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EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SIVASANKARAN CHANDRASEKAR and
NIPUN AGARWAL

Appeal 2015-004402
Application 12/791,337¹
Technology Center 2100

Before SCOTT B. HOWARD, JOHN D. HAMANN, and
JOYCE CRAIG, *Administrative Patent Judges*.

HAMANN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants file this appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1, 3–5, 10, and 12–14. We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

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

THE CLAIMED INVENTION

Appellants' claimed invention relates to "storing XML data in database systems more efficiently." Spec. ¶ 2. Claim 1 is illustrative of the subject matter of the appeal and is reproduced below with emphasis added to highlight the disputed, dispositive limitations.

1. A method comprising steps of:

loading each XML document of a plurality of XML documents into a table in which XML documents are stored in shredded form, wherein loading said each XML document comprises:

generating column values of a plurality of columns, said column values to be stored in a respective plurality of rows in the table;

analyzing said column values;

based on said analyzing said column values, for each column of said plurality of columns, making a determination for said each column of a row-storage format, said making a determination for said each column of a row-storage format including:

determining whether to store respective column values of said each column in column-major or row-major format, and

determining whether to use a compression technique to compress said respective column values; and

storing the column values into the table according to the determinations of the row-storage format made for said plurality of columns; and

wherein said plurality of XML documents include a first XML document and a second XML document:

wherein for said first XML document and for a particular column of said plurality of columns, said making a determination for said particular column of the row-storage format includes to store said particular column in column-major format; and

wherein for said second XML document and for said particular column of said plurality of columns, said making a determination for said particular column of the row-storage format includes to store said particular column in row-major format.

REJECTION ON APPEAL

The Examiner rejected claims 1, 3–5, 10, and 12–14 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Chau et al. (US 6,643,633 B2; issued Nov. 4, 2003) (hereinafter “Chau”), Johnson et al. (US 2010/0042587 A1; published Feb. 18, 2010) (hereinafter “Johnson”), and Jain et al. (7,496,589 B1; issued Feb. 24, 2009) (hereinafter “Jain”), collectively referred to hereinafter as “the combination.”

DISPOSITIVE ISSUE ON APPEAL

The dispositive issue for this appeal is whether the Examiner errs in finding the cited portions of the combination teach or suggest determining to store in a table (i) a column of a first XML document in column-major format and (ii) the same column of a second XML document in row-major format, as required by independent claims 1 and 10.

ANALYSIS

We find Appellants’ arguments persuasive with respect to the cited portions of the combination failing to teach or suggest the above dispositive, disputed limitations.

Appellants argue the combination, and Jain in particular, fails to teach or suggest “[s]toring the same column in different major formats (e.g. column-major or row-major) for different rows that are for different XML

documents, but that are the same table.” App. Br. 6 (emphasis omitted). Specifically, Appellants argue Jain instead teaches “alternative ways of compressing a block of rows, and how different compression algorithms can be used for different columns once the rows have been transposed . . . [where] transposing converts rows from row-major format to column-major format.” See App. Br. 8–9 (citing Jain col. 2, l. 63 – col. 3, l. 25; col. 3, l. 58 – col. 4, l. 3; col. 4, ll. 31–36; col. 5, ll. 22–23, 37–58; col. 6, ll. 11–20); see also Reply Br. 4–5. Furthermore, Appellants argue the Examiner improperly resorts to hypotheticals and supposition to extend beyond Jain’s teachings and suggestions in finding Jain teaches the disputed limitations. See Reply Br. 4–5.

The Examiner finds the combination, and Jain in particular, teaches or suggests the disputed limitations. See Ans. 3–4. Specifically, the Examiner finds Jain teaches (i) a table can be partitioned into blocks and (ii) blocks can be compressed in a column-wise or row-wise format. Ans. 3 (citing Jain col. 2, l. 63 – col. 3, l. 25). The Examiner finds Jain thus teaches that a first XML document can be stored in a table compressed in a column-wise format while a second XML document also can be stored in the table, but compressed in a row-wise format, and that the blocks can contain the same columns. See Ans. 3; see also *id.* at 4 (citing Jain Figs. 3, 4) (finding one of ordinary skill in the art “would understand and find obvious, that each block is individually/separately determined to select a best compression algorithm and stored/compressed (e.g.,] . . . Block A may be determined to be row-wise, where Block B may be determined to be column-wise)”).

We agree with Appellants that the Examiner cited portions of Jain fail to teach or suggest the disputed limitations. We also agree with Appellants

that the Examiner's findings of Jain teaching (i) blocks can be compressed "in a number of ways," (e.g., column-wise or row-wise) and (ii) a table can be partitioned into blocks are insufficient to support that Jain teaches or suggests storing in the same table the same column for different XML documents in a column-major and a row-major format. *See* Jain col. 2, l. 63 – col. 3, l. 25; col. 3, l. 58 – col. 4, l. 3; col. 4, ll. 31–36; col. 5, ll. 22–23, 37–58; col. 6, ll. 11–20; Figs. 3, 4.

Accordingly, we do not sustain the Examiner's rejection of claims 1 and 10, as well as the rejection of the remaining claims, which each depend from either claim 1 or claim 10.

DECISION

We reverse the Examiner's decision rejecting claims 1, 3–5, 10, and 12–14.

REVERSED