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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RAVI MURTHY, SIVASANKARAN CHANDRASEKAR,
ERIC SEDLAR, and NIPUN AGARWAL

Appeal 2010-008556
Application 11/286,873
Technology Center 2100

Before MICHAEL R. ZECHER, BRIAN J. MCNAMARA, and
RAMA G. ELLURU, *Administrative Patent Judges*.

ZECHER, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-9, 11-20, and 22. Supp. App. Br. 2. Claims 10 and 21 were cancelled. *Id.* We have jurisdiction under 35 U.S.C. § 6(b).

We reverse and enter a new ground of rejection.

Appellants' Invention

Appellants invented a method and machine-readable storage medium for efficiently maintaining Extensible Markup Language ("XML") index structures in a database system. Abstract. Instead of immediately synchronizing the XML index structures after every change that is submitted to the database system, the claimed invention stores the changes in a PENDING table. *Id.* The claimed invention periodically synchronizes the XML index structures using the information stored in the PENDING table. *Id.* However, between synchronizations, the XML index structures may be in either stale or current mode. *Id.* If the XML index structures are in stale mode, a request to access the indexed information will use the XML index structures to find the desired indexed information without checking the PENDING table. *Id.* If the XML index structures are in current mode, a request to access the indexed information will search the XML index structures and check the PENDING table to determine: (1) whether the indexed information has been updated or deleted; and (2) whether information relevant to the request has been inserted or updated. *Id.*

Illustrative Claim

Claims 1, 12-20, and 22 are independent claims. Independent claim 1 is illustrative:

1. A method comprising:

when changes are made to indexed information, storing one or more indications that an index has to be changed, wherein the step of storing one or more indications is performed in a first operation that is synchronous relative to the changes, wherein the index is not changed during said first operation;

in response to detecting that certain conditions have been satisfied, performing a second operation that updates the index and removes the one or more indications that the index has to be changed, wherein the second operation is performed asynchronously relative to the changes made to the indexed information; and

after the first operation has been completed and before the second operation is performed:

receiving a request to access the indexed information;

and

in response to receiving the request:

using the index to access the indexed information even though the changes are not yet reflected in the index;

reading data to determine whether the index is maintained in asynchronous stale mode or in asynchronous current mode;

if the index is maintained in asynchronous stale mode, then using the index to return the indexed information; and

if the index is maintained in asynchronous current mode, then:

determining, from the one or more indications, whether any portion of the accessed information has been deleted or updated, and if a portion of the accessed information has been deleted or updated, not responding to the request with said portion of the accessed information; and

examining the one or more indications for inserted and updated information that relates to the request.

Prior Art Relied Upon

King	US 5,745,904	Apr. 28, 1998
Zbikowski	US 5,878,410	Mar. 2, 1999
Chang	US 6,584,459 B1	June 24, 2003

Rejections on Appeal

Claims 1, 2, 4, 5, 8, 9, 11-13, 15, 19, 20, and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Zbikowski and King. Ans. 3-7.

Claims 3, 6, 7, 14, 17, and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Zbikowski, King, and Chang. *Id.* at 7-9.

Examiner's Findings and Conclusions

The Examiner finds that Zbikowski discloses running a query against an index in the usual manner. Ans. 4 and 10 (citing to col. 5, ll. 37-51). The Examiner finds that from a user's perspective, the information requested by Zbikowski's query is stale because the user is not updating the data. *Id.* at 10. Therefore, the Examiner finds that Zbikowski's disclosure of running the query in the usual manner constitutes using the index to return the indexed information while "the index is maintained in asynchronous stale mode," as required by independent claim 1. *Id.*

Appellants' Contentions

Appellants contend that Zbikowski—namely at column 5, lines 37-51—fails to teach that "if the index is maintained in asynchronous stale mode, then using the index to return the indexed information[,]" as recited in independent claim 1. App. Br. 7-8. In particular, Appellants argue that it is unclear what portion of Zbikowski's cited disclosure teaches the claimed "asynchronous stale mode." *Id.* Moreover, Appellants assert that Zbikowski updates a view index before processing a query and, therefore, directly contradicts independent claim 1. *Id.* (citing to col. 9, ll. 48-59).

In response to the Answer, Appellants disagree with the Examiner's position that the information returned from Zbikowski's view index is stale merely because the user is not updating the data. Reply Br. 2. Appellants reiterate that because Zbikowski explicitly teaches that the view index is always current before processing a query, Zbikowski's view index is not used until ever update has been applied to the view index. Reply Br. 2-3 (citing to col. 9, ll. 58-59). Appellants assert that such an approach is in direct conflict with independent claim 1, which requires using an index before it is updated. *Id.* at 3.

II. ISSUE

The dispositive issue before us is whether the Examiner erred in determining that the combination of Zbikowski and King teaches "if the index is maintained in asynchronous stale mode, then using the index to return the indexed information[.]" as recited in independent claim 1?

III. ANALYSIS

35 U.S.C. § 103(a)—Combination of Zbikowski and King

Claim 1

Based on the record before us, we discern error in the Examiner's obviousness rejection of independent claim 1, which recites, *inter alia*, "if the index is maintained in asynchronous stale mode, then using the index to return the indexed information[.]"

We begin our analysis by noting that since this dispute turns on the Examiner's factual findings with respect to Zbikowski, we confine our discussion to that reference. The Examiner takes the position that from a

user's perspective, Zbikowski discloses that a query run against the view index returns information that has not been updated, *i.e.*, the claimed "asynchronous stale" mode, because the user is not updating the data. *See* Ans. 10 (citing to col. 5, ll. 37-51). However, there is no indication in Zbikowski that the view index is maintained in a mode that would cause the index to return query results that have not been updated. Instead, as Appellants point out, Zbikowski ensures that the view index is current by updating the view index prior to processing a query. App. Br. 8; Reply Br. 2-3 (citing to col. 9, ll. 48-59). Therefore, contrary to the Examiner's position, Zbikowski teaches that the query run against the view index returns current or updated information—not stale information. As such, we agree with Appellants that Zbikowski fails to teach the disputed claim limitation.

Because the Examiner's position with respect to Zbikowski does not properly account for the disputed claim limitation, we need not reach the merits of Appellants' other arguments. It follows that the Examiner erred in determining that the combination of Zbikowski and King renders independent claim 1 unpatentable.

Claims 2, 4, 5, 8, 9, 11-13, 15, 19, 20, and 22

Because claims 2, 4, 5, 8, 9, 11-13, 19, 20, and 22 incorporate by reference the same disputed claim limitation as independent claim 1, the Examiner erred in rejecting these claims for the same reasons set forth in our discussion of independent claim 1.

35 U.S.C. § 103(a)—Combination of Zbikowski, King, and Chang

Claims 3, 6, 7, 14, 17, and 18

Claims 3, 6, 7, 14, 17, and 18 incorporate by reference the same disputed claim limitation as independent claim 1. As applied by the

Examiner, King and Chang do not remedy the above-noted deficiency in Zbikowski. As a result, the Examiner has erred in concluding that the combination of Zbikowski, King, and Chang renders claims 3, 6, 7, 14, 17, and 18 unpatentable for the same reason set forth in our discussion of independent claim 1.

IV. NEW GROUND OF REJECTION

We enter the following new ground of rejection pursuant to our authority under 37 C.F.R. § 41.50(b).

35 U.S.C. § 101 Rejection

Claims 12-20 and 22

Claims 12-20 and 22 recite, in pertinent part, “[a] machine-readable storage medium storing instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of”

According to Appellants’ Specification, a machine-readable medium may include transmission media, such as acoustic or light waves generated during radio-wave and infra-red data communications. ¶ [0061].

Consequently, we conclude that the claimed “machine-readable storage medium” can be broadly, but reasonably construed to encompass no more than a transitory, propagating signal. “A transitory, propagating signal . . . is not a ‘process, machine, manufacture, or composition of matter’ [under 35 U.S.C. § 101]” and, therefore, does not constitute statutory subject matter under § 101. *In re Nuijten*, 500 F.3d 1346, 1357 (Fed. Cir. 2007).

Moreover, because claims 12-20 and 22 are not limited to a non-transitory,

tangible medium within one of the four statutory classes of § 101,¹ we conclude that these claims are directed to non-statutory subject matter.

V. CONCLUSIONS

For the foregoing reasons, the Examiner has erred in rejecting: (1) claims 1, 2, 4, 5, 8, 9, 11-13, 15, 19, 20, and 22 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Zbikowski and King; and (2) claims 3, 6, 7, 14, 17, and 18 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Zbikowski, King, and Chang. However, we have entered a new ground of rejection against claims 12-20 and 22 under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

VI. DECISION

We reverse the Examiner's decision to reject claims 1-9, 11-20, and 22 under 35 U.S.C. § 103(a). However, we newly reject claims 12-20 and 22 under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

37 C.F.R. § 41.50(b) provides that, “[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review.”

¹ Claims that are so broad that they read on nonstatutory as well as statutory subject matter are unpatentable. *Cf. In re Lintner*, 458 F.2d 1013, 1015 (CCPA 1972) (citation omitted) (“Claims which are broad enough to read on obvious subject matter are unpatentable even though they also read on nonobvious subject matter.”). “A claim drawn to such a computer readable medium that covers both transitory and non-transitory embodiments may be amended to narrow the claim to cover only statutory embodiments to avoid a rejection under 35 U.S.C. § 101 by adding the limitation ‘non-transitory’ to the claim.” David J. Kappos, Subject Matter Eligibility of Computer Readable Media, 1351 OFF. GAZ. PAT. OFFICE 212 (Feb. 23, 2010).

37 C.F.R. § 41.50(b) also provides that the Appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new grounds of rejection to avoid termination of proceedings (37 C.F.R. § 1.197 (b)) as to the rejected claims:

- (1) *Reopen prosecution*. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .
- (2) *Request rehearing*. Request that the proceeding be reheard under 37 C.F.R. § 41.52 by the Board upon the same record. . . .

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).

REVERSED
37 C.F.R. § 41.50(b)