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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KRISTOFFER CASSEL and NILS EMIL LARSSON

Appeal 2017-005040[1]
Application 14/830,690
Technology Center 3600

Before CARL W. WHITEHEAD JR., ADAM J. PYONIN, and JOSEPH P. LENTIVECH, *Administrative Patent Judges*.

PYONIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

STATEMENT OF THE CASE

Introduction

The Application is directed to "a system and method for determining an identity of a user based on details corresponding to an order." Spec. ¶ 18.

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[1] The real party in interest is identified as Klarna AB. App. Br. 3.

Claims 1, 5, and 13 are independent. Claim 1 is reproduced below for reference (emphasis added):

> 1. A computer-implemented method, comprising:
>
> receiving a set of field values corresponding to a transaction;
>
> determining, based at least in part on the set of field values, identifying information about a user associated with the transaction;
>
> obtaining previous transaction information relating to at least one previous transaction to which the user was a party;
>
> computing, based at least in part on the identifying information and the previous transaction information, a user characteristic associated with the user;
>
> generating a set of inputs based at least in part on the identifying information and the previous transaction information;
>
> obtaining a set of payment types for an automated payment system, each payment type of the set corresponding to a workflow for completion of the transaction by the automated payment system;
>
> *computing a score for each payment type of the set of payment types by passing the set of inputs through a random forest, thereby obtaining a set of scores for the set of payment types, the random forest trained from a data set comprising records that include at least one field for a ground truth value that corresponds to a payment type from the set of payment types*;
>
> selecting a user interface based at least in part on the set of payment types, the set of scores, and the user characteristic; and
>
> providing the user interface to the user such that a selection from the user interface by the user causes the one or more computer systems to perform the workflow corresponding to the payment type associated with the selection.

References and Rejections

Claims 1–16 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 2.

ANALYSIS

We have reviewed the Examiner's rejection in light of Appellants' arguments. We have considered in this Decision only those arguments Appellants' actually raised in the Briefs. Any other arguments Appellants could have made but chose not to make are deemed waived. *See* 37 C.F.R. § 41.37(c)(1)(iv).

An invention is patent-eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. The Supreme Court, however, has long interpreted § 101 to include an implicit exception: laws of nature, natural phenomena, and abstract ideas are not patentable. *See, e.g., Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014); *see also Rubber-Tip Pencil Co. v. Howard*, 87 U.S. 498, 507, (1874) ("An idea of itself is not patentable."). 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, (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," e.g., to an abstract idea. *Alice*, 134 S. Ct. at 2355. If the claims are directed to a patent-ineligible concept, the inquiry proceeds to the second step, where the elements of the claims are considered "individually and 'as an ordered combination"' to determine whether there are additional elements that "'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).

Appellants argue the Examiner erred in finding the claims are directed to an unpatentable exception to 35 U.S.C. § 101:

> claims 1–4 do not set forth or describe an abstract idea, present significantly more than an abstract idea of "to providing payment options to a user," as alleged by the Office, are firmly rooted in the realm of computer technology, are directed to improvements to computer functionality, and present no risk of pre-emption of every application of providing payment options.

App. Br. 23.

We disagree. We adopt the Examiner's findings and conclusions as our own, and we add the following for emphasis.

Alice Step One

Appellants argue the Examiner's rejection is in error, because "[w]hile claim 1 involves providing payment options, the claims are not directed to merely providing the payment options on a computer, but one specific, technical way of providing payment options in a way that improves the functioning of the underlying payment computer system." App. Br. 10. Appellants argue the claim is not directed to an abstract concept, as "[n]o abstract ideas previously identified by the courts have recited a basic concept that is similar" to the claimed requirements of "using a 'random forest ... trained from a data set comprising records that include at least one field for a ground truth value that corresponds to a payment type,' as recited by claim 1." App. Br. 13.

We are not persuaded the Examiner errs. Claim 1 recites steps of obtaining, calculating, and providing data relating to a transaction. We agree with the Examiner that the claim is "drawn to analyzing previous transaction information for a user to determine scores associated with

various payment types and selecting a user interface to display based on the scores, wherein the user interface may display different payment types based on the scores," which is the abstract idea of "providing payment options to a user." Final Act. 2–3.

The claimed process can be used to authorize a transaction and/or authenticate a user (*see, e.g.* Spec. ¶¶ 18–19, 26), and our reviewing court has held claims similarly directed transaction authorization and fraud detection are directed to abstract ideas. *See FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1095 (Fed. Cir. 2016) ("These are the same questions (though perhaps phrased with different words) that humans in analogous situations detecting fraud have asked for decades, if not centuries."); *see also CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011) (the abstract idea of verifying credit card transactions); *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1054 (Fed. Cir. 2017) ("the abstract idea of 'processing an application for financing a purchase'"); *Smart Systems Innovations, LLC v. Chicago Transit Authority*, 873 F.3d 1364, 1371–72 (Fed. Cir. 2017) (finding the formation of financial transactions in a certain field is abstract).

Appellants' arguments focus on the "random forest" limitation, particularly the "recitation of 'computing a score for each payment type of the set of payment types by passing the set of inputs through a random forest [that has been] trained from a data set comprising records that include at least one field for a ground truth value that corresponds to a payment type.'" App. Br. 14. The "random forest," as claimed, is a model for evaluating data. *See* Spec. ¶ 20; Ans. 6; *see also* https://en.wikipedia.org/wiki/Random_forest (last accessed July 17, 2018). The use of the random forest,

then, is a mathematical relationship or formula which is abstract itself. *See, e.g., Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014) ("Without additional limitations, a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible."); *see also Coffelt v. NVIDIA Corp.*, 680 F. App'x 1010 (Fed. Cir. 2017) (unpublished) (an abstract mathematical algorithm for calculating and comparing regions in space). Adding the abstract idea of the random forest, to the abstract idea of providing payment options to a user, does not place the claim within the realm of patent eligibility. *See, e.g., RecogniCorp, LLC v. Nintendo Co., Ltd.,* 855 F.3d 1322, 1327 (Fed. Cir. 2017) ("Adding one abstract idea . . . to another abstract idea . . . does not render the claim non-abstract.").

Further, we are not persuaded the claimed use of the random forest "reflect[s] an inventive solution to a problem in computer technology." *Contra* Reply Br. 6. Even if the use of the random forest is not considered part of the abstract idea discussed above, at most the disputed limitation comprises extra-solution activity that does not convert the otherwise ineligible concept into an inventive concept. *See, e.g., Intellectual Ventures I LLC v. Erie Indent. Co.*, 850 F.3d 1315, 1328–29 (Fed. Cir. 2017) ("[w]hile limiting the index to XML tags certainly narrows the scope of the claims, in this instance, it is simply akin to limiting an abstract idea to one field of use or adding token post solution components that do not convert the otherwise ineligible concept into an inventive concept"); *see also Mayo*, 566 U.S. at 72–73 ("[T]he prohibition against patenting abstract ideas cannot be circumvented by . . . adding insignificant post[-]solution activity") (internal citations and quotation marks omitted).

Accordingly, we are not persuaded the Examiner errs in determining claim 1 is directed to an abstract idea pursuant to step one of *Alice*.

Alice Step Two

Appellants argue the Examiner's rejection is in error, because "the claims, when considered as a whole, amount to significantly more than an ineligible abstract idea." App. Br. 16. Particularly, Appellants contend "claim l's use of 'a random forest ... trained from a data set comprising records that include at least one field for a ground truth value that corresponds to a payment type' is unconventional, to say the least," as "*Appellant's* specific implementation of machine learning techniques to 'learn a preferred payment method' . . . present[s] significantly more than simply an abstract idea of 'providing payment options to a user.'" App. Br. 17.

We are not persuaded the Examiner errs. As discussed above, we find claim 1's use of the random forest limitation comprises, at most, token extra-solution activity. *See, e.g.*, Spec. ¶ 129 ("the supervised model may [also] be implemented as a set of naïve Bayes classifiers, a linear set of decision rules, or as a multinomial logistic regression."). Additionally, we agree with the Examiner, and Appellants do not challenge, that a random forest is a well-known and conventional algorithm. *See* Ans. 6–7; *see also* Final Act. 12, Ans. 11; Reply Br. 8–10; Spec. ¶¶ 20, 64. The disputed limitation computes a score by passing certain data through a random forest trained on other data. Appellants fail to show that this claimed use of the random forest is anything other than application of the known technique for its conventional purpose. *See* Ans. 7 ("the recited machine-learning technique

is recited at a high level of generality and could easily be substituted with other well-known machine-learning techniques such as neural networks"); Spec. ¶ 96 ("in some embodiments, the supervised model is alternatively implemented using a regression model based on such historical purchase data instead of a random forest"), *see also* Spec. ¶¶ 20, 72, 129. The Supreme Court has instructed that "limiting the use of an abstract idea to a particular technological environment" cannot transform a patent-ineligible abstract idea into a patent-eligible invention. *Alice*, 134 S. Ct. at 2358 (quotation omitted); s*ee also Affinity Labs of Texas, LLC v. DirecTV, LLC,* 838 F.3d 1253, 1259 (Fed. Cir. 2016). Here, the recited use of the random forest does not transform the patent-ineligible abstract idea of the claims into a patent-eligible invention.

Accordingly, Appellants do not persuasively show the claim recites an inventive concept that is significantly more than the abstract idea.

Preemption

Appellants further argue "the present claims present no [] risk of pre-empting all ways of 'providing payment options to a user,' because the claims recite a specific, discrete implementation; as noted above." App. Br. 23.

We are unpersuaded of Examiner error. Preemption is not the sole test for patent eligibility, and any questions on preemption in the instant case have been resolved by the above analysis. As our reviewing court has explained: "questions on preemption are inherent in and resolved by the § 101 analysis," and, although "preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate

patent eligibility." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015); *cf. OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362–63 (Fed. Cir. 2015) ("[T]hat the claims do not preempt all price optimization or may be limited to price optimization in the e-commerce setting do not make them any less abstract.").

CONCLUSION

Accordingly, we are not persuaded the Examiner erred in determining independent claim 1 is directed to non-statutory subject matter. Final Act. 2. Appellants' arguments for the remaining claims rely on the arguments presented for claim 1. *See* App. Br. 24 ("While the recitation of 'a plurality of decision trees' in claims 5 and 13 is broader in scope than the 'random forest' of claim 1, the same reasoning as above applies."). Thus, we sustain the rejection of independent claim 1, and claims 2–20 for the same reasons as discussed above.

DECISION

The Examiner's decision rejecting claims 1–20 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