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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MICHELLE L. CARLOUGH, CHRISTOPHER M. CURTIN,
ROBERT K. PARKIN, JOSHUA P. SCHIFFMAN, ZUOCHUN TANG,
and RICHARD T. WINCHELL¹

Appeal 2019-001454
Application 15/281,368
Technology Center 3600

Before ROBERT E. NAPPI, LINZY T. McCARTNEY and
JULIET MITCHELL DIRBA, *Administrative Patent Judges*.

NAPPI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1 through 18. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). According to Appellant, International Business Machines is the real party in interest. Appeal Br. 1.

INVENTION

The invention relates generally to a method to detect anomalies in a batch of communications, based upon an aggregation of response metric values. Abstract. Claim 1 is reproduced below.

1. A computer-implemented method for detecting anomalies in electronic communications, the method comprising:

obtaining, by at least one computing device, a set of response metrics from each of a plurality of electronic communications in a communications batch in a real-time data stream, the plurality of electronic communications being a batch of emails having common content sent from a common batch launch time;

computing, by the at least one computing device, a response metric value pattern for a response metric of the set of response metrics based on an aggregation of the response metric over the plurality of electronic communications;

analyzing a content of the electronic communications to retrieve characteristics of the communication that are in common with a cluster of previous communications batches in a plurality of clusters, each of the plurality of clusters having value patterns from a plurality of previous communication batches clustered together based on a similarity of data curves corresponding to the previous communication batches;

generating a predicted metric value pattern corresponding to the response metric based on the cluster, including:

analyzing accumulated response metrics from a plurality of previously sent communication batches; and

calculating the predicted metric value pattern for each of the accumulated response metrics based on the analyzing;

analyzing the cluster of previous communications batches to find predictive features of the cluster by comparing features and variables within communications that are similar

across the cluster and contrasting features and variables with other communications that are not in the cluster;

estimating a plurality of different models based on the predictive features, the plurality of different models including linear models, dynamic linear models, stochastic process models, hierarchical temporal memory models, gradient boosted trees, and recurrent neural networks with long- short term memory;

assigning a weight to each model of the plurality of different models based on an evaluation of each model according to standard fit and hold-out prediction statistics;

constructing a combined ensemble model based on the weighted plurality of different models;

comparing, by the at least one computing device, a trend over time indicated by the response metric value pattern to a predicted metric value pattern corresponding to the response metric based on the combined ensemble model to determine whether the response metric value pattern is anomalous; and

performing a remediation activity in response to a determination that the response metric value pattern is anomalous.

EXAMINER'S REJECTIONS²

The Examiner rejected claims 1 through 18 under 35 U.S.C. § 101 for being directed to patent-ineligible subject matter. Final Act. 11–18.

The Examiner rejected claims 1 through 18 under 35 U.S.C. § 112(a) for failing to comply with the written description requirement. Final Act. 18–24.

² Throughout this Decision we refer to the Appeal Brief filed August 28, 2018 (“Appeal Br.”); Reply Brief filed December 6, 2018 (“Reply Br.”); Final Office Action mailed March 28, 2018 (“Final Act.”); and the Examiner’s Answer mailed October 5, 2018 (“Ans.”).

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The Examiner withdrew the rejection of claims 13 through 18 under 35 U.S.C. § 101 as being directed to a signal; claims 1, 4 through 7, 10 through 13, 16 through 18 under 35 U.S.C. § 112(a) written description for the recitation of “batch job”; and claims 1 through 18 under 35 U.S.C. § 103. Answer 4.

35 U.S.C. § 101 Rejection

ANALYSIS

We have reviewed Appellant’s arguments in the Briefs, 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 any of the claims under 35 U.S.C. § 101. 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.”).

PRINCIPLES OF LAW

Patent-eligible subject matter is defined in 35 U.S.C. § 101 of the Patent Act, which recites:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

There are, however, three judicially created exceptions to the broad categories of patent-eligible subject matter in 35 U.S.C. § 101: “[I]aws of

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nature, natural phenomena, and abstract ideas.” *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012).

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*. *Alice*, 573 U.S. at 217–18 (citing *Mayo*, 566 U.S. at 75–77). 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 (1854))); 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 187; *see also id.* at 191 (“We

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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 (citation 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 United States Patent and Trademark Office “USPTO” published revised guidance on the application of § 101. USPTO’s *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Memorandum”). Under that guidance, we first determine whether the claim recites:

- (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of

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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) (9th Ed., Rev. 08.2017, Jan. 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 Memorandum.

DISCUSSION

The Judicial Exception

The Examiner determines all the pending claims are not patent eligible because they are directed to a judicial exception, abstract idea, without reciting significantly more. Final Act. 11–18. Specifically, the Examiner determines the claims are directed to collecting information, analyzing the information, and displaying the results of the collection and analysis of data information, which is similar to concepts found abstract in *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016), *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366 (Fed. Cir. 2011) and *FairWarning IP, LLC v. Iatric Sys.*, 839 F.3d 1089, 1095 (Fed. Cir. 2016). Answer 12–15.

