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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MICHAEL CHUN-CHIEH LEE and ERIC COHEN-SOLAL

Appeal 2018-003358
Application No. 14/365,267[1]
Technology Center 2100

Before MARC S. HOFF, JOHNNY A. KUMAR, and JOHN D. HAMANN, *Administrative Patent Judges*.

HOFF, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from a Final Rejection of claims 1, 3, 4, 6–16, and 18–20.[2] We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

Appellants' invention is a processor that generates a model which models a quality of findings in radiologist reports as a mathematical function of a deposited dose of scans from which the radiologist reports are created,

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[1] The real party in interest is Koninklijke Philips N.V. App. Br. 2
[2] Claims 2, 5, and 17 have been cancelled. Claims App'x.

and that determines an optimal dose value for a planned scan based on the model and one or more optimization rules.

Claim 1 is reproduced below:

> 1. A system, comprising:
> a processor that generates a model which models a quality of findings in radiologist reports as a mathematical function of deposited dose of scans from which the radiologist reports are created and that determines an optimal dose value for a planned scan based on the model and one or more optimization rules.

Claims 1, 3, 4, 6–16, and 18–20[3] stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter.[4]

Throughout this decision, we make reference to the Appeal Brief ("App. Br.," filed June 26, 2017), the Reply Brief ("Reply Br.," filed Feb. 6, 2018), and the Examiner's Answer ("Ans.," mailed Dec. 15, 2017) for their respective details.

ISSUES

Does the claimed invention incorporate particular rules that improve an existing technological process?

PRINCIPLES OF LAW

Under 35 U.S.C. § 101, a patent may be obtained for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." The Supreme Court has "long held that this provision contains an important implicit exception: Laws of nature,

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[3] The Examiner's Answer includes claims 1–20 in the § 101 rejection. The Claims Appendix attached to the Appeal Brief, however, lists claims 2, 5, and 17 as cancelled.

[4] The Examiner has withdrawn the § 102(b) rejection of claims "1–20." Ans. 2.

natural phenomena, and abstract ideas are not patentable." *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014) (quoting *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)). The Supreme Court in *Alice* reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 82–84 (2012), "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 134 S. Ct. at 2355.

The first step in that analysis is to determine whether the claims at issue are directed to one of those patent-ineligible concepts, such as an *abstract idea.* Abstract ideas may include, but are not limited to, fundamental economic practices, methods of organizing human activities, an idea of itself, and mathematical formulas or relationships. *Id.* at 2355–57.

If the claims are *not directed* to a patent-ineligible concept, *the inquiry ends. See Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1262 (Fed. Cir. 2017). Otherwise, the inquiry proceeds to the second step in which the elements of the claims are considered "individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 566 U.S. at 79, 78).

ANALYSIS

SECTION 101 REJECTION

Appellants argue, by analogy to *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016), that the claims under appeal are patent-eligible because they "incorporate particular rules that improve an

existing technological process." App. Br. 3; Reply Br. 2. Appellants refer to the *McRO* court's description of rules that "improve computer-related technology by allowing computer performance of a function not previously performed by a computer." Reply Br. 2.

The claimed invention in *McRO* concerned "allowing computers to produce 'accurate and realistic lip synchronization and facial expressions in animated characters' that previously could only be produced by human animators." *See McRO* at 1313. "[T]his computer animation is realized by improving the prior art through 'the use of rules, rather than artists, to set the morph weights and transitions between phonemes.'" *Id.*

Unlike the invention claimed in *McRO*, the invention under appeal merely "models a quality of findings in radiologist reports as a mathematical function of deposited dose of scans." That is, the invention determines a mathematical relationship between radiation dose and quality of findings. The claimed invention then determines an optimal radiation dose based on that "model" and "one or more optimization rules." In contrast with *McRO*, the claimed process is not a process that allows a computer to perform steps that previously could only be produced by humans.

Appellants' argument that "the claimed invention is directed to using a mathematical function and rules that improve computer-related technology" is also not persuasive. App. Br. 4. The claimed invention recites no details concerning any computer technology, either hardware or software. Appellants' specification explicitly discloses implementation on a "general-purpose computing system." Spec. 3. Claim 1 recites only "a processor." Claim 20 further recites

"a report and dose evaluator" that performs the function of determining the optimal dose; no further hardware or software details are recited. Claim 20 also recites a "validator," which merely compares an estimated dose value to the previously-computed optimal dose value.

We find that the claimed invention is analogous to the invention claimed in *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016). The invention in *Electric Power Group* concerned detecting events on an inter-connected electric power grid. The steps of the claimed method recited receiving various data, detecting and analyzing events in real-time based on the received data, and displaying various data as well as event analysis results. *Id.* at 1355. The court found that the claims expressed an abstract idea, without reciting significantly more to transform the nature of the invention into a patent-eligible application. *Id.*

Similarly, the invention under appeal gathers data concerning radiation doses and outcomes, analyzes that data to determine a function, and outputs a suggested dose based on that mathematical function. As in *Electric Power Group*, the claims do not require a new source or type of information, or new techniques for analyzing it. *Id.* Neither do the claims require anything other than "off-the-shelf, conventional computer, network, and display technology." *Id.* Thus, as in *Electric Power Group*, we find that the claims describe an abstract idea without reciting sufficiently more under *Alice* to transform the claimed invention into a patent-eligible application.

We therefore sustain the Examiner's § 101 rejection of claims 1, 3, 4, 6–16, and 18–20 as being directed to patent-ineligible subject matter.

CONCLUSION

The claimed invention does not incorporate particular rules that improve an existing technological process.

DECISION

The Examiner's decision to reject claims 1, 3, 4, 6–16, and 18–20 is affirmed.

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