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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte YASER EFTEKHARI, MICHAEL WIENER, YONGXIN ZHOU, and YUAN GU[1]

Appeal 2019-002732
Application 14/430,908
Technology Center 2100

Before ROBERT E. NAPPI, CATHERINE SHIANG, and BETH Z. SHAW, *Administrative Patent Judges*.

NAPPI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1 through 14. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42(a) (2018). According to Appellant, lrdeto B.V. is the real party in interest. Appeal Br. 2.

INVENTION

The invention relates generally to a method of performing a function on error control coded data without decoding the data. Specification Abstract, p. 5, ll. 6–15. Claim 1 is reproduced below.

> 1. A method of creating a data structure by processing encoded digital data according to a first predetermined function, the method comprising:
>
> receiving an encoded amount of digital data, wherein the encoded amount of digital data is an amount of digital data that has been encoded using a predetermined error control code; and
>
> processing the encoded amount of digital data using a second predetermined function to thereby generate the data structure as an output;
>
> wherein the second predetermined function is a function generated based on the first predetermined function and characteristics of the predetermined error control code and is configured to correspond to the first predetermined function in that the result of processing, with the second predetermined function, a quantity of digital data encoded using the predetermined error control code equals the result of encoding with the predetermined error control code the result of processing the quantity of digital data with the first predetermined function, to thereby allow the first predetermined function to be implemented based on input digital data that is encoded according to the predetermined error control code without having to perform error control code decoding on the input digital data.

EXAMINER'S REJECTION[2]

The Examiner rejected claims 1 through 14 under 35 U.S.C. § 101 for

[2] Throughout this Decision we refer to the Appeal Brief filed August 10, 2018 ("Appeal Br."); Final Office Action mailed March 12, 2018 ("Final Act."); and the Examiner's Answer mailed November 29, 2018 ("Ans.").

being directed to patent-ineligible subject matter. Final Act. 4–10.

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 U.S. 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. 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 Court's two-part 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, 67 (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 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 187; *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 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.* (citation omitted) (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.* (alterations in original) (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

In January 2019, the U.S. Patent and Trademark Office (USPTO) published revised guidance on the application of § 101. *See 2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) ("2019 Revised Guidance").[3] "All USPTO personnel are, as a matter of internal agency management, expected to follow the guidance." *Id.* at 51; *see also* October 2019 Update at 1.

Under the 2019 Revised Guidance and the October 2019 Update, we first look to whether the claim recites:

> (1) any judicial exceptions, 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) ("Step 2A, Prong One"); and
>
> (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h) (9th ed. Rev. 08.2017, Jan. 2018)) ("Step 2A, Prong Two").[4]

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[3] In response to received public comments, the Office issued further guidance on October 17, 2019, clarifying the 2019 Revised Guidance. USPTO, *October 2019 Update: Subject Matter Eligibility* (the "October 2019 Update") (available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf).

[4] This evaluation is performed by (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception, and (b) evaluating those additional elements individually and in combination to

2019 Revised Guidance, 84 Fed. Reg. at 52–55.

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

> (3) adds a specific limitation beyond the judicial exception that is not "well-understood, routine, conventional" in the field (*see* MPEP § 2106.05(d)); or
>
> (4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception. 2019 Revised Guidance, 84 Fed. Reg. at 52–56.

DISCUSSION

Rejection under 35 U.S.C. § 101

The Examiner determines the claims are not patent eligible because they are directed to a judicial exception without reciting significantly more. Final Act. 2–4. Specifically, the Examiner determines the claims recite an "abstract idea of an encoding/decoding algorithm and manipulating and organizing information through mathematical correlations." Final Act. 2–3 (citing, *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc*., 758 F.3d 1344, (Fed. Cir. 2014), and *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017)). The Examiner finds that the claims do not integrate the abstract idea into a practical application. *Id* at 6–7. Further, the Examiner finds that the claimed step "of processing the encoded amount of

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determine whether the claim as a whole integrates the exception into a practical application. *See* 2019 Revised Guidance - Section III(A)(2), 84 Fed. Reg. 54–55.

digital data using a second predetermined function to thereby generate the data structure as an output does not improve the functionality of a computer, nor does it improve a technology." *Id* at 4.

Patent eligibility under § 101 is a question of law that may contain underlying issues of fact. "We review the [Examiner's] ultimate conclusion on patent eligibility de novo." *Interval Licensing LLC v. AOL, Inc*., 896 F.3d 1335, 1342 (Fed. Cir. 2018) (citing *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1365 (Fed. Cir. 2018)); *see also SiRF Tech., Inc. v. Int'l Trade Comm'n*, 601 F.3d 1319, 1331 (Fed. Cir. 2010) ("Whether a claim is drawn to patent-eligible subject matter is an issue of law that we review de novo."). We have reviewed Appellant's arguments in the Appeal Brief, the Examiner's rejections, and the Examiner's response to Appellant's arguments. Appellant's arguments have not persuaded us of error in the Examiner's rejection of claims 1 through 14 under 35 U.S.C. § 101.

Appellant argues that the Examiner's rejection is in error as the "claimed invention results in a technical improvement and better operation of a computing system and thus are not merely an abstract idea." Appeal Br. 7. Appellant states, that "the independent claims recite a specific series of steps for creating and/or applying a data structure that can apply a specified function to encoded data without having to explicitly perform decoding." *Id* at 9. Further, Appellant asserts that their claims are different from those at issue in *Digitech Image Techs*, and *RecogniCorp,* cited by the Examiner. Specifically, Appellant argues that in *Digitech* the claims recited descriptive data and did not recite any manipulation of the data that caused the computer to operate in a beneficial manner. *Id* at 9–10. Further, Appellant argues that in *RecogniCorp* the court held claims where merely directed to the abstract

idea of encoding and decoding data, whereas the current claims are not merely directed to encoding and decoding; and do they recite well known processing. *Id* at 11. Appellant argues that the claims recite a series of ordered steps that render information into a specific format and as such are similar to those at issue in *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016). Additionally, Appellant argues that the invention is necessarily rooted in computer technology as it "is directed to overcoming inefficiencies associated with processing encoded data." Appeal Br. 13 (Citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1256 (Fed. Cir. 2014).)

The Judicial Exception

Appellant's arguments have not persuaded us the Examiner erred in finding the claims recite abstract mathematical processes. We note that Appellant has not contested that the claims recite a mathematical concept but rather, as discussed above, assert the claims recite a technical improvement and are necessarily rooted in computer technology. Nonetheless, we concur with the Examiner that the claims recite steps of the abstract idea of an encoding/decoding algorithm and manipulating information through mathematical correlations. Representative claim 1 recites: steps of receiving an amount of encoded digital data and processing the encoded amount of digital data using a second function (a mathematical operation). Appellant's Specification describes the function including a cryptographic process which may manipulate the data. *See* Specification p. 9, l. 28– p. 10, l. 15. Further, as identified by the Examiner, our reviewing court has held that the process of encoding data is an abstract concept, and noted that addition of a

mathematical equation does not make it less abstract. *RecogniCorp* at 1327. Claim 1 also recites a relationship between a first and second function in that the second function is "configured to correspond to the first predetermined function in that the result of processing, with the second predetermined function, a quantity of digital data encoded using the predetermined error control code equals the result of encoding with the predetermined error control code the result of processing the quantity of digital data with the first predetermined function, to thereby allow the first predetermined function to be implemented based on input digital data that is encoded according to the predetermined error control code without having to perform error control code decoding on the input digital data." This limitation is not a step of the method but rather further limits the mathematical process by describing the function, and only modifies the abstract mathematical operation. As such, we consider the claim to recite a mathematical concept, and are not persuaded the Examiner erred in determining the claims recite an abstract idea.

Integration of the Judicial Exception into a Practical Application

Similarly, Appellant's arguments have not persuaded us the Examiner erred by not considering the claims to recite a technical improvement, and consider them necessarily rooted in computer technology (i.e., not considering the claims to recite a practical application). As discussed above, Appellant asserts their claims are similar to those at issue in *McRO* and *DDR* as they recite a series of ordered steps and are necessarily rooted in computer

technology as they are directed to overcoming inefficiencies in processing encoded data. We are not persuaded of error by these arguments.

In *McRO*, the court reviewed claims that use "a combined order of specific rules that renders information into a specific format that is then used and applied to create desired results: a sequence of synchronized, animated characters." *McRO*, 837 F.3d at 1315. The court found that the claims did not "simply use a computer as a tool to automate conventional activity," but instead used the computer to "perform a distinct process" that is carried out in a different way than the prior non-computer method to improve the technology (of 3-D animation techniques). *See McRO*, 837 F.3d at 1314–16. Here, representative claim 1 just recites one step of processing data using a function. Thus, the claim is not directed to an ordered series of steps as in *McRO.*

In *DDR Holdings*, the claimed invention created a hybrid web page that combined advantageous elements from two web pages, bypassing the expected manner of sending a visitor to another party's web page, in order to solve the internet-centric problem of retaining website visitors. *DDR Holdings*, 773 F.3d at 1257–59. Here, representative claim 1 does not recite a computer or any device that is processing the data using the function. While Appellant's Specification identifies that the use of the abstract concept helps reduce processing power, this merely shows that the method is advantage to the abstract idea and does not demonstrate the claim is necessarily rooted in computer technology or centered around a technical problem as in *DDR Holdings*. Specification p. 9, ll. 25–27. Thus,

Appellant's arguments have not persuaded us the Examiner erred in not finding the claims recite a practical application of the abstract idea.

Significantly More than the Abstract Idea

Under the 2019 Revised Guidance, if a claim: (1) recites a judicial exception, and (2) does not integrate that exception into a practical application, we then 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.

Appellant argues the Examiner has not provide the analysis to show that the additional elements represent well understood routine or conventional activities as required by *Berkheimer v. HP Inc.*, 881 F.3d 1360 (Fed. Cir. 2018). Appeal Br. 15–16.

Appellant's arguments have not persuaded us the Examiner erred in considering the claims to not recite significantly more than the abstract idea. The Examiner finds that the additional elements are instructions to implement the idea on a computer or a recitation of generic computer structure to perform generic functions. Final Act. 3. Further, the Examiner finds that implementing functions or mathematical algorithms on data are standard processes. Final Act. 4. We concur with the Examiner that the additional limitations do not amount to significantly more. As discussed above, representative claim 1 recites an abstract idea. Representative claim 1 does not recite structure in addition to the abstract concept. While representative claim 1 is not limited to a computer performing the method, in

as much as the processing limitation could be considered to imply use of a computer, the act of processing data using function (calculations) is a well-known operation of a computer. *See,* MPEP § 2106.05(d) II (ii) (Performing repetitive calculations, *Flook,* 437 U.S. at 594, 198 USPQ2d at 199 (recomputing or readjusting alarm limit values); *Bancorp Servs., L.L.C. v. Sun Life Assurance Col of Can. (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) ("The computer required by some of Bancorp's claims is employed only for its most basic function, the performance of repetitive calculations, and as such does not impose meaningful limits on the scope of those claims.")). Thus, Appellant's arguments have not persuaded us the Examiner erred in not considering the claim to recite significantly more than the abstract idea.

In summary, Appellant's arguments have not persuaded us of error in the Examiner's determination that representative claim 1 recites an abstract idea, a mathematical concept. Further, Appellant's arguments have not persuaded us that the Examiner erred in finding that the claim is not directed to an improvement in the functioning of the computer or to other technology or other technical field; directed to a particular machine; directed to performing or affecting a transformation of an article to a different state or thing; or directed to using a judicial exception in some meaningful way beyond linking the exception to a particular technological environment, such that the claim as a whole is more than a drafting effort to monopolize the judicial exception.

For these reasons, we are unpersuaded that the claims recite additional elements that integrate the judicial exception into a practical application, nor do the claims add a specific limitation beyond the judicial exception that is not "well-understood, routine, conventional." *See* 2019 Revised Guidance,

84 Fed. Reg. at 54. Accordingly, we sustain the Examiner's rejection of representative claim 1, under 35 U.S.C. § 101 as being directed to a patent-ineligible abstract idea, which is not integrated into a practical application, and does not include an inventive concept.

Appellant has not presented arguments directed to separate patentability of claims 2 through 14. Accordingly, we similarly sustain the Examiner's rejection of these claims under 35 U.S.C. § 101 as being directed to a patent-ineligible abstract idea.

CONCLUSION

In summary:

Claim Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–14	101	Eligibility	1–14	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED