

Filed on behalf of Western Digital Technologies, Inc.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

WESTERN DIGITAL TECHNOLOGIES, INC.,
Petitioner,

v.

GODO KAISHA IP BRIDGE 1,
Patent Owner.

Case No. IPR2024-01493
U.S. Patent No. 10,680,167

AUTHORIZED RESPONSE TO DIRECTOR REVIEW REQUEST

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This Director Review raises the same litany of complaints as in related IPR2024-01447 and should be denied for the same reasons.

IPB again requests Director Review of a mixed Final Written Decision canceling some claims and finding others not unpatentable. The '167 Patent at issue claims a manufacturing method for semiconductor magnetic tunnel junctions used in magnetic memory. The Petition set forth two obviousness grounds: Bowen over Sunai or Parkin in Ground 1, and Nagahama over Sunai or Parkin in Ground 2. IPB's request identifies no error requiring Director Review. Specifically:

1. IPB faults the Board for its treatment of Parkin's Figure 11. But IPB does not show any error in the Board's finding that WD met its burden to show a reasonable expectation of success, let alone any APA violation.

2. IPB repeats its objection to the Board's findings about EX2080. Again, EX2080 was IPB's own exhibit. IPB asserts that the Board violated its procedural rights by considering EX2080 and determining it undercut IPB's cause. Buyer's remorse is not a cognizable APA violation.

3. IPB's assorted attacks on the Board's interpretation of Parkin's disclosures show no error because Parkin's teachings are not ambiguous.

I. THE BOARD CORRECTLY FOUND IPB’S CLAIMS UNPATENTABLE AND DID NOT VIOLATE IPB’S PROCEDURAL RIGHTS

IPB argues the Board violated its procedural rights by finding that Figure 11’s layer 520 is optional, claiming this issue was never raised by WD “in its Petition or even its Reply.” Req. (Paper 55) at 6-7. Given the Board’s finding that one of ordinary skill would have a reasonable expectation of success in forming an MgO(001) layer over amorphous CoFeB as shown in Parkin’s inverted Figure 3A, IPB fails to show that the Board’s addressing Figure 11 resulted in any harm giving rise to an APA violation. FWD (Paper 54) at 27-28; *e.g.*, *Bot M8 v. Sony Interactive Ent.*, 66 F.4th 1380, 1385 (Fed. Cir. 2023) (party raising APA violation must demonstrate the harmfulness of the alleged error).

As the Board correctly found, the Petition met its burden to show a reasonable expectation of success by pointing out that “Parkin teaches that Figure 3A’s MTJ may be inverted, as illustrated in Figure 11.” FWD at 27; *see also id.* at 20 (citing Pet. at 27; EX1062 at 17:7-10; Reply (Paper 24) at 6-7). IPB has no answer for that finding about the overlap of Parkin’s Figures 3A and 11. *See* Req. at 6-8.

IPB next misrepresents that the “Reply never argued that layer 520 is optional.” Req. at 7; *see also id.* at 6-8. That’s not what IPB told the Board when it moved to strike the Reply for asserting that “Fig. 11 teaches... that (001) crystalline interface layer 520 is optional.” Paper 30 at 5-6. Indeed, the Board confirmed that

the Reply’s arguments about Parkin’s Figure 11 “are not new.” FWD at 28. IPB also inaccurately states that counsel conceded that layer 520 was not optional at the oral hearing, Req. at 7 (citing Paper 53 at 98:1-99:2), when instead that cited transcript excerpt shows the opposite: in the “reply brief in the ’167” counsel confirmed “[t]hat passage specifically describes layer 520 being optional,” Paper 53 at 98:4-17.

Because the parties hotly contested Parkin’s disclosures about Figure 11 and layer 520, IPB’s assertions of an APA violation ring hollow. *See* Req. at 8.

II. THE GROUNDS WERE DECIDED CORRECTLY

A. The Board’s Reliance on IPB’s EX2080 Was Fair Game

As in the ’134 Director Review Request, IPB complains again about the Board addressing its own exhibit, EX2080. *Compare* Req. at 8-11, *with* IPR2024-01447, Paper 54 (“134-Req.”) at 7-8. This argument fails for the same reasons.

IPB tried to sneak in unauthorized EX2080 with its Sur-reply. FWD at 56 & n.50. After this gambit was revealed as a self-own, with EX2080 becoming additional evidence showing IPB’s claims are unpatentable, IPB now asks the Director to save IPB from itself and find an APA violation based on EX2080. *See* Req. at 10-11.