Appellant argues the claims are not directed to a judicial exception or

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abstract idea. Appeal Br. 11–14. Appellant argues that the claims are similar to those at issue in *Enfish, BASCOM and McRO*, as they are directed to computer technology, and improve a technology. *Id.* (citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016), *BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016), *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016)).

We are not persuaded of error by Appellant’s arguments and concur with the Examiner that representative claim 1 sets forth an abstract concept of collecting information and analyzing it (a mental process). Initially we note that we will address Appellant’s arguments that the claim are directed to a computer technology and improving a technology as it relates to the practical application analysis under the guidelines.

Claim 1 recites a method of using a device having a processor for: “obtaining . . . a set of response metrics” (a data gathering or observation step); “computing . . . a response metric value pattern” based on an aggregation of the response metric (an analysis step); analyzing the content of the electronic communications to retrieve characteristics (an analysis and data gathering step); generating a predicted metric by analyzing accumulated response metrics and calculating the predicted metric value (an analysis step); analyzing the cluster of prior communications (an analysis step); estimating plural different models (an analysis step); and assigning weight to each model and constructing a combined model and comparing a trend over time (analysis steps). We consider these limitations to recite an abstract mental process. These steps can be performed in the human mind as they are merely gathering and analyzing data, and we concur with the Examiner that they recite a concept similar to that at issue in *Electric Power Group*.

The claims at issue in *Electric Power Group* recited several steps of

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receiving data from various sources, detecting and analyzing the data, and displaying the data. *Elec. Power Grp.*, 830 F.3d at 1351–52. Thus, we concur with the Examiner that the claims recite a concept that is similar to concepts found abstract by the courts such as in *Electric Power Group*. See also *Classen Immunotherapies, Inc. v. Biogen IDEC*, 659 F.3d 1057, 1067 (Fed. Cir. 2011) (claim to collecting and comparing known information determined to be steps that can be practically performed in the human mind); *In re TLI Communications* 823 F3d 607, 613 (Fed Cir 2016) (finding claims to classifying and storing digital images as reciting an abstract idea) *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass’n*, 776 F.3d 1343, 1347 (Fed. Cir. 2014) (“The concept of data collection, recognition, and storage is undisputedly well-known. Indeed, humans have always performed these functions.”); October 2019 Update: Subject Matter Eligibility 7 (discussing *Electric Power Group* and mental processes), available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf.

Thus, we are not persuaded that the Examiner erred in determining the claim recites an abstract idea. As detailed above the claim recites numerous data gathering and analysis steps and as such recites an abstract idea which is not unlike the abstract idea at issue in *Electric Power Group*. As such, we concur with the Examiner and consider representative claim 1 to recite an abstract concept.

Integration of the Judicial Exception into a Practical Application

The Examiner finds that the claims do not recite an improvement to the functioning of the computer itself or the querying of a database. Final Act. 12–13.

As discussed above Appellant argues the claims are directed to a technical problem “an automated computer anomaly detection system that improves on the current technology in the field.” Appeal Br. 12 (citing *Enfish*), Reply Br. 11–5. Further, Appellant argues:

Similar to *MCRO*, the claims of the present application enable automation via a set of rules, here with respect to improving the functionality of an automated batch email sending system. In embodiments, patterns are measured in real time from metrics returned from emails in the batch and these patterns are compared against previously generated expectations to find anomalies in the response to the batch

Appeal Br. 13 (citing *McRO*).

We are not persuaded of error by Appellant’s arguments. As discussed above, we concur with the Examiner that representative claim 1 recites an abstract idea. Further, we do not consider the claim to integrate the abstract idea into a practical application because we do not find that the claim recites an improvement to the functioning of the computer or other technology or otherwise tied to technology.

We are not persuaded of error by Appellant’s argument, which relies upon *Enfish*, and which asserts the claim is directed to improving computer technology or other technology. The *Enfish* court found “the plain focus of the claims is on an improvement to computer functionality itself, not on economic or other tasks for which a computer is used in its ordinary capacity.” *Enfish*, 822 F.3d at 1336. Here, we do not find that Appellant’s claims improve the function of the computer, rather they merely describe an improvement to the concept of informing a user (e.g. marketers) to see how batch communications are performing. See Specification ¶ 32. Further, while the claim recites a step of performing a remediation action, Appellant’s Specification identifies that this may be just providing an alert to

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a user (*see* Specification ¶ 42), which is an insignificant post-solution activity and not a step which relates to improving the operation of the communication system. Similarly, the claims are not like those at issue in *DDR* where 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, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257–59 (Fed. Cir. 2014). Thus, the representative claim, when interpreted in light of the Specification, merely recites use of a computer as a tool to implement a concept of collecting information, analyzing it, and displaying the results, a mental process (an abstract idea). *See, e.g., RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) (“Unlike *Enfish*, [the claim] does not claim a software method that improves the functioning of a computer . . . [but] claims a ‘process that qualifies as an ‘abstract idea’ for which computers are invoked merely as a tool.’”) (citation omitted)).

Further, we do not find that representative claim 1 is like the claims at issue in *McRO*. In *McRO*, the court reviewed claims which 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, as discussed above, claim 1 recites several steps of gathering and analyzing data using models and Appellant’s Specification

identifies these models and statistical analysis can be by using any of a number of models (e.g. linear models, dynamic linear models which are evaluated using any a multiple statistical methods). Specification ¶¶ 39–41. Thus, when interpreted in light of the Specification, the claim recites a series of generically recited rules and there is no evidence that the claim performs a distinct process that is carried out in a different way than the prior non-computer method. Accordingly, we conclude representative claim 1 does not recite a practical application of the judicial exception.

As such, we are not persuaded of error in the Examiner’s rejection by Appellant’s argument that the claim improves a computer technology or other technology, and we do not consider representative claim 1 to recite a practical application of the abstract concept.

Significantly More than the Abstract Idea

Under the Memorandum, 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 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 that *Berkheimer* requires the Examiner to show that the claim elements are not well understood, routine and conventional which the Examiner has not done. Appeal Br. 14–15 (citing *Berkheimer v. HP Inc.*, 881 F.3d 1360 (Fed. Cir. 2018)). Further, Appellant argues the claim recites several additional elements such as the combination of multiple value patterns, clustering of results from previous communications etc. Reply Br.

5.

We are not persuaded of error by these arguments. The Examiner in the Final Action identified that the additional limitations of a computing device, computer system and computer program product are generically recited computer structure performing their conventional functions. Final Act 16–17 (citing Specification ¶ 15). The USPTO Memorandum of April 19, 2018, identifies that evidence to demonstrate well-understood, routine, and conventional can come from express statements in the Specification, citations of court decisions and publications. Here the Examiner has cited to Appellant’s Specification and, thus, we consider the Examiner to have provided ample evidence to support the findings that the additional limitations are well-understood, routine, and conventional. We concur with the Examiner, that Appellant’s Specification identifies the use of conventional/well known computers. *See, e.g.*, Specification ¶ 15. *See also Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1331, 1334 (Fed. Cir. 2015) (finding that the activities of storing and retrieving information in memory, and sorting information to be well-understood, routine, conventional activity). Further, we disagree with Appellant that the limitations directed to combining value patterns, clustering of results, finding features, estimating and weighing of models and constructing the combine model are additional elements which recite significantly more. As discussed above, these limitations are considered data gathering and analysis elements and are part of the abstract idea and are not additional limitations which recite significantly more. Further, the step of combining value patterns (collecting and combining data is well known see MPEP 2106.05(d) II (i)), clustering results and finding features and constructing the combined models are steps of arranging information which is well known (see MPEP

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2106.05(d) II (vii)).

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 method of collecting/gathering information and analyzing it (mental processes). 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 claim recites 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* Memorandum, 84 Fed. Reg. at 54. Accordingly, we sustain the Examiner's rejection of claim 1, and claims 2 through 18 grouped with claim 1, under 35 U.S.C. § 101 as being directed to a patent-ineligible abstract idea, that is not integrated into a practical application, and does not include an inventive concept.

35 U.S.C. § 112 Rejection

The Examiner rejects of each of independent claims 1, 7, and 13 as the Specification lacks written description for the limitations of analyzing the content, generating a predicted metric value, comparing the response metric value, analyzing the accumulated response metric and constructing a combined ensemble model as the scope of these limitations covers "any and

all ways” of performing these steps. Final Act. 20–24.

Appellant argues the Examiner’s rejection in error as

[t]he Office admits that ‘ . . . the disclosure only provides an adequate algorithm or step-by-step instructions for only a small number of ways (if any) of performing these specialized functions.’ Office Action, page 14, emphasis in original. To this extent, the number of ways provided in disclosure (see e.g., paras. 38-42) support the algorithm of the claimed invention when the claims are read in light of the specification.

Appeal Br. 16.

We have reviewed the independent claims and the cited portions of the Specification cited by Appellant. The written description requirement serves “to ensure that the inventor had possession, as of the filing date of the application relied on, of the specific subject matter later claimed by him; how the specification accomplishes this is not material.” *In re Wertheim*, 541 F.2d 257, 262 (CCPA 1976). In order to meet the written description requirement, Appellant does not have to utilize any particular form of disclosure to describe the subject matter claimed, but “the description must clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed.” *In re Gosteli*, 872 F.2d 1008, 1012 (Fed. Cir. 1989). Put another way, “the applicant must . . . convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention.” *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991) (emphasis in original). We have reviewed the portions of the originally filed Specification cited by Appellant and concur that it demonstrates that the Appellant was in possession of invention including the limitations disputed by the Examiner. While the Specification may identify several methods of performing the individual various steps, it does nonetheless demonstrate possession. Accordingly, we do not sustain

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the Examiner's rejection of claims 1 through 18 under 35 U.S.C. § 112(a) as lacking written description.

CONCLUSION

We affirm the Examiner's rejection of claims 1 through 18.

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/ Basis	Affirmed	Reversed
1-18	101	Eligibility	1-18	
1-18	112(a)	Written Description		1-18
Overall Outcome			1-18	

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