

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMMSCOPE TECHNOLOGIES LLC,
Petitioner,

v.

BELDEN INC.,
PO.

Case No. IPR2023-01056
Patent 9,991,030 B2

PATENT OWNER SUR-REPLY

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	PO’S EXPERT’S EDUCATION AND EXPERIENCE MEET OR EXCEED THE QUALIFICATIONS OF A POSITA.....	1
III.	COOK AS THE PRIMARY REFERENCE (GROUNDS 1 AND 2).....	4
A.	Cook’s Text Does Not Teach A Barrier Tape Shield That Includes All Of The Claimed Features.....	4
B.	Because Cook Does Not Disclose Any Single Embodiment That Includes All Of The Claimed Features And Petitioner Did Not Even Allege Otherwise, Cook Does Not Anticipate The Challenged Claims.	7
C.	Petitioner’s Belated New Theory That A POSITA Would Understand That Different Embodiments In Cook “Can” or “Might” Be Somehow Modified And Combined Lacks Support And Should Be Rejected.	8
D.	The “Relatively” Continuous Conductive Material Disclosed In FIG. 8D Is Not Continuous.	9
IV.	GLEW AS THE PRIMARY REFERENCE (GROUNDS 3 AND 4).....	13
A.	Petitioner’s Newly Proposed Claim Construction For “Lateral Edge,” Which It Only Proposed To Use For Glew And Not For Any Other Ground Or Prior Art, Should Be Rejected Along With Its Anticipation Challenge In Ground 3.....	13
B.	Because A POSITA Would Not Be Motivated To Modify Glew’s Foil-Free Edge Design In FIG. 13C, Petitioner’s Hindsight-Driven And Unsupported Proposed Modifications in Ground 4 Should Be Rejected.....	15
C.	A POSITA Would Be Discouraged From Modifying Glew To Provide A Continuous Conductive Layer That Extended To And Was Exposed At The Lateral Edges Of The Tape.	17
V.	ROBERTS AS THE PRIMARY REFERENCE (GROUNDS 5 AND 7)	21

A.	Because Roberts Fails To Anticipate Any Of The Challenged Claims, As The Board Already Determined, Ground 5 Should Be Rejected.....	21
B.	Neither Roberts Alone, Nor The Combination Of Roberts And Jachimowicz-036, Render Obvious Any Of The Challenged Claims Because A POSITA Would Be Discouraged From Modifying Its Metal Armor Shield As Proposed By Petitioner In Ground 7.	24

TABLE OF AUTHORITIES

CASES

<i>Extractiontek Sales LLC v. Gene Pool Techs., Inc.</i> , IPR2022-00625, Paper 39 (July 26, 2023)	2
<i>In re Arkley</i> , 455 F.2d 586 (CCPA 1972)	6
<i>KioSoft Techs., LLC v. PayRange Inc.</i> , IPR2021-00077, Paper 32 (Oct. 26, 2022)	2
<i>Microsoft Corp. v. Biscotti, Inc.</i> , 878 F.3d 1052 (Fed. Cir. 2017)	6
<i>Net MoneyIN, Inc. v. VeriSign, Inc.</i> , 545 F.3d 1359 (Fed. Cir. 2008)	6, 21
<i>Njoy, LLC v. Juul Labs, Inc.</i> , IPR2024-00231, Paper 15 (June 12, 2024)	8
<i>Ontel Products Corporation v. Guy A. Shaked Investments Ltd.</i> , IPR2020-01703, Paper 12 (Apr. 13, 2021)	9
<i>SEB S.A. v. Montgomery Ward & Co.</i> , 594 F.3d 1360 (Fed. Cir. 2010)	4
<i>Sundance, Inc. v. DeMonte Fabricating Ltd.</i> , 550 F.3d 1356 (Fed. Cir. 2008)	4
<i>Transclean Corp. v. Bridgewood Servs., Inc.</i> , 290 F.3d 1364 (Fed. Cir. 2002)	22
<i>United Patents Inc. v. IdeaHub, Inc.</i> , IPR2020-01338, Paper 48 (Feb. 7, 2022)	2
<i>Xerox Corp. v. Bytemark, Inc.</i> , IPR2022-00624, Paper 9 (Aug. 24, 2022) (precedential)	17

RULES

37 C.F.R. § 42.6(e)	1
37 C.F.R. § 42.64(b)	2
37 C.F.R. § 42.65(a)	17

OTHER AUTHORITIES

Consolidated Trial Practice Guide (“CTPG”) (Nov. 2019)..... passim

EXHIBIT LIST

EXHIBIT	DESCRIPTION
EX-1001	U.S. Patent No. 9,991,030 (“’030 Patent”)
EX-1002	Office Action dated 06/28/2019
EX-1003	Amendment and Response to Non-Final Office Action dated 10/3/2017
EX-1004	-
EX-1005	Scheduling Order, C.A. No. 22-783-RGA (D. Del.)
EX-1006	Expert Declaration of Kenneth Cornelison
EX-1007	<i>Curriculum Vitae</i> of Kenneth Cornelison
EX-1008	U.S. Patent Publication No. 2013/0248240 (“Glew”)
EX-1009	U.S. Patent No. 3,622,683 (“Roberts”)
EX-1010	U.S. Patent No. 9,363,935 (“Cook”)
EX-1011	U.S. Patent No. 7,335,837 (“Pfeiler”)
EX-1012	U.S. Patent No. 3,911,200 (“Simons”)
EX-1013	U.S. Patent No. 3,233,036 (“Jachimowicz-036”)
EX-1014	U.S. Patent No. 3,894,172 (“Jachimowicz-172”)
EX-1015	U.S. Patent No. 4,428,787 (“Pan”)
EX-1016	<i>Electronic Wire & Cable - A User’s Guide: Performance and Selection</i> , Section 5: Multiconductor Cables, AT&T (1987)
EX-1017	Whitham D. Reeve, <i>Subscriber Loop Signaling and Transmission Handbook – Digital</i> , IEEE Telecommunications Handbook Series (1995)
EX-1018	Whitham D. Reeve, <i>Subscriber Loop Signaling and Transmission Handbook – Analog</i> , IEEE Telecommunications Handbook Series (1992)
EX-1019	U.S. Patent No. 5,380,591 (“Keogh”)
EX-1020	U.S. Patent No. 1,727,972 (“Ford”)
EX-1021	U.S. Patent No. 1,956,730 (“Reichelt”)
EX-1022	U.S. Patent No. 3,803,340 (“Jachimowicz-340”)
EX-1023	Canadian Patent Application No. 2,058,046 (“Tessier”)
EX-1024	U.S. Patent No. 4,262,164 (“Nutt”)
EX-1025	U.S. Patent Pub. No. 2006/0169478 (“Clark-478”)
EX-1026	U.S. Patent Publication No. 2010/0206609 (“’609 Publication”)
EX-1027	U.S. Patent No. 5,670,748 (“Gingue”)
EX-1028	G.F. Moore, <i>Electric Cable Handbook</i> , BICC Cables (3rd. Ed. 1997)

EXHIBIT	DESCRIPTION
EX-1029	The New IEEE Standard Dictionary of Electrical and Electronics Terms (5th ed. 1993)
EX-1030	Neil Sclater and John Markus, Electronics Dictionary, McGraw-Hill (6th Ed. 1997)
EX-1031	Draka – B03: Rodent protection (2009-01-19)
EX-1032	U.S. Patent No. 5,427,643 (“Aitken”)
EX-1033	U.S. Patent No. 4,213,280 (“Sandborn”)
EX-1034	U.S. Patent No. 4,439,632 (“Aloisio”)
EX-1035	U.S. Patent No. 4,327,248 (“Campbell”)
EX-1036	U.S. Patent No. 5,518,836 (“McCullough”)
EX-1037	US Patent Publication No. 2011/0147039 (“Smith”)
EX-1038	US Patent No. 7,532,794 (“Cook-794”)
EX-1039	US Patent No. 6,074,503 (“Clark-503”)
EX-1040	U.S. Patent No. 4,755,629 (“Beggs”)
EX-1041	Alcatel Cable Systems Product Catalog (circa 1988-1990)
EX-1042	U.S. Patent No. 6,378,283 (“Barton”)
EX-1043	U.S. Patent No. 6,570,095 (“Clark”)
EX-1044	U.S. Patent No. 6,365,836 (“Blouin”)
EX-1045	Declaration of Sylvia D. Hall-Ellis, PhD. re. EX-1016, EX-1017, EX-1018 and EX-1028
EX-1048	Transcript from the May 21, 2024 Deposition of Charles Eldering, Ph.D.
EX-1049	U.S. Patent No. 3,206,541
EX-1050	Neptco.com: Foil Film Laminates, via archive.org
EX-1051	Exhibit 1 from the Deposition of Charles Eldering
EX-1052	Exhibit 2 from the Deposition of Charles Eldering
EX-1053	Exhibit 3 from the Deposition of Charles Eldering
EX-1054	Exhibit 4 from the Deposition of Charles Eldering
EX-1055	U.S. Patent Application Publication No. 2017/0213621 A1
EX-1056	Request for Continued Reexamination of Appl. No. 14/520,125
EX-1057	U.S. Patent Application Publication No. 2012/0222883 A1
EX-1058	Excerpts from 58 Fed. Reg. 29327-29520 (Thursday, May 20, 1993)
EX-1059	Declaration of Ken Cornelison

EXHIBIT	DESCRIPTION
EX-2001	Declaration of Dr. Charles A. Eldering in Support of PO Preliminary Response (“Eldering”) (¶¶1-130)
EX-2002	August 29, 2016 Amendment (U.S. Application No. 14/520,125)
EX-2003	March 7, 2017 Amendment (U.S. Application No. 14/520,125)
EX-2004	March 27, 2017 NOA (U.S. Application No. 14/520,125)
EX-2005	May 31, 2017 Original Claims (Application No. 15/610,504)
EX-2006	U.S. Patent No. 8,450,606 B2 (“McNutt”)
EX-2007	U.S. Patent Application Publication No. 2016/0037691 (“Kroushl”)
EX-2008	NEPTCO – NEPTAPE® Data Sheet – NEPTAPE Foil Free Edge Shielding Tapes: General Information (8/2000)
EX-2009	NEPTCO – NEPTAPE® Data Sheet – Foil Free Edge Shielding Tapes - NEPTAPE® F1141 (8/2000)
EX-2010	Declaration of Kenneth Cornelison, <i>Belden Inc. v. CommScope, Inc.</i> , Civ. No. 22-783-RGA (D. Del.) (February 10, 2024)
EX-2011	Deposition Transcript. Kenneth Cornelison (March 1, 2024)
EX-2012	Declaration of Dr. Charles A. Eldering in Support of PO Response (“Eldering”) (¶¶131-178)
EX-2013	U.S. Patent No. 7,923,641 (“Smith-641”)
EX-2014	U.S. Patent No. 8,927,866 (“Cornelison Patent”)
EX-2015	Dictionary Definition of “Lateral” (The American Heritage College Dictionary) (2002)
EX-2016	Deposition Transcript. Kenneth Cornelison (July 17, 2024)

I. INTRODUCTION

In its Response (Paper 16), Patent Owner (“PO”) detailed how the evidence in the post-institution record confirmed that the challenged claims were neither anticipated, nor obvious. Instead of rebutting this evidence in its Reply (Paper 26), Petitioner tellingly and improperly switched gears by relying upon new and unsupported theories that still fail to demonstrate that the challenged claims are anticipated or obvious. Accordingly, the Board should find that Petitioner failed to establish that any claims are unpatentable.

II. PO’S EXPERT’S EDUCATION AND EXPERIENCE MEET OR EXCEED THE QUALIFICATIONS OF A POSITA.

Petitioner alleged that the opinions of PO’s expert (Dr. Eldering) should be discounted based on an alleged lack of experience “manufacturing tape for cables,” “sizing tape to the correct width,” or “slitting.” Reply 16; *see also* Reply 1, 17. Petitioner’s allegations are misplaced for several reasons.

First, Petitioner’s criticism of Dr. Eldering’s alleged lack of experience with manufacturing, sizing, or slitting tapes is divorced from the parties’ proposed definitions of a POSITA, which never mention tapes. Pet. 15; Cornelison ¶12, Eldering ¶26.¹ And Petitioner’s belated attempt in its Reply to inject additional

¹ “Cornelison” refers to the Expert Declarations of Kenneth Cornelison (EX-1006

requirements for a POSITA to have specific experience with tapes should be rejected. *See KioSoft Techs., LLC v. PayRange Inc.*, IPR2021-00077, Paper 32 at 56 (Oct. 26, 2022) (“Petitioner’s attempt to undermine Dr. Shamos’s testimony based on his alleged lack of experience ... is unavailing as we do not require (and Petitioner did not proffer) that a person of skill in the art have such experience.”); *Extractiontek Sales LLC v. Gene Pool Techs., Inc.*, IPR2022-00625, Paper 39 at 13 (July 26, 2023) (“We do not consider Petitioner’s belated [Reply] arguments seeking to narrow its broad proposal” [for a POSITA]”).

Second, Petitioner did not even allege that Dr. Eldering was not qualified to opine from the perspective of a POSITA. *See United Patents Inc. v. IdeaHub, Inc.*, IPR2020-01338, Paper 48 at 14 (Feb. 7, 2022) (rejecting party’s request to give less weight to an expert’s opinions because the party “has not disputed that Dr. LeGall is at least a person of ordinary skill in the relevant art.”) Nor did Petitioner ever object under 37 C.F.R. § 42.64(b) to any testimony presented in Dr. Eldering’s declarations. This is not surprising since such objections would have been futile because Dr. Eldering’s education and experience meet or exceed the qualifications of a POSITA. For example, while the parties’ proposals for a POSITA both require a bachelor’s

and EX-1059) filed by Petitioner. “Eldering” refers to the Declarations of Dr. Eldering filed by PO (EX-2001 and EX-2012).

degree in electrical engineering, Dr. Eldering has a Ph.D. in electrical engineering. EX-2001 ¶12, Appendix A (CV) 1.

Dr. Eldering also testified regarding his significant industry experience with twisted pair data cables.² EX-2001 ¶13 (four years' experience with design and research of systems employing twist wire pair cables), ¶14 (two years' experience with design and analysis of networks involving twisted wire pair cables), ¶15 (additional experience with twisted wire pair cabling and evaluation of crosstalk); EX-1048 11:15-18 (experience creating twisted wire pairs), 16:3-12 (experience with wrapping cables barrier tapes for shielding), 18:13-22 (experience working with twisted pair cables with fillers and barrier tapes), 215:21-216:6 (experience working with CAT6A cables with barrier tapes); 217:8-17 (expertise in construction and design of cables to provide shielding), 220:3-9 (expertise in the control of electromagnetic interference). Accordingly, Dr. Eldering is at least a POSITA.

To the extent that Petitioner argued that Dr. Eldering does not have extensive experience in designing barrier tapes, which is not even required in the definition of

² Because Petitioner's own proposal for a POSITA acknowledges that an "individual with a master's degree in electrical engineering would require less industry experience (*e.g.*, 1-2 years)," it is undisputed that Dr. Eldering's Ph.D would reduce the required industry experience.

a POSITA, the Consolidated Trial Practice Guide (“CTPG”) (Nov. 2019) explains that “[t]here is ... no requirement of a perfect match between the expert’s experience and the relevant field.” CTPG 34 (citing *SEB S.A. v. Montgomery Ward & Co.*, 594 F.3d 1360, 1373 (Fed. Cir. 2010)). The CTPG also confirms that “[a] person may not need to be a person of ordinary skill in the art in order to testify as an expert under Rule 702, but rather must be ‘qualified in the pertinent art.’” *Id.* (quoting *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1363–64 (Fed. Cir. 2008)).

For all these reasons, Dr. Eldering’s opinions should not be discounted, especially in light of how they are supported by documentary evidence and his considerable education and experience with twisted pair cables.

III. COOK AS THE PRIMARY REFERENCE (GROUNDS 1 AND 2)

A. Cook’s Text Does Not Teach A Barrier Tape Shield That Includes All Of The Claimed Features.

The PO Response demonstrated that Petitioner’s anticipation challenge in Ground 1 improperly relied upon several separate and disparate embodiments in Cook (*i.e.*, shown in FIGS. 7B, 8A-8D, and 11). PO Response 19-26 (citing Petition 19-22; Cornelison ¶¶81-89). In its Institution Decision (Paper 7), the Board agreed, finding that “Petitioner relies upon a number of disparate embodiments discussed in Cook, without adequate explanation whether they are depictions of the same embodiment, or, if they are not the same embodiment, why we should accept them

as such under an anticipation standard.” Decision 16.

In its Reply, Petitioner admittedly “proceed[ed] in a **new** direction with a **new** approach as compared to the positions taken” in the Petition (CTPG 74) by belatedly arguing for the first time that “Cook’s description of shield 120 in the text is sufficient to anticipate without combining it with any figures.” Reply 2. After having expressly relied on Cook’s description and figures for ***six different embodiments*** to support its anticipation challenge, Petitioner and its expert now alleged for the first time that “Cook’s text teaches to ***select all three*** requirements of shield 120: the material (*e.g.*, continuous), the technique (*e.g.*, sandwiched), and the span (*e.g.*, fully across).”³ Reply 2-3 (citing Cornelison ¶349). But in reality, there is no support in Cook or elsewhere for such a new and unsupported “might somehow modify” theory that a POSITA would understand that Cook’s specification teaches to modify each embodiment to include three features in a single barrier tape shield even though that is not actually taught by Cook.

It is well established that for anticipation, “it is **not** enough that the prior art reference discloses part of the claimed invention, which an ordinary artisan **might** supplement to make the whole, or that it includes multiple, distinct teachings that the artisan **might somehow combine** to achieve the claimed invention.” *Net*

³ Unless otherwise noted, all emphasis is added.

MoneyIN, Inc. v. VeriSign, Inc., 545 F.3d 1359, 1371 (Fed. Cir. 2008). Rather, the reference must “clearly and unequivocally disclose the claimed [invention] or direct those skilled in the art to the [invention] without any need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference.” *Id.* (quoting *In re Arkley*, 455 F.2d 586, 587 (CCPA 1972)); *see also Microsoft Corp. v. Biscotti, Inc.*, 878 F.3d 1052, 1069 (Fed. Cir. 2017) (“Anticipation is not proven by multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention.”) (internal quotations omitted).

Effectively, because Petitioner’s unsupported theory is that a POSITA would pick and choose each of these three features and someone combine them in a modified barrier tape shield, it must be rejected. Here, because no single one of the several embodiments disclosed in Cook discloses the claimed combination of features (*i.e.*, Cook actually teaches significantly different embodiments with combinations that do not include the claimed combination), Cook falls well short of “clearly and unequivocally” disclosing the claimed combination of all three features to support Petitioner’s anticipation theory.

Furthermore, because the Petition expressly relied upon both the description of shield 120 in the written description and several disparate embodiments the shield disclosed in FIGS. 7B, 8A-8D, and 11, Petitioner cannot belatedly “proceed in a new direction with a new approach as compared to the positions taken” in the Petition.

CTPG 74.

B. Because Cook Does Not Disclose Any Single Embodiment That Includes All Of The Claimed Features And Petitioner Did Not Even Allege Otherwise, Cook Does Not Anticipate The Challenged Claims.

In addition to theorizing for the first time in its Reply that the textual description of shield 120 alone somehow anticipates, Petitioner alternatively and belatedly attempted to “proceed in a new direction with a new approach as compared to the positions taken” in the Petition (CTPG 74) when it theorized for the first time that “shield 120 (as described) and FIG. 8D are also sufficient to anticipate without combining it with Figures 7B or 11.” Reply 4. But as PO explained in its Response (Response 22-25) and in further detail below *infra* §III.D, FIG. 8D’s disclosure of a “relatively continuous patch of electrically conductive material” formed on a single dielectric layer does not disclose a continuous conductive layer or any conductive layer sandwiched between two dielectric layers. Cook 22:62-23:5, 23:58-67; Eldering ¶¶48-51. In fact, the only embodiment in Cook that discloses conductive material sandwiched between two dielectric layers is shown in FIG. 7B, which undisputedly discloses a conductive layer that is not continuous. Pet. 19 (“The side view of an exemplary shield where a discontinuous ‘electrically conductive layer 720 is sandwiched between two dielectric layers 725, 730’ is illustrated in FIG. 7B.”)

As explained in the PO Response (Response 21-22), each of Cook’s other

embodiments disclosed in FIGS. 7A, 7C, 8A-8D, and 11 shows shield layers 700, 800, 830, 835, 840, 1105 that have conductive material disposed on only a single dielectric layer. Accordingly, Petitioner did not even attempt to argue that Cook discloses a single embodiment that satisfies the combination of claim limitations at issue (*i.e.*, a conductive layer (i) contained between two dielectric layers, (ii) extending to each lateral edge of the dielectric layers, and (iii) continuous), which is fatal to its anticipation challenge. *See, e.g., Njoy, LLC v. Juul Labs, Inc.*, IPR2024-00231, Paper 15 at 18 (June 12, 2024) (rejecting anticipation challenge because “Petitioner does not argue that a single embodiment of [the prior art reference] discloses all limitations of challenged claim 14.”)

C. Petitioner’s Belated New Theory That A POSITA Would Understand That Different Embodiments In Cook “Can” or “Might” Be Somehow Modified And Combined Lacks Support And Should Be Rejected.

Acknowledging that its anticipation theory relied on certain separate and distinct embodiments in Cook, Petitioner belatedly attempted to “proceed in a new direction with a new approach as compared to the positions taken” in the Petition (CTPG 74) by theorizing that “Cook teaches Figures 7B, 8D, and 11 may be used with Cook’s ‘various embodiments of the disclosure,’ which includes using each figure with embodiment of shield 120 in the text and the embodiments in the other figures.” Reply 6 (citing Cook 2:5-61, 3:60-61). But those sections of Cook taken

from the “Brief Description of the Drawings,” merely confirm that each of the figures are separate and distinct embodiments that are not so modifiable and combinable. *See Ontel Products Corporation v. Guy A. Shaked Investments Ltd.*, IPR2020-01703, Paper 12 at 13-14 (Apr. 13, 2021) (rejecting anticipation challenge because the prior art reference “discloses several distinct embodiments, which are illustrated in different figures and discussed in separate portions of the specification.”)

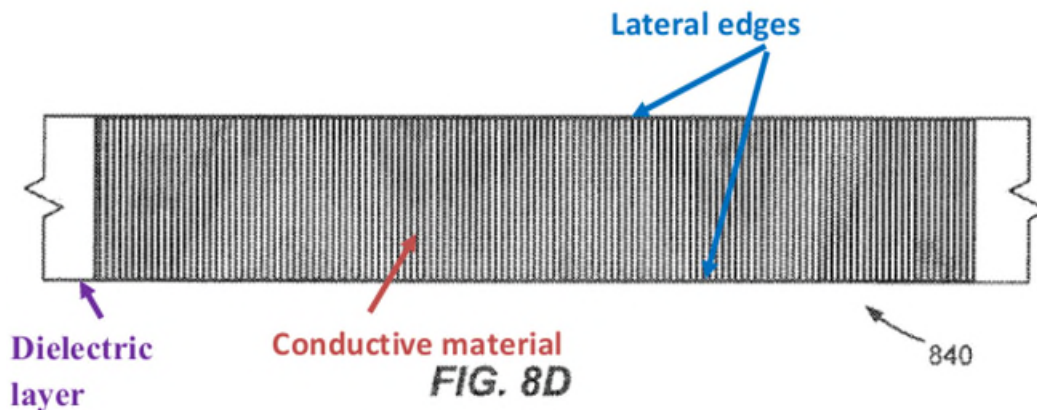
Petitioner’s reliance on Cook’s single statement that “any combination of shielding arrangements may be utilized” (Reply 6 citing Cook 3:60-61) is equally unavailing because that statement is immediately followed by the example configuration of “individually shielded twisted pairs and an overall shield” (Cook 3:61-62), which provides no support for combining the different embodiments.

Accordingly, because there is no support for Petitioner’s belated new theory that the various embodiments disclosed in Cook can be modified and combinable, its anticipation challenge should be rejected.

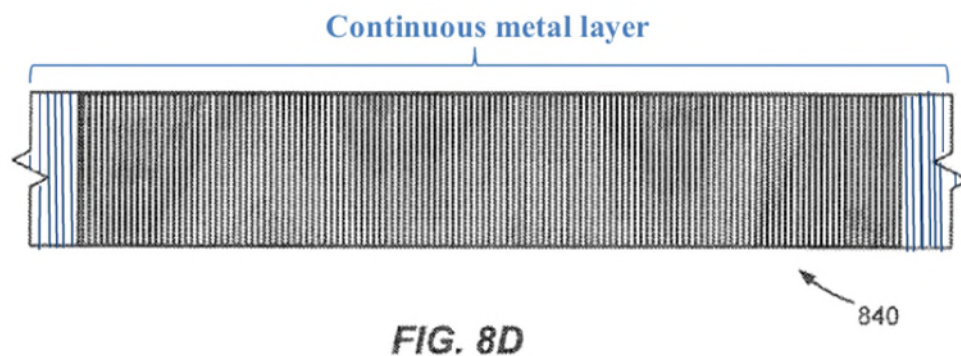
D. The “Relatively” Continuous Conductive Material Disclosed In FIG. 8D Is Not Continuous.

In its Response, PO explained that FIG. 8D’s disclosure of a “relatively continuous patch of electrically conductive material” fails to disclose the claimed “continuous conductive layer” of claim 1. Response 24-26 (citing Cook 22:62-23:5,

23:58-67; Eldering ¶¶48-51). Petitioner’s own annotations to FIG. 8D (Pet. 20, 22) show that Cook discloses that the conductive material of the shield layer 840 is not continuous.



According to Petitioner itself, a “POSITA would understand a multi-layer tape having a continuous conductive material *would extend to each longitudinal end [of the tape]*, such as illustrated in the annotated figure below:”



Pet. 21-22 9 (citing Cornelison ¶¶87-88).⁴ In other words, because Petitioner and its

⁴ Petitioner applied PO’s understanding of “continuous conductive material in other

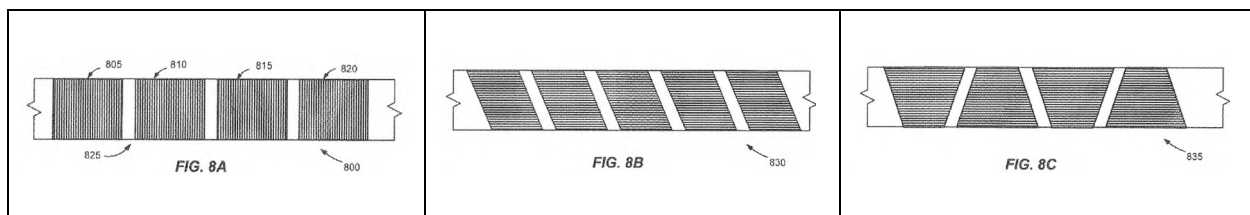
expert admitted that FIG. 8D does not disclose a “continuous conductive layer” (*i.e.*, because the conductive layer does not extend to each longitudinal end of the tape), they proposed to modify the shield layer 840 disclosed in FIG. 8D to be a “continuous conductive material” *“instead of being discontinuous patches,”* as shown in FIG. 8D. Cornelison ¶87; Pet. 21-22.

The Reply blatantly ignored Petitioner’s own claim construction for “continuous conductive material” in the Petition. Instead, the Reply and associated declaration attempted to “proceed in a new direction with a new approach as compared to the positions taken” in the Petition (CTPG 74) as if it had never proposed such a construction after all. In its Reply, Petitioner criticized PO’s expert for allegedly “mention[ing] a new claim construction at deposition:” that the “continuous conductive material must ‘extend from one end of the tape to the other.” Reply 9 (citing Ex-1048 61:21-62:2, 64:4-5). But that claim construction was already proposed by Petitioner and its expert, not the other way around. Pet. 21; Cornelison ¶87.

Seeking to overly broaden to scope of the claimed “multi-barrier conductive barrier tape comprising a conductive material,” Petitioner’s expert belatedly opined

grounds.” Pet. 36 (“Thus, a POSITA would understand Glew to disclose that the metallic layer is continuous from the proximal to the distal ends of the tape.”).

that a “POSITA would understand that the ordinary meaning of ‘continuous conductive material’ simply means that the conductive material has no discontinuities.” Cornelison ¶362; EX-2016 199:15-202:10. But Petitioner’s expert’s new and made-up definition of “continuous conductive material” would erroneously encompass all of the discontinuous patches in the shields shown in FIGS. 8A-8C because each of those electrical patches (e.g., 805, 810, 815, and 920 in FIG. 8A) have no discontinuities even though they do not extend from one end of the tape to the other.⁵

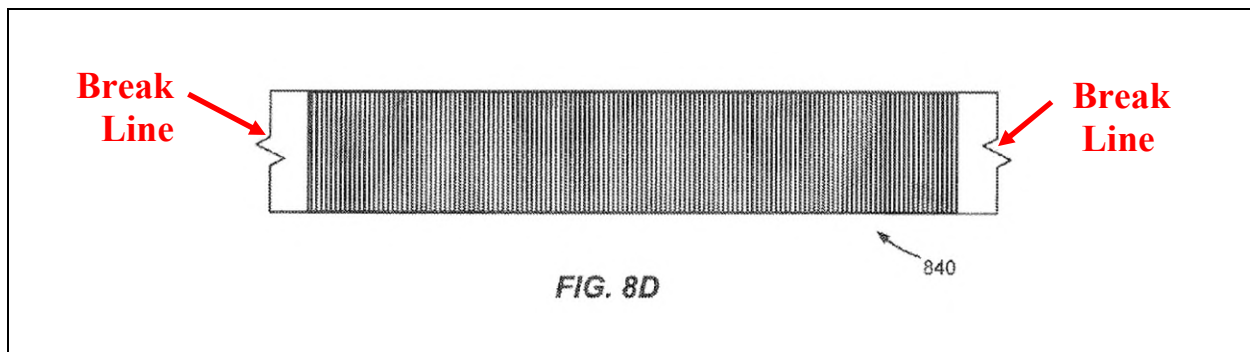


Further support that the conductive material in FIG. 8D is not continuous is

⁵ Petitioner’s expert asserted that “Cook only describes FIGS. 8A-8C as discontinuous” (Cornelison ¶355) referencing the following sentence in Cook: “A few non-limiting examples of *patch patterns* that may be utilized in a discontinuous shield are described in great detail below with reference to FIGS. 8A-8C.” Cook 7:6-9. But as Petitioner’s expert admitted, those embodiments disclosed in FIGS. 8A-8C only show *patch patterns* on each segment unlike FIG. 8D that only includes one patch per segment before the segment repeats itself. EX-2016 197:2-199:3.

provided by the specification of Cook that expressly states that the “relatively continuous patch of electrically conductive material [is] running along a longitudinal length of the separator 840,” rather than the “entire” length of the tape, which is consistent with the illustration in FIG. 8D. Cook 23:60-62, FIG. 8D.

Still further support that the conductive material in FIG. 8D is not continuous is provided by the “break lines” shown on the left and right dielectric ends of the separator segment shown in FIG. 8D, which Petitioner’s expert confirmed would be understood by a POSITA to teach that the illustrated electrically conductive patch with the dielectric ends would repeat itself along the entire length of the tape. EX-2016 195:6-196:21.

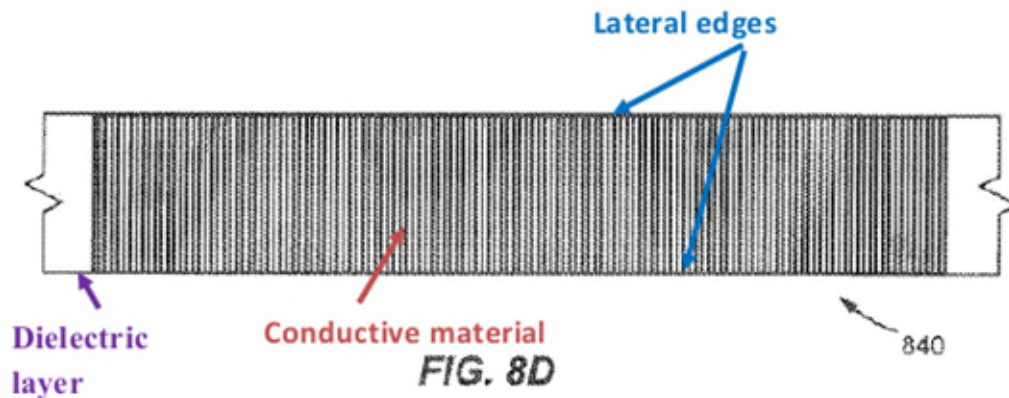
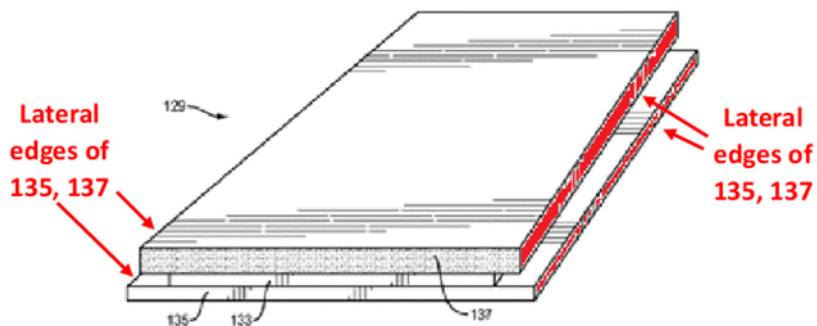


IV. GLEW AS THE PRIMARY REFERENCE (GROUNDS 3 AND 4)

A. Petitioner’s Newly Proposed Claim Construction For “Lateral Edge,” Which It Only Proposed To Use For Glew And Not For Any Other Ground Or Prior Art, Should Be Rejected Along With Its Anticipation Challenge In Ground 3.

In its Response, PO explained that the proper claim construction for the claimed “lateral edge[s]” should be the edges running along the sides of the tape

parallel to the longitudinal direction. Response 9-17. In doing so, PO identified significant intrinsic support in the specification, including the fact that the only edges discussed or identified in the '030 Patent were lateral edges 306a, 306b that are running along the sides of the tape parallel to the longitudinal direction. Response 9-12. PO also demonstrated how Petitioner itself adopted PO's proposed construction of lateral edges in its analysis of Cook and Glew in Grounds 1 and 4, such as by identifying as lateral edges the edges running along the sides of the tape parallel to the longitudinal direction. Response 12-14, 16.



Roberts also further supports PO's construction by using the term "lateral

edge” to describe the edges of the tape running along the sides of the tape parallel to the longitudinal direction. Response 14-16.

Because Petitioner ignored all this evidence in its Reply (Reply 11-15), including the fact that *Petitioner itself employed PO’s proposed construction in each and every ground except Ground 3*, the Board should reject Petitioner’s unsupported proposed construction for lateral edges as it did in the Institution Decision (Decision 23-24).

B. Because A POSITA Would Not Be Motivated To Modify Glew’s Foil-Free Edge Design In FIG. 13C, Petitioner’s Hindsight-Driven And Unsupported Proposed Modifications in Ground 4 Should Be Rejected.

In its Response, PO explained that it was beyond dispute that FIG. 13C in Glew discloses a multi-layer tape where the conductive layer 133 does not extend to the lateral edges of the dielectric layers 135, 137 (*i.e.*, because the layers have different widths) as required by the Challenged Claims. Response 31-34, 53-54.

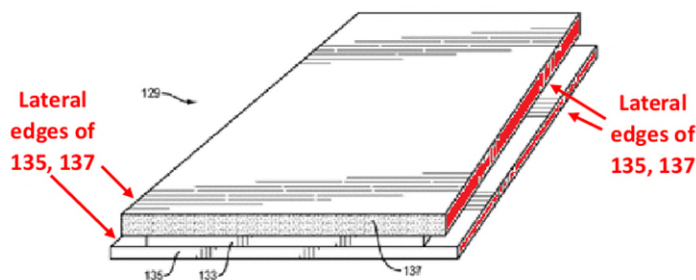


FIG. 13C

PO further provided evidence from Glew itself as well as several other prior

art references that various conventional manufacturing techniques that were neither complex nor expensive were known to be used to manufacture the tape shown in FIG. 13C with different widths for the three layers. Response 36-37, 45-47, 54-58. In doing so, PO exposed another fatal flaw in Petitioner's hindsight-driven and unsupported theory that a POSITA would be motivated to manufacture the tape shown in FIG. 13C using a slitting process that, as Petitioner's expert admitted (EX-2016 227:16-228:21, 232:3-234:8), could not be used to produce the tape shown in FIG. 13C with three layers having different widths.

Petitioner and its expert also failed to provide any support for its speculative and erroneous theory that "[i]t would take much more time and be more complex to make all three layers in FIG. 13C offset from each other" (Pet. 38) and would "be more ... costly to make than using the customary slitting process" (Pet. 50-51, 53-54). *See Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (Aug. 24, 2022) (precedential) ("Dr. Jones does not cite to any additional supporting evidence or provide any technical reasoning to support his statement. Thus, the cited declaration testimony is conclusory and unsupported, adds little to the conclusory assertion for which it is offered to support, and is entitled to little weight."). For example, in the Petition, neither Petitioner, nor its expert, provided any evidence or data regarding the costs of either (i) the numerous conventional techniques that were known to be used to produce the tape with layers of different widths actually

disclosed in Glew FIG. 13C, or (ii) the proposed slitting process to determine whether the slitting process was in fact less expensive.

To try to make-up for this deficiency, Petitioner belatedly relied on a *new* prior art reference (Jachimowicz-541 (EX-1049)) in its Reply that allegedly discloses a slitting process used for a tape with its foil edge exposed (which is the not the case for the tape shown in Glew FIG. 13C) “for economy of fabrication.” Reply 16 (quoting EX-1049 4:43-45). But once again, that single sentence does not provide any evidence that the slitting process at issue, *which could not even be used to produce the different width tape actually disclosed in Glew FIG. 13C*, would be any less expensive or “economical” than the various techniques that were known to be used to produce the tape actually disclosed in FIG. 13C.

C. A POSITA Would Be Discouraged From Modifying Glew To Provide A Continuous Conductive Layer That Extended To And Was Exposed At The Lateral Edges Of The Tape.

In its Response, PO also established how a POSITA would not be motivated to modify the tape in FIG. 13C to have the conductive layer extend to the lateral edges because that would disadvantageously expose the continuous conductive layer along the lateral edges of the tape. Response 34-45, 56-58. For instance, PO identified two prior art references (Kroushl (EX-2007 and NEPTAPE® (EX-2008, EX-2009)) that teach the use of shielding tapes that, like the tape shown in FIG. 13 of Glew, provided a conductive layer that was narrower in width than the dielectric

layer(s) to avoid *shield-to-shield shorts*.

Kroushl discloses a tape where the dielectric layer was wider than the conductive layer providing “two metallic free segments 14a and 14b on each side of metallic layer 12 running the length of tape 10.” Kroushl ¶[0024], Abstract, ¶[0012], [0014]. The “advantage of metallic free zones 14a and 14b is that they can help prevent the *unintentional shorting of adjacent metallic segments 16* when the tape is applied around the cable core.” Kroushl ¶[0028]; Eldering ¶93-94. Similarly, the NEPTAPE® Foil Free Edge Shielding Tapes include a “[f]oil free film edge [that] provides isolation between pairs, *preventing shield to shield shorts* and eliminating the need for a polyester overwrap.” EX-2008 1; Eldering ¶¶95-97.

In its Reply, ignoring the fact that FIG. 13C – the figure that Petitioner and its expert rely upon in Glew – indisputably discloses a foil-free edge tape, Petitioner erroneously theorized that “Glew *encourages* exposed conductive edges.” Pet. 18 (emphasis in original). Petitioner based this theory on Glew’s disclosure of conductive separators (*i.e.*, *not the barrier tape shown in FIG. 13C*) 300 that separate the electrical conductors. Pet. 18-20 (Petitioner’s annotated figure below labeling the location of the foil-free edge of FIG. 13C).

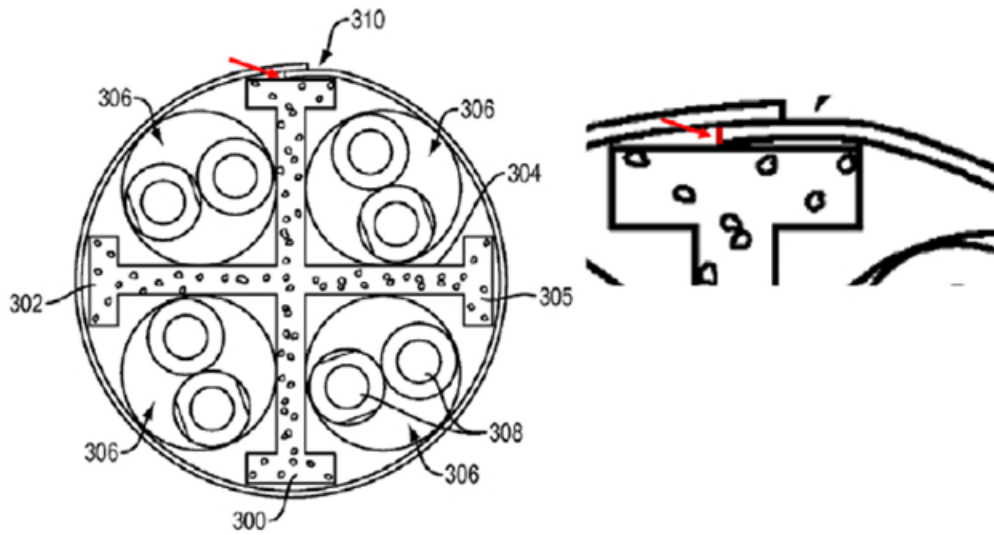


FIG. 10A

But in reality, because Glew discloses a conductive separator 300 (*i.e.*, a shield) that runs the ***entire length of the cable*** that is in close proximity to the lateral edges of the barrier tape 310, the foil-free edges provided by the wider dielectric layers in the barrier tape shield of FIG. 13C would clearly prevent shield-to-shield shorting just like the tapes in Kroushl and NEPTAPE®. More specifically, the foil-free edges of the barrier tape in Glew prevent shorting (i) between the two edges of the barrier tape 310 and (i) between the edges of the barrier tape 310 and the conductive separator 300, contrary to Petitioner’s made-up theory.

Petitioner’s theory that the alleged “tiny edge” that would be exposed if Glew’s barrier tape were modified to remove the foil-free edge would allegedly be much smaller than the surface of the conductive separator 300, as shown in the cross-section of FIG. 10A, erroneously ignores that the fact that the exposed conductive

edge would run the *entire length of the cable*, and, if it shorted with the other edge of the barrier tape 310 or the conductive separator 300 at any point along the cable, would cause a problem that could run the length of the cable.

Petitioner's characterization of Roberts' disclosure concerning the problems caused by having exposed edges in a continuous shield is also erroneous. According to Petitioner, "Roberts explains that exposed side edges are only a concern 'when considering a cable of many miles.'" Reply 21 (citing Roberts 3:59-61). Petitioner is wrong. Rather, no less than five times, Roberts discloses the disadvantages (*i.e.*, "undesirable electrical properties") of creating a shield where the edge of the continuous metal foil is exposed as it would be if it extended to the lateral edges of the dielectric layers, because those exposed edges deleteriously interact with conductive materials through pinholes in the plastic insulation or coatings regardless of the length of the cable. Roberts 3:39-44, 4:70-5:5, 6:10-15, 6:60-65, 7:21-25.

Accordingly, because Petitioner's Reply attempts to sidestep PO's significant evidence that a POSITA would not be motivated to modify the multi-layer tape disclosed in Glew FIG. 13C to provide an exposed conductive edge, its proposed obviousness challenges in Ground 4 should be rejected.

V. ROBERTS AS THE PRIMARY REFERENCE (GROUNDS 5 AND 7)

A. Because Roberts Fails To Anticipate Any Of The Challenged Claims, As The Board Already Determined, Ground 5 Should Be Rejected.

In its Response, PO demonstrated that Roberts fails to disclose that the metal armor shield 18 includes the claimed conductive material contained between two layers of a dielectric material, *where the conductive material extends to each lateral edge of the two layers of the dielectric material*. Response 47-51. As the Board already determined, “Petitioner does not, on this record, provide sufficient explanation and reasoning as to how or why the relied-upon properties of shield 15 may be imported into or construed as being the same as the properties of shield 18.” Decision 33 (citing *Net MoneyIN*, 545 F.3d at 1371 (Fed. Cir. 2008) (A reference must “clearly and unequivocally disclose” the claimed invention or direct those skilled in the art to the invention “without any need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference”).).

In its Reply, Petitioner belatedly introduced new and unsupported arguments that Roberts’ metal armor shield 18 would somehow have the same properties as the foil metal shield 15 despite the fact that Roberts expressly discloses that metal *armor* shield 18, which provides a mechanical shield, is *different than* any of the other shields disclosed in Roberts, including metal *foil* shield 15, which provides an

electrical shield and does not provide “mechanical (armor) protection.” Roberts 4:62-67; Eldering ¶79. For example, citing only testimony from a new declaration provided by its expert, Petitioner theorized that “PO does not dispute that the conductive material of armor 18 extends to the farthest edges of the armor” and that “the whole armor is conductive material.” Reply 27 (citing Cornelison ¶386). But that new theory is also erroneous (*i.e.*, PO disputes it) and is merely parroted by the expert in the new declaration without any support.

Furthermore, as Petitioner’s expert admitted during deposition (EX-2016 249:12-253:18), Roberts’ disclosure of a metal armor shield 18 with plastic on “either one or more surfaces thereof” (Roberts 4:15-23) could describe a metal armor shield 18 where the plastic surrounded the metal armor on all surfaces (*i.e.*, such that the metal did not extend to the lateral edges of the plastic). Accordingly, Petitioner’s further argument that Roberts’ disclosure of a metal armor shield 18 with plastic adhered or one or more sides could only be understood to mean that the “the plastic is flush with the metal and reciprocally the metal (conductive material) extends to the lateral edges of the plastic” (Reply 27) is simply wrong and not supported. *See Transclean Corp. v. Bridgewood Servs., Inc.*, 290 F.3d 1364, 1373 (Fed. Cir. 2002) (“[A]nticipation by inherent disclosure is appropriate only when the reference discloses prior art that must ***necessarily*** include the unstated limitation”

Failing to find any support for its argument within the “four corners” of

Roberts, Petitioner tellingly resorted to relying upon on a general statement in Roberts' abstract that the patent describes a "conventional telephone cable design" (Roberts Abstract) to try to bring in another prior art reference (Jachimowicz-036 (EX-1013)) that allegedly discloses the missing claimed features. Reply 27-28. But there is no evidentiary support that this single prior art reference (Jachimowicz-036) depicts a conventional telephone cable design. After all, if a conventional telephone cable design included the claimed barrier tape, Petitioner should have been able to (but did not) provide several prior art references depicting this allegedly conventional telephone cable design.

Furthermore, as explained in the Response (51-52), Petitioner failed to demonstrate that dependent claims 3 (which requires that "the filler has a *helical twist* at a first angle") and 9 were anticipated by Roberts because Petitioner and its expert merely conclusorily stated that "Roberts discloses that the conductors and shield 15 (filler) in FIG. 17 are twisted into a 'twisted composite' during manufacturing" without any further explanation of how or why such twisting would be understood to be "helical." Pet. 61; Cornelison ¶¶211-213. In its Reply (29-30), Petitioner "proceed[ed] in a new direction with a new approach as compared to the positions taken" in the Petition (CTPG 74) by introducing belated new arguments that should be rejected.

As the Board already determined (Decision 32-33), because Roberts does not

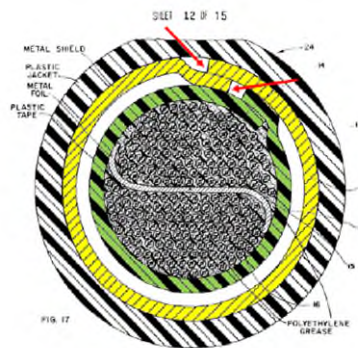
disclose a barrier tape with conductive material extending to each lateral edge of the two layers of the dielectric material, and surrounding the first and second twisted pairs of insulated conductors and the filler, it cannot anticipate independent claims 1 and 18 or any of the dependent claims.

B. Neither Roberts Alone, Nor The Combination Of Roberts And Jachimowicz-036, Render Obvious Any Of The Challenged Claims Because A POSITA Would Be Discouraged From Modifying Its Metal Armor Shield As Proposed By Petitioner In Ground 7.

In its Response (37-40, 65-66), PO demonstrated that Roberts expressly teaches that there were *disadvantages* (i.e., “undesirable electrical properties”) to creating a shield where the edge of the continuous metal foil is exposed as it would be if it extended to the lateral edges of the dielectric layers. More specifically, Roberts discloses that those exposed edges of the proposed modified metal armor shield 18 would deleteriously interact with conductive materials through “pinholes” in the plastic insulation or coatings. Roberts 3:39-44, 4:70-5:5, 6:10-15, 6:60-65, 7:21-25. Roberts discloses that these pinholes are undesirably formed in the plastic used to insulate the electrical conductors 14, 16 and the plastic used to coat the metal shield 15, with the plastic being specified as polyethylene terephthalate (Mylar). Roberts 1:32-40 (conductors), 1:69-71 (metal foil), 3:32-66 (same). Notably, Roberts specifies the use of a different plastic (polyethylene) for use as the coating

for the metal armor shield 18 rather than the Mylar⁶ used for the metal foil shield 15. Roberts 4:19-22. Accordingly, a POSITA would have been discouraged from Petitioner's proposed speculative and unsupported modification of Glew's actual teachings and design theory (*i.e.*, to create continuous conductive edges where the conductive metal of the metal armor shield was exposed).

In its Reply, Petitioner argued that the exposed conductive edges of its proposed modified metal armor shield 18 would not be a problem because the edges are allegedly isolated "by an additional plastic tape 17 (green) that separates armor (yellow) from the conductors." Reply 32.



⁶ Elsewhere Roberts confirms that the polyethylene suggested for the metal armor shield 18 is a different plastic than Mylar used for the metal foil 15. Roberts 3:32-37 ("This object is achieved in the instant invention by using a piece of metal (copper, aluminum, silver, steel, and etc.) foil, either per se, coated on both sides, coated only on one side, or completely surrounded by a plastic such as *polyethylene*, polypropylene, *or polyethylene terephthalate (Mylar)*.")

But because Roberts discloses that the tape 17 is also made of Mylar (Roberts 4:10-14, 7:42-46, 8:6-9, 8:44-47, 9:6-9) that would therefore also form pinholes, the exposed edges of the modified metal armor shield 18 (or the proposed use of the shield 14 of Jachimowicz-036) would not be reliably isolated from the conductors 14, 16 and would therefore pose the same exact problems as the exposed edges of the metal foil 15 (*e.g.*, potential exposure to the conductors 14, 16).

Regarding Petitioner's hindsight-driven proposal to employ the "relatively thin" shield 14 in Jachimowicz-036 as the metal "armor" in Roberts, PO demonstrated that Jachimowicz-036 does not provide any support that a POSITA would understand that the shield 14, which is described as having a protective film only to provide protection against corrosion (Jachimowicz-036 Title ("Corrosion Proof Shielding Tape"), 1:46-54 ("The polyethylene shields generally satisfy the requirements of resistivity and resistance to chemicals and moisture."), 1:65-70, 3:18-45), could be used to provide the armored mechanical protection desired in and provided by Roberts' metal armor shield 18. Response 67-68. In its Reply, neither Petitioner, nor its expert, even alleged that the shield 14 in Jachimowicz-036 would be suitable for use as a *metal armor* shield. Reply 33-35. While Roberts does indicate that the metal armor would have "a thickness greater than a foil" (Roberts 4:16-17), that does not mean that "Roberts *only* requires the armor to have a

thickness greater than the foil” as alleged by Petitioner. Reply 34. Because Petitioner has not provided any evidence to support that a POSITA would understand that the shield 14 in Jachimowicz would be suitable for use as metal armor shield in Roberts, Petitioner’s proposed combination should be rejected.

Accordingly, because neither Roberts alone, nor the combination of Roberts and Jachimowicz-036, render obvious any of the Challenged Claims, Ground 7 should be rejected.

Date: August 1, 2024

Respectfully submitted,

/Denis J. Sullivan/

Denis J. Sullivan (Reg. No. 47,980)

Thomas Hoehner (Reg. No. 73,474)

BARCLAY DAMON, LLP

Email: dsullivan@barclaydamon.com

Email: thoehner@barclaydamon.com

Cory C. Bell (Reg. No. 75,096)

FINNEGAN, HENDERSON, FARABOW,

GARRETT, & DUNNER LLP

Email: cory.bell@finnegan.com

Attorneys for Patent Owner Belden, Inc.

CERTIFICATION OF COMPLIANCE WITH WORD COUNT

The undersigned hereby certifies that the foregoing PO Sur-Reply complies with the requirements of 37 C.F.R. § 42.24 and contains less than 5,600 words (5,586 words), excluding those contained in the following: Table of Contents, Table of Authorities, Grounds of Standing, Mandatory Notices, Certification of Compliance with Word Count, Certificate of Service, and the Exhibit List.

/Denis J. Sullivan /
Denis J. Sullivan (Reg. No. 47,980)
Thomas Hoehner (Reg. No. 73,474)
BARCLAY DAMON, LLP
Email: dsullivan@barclaydamon.com
Email: thoehner@barclaydamon.com

Cory C. Bell (Reg. No. 75,096)
FINNEGAN, HENDERSON, FARABOW,
GARRETT, & DUNNER LLP
Email: cory.bell@finnegan.com

Attorneys for Patent Owner Belden, Inc.

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing **PATENT OWNER SUR-REPLY** was served pursuant to 37 C.F.R. § 42.6(e) via electronic mail on August 1, 2024, on the following:

Timothy A. Lindquist (tlindquist@carlsoncaspers.com)
Dennis C. Bremer (dbremer@ carlsoncaspers.com)
William F. Bullard (WBullard@carlsoncaspers.com)
CARLSON, CASPERS, VANDENBURGH & LINDQUIST P.A.

/Denis J. Sullivan /
Denis J. Sullivan (Reg. No. 47,980)
Thomas Hoehner (Reg. No. 73,474)
BARCLAY DAMON, LLP
Email: dsullivan@barclaydamon.com
Email: thoehner@barclaydamon.com

Cory C. Bell (Reg. No. 75,096)
FINNEGAN, HENDERSON, FARABOW,
GARRETT, & DUNNER LLP
Email: cory.bell@finnegan.com

Attorneys for Patent Owner Belden, Inc.