

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 29

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID E. HECKERMAN, DAN GEIGER and DAVID M. CHICKERING

Appeal No. 1999-2314
Application 08/739,200

HEARD: AUGUST 14, 2002

Before THOMAS, JERRY SMITH and RUGGIERO, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 38-59, which constitute all the claims remaining in this application.

The invention pertains to a computer-readable medium whose contents cause a computer system to generate an improved belief network. More particularly, an initial belief network

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made from expert data is modified using empirical data taken from actual observations.

Representative claim 38 is reproduced as follows:

38. A computer-readable medium whose contents cause a computer system to generate an improved belief network, the computer system having a belief network generator and a belief network containing nodes and arcs indicating a relationship between the nodes, the nodes containing expert data obtained from an expert in a field of expertise, by:

providing the belief network containing the expert data;

providing empirical data containing a plurality of observations for nodes in the provided belief network;

calculating a score for each node in the provided belief network utilizing the empirical data, each score indicating goodness of the node at rendering inferences; and

using the calculated node scores and the belief network generator to generate an improved belief network from the provided belief network, the generation accomplished through modifying the arcs of the provided belief network by removing an arc between a first node and a second node and by adding an arc between the first node and a third node, wherein a calculated score for the first node in the improved belief network indicates a higher goodness of the first node than the calculated score for the first node in the provided belief network.

The examiner relies on no references.

Claims 38-59 stand rejected under 35 U.S.C. § 101 as being directed to nonstatutory subject matter in the form of a mathematical algorithm or abstract idea.

Rather than repeat the arguments of appellants or the examiner, we make reference to the briefs and the answer for the

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respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the examiner and the reasons relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that claims 38-59 are directed to statutory subject matter within the meaning of 35 U.S.C. § 101. Accordingly, we reverse.

The examiner's rejection states that the claims are directed to nonstatutory subject matter based on guidelines issued by the Patent and Trademark Office for the examination of computer-related inventions. Using these guidelines, the examiner applies what is commonly known as the Freeman-Walter-Abele test. Using this test, the examiner finds that the claims on appeal are directed to the preemption of a mathematical algorithm and are nonstatutory [final rejection, pages 2-7].

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Appellants argue that the Freeman-Walter-Abele test is not the proper test to determine whether computer-related inventions are statutory subject matter, citing State Street Bank & Trust Co. v. Signature Financial Group, Inc., 149 F.3d 1368, 1374 (Fed. Cir. 1998), 525 U.S. 1093 (1999), cert denied. Appellants argue that the claimed invention is patentable as long as it is not a disembodied abstract idea. According to appellants, the only relevant and dispositive inquiry is whether the claimed invention is directed to something useful, that is, have practical utility. Appellants argue that the claimed invention clearly has practical utility because it uses and manipulates empirical data taken from the real world. Appellants also argue that the claims are directed to a data structure stored on a computer-readable medium which imposes a physical organization on the information which forms an electronic structure which is not an abstraction [brief, pages 15-32].

The examiner responds that the facts of this case are similar to the facts of In re Warmerdam, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994), and that Warmerdam is consistent with the decision in State Street. The examiner finds that the claimed invention is nothing more than a data structure. According to the examiner, a "belief network" is nonstatutory regardless of

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the improvements found in manipulating its overall structure. The examiner responds that the claimed invention is not limited to a practical application because the whole world can be encompassed by the claim. The examiner also responds that the claimed invention, as a product of manufacture, is not patentable because the claims encompass any and every computer-readable memory product implemented on any and every type of general purpose computer, configured in any manner to perform the process [answer, pages 5-15].

Appellants respond that the claimed invention is statutory because it uses empirical data which results from measurements of tangible, concrete and physical things, not mere abstract ideas. Appellants also respond that even though the claimed invention may have many practical applications, that fact does not make the invention an abstract idea. Appellants also respond that computer programs embodied on a tangible medium are patentable subject matter. Finally, appellants argue that a belief network is similar to a neural network which has been indicated as being patentable in the guidelines noted above [reply brief].

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As noted by appellants, it is the current view of the court that unpatentable mathematical algorithms are identifiable by showing that they are merely abstract ideas constituting disembodied concepts or truths that are not "useful." From a practical standpoint, this means that to be patentable an algorithm must be applied in a "useful" way. See State Street, supra.

A necessary consideration for any analysis of whether a claimed invention is directed to statutory subject matter has to include an analysis of what exactly is the claimed invention. The claims on appeal before us all recite a computer-readable medium which causes a computer to carry out a sequence of steps which use measured empirical data to adjust the nodes and arcs of a belief network to make the network more accurate. This computer-readable medium would fall within the definition of "functional descriptive material" as that term is used in the MPEP § 2106 IV.B.1., because it imparts functionality when employed as a computer component. The MPEP states there that "[w]hen functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive

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material to be realized." Thus, the PTO's own policy position on computer-readable media that have a functional relationship with a computer is that they are statutory subject matter in most cases. Since we find that the computer-readable medium recited in the claims on appeal relates to functional descriptive material, the examiner's rejection would appear to be contrary to the PTO's own published position.

We also find that the claims on appeal meet the test set forth by the court in State Street that the claimed invention must produce a useful, concrete and tangible result. The purpose of this requirement was to limit patent protection to inventions that possess a certain level of real world value. The belief network of the claimed invention permits predictions to be made about real world environments such as the disclosed auto repair environment. The belief network is modified based on actual physical results obtained while observing and monitoring the real world environment. We agree with appellants that the functions performed by a computer in response to the underlying functional information recorded on the claimed computer-readable medium constitutes an invention having real world value and has useful, concrete and tangible results within the meaning of State Street.

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Therefore, we do not sustain the examiner's rejection of claims
38-59.

In summary, the decision of the examiner rejecting claims
38-59 under 35 U.S.C. § 101 is reversed.

REVERSED

JAMES D. THOMAS)	
Administrative Patent Judge)	
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JERRY SMITH)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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)	
JOSEPH F. RUGGIERO)	
Administrative Patent Judge)	

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Himanshu S. Amin
Amin & Turocy, LLP
24th Floor, National City Center
1900 East 9th Street
Cleveland, OH 44141