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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte WEI HUANG and YIZHENG ZHOU¹

Appeal 2018-006586
Application 14/237,192
Technology Center 2100

Before BRADLEY W. BAUMEISTER, JAMES B. ARPIN, and
IRVIN E. BRANCH, *Administrative Patent Judges*.

BAUMEISTER, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–3, 5–16, and 18–23. App. Br. 6. These claims stand rejected under 35 U.S.C. § 101 as directed to patent-ineligible subject matter. Final Act. 2–4. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

THE CLAIMED SUBJECT MATTER

Appellant describes the present invention as follows: “A data storage system includes a partitioning module to partition data across multiple dimensions simultaneously. The partitioning may be based on a sizing

¹ Appellant identifies Ent IT Software LLC as the real party in interest. Appeal Brief filed December 11, 2017 (“App. Br.”) at 1.

parameter for each dimension. The partitioning module stores a cluster including the partitioned event data and metadata including attributes identifying the cluster.” Spec., Abstract.

Independent claim 1 illustrates the subject matter of the appealed claims.² It is reproduced below with and modified formatting for clarity and with emphasis added to the language that recites an abstract idea:

1. A system comprising:
 - [i] at least one processor;
 - [ii] a non-transitory storage medium storing partitioning instructions executable on the at least one processor to:
 - [a] receive, from network sources, event data records representing respective events of a plurality of events, the plurality of events comprising network events, and each event data record having a plurality of time dimensions that include:
 - a first time dimension indicating when the respective event is received by a storage system, and
 - a second time dimension indicating when the respective event was detected at a source device separate from the storage system;
 - [b] *obtain, for each respective time dimension of the plurality of time dimensions, a sizing parameter that defines a time range for the respective time dimension;*
 - [c] *determine a cluster by performing multi-dimensional partitioning of the event data records across the plurality of time dimensions simultaneously based on*

² Appellant argues claims 1–3, 5–10, 15, 16, 18–23 together as a group. *See* App. Br. 6. Accordingly, we select independent claim 1 as representative of these claims. 37 C.F.R. § 41.37(c)(1)(iv). Claims 11–14 are addressed separately.

the sizing parameter of each respective time dimension of the plurality of time dimensions; and

[d] store the cluster including a portion of the partitioned event data records, and metadata identifying the cluster from a plurality of clusters,

[iii] wherein the non-transitory storage medium further stores event processing instructions executable on the at least one processor to:

[a] *identify a network issue using data retrieved from a selected cluster of the plurality of clusters; and*

[b] generate a response to the identified network issue.

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-step framework, described in *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012), 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, 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.* (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.* (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

The United States Patent and Trademark Office (“USPTO”) recently published revised guidance on the application of 35 U.S.C. § 101. USPTO, 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“2019 Guidance”). Under the 2019 Guidance, we first look to whether the claim recites the following:

- (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activities such as a fundamental economic practice, or mental processes); and
 - (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP §§ 2106.05(a)–(c), (e)–(h)).
- 2019 Guidance, 84 Fed. Reg. 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 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 Guidance, 84 Fed. Reg. 56.

ANALYSIS

Step 2A, Prong 1

Under step 2A, prong 1, of the 2019 Guidance, we first look to whether the claim recites any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activities such as a fundamental economic practice, or mental processes). *Id.* at 52–55.

Limitation [ii.b] of claim 1 recites “obtain, for each respective time dimension of the plurality of time dimensions, a sizing parameter that defines a time range for the respective time dimension.” This step reasonably can be characterized as a mental evaluation, judgment, or opinion that can be performed in the human mind. The 2019 Guidance expressly recognizes such mental processes as constituting patent-ineligible abstract ideas. *Id.* at 52. As such, limitation step [2.b] reasonably can be characterized as reciting a patent-ineligible abstract idea.

Limitation [ii.c] recites “determine a cluster by performing multi-dimensional partitioning of the event data records across the plurality of time dimensions simultaneously based on the sizing parameter of each respective

time dimension of the plurality of time dimensions.” Such a step of partitioning records based upon sizing parameters also reasonably can be characterized as a mental process—a mental observation, evaluation, judgment, or opinion. As such, limitation [ii.c] also reasonably can be characterized as reciting a patent-ineligible abstract idea.

Limitation [iii.a] recites the step of “identify[ing] a network issue using data retrieved from a selected cluster of the plurality of clusters.” Analyzing data to identify a network also can be characterized reasonably as a mental process—a mental observation, evaluation, judgment, opinion, or combination thereof. Like limitations [ii.b] and [ii.c], then, limitation [iii.a] reasonably can be characterized as reciting a patent-ineligible abstract idea.

For these reasons, each of limitations [ii.b], [ii.c], and [iii.a] reasonably can be characterized as reciting patent-ineligible subject matter.

Step 2A, Prong 2

Under step 2A, prong 2, of the 2019 Guidance, we next analyze whether claim 1 recites additional elements that integrate the judicial exception into a practical application. 84 Fed. Reg. 52–55.

Limitation [ii.a] recites

receive, from network sources, event data records representing respective events of a plurality of events, the plurality of events comprising network events, and each event data record having a plurality of time dimensions that include:

a first time dimension indicating when the respective event is received by a storage system,
and

a second time dimension indicating when the respective event was detected at a source device separate from the storage system.

Receiving event data records reasonably can be characterized as merely constituting insignificant pre-solution activity:

An example of pre-solution activity is a step of gathering data for use in a claimed process, *e.g.*, a step of obtaining information about credit card transactions, which is recited as part of a claimed process of analyzing and manipulating the gathered information by a series of steps in order to detect whether the transactions were fraudulent.

MPEP § 2106.05(g); *see also In re Meyers*, 688 F.2d 789, 794 (CCPA 1982), *cited in* MPEP § 2106.05(g) (another example of insignificant pre-solution activity includes testing a system for a response, the response being used to determine system malfunction).

Limitation [iii.b] reads as follows:

[iii] wherein the non-transitory storage medium further stores event processing instructions executable on the at least one processor to:

[b] generate a response to the identified network issue.

Appellant's Specification indicates that the generated response can be "an alert to a system administrator" or "display[ed] reports or notification 220 about events." Spec. ¶¶ 24, 25. As such, step [iii.b] does not add any meaningful limitations to the abstract ideas because it reasonably may be characterized as merely being directed to the insignificant post-solution activity of displaying reports or notifications. *See, e.g., Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1241–42 (Fed. Cir. 2016) (holding that printing or downloading generated menus constituted insignificant extra-solution activity).

Limitation [ii.d] recites "stor[ing] the cluster including a portion of the partitioned event data records, and metadata identifying the cluster from a plurality of clusters." It was well understood by those of ordinary skill in the

computer arts that received computer data typically must be stored—either in long-term storage or in a short-term cache or buffer—so that the data can be processed as intended. By determining that gathering, transmitting, and displaying data constitutes insignificant extra-solution activity, then, the courts implicitly have determined that storing data, without more, also constitutes insignificant extra-solution activity. As such, limitation [ii.d] reasonably can be characterized as merely being directed to the insignificant extra-solution activity of storing data.

Appellant argues that, when all of the limitations of claim 1 are viewed as an ordered combination, claim 1 is directed to improving computer functionality. App. Br. 7–10. More specifically, Appellant argues that claim 1 recites both partitioning instructions and event processing instructions. *Id* at 8.

As explained in the preceding section of the Analysis, however, performing the steps of partitioning and event processing both recite abstract ideas. *See BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018) (“It has been clear since *Alice* that a claimed invention’s use of the ineligible concept to which it is directed cannot supply the inventive concept that renders the invention ‘significantly more’ than that ineligible concept”); *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) (“[A] claim for a new abstract idea is still an abstract idea”); *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1168 (Fed. Cir. 2018) (“What is needed is an inventive concept in the non-abstract application realm”).

Furthermore, even if the argued steps did not recite abstract ideas, Appellant’s arguments still would be unavailing. Appellant’s arguments

merely entail restating the claim language. App. Br. 7–10. In so doing, Appellant explains the functionality that the computer system is programmed to possess or the tasks that the system carries out. But Appellant does not set forth convincing arguments, much less adequate supporting evidence, for why prior-art data partitioning possessed any particular technical limitations or why Appellant’s partitioning steps provides a *technical* improvement to the data-partitioning art. *Id.*

For example, Appellant presents as an argument for improved functionality, the following restatement of the claim language:

Claim 1 recites both partitioning instructions and event processing instructions executable on at least one processor. The partitioning instructions are executable to receive, from network sources, event data records representing respective events of the plurality of events that comprise network events; to obtain, for each respective time dimension, a sizing parameter that defines a time range for the respective time dimension; to determine a cluster by performing multidimensional partitioning of the event data records across the plurality of time dimensions simultaneously based on the sizing parameter of each respective time dimension; and to store the cluster including a portion of the partitioned event data records, and metadata identifying the cluster from a plurality of clusters. The event processing instructions are executable to identify a network issue using data retrieved from a selected cluster of the plurality of clusters, and generate a response to the identified network issue.

