

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

US CONEC LTD.,
Petitioner,

v.

SENKO ADVANCED COMPONENTS, INC.,
Patent Owner.

IPR2024-00115
Patent 11,307,369 B2

Before BARBARA A. PARVIS, ELIZABETH M. ROESEL, and
JOHN A. HUDALLA, *Administrative Patent Judges*.

ROESEL, *Administrative Patent Judge*.

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

I. INTRODUCTION

US Conec Ltd. (“Petitioner”) filed a Petition (“the ’115 Petition”) requesting *inter partes* review of claims 1–22 (“the challenged claims”) of U.S. Patent No. 11,307,369 (Ex. 1001, “the ’369 patent”). Paper 3 (“Pet.”). Senko Advanced Components, Inc. (“Patent Owner”) did not file a preliminary response.

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless 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.” For the reasons below, we determine that Petitioner establishes a reasonable likelihood that it would prevail with respect to at least one claim, and we institute an *inter partes* review as to all challenged claims of the ’369 patent.

The following findings of fact and conclusions of law are not final, but are made for the sole purpose of determining whether Petitioner meets the threshold for initiating review. Any final decision will be based on the full trial record, including any response timely filed by Patent Owner. Any arguments not raised by Patent Owner in a timely-filed response may be deemed waived.

II. BACKGROUND

A. *Related Matters*

The parties identify the following district court action involving the ’369 patent: *Senko Advanced Components, Inc. v. US Conec Ltd.*,

No. 1:23-cv-00083 (D. Del.) (filed Jan. 24, 2023). Pet. 103; Paper 5, 2 (Patent Owner’s mandatory notices).¹

Petitioner challenges all claims of the ’369 patent across two concurrent petitions. The ’115 Petition challenges claims 1–22, and the petition in IPR2024-00116 challenges claims 23–40.

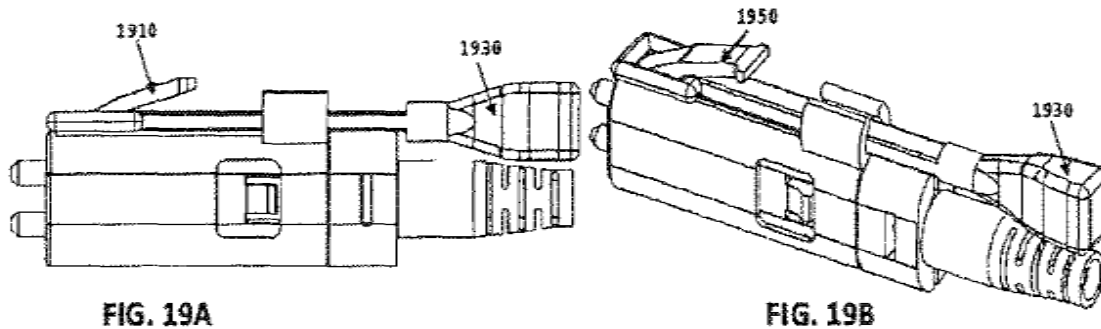
Petitioner filed a notice of ranking petitions for *inter partes* review, explaining the differences between the petitions. Paper 2. In the absence of any opposition from Patent Owner, we institute both petitions for the reasons stated by Petitioner. *Id.*

B. The ’369 Patent

The ’369 patent, titled “Ultra-small Form Factor Optical Connectors Used as Part of a Reconfigurable Outer Housing,” issued April 19, 2022, based on an application filed July 8, 2021. Ex. 1001, codes (45), (54). The ’369 patent lists a series of continuation applications and a series of provisional applications, the earliest which has a filing date of July 14, 2017. *Id.* at codes (60), (63).

¹ Petitioner states that “if instituted, Petitioner stipulates not to pursue in the district court the grounds in the Petition or any ground that reasonably could have been raised in the Petition.” Pet. 102. In view of Petitioner’s stipulation, we do not discretionarily deny institution. Katherine K. Vidal, *Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation* (June 21, 2022), at 3–4, available at https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf; *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to section II.A).

The '369 patent discloses an optical connector holding two or more optical fiber ferrules. Ex. 1001, code (57), 2:42–43. Figures 19A and 19B are reproduced below.



