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EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte AMARNADH SAI ELURI
and SASIKANTH SIMHACHALA GOTTAPU

Appeal 2017-008960
Application 13/332,465
Technology Center 2100

Before ROBERT E. NAPPI, DAVID M. KOHUT, and LYNNE E. PETTIGREW, *Administrative Patent Judges*.

KOHUT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE¹

This is an appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1, 2, 4–11, 13–19, 21, and 22.² We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

¹ Our Decision makes reference to Appellants’ Reply Brief (“Reply Br.,” filed June 5, 2017) and Appeal Brief (“App. Br.,” filed January 23, 2017), and the Examiner’s Answer (“Ans.,” mailed May 16, 2017) and Final Office Action (“Final Act.,” mailed May 10, 2016).

² Claims 3, 12, and 20 were previously cancelled. Final Act. 2.

INVENTION

The invention is directed to providing access to a database data source during database maintenance. Spec. ¶ 4.

CLAIMED SUBJECT MATTER

Claims 1, 11, and 19 are the independent claims on appeal. Claim 1 is representative and is reproduced below.

1. A method of providing access to a database data source during database maintenance, comprising:
 - initiating maintenance of the database data source, wherein maintenance includes locking a first data structure and then unlocking the first data structure to allow for a first modification by a database client;
 - creating a second set of data by populating a second data structure with the first set of data from the first data structure while the first data structure is unlocked for the first modification;
 - updating the second set of data based on the first modification to the first set of data;
 - deactivating the first data structure by changing system metadata;
 - activating the second data structure by changing system metadata; and
 - updating the second set of data based on a second modification to the first set of data, wherein the second modification to the first set of data occurred after the first data structure was deactivated.

Independent claims 11 and 19 recite similar limitations as claim 1, and Appellants argue they are allowable for the same reasons as argued for claim 1. App. Br. 9, 15; Reply Br. 5.

REJECTION AT ISSUE

The Examiner rejected claims 1, 2, 4–11, 13–19, 21, and 22 under 35 U.S.C. § 103(a) as unpatentable over Wei et al. (U.S. 2007/0239751 A1, published Oct. 11, 2007) and Beier et al. (U.S. 2009/0055448 A1, published Feb. 26, 2009).

ISSUES

Appellants' arguments present us with the following issues:

1. Did the Examiner err in finding the combination of Wei and Beier teaches or suggests changing system metadata to activate and deactivate data structures? App. Br. 10–13; Reply Br. 2–3.
2. Did the Examiner err in finding that it would have been obvious to combine Wei and Beier? App. Br. 13–15; Reply Br. 3–4.

ANALYSIS

The Examiner finds that Wei teaches the limitations in claim 1 including deactivating a first data structure and activating a second data structure, but does not explicitly teach these steps are done by “changing system metadata.” Final Act 3–5. The Examiner relies on Beier to teach deactivating and activating data structures by changing system metadata. Final Act 5. Specifically, the Examiner finds that Beier teaches using tracked changes (data data-spaces store the location of the changes) to deactivate and activate data-spaces. Final Act. 5; *see* Beier ¶ 33. The Examiner finds Beier's data structures are activated or deactivated based on their location, which is stored in the tracked changes; as such, the Examiner finds Beier teaches changing system metadata. Ans. 22. The Examiner concludes combining Wei's method with Beier's metadata to deactivate one

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data space and activate another would have been obvious to one of ordinary skill in the art. Final Act. 5. The Examiner further concludes the motivation to combine is within the references, i.e., facilitating efficiently tracking, coordinating, and manipulating large amounts of data with database administration. Ans. 25.

Issue 1

Appellants argue the combination of Wei and Beier does not teach or suggest the claimed “system metadata” and features associated therewith. App. Br. 9–13. Specifically, Appellants argue Beier’s tracked changes would not be the same as the claimed system metadata because the tracked changes controls data, which is different from the metadata, where the claimed system metadata is used to control data sources. App. Br. 10–11. Appellants further argue that even if the tracked changes were similar to the system metadata, Beier only deactivates an original data-space and activates a replacement data-space once the tracked changes have been applied. App. Br. 12. Further, Appellants argue Beier teaches the data data-space has information about the memory addresses of the changed data elements in the original data-space and shadow data-space, but that information about the data elements is different from selection of an entire data-space. Reply Br. 2–3; *see* Ans. 18, 21; Beier ¶ 48.

We are not persuaded because Appellants mischaracterize the teachings in Beier, as relied upon by the Examiner. The Examiner finds, and we agree, Beier’s tracked changes is not data, but is the location of the data. *See* Ans. 18, 21; Beier ¶¶ 14, 23, 29, 37, 38, 48. Beier teaches tracked changes includes index data-spaces and data data-spaces, where the data data-spaces store the location of a changed data element, but not the actual change to the data. *See* Beier ¶ 14, 29. Beier teaches the pending changes

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are applied to the data in the shadow data-space and then, once all of the pending changes as marked by the tracked changes have been made, the original data-space is deactivated and the reorganized shadow data-space is activated. *See* Beier ¶ 33. That is, as the pending changes to the data are applied, the locations of the data elements with updates are changed (decreased) and once all pending changes have been applied, the reorganization is complete and no locations are listed as having changes (i.e., the system metadata is changed), and the data structure is changed (i.e., the original data space is deactivated and the reorganized shadow data space is activated). Thus, we agree with the Examiner's finding that the selection, activated or deactivated, of the original and shadow data-spaces in Beier is based on changes to the system metadata. *See* Ans. 22; Beier ¶ 33, 43, 59. Accordingly, Appellants' arguments as to the combination lacking system metadata and associated claimed features are unpersuasive.

Issue 2

Appellants argue the Examiner impermissibly supports its conclusion of obviousness with circular logic, conclusory statements, and hindsight. App. Br. 13–15. Appellants further argue that the Examiner does not identify any motivation, advantage, or improvement that would result from incorporating Beier's teachings into the system of Wei. Reply Br. 4. Additionally, Appellants argue the Examiner does not explain why there is a reasonable expectation of success in combining Wei and Beier. Reply Br. 4.

Appellants' arguments are not persuasive. The Examiner concludes combining Beier's teaching to use metadata to deactivate one data space and activate another with Wei would have been obvious to one of ordinary skill in the art (Final Act. 5) because the motivation to combine is within the references (Ans. 25). Specifically, the Examiner concludes Beier provides a

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motivation, i.e., facilitating efficient tracking, coordinating, and manipulating large amounts of data with database administration. Ans. 25. The Examiner, therefore, provided some reasoning with rational underpinning to support a finding of obviousness and Appellants have not addressed the Examiner's specific finding. As such, Appellants' hindsight argument is unpersuasive because Appellants failed to explain why the Examiner's articulated reasoning with rational underpinning does not support the conclusion of obviousness.

To the extent Appellants argue there was no reasonable expectation of success in combining Wei and Beier (Reply Br. 4), the Examiner's proposed modification to Wei does not appear to be uniquely challenging, and Appellants have not sufficiently explained or provided evidence as to why a person of ordinary skill in the art would not have had an expectation of success in making the modifications. *See In re O'Farrell*, 853 F.2d 894, 903 (Fed. Cir. 1988) (all that is required is a reasonable expectation of success, not absolute predictability of success). We note both Wei and Beier give specific guidance for activating and deactivating data structures while synchronizing the structures during database maintenance. *See* Wei ¶¶ 15, 47, 49; Beier ¶¶ 33, 50, 61, Fig. 2. Furthermore, the Examiner's proposed combination merely substitutes activating and deactivating elements of Beier into Wei, the elements performing the same functions they have been known to perform. Because the evidence supports a likelihood of success in combining references to meet the limitations of the claimed invention, i.e., that the combination of Wei and Beier works for its intended purpose, we agree that there was a reasonable expectation of success.

Accordingly, we are not apprised of error with respect to the Examiner's conclusion that the combination of Wei and Beier teaches

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deactivating the first data structure by changing system metadata and activating the second data structure by changing system metadata as required in independent claims 1, 11, and 19. Claims 2, 4–10, 21, and 22 depend from claim 1 or another dependent base claim, and claims 13–18 depend from claim 11 or another dependent base claim. App. Br. 17–22, Claims Appendix. Appellants do not present separate arguments for the dependent claims. *See* App. Br. 15; Reply Br. 5. Thus, we sustain the Examiner’s rejection of claims 1, 2, 4–11, 13–19, 21, and 22.

DECISION

The Examiner’s rejections of claims 1, 2, 4–11, 13–19, 21, and 22 are affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED