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ZILKA-KOTAB, PC- NVID
1155 N. 1st St.
Suite 105
SAN JOSE, CA 95112

EXAMINER	
RASTOVSKI, CATHERINE T	

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOHN F. SPITZER, JING WANG, and CHRISTOPHER JUSTIN DANIEL

Appeal 2019-002314
Application 13/921,146
Technology Center 2800

Before JEFFREY W. ABRAHAM, JEFFREY R. SNAY, and MICHAEL G. MCMANUS, *Administrative Patent Judges*.

SNAY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 22–41 under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

[1] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies NVIDIA CORPORATION as the real party in interest. Appeal Br. 3.

BACKGROUND

The subject matter on appeal relates to determination of optimal settings for a product, such as computer software or computer games, relative to a plurality of parameter variations associated with a device, such as a computer. Spec. ¶¶ 2–5. Claim 22 is illustrative:

> 22. A method, comprising:
> constructing a directed acyclic graph (DAG) associated with a computing device, wherein
> the DAG includes a plurality of nodes directed based on one or more criteria, and wherein each node in the plurality of nodes corresponds to one parameter variation in a plurality of parameter variations associated with the computing device;
> organizing the plurality of nodes included in the DAG into a plurality of segments, such that each of the plurality of segments includes one or more of the plurality of nodes included in the DAG, where different threshold targets are set for each segment in the plurality of segments;
> determining optimal settings associated with each segment in the plurality of segments based on a threshold target set for the segment;
> performing a consistency check, via a consistency checker, to ensure that the optimal settings associated with each segment are monotonically increasing across the segments in the plurality of segments in the DAG; and
> returning the optimal settings associated with each segment;
> wherein the plurality of parameter variations include a plurality of unique variations of a plurality of different parameters.

Appeal Br. 20 (Claims Appendix). Independent claims 31 and 36 recite, respectively, a computer program product and a system for performing the process of claim 22. Each remaining claim on appeal depends from claim 22, 31, or 36.

PRINCIPLES OF LAW

A. SECTION 101

An invention is patent eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: "[l]aws of nature, natural phenomena, and abstract ideas" are not patentable. *E.g.*, *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court's two-step framework, described in *Mayo* and *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is "directed to." *See Alice*, 573 U.S. at 219 ("On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk."); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) ("Claims 1 and 4 in petitioners' application explain the basic concept of hedging, or protecting against risk.").

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 69 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding rubber products" (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); "tanning, dyeing, making water-proof cloth, vulcanizing India

rubber, smelting ores" (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1853))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that "[a] claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula." *Diehr*, 450 U.S. at 176; *see also id.* at 191 ("We view respondents' claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula."). Having said that, the Supreme Court also indicated that a claim "seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, . . . and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment." *Id.* (citing *Benson* and *Flook*); *see, e.g.*, *id.* at 187 ("It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.").

If the claim is "directed to" an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where "we must examine the elements of the claim to determine whether it contains an 'inventive concept' sufficient to 'transform' the claimed abstract idea into a patent eligible application." *Alice*, 573 U.S. at 221 (quotation marks omitted). "A claim that recites an abstract idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Id.* (quoting *Mayo*, 566 U.S. at 77).

"[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

B. USPTO SECTION 101 GUIDANCE

The PTO recently published revised guidance on the application of § 101. *See* Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Guidance"). Under Step 1 of the Guidance, we determine whether the claimed subject matter falls within the four statutory categories: process, machine, manufacture, or composition of matter. Step 2A of the Guidance is two-pronged, under which we look to whether the claim recites:

(1) any judicial exception, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes); and

(2) additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h)).

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then, under Step 2B, look to whether the claim:

adds a specific limitation beyond the judicial exception that is not "well-understood, routine, conventional" in the field (*see* MPEP § 2106.05(d)); or simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception. *See* Guidance, 84 Fed. Reg. at 56.

ANALYSIS

The Examiner rejects claims 22–41 under 35 U.S.C. § 101 as being directed to a judicial exception—namely, an abstract idea without significantly more. Final Act. 2. For each of independent claims 22, 31, and 36, the Examiner determines that the recited steps of "constructing a directed acyclic graph" and "organizing the plurality of nodes included in the DAG" are directed to "processes of organizing information which corresponds to concepts identified as abstract ideas by the courts." *Id.* at 2, 3. The Examiner further determines that the recited "determining optimal settings" and "performing a consistency check" "describe an idea of itself which corresponds to concepts identified as abstract ideas by the courts." *Id.* at 3.

Appellant argues that the claimed invention represents an improvement in computer technology, similar to the claims deemed patent-eligible in *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016). Appeal Br. 14. Appellant further argues that none of the recited steps falls within the groupings of abstract ideas identified in the 2019 Guidance. Reply Br. 9.

Under Step 2A, Prong 1, of the Guidance, we first determine whether any judicial exception to patent eligibility is recited in the claim. The Guidance identifies three judicially excepted groupings: (1) mathematical concepts, (2) certain methods of organizing human activity such as fundamental economic practices, and (3) mental processes. Guidance, 84 Fed. Reg. at 52–53. Claims that do not recite matter that falls within these

enumerated groupings generally should not be treated as reciting abstract ideas. *Id*. at 53.

The Examiner determines that each of claims 22, 31, and 36 recites the abstract idea of organizing information through the recited steps of constructing and organizing a directed acyclic graph associated with a computing device. Final Act. 3. The Examiner further determines that each of these claims recites the abstract ideas of collecting, analyzing and displaying information through the recited steps of determining optimal settings and performing a consistency check. These purported abstract ideas, however, do not fall into any of the judicially excepted groups set forth in the 2019 Guidance. None of the recited steps is a "mathematical concept" because the claims do not involve mathematical relationships, formulas, equations, or calculations. *See* Guidance, 84 Fed. Reg. at 52. Nor does the Examiner identify any claim recitation as encompassing a mental process, such as an observation, evaluation, judgment, or opinion. The Examiner's proposed abstract idea of collecting, analyzing, and displaying data also does not involve organizing activities performed by one or more humans. Rather, the claimed steps involve activities performed on parameter variations and settings associated with a computer device. The proposed abstract idea is not similar to the methods of organizing human activity that the 2019 Guidance has identified based on existing Supreme Court and Federal Circuit precedent, including fundamental economic principles or practices (including hedging, insurance, or mitigating risk), commercial or legal interactions (including agreements in the form of contracts, legal obligations, advertising, marketing or sales activities or behaviors, or business relations), or managing personal behavior or

relationships or interactions between people (including social activities, teaching, and following rules or instructions). *See id.*

Because the Examiner has not established that any of claims 22–41 recites a judicial exception, we do not sustain the rejection of these claims as directed to non-statutory subject matter under Section 101.

CONCLUSION

The Examiner's decision rejecting claims 22–41 is reversed.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
22–41	101			22–41

REVERSED