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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte BRAD NIGHTENGALE, KARL NEWLAND, KEVIN SIEGEL,
ZHONGXIAO JIANG, and SHARON ROWBERRY

Appeal 2020-002578
Application 14/100,690
Technology Center 3600

Before ERIC S. FRAHM, JASON J. CHUNG, and
JOYCE CRAIG, *Administrative Patent Judges*.

CHUNG, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals the Final Rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

INVENTION

The invention relates to analyze fraud and other risks in transactions. Spec. ¶ 3. Claim 1 is illustrative of the invention and is reproduced below:

1. A method comprising steps including:
receiving, by a service provider computer system, from a merchant terminal *an authorization request message for a*

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. According to Appellant, Visa International Service Association is the real party in interest. Appeal Br. 2.

payment from a first payment account for a transaction, the authorization request message indicating a transaction value;

forwarding, by the service provider computer system, the authorization request message to an issuer of the first payment account;

receiving, by the service provider computer system, an authorization approval message from the issuer in response to the authorization request message with the transaction value;

determining, by the service provider computer system, a rate of purchases of the first payment account;

determining, by the service provider computer system, that the first payment account is associated with a second payment account;

determining, by the service provider computer system, that the second payment account is associated with an elevated risk of fraud;

calculating, by the service provider computer system, notwithstanding the authorization approval message from the issuer, using a processor operatively coupled to a memory, a fraud risk score based on at least the rate of purchases in the first payment account and the elevated risk of fraud associated with the second payment account, and wherein the calculating comprises weighting a first risk based on the rate of purchases in the first payment account and a second risk based on the elevated risk of fraud associated with the second payment account;

inserting, by the service provider computer system, the fraud risk score in the authorization approval message; and

sending, by the service provider computer system, the authorization approval message with the fraud risk score to the merchant terminal in response to the authorization request message, wherein the merchant terminal automatically denies the transaction based on the fraud risk score when the fraud risk score exceeds a threshold, notwithstanding the authorization approval message from the issuer.

REJECTION

The Examiner rejects claims 1–20 under 35 U.S.C. § 101 as being directed to patent ineligible subject matter. Final Act. 5–9.

ANALYSIS

A. Principles of Law

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 waterproof 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. 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“2019 Revised Guidance”).² “All USPTO personnel are, as a matter of internal agency management, expected to follow the guidance.” *Id.* at 51; *see also* Update at 1.

Under the 2019 Revised Guidance and the 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”).³

² 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 “Update”) (available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf).

³ This evaluation is performed by (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception, and

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.

C. The Examiner’s Rejection and Appellant’s Arguments

The Examiner concludes the present claims recite certain methods of organizing human activity. Ans. 5–6; Final Act. 3–6. The Examiner concludes the present claims are not integrated into a practical application. Ans. 6–7; Final Act. 6–7. The Examiner determines the present claims recite an abstract idea using additional elements that are well-understood, routine, and conventional. Final Act. 3–4, 9 (citing *Parker v. Flook*, 437 U.S. at 594–95).

Appellant argues that the present claims do not recite human activity because the claims recite a combination of steps that includes transmission of data between multiple machines. Appeal Br. 6–7; Reply Br. 2. Appellant

(b) evaluating those additional elements individually and in combination to 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.

argues the present claims recite an improvement in computer technology because transactions will not be completed if the risk of the transaction is unacceptable to the merchant. Appeal Br. 8–9 (citing Dr. Ianakiev Declaration ¶ 9); Reply Br. 3–4. Appellant argues the present claims are similar to the patent eligible claims of Example 42 in the 2019 Revised Guidance. Appeal Br. 9–10; Reply Br. 5. Appellant argues that the Examiner fails to provide sufficient evidence to support the finding that the additional elements implementing the abstract idea are well-understood, routine, and conventional. Appeal Br. 10–11 (citing *Berkheimer v. HP Inc.*, 881 F.3d 1360 (Fed. Cir. 2018)); Reply Br. 4. We disagree with Appellant.

D. Step 2A, Prong 1

Patent eligibility under 35 U.S.C. § 101 is a question that we resolve pursuant to the 2019 Revised Guidance. The emphasized portions of claim 1, reproduced above (*see supra* at 1–2), recite fundamental economic practices (including mitigating risk) because they recite not completing a transaction if the risk of the transaction is unacceptable to a merchant. Ans. 5–6; Final Act. 3–6; *see* 2019 Revised Guidance, 84 Fed. Reg. at 52 n.14. Fundamental economic practices (including mitigating risk) fall into the category of certain methods of organizing human activity. 2019 Revised Guidance, 84 Fed. Reg. at 52 n.14. Certain methods of organizing human activity are a type of abstract idea. *Id.*

We also conclude the italicized “determining” limitations and the “calculating” limitation can be performed by the human mind with the assistance of pen and paper. *See* 2019 Revised Guidance, 84 Fed. Reg. at 52 n.14. Concepts performed in the human mind (including an observation, evaluation, judgment, opinion) fall into the category of mental processes. *Id.*

Mental processes are a type of abstract idea. *Id.*; *see also FairWarning IP, LLC v. Iatric Systems, Inc.*, 839 F.3d 1089, 1094–1095, 1097 (Fed. Cir. 2016) (collecting and analyzing information to detect fraud or misuse and notifying a user when fraud or misuse is detected is an abstract idea).

