

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. IPR2024-01447

U.S. Patent No. 8,405,134

AUTHORIZED RESPONSE TO DIRECTOR REVIEW REQUEST

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IPB requests Director Review of a mixed Final Written Decision canceling two claims and finding two others not unpatentable. The '134 Patent at issue claims 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 making different factual findings in Ground 2 based on the different prior art advanced there. Because the Board's finding IPB complains of adopted IPB's own argument, it can hardly complain.

2. IPB objects 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'S DECISION WAS CONSISTENT

IPB argues that the Board's Ground 1 finding "is irreconcilable with its Ground 2 finding" about growing MgO(001) over CoFeB layers. Req. (Paper 54) at 4. Grounds 1-2 present different prior art, and IPB can hardly fault the Board for accepting IPB's arguments about Ground 2.

For Ground 1, the Board found that WD relied on “Parkin includ[ing] a method for accomplishing the formation of MgO(001) on amorphous substrates.” FWD (Paper 53) at 43-44 (citing Pet. at 33-34; Ex. 1062 (Parkin) at 18:49-51). The Board expressly relied on the Petition and Parkin citation in the Petition, which directly refutes IPB’s assertion that the “Board did not find that any *Petition-cited evidence* supports Petitioner’s assertion that a POSA would have reasonably expected MgO(001) to form on amorphous CoFeB.” Req. at 4.

At IPB’s urging, the Board treated Ground 2 differently. IPB asserted Ground 2 is insufficient because it did not rely on “Parkin, to teach limitation 1[d].” FWD at 47 (citing POR (Paper 19) at 19). Over WD’s objection, the Board agreed with IPB that “Petitioner does not rely on any other reference than Nagahama for teaching the MgO(001) layer as claimed.” FWD at 49-50. Based on IPB’s own argument that Grounds 1-2 relied on different art for limitation 1[d], these findings are hardly “irreconcilable.” See Req. at 4.

II. GROUND 1 WAS DECIDED CORRECTLY

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

IPB tried to sneak in unauthorized EX2080 with its Sur-reply. FWD at 54 & n.9. After this gambit was revealed as a self-own, with EX2080 becoming additional evidence showing IPB’s claims are unpatentable, it now asks the Director to save IPB from itself and find an APA violation based on EX2080. See Req. at 5-6.

IPB now complains that its APA rights were violated because it was not afforded an “opportunity to offer rebuttal evidence including expert testimony” to WD’s points about EX2080 at the oral hearing. Req. at 5-6 (emphasis omitted). 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 54 (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. 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. Accelaron*, 818 F.3d 1293, 1301 (Fed. Cir. 2016) (A party is entitled to “submit rebuttal evidence” under the APA.).

IPB’s argument that it was not afforded an opportunity to introduce expert testimony rings hollow. IPB admits it “introduced EX2080 to rebut” Parkin’s Figure 11 disclosure. Req. at 5. Yet the Board “invited additional briefing” on this point in its Institution Decision, FWD at 17-18; ID (Paper 10) at 28-29, and IPB chose not to address or introduce expert testimony about EX2080 in the ordinary course as part of its Patent Owner Response brief. IPB could have responded to WD’s points about EX2080 at the hearing. Trial Tr. (Paper 52) at 46:8-11 (asserting WD’s arguments about EX2080 at oral argument were new but declining to substantively respond to

WD's arguments). Asking for another opportunity at this juncture is too little too late.

B. The Board Did Not Misunderstand EX2080

At institution, IPB acknowledged that Parkin taught forming MgO(001) barrier layers on amorphous CoFeB layers. *E.g.*, 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. EX1062 at 22:29-33, Fig. 11. Layer 520 between the CoFeB and MgO tunnel barrier layer “is optional.” FWD at 22-23 (citing EX1062 at 22:58-60, 22:66-67); *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 32) at 14 (EX2080 describes “form[ing] MgO(001) on a crystalline(001) layer like interface layer 520.”), 16 (EX2080 is “dispositive of how Parkin says Fig.

11's MgO(001) layer is formed and refute[s] Petitioner's assertion that Parkin formed MgO(001) on amorphous CoFeB."); *see also* POR at 20-21 (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 24 (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 14-16.

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

A. There Is Nothing Ambiguous About Parkin

IPB's assertion that the Board misinterpreted Parkin's express disclosure to find that layer 520 was optional withstands no scrutiny. *See* Req. at 8-10. 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 22-23 (quoting EX1062 at 22:66-67). 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 8-9. 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 asserts that the Board incorrectly credited and rejected aspects of Dr. Bokor’s testimony, specifically: “[1] Crediting Bokor’s testimony that Parkin discloses forming MgO(001) on amorphous CoFeB despite [2] rejecting as *not* credible his testimony that a POSA even knew how [to] make such a device.” Req. at 10. The Board’s two determinations were based on different underlying evidence. IPB admits the first finding on page 23 of the Final Written Decision is based on what “Parkin discloses.” Req. at 10. The second finding at page 50 addresses Nagahama alone. FWD at 50 (quoting EX1105 ¶ 22). Because IPB advocated for different outcomes for Grounds 1-2 based on their different supporting evidence, again it cannot complain about the Board’s different findings. *See* POR at 21 (identifying the reliance on Parkin/Sunai for MgO(001) in Ground 1 and asserting

that “Petitioner made no such argument for Ground 2’s Nagahama-Sunai/Parkin combination”).

C. The Board’s Rationale Is Based On Parkin’s Disclosure

Finally, IPB faults the Board for construing Parkin’s disclosure based on the surrounding context. Req. at 10. IPB asserts that Parkin’s disclosure that the “entire electrode” may be “amorphous” as the Board found, FWD at 23 (citing EX1062 at 22:57-62), is “wrong” because it “describes materials for the amorphous part of the electrode then describes the crystalline interface layer 520 portion of the electrode.” Req. at 10. But IPB fails to discredit the Board’s interpretation, and IPB’s disagreement with the Board’s interpretation does not make it wrong. Moreover, the fact that Dr. Bokor did not think of this issue while being questioned at his deposition hardly makes his testimony inconsistent with the Board’s interpretation. *See* Req. at 10.

D. The Great Weight Of The Evidence Favors The Board’s Conclusion On Ground 1

IPB again baselessly asserts that the Board’s finding that WD failed to show that one of skill “knew how to grow MgO(001) on amorphous CoFeB” based on Nagahama (*see* FWD at 48-50) “should have informed its ‘reading’ of Parkin’s interface layer sentence.” Req. at 11. But this argument falls apart when the differing evidentiary bases for these two findings (Nagahama v. Parkin) are identified.

IPB next asserts that “[t]he discovery that depositing MgO on amorphous CoFeB and annealing the device yielded MgO(001) and crystallized CoFeB surprised the industry.” Req. at 11. But IPB’s only evidence for that is inventor Yuasa’s self-serving statements. *See* FWD at 28, 35. Moreover, that assertion is simply not credible when Parkin disclosed the arrangement and its benefits before Yuasa. *Id.* at 35 (“[T]he prior art Parkin patent taught the formation of a MgO(001) layer grown on the amorphous CoFeB.”). IPB 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, Req. at 11-12, 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 28. IPB identifies no error in that finding.

IPB argues that the industry was aware of Parkin’s work but gave credit to Yuasa, not Parkin, for the discovery of growing MgO(001) on CoFeB. Req. at 12. As the Board found, however, “there are no references in the cited publications to the asserted Parkin prior art patent.” FWD at 28, 36 n.8. Acknowledging this lack of recognition for Parkin’s patent, the Board found that nonetheless, “Parkin explicitly discloses the benefits that Patent Owner relies upon, and, therefore, we do not find the purported secondary considerations persuasive.” FWD at 36.

IPB counters that “APL teaches a *different method* of forming MgO(001),” Req. at 13, but APL is not the ’134 Patent at issue in this IPR. The ’134 Patent fails to disclose any method of forming MgO(001) on CoFeB. *See* EX1005 at 8:56-9:10 (describing the only relevant embodiment and failing to disclose how the MgO layer is formed). Moreover, 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, the Board did not “exalt[] its linguistic analysis over the objective evidence” as asserted by IPB. Req. at 13-14. The Board determined that Parkin discloses MgO(001) over CoFeB. FWD at 28. 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 60. The Board correctly applied the law as IPB articulated it. *See* POR at 60.

IV. PARKIN’S TEACHING WAS SUFFICIENT TO SHOW THAT ONE OF SKILL KNEW HOW TO MAKE THE CLAIMED DEVICE

IPB again asserts that WD failed to show any method of making MgO(001) on amorphous CoFeB despite Parkin’s plain teaching of how to do so. Req. at 14-15. As discussed *supra*, Parkin taught the same method of forming MgO(001) on amorphous CoFeB as Yuasa’s APL paper. *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”).
However, the ’134 Patent at issue in this IPR taught no method at all. *See* EX1005
at 8:56-9:10. Thus, it is IPB’s own patent that suffers from this deficiency, not the
Parkin prior art. Moreover, prior art patents are presumed to be enabled, thus placing
the burden on IPB to prove that Parkin is not enabled. *In re Antor Media*, 689 F.3d
1282, 1287-88 (Fed. Cir. 2012). IPB has never asserted that if Parkin’s method for
forming MgO(001) over amorphous CoFeB were used, MgO(001) would not result,
nor could it since it is the same method disclosed by inventor Yuasa in his APL paper.

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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 1, 2026 to the following counsel for Patent Owner to the following email addresses:

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