

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.

Case No.: IPR2024-01133

Patent 9,263,509

PATENT OWNER'S SUR-REPLY

Table of Contents

I.	Introduction.....	1
II.	Person of Ordinary Skill in the Art.....	1
III.	Hindsight.....	3
	A. Hindsight on the Record	4
	B. Petitioner’s Positions Are Inconsistent.....	5
	C. Petitioner Misconstrues Patent Owner’s Arguments and the Testimony of Dr. Bretschneider.....	5
	D. Petitioner’s Further Hindsight	6
IV.	Claim Construction	7
	A. “auxiliary”.....	7
	B. “electrode”	9
	C. The Court’s Preliminary Construction.....	12
V.	Ground 1 (Weaver § 102) (Claims 1-5, 9, 12-13)	13
VI.	Ground 2 (Weaver, Lee053 § 103) (Claims 6-8).....	13
	A. Hindsight.....	13
VII.	Ground 3 (Weaver, Song § 103) (Claims 6–8).....	15
	A. Hindsight.....	15
VIII.	Ground 4 (Weaver, Lee149 § 103) (Claims 10-11).....	16
	A. Hindsight.....	16
IX.	Ground 5 (Weaver, Bae § 103) (Claims 10-11).....	20
	A. Hindsight: Modification Does Not Work	20
	B. Hindsight: Dr. Baker Violates His Own Rules	22
	C. Patent Owner Debunked All of Petitioner’s “Whack-a-Mole” Theories ...	23
	D. The Deposition Drawings Are Dr. Baker’s Opinions.....	25
X.	Ground 6 (Weaver, Gupta or Han § 103) (Claims 10-11)	25
	A. Hindsight/No Motivation to Combine	26
XI.	Conclusion	27

Patent Owner's Exhibit List for IPR2024-01131

Pursuant to 37 C.F.R. § 42.63(e), Patent Owner Optronics Sciences LLC hereby submits its exhibit list associated with the above-captioned *inter partes* review of U.S. Patent No. 7,226,801.

Exhibit No.	Description
2001	Docket Control Order from <i>Optronics Sciences LLC v. BOE Tech. Group Co., Ltd.</i> , No. 2:23-cv-00549-JRG, Dkt. 33 (E.D. Tex. Aug. 5, 2024)
2002	Optronics Sciences LLC's Infringement Contentions from <i>Optronics Sciences LLC v. BOE Tech. Group Co., Ltd.</i> , No. 2:23-cv-00549-JRG (E.D. Tex. July 19, 2024).
2003	BOE Technology Group Co., LTD's Invalidity Contentions from <i>Optronics Sciences LLC v. BOE Tech. Group Co., Ltd.</i> , No. 2:23-cv-00549-JRG (E.D. Tex. Oct. 25, 2024).
2004	Declaration of Benjamin T. Wang in Support of Motion to Appear <i>Pro Hac Vice</i>
2005	Declaration of Andrew D. Weiss in Support of Motion to Appear <i>Pro Hac Vice</i>
2006	Declaration of Christian W. Conkle in Support of Motion to Appear <i>Pro Hac Vice</i>
2007	Time to Trial for Rodney Gilstrap Report from Docket Navigator, accessed December 12, 2024.
2008	Declaration of Paul A. Kroeger in support of Motion to Appear <i>Pro Hac Vice</i> .
2009	[Intentionally Omitted].
2010	<i>POS Solutions</i> , Cirque: Innovative Touch Solutions, available at https://web.archive.org/web/20131109010416/http://www.cirque.com/solutions/posSolutions.aspx (archived by the Wayback Machine on Nov. 9, 2013).
2011	COMPREHENSIVE DICTIONARY OF ELECTRICAL ENGINEERING (2d ed. 2005).
2012	WILEY ELECTRICAL AND ELECTRONICS ENGINEERING DICTIONARY (2004).
2013	MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS (6th ed. 2003)

2014	THE AMERICAN HERITAGE COLLEGE DICTIONARY (3rd ed. 1997)
2015	WEBSTER’S NEW WORLD DICTIONARY AT 94 (3rd College Ed. 1994)
2016	WEBSTER’S II NEW COLLEGE DICTIONARY (2001)
2017	Disclosure of Dr. Eric Bretschneider in Compliance with P.R. 4-3(B), <i>Optronic Sciences LLC v. BOE Tech. Group. Co., Ltd.</i> , No. 2:23-cv-005549-JRG (E.D. Tex.).
2018	Exhibit 9 from the Deposition of Dr. Baker, <i>IPR2024-01130, IPR2024-01133, IPR2024-01134</i> , Volume 1.
2019	Exhibit 10 from the Deposition of Dr. Baker, <i>IPR2024-01130, IPR2024-01133, IPR2024-01134</i> , Volume 1.
2020	Exhibit 11 from the Deposition of Dr. Baker, <i>IPR2024-01130, IPR2024-01133, IPR2024-01134</i> , Volume 1.
2021	<i>Solid-State Lighting Research and Development Multi-Year Program Plan</i> , U.S. DEPARTMENT OF ENERGY (Apr. 2013).
2022	Part 1 of Video Excerpt from April 2, 2025, Deposition Transcript of Dr. Jacob Baker, <i>IPR2024-01130, IPR2024-01133, IPR2024-01134</i> , Volume 1.
2023	Part 2 of Video Excerpt from April 2, 2025, Deposition Transcript of Dr. Jacob Baker, <i>IPR2024-01130, IPR2024-01133, IPR2024-01134</i> , Volume 1.
2024	Part 3 of Video Excerpt from April 2, 2025, Deposition Transcript of Dr. Jacob Baker, <i>IPR2024-01130, IPR2024-01133, IPR2024-01134</i> , Volume 1.
2025	Part 4 of Video Excerpt from April 2, 2025, Deposition Transcript of Dr. Jacob Baker, <i>IPR2024-01130, IPR2024-01133, IPR2024-01134</i> , Volume 1.
2026	Declaration of Dr. Eric Bretschneider in support of Patent Owner’s Response (“Bretschneider Decl.”).
2027	<i>Curriculum vitae</i> of Dr. Eric Bretschneider.
2028	April 2, 2025, Deposition Transcript of Dr. Jacob Baker, <i>IPR2024-01130, IPR2024-01133, IPR2024-01134</i> , Volume 1.
2029	April 3, 2025, Deposition Transcript of Dr. Jacob Baker, <i>IPR2024-01130, IPR2024-01133, IPR2024-01134</i> , Volume 2.

I. Introduction

Petitioner's Reply does not overcome the defects identified by Patent Owner.

II. Person of Ordinary Skill in the Art

A POSITA for the '509 Patent would have at least a Bachelors' degree in a field of engineering or physics and at least two years of professional experience related to the design and manufacture of LED or OLED pixels for flat panel displays. POR at 10; Ex. 2026, § V. Petitioner's arguments to the contrary are unavailing.

Petitioner attacks "bachelor's degree in (unspecified) engineering," arguing "[t]his omission is notable" and would not equip a POSITA with the requisite knowledge. Reply at 1. To be clear, Patent Owners referred to a relevant engineering field, not civil or environmental engineering. But it does cover chemical engineering because fabrication at the device-level is inherently a chemical process.

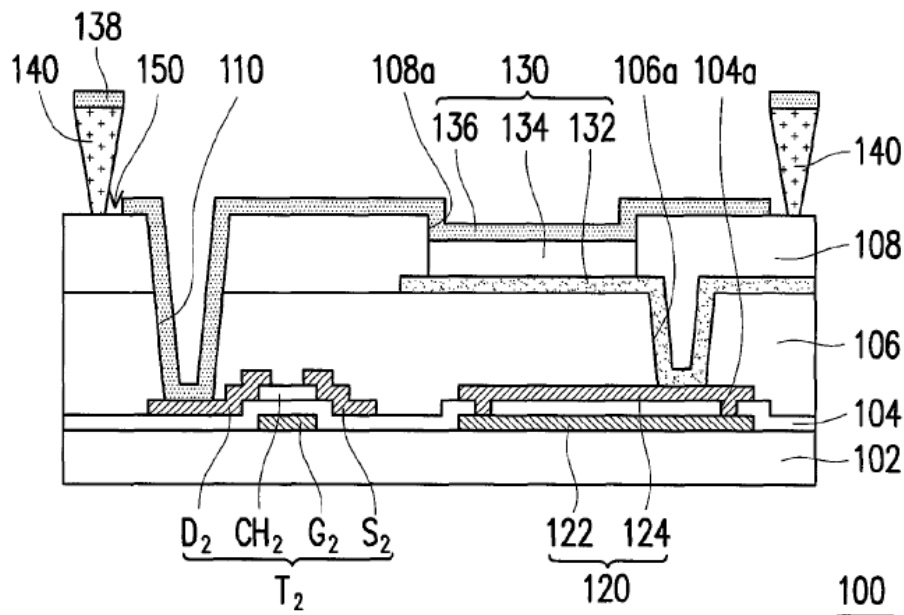


FIG. 2

Ex. 1001 at Fig. 2. The technology here involves the interaction between layers of metals, polymers, glass, quartz, insulators, organic materials, inorganic materials, etches, silicon oxide, silicon nitride, oxynitride, and combinations thereof. *Id.* at 3:43–4:4. In practice, chemical engineers, physicists, and electrical engineers work together when designing device-level components.

Petitioner does not meaningfully address the requirement of “at least two years of professional experience related to the design and manufacture of LED or OLED pixels for flat panel displays.” Reply at 1–2. Dr. Bretschneider has “over 30 years of experience with LEDs, displays, lighting fixtures, and lighting,” including the design of flat panel displays like that of the ’509 Patent. Ex. 2026, ¶¶ 10, 9–30; *see* Ex. 2027. Dr. Baker does not.

Petitioner merely argues that experience with LED or OLED pixels for flat panel displays is not necessary because “[t]he problem and solution are common to any electrical circuit, and to any optoelectronic system.” Reply at 3. This is wrong. Dr. Bretschneider explained that “LED and OLED pixel design is a sophisticated technology, and requires a deep technical understanding in areas unique to LEDs, OLEDs, and displays.” Ex. 2026, ¶¶ 60, 49–51 (explaining that large area flat panel light sources “present very different engineering challenges”). Indeed, the ’509 Patent itself states the field of invention relates to “a pixel structure and particularly relates to a pixel structure capable of improving the overall luminous uniformity of a display panel.” Ex. 1001, 1:17–20. Petitioner’s attempts to diminish the unique engineering challenges present in LED or OLED pixels for flat panel displays is improper and highlights the under-qualifications of its expert. *See* Reply at 1–3; Ex. 2026, ¶ 52–67.

III. Hindsight

Petitioner’s attempts to downplay its hindsight on the record cannot stand. Patent Owner is not simply pointing at the fact that Petitioner’s expert reviewed the ’509 Patent before he reviewed the prior art references provided to him. Patent Owners instead exposed how specific steps of Dr. Baker’s process were rooted in hindsight. Reply at 4; POR at 13–20. As identified in the POR, for example, Petitioner and its expert (1) demonstrate reliance on hindsight on the record, (2)

admit that the proposed modifications are outside the scope of what a POSITA's knowledge, and (3) could not reconstruct the claims without reliance on hindsight, even after spending 115 hours reviewing the prior art, and (4) fail to identify any motivation to modify Weaver as they propose. POR at 12–13, 12–21.

A. Hindsight on the Record

Petitioner contends that the answers its expert provided at deposition “reflect the order of counsel’s questioning, not the thought process by which Dr. Baker reached his original conclusion.” Reply at 4. Counsel asked: “Q[:] So to the extent that any other modifications you think are necessary and obvious, let me know now; otherwise, I will PDF this and get it committed as an exhibit. A[:] Well, just one sec. I mean, Claim 11 teaches using the material 422. So you don’t have an additional layer. So it’d probably be better to cover both Claims 10 and 11 with the modification, and you can easily do that by getting rid of the red box and just – or moving the red box to where it’s on the same layer as 422 and then just extending it down to the -- yeah, kind of.” Ex. 2028, 197:2–14; *see also id.* at 206:16, 20–21. The record reflects Dr. Baker’s thought process for the “modifications [he thought] are necessary and obvious,” which he answered only by looking at the language of the ’509 Patent’s claims, not by looking at the combination of prior art. While Patent Owner did not have the benefit of deposing Dr. Baker at the time he formed his initial opinions, his answers reflect his reliance on using the claims as a roadmap for

his obviousness combinations *even after spending 115 hours analyzing the prior art and thoroughly thinking through what his theories were*. POR at 20–21; Ex. 2028, 208:3–25, 212:3–15; Ex. 2029, 294:19–296:25.

B. Petitioner’s Positions Are Inconsistent

As explained in depth in Patent Owner’s Response, the most fundamentally flawed argument about the motivation to modify is Petitioner’s expert’s emphatic and repeated testimony that a “POSITA is not a person that is changing the process,” yet his proposed modifications involve changes to the fabrication process. Ex. 2028, 139:22–140:2, 137:15–22, Petition at 33, 37. Dr. Bretschneider identified changes to the process that would be required by Petitioner’s proposed combinations throughout his declaration. *See* Ex. 2026, ¶¶ 112–115, 131–133, 137, 153, 160.

C. Petitioner Misconstrues Patent Owner’s Arguments and the Testimony of Dr. Bretschneider

Petitioner ignores the context of Patent Owner’s remarks, which are addressing *its own argument that a POSITA would not be able to change the process yet could still somehow make the combinations it proposes*. “In order to modify Weaver as Dr. Baker has proposed (without etching), the **bus line 430** would have to extend horizontally around via 428. Extending **bus line 430** horizontally *would defeat the goal of ‘reduced wiring widths’* . . . If a POSITA wanted to reduce resistance *and making **bus line 430** wider was an option*, they would have simply

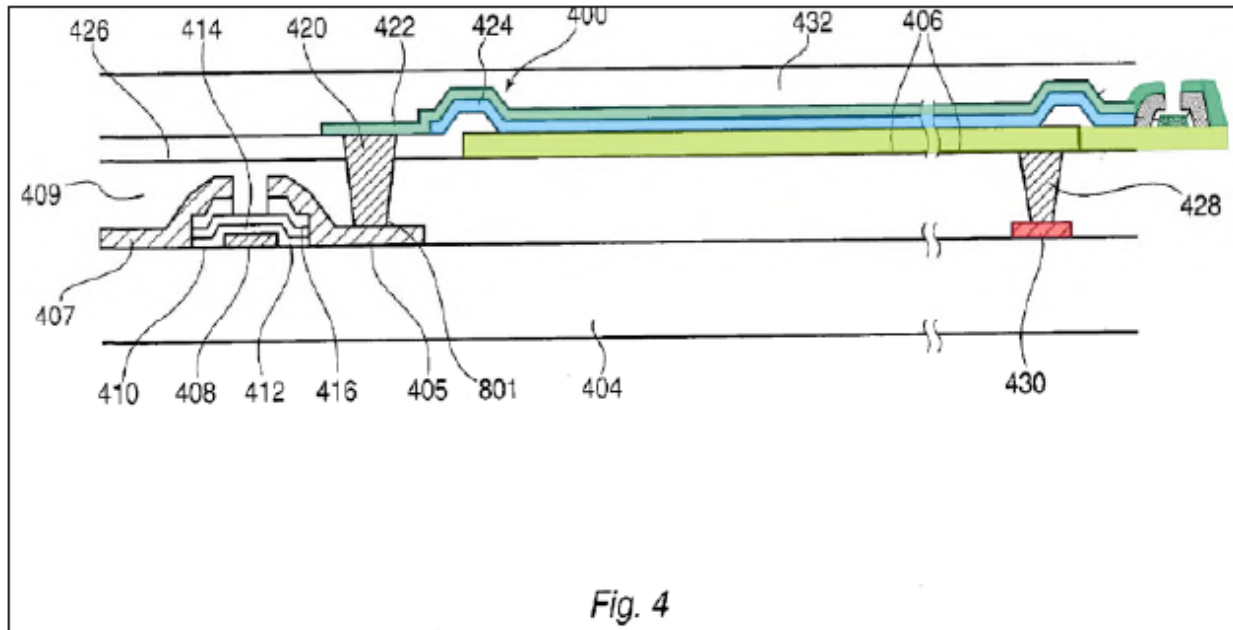
made **bus line 430** wider without bothering with additional layers.” Ex. 2026, ¶¶ 115–16 (emphasis added). Patent Owner is thus addressing *the obvious option based on the very assumptions suggested by Petitioner*. If a POSITA would not change the process, as Petitioner’s expert repeatedly asserted, the only remaining option for the structure it proposes is *patterning around* the via, which would increase the width of the wiring. Ex. 2026, ¶ 115–16. In such a case, width is not an issue and a POSITA would simply make the line wider. *Id.* Petitioner’s attempts to mischaracterize Dr. Bretschneider’s testimony and Patent Owner’s observations highlight the weakness of its position.

D. Petitioner’s Further Hindsight

When Petitioner attempts to distance itself from Dr. Bretschneider’s proposed modifications that are *actually* obvious, Petitioner further exposes its own hindsight. Dr. Bretschneider explained that a POSITA motivated to reduce the resistance of Weaver’s bus line would have simply made the bus line a bit wider.¹ POR at 17, 19–20, 34, 41, 48. Against this, Petitioner now argues that “there is only so much space in and around the pixels” and that a POSITA cannot ignore these spatial limitations. Reply at 5–6.

¹ Petitioner offers no rebuttal to increasing thickness.

But if this is the case, then Dr. Baker should never have proposed the addition to the right side of this drawing that clearly takes up more space beside the pixel:



Reply at 19, 22. If this rule is not needed, then Figure 4 shows that there is **plenty** of room to widen the red bus 430 toward the left or to make it thicker, without increasing the total width. Petitioner and its expert are making up and ignoring their own rules depending on whether it helps or hurts their argument. This showcases more hindsight.

IV. Claim Construction

A. “auxiliary”

Petitioner’s attempt to broaden the plain and ordinary meaning of the term “auxiliary” must fail. *See* reply at 8. Something that is auxiliary is supplemental to something else that is primary and essential. POR at 22; Ex. 2026, ¶¶ 95–103; Ex.

2017 ¶¶ 55–65. An auxiliary electrode cannot itself provide a primary, essential connection. Despite Petitioner agreeing in Court that “auxiliary” means “supplemental,” Petitioner is now arguing that “auxiliary” actually means “primary” and “essential.” Petitioner’s inconsistent arguments should not be allowed.

Petitioner’s discussion of electrical properties is irrelevant. The words “auxiliary” and “supplemental” do not inherently have any electrical meaning; their plain meanings do not imply any degree of electrical resistance. Instead, “auxiliary” and “supplemental” mean that they are in addition to *something else* that is primary or essential, in this case, supplemental to a first/primary electrode.

Petitioner urges for a construction of auxiliary that is broader than its plain and ordinary meaning, either as “supplemental electrode” or a “supplemental electrode to reduce the total resistance of the pixel structure.” Reply at 8. Such a construction enables Petitioner to point to *any* electrode other than the first electrode. See POR at 23. Contrary to Petitioner’s assertions in its Reply, this position is not supported by the claims of the ’509 Patent itself. POR at 23 (“BOE seeks to construe “auxiliary electrode” as merely a “second electrode.” Ex. 2028, 69:6–8. This position is inconsistent with the language of claims 10 and 11. Claims 10 and 11 recite a “second auxiliary electrode.” Claims 10 and 11 are consistent with the plain and ordinary meaning of “auxiliary,” and these claims show that the inventors used the word “auxiliary” to have a distinct meaning from the word “second.” But this

makes claims 10 and 11 nonsensical, as these claims would require a “second electrode.”); *see* Ex. 2028 at 69:1–70:4 (Petitioner’s expert testifying that his opinion is that “auxiliary” electrode is anything other than claimed first electrode layer).

Petitioner argues that Patent Owner’s construction is indefinite because a POSITA would not know “what functionalities or characteristics rise to the level of being ‘primary and essential.’” Reply at 11. The answer is simply: if the pixel would cease to function if it were removed, it is primary and essential—something any POSITA would understand.

Petitioner’s alternate construction, (“supplemental electrode to reduce the total resistance of the pixel structure”) suffers the same flaws by not excluding structures that are primary and essential, and for the additional reasons explained in Grounds 6–10. Reply at 11; POR at 44–55.

B. “electrode”

As explained in Patent Owner’s response, the plain and ordinary meaning of electrode is an end structure of a conductor for making electrical contact. POR at 25; Ex. 2026, ¶ 104–08; Ex. 2017 ¶¶ 66–73.

Petitioner attempts to diagram electrode endpoints is misleading. Petitioner uses only portions in a 2-dimensional *cross section* showing only electrical contacts being made while ignoring the greater three-dimensional picture that more clearly shows the bus that is separate from the electrode:

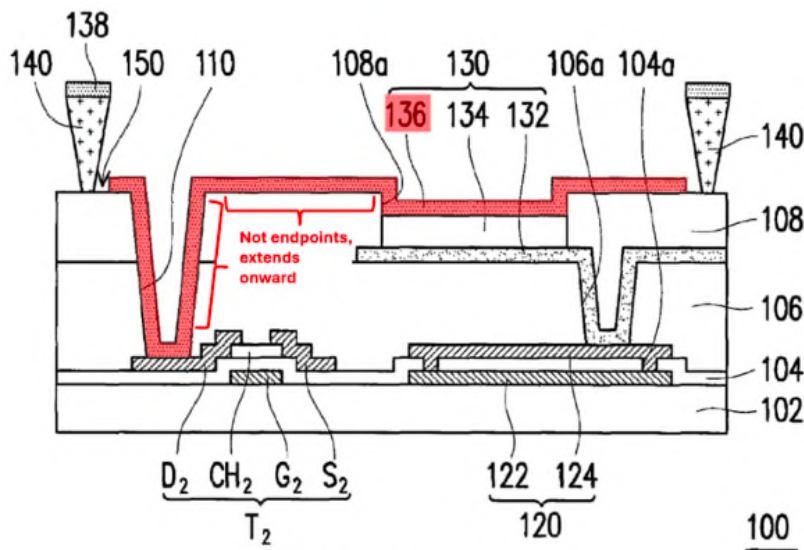
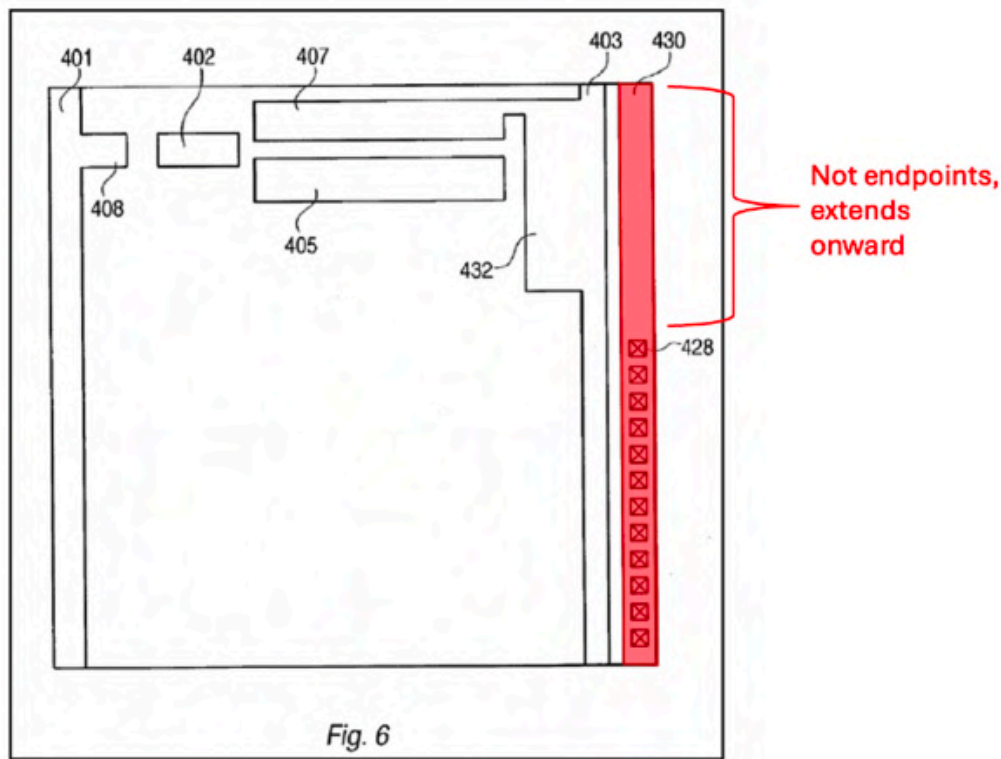


FIG. 2

Reply at 14. Weaver, by contrast, shows a top-down view of the *bus line 430* extending in a third dimension, providing the primary and essential means for delivering power to the pixel structure, with vias 428 connecting it to an electrode at *only a small portion* of the bus line (anode 406):



Reply at 13. Weaver's bus line itself is not an electrode, it is a power line.

An electrode is not simply a conductor, as Petitioner proposes. Patent Owner has provided numerous technical definitions and evidence that confirm its construction. See POR at 25–27. Indeed, Patent Owner's point was further explained in related IPR2024-01134, Paper 28 at 4, which shows that Patent Owner's construction "can be easily understood by the following example of electrodes and wires, where the 'electrodes' are the end structure for making contact, and the wires lead up to the electrode:"



<https://zollwebstore.com/defib-and-monitors/rseries/electrodes-padz/8900-4052-40>

Visited August 27, 2025, excerpted, annotated with red.

Accordingly, the Board should reject Petitioner’s construction, which improperly expands the term electrode to encompass any conductor. Reply at 15 (arguing “the meaning of electrode is a conductor”). The Board should adopt Patent Owner’s position that the plain and ordinary meaning of electrode is an end structure of a conductor for making electrical contact

C. The Court’s Preliminary Construction

Petitioner relegates to a footnote in its Reply that the Court issued a preliminary construction at the July 23, 2025 claim construction hearing for “auxiliary electrode” as an “electrode that works in unison with another electrode.” Reply at 16 n.2 (citing Ex. 1021 at 3). The Court’s preliminary construction supports

Patent Owner's original construction that an auxiliary electrode needs to work with another electrode, for example, a primary electrode.

Weaver's bus line 430 does not meet this construction. It is not an electrode that works in unison with another electrode. Because the Petition offered no invalidity theory under the District Court's preliminary construction, it can be outright denied. If the Board uses a construction that is different than the District Court's preliminary construction, "the Board shall explain in the . . . final written decision why a different outcome is warranted."²

V. Ground 1 (Weaver § 102) (Claims 1-5, 9, 12-13)

Petitioner provides no rebuttal that, under Patent Owner's constructions, Weaver does not anticipate the '509 Patent. Reply at 15–16.

VI. Ground 2 (Weaver, Lee053 § 103) (Claims 6-8)

Petitioner provides no rebuttal that, under Patent Owner's constructions, Weaver and Lee053 do not render obvious the '509 Patent. Reply at 16.

A. Hindsight

Contrary to the assertions in the Reply, it is Petitioner that does not understand the difference between process changes and changes in the layout of a circuit."

² USPTO Director's September 16, 2025 Memorandum, available at https://www.uspto.gov/sites/default/files/documents/Memo_re_prior_findings_of_fact_and_conclusions_of_law_9_16_25.pdf.

Reply at 16. Petitioner’s expert, Dr. Baker, admitted that his “main focus” is not a material science, process-setting point of view. Ex. 2028 at 21:7–10 (Q[:] Do you have any experience designing LEDs from a material scientist point of view? A[:] Yes, to some degree. I wouldn’t say that’s my main focus.”), 40:8-16 (“My work was more on the position of the elements. So, for example, where to place the LED; where to put transistors that were driving the LED or sensing, the capacitance of a structure within the pixel. So it was more the placement of the devices and metal that you see in figure 2 rather than the actual thicknesses used. Those were set by the process, technologists that developed the process.”).³

Dr. Bretschneider, who holds a PhD in Chemical Engineering, explained that a “POSITA understood that via 428 would have been made with etching and that bus line 430 is an etch stop—this means the etch process stops at the material of bus line 430 and cannot etch into bus line 430. If a POSITA wanted to extend via 428 through bus line 430, as the modified figure above shows, the POSITA would have had to change the process to create the via 428 through bus line 430, shown in the modified figure above.” Ex. 2026 at ¶¶ 113–114, ¶¶ 25–26. Notably, Petitioner does not address Dr. Bretschneider’s explanation, instead merely repeats that the

³ This is Dr. Baker’s best effort to explain why a POSITA cannot reduce the resistance of the bus line by making it a little thicker: the hypothetical POSITA layout designer simply isn’t asking his technologist colleague in charge of the process to make such an adjustment.

same layers are used so no process change is involved. Reply at 17. The process is defined by more than just whether the same layers are used.

Additionally, as discussed above, Petitioner's proposed modification without changing the process would increase the width of the bus line. But if increasing the width of the bus line was an option, a POSITA would have simply done that instead. *See* Ex. 2026, ¶ 115–16.

Accordingly, Petitioner has not met its burden of proving that the challenged claims are invalid.

VII. Ground 3 (Weaver, Song § 103) (Claims 6–8)

Petitioner provides no rebuttal that, under Patent Owner's constructions, Weaver and Song do not anticipate the '509 Patent. Reply at 17.

A. Hindsight

Petitioner asserts the “general teachings would result in the same modification to Weaver.” Reply at 18. As explained in Patent Owner's Response, Song and Lee053 have different structures, yet Petitioner proposes the same modification to Weaver, further indicating the hindsight required to reach the claims. POR at 36–39.

Further, the same flaws described above also apply here with respect to changing the process. For example, Petitioner again merely states that no change to the process is required because the same layers are used but completely overlooks

that a POSITA would have to *change the process to create via 428 through bus line 430* as it proposes. Reply at 18; Ex. 2026 at ¶¶ 113–114, ¶¶ 25–26 (“bus line 430 is an etch stop—this means the etch process stops at the material of bus line 430 and cannot etch into bus line 430. If a POSITA wanted to extend via 428 through bus line 430, as the modified figure above shows, the POSITA would have had to change the process to create the via 428 through bus line 430, shown in the modified figure above.”).

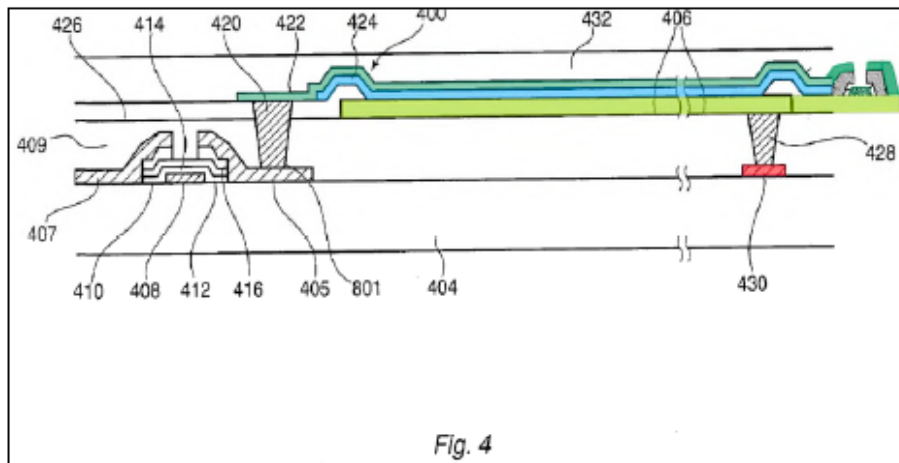
Accordingly, Petitioner has not shown how a POSITA would have made the proposed modifications and fails to meet its burden of proof.

VIII. Ground 4 (Weaver, Lee149 § 103) (Claims 10-11)

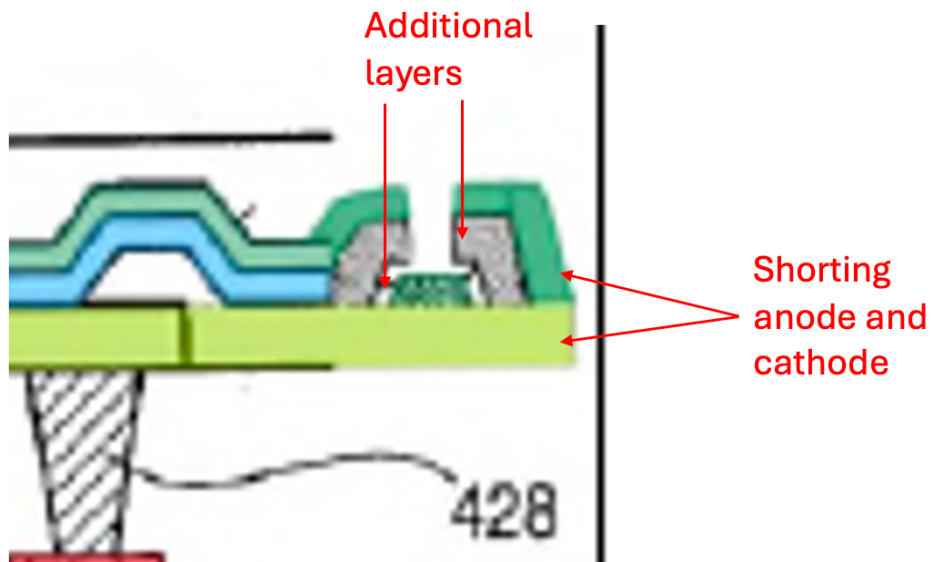
Petitioner provides no rebuttal that, under Patent Owner’s constructions, Weaver and Lee149 do not anticipate the ’509 Patent. Reply at 17.

A. Hindsight

Petitioner asserts the “petition describes in detail how the modification [of Weaver and Lee149] would be implemented” and provides the following image:



Reply at 19. As evident from this illustration, a change in Weaver's process would necessarily be involved (and the proposal would not work, as it shorts the anode and the cathode together, as shown below):



Thus, the “simplicity of the modification” is not nearly as straightforward as Petitioner urges in its Reply. Reply at 19 (citing POR at 19). Rather, the proposed modifications fails and would be non-functional due to the short circuit. MPEP § 2143.01(V) (“The proposed modification cannot render the prior art unsatisfactory for its intended purpose”).

Further, Petitioner’s attempt to categorize Patent Owner’s deposition questioning as a sideshow is demonstrably false. Rather, it shows how convoluted and non-obvious Petitioner’s theory is—Petitioner’s expert was not able to consistently explain how its proposed modification would *actually* be implemented, highlighting how non-obvious the proposed modification is. As shown above, even with the benefit of hindsight and 115 hours of preparation, Petitioner was unable to present how it would make the proposed modification in a way that works and does not involve changing the process. *See* Ex. 2018 (Deposition Exhibit 9); Ex. 2028, 190:6–201:18; Ex. 2022, 0:01–8:45; Ex. 2023, 0:00–6:20; *see also* Ex. 2022, 5:04–5:45 (regarding Ex. 2018, trying to combine Weaver and Lee149), 6:55–7:12 (regarding Ex. 2018, trying to combine Weaver and Lee149); Ex. 2023, 1:28–39 (regarding Ex. 2018, trying to combine Weaver and Lee149). The ultimate question to the Board is whether the proposed modification is “obvious” under Section 103. Because Dr. Baker failed to explain the modification after 115 hours of preparation, the modification is not “obvious.”

The Board should watch the videos of the deposition (Ex. 2022–2025) before the hearing to see that Dr. Baker was given a fair opportunity to draw out, explain, and correct drawings of his proposed modification. Petitioner’s objections during the process and in its Reply are not rooted in merit. Rather, Petitioner is objecting because Petitioner does not like how this process exposed Petitioner’s hindsight.

Further, Petitioner’s attempts to fault Dr. Bretschneider for addressing the clarifications provided Dr. Baker’s testimony rather than the abstract and conclusory statement in the Petition is without merit. Reply at 20. The deposition was not a “diversionary deposition side show” but an attempt to get Dr. Baker to further articulate his theory beyond a single, convoluted, conclusory paragraph without any supporting illustrations or explanation on how the modification would be made without changes to the process. Ex. 2028, 199:12–15 (“And what I’m trying to do is represent the opinion that’s stated in Ground 4, I think it was; and I think I have, but I’m not entirely sure”), 201:13–18. Indeed, Dr. Bretschneider testified that he felt like he was “playing Whack-a-Mole” with Petitioners theories. Ex. 1017 at 162:16–163:3. Dr. Bretschneider further testified that “I did a search for 183 [the paragraph counsel asked about]. I didn't find that in my declaration. But, again, at best, all of Dr. Baker's modifications – even though he said a person of ordinary skill in the art would[] make [the] modification -- they were all incredibly complex, convoluted, may or may not work, and hardly obvious.” Ex. 1017, 164:2–12.

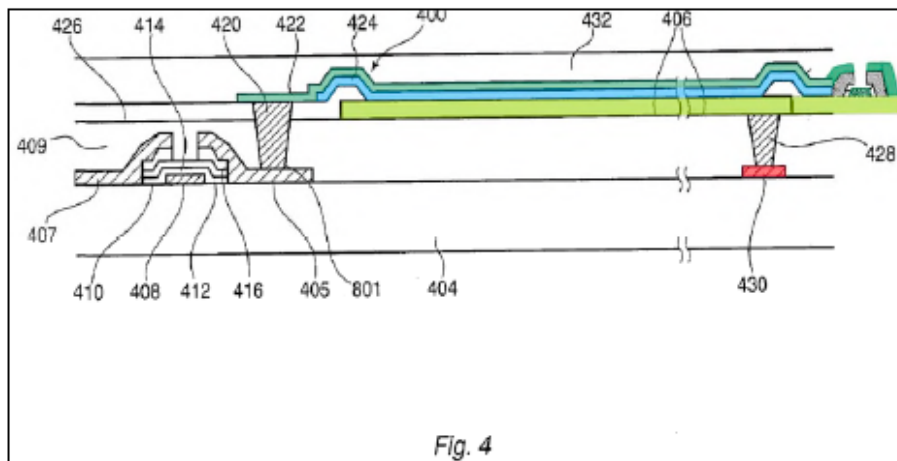
Petitioner's inability to articulate a coherent, consistent theory shows that its proposed modifications are not obvious, and Petitioner simply has not met its burden in establishing a combination of Weaver and Lee149 that invalidates the claims of the '509 Patent. A conclusory paragraph and technically flawed drawings that would involve changes to the process do not suffice.

