UNITED STATES PATENT AND TRADEMARK OFFICE

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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 NICHOLAS V. BRUNO, DONNA K. BYRON,
JULIUS GOTH III, and DWI SIANTO MANSJUR
_____

Appeal 2018-009179
Application 14/476,912
Technology Center 2100
_____

Before MAHSHID D. SAADAT, JOHN P. PINKERTON, and
NORMAN H. BEAMER, *Administrative Patent Judges*.

SAADAT, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Final Rejection of claims 1, 3, 5, 6, and 8–23.[2] We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

STATEMENT OF CASE

Introduction

Appellant's Specification describes a "data processing apparatus and method . . . for tailoring question answering system output based on user expertise." *See* Spec. ¶ 1.

Exemplary claim 1 under appeal reads as follows:

1. A method, in a data processing system comprising at least one processor and at least one memory, the at least one memory comprising instructions which are executed by the at least one processor and configure the processor to implement a question answering system for categorizing a user providing a text input, the method comprising:

receiving, by the question answering system executing a question answering pipeline on the at least one processor of the data processing system, an input question written by a user;

determining, by a question and topic analysis stage of the question answering pipeline, a set of features associated with the input question;

processing, by the question answering pipeline, the input question and the set of features by a detection model within the question answering pipeline, wherein the detection model comprises a plurality of detectors corresponding to a plurality of categories, wherein each of the plurality of detectors determines whether the user fits a respective category based on the input question and the set of features, wherein each detector determines a presence probability that the user fits the respective category based on the input question and the set of features, determines an absence probability that the user fits a default category based on the input question and the set of features, and compares a difference between the presence probability and the absence probability to a threshold;

categorizing, by the question answering pipeline, the user input one or more of the plurality of categories based on a result of comparing the difference between the presence probability

and the absence probability to the threshold to form a user categorization;

generating, by a hypothesis generation stage of the question answering pipeline, a set of candidate answers to the input question using a corpus of documents;

selecting and tailoring by a final confidence ranking and merging stage of the question answering pipeline; one or more candidate answers from the set of candidate answers based on the user categorization to form a tailored answer output; and

outputting, by the question answering system, the tailored answer output.

Appeal Br. 16–17 (Claims Appendix).

The Examiner's Rejection

Claims 1, 3, 5, 6, and 8–23 stand rejected under 35 U.S.C. § 101 for being directed to patent-ineligible subject matter. *See* Final Act. 2–4.

ANALYSIS

Principles of Law

Section 101 of the Patent Act provides that "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" is patent eligible. 35 U.S.C. § 101. But the Supreme Court has long recognized an implicit exception to this section: "Laws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014) (quoting *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)). To determine whether a claim falls within one of these excluded categories, the Court has set out a two-part framework. The framework requires us first to consider whether the claim is "directed to one of those patent-ineligible concepts." *Alice*, 573 U.S. at 217. If so, we then examine "the elements of

[the] claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Alice*, 573 U.S. at 217 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 78, 79 (2012)). That is, we examine the claim for an "inventive concept," "an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Alice*, 573 U.S. at 217–18 (alteration in original) (quoting *Mayo*, 566 U.S. at 72–73).

The PTO recently published revised guidance on the application of section 101. USPTO, *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 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* MANUAL OF PATENT EXAMINING PROCEDURE ("MPEP") §§ 2106.05(a)–(c), (e)–(h) (9th ed. 2018)).

See 2019 Revised Guidance, 84 Fed. Reg. at 52, 55–56. 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 are 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 56.

With these principles in mind, we turn to the § 101 rejection.

Contentions

The Examiner determines that the claims are directed to an abstract
idea of "receiving an input, determining features associated with the input
and processing the input and the determined features, categorizing based on
the input, generating candidate response to the input, selecting and tailoring
one or more of the responses, and outputting the tailored output." Final Act.
2 (determining that claim 1 is similar to other identified abstract ideas such
as collecting information, analyzing it, and displaying certain results of the
collection and analysis (*Electric Power Group*)). *See Electric Power Group,
LLC, v. Alstom*, 830 F.3d 1350 (Fed. Cir. 2016).

The Examiner further determines no additional elements are recited in
claim 1 "that are sufficient to amount to significantly more when considered
both individually and as an ordered combination, than the judicial exception
(i.e. abstract idea)." Final Act. 3. The Examiner finds:

> The additional limitations of claim 1 are a data processing
> system comprising at least one processor and at least one
> memory, the at least one memory comprising instructions
> which are executed by the at least one processor and configure
> the processor to implement a question answering system.
>
> . . .
>
> **Generic computing hardware performing generic
> computing tasks is insufficient to render the claim(s) as
> directed to significantly more than the abstract idea.
> Extrasolution activity is insufficient to render the claim(s)**

> **as directed to significantly more than the abstract idea**.
> Looking at the limitations as an ordered combination adds
> nothing that is not already present when looking at the elements
> taken individually. There is no indication that the combination
> of elements improves the functioning of a computer or
> improves another technology. Their collective functions merely
> provide conventional computer implementations.

Final Act. 3–4.

Appellant argues that the claimed invention is not directed to an abstract idea because the Examiner has overgeneralized the recited features. Appeal Br. 7. Appellant argues, based on the analysis in *McRO*[3] and *Affinity Labs*,[4] "the claimed invention improves a computer or other technology by describing mechanisms for inferring categories of users and using the categories to tailor answers produced by a computerized question answering system." Appeal Br. 7 (citing Spec. ¶¶ 23–26, 62, 63). Appellant also argues "the claims recite a particular solution" and unlike *McRO*, "the present claims present an improvement in the art of artificial intelligence or, more specifically, question answering" and "replace a human question answerer with a computerized question answerer and improve the output of candidate answers based on a categorization of the questioning user." Appeal Br. 8. Additionally, Appellant asserts the Examiner's position that "the claims do not include additional elements that are sufficient to amount to significantly more than the alleged judicial exception" because they are not more than the abstract idea, fails to "address the specific features and

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[3] *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016).
[4] *Affinity Labs of Texas, LLC v. DirecTV, LLC*, 838 F.3d 1253 (Fed. Cir. 2016).

activities recited in the body of the claim" or "address the claim features as an ordered combination." Appeal Br. 13. Appellant also argues, based on the decision in *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1367 (Fed. Cir. 2018), the Examiner's analysis of whether the additional elements represent well-understood, routine, conventional activity does not satisfy any of the requirements in the *Berkheimer* Memorandum (April 19, 2018).

The Judicial Exception – Abstract Idea

Under the Revised Guidance, we begin our analysis by first considering whether the claims recite any judicial exceptions, including certain groupings of abstract ideas, in particular: (a) mathematical concepts, (b) mental steps, and (c) certain methods of organizing human activities. Turning to independent claim 1, we observe claim 1, other than executing instructions, processing by a processor, and outputting the answer, recites, *inter alia*, the following functions:

> **receiving**, . . ., an input question written by a user;
>
> **determining**, . . ., a set of features associated with the input questions;
>
> **processing**, . . ., the input question . . . by a detection model;
>
> **categorizing**, . . ., a set of candidate answers to the input question . . .;
>
> **generating**, . . ., a set of candidate answers to the input question . . .;
>
> **selecting and tailoring**, . . ., one or more candidate answers from the set of candidate answers . . .;
>
> . . .

Claim 1 Appeal Br. 16–17 (Claims App.) (emphases added).

