

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.

IPR2024-01133
Patent 9,263,509 B2

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

DANG, *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 requesting an *inter partes* review of claims 1–13 (the “challenged claims”) of U.S. Patent No. 9,263,509 B2 (Ex. 1001, “the ’509 patent”). Paper 1 (“Pet.”). Optronic Sciences, LLC (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”). With the Board’s authorization, Petitioner filed a Preliminary Reply to the Preliminary Response (Paper 11, “Prelim. Reply”), and Patent Owner filed a Preliminary Sur-reply to the Reply (Paper 12, “Prelim. Sur-reply”).

Under 37 C.F.R. § 42.4(a) (2024), the Board has authority to determine whether to institute an *inter partes* review. Applying the standard set forth in 35 U.S.C. § 314(a), which requires demonstration of a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim, we grant Petitioner’s request and institute an *inter partes* review of all challenged claims.

B. *Related Proceedings*

The parties identify the following litigation as involving the ’509 patent: *Optronic Sciences, LLC v. BOE Technology Group Co., LTD.*, No. 2:23-cv-00549 (E.D. Tex.) (the “district court litigation”). Pet. 83; Paper 3, 1. Patent Owner further indicates the following Board proceedings are related to this proceeding: IPR2024-01130; IPR2024-01131; IPR2024-01132; IPR2024-01134; and IPR2024-01315. Paper 6, 1.

C. *The ’509 Patent*

The ’509 patent, titled “Pixel Structure Having Light Emitting Device Above Auxiliary Electrode,” issued on February 16, 2016, from Application

No. 14/447,620, with a filing date of July 31, 2014. Ex. 1001, codes (54), (45), (21), (22). The '509 patent observes that “[s]ince the luminance of each pixel of the electroluminescent device is related to the current that flows through the pixel, the overall luminous uniformity of the electroluminescent device is low.” *Id.* at 1:41–44. The '509 seeks to solve this problem of traditional electroluminescent devices by providing “a pixel structure capable of improving the overall luminous uniformity of a display panel.” *Id.* at 1:18–19, 1:48–50.

Figure 1, reproduced below, illustrates an equivalent circuit diagram of a pixel structure. Ex. 1001, 2:37–38.

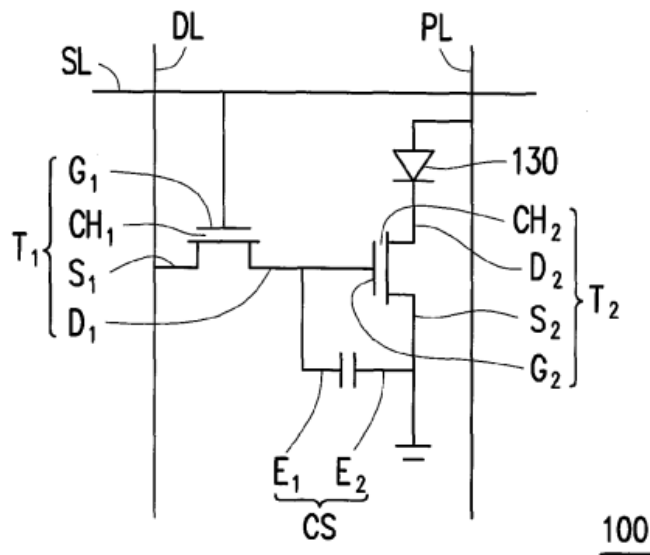
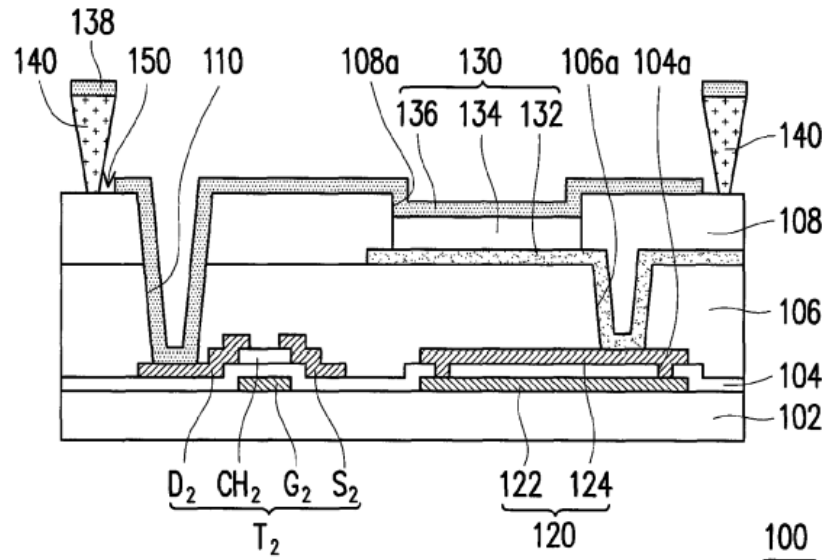


FIG. 1

As shown in Figure 1, “pixel structure 100 includes a data line DL, a scan line SL, at least one active device T₁ and T₂, a capacitor CS, a power line PL, and a light emitting device 130.” *Id.* at 2:65–3:1.

Figure 2, reproduced below, illustrates a schematic cross-sectional view of pixel structure 100, but omits certain commonly known components. Ex. 1001, 3:32–42.



As shown in Figure 2, active device T_2 of pixel structure 100 is located on substrate 102. Ex. 1001, 3:43–44, Fig. 2. Active device T_2 includes source S_2 and drain D_2 disposed on an etch-stop layer (not shown), channel layer CH_2 located under source S_2 and drain D_2 , and gate G_2 located under channel layer CH_2 . *Id.* at 3:50–53, 3:65–4:2. Pixel structure 100 also includes first auxiliary electrode 120, which is electrically insulated from active device T_2 . *Id.* at 4:5–6. In the Figure 2 embodiment, first auxiliary electrode 120 comprises bottom electrode layer 122 and top electrode layer 124, which are separated from each other by insulating layer 104. *Id.* at 4:6–8, 4:12–13. In other embodiments, the first auxiliary electrode can be a single layer, for example, solely a bottom electrode layer or top electrode layer. *Id.* at 6:16–

32, 6:44–47. Insulating layer 106 covers active device T_2 and first auxiliary electrode 120. *Id.* at 4:26–27.

Light emitting device 130, which may be “a top-emission organic electroluminescent device,” is located above first auxiliary electrode 120 in the Figure 2 embodiment and comprises first electrode layer 132, light emitting layer 134, and second electrode layer 136. Ex. 1001, 4:35–40. “[T]he first electrode layer 132 and the second electrode layer 136 serve as an anode and a cathode respectively.” *Id.* at 4:40–42. Further, first electrode layer 132 is disposed on first insulating layer 106, but is electrically connected to top electrode layer 124 of first auxiliary electrode 120 by way of first contact window opening 106a through insulating layer 106. *Id.* at 4:43–56. And second electrode layer 136 is disposed on second insulating layer 108, but is electrically connected to drain D_2 of active device T_2 by way of second contact window opening 110 through insulating layers 108 and 106. *Id.* at 4:63–5:3, 5:25–36.

D. The Challenged Claims

Of the challenged claims, claim 1 is independent. Independent claim 1 is illustrative of the challenged claims, and is reproduced below:

1. A pixel structure, comprising:

a data line and a scan line;

at least one active device electrically connected with the data line and the scan line, and each active device comprising a gate, a channel layer, a source, and a drain;

a first auxiliary electrode electrically insulated from the active device; and

a light emitting device disposed above the first auxiliary electrode, wherein the light emitting device comprises:

a first electrode layer electrically connected with the first auxiliary electrode;

a light emitting layer disposed on the first electrode layer; and

a second electrode layer disposed on the light emitting layer, wherein the second electrode layer is electrically connected with the active device.

Ex. 1001, 8:42–57.

E. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1–13 of the ’509 patent on the following grounds (Pet. 1):

Claim(s) Challenged	35 U.S.C. §¹	Reference(s)/Basis
1–5, 9, 12, 13	102	Weaver ²
6–8	103	Weaver, Lee ’053 ³
6–8	103	Weaver, Song ⁴

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. §§ 102, 103, effective March 16, 2013. Because the application from which the ’509 patent issued has an earliest effective filing date after this date, the AIA versions of §§ 102, 103 apply. *See* Ex. 1001, codes (22), (30).

² U.S. Patent Publication No. 2004/0079945 A1, published Apr. 29, 2004, filed Oct. 28, 2002 (Ex. 1004, “Weaver”).

³ U.S. Patent Publication No. 2012/0162053 A1, published June 28, 2012, filed Dec. 22, 2011 (Ex. 1005, “Lee ’053”).

⁴ U.S. Patent Publication No. 2014/0183502 A1, published July 3, 2014, filed Dec. 26, 2013 (Ex. 1006, “Song”).

Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)/Basis
10, 11	103	Weaver, Lee '149 ⁵
10, 11	103	Weaver, Bae ⁶
1–5, 9, 12, 13	103	Weaver, Gupta ⁷ or Han ⁸
6–8	103	Weaver, Lee '053, Gupta or Han
6–8	103	Weaver, Song, Gupta or Han
10, 11	103	Weaver, Lee '149, Gupta or Han
10, 11	103	Weaver, Bae, Gupta or Han

Petitioner relies on the Declaration of Dr. R. Jacob Baker, Ph.D, P.E. (Ex. 1003) in support of its unpatentability contentions.

II. DISCRETIONARY DENIAL

Institution of an *inter partes* review is discretionary, not mandatory. *See* 35 U.S.C. § 314(a) (authorizing institution of an *inter partes* review under particular 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.”); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d

⁵ U.S. Patent Publication No. 2009/0015149 A1, published Jan. 15, 2009, filed July 9, 2008 (Ex. 1011, “Lee ’149”).

⁶ U.S. Patent Publication No. 2006/0119259 A1, published June 8, 2006, filed Nov. 29, 2005 (Ex. 1012, “Bae”).

⁷ U.S. Patent No. 9,088,003 B2, published July 21, 2015, filed Mar. 6, 2013 (Ex. 1009, “Gupta”).

⁸ U.S. Patent Publication No. 2011/0248309 A1, published Oct. 13, 2011, filed Apr. 1, 2011 (Ex. 1010, “Han”).

1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”).

Patent Owner argues “[t]he Board should not waste its limited resources on reconsidering the same types of repeatedly rejected arguments.” Prelim. Resp. 20. In particular, Patent Owner contends that “the Board should deny institution under *Fintiv* to avoid wasting its limited resources writing a decision that will not issue until [] about a month after trial.” *Id.* at 23.

When determining whether to exercise discretion to deny institution in view of a parallel proceeding, we consider the following factors:

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.

See Apple Inc. v. Fintiv, Inc., IPR2020-00019, Paper 11 at 6 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv* factors”). “These factors relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding.” *Id.* In evaluating the *Fintiv* factors, we take “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review,” recognizing that “there is some overlap among these factors” and that “[s]ome facts may be relevant to more than one factor.” *Id.*

1. *Whether a stay exists or is likely to be granted if a proceeding is instituted*

Patent Owner contends the district court judge, Judge Gilstrap, “has rarely stayed a patent case pending *inter partes* review.” Prelim. Resp. 21. In particular, Patent Owner contends that, according to Docket Navigator, Judge Gilstrap has only granted “8 of 67 motions to stay pending an IPR,” and thus, “[b]ecause of the 88% chance that a stay will be denied, this factor weighs against institution.” *Id.* at 21–22 (citing Docket Navigator Motion Outcomes Report (October 17, 2024)⁹).

Petitioner points out that “no party has requested a stay.” Pet. 81. Petitioner requests that the Board “not speculate on how the Court will rule on any motion to stay filed post-institution.” Prelim. Reply 3.

On the present record, neither party has produced evidence that the district court has considered a stay in the district court litigation based on this proceeding. Further, *Fintiv*, IPR2020-00019, Paper 15 at 12 (PTAB May 13, 2020) (informative), cautions against speculating whether the district court would grant a stay if one were requested.

Accordingly, this factor is neutral.

2. *The Trial Date in the Related District Court Litigation*

The projected statutory deadline for issuance of a final written decision in this proceeding is January 2026, one year from the date of this Decision. As Patent Owner acknowledges, trial is set in the district court litigation for January 2026 (Prelim. Resp. 22), which is around the same time of the final written decision. Petitioner points out that “ten patent cases

⁹ Patent Owner has not entered this report into the record.

are set for jury selection,” and thus, Petitioner contends that “this IPR may complete before any jury trial.” Prelim. Reply 3.

If a district court’s trial date is earlier than the projected statutory deadline, the Board generally has weighed this factor in favor of exercising authority to deny institution under § 314(a). *Fintiv*, Paper 11 at 9. However, “[a] court’s scheduled trial date . . . is not by itself a good indicator of whether the district court trial will occur before the statutory deadline for a final written decision.” USPTO Memorandum, *Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation*, at 8 (June 21, 2022)¹⁰ (“*Fintiv* Guidance”). “Parties may present evidence regarding the most recent statistics on median time-to-trial for civil actions in the district court in which the parallel litigation resides[] for the PTAB’s consideration.” *Id.* at 8–9 (footnote omitted).

Here, the statistics provided by Patent Owner show a median time to trial, from filing, to be 19 months for Judge Gilstrap. Ex. 2007, 1 (“Gilstrap Docket Navigation Report”). Thus, the statistics suggest that trial in the district court with Judge Gilstrap will occur approximately in February of 2026, which is around or after when we would be expected to issue a final written decision. According to the *Fintiv* Guidance, “[t]he PTAB will weigh this factor against exercising discretion to deny institution under *Fintiv* if the median time-to-trial is around the same time or after the projected statutory deadline for the PTAB’s final written decision.” *Fintiv* Guidance 9.

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

Accordingly, this factor weighs against exercise of our discretion to deny the Petition.

3. *Investment in the Parallel Proceeding by the District Court and the Parties*

We consider now the amount and type of work already completed in the district court and by the parties at the time of the institution decision. *See Fintiv*, Paper 11 at 9.