Figures 19A and 19B show an optical connector having push-pull tab 1930 that actuates latch 1910 for inserting and extracting the connector from an adapter or transceiver. Ex. 1001, 3:46–47, 12:38–44. According to the '369 patent, push-pull tab 1930 is a separable element from a connector housing. *Id.*

C. Illustrative Claim

The '115 Petition challenges claims 1–22 of the '369 patent. Of these, claims 1, 20, 21, and 22 are independent. Claim 1 is reproduced below with Petitioner's claim element designations in brackets.

1. An optical fiber connector comprising:
 - [1.1] first and second optical fiber ferrules;
 - [1.2] a connector housing having a front end portion and a rear end portion spaced apart along a longitudinal axis, the connector housing comprising a top portion and a bottom portion spaced apart along a transverse axis perpendicular to the longitudinal axis, [1.3] the connector housing holding the first and second optical fiber ferrules such that the first and second optical fiber ferrules are exposed through the front end portion for making an optical connection and the first and second optical

fiber ferrules are spaced apart from one another along the transverse axis,

[1.4] a depressible latch above the top portion of the connector housing; and

[1.5] an elongate arm connected to the connector housing above the top portion and configured to be pulled to actuate the depressible latch;

[1.6] wherein the connector housing comprises a guide connecting the elongate arm to the optical fiber connector.

Ex. 1001, 24:28–47.

D. Asserted Challenges

Petitioner, supported by the declaration of James F. Brennan III, Ph.D. (Ex. 1011), asserts the following challenges to unpatentability (Pet. 12):²

Claims Challenged	35 U.S.C. §	References/Basis
1–17, 20, 21	103	Scherer, ³ Lee ⁴
18, 19, 22	103	Scherer, Lee, Gniadek ⁵
1–17, 20, 21	102(a)(2)	Lee
18, 19, 21, 22	103	Lee

III. ANALYSIS

A. Legal Standard

² The relevant sections of the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, took effect on March 16, 2013. The earliest possible effective filing date of the ’369 patent is after this date. *See* Ex. 1001, code (60). Thus, AIA statutes apply to the claims of the ’369 patent.

³ Ex. 1003, WO 2015/027033 A1, published February 26, 2015 (“Scherer”).

⁴ Ex. 1004, WO 2017/127208 A1, filed December 21, 2016, published July 27, 2017 (“Lee”).

⁵ Ex. 1010, US 8,465,317 B2, published June 18, 2013 (“Gniadek”).

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 (2018). 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 ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness.⁶ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art (“POSITA”)

would have been a person having: (1) at least a bachelor’s degree in mechanical engineering, electrical engineering, physics, or a related field and three years of experience in fiber optics and fiber optic connectors; (2) a master’s degree in mechanical engineering, electrical engineering, physics, or a related field and at least one year of experience in fiber optics and fiber optic connectors; or (3) industry experience (at least three years) designing fiber optic connectors in lieu of a formal degree.

Pet. 3–4 (citing Ex. 1011 ¶¶ 40–46).

For purposes of this Decision, we adopt Petitioner’s proposal as reasonable and consistent with the ’369 patent specification and the prior art.

C. Claim Construction

⁶ The present record does not include any objective evidence of nonobviousness.

In an *inter partes* review, the Board interprets claim language using the district-court-type standard, as described in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). Under that standard, we generally give claim terms their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1313–14. “The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner asserts that the “Petition affords all terms their ordinary and customary meaning.” Pet. 4. For purposes of this Decision, no claim terms require express construction.

D. Petitioner’s First Challenge: Scherer and Lee

Petitioner contends that claims 1–17, 20, and 21 would have been obvious in view of Scherer and Lee. Pet. 12–49 (citing Ex. 1011 ¶¶ 125–358). We begin with an overview of the references.

1. Scherer (Ex. 1003)

Scherer relates to fiber optic cables and discloses a traceable networking cable with a remote release connector. Ex. 1003, codes (54), (57), ¶ 2. Figure 10 is reproduced below.

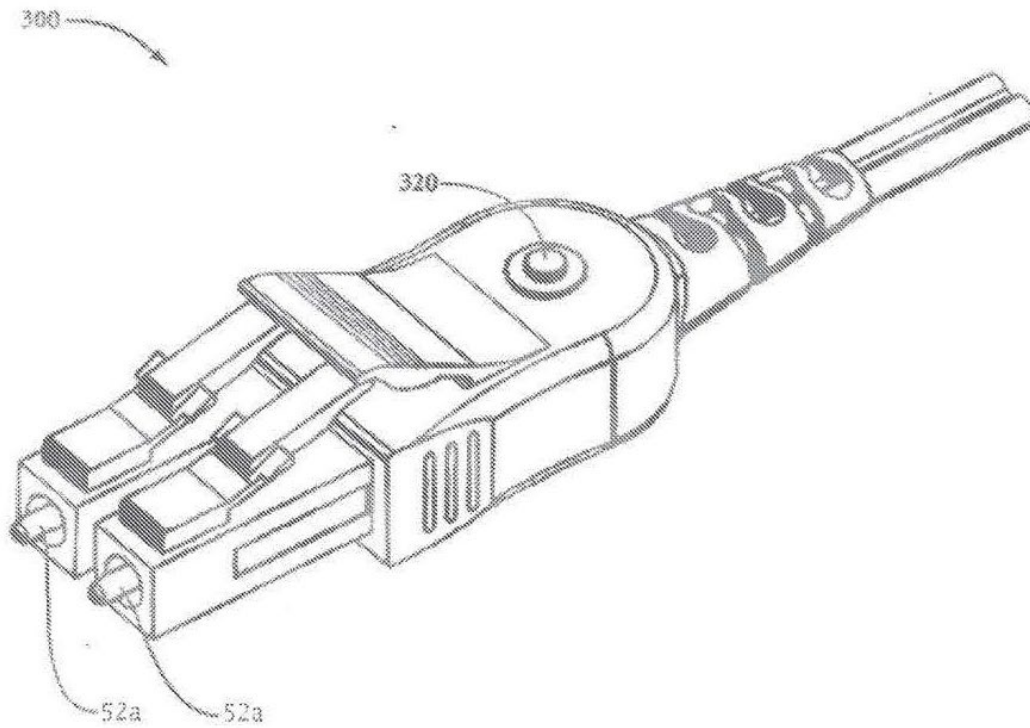


FIG. 10

Scherer Figure 10 shows a dual fiber optic cable connector having optical fibers 52a. Ex. 1003 ¶¶ 28, 50, 51.

Figure 11 is reproduced below.

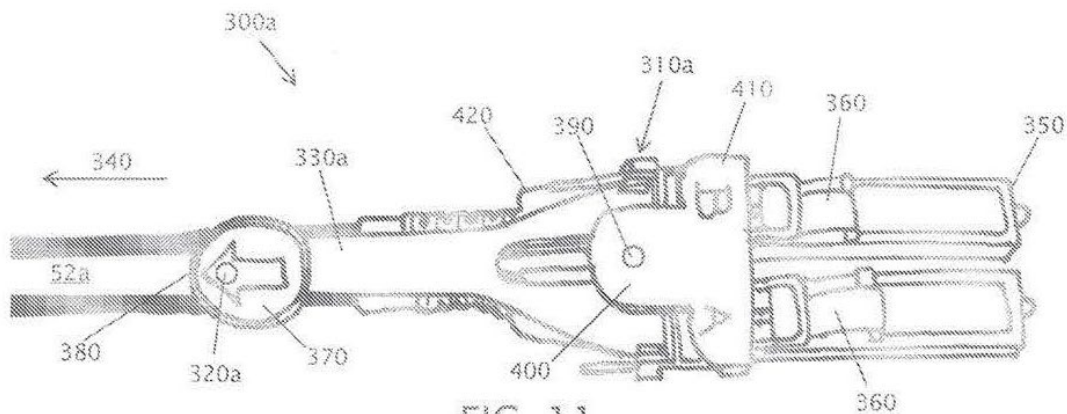


FIG. 11

Scherer Figure 11 shows a dual fiber optic cable connector with a remote release tab. Ex. 1003 ¶ 29. More particularly, Figure 11 shows cable 300a

with fiber optic cable connector hood 310a and extender or remote release tab 330a. *Id.* ¶ 51. According to Scherer, the extender or remote release tab can be pulled by a user in direction 340 away from distal end 350 of the connector to laterally compress levers 360 of the connector toward optical fibers 52a. *Id.*

Figure 14 is reproduced below.

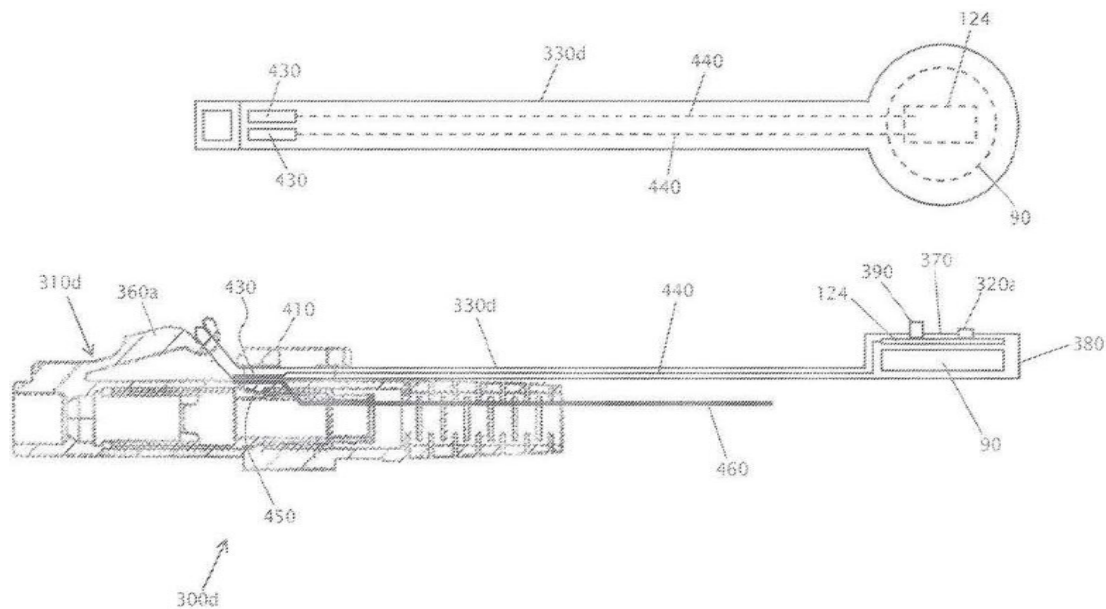


FIG. 14

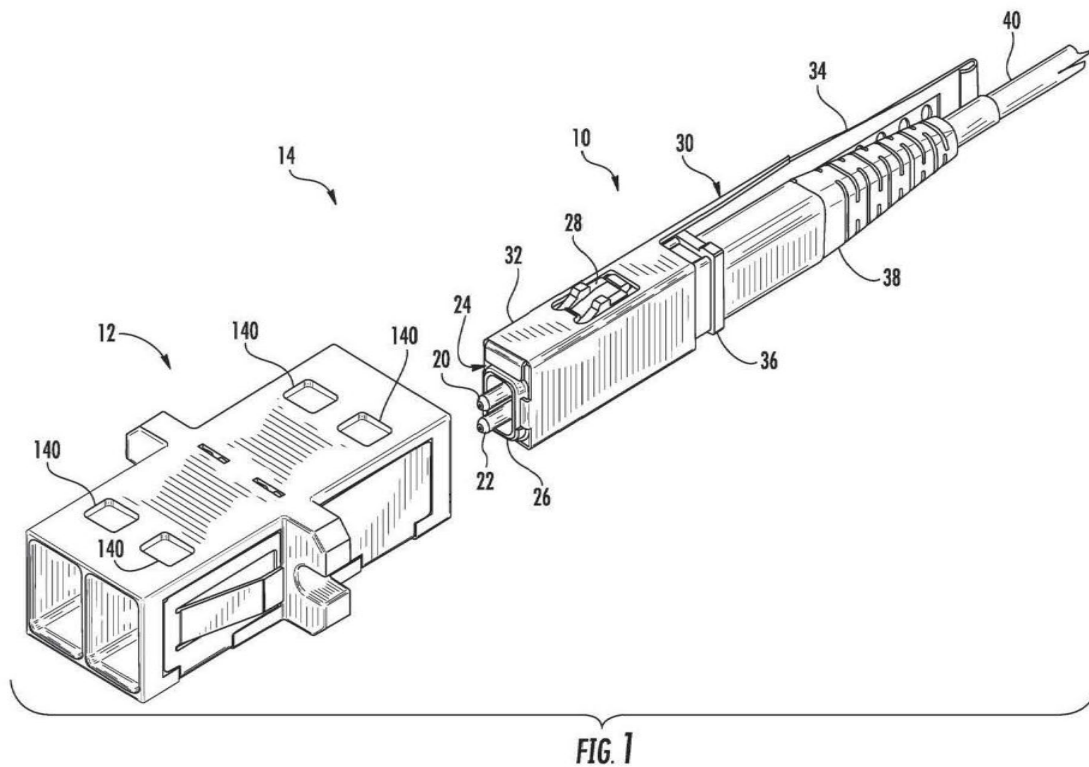
Scherer Figure 14 includes a cutaway side view of a single fiber optic cable connector hood with a remote release tab and an inset bottom view of an extender for the connector hood. Ex. 1003 ¶ 32. Scherer's Figure 14 embodiment is similar to Scherer's Figure 11–13 embodiments,⁷ except that the Figure 14 embodiment includes only a single fiber optic cable (not shown in Figure 14), rather than two fiber optic cables, as in Figures 11–13.

⁷ Scherer's Figures 12 and 13 are similar to Figure 11. Ex. 1003 ¶¶ 52, 53.

Id. ¶¶ 52–54. Scherer discloses that “connector hood 310d includes extender 300d [*sic*, 330d] that is configured to be removably coupled to connector body 400a [*sic*, 410] such that extender 300d [*sic*, 330d] can slide relative to connector body 400a [*sic*, 410] to depress or compress lever 360a.” *Id.* ¶ 54.⁸

2. *Lee (Ex. 1004)*

Lee discloses a fiber optic connector. Ex. 1004, code (57). Figure 1 is reproduced below.



Lee Figure 1 shows fiber optic connector system 14 including fiber optic connector 10 and adapter 12. Ex. 1004 ¶¶ 15, 29. Connector 10 includes first and second ferrules 20, 22, as well as inner connector body 24, latch

⁸ Our corrections of the reference numerals are based on the text and figures of Scherer. Ex. 1003 ¶¶ 51, 54, Figs. 11–14.

arm 28, and handle 30, which cooperate to releasably retain connector 10 in adapter 12. *Id.* ¶¶ 30, 45, 65. Handle 30 includes housing portion 32 that receives inner connector body 24 and grip portion 34 that extends rearwardly from housing portion 32. *Id.* ¶ 30. Handle 30 can move relative to inner connector body 24 so that housing portion 32 causes latch arm 28 to flex toward the inner connector body. *Id.*

Figure 3 is reproduced below.

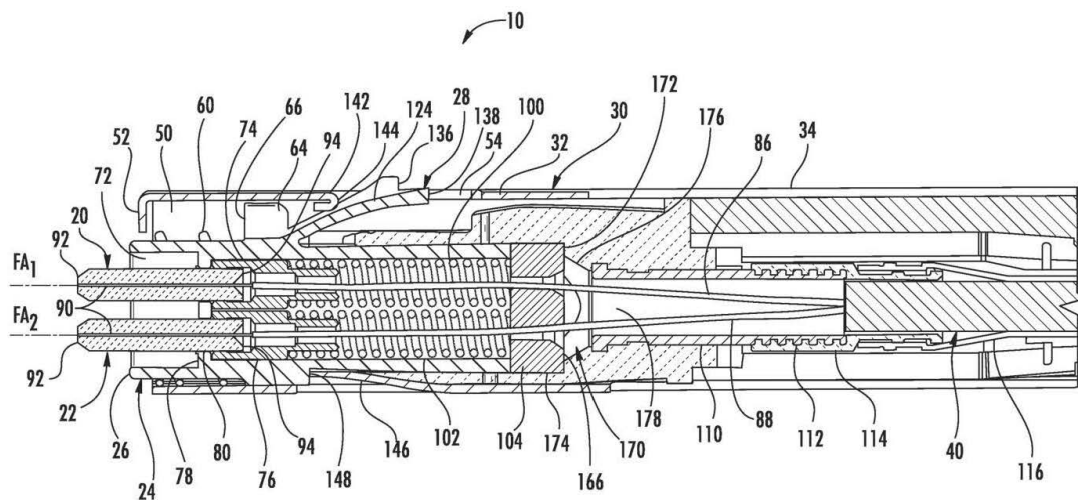
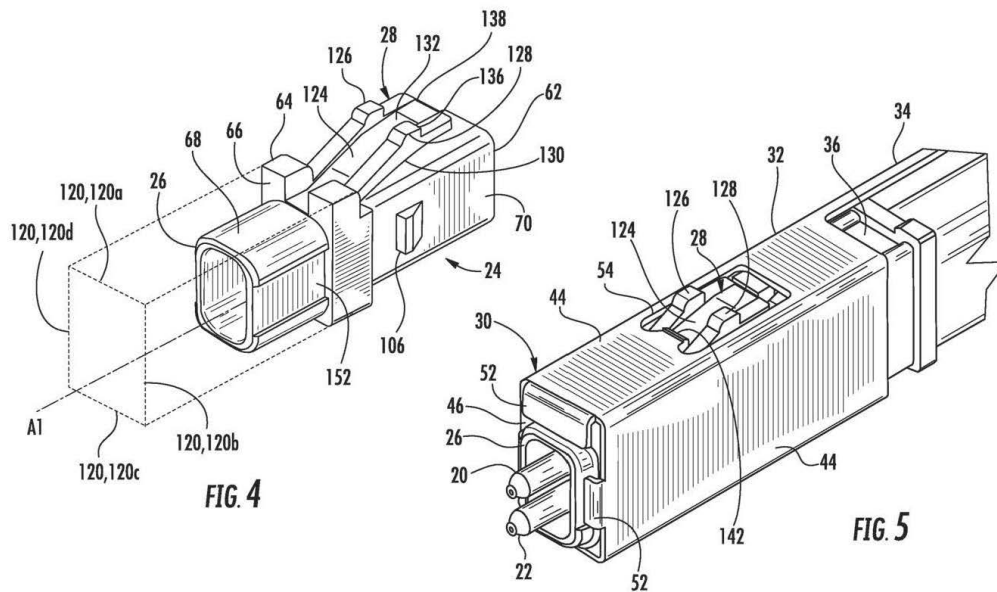


FIG. 3

Lee Figure 3 is a cross-sectional view of fiber optic connector 10 of Figure 1 and shows first and second ferrules 20, 22, inner connector body 24, latch arm 28, and handle 30. Ex. 1003 ¶¶ 17, 35, 47.

Figures 4 and 5 are reproduced below.



Figures 4 and 5 show a portion of a fiber optic connector and illustrate how inner connector body 24 is received in housing portion 32 of handle 30 and how latch arm 28 cooperates with handle 30. Ex. 1004 ¶¶ 18, 41, 43.

As shown in Figures 1 and 3–5, latch arm 28 has ramp 124 between latching features 126, 128, which engage openings 140 in adapter 12 to retain connector 10 in adapter 12. Ex. 1004 ¶¶ 43–45, 63. Latch arm 28 extends through opening 54 in housing portion 32, which includes pushing feature 142, such as rounded surface 144, adjacent opening 54. *Id.* ¶ 47, Fig. 3. When handle 30 is moved rearwardly relative to inner connector body 24, rounded surface 144 slides along ramp 124 to cause latch arm 28 to flex toward inner connector body 24 and cause latching features 126, 128 to disengage from opening 140 so that connector 10 can be removed from adapter 12. *Id.* ¶¶ 47, 65.

3. Reasons to Combine

Petitioner contends that it would have been obvious to modify Scherer’s connector in two ways. Pet. 14. First, Petitioner asserts it would

have been obvious “to orient first and second optical fiber ferrules along the transverse axis of Scherer’s connector.” *Id.* (citing Ex. 1011 ¶¶ 128–133). Second, Petitioner asserts it would have been obvious “to modify Scherer’s extender 330d and lever 360a such that the edge defining the front end of the opening slides longitudinally along the upper surface of the lever 360a when the extender 330d is pulled rearwardly to depress the lever 360a.” *Id.* (citing Ex. 1011 ¶ 134).

Addressing the first modification, Petitioner contends that it would have been obvious to arrange an array of fibers perpendicular to the longitudinal axis of the fiber, and the choice between the horizontal and vertical axes is “merely choosing one of the few and finite available options.” Pet. 14–15 (citing Ex. 1011 ¶¶ 135–144). Petitioner contends that, in view of the dual connections shown in Scherer Figures 11–13, it would have been obvious to modify the connector of Scherer Figure 14 “to make multiple connections from a single optical fiber transmission line 52a.” Pet. 15 (citing Ex. 1011 ¶¶ 135–144), 20 (citing Ex. 1011 ¶¶ 145–159). According to Petitioner, Lee provides an alternative solution for making multiple connections from a single optical fiber cable. Pet. 16, 21. Petitioner contends that a desire for increased connector density would have motivated a POSITA “to modify Scherer’s connector hood to include multiple ferrules positioned relative to the lever as disclosed in Lee.” Pet. 16–17 (citing Ex. 1011 ¶¶ 135–144), 22. Petitioner’s first modification relates to claim elements 1.1 and 1.3, as discussed below. Pet. 19–22, 26–27.

Addressing the second modification, Petitioner asserts that

the modification of [Scherer's] extender 330d to have an edge that slides along lever 360a would have only required elongating the portion of the front portion of extender 330d in which the opening that receives the lever 360a is defined so that the edge at the front end of the opening would rest against the ramped upper surface of the lever 360a instead of being seated inside of the hook-shaped recess at the back end of the lever 360a.

Pet. 17 (citing Ex. 1011 ¶¶ 135–144). Petitioner's second modification relates to dependent claim 14.

We find that Petitioner's asserted rationale for modifying Scherer in view of Lee, as it relates to claim 1, is adequate for purposes of institution.

4. *Claim 1*

a. *Preamble*

The claim 1 preamble recites: “an optical fiber connector.” Ex. 1001, 24:28. Petitioner contends that Scherer discloses the preamble, asserting that Scherer Figures 10–14 show optical fiber connectors. Pet. 18 (citing Ex. 1003 ¶¶ 51–55, Figs. 10–14).

We find that Petitioner's contention for the claim 1 preamble is adequate for purposes of institution.

b. *Claim Element 1.1*

Claim element 1.1 recites: “first and second optical fiber ferrules.” Ex. 1001, 24:29.

Petitioner contends that a combination of Scherer and Lee teaches claim element 1.1. Pet. 19–22. According to Petitioner, a “POSITA would have understood that the features of the connector shown in [Scherer] Figure 14 would also be suitable for making double ended connections like those related to Figures 11–13.” Pet. 20 (citing Ex. 1011 ¶¶ 145–159). Petitioner contends that Lee teaches first and second optical fiber ferrules, as

recited in element 1.1, and that a “POSITA would have been motivated to modify Scherer’s Figure 14 optical fiber connector to include Lee’s first and second optical fiber ferrules” to increase connector density. Pet. 21–22 (citing Ex. 1011 ¶¶ 145–159).

We find that Petitioner’s contentions for claim element 1.1 are adequate for purposes of institution.

c. Claim Element 1.2

Claim element 1.2 recites: “a connector housing having a front end portion and a rear end portion spaced apart along a longitudinal axis, the connector housing comprising a top portion and a bottom portion spaced apart along a transverse axis perpendicular to the longitudinal axis.” Ex. 1001, 24:30–34.

Petitioner contends that Scherer teaches claim element 1.2, asserting that “the portion of Scherer’s ‘connector hood 310d’ that surrounds the empty space through which the transmission line 52a would extend defines the claimed ‘connector housing.’” Pet. 22 (citing Ex. 1003 ¶¶ 50, 51, 53, Fig. 14). Petitioner provides an annotated version of Scherer Figure 14 identifying front and rear end portions, top and bottom portions, and longitudinal and transverse axes. Pet. 26.

We find that Petitioner’s contentions for claim element 1.2 are adequate for purposes of institution.

d. Claim Element 1.3

Claim element 1.3 recites: “the connector housing holding the first and second optical fiber ferrules such that the first and second optical fiber ferrules are exposed through the front end portion for making an optical

connection and the first and second optical fiber ferrules are spaced apart from one another along the transverse axis.” Ex. 1001, 24:34–40.

Petitioner contends that a combination of Scherer and Lee teaches claim element 1.3. Pet. 26–27. According to Petitioner, “Scherer discloses hood 310d that defines a connector housing configured to hold line 52a, such that the distal end of line 52a is exposed through the front end portion of the housing.” Pet. 26 (citing Ex. 1003, Fig. 14). Petitioner acknowledges that “Scherer does not expressly disclose a connector housing holding the first and second optical fiber ferrules such that the first and second ferrules are spaced apart from one another along the transverse axis” and contends that “it would have been obvious in view of Lee to modify Scherer’s Figure 14 by adding a second ferrule aligned with the first ferrule and the latch on a transverse axis,” as taught by Lee. Pet. 27 (citing Ex. 1004 ¶¶ 3, 30, 35, 36, Figs. 1–3, 5; Ex. 1011 ¶¶ 125–144, 172–186).

We find that Petitioner’s contentions for claim element 1.3 are adequate for purposes of institution.

e. Claim Element 1.4

Claim element 1.4 recites: “a depressible latch above the top portion of the connector housing.” Ex. 1001, 24:41–42.

Petitioner contends that Scherer discloses claim element 1.4, asserting that Scherer’s lever 360a is a depressible latch and that lever 360a is above the top portion of hood 310d, which corresponds to the connector housing. Pet. 27–29 (citing Ex. 1003 ¶¶ 5, 10, 50, 51, 53, 54, Fig. 14).

We find that Petitioner’s contention for claim element 1.4 is adequate for purposes of institution.

f. Claim Element 1.5

Claim element 1.5 recites: “an elongate arm connected to the connector housing above the top portion and configured to be pulled to actuate the depressible latch.” Ex. 1001, 24:43–45.

Petitioner contends that Scherer discloses claim element 1.5, asserting that Scherer’s extender 330d provides an elongate arm that is pulled to actuate a depressible latch in the form of lever 360a. Pet. 29–30 (citing Ex. 1003 ¶ 54, Fig. 14).

We find that Petitioner’s contention for claim element 1.5 is adequate for purposes of institution.

g. Claim Element 1.6

Claim element 1.6 recites: “wherein the connector housing comprises a guide connecting the elongate arm to the optical fiber connector.” Ex. 1001, 24:46–47.

Petitioner contends that Scherer discloses claim element 1.6, asserting that Scherer’s “connector body 400a/410 couples extender 330d to the housing while allowing extender 330d to slide.” Pet. 31–32 (citing Ex. 1003 ¶ 54). Petitioner provides an annotated version of Figure 14 identifying a guide and directs us to Scherer’s disclosure that “the connector body defines a slot, and the extender is configured to be slidably disposed in the slot.” Pet. 31–32 (quoting Ex. 1003 ¶ 8).

We find that Petitioner’s contentions for claim element 1.6 are adequate for purposes of institution.

h. Conclusion for Claim 1

We determine that Petitioner establishes a reasonable likelihood of prevailing on its challenge to claim 1 as obvious in view of Scherer and Lee.

5. Dependent Claims 2–17, 20, and 21

Petitioner contends that Scherer in view of Lee discloses the limitations of dependent claims 2–17, 20, and 21. Pet. 32–49. In view of our preliminary determination for claim 1 and the lack of a Patent Owner preliminary response, we decline at this stage to provide an element-by-element analysis for dependent claims 2–17, 20, and 21.

E. Petitioner’s Remaining Challenges

Petitioner contends that claims 18, 19, and 20 would have been obvious in view of Scherer, Lee, and Gniadek. Pet. 49–56. Petitioner contends that Lee anticipates claims 1–17, 20, and 21. Pet. 57–97. Petitioner contends that claims 18, 19, 21, and 22 would have been obvious in view of Lee. Pet. 98–102. In view of our preliminary determination for claim 1 and the lack of a Patent Owner preliminary response, we decline at this stage to provide additional analysis for these challenges.

IV. CONCLUSION

For the reasons above, we determine that the information presented in the Petition establishes a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim of the ’369 patent. At this stage, we have not made a final determination with respect to the patentability of the challenged claims.

V. ORDER

For the foregoing reasons, it is

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–22 of the ’369 patent is hereby instituted with respect to all grounds of unpatentability set forth in the Petition; and

IPR2024-00115
Patent 11,307,369 B2

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; the trial will commence on the entry date of this Decision.

IPR2024-00115
Patent 11,307,369 B2

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