IPB now complains that its APA rights were violated because it was afforded “no opportunity to address [EX2080] with briefing or evidence” to WD’s points

about EX2080 at the oral hearing. Req. at 11. As the Board correctly recognized, the only party at risk of suffering an APA violation because of IPB's late introduction of EX2080 was WD, not IPB. FWD at 56 (Board: of "concern is lack of notice and prejudice to Petitioner"). Because IPB introduced it with its final Sur-reply brief, WD's only remaining opportunity to address EX2080 was at the final oral hearing. IPB's argument that WD could have sought supplemental briefing after sur-reply ignores that WD did file briefing: namely, a motion to strike EX2080 and the related briefing. *See* Paper 35. Refusing to allow WD to address EX2080 at the hearing would have violated the APA as to WD, not IPB. *See, e.g., Nike v. Adidas*, 955 F.3d 45, 54 (Fed. Cir. 2020) (Under the APA, the Board "must give the parties notice and an opportunity to respond."); *Dell v. Acceleron*, 818 F.3d 1293, 1301 (Fed. Cir. 2016) (A party is entitled to "submit rebuttal evidence" under the APA.).

IPB's argument that it "would have shown that" EX2080 taught "***templating*** on a crystalline(001) layer," Req. at 11 (emphasis original), offers nothing new because as explained below, the Board already considered, and rejected, IPB's argument that EX2080 only showed forming "a crystalline(001) electrode layer by templating," FWD at 32-33. IPB's request to argue this point again cannot show harm.

B. The Board Did Not Misunderstand EX2080

Again, IPB's arguments that the Board misapprehended EX2080 are unsupported. *Compare* Req. at 9-12, *with* 134-Req. at 5-8. Before institution, IPB acknowledged that Parkin taught forming MgO(001) barrier layers on amorphous CoFeB layers. *E.g.*, IPR2024-01447, POPR (Paper 8) at 47 (IPB: In Figure 11, the CoFeB "electrode beneath the tunnel barrier (540) is amorphous, not crystalline.").

IPB does not dispute that Parkin's inverted Figure 3A discloses MgO(001) grown over amorphous CoFeB. EX1062 at 17:7-10 (inverting Fig. 3A such that storage layer is under tunnel barrier), 17:40-44 (storage layer is CoFeB), 18:49-62 (amorphous storage layer formed adjacent to MgO(100) barrier is crystallized by annealing), Fig. 3A. Parkin's Figure 11 is one more example of growing MgO(001) over amorphous CoFeB. *Id.* at 22:29-33, Fig. 11. Layer 520 between the CoFeB and MgO tunnel barrier layer "is optional." FWD at 29 (citing EX1062 at 22:58-62, 22:56-67); *infra* § III.A.

IPB originally introduced EX2080, a prior Parkin application, to try to undermine Parkin's disclosure by asserting that his method of forming MgO required a crystalline underlayer for patterning crystalline MgO(001). *See, e.g.*, Sur-reply (Paper 31) at 16 (EX2080 describes "form[ing] MgO(001) on a crystalline(001) layer like interface layer 520."), 18 (EX2080 "refute[s] Petitioner's assertion that Parkin formed Fig. 11's MgO(001) on amorphous CoFeB."); *see also*

POR (Paper 18) at 8-11 (arguing no reasonable expectation of success in forming MgO(001) because it was grown on amorphous (not crystalline) CoFeB).

The Board correctly recognized that EX2080 unwinds IPB's premise. EX2080, like Parkin itself, expressly teaches alternative methods for creating MgO(001) "without using single crystalline substrates or high deposition temperatures" for "facilitating the manufacture of devices using standard deposition techniques *on* polycrystalline or *amorphous thermal films*," and then thermally annealing so "the crystallographic texture becomes substantially (100) oriented." FWD at 33-34 (emphasis original) (quoting EX2080 at 22:23-23:4, 47:13-17). It does not take an expert to figure out that EX2080 expressly taught forming MgO(001) barriers on "amorphous" films, undercutting the entire premise for which IPB tried to introduce EX2080, or that simply annealing will create MgO(001) even if it was not (001) as deposited. *Compare* EX2080 at 22:23-23:4, 47:13-17, *with* Sur-reply at 16-18.

III. PARKIN TEACHES MGO(001) OVER CoFeB INCLUDING FIGURE 11

A. There Is Nothing Ambiguous About Parkin

Again, IPB inaccurately asserts that the Board misinterpreted Parkin's express disclosure to find that layer 520 was optional. *Compare* Req. at 13-14, *with* 134-Req. at 8-10. As previously explained, this argument should be rejected because the Board correctly found that Parkin's statement "[a]n interface layer 520 of a

crystalline CoFe alloy may also be used” allowed that layer 520 “may [also] not be used.” FWD at 29 (quoting EX1062 at 22:56-67). To support its strained interpretation, IPB disregards simple grammar to assert that the verb “may also be used” modifies the object of a preposition (“CoFe”) rather than its subject (“interface layer 520”). Req. at 13. Because this argument lacks any authority and ignores Parkin’s disclosure and grammar, IPB demonstrates no error in the Board’s finding. *See id.*

B. The Board Did Not Treat Petitioner’s Expert Testimony Inconsistently

IPB also repeats its criticism of the Board’s treatment of Dr. Bokor’s testimony in finding that Parkin’s layer 520 was optional. *Compare* Req. at 13-14 (citing EX2085 at 52:3-13), *with* 134-Req. at 9-10. As WD previously pointed out, the Board’s finding that “Parkin teaches that layer 520 is optional” was based on different underlying evidence, namely Parkin’s disclosures. FWD at 29. The Board extensively discussed “Parkin’s teaching” and what “Parkin states” on this topic. FWD at 29-30 (quoting Parkin, EX1062 at 22:56-23:1, 22:56-67). IPB’s collateral attacks do not displace the evidence from Parkin supporting the Board’s finding. *See id.*

C. The Great Weight Of The Objective Evidence Supports The Board's Conclusion

IPB again asserts that objective evidence shows that the “discovery—that depositing MgO on amorphous CoFeB and annealing the device yielded MgO(001) and crystallized CoFeB—revolutionized and surprised the industry.” *Compare* Req. at 14, *with* 134-Req. at 11. As previously explained, IPB’s only evidence for that is inventor Yuasa’s self-serving statements. *See* FWD at 14, 37. Moreover, that assertion is simply not credible when Parkin disclosed the arrangement and its benefits before Yuasa. *Id.* at 14 (“[T]he prior art Parkin patent taught the formation of a MgO(001) layer grown on amorphous CoFeB.”). IPB again attempts to avoid this result by invoking the fact that Yuasa’s self-serving “surprising” assertion was published in a peer-reviewed journal and that numerous industry awards and publications credited the self-serving statement, *compare* Req. 14-15, *with* 134-Req. at 11-13, but the Board found that “contrary to Patent Owner’s arguments, we do not find that the citations to the APL paper represent independent corroboration of the nature of the result,” FWD at 37. IPB identifies no error in that finding.

IPB again claims that APL “teaches a *different method* of forming MgO(001),” *compare* Req. at 14 (emphasis original), *with* 134-Req. at 13, but even if that were true, as explained APL is not the ’167 Patent at issue in this IPR. The ’167 Patent fails to disclose any method of forming MgO(001) on CoFeB. *See*

EX1013 at 9:6-27 (describing the only relevant embodiment and failing to disclose how the MgO layer is formed). Moreover, it is not true because Parkin discloses the same sputtering method of forming MgO followed by annealing as does APL. *Compare* EX1062 at 17:21-39 (formation by reactive magnetron sputtering), 17:60-18:23 (describing subsequent annealing), *with* EX2006 at 1-2 (MgO formed using “rf sputtering method” and “annealed”).

Finally, IPB again incorrectly claims the Board “failed to” evaluate the “objective evidence” before reaching a conclusion on obviousness. *Compare* Req. at 15, *with* 134-Req. at 13-14. In fact, the Board determined that Parkin discloses MgO(001) over CoFeB. FWD at 37-38. As IPB itself conceded, a feature in the prior art cannot show nexus to alleged secondary indicia evidence. *See, e.g., In re Kao*, 639 F.3d 1057, 1068-69 (Fed. Cir. 2011), cited by POR at 57. The Board correctly applied the law as IPB articulated it. *See* POR at 57.

IV. CONCLUSION

Because IPB identifies no reason to disturb the Board’s Final Written Decision, WD respectfully requests denial of the Director Review Request.

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Western Digital v. Godo Kaisha IP Bridge
U.S. Patent No. 10,680,167 – IPR2024-01493

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CERTIFICATE OF SERVICE

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a true copy of the foregoing **AUTHORIZED RESPONSE TO DIRECTOR REVIEW REQUEST** is being served electronically on May 22, 2026 to the following counsel for Patent Owner to the following email addresses:

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