

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BOE TECHNOLOGY GROUP CO., LTD.,
Petitioner,

v.

OPTRONIC SCIENCES LLC,
Patent Owner.

IPR2024-01130
Patent 7,168,842 B2

Before THU A. DANG, BRIAN J. McNAMARA, and
BENJAMIN D. M. WOOD, *Administrative Patent Judges*.

WOOD, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background*

BOE Technology Group Co., Ltd. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 3–9 of U.S. Patent No. 7,168,842 B2 (Ex. 1001, “the ’842 patent”). Optronic Sciences LLC (“Patent Owner”) filed a preliminary response. Paper 7 (“Prelim. Resp.”). With our authorization (Ex. 3001), Petitioner filed a preliminary reply (Paper 11, “Prelim. Reply”) and Patent Owner filed a preliminary sur-reply (Paper 12, “Prelim. Sur-reply”). The parties informed us that, after the Petition was filed, Patent Owner disclaimed claims 3 and 4. Prelim. Resp. 20; Prelim. Reply 1–2; *see* Ex 1023 (statutory disclaimer of claims 3 and 4 of the ’842 patent). Our decision on institution is therefore based on claims 5–9. *See* Consolidated Trial Practice Guide (Nov. 2019)¹ at 52. We do not address any arguments or grounds specific to the disclaimed claims.

We have authority under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted “unless . . . 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). On the preliminary record before us, we determine that Petitioner has satisfied this threshold requirement, and therefore we institute *inter partes* review of claims 5–9 of the ’842 patent.

B. *Real Parties-in-Interest*

Petitioner identifies itself as real party-in-interest. Pet. 92.

¹ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

Patent Owner identifies itself as real party-in-interest. Paper 6, 1.

C. Related Proceedings

The Parties identify *Optronic Sciences LLC v. BOE Technology Group Co., LTD*, 2:23-cv-00549 (E.D. Tex.) as a related matter (“the related litigation”). Pet. 92; Paper 3, 1.

Patent Owner also identifies the following *inter partes* review proceedings as related matters: IPR2024-01131 (Patent No. 7,226,801); IPR2024-01132 (Patent No. 7,586,121); IPR2024-01133 (Patent No. 9,263,509); IPR2024-01134 (Patent No. 9,406,733); and IPR2024-01315 (Patent 8,158,477). Paper 6, 1.

D. The '842 patent

The '842 patent² relates to light-emitting device (LED) backlights for liquid crystal displays (LCDs) that “require[] minimal space while producing maximum luminosity.” Ex. 1001, 1:7–11. The '842 patent teaches that backlighting an LCD provides low ambient light and enhanced contrast ratios. *Id.* at 1:21–24. Because LCDs are not highly transmissive to light, the backlight must be efficient. *Id.* at 1:24–27. In a conventional configuration of an LED backlight package, the LED modules are placed at the bottom of the two ends of a light guiding plate (LGP) such that light must be reflected twice before traveling along the length of the LGP. *Id.* at 1:34–41, Fig. 1. These two reflections result in energy losses due to the imperfect reflectivity of the LGP surfaces. *Id.* at 1:44–48. In another conventional configuration, the LED modules are placed on the ends of an

² The '842 patent issued on January 30, 2007 from an application filed December 1, 2004.

LGP such that emitted light travels directly along the length of the LGP with no reflections. *Id.* at 1:51–56, Fig. 2. Although this configuration improves energy efficiency and luminosity along the length of the LGP, the heat-dissipating plates that are conventionally placed underneath the printed-circuit-board (PCB) portion of the LED modules must extend from the ends of the LGP in the longitudinal direction, which results in “awkward and inefficient” use of “critical space to be occupied by what is essentially a maintenance device, instead of using that space to contribute to the primary goal of achieving efficient light production.” *Id.* at 1:57–2:5. The ’842 patent addresses this problem by providing an LED backlight package using an L-shaped fastener to provide a first surface adjacent to the end of the LGP to which an LED module attaches, and a second perpendicularly oriented surface for attachment to a PCB. *Id.* at 2:31–40, 3:10–21.

Figures 4 and 5 of the ’842 patent, reproduced below, show a side view and end view, respectively, of an LED backlight package according to the ’842 patent:

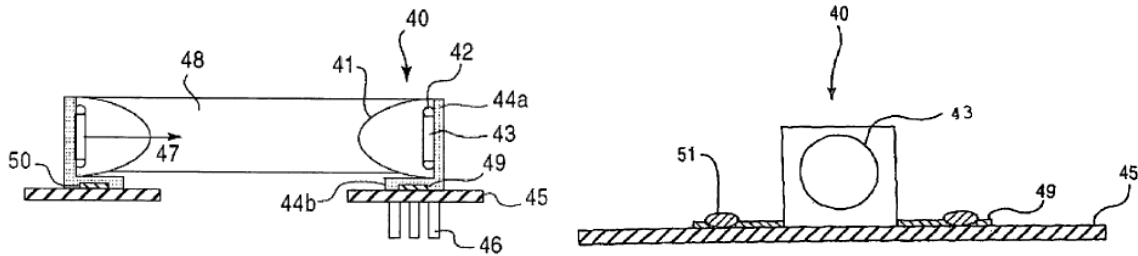


Fig.4

FIG.5

Figures 4 and 5 depict LED module 40 comprising lens 41, conducting wires 42, chip 43, an L-shaped fastener formed of first portion 44a and second portion 44b “oriented perpendicular to each other,” and PCB 45. *Id.* at 3:6–14. Chip 43 is attached to first portion 44a and second portion 44b is

attached to PCB 45. *Id.* at 3:19–22. Conducting wires 42 electrically connect chip 43 to PCB 45. *Id.* at 3:21–24. As shown in Figure 5, anode lead 49 is attached to the PCB 45 with solder 51. *Id.* at 3:59–61. In this configuration, first portion 44a extends along the lateral side of light guiding plate 48 in a direction perpendicular to longitudinal axis 47, and second portion 44b “extends behind” light guiding plate 48 in a direction parallel to longitudinal axis 47. *Id.* at 3:24–39. LED modules 40 may then be placed on the lateral sides of light guiding plate 48 so that the emitted light travels directly through light guiding plate 48 along longitudinal axis 47, and heat-dissipating plates 46 may be “attached to the underside of the horizontally oriented PCB 45” as shown in Figure 4. *Id.* at 3:26–27, 39–43. This configuration “achieves an optimal light travel path and efficient heat dissipation, while conserving valuable space in the longitudinal direction of the light guiding plate 48.” *Id.* at 3:54–57.

E. The Challenged Claims

As noted above, Petitioner challenges claims 5–9 of the ’842 patent, which are the challenged claims that remain after Patent Owner’s statutory disclaimer of claims 3 and 4. Pet. 1. Claims 5 and 6 depend from disclaimed independent claim 3. Claim 7 is independent. Claims 8 and 9 depend from independent claim 7. As the Petition was filed before the claim 3 was disclaimed, we treat claim 5, which incorporates the limitations of claim 3, as illustrative. Claim 5 is reproduced below (along with its base claim 3):³

³ We use Petitioner’s bracketed identifiers for each limitation. *See* Pet. vii, 8–27.

3. [3pre] A backlight package comprising:

[3a] a light guiding plate having a first side;

[3b] a first fastener having a first portion and a second portion, the first portion disposed adjacent to the first side of the light guiding plate, wherein the first portion and the second portion are arranged in a substantially perpendicular relationship to form a substantially L-shaped structure; and

[3c] a light emitting device disposed on the first portion of the first fastener for emitting a light toward the light guiding plate.

5. The backlight package as claimed in claim 3, further comprising a circuit board and a conducting wire, the circuit board connecting the second portion, and the conducting wire electrically coupling the light emitting device to the circuit board.

Ex. 1001, 4:37–48, 51–55.

F. Asserted Grounds of Unpatentability

Petitioner contends that claims 5–9 are unpatentable based on the following specific grounds (Pet. 1):⁴

Ground	Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1	5–9	102 ⁵	Uekusa ⁶

⁴ Petitioner’s ground 7 and 8, which were specific to disclaimed claims 3 and 4 (*see* Pet. 1), have been omitted.

⁵ Because the ’842 patent’s filing date precedes the effective date of the amendments to 35 U.S.C. §§ 102 and 103 enacted by the Leahy-Smith America Invents Act (AIA), we apply the pre-AIA version of these sections (although our decision would be the same under either version). *See* AIA, Pub. L. No. 112–29, § 3(n)(1), 125 Stat. 284, 293 (2011).

⁶ U.S. Patent No. 6,927,424 B2 (issued Aug. 9, 2005) (Ex. 1008).

Ground	Claims Challenged	35 U.S.C. §	Reference(s)/Basis
2	5–9	103	Uekusa, Isoda ⁷
3	6, 9	103	Uekusa in view of what was admitted to be prior art in the '842 patent (“AAPA”) ⁸
4	5–9	102	Kurokawa ⁹
5	7–9	103	Kurokawa
6	5–9	103	Kurokawa, Isoda

Petitioner also relies on the Declaration of Dr. R. Jacob Baker (Ex. 1002) to support its asserted grounds.

II. PATENT OWNER’S REQUEST FOR DISCRETIONARY DENIAL OF INSTITUTION UNDER 35 U.S.C. § 314(A)

Patent Owner requests that we deny institution under 35 U.S.C. § 314(a) because of the parallel district-court action listed above. Prelim. Resp. 20–23. For the reasons stated below, we do not exercise our discretion in view of the parallel proceeding.

Institution of an *inter partes* review is discretionary. *See* 35 U.S.C. § 314(a) (authorizing institution of an *inter partes* review under particular

⁷ U.S. Patent No. 7,218,041 B2 (issued May 15, 2007) (Ex. 1005).

⁸ Petitioner cites as AAPA the '842 patent’s disclosure of “‘conventional’ backlight packages [that] ‘typically’ include heat plates connected to circuit boards to dissipate heat generated thereon, both on the back of the circuit board, and with the circuit board rotated 90 degrees.” Pet. 30–31 (citing Ex. 1001, 1:51–2:5, 2:6–11, Figs. 2–3), 47.

⁹ Certified English language translation of JP 2004-279262 A (published Oct. 7, 2004) (Ex. 1004).

circumstances, but not requiring institution under any circumstances); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) (“[T]he agency’s decision to deny a petition is a matter committed to the Patent Office’s discretion.”); *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018)) (same); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”).

The Board may, in the interest of fairness and efficient use of Board resources, deny institution under § 314(a) in view of a parallel district-court proceeding. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5–6, 12–13 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”). Under *Fintiv*, we consider several factors to determine whether to deny institution under § 314(a) based on parallel district-court proceedings:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board’s exercise of discretion, including the merits.

Fintiv, Paper 11 at 5–6. We apply these factors in light of mandatory guidance issued by the USPTO Director in a June 21, 2022 Memorandum

titled “Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation” (“Memorandum”).¹⁰

A. Fintiv Factor 1: Stay in the Parallel Proceeding

Under the first *Fintiv* factor, we consider “whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted.” *Fintiv*, Paper 11, 5–6. “If a court has denied a defendant’s motion for a stay pending resolution of a PTAB proceeding, and has not indicated to the parties that it will consider a renewed motion or reconsider a motion to stay if a PTAB trial is instituted, this fact has sometimes weighed in favor of exercising authority to deny institution.” *Id.* at 7–8. Patent Owner states that no stay has been granted in the parallel district-court proceeding. Prelim. Resp. 21. It does not appear, however, that the court has denied a stay either, because neither party has yet moved for a stay. We decline to speculate how the court would rule in the event a stay is requested. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 at 12 (PTAB May 13, 2020) (informative) (“A judge determines whether to grant a stay based on the facts of each specific case as presented in the briefs by the parties,” and “[w]e decline to infer, based on actions taken in different cases with different facts, how the [court] would rule should a stay be requested by the parties in the parallel case.”). We therefore determine that the first *Fintiv* factor is neutral.

¹⁰ Available at: https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf

*B. Fintiv Factor 2: Proximity of Trial
Date in the Parallel Proceeding*

Under the second *Fintiv* factor, we consider the “proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision.” *Fintiv*, Paper 11, 6. According to Patent Owner, “[t]rial is set for January 5, 2026,” which would be about three weeks before a final written decision would issue in an *inter partes* review. Prelim. Resp. 21–22 (citing Ex. 2001, 1). Petitioner responds that while jury selection is scheduled for January 5, 2026, “trial is likely to occur substantially after that date, because the court set 10 cases for jury selection on the same day.” Prelim. Reply 1 (citing Ex. 1022, 1–2). Patent Owner counters that “[t]he district court is not likely to vacate the trial date” because most of the other cases scheduled for jury selection on that day “are likely to settle[] or be disposed of before trial.” Prelim. Sur-reply 1.

Because a number of cases are scheduled for jury selection on January 5, 2026 in addition to the parallel proceeding, there is some uncertainty whether the trial in that proceeding would actually begin on that date. Even if many of the other cases settle or are disposed before trial, even a brief postponement of the trial because one or more of the other cases remain may delay trial in the parallel proceeding until after a final decision would issue in an *inter partes* review. Accordingly, we consider this factor to be neutral or weigh slightly in favor of not exercising our discretion to deny institution.

*C. Fintiv Factor 3: Investment by the Court
and the Parties in the Parallel Proceeding*

Under the third *Fintiv* factor, we consider the “investment in the parallel proceeding by the court and the parties.” *Fintiv*, Paper 11, 6. Patent

Owner contends that Factor 3 is neutral because the parties have spent over a year litigating in district court and will be close to the start of the claim construction process by the time an institution decision issues. Prelim. Resp. 22. Petitioner responds that Factor 3 “weighs heavily in favor of institution” because “[w]hile contentions have been served, nothing else of significance has occurred in the litigation,” and an institution decision would issue “almost six weeks before the parties begin the claim construction process.” Prelim. Reply 1. Patent Owner counters that Petitioner “misstates the state of discovery” and has “fail[ed] to produce documents and substantively respond to interrogatories.” Prelim. Sur-reply 1.

Based on our review of the Docket Control Order entered in the parallel proceeding (Ex. 2001), most of the scheduled items have yet to occur. For example, as Petitioner notes, the parties have not yet participated in a *Markman* hearing (currently scheduled for July 15, 2025) or even exchanged proposed claim terms (currently scheduled for March 11, 2025). *Id.* at 4–5. Fact discovery is in its early stages and will not be completed until August 18, 2025. *Id.* at 4. Because the parties’ investment in the parallel proceeding is not extensive, this factor weighs in favor of not exercising our discretion to deny institution.

*D. Fintiv Factor 4: Overlap Between Issues
Raised in the Petition and Parallel Proceeding*

Under the fourth *Fintiv* factor, we consider the “overlap between issues raised in the petition and in the parallel proceeding.” *Fintiv*, Paper 11, 6. Patent Owner contends that this factor weighs against institution because Petitioner asserts the same prior art in district court, plus 10 additional references and 85 systems asserted to be prior art. Prelim. Resp.

22; Ex. 2003, 6–10. Patent Owner submits that we “should deny institution in the interest of efficiency, so that Petitioner will pick its best prior art references—including from among any system art—and present Petitioner’s best arguments in a single proceeding.” *Id.* at 22–23.

Petitioner responds that Factor 4 “weighs heavily in favor of institution because this IPR challenges claims 5–9, while the litigation will address, at most, claims 5, 7 and 8.” Prelim. Reply 1–2 (citing Ex. 2002; Ex. 1023). According to Petitioner, claims 6 and 9, which additionally recite heat dissipating means, “represent 40% of this IPR and raise substantially different issues related to the placement of heat sinks, which was the sole purported problem in the prior art.” *Id.* at 2 (citing Ex. 1001, 1:61–2:5).

