

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMMSCOPE TECHNOLOGIES LLC.
Petitioner

v.

BELDEN INC.
Patent Owner

IPR2023-01056
U.S. Patent No. US 9,991,030

COMMSCOPE'S REPLY BRIEF

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Introduction

The Petition identified anticipation and alternative obviousness grounds based on three primary references (Cook, Roberts, Glew). Patent Owner (“PO”) does not persuasively distinguish either anticipation or obviousness.

Preliminary Matters

I. Claim Construction

PO proposes one term for construction (“lateral” edge). PO, however, only relies on its construction to distinguish one ground (Glew anticipation). CommScope addresses PO’s construction in the Glew section. (Section II.A).

II. Expert Testimony

PO’s proffered expert argues a POSITA would be “discouraged” from the obviousness grounds. But PO never explains why this expert’s opinions should be given any significant weight. PO’s expert admitted he had no relevant experience designing cables or tapes. EX-1048, 10:5-9, 11:5-11:11, 11:19-21, 12:13-13:14, 14:3-15:20, 16:13-17:4, 17:17-18:4, 195:20-196:1. Instead, his expertise is: “telecommunications, microelectronics, consumer electronics, targeted advertising, location-based services, data mining, and bioinformatics.” EX-1048, 218:3-219:9. By contrast, CommScope’s expert has 40 years of experience in the cable industry, including firsthand experience designing cables and with manufacturing tapes. EX-1006 ¶3. CommScope’s expert also was an inventor in the same field as the challenged patent. EX-2014; EX-1007 at 2; EX-1057.

Argument

I. Cook Grounds (Ground 1-2)

A. Anticipation (Ground 1)

PO only disputes whether Cook discloses the “barrier tape” in independent claims 1 and 18. Both claims require that the barrier tape comprises conductive material “contained between two layers of a dielectric material” and “extending to each lateral edge of the two layers of the dielectric material.” Claim 1, but not claim 18, also requires the conductive material be “continuous”.

PO focuses on Cook’s figures and says CommScope’s position “improperly” requires combining “different embodiments,” specifically, “FIGS. 8D and 11” and “FIGS 7B and 8A-8D.”¹ PO’s argument fails for three reasons.

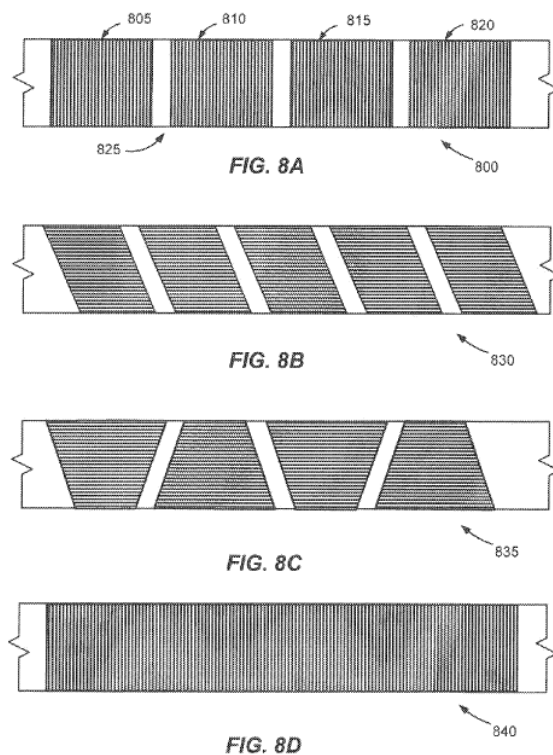
First, CommScope’s position does not require combining figures. The Petition asserts that “shield 120” is the claimed barrier tape and cites both (a) Cook’s description of shield 120 in the text and (b) Cook’s examples in the figures. Petition, 18-19. PO only responds to Cook’s figures, not Cook’s text. Although Cook’s figures corroborate CommScope’s position, Cook’s description of shield 120 in the text is sufficient to anticipate without combining it with any figures.

¹ Paper 16 at 19 (“...two different embodiments in Cook (i.e., shown in FIGS. 8D and 11).”), 22-23 (“FIGS. 7B & 8A-8D”).

Cook's text teaches to select multiple aspects of shield 120, including the suitable material, suitable technique, and suitable span of the conductive material. Cook's text explains that the suitable materials for shield 120 includes "**continuous**" or "discontinuous" electrically conductive material. EX-1010, 6:50-7:11.² Cook's text explains that the suitable techniques to form shield 120 include the conductive material being "**sandwiched**" between two dielectric layers or placed on one dielectric layer. EX-1010, 7:10-18. Cook's text explains that the conductive material in shield 120 may span different dimensions including "**fully across a width**". EX-1010, 12:22-23. Thus, Cook's text teaches to select all three requirements of shield 120: the material (e.g., continuous), the technique (e.g., sandwiched), and the span (e.g., fully across). EX-1059 ¶349. PO's expert conceded Cook has these teachings. EX-1048, 180:15-181:13, 183:10-14, 184:15-185:6. PO's argument about the figures does not distinguish these teachings, which were all quoted in the Petition. Petition, 19-20. Prior art can anticipate through teaching in the text or disclosure in the figures. Moreover, Cook emphasizes the figures are "not intended to limit" the text and the embodiments in the text "may utilize elements and/or components other than those illustrated in the figures." EX-1010, 2:33-36.

² All annotations/emphasis/bolding/highlighting is added.

Second, shield 120 (as described) and Figure 8D are also sufficient to anticipate without combining it with Figures 7B or 11. Cook’s text expressly discloses the embodiment of shield 120 where the conductive material is “sandwiched.” EX-1010, 7:10-18. This only leaves the question of whether conductive material is continuous and extends to the lateral edges. Cook broadly teaches: “***As desired***, patches of electrically conductive material incorporated into a separator, a separator segment, or a shield layer may have a ***wide variety of different shapes and/or orientations.***” EX-1010, 22:62-67. Figures 8A-D illustrates examples of these “shapes and/or orientations”:



EX-1010, 22:65-67. Figure 8D (bottom) shows the conductive material may be one continuous patch that extends to the lateral edges (top and bottom) per PO's interpretation. There is no need to consider further figures. EX-1059 ¶350.

Cook's shield 120 and Figure 8D is not "improperly" combining embodiments. Cook has two express teachings that encourage such combination. Cook expressly teaches that the configuration of the conductive material in Figure 8D may be applied to the "various embodiments of the disclosure," which includes shield 120. EX-1010, 22:65-67. Cook also expressly teaches the "shape and/or orientation" of the conductive material shown in Figures 8A-8D may be incorporated into the shield "as desired," which includes incorporating the shape and orientation in Figure 8D into the embodiment described in the text where shield 120 has the conductive material sandwiched between two layers of dielectric. EX-1010, 22:62-65.

These are not "two" embodiments. Figure 8D illustrates a "shape and/or orientation" of the conductive material that may be "incorporated into" Cook's shield. EX-1010, 22:63. When Figure 8D is "incorporated into" the shield 120, the result is one shield, not two shields. EX-1059 ¶351.

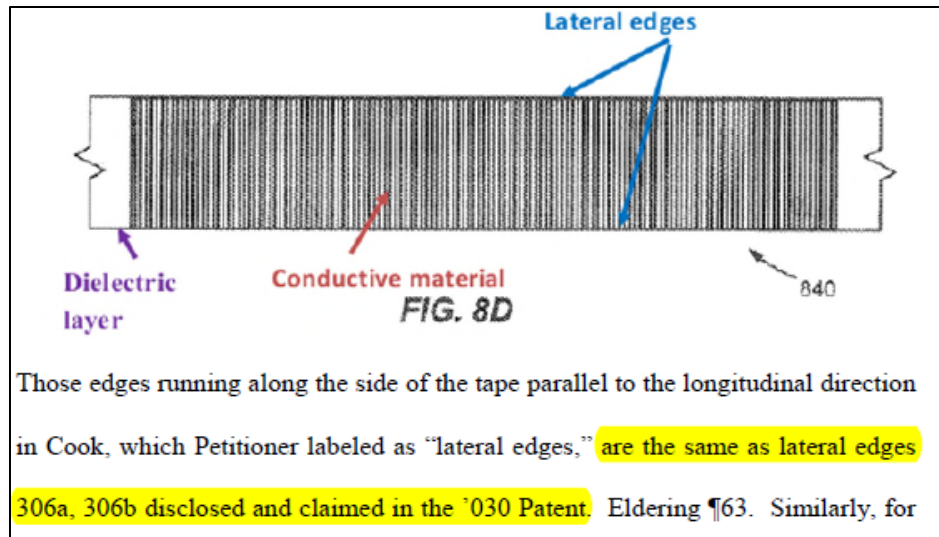
Third, even if the Board views CommScope's position as requiring features from multiple embodiments, that does not mean CommScope "improperly" combined embodiments. The Institution Decision recognized it can be appropriate

to find anticipation by combining embodiments when the reference contemplates doing so. Paper 7 at 16-17. Ample authority supports this.³ Cook teaches Figures 7B, 8D, and 11 may be used with Cook’s “various embodiments of the disclosure,” which includes using each figure with the embodiment of shield 120 in the text and the embodiments in the other figures. EX-1010, 2:55-61, 3:1-3. Cook also teaches: “any combination of shielding arrangements may be utilized.” EX-1010, 3:60-61; EX-1059 ¶365.

Lastly, PO makes several erroneous and/or misguided counterarguments that Figure 8D by itself does not disclose each of the claimed requirements for the conductive material (lateral edges, between dielectric layers, and continuous).

Lateral edge. There is no dispute that Figure 8D shows the conductive material extends to the top and bottom edges. PO, however, emphasizes that CommScope’s expert did not specifically label those top and bottom edges as the “lateral edges.” This is a red herring because PO itself argues the top and bottom edges are the lateral edges:

³ *Kennametal, Inc v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376, 1381 (Fed. Cir. 2015); *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1344 (Fed. Cir. 2016); *Unified Patents Inc. v. Intellectual Ventures I LLC*, IPR2016-01643, Paper 51 (PTAB March 26, 2018).



Paper 16 at 13. CommScope also explained that, if the lateral edges are the left and right edges, Cook discloses that too. Petition, 21-22. Thus, under either interpretation of lateral edge, Cook discloses this element.

Between two layers of dielectric. PO argues that Figure 8D does not show conductive material between two dielectric layers. But CommScope did not rely on this figure for that feature. Cook already expressly teaches that feature in the text. The relevant feature in Figures 8A-8D is the “shape and/or orientation” of the conductive material that Cook broadly teaches may be incorporated “as desired” into the “various embodiments” of the shield, which includes disclosed shields with two dielectric layers sandwiching the conductive material. EX-1010, 22:62-67.

Continuous conductive material. PO quibbles that the conductive material in Fig. 8D is a “patch.” Nothing in the claims excludes a “patch.” The claims broadly recite conductive “material.”

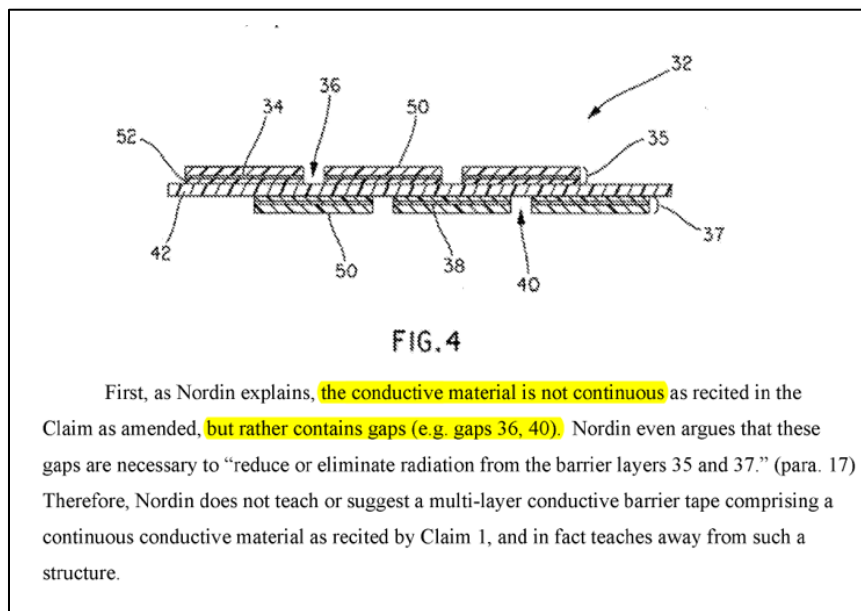
PO also quibbles that the conductive material in Fig. 8D is “relatively continuous.” First, this does not help PO for claim 18, which does not require the “continuous” limitation. Second, it also does not help PO for claim 1. A POSITA understands “relatively continuous” is one example of continuous. EX-1059 ¶¶353-59, ¶363. PO’s expert conceded there are “no discontinuities within the material itself” in Figure 8D. EX-1048, 163:5-16; EX-1010, 11:67-12:2 (explaining “single” patch”). He also agreed that the material has “electrical continuity”.⁴ EX-1048, 163:5-16, 246:17-21. Third, PO is taking “relatively” out of context. EX-1059 ¶359. Cook explains that “relatively continuous” means that “as desired” a dielectric end “may” be positioned at “one end” of the continuous

⁴ PO incorrectly says CommScope never asserted Fig. 8D was continuous. The Petition asserted: “**continuous** conductive material would similarly extend to the lateral edges such **as shown above in FIG 8D.**” Petition at 21. PO also incorrectly says CommScope made an “obviousness-style” argument for the “continuous” limitation based on CommScope’s annotation. This annotation that PO refers to addresses the alternative interpretation of the *lateral edge*. EX-1059 ¶352.

conductive material. EX-1010, 23:62-67. Nothing in the claim excludes adding a dielectric end before or after the continuous conductive material. The only requirements in the claims about the conductive material compared to the dielectric layers are that the conductive material is (a) between dielectric layers and (b) extends to the lateral edge of the dielectric layers. There is no other requirement.

Because PO's expert cannot dispute Figure 8D meets the plain language, he mentioned a new claim construction at deposition (which PO never proposed). He asserted continuous conductive material must "extend from one end of the tape to the other." EX-1048, 61:21-62:2, 64:4-5. PO's expert misread the grammar. The adjective "continuous" describes the noun "conductive material," i.e., the conductive material itself must be continuous. It does not describe the material's relationship to another component (the end of the tape). The plain language of the claim already specifies where the conductive material extends: "the conductive material of the barrier tape *extending to each lateral edge* of the two layers of the dielectric material." EX-1001. PO also conflated two concepts: the conductive material and the overall shield. PO's expert agreed Cook teaches "*continuous conductive material*" but said the result is a "*shield* that is *discontinuous* from end to end." EX-1010, 242:14-19, 245:1-7. The claim states no requirement for the "shield." EX-1059 ¶¶359-60.

PO's expert also missed the prosecution history. PO added "continuous" to distinguish "Nordin" (in the parent application):



EX-1056, 9-10, EX-1057. PO focused on the fact the conductive material "contains gaps" between the plural segments of conductive material. Cook's conductive material in Figure 8D with a single patch contains no such "gaps."

PO's expert's new construction does not even distinguish Figure 8D. EX-1059 ¶361. PO's expert believes the conductive material in Figure 8D does not extend from "one end of the tape to the other" because there is a dielectric end. But Cook qualifies that the dielectric end in Figure 8D "may" be present and explains that "may" means the feature can be omitted. EX-1010, 23:62-64, 25:64-26:2. Even PO must concede that the conductive material in Figure 8D extends "from end of the tape to the other" when the dielectric ends are omitted.

B. Obviousness (Ground 2)

The Board can skip Ground 2. It was a backup ground if PO disputed claim

11.

II. Glew Grounds (Grounds 3-4)

A. Anticipation (Ground 3)

The dispute is which of Glew's edges are the "lateral" edges. Glew's dielectric layers (135, 137) have (a) shorter sideways-extending edges (red) and (b) longer lengthwise-extending edges (yellow):

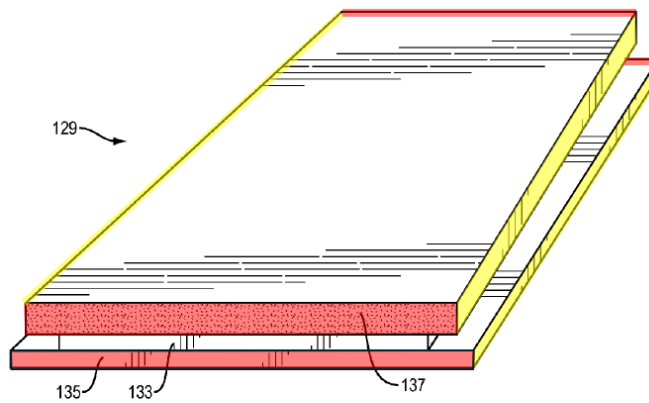


FIG. 13C

The layers are rectangular with each edge running along one of the four sides.

PO's brief skips two areas of agreement. First, the parties agree on the "lateral" direction in Glew. PO's expert agreed that "lateral" refers to sideways. EX-1048, 74:7. PO's expert also agreed that Glew's sideways edges (red) run in the "lateral" direction.

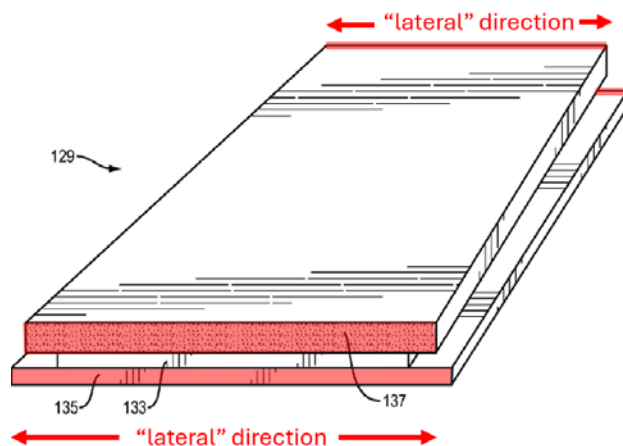


FIG. 13C

EX-1048, 81:17-82:10, EX-1051. Second, PO's own construction agrees the term "lateral" is associated with the "direction" the edges run. The parties, however, disagree on the correct direction. PO proposes that the "lateral edges" are the edges running along the sides in the "longitudinal direction." Paper 16 at 16. CommScope's position is that "lateral edges" are the edges running along the sides in the "lateral direction." By contrast, the edges running in the longitudinal directions are the longitudinal edges. EX-1055 ¶0159 ("longitudinal edge 60"), Fig. 22, EX-1038 5:46-55 ("longitudinal edges"); EX-2013, 5:64-6:3 ("longitudinal edges"); EX-2010 ¶34.

There is no dispute Glew anticipates under CommScope's position. Glew's conductive material (133) is covered up because it is sandwiched between the layers. Petition, 36-37. PO, however, does not dispute Glew's conductive material (blue) does "extend" to each of the below edges.

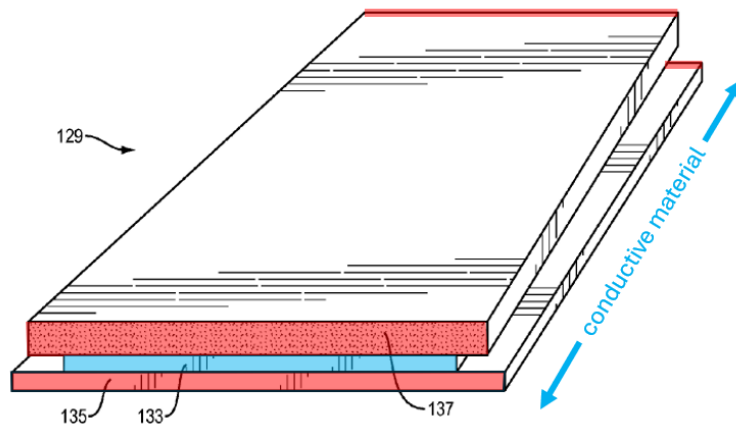


FIG. 13C

Id.

CommScope recognizes the Board preliminarily adopted PO's construction based on arguments in PO's preliminary response. At that time, however, PO's expert had not yet clarified that he agreed the sideways edges (red) are the edges in the lateral direction. CommScope also had not yet rebutted PO's arguments.

PO's preliminary response argued that CommScope "acknowledged" PO's construction was right. Paper 6 at 26. PO cited CommScope's annotation of the lateral edges in CommScope's *backup obviousness* ground on Petition page 49. CommScope expressly qualified the annotation with "***if*** the lateral edges are as labelled below." Petition, 49. It is a misrepresentation to say CommScope "acknowledged" PO is right. PO's response also suggests CommScope agrees with PO, pointing to CommScope's annotation of lateral edges for Cook. But CommScope expressly noted there was another construction of lateral edges.

Petition, 21. CommScope is allowed to argue in the alternative to address both constructions and to present different grounds for each construction.

PO's preliminary response also argued the specification supported PO's construction. PO's expert, however, agreed there is no special definition in the specification. EX-1048, 103:14-104:2. PO's response cites edges 306a and 306b. But the specification does not identify them as "lateral" edges. It merely identifies them as a "first edge" and "second edge." EX-1001, 8:1-3

Respectfully, the Board should reject PO's construction. There is no basis in the plain language to change "lateral" to the "longitudinal direction."

Longitudinal is different from lateral, e.g., longitudinal is perpendicular to lateral. EX-1048, 71:13-14.

By contrast, CommScope's position states the agreed point ("lateral" refers to the direction that edge runs) and does not change the term "lateral."

CommScope's construction properly accounts for all the edges, i.e., there are both lateral and longitudinal edges:

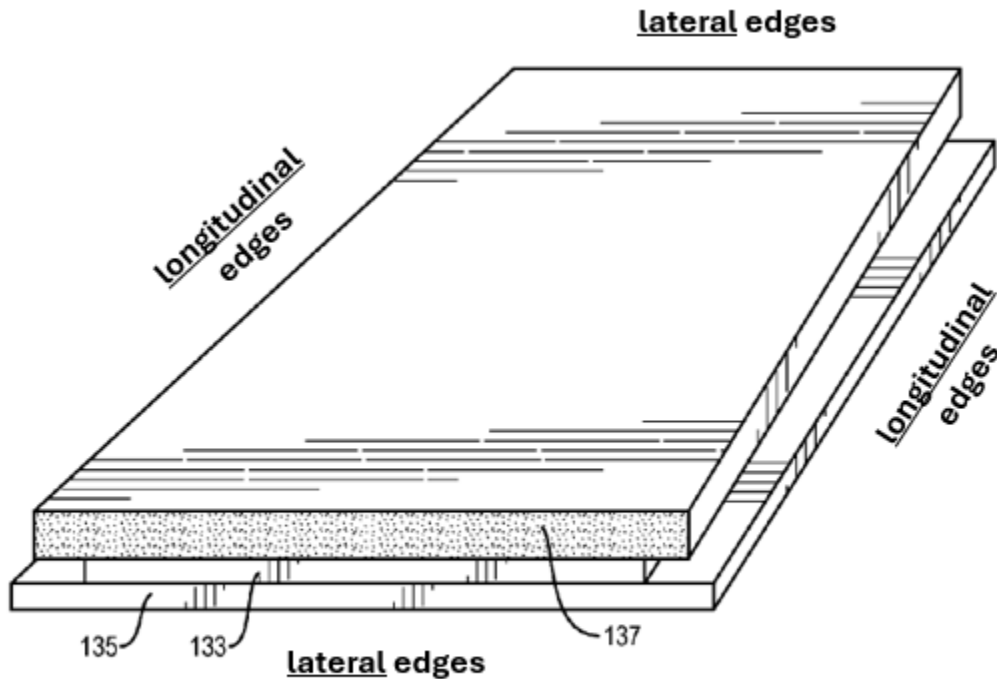


FIG. 13C

PO says the dictionary defines lateral as “side” and says lateral edges thus must run along the “side” of the dielectric layers. Glew’s sideways edges do run along the sides, i.e., the two shorter sides. PO’s expert agreed the dielectric layer is an elongated “rectangle,” which has four sides. EX-1048, 42:18-43:12. None of the dictionaries defines “lateral” as the “longitudinal” direction as PO proposes.

B. Obviousness (Ground 4)

Even if PO’s construction for “lateral” edges applies, Glew still renders the claims obvious. The Institution Decision preliminarily agreed that (a) Glew itself and (b) Glew with Cook and/or knowledge of POSITA renders obvious the challenged claims.

Glew itself. The Petition showed a POSITA would have been motivated to have the long edges of Glew's conductive layer and dielectric layers aligned because this was cheaper, easier, and less complicated than making each layer a different, custom width. Petition, 50-51. CommScope showed a predictable technique (slitting) for this. *Id.* The background art known to POSITAs confirms it was "usual" to slit and resulted in "economy." EX-1049, 4:43-45 ("It is usual to fabricate the inner jacket made of sandwich tape from wide sheets of material which are then slit to the desired width for economy of fabrication."); EX-1059 ¶369. PO does not dispute that slitting was a known technique that predictably results in all the layers being aligned. The slitting machines uses knives that make straight, flush cuts through the layers. EX-1059 ¶368; EX-1048, 16:16-19.

PO, citing its expert, makes two counterarguments. PO's expert testimony, however, cannot help PO because he admitted he had no experience with manufacturing tape for cables (EX-1048, 12:13-21), no experience with sizing tape to the correct width (EX-1048, 13:10-14), and no experience with slitting (EX-1048, 11:19-21, 195:20-196:1).

PO's first argument (PO's Section 1, pages 54-56) is that just because a POSITA "could" make Glew's tape with aligned edges does not mean a POSITA "would." Paper 16 at 54. The Petition showed a POSITA would have been motivated to make Glew's tape with the edges aligned because it was cheaper,

easier, and less complicated and that there was a predictable technique (slitting). Petition, 50-51. PO emphasizes there were other techniques. That does not contradict that a POSITA would have been motivated to consider the cheaper, easier, and less complicated technique (slitting). PO also misunderstood the issue because PO's expert, as he admitted, has no experience here. EX-1048, 11:19-21, 12:13-21, 13:10-14, 195:20-196:1. PO lists examples of techniques for "bonding" the layers together (e.g., thermal bonding, welding, etc.). Paper 16 at 55. The tape must still be sized (slit) to desired width regardless of how the layers are bonded. EX-1059 ¶369.

PO quibbles that background references on slitting show tapes with a discontinuous metal layer and not a continuous metal layer. But CommScope did not need to cite references for the continuous limitation. Glew already teaches the tape has a continuous metal layer. Petition, 36. The advantages of slitting (easier, less complicated, etc.) equally apply to discontinuous and continuous metal-layer tapes. EX-1059 ¶370. Both tapes must be manufactured and sized. *Id.*

CommScope's expert confirms that continuous tapes (e.g., Zetabon) are also manufactured with slitting. *Id.* PO's expert admitted he had no opinion that slitting would not work for continuous tapes. EX-1048, 194:21-195:14.

PO's second argument (PO's Section 2, page 56-58) argues a POSITA would be "discouraged" from aligning the edges of Glew's tape because the

conductive metal edges would be “exposed” to the electrical cable conductors.

Paper 16 at 56 (citing PO’s Section IV.B, Eldering ¶¶88-98, 158).

PO’s concern about “exposed” edges does not apply to Glew. EX-1059 ¶¶372-73. Glew *encourages* exposed conductive edges. Glew teaches to include a *conductive* “separator” in the center of the cable adjacent to the electrical conductors. EX-1008 ¶¶0044-0047, ¶¶0120-0124, ¶¶0132-0133, ¶0154. Glew’s separator (10, 300) has cross-like shapes:

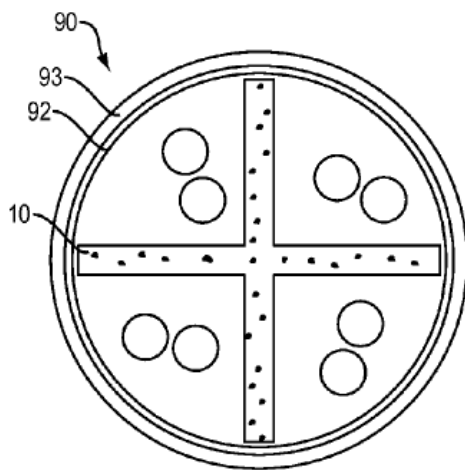


FIG. 6A

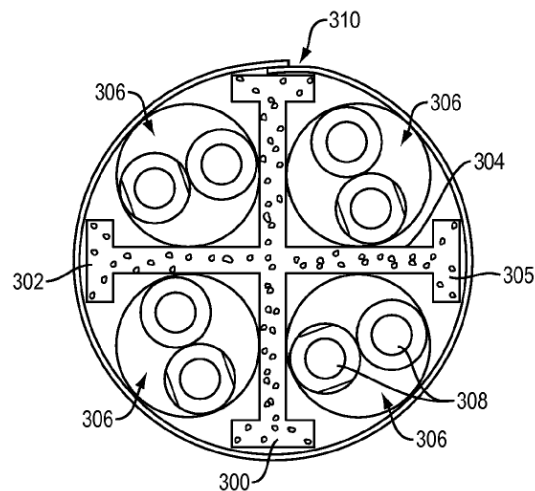


FIG. 10A

EX-1008. The cable conductors are the small white circles next to the arms of the separator. Figs. 2A (below left) shows the *entire surfaces* of those conductive separator arms (not just a small edge) is exposed:

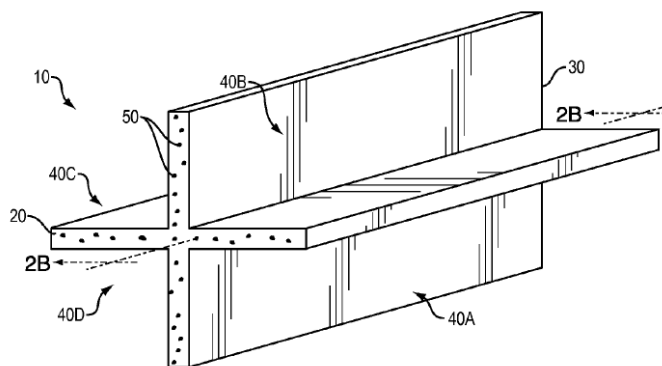


FIG. 2A

EX-1008 ¶0122, ¶0160. Glew specifically designed the exposed separator to be conductive. EX-1059 ¶372. The dots spread through the separator are “electrically conductive inclusions.” EX-1008 ¶0104, ¶¶0107-0110, ¶¶0120-0124, ¶0154.

Glew goes even farther. Glew emphasizes that “substantially the entire surface” of the exposed separator can be coated with conductive material such as “aluminum.” EX-1008 ¶¶0149-0150. Numeral 100 in Figure 8A shows an example:

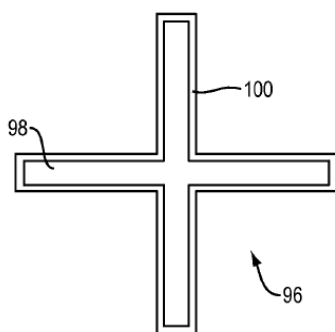


FIG. 8A

Id.

PO never accounts for Glew's own disclosure encouraging exposed conductive edges. PO cites no law finding a POSITA would be "discouraged" from having a feature expressly encouraged by the reference.

PO's argument is also wildly out of perspective. The exposed portion that PO says a POSITA would be discouraged from having is the tiny side edge of the tape identified below:

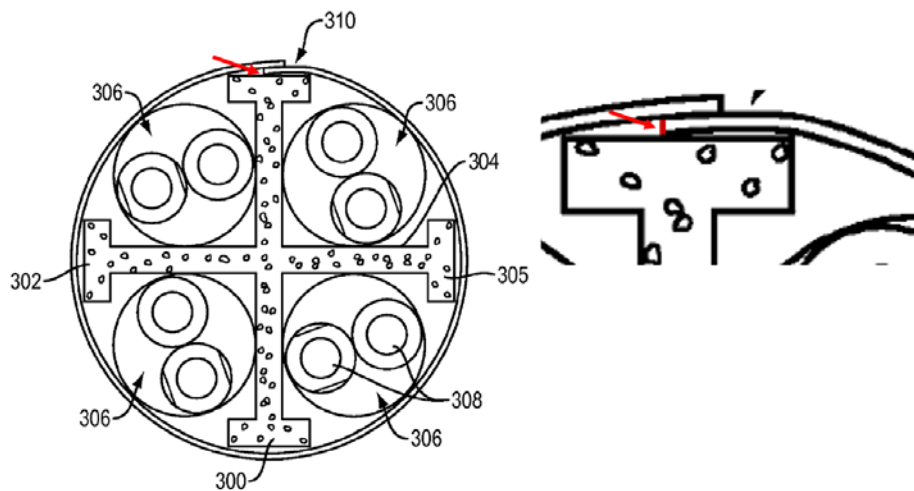
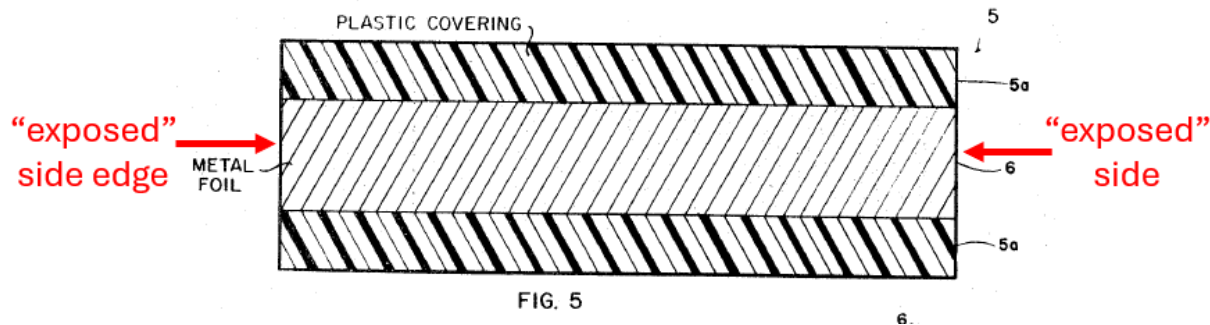


FIG. 10A

Even assuming that edge is exposed to the conductors, compare that small exposed edge to the *whole exposed cross-shaped separator* (300). Because Glew *encourages* having the much larger entire surface (not just an edge) of the separator exposed and even coated with conductive material, it would be illogical to conclude a POSITA would be *discouraged* from having the comparatively tiny edge exposed in Glew's design. EX-1059 ¶374.

PO's argument is wildly out of perspective for a second reason. Glew's Figure 13D shows an exemplary two-layer shield where both layers are conductive, i.e., the whole inner and outer surface (not just the edge).⁵ EX-1008 ¶10158, ¶10196, Fig. 13D.

PO's evidence is off point. PO cites Roberts. But, in Figure 5, Roberts allows for the very feature PO says is undesirable (exposed side edges):

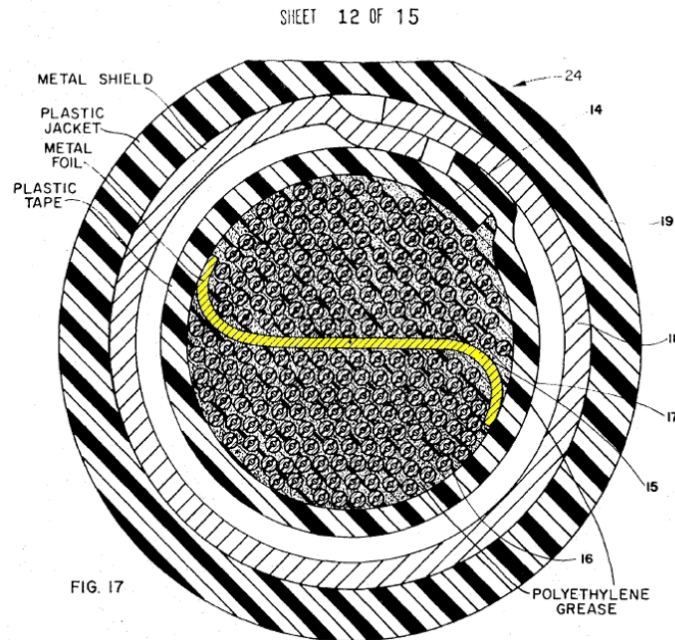


EX-1009, Fig. 5, 4:56-58 (“...viable as a shield from both a structural and electrical standpoint”); EX-1059 ¶376. Robert explains that exposed side edges are only a concern “when considering a cable of many miles.” EX-1009, 3:59-61. The main concern are the “major surface[s]” (top/bottom). EX1009, 10:71-74. PO identifies nothing indicating Glew's data cable is for “many miles.” It is not. EX-1059 ¶377.

⁵ When the separator is conductive (as is the case in Glew), there is electrical benefit to having exposed conductive material in the shield. EX-1025 ¶10047.

Further, the cited statements in Roberts relate to the *internal* foil 15

“between” groups of conductors, i.e., a separator:



EX-1009, 1:13-16; Fig. 17; EX-1059 ¶378. But Glew, as shown above, expressly encourages using a conductive separator with exposed surfaces/edges. Thus, Glew does not adopt Roberts’s concern. EX-1059 ¶378. Furthermore, even Roberts does not suggest his concern applies to an *external* shield that is not “between” conductors. Glew’s shield (310) is an *external* shield. EX-1008, Fig. 10A.

PO also cites Kroushl and NEPTAPE. Neither is relevant to Glew. EX-1059 ¶¶379-82. Glew’s context, as mentioned above, is a design that expressly allows for exposed conductive material adjacent the conductors. Neither Kroushl nor NEPTAPE indicate exposed side edges are a concern in that context. *Id.*

Glew with Cook and/or knowledge of POSITA. PO does not (and cannot) dispute that Cook expressly teaches to extend the conductive material to the lateral edge (the alleged missing element in Glew). EX-1010,12:22-23 (“span fully across a width”). PO also does not dispute the Petition identified a motivation to combine Glew and Cook: “a POSITA would understand that it would be more cost-effective and simpler to manufacture such tapes with aligned edges.” Petition, 53-54.

PO argues Cook itself does not disclose the full barrier tape element (continuous, between two layers, lateral edge). CommScope’s position does not require Cook itself to supply the full element. Glew already itself discloses his conductive material is continuous and between two layers. Petition, 34-36.

III. Roberts Grounds (Grounds 5-9)

The Petition showed Roberts anticipates and renders obvious all the challenged claims, except dependent claim 14.

A. Anticipation (Ground 5)

The most important point for CommScope’s anticipation argument is correcting a misunderstanding. PO’s expert objects that “a POSITA would not understand that metal foil shield 15 could be *used for* metal armor shield 18.” EX-2001 ¶81. PO’s expert explained he meant a POSITA would not “*replace*” the armor with the foil. EX-1048, 155:21-156:5. PO likewise emphasizes that the foil

is “different” to underscore that it cannot be “used for” (i.e., “replace”) the armor. Paper 16 at 49-50.

CommScope’s position is not that foil 15 be “used for” (i.e., “replace”) armor 18. The Petition asserts that element 18 is itself the claimed barrier tape. Petition, 58 (“metal shield **18** is a multi-layer tape...”). The Petition only discussed foil 15 to point out that Roberts’s teaching to add plastic on the armor 18 would “look the same” as Roberts’s teaching to add plastic on the foil as shown in Figure 5. Petition, 59. The fact that *plastic* on the components would “look the same” says nothing about replacing one for the other. EX-1059 ¶386, ¶¶384-85.

The Institution Decision suggests it would be helpful to explain this more. Roberts teaches both that you can firmly adhere plastic to the foil 15 *and* that this same concept applies to the armor 18. Starting with the foil, Roberts teaches that it can be a plain piece of metal (foil per se) or you can firmly adhere plastic to the foil. EX-1009, 10:6-10. The “firmly adhering plastic” has mechanical advantages. EX-1009, 10:6-10 (“...the strength or durability added to a metal foil by a *firmly adhering plastic* coating enables the coated metal foil to withstand more mechanical handling”), 13:49-53 (“By using the concept of a *firmly adhering plastic* coating on a metal foil, the mechanical properties...can be improved.”). The “firmly adhesive plastic” also provides “dielectric” protection as recited in the claims. EX-1009, 13:44-45 (“Dielectric protection can take the form of a *firmly*

adhesive plastic coating”). Figures 5-8 show the different cross-sections that result from adding plastic to one, both, or all surfaces:

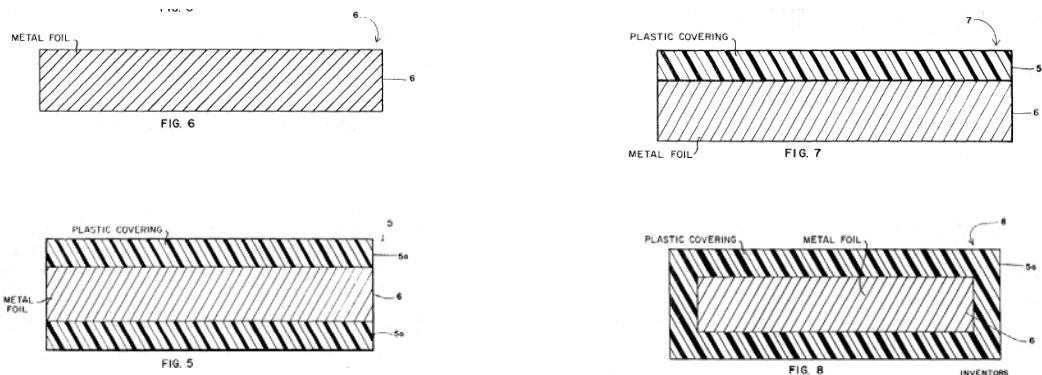


Figure 5 (bottom left) shows the result from adding plastic to two surfaces (top and bottom).

Critically, Roberts discloses that the “firmly adhered” plastic teaching also applies to the armor 18. Like the foil, Roberts teaches the armor can be plain metal (Figure 1) or can have “firmly adhered” plastic, specifically: “This particular piece of armor is in a sense an electrical, as well as a mechanical, shield and it can have a plastic, such as polyethylene, *firmly adhered to either one or more surfaces thereof.*” EX-1009 at 4:20-23. The “one or more surfaces” language covers the same examples of plastic on one, two, or all surfaces.

The Petition relies on the example where the armor itself has plastic on two surfaces (top and bottom). PO’s expert agreed “one or more” includes two surfaces (top and bottom). EX-1048, 150:19-152:3, 153:1-13. In that example, CommScope noted that added plastic to the armor would “look the same” as Figure

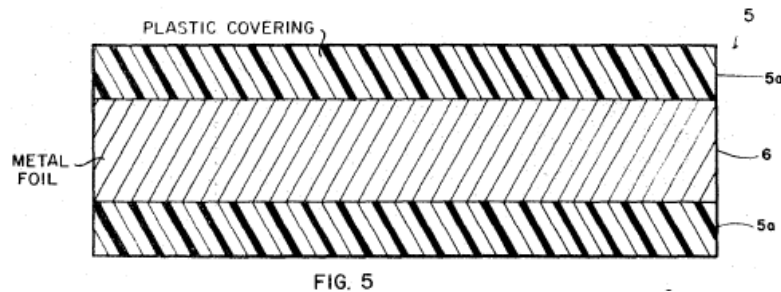
5 because Figure 5 illustrates the result of plastic on the top and bottom surfaces. Petition, 59. Nothing in this argument required the foil 15 be “used for” the armor 18. Roberts teaches the armor *itself* can have plastic on both surfaces. EX-1009 at 4:20-23; EX-1059 ¶385.

Neither PO nor its expert actually argues the added plastic on the top and bottom surface of the armor would look different than Figure 5. PO only argues about other characteristics. PO argues the *thickness* of the *metal* (in the armor versus the foil) is different. This says nothing about the *added plastic*. Furthermore, although differences such as thickness might argue against replacing armor with the foil, they do not respond to the express teaching about adding plastic to multiple surfaces of the armor.

Once PO’s misunderstanding is corrected, the only dispute is whether the conductive material of the barrier tape (i.e., the armor) extends to “each lateral edge of the two layers of the dielectric material.” There is more than enough evidence for a POSITA to at least “*reasonably understand or infer*” that Roberts discloses that element. *Acoustic Tech., Inc. v. Itron Networked Sols., Inc.*, 949 F.3d 1366, 1373 (Fed. Cir. 2020) (“In an anticipation analysis, the dispositive question is whether a skilled artisan would ‘*reasonably understand or infer*’ from a prior art reference that every claim limitation is disclosed in that single reference.”).

First, PO's expert concedes firmly adhered plastic on both sides of the armor counts as two layers of the dielectric material. EX-1048, 153:1-13. PO also does not dispute that the conductive material of armor 18 extends to the farthest edges of the armor. Armor 18 itself is metal; thus, the whole armor is conductive material not merely parts of the armor. EX-1059 ¶386.

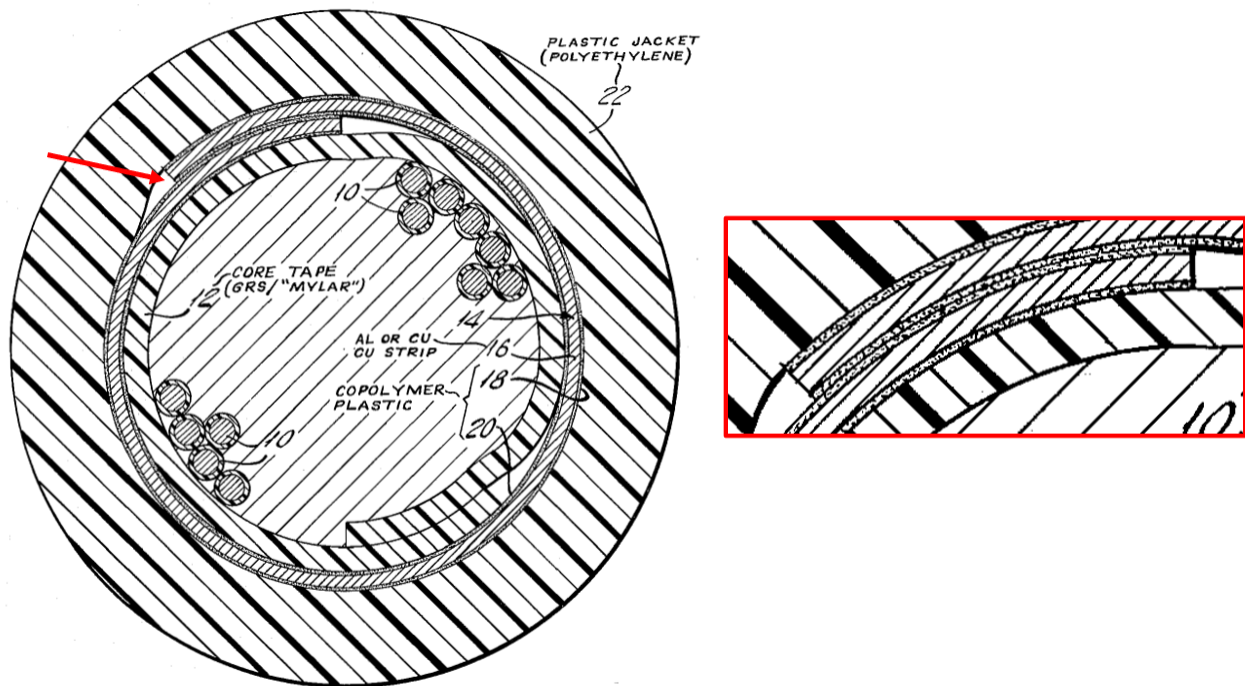
Second, Roberts shows the cross-section that result from firmly adhering plastic to both side of a piece of metal:



EX-1009, Fig. 5. Because the plastic is “firmly adhered” to the metal, the plastic is flush with the metal and reciprocally the metal (conductive material) extends to the lateral edges of the plastic. EX-1059 ¶386. PO notes that the metal in Figure 5 is the foil. But this is no answer because Roberts expressly teaches the *same* concept of firmly adhering plastic to both sides also applies the metal armor 18. EX-1009 at 4:20-23. It is “reasonable” for a POSITA to understand (or at least “infer”) that the same exact concept applied to the armor 18 looks the same.

Third, Roberts explains its disclosure follows the “conventional telephone cable design,” which provides further context for what the armor would look like

with plastic on both sides. EX-1009 at Abstract. In the conventional cable design, CommScope's expert explained the metal layer is flush with the added plastic. CommScope's expert corroborated this conclusion about the "conventional telephone cable design" with the Jachimowicz reference that is (a) cited on the face of Roberts and (b) explains the "shielding tape for shielding telephone cables." EX-1013 (title). Jachimowicz shows the metal (16) sandwiched between the plastic (18, 20) and flush with the edges (the same as Roberts's Figure 5):

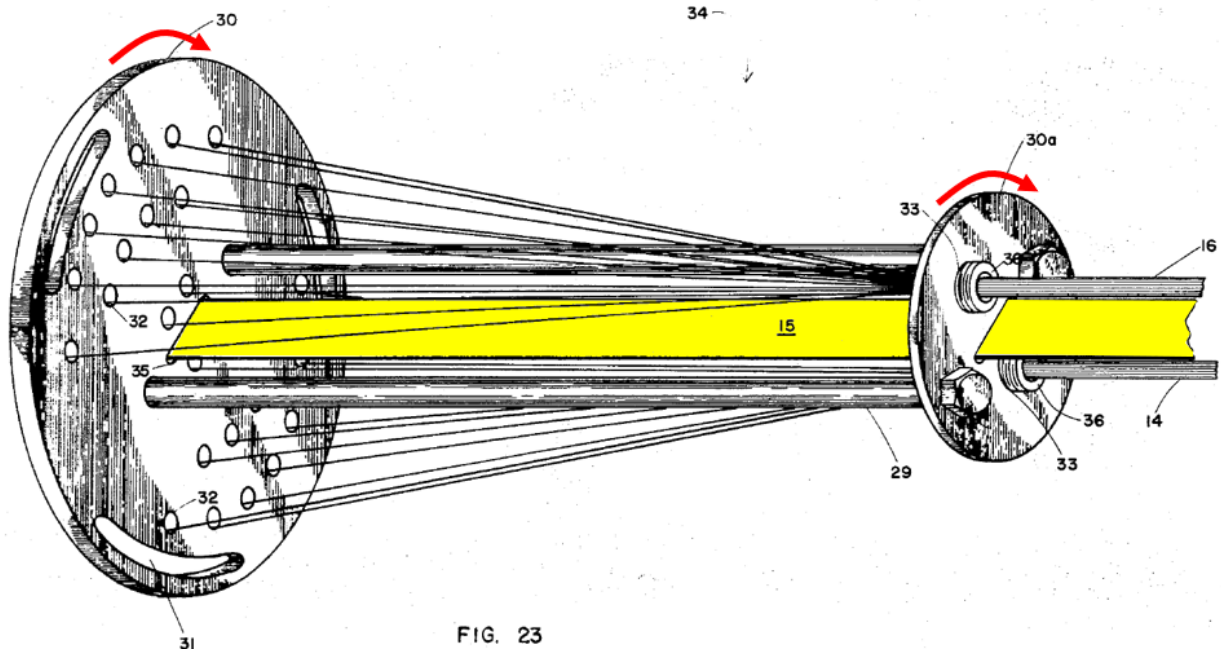


EX-1013, Fig. 1. PO does not dispute CommScope's expert is factually correct about the "conventional telephone cable design." PO merely argues it is improper to consider this evidence. To the contrary, "Extrinsic evidence may be used to interpret the allegedly anticipating reference and to shed light on what it would have meant to a PHOSITA." *Monsanto Tech. LLC v. E.I. DuPont De Nemours &*

Co., 878 F.3d 1336, 1345 (Fed. Cir. 2018) (brackets omitted). CommScope's expert is not importing a new teaching. He is explaining the existing teaching about the "conventional" cable design.

Fourth, *PO's expert does not identify any alternative way a POSITA would interpret Roberts*. PO's expert did not identify some alternative figure or teaching in Roberts to firmly adhere the plastic to the top/bottom surfaces another way.

PO also disputes whether Roberts discloses dependent claims 3 and 9 that require a filler with a "helical twist." The Petition explained, citing Figure 23, that Roberts's manufacturing process twists the filler into a "twisted composite." EX-1009, 12:28. PO quibbles that Roberts does not use the term "helical." Roberts teaches that filler (15) is fed through die plates (30, 30a) that rotate along a central axis to twist the components (14, 15 16) into a twisted composite as they exit to the right:



EX-1009, 3:11-13, 11:69-12:39. A POSITA knows that the result of twisting the tape/ribbon shape of the filler (15) along its central axis is helical:



EX-1059 ¶388. PO's expert conceded this. EX-1048, 248:21-249:9, EX-1054.

The edges form a helix like DNA. EX-1059 ¶388.

B. Obviousness (Grounds 6-7)

The Institution Decision preliminary agreed with Ground 7.⁶ If there is some doubt whether the metal in Roberts's armor extends to the lateral edge of the plastic when the metal is coated with plastic, Ground 7 explained this feature would be obvious in view of (a) Roberts itself and (b) Roberts with Jachimowicz-036.

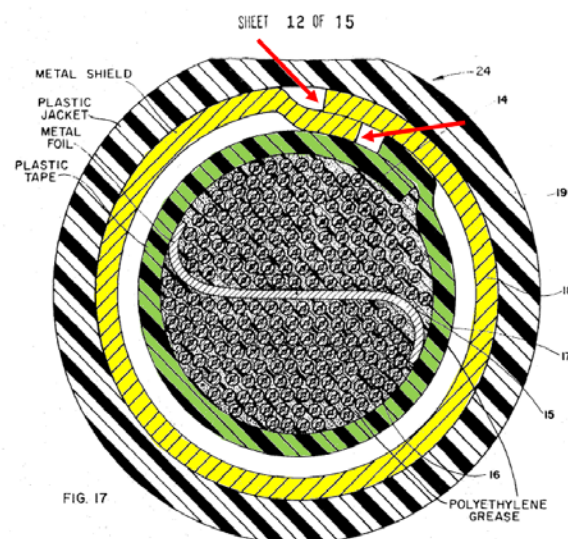
Roberts itself. The Petition explained that a POSITA would find it obvious for Roberts's shield 18 (armor) to have the same "cross section" shown in Roberts's Figure 5. Petition, 72. PO does not dispute that Figure 5 shows the metal extending to the lateral edge of the plastic at least when the foil is coated with plastic. The Petition explained there is, at most, a finite number of possibilities when the armor is likewise coated with plastic. Petition, 74. PO does not dispute this.

PO makes two counterarguments (Sections 1-2, pages 62-66). PO's first argument is that a POSITA would not find it obvious to "replace" armor 18 with the foil 15. CommScope's position is about the "cross section," not "replacing" the armor. Petition, 72. The relevant point of the cross-section in Figure 5 is that

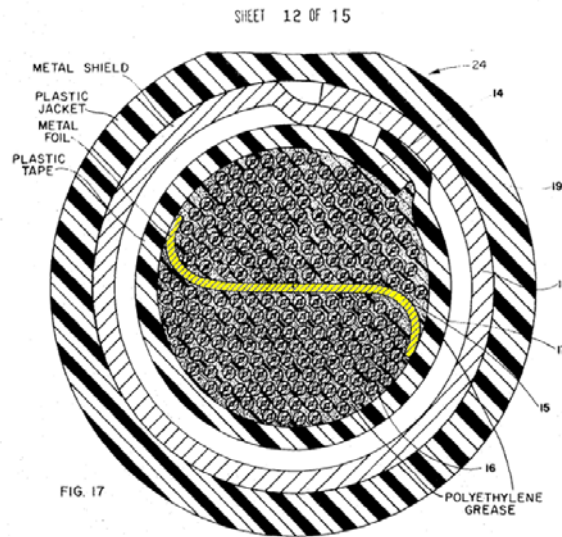
⁶ The Board can skip Ground 6. It was a backup ground if PO disputed Roberts's twisted pairs.

the three layers are flush. The armor 18 already has three layers when coated with plastic (i.e., plastic-metal-plastic) and having those layers flush merely requires aligning the existing layers, not replacing them with the foil. EX-1059 ¶390. PO keep ignoring the express teaching that the armor itself can have the plastic coating.

PO's second counterargument is the "exposed" edge argument discussed for Glew. But PO's expert conceded that the edges of armor 18 are "not exposed" to the electrical conductors inside the center of the cable. EX-1048, 160:14-20. He agreed the edges (arrows) are "isolated" by an additional plastic tape 17 (green) that separates the armor (yellow) from the conductors. EX-1048, 161:12-18, 160:3-8, EX-1052.



EX-1009, Fig. 17, 10:47-48, 4:14-20. Roberts only describes exposed edges as problematic for the foil (yellow below) because the foil is inside the center:



EX-1009, Fig. 17.

Roberts and Jachimowicz-036. PO does not dispute Jachimowicz-036 discloses the claimed barrier tape. PO argues it is unclear “how” Jachimowicz’s shield would be used in Roberts. CommScope’s expert provided this explanation. EX-1006 ¶249; Petition, 71 (citing EX-1006 ¶249); EX-1059 ¶394. CommScope also explained there are only a finite number of possibilities. Petition, 74. Jachimowicz fits exactly within the finite number of possibilities of implementing Roberts’s teaching that the armor can be a shield with plastic on “one or more” surfaces. Jachimowicz is cited on the face of Roberts and its focus is how to construct a shield with plastic on both the top and bottom surfaces and the resulting benefits. EX-1013, 1:46-54, 1:65-2:9, 3:18-45.

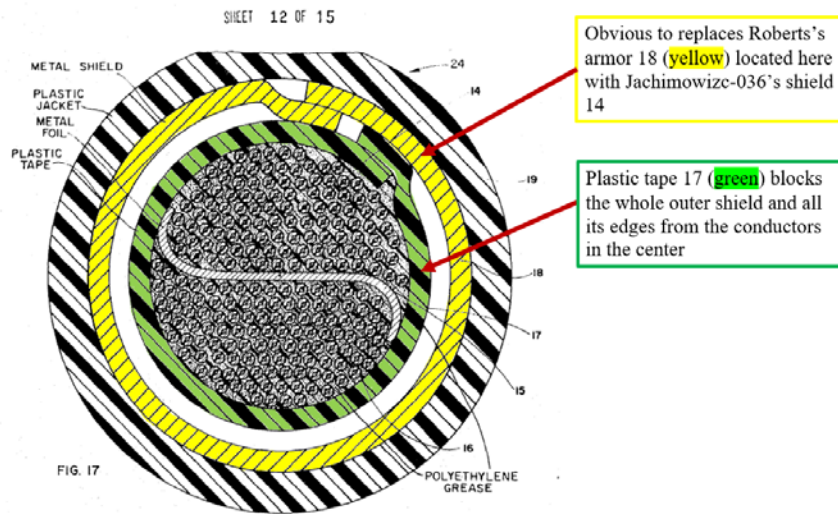
PO wrongly says Jachimowicz’s shield is too “thin” for Robert’s armor. Jachimowicz shield is only “**relatively** thin” that Jachimowicz explains means “5-

10 mils” thick such as “8 mil thick.” EX-1013, 1:45-46, 2:17-18, 2:58-59. Roberts only requires the armor to have a thickness greater than the foil that is 1-5 mils thick. EX-1009, 4:17-18, 4:58-59. Jachimowicz-036’s example (8 mils) is greater than 1-5 mils. EX-1059 ¶392. “8 mil” coated aluminum is standard per Federal Regulation:

Federal Register / Vol. 5	
(5) The following is a list of acceptable materials for use as cable shielding. Other types of shielding materials may also be used provided they are accepted by REA prior to their use.	
Standard Cable	Gopher Resistant Cable
8-mil Coated Aluminum ¹ 5-mil Copper	10-mil Copper 6-mil Copper-Clad Stainless Steel 5 mil Copper-Clad Stainless Steel 5 mil Copper-Clad Alloy Steel 7-mil Alloy 194 6-mil Alloy 194 8-mil Coated Aluminum ¹ and 6-mil Coated Steel ¹
¹ Dimensions of uncoated metal.	
(i) The 8-mil aluminum tape must be plastic coated on both sides and must comply with the requirements of ANSI/ICEA S-84-608-1988, paragraph 6.2.2.	

EX-1058 at 29331, 29340; 7 CFR §§ 1755.390, 1755.890.

The modification (replace armor 18 with shield 14 of Jachimowicz) would not result in edges being exposed to the electrical conductors because there is still the plastic tape (green) that blocks the entire outer shield and its edges from the electrical conductors:



EX-1009, Fig. 17; EX-1059 ¶395.

C. Grounds 8-9

PO did not separately dispute these grounds.

IV. Ground 10: Clark-478

The Institution Decision preliminarily agreed the claims would have been obvious over the combination of Clark-478, Roberts, and Glew.

PO says CommScope is relying on the “same” combination the examiner considered during prosecution. Here, CommScope identified new teachings (e.g., Roberts's armor 18 instead of foil 15). PO says Roberts and Glew do not disclose the barrier tape element. Section I.A and III.A, above, show PO is wrong. PO says CommScope's motivations are “contradicted” because a POSITA would not extend the conductive material to the lateral edges. This is incorrect and non-responsive. CommScope's motivations are about modifying Clark-478's two-layer tape to a three-layer tape, not the lateral edge.

Dated: June 20, 2024

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Certification under 37 CFR § 42.24(d)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petitioner's Reply to Patent Owner's Response totals 5,573 words per Microsoft Word 365, which complies with the requirement of 5,600 words allowed under 37 CFR § 42.24(c)(i).

Respectfully submitted,

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Certificate of Service

Pursuant to 37 C.F.R. § 42.6(e) and the agreement of the parties, the undersigned certifies that on June 20, 2024, a true and correct copy of the foregoing *Petitioner's Reply* was served via electronic mail upon the following:

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