

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS
AMERICA, INC., SAMSUNG SEMICONDUCTOR, INC., and SAMSUNG
AUSTIN SEMICONDUCTOR LLC,

Petitioners,

v.

W&WSENS DEVICES INC.,

Patent Owner.

Case No. PGR2025-00082
U.S. Patent No. 12,243,948

**PETITIONERS' SUR-REPLY IN OPPOSITION TO
PATENT OWNER'S REQUEST FOR DISCRETIONARY DENIAL
OF INSTITUTION**

Patent Owner W&W's Pre-Institution Reply (Paper 14, "Reply") highlights, rather than refutes, the Office's material errors during prosecution of the '948 Patent. The Director should refer this Petition for a merits consideration.

I. W&W's Reply Highlights the Examiner's Failure to Conduct a Proper Search for the Limitations Deemed Allowable

W&W makes contradictory arguments to incorrectly allege that the Examiner conducted a "robust search for and consideration of prior-art 'pillar shaped photodetector devices.'" Reply 1. W&W first acknowledges that the M.P.E.P. instructs examiners to "employ[] broader text terms" and "'consider spatial relationships or shapes' of claim elements." Reply 1-2 (quoting M.P.E.P. § 904.02 (Rev. 07.2022, Feb. 2023)). But W&W then argues that the Examiner (contrary to the M.P.E.P.) should search only the *exact* claim language—"elongated"—and should disregard other known terms used by the '948 Patent and prior art (such as "vertical") to describe the same elongated shape. Reply 1-2; *see* Paper 11 ("Opp."), 5 n.2 (showing '948 Patent and prior art in prosecution history also describe elongated holes as "vertical"). The Examiner's failure to conduct searches according to the M.P.E.P. is why he did not find *Kuboi*, resulting in material error. Opp. 4-6.

W&W does not dispute that the Examiner's sole search including "elongated" (search N1) also contained numerous other narrowing limitations. *Compare* Reply 1-2, *with* Opp. 4-5, 5 n.1 (search N1 including inventor names, classes outside

Kuboi's class although *Kuboi*'s class is relevant, and additional narrow limitations). Nor does W&W dispute that this sole search returned **zero results**, confirming its undue narrowness. *See* Reply 1-2; Opp. 4-6. W&W also does not dispute that “vertical” is used by the '948 Patent and prior art to describe the same elongated holes. *Compare* Reply 1-2, with Opp. 5 n.2. Instead, W&W wrongly argues that, because the M.P.E.P. instructs examiners to search for “‘spatial relationships or shapes’ of claim elements,” searching the word “shape” is sufficient. Reply 1-2 (quoting M.P.E.P. § 904.02). To the contrary, the M.P.E.P. tasks examiners with searching the shapes ***in the claims*** using “broader text terms”—here “elongated,” which is also described as “vertical”—not the word “shape.” *See* M.P.E.P. § 904.02. Had the Examiner followed the M.P.E.P., he would have found *Kuboi*. Opp. 4-6.

Contrary to its own acknowledgement that examiners should search claims broadly, W&W argues that the Examiner should have instead searched narrowly and searched **only** for “elongated,” not other terms undisputedly used to describe the same shape (such as “vertical”) in both the '948 Patent and the prior art. Reply 2; Opp. 5 n.2. W&W exhibits that include the search without “vertical” merely confirm the Office's error. Reply 2; Ex. 2037 (W&W search); Ex. 2038 (W&W search results). This search yields **3 results**, which confirms the Examiner's error in searching only “elongated” without including known descriptions for the same shaped holes. *See* Reply 2; Ex. 2038. It is undisputed that the Examiner did not

include such additional terms *or* that the inclusion of one of those known terms—e.g., “vertical”—would have yielded *Kuboi*. Opp. 4-6. W&W cannot argue that the M.P.E.P. instructs examiners to search broadly, and then argue that a broad search including terminology used in the '948 Patent and prosecution prior art should not be considered. A proper search would have yielded *Kuboi*, which renders the claims unpatentable. Opp. 4-6. The Board can, and should, correct the Office’s error here.

II. The Office Erred by Allowing Claims Later Found to Lack Support Under 35 U.S.C. § 112

W&W argues that the Examiner merely “withdrew” the § 112 rejection and suggests that this withdrawal did not result from a claim amendment. Reply 3. That is incorrect. The same response W&W cites (Ex. 1093, 433-436) includes the amendment discussed in Samsung’s Opposition. *See* Opp. 7 (citing Ex. 1093, 430-433). W&W incorrectly cites its discussion of *pillar height* during prosecution. Reply 3 (citing Ex. 1093). But that § 112 discussion does not provide values for *in-pillar hole depth* or the lack of enablement shown in the Petition. Ex. 1093, 434-436. The only “[p]illar with hole” discussion does not specify the hole depth. *See id.*, 435; *see Hockerson-Halberstadt, Inc. v. Avia Group Int’l*, 222 F.3d 951, 956, (Fed. Cir. 2000) (“[P]atent drawings do not define the precise proportions of the elements”).

III. Conclusion

Petitioners respectfully request referral of this Petition to the merits panel.

Date: December 16, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that a copy of the foregoing **Petitioners' Sur-Reply in Opposition to Patent Owner's Request for Discretionary Denial of Institution** was served on December 16, 2025, via email directed to counsel of record for the Patent Owner at the following:

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Dated: December 16, 2025

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