Notwithstanding a partial overlap between the subject matter of the Petition and the subject matter of the related litigation, as Petitioner points out, a substantial portion of the subject matter challenged in the Petition before us is not the subject matter of the related litigation. In particular, the heat-dissipating-means subject matter recited in challenged claims 6 and 9 is not addressed in the related litigation. Having been served with a complaint alleging infringement of the ’842 patent, it is not clear that Petitioner could respond to a subsequent allegation that it infringes claims 6 and 9 by challenging their patentability in an *inter partes* review of those claims. *See* 35 U.S.C. § 315(b) (2021) (providing that an *inter partes* review may not be instituted if the petition requesting the proceeding is filed more than 1 year after the date on which the petitioner is served with a complaint alleging infringement of the patent). We further note that a decision to institute under § 314 may not institute on fewer than all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018). If the

Board institutes trial, it will institute “on all of the challenged claims and on all grounds of unpatentability asserted for each claim.” *See* 37 C.F.R. § 42.108(a); *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1359–60 (Fed. Cir. 2018) (stating a decision to institute is “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”).

Having considered the potential implications of the difference between the scope of the claims challenged in the Petition and those that are the subject matter of the related litigation, and the requirement that we institute on all challenges to all claims or on none, we determine that this factor is neutral or weighs slightly in favor of not exercising our discretion to deny institution.

E. Fintiv Factor 5: Whether Petitioner is the Defendant in the Parallel Proceeding

Under the fifth *Fintiv* factor, we consider “whether the petitioner and the defendant in the parallel proceeding are the same party.” *Fintiv*, Paper 11, 6. It is undisputed that the parties here are the same parties in the parallel district-court litigation. The parties being the same “could weigh either in favor of, or against, exercising discretion to deny institution, depending on which tribunal is likely to address the challenged patent first.” *Carrier Fire & Security Americas Corp. v. Sentrilock, LLC*, IPR2021-00665, Paper 12 at 13–14 (PTAB Sept. 16, 2021). For example, if the Board reaches the merits before the district court, “estoppel will apply against Petitioner should we determine that Petitioner failed to demonstrate unpatentability of the challenged claims.” *Id.*

As discussed above, the district-court trial—and hence any ruling on the validity of the claims asserted in the district court—may not occur before the entry of a final written decision in this IPR. Accordingly, this factor is neutral or weighs slightly in favor of not exercising discretionary denial.

F. Fintiv Factor 6: Other Considerations

Under the sixth *Fintiv* factor, we consider “other circumstances that impact the Board’s exercise of discretion, including the merits.” *Fintiv*, Paper 11, 6. “[W]here the PTAB determines that the information presented at the institution stage presents a compelling unpatentability challenge, that determination alone demonstrates that the PTAB should not discretionarily denied institution under *Fintiv*.” Memorandum, 4–5. On the other hand, “in circumstances where the Board determines that the other *Fintiv* factors 1–5 do not favor discretionary denial, the Board shall decline to discretionarily deny under *Fintiv* without reaching the compelling merits analysis.”

CommScope Techs. LLC v. Dali Wireless, Inc., IPR2022-01242, Paper 23 at 4–5 (PTAB Feb. 27, 2023) (decision on Director review) (precedential).

Here, factors 1–5 are either neutral or weigh at least slightly against discretionary denial of institution. Thus, on balance, we determine that *Fintiv* factors 1–5 do not favor discretionary denial of institution, and we need not decide whether Petitioner presents a compelling unpatentability challenge.

1. Conclusion

Based on our review of the *Fintiv* factors, we decline to exercise our discretion under § 314(a) to deny institution.

III. ANALYSIS

A. *Legal Standards Used in the Merits Analysis*

“In an IPR, 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”)); *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

“Because the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements ‘arranged as in the claim.’” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008) (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)).

“A patent may not be obtained though the invention is not identically disclosed or described as set forth in [35 U.S.C. § 102], 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.” 35 U.S.C. § 103(a) (pre-AIA version). Obviousness is a question of law based on underlying factual considerations, including the scope and content of the prior art, the differences between the prior art and the claimed invention, the level of ordinary skill in the art, and

any relevant secondary considerations of non-obviousness, including commercial success of the patented product or method, a long-felt but unmet need for the functionality of the patented invention, and the failure of others who have unsuccessfully attempted to accomplish what the patentee has achieved. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). The obviousness analysis should not be conducted “in a narrow, rigid manner,” but should instead focus on whether a claimed invention is merely “the result[] of ordinary innovation,” which is not entitled to patent protection. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406, 427–28 (2007).

B. Level of Ordinary Skill in the Art

Petitioner contends that, for the ’842 patent, one of ordinary skill in the art “would have had a Bachelors’ degree in electrical engineering or a comparable field of study, plus approximately one or more years of professional experience with electronic and optoelectronic system design,” and that “[a]dditional graduate education could substitute for professional experience, and significant experience in the field could substitute for formal education.” Pet. 3 (citing Ex. 1002 ¶¶ 45–46). Patent Owner does not offer an alternative definition. *See generally*, Prelim. Resp.

The level of ordinary skill in the art usually is evidenced by the references themselves. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978). As Petitioner’s unchallenged description of an ordinarily skilled artisan appears consistent with the subject matter discussed in the references and that of the challenged claims, for purposes of this Decision we apply Petitioner’s description of a person of

ordinary skill in the art (without adopting, however, Petitioner’s open-ended “or more” language).

C. Claim Construction

We construe claim terms “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). Under this standard, claim terms are generally given their plain and ordinary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). Any special definitions for claim terms must be set forth in the Specification “with reasonable clarity, deliberateness, and precision.” *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). Extrinsic evidence is “less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *Phillips*, 415 F.3d at 1317 (citations omitted).

Both parties have submitted proposed claim constructions. Pet. 4–7; Prelim. Resp. 6. At this stage of the proceeding, however, we do not see the need to expressly construe any claim term, as the threshold question of institution can be decided without doing so. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (approving Board decision not to construe claim language where construction is not material to the dispute).

D. Ground 1: Anticipation of Claims 5–9 by Uekusa

Petitioner contends that Uekusa anticipates claims 5–9. Pet. 8–27. Patent Owner opposes. Prelim. Resp. 7–12.

1. *Uekusa (Ex. 1008)*

Uekusa is titled “Light Emitting Diode and Method for Producing It,” and relates to LED backlights for LCD displays. Ex. 1008, code (54), 1:8–10, 29–31. Figure 1, reproduced below, “is a perspective view showing an outside shape of a completed light emitting diode.” *Id.* at 3:14–15.

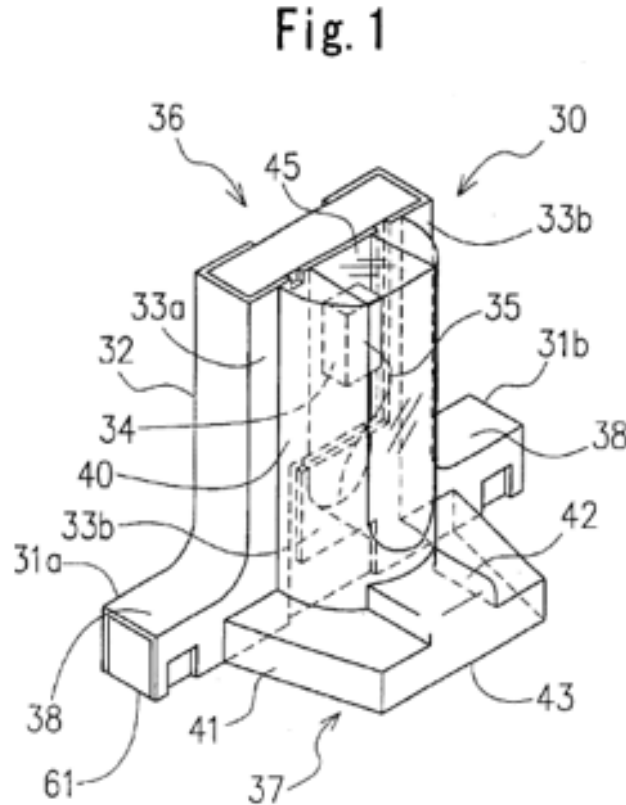


Figure 1 depicts LED 30 having body section 36 “formed into a generally T-character shape from a glass epoxy resin material,” and resin forming section 37 “extending integrally from . . . a front surface of the body section [36].” Ex. 1008, 3:47–53. Base portions 31a and 31b of body section 36 have mounted surfaces for mounting on a motherboard. *Id.* at 3:60–63. LED element 34 is fixed on a front surface of left substrate electrode 33a and upright section 32 of body section 36. *Id.* at 3:63–65. Bonding wire 35 connects LED element 34 to right substrate electrode 33b. *Id.* at 3:67–4:3.

Resin forming section 37 “is composed of a generally U-shaped frame 40 formed on the front surface” of upright section 32 of body section 36, and plate-shaped extension part 41 is formed integrally with U-shaped frame 40 at a lower end thereof. *Id.* at 4:4–10. Plate-shaped extension part 41 includes rectangular mounted portion 42 for mounting on the motherboard. *Id.* at 4:11–14, 4:61–63.

Figures 2 and 3, reproduced below, respectively depict a front and side view of Eukusa’s LED mounted on a motherboard. *Id.* at 3:18–19, 3:24–25, 5:23–32.

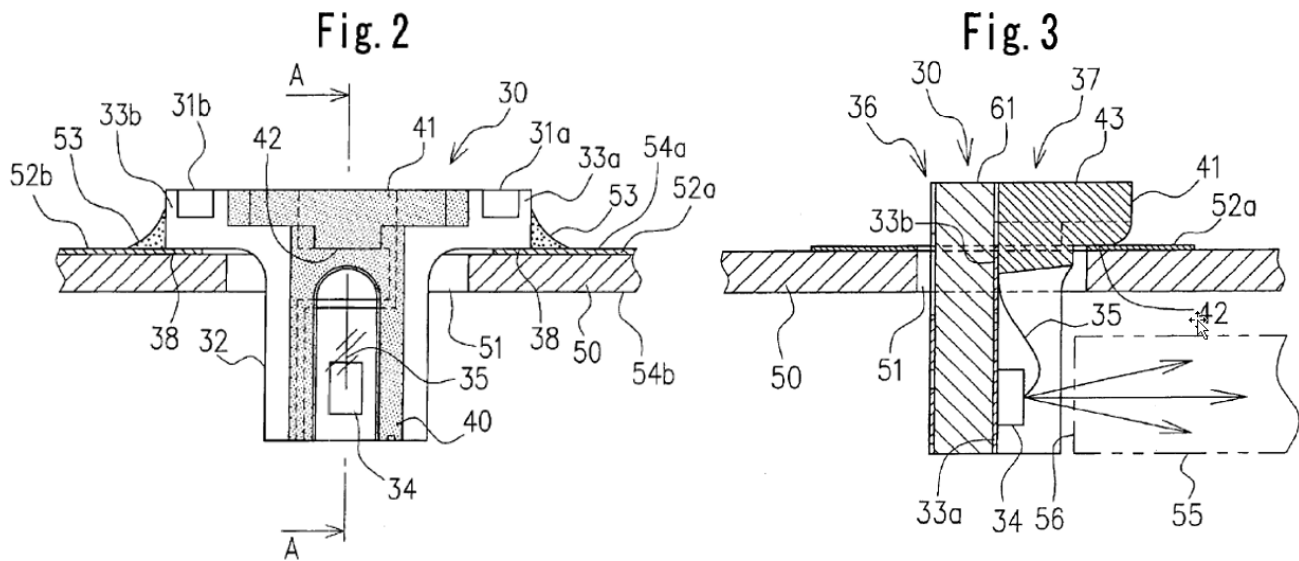


Figure 2 depicts LED 30 of Figure 1 inverted and mounted in circular hole 51 of motherboard 50. Ex. 1008, 4:61–62, 5:12–14. Base portions 31a and 31b of LED 30 are mounted to motherboard 50 on the peripheral edge of circular hole 51 and secured by solder 53. *Id.* at 4:63–5:10. Figure 3 is a sectional side view of LED 30 shown in Figure 2. *Id.* at 3:20–21. LED element 34 emits light toward guiding end surface 56 of optical wave-guide 55. *Id.* at 5:23–33. Because both side and lower surfaces of LED element 34 are shielded by the U-shaped frame 40 identified in Figures 1 and 2, the

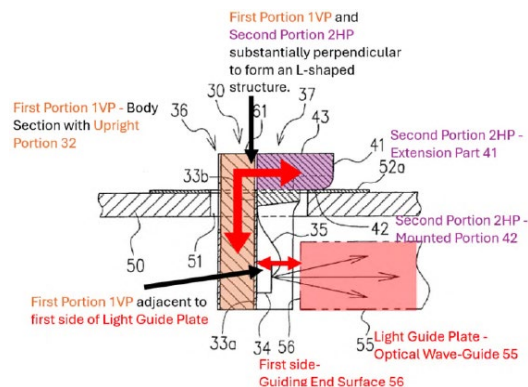
“diffusion of light to [] both sideward and downward directions of the light emitting diode is blocked.” *Id.*

2. *Claims 5 and 6*

a. Claim 5

Petitioner contends that Uekusa discloses all of the limitations of claim 3 and the additional limitation of claim 5. Pet. 8–15, 17–23 (citing Ex. 1008, 1:29–56, 2:9–15, 3:25–31, 3:47–6:6, Figs. 1–8, 10, 11; Ex. 1002 ¶¶ 79–89, 99–105). Petitioner specifically contends that Uekusa’s optical wave-guide 55 corresponds to the claimed light guiding plate; upright portion 32 of body section 36 (alternatively with substrate electrode 33a) corresponds to the claimed first portion of the fastener; extension part 41/mounted portion 42 of resin forming section 37 corresponds to the claimed second portion of the fastener; LED 34 corresponds to the claimed light emitting device disposed on the first portion; and motherboard 50 corresponds to the circuit board connecting the second portion recited in claim 5. *Id.* Petitioner supports these contentions with citations to the record and to the testimony of its declarant, Dr. Baker. *Id.*

Petitioner provides an annotated version of Figure 3 of Uekusa, reproduced below, to illustrate where it contends the first and second fastener portions are located:



In Petitioner’s annotated version of Uekusa Figure 3, Petitioner labels, *inter alia*, upright portion 32 as the claimed first portion of the first fastener, and extension part 41 and mounted portion 42 as the claimed second portion of the first fastener. Pet. 11.

Having reviewed the current record and the parties’ contentions, we determine that Petitioner has shown a reasonable likelihood of prevailing in showing that Uekusa anticipates claim 5. At this stage of the proceeding, Patent Owner only disputes that Uekusa discloses limitation [3b] directed to an L-shaped fastener having first and second perpendicularly oriented portions. Prelim. Resp. 7–12. We have reviewed Patent Owner’s arguments concerning limitation [3b] and, on the current record, find them unpersuasive.

Patent Owner argues that, assuming *arguendo* that Uekusa’s portion 32/electrode 33a corresponds to the claimed first portion of the first fastener, extension 41/mounted portion 42 cannot correspond to the claimed second portion. Prelim. Resp. 8. According to Patent Owner, extension 41/portion 42 cannot be the second portion because these components “are not integrally formed with electrode 33a or with the upright portion 32,” but instead are “separate, distinct parts made of different materials.” *Id.*

This argument is unpersuasive for two reasons. First, Patent Owner has not explained or supported with evidence its contention that upright section 32 and extension 41 portion 42 are not “integrally formed.” On the contrary, Uekusa specifically discloses that resin forming section 37 (which includes extension part 41/mounted portion 42) “extend[s] *integrally* from” a front surface of body section 36 (which includes upright portion 32). Ex. 1008, 3:49–53. Second, neither claim 3 nor claim 5 requires the first

and second portions of the L-shaped fastener be “integrally formed,” however that term is defined. For example, the claims do not require that the two portions be made from the same material; nor do the claims exclude the possibility that the first and second portions be formed from distinct parts.

Patent Owner further argues that the components of Uekusa that Petitioner alleges correspond to the claimed first and second fastener portions do not fasten LED chip 41 to anything. Prelim. Resp. 8–9. Instead, according to Patent Owner, “the plate-shaped extension part 41 and U-shaped frame 40 collectively act as a white, concave cavity for reflecting light from LED.” *Id.* at 9 (citing 4:45–60). Thus, Patent Owner submits, “[t]heir purpose is focusing light, not fastening LED chips.” *Id.*

Claims directed to an apparatus, as claim 5 is here, must distinguish from the prior art in terms of structure rather than function. *See In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997); *see also Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1468 (Fed. Cir. 1990) (holding “apparatus claims cover what a device *is*, not what a device *does*”). Patent Owner does not identify what structure is required for a component to be a “fastener” as claimed. The fasteners described in the ’842 patent appear to simply provide surfaces onto which other components, e.g., an LED, may be attached. For example, the ’842 patent describes an LED backlight package having a “fastener” that “provides a first surface to which a chip and light emitting device module attach, while also providing a second surface for attachment of a second fastener, or a PCB.” Ex. 1001, 2:31–35. Similarly, the ’842 describes the “present invention” as “a light emitting device backlight package [that] includes a fastener having a first surface to which to

attach a chip and a second surface for attachment of a printed circuit board.”

Id. at 4:1–4. The structure in Uekusa that Petitioner identifies as corresponding to the claimed fastener appears to also provide attachment surfaces for LEDs and circuit boards: upright portion 32/substrate electrode 33a provides a mounting surface for LED element 34, and mounted portion 42 of extension part 41 provides a surface for attachment to motherboard 50. *Id.* at 4:31–33, 4:61–5:4, Fig. 3. In short, Uekusa describes the structure of a fastener consistent with the fasteners disclosed in the ’842 patent.

b. Claim 6

Claim 6 depends from claim 3 and additionally recites “a circuit board and a heat dissipating means . . . attached onto the surface of the circuit board for conducting a heat generated thereon.” Petitioner relies on Uekusa’s motherboard 50 as corresponding to the claimed circuit board. Pet. 23. Petitioner construes “heat dissipating means” to be a means-plus-function claim under 35 U.S.C. § 112(f), and contends that “[t]he only structure disclosed and linked by the specification to perform that function is heat-dissipating plates 46 (plural)” (Petitioner’s so-called “narrow” construction), or “at least one heat-dissipating plate” (Petitioner’s so-called “broader interpretation”). *Id.* at 6 (citing Ex. 1001, 2:9–11, 3:25–32, 3:51–58, 4:30–31, Fig. 4). According to Petitioner, portions of Uekusa’s substrate electrodes 33a and 33b correspond to the claimed heat dissipating means. Pet. 23–24. Petitioner asserts that “[a] POSITA would have understood that the portions of [Uekusa’s] substrate electrodes 33a and 33b would inherently perform the function of ‘conducting heat generated on the circuit board’” because they “would be made of metal” and “would inherently have conducted heat from any component they touched.” *Id.* at 25–26 (citing Ex.

1002 ¶ 108). At this stage of the proceeding, Patent Owner does not address claim 6 other than to say that “[n]one of Petitioner’s arguments regarding [the] dependent claims cures the deficiencies regarding independent claims 3 and 9 [sic, 7].” Prelim. Resp. 13. As noted above, because we have decided to grant institution on claim 5, we must do the same for claim 6.

3. *Claims 7–9*

Independent claim 7 is similar in scope to claim 5. Claim 8 depends from claim 7 and repeats claim 7’s recitation that the first and second portions of the fastener are arranged in a substantially perpendicular relationship. Claim 9 recites a heat dissipating means similar to that addressed in our discussion of claim 6.

Petitioner has mapped the limitations of claims 7–9 to Uekusa’s teachings, and supported its contentions with citations to Uekusa and to Dr. Baker’s declaration. Pet. 26–27. Patent Owner does not raise any arguments specifically directed to these claims beyond referring to arguments made in support of the patentability of claim 3, which we address above. Prelim. Resp. 12–13. As noted above, because we have decided to grant institution on claim 5, we must do the same for claims 7–9.

*E. Ground 2 (Uekusa and Isoda)
and Ground 3 (Uekusa and AAPA)*

As it did for Ground 1, for Grounds 2 and 3 Petitioner has mapped the limitations of the challenged claims to the teachings of the prior-art references on which the Grounds are based, and articulated reasons why one of ordinary skill in the art would have combined Uekusa with Isoda (Ground 2) and Uekusa with AAPA (Ground 3). Pet. 27–89. Petitioner supports its contentions with citations to Dr. Baker’s declaration. *Id.* Patent Owner does

not raise any arguments specifically directed to these Grounds. As noted above, because we have decided to grant institution on Ground 1, we must do the same for Grounds 2 and 3.

F. Ground 4: Kurokawa

Petitioner contends that Kurokawa anticipates claims 5–9. Pet. 48–67. Patent Owner opposes. Prelim. Resp. 15–18. As noted above, because we have decided to grant institution on Ground 1, we must do the same for Ground 4. Nonetheless, we briefly discuss Ground 4 solely to address Patent Owner’s argument that Kurokawa does not disclose the L-shaped fastener recited in independent claims 3 and 7. Prelim. Resp. 15–18.

To aid the discussion, Figures 1 and 2 of Kurokawa are reproduced below:

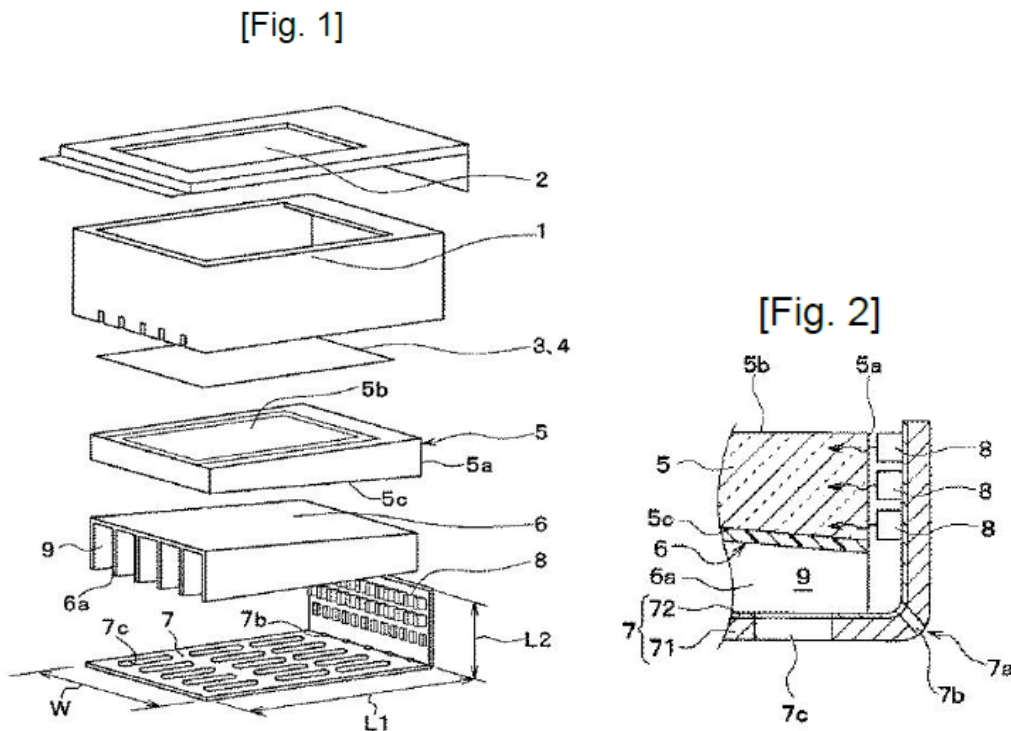


Figure 1 shows Kurokawa’s display unit including, *inter alia*, cover 1, liquid crystal panel 2, light guide plate 5, reflector 6, printed wiring board 7,

and light emitting diodes 8. Ex. 1004 ¶¶ 31–32. Figure 2, a partial cross-sectional view of the display of Figure 1, illustrates that printed wiring board 7 is composed of metal plate 71 bonded to flexible printed wiring board 72. *Id.* ¶¶ 37–38. For the L-shaped fastener limitation, Petitioner relies on the entire printed wiring board 7, i.e., the combination of metal plate 71 and flexible printed wiring board 72. Pet. 51 (citing Ex. 1002 ¶ 168). For the circuit board limitation of claim 5, Petitioner relies on flexible wiring board 72, and in doing so appears to change its position regarding the fastener limitation, relying on metal plate 71, by itself, as corresponding to the L-shaped fastener. *See id.* at 59 (referring to “second portion” of metal plate 71).

Patent Owner asserts that Kurokawa lacks the claimed fastener because “Kurokawa teaches to bend a flexible printed circuit board instead of an intermediate fastener between the PCB and the chip.” Prelim. Resp. 17. Patent Owner submits that “[n]o reasonable construction allows for the fastener to be the entire PCB itself,” because the ’842 patent claims “separately recite the fastener and the circuit board.” *Id.* According to Patent Owner, “Kurokawa’s printed wiring board 72 cannot simultaneously be both the fastener itself and the circuit board that the fastener is fastened to.” *Id.* at 18.

We are sympathetic to Patent Owner’s argument that Kurokawa’s printed wiring board 72 cannot satisfy both the L-shaped-fastener and circuit-board limitations of claim 5. *See Becton, Dickinson and Co. v. Tyco Healthcare Group, LP*, 616 F.3d 1249, 1254–55 (Fed. Cir. 2010) (“Where a claim lists elements separately, the clear implication of the claim language is that those elements are distinct components of the patented invention.”)

(internal quotation marks and alterations omitted). But it is not entirely clear that is Petitioner's position, primarily because Petitioner's mapping of claim 5 to Kurokawa is not entirely clear. For that reason, we will wait to address this issue on a complete record and after the parties have had the opportunity to clarify their views and address any issues of claim interpretation as necessary. Moreover, as noted above, because we have decided to grant institution on Ground 1, we must do the same for Ground 4.

G. Ground 5 (Kurokawa) and Ground 6 (Kurokawa and Isoda)

For Grounds 5 and 6 Petitioner has mapped the limitations of the challenged claims to the teachings of the prior-art references on which the Grounds are based, and articulated reasons why the challenged claims would have been obvious over the cited references. Pet. 67–84. Petitioner supports its contentions with citations to Dr. Baker's declaration. *Id.* Patent Owner does not raise any arguments specifically directed to these Grounds. As noted above, because we have decided to grant institution on Ground 1, we must do the same for Grounds 5 and 6.

IV. CONCLUSION

For the foregoing reasons, we determine that Petitioner has shown that there is a reasonable likelihood that it would prevail with regard to at least one of the claims challenged in the Petition. Accordingly, we institute *inter partes* review of claims 5–9 of the '842 patent on all asserted grounds.

V. ORDER

For the reasons given, it is

ORDERED that the Petition for *Inter Partes* Review is instituted with respect to the grounds asserted in the Petition; 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 shall commence on the entry date of this Decision.

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