We, therefore, disagree with Appellant’s argument that the present claims do not recite human activity. Appeal Br. 6–7; Reply Br. 2. The additional elements (i.e., the non-emphasized portions of claim 1 recited *supra* at 1–2) are generic computer components for the reasons discussed *infra*.

We must still determine whether the abstract idea is integrated into a practical application, namely whether the claim applies, relies on, or uses the abstract idea in a manner that imposes a meaningful limit on the abstract idea, such that the claim is more than a drafting effort designed to monopolize the abstract idea. *See* 2019 Revised Guidance, 84 Fed. Reg. at 54–55. We therefore (1) identify whether there are any additional recited elements beyond the abstract idea, and (2) evaluate those elements both individually and collectively to determine whether they integrate the exception into a practical application. *See id.*

Accordingly, we proceed to Prong 2.

E. Step 2A, Prong 2

Here, the only elements in the claims beyond the abstract idea (i.e., the additional elements) are “service provider computer system,”⁴ “processor,” “memory,” and “merchant terminal.” *See* 2019 Revised Guidance, 84 Fed. Reg. at 52. The additional elements of the present claims

⁴ This additional element appears only in claim 1 and its dependent claims. *See* Claims App.

do not integrate the abstract idea into a practical application because they do not impose any meaningful limits on practicing the abstract idea for the following reasons.

Appellant does not identify persuasively how the Specification sets forth an improvement in technology. The Update addresses how we consider evidence of improvement that is presented to us. The Update states:

the evaluation of Prong Two requires the use of the considerations (e.g. improving technology, effecting a particular change treatment or prophylaxis, implementing with a particular machine, etc.) identified by the Supreme Court and the Federal Circuit, to ensure that the claim as a whole “integrates [the] judicial exception into a practical application [that] will apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception.”

Update, 11 (emphases added). The Update further states:

[d]uring examination, the examiner should analyze the “improvements” consideration by evaluating the specification and the claims to ensure that a technical explanation of the asserted improvement is present in the specification, and that the claim reflects the asserted improvement. Generally, examiners are not expected to make a qualitative judgment on the merits of the asserted improvement. *If the examiner concludes the disclosed invention does not improve technology, the burden shifts to applicant to provide persuasive arguments supported by any necessary evidence to demonstrate that one of ordinary skill in the art would understand that the disclosed invention improves technology.* Any such evidence submitted under 37 C.F.R. § 1.132 must establish what the specification would convey to one of ordinary skill in the art and cannot be used to supplement the specification. For example, in response to a rejection under 35 U.S.C. § 101, an applicant could submit a declaration under

§ 1.132 providing testimony on how one of ordinary skill in the art would interpret the disclosed invention as improving technology and the underlying factual basis for that conclusion.

Id. at 13 (emphasis added).

Here, the Examiner concludes the present claims are not integrated into a practical application. Ans. 6–7; Final Act. 6–7. Appellant presents testimonial evidence from Dr. Ianakiev. Appeal Br. 8–9 (citing Dr. Ianakiev Declaration ¶ 9).

However, we disagree with Appellant’s argument that the present claims recite an improvement in computer technology because transactions will not be completed if the risk of the transaction is unacceptable to the merchant. Appeal Br. 8–9 (citing Dr. Ianakiev Declaration ¶ 9); Reply Br. 3–4; *see also FairWarning IP, LLC v. Iatric Systems, Inc.*, 839 F.3d at 1094–1095, 1097 (collecting and analyzing information to detect fraud or misuse and notifying a user when fraud or misuse is detected is an abstract idea).

In particular, Dr. Ianakiev states “I believe that, *as of the earliest priority date for the present application (March 23, 2010, relating to U.S. provisional application no. 61/316,483)*, no specific information regarding fraud was passed back to the merchant in an authorization response message during a transaction in conventional systems” (emphasis added). Dr. Ianakiev Declaration ¶ 9 (cited at Appeal Br. 8–9). To the extent that Appellant and Dr. Ianakiev are arguing that the present claims recite an improvement in computer technology because there is no prior art rejection, we disagree. Appellant improperly conflates the requirements for patent-eligible subject matter (§ 101) with the independent requirements of novelty (§ 102) and non-obviousness (§ 103). “The ‘novelty’ of any element or

steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.” *Diehr*, 450 U.S. at 188–89; *see also Genetic*, 818 F.3d at 1376 (stating that, “under the *Mayo/Alice* framework, a claim directed to a newly discovered law of nature (or natural phenomenon or abstract idea) cannot rely on the novelty of that discovery for the inventive concept necessary for patent eligibility”).

