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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOHN M. MARYNOWSKI,
CATALIN D. VOINESCU, STEFAN PUSCASU, and
THOMAS M. O'DONNELL

Appeal 2018-002907
Application 14/082,591[1]
Technology Center 3600

Before: MICHAEL R. ZECHER, BETH Z. SHAW, and
MICHAEL M. BARRY, *Administrative Patent Judges*.

SHAW, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] According to Appellants, the real party in interest is DCFB LLC. App. Br. 1. We previously decided an appeal in related U.S. Patent Application No. 14/828,117. *See Ex parte Marynowski*, No. 2016-008507, 2018 WL 2017635 (non-precedential) (affirming the Examiner's 35 U.S.C. § 101 rejection).

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from a rejection of claims 21–56. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.[2]

The claims are directed to an automated trading system in an electronic trading exchange. Spec. ¶ 3. Claim 21, reproduced below, is illustrative of the claimed subject matter:

> 21. A method for improving an automated response speed within a system, comprising:
>
> in a system comprising an electronic exchange system having one or more computers and a separate automated trading system having one or more dedicated computers:
>
> executing, by the automated trading system, a first portion of at least one mathematical model to generate one or more model terms, said model terms comprising pre-calculated price information comprising;
>
> storing, by the automated trading system, the pre-calculated price information in a searchable format at the automated trading system;
>
> generating, by the electronic exchange system, information related to a first traded item;
>
> transmitting, by the electronic exchange system, the information related to the first traded item to the automated trading system;
>
> retrieving, by the automated trading system, at least a portion of the pre-calculated price information previously stored in the searchable format by the automated trading system;
>
> executing, by the automated trading system, a remaining portion of the at least one mathematical model, said remaining portion using as input the information related to the first traded item;

[2] Our Decision refers to the Appeal Brief filed July 19, 2017 ("App. Br."); Reply Brief filed January 18, 2018 ("Reply. Br."); Examiner's Answer mailed November 29, 2017 ("Ans."); and Final Office Action mailed March 3, 2017 ("Final Act.").

generating, by the automated trading system, an automatically-generated request for one or more market transactions, said request being based at least in part on at least one of the information related to the first traded item, the pre-calculated price information previously stored in the searchable format at the automated trading system, and output of the executed remaining portion of the at least one mathematical model;

transmitting, by the automated trading system, the automatically-generated request to the electronic exchange system; and

executing, by the electronic exchange system, the one or more market transactions automatically generated by the automated trading system for the first traded item.

App. Br., Claims Appendix, 20.

REJECTION

The Examiner rejected claims 21–56 under 35 U.S.C. § 101 as directed to patent-ineligible subject matter. Final Act. 5–6.

The Examiner withdrew the 35 U.S.C. § 103(a) rejection in the Answer. Ans. 6.

CONTENTIONS AND ANALYSIS

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. 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, 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 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.*, *Diehr*, 450 U.S. 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.*

The U.S. Patent and Trademark Office ("USPTO") recently published revised guidance on the application of § 101. USPTO's 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Revised Guidance"). Under that Revised Guidance, 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); and

(2) additional elements that integrate the judicial exception into a practical application (*see* Manual of Patent Examining Procedure ("MPEP") § 2106.05(a)–(c), (e)–(h) (Rev. 08.2017 2018)).

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look 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.

See Revised Guidance.

Abstract Idea

The Examiner determines claim 21 is directed to processing price information, which is considered a fundamental economic practice, and thus, an abstract idea, because it relates to trading agreements. Final Act. 3, 5–6. For the following reasons, we conclude the claims recite a fundamental economic practice, which is one of certain methods of organizing human activity identified in the Revised Guidance, and thus an abstract idea. *See* 2019 Eligibility Guidance, 84 Fed. Reg. at 52, 53 (listing "[c]ertain methods of organizing human activity—fundamental economic principles or practices" as one of the "enumerated groupings of abstract ideas").

Appellants address the claims as a group (App. Br. 5–18), and we treat claim 21 as representative. Appellants argue the Examiner mischaracterized the claim by failing to consider certain elements of the claim and the claimed subject matter, as a whole or as an ordered combination of features. App. Br.

15; Reply Br. 3. Appellants argue the system is "uniquely configured to 'pre-execute' certain code (e.g., pre-execute model(s)) such that the amount of code that needs to be executed at a later time (e.g., at the time when certain determinations are actually needed), the system has much less code to execute, thereby hastening the speed at which the system can produce results." App. Br. 5.

In this case, we are not persuaded by Appellants' arguments. The claim is directed to an abstract idea because it is directed to a fundamental economic practice, which is one of certain methods of organizing human activity, as discussed below. The steps of claim 21, including, with italics added:

executing, by the automated trading system, *a first portion of at least one mathematical model to generate one or more model terms, said model terms comprising pre-calculated price information comprising*;

storing, by the automated trading system, the pre-calculated price information in a searchable format at the automated trading system;

generating, by the electronic exchange system, *information related to a first traded item*;

transmitting, by the electronic exchange system, the information related to the first traded item to the automated trading system;

retrieving, by the automated trading system, at least a portion of the pre-calculated price information previously stored in the searchable format by the automated trading system;

executing, by the automated trading system, *a remaining portion of the at least one mathematical model, said remaining portion using as input the information related to the first traded item*;

generating, by the automated trading system, *an automatically-generated request for one or more market transactions, said request being based at least in part on at least one of the information related to the first traded item, the pre-calculated price information previously stored in the searchable format at the automated trading system, and output of the executed remaining portion of the at least one mathematical model*;

transmitting, by the automated trading system, the automatically-generated request to the electronic exchange system; and

executing, by the electronic exchange system, *the one or more market transactions automatically generated by the automated trading system for the first traded item*

recite steps of retrieving financial data, generating information, and executing a market transaction.

Under Supreme Court precedent, claims directed purely to an abstract idea are patent in-eligible. As set forth in the Revised Guidance, which extracts and synthesizes key concepts identified by the courts, abstract ideas include (1) mathematical concepts, (2) certain methods of organizing human activity, and (3) mental processes. Among those certain methods of organizing human activity listed in the Revised Guidance are fundamental economic practices, such as the concept of intermediated settlement in *Alice*, and the concept of hedging in *Bilski*. Like those concepts, claim 21 also recites a fundamental economic practice. Specifically, the italicized steps fall under the umbrella of economic practices, including managing transactions or sales activities, because "generating" "information related to a first traded item," "retrieving" "pre-calculated price information," and "executing" one or more "market transactions" would ordinarily take place in a sale or market transaction, which occurs in our system of commerce. The "executing of the market transaction automatically generated by the automated trading system for the first traded item" is an economic act, and the "traded item" is an item sold in commerce.

In *Intellectual Ventures I LLC v. Capital One Bank*, 792 F.3d 1363, 1369 (Fed. Cir. 2015), an advertisement taking into account the time of day and tailoring the information presented to the user based on that information

was considered another "fundamental . . . practice long prevalent in our system." In *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044 (Fed. Cir. 2017), patent claims directed to a system and method for providing financing to allow a customer to purchase a product selected from an inventory of products maintained by a dealer were considered patent ineligible as directed to the abstract idea of processing an application for financing a purchase, an economic practice long prevalent in commerce. Like the claims at issue in *Intellectual Ventures I* and *Credit Acceptance*, the processing of price information and the market transaction in claim 21 is "a fundamental economic practice long prevalent in our system of commerce." Thus, we conclude claim 21 is directed to a fundamental economic practice, which is one of certain methods of organizing human activity identified in the Revised Guidance, and thus an abstract idea.

In accordance with the Revised Guidance, and looking to MPEP § 2106.05(a)-(c) and (e)-(h), we determine that the additional elements of claim 21, both individually and as an ordered combination, do not integrate a judicial exception, in this case abstract concepts, into a practical application. Claim 21 is directed to little more than the implementation of the abstract idea on generic computer servers and devices. The claim, as a whole, describes how to generally apply or execute the concept of retrieving and transmitting trading information in a computer environment. The claimed computer components are recited at a high level of generality and are merely invoked as tools to perform an existing process. Simply implementing the abstract idea on generic computer components is not a practical application of the abstract idea.

Accordingly, the claim, as a whole, does not integrate the abstract idea into a practical application because the claim limitations do not impose any meaningful limits on practicing the abstract idea. Stated differently, the claims do not (1) improve the functioning of a computer or other technology, (2) are not applied with any particular machine (except for generic computer components), (3) do not effect a transformation of a particular article to a different state, and (4) are not applied in any meaningful way beyond generally linking the use of the judicial exception to a particular technological environment, such that the claim, as a whole, is more than a drafting effort designed to monopolize the exception. *See* MPEP §§ 2106.05(a)–(c), (e)–(h).

Inventive Concept

Because we determine claim 21 is "directed to" an abstract idea, we consider whether claim 21 recites an "inventive concept." The Examiner determined claim 21 does not recite an inventive concept because the additional elements in the claim do not amount to "significantly more" than an abstract idea. *See* Final Act. 6.

We agree with the Examiner's determination in this regard. The additional elements recited in claim 21 include "an electronic exchange system having or ore more computers and a separate automated trading system having one or more dedicated computers." The claim recites these elements at a high level of generality, and the written description indicates that these elements are generic computer components. *See, e.g.*, Spec. ¶ 45 ("For example, theoretical price logic may be implemented by the central processor and memory, and possible other equipment useful in perforating

[sic] fast mathematical calculations, in a general purpose computer. Alternatively, the theoretical price logic may be implemented in a separate processor in communication with the processor of a general purpose computer or an array of processors."), Fig. 6 (illustrating electronic trading system network 70, which includes back-end computers, trading stations, and exchange sites containing back-office computers). Using generic computer components to perform abstract ideas does not provide the necessary inventive concept. *See Alice*, 573 U.S. at 223 ("[T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention."). Thus, these elements, taken individually or together, do not amount to "significantly more" than the abstract idea itself.

Appellants argue the claims are analogous to *BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016). App. Br. 10. We have considered Appellants' arguments in light of *BASCOM*, and, for the reasons set forth below, we conclude *BASCOM* does not alter our determination that the claims do not include an inventive concept—an element or combination of elements sufficient to ensure that the claim amounts to significantly more than the abstract idea and to transform the nature of the claim into a patent-eligible concept.

In *BASCOM*, the Court decided at the pleading stage in favor of the non-movant:

> The inventive concept described and claimed . . . *is the installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user. This design gives the filtering tool both the benefits of a filter on a local computer and the benefits of a filter on the ISP server.* BASCOM explains that the inventive concept

> rests on taking advantage of the ability of at least some ISPs [internet service providers] to identify individual accounts that communicate with the ISP server, and to associate a request for Internet content with a specific individual account.

Id. at 1350 (emphasis added).

The rejected claims are unlike the claims of *BASCOM* because they are do not recite any analogous technological requirements, such as an "installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user." *Id.*

Appellants also argue the claimed system is analogous to *Enfish, LLC v. Microsoft, Corp.*, 822 F.3d 1327 (Fed. Cir. 2016), because the "claims result in a reconfiguration of elements that results in data processing improvements" and allows "for improved automated response speeds in an electronic trading system." App. Br. 7, 11. Appellants also argue the claimed system is also analogous to *McRO, Inc. v. Bandai Namco Games America, Inc.*, 837 F.3d 1299 (Fed. Cir. 2016), because the process improves an automated response speed. App. Br. 11–12. These case comparisons are misplaced because "claiming the improved speed or efficiency inherent with applying the abstract idea on a computer" does not provide an inventive concept. *Intellectual Ventures I,* 792 F.3d at 1367.

Accordingly, we sustain the Examiner's rejection of claims 21–56 under 35 U.S.C. § 101 as directed to patent-ineligible subject matter.

DECISION

For the above reasons, the Examiner's rejection of claims 21–56 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) (2009).

AFFIRMED