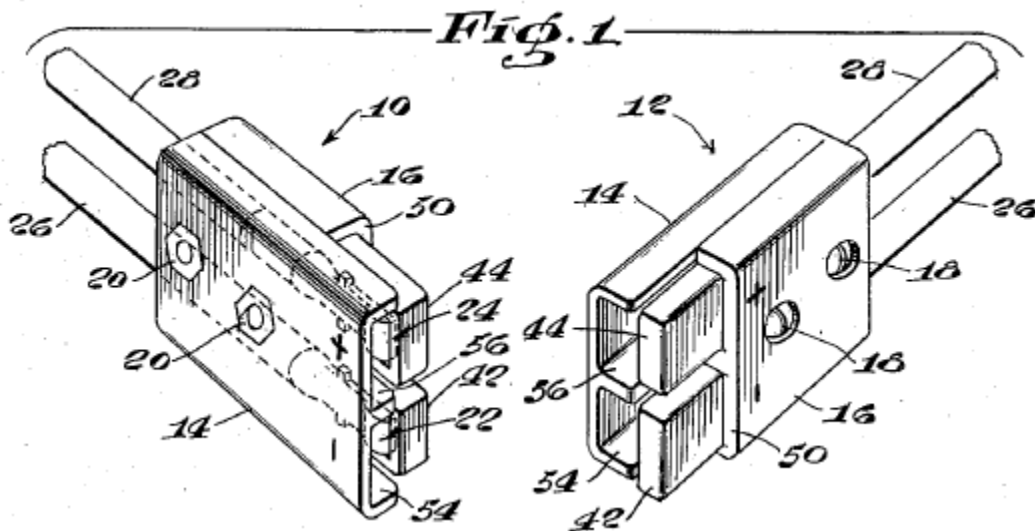


Figure 1 illustrates electrical connectors 10, 12 each including an insulated housing with two half sections 14, 16. *Id.* at 1:71–2:2. Winkler discloses that each housing supports contact members 22, 24 that form terminals of electrical cables 26, 28. *Id.* at 2:4–10. Additionally, half section 16 of each connector has terminal-receiving pockets 42, 44 that are “substantially U-shaped in cross section and closed at their outer ends.” *Id.* at 2:23–26. According to Winkler, the terminals are enclosed in the terminal-receiving pockets, and sockets 54, 56 “provide a protective insulating wall above the terminals.” *Id.* at 3:7–13.

Winkler’s Figure 2, reproduced below, shows a cross-sectional view of the connectors in a connected state. Ex. 1004, 1:29–30.

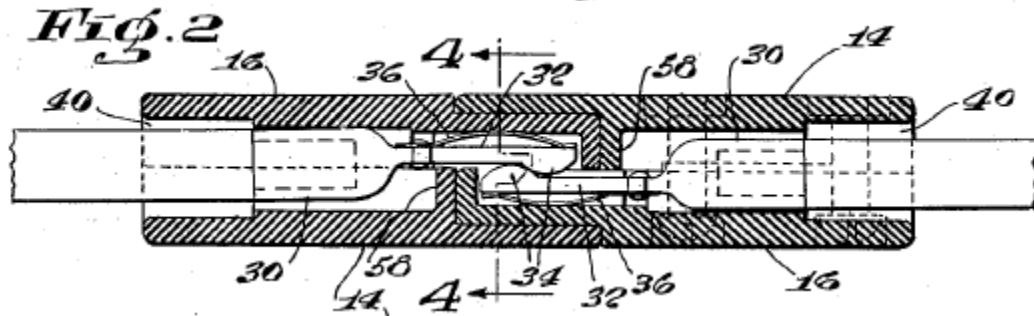


Figure 2 illustrates each of the contact members having a contacting end including elongated flat portion 32 having rounded or convex end portion 34 projecting from a surface of the elongated flat portion. *Id.* at Fig. 2, 2:10–14.

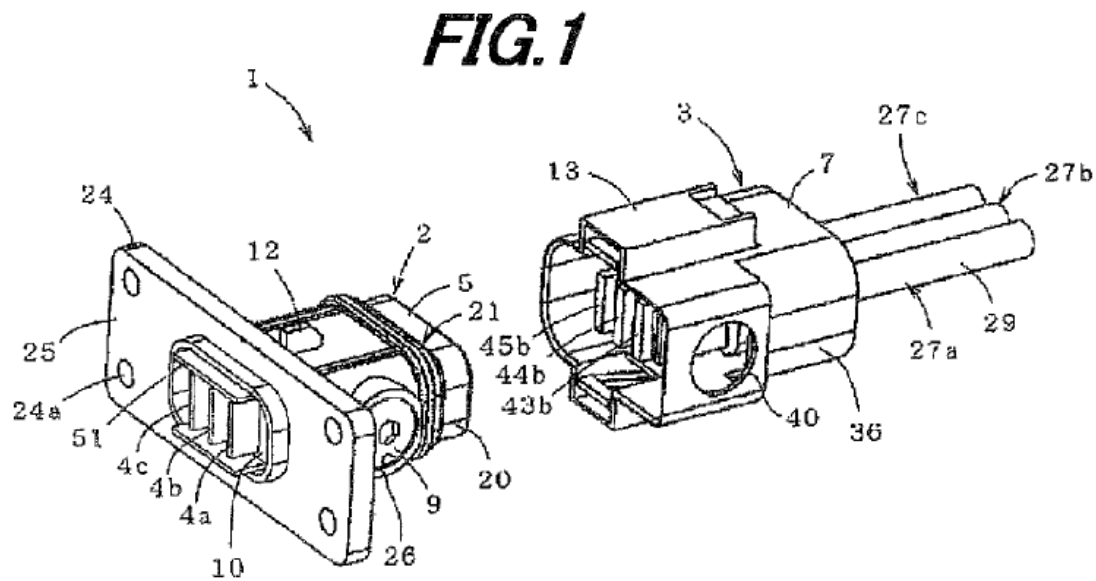
Winkler explains that during engagement of the connectors,

the rounded contacting faces 34 of each spring-pressed terminal are slidably engaged by each other, initial inward movement of the connectors effecting downward movement of the terminals in their respective pockets against the springs 36. Upon continued inward movement the high points of the curved portions pass by each other, and as the connectors approach full engagement, the springs 36 effect upward movement of the terminals in their pockets to present the curved portions 34 in hooked or interlocked relation to each other, as illustrated [in Figure 2].

Id. at 3:14–27.

2. Kataoka (Ex. 1005)

Kataoka is titled “Connector” and provides an electrical connector. Ex. 1005, codes (54), (57). Figure 1, reproduced below, shows an exemplary connector including first connector portion 2 and second connector portion 3. *Id.* at Fig. 1, 4:48–52.



As shown in Figure 1, the first connector portion has male terminals 4a-4c housed in first terminal housing 5, and the second connector portion has female terminals housed in second terminal housing 7. *Id.* at 4:53-63.

Figure 3 of Kataoka is shown below.

FIG.3

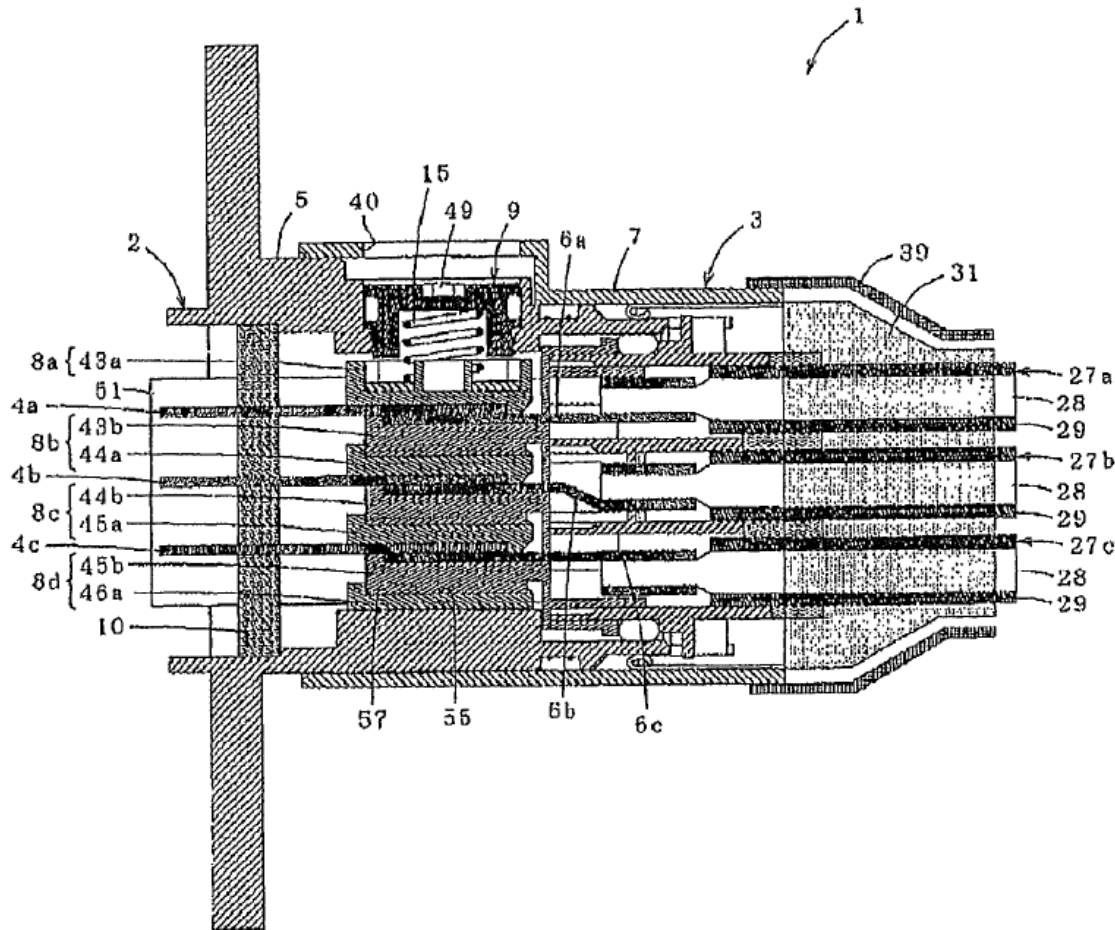


Figure 3 is a cross-sectional view of the connector portions when they are fitted together. Ex. 1005, 4:6–7. When the connector portions are connected as shown in Figure 3, above, connecting member 9, depicted as a spring, causes the male and female terminals to electrically connect. *Id.* at 4:53–63. Kataoka explains that one surface of each of the male terminals is paired with one surface of each of the female terminals to create contact points “sandwiched” by insulators 8a–8d that are adjacent to the male and female terminals, “thereby forming a laminated structure.” *Id.* at 4:63–5:9. Kataoka further discloses that because of the insulators, the male and female insulators “are not exposed in the non-fitted state[,] and it is thereby possible

to prevent unintentional contact and electric shock to a foreign object such as a hand or finger of a worker, etc.” *Id.* at 15:12–22.

3. *Winkler2 (Ex. 1006)*

Winkler2 is titled “Electrical Connector With Movably Mounted Cable Clamp” and provides an electrical connector having a cable clamp that freely pivots around a longitudinal axis of a cable but is restrained from movement in a direction along the longitudinal axis. Ex. 1006, codes (54), (57). Figure 1, below, shows a partial view of two electrical connectors 10, 12 and their respective clamping assemblies 24. *Id.* at 1:54–57, 2:15–22.

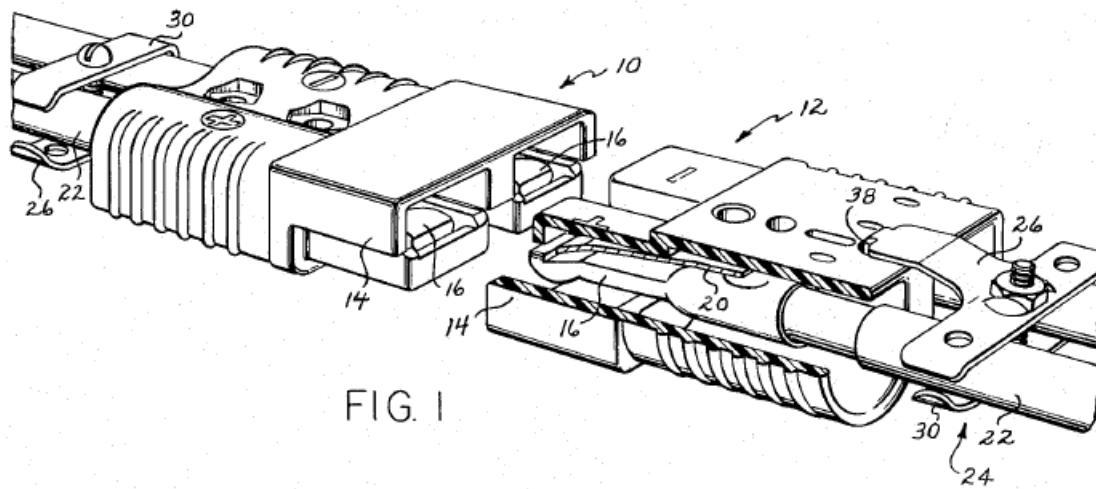


Figure 1 shows the electrical connectors each having hollow insulated housing 14 and terminal member 16 positioned within the housing. *Id.* at Fig. 1, 2:6–9. The terminal member is electrically and mechanically secured to electrical cable 22 “by conventional means, such as[] by crimping and/or soldering,” and the electrical cable is held to housing by the clamping assembly. *Id.* at 2:12–17.

4. Poliak (Ex. 1007)

Poliak is titled “Wiring Device System With Single Screw

Subassembly” and provides a “device that electrically connects conductors from a cable to the electrical contacts of a plug or receptacle by means of a single fastener.” Ex. 1007, codes (54), (57). Figure 3, reproduced below, shows a longitudinal cross-sectional view of a plug with an electrical cord connection. *See id.* at Fig. 1, 3:6–9, 3:14–15.

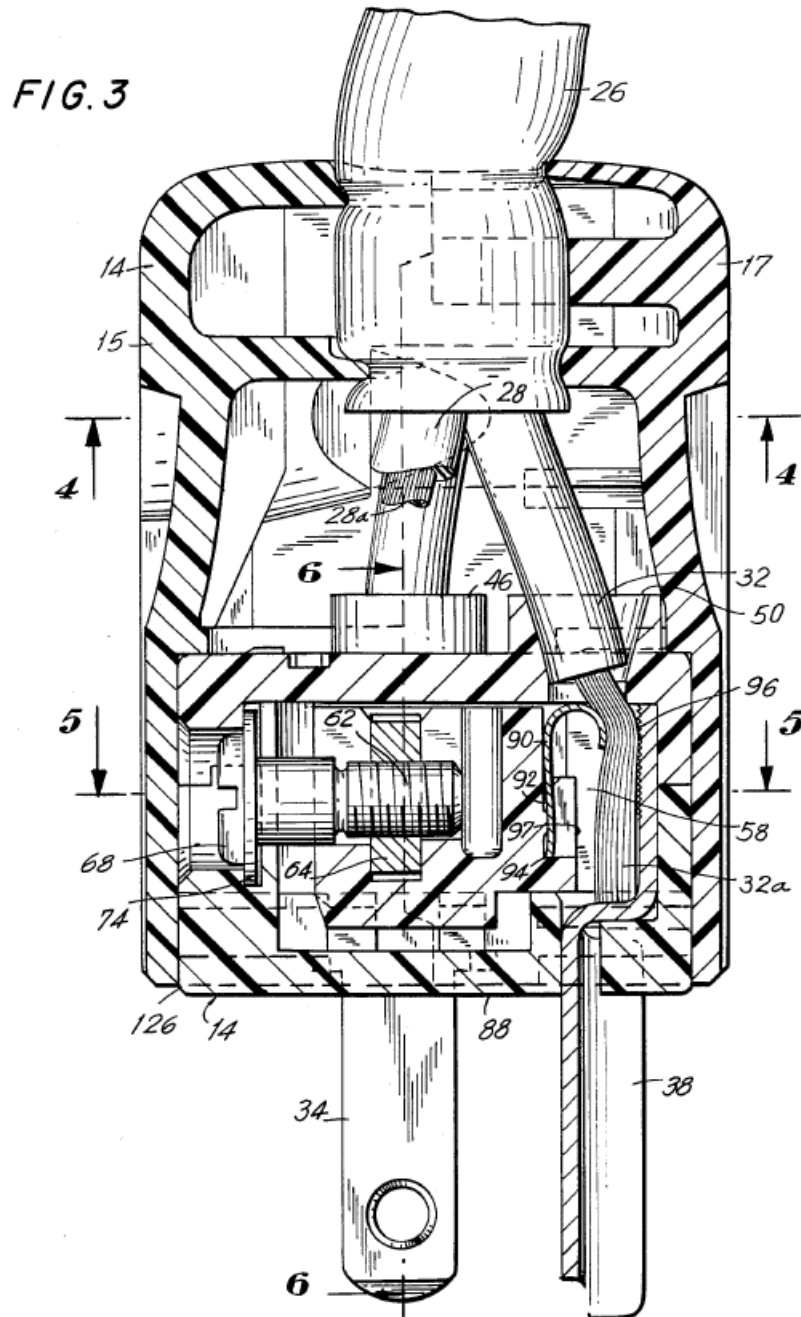


Figure 3 illustrates a male plug assembly having multi-conductor cable 26 with conductors 28, 32 shown in the figure, and additional conductor 30 not shown in the figure. *Id.* at Fig. 3, 4:6–29. The plug assembly further includes grounding contact 38 and electrical contacts 34, 36, with only the contact 34 shown in the figure. *Id.* Screw 62 engaged with nut 64 may be rotated to move a carriage (not labeled) forward so that the conductors are tightly pressed against respective contacts. *Id.* at 6:21–29. Figure 3 shows one carriage wall 97 pressing one of the conductors 32 into contact with the grounding contact. *Id.* at Fig. 3.

5. *Handbook (Ex. 1008)*

Handbook is excerpts from a book titled *Electronic Connector Handbook* that purports to aid in “[s]elect[ing] the perfect connector for any given application” and provide information regarding “signal and power applications” and “design and material issues.” Ex. 1008, 1–2. To that end, Handbook includes chapters covering topics such as overviews of the function, structure, and applications of connectors (Chapter 1); permanent connections, including crimped connections and insulation displacement connections, to wires and cables (Chapter 9); and connections, including permanent mechanical connections and soldering, to printed wiring boards (Chapter 11). *Id.* at 4–7, 32, 70.

E. Asserted Grounds of Unpatentability

1. *Alleged Anticipation By Winkler: Claims 1–4 and 9*

Petitioner contends that claims 1–4 and 9 of the ’017 patent would have been anticipated under 35 U.S.C. § 102(b) by Winkler. Pet. 13, 19–38. For the reasons below, the evidence on this record indicates there is a reasonable likelihood that Petitioner would prevail in demonstrating that

independent claim 1 of the '017 patent would have been anticipated under 35 U.S.C. § 102(b) by Winkler. We address, first, Petitioner's arguments and evidence as they relate to the limitations of claim 1. Next, we address Patent Owner's arguments regarding the merits of Petitioner's challenge of this claim.

(a) Petitioner's Arguments

(i) *1[pre]: "An electrical connector pair, comprising"*

Regarding the preamble, Petitioner contends Winkler discloses two-pole electrical cable connectors 10, 12. Pet. 19–20 (citing Ex. 1004, Fig. 1, 1:68–70; Ex. 1003 ¶ 63).¹⁰

(ii) *1[a]: "a first connector having a first insulating housing"*

As for limitation 1[a], Petitioner points to Winkler's disclosure that connector 10 includes "an insulating housing" formed by two half sections 14, 16. Pet. 20–21 (citing Ex. 1004, Fig. 1, 1:47–50, 1:68–2:2, 3:7–13; Ex. 1003 ¶ 64).

(iii) *1[b]: "a first electrical contact supported within the first insulating housing"*

For limitation 1[b], Petitioner argues that Winkler illustrates contact member 22 supported by the housing half sections. Pet. 22 (citing Ex. 1004, Figs. 1, 3; Ex. 1003 ¶¶ 63–64). Petitioner explains that the contact member "forms a terminal for electrical cable 26." *Id.* at 21 (citing Ex. 1004, 2:4–7).

¹⁰ At this stage, we need not resolve whether the preamble is limiting. Regardless, Petitioner shows sufficiently for purposes of institution that the asserted art satisfies the recitation in the preamble.

- (iv) *1[c]: “the first electrical contact having a connecting surface that is substantially parallel with a longitudinal axis of the insulating housing and terminates in a leading end of the first electrical contact”*

For limitation 1[c], Petitioner argues that Winkler’s contact member has elongated flat portion 32 and leading convex end portion 34. Pet. 23–25. Petitioner further contends that the elongated flat portion: (1) is in electrical connection with a second contact member of a mated connector, and (2) is parallel with a longitudinal axis of the housing half sections. *Id.* at 23–24 (citing Ex. 1004, Figs. 2, 4, 2:10–14; Ex. 1003 ¶¶ 66–67). Moreover, Petitioner contends that the convex end portion of Winkler’s contact member is “substantially the same” as the type of structure that Patent Owner asserts in the related district court litigation may be the recited “connecting surface.” *Id.* at 25–26 (citing Ex. 1009 (Complaint for Infringement), 11; Ex. 1003 ¶ 71).

- (v) *1[d]: “a second connector having a second insulating housing”*

With respect to limitation 1[d], Petitioner argues that Winkler’s connector 12 is identical to connector 10 and similarly includes insulating housing half sections 14, 16. Pet. 26–27 (citing Ex. 1004, Fig. 1, 1:27–28, 2:4–10; Ex. 1003 ¶ 72).

- (vi) *1[e]: “a second electrical contact supported within the second insulating housing”*

As for limitation 1[e], Petitioner argues that Winkler illustrates a second contact member 22 supported by the housing half sections of the second connector. Pet. 27–28 (citing Ex. 1004, Figs. 2, 4; Ex. 1003 ¶ 73).

Petitioner explains that the contact member “is a terminal for electrical cable 26.” *Id.* at 28 (citing Ex. 1004, 2:4–7).

- (vii) *1[f]: “the second electrical contact being configured to laterally engage with the connecting surface of the first electrical contact when the first connector is mated with the second connector”*

Regarding limitation 1[f], Petitioner contends that the two connectors are slidably engaged and that Winkler discloses that the contact members of the connectors are biased together such that their respective convex end portions are “in hooked or interlocked relation to each other” when the contact members are fully engaged. Pet. 28–30 (citing Ex. 1004, Figs. 2, 4, 3:18–27, 4:50–56; Ex. 1003 ¶¶ 74–75).

- (viii) *1[g]: “a first insulating barrier within the first connector extending beyond and covering the leading end of the first electrical contact”*

For limitation 1[g], Petitioner argues that housing half section 16 of connector 10 has receiving pocket 42 that is an insulating barrier enclosing the connector’s contact member, and which is “substantially U-shaped in cross section and closed at [its] outer end[.]” Pet. 30–31 (citing Ex. 1004, Figs. 1–2, 2:23–26, 2:39–40, 3:7–9; Ex. 1003 ¶ 76) (alterations in original). Petitioner further contends that “[t]he ’017 [patent] also admits an insulating barrier that ‘blocks the direct through-air path between the contacts’ was known.” *Id.* at 31 (citing Ex. 1001, 1:42–44; Ex. 1003 ¶ 77).

- (ix) *1[h]: “a second insulating barrier extending beyond the second electrical contact within the second connector”*

For limitation 1[h], Petitioner reiterates that Winkler’s connectors are

identical and argues that receiving pocket 42 of connector 12 constitutes the claimed “second insulating barrier” for the same reasons as articulated for limitation 1[g]. Pet. 31–32 (citing Ex. 1004, Fig. 2, 1:27–28, 2:4–10; Ex. 1003 ¶ 78).

- (x) *1[i]: “the second insulating barrier being configured so as to be in close proximity with the first insulating barrier when the first and second connectors are partially disconnected and the first and second electrical contacts are separated by a short distance, thereby blocking substantially all through-air arcing paths between the first and second electrical contacts”*

With respect to limitation 1[i], Petitioner relies on “[a] diagram created based on *Winkler* Fig. 2 . . . , showing connectors 10 and 12 partially disconnected,” to show that *Winkler* discloses the limitation. Pet. 32–33. Reproduced below are Petitioner’s modified Figure 2 diagram and accompanying caption.



Diagram created based on Ex. 1004, Fig. 2, (modified to show connector 10 and connector 12 partially disconnected)

Petitioner explains that the diagram above shows the first contact member (blue) and the second contact member (orange) “separated . . . by a short distance” and the closed ends of the first insulation barrier (red) and the second insulation barrier (green) “in close proximity to one another.” *Id.*

at 32 (citing Ex. 1003 ¶¶ 79–82). According to Petitioner, the modified Figure 2 diagram further shows that “*Winkler* exhibits the same arcing path-blocking functionality that the ’017 patent depicts.” *Id.* at 32–33 (citing Ex. 1001 Fig. 2B; Ex. 1003 ¶ 83). In this regard, Petitioner’s declarant, Dr. Eldering, testifies that the claimed “blocking substantially all through-air arcing paths between the first and second electrical contacts” is achieved by the second insulating barrier being configured as recited in limitation 1[i]. Ex. 1003 ¶ 82.

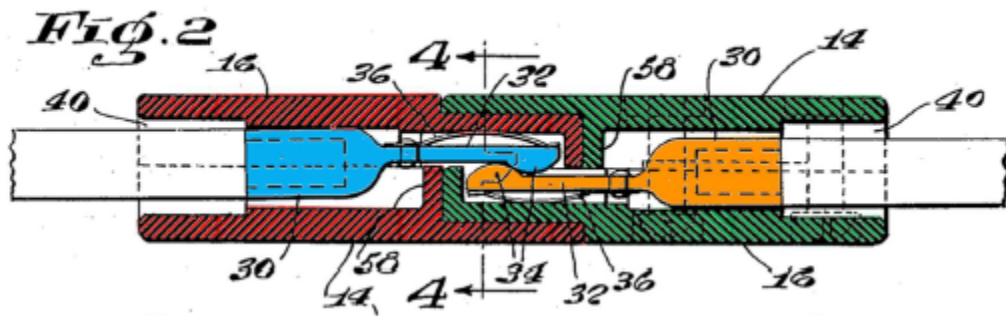
(b) Patent Owner’s Arguments

At this juncture, Patent Owner disputes that *Winkler* discloses limitations 1[f], 1[g], and 1[i]. Prelim. Resp. 15–25.

(i) Limitation 1[f]

Regarding limitation 1[f], Patent Owner argues the Petition does not address the full limitation because “the Petition merely asserts that *Winkler*’s first and second contacts laterally engage with one another,” rather than the second contact being configured to laterally engage “with the connecting surface” of the first contact, as specifically recited. Prelim. Resp. 15–18 (emphasis omitted).

By expressly referencing and discussing *Winkler*’s Figures 2 and 4, however, Petitioner shows sufficiently that *Winkler* discloses a second contact configured to laterally engage “with the connecting surface” of a first contact. *See* Pet. 29. Specifically, as Patent Owner acknowledges, Petitioner argues that *Winkler*’s elongated flat portion 32 meets the recited “connecting surface.” Prelim. Resp. 16; Pet. 23. In addressing limitation 1[f], the Petition reproduces Figure 2 of *Winkler* with coloring, as shown below:



Pet. 29. Figure 2 illustrates mated first connector (red) and second connector (green), mated first electrical contact (blue) and second electrical contact (orange), and a line 4—4 extending through the elongated flat portion. *See* Ex. 1004, Fig. 2; Pet. 29. The Petition also reproduces a colored version of Winkler's Figure 4, which corresponds to a cross-sectional view taken along the line 4—4 and looking towards the left of Figure 2, i.e., along the length of the elongated flat portion. Pet. 29; Ex. 1004, 1:33–34.

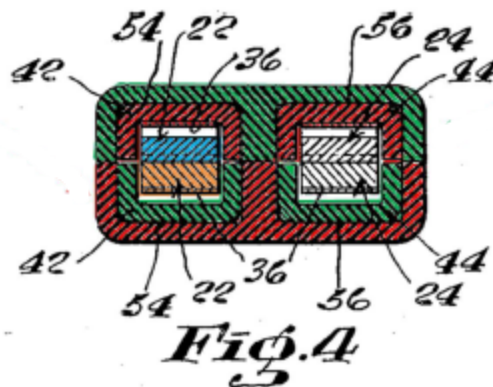


Figure 4, above, again shows the first and second connectors shaded in red and green, respectively, and first contact and second contact shaded in blue and orange, respectively. Pet. 29. As shown, and without need for further explanation, the first and second contacts are engaged at least along the location of the elongated flat portion depicted cross-sectionally in Figure 4. *Id.*; Ex. 1004, Fig. 4.

(ii) *Limitation 1[g]*

Patent Owner further argues the Petition does not address whether Winkler's receiving pocket is "within the first connector," as limitation 1[g] requires. Prelim. Resp. 19. However, Petitioner argues that "*Winkler's* connector 10 includes terminal receiving pocket 42 *in* housing section 16." Pet. 30 (citing Ex. 1004, 2:23–25) (emphasis added). Additionally, Winkler's Figure 1 shows, without need for further explanation, the receiving pocket "within" the housing section of the first connector 10, at least inasmuch as receiving pocket 42 of second connector 12 is depicted as being inside the second connector. *See* Ex. 1004, Fig. 1, *cited in* Pet. 30–31; *see also* Ex. 1004, 1:67–70 (describing the connectors 10, 12 as "exact counterparts").

(iii) *Limitation 1[i]*

As for limitation 1[i], Patent Owner argues that Winkler does not disclose, either expressly or inherently, its recited features. Prelim. Resp. 19–25. According to Patent Owner, rather than relying on Winkler's actual disclosures, "the Petition relies entirely on a diagram that is not disclosed anywhere in Winkler." *Id.* at 19–21. Additionally, Patent Owner contends that the Petition and Dr. Eldering's Declaration do not include any explanation or analysis as to how "Petitioner's manufactured diagram" discloses that the first and second insulation barriers meet the recited "blocking substantially all through-air arcing paths between the first and second electrical contacts." *Id.* at 20–21 (citing *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (PTAB Aug. 24, 2022) (precedential)). In this regard, Patent Owner avers that Petitioner's diagram is "ambiguous at best" and cannot disclose, either expressly or inherently, the "blocking

substantially” limitation. *Id.* at 22–25. Specifically, Patent Owner argues the diagram shows the insulating barriers “at only a single, unspecified location along the width of the electrical connector pair” and, for example, does not show “whether there are any gaps between, or discontinuities in, the alleged insulating barriers at other locations along the width of the electrical connector pair that would provide through-air arcing paths.” *Id.* at 22–24 (emphasis omitted). Furthermore, Patent Owner contends that whether Petitioner’s diagram “looks like a figure in the ‘017 patent is irrelevant,” since Winkler should be compared to the claims, rather than the Specification of the ‘017 patent. *Id.* at 24.

At this juncture, we are unpersuaded by Patent Owner’s arguments. Petitioner’s reliance on the modified Figure 2 diagram not explicitly shown in Winkler is not per se improper, so long as the skilled artisan would have reasonably understood that that is what Winkler discloses. *See Acoustic Tech., Inc. v. Itron Networked Solutions, Inc.*, 949 F.3d 1366, 1373 (Fed. Cir. 2020) (“In an anticipation analysis, the dispositive question is whether a skilled artisan would ‘reasonably understand or infer’ from a prior art reference that every claim limitation is disclosed in that single reference. . . . Expert testimony may shed light on what a skilled artisan would reasonably understand or infer from a prior art reference.” (citations omitted)). Dr. Eldering testifies that the diagram was “created based on FIG. 2 of *Winkler* and developed by taking the components of each half of the connector and recreating them in a separated state.” Ex. 1003 ¶ 80. On the current record, Patent Owner does not dispute Dr. Eldering’s testimony or that Petitioner’s diagram reflects what the skilled artisan would have reasonably understood by looking at Figure 2 of Winkler. *See generally* Prelim. Resp.

Dr. Eldering further testifies that Winkler discloses the “blocking substantially” limitation because the limitation “is in fact accomplished by the second barrier being configured ‘so as to be in close proximity with the first insulating barrier when the first and second connectors are partially disconnected and the first and second electrical contacts are separated by a short distance,’” as recited in claim 1. Ex. 1003 ¶ 82. In this regard, we understand Petitioner to rely on alleged similarities between its modified Figure 2 diagram and Figure 2B of the ’017 patent only to show similar relative positions of the insulating barriers which, according to Petitioner, thereby accomplish the claimed “blocking substantially” function. *See* Pet. 33–34; Ex. 1003 ¶ 83.

Additionally, although we agree with Patent Owner’s argument that Petitioner’s diagram does not show Winkler’s insulating barriers at other locations along the width of the connector pair, it is implicit in Petitioner’s contentions and reasoning that the same illustrated structure exists at other locations sufficient to block all through-air arcing paths. We are persuaded, on this record, that Petitioner persuasively shows this, particularly in view of Figures 1 and 3 of Winkler, which appear to show, for example, no gaps or discontinuities along the widths of the barriers. *See* Ex. 1004, Figs. 1, 3.

Dr. Eldering’s testimony is not conclusory as Patent Owner asserts. Patent Owner’s reliance on *Xerox Corp.* is misplaced. Expert testimony is not conclusory just because it reads the same as the statements in the Petition. Rather, the critical inquiry is whether a declaration discloses underlying facts or data on which the opinion is based. *Xerox Corp.*, Paper 9, 15. Here, Dr. Eldering’s Declaration includes detailed explanations and analyses that, based on the current record, are supported by the asserted art

of record.

(c) Conclusion

In light of the foregoing, we determine that, for purposes of this Decision, Petitioner has shown sufficiently that Winkler discloses all of the limitations recited in claim 1. Petitioner has provided arguments and evidence for dependent claims 2–4 and 9. Pet. 34–38. At this stage, Patent Owner argues that Winkler would not have anticipated claims 2–4 and 9 for the same reasons as claim 1. Prelim. Resp. 25. We determine that for purposes of this Decision, Petitioner has, likewise, shown sufficiently that Winkler would have anticipated claims 2–4 and 9.

2. Alleged Obviousness Over Winkler and One of Winkler2, Handbook, and Poliak: Claims 7, 8, and 10–12

Petitioner argues that dependent claim 7 would have been obvious over the combined teachings of Winkler and Winkler2 (Pet. 38–43); dependent claims 8 and 10 would have been obvious over the combined teachings of Winkler and Handbook (*id.* at 43–55); and dependent claims 11 and 12 would have been obvious over the combined teachings of Winkler and Poliak (*id.* at 55–62).

Patent Owner does not specifically address the limitations of these dependent claims and Petitioner’s challenges based on Winkler2, Handbook, and Poliak. *See* Prelim. Resp. 25 (arguing, “[b]ecause Petitioner has failed to show that Challenged Claim 1 is unpatentable over Winkler, Petitioner has likewise failed to show that Challenged Claims 7–8 and 10–12 are unpatentable”).

Because we institute on another ground on this record, we need not determine whether institution may, alternatively, be based on these grounds

of alleged unpatentability. *See* 37 C.F.R. § 42.108(a) (2023).

3. Alleged Anticipation By Kataoka: Claims 1–4

Petitioner contends that claims 1–4 of the '017 patent would have been anticipated under 35 U.S.C. §§ 102(a) or 102(e) by Kataoka. Pet. 15, 63–86. For the reasons below, the evidence on this record indicates there is not a reasonable likelihood that Petitioner would prevail in demonstrating that independent claim 1 of the '017 patent would have been anticipated under 35 U.S.C. §§ 102(a) or 102(e) by Kataoka.

As discussed further below, Petitioner's arguments regarding limitation 1[d] are insufficient to establish a reasonable likelihood of prevailing on this asserted ground.

(a) 1[d]: “a second connector having a second insulating housing”

For limitation 1[d], Petitioner argues, “*Kataoka* discloses a second connector portion 3 having housing 7,” which “includes cylindrical body 36 that surrounds second connecting terminals 6a–6c.” Pet. 68–69 (citing Ex. 1005, Figs. 1, 6B, 12:17–64). Petitioner contends that the housing meets the recited “insulating housing” because it “surrounds the contact members and protects from the environment.” *Id.* at 70 (citing Ex. 1005, Figs. 6A–6B, 4:56–66, 10:19–29, 12:17–43; Ex. 1003 ¶ 142); *see also* Ex. 1003 ¶ 142. Petitioner explains that Kataoka's housing has the same functionality and purpose as the claimed “insulating housing,” namely to “surround the male [or] female contact[], and shield the contact[] from environmental hazards, as well as providing some protection to a user in case arcing occurs when the user is handling the connector pair.” Pet. 65 (citing Ex. 1001, 3:2–6; Ex. 1003 ¶ 136), 70; *see also* Ex. 1003 ¶ 136.

Patent Owner avers, in part, that Petitioner has failed to demonstrate that Kataoka discloses the recited “second insulating housing” because Kataoka’s housing is not electrically insulating. Prelim. Resp. 26–28. Specifically, Patent Owner contends that the Petition does not mention the housing’s material properties; and the cited portions of Kataoka do not either (1) expressly or inherently disclose the housing being electrically insulating, or (2) disclose a material of the housing. *Id.* at 27, 29–30.

As noted above, on this current record, we construe “insulating” to mean “electrically insulating.” Accordingly, claim 1 requires that the “second insulating housing” be an electrically insulating housing. We agree with Patent Owner on this record, however, that the Petition does not address whether Kataoka’s housing 7 is electrically insulating. *See* Pet. 68–70. We additionally agree with Patent Owner, based on the preliminary record at this stage, that the portions of Kataoka that Petitioner relies upon, likewise, do not support a finding that the housing is either inherently or expressly electrically insulating. *See* Ex. 1005, Figs. 1, 6A–6B, 4:56–66, 10:19–29, 12:17–64, *cited in* Pet. 68–70.

(b) Claims 2–4

Claims 2–4 each depend, directly or indirectly, from claim 1. Because Petitioner has not adequately shown that claim 1 would have been anticipated by Kataoka, Petitioner also has not adequately shown that claims 2–4 would have been anticipated by Kataoka.

(c) Conclusion

In light of the foregoing, we determine that, for purposes of this Decision, Petitioner has not shown sufficiently that Kataoka would have anticipated any of claims 1–4.

4. *Alleged Obviousness Over Kataoka and Handbook: Claims 7–10*

Petitioner contends claims 7–10 would have been obvious over the combined teachings of Kataoka and Handbook. Pet. 86–99. Patent Owner argues Petitioner has failed to show that claims 7–10 are unpatentable because Petitioner has failed to show that claim 1 is unpatentable over Kataoka. Prelim. Resp. 36. Because we agree with Patent Owner’s arguments, on this record, regarding the insufficiency of Petitioner’s challenge to claim 1, we, likewise, determine that for purposes of this Decision, Petitioner has not shown sufficiently that the combined teachings of Kataoka and Handbook would have rendered obvious claims 7–10.

5. *Summary*

For all of the foregoing reasons and based on the record before us, we determine that there is a reasonable likelihood that Petitioner would prevail in showing that claims 1–4 and 9 would have been anticipated by Winkler. We, however, determine that there is not a reasonable likelihood that Petitioner would prevail in showing that claims 1–4 would have been anticipated by Kataoka or claims 7–10 would have been obvious over Kataoka and Handbook. We do not reach the alleged unpatentability of any challenged claim as unpatentable over Winkler and one of Winkler2, Handbook, and Poliak. In any event, because Petitioner has satisfied the threshold for institution as to at least one claim, we institute *inter partes* review on all claims and all grounds raised in the Petition. *See* 37 C.F.R. § 42.108(a) (2023); Consolidated Trial Practice Guide

(Nov. 2019), 64.¹¹

III. CONCLUSION

Based on the current record, we determine Petitioner has shown a reasonable likelihood that it would prevail in establishing that at least one claim of the '017 patent is unpatentable.

At this stage of the proceeding, the Board has not made a final determination as to the patentability of any challenged claim. Our view with regard to any conclusion reached in the foregoing analysis could change upon completion of the record.

IV. ORDER

Accordingly, it is:

ORDERED that pursuant to 35 U.S.C. § 314, an *inter partes* review is hereby instituted as to claims 1–4 and 7–12 of the '017 patent based on the unpatentability challenges presented in the Petition; and

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

¹¹ Available at www.uspto.gov/sites/default/files/documents/tpgnov.pdf.

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