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UNITED STATES PATENT AND TRADEMARK OFFICE
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BEFORE THE PATENT TRIAL AND APPEAL BOARD
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Ex parte VAROUJ A. CHITILIAN, ILYA NETCHITAILO,
NIKHIL BAKSHI, JIAQI YU, and CHETAN PATEL
_____

Appeal 2019-002117
Application 13/474,977
Technology Center 3600
_____

Before DONALD E. ADAMS, FRANCISCO C. PRATS, and
MICHAEL A. VALEK, *Administrative Patent Judges*.

ADAMS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the

Examiner's decision to reject claims 1–10, 12–18, and 20–25. We have

jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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[1] We use the word "Appellant" to refer to "applicant" as defined in 37
C.F.R. § 1.42. Appellant identifies the real party in interest as "Google
LLC" (Appellant's August 30, 2018 Appeal Brief (Appeal Br.) 1).

STATEMENT OF THE CASE

Appellant's disclosure relates to "managing application program interface [(API)] calls for script execution in, for example, an advertising management environment" (Spec.[2] 1:12–13). Appellant's independent claim 1 is representative and reproduced below:

1. A system, comprising:

a data processing apparatus including one or more computers; and

a computer storage system storing instructions that when executed by the data processing apparatus cause the data processing apparatus to perform operations comprising:

executing, for each of a plurality of rules, a corresponding script defining the rule, the rule being associated with a campaign management entity of an advertising campaign and defining an operation and a corresponding event, the event being an occurrence of a condition defined for the campaign management entity, and the operation specifying an entity change for the associated campaign management entity, the execution of the script comprising:

identifying requests to an advertising service, each request being for a respective first cardinality of first entities of a same first entity type and corresponding to the campaign management entity;

determining, for API calls for entities of the first entity type, a given cardinality limit that provides a target success rate for the API calls for entities of the first entity type, the given cardinality limit specifying a maximum number of entities of the first entity type for which a single API call for entities of the first entity type is allowed, the target success rate being a percentage of the API calls for entities of the first entity type that do not time out before the advertising service responds to the API calls, the determining comprising:

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[2] Appellant's May 18, 2012 Specification.

determining, for each of a plurality of cardinality limits, a success rate of previous API calls for a number of entities of the first entity type that matches the cardinality limit, the success rate for each cardinality limit being a percentage of the previous API calls for the number of entities that did not time out before the advertising service responded to the API calls; and

identifying, as the given cardinality limit, a cardinality limit for which the success rate for the cardinality limit meets the target success rate;

for each request in which the respective first cardinality is greater than the given cardinality limit, generating a plurality of API calls to the advertising service for first entities of the request, each of the plurality of API calls specifying up to the given cardinality limit of entities of the first entity type, including:

generating a first API call to the advertising service for a first set of the first entities, the first set including a number of first entities that is less than or equal to the given cardinality limit; and

generating one or more additional API calls to the advertising service for remaining first entities not included in the first set of the first entities, each of the one or more additional API calls specifying up to the given cardinality limit of first entities; and

for each given request in which the respective first cardinality is less than the given cardinality limit, generating a single API call to the advertising service for first entities of the given request, wherein at least one request has a respective first cardinality that is greater than the given cardinality limit and at least one other request has a respective first cardinality that is less than the given cardinality limit.

(Appeal Br. 12–13.)

Ground of rejection before this Panel for review:

Claims 1–10, 12–18, and 20–25 stand rejected under 35 U.S.C. § 101.

ISSUE

Does the preponderance of evidence of record support Examiner's finding that Appellant's claimed invention is directed to patent ineligible subject matter?

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 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

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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 (1854))); and manufacturing flour (*Gottschalk*, 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; *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 *Gottschalk* and *Parker*); *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 (internal 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.*

The PTO published revised guidance on the application of § 101. USPTO, *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (January 7, 2019) ("Revised Guidance"). Under that 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* MPEP §§ 2106.05(a)–(c), (e)–(h)).

See Revised Guidance, 84 Fed. Reg. at 54–55. 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.

See Revised Guidance, 84 Fed. Reg. at 51.

ANALYSIS

Applying the Revised Guidance to the facts on this record, we find that Appellant's claims are directed to patent-eligible subject matter.

The Revised Guidance instructs us first to determine whether any judicial exception to patent eligibility is recited in the claim. The Revised Guidance identifies three judicially-excepted groupings identified by the courts as abstract ideas: (1) mathematical concepts, (2) certain methods of organizing human behavior such as fundamental economic practices, and (3) mental processes.

On this record, Examiner finds that Appellant's claimed invention is "directed to the idea of batch processing information according to constraints . . . a concept similar to those previously found by the courts to be abstract" (see Ans.[3] 3–4 (citing *Dealertrack, Inc. v. Huber*, 674 F.3d 1315 (Fed. Cir. 2012), *In re Maucorps*, 609 F.2d 481 (CCPA 1979), and *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344 (2014))).

Having found that Appellant's claims are directed to a mental process, Examiner further finds that Appellant's claims

> do not include additional elements that are sufficient to amount to significantly more than the judicial exception because the additional elements in the claims when considered alone and in combination amount to no more than:
>
> > (1) Generally linking the use of the judicial exception to a particular technological environment or field of use . . .,
>
> > . . . .
>
> > (2) Adding the words "apply it" (or an equivalent) with the judicial exception or mere instruction to implement an abstract idea on a computer . . .,

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[3] Examiner's November 16, 2018 Answer.

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[a]nd (3) Simply appending well-understood, routine and
conventional activities previously known to the industry,
specified at a high level of generality, to the judicial exception.

(Ans. 4–6; *see also id.* at 6–11.)

Thus, Examiner finds that Appellant's claimed invention "is directed
to a judicial exception . . . without significantly more" (*id.* at 3). We are not
persuaded.

Initially, we agree with Examiner that Appellant's claimed invention
involves a mental process, i.e. an abstract idea, wherein instructions, when
executed by a data processing apparatus, cause the data processing apparatus
to perform a series of operations (*see generally* Appeal Br. 12–13). We
note, however, that "[i]n cases involving software innovations, th[e] inquiry
often turns on whether the claims focus on 'the specific asserted
improvement in computer capabilities . . . or, instead, on a process that
qualifies as an abstract idea for which computers are invoked merely as a
tool.'" *Finjan, Inc. v. Blue Coat Sys., Inc.*, 879 F.3d 1299, 1303 (Fed. Cir.
2018) (quoting *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36
(Fed. Cir. 2016) (internal quotation marks omitted)).

In contrast to Examiner's analysis, on this record, we find that
Appellant's claimed invention recites additional elements that integrate the
judicial exception into a practical application, i.e., an improvement in
computer capabilities. Specifically, as Appellant discloses:

> The system that provides for management and execution
> of the rules may be external to an advertising management
> system that manages and stores campaign data upon which the
> rules operate. Accordingly, the two separate systems
> communicate by means of application programming interface
> (API) calls. During execution of a rule, an API call requested
> data for a first entity can be expanded to request that same

corresponding data for all previously requested entities. The expansion of the API call can drastically reduce the number of API calls between the systems, which, in turn, frees up processing resources. The system can dynamically expand the API calls during script execution, and thus script coding optimization techniques need not be utilized at the script level.

Additionally, during execution API calls for the same entity types can be batched for more efficient utilization of API resources. The system can monitor success and failures of API calls (e.g., monitor for API call timeouts, batch update failures, etc.). The system can dynamically adjust the number (cardinality) of entities being requested or updated for API calls until a desired success rate is achieved. The batching of the API call into apportioned API calls facilitates the writing of scripts that do not need to take into account pre-defined call limits. Furthermore, when an operation on a particular entity fails, the API call can be regenerated to omit the particular entity, thus ensuring at least partial success of a particular batch execution.

(Spec. 4:1–18.) As Appellant explains:

The claimed technical solution dynamically adjusts the maximum number of entities that can be included in API calls based on determined success rates of API calls for a plurality of cardinality limits and generates API calls that are limited by the maximum number to ensure that the API calls achieve the target success rate over time. Thus, the claimed solution is a "solution to a problem in the software arts" and provides a "technological solution to a technological problem," namely how to limit system failures, rather than "simply the addition of general purpose computers added post-hoc to an abstract idea."

(Appeal Br. 7 (citing MPEP § 2106.05(a); *see also* Reply Br. 2–4). *See Koninklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1150 (Fed. Cir. 2019) ("software inventions [were found] to be patent-eligible where they have made non-abstract improvements to existing technological processes and computer technology").

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For the foregoing reasons, we find that Appellant's claims integrate the judicial exception into a practical application. This concludes the eligibility analysis on this record. Therefore, we need not address the contentions on this record concerning what was, or was not, "well-understood, routine, conventional" in the field. *See generally* Appeal Br. 1–2; *cf.* Revised Guidance.

CONCLUSION

The preponderance of evidence of record fails to support Examiner's finding that Appellant's claimed invention is directed to patent ineligible subject matter. The rejection of claims 1–10, 12–18, and 20–25 under 35 U.S.C. § 101 is reversed.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1–10, 12–18, 20–25	101	Eligibility		1–10, 12–18, 20–25

REVERSED