People can perform each of these steps in their minds or using pen and paper. People can receive a question and categorize the question and

provide an answer by, for example, reading the question and answer entries from a database. *Cf. CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372 (Fed. Cir. 2011) (determining that a limitation that "requires 'obtaining information about other transactions that have utilized an Internet address that is identified with the [ ] credit card transaction'—can be performed by a human who simply reads records of Internet credit card transactions from a preexisting database" (alteration in original)); *Elec. Power Grp.*, 830 F.3d at 1353 ("Accordingly, we have treated collecting information, including when limited to particular content (which does not change its character as information), as within the realm of abstract ideas."). Even if these steps did not encompass mental processes, the step would not make claim 1 patent eligible because the step merely collects data. *See CyberSource*, 654 F.3d at 1372 ("[E]ven if some physical steps are required to obtain information from the database (e.g., entering a query via a keyboard, clicking a mouse), such data-gathering steps cannot alone confer patentability.").

As for processing the input question by a detection model comprising "detectors" for determining probabilities and their difference to a threshold limitation, this limitation recites a mental process. The written description describes determining probability of presence or absence of an input phrase after some level of training, which relates to the function of thinking and remembering in the human mind, *see, e.g.*, Spec. ¶¶ 83–85, but does not limit the claimed method to a particular mathematical function or algorithm. This limitation is thus so broadly recited that it encompasses people using functions that they can solve in their minds or using pen and paper to match the best answers to questions. *See CyberSource*, 654 F.3d at 1373

(determining that a claim limitation "is so broadly worded" that the limitation "encompasses literally *any* method" for performing the limitation, including "even logical reasoning that can be performed entirely in the human mind"); *Elec. Power Grp.*, 830 F.3d at 1354.

Finally, for generating a set of candidate answers to the input question using a corpus of documents limitation, this limitation encompasses accessing information from a corpus of data or information and analyzing it. *See* Spec. ¶¶ 29, 31, 35–39 (disclosing exemplary corpus of data stored in a database). People can look in a table of answers that are matched with questions or mentally come up with an answer. *See CyberSource*, 654 F.3d at 1372 (determining that "a person may 'construct[ ] a map of credit card numbers' as required by step (b) by writing down a list of credit card transactions made from a particular IP address" (alteration in original)); *Elec. Power Grp.*, 830 F.3d at 1354 ("In a similar vein, we have treated analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category.").

Because each of the limitations recited in claim 1 encompasses an act that people can perform in their minds or using pen and paper, claim 1 recites mental processes. *See CyberSource*, 654 F.3d at 1372. Claim 1 recites mental processes even though the claimed method calls for computer components to perform the recited steps. *See, e.g.*, *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1335 (Fed. Cir. 2015) ("Courts have examined claims that required the use of a computer and still found that the underlying, patent-ineligible invention could be performed via pen and paper or in a person's mind."); *CyberSource*, 654 F.3d at 1375 ("That purely

mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*."); Revised Guidance, 84 Fed. Reg. at 52 n.14 ("If a claim, under its broadest reasonable interpretation, covers performance in the mind but for the recitation of generic computer components, then it is still in the mental processes category unless the claim cannot practically be performed in the mind."). Additionally, claim 1 essentially converts collected data into a new form of data by receiving questions and outputting answers. *See* Appeal Br. 16–17 (Claims App.). The Federal Circuit has explained that processes that simply convert data from one form to another generally recite an abstract idea. *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.").

We also note the recited "outputting" functions of claim 1 merely receive and present information. Courts have found such data gathering and presenting steps to be insignificant extra-solution activity. *See, e.g.*, *In re Bilski*, 545 F.3d 943, 963 (Fed. Cir. 2008) (en banc), *aff'd sub nom Bilski*, 561 U.S. 593 (characterizing data gathering steps as insignificant extra-solution activity).

Because we conclude all claims on appeal recite an abstract idea, as discussed above, under *Step 2A, Prong One,* we proceed to *Step 2A, Prong Two.* Although claim 1 recites an abstract idea based on these mental processes, we, nevertheless, 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* 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 individually and collectively to determine whether they integrate the exception into a practical application. *See id.*

Integration of the Judicial Exception into a
Practical Application

The additional non-abstract limitations recited in independent claim 1 include a data processing system, a processor, at least one memory comprising instructions to configure the processor to perform the recited functions, question answering system, and a detection model. We determine that claim 1 does not recite additional elements that integrate the abstract ideas into a practical application. As discussed below, the additional elements do not improve computer capabilities or a technical field. Nor do they implement the abstract ideas on a particular machine that is integral to the claims or effect a transformation or reduction of a particular article to a different state or thing. Revised Guidance, 84 Fed. Reg. at 55. They simply use computers as tools to apply the abstract ideas. "[M]ere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention." *Alice*, 573 U.S. at 223; *see also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016).

The above-mentioned elements are generic components that perform generic functions of analyzing and processing data (questions and answers), which do not integrate the abstract ideas into a practical application. *See id.* at 55 n.31; *Elec. Power Grp.*, 830 F.3d at 1353–54 (holding that recited

steps of collecting information even when limited to particular content that does not change its character as information and analyzing the information by steps people go through in their minds or by mathematical algorithms, without more, are abstract ideas).

These recited processing systems are disclosed as "one or more computing devices 104 (comprising one or more processors and one or more memories, and potentially any other computing device elements generally known in the art including buses, storage devices, communication interfaces, and the like) connected to the computer network 102." Spec. ¶¶ 34, 50. The storage system is disclosed as "flash memory, equivalent non-volatile memory, or optical disk drives and the like," without any details of its configuration. Spec. ¶¶ 49, 145, 170. The executable instructions are described as "computer readable program instructions may be provided to a processor of a general purpose computer, special purpose computer, or other programmable data processing apparatus to produce a machine." Spec. ¶ 149.

It is well-settled that "mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention." *Alice*, 573 U.S. at 223 ("Stating an abstract idea while adding the words 'apply it with a computer' simply combines those two steps, with the same deficient result. Thus, if a patent's recitation of a computer amounts to a mere instruction to 'implemen[t]' an abstract idea 'on ... a computer,' . . . that addition cannot impart patent eligibility.") (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 82 (2012)); *see* Revised Guidance, 84 Fed. Reg. at 55 & n.30. The lack of details about these elements also indicates that the "interface circuit" and "processor circuit" are

generic computer components. *See Intellectual Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1331 (Fed. Cir. 2017) ("The claimed mobile interface is so lacking in implementation details that it amounts to merely a generic component (software, hardware, or firmware) that permits the performance of the abstract idea, i.e., to retrieve the user-specific resources.").

Additionally, we are not persuaded by Appellant's arguments that "[t]he problem being solved by the present invention is specific to computerized question answering systems, because prior to the present invention computerized question answering systems could not accurately infer categorization of a questioning user and tailor answer output based on the user categorization." Appeal Br. 9–10 (citing the decision in *McRO*). In *McRO*, the claims incorporated "specific," "limited" rules that improved computer animation. *McRO*, 837 F.3d at 1314–16. In contrast, claim 1 recites a series of broadly worded functions without meaningfully limiting how the method performs the functions. Here, as discussed above, claim 1 uses generic computer components that perform generic functions to produce answers to inputted questions. *See* Appeal Br. 16–17 (Claims App.). Appellant has not shown that the computer components recited in claim 1 function differently than generic computer components, let alone function in an improved manner.

Thus, we determine that claim 1 is directed to an abstract idea.

Inventive Concept

Because we determine claim 1 is "directed to" an abstract idea, we consider whether claim 1 recites an "inventive concept." Under the Revised Guidance, if a claim: (1) recites a judicial exception, and (2) does not

integrate that exception into a practical application, 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. *See* Revised Guidance, 84 Fed. Reg. at
56.

The Examiner determined claim 1 does not recite an inventive concept
because the additional elements in the claim "are all conventional computing
hardware recited at a high level of generality performing generic computing
tasks." *See* Final Act. 3–4; *see also* Ans. 5. The Examiner further cited the
Berkheimer Memorandum and MPEP §2106.0S(f) to explain "merely
implementing an otherwise abstract idea on a generic computing hardware is
not 'significantly more', and is explicitly insufficient to render otherwise
ineligible claims as being patent-eligible." Ans. 11–12.[5]

Appellant argues that the Examiner did not provide any evidence to
show the recited features of claim 1 are "well-understood, routine, or
conventional." Appeal Br. 14. Appellant contends:

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[5] A specification demonstrates the well-understood, routine, conventional
nature of additional elements when it describes the additional elements as
well-understood or routine or conventional (or an equivalent term), as a
commercially available product, or in a manner that indicates that the
additional elements are sufficiently well-known that the specification does
not need to describe the particulars of such additional elements to satisfy
35 U.S.C. § 112(a). Memorandum on *Changes in Examination Procedure
Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility
Decision* (*Berkheimer v. HP, Inc.*) (Apr. 19, 2018) available at:
https://www.uspto.gov/sites/default/files/documents/memo-berkheimer-
20180419.PDF

In the instant case, the question is whether the claimed
components and their activities are well-understood, routine,
and conventional. The lack of a rejection based on prior art
supports a conclusion that the activities are not well-
understood, routine, and conventional. The Examiner has not
established that the claims fail to recite significantly more than
the abstract idea **as a matter of fact**.

Id.

We are unpersuaded. First, Appellant's claims can be distinguished
from patent-eligible claims such as those in *Bascom*, where the system
claims were directed to a "content filtering system for filtering content
retrieved from an Internet computer network," which the court held were
directed to an abstract idea. *Bascom*, 827 F.3d at 1348–49. The court further
held the claims included an inventive concept in the ordered combination of
system components, including a local client computer and a remote ISP
server connected to the client computer and Internet computer network
providing for "the installation of a filtering tool at a specific location, remote
from the end-users, with customizable filtering features specific to each end
user." *Id.* at 1350.

Appellant has failed to establish that claim 1 includes a similar or
analogous arrangement or "ordered combination" of components, and,
instead, makes only the conclusory statement that "the question answering
pipeline is processing 'the input question and the set of features by a
detection model within the question answering pipeline.'" *See* Reply Br. 7.
Second, the additional elements are recited at a high level of generality, and
the written description provides no details about how the input questions are
processed by the question answering pipeline to show that the recited
process improves the underlying technology or provides a technological

advancement, but rather, the additional elements process the recited mental steps faster. *See, e.g.*, Spec. ¶¶ 34, 49, 50, 145, 149, 170 (describing generic components without detailed description of their specific processing functions). *See also* USPTO, Memorandum on Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*) at 3 (Apr. 19, 2018) (explaining that a specification that describes additional elements "in a manner that indicates that the additional elements are sufficiently well-known that the specification does not need to describe the particulars of such additional elements to satisfy 35 U.S.C. § 112(a)" can show that the elements are well understood, routine, and conventional). Consequently, we find that the above-identified claim elements, at the high level of generality recited in claim 1, constitute no more than what would have been well-understood, routine and conventional to a skilled artisan. *See Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (2018).

Conclusion

For at least the above reasons, we agree with the Examiner that claim 1 is "directed to" an abstract idea and does not recite an "inventive concept." Accordingly, we sustain the Examiner's rejection of claim 1 and the remaining claims, for which Appellant does not offer any separate arguments for patentability allowing them to fall with claim 1 (*see* Appeal Br. 6–15), under 35 U.S.C. § 101.

DECISION SUMMARY

In summary:

Claims Rejected	Basis §	Affirmed	Reversed
1, 3, 5, 6, 8–23	101	1, 3, 5, 6, 8–23	

TIME PERIOD FOR RESPONSE

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).

<u>AFFIRMED</u>