

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROSARIO UCEDA-SOSA

Appeal 2008-1052
Application 10/326,375 ¹
Technology Center 2100

Decided: November 13, 2008

Before: JAY P. LUCAS, CAROLYN D. THOMAS and STEPHEN C. SIU,
Administrative Patent Judges.

LUCAS, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF CASE

¹ Application filed December 23, 2002. The real party in interest is International Business Machines Corporation.

Appellant appeals from the twice rejection of claims 1 to 24 under authority of 35 U.S.C. § 134. The Board of Patent Appeals and Interferences (BPAI) has jurisdiction under 35 U.S.C. § 6(b).

Appellant's invention relates to a method and apparatus for facilitating retrieval of information from open-ended information environments using special templates having entity-relation structures. In the words of the Appellant:

The present invention addresses a template-based method as exemplarily implemented in IRIS, to retrieve data from information structures based on the entity-relation paradigm, and implemented as a hypergraph (as is done in IRIS). In the entities-relation paradigm, data is encapsulated in entities with relations among them. Usually these structures are implemented as graphs, where nodes are entities and arcs have relations as labels. It is assumed that n-ary arcs are allowed in the underlying information structure.
(Spec., p. 7)

Claim 1 and Claim 7 are exemplary:

1. A method to retrieve data from information structures, said method comprising:

generating a template containing at least one query unit,

wherein both of an information structure being queried by said template and said template are based on an entity/relation paradigm and are characterized as having a self-similar hypergraph ("fractal") format, said self-similar hypergraph format representing a graph in said information structure which comprises one or more nodes and each said node selectively comprises an entire subgraph.

7. A middleware module executing a template-based method to retrieve data from information structures, said middleware module comprising:

a template constructor for creating a template that matches a self-similar hypergraph format of said information structure, said template containing at least one query unit, wherein said information structure is based on an entity/relation paradigm and is characterized as having a self-similar hypergraph (“fractal”) format, said self-similar hypergraph format representing a graph in said information structure which comprises one or more nodes and each said node selectively comprises an entire subgraph.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Morgenstern

US 5,970,490

Oct. 19, 1999

REJECTIONS

R1: Claims 1 to 6 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

R2: Claims 1 to 24 stand rejected under 35 U.S.C. § 112, paragraph 1, for lack of enablement.

R3: Claims 1 to 24 stand rejected under 35 U.S.C. §§ 102(b) or 103(a) for being anticipated by or obvious over Morganstern.

Groups of Claims:

Claims will be considered in the order of their rejections.

Appellant contends that the claimed subject matter is statutory, enabled by the Specification, and not anticipated or rendered obvious by Morgenstern for reasons to be discussed more fully below. The Examiner contends that each of the claims is properly rejected.

Rather than repeat the arguments of Appellant or the Examiner, we make reference to the Briefs and the Answer for their respective details. Only those arguments actually made by Appellant have been considered in

this opinion. Arguments which Appellant could have made but chose not to make in the Briefs have not been considered and are deemed to be waived.

We affirm R1 and R3, reverse R2, and add a new rejection under 35 U.S.C. § 101.

ISSUE

The issue is whether Appellant has shown that the Examiner erred in rejecting the claims as specified above. The issue for R1 involves whether claims 1 to 6 recite statutory subject matter in accordance with the current understanding of the statutory classes. The issue for R2 is whether there is support in the Specification for the self-similar hypergraph format. The issue for R3 is whether the Morgenstern reference anticipates, or renders obvious, the limitations of claims 1 to 24. The issue for the new rejection is whether the Appellant has expressed his invention to encompass storage of the computer instructions on a medium comprising pure signals.

FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence.

1. Appellant has invented a method to retrieve data from open ended information environments where the data is not uniformly modeled in each of a plurality of databases. (Spec., p. 2 to 3, top). Information is queried by templates where both the information and the template are characterized by a self-similar hypergraph (fractal) format. (Br., p. 2, middle).
2. Morgenstern teaches a method for searching heterogeneous data using pattern matching by comparing templates with the data. (Col. 33, 1.

8). Queries are specified by subgraphs of the database schema (Col. 13, l. 43). Data is structured in node fashion, with database patterns treated as hypergraphs. (Col. 14, l. 48).

PRINCIPLES OF LAW

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. See *In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of prima facie obviousness or by rebutting the prima facie case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

"What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103." *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1742 (2007). To be nonobvious, an improvement must be "more than the predictable use of prior art elements according to their established functions." *Id.* at 1740.

Both anticipation under 35 U.S.C. § 102 and obviousness under § 103 are two-step inquiries, in which the first step is a proper construction of the claims and the second step requires a comparison of the properly construed claim to the prior art. *Medichem S.A. v. Rolabo S.L.*, 353 F.3d 928, 933 (Fed. Cir. 2003).

Laws of nature, physical phenomena and abstract ideas are excluded from patent protection. *Diamond v. Diehr*, 450 U.S. 175, 185 (1981).

The test for statutory subject matter is whether the claimed subject matter is directed to a “practical application,” i.e., whether it is applied to produce “a useful, concrete and tangible result.” *See State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1373 (Fed. Cir. 1998).

“Following the lead of the Supreme Court, this court and our predecessor court have refused to find processes patentable when they are merely claimed a mental process standing alone and untied to another category of statutory subject matter even when a practical application was claimed.” *In re Comiskey*, 499 F.3d 1365, 1378 (Fed. Cir., 2007)

ANALYSIS

From our review of the administrative record, we find that the Examiner has presented a prima facie case for the rejections of Appellant's claims under 35 U.S.C. § 101, § 112, § 102, and § 103. The prima facie case is presented in the Rejection of 11/15/2006 and on pages 4 to 6 of the Examiner's Answer. In opposition, Appellant presents a number of arguments.

*Arguments with respect to the rejection
of claims 1 to 6
under 35 U.S.C. § 101 [R1]*

The Examiner has rejected claims 1 to 6 as being non-statutory for failure to define useful, concrete and tangible results, as these claims merely address an abstract idea that does not involve the technological arts. (Ans., p. 3, middle).

Though claims 1 to 6 recited a method, not every process is patentable. “‘Abstract ideas’ are one type of subject matter that the Supreme Court has consistently held fall beyond the broad reaches of patentable subject matter under 35 U.S.C. § 101.” *In re Comiskey* 499 F3d at 1376 (Fed. Cir. 2007).

Representative claim 1 recites a method to retrieve data from information structures. The single step is to generate a template with a certain data structure. Limitations thereafter specify the nature of the data in the information structure and the template.

Our guiding court states: “As the PTO notes, ‘the Supreme Court has recognized only two instances in which such a method may qualify as a section 101 process: when the process ‘either [1] was tied to a particular apparatus’ or [2] operated to change materials to a ‘different state or thing.’” *See* PTO Supp. Br. 4 (quoting *Flook*, 437 U.S. at 588 n. 9, 98 S.Ct. 2522).” *In re Comiskey* 499 F.3d at 1376 (Fed. Cir. 2007).

The claims in question are not tied to a particular apparatus, as the claims in *Gottschalk v. Benson* (409 U.S. 63, (1972)) were tied to a rubber curing machine. Nor do they change a material to a different state or thing.

We thus, do not find error in the Examiner’s rejection of claims 1 to 6 under 35 U.S.C. § 101.

*Arguments with respect to the rejection
of claims 1 to 6
under 35 U.S.C. § 112(¶1) [R2]*

Claims 1 to 24 were rejected for failure to describe a claimed limitation, “a self-similar hypergraph format,” in the Specification so a person of ordinary skill in the art can make or use the invention. (Non-Final Rej. p. 2, bottom).

More specifically, the Examiner explains:

According to the specification, page 7, Appellant defined that “self-similar hypergraph format” can be a node that includes an entire network of nodes. It is impossible for a node to include an entire network of nodes. A node can include another sub node, and this is the meaning that the Examiner interprets the claim language.

We believe that the Examiner has properly interpreted the claim, and that any person of ordinary skill in the art would reach the same interpretation. A node which includes an entire network of nodes is meant to mean that it includes a sub node, which can be comprised of a network of sub nodes. This is similar in concept to a routine that includes a subroutine as one of its instructions.

Appellant has pointed out that each of the claims that includes this self-similar hypergraph limitation contains a definition of what is meant, to wit, “...and each said node selectively comprises an entire subgraph.” As these claims were in the Specification as filed, they were part of the original disclosure.

We thus, find that the Appellant has demonstrated that the Examiner erred, and that the limitations of the claims are supported by the original Specification as filed.

*Arguments with respect to the rejection
of claims 1 to 24
under 35 U.S.C. §§ 102(b) and 103(a)[R3]*

Appellant contends that the Examiner erred in rejecting claims 1 to 24 under 35 U.S.C. §§ 102(b) and 103(a). Appellant contends that the nodes as shown in Morgenstern's Figure 4 do not comprise "anything except what a 'node' is understood as representing by definition." (Br., p. 12, middle). More specifically, Appellant contends that the nodes in Morgenstern would not be considered to be subgraphs as claimed. (Id.)

Reviewing Morgenstern, in column 14 the patent describes the database pattern as various schema using node patterns. The patterns provide "the equivalents of selection, projection and join. In addition they can provide recursion to obtain the closure of a relationship as well as other constructs..." (Col. 14, ll. 15-18). Later in the column, "[t]his general form of database pattern can be usefully treated as a hypergraph, in which some or all edges have $k > 2$ nodes." (Id., ll. 37-39).

We thus find nodal structures being used for searching in non-uniform databases in Morgenstern. Further, Morgenstern discloses that "[t]he approach (pattern matching) is motivated by the observation that a query could be specified by a subgraph or subset of the database schema together with annotations designating the outputs and the selection predicates on

certain components.” (Col. 13, ll. 41-45). The use of subgraphs is thus taught in Morgenstern as part of the query process. In this context, Morgenstern’s nodal structures of Fig. 3 and Fig. 4 provides a basis for either anticipating or rendering obvious, searching using nodes of elements and relationships, where nodes can be relational sub schema (see element #120), or self-similar, as claimed. Further, Morgenstern’s header nodes can represent the underlying node structure, “selectively comprising an entire subgraph” as claimed.

Thus, we do not find that Appellant’s arguments show error in the Examiner’s rejection [R3].

CONCLUSION OF LAW

Based on the findings of facts and analysis above, we conclude that the Examiner erred in rejecting claims 1 to 24 under 35 U.S.C. § 112, ¶ 1, for lack of enablement [R2]. However, we did not find error in the Examiner’s rejections of claims 1 to 6 [R1] or 1 to 24 [R3] under 35 U.S.C. § 101 and under 35 U.S.C. § 102 (b) or 35 U.S.C. § 103, respectively.

OTHER ISSUES

REJECTION OF CLAIMS 1-15 UNDER 37 C.F.R. § 41.50(B)

We make the following new grounds of rejection using our authority under 37 C.F.R. § 41.50(b).

Rejections:

Claims 1 to 15 are rejected under 35 U.S.C. § 101 for being non-statutory.

Claims 1 to 15 recite a computer readable medium encoded with a computer program. In the Specification, page 19, the Appellant defines computer readable medium as including a data signal embodied in a wireless communication link.

Such a claim for computer instructions embodied only in a signal is not considered by this office to be statutory under 35 U.S.C. § 101.² This policy has recently been confirmed by the Court of Appeals for the Federal Circuit in *In re Nuijten*. “A transitory, propagating signal like Nuijten's is not a “process, machine, manufacture, or composition of matter.” Those four categories define the explicit scope and reach of subject matter patentable under 35 U.S.C. § 101; thus, such a signal cannot be patentable subject matter.” *In re Nuijten*, 500 F.3d 1346, 1357 (Fed. Cir. 2007).

DECISION

R1: The rejection of claims 1 to 6 under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter is affirmed.

R2: The rejection of claims 1 to 24 under 35 U.S.C. § 112, paragraph 1, for lack of enablement is reversed.

² See, "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility," 1300 Off. Gaz. Pat. Office 142, Annex IV(c) (Nov. 22, 2005).

R3: The rejection of claims 1 to 24 under 35 U.S.C. § 102(b) or § 103(a) for being anticipated by or obvious over Morganstern is affirmed.

R4: Claims 1 to 15 are rejected under 35 U.S.C. § 101 for being non-statutory, containing subject matter stored in signals only.

With respect to the affirmed rejection(s), 37 C.F.R. § 41.52(a)(1) provides that “[a]ppellant may file a single request for rehearing within two months from the date of the original decision of the Board.”

In addition to affirming the Examiner’s rejection(s) of one or more claims, this decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b). 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.”

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 ground of rejection to avoid termination of the appeal 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 § 41.52 by the Board upon the same record. . . .

Appeal 2008-1052
Application 10/326,375

Should Appellant elect to prosecute further before the Examiner pursuant to 37 C.F.R. § 41.50(b)(1), in order to preserve the right to seek review under 35 U.S.C. §§ 141 or 145 with respect to the affirmed rejection, the effective date of the affirmance is deferred until conclusion of the prosecution before the Examiner unless, as a mere incident to the limited prosecution, the affirmed rejection is overcome.

If Appellant elects prosecution before the Examiner and this does not result in allowance of the application, abandonment or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final action on the affirmed rejection, including any timely request for rehearing thereof.

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

37 C.F.R. § 41.50(b)

pgc

MGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC
8321 OLD COURTHOUSE ROAD
SUITE 200
VIENNA VA 22182-3817