

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMMSCOPE TECHNOLOGIES LLC,
Petitioner,

v.

BELDEN INC.,
Patent Owner.

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

PATENT OWNER RESPONSE

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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)

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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-2001	Declaration of Dr. Charles A. Eldering in Support of Patent Owner 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)

EXHIBIT	DESCRIPTION
EX-2012	Declaration of Dr. Charles A. Eldering in Support of Patent Owner 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)

I. INTRODUCTION

Patent Owner respectfully submits this Response to the Petition for *Inter Partes* Review (“IPR”) of claims 1-3, 9-14, 16-18 (the “Challenged Claims”) of U.S. Patent No. 9,991,030 B2 (“’030 Patent”) (EX-1001) and the Institution Decision (Paper 7) (“Decision”). The Petition fails to establish that the Challenged Claims are unpatentable for a number of reasons.

First, Petitioner’s alleged *anticipation* arguments (*i.e.*, Grounds 1, 3, and 5) fail to establish that any of the asserted references disclose or suggest each and every element of the challenged claims of the ’030 Patent, as the Board determined in its Decision. Recognizing this, Petitioner improperly resorted to made-up obviousness-style—not *anticipation*—theories. It also blatantly relied upon conclusory, unsupported, and erroneous *ex post facto* hindsight reasoning to try to pick and choose various claim elements from different and unrelated embodiments in the same reference, and in some cases, from multiple references that go well beyond the “four corners” of the relied upon prior art reference. Petitioner further relied upon erroneous claim construction theories that contradict its (i) own obviousness claim construction theories in this proceeding, and (ii) own construction theories in the district court case after the Petition was filed. Since all of the prior art references are missing one or more of the elements of the independent claims, the proposed anticipation grounds should continue to be rejected.

Second, the remaining alleged obviousness grounds, most of which employ as their primary reference one of the flawed anticipation references, are woefully insufficient for a host of fundamental reasons. Petitioner simply repeated the same flawed anticipation arguments and did not even attempt to use the additional secondary references to try to supply the missing claim elements. Petitioner also disregarded compelling disclosures in the asserted prior art references that expressly teach away from the proposed combinations and modifications, which would produce several disadvantages. Unable to find any prior art support for its arguments, Petitioner instead relied upon unsupported expert speculation that simply repeated *verbatim* the conclusory arguments presented by Petitioner. Such speculation should be rejected not only because it is unsupported, but worse, it is contrary to the evidentiary record. Finally, unable to articulate any rational basis for its proposed combinations and modifications, Petitioner merely speculated that certain claim elements were generally “well known,” which the Federal Circuit has repeatedly rejected as an insufficient basis to support even a *prima facie* case of obviousness, let alone an ultimate conclusion of obviousness.

The Board should reject Petitioner’s factually and legally incorrect arguments, decline Petitioner’s invitation to commit legal and factual error by making up facts and law that not only do not exist, but also are contrary to the factual record and governing Federal Circuit precedent, and conclude that Petitioner has failed to

establish that the Challenged Claims are unpatentable.

II. THE '030 PATENT

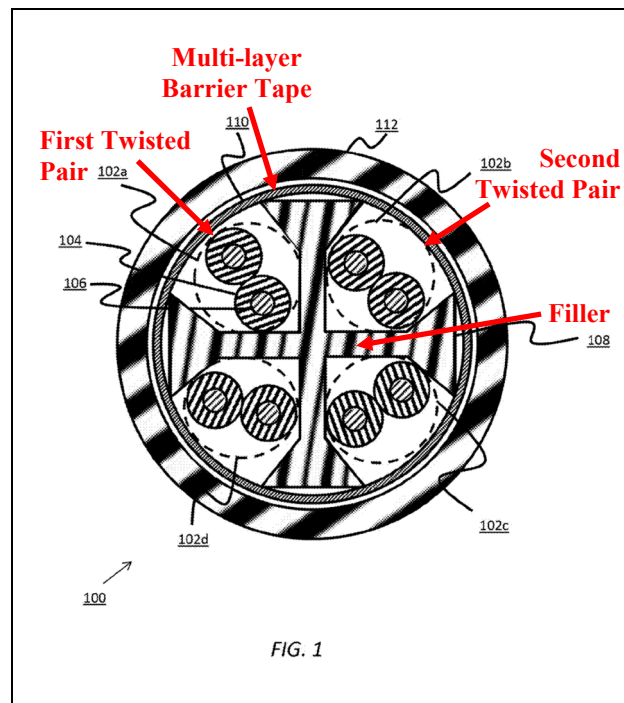
The '030 Patent is directed to the problem of “crosstalk” between adjacent twisted pairs of conductors. “[A]lien crosstalk is electromagnetic interference between adjacent cables” “with discrete signals [] in close proximity and parallel for long distances.” '030 Patent 1:44-50; Eldering¹ (EX-2001) ¶¶29-30.

The '030 Patent disclosure and claim are directed to reducing alien crosstalk between adjacent cables using a “*barrier tape*”² around helically arranged twisted pairs of conductors” and a “filler included within the cable to separate the twisted pairs and provide a support base for the barrier tape.” '030 Patent 2:22-33. Accordingly, the '030 Patent independent claims 1 and 18 each require: (i) a first (102a) and second (102b) twisted pair of insulated conductors; (ii) a filler (108) separating the first twisted pair of insulated conductors from the second twisted pair of insulated conductors; and (iii) a multi-layer conductive barrier tape (110). '030 Patent 4:48-61, 6:20-24, 7:32-34, 7:55-57, 11:26-39, 12:28-40, FIGS. 1, 3A-3E;

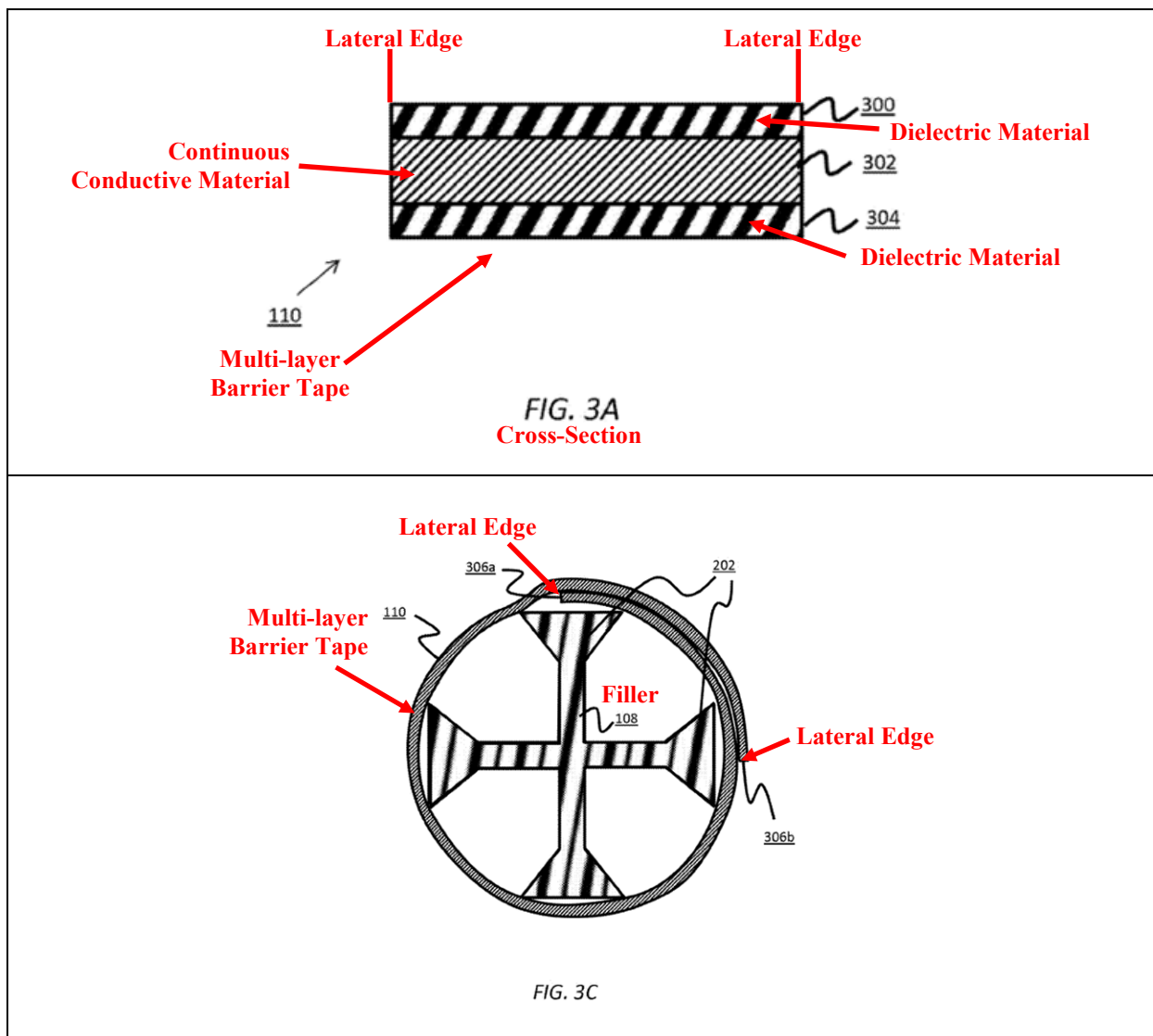
¹ “Eldering” refers to the Declarations of Dr. Charles A. Eldering in Support of (i) the Patent Owner Preliminary Response (EX-2001 ¶¶1-130) and (ii) the Patent Owner Response (EX2012 ¶¶131-178).

² All emphasis herein has been added unless otherwise noted.

Eldering ¶¶31-32.



The claimed barrier tape (110) also includes a continuous conductive material (302) contained between two layers of a dielectric material (300, 304), where the conductive material extends to each lateral edge (306a, 306b) of the two layers of the dielectric material. The barrier tape (110) also surrounds the first and second twisted pair of insulated conductors and the filler. '030 Patent 6:3-10, 7:34-54, 7:64-8:5, 11:26-39, 12:28-40, FIGS. 1, 3A-3E; Eldering ¶33.



The '030 Patent is a continuation of Application No. 14/520,125, which issued as U.S. Patent No. 9,697,929 (the "'929 Patent"). During prosecution of the parent '929 Patent, the independent claims were amended to require that (i) the barrier tape is multi-layer with a conductive material contained between two layers of a dielectric material, and (ii) the conductive material of the barrier tape extends to each lateral edge of the two layers of dielectric material. EX-2002 4-7; EX-2003 2-5.

Original independent claims 1 and 18 of Application No. 15/610,504, which

issued as the '030 Patent, included each of these limitations. EX-2005. In a first office action, the Examiner rejected the independent claims as obvious over Clark-478 (EX-1025) in view of Roberts (EX-1009) (EX-1002 ¶12), two of the primary references relied upon by Petitioner.

The Examiner relied upon Clark-478's alleged disclosure of "a multi-layer conductive barrier tape (76)" as follows:

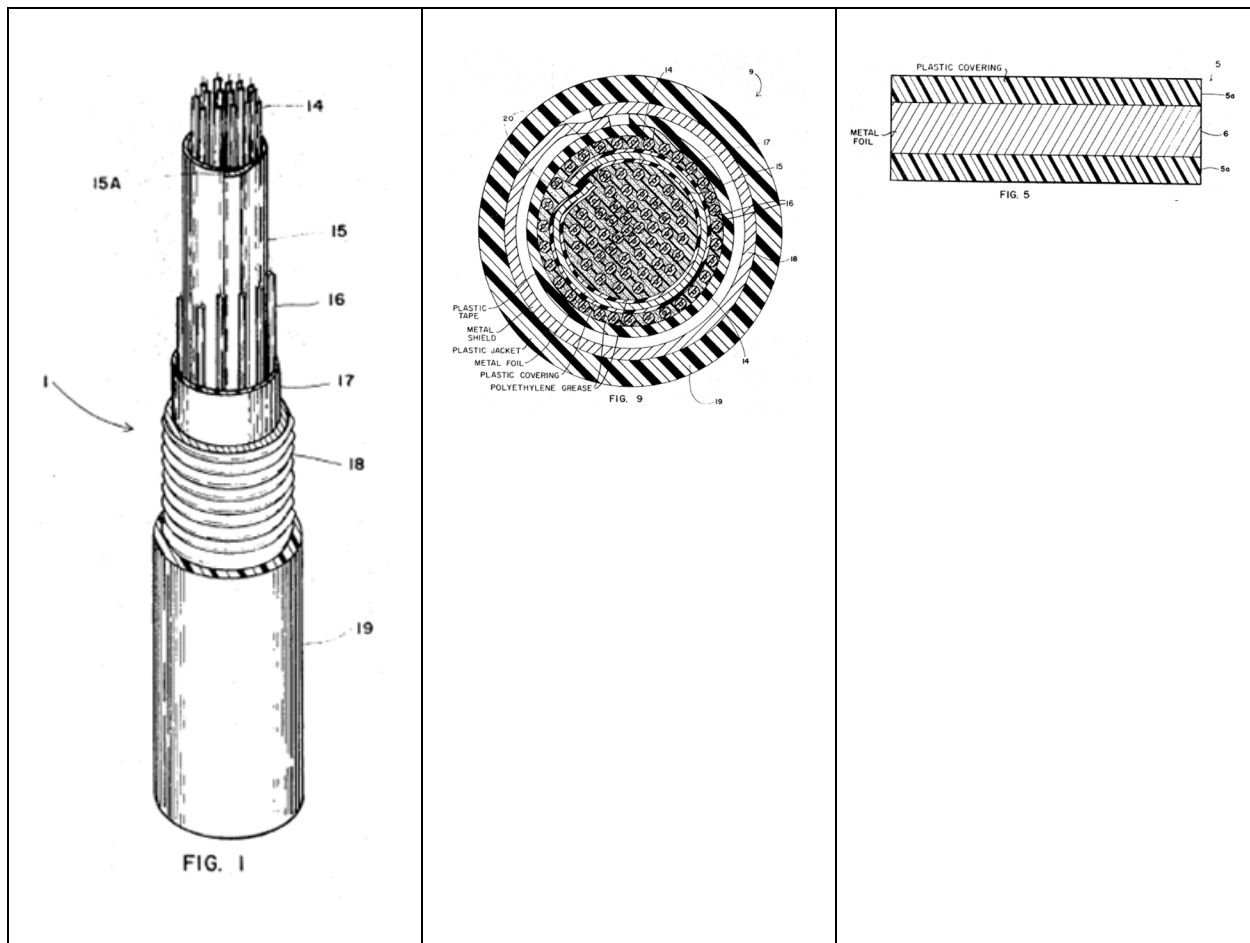
With respect to claims 1-2, Clark discloses a cable (70, Fig. 2) comprising ... a multi-layer conductive barrier tape (76) comprising a continuous conductive material (*i.e.*, aluminum) contained on a layer of dielectric material (*i.e.*, mylar, Paragraph 47), wherein the conductive material extends to lateral edges of the dielectric material (mylar) and surrounding the first twisted pair of insulated conductors (50a), a second twisted pair of insulated conductors (50b), and the filler (72).

EX-1002 7-8.³

³ Citations to Petitioner's exhibit page numbers are to its assigned page numbers.

FIG. 2

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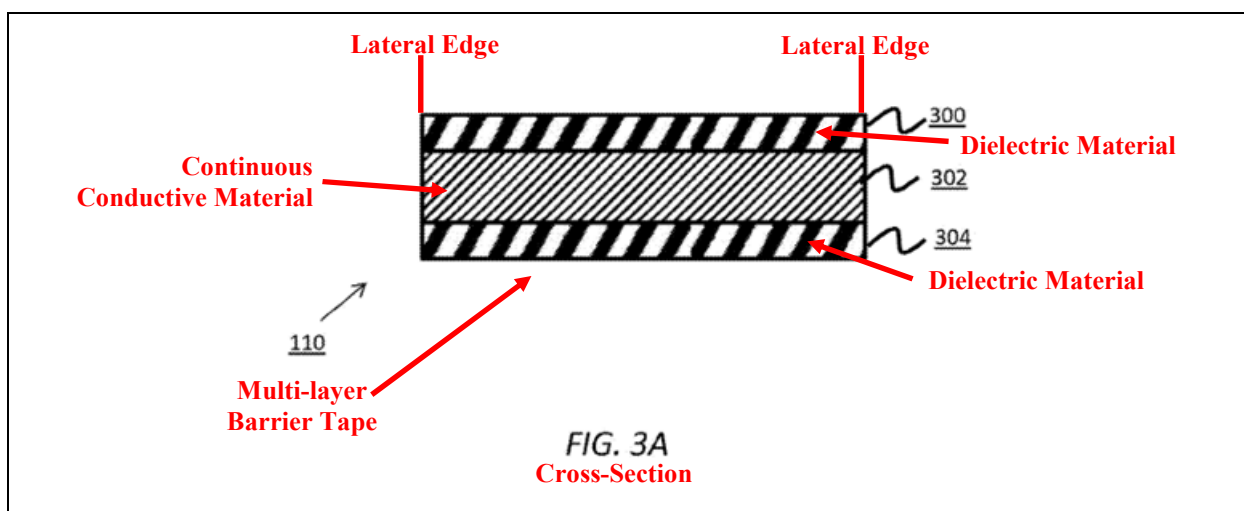


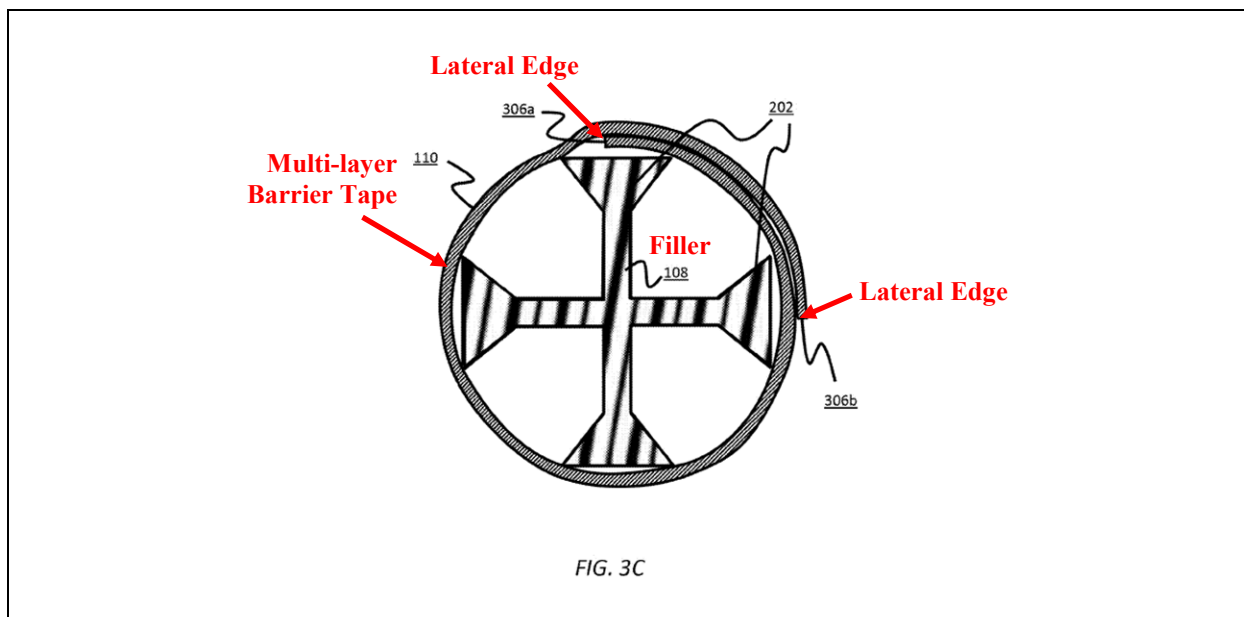
Applicant responded by distinguishing over Roberts based on how Roberts' metal foil 5, which is used for tape metal foil shield 15, was "deployed between two conductors o[f] a 'disturbing' and a 'disturbed' circuit, to prevent crosstalk between these circuits," and was not "*surrounding* the first twisted pair of insulated conductors [and] the second pair of insulated conductors" as required by the claim. EX-1003 8 (emphasis and alterations in original). After the Examiner withdrew the rejection, these original independent claims 1 and 18 issued in the '030 Patent.

III. CLAIM CONSTRUCTION

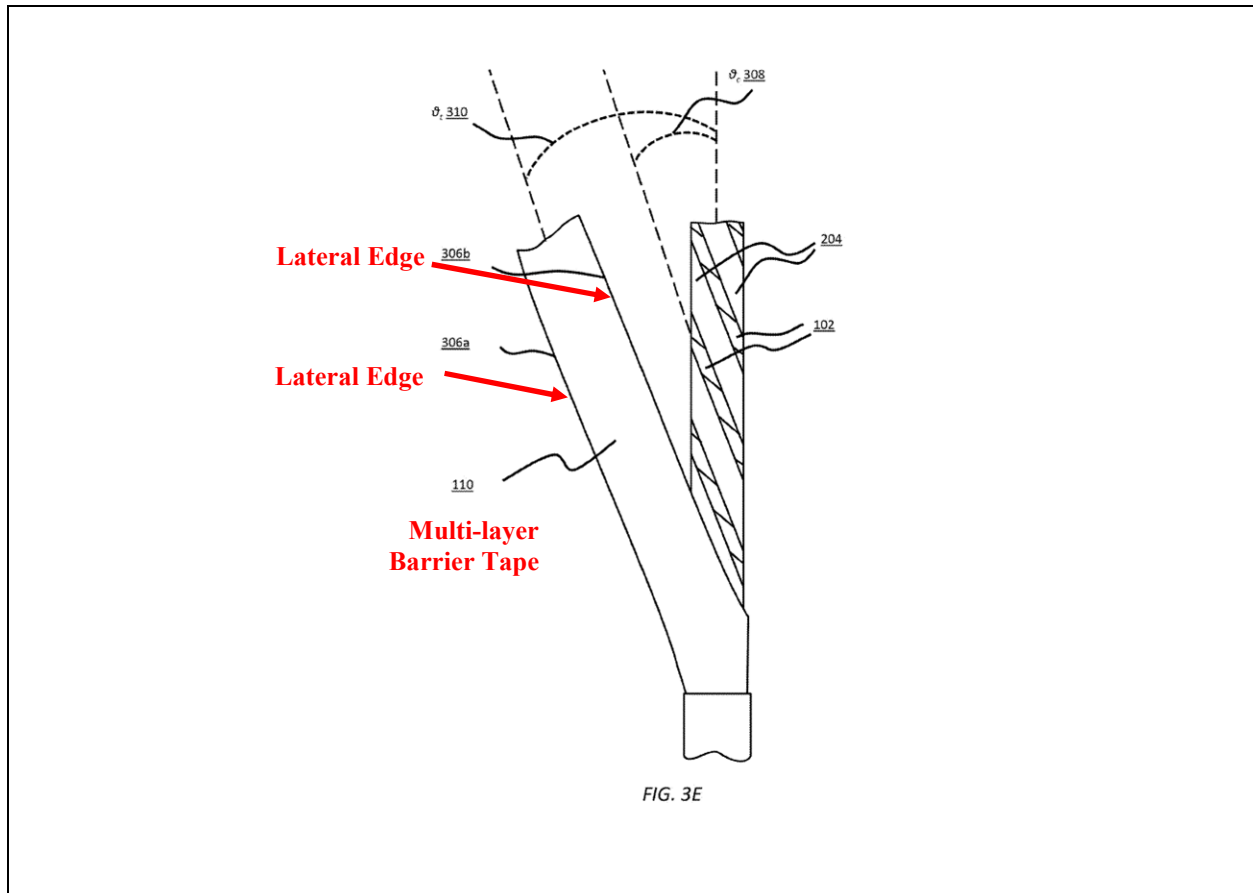
Rather than offer claim construction for any disputed terms (*i.e.*, “lateral edge”), as it was required to do under 37 C.F.R. § 42.104(b)(3), Petitioner stated that it “presently believes the plain meaning is enough to resolve this petition.” Pet. 14 n.2.

Regarding the disputed term “lateral edge,” independent claims 1 and 18 each require a multi-layer barrier tape (110) that comprises a conductive material (302) contained between two layers of a dielectric material (300, 304), where “the conductive material of the barrier tape extend[s] to each lateral edge [306a, 306b] of the two layers of the dielectric material.” ’030 Patent 6:3-10, 7:34-54, 7:64-8:5, 11:31-39, 12:28-40, FIGS. 1, 3A-3E. In addition, independent claim 1 requires that the conductive material be “continuous.” ’030 Patent 6:3-6, 7:34-37, 11:31-39, FIG. 3A; Eldering ¶35.





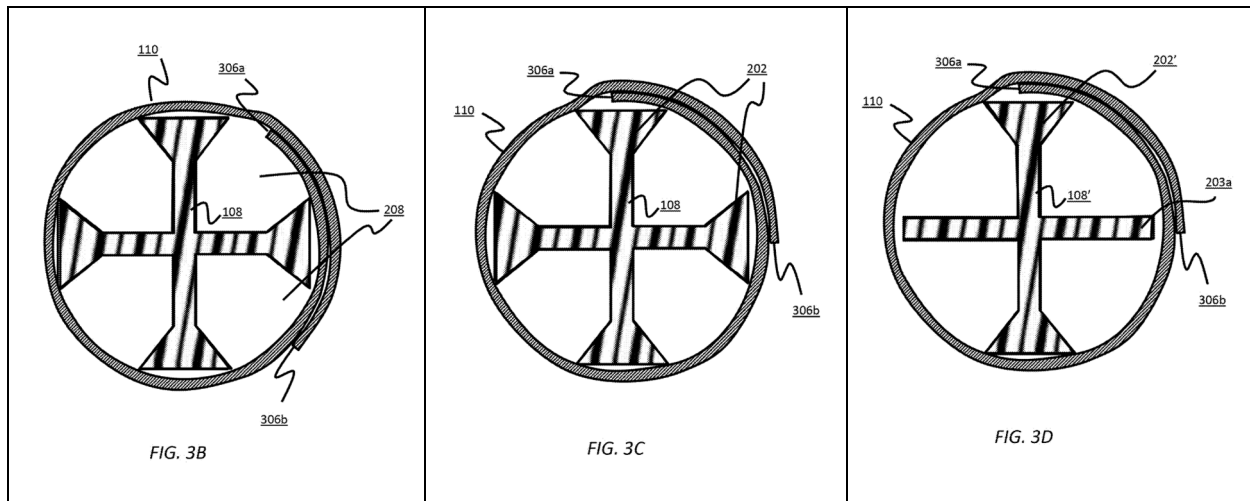
The '030 Patent specification and drawings make it clear that the relevant “lateral edge[s]” of the barrier tape are the conductive edges (306a, 306b) running along the sides of the tape parallel to (or in) the longitudinal direction and exposing the conductive material 302. '030 Patent 7:64-8:3 (“The tape 110 has a *first edge 306a* and a *second edge 306b*, referred to generally as edge(s) 306 of the barrier tape 110.”), FIGS. 3B-3E; Eldering ¶58.



Regarding the application of the barrier tape 110 shown in FIG. 3E, the '030 Patent explains that “the *tape edge 306* will continue to follow the end portion 204 of the terminal portion without ever crossing above a channel or pair 102. This prevents electrical coupling of pairs 102 to *conductive edges 306* of tape 110, and thus reduces leakage and ANEXT.” '030 Patent 8:38-46, FIG. 3E; Eldering ¶59.

Since the conductive material 302 is exposed along the conductive lateral edges 306a, 306b of the barrier tape 110, the '030 Patent teaches that these conductive lateral edges should be placed *above* the terminal portions 202 of the filler 108 (as shown in FIGS. 3C and 3D), and *not above* the channels 208 holding

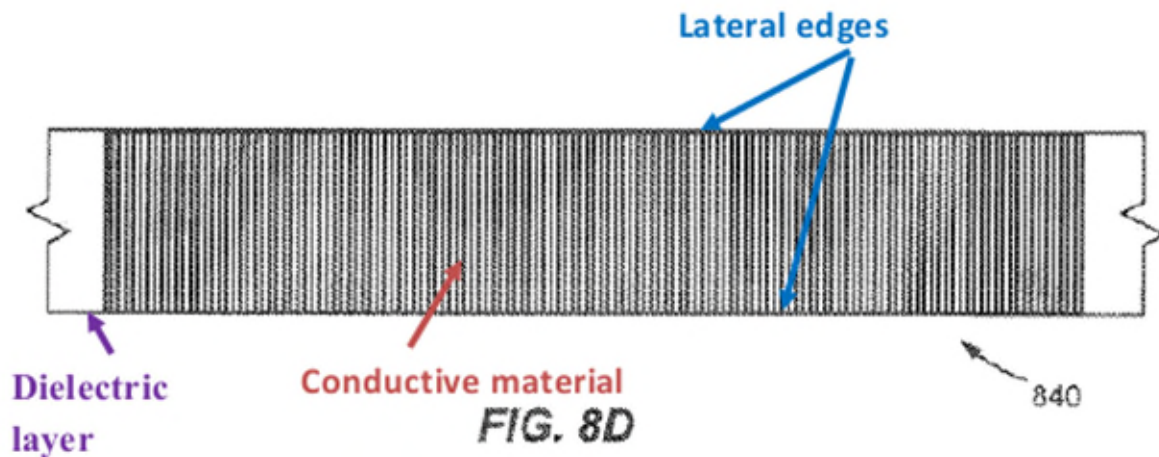
the twisted pairs (as shown in FIG. 3B), to avoid electrical coupling of the *exposed conductive lateral edges 306a, 306b* and the twisted pairs 102. '030 Patent 8:3-25, FIGS. 3B-3D; Eldering ¶¶60.



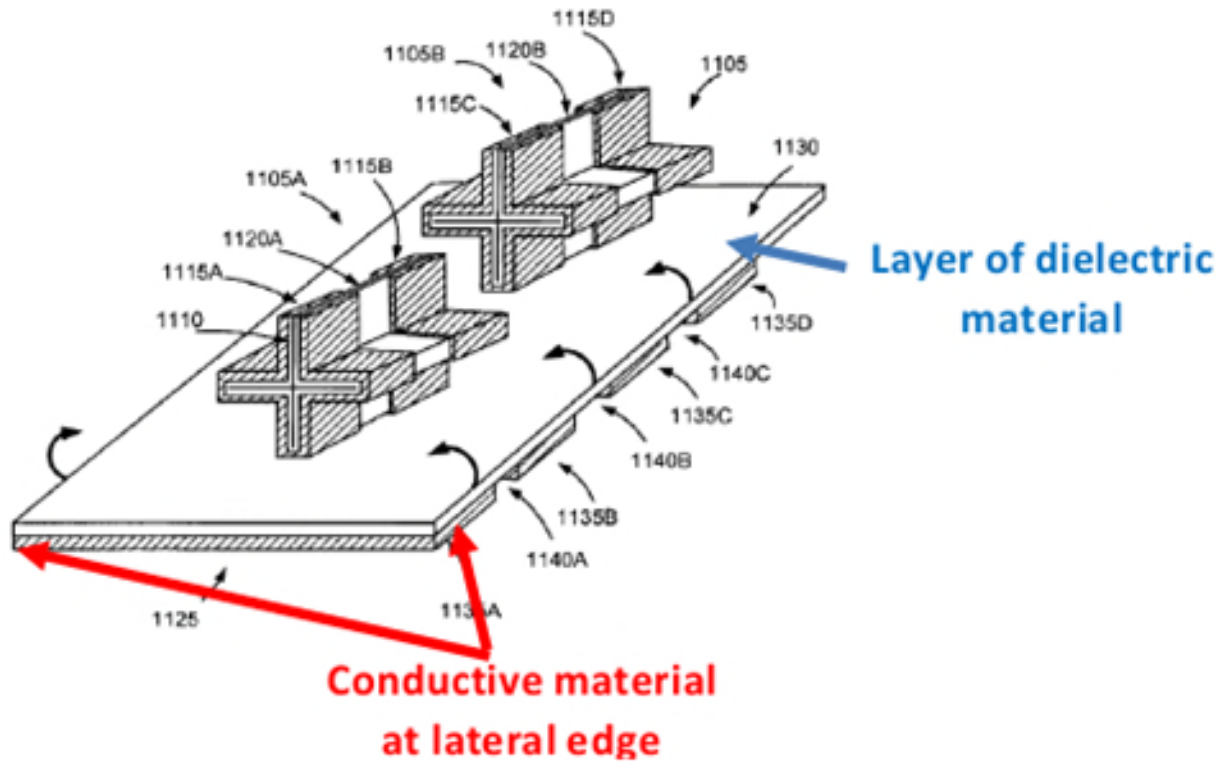
In addition to the '030 Patent specification and drawings, *where the only edges discussed or identified are lateral edges 306a, 306b*, two of Petitioner's relied upon prior art references confirm that a POSITA⁴ would understand that a tape's "lateral edges" constitute the edges running along the sides of the tape parallel to the longitudinal direction. Eldering ¶¶61.

⁴ All references to a POSITA herein refer to a "person of ordinary skill in the art" at the time of the claimed invention (2013). Eldering ¶¶23-26. As acknowledged by the Board (Decision 8), Patent Owner agrees that any differences between the parties' proposals definitions of POSITA are insubstantial and do not impact the analysis of the issues presented.

First, in Ground 1, Petitioner provided the following annotated illustration of the shield layer or separator 840 shown in FIG. 8D of Cook (EX-1010) (Pet. 20), which describes the “electrically conductive material running along a longitudinal length of the separator.” Cook 23:58-67; Eldering ¶62.



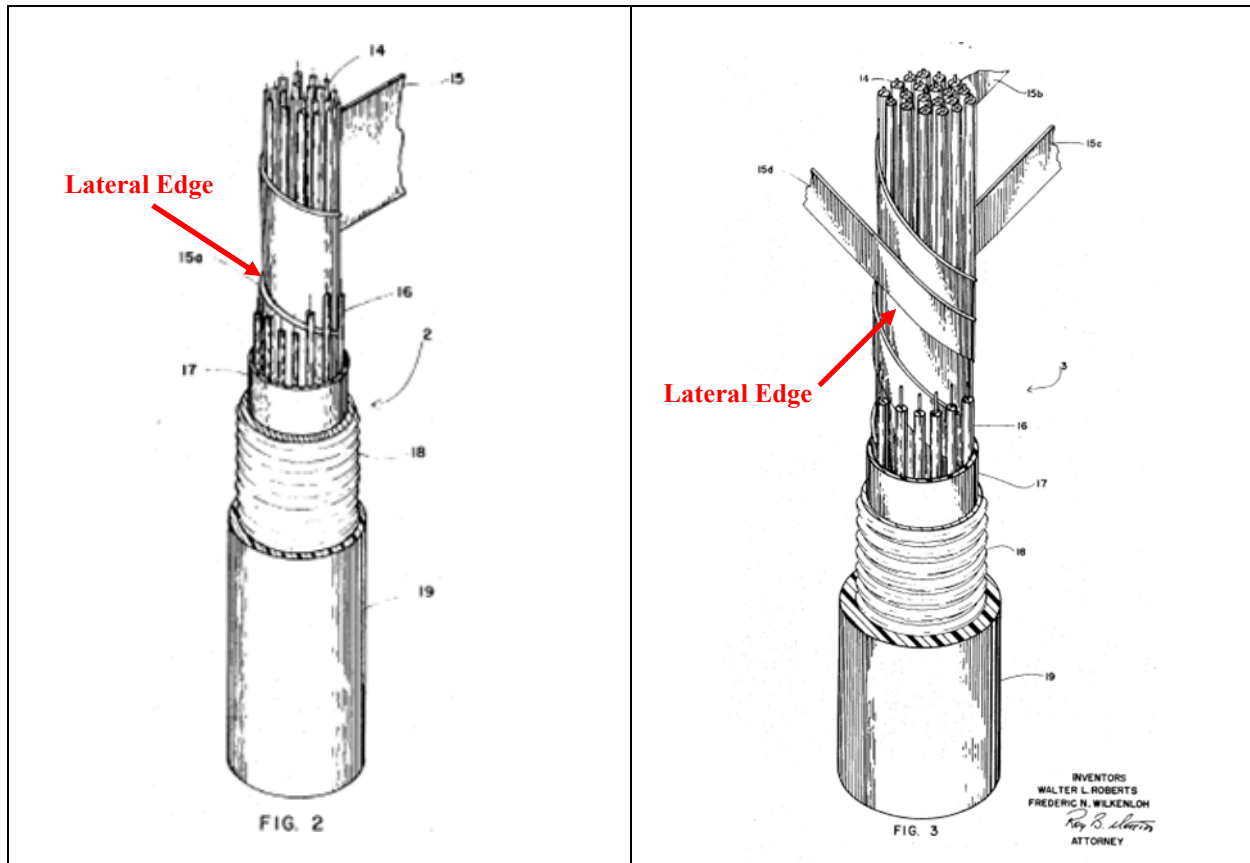
Those edges running along the side of the tape parallel to the longitudinal direction in Cook, which Petitioner labeled as “lateral edges,” are the same as lateral edges 306a, 306b disclosed and claimed in the '030 Patent. Eldering ¶63. Similarly, for Ground 1, Petitioner (Pet. 21) provided the following annotated illustration of the separator or shield layer 1125 shown in FIG. 11. Cook 25:39-63; Eldering ¶39.



As shown in FIG. 11, Cook expressly discloses that the conductive patches 1135A-D of the shield layer 1125 extend to the edges running along the side of the tape parallel to the longitudinal direction in Cook, which Petitioner labeled as “lateral edges.”

Second, another of Petitioner’s prior art references (Roberts (EX-1009)) also confirms that a POSITA would understand that a tape’s “lateral edges” constitute the edges running along the sides of the tape parallel to the longitudinal direction. For example, Roberts’ metal foil shield tapes 15 in FIGS. 2 and 3 (a cross-section of which is shown in FIG. 10) have edges running along the sides of the tape parallel to the longitudinal direction (like the conductive lateral edges 306a, 306b of the

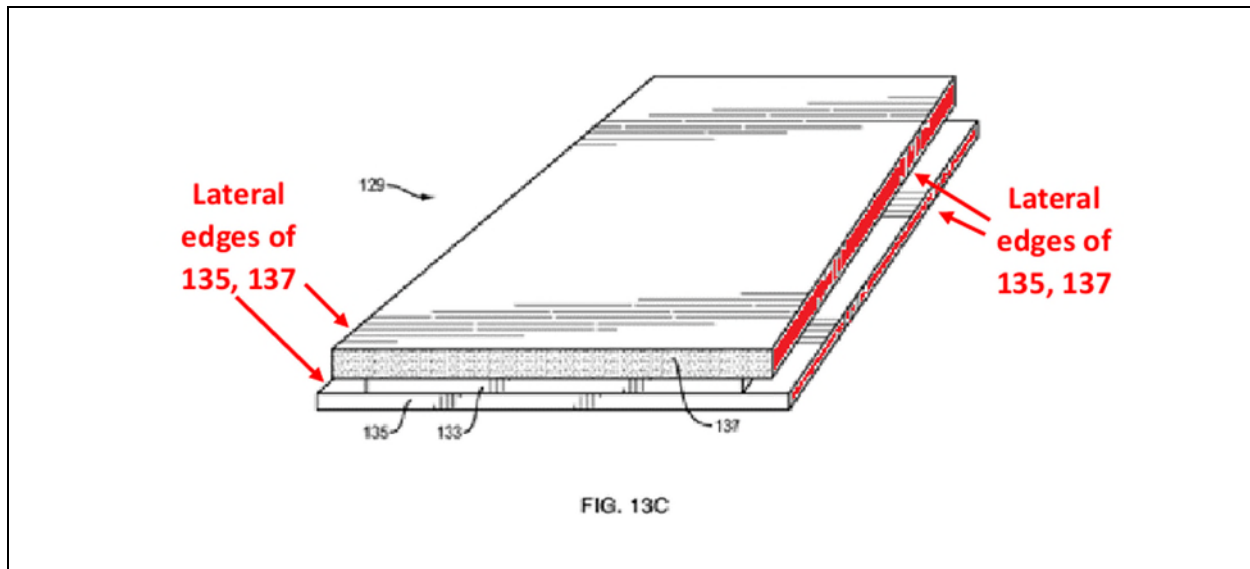
barrier tape 110 in the '030 Patent) that are described as being “lateral edges.”
Eldering ¶64.



Roberts 2:20-24 (“a shield made from a plurality of tapes helically disposed, *the lateral edges of which overlap adjacently lying tapes*”), 2:42-46 (“a shield composed of a plurality of ..., *the lateral edges of which overlap* adjacently disposed tapes”), 4:27-33 (“the plastic-coated metal foil shield (15) [FIG. 2] has *lateral edges that overlap,*” “*the lateral edges of the shield overlapping* one another. (See [15 a])”), 4:34-40 (“The *lateral edges of the helically disposed tapes [of FIG. 3] overlap adjacently lying tapes.*”), 5:65-75 (“the shield (15) [of FIG. 10] is made up of a plurality of tapes, *the lateral edges of which overlap adjacently disposed*

like tapes”), FIGS. 2, 3, 10. Accordingly, the claimed “lateral edge[s]” of the barrier tape run along the sides of the tape parallel to the longitudinal direction. Eldering ¶¶64-65.

Petitioner recognized the proper definition of “lateral edge” by providing the following annotated figure in its obviousness argument for Ground 4 that illustrates how the lateral edges in Glew (EX-1008) run along the sides of the tape parallel to the longitudinal direction. Pet. 49.



Finally, the dictionary definition of “lateral” (*i.e.*, “of, relating to, or “situated at or on the side”) supports that the claimed “lateral edge[s]” must run along the *sides* of the tape parallel to the longitudinal direction. EX-2015.

Accordingly, the claimed “lateral edge[s]” should be construed as the edges running along the sides of the tape parallel to the longitudinal direction. As acknowledged by the Board in its Decision, “Patent Owner provides reasonable

support for this interpretation in the '030 patent Specification and other references.” (Decision 23-24.)

IV. THE CHALLENGED CLAIMS ARE NOT ANTICIPATED, AS THE BOARD ALREADY DETERMINED.

Establishing invalidity by anticipation is “an especially heavy burden” for the patent’s challenger. *Koito Mfg. Co. v. Turn-Key-Tech, LLC*, 381 F.3d 1142, 1151 (Fed. Cir. 2004). “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). A prior art reference “must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements *‘arranged as in the claim’*” in order to anticipate under 35 U.S.C. § 102. *NetMoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008) (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)).

“[I]t 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.” *NetMoneyIN*, 545 F.3d at 1371. 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)). “[D]ifferences between the prior art reference and a claimed invention, however slight, invoke the question of obviousness, not anticipation.” *NetMoneyIN*, 545 F.3d at 1371.

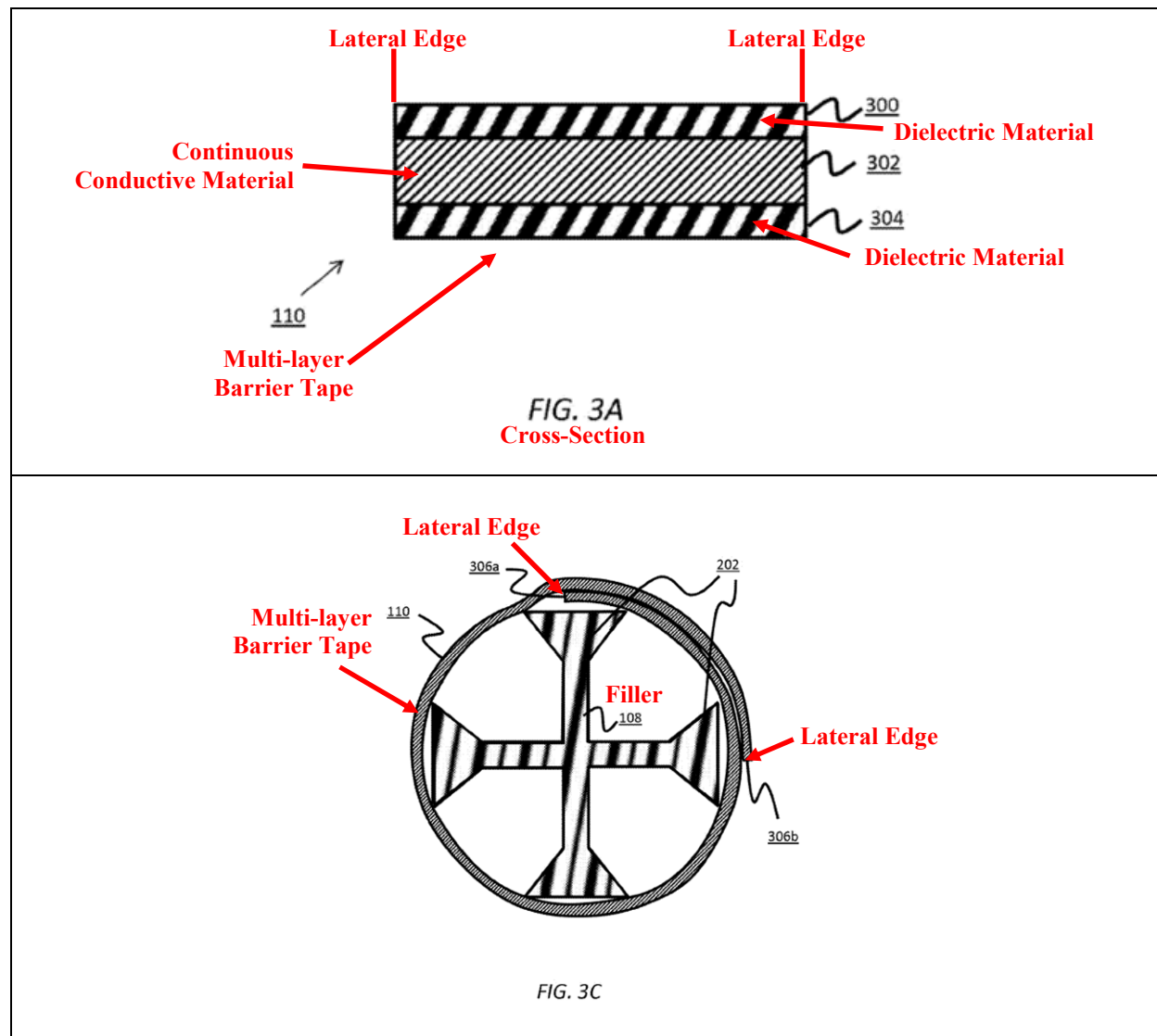
Petitioner alleged that three different prior art references (Cook (Ground 1), Glew (Ground 3), and Roberts (Ground 5)) each anticipate all of the Challenged Claims. But since each of Petitioner’s alleged anticipation grounds erroneously went well beyond the four corners of the prior art references at issue, they should continue to be rejected, *as the Board already determined in its Decision*.

A. Regarding Ground 1, Cook Fails To Anticipate Any Of The Challenged Claims, As The Board Already Determined.

1. *Cook Does Not Disclose A Barrier Tape With Continuous Conductive Material Contained Between Two Layers Of A Dielectric Material And Extending To Each Lateral Edge Of The Two Layers Of The Dielectric Material.*

Petitioner alleged that Cook (EX-1010) anticipates all of the Challenged Claims. Pet. 17-31. Independent claims 1 and 18 each require a multi-layer barrier tape (110) that comprises (i) a conductive material (302) contained between two layers of a dielectric material (300, 304), and (ii) where the conductive material extends to each lateral edge (306a, 306b) of the two layers of the dielectric material. ’030 Patent 6:3-10, 7:34-54, 7:64-8:5, 11:31-39, 12:28-40, FIGS. 1, 3A-3E. Independent claim 1 also requires that the conductive material be “continuous.”

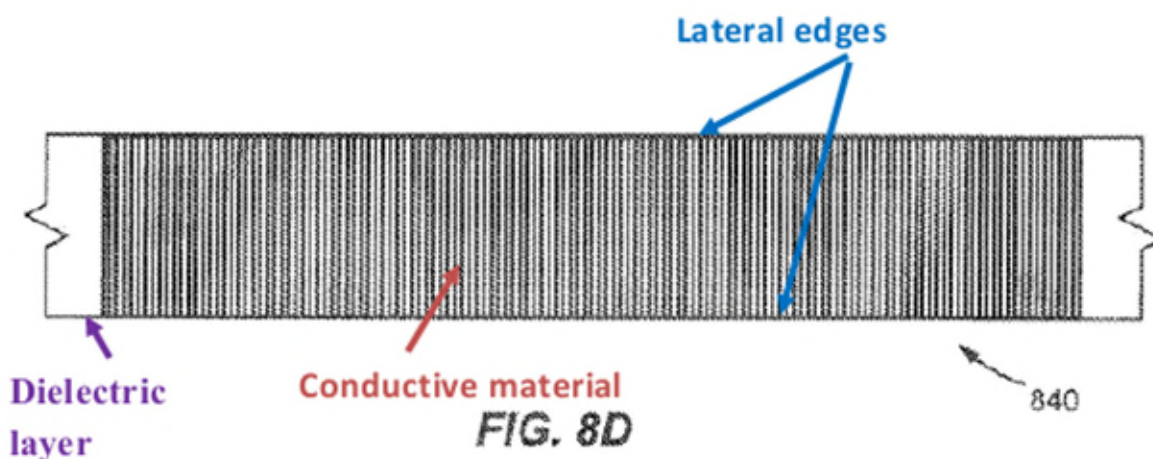
'030 Patent 6:3-6, 7:34-37, 11:31-39, FIG. 3A; Eldering ¶¶34-35.



Regarding the independent claims' requirements that the conductive material (i) be contained *between two layers of a dielectric material* and (ii) *extend to each lateral edge* of the two layers of the dielectric material, as the Board already determined, Petitioner improperly relied upon *two different embodiments* in Cook

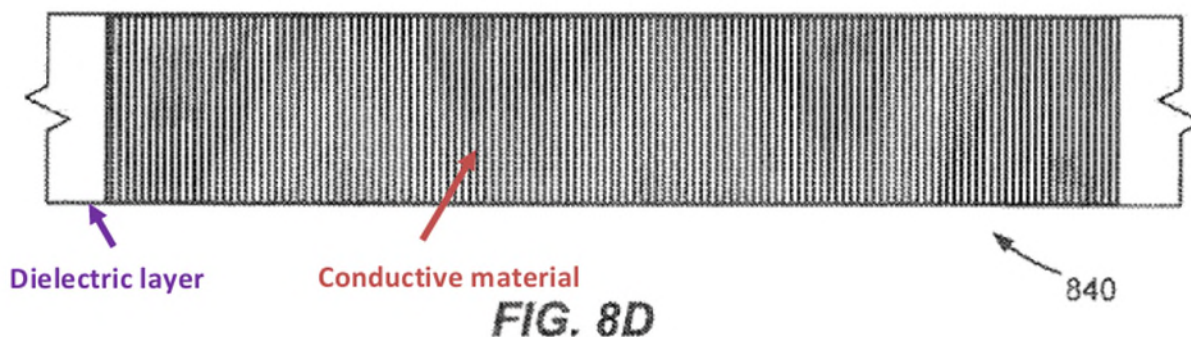
(i.e., shown in FIGS. 8D and 11). Pet. 20-22; Cornelison⁵ (EX-1006) ¶¶84-87; Decision 16 (“Petitioner relies upon a number of disparate embodiments discussed in Cook, without adequate explanation whether they are depictions of the same embodiment, or, if they are not the same embodiment, why we should accept them as such under an anticipation standard.”) But neither of these embodiments disclose, *inter alia*, a conductive barrier tape comprising a conductive material contained between two layers of a dielectric material, as required by independent claims 1 and 18. Eldering ¶35.

For example, Petitioner (Pet. 20) provided the following annotated illustration of the **two-layer** separator or shield layer 840 (i.e., a dielectric layer and a conductive material layer) shown in FIG. 8D of Cook, which is described in Cook as being “a top level (or bottom level) view.” Cook 23:58-64; Eldering ¶36.



⁵ “Cornelison” refers to the Expert Declaration of Kenneth Cornelison (EX-1006) filed by Petitioner.

Significantly, Petitioner's annotations of the lateral edges of the tape in FIG. 8D were not included in its own expert's annotations of the same figure in his report, as shown below where he did not label the lateral edges.

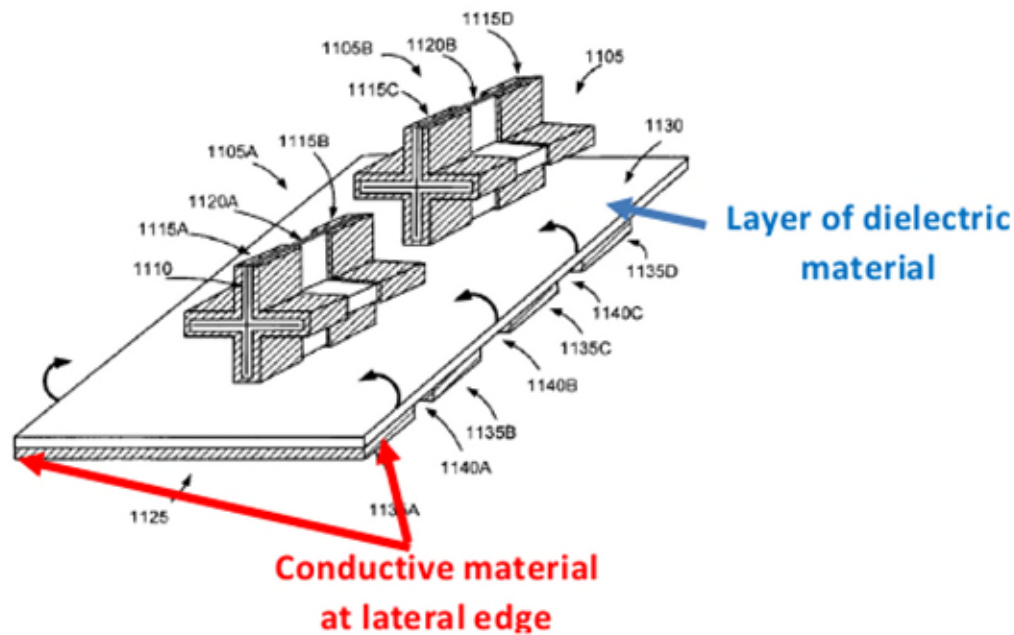


Cornelison ¶84 (no label for lateral edges). And during his deposition, Petitioner's expert admitted that, based on his current opinion expressed in the district court case that a POSITA would understand that the lateral edges of the tape were the left and right ends of the tape (*i.e.*, where the dielectric layer is labeled) and ***not*** the longitudinal edges or sides of the tape, ***he did not even agree with Petitioner's annotations of the lateral edges*** on FIG. 8D. EX-2011 53:10-61:7, 122:4-124:1; EX-2010 ¶35.

As also shown in FIG. 8D, Cook expressly discloses that the conductive material in the embodiments illustrated in FIGS. 8A-8D is formed on a ***single*** dielectric layer (*i.e.*, not between two dielectric layers). Cook 22:62-23:5. As Petitioner's expert also admitted during his deposition (EX-2011 50:2-53:2), since the conductive material is clearly visible on the surface of the ***single*** layer of

dielectric material in the top level (or bottom) level view of FIG. 8D, *the conductive material is not contained between two layers of a dielectric material*, as required by independent claims 1 and 18. Eldering ¶¶37-38.

Similarly, Petitioner (Pet. 21) provided the following annotated illustration of the separator or shield layer 1125 shown in FIG. 11. Cook 25:39-63; Eldering ¶39.

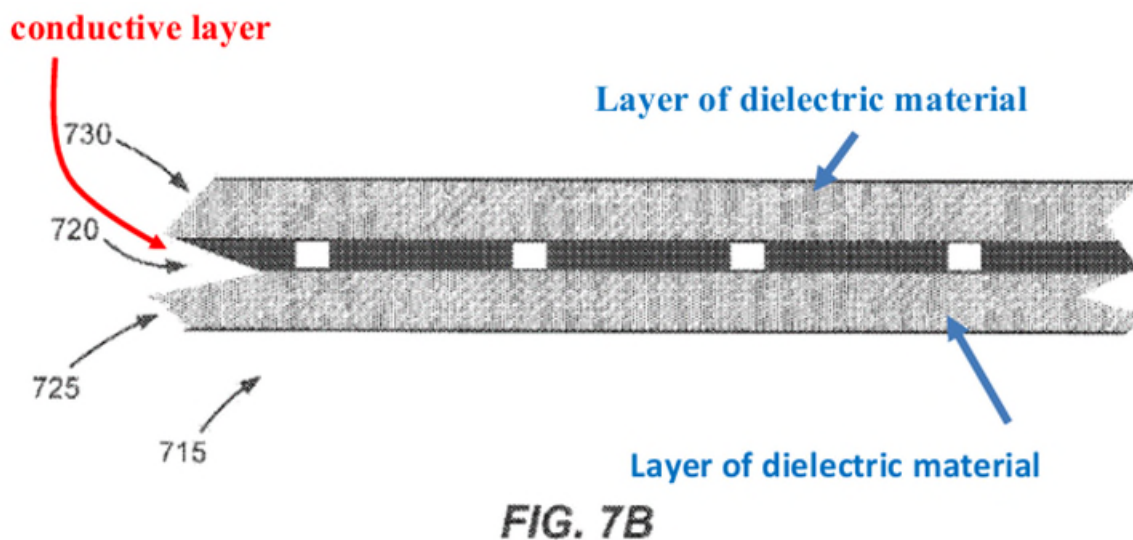


As shown in FIG. 11, Cook expressly discloses that the conductive patches 1135A-D of the shield layer 1125 are formed on a *single* substrate (dielectric) layer 1130. Cook 25:51-57. And since the conductive patches 1135A are clearly visible on the surface of the *single* substrate layer 1130 of dielectric material in the illustration of FIG. 11, *the conductive material is not contained between two layers of a dielectric material*, as required by independent claims 1 and 18. Eldering ¶¶40-41.

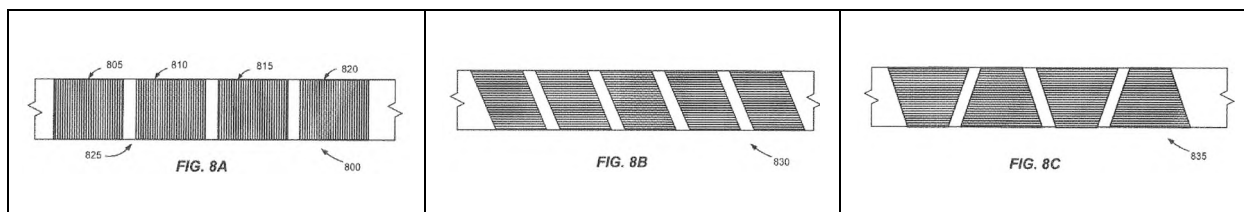
Regarding the additional requirement of independent claim 1 that the

conductive material contained between two layers of a dielectric material be *continuous*, Petitioner relied upon various embodiments in Cook (*i.e.*, shown in FIGS. 7B & 8A-8D). Pet. 19, 21-22; Cornelison ¶¶82, 87. But again, none of those embodiments disclose a continuous conductive material contained between two layers of a dielectric material, as required by independent claim 1. Eldering ¶42.

For example, Petitioner relied upon the shield disclosed in FIG. 7B of Cook, despite paradoxically admitting that it discloses “a *discontinuous* ‘electrically conductive layer 720’,” as shown in the figure below annotated by Petitioner. Pet. 19 (citing Cook 22:39-41, FIG. 7B); Eldering ¶52.

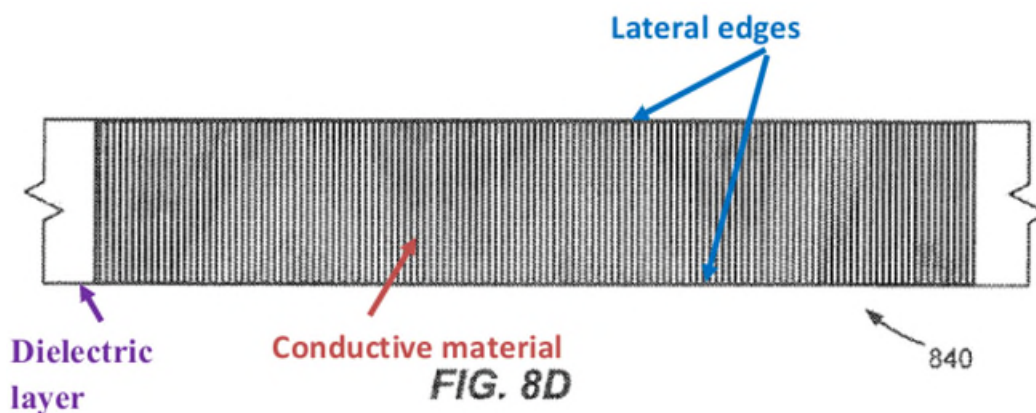


The sections of Cook (Pet. 19 (citing Cook 6:50-7:20)) cited by Petitioner refer to “a discontinuous shield,” as shown in FIGS. 8A-8C below. Cook 6:52-7:9; Eldering ¶43.



As shown above, Cook discloses that the “discontinuous” conductive material in those shield layers shown in FIGS. 8A-8C is formed on a *single* dielectric material layer (Cook 22:62-23:5) and *is not contained between two layers of a dielectric material*, as expressly required by independent claim 1. Eldering ¶¶44.

Similarly, Cook discloses that the conductive material of the shield layer 840, which is shown in FIG. 8D and annotated by Petitioner (Pet. 20, 22), is a “*relatively continuous patch* of electrically conductive material” with a dielectric end. Cook 23:58-67; Eldering ¶¶48-49.



As shown in FIG. 8D, Cook discloses that the “relatively continuous patch” of conductive material is formed on a *single* layer of dielectric material (Cook 22:62-23:5) and *is not contained between two layers of a dielectric material*, as expressly

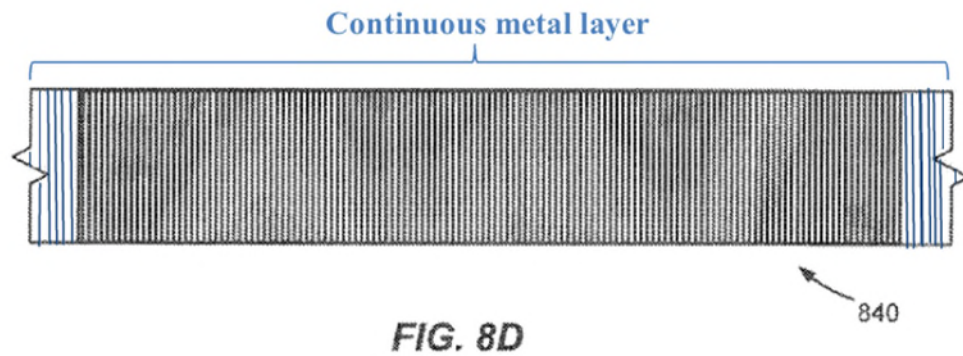
required by independent claim 1. Eldering ¶51.

As the Board already determined (Decision 16-17), since Cook does not disclose any shield layer (or barrier tape) with conductive material contained between **two layers** of a dielectric material **and** extending to each lateral edge of the two layers of the dielectric material, Cook cannot anticipate independent claims 1 and 18 or any of the dependent claims. Eldering ¶53; *see NetMoneyIN*, 545 F.3d at 1371 (reversing anticipation finding based on combining parts of two separate embodiments to meet all of the claim elements, when neither embodiment alone contained all of the elements). And since Cook also does not disclose any shield layer (or barrier tape) with **continuous** conductive material contained between two layers of a dielectric material, Cook cannot anticipate independent claim 1 or any of the dependent claims for that additional reason. Eldering ¶54. Accordingly, Petitioner’s blatant picking and choosing of different features from different embodiments, without any explanation regarding how or why the features would be combined, cannot support its proposed anticipation Ground 1.

2. *Cook’s “Relatively Continuous” Conductive Layer Of Fig. 13D Is Not Continuous And A POSITA Would Be Discouraged From Making It Continuous, As Evidenced By Cook’s Own Teachings And Petitioner’s Expert’s Own Patent.*

Despite proffering an anticipation theory, Petitioner improperly attempted to rely on an obviousness-style theory by proposing to modify the shield layer 840 disclosed in FIG. 8D to try to provide the missing “continuous” conductive material

“instead of being discontinuous patches,” as shown in FIG. 8D, thus paradoxically admitting that FIG. 8D does *not* disclose a continuous conductive material after all, as shown in the figure below annotated by Petitioner. Pet. 21-22; Cornelison ¶¶87; Eldering ¶50.



In fact, neither Petitioner, nor its expert, even alleged that the “*relatively* continuous shield” disclosed in FIG. 8D was “continuous.” Instead, they only relied upon the figure to allegedly illustrate that the conductive material extended to the lateral edges of the dielectric layer (*i.e.*, a different claim element) under their misinformed claim interpretation of “lateral edge[s].” Pet. 20-22; Cornelison ¶¶84, 87.

A POSITA, reading the entirety of Cook, *including other related patents incorporated by reference*, also would be discouraged from making the “*relatively* continuous” conductive layer of shield 840 continuous (or understanding that it was continuous). *See Arbutus Biopharma Corp. v. Modernatx, Inc.*, 65 F.4th 656, 662-663 (Fed. Cir. 2023) (“When a reference or material from various documents is

incorporated, they are ‘effectively part of the host documents as if [they] were explicitly contained therein.’”) (quoting *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000); Eldering ¶¶45-47, 150-156.

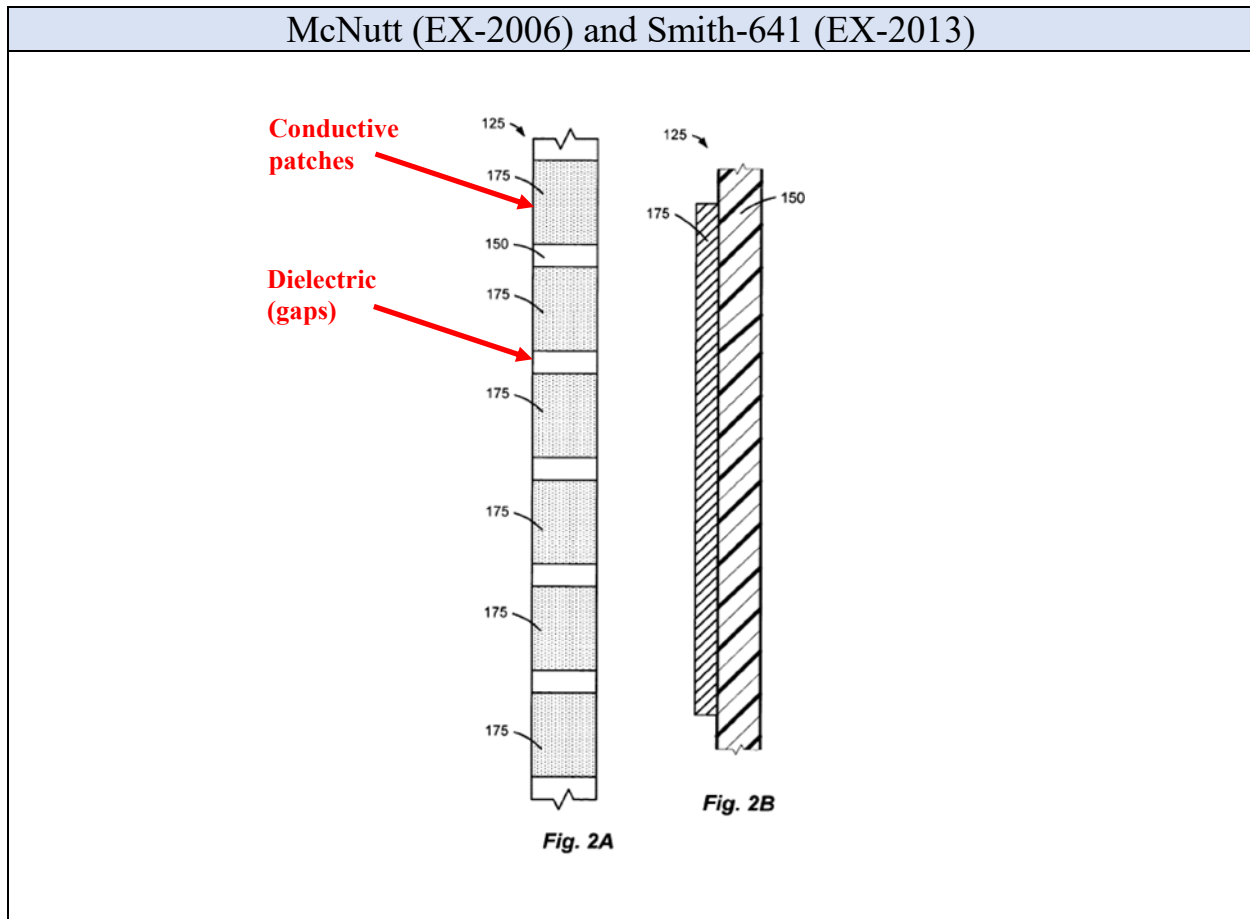
For example, Petitioner relied upon Cook’s teachings at column 6, line 50 to column 7, line 20 (Pet. 19), that incorporates by reference two other U.S. patent applications (*i.e.*, U.S. Patent Application No. 12/653,804 that issued as U.S. Patent No. 8,450,606 (“McNutt”) (EX-2006) and U.S. Patent Application No. 12/313,914 that issued as U.S. Patent No. 7,923,641 (“Smith-641”) (EX-2013)). Both applications, which issued into patents and share a common inventor to Cook (Christopher W. McNutt), not only teach the benefits of a ***discontinuous*** shield, which is the antithesis of a ***continuous*** shield, they demonstrably teach away from using a ***continuous*** shield because of various continuous shield disadvantages or complications. Eldering ¶¶45, 150-151.

For example, both patents teach that various disadvantages or “***complications can arise*** when a cable is encased by a ***shield that is electrically continuous*** between the two ends of the cable.” McNutt 1:63-2:4; Smith-641 1:42-50. One complication is that the “continuous shield can ***inadvertently carry voltage*** along the cable” such that “[i]f a person contacts the shielding, the person ***may receive a shock*** if the shielding is not properly grounded.” McNutt 2:5-15; Smith-641 1:51-61. Another complication is that “a continuous shield can also set up ***standing waves of***

electromagnetic energy based on signals received from nearby energy sources” that “can radiate electromagnetic energy, somewhat like an antenna, that *may interfere with* wireless communication devices or other sensitive equipment operating nearby. McNutt 2:16-21; Smith-641 1:62-67; Eldering ¶¶46, 152.

To avoid these “complications” of using a continuous shield, these teachings, which are incorporated by reference into Cook, center on the use of a tape that “can be a shield that is *electrically discontinuous* or exhibits a high level of resistance between opposite ends of a cable.” McNutt 2:39-60, Abstract (“patches of electrical conductive material ... provide a shield that is *electrically discontinuous*”), 2:26-31 (“effectively suppresses crosstalk and/or other interference *without providing an electrically conductive path* between opposite ends of the cable”), 3:30-34, 4:20-36 (“The present invention supports shielding a communication cable, wherein at least one *break or discontinuity in a shielding material* electrically isolates shielding at one end of the cable from shielding at the other end of the cable.”), 5:12-15, 6:10-20, 6:35-42 (“each patch 175 is *electrically isolated* from the other patches 175. That is, the respective physical separations between the patches 175 can impede the flow of electricity between adjacent patches 175”), 8:28-30 (“the segmented tape 125 encircles or encases the conductors 105 in *discontinuous*, conductive patches”), 11:8-12 (“an *electrically discontinuous shield* that protects against electromagnetic interference”), FIGS. 2A-2B; Smith-641 Title (“Communication Cable Comprising

Electrically Isolated Patches Of Shielding Material”), Abstract, 2:15-45, 2:66-3:3, 3:48-54; 3:58-63, 4:36-39, 5:18-28, 5:43-50, 7:32-34, 10:16-20, FIGS. 2A-2B; Eldering ¶¶47, 153.



In fact, Petitioner’s expert’s own patent (U.S. Patent No. 8,927,866) (EX-2014) (“Cornelison Patent”) extolled the advantages of the use of a *discontinuous* conductive layer. EX-2014 Abstract (“*discontinuous* conductive segments”), 1:45-52 (“while gaps between the conductive segments reduce the emission of electromagnetic energy from the conductive material and also reduce the susceptibility of the conductive material to radiated electromagnetic energy”), 2:60-

3:13, 3:21-24 (“two barrier layers 35 and 37 of *discontinuous* conductive material are used”), 3:31-33 (“The *discontinuous* nature of the conductive segments 34 and 38 reduces or eliminates radiation from the barrier layers 35 and 37”), 4:43-47, FIGS. 2-4; Eldering ¶155.

Accordingly, a POSITA reviewing the teachings of Cook as a whole, including McNutt and Smith-641, which are both incorporated by reference, would not understand that a so-called “*relatively* continuous shield,” which in reality is made with a “*patch*” of conductive material, could somehow constitute a continuous shield (and would be discouraged from making such a so-called “relatively continuous shield” shown in FIG. 8D into a continuous shield). Eldering ¶¶150-156. *Polaris Indus. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1069 (Fed. Cir. 2018) (“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.”) Petitioner’s invitation to commit legal and factual error by making up facts that do not exist in reality, such as by somehow concluding that FIG. 8D discloses a continuous conductive layer when in reality it teaches the opposite—a discontinuous layer—must be rejected,. *See Cheese Sys., Inc. v. Tetra Pak Cheese and Powder Sys., Inc.*, 725 F.3d 1341, 1351 (Fed. Cir. 2013) (“Without a clear and unambiguous teaching, a jury could only speculate, hardly a compelling case for anticipation.”);

see also 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”⁶

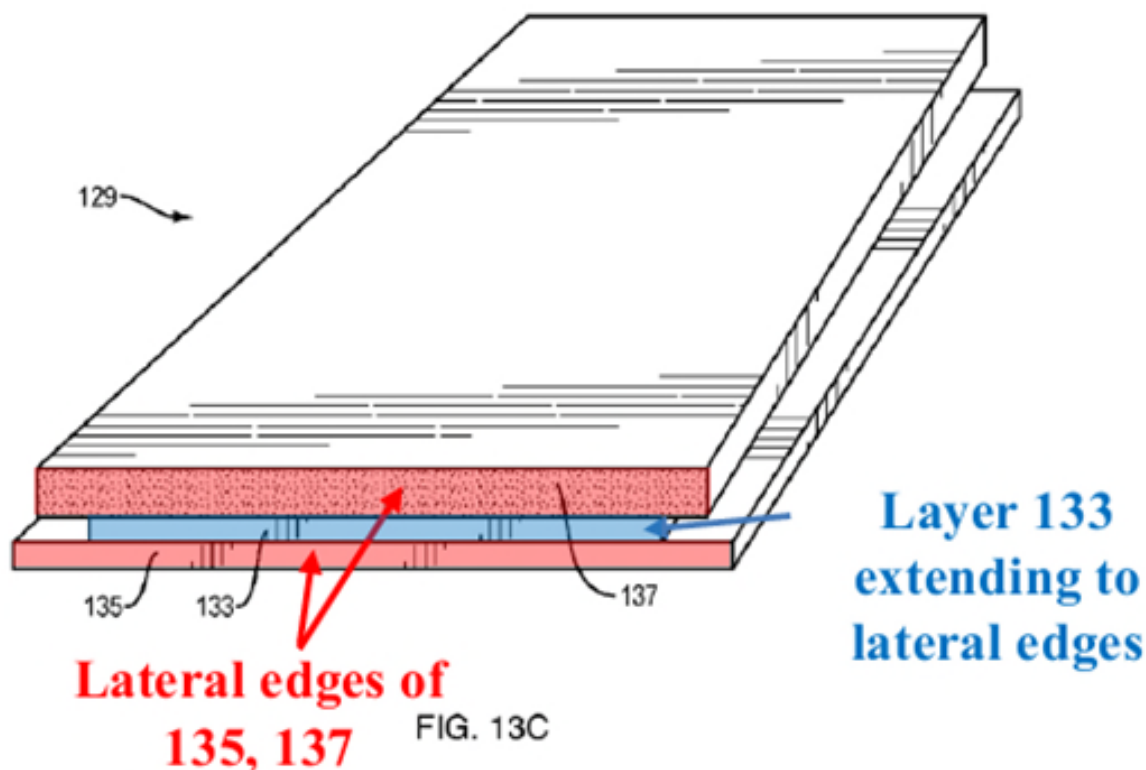
B. Regarding Ground 3, Glew Fails To Anticipate Any Of The Challenged Claims, As The Board Also Already Determined.

1. *Under The Proper Claim Construction Of “Lateral Edge,” Glew Does Not Disclose A Barrier Tape With Conductive Material Extending To Each Lateral Edge Of Two Layers Of Dielectric Material.*

Petitioner alleged that Glew (EX-1008) anticipates all of the Challenged Claims. Pet. 34-48. In doing so, Petitioner employed two different interpretations of “lateral edge[s],” which should be construed as the edges running along the sides of the tape parallel to the longitudinal direction, as explained in the Claim Construction section above (*supra* §III).

⁶ Ground 2 alleged that dependent claim 11, which depends from claim 1, is rendered obvious by the combination of Cook and/or Glew. Pet. 31-33. As the Board already determined (Decision 17), since Ground 2 only focused on the additional claim element(s) added in claim 11 and did not even attempt to remedy Cook’s failure to disclose the missing elements of independent claims 1 and 18, it should also be rejected. Elderling ¶55.

First, Petitioner improperly disregarded a POSITA's understanding of the claimed "lateral edges" in erroneously annotating the lateral edges FIG. 13C in Glew, as shown below, to instead be the front and back edges of the dielectric layers.

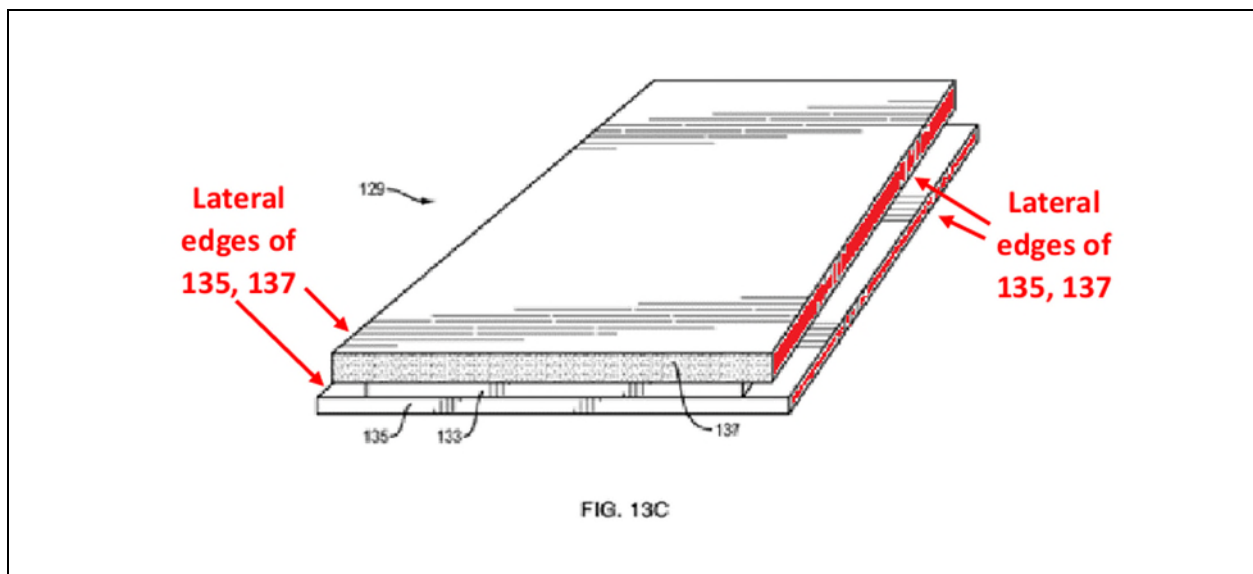


Pet. 37; Eldering ¶66.

Without offering any claim construction for the term "lateral edge," as it was required to do under 37 C.F.R. § 42.104(b)(3), Petitioner and its expert merely speculated that "the metallic layer 133 [in Grew] extends to *the front edges of dielectric layers 135 and 137, which can be considered "lateral edges" of these two dielectric layers*" Pet. 37; Cornelison ¶136; EX-2011 66:6-67:5. But as explained above, since the "lateral edge[s]" of Glew's tape 129 are the edges running

along the sides of the dielectric layers 135, 137 parallel to the longitudinal direction, the “front edges” of the tape 129 in FIG. 13C identified by Petitioner cannot constitute such lateral edges, *but instead merely constitute the ends of the tape* or the cross-section prior to the ends of the tape. Eldering ¶67.

Tellingly, Petitioner acknowledged this fact by providing the following annotated figure later in the Petition in its obviousness argument that illustrates how the actual lateral edges in Glew are the edges running along the sides of the tape parallel to the longitudinal direction.



Pet. 49; Cornelison ¶174.⁷ Decision 23-24 (“Petitioner’s inconsistent position on

⁷ During his deposition, Cornelison admitted that he does not agree with Petitioner’s annotations of the side or longitudinal edges as the lateral edges on Glew FIG. 13C in his declaration (Cornelison ¶174), undermining Petitioner’s

the interpretation of the ‘lateral edge’ term among its Grounds 1, 3, and 4 arguments undermines its position as to the interpretation of the term.”). Applying the proper construction of “lateral edge,” as understood by a POSITA, Petitioner’s erroneous and speculative anticipation theory should be rejected because Glew’s metallic foil layer 133 does not extend to the lateral edges of the dielectric layers 135, 137, as the Board already determined (Decision 23-24). Eldering ¶¶68-69, 73.

2. *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.*

Recognizing the deficiencies in its theory that the ends of the tape shown in FIG. 13C were somehow the lateral edges (which they are not), Petitioner next improperly offered an obviousness-style theory, speculating that the metallic foil 137 might somehow extend to the actual lateral edges of the dielectric layer (Pet. 37-38) despite the fact that, in reality, FIG. 13C clearly and unmistakably shows that the width of the metallic foil layer 137 is less than the width of the dielectric layers 133, 135. Petitioner speculated that since FIG. 13C is described as “schematic,” as is the case for all thirty-four of the detailed patent figures shown in Glew (Glew ¶¶[0054]-[0087]), the figures do not show what they, in reality, do show. Eldering ¶70.

positions. EX-2011 61:8-65:21.

For example, Petitioner speculated that, even though FIG. 13C (and FIGS. 13A, 13B, and 13D) **actually show** metallic and dielectric layers of different widths offset relative to each other, a “POSITA would understand that the figure is intended to identify and illustrate the three different layers of the multi-layer tape, **not to show** that these layers must be or are intended to be offset relative to each other when the tape is employed in a cable.” Pet. 37-38. Incredulously, Petitioner’s expert even alleged that “a POSITA would not view FIG. 13C of Glew as disclosing only a tape that has three layers with varying widths” (Cornelison ¶137)—even though FIG. 13C actually depicts “a tape that has three layers with varying widths.”

Petitioner also speculated that a “POSITA would understand that when a three-layer tape, such as shown in FIG. 13C, is manufactured for use in a cable, the three layers would be aligned along the side edges.” Pet. 38 (citing Cornelison ¶¶137-138); Eldering ¶71. As an initial matter, Petitioner’s reliance on its expert’s speculative testimony (Cornelison ¶¶137-138), which in turn points to a video and other prior art references (EX-1037 and Ex-1038), is impermissible for its proposed Ground 3 **anticipation** challenge based on Glew. *See Cont’l Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1267 (Fed. Cir. 1991) (“When more than one reference is required to establish unpatentability of the claimed invention anticipation under § 102 can not be found, and validity is determined in terms of § 103.”). Petitioner’s speculation that FIG. 13C discloses a continuous conductive layer extending to each

lateral edge despite showing the opposite in reality should be rejected. *See Cheese Sys.*, 725 F.3d at 1351.

And even if the Board were to consider extraneous materials outside of the four corners of Glew, such materials contradict Petitioner's theory that Glew FIG. 13C does not actually show what it, in reality, does show (*i.e.*, that the metallic foil layer 133 does ***not*** actually extend to the lateral edges of the dielectric layers 135, 137). Eldering ¶72.

For example, Petitioner alleged that *other tapes* are "***typically***" (*i.e.*, not always) manufactured with layers having the same width. Pet. 38. But Petitioner expressly admitted that tapes where each layer had a different width, as shown in every tape in FIGS. 13A-13D in Glew, could be made. Pet. 38; Eldering ¶72. Indeed, as admitted by Petitioner's expert (EX-2011 85:13-88), Glew expressly discloses that several different conventional manufacturing techniques could be used to manufacture the tape shown in FIG. 13C with different widths for the three layers. Glew ¶¶[0195], [0199] ("The multi-layer tapes discussed above can be manufactured in a variety of ways.").

The various layers, e.g., polymeric substrate layer, nonwoven fabric layer, and metallic layer ***can be bonded to their adjacent layer using various techniques***. In some embodiments, the layers can be bonded using an ***adhesive or other bonding agents***. In other embodiments, the layers can be ***mechanically affixed or bonded to one another***. For

example, the metallic layer can be joined to a nonwoven layer by **needlepunching**, as discussed in more detail below. For another example, the polymeric layer and/or the nonwoven fabric layer can be **thermally bonded** to each other or to the metallic layer by selectively heating portions of the layers to a temperature sufficient to melt the polymer components, e.g., by **ultrasonic welding or calender bonding**. Glew ¶[0199].

In other examples, the polymeric layer and/or the nonwoven fabric layer can be thermally bonded to each other or to the metallic layer by **ultrasonic bonding**. For example, the layers of material can be drawn between a horn, which provides high frequency sound waves, and a rotary calendar, referred to as an anvil. The sound energy can generate localized heat through mechanical vibration at the embossing points of the anvil, thereby fusing the material. Glew ¶[0200].

Eldering ¶160.

Moreover, the prior art references cited by Petitioner and its expert for the disclosure of the allegedly advantageous slitting process (Smith-039 (EX-1037) and Cook-794 (EX-1038)) disclose manufacturing tapes with a **discontinuous** metallic layer and do not disclose the **continuous** metallic layer tape shown in FIG. 13C of Glew. Eldering ¶¶161-164. Petitioner's own prior art reference, Roberts, also confirms that Glew's design in FIG. 13C, where the edges of the **continuous** conductive material did **not** extend to the lateral edges of the dielectric layers (*i.e.*, a "foil free edge" design), was intentional and had significant advantages that would

be lost if it were modified as suggested by Petitioner. Eldering ¶88.

As Roberts teaches, 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, as claimed in the ’030 Patent:

It is also an embodiment of the instant invention to employ as *a shield, a metal foil which is completely surrounded on all sides by a plastic coating*, e.g., an aluminum foil, completely surrounded by polyethylene terephthalate (Mylar), polyethylene, polypropylene, polystyrene or PVC. *An aluminum foil, which is coated only on its two major surfaces with a plastic, still has exposed naked aluminum surfaces at the edges thereof. When considering a cable of many miles in length, this amount of exposed conductive metal becomes significant.* Therefore, the instant invention takes this into account in one of two ways: the first way is to employ a metal foil which is completely surrounded by plastic. As an example, such a foil would be envisioned as being aluminum with the plastic covering being polyethylene terephthalate (Mylar). Another way to mitigate *undesirable electrical properties created by having an exposed surface (edge) of metal to the electrical conductors* is to fill that portion of the space created by the plastic-coated metal foil shield not otherwise occupied by the electrical conductors therein with a polyethylene greaselike material. This greaselike material acts as both a dielectric protection, as well as an inhibitor of any subsequent incoming moisture.

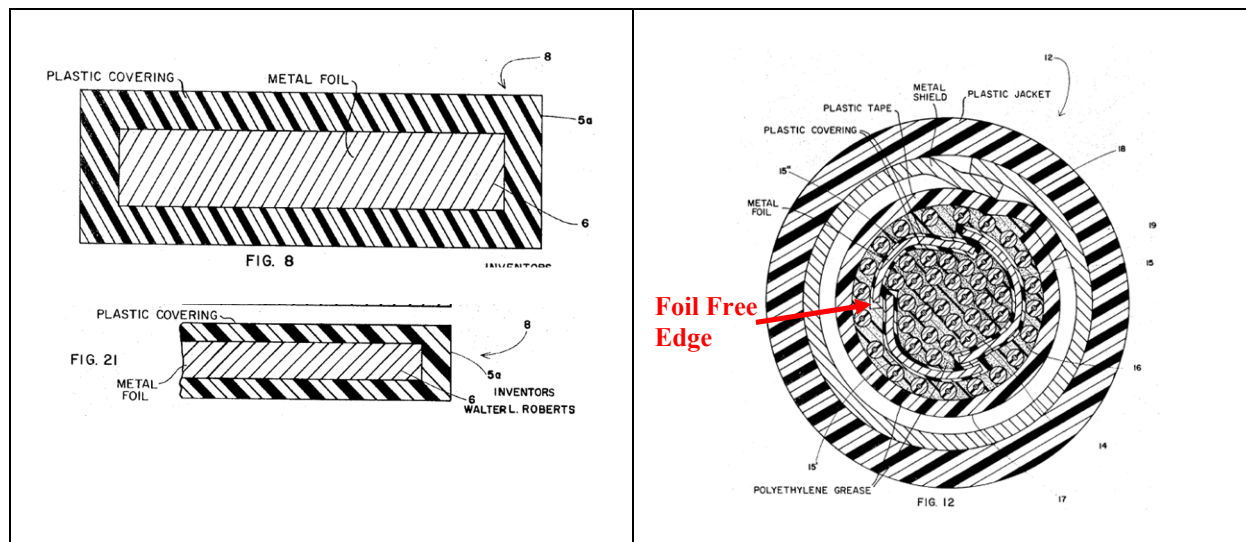
Roberts 3:52-74; Eldering ¶89.

Element (9) of FIG. 9, shows a cross-sectional view of that cable structure as depicted in FIG. 1. Like numbers of FIG. 1 also represent like elements in FIG. 9. Here it will be noted that the plastic-coated metal foil shield (15) is coated on its two major surfaces with a plastic; *however, it can be seen by element (20), that thin strips of uninsulated metal are exposed to the first and second group of electrical conductors (14) and (16) respectively. It is quite obvious that pinholes in the electrical insulation of the insulated electrical conductors (14) or (16), or the shield (15), would allow unwanted electrical energy to reach exposed portions (edges) of the aluminum foil shield, through the edges (20) or pinholes in its plastic coating. From an electrical standpoint, it is desirable to avoid this.* It is also electrically desirable to keep moisture away from the electrical conductors. *Thus, the instant invention envisions an embodiment in which a polyethylene greaselike material (a flooding compound) is disposed in that cavity created or defined by the foil shield (15) not otherwise occupied by insulated electrical conductors (14).* Furthermore, it is also envisioned that the same polyethylene greaselike material can be disposed in that cavity created by the plastic-coated metal foil shield (15) and plastic tape (17) not otherwise occupied by the insulated electrical conductors (16).

Roberts 4:68-5:15, 5:48-54, 6:15-28, FIGS. 9 & 10; Eldering ¶89.

To avoid the disadvantages caused by these continuous conductive edges, Roberts discloses in FIGS. 8 and 21 a “metal foil shield [8] having a plastic coating

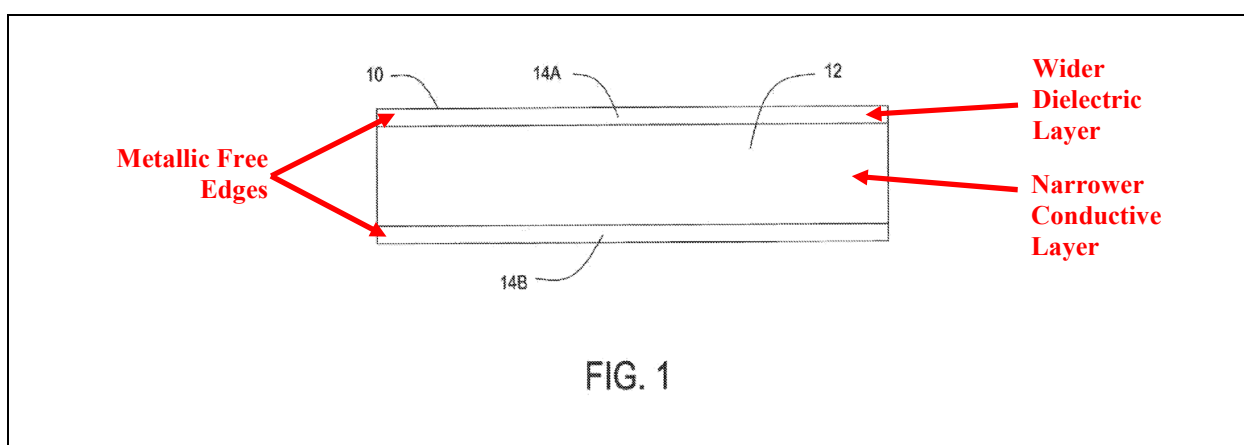
that completely surrounds said foil” and covers the conductive edges. Roberts 2:37-38, 2:47-53, 3:1-7, 6:29-65, 6:66-7:25, FIGS. 8, 11, 12, 14, 16, 21; Eldering ¶90.



In fact, Petitioner and its expert elsewhere in the Petition admitted that “POSITAs have been *motivated to isolate the conductors from the metal layer of a shield since at least the 1960s, as exemplified by Roberts*, which discloses adding mylar and also a grease-like dielectric material to cables to help isolate the conductors from the metal layer in multi-layer shields.” Pet. 84 (citing Roberts 3:37-75, 4:48-5:15); Cornelison ¶291. 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 foil was exposed). Eldering ¶91.

Yet another reference filed around the priority date of the ’030 Patent confirms that a POSITA would be motivated to make the conductive layer narrower than the

dielectric layer(s) as disclosed in Glew’s FIG. 13D. In FIG. 1 of U.S. Patent Application Publication No. 2016/0037691 (“Kroushl”) (EX-2007), “a first polyester substrate tape 10 is provided having a laminated metallic surface 12 thereon ... The associated metal layer 12 deposited thereon is an *aluminum layer* ... *approximately 0.25” narrower* than the width of tape 10.” Kroushl ¶¶[0017], [0023]; Eldering ¶92.



Having the tape or dielectric layer wider than the conductive layer provides “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.

Data sheets of NEPTAPE® Foil Free Edge Shielding Tapes available before the priority date of the '030 Patent provide additional compelling evidence of the advantages of a shield having foil free edges as shown in Glew. For example, the

foil free edge tapes “offer a film/film/foil construction with a wider, thicker top film layer which overlaps the foil, providing ***non-conductive foil free edges***.” EX-2008 1; EX-2009 (“Three ply tape with a thicker film layer which overlaps the foil”). These foil free edge shielding tapes were to be used for “[s]hielding of twisted pairs in multi-pair cables such as process control, computer, or instrumentation cables.” EX-2008 1. The “[f]oil free film edge provides isolation between pairs, ***preventing shield to shield shorts*** and eliminating the need for a polyester overwrap.” EX-2008 1; Eldering ¶¶95-97.

In each of these examples (*i.e.*, Roberts, Kroushl, NEPTAPE®) of foil-free edge tapes, just like the tape disclosed in Glew FIG. 13C, the width of the conductive layer of the tape was intentionally and advantageously narrower than the dielectric layers to avoid the disadvantages of having an exposed conductive edge. A POSITA would thus readily understand how having layers with different widths to avoid having the conductive layer exposed would have several advantages. Eldering ¶¶89-98, 157-158.

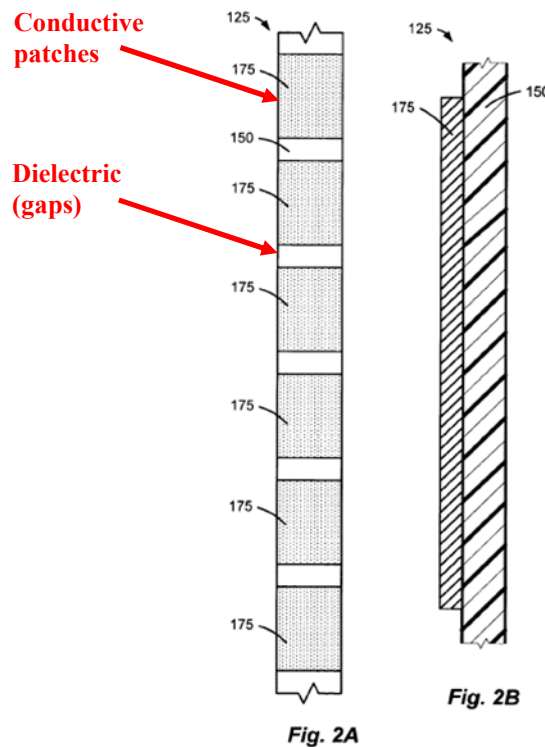
By contrast, the prior art references cited by Petitioner (Pet. 38, 50) and its expert (Cornelison ¶¶138, 176, 183) for the disclosure of the allegedly advantageous slitting process (Smith-039 (EX-1037) and Cook-794 (EX-1038)) are admittedly used for manufacturing tapes with ***discontinuous*** metallic layers, where there is a less of concern of having exposed conductive edges. Cornelison ¶¶138 (Smith-039

“shows slitting three-layer tapes where *the conductive layer is discontinuous*”), 176 (same), 183; EX-2011 89:12-100:8; Eldering ¶161.

In fact, both Smith-039 and Cook-794 teach the benefits of a *discontinuous* shield and expressly teach away from using a continuous shield while describing various disadvantages of such a continuous shield. For example, both references teach that “*complications can arise* when a cable is encased by a *shield that is electrically continuous* between the two ends of the cable.” Smith-039 ¶[0004], Cook-794 1:20-28. One of the disadvantages is that the “continuous shield can inadvertently *carry voltage* along the cable” such that “[i]f a person contacts the shielding, the person *may receive a shock* if the shielding is not properly grounded.” Smith-039 ¶[0005], Cook-794 1:34-46. Another complication is that “a continuous shield can also set up *standing waves of electromagnetic energy* based on signals received from nearby energy sources” that “can *radiate electromagnetic energy*, somewhat like an antenna, that *may interfere with* wireless communication devices or other sensitive equipment operating nearby.” Smith-039 ¶[0006]; Eldering ¶162.

To avoid these “complications” resulting from using a continuous shield, those references disclose a tape with “a shield that is *electrically discontinuous* between opposite ends of the cable.” Smith-039 Abstract, Title (“*Electrically Discontinuous Shield*”), ¶¶[0002], [0007] (“*without providing an electrically conductive path* between ends of the cable”), ¶[0009] (“*the conductive areas are*

electrically isolated from one another”), [0010] (“the *shield discontinuities* can inhibit electricity from flowing in the shielding material along the full or axial length of the cable”), [0017], [0022] (“at least *one break or discontinuity in the shielding* along the cable *electrically isolates the shielding* at one end of the cable from the shielding at the other end of the cable”, “an *alternative to forming a continuous* or contiguous conductive path, the tape can be segmented or can comprise intermittently conductive patches”), [0023], [0025], [0029], [0034], [0036] (“the respective physical separations between the patches 175 can *impede the flow of electricity* between adjacent patches 175”), [0046] (“the segmented tape 125 encircles or encases the conductors 105 in *discontinuous, conductive patches*”), ¶[0067] (“an *electrically discontinuous shield* that protects against electromagnetic interference”), FIGS. 2A-2B; Cook-794 Abstract, 1:6-9, 1:51-54, 1:66-2:15, 2:20-27, 2:51-55, 3:20-31, 3:36-41, 4:5-8, 4:50-60, 5:9-16, 6:63-65, 9:9-12, FIGS. 2A-2B; Eldering ¶163.



And since the conductive shield is discontinuous, there are no concerns with having the conductive layer exposed at the edge of the tape, unlike in the tape shown in Glew FIG. 13C, which intentionally keeps the continuous conductive layer from being exposed at the edges of the tape. Eldering ¶164.

Moreover, while Petitioner and its expert rely upon Smith-039 and Cook-794 to try to support its theory that a POSITA would understand that “[t]apes are typically manufactured by slitting larger films to size” (Pet. 38; Cornelison ¶¶138, 176, 183), each of the references expressly discloses that “[w]hile the illustrated embodiment of Process 300 creates conductive patches on a wide piece of film and

then slits the resulting material into individual segmented tapes 125, that sequence is *merely one possibility*.” Smith-039 ¶[0060]; Cook-794 8:15-18. Included among those other manufacturing techniques disclosed in those references was a technique that could be used to produce the tape shown in Glew FIG. 13C, namely, applying the conductive patches to the desired narrow width of a dielectric layer. Smith-039 ¶[0060]; Cook-794 8:18-26. Furthermore, McNutt (EX-2006), which was incorporated by reference into Cook, expressly discloses that a shielding tape can be manufactured with a conductive layer that is narrower than the dielectric layer as disclosed in Glew FIG. 13C. McNutt 13:9-25, FIG. 5A (“[T]he dielectric substrate 150/film provides an adhesive-coated substrate that is wider than the [conductive] patches 175A to provide an adhesive strip running lengthwise along the tape 500.”); Eldering ¶¶165-167.

There is also no support for Petitioner’s conclusory 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. Instead, Petitioner merely cited to its expert’s conclusory testimony (Cornelison ¶138), which “merely repeats, *verbatim*, the conclusory assertion for which it is offered to support.” *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

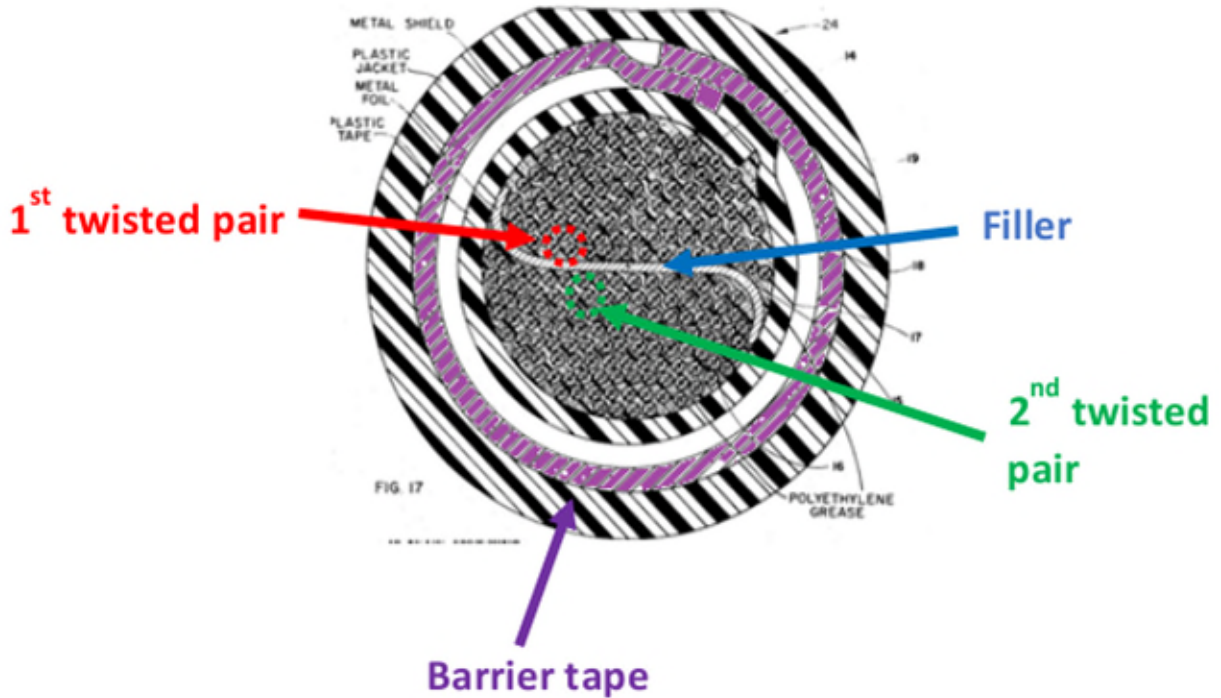
unsupported, adds little to the conclusory assertion for which it is offered to support, and is entitled to little weight.”). Furthermore, Petitioner is wrong. The conventional techniques disclosed in Glew to manufacture the tape shown in FIG. 13C are neither complex, nor expensive. Eldering ¶¶99, 168.

Accordingly, 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 (or understanding that FIG. 13C disclosed such a design). Eldering ¶¶99, 169.

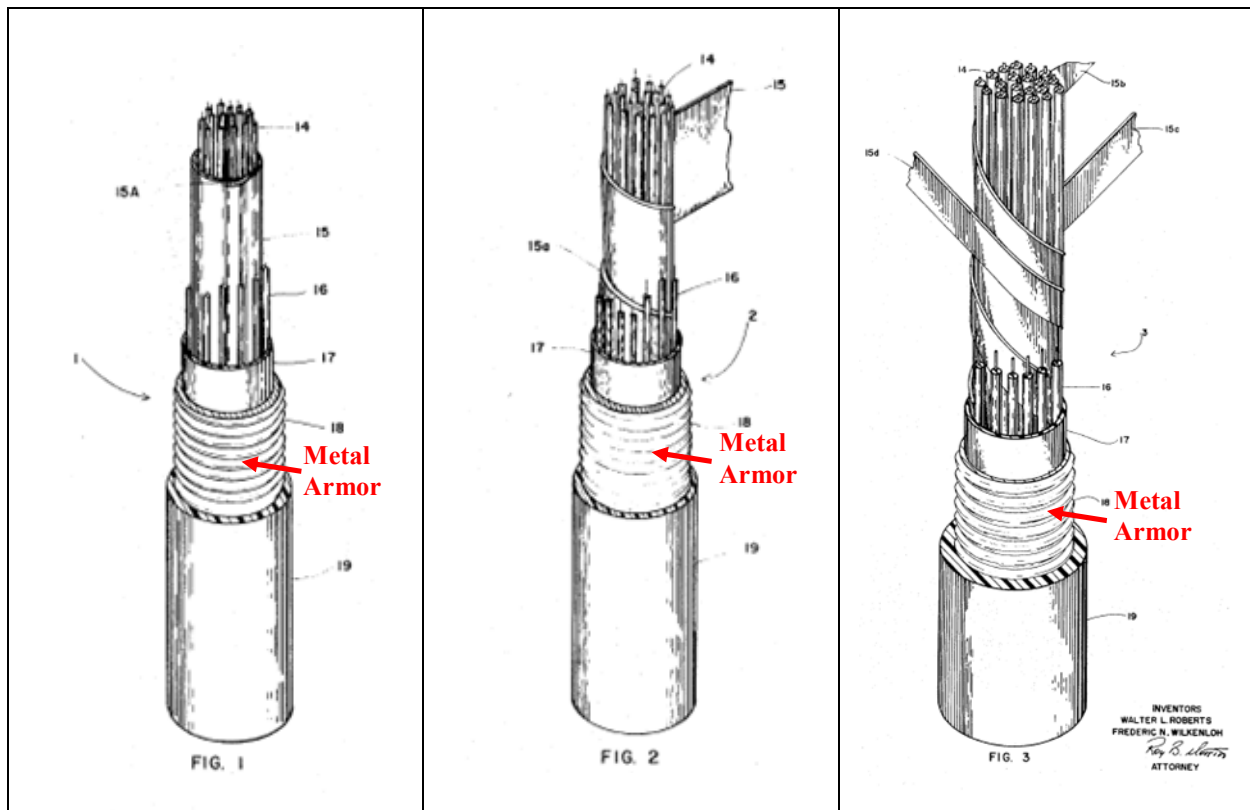
C. Regarding Ground 5, Roberts Fails To Anticipate Any Of The Challenged Claims, As The Board Similarly Already Determined.

- 1. Roberts Does Not Disclose A Barrier Tape With Conductive Material Extending To Each Lateral Edge Of Two Layers Of Dielectric Material And Surrounding The Twisted Pairs And Filler.*

Petitioner also alleged that Roberts (EX-1009) anticipates all of the Challenged Claims. Pet. 54-68. In arguing that Roberts discloses the claimed barrier tape, Petitioner relied upon the embodiment of a cable 24 shown in FIG. 17 and annotated by Petitioner, as shown below. Pet. 58; Eldering ¶76.



As shown, Petitioner alleged that Roberts’ disclosure in FIG. 17 of metal shield 18 (which is described in Roberts as “metal *armor* shield,” “metal *armor* tape,” “*armor*”) discloses the claimed barrier tape. Pet. 57-58; Roberts 4:15-22 (“corrugated metal *armor* tape shown at (18),” “metal *armor*,” “*armor*”); 10:42-48 (“metal *armor* shield (18)”), 11:43-49 (“*armor* (18)”), FIGS. 1, 2, 3, 17.) This metal *armor* shield/tape 18 provides “mechanical (*armor*) protection” to the cable. Roberts 4:62-67; Eldering ¶77.



Since, as the Board already determined (Decision 33), Roberts does not 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, Petitioner was forced to improperly rely upon *a completely different component (i.e., shield 15)*, which Petitioner also relied upon to disclose the claimed “filler.” Pet. 56-59. But Roberts expressly discloses that shield 15 is a thin *metal foil shield* in all of the embodiments, including FIG. 17, and not a *metal armor shield* 18. Eldering ¶78.

As the Board already determined (Decision 32-33), Roberts’ metal armor shield 18, which provides mechanical protection to the cable, is *not a metal foil* like

shield 15. Instead, it has “*a thickness greater than a foil*” to provide mechanical protection. Roberts 4:15-19. Indeed, 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.”

For *the purposes of this disclosure, when reference is made to a shield, other than element (18), an electrical shield is meant.* Even though the word “shield” has an accepted double meaning, *i.e.* electrical as well as mechanical (armor) protection,” the *metal foil shield of the instant invention connote primarily an electrical shield.*

Roberts 4:62-67; Eldering ¶79.

As the Board also already determined (Decision 32-33), the specification of Roberts expressly contradicts and teaches away from Petitioner’s further unsupported and conclusory, hindsight-driven allegation that a “POSITA would conclude that the disclosed metal shield 18 (with dielectric on both surfaces) would look the same” as metal shield 15. Pet. 58-59; Eldering ¶¶77-82.

Finding no support in Roberts for its proposed *anticipation* rejection, Petitioner improperly resorted to conclusory expert testimony (Cornelison ¶¶44-45, 206) and a slew of other prior art references (EX-1013, EX-1014, EX-1031 to EX-1037) to allege that “a POSITA would understand that with conventional designs, the metal armor tape 18 has a continuous metal layer sandwiched between two layers

of a dielectric material and extending to the lateral edges of the dielectric material.” Pet. 59-60. But, as the Board already determined (Decision 33), Petitioner’s reliance on evidence outside of the four corners of Roberts that contradicts Roberts’ express teachings, is not appropriate for its proposed Ground 5 anticipation challenge based on Roberts. *See Cont’l Can*, 948 F.2d at 1267 (“When more than one reference is required to establish unpatentability of the claimed invention anticipation under § 102 can not be found, and validity is determined in terms of § 103.”).

As the Board already determined (Decision 32-33), since 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. Eldering ¶¶83.

2. *Petitioner Did Not Even Attempt To Explain How Roberts Allegedly Discloses A Filler That Has A “Helical Twist” As Required By Dependent Claims 3 and 9.*

Regarding dependent claim 3, which requires that “the filler has a **helical twist** at a first angle,” Petitioner and its expert state in conclusory fashion 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. Unsupported declarant testimony is entitled to little weight. *See* 37

C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”); *see also Xerox*, IPR2022-00624, Paper 9 at 15-17 (finding that a declaration that “merely repeats, *verbatim*, the conclusory assertion for which it is offered to support” and provides no additional supporting evidence or technical reasoning “is conclusory and unsupported, adds little to the conclusory assertion for which it is offered to support, and is entitled to little weight”). Accordingly, for this separate reason, dependent claim 3 and dependent claim 9 that depends from claim 3 are not anticipated.

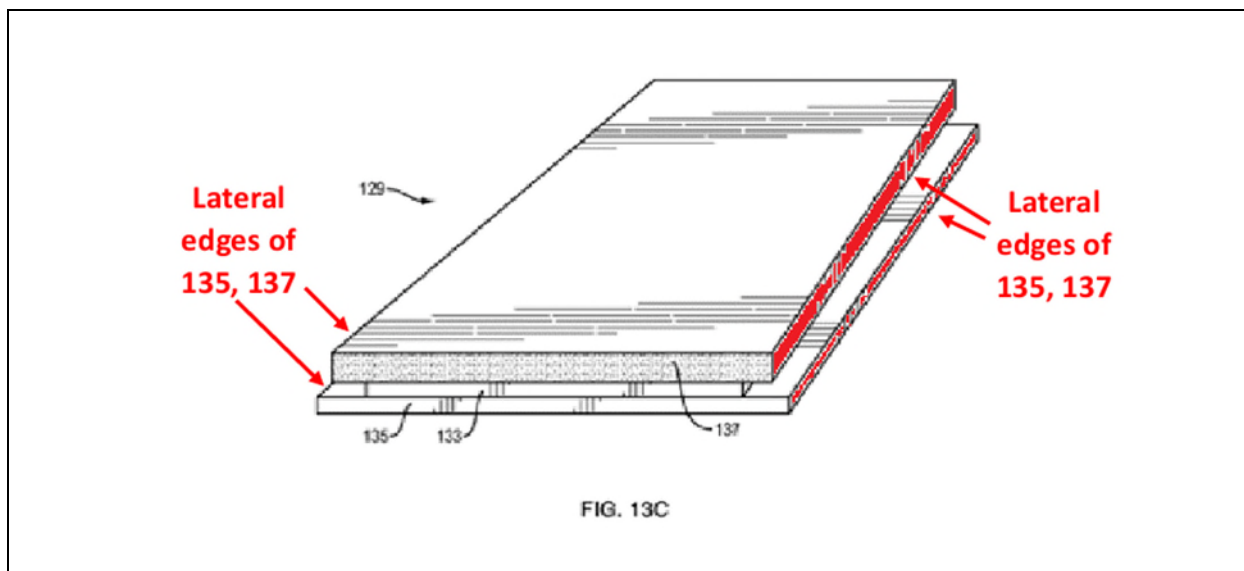
V. THE CHALLENGED CLAIMS ARE NOT OBVIOUS.

In addition to its three anticipation grounds, Petitioner offered the following four obviousness grounds/combinations regarding independent claims 1 and 18 in its Petition: Ground 4 (Glew and Cook), Ground 6 (Roberts and Jachimowicz-172), Ground 7 (Roberts and Jackimowitz-036), and Ground 10 (Clark, Roberts, and Glew). In doing so, Petitioner blatantly resorted to picking and choosing elements from the prior art to meet the limitations of the claims. That is a classic and improper case “of hindsight reconstruction by using the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit,” which must be avoided. *In re NTP, Inc.*, 654 F.3d 1279, 1299 (Fed. Cir. 2011); *see also Grain Processing Corp. v. Am. Maize Prods. Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988) (same).

The Federal Circuit has long “rejected obviousness determinations based on conclusory and unsupported expert testimony ... [that] use[d] the challenged patent as a roadmap to reconstruct the claimed invention using disparate elements from the prior art—*i.e.*, the impermissible *ex post* reasoning and hindsight bias that *KSR* warned against.” *TQ Delta, LLC v. Cisco Sys.*, 942 F.3d 1352, 1361 (Fed. Cir. 2019) (citing *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418, 421 (2007)); *see also In re Mettke*, 570 F.3d 1356, 1360 (Fed. Cir. 2009) (recognizing that a patent should not be used as a blueprint for the combination of elements from various sources); *Ecolochem, Inc. v. Southern Cal. Edison Co.*, 227 F.3d 1361, 1371-72 (Fed. Cir. 2000) (“Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight.”) (quoting *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999).) The Board should do the same here and reject all of Petitioner’s hindsight-driven obviousness grounds.

A. Regarding Ground 4, Neither Glew Alone, Nor In Combination With Cook, Renders Obvious Any Of The Challenged Claims.

As explained above in Ground 3 (*supra* §IV.B) and as demonstrated in Petitioner’s own annotated figure below, Glew does not anticipate independent claims 1 and 18 because it does not disclose a barrier tape with conductive material (133) that extends to each lateral edge of the two layers of the dielectric material (135, 137). Eldering ¶¶56-73, 85, 157-169.



Pet. 49.

In light of the fatal flaws in its anticipation grounds, Petitioner alternatively speculated that it somehow would have been obvious based on Glew alone to extend the conductive metal foil layer 133 to the lateral edges of the dielectric layers 135, 137. Pet. 49-51. But in doing so, Petitioner merely repeated its same exact flawed anticipation theories.

1. *The Parties Agree That Several Conventional Techniques Were Available To Manufacture Glew's Tape As Shown In FIG. 13C. Where The Continuous Conductive Layer Does Not Extend To The Lateral Edges.*

Petitioner asserted that “at the time of the ’030 patent filing date the **common method** of making multi-layer tapes, such as disclosed in Glew, was [a] process [that] results in all three layers having side edges flush with each other.” Pet. 50. But this theory that a POSITA “could” have made the multi-layer tape with flush edges fails to establish that it “would” have been obvious to do so. Eldering ¶¶86-87, 165-

167. It is well settled that “mere capability” to modify the prior art to meet the claim limitations is not sufficient to establish obviousness. *See, e.g., Ex parte Gerlach*, 212 USPQ 471, 471 (PTAB 1980); *see also Polaris*, 882 F.3d at 1068-69 (vacating Board’s obviousness determination since “the Board focused on what a skilled artisan would have been *able* to do, rather than what a skilled artisan would have been *motivated* to do at the time of the invention.”) (emphasis in original)); *Apple Inc. v. MPH Techs. Oy*, 28 F.4th 254, 262-63 (Fed. Cir. 2022) (affirming Board’s rejection of petitioner’s technical expert’s testimony on motivation to combine that “amounted to an argument about ‘what *could* be combined’ and a conclusory statement that the combination would have been obvious.”) (emphasis in original).

Furthermore, as explained in Ground 3 (*supra* §IV.B.2), the parties agree that Glew discloses several conventional techniques that ***were actually used to manufacture the three-layer tape with different widths shown in FIG. 13***. Glew ¶¶[0199] (“adhesive or other bonding agents,” “mechanically affixed or bonded to each other,” “needlepunching,” “thermally bonded,” “ultrasonic welding or calender bonding”), [0200]; EX-2011 85:13-88; Eldering ¶160. In addition, as explained in Ground 3 (*supra* §IV.B.2), the prior art references cited by Petitioner and its expert for the disclosure of the allegedly advantageous slitting process (Smith-039 (EX-1037) and Cook-794 (EX-1038)) disclosed manufacturing tapes with a ***discontinuous*** metallic layer, which contradict such an erroneous theory that the

slitting process would be used for the *continuous* metallic layer tape shown in FIG. 13C of Glew, which in turn would result in many disadvantages of an exposed conductive layer edge. Eldering ¶¶161-164.

2. *A POSITA Would Be Discouraged From Modifying Glew's Tape Shown In FIG. 13C. To Have The Continuous Conductive Layer Extend To The Lateral Edges.*

Petitioner also repeated its fatally flawed theory that modifying Glew to provide flush conductive edges somehow would have been obvious based on the speculative notion that Glew does not discuss the advantages of having edges that are not aligned as actually shown in its figures. Pet. 50-51. But there is no factual or legal support for such a speculative theory (*i.e.*, whether Glew discusses the advantages of edges that are not aligned does not change the fact that expressly discloses that configuration). And as explained in Ground 3 (*supra* §IV.B.2), a POSITA would understand that having layers with different widths to prevent having exposed continuous conductive layer edges exposed would avoid several disadvantages and “complications.” Eldering ¶¶88-98, 158.

To support an obviousness finding, the proposed modification must be “desirable,” not merely “feasible.” *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 (Fed. Cir. 2000). When determining whether a POSITA would be motivated to make a proposed modification, the Federal Circuit has repeatedly instructed that “the benefits, both lost and gained, should be weighed against one

another.” *Id.* at 1349 n.8 (Fed. Cir. 2000); *see also Arctic Cat Inc. v. Polaris Indus.*, 795 Fed. Appx. 827, 834 (Fed. Cir. 2019). Here, since Petitioner’s proposed Glew modification theory (*i.e.*, extending the conductive metal foil layer 133 to the lateral edges of the dielectric layers 133, 135 and exposing the edges of the metal foil 133) would result in undesirable electrical properties and possible shorting of electrical shields (*supra* §IV.B.2), a POSITA would not be motivated to make such a modification. Eldering ¶¶98, 169.

Petitioner once again speculated in conclusory fashion that the manufacturing of the tape 129 shown in FIG. 13C “would take much more time and be more complex and costly to make than using the customary slitting process.” Pet. 50-51, 53-54. To try to support such speculation, Petitioner only cited to its expert’s testimony (Cornelison ¶¶178, 186), which “merely repeats, *verbatim*, the conclusory assertion for which it is offered to support.” *Xerox*, IPR2022-00624, Paper 9 at 15. “To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, ***based on evidence of record***, to support the legal conclusion of obviousness.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016); *see also TQ Delta*, 942 F.3d at 1357 (reversing Board’s obviousness determinations since “its factfinding ... is based on conclusory [expert] testimony”). Since Petitioner offered no evidentiary support for its speculative theory beyond the conclusory and *verbatim*

testimony of its expert, which is contradicted by Patent Owner’s expert, it should be rejected out of hand. *See* 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”); Eldering ¶¶99, 168.

3. *The Claimed Continuous Conductive Layer Extending To Each Lateral Edge Of The Tape Was Not Well-Known, Which Would Be Insufficient As A Matter Of Law To Prove Obviousness.*

Petitioner’s alternative obviousness arguments based on the combination of Glew and Cook (Pet. 51-54) must also be rejected for the same reasons as its Glew-alone obviousness arguments. For example, Petitioner speculated that “Cook thus demonstrates that it is *well-known* for multi-layer tapes to have the metal layer side edges flush/aligned with the dielectric layer edges,” and cited to the same two additional prior art references (Smith-039 (EX-1037) and Cook-794 (EX-1038)). Pet at 52-53; Eldering ¶¶100-101. But as explained in Ground 3 (*supra* § IV.B.2), Cook and those additional references disclose non-continuous conductive layers where exposure of the conductive edges would not have the disadvantages of exposing the continuous conductive edge in the proposed modification of Glew FIG. 13C. Eldering ¶¶161-164.

As explained in Ground 1 above (*supra* §IV.A), Cook does not disclose any shield layer (or barrier tape) with continuous conductive material contained between two layers of a dielectric material and extending to each lateral edge of the two layers

of the dielectric material. So Cook does not demonstrate that Petitioner’s hindsight-driven proposed modification of Glew was “well-known.” Eldering ¶¶34-55, 102, 149-156. Furthermore, an invention “composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418; *see also In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998) (“If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue.”); *Metalcraft of Mayville, Inc. v. Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017) (“[I]t is not enough for Toro to merely demonstrate that elements of the claimed invention were independently known in the prior art. Often, every element of a claimed invention can be found in the prior art.”) (citing *In re Kotzab*, 217 F.3d 1365, 1370 (Fed. Cir. 2000)); *Black & Decker, Inc. v. Positec USA, Inc.*, 646 Fed. Appx. 1019, 1027 (Fed. Cir. 2016) (“[W]hat one of skill in the art ‘would have known’ or ‘could have’ done to meet the limitation . . . is not sufficient” to show that the claimed limitation was obvious.) (nonprecentential).

4. *Petitioner Only Offers Conclusory Expert Testimony In Support Of Its Boilerplate Obviousness Rationales, Which Are Contradicted By The Record Evidence.*

Petitioner’s and its expert’s *verbatim* laundry list of boilerplate obviousness rationales (*i.e.*, “combination of familiar elements according to known methods to yield predictable results,” “rearrangement of old elements with each performing the

same function it had known to perform,” “a reasonable expectation that [the modification] would be successful”) (Pet. 52; Cornelison ¶¶184-186) without any documentary support is equally unavailing. For example, Petitioner’s conclusory theory that a “POSITA would have a reasonable expectation that using the Glew tape modified to have the metal layer extending to the lateral edges of the dielectric layers (as shown in Cook) would be successful” is directly contradicted by the evidence presented above (*supra* §IV.B.2) that extending the metal layer to the alter edges would lead to several disadvantages. Eldering ¶¶88-98, 161-164. Accordingly, since neither Glew alone, nor the combination of Glew and Cook, render obvious any of the Challenged Claims, Ground 4 should be rejected. Eldering ¶103.

B. Regarding Ground 6, The Combination Of Roberts And Jachimowicz-172 Does Not Render Obvious Any Of The Challenged Claims, As The Board Again Already Determined.

As explained above regarding Ground 5 (*supra* §IV.C), Roberts cannot anticipate independent claims 1 and 18 (or any of the dependent claims, including dependent claims 3 and 9) because it 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 (claim elements [1D], [18C-1], and [18C-2]). Eldering ¶¶74-83, 104.

Regarding Ground 6, Petitioner alternatively speculated that the combination

of Roberts and Jachimowicz-172 should render obvious independent claims 1 and 18 and several dependent claims. Pet. 68-70. But this theory does not even attempt to address Roberts’ failure to 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 (claim elements [1D], [18C-1], and [18C-2]). As the Board already determined, “[b]ecause Petitioner’s Ground 6 arguments do not account for the shortcomings in Petitioner’s Ground 5 arguments, Petitioner has not established a reasonable likelihood of prevailing on its assertions of obviousness of claims 1–3, 9–11, 13, and 16–18 over Roberts and Jachimowicz-172.” Decision 34; Eldering ¶105.

C. Regarding Ground 7, The Combination Of Roberts And Jachimowicz-036 Does Not Render Obvious Any Of The Challenged Claims.

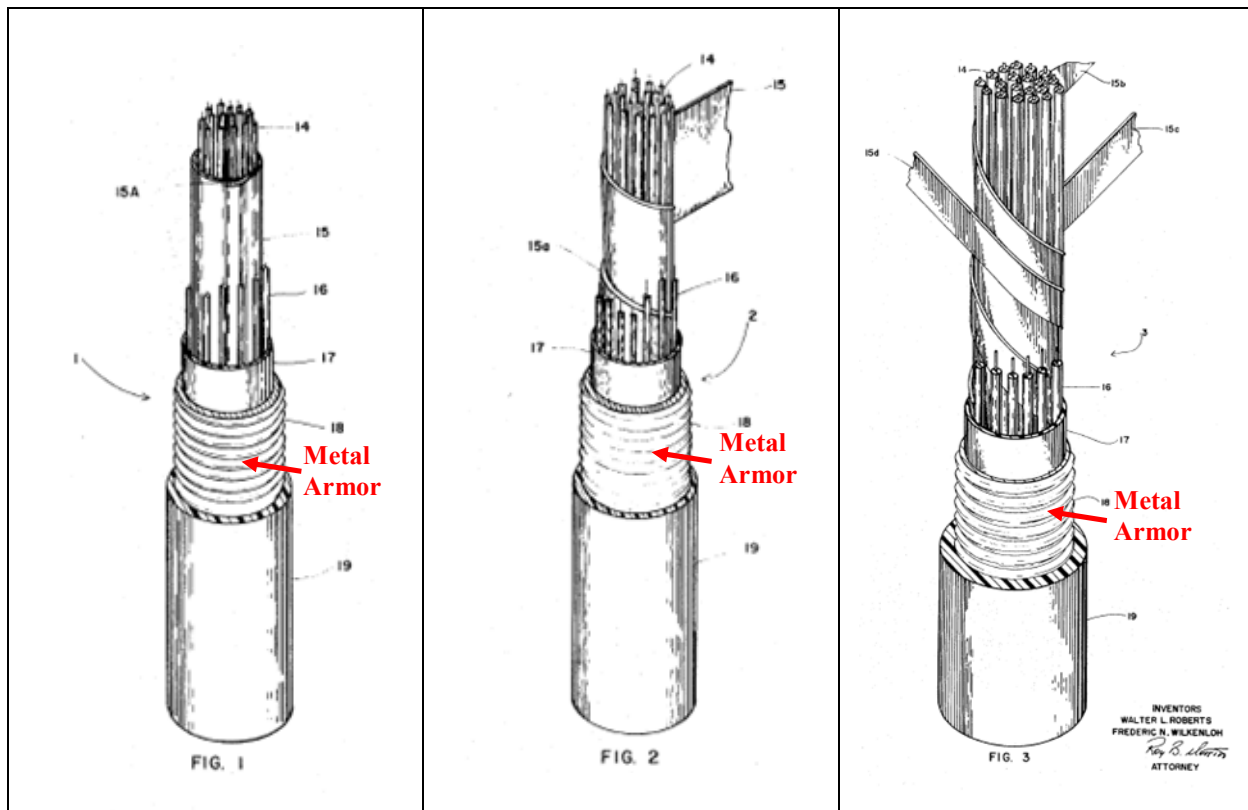
As explained above regarding Ground 5 (*supra* §IV.C), and as already determined by the Board (Decision 32-33), Roberts cannot anticipate independent claims 1 and 18 (or any of the dependent claims) because Roberts’ metal armor shield 18 does not disclose a barrier tape with conductive material that extends to each lateral edge of the two layers of the dielectric material and surrounds the first and second twisted pairs of insulated conductors and the filler (claim elements [1D], [18C-1], and [18C-2]). Eldering ¶¶74-83, 106, 170. As explained by the Board, “Petitioner impermissibly relies on properties of shield 15, which provides primarily

electrical shielding in a location within or between the twisted pairs of cables, to fill in the missing characteristics of shield 18, which serves a function of primarily mechanical shielding in a location surrounding the twisted pairs of cables.” Decision 32-33.

1. It Would Not Be Obvious To Replace Robert’s Metal Armor Shield 18 With The Thin Metal Foil Shield 15.

Alternatively, Petitioner alleged that it would have been obvious based on Roberts alone to use the configuration of the metal foil shield 5 shown in FIG. 5 of Roberts for the metal armor shield 18. Pet. 71-73. But this is merely a repeat of Petitioner’s deficient Ground 5 anticipation theory. Pet. 58-59 (“A POSITA would conclude that the disclosed metal shield 18 (with dielectric on both surfaces) would look the same” as the shield shown in FIG. 5). Eldering ¶107. And the Board has already determined that “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.

As explained above in Ground 5 (*supra* §IV.C.1), metal shield 18 (which is described in Roberts as “metal *armor* shield,” “metal *armor* tape,” “*armor*”) discloses the claimed barrier tape. Pet. 57-58; Roberts 4:15-22; 10:42-48, 11:43-49, FIGS. 1, 2, 3, 17.). This metal *armor* shield/tape 18 provides “mechanical (*armor*) protection” to the cable. Roberts 4:62-67; Eldering ¶¶77, 108-109.

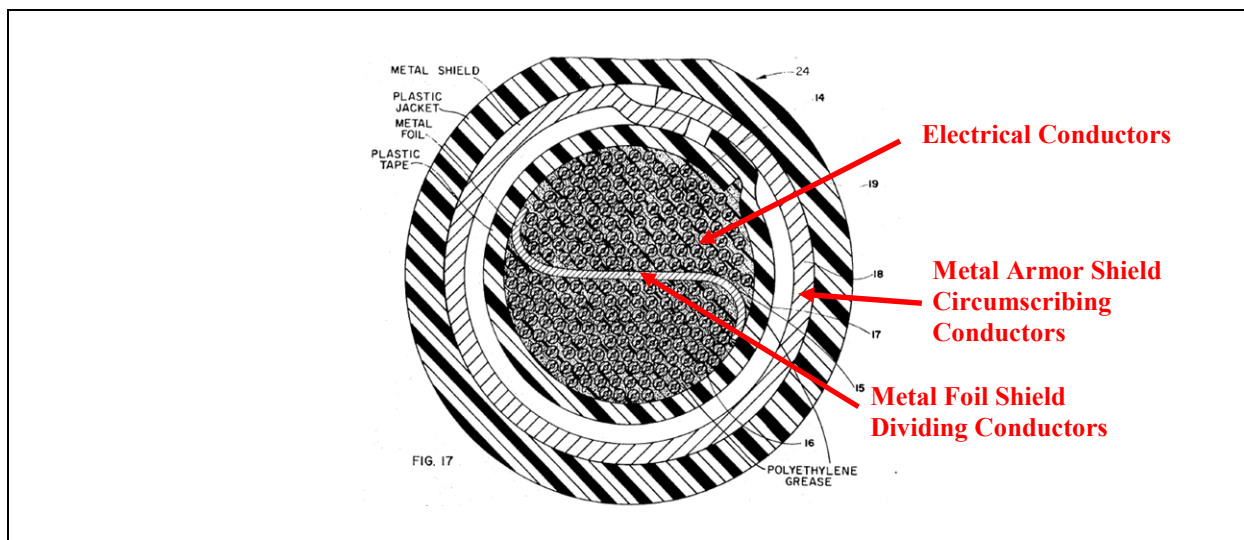


By contrast, Roberts discloses that shield 15, which can be configured as the tape 5 shown in FIG. 5 (or any of the other tapes shown FIGS. 6-8), is a thin *metal foil shield* in all of the embodiments in Roberts, and not a *metal armor shield* 18. For example, as the Board already determined (Decision 32-33), Roberts' metal armor shield 18, which provides mechanical protection to the cable, is *not a metal foil* like shield 15, but instead has *"a thickness greater than a foil"* to provide mechanical protection. Roberts 4:15-19. Indeed, 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."

For the purposes of this disclosure, when reference is made to a shield, other than element (18), an electrical shield is meant. Even though the word “shield” has an accepted double meaning, *i.e.* electrical as well as mechanical (armor) protection, the *metal foil shield of the instant invention connote primarily an electrical shield.*

Roberts 4:62-67; Eldering ¶¶79, 110.

Roberts also expressly discloses that metal foil shield 15 in FIG. 17 divides “a plurality of insulated electrical conductors [] into essentially two groups” and “that this particular shield *does not* circumscribe *any one group of insulated electrical conductors (14) and (16).*” Roberts 10:50-55, FIG. 17. In fact, the cable 24 of FIG. 17 is described in Roberts as “a cable structure showing a screen or shield *dividing groups of insulated electrical conductors that does not longitudinally circumscribe any group of conductors.*” Roberts 2:72-75. But, as shown in the annotated figure below, unlike the metal foil shield 15 that expressly does not circumscribe the electrical conductors 14, 16, the metal armor shield 18 does exactly that. Thus, a POSITA would *not* understand that metal foil shield 15 could be used for metal armor shield 18. Eldering ¶¶80-81, 111-112.



2. *Roberts’ Expressly Teaches Several Disadvantages That Would Result From Petitioner’s Hindsight-Driven Proposed Modification.*

As explained in Ground 5 (*supra* §IV.C.2), a POSITA would not be motivated to provide Roberts’ metal armor shield 18 with a continuous conductive layer extending to and being exposed at the lateral edges of the dielectric layers given the resulting “undesirable electrical properties.” Roberts 3:52-74, 4:68-5:15, 5:48-54, 6:15-28, FIGS. 9 & 10; Elderling ¶89.

Roberts also expressly touts the “obvious advantage” of *not* having a metal foil shield circumscribing the electrical conductors “in that less shield material is used in this manufacture, without the loss of any of the desired electrical properties [mitigation of the near-end crosstalk problem].” Roberts 11:7-12 (alteration in original). Accordingly, Roberts itself expressly teaches away from using the metal foil shield 15 (as shown in FIG. 5) as the metal armor shield 18. Elderling ¶82.

Given all of this disclosure in Roberts, Petitioner’s conclusory statement that

“Tape 15 in Roberts is an exemplary embodiment of what tape shield 18 ... *could be*, and certainly [sic] one alternative of what a POSITA would consider tape shield 18 (*i.e.*, the barrier tape) to be” (Pet. 72-73) enjoys no evidentiary support. This theory that a POSITA “*could*” have made metal armor shield 18 like metal foil shield 15 fails to establish that it “would” have been obvious to do so. It is well settled that “mere capability” to modify the prior art to meet the claim limitations is not sufficient to establish obviousness. *See, e.g., Ex parte Gerlach*, 212 USPQ at 471; *see also Polaris*, 882 F.3d at 1068-69. Roberts thus cannot render obvious any of the Challenged Claims. *Eldering* ¶¶82, 113.

3. *A POSITA Would Not Be Motivated To Use Jachimowicz-036’s Shield In Roberts, Since Petitioner Offers No Motivation To Do So Or Reasonable Expectation Of Success.*

Petitioner next argued that “it would be obvious to use the three-layer barrier tape [shield 14] in [Jachimowicz-036] *on Roberts’ cable*.” Pet. 73. But neither Petitioner, nor its expert, ever explained *why or how* shield 14 disclosed in Jachimowicz-036 would be used “on Roberts’ cable.” Pet. 73; *Cornelison* ¶254. For example, Petitioner, and its expert, did not even try to explain *how* the shield 14 disclosed in Jachimowicz-036 would be used in Roberts’ cable (*i.e.*, how it would replace the metal armor shield 18 in Roberts). Nor did they even attempt to explain *why* a POSITA would be motivated to use the shield 14 disclosed in Jachimowicz-036 in Roberts. *Eldering* ¶114.

Petitioner’s only speculative theory offered for modifying Roberts’ metal armor shield 18 is that “***well-known*** multi-layer barrier tape shields⁸ had a continuous metal layer sandwiched between and extending to the lateral edges of the dielectric layers.” Pet. 73-74. But, once again, an invention “composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418.

And for at least the same reasons why it would not have been obvious to use Roberts’ ***thin*** metal ***foil*** shield 15 for the metal ***armor*** shield 18 (which is designed to be thicker than the foil shield to provide mechanical protection (Roberts 4:15-19)), it also would not have been obvious and there would be no reasonable expectation of success to use Jachimowicz-036’s foil shield 14, which is also

⁸ Petitioner cited to several other references (EX-1031 to EX-1037) ***not identified in the proposed obviousness ground*** that allegedly disclose “well-known multi-layer barrier tape shields sold under the Zatabon trademark.” Pet. 73-74. These references include EX-1031, which is directed to “Rodent Protection” rather than communications cable shielding to prevent cross-talk. Other than alleging that the shields were “well-known,” Petitioner did not offer any other explanations regarding why those references, which are not even identified as part of Ground 7, render any of the Challenged Claims obvious. Eldering ¶115.

described as being a thin foil. Jachimowicz-036 1:41-45 (“the shield ... consists of a metallic strip such as aluminum or copper. The strip is relatively *thin*.”). Eldering ¶¶116, 172. The section of Jachimowicz-036 cited by Cornelison (Jachimowicz-036 2:52-72) does not provide any support that a POSITA would understand that the shield 14, which is described as having a “thin” 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. Eldering ¶¶171-172.

Moreover, as explained regarding Ground 5 (*supra* §IV.C), Roberts teaches that there would not be a reasonable expectation of success for such a modification since it expressly discloses various disadvantages of using a shield where the edge of the metal foil is exposed as it would be if it extended to the lateral edges of the dielectric layers as suggested by Petitioner. Roberts 3:52-74 (“undesirable electrical properties created by having an exposed surface (edge) of metal to the electrical conductors”), 4:68-5:15, 5:48-54, 6:15-28, FIGS. 9 & 10. In fact, Petitioner, and its expert, admitted that “POSITAs have been *motivated to isolate the conductors from the metal layer of a shield since at least the 1960s, as exemplified by Roberts*, which discloses adding mylar and also a grease-like dielectric material to cables to help

isolate the conductors from the metal layer in multi-layer shields.” Pet. 84 (citing Roberts 3:37-75, 4:48-5:15); Cornelison ¶291; Eldering ¶¶88-97, 117-118.

Accordingly, since neither Roberts alone, nor the combination of Roberts and Jachimowicz-036, render obvious any of the Challenged Claims, Ground 7 should be rejected.⁹ Eldering ¶¶119, 172.

D. Regarding Ground 10, the Combination Of Clark-478, Roberts, And Glew Does Not Render Obvious Any Of The Challenged Claims.

Petitioner alleged that the combination of Clark-478 (EX-1025), Roberts, and Glew renders obvious the Challenged Claims. Pet. 81-97.

1. Petitioner Is Relying On The Same Combination Of Clark And Roberts That Was Already Considered And Rejected By The Examiner.

As acknowledged by Petitioner (Pet. 82-83), the Examiner during prosecution

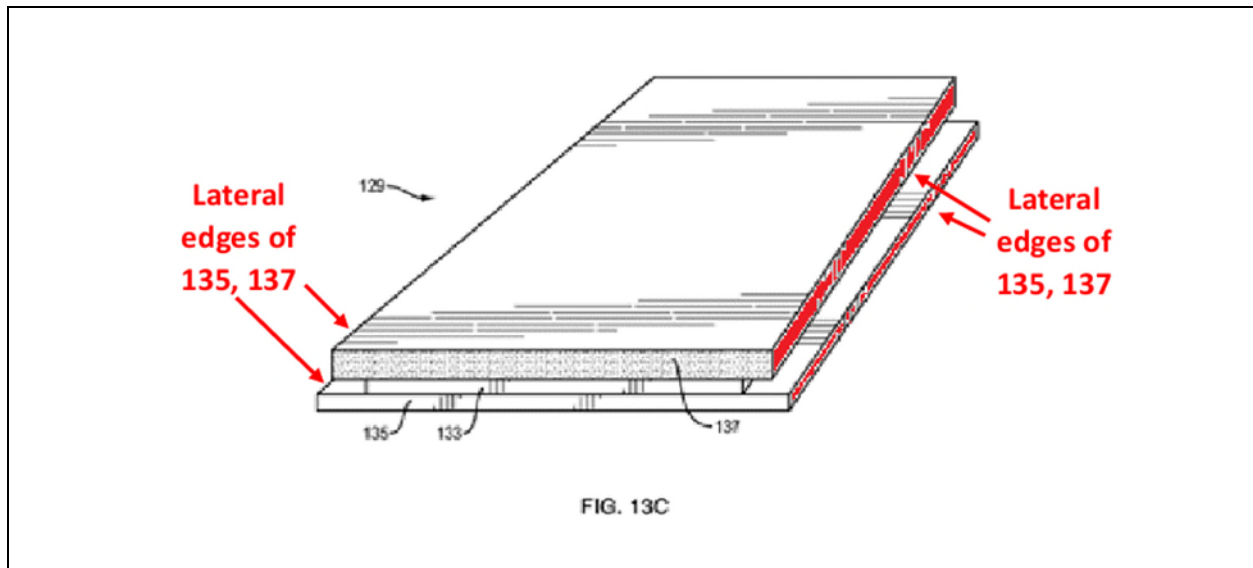
⁹ Grounds 8 and 9 allege that dependent claims 11 (Ground 8) and claims 9 and 12 (Ground 9) respectively, all of which depend from independent claim 1, are rendered obvious by the combinations of Roberts and Glew (Ground 8) and Roberts and Simons (Ground 9). Pet. 75-81. Since these grounds only address the additional claim element(s) added in dependent claims 11, 12, and 16, and do not even attempt to remedy Roberts’ failure to anticipate or render obvious any of the Challenged Claims, they should also be rejected. Eldering ¶84.

initially rejected the independent claims as obvious over Clark-478 in view of Roberts. EX-1002 ¶12. The Examiner acknowledged that Clark-478 did not “disclose the barrier tape comprising a conductive material in-between two dielectric layers (claims 1 and 18).” EX-1002 9. Instead, like Petitioner, the Examiner relied upon Roberts’ alleged disclosure of a tape metal foil shield 15, where the tape metal foil shield 15 is a metal foil 5 as shown in FIG. 5. EX-1002 at 9-10. In response, the Applicant distinguished Roberts on the basis that Roberts’ metal foil 5 used for tape metal foil shield 15 was not “*surrounding* the first twisted pair of insulated conductors [and] the second pair of insulated conductors,” as required by the claim. EX-1003 8 (emphasis and alterations in original).

2. *None Of The Prior Art References In Ground 10 Disclose A Barrier Tape With Conductive Material Extending To Each Lateral Edge Of The Two Layers Of The Dielectric Material.*

Nevertheless, in Ground 10, Petitioner argued again that “[s]urrounding Clark-478’s filler and twisted pairs with Roberts’ or Glew’s three-layer tapes” would be obvious. Pet. 83. But as explained in Grounds 5-7 (*supra* §§IV.C, V.B, V.C), Roberts does not disclose or render obvious 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 (claim elements [1D], [18C-1], and [18C-2]). And as explained in Grounds 3-4 (*supra* §§IV.B, V.A) and as demonstrated in Petitioner’s own annotated figure

below, Glew does not disclose or render obvious a barrier tape with conductive material (133) extending to each lateral edge of the two layers of the dielectric material (135, 137).



Pet. 49; Eldering ¶¶66-73, 78-83, 121-123, 157-169.

Petitioner does not and cannot rely upon Clark-478 to remedy the fact that neither Roberts, nor Glew, disclose or suggest these missing claim elements. In fact, Petitioner admitted that Clark-478 does not even disclose a “barrier tape having three layers, with a conductive material contained between two layers of a dielectric material.” Pet. 82; Eldering ¶124. Accordingly, since Glew’s three-layer tape in FIG. 13C does not disclose a barrier tape with conductive material extending to each lateral edge of the two layers of the dielectric material, the proposed combination with Clark-478 would also lack that claim element. Similarly, Petitioner’s reliance on Roberts’ metal armor shield 18, which as explained in Ground 5 (*supra* §IV.C),

is not a barrier tape with conductive material extending to each lateral edge of the two layers of the dielectric material, the proposed combination with Clark-478 would also lack that claim element. Eldering ¶¶124-125, 173-176.

3. *Petitioner’s Unsupported Motivations To Modify Clark-478 Are Contradicted By Petitioner Itself And The Disclosure In Clark-478.*

Furthermore, Petitioner’s alleged motivation for modifying Clark-478 actually teaches away from providing a barrier tape with conductive material extending to each lateral edge of the two layers of the dielectric material (*i.e.*, exposing the metal layer). According to Petitioner itself, “POSITAs have been *motivated to isolate the conductors from the metal layer of a shield since at least the 1960s, as exemplified by Roberts*, which discloses adding mylar and also a grease-like dielectric material to cables to help isolate the conductors from the metal layer in multi-layer shields.” Pet. 84 (citing Roberts 3:37-75, 4:48-5:15, Cornelison ¶291). Under Petitioner’s own theory, a POSITA thus would not want to extend the conductive material to each lateral edge of the two layers of the dielectric material since that would not isolate the metal layer of the shield from the conductors. Eldering ¶126.

Petitioner also alleged that “having the three-layer tape (instead of the two-layer tape in Clark-478) would provide a further benefit of having a dielectric layer between the conductors and the metal layer ... to isolate the conductors from the

metal layer” Pet. 84 (citing Cornelison ¶291). But Clark-478 expressly teaches away from this proposed modification, and instead teaches that *it is desirable to have the metal layer of the shield facing and exposed to the conductors of the twisted pair* (*i.e.*, not isolated from the conductors of the twisted pair by a dielectric layer as Petitioner proposes).

In one embodiment, the separator may be conductive, for example, an aluminum/mylar tape, with an aluminum layer on a side of the tape facing the plurality of twisted pairs. In this case, *the binder 74 may also be conductive, for example, also an aluminum/mylar tape, with the aluminum layer of the tape facing the plurality of twisted pairs 50a-d* so that the combination of the binder 74 and the separator 72 provide four electrically shielded, enclosed channels. With this embodiment, the four enclosed channels are isolated from one another to provide desired crosstalk isolation.

Clark-478 ¶[0047], FIG. 2; Eldering ¶174-175.

Accordingly, since the combination of Clark-478, Roberts, and Glew does not render obvious any independent claims 1 and 18 or any of the dependent claims, Ground 10 should be rejected.¹⁰ Eldering ¶¶127, 176.

¹⁰ Ground 11 alleges that dependent claims 3 and 9, which depend from independent claim 1, are rendered obvious by the combination of Glew and/or Roberts and/or Cook. Pet. 97. Since Ground 11 only addresses the additional claim element(s)

E. Regarding Ground 11, Petitioner Has Failed To Demonstrate That Dependent Claims 3 And 9 Are Rendered Obvious, As The Board Also Already Determined.

Petitioner alleged that dependent claims 3 and 9 are obvious in view of any one of five separate grounds (*i.e.*, anticipation grounds 3 and 5 and obviousness grounds 4 and 6-7) involving five separate prior art references, offering little more than half a page of analysis. Pet. 97. In the Decision, the Board determined “that Petitioner is unlikely to succeed in prevailing on this expansive ground given the paucity of the argument presented.” Decision 37-38 (citing *Adaptics Ltd. v. Perfect Co.*, IPR2018-01596, Paper 20 (PTAB March 6, 2019) (informative) (discussing failure to meet the particularity requirement of 35 U.S.C. § 312(a)(3))). Since “the many possible combinations asserted in this ground are insufficiently explained or supported in the single page of minimally developed argument presented in the Petition” (Decision 38), Ground 11 should be rejected.

Date: March 25, 2024

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added in claims 3 and 9 and do not even attempt to remedy those prior art references’ failure to disclose the missing elements of independent claims 1 and 18, Ground 11 should also be rejected. Eldering ¶128.

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CERTIFICATION OF COMPLIANCE WITH WORD COUNT

The undersigned hereby certifies that the foregoing Patent Owner Response complies with the requirements of 37 C.F.R. § 42.24 and contains less than 14,000 words (13,972 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.

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CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing **PATENT OWNER RESPONSE** was served pursuant to 37 C.F.R. § 42.6(e) via electronic mail on March 25, 2024, on the following:

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