When the ordered combination of all the elements of claim 1 are properly considered, Appellant respectfully submits that claim 1 is directed to improving computer functionality, namely a system that includes a network, where the improvement in computer functionality is achieved by identifying a network issue using data retrieved from a selected cluster of the plurality of clusters, and generating a response to the identified network issue.

Id. at 8.

As another example, Appellant argues the following:

In addition, claim 1 further recites event processing instructions executable on the at least one processor to “identify a network issue using data retrieved from a selected cluster of the plurality of clusters,” and “generate a response to the identified network issue.” Claim 1 thus further improves the computer functionality of a network, by identifying a network issue and generating a response to the identified network issue.

Id. at 11.

For these reasons, Appellants do not persuade us that claim 1 is directed to an improvement in the functioning of a computer, data-partitioning technology, or to any other technology or technical field. MPEP § 2106.05(a). Nor has Appellant demonstrated that claim 1 directed to a particular machine or transformation. MPEP § 2106.05(b), (c). Nor has Appellant demonstrated that claim 1 adds any other meaningful limitations. MPEP § 2106.05(e). Accordingly, Appellants have not persuaded us that claim 1 integrates the recited abstract ideas into a practical application within the meaning of the 2019 Guidance. 84 Fed. Reg. 52–55.

Step 2B

Under step 2B of the 2019 Guidance, we next analyze whether claim 2 adds any specific limitation beyond the judicial exception that is not “well-understood, routine, conventional” in the field. 84 Fed. Reg. 56; MPEP § 2106.05(d).

Claim 1 recites additional elements, beyond the abstract ideas, including “at least one processor,” “a non-transitory storage medium storing partitioning instructions.” Appellant does not provide sufficient evidence that the programmed processor is anything other than a conventional processor. To the contrary, Appellant’s Specification indicates that the

processor may be a generic device that performs well-understood, routine, and conventional activities:

Figure 5 shows a computer system 500 that may be used with the embodiments described herein including the data storage system 100. *The computer system 500 represents a generic platform that includes components that may be in a server or another computer system.* The computer system 500 may be used as a platform for the data storage system 100. The computer system 500 may execute, by a processor or other hardware processing circuit, the methods, functions and other processes described herein. These methods, functions and other processes may be embodied as machine readable instructions stored on computer readable medium, which may be non-transitory, such as hardware storage devices (e.g., RAM (random access memory), ROM (read only memory), EPROM (erasable, programmable ROM), EEPROM (electrically erasable, programmable ROM), hard drives, and flash memory).

Spec. ¶ 41 (emphasis added).

For these reasons, we determine that claim 1 does not recite additional elements that amount to significantly more than the judicial exception within the meaning of the 2019 Guidance. 84 Fed. Reg. 52–55; MPEP § 2106.05(d).

Accordingly, we sustain the Examiner’s rejection of claim 1 under 35 U.S.C. § 101 as directed to patent-ineligible subject matter. We, likewise, sustain the 101 rejection of claims 2, 3, 5–10, 15, 16, and 18–23, which Appellant does not argue separately. App. Br. 6. 37 C.F.R. § 41.37(c)(1)(iv).

Claims 11–14

The limitations of claim 11 are substantially similar to those of claim 1. Appellant argues claim 11 separately from claim 1 only based on the fact that claim 11 additionally recites “event processing instructions

executable on the at least one processor to correlate query results from the executed query in accordance with rules, instructions, or requests to identify network security threats.” App. Br. 16.

Specifically, Appellant argues with respect to claim 11,

Using the inventive system to identify network security threats allows for such network security threats to be addressed, which improves computer functionality, namely functionality of a system that includes a network. Claim 11 also recites a claimed solution that is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks and involves a software-based invention that improves the performance of a computer system by claiming a technology-based solution.

Id. at 16–17.

These arguments are unpersuasive. The step of correlating query results from the executed query in accordance with rules, instructions, or requests reasonably can be characterized as an evaluation that can be performed in the human mind. The step additionally can be characterized reasonably as a method of organizing human activity—specifically, managing personal behavior or relationships or interactions between people (including following rules or instructions). The 2019 Guidance expressly recognizes this sort of mental process, as well as this sort of method of organizing human activity, as constituting a patent-ineligible abstract idea.

For these reasons, as well as the reasons set forth in relation to independent claim 1, we sustain the Examiner’s rejection of claim 1 under 35 U.S.C. § 101 as directed to patent-ineligible subject matter. We, likewise, sustain the 101 rejection of claims 12–14, which Appellant does not argue separately. App. Br. 16–17. 37 C.F.R. § 41.37(c)(1)(iv).

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DECISION

The Examiner's decision rejecting claims 1–3, 5–16, and 18–23 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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED