

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMMSCOPE TECHNOLOGIES LLC,
Petitioner,

v.

BELDEN CANADA ULC,
Patent Owner.

IPR2024-01228
Patent 11,656,422 B2

Before JOSIAH C. COCKS, CHRISTOPHER M. KAISER, and
KIMBERLY McGRAW, *Administrative Patent Judges*.

McGRAW, *Administrative Patent Judge*.

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

I. INTRODUCTION

Petitioner, CommScope Technologies LLC, filed a Petition requesting *inter partes* review of claims 1–6, 10–14, 16, 18, 20–28, 32–36, 38, 40–42, 44–56, 60–62, and 64 (“the challenged claims”) of U.S. Patent No. 11,656,422 B2 (Ex. 1001, “the ’422 patent”). Paper 1 (“Pet.”). Patent Owner, Belden Canada ULC, filed a Preliminary Response. Paper 7 (“Prelim. Resp.”). Applying the standard set forth in 35 U.S.C. § 314(a), which authorizes institution of 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,” we institute an *inter partes* review of all claims of the ’422 patent on all grounds asserted in the Petition.

A. *Real Parties-in-Interest*

Petitioner identifies CommScope Technologies LLC, CommScope, Inc. of North Carolina, and CommScope, Inc., as real parties-in-interest. Pet. 1. Patent Owner identifies Belden Canada ULC and its parent company, Belden Inc., as real parties-in-interest. Paper 3 (“Patent Owner’s Mandatory Notices”), 1.

B. *Related Matters*

The parties identify the following related district court litigation involving the ’422 patent: *Belden Canada ULC v. CommScope, Inc.*, No. 1:23-cv-00810 (D. Del.) (“the district court litigation”). Pet. 1; Paper 3, 1.

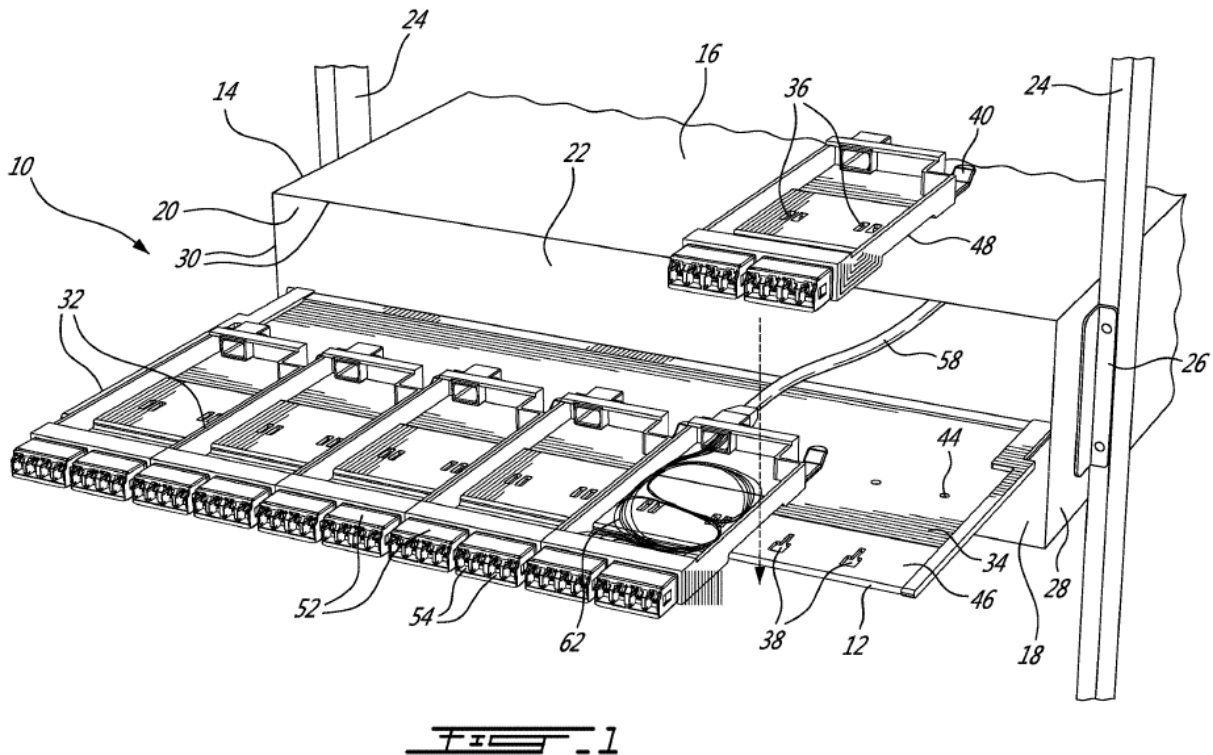
Patent Owner also identifies the following as related matters: IPR2024-01218 (challenging U.S. Patent No. 10,795,107 B2); IPR2024-01227 (challenging U.S. Patent No. 11,435,542 B2 (“the ’542 parent

patent”); U.S. Patent No.11,740,423 B2; U.S. Patent Application No. 18/328,431; and U.S. Patent Application No. 18/232,729. Paper 3, 1.

C. The '422 Patent

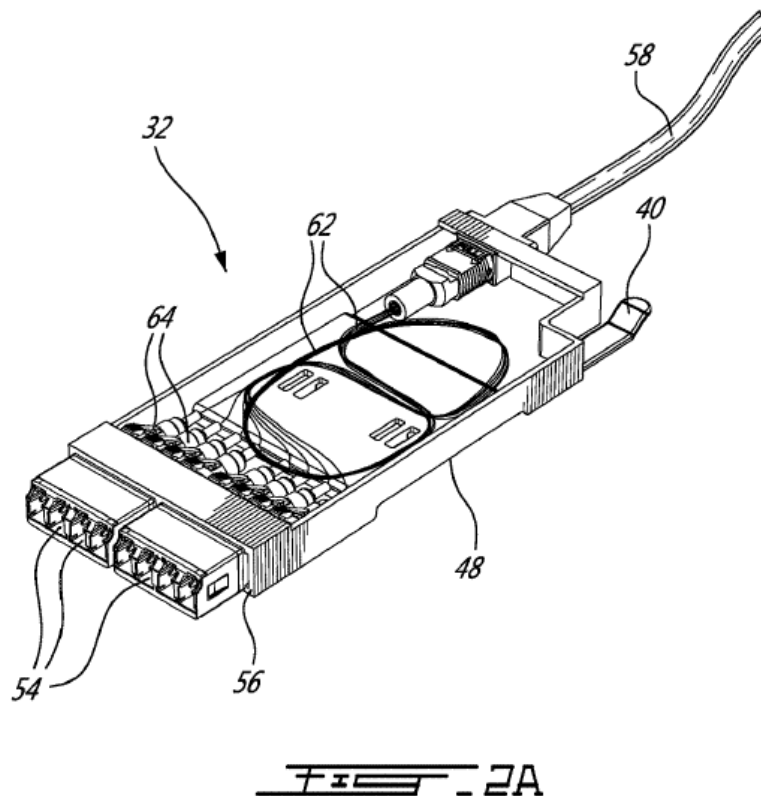
The '422 patent, titled “Modular Fibre Optic Cassette, System and Method,” is directed to “a fiber optic cassette comprising a width of one or more standard width units and such that fiber optic cassettes of different widths can be arranged on the same tray while optimizing the use of tray space.” Ex. 1001, code (54), 1:21–24. The application giving rise to the '422 patent was filed on September 2, 2022, and has an earliest priority claim to U.S. Provisional Application No. 62/567,339, filed on October 3, 2017. *Id.* at codes (21), (22), (60).

Figure 1, reproduced below, illustrates “a modular fiber optic cassette and system mounted in a rack.” Ex. 1001, 1:60–61.



As shown in Figure 1, modular cassette system 10 includes slidable tray 12 mounted in case 14, which in turn is mounted to rails 24 of a rack. *Id.* at 2:26–33. Case 14 includes tray receiving space 22, where “front edges 30 of the walls 16, 18, 20 [of case 14] define an opening via which the tray receiving space 22 can be accessed.” *Id.* at 2:35–37. Tray 12 may receive removable fiber optic cassettes 32, which are secured on upper surface 34 of tray 12. *Id.* at 2:42–45.

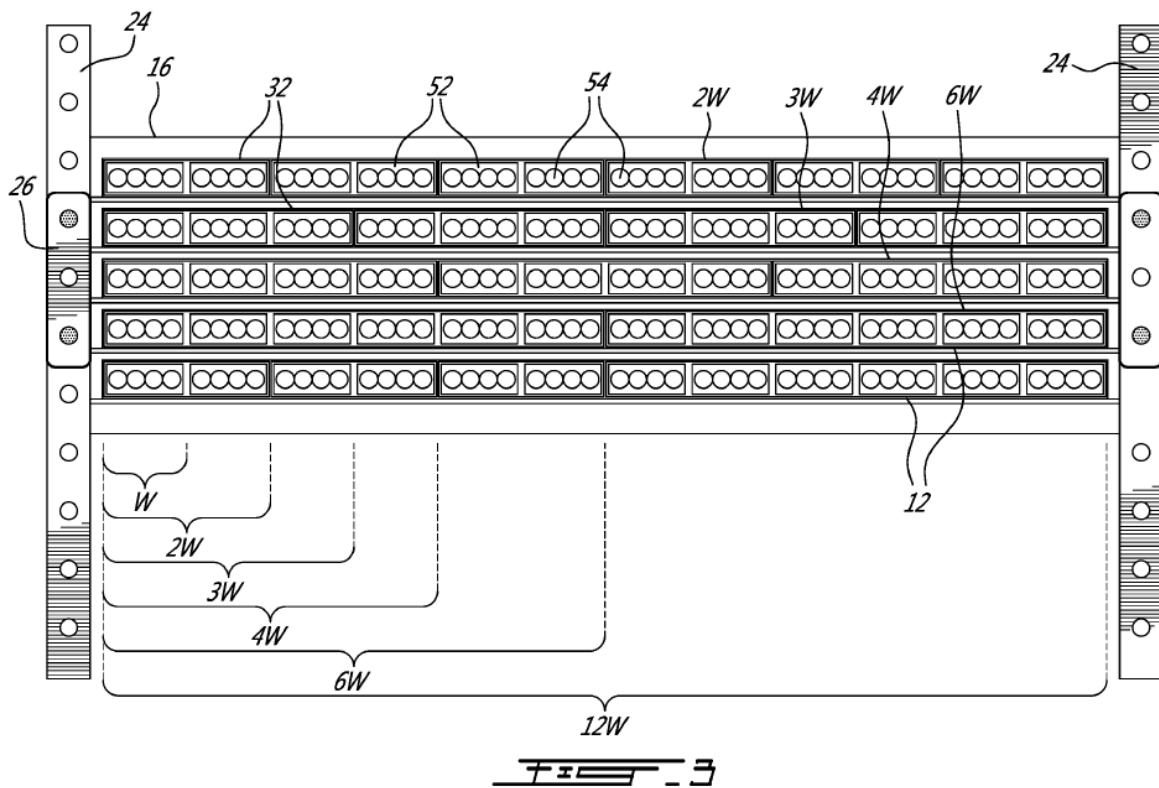
Figure 2A, reproduced below, illustrates a modular fiber optic cassette.



As shown in Figure 2A, each cassette 32 includes receptacle modules 52 (not labeled in Figure 2A) comprising receptacles 54 exposed on forward edge 56 of cassette 32. Ex. 1001, 2:58–62. Fiber optic cable 58 terminates

at cassette 32, where “[e]ach optic fiber of the fiber optic cable 58 is interconnected with a respective one of the receptacles 54 using an optic fiber segment 62 comprising a receptacle end which is terminated by a plug 64.” *Id.* at 2:66–3:2.

Figure 3, reproduced below, illustrates “a front plan view of a modular fiber optic cassette system mounted in a rack in accordance with an embodiment.” Ex. 1001, 2:1–3.



As shown in Figure 3, each cassette 32 includes multiple receptacle modules 52, each comprising four receptacles 54, with “four (4) different cassette sizes to accommodate terminating fiber optic cables comprising different number[s] of optic fibers.” *Id.* at 3:11–17. Specifically, the different cassette sizes are based on integer multiples of a standard width unit “W,” which in this embodiment comprises a single receptacle module 52 with four

receptacles 54. *Id.* at 3:18–21. Figure 3 depicts cassette sizes of 2W, 3W, 4W, and 6W, with only cassettes of like sizes being accommodated within each tray of width 12W, although the ’422 patent discloses that “in a particular embodiment cassettes 32 of different widths could be used together.” *Id.* at 3:22–35.

D. Illustrative Claim

Petitioner challenges claims 1–6, 10–14, 16, 18, 20–28, 32–36, 38, 40–42, 44–56, 60–62, and 64 in this proceeding. Of the challenged claims, claims 1, 18, and 40 are independent. Claim 1 is reproduced below.

1. [Preamble] A fiber optic cassette tray for providing a plurality of different modular fiber optic cassette configurations in a fiber optic management system comprising:
 - [1A] a tray having a front tray end portion and configured to be slidably received in at least a portion of the tray receiving space of a housing of a fiber optic management system;
 - [1B] wherein the tray is configured to support a plurality of different modular fiber optic cassette configurations when the tray is slidably received in at least the portion of the tray receiving space;
 - [1C] wherein the plurality of different modular fiber optic cassette configurations include a selected plurality of fiber optic cassettes that are each configured to be arranged side by side along the front tray end portion of the tray such that an outer side edge of each of the selected plurality of fiber optic cassettes is directly adjacent to an outer edge of at least one other fiber optic cassette;
 - [1D] wherein each of the selected plurality of fiber optic cassettes include a plurality of fiber optic plug receiving receptacle portions;
 - [1E] wherein the tray is configured to be removably secured to each of the selected plurality of fiber optic cassettes when each of the plurality of fiber optic plug receiving receptacle portions are arranged side by side in a row along the front tray end portion;

[1F] wherein a first of the selected plurality of fiber optic cassettes comprises a first cassette width, as measured between outer side edges thereof, of two, three, four, or six standard width units;

[1G] wherein a second of the selected plurality of fiber optic cassettes comprises a second cassette width, as measured between outer side edges thereof, of two, three, four, or six standard width units; and

[1H] wherein the second cassette width is different from the first cassette width.

Ex. 1001, 5:5–41 (bracketed designations added by Petitioner (*see* Pet. 27–65, 160–161)).

E. Prior Art and Asserted Grounds

Relying on the declaration testimony of Stephen E. Ralph, Ph.D. (Ex. 1003), Petitioner asserts that claims 1–6, 10–14, 16, 18, 20–28, 32–36, 38, 40–42, 44–56, 60–62, and 64 would have been unpatentable based on the following grounds:

Claim Challenged	35 U.S.C. § ¹	Reference(s)/Basis
1–6, 10–14, 16, 18, 20–28, 32–36, 38, 40–42, 44–56, 60–62, 64	102 or 103	Fukui ²
1–6, 10–14, 16, 18, 20–28, 32–36, 38, 40–42, 44–56, 60–62, 64	103	Fukui, Sedor ³
1–6, 10–14, 16, 18, 20–28, 32–36, 38, 40–42, 44–56, 60–62, 64	102 or 103	Sauter ⁴
1–6, 10–14, 16, 18, 20–28, 32–36, 38, 40–42, 44–56, 60–62, 64	103	Sauter, Fukui
1–6, 10–14, 16, 18, 20–28, 32–36, 38, 40–42, 44–56, 60–62, 64	103	Sauter, Sedor or Sauter, Fukui, Sedor ⁵

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (2011), revised 35 U.S.C. §§ 102 and 103 effective March 16, 2013. Because the ’422 patent has an earliest effective filing date after March 16, 2013 (Ex. 1001, codes (22), (60), (63)), we refer to the AIA versions of Sections 102 and 103.

² US 10,101,551 B2, issued Oct. 16, 2018 (Ex. 1004, “Fukui”).

³ US 10,215,944 B2, issued Feb. 26, 2019 (Ex. 1005, “Sedor”).

⁴ US 9,690,064 B2, issued Jun. 27, 2017 (Ex. 1006, “Sauter”).

⁵ In the initial identification of the presented challenges the Petition mistakenly indicates this ground is based on “[e]ither of Grounds 4 or 5 in further combination with Sedor.” Pet. 2. In its detailed discussion of this ground, however, the Petition correctly states it is based on “Grounds 3 [Sauter alone] or 4 [Sauter and Fukui] in further light of Sedor.” *Id.* at 155.

II. GROUNDS OF THE PETITION

For the reasons below, we determine that Petitioner has satisfied the threshold for institution as to at least one claim. Accordingly, we institute *inter partes* review on all claims and all grounds raised in the Petition. *See SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018) (holding that a decision to institute under 35 U.S.C. § 314 may not institute on fewer than all claims challenged in the petition); *AC Technologies S.A. v. Amazon.com*, 912 F.3d 1358, 1364 (Fed. Cir. 2019) (stating “if the Board institutes an [*inter partes* review], it must similarly address all grounds of unpatentability raised by the petitioner”).

A. Legal Standards

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)); *see also* 37 C.F.R. § 42.104(b) (requiring a petition for *inter partes* review to identify how the challenged claim is to be construed and where each element of the claim is found in the prior art patents or printed publications relied upon).

Anticipation “requires that every element and limitation of the claim was previously described in a single prior art reference, either expressly or inherently, so as to place a person of ordinary skill in possession of the invention.” *Sanofi-Synthelabo v. Apotex, Inc.*, 550 F.3d 1075, 1082 (Fed. Cir. 2008). Anticipation also requires that a reference discloses “all of the limitations arranged or combined in the same way as recited in the claim.” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008).

A claim is unpatentable under 35 U.S.C. § 103(a) if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective evidence of obviousness or nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Additionally, the obviousness inquiry typically requires an analysis of “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2016) (requiring “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”)). Furthermore, Petitioner does not satisfy its burden of proving obviousness by employing “mere conclusory statements,” but “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).

B. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17. Petitioner contends that a person of ordinary skill in the art (“POSITA”) “would have a B.S. degree or equivalent in mechanical or electrical engineering or similar fields,

in addition to a minimum of two years of professional experience with or graduate studies involving design, development, and/or utilization of optical communication systems.” Pet. 26. (citing Ex. 1003 ¶¶ 19–21).

At this stage of the proceeding, Patent Owner neither responds to Petitioner’s proposed definition, nor provides a definition of its own. *See* Prelim. Resp. Petitioner’s undisputed proposed definition appears to be consistent with the cited prior art and the disclosure of the ’422 patent, and we adopt it for purposes of this Decision.

C. Claim Construction

We construe the ’422 patent claims using same claim construction standard that would be used to construe a claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc). Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Petitioner states “the plain meaning is enough to resolve the lead Fukui grounds” but notes that there are “two disputes relevant to the alternative Sauter grounds.” Pet. 23. In particular, Petitioner identifies respective constructions presented by Petitioner and Patent Owner in the district court litigation for the claim language “two, three, four, or six standard width units” and “directly adjacent.” Pet. 23–26.

1.a A “cassette width, as measured between outer edges thereof, of two, three, four, or six standard width units” (claim 1)

Claim elements 1F and 1G recite a first and a second “cassette width, as measured between outer side edges thereof, of two, three, four, or six standard width units.” Ex. 1001, 5:33–35, 5:37–39. In the district court proceeding, the parties proposed the following constructions:

Term:	Petitioner’s Proposed Construction	Patent Owner’s Proposed Construction
“cassette width, as measured between outer side edges thereof, of two, three, four, or six standard width units”	“The cassette width, as measured between outer side edges thereof, equals two, three, four, or six times the standard width unit, without an additional amount. This means the cassette width must be evenly divisible by the standard width unit.”	“cassette width as measured between outer side edges thereof that accommodates one of one, two, three, four, or six receptacle modules”

Ex. 1011, 12.

Petitioner states that the construction proposed by Patent Owner before the district court cannot be correct because this construction was disclaimed during prosecution. Pet. 23–25 (citing Ex. 1002, 187–188). Nonetheless, Petitioner asserts that Sauter’s multi-gang cassettes satisfy these limitations under Patent Owner’s claim construction as well as Petitioner’s. *Id.* at 119.

Patent Owner does not affirmatively state how the term should be construed. Instead, Patent Owner asserts that it is not necessary to fully resolve this claim construction dispute because Petitioner does not show Sauter teaches this limitation under either construction. Prelim Resp. 23

(stating “[i]rrespective of the proposed constructions, a cassette width is not construed *solely* by its ability to accommodate a certain number of receptable modules or construed to include structures that are additionally attached (e.g., a latching mechanism)”).

Based on the present record, we agree with Petitioner that Patent Owner’s statements during prosecution are relevant to claim construction. Pet. 24–25. During prosecution of the parent application to the ’422 patent, Patent Owner stated, *inter alia*, that “a person of ordinary skill in the art would understand that the width of a cassette is simply the width of the cassettes from side to side and not some other ‘dimension’ such as the number of receptables or the like.” Ex. 1002, 187. Patent Owner further stated that it disagreed with the Examiner’s statement that paragraph 15 of the specification⁶ defines width in terms of the number of receptacles and that such a definition of width makes no sense in view of other claims where the standard width is defined in terms of a width of front edge of a tray on which the cassettes are secured. *Id.* We note that at this stage of the proceeding, Patent Owner has not provided any argument or evidence opposing Petitioner’s proposed construction or supporting the claim construction that it proposed during the district litigation. Our construction is preliminary and the parties are invited to address this claim construction more fully during trial.

1.b A “cassette width, as measured between outer edges thereof, of two, three, four, and six standard width units” (claims 18, 40)

We note that claims 18 and 40 recites “and” instead of “or” (i.e., the first and second cassette comprises a cassette width “of two, three, four, *and*

⁶ Compare ’422 patent 3:11–35 with parent ’542 patent ¶ 15.

six standard width units”). Ex. 1001, 6:64–67, 7:1–4, 8:55–57, 8:59–61 (reciting similar limitations for the second cassette). Petitioner does not explicitly construe this term, but asserts that if Patent Owner’s proposed claim construction in the related proceeding—that “and” means “or”—then Fukui discloses these limitations for the same reasons set forth in connection with claim 1. *See* Pet. 68 (stating that Patent Owner’s replaced the term “or” with “and” and [b]y claim differentiation, this appears to be a deliberate choice”).

Patent Owner does not respond to Petitioner’s contentions in its Preliminary Response. The parties are invited to address this claim construction issue during trial.

2. “*directly adjacent*”

Claim element 1C recites, *inter alia*, “an outer edge of each of the selected plurality of fiber optic cassettes is directly adjacent to an outer edge of at least one other fiber optic cassette.” Ex. 1001, 5:20–23. The phrase “directly adjacent” is also recited in a number of challenged dependent claims dependent claims. *See* claims 10, 20, 22, 32, 45, 47.

Petitioner proposes that the term be construed as:

an outer side edge of each of the selected plurality of fiber optic cassettes is almost touching or touching an outer edge of at least one other fiber optic cassette. *This excludes arrangements with any intervening structure such as a rail between an outer side edge of a cassette and an outer edge of at least one other selected cassette.*

Pet. 26 (citing Ex. 1011, 21) (italicization added, underlining in original). Patent Owner’s proposed construction during litigation is similar to Petitioner’s but does not include the italicized language. Petitioner states that its construction clarifies that Patent Owner narrowed this term during

prosecution to exclude rails. *Id.* (citing Ex. 1002, 134–135, 187). The Preliminary Response does not address construction of this term.

Based on our review of the record at this stage of the proceeding, including Patent Owner statements made during prosecution of the parent application to the '422 regarding the meaning of “directly adjacent,” we agree with Petitioner that a first cassette that is separated by a rail from a second cassette is not “directly adjacent” to the second cassette as that term is used in the challenged claims. *See* Ex. 1002, 135 (Patent Owner stating that “the modification of adjacent by ‘directly’ was clearly intended to exclude any intervening structure”); 188 (stating that a module cannot be directly adjacent to a cassette if the modules are separated by a rail). This construction is preliminary and the parties are free to address construction of this term, if they so choose.

D. Asserted Unpatentability over Fukui

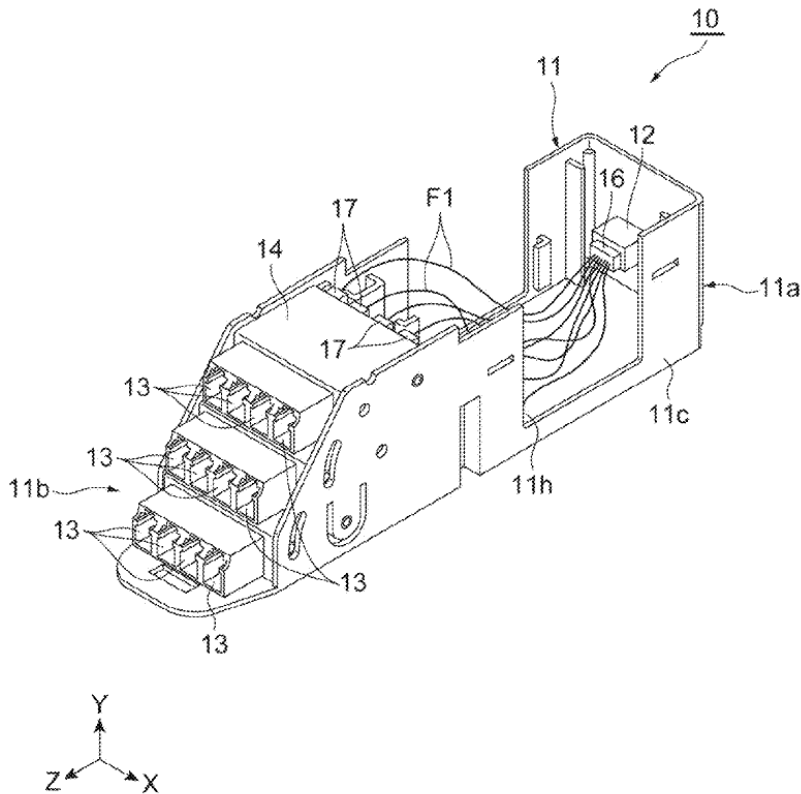
Petitioner contends that claims 1–6, 10–14, 16, 18, 20–28, 32–36, 38, 40–42, 44–56, 60–62, and 64 are either anticipated or rendered obvious by Fukui. *See* Pet. 27–91.

1. Overview of Fukui

Fukui, titled “Multi-Core/Single-Core Conversion Module and Multi-Core/Single-Core Conversion Apparatus,” relates to a multi-core/single-core conversion module that uses multiple optical fibers to connect a multi-core optical connector to a number of single-core optical connectors in the inner space of a housing. Ex. 1004, codes (54), (57).

Figure 4, reproduced below, illustrates a perspective view of a multi-core/single-core conversion module.

Fig.4

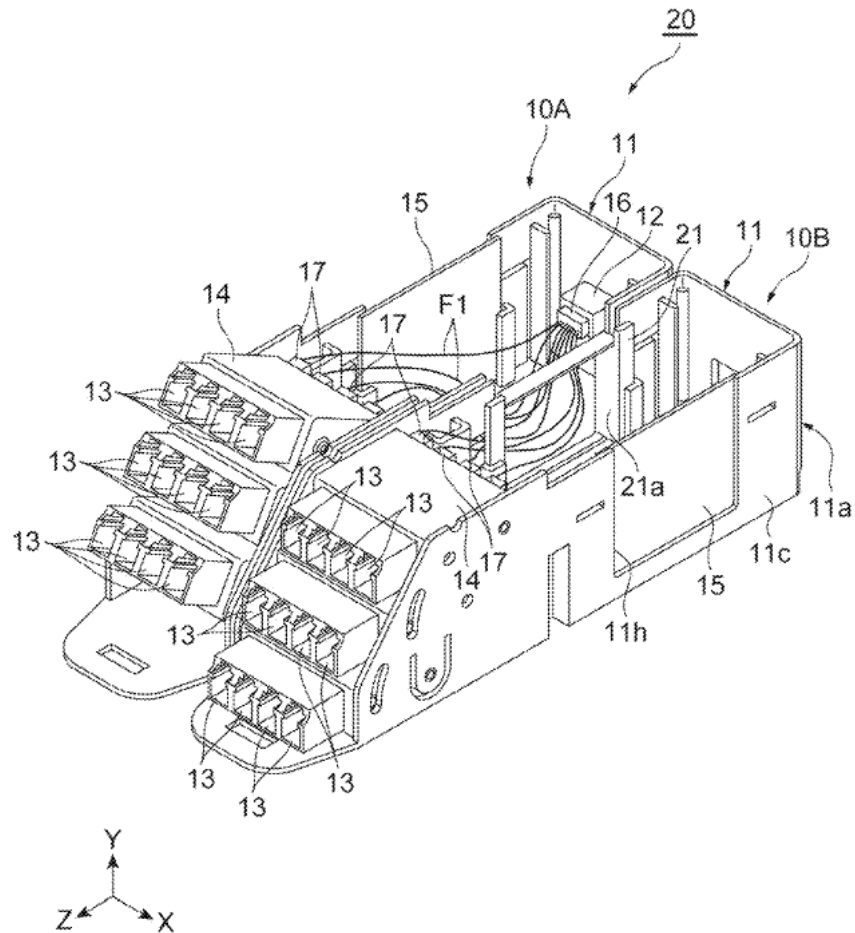


As shown in Figure 4, in conversion module 10 “a multi-core optical connector 16 is inserted into the multi-core optical connector adapter 12 from the inner side of the housing 11, and many optical fibers F1 extend from the multi-core optical connector 16.” Ex. 1004, 6:35–39. Further, for each of a number single-core optical connectors 17, the “single-core optical connector 17 is inserted into the single-core optical connector adapter 13 from the inner side of the housing 11, and one optical fiber F1 extends from the single-core optical connector 17.” *Id.* at 6:39–42. In module 10, “each single-core optical connector adapter 13 is inserted into the corresponding adapter socket 14 and the respective adapter sockets 14 are attached to the housing 11 in order from the lowermost tier.” *Id.* at 7:9–13. Each of three

tiers of adapter sockets 14 include four single-core optical connector adapters 13. *See id.* at 5:63–6:3; Fig. 4.

Figure 5, reproduced below, illustrates a perspective view of a conversion modules coupling structure.

Fig.5

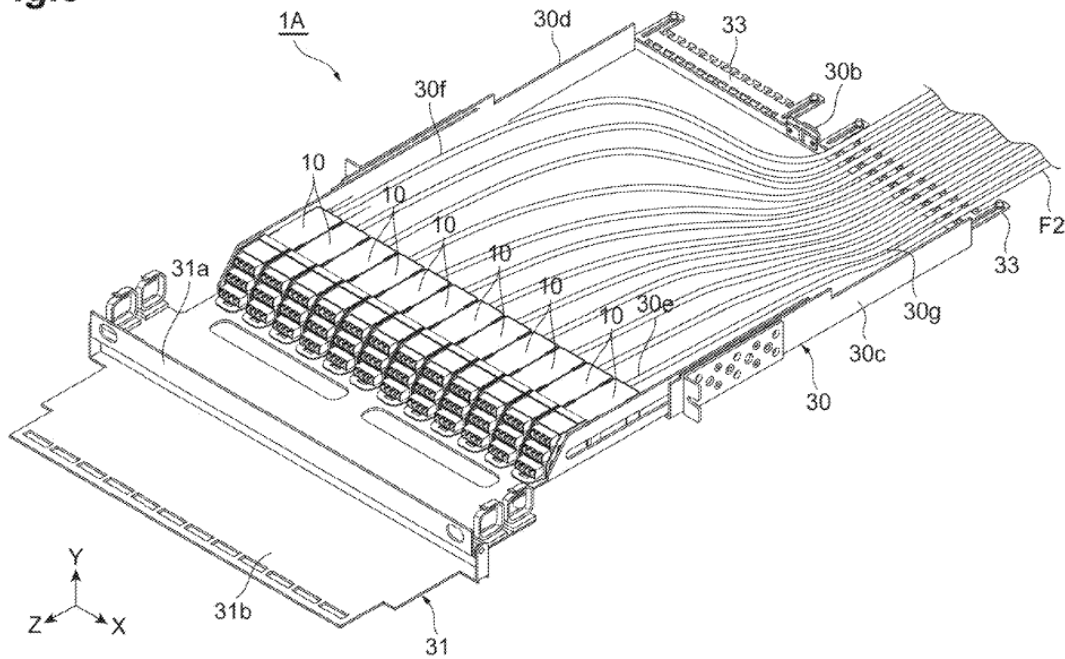


As shown in Figure 5, conversion module 20 may comprise first unit module 10A and second unit module 10B, where each of modules 10A and 10B are configured the same as module 10 shown in Figure 4 above. Ex. 1004, 7:25–29. “[M]odule coupling member 21 couples the housing 11 of the unit

module 10A with the housing 11 of the unit module 10B to each other.” *Id.* at 7:46–48.

Figure 8, reproduced below, illustrates a perspective view of a multi-core/single-core conversion apparatus.

Fig.8



As shown in Figure 8, “conversion apparatus 1A includes a plurality of conversion modules 10 and the base member 30.” Ex. 1004, 8:17–19. Base member 30 is made of metal and “is a hollow box-like member in a rectangular parallelepiped shape,” with front face 30a, rear face 30b, lateral faces 30c and 30d, and bottom panel 30e.” *Id.* at 8:24–29. Multiple conversion modules 10 are arranged along a single direction on bottom panel 30e. *Id.* at 8:30–32. Accordingly, “it is possible to house the modules to be laterally aligned in a so-called 19-inch rack standardized by the Electronic Industries Alliance (EIA) in 1U size, for example, as well as the single-core optical connector adapters 13 can be arranged in plural tiers.” *Id.* at 9:30–

35. “[U]p to 1 tier x 12 rows of the modules 10, that is, 144 single-core optical connector adapters 13 in total are housed in 1U size,” and “up to 1 tier x 6 rows of the modules 20, that is, 144 single-core optical connector adapters 13 in total are housed.” *Id.* at 9:35–41. It is also possible that “conversion modules 10 and 20 may be present together in combination.” *Id.* at 9:42–43.

2. *Independent Claim 1*

Petitioner asserts independent claim 1 is either anticipated or rendered obvious by Fukui and provides arguments and evidence as to where Fukui discloses or suggests each limitation. Pet. 27–68. At this stage of the proceeding, Patent Owner does not dispute most of Petitioner’s assertions, but does assert that Fukui fails to disclose or suggest a cassette meeting the width requirements of claim elements 1F–1H. Prelim. Resp. 8–14.

a) *Undisputed Limitations*

(1) *Preamble- “[a] fiber optic cassette tray for providing a plurality of different modular fiber optic cassette configurations in a fiber optic management system comprising.”*

Petitioner asserts that Fukui’s bottom panel 30e, which supports different numbers and combinations of modules 10 (modular fiber cassettes), is a fiber optic cassette tray as required by the preamble. Pet. 27–31 (citing, *inter alia*, Ex. 1004, 3:27–28, 4:2–3, 4:42–43, 5:12–42, 8:45–56, 9:58–59, 10:4–6, 10:34–35, 10:43–44, Figs. 1, 4, 6, 7, 9; Ex. 1003 ¶¶ 45–50); *see also id.* at 29 (stating Fukui’s tray can support single modules 10 as well as a combination of single modules 10 and coupled modules 10 (citing Ex. 1004, 9:35–53; Ex. 1003 ¶¶ 48–50)).

(2) *Claim element [1A]- “a tray having a front tray end portion and configured to be slidingly received in at least a portion*

of the tray receiving space of a housing of a fiber optic management system.”

Petitioner asserts, *inter alia*, that Fukui’s tray (bottom panel 30e) has a front tray end portion as recited in claim element 1A. Pet. 31 (citing Ex. 1004, Fig. 9; Ex. 1003 ¶ 53). Petitioner also states that Fukui’s tray is slidably received in a housing comprising bottom panel 30g and side panels 30a, 30c. Pet. 32–33 (citing Ex. 1004, 8:24–27, 8:57–58, Figs. 6, 9; Ex. 1003 ¶¶ 54, 57); *see also id.* at 32–40 (stating that if the housing requires a top wall, it would have been obvious to add a top wall to Fukui’s housing).

(3) *Claim element [1B] - “wherein the tray is configured to support a plurality of different modular fiber optic cassette configurations when the tray is slidably received in at least the portion of the tray receiving space”*

Petitioner asserts that areas 32 of Fukui’s bottom panel 30e support up to twelve single modules 10 and a combination of single and coupled modules (a plurality of different cassette configurations) as required by claim element 1B. Pet. 40–41 (citing Ex. 1004, 7:26–27, 7:7–8:6, 8:17–24, 8:45–47, 9:35–53, Figs. 4, 5, 9; Ex. 1003 ¶¶ 87).

(4) *Claim element [1C] - “wherein the plurality of different modular fiber optic cassette configurations include a selected plurality of fiber optic cassettes that are each configured to be arranged side by side along the front tray end portion of the tray such that an outer side edge of each of the selected plurality of fiber optic cassettes is directly adjacent to an outer edge of at least one other fiber optic cassette.”*

Petitioner asserts that Fukui’s modules 10 combinations can be arranged side by side along Fukui’s bottom panel 30e such that the outer edge of each module 10 (or a number of module 10s coupled together) are directly adjacent to an outer edge of another fiber optic cassette. Pet. 42

(citing Ex. 1004, 7:26–27, 7:67–8:6, 8:18–32, 8:51, 9:16–17, 9:35–53, Figs. 8, 9; Ex. 1003 ¶¶ 83, 89, 90).

Petitioner further states that the Fukui’s cassettes are arranged side by side *along the front* tray end portion of the tray under the claim construction of “along” agreed to by the parties in the co-pending litigation. Pet. 44 (citing Ex. 1011, 2). Petitioner also asserts that if Patent Owner disputes that “along” means “besides,” then it would have been obvious to move Fukui’s modules forward to be closer to the front end of the tray to make it easier to access the modules. *Id.* at 49–50 (citing Ex. 1003 ¶ 92; Ex. 1004, 8:52–64, 9:20–29, 10:19–30, Fig. 9).

(5) *Claim element [1D] - “wherein each of the selected plurality of fiber optic cassettes include a plurality of fiber optic plug receiving receptacle portions”*

Petitioner asserts that each Fukui’s module 10 (fiber optic cassette) has a plurality of “single-core optical connectors adapters” 13 (fiber optic plug receiving receptacle portions) as required by claim element 1D. Pet. 50–51 (citing Ex. 1004, 5:24–42, 7:26–27, 7:67–8:6, Figs. 4–5; Ex. 1003 ¶ 100).

(6) *Claim element [1E] - “wherein the tray is configured to be removably secured to each of the selected plurality of fiber optic cassettes when each of the plurality of fiber optic plug receiving receptacle portions are arranged side by side in a row along the front tray end portion”*

Petitioner asserts that Fukui’s disclosure of modules 10 (fiber optic cassettes), having single-core optical connector adapters 13 (fiber optic plug receiving receptable portions) and hooks 11i, 11j that reversibly engage with holes 33a, 33b on bottom panel 30e, satisfies the limitations of claim element 1E. Pet. 51–54 (citing Ex. 1004, 3:8–11, 7:27–29, 8:3–6, 8:52–56, 9:18–29, 9:66–10:1, 10:33–35, Figs. 2, 4–5, 8; Ex. 1003 ¶¶ 102–105).

At this stage of the proceeding, Patent Owner does not dispute Petitioner's assertions regarding the above recited limitations. We have reviewed Petitioner's arguments for the above limitations and determine Petitioner has sufficiently shown that Fukui discloses or suggests each of these limitations.

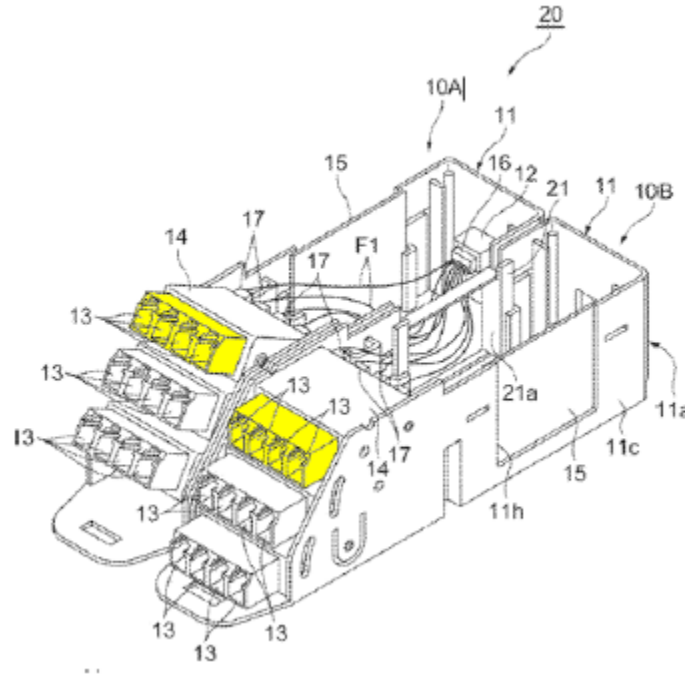
b) Disputed Limitations

(1) Claim element [1F] - "wherein a first of the selected plurality of fiber optic cassettes comprises a first cassette width, as measured between outer side edges thereof, of two, three, four, or six standard width units"

Claim element [1G] - "wherein a second of the selected plurality of fiber optic cassettes comprises a second cassette width, as measured between outer side edges thereof, of two, three, four, or six standard width units"

Claim element [1H] - "wherein the second cassette width is different from the first cassette width."

Petitioner asserts that Fukui's double module 20, shown below in Fukui's Figure 5, has a first cassette width as required by claim element 1F because it has a first cassette width of two standard width units under either party's claim construction proposed in the co-pending litigations. Pet. 54–60 (citing Ex. 1004, 5:34–36, 7:25–29, 7:67–8:1, 8:2–6, Figs. 4–9; Ex. 1003 ¶¶ 107–128).



Fukui's Figure 5, with Petitioner's highlighting added, is a perspective view showing conversion module 20, which includes first unit module 10A and second unit module 10B. Ex. 1004, 2:34–35, 7:23–27. Module coupling member 21 couples the hosing 11 of unit module 10A with housing 11 of unit module 10B to each other. *Id.* at 7:46–51.

As noted above, Petitioner construes the “cassette width” limitations recited in claim elements 1F – 1H as the “cassette width, as measured between the outer side edges thereof, equals two, three, four, or six times the width unit, without an additional amount. This means the cassette width must be evenly divisible by the standard width unit.” Pet. 23. Petitioner asserts that the width of Fukui's module 10 “is a ‘standard’ width unit because it is common for all of Fukui's modules and the tray and [is] based on an actual width standardized in the industry.” Pet. 54–55 (citing Ex. 1003 ¶ 107; Ex. 1009, 27; Pet. 28–29); *see also* Pet. 28 (stating Fukui's module 10 has LC adapters 13 in the front). Petitioner asserts that Fukui's module 20 has a width of two standard width units because the width of module 20, as measured between its outer side edges, is two times the width

of module 10 but does not include an additional amount, such as a rail.
Pet. 75 (citing Ex. 1004, 7:25–29, 8:3–6, Figs. 4–9; Ex. 1003 ¶ 111).

Petitioner also states that under the construction proposed by Patent Owner during the litigation, Fukui still discloses claim element 1F because Fukui’s module 20 accommodates two quad LC receptacles modules.
Pet. 56–57 (citing Ex. 1004, 5:34–36; Ex. 1003 ¶ 110, 112).

Petitioner asserts that Fukui’s triple core module 36 has a “second cassette width” of three standard width units, which is different from the first cassette width, as required by claim elements 1G and 1H. Pet. 60–64 (citing, *inter alia*, Ex. 1004, 7:67–8:3, 9:42–43, Figs. 1, 5, 8–9; Ex. 1003 ¶¶ 130–138).

Patent Owner responds that Fukui does not disclose or suggest cassettes meeting either the first cassette width or the second cassette width limitations recited in claim elements 1F–1H. Prelim. Resp. 8–13. Patent Owner asserts that Fukui only discloses a cassette having a single “standard width unit[]” and that modules 20 and 30 are merely multiples of module 10 coupled together and not a single module having the claimed width units. *See id.* at 10–11 (stating neither module 20 nor module 36 “is a distinct single module of a different width than module 10”); *id.* at 11 (stating that connecting modules 10 “using ‘coupling member 21’” does not meet the requirements of a second cassette as claimed). To support this argument, Patent Owner points to Petitioner’s statement in related IPR2024-01218, that “Laarveld [Ex. 1026)] discloses . . . creat[ing] larger cassettes by coupling cassettes together.” *Id.* at 12 (citing IPR2024-01218, Paper 1 at 87). Patent Owner asserts that Petitioner’s characterization of that art make clear that, merely coupling two cassettes together—as taught by Fukui— does not turn two cassettes into a single cassette.” *Id.*

(2) Analysis

Based on the present record, we determine Petitioner sufficiently shows that Fukui's module 20 and module 36 disclose or suggest the limitations of claim elements 1F–1H, notwithstanding Patent Owner's arguments to the contrary. Fukui explains that conversion module 20 comprises unit two module 10 units reversibly coupled together using "module coupling member 21." Ex. 1004, 7:34–35. Fukui further states that a "plurality of coupled unit modules can be dealt with as one body." Ex. 1004, 8:2–3. Thus, it appears that once two module 10s are coupled together using module coupling member 21, they form a single rigid unit or body. Moreover, when two single-width structures are coupled together to make a double-width structure, Fukui refers to the single-width structures as "unit modules," rather than using the term "conversion module" that both parties agree refers to a cassette, thus indicating that there is a difference between the two-unit "conversion module" and two single cassettes. *Id.* at 7:23–29. Additionally, Fukui's module 20 only has a single "multi-core optical connector 16," thus indicating that module 20 is not simply two single units coupled together. Ex. 1004, 7:56–65, Fig. 5.

Patent Owner's arguments regarding Laarveld are not persuasive on the present record. It is unclear how Petitioner's characterization of Laarveld undermines Petitioner's characterizations of a Fukui, a different reference with different teachings.

Thus, based on the present record, Petitioner sufficiently shows that Fukui disclose or suggest the limitations recited in claim elements 1F–1H.

c) Conclusion

Petitioner shows a reasonable likelihood that it would prevail in showing that claim 1 is unpatentable over Fukui. Accordingly, we institute

inter partes review of all challenged claims based on all grounds asserted in the Petition. *See SAS*, 138 S.Ct. at 1354.

3. *Remaining Challenged Claims 2–6, 10–14, 16, 18, 20–28, 32–36, 38, 40–42, 44–56, 60–62, and 64*

Petitioner asserts that Fukui discloses or suggests independent claims 18 and 40 and dependent claims 2–6, 10–14, 16, 20–28, 32–36, 38, 41–42, 44–56, 60–62, and 64 and provides evidence and argument to support thereof. Pet. 65–91. Other than the arguments set forth above regarding claim 1, which Patent Owner asserts apply to similar limitations recited in independent claims 18 and 40, Patent Owner does not dispute Petitioner’s contentions at this stage of the proceeding. Prelim. Resp. 14.

Because we determined that Petitioner shows a reasonable likelihood for claim 1, and Patent Owner does not present any arguments directed these claims, we do not address these challenges at this stage of the proceeding, which are best left for trial after full development of the record.

E. *Asserted Unpatentability over Fukui and Sedor*

Petitioner contends that claims 1–6, 10–14, 16, 18, 20–28, 32–36, 38, 40–42, 44–56, 60–62, and 64 would have been obvious over the combined teachings of Fukui and Sedor. *See* Pet. 91–94.

1. *Overview of Sedor*

Sedor, titled “Modular Fiber Optic Tray,” relates to “a tray to support fiber optic equipment.” Ex. 1005, code (54), 1:36–37. In particular, Sedor describes modular trays with cutout features for engaging with mounting features of removable rails. *Id.* at code (57). Removable rails may be secured in different positions for supporting different-sized fiber optic modules, such that, for example, “a tray may support a twenty-four optical

fiber module, two twelve optical fiber modules, or three eight optical fiber modules.” *Id.*; *see also id.* at 4:16–35.

2. Discussion

Petitioner states that during the district court litigation, the parties stipulated that the term “cassettes that are each configured to be arranged side by side along the front tray end portion of the tray” as recited in claim element 1C means that the cassettes are each configured to be “arranged side by side on *or beside* the front tray end portion of the tray.” Ex. 1011, 2 (emphasis added); Pet. 44.

Petitioner asserts that if Patent Owner changes its claim construction to require that the cassettes be located *on*, and not *beside*, the front end of the tray, and that Fukui does not teach or suggest modules on the front tray end portion, that it would have been obvious to move Fukui’s modules in view of Sedor’s disclosure of cassettes 30 arranged on the front of tray 120. Pet. 49–50, 91–95 (citing, *inter alia*, Ex. 1005, Figs. 7–12; Ex. 1003 ¶¶ 282–283).

Petitioner also argues that if Patent Owner contends that the housing recited in claim element 1A requires a “top” wall, and that Fukui does not teach or suggest this limitation, that it would have been obvious to add a top wall to Fukui’s housing in view of Sedor’s disclosure of a conventional enclosure with a top wall. *Id.* at 34, 92–94 (citing Ex. 1005, 7:32–35, Fig. 44; Ex. 1003 ¶ 284). At this stage of the proceeding, Patent Owner does not address Petitioner’s contentions.

On the present record, we determine Petitioner shows a reasonable likelihood of success of demonstrating that it would have been obvious to move Fukui’s modules to the front of tray 120 and to add a top wall to

Fukui's housing. At this stage of the proceeding, we make no determination, however, as to whether the claim 1 contains any such requirements.

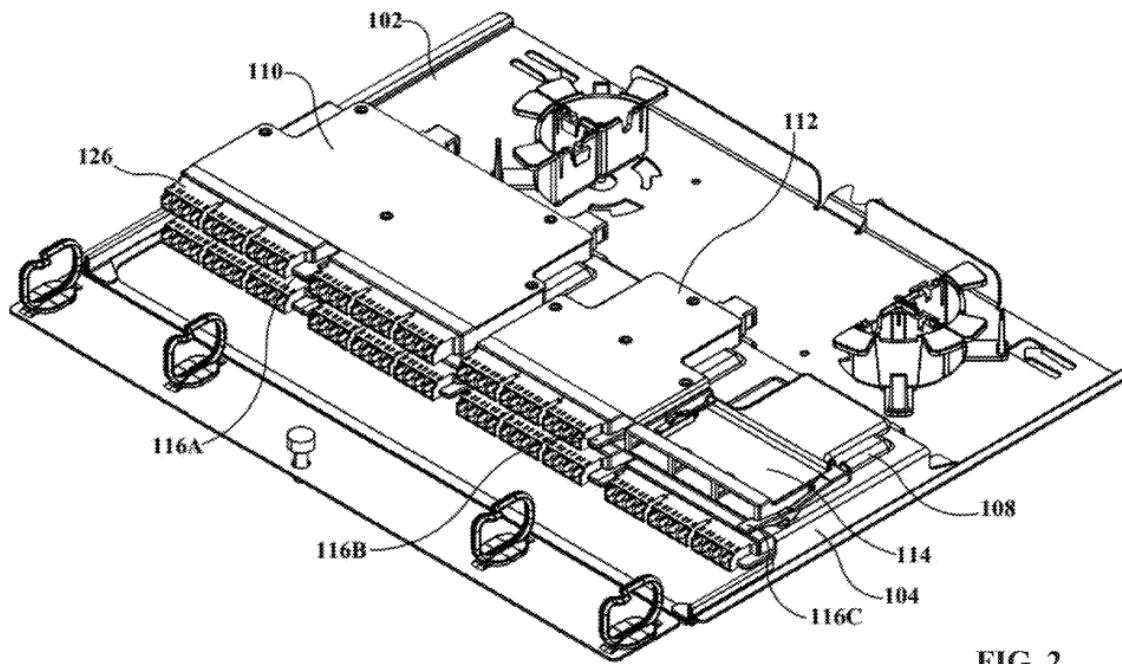
F. Asserted Unpatentability over Sauter Either Alone or in Combination with Fukui or Fukui and Sedor

Petitioner contends that claims 1–6, 10–14, 16, 18, 20–28, 32–36, 38, 40–42, 44–56, 60–62, and 64 are anticipated by Sauter or would have been obvious either over Sauter alone, over the combination of Sauter and Fukui, or over the combination of Sauter, Fukui, and Sedor. Pet. 94–159.

1. Overview of Sauter

Sauter, titled “Multi-Gang Cassette System,” relates to “[a] cassette mounting system [that] allows fiber optic cassettes of different sizes to be mounted on the same fiber optic tray or other mounting surface.” Ex. 1006, codes (54), (57).

Figure 2, reproduced below, illustrates a three-dimensional view of an example fiber optic cassette tray with a number of cassettes.



As shown in Figure 2, fiber optic cassette tray 102 provides for the mounting of “cassettes of different sizes (e.g., both single-gang and multi-gang cassettes) on the same cassette tray 102 simultaneously at any position on the mounting interfaces.” Ex. 1006, 5:4–8. Specifically, Figure 2 shows “a single-gang cassette 112, a dual-gang cassette 110, and a single-gang adapter plate 114 are mounted on the upper mounting interface 104 of tray 102.” *Id.* at 5:9–11. Rail guides 108 hold cassettes and adapter plates in place and ensure proper orientation when cassettes and adapter plates are installed from the front of tray 102. *Id.* at 5:16–23. More specifically, “a single-gang cassette 112 or adapter plate 114 will interface with two adjacent rail guides 108 when installed,” whereas “a double-gang cassette will interface with three rail guides 108.” *Id.* at 7:3–8. Although Figure 2 demonstrates a two-layered configuration, Sauter also discloses single-layer cassette trays or trays that stack more than two layers. *Id.* at 6:30–42.

2. Discussion

Because we determine that Petitioner has shown a reasonable likelihood in showing that at least one claim is unpatentable over Fukui, we also institute all grounds asserted in the Petition, including the grounds involving Sauter. *See PGS Geophysical AS v. Iancu*, 891 F.3d 1357, 1360 (Fed. Cir. 2018) (interpreting the statute to require “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”). Nonetheless, we provide the following comments for guidance to the parties.

Petitioner asserts that Sauter’s sets of single-gang, double (or dual)-gang, triple-gang, and multi-gang cassettes meet the first and second cassette width limitations recited in claim elements 1F–1H under either claim

construction proposed by the parties in the district court litigation. Pet. 119–121 (citing, *inter alia*, Ex. 1006, 4:50–61, Fig. 7; Ex. 1003 ¶¶ 335).

First, Petitioner asserts that Sauter’s single-gang cassette 112 has a width that accommodates three quad LC adapter modules and is, therefore, a first cassette having a first cassette width of three standard units under Patent Owner’s proposed construction. Pet. 119; *see id.* (similarly asserting that Sauter’s double-gang cassette 110 has a width of six standard units). As noted above, we question whether this construction is correct in light of Patent Owner’s statements made during prosecution regarding how this term would be understood by a person skilled in the art.

Regarding Petitioner’s unpatentability arguments under its own proposed construction, Petitioner contends that when Sauter’s latching mechanism 120 of the double-gang cassette is positioned along the right-hand side of the cassette, then Sauter’s cassette 110 is mathematically equal to twice the width of cassette 112. *Id.* at 119–120 (citing Ex. 1006, 1:64–2:1, 4:50–61, 7:18–60, Fig. 7; Ex. 1003 ¶¶ 336–338). Patent Owner responds that it is improper to integrate structural features adding latching mechanism 120 to the right side of the double-gang cassette does not result in a cassette having a width that is evenly divisible by the standard width unit. Prelim. Resp. 18. Patent Owner’s arguments may have merit and may be further assessed during trial.⁷

⁷ Petitioner also argues that it would have been obvious to use Fukui’s mounting features instead of Sauter’s rail guides and that the resulting modified cassettes would be exact multiple in width of the smallest gang cassette. Pet. 153 (citing Ex. 1003 ¶¶ 423–434). Patent Owner does not directly respond to these assertions.

III. DISCRETION TO DENY INSTITUTION UNDER 35 U.S.C. § 325(d)

Patent Owner argues that if the Board determines that Petitioner's Fukui-based grounds 1 and 2 are deficient, then the Board should deny institution under § 325(d). Prelim. Resp. 26. In particular, Patent Owner asserts that remaining grounds 3 through 5 rely on art (i.e., Sauter) a reference that is substantially similar to art that was before the Examiner (i.e., Sedor). *Id.* at 26–27. Because we do not determine that Fukui-based grounds are deficient, we decline to exercise our discretion to deny institution under § 325(d).

IV. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing at least one of the challenged claims of the '422 patent is unpatentable. Because Petitioner has satisfied the threshold for institution as to at least one claim, we institute *inter partes* review on all claims and all grounds raised in the Petition.

At this preliminary stage, we have not made a final determination with respect to the patentability of the challenged claims or any underlying factual and legal issues, including claim construction.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of all challenged claims of the '422 patent on all asserted grounds is instituted; and

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

IPR2024-01228
Patent 11,656,422 B2

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