

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

STERLITE TECHNOLOGIES INC.,
Petitioner,

v.

AFL TELECOMMUNICATIONS, LLC.,
Patent Owner.

IPR2025-00127
Patent 11,287,591 B2

Before JOSIAH C. COCKS, JEFFREY W. ABRAHAM, and
BRIAN D. RANGE, *Administrative Patent Judges*.

COCKS, *Administrative Patent Judge*.

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

I. INTRODUCTION

Sterlite Technologies Inc. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) under 35 U.S.C. §§ 311–319 requesting *inter partes* review of claims 1–4, 8, 13, and 14 of U.S. Patent No. 11,287,591 B2 (Ex. 1001, “the ’591 patent”). AFL Telecommunications, LLC. (“Patent Owner”) filed a Preliminary Response (Paper 8, “Prelim. Resp.”).

Under the authority delegated to us by the Director of the U.S. Patent and Trademark Office under 37 C.F.R. § 42.4(a), we may only institute an *inter partes* review when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); *see also* 37 C.F.R. § 42.108(c). However, institution of *inter partes* review is discretionary. *See Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”).

For the reasons below, we do not institute an *inter partes* review.

II. INITIAL MATTER

In the Preliminary Response, Patent Owner indicates that “[u]nder 35 U.S.C. § 253(a), Patent Owner filed a statutory disclaimer of claim 14,” and that the only ground directed to claim 14 “is not addressed herein.” *See id.* at 1 n.1.¹ Pursuant to 37 C.F.R. § 42.107(e), a “patent owner may file a statutory disclaimer under 35 U.S.C. [§] 253(a) in compliance with

¹ Although the Preliminary Response references “Ex. 2004” in connection with the statutory disclaimer, we discern that a “Disclaimer in a Patent Under 37 CFR 1.321(a)” dated February 19, 2025, and referencing claim 14 of the ’591 patent appears in the record as Exhibit 2003.

§ 1.321(a) of this chapter disclaiming one or more claim in the patent. No *inter partes* review will be instituted based on disclaimed claims.” 37 C.F.R. § 42.107(e). Patent Owner’s disclaimer of claim 14 renders that disclaimed claim inapplicable for *inter partes* review. Accordingly, we evaluate the Petition in connection with only claims 1–4, 8, and 13 (“the challenged claims”), and only the grounds proposed for those claims.

III. BACKGROUND

A. Related Matters

Both parties identify *AFL Telecommunications, LLC. V. Sterlite Technologies, Inc.*, No. 1:23-cv-01202-RGA (D. Del) as a related matter. *See* Pet. 59–60; Paper 5 (Patent Owner’s Mandatory Notices), 1. Patent Owner also identifies the following patents and pending applications as related to the challenged patent and therefore may be affected by a decision in this proceeding:

- US Patent No. 12,105,335 B2;
- US Patent No. 11,709,329 B2;
- US Patent Application No. 2023/0350144 A1; and
- US Patent Application No. 2023/0350145 A1.

Paper 5, 1.

B. Real Parties In Interest

Petitioner identifies itself as the only real party in interest. *See* Pet. 59. Patent Owner identifies itself as the only real party in interest. *See* Paper 5, 1.

C. Overview of the '591 patent

The '591 patent is titled "Optical Fiber Cable." Ex. 1001, code (54).

The '591 patent's Abstract reads as follows:

An optical fiber cable includes: a sheath; and a core that is housed in the sheath and includes an intermittently – adhered optical fiber ribbon including optical fibers and adhesive portions for intermittently adhering the optical fibers in a longitudinal direction. Recesses and protrusions are disposed alternately in a circumferential direction on an outer circumferential surface of the sheath. The recesses each include: two connecting portions respectively connected to radial inner ends of two adjacent protrusions; and a bottom surface positioned between the two connecting portions.

Id. at code (57).

Figure 1A of the '591 patent is reproduced below:

FIG. 1A

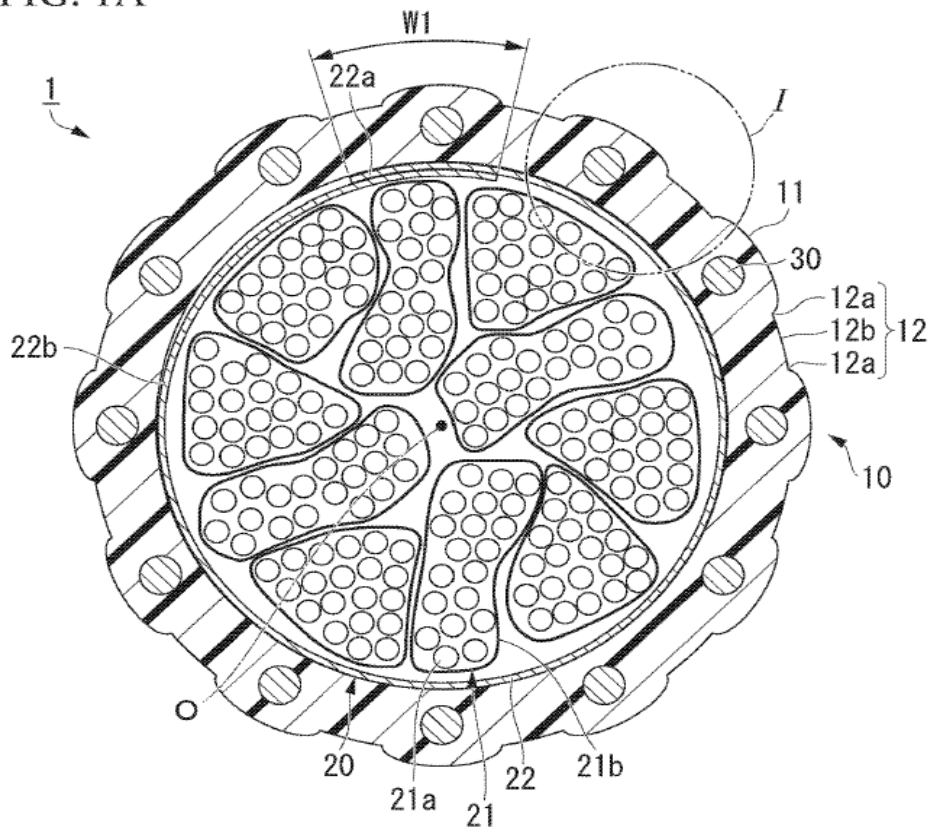


Figure 1A above illustrates optical fiber cable 1, which includes sheath 10 and core 20. Ex. 1001, 3:5–7. The outer surface of sheath 10 includes a plurality of protrusions 11 and recesses 12 that are “disposed alternatively in the circumferential direction” such that “an uneven shape is formed on the outer circumferential surface of” sheath 10. *Id.* at 4:22–27. The ’591 patent explains that optical fiber cable 1 is installed within micro-duct D (shown in Figure 3 reproduced below) via an air blowing process such that air flows through recesses 12 to form an air layer that reduces friction between cable 1 and micro-duct D during the installation process. *Id.* at 8:48–53.

FIG. 3

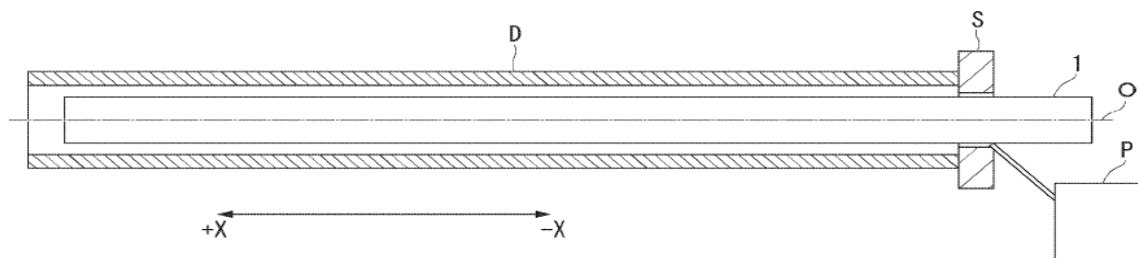


Figure 3 above “is a schematic view illustrating a method of air-blowing.” Ex. 1001, 2:15–16. Seal S is attached to the end of micro-duct D and optical fiber cable 1 is inserted through the opening of seal S. *Id.* at 5:41–51. The optical fiber cable is installed within micro-duct D via a flow of air provided by pump P through seal S into micro-duct D, which forms an air layer between the cable and the micro-duct. *Id.*

Figure 6 of the '591 patent is reproduced below:

FIG. 6

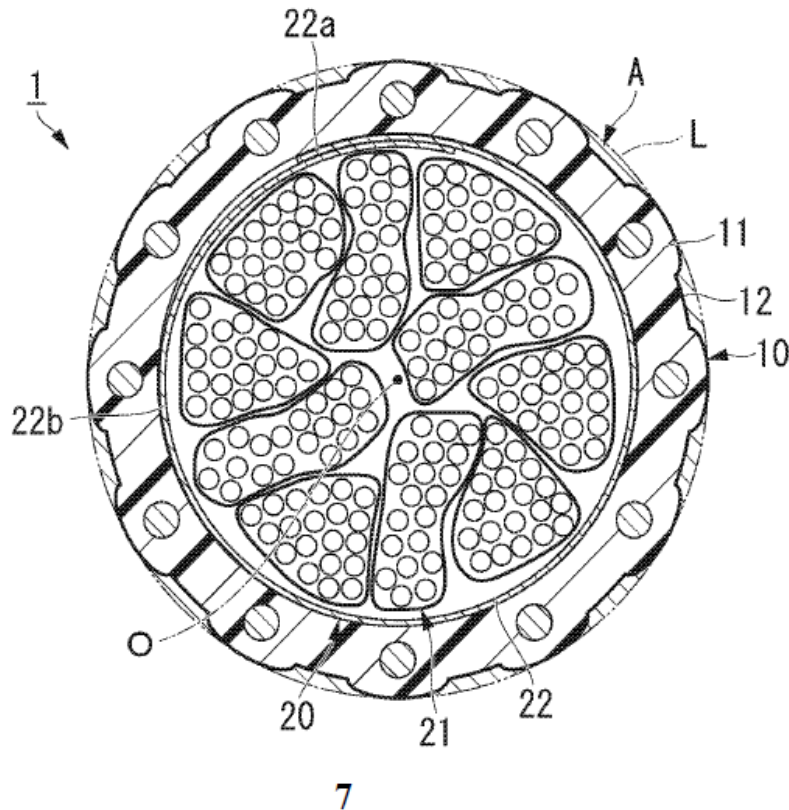


Figure 6 above depicts “an explanatory view of a cross-sectional area of a recess.” Ex. 1001, 2:21–22. As set forth in the '591 patent, the cross-sectional area of recesses 12, i.e., cross-sectional area A shown in Figure 6 above, must be within “a predetermined range” to provide an effective air layer. *Id.* at 8:53–56. More specifically, as established via the results of an “air-blowing test” involving optical cable 1, micro-duct D, seal S, and pump P, a cross-sectional area A of between 1.3 mm² and 4.8 mm² constitutes the range in which that cross-sectional area is “good.” *Id.* at 9:10–53. More particularly, the '591 explains the following in connection with the noted range:

This is because the cross-sectional area A of the recesses is sufficiently small, the sealability between the seal S and the

optical fiber cable is good, and the backflow of air from the inside of the micro-duct D is suppressed. That is, it is considered that the friction is reduced by the sufficient air intervening between the inner surface of the micro-duct D and the optical fiber cable, and the force can be transmitted from the upstream side to the downstream side of the optical fiber cable.

Id. at 9:36–44.

Figure 2 of the '591 patent is reproduced below:

FIG. 2

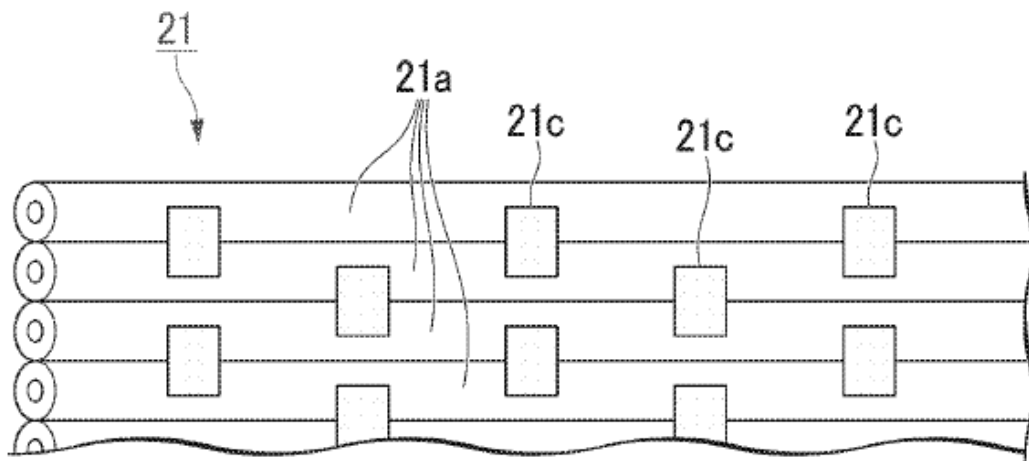


Figure 2 above “is a schematic view of an intermittently-adhered optical fiber ribbon” 21, which was illustrated, for instance, in Figure 1A (reproduced *supra*) as being positioned within optical fiber cable 1. Optical fibers 21a are “intermittently-adhered” via adhesive portions 21c. Ex. 1001, 4:62–66. The '591 patent explains that such intermittent adherence of the fibers provides the following benefits:

Thus, the rigidity of the optical fiber cable 1 is ensured as compared with the case where a plurality of optical fibers, which are not adhered, are simply twisted, and the structure is advantageous in buckling resistance and air-blowing characteristics. Further, as compared with the case where a plurality of optical fibers are collectively coated with a resin, the

diameter of the optical fiber cable 1 can be reduced and an increase in transmission loss can be suppressed.

Id. at 4:67–5:7.

D. The Challenged Claims

Petitioner challenges claims 1–4, 8, and 13 of the '591 patent. Claim 1 is independent and claims 2–4, 8, and 13 ultimately depend from that independent claim. Claim 1 is representative and is reproduced below:²

1. An optical fiber cable comprising:
 - [1.1] a sheath; and
 - [1.2] a core that is housed in the sheath and comprises an intermittently-adhered optical fiber ribbon comprising:
 - [1.3] optical fibers; and
 - [1.4] adhesive portions that intermittently adhere the optical fibers together in a longitudinal direction, wherein
 - [1.5] recesses and protrusions are disposed alternately in a circumferential direction on an outer circumferential surface of the sheath,
 - [1.6] the recesses each comprise:
 - [1.6a] two connecting portions respectively connected to radial inner ends of two adjacent protrusions;
 - [1.6b] and a bottom surface positioned between the two connecting portions, and
 - [1.7] in a transverse cross-sectional view, a cross-sectional area of the recesses that is enclosed by closed curves tangent to radial outer ends of the protrusions and all the recesses is 1.3 mm² or greater and 4.8 mm² or less.

² We reproduce the claim with the same designations for claim limitations that are used in the Petition (i.e., “1.1” through “1.7”). *See, e.g.*, Pet. viii.

E. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability that are applicable to this proceeding:³

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–4, 8, 13	103	Summers, ⁴ Kaji ⁵
1–4, 8	103	Pausan, ⁶ eABF ⁷

Pet. 7.

IV. PATENTABILITY ANALYSIS

A. Principles of Law

A patent claim is unpatentable under 35 U.S.C. § 103 “if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” 35 U.S.C. § 103. The question of obviousness is resolved on the basis of underlying factual determinations

³ In the Petition, Petitioner also proposed a ground of unpatentability for claim 14 based on a reference characterized as “Sato-1.” *See* Pet. 5. As noted above, however, Patent Owner has statutorily disclaimed claim 14 (*see supra* § II) and we do not address that claim or the ground of unpatentability asserted for that claim.

⁴ Summers et al., U.S. Patent No. 6,160,940, issued Dec. 12, 2000 (Ex. 1005, “Summers”).

⁵ Kaji et al., U.S. Patent Application Publication No. 2016/0299311 A1, published Oct. 13, 2016 (Ex. 1006, “Kaji”).

⁶ Pausan et al., International Application Publication No. WO 2018/144529 A1 published Aug. 9, 2018 (Ex. 1007, “Pausan”).

⁷ AFL and Dura-Line sales catalog, “Enterprise Blown Fiber Solutions” with 2015 copyright date (Ex. 1008, “eABF”).

including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness.⁸ *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

At this preliminary stage, we determine whether the information presented shows a reasonable likelihood that Petitioner would prevail in establishing that at least one of the challenged claims would have been unpatentable over the proposed prior art. We analyze the asserted grounds with the above-noted principles in mind.

B. Level of Ordinary Skill in the Art

As noted above, resolving the question of obviousness requires determination of the level of ordinary skill in the art. *Graham*, 383 U.S. at 17–18. Here, however, as Patent Owner observes (Prelim. Resp. 10),

⁸ Patent Owner does not present arguments or evidence of secondary considerations in its Preliminary Response. Therefore, secondary considerations do not constitute part of our analysis herein.

Petitioner has provided no assessment as to the level of ordinary skill to be considered in evaluating the grounds of obviousness that are advanced by Petitioner. The absence of such assessment calls into question the fundamental adequacy of Petitioner in carrying its burden to show a reasonable likelihood of success of unpatentability of the challenged claims that necessarily must take into account the level of ordinary skill in the art.

C. Claim Construction

In interpreting the claims of the '591 patent, we “us[e] the same claim construction standard that would be used to construe the claim[s] in a civil action under 35 U.S.C. [§] 282(b).” *See* 37 C.F.R. § 42.100(b) (2020). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as would have been understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (*en banc*).

With respect to claim construction, Petitioner offers the following:

Sole[l]y for purposes of this Petition, Petitioner believes the Board should apply the agreed upon claim constructions in the co-pending district court litigation to the terms “radial inner ends,” “radial outer ends,” and “convex surface shape that is radially inward” in the Challenged Claims. (Ex-1024, 1). Otherwise, Petitioner proposes that the remaining claim terms in the Challenged Claims be afforded their plain and ordinary meaning.

Pet. 12–13.

Patent Owner expresses that it “accepts the claim constructions agreed upon in the co-pending district court litigation” but “notes that none of these constructions are actually applied by the Petitioner at any point.” Prelim.

Resp. 9. Patent Owner offers the following “construction” of “‘cross-sectional area’ as used in element [1.7]”:⁹

in a transverse view, the area of the recesses that is enclosed by closed curves tangent to radial outer ends of the protrusions and all of the recesses is 1.3 mm² or greater and 4.8 mm² or less[.]

Id. at 10.

Although characterized as a “construction” of the term “cross-sectional area,” we observe that the language presented essentially tracks the language of the entire element [1.7], but simply omits the term “cross-sectional.” Specifically, element [1.7] reads: “in a transverse cross-sectional view, a cross-sectional area of the recesses that is enclosed by closed curves tangent to radial outer ends of the protrusions and all of the recesses is 1.3 mm² or greater and 4.8 mm² or less.” *See* Ex. 1001, 18:24–27. It is not apparent what significance, if any, emerges from the assessment offered by Patent Owner in connection with the term “cross-sectional area” that largely adheres to the language of the claims.

In any event, we do not discern that there is any apparent dispute between the parties as to the meaning of any claim term. In considering the record at hand, we determine that it is unnecessary to make explicit, or further address, any claim term in deciding whether or not to institute trial. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (holding that only claim terms in controversy need to be construed, and only to the extent necessary to resolve the

⁹ Throughout their briefings, the parties refer to the limitations designated [1.1] through [1.7] using the term “element,” e.g., “element [1.7]” (*see, e.g.*, Pet. 23; Prelim. Resp. 23). For consistency with the parties’ chosen nomenclature, we do the same in this Decision.

controversy (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Proposed Ground Based on Summers and Kaji

Petitioner contends that claims 1–4, 8, and 13 are unpatentable for obviousness over Summers and Kali. Pet. 5.

1. Overview of Summers

Summers is titled “Fiber Optic Cable for Installation in a Cable Passageway and Methods and an Apparatus for Producing the Same.” Ex. 1005, code [54]. Summers characterizes an objective of its disclosure as providing “a fiber optic cable that is easy to install in a cable passageway.” *Id.* at 2:3–4.

Figure 6 of Summers is reproduced below:

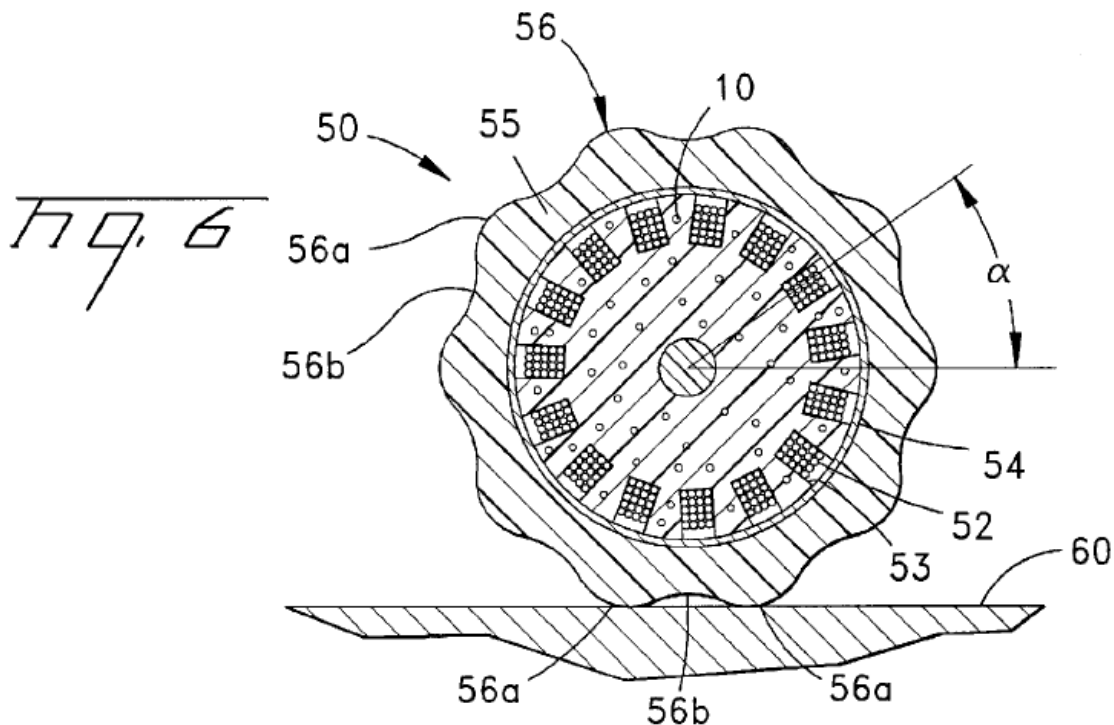


Figure 6 above “is a cross sectional view of a fiber optic cable according to the present invention.” Ex. 1005, 2:23–24. Fiber optic cable 50 includes cable jacket 55 with “undulated profile 56.” Undulated profile 56 is characterized as including “crests 56a” and “hollow[s] 56b.” *Id.* at 3:53–64. Within the cable resides component 10 that includes “four-fiber ribbons 52 disposed in fifteen slots 53 of a cellularized rod 51” (not numbered in Figure 6). *Id.* at 3:53–56.

2. Overview of Kaji

Kaji is titled “Former, Optical Fiber Unit Manufacturing Method and Optical Cable Manufacturing Method.” Ex. 1006, code (54). Kaji describes that its “invention enables an optical fiber bundle to be wrapped in a press-wrapping tape while guiding the optical fiber bundle.” *Id.* ¶ 12.

Kaji’s Figure 2 is reproduced below:

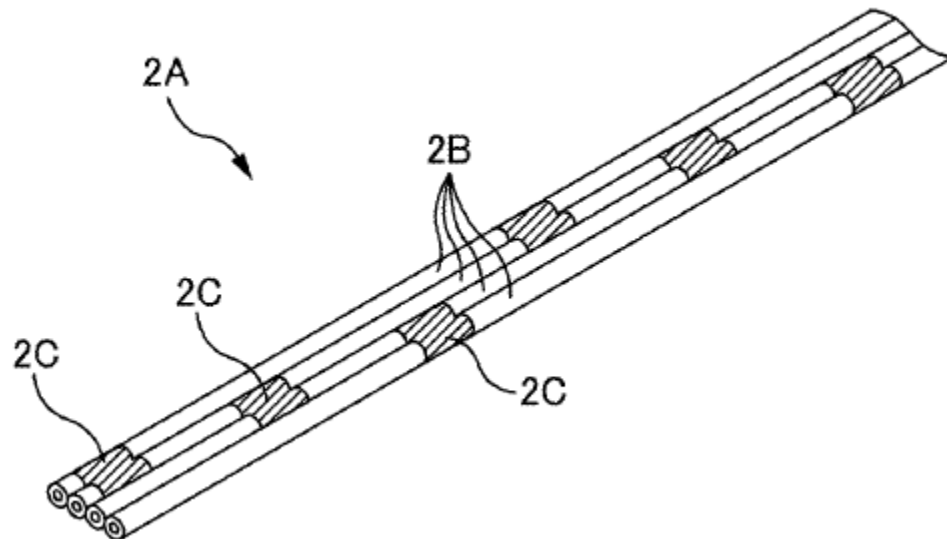


Figure 2 above “is an explanatory diagram of an intermittently-fixed optical fiber tape 2A.” *Id.* ¶ 14. Optical fiber tape 2A includes optical fibers

2B and a plurality of intermittently disposed connection parts 2C connecting two adjacent cores of the optical fibers. *Id.* ¶ 41.

3. *Discussion—Summers and Kaji Ground*

Petitioner submits that all of the features of claims 1–4, 8, and 13 are present in Summers and Kaji, and that their combined teachings establish the obviousness of those claims. *See* Pet. 13–32. Patent Owner disagrees. In that respect, Patent Owner contends that Petitioner’s proposed ground is deficient in connection with multiple limitations of claim 1, and also that Petitioner has not established adequate reason to combine the teachings of Summers and Kaji. *See* Prelim. Resp. 13–21, 23–34. We focus first on element [1.7], i.e., “in a transverse cross-sectional view, a cross-sectional area of the recesses that is enclosed by closed curves tangent to radial outer ends of the protrusions and all the recesses is 1.3 mm² or greater and 4.8 mm² or less.” Ex. 1001, 18:24–27.

a) *Element [1.7]*

The optical fiber cable of claim 1 includes recitation of an outer sheath having protrusions and recesses. Element [1.7] sets forth a particular range of the cross-sectional area of the recesses as being “1.3 mm² or greater and 4.8 mm² or less.” As is described in the ’591 patent, that range balances matters pertaining to sealability and friction when an optical fiber cable is installed within a micro-duct. *See, e.g.*, Ex. 1001, 9:10–53. Petitioner acknowledges that the recesses, i.e., hollows 56b, of Summers’s cable 50 are not disclosed as being 1.3 mm² or greater and 4.8 mm² or less but postulates that “[f]or at least three distinct reasons . . . it would have been obvious to a

POSITA^[10] to configure Summers' cable 50 with the cross-sectional area of all hollows 56 being 1.3 mm² or greater and 4.8 mm² or less." Pet. 22–23.

We consider the three proposed reasons offered by Petitioner.

"First," Petitioner contends that "it is well established that merely changing the **size** of a device **is not patentable**."¹¹ *Id.* at 23 (citing *In Gardner v. TEC Syst., Inc.*, 725 F.2d 1338 (Fed. Cir. 1984) (en banc); *Powers-Kennedy Contracting v. Concrete Mixing & Conveying*, 282 U.S. 175, 185 (1930)). Petition, however, advances no cogent argument that such a sweeping principle, even if true, is applicable in the circumstance here where a specific range of recess cross-sectional area has been determined to provide an identified, optimal structural configuration of an optical fiber cable that facilitates the cable's installation. Indeed, Petitioner concludes its brief assessment of the matter noting that "each Challenged Claim recites various structural limitations such as element [1.7] that define a respective optical fiber cable." *Id.* at 23–24. Petitioner's own recognition that limitation [1.7] is a distinct structural limitation that defines an optical fiber, seemingly undermines the very premise on which Petitioner relies in discounting that limitation as not contributing to the patentability of the challenged claims. We reject this proposed first "reason" purporting to establish unpatentability as inadequately argued and supported.

"Second," according to Petitioner, "**overlap between** prior art **ranges** and a claimed range **establishes** a *prima facie* case of obviousness that is only rebuttable by demonstrating that the claimed range provides benefits

¹⁰ "POSITA" is an acronym that stands for person of ordinary skill in the art.

¹¹ Unless otherwise noted, in this Decision, emphasis presented is a part a party's argument and was provided by the party.

that are different in kind or unexpected.” Pet. 24. Petitioner proceeds to theorize that Summers discloses “a non-zero (e.g., 0.1 mm²) cross-sectional area corresponding to each hollow 56b disposed on its cable jacket 55” and that such “non-zero value establishes a lower-bound of the range that Summers discloses for the recited ‘cross-sectional area’.” *Id.* Patent Owner observes that Summers itself does not “recognize[] a ‘non-zero value’ or any cross-sectional area as a parameter.” *See* PO Resp. 28. We agree that Summers does not itself set forth any particular “lower-bound” values of a range for a cross-sectional area of a recess, much less the specific value selected by Petitioner of “0.1 mm².”

Furthermore, Petitioner’s characterization that “Summers’[s] stated objectives” establishes an “upper-bound” of an area range is ill-explained and simply does not follow from Summers’s teachings. *See* Pet. 24–25. The “stated objectives” offered by Petitioner arise from general disclosures in Summers of providing “minimal resistance” during cable installation and recognition that portions of a cable exterior, e.g., “crests” may contact “surfaces in a cable passageway.” *See* Pet. 24–25 (citing Ex. 1005 2:5–8; 5:55–61; 2:46–51; 3:57–64; claim 3) (emphasis omitted). Petitioner then postulates from those general disclosures that “a cross-sectional area defined by an existing cable passageway establishes an upper-bound of the range that Summers discloses for the recited ‘cross-sectional area’.” *Id.* at 25. Petitioner appears to take the position that the entirety of the interior diameter of a cable passageway forms an “upper-bound” of the required range. *Id.* Petitioner then submits that “8 millimeters (“mm”) or less” were values “well known in the art” for a cable passageway’s interior diameter,

and that the cross-sectional area of that cable passageway can be calculated to be “50.26 mm².” *Id.*

Based on its alleged “lower and upper bounds,” Petitioner arrives at a cross-sectional area “range” of “a non-zero value (e.g., 0.1 mm²) or greater and about 50.26 mm² or less,” which, according to Petitioner, “overlaps the claimed range of 1.3 mm² or greater and 4.8 mm² or less.” Pet. 25–26. Petitioner’s proposal that Summers suggests the above-noted “range” is deficient. As discussed above, Summers’s teachings do not convey or suggest reasonably any recognized lower or upper bounds for the cross-sectional area of its hollows 56, much less any such bounds that establish a “range” that overlaps or encompasses the identified range of the ’591 patent. We note that although Petitioner characterizes the purported range “overlap” as rendering the challenged claims “presumptively obvious” on the basis of being “devoid of any alleged criticality or unexpected results to rebut that presumption” (Pet. 25–26), Petitioner neglects to assess or consider the content of the ’591 patent establishing the basis and desirability of the claimed range (e.g., Ex. 1001, 9:10–53). We find unpersuasive Petitioner’s above-discussed second “reason” in asserting the obviousness of the challenged claims.

“Third,” and finally, Petitioner asserts that “routine experimentation to determine optimum or workable ranges of a **result-effective variable** is **obvious** to a POSITA and ordinarily within the skill of the art.” Pet. 26 (citing *In re Applied Materials*, 692 F.3d 1289 (Fed. Cir. 2012)). Petitioner then states that “a POSITA knew that cable/duct friction affects installation of a cable into an existing duct” and makes general citation to, and summary of, a variety of record documents urged as supporting that statement. *Id.* at

27. Petitioner concludes that the “known relationship between outer surface geometries of a cable with an uneven shape and cable/duct friction is sufficient to render element [1.7] obvious,” and that “[e]lement [1.7] is further rendered obvious by that known relationship, coupled with Summers’ disclosure of a range overlapping the claimed range.” *Id.* at 27–28.

At the outset, as discussed above, the proposed “range” that is said to emerge from Summers’ disclosure does not find adequate underlying support and is deficient on this record. That deficiency does not aid Petitioner’s proposed basis for obviousness. Furthermore, even if “friction affects” are generally known to impact cable installation, Petitioner provides no adequate assessment or evidentiary support that it is the cross-sectional area of recesses interposed between projections, and which reside on a cable’s sheath, that are a “result-effective variable” known to a person of ordinary skill in the art as being adjustable or optimizable. To that end, we share Patent Owner’s view that it is incumbent on Petitioner to provide adequate evidence that the prior art, itself, recognizes a given parameter as a “result-effective variable” ripe for optimization. *See, e.g.*, Prelim. Resp. 27 (citing *In re Antonie*, 559 F.2d 618 (CCPA 1977)). As Patent Owner observes, and we agree, “the Petition is devoid not only of evidence of prior art recognition of the cross-sectional area range of element [1.7], it lacks evidence of any prior art recognizing even the cross-sectional area of element [1.7] as a result-effective variable — much less the claimed range.” *Id.* at 27–28.

We have considered the Petition, but, for the above-discussed reasons, we determine that Petitioner has not accounted adequately for element [1.7]

as a part of the proposed ground of unpatentability based on Summers and Kaji.¹²

b) Alleged Reasons to Combine Summers and Kaji

Patent Owner also contends that Petitioner has provided inadequate reasoning as to why a person of ordinary skill in the art would have combined the teachings of Summer and Kaji. Petitioner relies on Kaji's teachings in accounting for element [1.2], i.e., "a core that is housed in the sheath and comprises an intermittently-adhered optical fiber ribbon[.]" Pet. 15–18. Petitioner likens Kaji's "intermittently-fixed optical fiber tape 2A" to the claimed "intermittently-adhered optical fiber ribbon." *Id.* at 15–16. According to Petitioner, a skilled artisan would have looked to Kaji to modify Summers' fiber optic cable 50 to incorporate its intermittently-fixed optical fiber tape 2A. To that end, Petitioner makes the following statements:

A POSITA would have been motivated to modify Summers' fiber optic cable 50 to include Kaji's intermittently-fixed optical fiber tape 2A to obtain the predictable result of enabling a higher density of optical fibers to be packed in Summers' fiber optic cable 50, as contemplated by Kaji.

a POSITA would have had a reasonable expectation of success because such modification would amount to nothing more than a simple substitution of Summers' four-fiber ribbons 52 with Kaji's intermittently-fixed optical fiber tape 2A by known methods of cable manufacturing.

¹² We note that Petitioner does not rely on Kaji in accounting for element [1.7].

A POSITA would thus appreciate that such modification is accomplished without additional change to Summers' fiber optic cable 50.

Pet. 17–18.

Thus, unaccompanied by supporting citation, Petitioner makes specific assessments as to the understanding of one of ordinary skill in the art. For instance, as Patent Owner notes (*see, e.g.*, Prelim. Resp. 18), Petitioner does not articulate an adequate evidentiary basis that obtaining “a higher density of optical fibers” serves as appropriate “motivat[ion]” for a skilled artisan to undertake the substitution that Petitioner proposes. *See* Pet. 17. Neither does Petitioner offer cogent, supported reasoning underpinning the premise that the skilled artisan would have had a reasonable expectation of success for such modification and that it would have been accomplished without additional change to Summers's cable. We also again observe that the Petition is devoid of reasoning as to the level of skill an ordinarily skilled artisan possess. The absence of adequate evidentiary backing coupled with silence as to the level of ordinary skill in the art significantly undermines Petitioner's obviousness position as to the challenged claims based on Summers and Kaji.

4. Conclusion—Summers and Kaji Ground

Having considered the parties' arguments and evidence before us, and for the foregoing reasons, we are not satisfied that Petitioner accounts appropriately for all the required features of the challenged claims or provides suitable basis justifying its view that a skilled artisan would have had adequate reason to combine the teachings of Summers and Kaji. We, thus, determine that Petitioner has not met its requisite burden of showing a reasonable likelihood of success that claim 1 is unpatentable based on

Summers and Kaji. Claims 2–4, 8, and 13, which ultimately depend from independent claim 1, have the same deficiencies as those discussed above in connection with claim 1. We also determine that Petitioner has not made the necessary showing with respect to claims 2–4, 8, and 13.

E. Proposed Ground Based on Pausan and eABF

Petitioner contends that claims 1–4 and 8 are unpatentable over Pausan and eABF. Pet. 33–40.

1. Overview of Pausan

Pausan is titled “Low Friction Indoor/Outdoor Optic Fiber Cable With Fluted Outer Shape.” Ex. 1007, code (54). Pausan’s Abstract is reproduced below:

A cable includes an inner core. In one embodiment, the inner core includes at least one optical fiber, plural flaccid strength members, such as aramid yarns, and at least one rigid strength member, such as one or more GRP^[13] rods. A jacket surrounds the inner core. The jacket has an undulating thickness which results in plural projections formed on an outer surface of the jacket extending along the length of the cable. In a first embodiment, the at least one optical fiber is centrally located within the inner core and surrounded by a buffer tube, which is surrounded by plural GRP rods. In other embodiments, the at least one optical fiber is centrally located within the inner core and located within a channel formed in a single GRP rod or located within a buffer tube, which is placed in the channel formed in the single GRP rod.

Id. at code (57).

¹³ “GRP” stands for “glass reinforced plastic.” Ex. 1007 ¶ 54.

Pausan's Figure 6 is reproduced below:

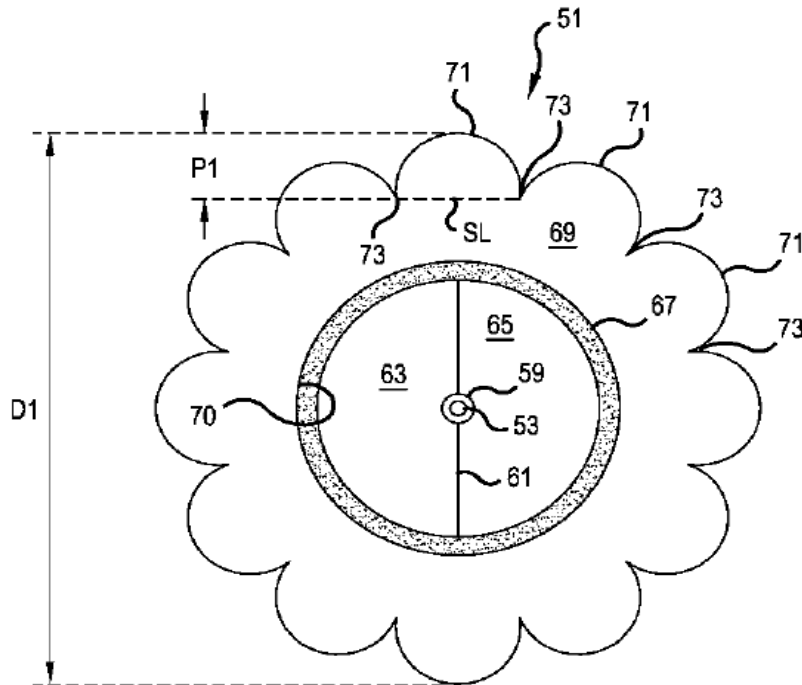


FIG.6

Figure 6 above is a cross-sectional view of an end of a length of cable according to Pausan's disclosure. Ex. 1007 ¶¶ 34, 35. Cable 51 includes an inner core with optical fiber 53 and jacket 69 surrounding the inner core. Id. ¶¶ 58, 61.

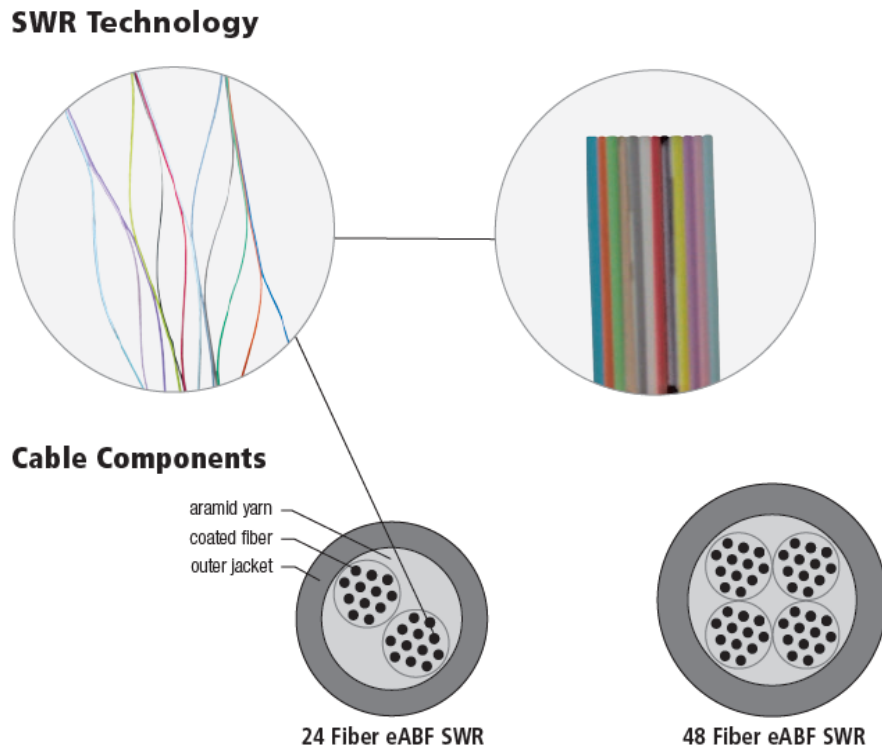
2. Overview of eABF

eABF is a catalogue for “Enterprise Blown Fiber Solutions.”

Ex. 1008, 1.¹⁴ eABF describes a cabling system with fiber cables providing for optical fiber network communications. *Id.* at 5.

¹⁴ The reference page numbering is that provided by Petitioner at the bottom center of each page.

A figure from page 24 of eABF is reproduced below:



The figure above shows interior components of a Spider Web Ribbon (SWR) cable. *Id.* at 24.

3. Discussion—*Pausan and eABF Ground*

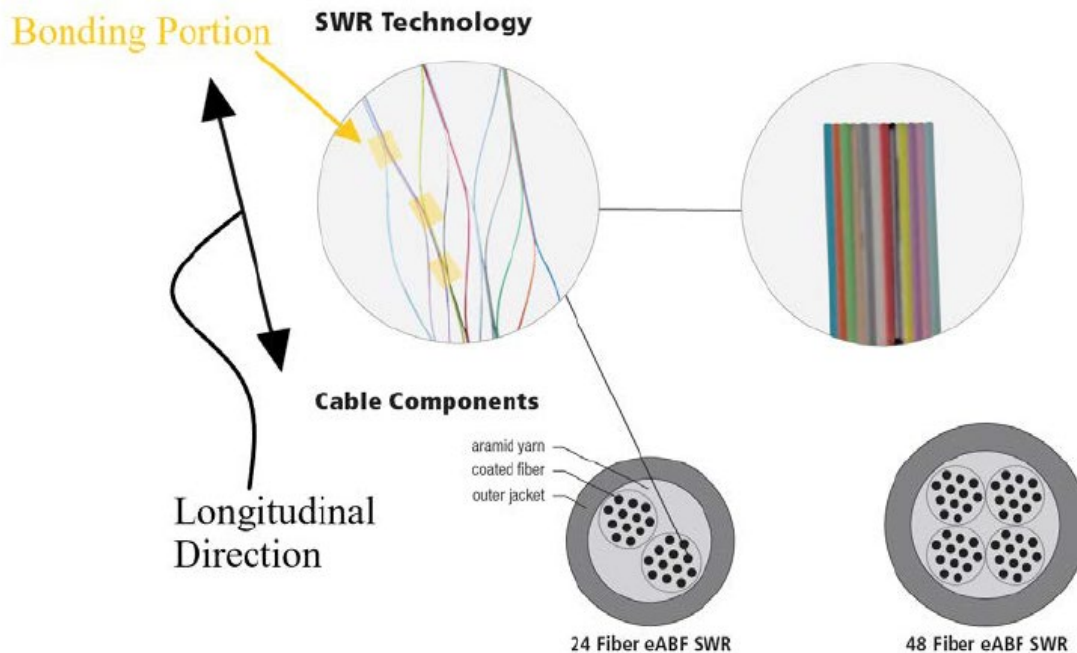
In Petitioner’s view, all of the features of claims 1–4 and 8 are found in Pausan and eABF, and there is adequate basis for combining those teachings. Pet. 33–48. As with the ground that was based on Summers and Kaji, Patent Owner challenges Petitioner’s view as being deficient in accounting for various features of the claims and conveying insufficient reasoning to combine the teachings. Prelim. Resp. 14–17, 21–29, 34–40

As discussed above, element [1.7] incorporates a particular range, “1.3 mm² or greater and 4.8 mm² or less” for the cross-sectional area of recesses of an optical fiber cable. With reference to its ground involving Summers, Petitioner takes essentially the same three positions as to how,

according to Petitioner, that range is suggested by out of Pausan's disclosure. In particular, Petitioner advances the same theories that lower and upper bounds of a range can be calculated and that such range both overlaps the claimed range and is the product a "result-effective variable." *See* Pet. 40–44. The ground involving Pausan suffers from the same deficiencies as those discussed for the Summers based ground (*see supra* § IV.D.3.a). Here too, we determine that Petitioner's approach lacks adequate reasoning and is untethered to adequate supporting evidence to account appropriately for the requirements of element [1.7].

Petitioner also offers similar, if not the same, inadequately developed or supported reasoning as to why and how one of ordinary skill in the art would have combined the teachings of Pausan with those of eABF in accounting, for instance, for the requirements of element [1.2]. *See, e.g.*, Pet. 36–38. That deficient reasoning fares no better here in conjunction with the Pausan-based grounds, and we similarly reject such reasoning here effectively on the same basis as discussed above (*see supra* § IV.D.3.b).

We further observe that there is another notable defect in Petitioner's reliance on eABF to account for element [1.2]. As noted above, that element recites "a core that is housed in the sheath and comprises an intermittently-adhered optical fiber ribbon[.]" *See* Ex. 1001, 18:11–13. Petitioner relies on a figure of eABF found at page 24 of the document. We reproduced above that figure as it appears in eABF. *See supra* § IV.E.2. Petitioner, however, offers an annotated version of the figure, which we reproduce below:



According to Petitioner, the annotated figure above “shows that the eABF [] configures its SWR fiber bundle from multiple optical fibers using multiple bonding portions (in orange)” and that “its bonding portions (in orange) are intermittently disposed” along the optical fibers. Pet. 36. Yet, the Petition lacks any meaningful explanation or evidentiary support that the orange “Bonding Portion” sections that Petitioner adds to eABF’s figure would be understood to be present in the SWR fibers disclosed in eABF. Rather, we are left simply with Petitioner’s arguments that such is the case. See Pet. 36–37. Those bare arguments, however, without more, are inadequate and cannot take the place of necessary evidence that is not present in the record. See *Estee Lauder Inc. v. L’Oreal, S.A.*, 129 F.3d 588, 595 (Fed. Cir. 1997) (“arguments of counsel cannot take the place of evidence lacking in the record” (quoting *Knorr v. Pearson*, 671 F.2d 1368, 1373 (CCPA 1982))).

4. *Conclusion—Pausan and eABF Ground*

As with the ground based on Summers and Kaji, the record before us does not establish the ground based on Pausan and eABF is sufficient to account for claim 1–4 and 8 of the '591 patent. We, thus, determine that, Petitioner has not met its burden to show a reasonable likelihood of success that claim 1 is unpatentable over Pausan and eABF. We also determine that Petitioner has not made the necessary showing with respect to claims 2–4 and 8.

V. REQUEST FOR DISCRETIONARY DENIAL

Patent Owner requests that we exercise discretion to deny institution of *inter partes* review under either 35 U.S.C. § 325(d) or 35 U.S.C. 314(a). Prelim. Resp. 40–57. Because we determine that Petitioner has not shown a reasonable likelihood of success in its assertions of unpatentability for any of the challenged claims, we need not further consider Patent Owner's request with respect to discretionary denial of institution.

VI. CONCLUSION

For the reasons set forth above, we conclude that Petitioner has not shown a reasonable likelihood that it would prevail with respect to at least one of the challenged claims.

VII. ORDER

It is

ORDERED that the Petition is *denied*, and no trial is instituted.

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