

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HTC CORPORATION and HTC AMERICA, INC.

Petitioners,

v.

UNILOC 2017 LLC,
Patent Owner

CASE IPR2018-01589

U.S. PATENT NO. 7,653,508

PETITIONER'S REPLY

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PETITIONER'S EXHIBIT LIST

August 27, 2019

Ex. 1001	U.S. Patent No. 7,653,508
Ex. 1002	Prosecution History of U.S. Patent No. 7,653,508
Ex. 1003	Declaration of Joe Paradiso, Ph.D, under 37 C.F.R. § 1.68
Ex. 1004	Curriculum Vitae of Joe Paradiso.
Ex. 1005	U.S. Patent No. 7,463,997 to Fabio Pasolini et al. ("Pasolini")
Ex. 1006	U.S. Patent No. 7,698,097 to Fabio Pasolini et al. ("Fabio").

I. INTRODUCTION

The Petition and supporting evidence establish that Pasolini alone or in combination with Fabio renders claims 1-4, 6-8, 11-16, 19, and 20 of the '508 patent obvious. *See* Paper 1 (“Pet.”). The Petition asserts substantially the same grounds of unpatentability as *Apple Inc. v. Uniloc 2017 LLC*, Case IPR2018-00387, Paper No. 2 (Dec. 21, 2017) (“the Apple IPR”), but includes an additional challenge to claim 20. The Board instituted an *inter partes* review of all challenged claims, but “ordered that the parties are limited to advancing arguments regarding claim 20 in this proceeding” because the other “claims will be addressed in the Apple IPR.” *HTC Corp. v. Uniloc 2017 LLC*, Case IPR2108-01589, Paper No. 9 at 10-11 (Feb. 27, 2019) (“Decision”). On June 17, 2019, the Board issued a Final Written Decision on the Apple IPR, finding all challenged claims (1-4, 6-8, 11-16, and 19) unpatentable. IPR2018-00387, Paper No. 21 (“Apple FWD”). For similar reasons as provided by the Board in the Apple FWD with respect to claims 3 and 13, claim 20 should likewise be found unpatentable.

Patent Owner’s arguments for claim 20 are unavailing because they are either verbatim reassertions of arguments made in the Apple IPR, which the Board has rejected, or variants of those arguments. By failing to dispute that claim 20 contains materially different limitations than do dependent claims 3 and 13, Patent Owner concedes that these claims should be treated the same. Therefore, claim 20 should

be found unpatentable for the same reasons the Board found claims 3 and 13 unpatentable in the Apple FWD. For these reasons and as explained in further detail below, Petitioner respectfully requests that the Board reject Patent Owner's rehashed and incorrect arguments now made for claim 20 and find claim 20 unpatentable.

II. ARGUMENT

A. Patent Owner's arguments for patentability of claim 20 based on arguments about the patentability of claims 15 and 19 must be denied because the Board has already finally rejected those very arguments.

The Board ordered "that the parties are limited to advancing arguments regarding claim 20." Paper No. 9 at 11. Nevertheless, Patent Owner elected to rehash the arguments it previously made for claims 15 and 19 (from which claim 20 depends) in Apple IPR. *Compare* Apple IPR, Paper 11 at 11-20, *with* Paper 11 at 7-15 ("PO Resp.").¹ The Board finally rejected these arguments and found that "Fabio teaches the limitations of independent claims 6 and 15" and dependent claim 19. Apple FWD at 27-39, 41. As a result, Parts A and B of Patent Owner's response

¹ Patent Owner makes the same arguments for claim 15: that Fabio does not "render[] obvious the 'cadence window' limitations of independent claim 15" or "the 'switching' step recited in independent claim 6 (and by extension claim 15)." PO Resp. at 7-14 (Part A). For claim 19, Patent Owner recites the same "cadence window" argument it relied on for claim 15. PO Resp. at 14-15 (Part B).

should be disregarded by the Board.² *See MaxLinear, Inc. v. CF CRESPE LLC*, 880 F.3d 1373, 1377 (Fed. Cir. 2018) (“[T]he collateral-estoppel effect of an administrative decision of unpatentability generally requires the invalidation of related claims that present identical issues of patentability.”).

B. Patent Owner has waived any argument that claim 20 is not substantially similar to the limitations of dependent claims 3 and 13 already found unpatentable by the Board.

In its institution decision, the Board found “that the differences between claim 20 and claim 3 do not seem substantial.” Decision at 8. Even with that finding, the Board gave the Patent Owner a “fair opportunity to respond to the contentions of Petitioner and Petitioner’s declarant, including the opportunity to depose Petitioner’s declarant or otherwise seek discovery from Petitioner.” *Id.* at 8-9. Despite being afforded the opportunity, Patent Owner failed to depose Petitioner’s declarant or otherwise seek discovery regarding claim 20. Rather, Patent Owner chose to concede the substantial similarity of claim 20 to claims 3 and 13, and it provided no additional arguments distinguishing these claims. That was a waiver of any such arguments. *See* Paper 10 at 5 (“Patent Owner is cautioned that any arguments for

² To the extent the Board reconsiders those arguments in this proceeding, Petitioner adopts and incorporates by reference the response to those arguments previously provided at Apple IPR, Paper 12 at 6-21 (Petitioner’s Reply, Parts IV & V).

patentability not raised in the response may be deemed waived.”); *see also RPX Corp. v. Iridescent Networks, Inc.*, Case IPR2018-00254, Paper 20 at 56 (Dec. 10, 2018) (“By not addressing Petitioner’s argument and Dr. Reddy’s original testimony in the Patent Owner’s Response, Patent Owner waived the right to present that argument.” (citing *In re Nuvasive, Inc.*, 842 F.3d 1376, 1380–81 (Fed. Cir. 2016) (holding Patent Owner waived argument addressed in Preliminary Response by not raising it in the Patent Owner Response))).

Because claim 20 is substantially the same as claims 3 and 13, the Board should find claim 20 unpatentable for the same reasons that the Board found claims 3 and 13 unpatentable. *See* Apple FWD at 42-45; *see also Ohio Willow Wood Co. v. Alps S., LLC*, 735 F.3d 1333, 1342 (Fed. Cir. 2013) (“If the differences between the unadjudicated patent claims and adjudicated patent claims do not materially alter the question of invalidity, collateral estoppel applies.”).

C. Claim 20 is unpatentable because its limitations are disclosed by Fabio.

The Board should find that Fabio teaches “adjust[ing] the cadence windows based on a measured cadence associated with the periodic human motion” as recited in dependent claim 20. As demonstrated in the Petition, Fabio teaches that “the validation interval TV for each step is ‘defined with respect to the instant recognition of the immediately preceding step $T_R(K-1)$.’” Ex.1006 at 4:37-39. In other words, the appropriate cadence window for each step (K) is defined as a window of time

based on the immediately preceding step (K-1). Pet. at 46; Ex.1003 at 61. As a result, the validation interval TV (i.e., the cadence window) for each new step is continuously adjusted based on the measured timing and duration of the immediately preceding step. Pet. at 64-65, 72-73; Ex.1003 at 82-84, 94-95. So Fabio discloses the additional limitation of claim 20 and should be found unpatentable.

D. Patent Owner's arguments to save claim 20 should be rejected because they rely on Patent Owner's already-rejected "cadence window" arguments.

Patent Owner relies on its rejected "cadence window" arguments to argue the patentability of claim 20. Because each of those arguments is premised on Patent Owner's finally-rejected contention that Fabio's validation interval is retrospective, the Board should reject each of the arguments here for similar reasons as established in the Apple FWD.

1. Patent Owner's "required cadence window" argument was already rejected by the Board in the Apple FWD.

Patent Owner argues that "Fabio does not disclose the required cadence window(s), because . . . Fabio defines its validation interval (TV) as necessarily starting *before the last step is counted.*" Response at 17 (emphasis original). The Board rejected the same argument for independent claim 15 in the Apple FWD. *See* Apple FWD at 31 ("We are not persuaded by the Patent Owner's arguments, which are premised on the contention that Fabio is retrospective in that its validation interval TV is used to validate a prior step (K-1), not to validate the current step

(K).”). Specifically, the Board found that Fabio discloses that “the current step has been recognized (‘instant of recognition of the current step’), and the current step (K) necessarily occurred more recently than the immediately preceding step (K-1).” *Id.* at 32. The Board found that “only recognized steps are subjected to the validation test.” *Id.* Accordingly, the Board in the Apple FWD correctly concluded that Fabio’s validation interval is not retrospective because “it is the currently recognized step (K) that is being validated, not the preceding step (K-1).”³ *Id.* at 31. The Board should similarly reject the same argument here with respect to claim 20, which depends from claim 15.

2. *Patent Owner’s other arguments should be rejected because they are based on Patent Owner’s incorrect and rejected “retrospective” argument.*

Relying on its rejected “retrospective” interpretation of Fabio, Patent Owner makes two additional arguments for claim 20. Each of them is meritless and should be rejected.

³ The Board recently denied Patent Owner’s Request for rehearing there because “Patent Owner largely repeats its retrospective argument,” which amounted to “little more than a request to reconsider arguments already made in Patent Owner’s Response.” IPR2018-00387, Paper No. 23 at 4 (August 16, 2019).

First, Patent Owner argues that Fabio does not disclose “adjusting a cadence window based on a measured cadence” because the validation interval “only looks at the *single* prior step (and uses the current step to validate the single prior step).” PO Resp. at 17-18 (emphasis added). That argument relies on the same rejected premise: that “the current step [is] used to validate the single prior step.” Patent Owner’s argument fails because it is “the currently recognized step (K) that is being validated, not the preceding step (K-1).” Apple FWD at 31; *see also supra* Part II.D.1.

In addition, the Board has already found (for claims 3 and 13) that Fabio’s disclosure of using a *single* prior step to determine a validation window sufficiently discloses “maintaining a cadence window and updating the cadence window as a user’s actual cadence changes.” Apple FWD at 43. In particular, the Board found that “Fabio defines validation interval TV as a function of the duration of the preceding step: beginning at time $T_R(K-1) + \frac{1}{2} (\Delta T_{K-1})$ and ending at time $T_R(K-1) + 2 (\Delta T_{K-1})$. Thus, as the cadence of a user’s steps changes, the validation interval TV will also change in corresponding fashion.” *Id.* In other words, Fabio teaches updating the cadence window as a user’s actual cadence changes by looking at the previous step and adjusting a validation interval TV “anew each time a step is recognized.” Apple FWD at 43. Here, the Board should similarly find that Fabio teaches “the cadence logic adjusts [or updates] the cadence window” in response to

a change in “a measured cadence associated with the periodic human motion” or the user’s actual cadence as required by claim 20.⁴ *See* Ex.1003 at 94-95.

Second, Patent Owner argues that “Fabio does not disclose any ‘adjust[ing] based on a measured cadence’ because steps in the system of Fabio are only validated if the previous step is *substantially homogenous* with the current step.” PO Resp. at 18 (emphasis original). That argument is similarly premised on Patent Owner’s already-rejected “retrospective” argument that Fabio’s validation interval uses the current step to validate the previous step. As discussed above, the Board has already rejected the “retrospective” argument because it is “the currently recognized step (K) that is being validated, not the preceding step (K-1).” Apple

⁴ Patent Owner claims that “Petitioner does not dispute that Fabio (EX1006)’s [validation interval] only looks at the single prior step (and uses the current step to validate the single prior step).” PO Resp. at 17. That is incorrect. Petitioner has consistently argued that it is the current step being validated, not that the current step is used to validate the prior step. *See* Pet. at 45-48; *see also* Apple IPR, Paper 12 at 6-16 (Petitioner’s Reply, Part IV); Apple FWD at 45 (“[W]e find that Fabio validates and counts the current step (K), not the preceding step (K-1). Accordingly, we are persuaded by Petitioner’s showing, which we adopt, that claims 3 and 13 would have been obvious in view of Pasolini and Fabio.”).

FWD at 31; *see also supra* Part II.D.1. Fabio adjusts the cadence window as the system's measurement of a user's actual cadence changes by looking at the previous step and adjusting the validation interval TV "anew each time a step is recognized." Apple FWD at 43.⁵

III. CONCLUSION

For the reasons stated above and in view of the evidence of record, Petitioner respectfully requests the Board find claim 20 unpatentable.

⁵ Patent Owner is incorrect in that Fabio validates steps "only" if the previous step is substantially homogenous with the current step. *See* PO Resp. at 18. Fabio discloses validating steps for homogenous or non-homogenous durations and is not limited to only validating "substantially homogenous" steps. Fabio's claim 5 recites "executing a first validation test of a current detected step." Ex.1006, claim 5. Claim 6, which depends from claim 5, then recites "wherein said executing said first validation test of said current detected step comprises evaluating whether a duration of said current detected step is **homogeneous** with respect to a duration of an immediately preceding detected step." Ex.1006, claim 6 (emphasis added). As a result, Fabio is not limited to only validating substantially homogenous steps.

Respectfully submitted,

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Petitioner hereby certifies, in accordance with and reliance on the word count provided by the word-processing system used to prepare this petition, that the number of words in this paper is 2,517. Pursuant to 37 C.F.R. §42.24(d), this word count excludes the table of contents, table of authorities, mandatory notices under §42.8, certificate of service, certificate of word count, appendix of exhibits, and any claim listing.

Dated: August 27, 2019

/Todd E. Landis/

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Lead Counsel for Petitioner
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CERTIFICATE OF SERVICE

The undersigned certifies that, in accordance with 37 C.F.R. § 42.6(e) and 37 C.F.R. § 42.105, Petitioner's Reply is being served via overnight mail on the 27th day of August 2019, the same day as the filing of the above-identified documents in the United States Patent and Trademark Office/Patent Trial and Appeal Board, upon the Patent Owner by serving the correspondence address of record with the USPTO as follows:

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