

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMPHENOL CORP.,
Petitioner,

v.

PPC BROADBAND, INC.,
Patent Owner.

IPR2023-01363
Patent 9,008,483 B2

Before BART A. GERSTENBLITH, GEORGE R. HOSKINS, and
JON B. TORNQUIST, *Administrative Patent Judges*.

TORNQUIST, *Administrative Patent Judge*.

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

I. INTRODUCTION

Amphenol Corp. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1, 2, and 10–13 (“Challenged Claims”) of U.S. Patent No. 9,008,483 B2 (Ex. 1001, “the ’483 patent”). Paper 2 (“Pet.”). PPC Broadband, Inc. (“Patent Owner”) filed a Preliminary Response to the Petition. Paper 6. With authorization, Petitioner filed a Preliminary Reply (Paper 7, “Prelim. Reply”) and Patent Owner filed a Preliminary Sur-reply (Paper 8, “Prelim. Sur-reply”).

An *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . 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) (2018). Having considered the arguments and evidence presented by Petitioner and Patent Owner, we determine that the information presented in the Petition demonstrates a reasonable likelihood that Petitioner would prevail on at least one of the Challenged Claims of the ’483 patent. Accordingly, we institute an *inter partes* review as to all the Challenged Claims of the ’483 patent on all the grounds of unpatentability set forth in the Petition.

II. BACKGROUND

A. Related Matter

The parties identify *PPC Broadband, Inc. v. Charles Industries, LLC*, 1-22-cv-01517-GBW (D. Del. Nov. 21, 2022), as a related matter. Pet. 91; Paper 4, 2.

B. Real Parties-in-Interest

Petitioner identifies itself and Charles Industries, LLC, as the real parties-in-interest. Pet. 91. Patent Owner identifies itself and Belden Inc., as the real parties-in-interest. Paper 4, 2.

C. The '483 patent

The '483 patent is titled “Optical Fiber Cable Drop Interface Box” and issued April 14, 2015. Ex. 1001, codes (45), (54). The '483 patent discloses an enclosure for distribution of a passive optical fiber network. *Id.* at 1:19–21. The '483 patent explains that typically a feed or drop optical fiber cable is provided from an optical fiber service provider to a premises, such as a multi-unit dwelling. *Id.* at 1:15–18, 1:39–44. This drop cable is “typically a heavy jacketed or hardened multi-fiber cable that is broken out at the premises into individual fiber connections.” *Id.* at 1:42–44.

The '483 patent explains that optical fiber cables are often pre-connectorized, i.e., “shipped from a factory with terminating connectors already installed,” which “can lead to the need for installers to deal with excess optical fiber cable length in many instances.” *Id.* at 1:50–54. “Storage of the excess cable length can be problematic, as can organization of the drop optical fiber cable, the multiple individual feed optical fiber cables, and the multiple individual distribution optical fiber cables.” *Id.* at 1:55–59. To overcome these challenges, the '483 patent discloses “a drop interface box (DIB) for interfacing between an optical network service provider’s heavy jacketed drop cable and optical distribution cables at a premises.” *Id.* at 2:3–6. “The DIB provides organized drop, feed and distribution fiber cable storage and routing in a manner which does not cross

different cable types when additional cables are added, and which maintains minimum bend radius of the cables and inhibits cable strain.” *Id.* at 2:6–10.

Figure 5-2 is reproduced below.

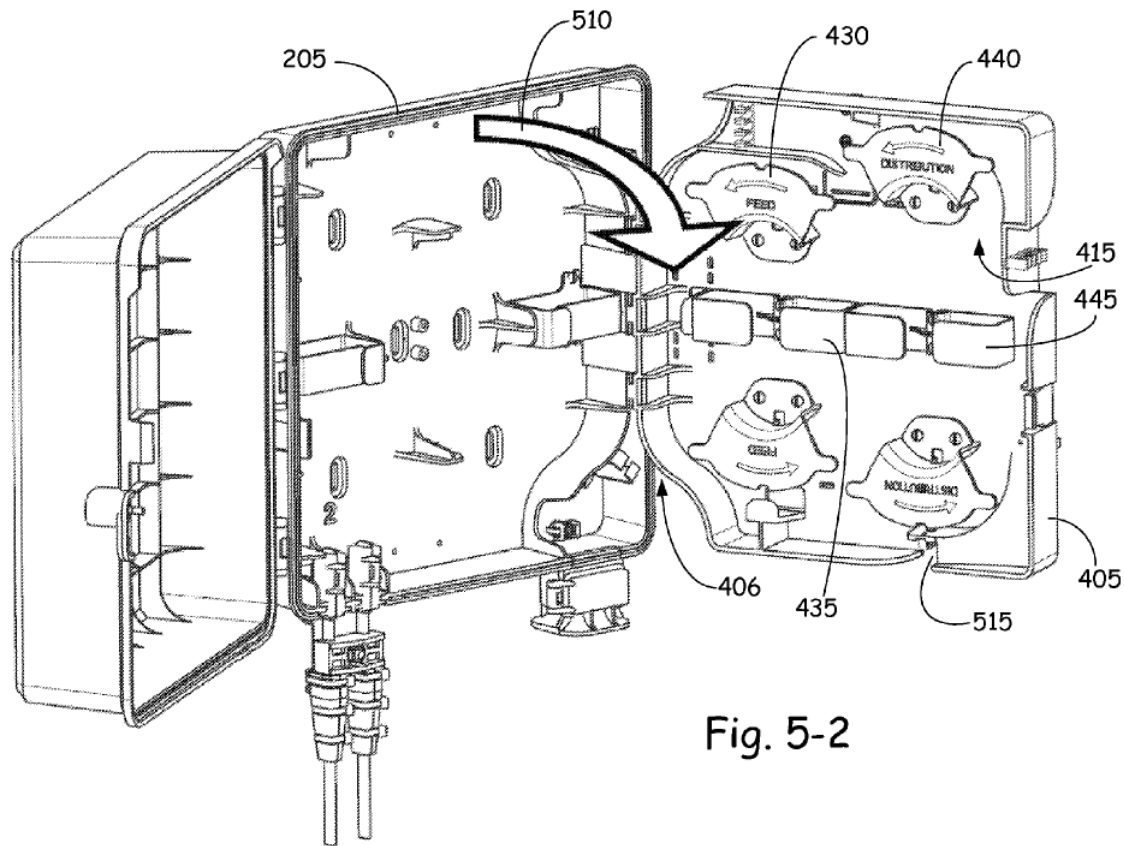


Fig. 5-2

Figure 5-2 is a diagrammatic illustration of the drop, feed, and distribution cable routing and storage in a DIB embodiment. *Id.* at 2:36–38. As shown in Figure 5-2, base 205 includes drop cable storage clips that are used to retain coils of the outdoor jacketed feeder cable without imparting unnecessary stress on the cable or violating minimum bend radius. *Id.* at 4:58–62, 5:21–26. Arrow 510 represents the routing of drop cable 110 (depicted in Figure 5-4 below) from base 205 to rear side 415 of hinged fiber storage panel 405. *Id.* at 5:30–32. Cable storage spools 430 and 440, cable storage clips 435 and 445, and routing channels 515 and 532 (shown in Figure 5-4 below) of storage panel 405 “are positioned and designed to

(1) maintain separation of cable storage between the feed cables (stored on spools 430 and clips 435) and the distribution cables 120 (stored on spools 440 and clips 445); (2) support the manufacturer's specific minimum bend radius for the cables; and (3) allow cables to be added after the initial installation without cross-over of cable types.” *Id.* at 5:34–43.

Figure 5-4 is reproduced below.

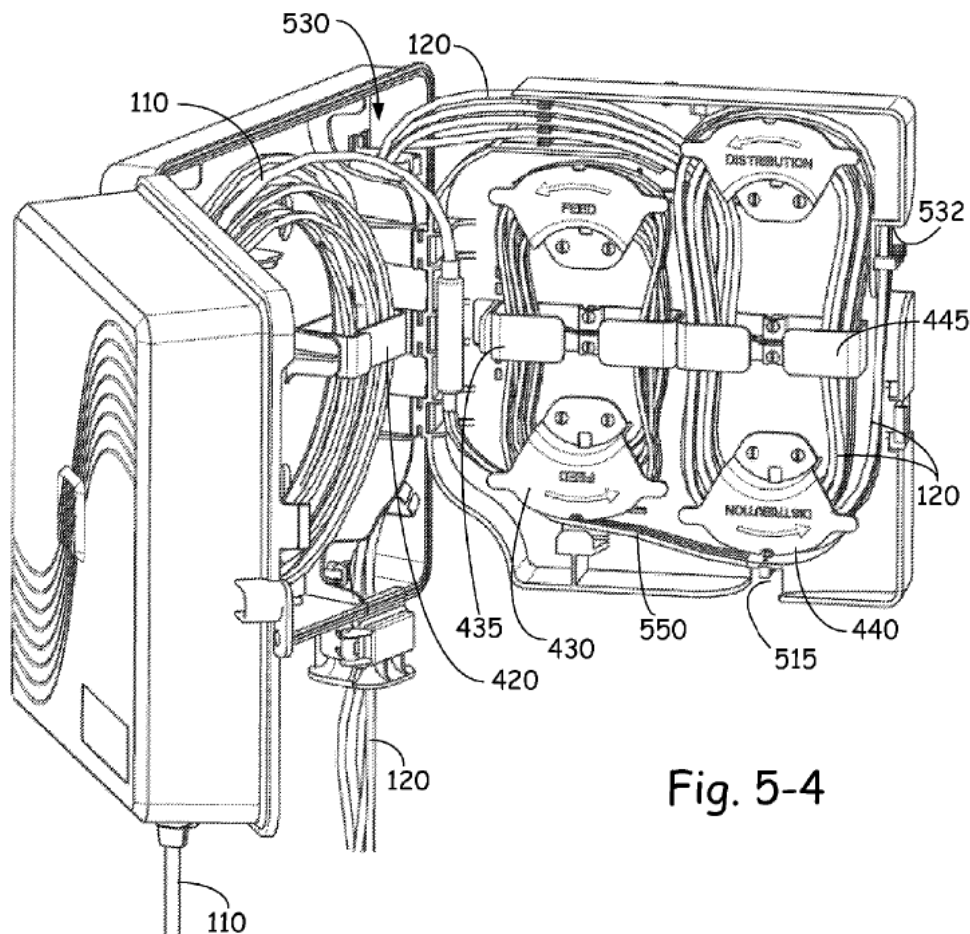


Fig. 5-4

Figure 5-4 is a view of an exemplary DIB 100 “with drop cable 110, feed cables 550 and distribution cables 120 routed and stored.” *Id.* at 2:39–41, 6:19–21.

Figure 6-4 is reproduced below.

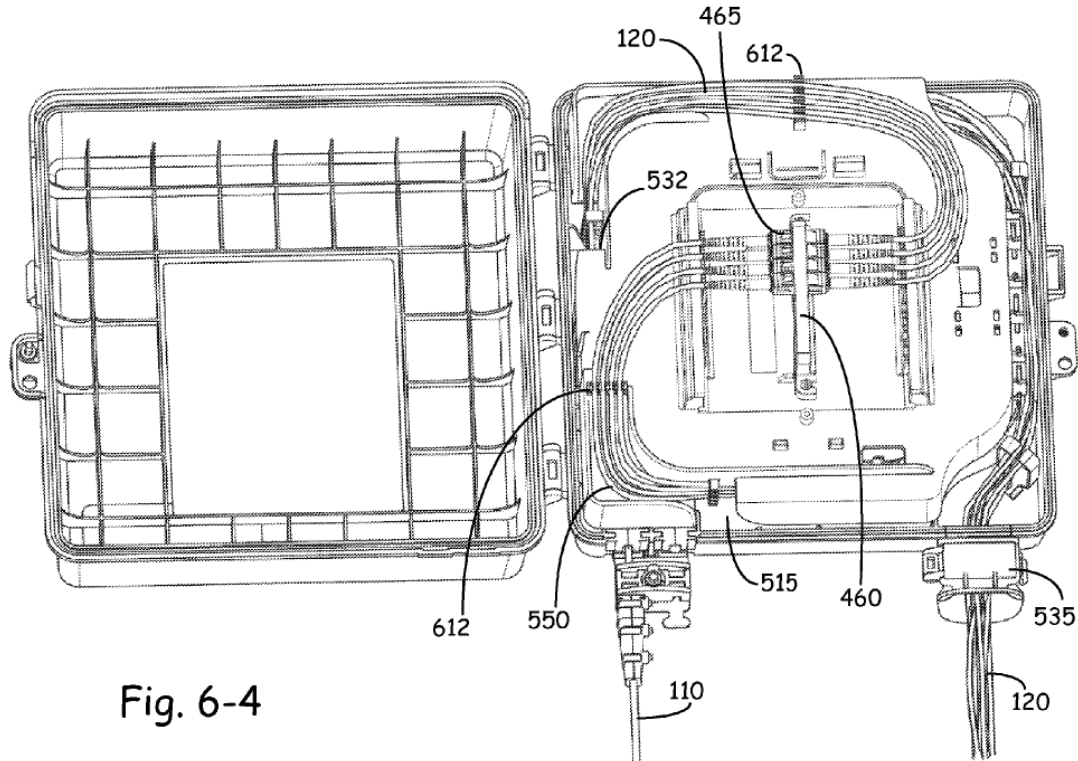


Fig. 6-4

Figure 6-4 is a view of an exemplary DIB showing feed and distribution cable routing to the front side of the fiber storage panel. *Id.* at 2:48–51. In Figure 6-4,

DIB 100 is shown in its folded position (with front 410 of panel 405 shown facing out as the panel is stored in the base) with drop cable 110, feed cables 550 and distribution cables 120 routed and stored as described above, including the transition channels 515 and 532 as well as the cable adapters or connectors 465 positioned approximately at the center of panel 405.

Id. at 7:1–7.

D. Illustrative Claim

Claim 1, reproduced below, is representative of the Challenged Claims.

1. [pre] A drop interface box configured to be mounted to a structure and to receive a drop cable from an optical fiber service provider distribution point and a plurality of distribution cables which distribute the optical fiber service, the drop interface box comprising:

[1a] a base unit having a drop cable entrance configured to receive the drop cable and having drop cable retaining mechanisms spaced apart and configured to retain a length of drop cable looped around the drop cable retaining mechanisms;

[1b] a cover having a hinged connection to the base unit to selectively enclose a storage area provided in the base unit; and

[1c] a fiber storage panel having a hinged connection to the base unit on a side opposite the hinged connection of the cover to the base unit such that the fiber storage panel is moveable relative to the base unit and configured to be stored between the base unit and the cover,

[1d] the fiber storage panel having first spools positioned to store a plurality of feed break-out cables coupleable to the drop cable, the fiber storage panel further having second spools positioned to store a plurality of distribution cables coupleable to the plurality of feed break-out cables.

Ex. 1001, 7:23–46 (Petitioner’s spacing and bracketing added for reference); Pet. 93–94 (Claims Listing Appendix).

E. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability (Pet. 8):¹

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 11	103(a)	Holmberg ² , Battey ³
2, 12, 13	103(a)	Holmberg, Battey, Blankenship ⁴
1, 2, 11–13	103(a)	Holmberg, Battey, Blankenship
10	103(a)	Holmberg, Battey, Cowen ⁵
10	103(a)	Holmberg, Battey, Blankenship, Cowen

In support of their respective arguments, Petitioner provides a declaration from Dr. Sayfe Kiaei (Ex. 1003) and Patent Owner provides a declaration from Dr. Charles A. Eldering (Ex. 2001).

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, amended § 103 effective March 16, 2013. The ’483 patent issued April 14, 2015, and claims priority to a provisional application filed on April 5, 2011. Ex. 1001, code (45), (60). Petitioner contends that the pre-AIA version of § 103 applies to the ’483 patent and Patent Owner does not expressly disagree. Thus, we apply the pre-AIA version of § 103 in this Decision. *See* Pet. 16 (asserting that Holmberg is prior art under the pre-AIA version of 35 U.S.C. § 102(b)); *see also* Ex. 1002, 232 (the Examiner applying the pre-AIA version of § 103(a) during prosecution).

² U.S. Patent Publ. 2009/0202214 A1, published August 13, 2009. Ex. 1004 (“Holmberg”).

³ U.S. Patent Publ. 2008/0112681 A1, published May 15, 2008. Ex. 1005 (“Battey”).

⁴ US 6,721,484 B1, issued April 13, 2004. Ex. 1006 (“Blankenship”).

⁵ US 8,965,168 B2, issued February 24, 2015. Ex. 1007 (“Cowen”).

III. ANALYSIS

A. Legal Standard

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter 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 ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

In order to determine whether an invention would have been obvious at the time the application was filed, we consider the level of ordinary skill in the pertinent art. *Graham*, 383 U.S. at 17. In assessing the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citations omitted).

Petitioner contends a person of ordinary skill in the art “would have had at least a bachelor’s degree in electrical engineering, computer engineering, or a related field, and at least 1 year of experience related to communication networks or the equivalent.” Pet. 7. Petitioner further

contends that “[a]dditional education could substitute for professional experience or significant experience in the field could substitute for formal education.” *Id.* at 7–8 (citing Ex. 1003 ¶¶ 29–31).

Dr. Eldering agrees that one of ordinary skill in the art “would have had at least a bachelor’s degree in electrical engineering, computer engineering, or a related field, and at least one year of experience related to communication networks or the equivalent.” Ex. 2001 ¶ 24. According to Dr. Eldering, “[a] person with less relevant practical experience but with additional experience would also qualify.” *Id.* Patent Owner contends that any differences between the parties’ proposed definitions “are insubstantial and do not impact the analysis of the issues presented.” Prelim. Resp. 28 n.3.

Upon review of the prior art of record and the parties’ arguments, we adopt Petitioner’s definition of the person of ordinary skill in the art for purposes of this Decision as it appears consistent with the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (holding that the prior art itself can reflect the appropriate level of ordinary skill in the art). We note, however, that our conclusion would be the same under either party’s definition, to the extent there is any relevant distinction between the two definitions.

C. Claim Construction

In an *inter partes* review proceeding, a patent claim is construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b) (as amended Oct. 11, 2018). This rule adopts the same claim construction standard used by Article III federal courts, which follow *Phillips v. AWH*

Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc), and its progeny. Under this standard, the words of a claim are generally given their “ordinary and customary meaning,” which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *See Phillips*, 415 F.3d at 1312–13.

Petitioner contends claim 1 should be construed to require that “the drop cable retain its external jacket as it is routed internally.” Pet. 10. Petitioner contends this construction differs from Patent Owner’s apparent construction in the district court, “which allows the external jacket to be removed as the drop cable enters the DIB and the fibers routed inside the box without the external jacket.” *Id.* at 10–11.

Patent Owner contends Petitioner’s narrower construction requiring the “drop cable” retain its external jacket is incorrect, but contends “the Board need not resolve this claim construction dispute to deny institution because Petitioner’s proposed Grounds 1–5 are all insufficient under” either party’s construction. Prelim. Resp. 9.

Upon review of the parties’ arguments and the prior art of record, we determine that no claim terms require express construction for purposes of this decision. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”)). We address below, however, whether the recited cable types themselves constitute claim limitations.

D. Claims 1 and 11 over Holmberg and Battey

Petitioner contends the subject matter of claims 1 and 11 would have been obvious over the combined disclosures of Holmberg and Battey. Pet. 22–61.

1. *Holmberg*

Holmberg discloses “wall boxes configured to be easily mounted at mid-span locations along the length of a fiber optic telecommunications cable.” Ex. 1004 ¶ 34. Preferably, the disclosed wall boxes are used for “indoor applications such as multi-dwelling units, or commercial buildings where a plurality of subscribers is located.” *Id.*

Figure 3 of Holmberg is reproduced below.

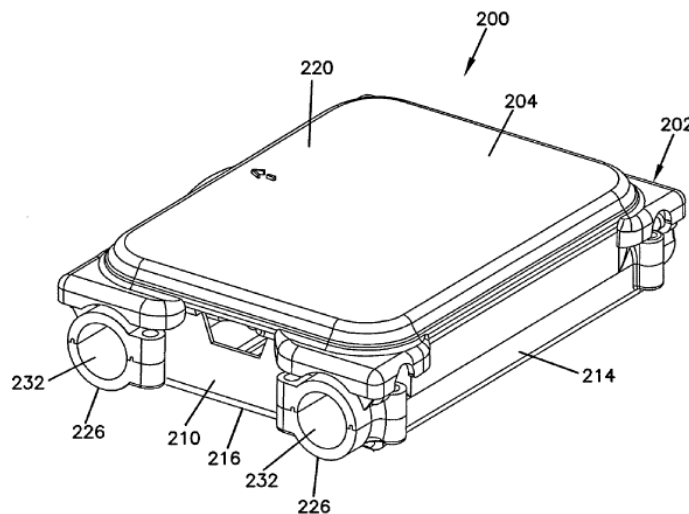


Figure 3 “is a front, left and bottom side perspective view of a wall box” of Holmberg. *Id.* ¶ 12. Wall box 200 includes a generally rectangular enclosure 202 that includes main body 216 and front cover 220. *Id.* ¶ 35. Front cover 220 is pivotally mounted to main body 216 and is movable between an open and closed position. *Id.* Cable covers 226 may be removed to allow insertion of cable into enclosure 202 through openings 232, and cable covers 226 may then be attached to main body 216 “to cover

the corresponding open region 222 and enclose the mid-span location of the cable within the enclosure 202.” *Id.* ¶ 37.

Figure 4 of Holmberg is reproduced below.

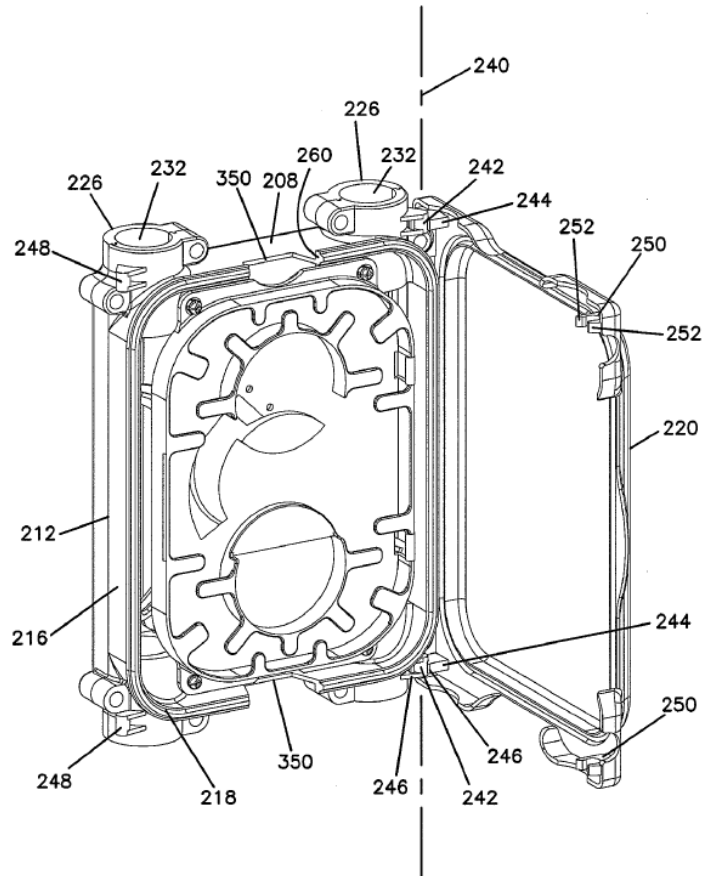


Figure 4 is a front perspective view of the wall box of Figure 3 with the front door open. *Id.* ¶ 13. As shown in Figure 4, front cover 220 is pivotally connected to main body 216 at vertical pivot axis 240. *Id.* ¶ 38.

Figure 6 of Holmberg is reproduced below.

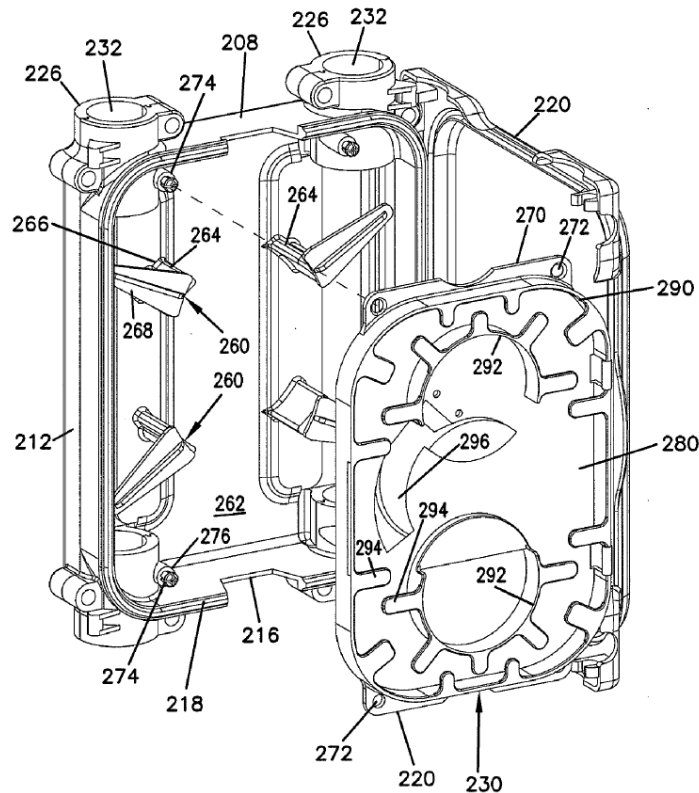


Figure 6 is a front perspective view of the wall box of Holmberg, “with the front door open and with a splice tray exploded outwardly from the interior of the wall box.” *Id.* ¶ 15. As shown in Figure 6, four cable management members 260 are integrally formed with a back wall 262, each having a bend radius limiter 264 that projects forwardly from rear wall 262. *Id.* ¶ 41. Each bend radius limiter 264 defines an outer curved surface 266 “having a curvature that satisfies the minimum bend radius requirements of the optical fiber desired to be stored within the enclosure 202.” *Id.*

Splice tray 230 also provides cable/fiber management within the interior of enclosure 202 and includes fastener openings 272 allowing a threaded fastener to be inserted to fasten splice tray 230 to enclosure 202. *Id.* ¶ 42. Fiber storage walls 292 project forwardly from main panel 280 to

allow excess fiber to be looped “so as to form an elongated fiber storage loop at the front side of the main panel 280.” *Id.* ¶ 43. Fiber storage walls 292 have an outer curvature that is selected to provide bend radius protection. *Id.* “One or more passages 296 can be defined through the main panel 280 for allowing optical fibers to be routed from a back side to a front side of the splice tray 230.” *Id.* ¶ 44.

Figure 7 of Holmberg is reproduced below.

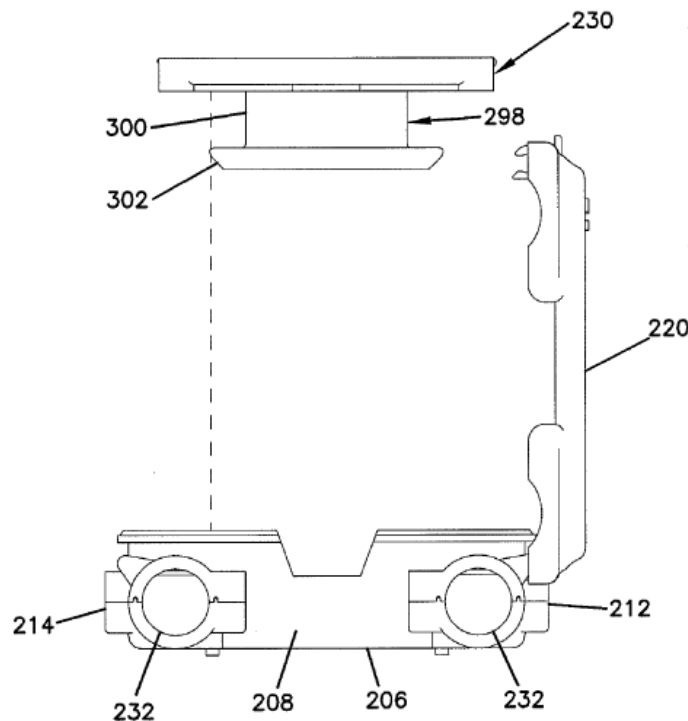


Figure 7 is a top view of the wall box with the front door open and the splice tray exploded outwardly from the interior of the wall box. *Id.* ¶ 16. As shown in Figure 7, splice tray 230 includes spool structure 298 that projects rearwardly from the back side of main panel 280. *Id.* ¶ 45. Spool structure 298 includes cylindrical spool 300 about which excess fiber can be wrapped and annular flange 302 that assists in retaining fibers spooled about spool 300. *Id.*

Figure 12 of Holmberg is reproduced below.

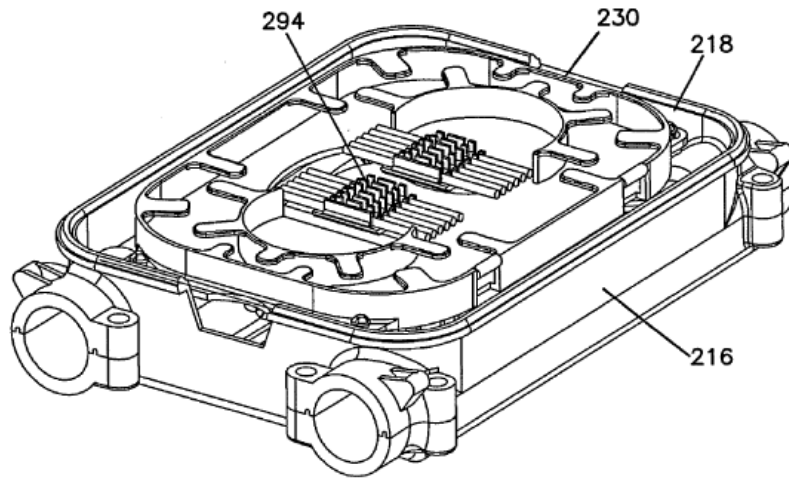


Figure 12 shows a wall box with front cover removed and fiber optic splices provided at the splice tray. *Id.* ¶ 21. As shown in Figure 12, splice sleeve holders 294 can be mounted to main panel 280 in the region between fiber storage walls 292. *Id.* ¶ 44. The splice sleeve holders 294 are adapted for holding splice sleeves used to provide mechanical support to a fusion splice formed between optical fibers. *Id.*

2. Battey

Battey discloses an enclosure deployed in fiber optic communications networks. Ex. 1005 ¶ 3. Figure 3 of Battey is reproduced below.

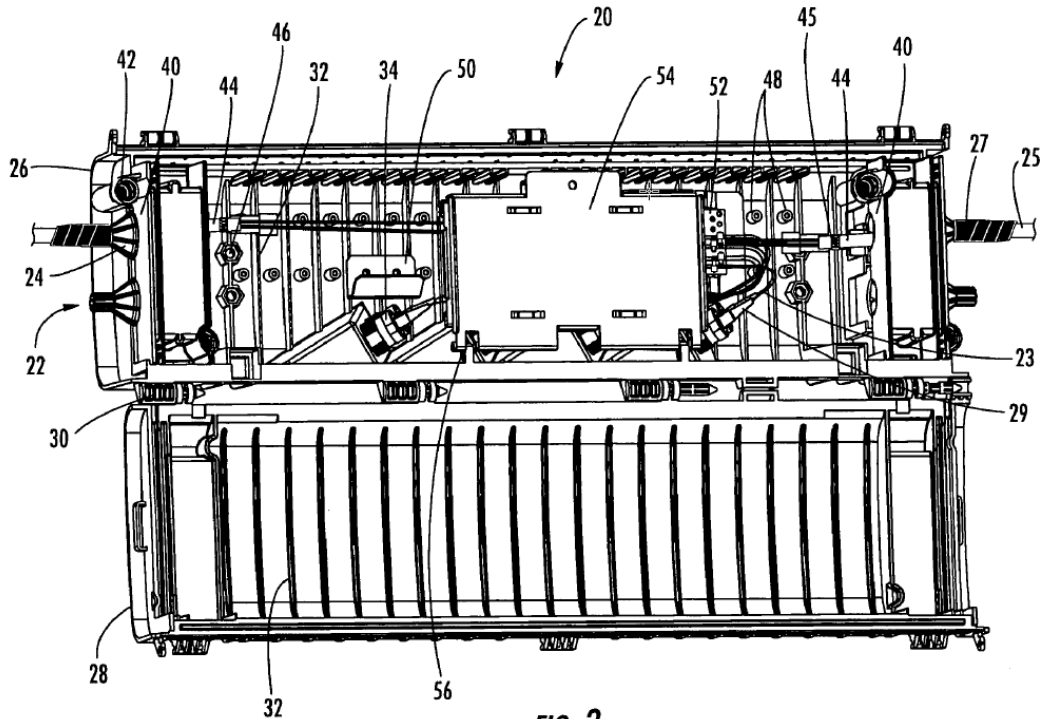


FIG. 3

Figure 3 is a perspective view of an aerial optical connection closure with the cover in opened position to show the internal compartment of the closure. *Id.* ¶¶ 13–15. Battey explains that in applications in which optical fibers of a distribution cable are spliced to pigtails in the field, “a conventional splice organizer or splice tray (obscured) is mounted to a work shelf 54, preferably on the side of the shelf 54 facing the base 26.” *Id.* ¶ 38. Shelf 54 is preferably hingedly affixed to an interior wall of base 26 at hinge locations 56. *Id.* ¶ 39. Hinge locations 56 may be on the same side or the opposite side as the hinge locations of closure 20. *Id.* “Preferably, the distribution cable 25 is routed through the interior of the connection closure 20 beneath the shelf 54 so as to not interfere with the movement of the shelf 54 between the opened and closed positions.” *Id.* A slack basket 50 may be used to receive and store slack lengths of optical fibers and/or optical fiber buffer tubes. *Id.* ¶ 36.

3. *Analysis—Claims 1 and 11*

a. *Petitioner's Arguments*

Petitioner contends that Holmberg and Battey, in combination, disclose every limitation of claims 1 and 11. Pet. 23–61. In particular, to the extent the preamble of claim 1 is limiting, Petitioner contends Holmberg discloses a drop interface box (wall box 200) that is configured to be mounted to a structure and receive a drop cable from an optical service provider and a plurality of distribution cables that distribute an optical fiber service.⁶ *Id.* at 23–29.

With respect to limitation 1[a], Petitioner contends that the wall box of Holmberg includes an entrance configured to receive a drop cable and retaining mechanisms spaced apart and configured to retain a length of drop cable looped around the drop cable retaining mechanisms. *Id.* at 29–32. Petitioner further contends that at least a portion of the jacketed drop cable inside main body 216 of wall box 200 of Holmberg is stripped to expose individual cables, which may be looped around cable management members 260 (which include bend radius limiters 264 and cable retention members 268). *Id.* at 30–31 (citing Ex. 1004 ¶¶ 41, 45, 52–53).

With respect to limitation 1[b], Petitioner contends that Holmberg discloses a front cover 220 that is pivotally mounted to main body 216 using a hinged connection and is able to selectively enclose the storage area of enclosure 202. *Id.* at 32–35 (citing Ex. 1004 ¶¶ 35, 38–39, Figs. 3, 4).

With respect to limitation 1[c], Petitioner contends that Holmberg's splice tray 230 “provides cable/fiber management within the interior of the

⁶ We need not resolve whether the preamble of claim 1 is limiting because there is no dispute that Holmberg discloses the recited subject matter.

enclosure 202” and is configured to be stored between the base unit and the cover. *Id.* at 35–36 (Ex. 1004 ¶¶ 35, 41–45, 52–53). Petitioner concedes that splice tray 230 does not have a hinged connection, or a hinged connection at a location opposite the hinge for the cover, but contends this configuration was “well known in the prior art” and modifying Holmberg to have this configuration would allow “convenient access to the splice tray, as *Battey* expressly teaches” and easier access to “components located behind the splice tray in main body 216, such as the drop cable.” *Id.* at 38, 40–41, 43–44 (citing Ex. 1005 ¶ 39; Ex. 1003 ¶¶ 38–39, 90–93).

With respect to limitation 1[d], Petitioner contends that Holmberg teaches that the drop cable is stripped of its external jacket and the internal fiber components then separated out into terminated fibers (feed break-out cables) which are then spooled around spool structure 298. *Id.* at 47–50 (citing Ex. 1004 ¶¶ 45, 53, Fig. 7; Ex. 1003 ¶ 99). Petitioner further contends that the spooled terminated fibers may be spliced to a corresponding fiber of another cable (e.g., a distribution cable) and these distribution cables then looped around fiber storage walls 292. *Id.* at 55–56, 58 (citing Ex. 1004 ¶¶ 45, 53; Ex. 1003 ¶¶ 106–107, 109–110). According to Petitioner, spool structure 298 constitutes spools⁷ capable of storing a plurality of feed break-out cables coupleable to the drop cable, and fiber storage walls 292 of splice tray 230 constitute spools capable of storing

⁷ To the extent claim 1 is construed to require more than one spool for retaining the feed break-out cables, Petitioner contends that one of ordinary skill in the art would have found it obvious to manufacture the cylinder of Holmberg’s spool structure 298 using two pieces. Pet. 51–53. Patent Owner does not assert that spool structure 298 fails to satisfy the “spools” limitation of claim 1 or contest Petitioner’s argument regarding the motivation to construct spool structure 298 using two separate pieces.

distribution cables coupleable to the plurality of feed break-out cables. *Id.* at 49–50, 55–58.

Claim 11 depends from claim 1 and further requires that the drop cable entrance comprises slots that are configured to receive a cable clip, with the slots and cable clip forming a substantially weather tight seal with the base unit. Ex. 1001, 8:33–37. Petitioner contends that Holmberg expressly discloses half cylinder 314 that provides mechanical retention of the cable and also provides “a seal around the perimeter of the cable jacket.” *Id.* at 59–61 (citing Ex. 1004 ¶¶ 47–48; Ex. 1003 ¶¶ 111–113 (Dr. Kiaei testifying that the seal provided by half cylinder 314 would be “substantially weathertight”)).

Patent Owner contends that Petitioner’s grounds based on Holmberg and Battey fail because Petitioner has not demonstrated (1) that Holmberg discloses spools capable of storing feed break-out cables coupleable to a drop cable, or (2) that one of ordinary skill in the art would have combined the disclosures of Holmberg and Battey to arrive at the claimed invention. Prelim. Resp. 10–43. We address these issues in turn.

b. The Claimed Cable Types

Claim 1 requires “drop cable retaining mechanisms” that are “configured to retain a length of drop cable,” spools positioned to store a plurality of “feed break-out cables coupleable to the drop cable,” and spools positioned to store “distribution cables coupleable to the plurality of feed break-out cables.” Ex. 1001, 7:28–46.

On the present record, we do not understand the recited cable types to be structural limitations. Rather, the recited cable types limit the acceptable retaining mechanisms and spools, with the recited retaining mechanisms

required to be capable of retaining a length of drop cable, and the spools required to be capable of storing feed break-out cables coupleable to the drop cable or distribution cables coupleable to the plurality of feed break-out cables. Prelim. Reply 2–3; Prelim. Sur-reply 6; *see also* Ex. 1002, 39 (WIPO Written Opinion noting that “the device claim 1 does not apparently include the cables in its scope”).

c. Analysis: Spools Capable of Storing Feed Break-Out Cables

Patent Owner contends that the separated fibers of Holmberg’s drop cable are part of the drop cable and therefore cannot be feed break-out cables that are “coupleable” to the drop cable, per claim 1. Prelim. Resp. 20. Given the difference in cable types between the ’483 patent and Holmberg, Patent Owner contends the Petition fails to demonstrate that spool structure 298 is capable of storing feed break-out cables that are coupleable to the drop cable, as required by claim 1. Prelim. Sur-reply 6; Prelim. Resp. 20–22. We disagree.

The ’483 patent discloses the use of a break-out plug 450 that “divides the drop cable 110 into multiple (e.g., typically four) individual feed cables 550” which are stored on spools 430. Ex. 1001, 4:62–5:2; Ex. 1022, 14 (discussing an adapter designed to split the drop cable into individual feed break-out cables). Holmberg likewise divides the drop cable into individual cables that are stored on spool structure 298, and neither party suggests that individual fibers of the drop cable would have different physical characteristics than individual fibers that are divided from the drop cable by a break-out plug. Indeed, Patent Owner previously argued before the district court that there is no relevant physical distinction between the structures of the claimed cable types, with the same fiber capable of being used, for

example, as a drop cable and as a distribution cable. Prelim. Reply 5–6 (citing Ex. 1021, 28 (Patent Owner arguing before the district court that “one piece of cable cut from a spool of cable could be used as a drop cable, and a second piece of cable cut from the same spool could be used as a distribution cable”)). Thus, Petitioner demonstrates sufficiently at this stage of the proceeding and on the present record that Holmberg teaches or suggests spools that are capable of storing a plurality of feed break-out cables that are coupleable⁸ to the drop cable.

d. Analysis: Reason to Combine

As discussed above, Petitioner contends that Battey discloses a splice tray with a hinge opposite the hinge location for the cover and that one of ordinary skill in the art would have sought to use this hinge location for the splice tray of Holmberg in order to allow “convenient access to the splice tray,” as well as “components located behind the splice tray in main body 216, such as the drop cable.” Pet. 39–44.

Patent Owner contends Petitioner’s reliance on Battey’s hinged shelf 54 is misplaced for many reasons, including that (1) Battey’s shelf 54 does not store any fiber optic cables, (2) Battey teaches that the fiber optic cables should avoid contacting shelf 54, and the ability of shelf 54 to slide within the interior cavity of the base would be “inconsistent with using the shelf for storage of excess lengths of fiber optic cables,” and (3) Battey expressly discloses using a fixedly mounted slack basket to store excess or

⁸ The ’483 patent explains that the term “coupled” is “used broadly and encompass[es] both direct and indirect . . . couplings.” Ex. 1001, 2:67–3:3. “Further, ‘connected’ and ‘coupled’ are not restricted to physical or mechanical connections or couplings.” *Id.* at 3:3–5.

slack fiber. Prelim. Resp. 33–37. These arguments are not persuasive. First, Petitioner does not propose a bodily incorporation of Battey’s shelf into the device of Holmberg. Rather, Petitioner’s proposed combination retains splice tray 230 of Holmberg and relies on Battey for its disclosure of using a hinge connection for the splice tray. Pet. 40 (asserting that one of ordinary skill in the art “would have found it obvious to modify *Holmberg* pursuant to *Battey*, resulting in splice tray 230 moveable relative to main body 216”), 43 (“Such a modification would have been a simple substitution of a hinged connection instead of a fastener.”). Second, although Battey utilizes a fixedly mounted slack basket to store excess cable, we are directed to no disclosure or teaching in Battey that teaches away from using other means of storing slack fiber.

Patent Owner argues that one of ordinary skill in the art would not have modified Holmberg in the manner asserted in the Petition because such a modification would introduce stresses on the spliced fibers stored on splice tray 230. Prelim. Resp. 28, 37 (asserting that the proposed modification of Holmberg would render the splice tray inoperable for its intended purpose). Patent Owner further argues that, contrary to Petitioner’s arguments, the terminated fiber in Holmberg’s fixedly mounted splice tray can already be accessed from spool structure 298 and routed through one of the openings 296 to the front side of splice tray 230. *Id.* at 42–43 (citing Ex. 1004 ¶¶ 44, 53; Ex. 1003 ¶ 81). Thus, Patent Owner contends Petitioner presents a solution to a problem that doesn’t exist in Holmberg and does so in a manner that would be detrimental to the integrity of stored cables and splices held in splice sleeve holders 294. *Id.* at 42–43.

The parties’ arguments regarding the addition of a hinged connection in Holmberg appear to rest on one factual predicate: whether a technician

would need convenient access to the rear side of splice tray 230 or any components located in main body 216 behind splice tray 230, including the drop cable. Pet. 43–44; Prelim. Resp. 42–43. As noted above, Patent Owner contends that the ability to access the area behind splice tray 230 is not necessary because terminated fiber can already be accessed from spool structure 298 and routed through openings 296, thereby removing the need to unfasten splice tray 230. Prelim. Resp. 42–43 (citing Ex. 1004 ¶¶ 44, 53). It is not evident on the current record, however, that the drop cable, terminated fibers of the drop cable, or distribution fibers could be accessed when splice tray 230 is fastened in place.

Holmberg discloses that

to access fibers within the wall box 200, selected fibers from the cable can be terminated (i.e., cut) adjacent one of the clamping portions 310 so as to provide a length of terminated fiber within the enclosure 202. The length of terminated fiber can be spooled around the spool structure 298 of the splice tray 230 for storage purposes. When it is desired to splice one of the terminated fibers to a distribution cable, the terminated fiber can be accessed from the spool structure 298 and routed through one of the openings 296 in the splice tray 230 to the front side of the splice tray 230 . . . [t]he cable to which the terminated fiber is spliced is preferably routed into the wall box 200 through one of the unused openings 232, or through openings 350 located a mid regions of the top and bottom sides 208, 210 of the main body 216.

Ex. 1004 ¶ 53. From this disclosure, it is unclear whether a technician could access terminated fiber from spool 298, or distribution fiber to be routed through openings 232, without unfastening splice tray 230. Moreover, we are directed to no evidence that a technician could access the drop cable and store terminated fiber on spool structure 298 with splice tray 230 fastened in place. As such, the question of whether splice tray 230 would need to be

unfastened in order to cut, spool, and route fibers in Holmberg is a disputed issue of material fact that is best resolved on a complete trial record.⁹

e. Conclusion—Claims 1 and 11

For the reasons set forth above, on the present record Petitioner sufficiently identifies where Holmberg and Battey disclose every limitation of claims 1 and 11. Petitioner also provides an explanation, supported by factual underpinning, as to why one of ordinary skill in the art would have combined the two references with a reasonable expectation of success. Pet. 44 (citing 1003 ¶¶ 90–93). Accordingly, Petitioner demonstrates a reasonable likelihood that claims 1 and 11 would have been obvious in view of Holmberg and Battey.

E. Claims 2, 12, and 13 in View of Holmberg, Battey, and Blankenship

Claim 2 depends from claim 1 and further requires “an adapter bracket configured to hold one or more adapters which couple the plurality of feed break-out cables to the plurality of distribution cables.” Ex. 1001, 7:47–50. Claim 12 depends from claim 11 and further requires “a strain-relief clamp coupled to the base unit proximate the drop cable entrance.” *Id.* at 8:38–40. Claim 13 depends from claim 1 and further requires “a security mechanism for securing the cover to the base unit in a closed position.” *Id.* at 8:41–43. Petitioner contends the subject matter of claims 2, 12, and 13 would have been obvious in view of the combined disclosures of Holmberg, Battey, and Blankenship. Pet. 62–73.

⁹ To the extent a technician would need to access the rear side of splice tray 230 and locations behind this tray, we are presented with no persuasive argument or evidence to suggest that removing screws to release splice tray 230 would induce less strain than using a hinged connection.

With respect to claim 2, Petitioner concedes that Holmberg does not disclose an adapter bracket configured to hold one or more adapters which couple the feed break-out cables to the distribution cables, but asserts that Blankenship discloses this feature. *Id.* at 62–63. Petitioner contends one of ordinary skill in the art would have sought to utilize such an adapter bracket in Holmberg/Batley in order “to provide simplified and robust optical connections” between the fibers of the feed break-out cables and distribution cables in Holmberg. *Id.* at 65–66.

With respect to claim 12, Petitioner concedes that Holmberg does not disclose a strain-relief clamp coupled to the base unit proximate the drop cable entrance, but asserts that Blankenship discloses this feature. *Id.* at 66–67. Petitioner contends one of ordinary skill in the art would have sought to utilize a strain-relief bracket/clamping device in the structure of Holmberg/Batley “because it was well known in the art that fiber optic cables have a minimum bend radius and may be damaged by sharp bends or other sources of strain.” *Id.* at 68.

With respect to claim 13, Petitioner concedes that Holmberg does not disclose a security mechanism for securing the cover to the base unit in a closed position, but contends Blankenship discloses this feature. *Id.* at 69. Petitioner contends one of ordinary skill in the art would have sought to use such a feature in the structure of Holmberg/Batley because it would “advantageously provide security for the cover” and “prevent unauthorized access to the optical components and connections housed within” Holmberg’s wall box 200. *Id.* at 72.

Patent Owner does not address Petitioner’s arguments with respect to claims 2, 12, and 13, apart from its arguments addressing independent claim 1.

Upon review of the parties' arguments and evidence, we determine that Petitioner sufficiently demonstrates that Holmberg, Battey, and Blankenship disclose every limitation of claims 2, 12, and 13. Petitioner also provides reasons, supported by factual underpinnings, to explain why one of ordinary skill in the art would have combined the three references with a reasonable expectation of success. Accordingly, Petitioner demonstrates a reasonable likelihood that claims 2, 12, and 13 would have been obvious over Holmberg, Battey, and Blankenship.

F. Claim 10 in View of Holmberg, Battey, and Cowen or Holmberg, Battey, Blankenship, and Cowen

Claim 10 depends from claim 1 and further requires a "drop cable retaining mechanism in the base unit" that comprises "storage clips positioned on opposing sides of the base unit." Ex. 1001, 8:30–32. Petitioner contends the subject matter of claim 10 would have been obvious in view of either Holmberg, Battey, and Cowen or Holmberg, Battey, Blankenship, and Cowen. Pet. 81–88.

Patent Owner does not address Petitioner's arguments with respect to claim 10, apart from its arguments addressing independent claim 1.

Upon review of the parties' arguments and evidence, we determine that Petitioner sufficiently demonstrates that Holmberg, Battey, and Cowen and Holmberg, Battey, Blankenship, and Cowen disclose every limitation of claim 10. Petitioner also provides reasons, supported by factual underpinnings, to explain why one of ordinary skill in the art would have combined the references with a reasonable expectation of success. *Id.* at 87–88. Accordingly, Petitioner demonstrates a reasonable likelihood that claim 10 would have been obvious over Holmberg, Battey, and Cowen and Holmberg, Battey, Blankenship, and Cowen.

G. Claims 1, 2, and 11–13 in View of Holmberg, Battey, and Blankenship

Petitioner contends that, to the extent claim 1 requires the storage of jacketed drop cable, claim 1 would have been obvious in view of Holmberg, Battey, and Blankenship. Pet. 73–81.

As we determine that Petitioner demonstrates a reasonable likelihood that claim 1 would have been obvious over Holmberg and Battey, and because there is currently no dispute that the retaining mechanisms of Holmberg are capable of storing drop cable under either parties’ construction of that term, we do not address this ground at this time.

H. 35 U.S.C. § 325(d)

Patent Owner contends we should exercise our discretion to deny the Petition under 35 U.S.C. § 325(d). Prelim. Resp. 43–58.

1. *Applicable Framework*

Section 325(d) provides that, in determining whether to institute an *inter partes* review, “the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.” 35 U.S.C. § 325(d). The Board uses a two-part framework in determining whether to exercise its discretion under § 325(d), specifically we determine:

- (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
- (2) if either condition of the first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics LLC v. MED-EL Elektromedizinische Geräte GmbH,
IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential).

In applying the two-part framework, we consider several non-exclusive factors identified in *Becton, Dickinson and Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, First Para.), which provide “useful insight into how to apply the framework” (*Advanced Bionics*, Paper 6 at 9):

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;
- (e) whether Petitioner has pointed out sufficiently how the examiner erred in its evaluation of the asserted prior art; and
- (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments. *Becton, Dickinson*, Paper 8 at 17–18.

If, after review of factors (a), (b), and (d), we determine that the same or substantially the same art or arguments previously were presented to the Office, we then review factors (c), (e), and (f), to determine whether the Office erred in a manner material to the patentability of the challenged claims. *Advanced Bionics*, Paper 6 at 10.

2. *Analysis*

Patent Owner presents evidence that Holmberg was before the Office during prosecution, as was at least one reference (Laporte) that discloses a hinged connection on the opposite side as the hinge for the cover. Prelim. Resp. 47 (asserting that Laporte was identified in an “International Search Report” and “Written Opinion”), 50–53. And, because Holmberg was specifically addressed by the Examiner, and Battey is alleged to be cumulative of Laporte, Patent Owner contends part one of the *Advanced Bionics* framework is satisfied. *Id.* at 55–57.

Patent Owner contends part two of the *Advanced Bionics* framework also is satisfied because Holmberg and Laporte “were extensively evaluated during prosecution prior to allowance of the claims,” and “Petitioner did not even attempt to meet its burden to show that the Examiner materially erred.” *Id.* at 57–58.

For the reasons set forth below, we determine that part two of the *Advanced Bionics* framework has not been satisfied. Thus, we need not address whether part one of the framework is satisfied in view of the alleged cumulative nature of Laporte and Battey.

a. *Factor (c) - the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for a rejection*

During prosecution, the Examiner rejected several pending claims, including claims 1 and 2, in view of Holmberg. Ex. 1002, 232–34. In so doing, the Examiner determined that Holmberg taught or suggested every limitation of these claims. In response, the Applicants amended pending claim 1 to include the limitations of pending claim 2, i.e., “having a hinged connection to the base unit on a side opposite the hinged connection of the

cover to the base unit such that the fiber storage panel is moveable relative to the base unit.” *Id.* at 247. In their remarks, the Applicants argued that Holmberg does not disclose the claimed hinged connection and its use of threaded fasteners teaches away from such a connection. *Id.* at 253–54.

The Examiner then issued a Notice of Allowance, concluding that “the prior art as best exemplified by US 2009/0202214 to Holmberg et al., taken individually or in combination, fails to disclose or render obvious a fiber storage panel having a hinged connection to the base unit on a side opposite the hinged connection of the cover to the base unit.” *Id.* at 285. In reaching this conclusion, the Examiner did not identify any art disclosing hinged connections on a side opposite the hinged connection of a cover, or explain why such disclosures, if they were considered, would not have been obvious to combine with Holmberg to arrive at the claimed invention. Thus, we disagree with Patent Owner that the combination of Holmberg and Laporte (alleged to be cumulative to Battey) was “extensively evaluated during prosecution prior to allowance of the claims.” Prelim. Resp. 57.

In view of the foregoing, we determine that factor (c) counsels against discretionary denial.

b. Factors (e) and (f) - whether Petitioner has pointed out sufficiently how the examiner erred in its evaluation of the asserted prior art or why the evidence and facts warrant reconsideration of the prior art or arguments.

On the present record, the Petition identifies a prior art reference that sufficiently teaches or suggests the use of a hinged connection that is on a side opposite the hinged connection of the cover of the base unit. Pet. 39–40. As noted by Petitioner, this is the very limitation that the Examiner found lacking in Holmberg and the prior art of record. *Id.* at 6–7 (asserting

that Battey “supplies teachings the examiner deemed lacking from the art of record”). Petitioner also provides an explanation as to why the disclosures of Battey would be combined with Holmberg to arrive at the claimed invention. *Id.* at 39–44. For the reasons set forth above, this evidence is sufficient to demonstrate a reasonable likelihood that the challenged claims would have been obvious in view of the prior art of record. Thus, Petitioner sufficiently points out how the Examiner erred in the evaluation of the asserted prior art and why the evidence and facts warrant reconsideration.

In view of the foregoing, we determine that factors (e) and (f) counsel against discretionary denial.

c. Conclusion

Upon review of factors (c), (e), and (f), we determine that the Office erred in a manner material to patentability. As such, we decline to exercise discretion to deny the Petition under § 325(d).

IV. CONCLUSION

For the foregoing reasons, we determine that there is a reasonable likelihood that Petitioner would prevail with respect to at least one of the Challenged Claims in the Petition. We, therefore, institute *inter partes* review.

V. ORDER

For the foregoing reasons, it is:

ORDERED that, pursuant to 35 U.S.C. § 314(a), *inter partes* review of claims 1, 2, and 10–13 of the '483 patent is instituted on all grounds of unpatentability set forth in the Petition; and

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

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