Patent Owner contends that, by the time of the institution decision, “the parties will have spent *over a year* litigating in district court,” “be close to the start of the claim construction process,” and “the case will be near its pre-*Markman* stage.” Prelim. Resp. 22. Petitioner contends that “the deadline for institution (Jan. 29, 2025) is six weeks before the first step of claim construction in the litigation.” Prelim. Reply 3.

Here, Patent Owner acknowledges that the claim construction process has not begun, a *Markman* hearing has not occurred (Prelim. Resp. 22), and thus, much work relating to invalidity still remains.

The Board’s precedential *Fintiv* order provides the following guidance:

[I]f, at the time of the institution decision, the district court has issued substantive orders related to the patent at issue in the petition, this fact favors denial.[] Likewise, district court claim construction orders may indicate that the court and parties have invested sufficient time in the parallel proceeding to favor denial.

Fintiv, Paper 11 at 9–10.

We are unaware of any dispositive motions that have yet been filed or ruled upon in the district court litigation. There is no evidence that

discovery is over. There is also no evidence that parties to the district court litigation have submitted briefing on any dispositive issue, or that the district court has made any determination on the merits. The current record does not indicate that the district court has invested significant resources in the district court litigation that bear directly on the issue of patent validity.

Weighing the facts in this particular case, including the minimal investment in the district court litigation as it relates to issues of patent validity thus far, we find that this factor weighs against exercising our discretion to deny institution under § 314(a).

4. *Overlap Between Issues Raised in the Petition and in the Parallel Proceeding*

This factor evaluates “concerns of inefficiency and the possibility of conflicting decisions” when substantially identical prior art is submitted in both the district court and the *inter partes* review proceedings. *Fintiv* at 12.

Patent Owner argues that “Petitioner asserts the same prior art in district court, without a *Sotera*-type stipulation.” Prelim. Resp. 22 (citing *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 18–19 (Dec. 1, 2020)). Petitioner argues that the Petition challenges 13 claims whereas, in the district court litigation, the complaint “will only address claims 1, 5, 10, 12.” Prelim. Reply 3; *see also* Pet. 82.

Here, as Patent Owner points out, the substantially identical prior art in the Petition is submitted in the district court. *See* Ex. 2003 (“Invalidity Contentions”). However, as Petitioner points out, although the Petition addresses all 13 claims, the district court litigation only addresses claims 1, 5, 10, and 12, which somewhat reduces the possibility of conflicting decisions.

Accordingly, this factor is neutral.

5. *Identity of Petitioner and the Defendant in the Underlying Litigation*

“If a petitioner is unrelated to a defendant in an earlier court proceeding, the Board has weighed this fact against exercising discretion.” *Fintiv*, Paper 11 at 13–14. As to whether the petitioner and the defendant in the district court proceedings are related (*Fintiv* Factor 5), it is undisputed that Petitioner is the defendant in the district court litigations. *See* Pet. 83; Paper 3, 1. This fact could weigh either in favor of, or against, exercising discretion to deny institution, depending on which tribunal was likely to address the challenged patent first.

Given the current information concerning the relative timing of the proceedings, we weigh this factor as neutral.

6. *Other Circumstances That Impact the Board’s Exercise of Discretion, Including the Merits*

Under the sixth *Fintiv* factor, we consider “other circumstances that impact the Board’s exercise of discretion, including the merits.” *Fintiv*, Paper 11 at 6.

Petitioner argues that “[e]ven if the Board were to determine that *Fintiv* factors on balance weigh in favor of denial, institution should nonetheless be granted because this Petition satisfies the compelling merits standard.” Pet. 82. Patent Owner argues that “the Petition is not likely to succeed on the merits.” Prelim. Resp. 23.

On balance, we determine that *Fintiv* factors 1–5 do not favor discretionary denial of institution: factors 1, 4, and 5 are neutral and factors 2 and 3 weigh at least slightly against exercising discretion to deny

institution. As a result, for this factor 6, we need not decide whether Petitioner presents a compelling unpatentability challenge on the merits. *See CommScope Techs. LLC v. Dali Wireless, Inc.*, IPR2022-01242, Paper 23 at 4–5 (PTAB Feb. 27, 2023) (decision on Director review) (precedential) (“[I]n 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.”).

7. *Conclusion on Discretionary Denial Under § 314(a)*

As noted in *Fintiv*, we consider the above six factors when taking “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Fintiv*, Paper 11 at 6. We determine that, weighing these factors in a holistic analysis, the circumstances here favoring institution outweigh the overlapping of issues in the district court litigation. Therefore, we are not persuaded that the interests of efficiency and integrity of the system would be best served by invoking our authority under § 314(a) to deny institution of this Petition.

III. ANALYSIS

A. *Claim Construction*

We construe each claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b) (2024). 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 (POSITA) at the time of the invention and in the

context of the entire patent disclosure. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

Only those terms in controversy need to be construed, and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 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)).

I. “auxiliary electrode”

Petitioner proposes construing “auxiliary electrode” recited in claims 1, 2, 5, 6, 10, 11, and 13 “either broadly as ‘supplemental electrode’ or narrowly as ‘supplemental electrode to reduce the total resistance of the pixel structure.’” Pet. 5 (citing Ex. 1003 ¶¶ 61–65). According to Petitioner, “[t]he claims do not explicitly state what the ‘auxiliary electrode’ is auxiliary to,” i.e., “the claims do not explicitly recite what function or characteristic existed without the auxiliary electrode that has been supplemented with the auxiliary electrode.” *Id.* Thus, Petitioner argues that “the plain meaning of ‘auxiliary’ is ‘supplemental’ and is not limited to any particular type of supplemental functionality.” *Id.* at 6 (citing Ex. 1013, 51). Petitioner further contends that, although the Specification contains statements describing the term, “it should be noted that each of the two statements . . . is followed by the explicit disclaimer that ‘the invention is not limited thereto.’” *Id.* at 6–7 (citing Ex. 1001, 6:8–9, 7:56–57).

Patent Owner agrees with Petitioner’s proposed construction of “auxiliary” as “supplemental” which “appears to be suggested in the Petition.” Prelim. Resp. 6. However, Patent Owner argues that “[i]n context, a ‘supplemental’ electrode cannot itself be a primary electrode that

provides a sole, critical electrical connection to a load,” and that “a load should still have an electrical connection via a primary pathway.” *Id.*

Further, Patent Owner asserts that the plain and ordinary meaning of “electrode” includes “an anode or cathode,” but “[u]nder the plain and ordinary meaning or any other reasonable construction, an ‘electrode’ is not the same thing as a ‘power line,’ ‘bus line,’ or ‘resistor.’” Prelim. Resp. 7. According to Patent Owner, such construction “would contradict the specification.” *Id.* at 7–8 (citing Ex. 1001, Figures 2, 3, and 5 “[f]or example”). Patent Owner contends that, for example, Figure 2 of the ’509 patent shows an example “auxiliary electrode” but the specification states that “for illustrative purpose . . . the power line PL [of Figure 1 is] omitted.” *Id.* at 8. Thus, Patent Owner contends that “the ‘auxiliary electrode’ shown in Figure 2 cannot also be the ‘power line PL’ that is omitted from Figure 2. *Id.*

The plain language in claim 1 of “auxiliary electrode” does not suggest a requirement that the “electrode” be an anode or cathode, or preclude a power line, bus line, or resistor. Ex. 1001, 8:47–52. Nothing in the Specification clearly limits “auxiliary electrode” to “an anode or cathode,” or precludes “a ‘power line,’ ‘bus line,’ or resistor,” as Patent Owner proposes. Prelim. Resp. 7–8.

Further, nothing in the Specification supports Patent Owner’s contention that “a ‘supplemental’ electrode cannot . . . provide[] a sole, critical electrical connection to a load.” Prelim. Resp. 6. As Petitioner points out, “[t]he claims do not explicitly state what the ‘auxiliary electrode’ is auxiliary to.” Pet. 5.

We are unpersuaded by Patent Owner's contention that the Specification states that, for illustrative purpose, "the power line PL [of Figure 1 is] omitted" in Figure 2, and thus, "the 'auxiliary electrode' shown in Figure 2 cannot also be the 'power line PL' that is omitted from Figure 2." Prelim. Resp. 8. Here, Patent Owner points to no portions in the Specification that provide the requisite "reasonable clarity, deliberateness, and precision" to warrant interpreting the claim language at issue as requiring "an anode or cathode" or supporting Patent Owner's contention that an auxiliary electrode "cannot be" a power line, bus line or resistor. *Id.*; *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1984). That is, although Patent Owner points to Figures 1 and 2 of the Specification for support of its contention, as Patent Owner acknowledges, Figures 1 and 2 of the Specification merely show various examples of power line and an auxiliary electrode. Prelim. Resp. 8. Thus, although the referenced portions of the Specification discuss various examples wherein an auxiliary electrode may be implemented, nothing in these referenced portions of the Specification clearly requires the "auxiliary electrode" to only be an anode or cathode, or precludes a power line or any electrode that "provides a sole, critical electrical connection to a load," as Patent Owner contends. *Id.* at 6, 8. Patent Owner points to no special definition, implicit or explicit, for "auxiliary electrode" that is set forth in the Specification which supports Patent Owner's construction with reasonable clarity, deliberateness, and precision. *Paulsen*, 30 F.3d at 1480.

In view of the plain language of the claims and the Specification, we determine that the term "auxiliary electrode" recited in claim 1 is neither limited to an anode or cathode, nor precludes "a power line, bus line, or

resistor” or any electrode that “provides a sole, critical electrical connection to a load.” We determine no further explicit construction of this term is necessary to resolve the controversy. *See Vivid Techs.*, 200 F.3d at 803.

B. Principles of Law

To establish anticipation, each and every element in a claim, arranged as recited in the claim, must be found in a single prior art reference. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008). There is no requirement that the prior art must use the same words to describe a claim element in order to teach or disclose that claim element. Identity of terminology is not required for a claim element to be anticipated by the prior art without resort to obviousness. *See In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009); *In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990).

It is proper to take into account not only the literal and specific teachings of the reference, but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. *In re Preda*, 401 F.2d 825, 826 (CCPA 1968). For anticipation, the dispositive question is whether one skilled in the art would reasonably understand or infer from a prior art reference that every claim element is disclosed in that reference. *Eli Lilly and Co. v. Los Angeles Biomedical Research Inst. at Harbor-UCLA Med. Ctr.*, 849 F.3d 1073, 1074–75 (Fed. Cir. 2017).

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 before the effective filing date of the claimed invention to a person having ordinary skill in the art to which said subject matter pertains. 35 U.S.C. § 103; *see KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is

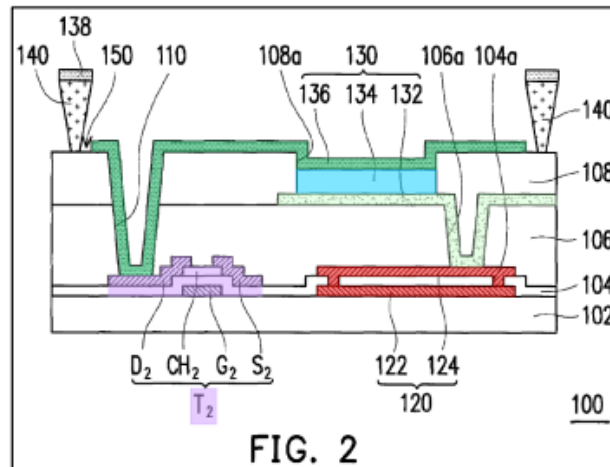
resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of non-obviousness.¹¹ *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

C. Claims 1–5, 9, 12, and 13 as Allegedly Anticipated by Weaver; Claims 6–8 as Allegedly Obvious over Weaver In View of Lee '053 or Song; Claims 10 and 11 as Allegedly Obvious over Weaver In View of Lee '149 or Bae

Petitioner contends that the '509 patent is directed to a “pixel structure for solving the purported problem of poor overall luminous uniformity that occurs in traditional electroluminescent devices.” Pet. 2 (citing Ex. 1001, 1:48–50). According to Petitioner, “[t]he purported novelty is the inclusion of a first auxiliary electrode . . . that is electrically connected with the first electrode layer . . . , with the light emitting device . . . located above the first auxiliary electrode.” *Id.* (citing Ex. 1001, 4:35–36, 47–49, Fig. 2).

Petitioner provides an annotated Figure 2 of the '509 patent, reproduced below, to illustrate its contentions.

¹¹ Neither party presents evidence or arguments regarding objective evidence of non-obviousness in the instant proceeding at this time.



The above annotated Figure 2 of the '509 patent in the Petition shows pixel structure 100 that includes active device T2 (purple), first auxiliary electrode 120 (red), light emitting device 130 comprising first electrode layer 132 (light green), light emitting layer 134 (blue), and second electrode layer (dark green). Pet. 2–3; *see also* Ex. 1001, 4:35–38, 47–49, Fig. 2.

Petitioner then contends that claims 1–5, 9, 12, and 13 are anticipated by Weaver. Pet. 11–28. Petitioner further contends that claims 6–8 would have been obvious over Weaver and Lee '053 (*id.* at 29–42) or over Weaver and Song (*id.* at 42–55), and that claims 10 and 11 would have been obvious over Weaver and Lee '149 (*id.* at 55–63) or over Weaver and Bae (*id.* at 63–71).

In response, Patent Owner contends that “only the Weaver prior art is asserted against the sole independent claim (claim 1),” but “Weaver does not have an ‘auxiliary electrode,’” as claimed. Prelim. Resp. 4.

We briefly summarize Weaver, Lee '053, Song, Lee '149, and Bae below.

I. Weaver

Weaver, titled “Device Including OLED Controlled By N-Type Transistor,” published on April 29, 2004, with a filing date of October 28, 2002. Ex. 1004, codes (54), (43), (22). Weaver describes a device with “an n-type transistor fabricated over a substrate” as well as “non-inverted organic light emitting device [OLED] fabricated over the substrate,” where the cathode of the OLED is connected to an electrode of the n-type transistor. *Id.* ¶ 4.

Figure 4, reproduced below, illustrates “an OLED and a thin film transistor.” Ex. 1004 ¶ 8.

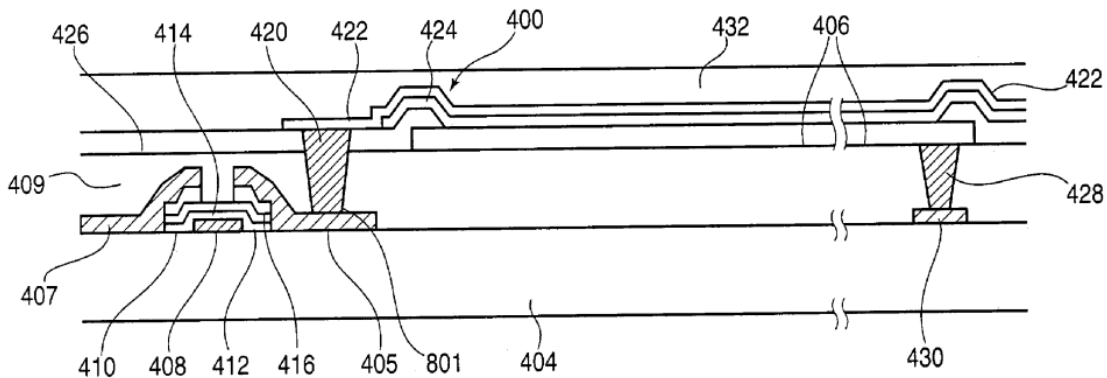


Fig. 4

As shown in Figure 4, transistor 410 is formed over substrate 404 and includes gate 408, source region 405, and drain region 407. *Id.* ¶ 24. OLED 400 includes anode 406, organic layer 424, and cathode 422. *Id.* ¶ 26. “Organic layer 424 may be any suitable organic material that emits light when sufficient current is passed between anode 406 and cathode 422.” *Id.*

¶ 27. Anode 406 is connected to bus line 430 by way of via 428, and cathode 422 is connected to source region 405 of transistor 410, by way of via 420. *Id.* ¶¶ 25–26.

2. *Lee '053*

Lee '053, titled “Organic Light Emitting Diode Display Device and Fabrication Method Thereof,” published on June 28, 2012, with a filing date of December 22, 2011. Ex. 1005, codes (54), (43), (22). *Lee '053* specifically relates to “an OLED display device capable of reducing a bezel width.” *Id.* ¶ 3.

3. *Song*

Song, titled “Organic Light Emitting Diode Display,” published on July 3, 2014, with a filing date of December 26, 2013. Ex. 1006, codes (54), (43), (22). *Song* seeks “to provide an organic light emitting diode (OLED) display that can reduce or minimize a voltage drop of power passing through a thin and large-sized electrode for driving of an organic emission layer.” *Id.* ¶ 11.

4. *Lee '149*

Lee '149, titled “Organic Electroluminescent Device and Method for Fabricating the Same,” published on January 15, 2009, with a filing date of July 9, 2008. Ex. 1011, codes (54), (43), (22). In particular, *Lee '149* aims to prevent “infiltration of moisture or outgas into an organic electroluminescent layer” “by forming a plurality of passivation layers on a substrate on which the electroluminescent layer is formed.” *Id.* ¶ 18.

5. *Bae*

Bae, titled “Organic Electro-Luminescence Display Device and Method for Fabricating the Same,” published on June 8, 2006, with a filing

date of November 20, 2005. Ex. 1012, codes (54), (43), (22). Bae seeks to “obviate one or more problems due to limitations and disadvantages of the related art” in part by providing “an organic electro-luminescence display device . . . in which electrodes can be separated from one another in sub-pixels without using a conventional reverse-taper-shape separator.” *Id.* ¶¶ 15–16.

6. *Analysis of Claims 1–5, 9, 12, and 13 over Weaver*

We begin by addressing in detail Petitioner’s contentions and Patent Owner’s arguments with respect to the limitations of representative claim 1.

i. *Preamble, “A pixel structure”*

Petitioner contends that, “[t]o the extent that the preamble is limiting, Weaver discloses ‘a pixel structure (Weaver’s circuit/array 300).’” Pet. 11 (citing Ex. 1003 ¶¶ 78–79). At this stage of the proceeding, Patent Owner does not present arguments in the Preliminary Response addressing the specific merits of Petitioner’s contentions with respect to the preamble. *See generally* Prelim. Resp. 13–16.¹²

Having reviewed all of Petitioner’s assertions regarding this claim limitation, as well as the supporting evidence, we determine on this record that Petitioner has made a sufficient showing that Weaver teaches a “pixel structure.”

¹² Because there is no dispute between the parties that Weaver teaches a pixel structure, as recited in the preamble, for purposes of institution, we need not decide whether the preamble is limiting. *See Nidec*, 868 F.3d at 1017.

- ii. *“a data line and a scan line,” “at least one active device electrically connected with the data line and the scan line,” “each active device comprises a gate, a channel layer, a source and a drain”*

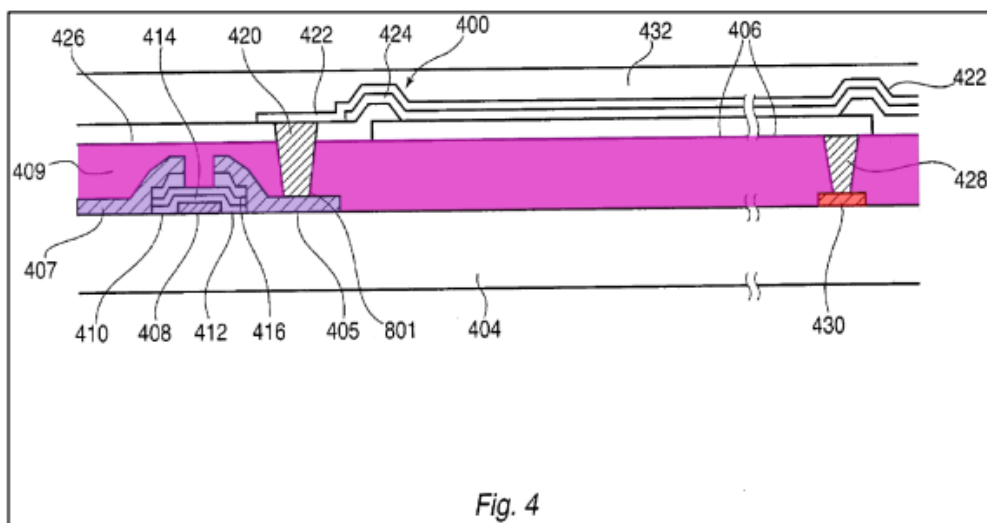
Petitioner contends that “Weaver discloses ‘a data line (data line 304) and a scan line (select line 306),’” wherein “each circuit . . . is connected to a data line 304 and a select line 306).” Pet. 12 (citing Ex. 1004 ¶¶ 19, 21, Figs 2–3; Ex. 1003 ¶¶ 80–82). Petitioner further contends that “Weaver discloses ‘at least one active device (transistor 208/308 and transistor 210/310/410) electrically connected with the data line (204/304) and the scan line (206/306),’” with “each active device comprising a gate (gate 408), a channel layer (a-Si layer 414), a source (source 220/405), and a drain (drain 218/407).” *Id.* at 12–13 (citing Ex. 1003 ¶¶ 83–88).

At this stage of the proceeding, Patent Owner does not present arguments in the Preliminary Response addressing the specific merits of Petitioner’s contentions with respect to these claim limitations. *See generally* Prelim. Resp. 13–16.

Having reviewed all of Petitioner’s assertions regarding these claim limitations, as well as the supporting evidence, we determine on this record that Petitioner has made a sufficient showing that Weaver teaches “a data line and a scan line,” and “at least one active device electrically connected with the data line and the scan line,” wherein “each active device comprises a gate, a channel layer, a source and a drain.”

iii. “first auxiliary electrode electrically insulated from the active device,” “a light emitting device disposed above the first auxiliary electrode,” “the light emitting device comprises a first electrode layer electrically connected with the first auxiliary electrode ”

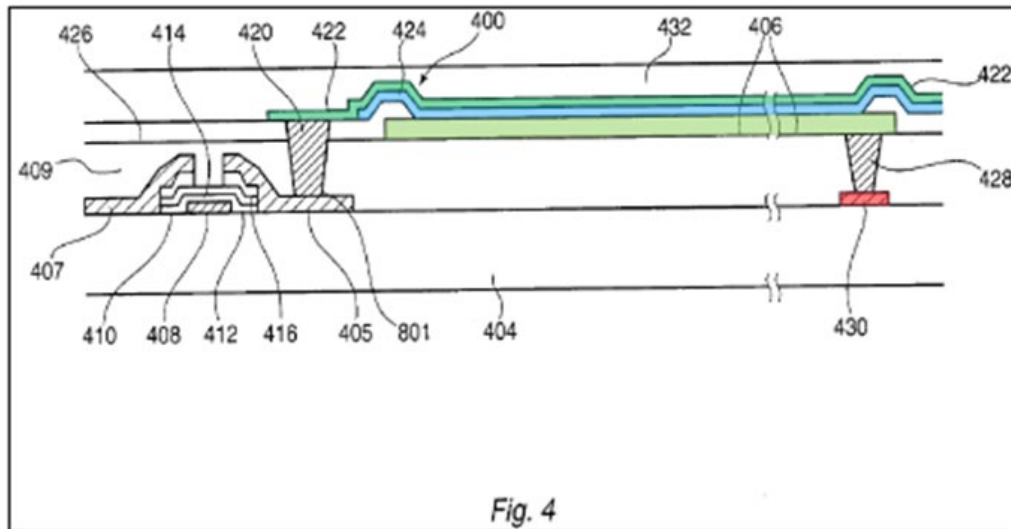
Petitioner contends that, like the '509 patent, Weaver discloses “a first auxiliary electrode . . . electrically insulated from the active device.” Pet. 16 (citing Ex. 1003 ¶¶ 89–94). Petitioner provides an annotated Figure 4 of Weaver, shown below, to illustrate its contentions.



The above annotated Figure 4 of Weaver, according to Petitioner, illustrates “bus line 430 [red] electrically insulated from transistor 410 [purple] by passivation layer 409 [pink].” Pet. 16 (citing Ex. 1004 ¶ 26, Fig. 4). According to Petitioner, “Weaver discloses that bus line 430 is an electrode that is supplemental to other electrodes in the structure.” *Id.* at 18 (citing Ex. 1004 ¶ 26, Fig. 4; Ex. 1003 ¶ 92). Relying on Dr. Baker’s testimony, Petitioner further contends that a POSITA would have understood that “the plural electrical connections provided by vias 428 between anode 406 and

bus line 430 means that the anode 406 and bus line 430 are connected in parallel,” which means that “bus line 430 is a supplemental electrode that reduces the total resistance of the pixel structure.” *Id.* at 19 (citing Ex. 1003 ¶ 94).

Petitioner then contends that Weaver discloses “a light emitting device (OLED 202, 302, 400) disposed above the first auxiliary electrode (bus line 430).” Pet. 19 (citing Ex. 1003 ¶¶ 95–96). Petitioner provides an annotated Figure 4 of Weaver, shown below, to illustrate its contentions.



The above annotated Figure 4 of Weaver, according to Petitioner, illustrates “OLED 400 [which] includes three layers (cathode 422 [dark green], organic layer 424 [blue], anode 406 [light green]), which are disposed above bus line 430 [red].” Pet. 20 (citing Ex. 1004 ¶ 26, Fig. 4). According to Petitioner, “Weaver discloses that OLED 400 includes anode 406 [light green], which is electrically connected to bus line 430 [red] by via 428.” *Id.*

Patent Owner responds that “Weaver does not have an ‘auxiliary electrode,’” because “bus line 430 is not ‘auxiliary’ or ‘supplemental’ to anything.” Prelim. Resp. 4. According to Patent Owner, “bus line 430

provides a primary and critical connection for power delivery,” and thus, “does not play an ‘auxiliary’ or ‘supplemental’ role.” *Id.* at 14. Further, Patent Owner argues that Weaver’s “‘bus line 430’ is not an ‘electrode.’” *Id.* at 4. Patent Owner contends that “Weaver never refers to its ‘bus line 430’ as an anode, cathode, or electrode.” *Id.* at 16.

We find Patent Owner’s arguments unavailing. In particular, we find unavailing Patent Owner’s contention that “‘bus line 430’ is not an ‘electrode’” (Prelim. Resp. 4), because Patent Owner is relying on a claim construction of “electrode,” requiring “an anode” or “cathode” and excluding a “bus line” (*id.* at 16), that is not adopted by our construction discussed above. Thus, we are unpersuaded by Patent Owner’s contention that Weaver fails to disclose the “auxiliary electrode” limitation because “Weaver never refers to its ‘bus line 430’ as an anode, cathode, or electrode.” *Id.*

Although Patent Owner contends that “bus line 430 is not ‘auxiliary’ or ‘supplemental’ to anything” (Prelim. Resp. 4), we are persuaded by Petitioner’s reliance on Weaver’s bus line 430 for providing the claimed “electrode,” that is “supplemental to other electrodes in the structure.” Pet. 18; *see also* Ex. 1004 ¶ 26, Fig. 4; Ex. 1003 ¶ 92. We find availing Petitioner’s contention, supported by Dr. Baker’s testimony, that a POSITA would have understood that “anode 406 and bus line 430 are connected in parallel,” which means that “bus line 430 is a supplemental electrode that reduces the total resistance of the pixel structure.” Pet. 19; Ex. 1003 ¶ 94. Thus, we find availing Petitioner’s contention, supported by Dr. Baker’s testimony, that Weaver’s bus line 430 is an electrode supplemental to other electrodes in the structure that is electrically insulated from transistor 410 by

passivation layer 409, wherein OLED 400, which includes cathode 422, organic layer 424, and anode 406, is disposed above bus line 430, and wherein anode 406 of OLED 400 is electrically connected to bus line 430 by via 428. Pet. 16–19; Ex. 1003 ¶¶ 89–94. That is, we find availing Petitioner’s contention, which Patent Owner does not contest, that, like the ’509 patent’s auxiliary electrode 120, bus line 430 is electrically insulated from transistor 410, wherein OLED 400 is disposed above bus line 430 and anode 406 electrically connected with bus line 430. *Id.*; *also compare* Pet. 2–3 (annotated Figure 2 of the ’509 patent) *with id.* at 16, 20 (annotated Figure 4 of Weaver).

On this preliminary record, we are persuaded that Petitioner has made a sufficient showing that Weaver teaches “a first auxiliary electrode electrically insulated from the active device,” and “a light emitting device disposed above the first auxiliary electrode,” wherein “the light emitting device comprises a first electrode layer electrically connected with the first auxiliary electrode.”

iv. the light emitting device further comprises “a light emitting layer disposed on the first electrode layer,” “a second electrode layer disposed on the light emitting layer, wherein the second electrode layer is electrically connected with the active device”

Petitioner contends that “Weaver discloses that OLED 400 includes organic layer 424, which is disposed on anode 406,” and thus “Weaver discloses ‘a light emitting layer (organic layer 424) disposed on the first electrode layer (anode 406).’” Pet. 21 (citing Ex. 1004 ¶ 26, Fig. 4; Ex. 1003 ¶¶ 99–100). Petitioner further contends that “Weaver discloses ‘a second electrode layer (cathode 422) disposed on the light emitting layer

(organic layer 424), wherein the second electrode layer is electrically connected with the active device (transistor 410).” *Id.* at 21–22 (citing Ex. 1003 ¶¶ 101–103).

At this stage of the proceeding, Patent Owner does not present arguments in the Preliminary Response addressing the specific merits of Petitioner’s contentions with respect to these claim limitations. *See generally* Prelim. Resp. 13–16.

Having reviewed all of Petitioner’s assertions regarding these claim limitations, as well as the supporting evidence, we determine on this record that Petitioner has made a sufficient showing that Weaver teaches that the light emitting device further comprises “a light emitting layer disposed on the first electrode layer,” and “a second electrode layer disposed on the light emitting layer,” wherein “the second electrode layer is electrically connected with the active device.”

v. Claim 1 Conclusion

On the present record, we determine Petitioner has demonstrated a reasonable likelihood that it will prevail on its assertion that claim 1 would have been anticipated by Weaver.

vi. Claims 2–5, 9, 12, and 13

Petitioner provides detailed explanations as to how Weaver anticipates claims 2–5, 9, 12, and 13, depending from claim 1, citing Dr. Baker’s testimony for support. Pet. 22–29 (citing Ex. 1004 ¶¶ 25–29, 35–37, Figs. 4, 7–8; Ex. 1003 ¶¶ 104–120). Patent Owner merely contends that “[n]one of Petitioner’s arguments regarding these dependent claims cures the deficiencies regarding independent claim 1.” *See* Prelim. Resp. 17.

Having reviewed Petitioner's arguments and supporting evidence in the present record, we determine Petitioner has demonstrated a reasonable likelihood that it will prevail on its assertion that the subject matter of claims 2–5, 9, 12, and 13 are anticipated by Weaver.

7. *Analysis of claims 6–8 over Weaver and Lee '053 or over Weaver and Song; of claims 10 and 11 over Weaver and Lee '149 or over Weaver and Bae*

Petitioner provides detailed explanations as to how the combination of Weaver and Lee '053 allegedly renders obvious claims 6–8 of the '509 patent, how the combination of Weaver and Song allegedly renders obvious claims 6–8 of the '509 patent, how the combination of Weaver and Lee '149 allegedly renders obvious claims 10 and 11 of the '509 patent, and how the combination of Weaver and Bae allegedly renders obvious claims 10 and 11 of the '509 patent, citing Dr. Baker's testimony for support. Pet. 29–71 (citing Ex. 1004 ¶¶ 17, 24, 30, 34, 36, Figs. 2, 4, 6; Ex. 1005 ¶¶ 8, 69, 71, 73–74, 76–77, 81, 85, 89, 91–93, Figs. 2, 7; Ex. 1006 ¶¶ 59, 69, 90–91, 98, Fig. 5; Ex. 1011 ¶¶ 25, 27, 38, Fig. 1; Ex. 1012 ¶¶ 37, 41–43, 48, 59, Fig. 3–4; Ex. 1003 ¶¶ 122–146, 148–173, 175–192, 194–212). Patent Owner merely contends that “[n]one of Petitioner's arguments regarding these dependent claims cures the deficiencies regarding independent claim 1.” *See* Prelim. Resp. 17.

Having reviewed Petitioner's arguments and supporting evidence in the present record, we determine Petitioner has demonstrated a reasonable likelihood that it will prevail on its assertion that claims 6–8 would have been obvious over the combination of Weaver and Lee '053 or alternatively over the combination of Weaver and Song, and that claims 10 and 11 would

have been obvious over the combination of Weaver and Lee '149 or alternatively over the combination of Weaver and Bae.

D. Claims 1–5, 9, 12, and 13 as Allegedly Obvious over Weaver and Gupta or Han; Claims 6–8 as Allegedly Obvious over Weaver, Lee '053 and Gupta or Han or Weaver, Song and Gupta or Han; Claims 10 and 11 as Allegedly Obvious over Weaver, Lee '149 and Gupta or Han or over Weaver, Bae and Gupta or Han

Petitioner contends that claims 1–5, 9, 12, and 13 would have been obvious over Weaver and Gupta or Han. Pet. 71–78. Petitioner further contends that claims 6–8 would have been obvious over Weaver, Lee '053 and Gupta or Han (*id.* at 78–79) or over Weaver, Song and Gupta or Han (*id.* at 79); and that claims 10 and 11 would have been obvious over Weaver, Lee '149 and Gupta or Han (*id.* at 79–80) or over Weaver, Bae and Gupta or Han (*id.* at 80–81).

In response, Patent Owner contends that, for these grounds, “Petitioner still relies on Weaver’s bus line 430 as the claimed ‘auxiliary electrode,’” and “proposes to modify Waver’s[sic] design in view of Gupta or Han,” but “the proposed modification still does not change the fact that a ‘bus line’ is not an ‘electrode.’” Prelim. Resp. 17–18.

We briefly summarize Gupta and Han below.

1. Gupta

Gupta, titled “Reducing Sheet Resistance for Common Electrode in Top Emission Organic Light Emitting Diode Display,” issued on July 21, 2015, with a filing date of March 6, 2013. Ex. 1009, codes (54), (45), (22). Gupta relates to “top emission AMOLED displays having a conductive mesh(es) or conductive strips coupled to a common electrode to reduce sheet

resistance,” which “helps save power consumption in operating the AMOLED displays.” *Id.* at 4:55–60.

2. *Han*

Han, titled “Organic-Light-Emitting-Diode Flat-Panel Light-Source Apparatus and Method of Manufacturing the Same,” published on October 13, 2011, with a filing date of April 1, 2011. Ex. 1010, codes (54), (45), (22). Han relates to “improv[ing] the uniformity of electrical and optical properties of a large-area OLED flat-panel light-source apparatus required for an illumination system and a display device.” *Id.* ¶ 3.

3. *Analysis of claims 1–5, 9, 12, and 13 over Weaver and Gupta or Han*

Petitioner contends that if the Board were to conclude that “Weaver does not disclose an auxiliary electrode under the narrow construction (‘supplemental electrode to reduce the total resistance of the pixel structure’),” then “Weaver in combination with Gupta or Han renders obvious ‘a first auxiliary electrode (Weaver’s bus line 430 modified with a parallel connection with anode 406) electrically insulated from the active device (Weaver’s transistor 410).” Pet. 72 (citing Ex. 1003 ¶¶ 218–228). In particular, Petitioner argues that Gupta discloses “resistor 238 . . . added to be in parallel with the anode sheet resistance 234B to reduce the total resistance between anode 230 and VDD 202,” wherein “resistor 238 may be formed of a conductive mesh or strip,” and “is a supplemental electrode that reduces the total resistance of the pixel structure.” *Id.* at 73–74 (citing Ex. 1009, 4:55–60, 5:8–9, 7:42–43, 8:3–14, Figs. 2A–2C). Petitioner also contends that “Han discloses a solution that includes the addition of ‘first and third subsidiary electrodes 750 and 770, which may be bonded to the

anode 720 and function to reduce a resistance component of the anode 720.” *Id.* at 74–75 (citing Ex. 1010 ¶¶ 8–9, 30–33, Fig. 7A; Ex. 1003 ¶ 222). Petitioner then contends that “[a] POSITA would have had a reasonable expectation of success in combining Weaver with Gupta or Han, as all [of] these references disclose the various electrodes and connections for operating an organic light emitting device.” *Id.* at 77 (citing Ex. 1003 ¶ 228).

Patent Owner contends that “the proposed combination (‘Weaver’s bus line 430 modified with a parallel connection to anode 406’) does not convert Weaver’s bus line 430 into any type of ‘electrode’ as recited in the claim.” *See* Prelim. Resp. 19. Although Patent Owner acknowledges that “the parallel connection arguably relegates the bus line 430 to a ‘auxiliary’ or ‘supplement’ connection,” Patent Owner argues that “it does not turn a bus line into an electrode.” *Id.*

We find unavailing Patent Owner’s arguments that Petitioner’s proposed combination of Weaver with Gupta or Han “does not convert Weaver’s bus line 430 into any type of ‘electrode’ as recited in the claim” (Prelim. Resp. 19) because Patent Owner is again relying on a claim construction of “electrode” that is inconsistent with our construction discussed above. Thus, we are unpersuaded by Patent Owner’s contention that the combination of Weaver and Gupta or Han fails to disclose the “auxiliary electrode.” *Id.*

Having reviewed Petitioner’s arguments and supporting evidence in the present record, we determine Petitioner has demonstrated a reasonable likelihood that it will prevail on its assertion that claims 1–5, 9, 12, and 13

would have been obvious over the combination of Weaver and Gupta or Han.

4. *Analysis of claims 6–8 over Weaver, Lee ’053 and Gupta or Han or over Weaver, Song and Gupta or Han; of claims 10 and 11 Weaver, Lee ’149 and Gupta or Han, or over Weaver, Bae and Gupta or Han*

Petitioner contends that claims 6–8 would have been obvious over Weaver, Lee ’053 and Gupta or Han (Pet. 78–79) or over Weaver, Song and Gupta or Han (*id.* at 79); and that claims 10 and 11 would have been obvious over Weaver, Lee ’149 and Gupta or Han (*id.* at 79–80) or over Weaver, Bae and Gupta or Han (*id.* at 80–81). Petitioner references the above discussed detailed explanations as to how the combination of Weaver and Lee ’053 allegedly renders obvious claims 6–8 of the ’509 patent, how the combination of Weaver and Song allegedly renders obvious claims 6–8 of the ’509 patent, how the combination of Weaver and Lee ’149 allegedly renders obvious claims 10 and 11 of the ’509 patent, and how the combination of Weaver and Bae allegedly renders obvious claims 10 and 11 of the ’509 patent, citing Dr. Baker’s testimony for support. *See above* Section III.C.7. Patent Owner contends that “[n]one of Petitioner’s arguments regarding these dependent claims cures the deficiencies regarding independent claim 1.” *See* Prelim. Resp. 20.

Having reviewed Petitioner’s arguments and supporting evidence in the present record, we determine Petitioner has demonstrated a reasonable likelihood that it will prevail on its assertion that claims 6–8 would have been obvious over the combination of Weaver, Lee ’053, and Gupta or Han, or alternatively over the combination of Weaver, Song, and Gupta or Han; and that claims 10 and 11 would have been obvious over the combination of

Weaver, Lee '149, and Gupta or Han, or alternatively over the combination of Weaver, Bae, and Gupta or Han.

IV. CONCLUSION

Because we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing at least one of the challenged claims is unpatentable, we institute *inter partes* review as to all challenged claims and grounds presented in the Petition. 37 C.F.R. § 42.108(a) (2024). At this stage of the proceeding, we have not made a final determination as to the patentability of any of these challenged claims.

V. ORDER

For the reasons given, it is

ORDERED that pursuant to 35 U.S.C. § 314, an *inter partes* review is instituted as to claims 1–13 of the '509 patent to determine whether:

- 1) claims 1–5, 9, 12, and 13 are unpatentable under 35 U.S.C. § 102 as anticipated by Weaver;
- 2) claims 6–8 are unpatentable under 35 U.S.C. § 103 as obvious over Weaver and Lee '053;
- 3) claim 6–8 are unpatentable under 35 U.S.C. § 103 as obvious over Weaver and Song;
- 4) claims 10 and 11 are unpatentable under 35 U.S.C. § 103 as obvious over Weaver and Lee '149;
- 5) claims 10 and 11 are unpatentable under 35 U.S.C. § 103 as obvious over Weaver and Bae;
- 6) claims 1–5, 9, 12, and 13 are unpatentable under 35 U.S.C. § 103 as obvious over Weaver and Gupta or Han;
- 7) claims 6–8 are unpatentable under 35 U.S.C. § 103 as obvious over Weaver, Lee '053, and Gupta or Han;

- 8) claims 6–8 are unpatentable under 35 U.S.C. § 103 as obvious over Weaver, Song, and Gupta or Han;
- 9) claims 10 and 11 are unpatentable under 35 U.S.C. § 103 as obvious over Weaver, Lee '149, and Gupta or Han; and
- 10) claims 10 and 11 are unpatentable under 35 U.S.C. § 103 as obvious over Weaver, Bae, and Gupta or Han.

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4 (2024), notice is hereby given of the institution of a trial, which commences on the entry date of this Decision.

IPR2024-01133
Patent 9,263,509 B2

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