Furthermore, although Dr. Ianakiev states there is an improvement in computer technology because transactions will not be completed if the risk of the transaction is unacceptable to the merchant, we view this as an improvement to the abstract idea (i.e., an improvement to certain methods of organizing human activity or an improvement to mental processes) rather than an improvement to computer technology for the reasons discussed in §§ D. and E. In addition, “a claim for a *new* abstract idea is still an abstract idea.” *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016). Also, we have weighed the declaration against the facts on record and considered it as legally required by case precedent, and have concluded that the declaration was not persuasive to prove integration into a practical application.

Appellant argues the present claims are similar to the patent eligible claims of Example 42 in the 2019 Revised Guidance is unpersuasive. Appeal Br. 9–10; Reply Br 5. The claims in Example 42 pertained to storing medical records and sharing updated information on a patient’s medical conditions with other medical providers, whereas the present claims recites not completing a transaction if the risk of the transaction is unacceptable to a merchant. *See also FairWarning IP, LLC v. Iatric Systems, Inc.*, 839 F.3d at

1094–1095, 1097 (collecting and analyzing information to detect fraud or misuse and notifying a user when fraud or misuse is detected is an abstract idea).

Moreover, the additional elements in the present claims, namely “service provider computer system,” “processor,” “memory,” and “merchant terminal” do not, either individually or in combination, integrate the abstract idea into a practical application. Appellant’s Specification discloses that these elements encompass generic computer components, such as service provider computer system (Spec. ¶¶ 52, 53, 55, 56, 62), processor (*id.* ¶¶ 14, 16, 17, 64–66, 70), memory (*id.*), and merchant terminal (*id.* ¶¶ 45, 47–49, 51, 57, 60). Merely adding generic computer components to perform abstract ideas does not integrate those ideas into a practical application. *See* 2019 Revised Guidance, 84 Fed. Reg. at 55 (identifying “merely includ[ing] instructions to implement an abstract idea on a computer” as an example of when an abstract idea has not been integrated into a practical application).

Appellant does not make any other arguments pertaining to Step 2A, Prong 2. Because the present claims recite an abstract idea that is not integrated into a practical application, we proceed to Step 2B.

F. Step 2B

The additional elements, either individually or in combination, do not amount to an inventive concept. An inventive concept “cannot be furnished by the unpatentable law of nature (or natural phenomenon or abstract idea) itself.” *Genetic*, 818 F.3d at 1376; *see also* 2019 Revised Guidance; *Alice*, 573 U.S. at 217 (explaining that, after determining a claim is directed to a judicial exception, “we then ask, ‘[w]hat else is there in the claims before us?’” (alteration in original) (quoting *Mayo*, 566 U.S. at 78)). Instead, an

“inventive concept” is furnished by an element or combination of elements that is recited in the claim in addition to the judicial exception and sufficient to ensure the claim as a whole amounts to significantly more than the judicial exception itself. *Alice*, 573 U.S. at 218–19 (citing *Mayo*, 566 U.S. at 72–73); see *BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018) (explaining that the Supreme Court in *Alice* “only assessed whether the claim limitations other than the invention’s use of the ineligible concept to which it was directed were well-understood, routine and conventional” (emphasis added)).

We agree with the Examiner’s determination that the present claims recite an abstract idea using additional elements that are well-understood, routine, and conventional. Final Act. 3–4, 9 (citing *Parker v. Flook*, 437 U.S. at 594–95). The Specification supports the Examiner’s determination in this regard, because it explains that service provider computer system (Spec. ¶¶ 52, 53, 55, 56, 62), processor (*id.* ¶¶ 14, 16, 17, 64–66, 70), memory (*id.*), and merchant terminal (*id.* ¶¶ 45, 47–49, 51, 57, 60) are generic computer components. Appellant’s Specification indicates these additional elements were well-understood, routine, and conventional components because it describes them at a high level of generality and in a manner that indicates that they are sufficiently well-known. *Id.* ¶¶ 14, 16, 17, 45, 47–49, 51–53, 55–57, 60, 62, 64–66, 70.

We, therefore, disagree with Appellant’s argument that the Examiner fails to provide sufficient evidence to support the finding that the additional elements implementing the abstract idea are well-understood, routine, and conventional. Appeal Br. 10–11 (citing *Berkheimer v. HP Inc.*, 881 F.3d 1360 (Fed. Cir. 2018)); Reply Br. 4.

Appellant does not argue claims 1–20 separately with particularity. Appeal Br. 6–11. For at least the reasons above, we conclude, under the 2019 Revised Guidance, that each of the present claims, considered as a whole, is directed to a patent-ineligible abstract idea that is not integrated into a practical application, and does not include an inventive concept. We therefore sustain the Examiner’s rejection of: (1) independent claims 1, 17, and 19; and (2) dependent claims 2–16, 18, and 20 under 35 U.S.C. § 101.

We have only considered those arguments that Appellant actually raised in the Briefs. Arguments Appellant could have made, but chose not to make, in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(iv).

CONCLUSION

Claim(s) Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–20	101	Eligibility	1–20	

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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED