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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte VLADIMIR MORDVINOV, SOUFIANE AZIZI, and
NIGEL ANTHONY CAMPBELL

Appeal 2013-006752
Application 12/332,871
Technology Center 2100

Before ROBERT E. NAPPI, TERRENCE W. McMILLIN, and
JOSEPH P. LENTIVECH, *Administrative Patent Judges*.

LENTIVECH, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants¹ seek our review under 35 U.S.C. § 134(a) of the Examiner's final rejection of claims 1–4, 7–14, 17, 18, and 20–23. Claims 5, 6, 15, and 16 are withdrawn from consideration. Claim 19 is canceled. We have jurisdiction over the pending claims under 35 U.S.C. § 6(b).

We AFFIRM.

¹ According to Appellants, the real party in interest is International Business Machines Corporation. App. Br. 2.

STATEMENT OF THE CASE

Appellants' Invention

Appellants' invention generally relates "a method of and apparatus for processing query representation, and particularly to a method of and apparatus for extraction and analysis of macro operations within query language statement." Spec. ¶ 1. Claim 1, which is illustrative, reads as follows:

1. A method of processing a query representation comprising:
 - analyzing a statement of a query to determine a query structure of elements forming the statement;
 - formatting text of the statement to reflect the query structure;
 - replacing the formatted text with an equivalent tree of logical blocks representing the statement in a higher level;
 - shortening the representation of one or more of the logical blocks; and
 - generating a data flow tree based on the logical blocks for presentation to the user.

Rejections

Claim 22 stands rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Final Act. 4–5.

Claims 1–4, 7, 8, 11–14, 18, 22, and 23 stand rejected under 35 U.S.C. § 103(a) as unpatentable over MacLeod et al. (US 6,744,449 B2; June 1, 2004) and Lohman et al. (US 2005/0097078 A1; May 5, 2005). Final Act. 6–24.

Claims 9, 10, 20, and 21 stand rejected under 35 U.S.C. § 103(a) as unpatentable over MacLeod, Lohman, and Payton et al. (US 2005/0015364 A1; Jan. 20, 2005). Final Act. 25–31.

Claim 17 stands rejected under 35 U.S.C. § 103(a) as unpatentable over MacLeod, Lohman, and Netz et al. (US 2006/0020619 A1; Jan. 26, 2006). Final Act. 31–36.

Issues on Appeal

Did the Examiner err in finding that claim 22 is directed to nonstatutory subject matter under 35 U.S.C. § 101?

Does the combination of MacLeod and Lohman teach or suggest

- formatting text of the statement to reflect the query structure;
- replacing the formatted text with an equivalent tree of logical blocks representing the statement in a higher level;
- shortening the representation of one or more of the logical blocks; and
- generating a data flow tree based on the logical blocks for presentation to the user,

as recited in claim 1?

Does the combination of MacLeod and Lohman teach or suggest “inserting spaces and line breaks or tags identifying each block beginning and ending in a language string of the statement based on formatting rules to break the statement into a tree of structural blocks,” as recited in claim 7?

Does the combination of MacLeod and Lohman teach or suggest “wherein the shortening the representation shortens the representation based on abbreviation rules,” as recited in claim 8?

Does the combination of MacLeod, Lohman, and Payton teach or suggest “managing declaration of visualization rules including formatting rules based on which the text of the statement is formatted and abbreviation rules based on which the representation is shortened,” as recited in claim 9?

ANALYSIS

Rejection under 35 U.S.C. § 101²

The Examiner rejected claim 22 under 35 U.S.C. § 101 because “computer readable storage medium” as recited in those claims encompasses both transitory and non-transitory media. Ans. 2–3. Appellants argue claim 22 is directed to statutory subject matter. App. Br. 4–5; Reply Br. 2–3.

We agree with the Examiner’s findings because when the specification is silent as to the meaning of “computer readable storage medium,” that term is properly construed to include a signal *per se*. *See Ex parte Mewherter*, 107 USPQ2d 1857 (PTAB 2013) (precedential-in-part). Here, Appellants’ Specification does not define “computer readable storage medium.” Because the broadest reasonable interpretation of “a computer-readable storage medium” includes a signal *per se*, we sustain the Examiner’s § 101 rejection of claim 22.

² Should there be further prosecution of this Application (including any review for allowance), the Examiner may wish to review claims 1–4, 7–14, 17, 18, 20, 21, and 23 for compliance under 35 U.S.C. § 101 in light of the recently issued preliminary examination instructions on patent eligible subject matter. *See* “Preliminary Examination Instructions in view of the Supreme Court Decision in *Alice Corporation Pty. Ltd. v. CLS Bank International, et al.*,” Memorandum to the Examining Corps, June 25, 2014.

Rejections under 35 U.S.C. § 103

We have reviewed the Examiner's rejections in light of Appellants' arguments that the Examiner has erred. We disagree with Appellants' conclusions. We adopt as our own the findings and reasons set forth by the Examiner in the Final Office Action from which this appeal is taken and the reasons set forth in the Examiner's Answer in response to Appellants' Appeal Brief. *See* Final Act. 4–36; Ans. 2–18. We highlight and address specific findings and arguments for emphasis as follows.

CLAIM 1

Appellants do not substantively argue claims 1–4, 11–14, 22, and 23 separately, but instead rely on the same arguments for all claims. *See* App. Br. 6–12; Reply Br. 3–5. In accordance with 37 C.F.R. § 41.37(c)(1)(iv), we select independent claim 1 as the representative claim. Remaining claims 2–4, 11–14, 22, and 23 stand or fall together with claim 1.

Appellants contend MacLeod does not teach or suggest “formatting text of the statement to reflect the query structure,” as recited in claim 1, but, instead, teaches translating the statement into another non-text structure including icons. App. Br. 6–8; Reply Br. 3–4.

We do not find Appellants' contention persuasive. As found by the Examiner (Ans. 4), Figure 6 of MacLeod depicts “Query text: select e.LastName, p.ProductName, sum(d.Quantity * d.UnitPrice) from Employees e, Orders o, Order_Details.” Item 220 of Figure 6 depicts the text formatted to reflect the query structure by the insertion of page breaks and spaces. As such, MacLeod teaches or suggests the disputed limitation.

Appellants contend MacLeod does not teach or suggest “replacing the formatted text with an equivalent tree of logical blocks representing the statement in a higher level,” as recited in claim 1, because MacLeod does not contemplate representing logical blocks of the statement at different levels. App. Br. 8–9; Reply Br. 4. Appellants further contend MacLeod does not teach or suggest “generating a data flow tree based on the logical blocks for presentation to the user,” as also recited in claim 1, because “MacLeod makes no mention whatsoever of a data flow tree of macro operation nodes.” App. Br. 9.

We do not find Appellants’ contention persuasive. Initially, we note claim 1 does not recite “a data flow tree of macro operation nodes.” Instead, claim 1 merely recites “a data flow tree.” As such, Appellants’ contentions regarding MacLeod not teaching a data flow tree of macro operation nodes are not commensurate with the scope of the claim and, therefore, unpersuasive of error. Regarding Appellants’ remaining contentions, as found by the Examiner (Ans. 5), MacLeod teaches “[e]ach query submitted is displayed and represented as a tree, with each operation in the execution plan for the query represented by a corresponding tree node.” MacLeod, Abstract. MacLeod further teaches “[t]ree nodes are displayed to convey execution ordering intuitively so that, for example, a parent node will typically correspond to an operation calling another operation (i.e., represented as the child).” MacLeod 2:8–11. Figure 6 of MacLeod depicts the tree which has been generated by replacing the formatted text, represented by item 220, with individual nodes (e.g., logical blocks). As such, MacLeod teaches or suggests the disputed limitations.

Appellants contend Lohman does not teach or suggest “shortening the representation of one or more of the logical blocks,” as recited in claim 1. App. Br. 9–12. According to Appellants, Lohman teaches “checkpointing in query processing and determining a join method to use in query processing” and the Examiner fails to explain “how checkpointing and join methods relate to shortening the representation of one or more logical blocks.” App. Br. 12; Reply Br. 5.

We do not find Appellants’ contention persuasive. The Examiner finds, and we agree,

In a second example described in paragraph [0137] of Lohman, the query execution plans (data flow trees) representing Query 4 before and after re-optimization are illustrated in Fig. 14. The query execution plan representing the Query 4 before re-optimization (data flow tree comprising tree nodes, i.e. the representation of one or more logical blocks) is re-optimized using an HSJN join method, where the HSJN method joins/merges nodes of the tree, which shortens the number of nodes of the tree to produce the query execution plan representing the Query 4 after re-optimization (shortening the representation of one or more of the logical blocks, i.e. data flow tree comprising tree nodes, based on abbreviation rules, i.e. hash-join (HSJN)).

Ans. 9.

Appellants have not persuasively shown that Lohman’s joining or merging of nodes, resulting in a shortening of the tree, fails to teach or suggest shortening the representation of one or more logical blocks. As such, we are unpersuaded the Examiner erred in finding Lohman teaches or suggests the disputed limitation.

Accordingly, we are not persuaded the Examiner erred in rejecting claim 1 and claims 2–4, 11–14, 22, and 23, not argued separately with particularity.

CLAIMS 7 AND 18

Appellants contend MacLeod does not teach or suggest “inserting spaces and line breaks or tags identifying each block beginning and ending in a language string of the statement based on formatting rules to break the statement into a tree of structural blocks,” as recited in claim 7, because “MacLeod make[s] no mention of inserting spaces and line breaks or tags” and “MacLeod also makes no mention of formatting rules.” App. Br. 13; Reply Br. 5–6.

We do not find Appellants’ contentions persuasive. We find MacLeod teaches or suggests inserting spaces and line breaks in a language string of the statement to break the statement into a tree of structural blocks for the reasons discussed *supra*. As found by the Examiner (Ans. 10), MacLeod teaches “the database management system parses the SQL query, checking for proper SQL syntax and translating the SQL commands into a database internal format that can be operated upon.” MacLeod 6:53–56. Because MacLeod teaches the database management system parses the SQL query and translates the SQL commands, MacLeod suggests a set of rules according to which the query is parsed and the SQL commands are translated. Appellants have not persuasively shown that these rules fail to teach or suggest the claimed “formatting rules.” Accordingly, we are not persuaded the Examiner erred.

Appellants contend the Examiner erred in rejecting claim 18 for the reasons presented with respect to claim 7. App. Br. 13. Accordingly, we are

not persuaded the Examiner erred in rejecting claim 18 for the reasons discussed *supra*.

CLAIM 8

Appellants contend Lohman does not teach or suggest “wherein the shortening the representation shortens the representation based on abbreviation rules,” as recited in claim 8, because “Lohman makes no mention of abbreviation rules.” App. Br. 14; Reply Br. 6.

We do not find Appellants’ contention persuasive. As discussed *supra*, with respect to claim 1, Lohman teaches or suggests the claimed “shortening.” As found by the Examiner, Lohman teaches shortening the tree representing the query using hash-join (HSJN) or merge-join (MGJN) methods. Ans. 11 (citing Lohman ¶ 50). The Examiner finds, and we agree, Lohman’s hash-join and merge-join methods comprise a set of rules used to shorten the tree. Ans. 11–12. Based on these findings, the Examiner finds, and we agree, the rules are within the broadest reasonable definition of the term “abbreviation rules.” *Id.* As such, Lohman teaches or suggests the disputed limitation.

CLAIMS 9, 10, 20, AND 21

Appellants contend the combination of MacLeod, Lohman, and Payton do not teach or suggest “managing declaration of visualization rules including formatting rules based on which the text of the statement is formatted and abbreviation rules based on which the representation is shortened,” as recited in claim 9, because none of the references teach the recited “formatting rules” or the recited “abbreviation rules.” App. Br. 14–

17; Reply Br. 6. Appellants contend MacLeod and Lohman do not teach the claimed “formatting rules” and “abbreviation rules” for the reasons discussed *supra* with respect to claims 7 and 8. App. Br. 14–15. Appellants contend Payton fails to teach or suggest managing declaration of visualization rules because “Payton does not mention managing declaration of visualization rules including formatting rules based on which the text of the statement is formatted and abbreviation rules based on which the representation is shortened.” App. Br. 16–17.

We do not find Appellants’ contentions persuasive. Nonobviousness cannot be established by attacking the references individually when the rejection is predicated upon a combination of prior art disclosures. *See In re Merck & Co. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). The Examiner finds, and we agree, MacLeod and Lohman teach or suggest the recited “formatting rules” and “abbreviation rules,” respectively, and, therefore, teach or suggest the claimed “visualization rules.” Ans. 13–17. The Examiner finds, and we agree, Payton teaches “an interactive graphical user interface for inputting, creating, and modifying database query statements” and, therefore, teaches “managing declaration of . . . rules.” Ans. 13 (citing Payton Figs. 3A, 3B; ¶ 8). As such, the combination of MacLeod, Lohman, and Payton teaches or suggests the disputed limitation.

Accordingly, we are not persuaded the Examiner erred in rejecting claim 9. Appellants rely on the arguments presented with respect to claim 9 for claims 10, 20, and 21. *See* App. Br. 17. Accordingly, we are not persuaded the Examiner erred in rejecting claims 10, 20, and 21 for the reasons discussed *supra*.

CLAIM 17

Appellants contend the additional reference Netz cited in the rejection of dependent claim 17 does not teach the contested limitations of independent claims 1, 11, and 22. App. Br. 17. For the reasons discussed *supra*, we are not persuaded the Examiner erred in finding the references cited in the rejection of the independent claims teach those limitations. Accordingly, we are not persuaded the Examiner erred in rejecting claim 17.

DECISION

We AFFIRM the Examiner's rejection of claim 22 under 35 U.S.C. § 101 and the Examiner's rejection of claims 1–4, 7–14, 17, 18, and 20–23 under 35 U.S.C. § 103(a).

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

Klh