IX. Ground 5 (Weaver, Bae § 103) (Claims 10-11)

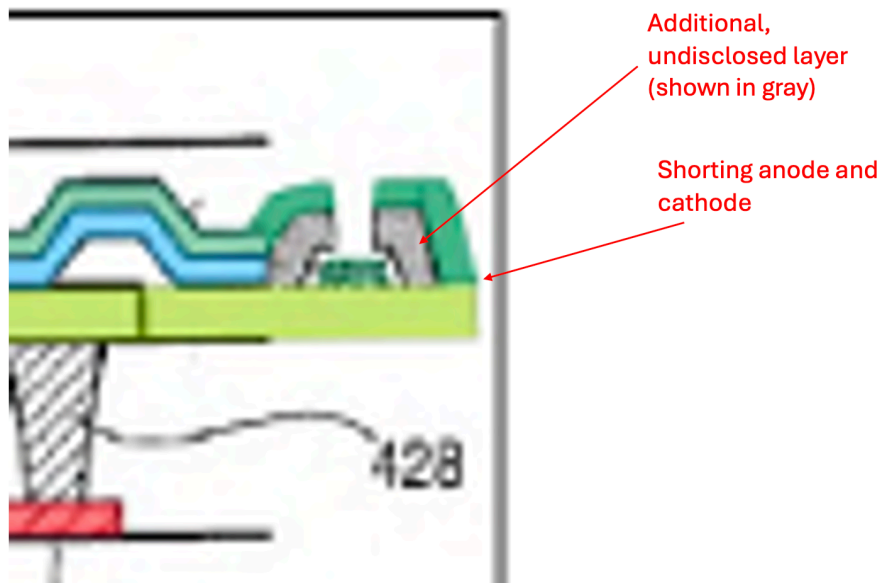
Petitioner provides no rebuttal that, under Patent Owner's constructions, Weaver and Lee149 do not anticipate the '509 Patent. Reply at 21.

A. Hindsight: Modification Does Not Work

Once more, Petitioner asserts the “petition describes in detail how the modification [of Weaver and Bae] would be implemented” and provides the following image:



Reply at 22. As evident from this illustration, a change in Weaver's process would necessarily be involved (and the proposal would not work, as it shorts the anode and the cathode together, as shown below):



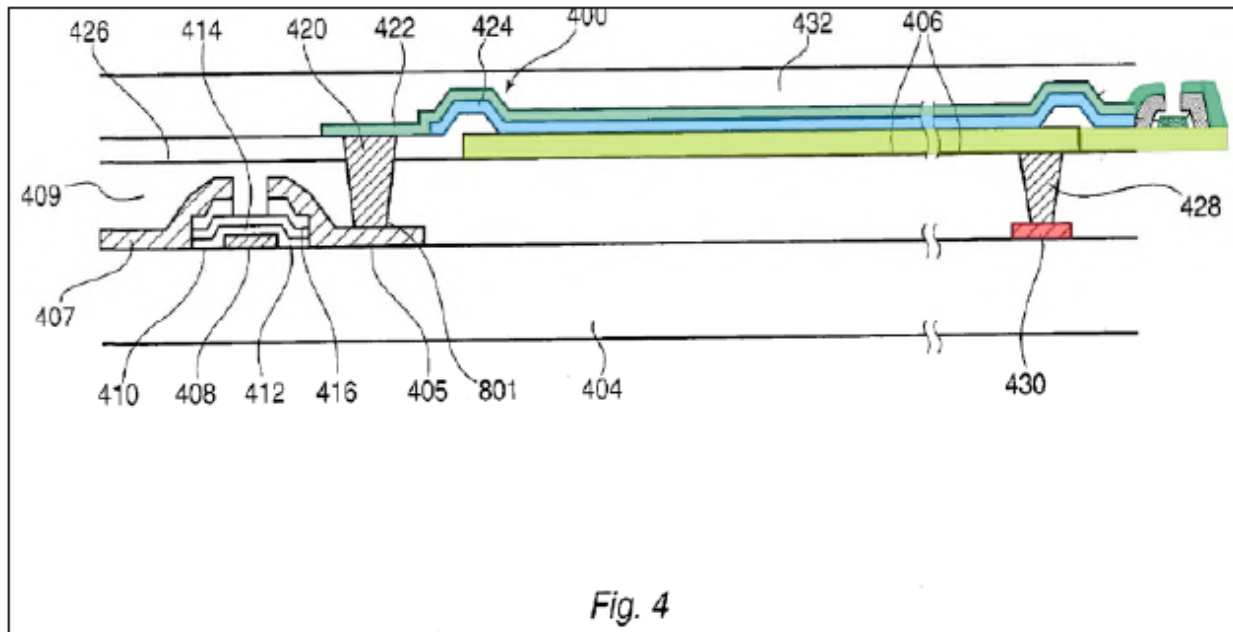
Thus, the “simplicity of the modification” is not nearly as straightforward as Petitioner urges in its Reply. Reply at 19 (citing POR at 19). Petitioner’s attempt to categorize Patent Owner’s deposition questioning as a sideshow is plainly false. Patent Owner was attempting to understand the modifications Petitioner’s expert was proposing, something he could not describe. Even after the deposition, Petitioner was unable to present how it would make the proposed modification in a way that works and does not involve changing the process, as shown above. *See* Ex. 2019 (Demonstrative exhibit 10 from Dr. Baker’s deposition of the proposed

combination of Weaver and Bae); Ex. 2028, 202:18–209:15; Ex. 2024, 8:23–3 (regarding Ex. 2019, trying to combine Weaver and Bae).

B. Hindsight: Dr. Baker Violates His Own Rules

As explained above, Petitioner and its expert now argues that “there is only so much space in and around the pixels” and that a POSITA cannot ignore these spatial limitations. Reply at 5–6; Ex. 1020 ¶¶ 34–35.

But if this is the case, then Dr. Baker should never have proposed the addition to the right side of this drawing that clearly takes up more space out to the side of the pixel:



Reply at 19, 22. Petitioner and Dr. Baker are ignoring their own rules in hindsight.

C. Patent Owner Debunked All of Petitioner’s “Whack-a-Mole” Theories

Petitioner’s assertion that Patent Owner and Dr. Bretschneider “provide no argument or rebuttal to the modification identified at page [59/67] of the Petition” is simply false. Reply at 20, 23. Indeed, Petitioner’s supporting citations to Dr. Bretschneider’s testimony are inaccurate. *Id.* The deposition of Dr. Baker was intended to elicit a concrete example of the combination that Dr. Bretschneider could respond to because the Petition had only conclusory proposals with no concrete example. Dr. Bretschneider testified that he felt like he was “playing Whack-a-Mole” with the Petition’s theories. Ex. 1017 at 162:16–163:3. Dr. Bretschneider further testified that “The image is what he came up with in his deposition. So, again, why that's different from his declaration, I can’t answer that. . . . If he wants to continually change his opinions, I suppose that’s his prerogative. . . . [W]hy the different opinions, I can’t address that. If it was an obvious change, they should be very, very similar.” Ex. 1017, 169:4–170:15.

When asked about Petitioner’s conclusory paragraph describing how the combination would be implemented (e.g., Ex. 1003, ¶ 202), Dr. Bretschneider explained at length:

First of all, I have to point out that it's a huge modification to a process, which Dr. Baker already said you can't -- a person of ordinary skill in the art wouldn't do. Because now you're undercutting portions.

...

Where is any suggestions of any type of structure like that in Weaver? You're making substantial changes to a process that Dr. Baker already said a person of ordinary skill in the art wouldn't do.

And, again, to just say, "Oh, yeah, reasonable expectation of success," no, I don't think so. This isn't just "Yeah. I made these changes, and I said it would work." It's far from that simple.

...

Again, paragraph 202, it's a simple conclusory statement. And, again, I don't know why he changed his opinions between his declaration and the deposition. I can't answer that.

Ex. 1017, 171:4–173:15.

Patent Owner asked Petitioner's expert how he would implement his proposed modification (which he should have been able to answer if the "simplicity of the modification is evident from the" description he set forth, as Petitioner asserts). Petitioner's expert was not able to do so, and Petitioner now provides a different structure it alleges describing in its conclusory paragraph—as explained above, this newly illustrated structure also would not work (despite Petitioner having ample time to consider it). Thus, Petitioner's argument that Patent Owner has not addressed any of Petitioner's theories is unfounded.

D. The Deposition Drawings Are Dr. Baker's Opinions

In an attempt to attack the illustrations created by Dr. Baker at his deposition, Petitioner incorrectly states “if [Dr. Baker] were creating such a drawing, not only would he have not drawn it the way counsel did, but in fact he would not have included much of the structure drawn by counsel.” Reply at 24. Petitioner overlooks that Dr. Baker did create such a drawing, with deposition counsel acting at Dr. Baker's direction. The videos of Dr. Baker's deposition (Ex. 2022–2025) show that he was given a fair opportunity to draw out, explain, and correct drawings of his proposed modification.

Petitioner simply has not met its burden in establishing a combination of Weaver and Bae that invalidates the claims of the '509 Patent—a conclusory paragraph and technically flawed drawings cannot suffice.

X. Ground 6 (Weaver, Gupta or Han § 103) (Claims 10-11)

Petitioner provides no rebuttal that, under Patent Owner's constructions, Weaver and Gupta or Han do not anticipate the '509 Patent. Reply at 25. Indeed, Petitioner relies on its constructions for its combination with Gupta or Han as well. Reply at 27 (“an electrode is simply a conductor”). If the Board does not adopt Petitioner's construction, Ground 6 fails.

A. Hindsight/No Motivation to Combine

As explained in Patent Owner's Response, Han is not analogous art. As Dr. Bretschneider explained, Han's teaching "is beneficial when the relative size of the OLED is inches, not millimeter or smaller, the design is not required or used for pixels for in LED displays due to their significantly smaller size." Ex. 2026 at 159. Han's OLED **panels** are usually *inches* in size. Ex. 2026 ¶ 51. Typical pixels are less than 0.1 mm². *Id.* A POSITA would have recognized that the problems and solutions are not applicable across 3-4 orders of magnitude. *Id.* The type IR-drop in Han's panels do not occur in a micro-scale pixel, and Han's solutions to inch-sized devices are not applicable to micro-scale pixels.

Further, Petitioner simply states it describes the physical change required to Weaver (i.e., that Weaver's bus line 430 should be modified to be connected in parallel with its anode 406) but provides no further explanation as to ***what physical modifications to Weaver's structure are required.*** Reply at 26. Petitioner has maintained that a POSITA would not change the process, and it has provided no evidence that a POSITA would be able to make its proposed changes to the structure of Weaver without changing the process. Accordingly, the Petition has failed to meet its burden of proving that the claims of the '509 Patent are rendered obvious by the combination of Weaver with Gupta or Han.

Finally, Petitioner has inadvertently doomed these theories in its own Reply. Petitioner admitted that there is not even enough room in a pixel to make a bus line a little bit wider. Reply at 5–6. But now, Petitioner argues that there is enough room in Weaver to add an entirely new parallel structure, e.g., as taught by Han or Weaver, when it helps an invalidity theory.

XI. Conclusion

For the reasons set forth in Patent Owner’s Response and set forth above, Patent Owner respectfully requests that the Board find all challenged claims patentable.

Date: September 17, 2025

Respectfully submitted,

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CERTIFICATION REGARDING WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Patent Owner hereby certifies, in accordance with and reliance on the word count provided by the word-processing system used to prepare this **PATENT OWNER'S RESPONSE**, that the amount of words in this paper is 4,817. Pursuant to 37 C.F.R. § 42.24, this word count is in compliance with the 5,600 word limit set forth in 37 C.F.R. § 42.24(c)(2) excluding the portions exempted under 37 C.F.R. § 42.24(a)(1).

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CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e)(1))

The undersigned hereby certifies that the above document was served on September 17, 2025, by filing this document through the Patent Trial and Appeal Board End to End system as well as delivering a copy via electronic mail upon the following attorneys of record for the Petitioner:

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