

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SAN YU PHOENIX, KALPANA SHYAM,
JAMES ZU-CHIA TENG, JULIE ANN WATTS
and JAY A. YOTHERS

Appeal No. 2003-0032
Application No. 09/193,966¹

ON BRIEF

Before THOMAS, KRASS and SAADAT, Administrative Patent Judges.
SAADAT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the Examiner's final rejection of claims 1-4, 6-25, 27-46 and 48-63. The Examiner has objected to claims 5, 26 and 47 and has indicated their allowability if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

We reverse.

¹ Application for patent filed November 18, 1998.

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BACKGROUND

Appellants' invention is directed to a method and system for performing updates in a computer-implemented database management system. According to Appellants, the conventional approach has been disallowing the update of values in partitioning key columns or allowing the update if the row partition remains unchanged (specification page 3 & 4). As depicted in Figures 2B and 2C, upon detecting that an update to a row will cause a change to the row location, Appellants' method takes control from the partition from which the row is being moved, the partition to which the row is being moved and all the partitions in between (Specification, pages 9 & 10).

Representative independent claim 1 is reproduced below:

1. A method of performing updates in a computer-implemented database management system, comprising:

(a) detecting that an update to a record will cause the record to change locations in a database from an original location to an updated location and

(b) selectively preventing activity in the database between the original location and update location until the updated record has changed locations in the database from the original location to the updated location.

The Examiner relies on the following references in rejecting the claims:

Lomet et al. (Lomet)	5,485,607	Jan. 16, 1996
Kodavalla et al. (Kodavalla)	5,717,919	Feb. 10, 1998

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Vicik et al. (Vicik)	5,835,904	Nov. 10, 1998
Friske et al. (Friske)	6,070,170	May 30, 2000 (filed Oct. 1, 1997)
Graefe et al. (Graefe)	6,122,644	Sep. 19, 2000 (filed Jul. 1, 1998)

Mohan, C. (Mohan), "ARIES/LHS: A Concurrency Control and Recovery Method Using Write-Ahead Logging for Linear Hashing with Separators," Proceedings of the 9th International Conference on Data Engineering, (1993), pp. 243-252.

Claims 1-4, 22-25 and 43-46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mohan in view of Lomet.

Claims 6-10, 27-31 and 48-52 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mohan and Lomet and further in view of Friske.

Claims 11, 32 and 53 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mohan and Lomet and further in view of Graefe and Kodavilla.

Claims 12, 13, 33, 34, 54 and 55 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mohan and Lomet and further in view of Vicik.

Claims 14, 15, 17-19, 35, 36, 38-40, 56, 57 and 59-61 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mohan and Lomet and further in view of Graefe.

Claims 16, 37 and 58 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mohan and Lomet and further in view of Graefe and Friske.

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Claims 20, 21, 41, 42, 62 and 63 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mohan and Lomet and further in view of Graefe and Vicik.

We make reference to the Office action (Paper No. 14, mailed November 27, 2001) and the answer (Paper No. 16, mailed July 1, 2002) for the Examiner's reasoning, and to the appeal brief (Paper No. 13, filed October 9, 2001), the supplemental brief (Paper No. 15, filed March 8, 2002)² and the reply brief (Paper No. 17, filed September 3, 2002) for Appellants' arguments thereagainst.

OPINION

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of presenting a prima facie case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). The conclusion that the claimed subject matter is obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention. See In re

² The supplemental brief was filed in response to the Examiner's reopening of the prosecution in a new Office action, mailed November 27, 2001. The supplemental brief incorporates by reference the relevant parts of the previously filed brief.

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Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Furthermore, the Examiner must produce a factual basis supported by teaching in a prior art reference or shown to be common knowledge of unquestionable demonstration, consistent with the holding in Graham v. John Deere Co., 383 U.S. 1 (1966). Such evidence is required in order to establish a prima facie case. In re Piasecki, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984); In re Cofer, 354 F.2d 664, 668, 148 USPQ 268, 271-72 (CCPA 1966).

With respect to the rejection of claims 1-4, 22-25 and 43-46 over Mohan and Lomet, Appellants contend the Examiner's interpretation of the claimed range of database for which activity is prevented as any selected portion of the database between the original and the update location (supplemental brief, page 7 and reply brief, page 5). Appellants further argue that Mohan's acquiring a lock on the target record is not equivalent to the claimed selectively preventing activity on a range of records in the database (brief, page 6, supplemental brief, page 6 and reply brief, page 6). Additionally, Appellants assert that the prior art locking of a range of records in the context of an update does not teach or suggest preventing activity between the

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original and updated locations until the location is updated
(reply brief, pages 6).

In response to Appellants' arguments, the Examiner asserts that the claimed "selectively preventing activity in the database between the original location and update location" should be broadly interpreted as it does not require locking a range of records (answer, page 13). We do not agree with the Examiner's limited interpretation of the claimed feature such that it reads on a lock on the target record alone. Not only does the recitation of preventing the activity in the database between the original and update locations simply refer to a portion of the database starting from the original location and extending to the update location, Appellants' disclosure also clearly identifies the bounds and the extent of such range. Starting on page 9, line 19 of the specification, referring to Figures 2B and 2C, the range of the claimed portion of the database is disclosed as:

For example, in the preferred embodiment, control is taken of the partition 108 from which the row is being moved, the partition 108 to which the row is being moved, and all partitions 108 in between.
[Emphasis added.]

Therefore, the claimed preventing the activity in the database is different from Lomet's locking a portion of the data that requires updating. Therefore, characterizing the record

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locking of Loment as the claimed step of preventing activity in a portion of the database from the original location and extending to the updated location is simply incorrect.

We also remain unconvinced by the Examiner's argument that Mohan and Lomet may be properly combined since both references teach methods of ensuring concurrency by simply locking the several affected records (answer, page 15). Notwithstanding the recognition of the problem of accessing the database when an update is required, the Examiner has not pointed to any part of the references that would have contained such suggestion. Thus, we agree with Appellants that such combination is made only in terms of the problems and solutions disclosed by Appellants (supplemental brief, page 7). Whereas, our reviewing court requires that particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected and modified the prior art teachings for combination in the manner claimed. In re Kotzab, 217 F.3d 1365, 1369-70, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000).

In fact, although the part of page 246 of Mohan (near the top of the right-hand column), as noted by the examiner (answer, page 12), mentions locking of the records, the records remain unlocked when they are only relocated:

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Transactions do not lock those records which they only relocate from one page to another during operations like DR, FC, FE, IR and UR.

Thus, the evidence provided by the Examiner fails to motivate the skilled artisan to combine the prior art and lock a range of data between the original location and the updated location when the update changes the location of the record and at best, may even teach away from such combination.

In view of our analysis above, we find that the Examiner has failed to set forth a prima facie case of obviousness with respect to claims 1, as well as claims 22, and 43, which recite similar features. Accordingly, we do not sustain the 35 U.S.C. § 103 rejection of claims 1-4, 22-25 and 43-46 over Mohan and Lomet.

With respect to the rejections of the remaining claims, the Examiner further relies on Friske for pausing step, on Graefe for locations on different pages, on Kodavilla for partitioning and on Vicik for degrees of concurrency (Office action, pages 4-13). However, neither of these references overcomes the above discussed deficiencies of the combination of Mohan and Lomet. Therefore, the 35 U.S.C. § 103 rejection of claims 6-21, 27-42 and 48-63 cannot be sustained.

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CONCLUSION

In view of the foregoing, the decision of the Examiner rejecting claims 1-4, 6-25, 27-46 and 48-63 under 35 U.S.C. § 103 is reversed.

REVERSED

JAMES D. THOMAS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
ERROL A. KRASS)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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