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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 SHILEI ZHANG, SHENGHUA BAO, WEN LIU, YONG QIN,
ZHIWEI SHUANG, JIAN CHEN, ZHONG SU, QIN SHI, and
WILLIAM F. GANONG III

———————

Appeal 2017-007380
Application 14/750,000[1]
Technology Center 2600

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Before NATHAN A. ENGELS, JAMES W. DEJMEK, and
MICHAEL M. BARRY, *Administrative Patent Judges.*

ENGELS, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of
claims 1–4, 6, 7, 9, 11, 12, 16, and 18–27. We have jurisdiction under
35 U.S.C. § 6(b).

We affirm-in-part.

EXEMPLARY CLAIM

Appellants' Specification states "[t]he present disclosure relates to speech recognition [and] information retrieval systems for executing . . . voice-enabled searches." Spec. 1. Further, Appellants' "[t]echniques include using speech information, speaker information, and information associated with a spoken query to enhance open voice search results." Spec. 9. Claim 1, reproduced below, is exemplary of the claimed subject matter:

> 1. A method comprising:
>
> classifying, by a computing device, speech into at least one voice cluster based on identified acoustic features of the speech, the at least one voice cluster corresponding to a text cluster and a customized language model that reflects characteristics of a speaker of the speech;
>
> determining, by the computing device, a text query based on the customized language model and one or more text strings determined based on the speech;
>
> receiving, by the computing device, search results based on the text query, each of the search results having a ranking indicating a measure of importance relative to other of the search results; and
>
> re-ranking, by the computing device, the search results based on re-scoring the search results using the text cluster.

Appeal Br. 20 (Claims App'x).

THE REJECTION

Claims 1–4, 6, 7, 9, 11, 12, 16, and 18–27[2] stand rejected under

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[2] The Final Rejection states that claims 1–27 are rejected under 35 U.S.C. § 101. Final Act. 5–6. But, as Appellants note, only claims 1–4, 6, 7, 9, 11, 12, 16, and 18–27 remain pending; claims 5, 8, 10, 13–15, and 17 have been

35 U.S.C. § 101 as being directed to patent-ineligible subject matter in the form of a judicial exception without significantly more. Final Act. 5–6.

ANALYSIS

Appellants dispute the Examiner's conclusion that claims 1–4, 6, 7, 9, 11, 12, 16, and 18–27 are directed to patent-ineligible subject matter under 35 U.S.C. § 101. Appeal Br. 7–18; Reply Br. 2–12. We agree with the Examiner's conclusion that claims 1–4, 6, 7, 9, 11, 12, 16, 18–22, 24, and 25 are directed to patent-ineligible subject matter under 35 U.S.C. § 101. *See* Final Act. 5–6. We agree with Appellants that the Examiner errs in concluding that claims 23, 26, and 27 are directed to patent-ineligible subject matter under 35 U.S.C. § 101.

Our analysis below focuses on whether the Examiner has properly applied the two-step test set forth by the Supreme Court in *Alice Corp. Pty. Ltd. v. CLS Bank International*, 134 S. Ct. 2347 (2014). In *Alice*, the Supreme Court reiterated the framework set out in *Mayo Collaborative Services, v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012), for "distinguishing patents that claim . . . abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 134 S. Ct. at 2355. If a claim falls within one of the statutory categories of patent eligibility (i.e., a process, machine, manufacture or composition of matter), then the first step is to determine whether the claim is directed to one of the judicially recognized exceptions (i.e., a law of nature, a natural phenomenon, or an abstract idea).

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canceled. Reply to Final Office Action 8 n.1 (filed June 9, 2016); *see* Appeal Br. 20–24 (Claims App'x). We treat this oversight by the Examiner as harmless error.

Alice, 134 S. Ct. at 2355. If so, the second step is to determine whether any element, or combination of elements, amounts to significantly more than the judicial exception. *Alice,* 134 S. Ct. at 2355.

The Examiner concludes that although Appellants' claimed invention broadly falls within the statutory categories of patent eligibility, the pending claims are directed to an abstract idea, without reciting significantly more. Final Act. 5–6. The Examiner characterizes claim 1 as directed to the abstract idea of "a method of organizing human activities" because a human could perform the "classifying," "determining," "receiving," and "re-ranking" steps using merely pen and paper and observation. Final Act. 5. In addition, the Examiner finds the "computing device" and a "processor" recited in claim 1 do not amount to significantly more than the abstract idea. Final Act. 5. The Examiner also finds the additional elements recited in dependent claims 2–18, 21, 22, 24, and 25 do not render any of these claims patent eligible. Final Act. 5.

Analysis Under Step 1 of Alice

Appellants argue the pending claims are not directed to an abstract idea and that the Examiner's characterization of the independent claims as "a method of organizing human activities" is inaccurate. Appeal Br. 7–13; Reply Br. 2–8. Appellants assert claim 1 reflects an improvement in the functioning of a computer. Appeal Br. 10–13; Reply Br. 7–8. More specifically, Appellants assert:

   a) "The Office Action's alleged abstract idea is not sufficient to establish a *prima facie* case of patent ineligible subject matter under 35 U.S.C. § 101" because the alleged abstract idea is an overly broad characterization and is not tied to the

specific language of the claims (Appeal Br. 7–9 (emphasis omitted); Reply Br. 2–6);

b) "The abstract idea alleged by the Office Action does not correspond to a concept that the courts have identified as an abstract idea" (Appeal Br. 9–10 (emphasis omitted); Reply Br. 6–7);

c) "The claims are directed to an improvement in the functioning of a computer, and are not directed to an abstract idea" (Appeal Br. 10–13 (emphasis omitted); Reply Br. 7–8); and

d) "The claims recite significantly more than an abstract idea" (Appeal Br. 14–15 (emphasis omitted); Reply Br. 8–11).

With respect to claims 1–4, 6, 7, 9, 11, 12, 16, 18, 21, 22, 24, and 25, we disagree with Appellants and agree with the Examiner that the claims are directed to an abstract idea. Claim 1 generally recites the steps of classifying speech based on its acoustic features into a voice cluster corresponding to a text cluster and a speaker-customized language model; determining a text query based on the customized language model and text string(s) determined based on the speech; receiving, based on the text query, search results ranked by relative importance; and re-ranking the search results based on re-scoring the search results using the text cluster. As further context, Appellants' Specification describes receiving a voice query from a person and processing the voice query using "a conventional speech recognition process" to generate a text output. Spec. 9; *accord* Spec., Fig. 3. The Specification describes subsequently using "a conventional search engine" to return a set of search results. Spec. 9 ("This text query output 114 (text representation of the spoken query 102) can subsequently be used in a conventional search engine text search 116 to acquire a set of document search results 118."). In addition, the Specification describes using

characteristics about the speaker and/or metadata relating to the voice signal ("acoustic features") to further classify the spoken query into a voice cluster and re-scoring or re-ranking the search results using a text cluster corresponding to the voice cluster. Spec. 10. Examples of classifying queries into clusters based on acoustic features include identifying a speaker as "old female, young female, girl, old male, young make, specific accent, noisy, quite, and so forth." Spec. 13..

Notably, the Specification explains that these methods can be performed by a person. Spec. 6 (explaining that the methods can be embodied as a software program, a hybrid of software and hardware, "or via a non-software application such [as] a person performing all or part of the operations"). Among other manual steps, the Specification states that creating the voice and call clusters can be a manual process in which "a person would need to listen to many calls and then manually classify calls/queries based on the person's perception of acoustic features." Spec. 13.

Although claim 1 and Appellants' Specification describe using a computer to perform Appellants' method, we agree with the Examiner that the recited steps of claim 1 are directed to a method of organizing human activity (*see* Final Act. 5; Ans. 3–4), and we disagree with Appellants that the Examiner's characterization of claim 1 is overly broad or oversimplified. To the contrary, the Examiner addresses each limitation of claim 1 and explains how, consistent with Appellants' Specification, a human could perform each limitation. *See* Ans. 3–4.

Courts have similarly determined that various methods of organizing human activity fall "squarely within the realm of 'abstract ideas'." *Alice,*

134 S. Ct. at 2357 (discussing methods for risk hedging and intermediated settlement as non-limiting examples of organizing human activity). Among others, recent cases from the Federal Circuit also have "applied the 'abstract idea' exception to encompass inventions pertaining to methods of organizing human activity." *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016); *see also, e.g., Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1367 (Fed. Cir. 2017) (finding the claim at issue was directed to the abstract idea of budgeting, which was "not meaningfully different from the ideas found to be abstract in other cases before the Supreme Court and our court involving methods of organizing human activity"). In *TLI*, the Federal Circuit concluded claims directed to classifying and storing images in an organized manner was a well-established basic concept analogous to methods of organizing human activity and, accordingly, directed to an ineligible abstract idea. *TLI*, 823 F.3d at 613 (citing *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1347 (Fed. Cir. 2014)). In addition, the Federal Circuit has said that abstract ideas include collecting information, analyzing the information by using a mathematical algorithm, and displaying the results. *Elec. Pwr. Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1351–54 (Fed. Cir. 2016).

We disagree with Appellants' characterization of claim 1 as reciting a specific improvement in the functioning of a computer, similar to the claims in *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016). As the Examiner explains, the claims in *Enfish* were directed to a specific improvement in the way computers operate—embodied in a self-referential database table—and recited technical details for a software component that

distinguished that particular software component from the prior art, thus improving how the computer was configured. *See* Ans. 8–10; *Enfish*, 822 F.3d at 1338–39. By contrast, the focus of claim 1 is not on such an improvement in computers as a tool, but on a process for classifying, analyzing, collecting, and re-analyzing data that uses a computer as a tool. *See* Ans. 8–10; *Elec. Pwr.*, 830 F.3d at 1354.

In addition, we are unpersuaded by Appellants' assertions that claim 1 is patent eligible because it provides an efficient way of performing computerized voice recognition and searching that results in faster delivery of more accurate results. *See* Appeal Br. 12–13. Merely "[u]sing a computer to accelerate an ineligible mental process does not make that process patent-eligible." *Bancorp Services, LLC v. Sun Life Assur. Co. of Canada*, 687 F.3d 1266, 1279 (Fed. Cir. 2012); *see also CLS Bank Int'l v. Alice Corp. Pty. Ltd.*, 717 F.3d 1269, 1286 (Fed. Cir. 2013) (en banc) *aff'd*, 134 S. Ct. 2347 ("simply appending generic computer functionality to lend speed or efficiency to the performance of an otherwise abstract concept does not meaningfully limit claim scope for purposes of patent eligibility.").

In total, for the reasons stated above, we agree with the Examiner that claim 1 recites an abstract idea. For the same reasons, we also agree with the Examiner that independent claims 19 and 20, which recite steps similar to claim 1, and claims 2–4, 6, 7, 9, 11, 12, 16, 18, 21, 22, 24, and 25, which depend from independent claims 1, 19, or 20, are directed to an abstract idea.

Analysis Under Step 2 of Alice

We also are unpersuaded by Appellants' assertions that claim 1 recites significantly more than an abstract idea. In determining whether a claim

recites significantly more than the abstract idea, "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*, 134 S. Ct. at 2357.

Appellants cite the "classifying" step as evidence that claim 1 "provides a specific technical solution beyond simply using generic computer concepts in a conventional way." Appeal Br. 14 (bracketing and citation omitted); *see also* Appeal Br. 14–15. We disagree. As discussed above, we agree with the Examiner the "classifying" step is nothing more than the generic computer implementation of a conventional process that can be performed by a human. By contrast, as the Examiner explains, the claims in *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299, 1313–16 (Fed. Cir. 2016), recited a specific technological improvement over existing manual 3-D animation techniques, that was "much more specific than [claim 1] and . . . beyond what a human may realistically perform mentally or with pen and paper." Ans. 6.

In addition, although claim 1 recites a method performed "by a computing device," "the use of generic computer elements like a microprocessor or user interface do not alone transform an otherwise abstract idea into patent-eligible subject matter." *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1096 (Fed. Cir. 2016) (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1256 (Fed. Cir. 2014)). Indeed, claim 1 does not require (and the Specification does not disclose) any nonconventional computing or network components, or even a "non-conventional and non-generic arrangement of known, conventional pieces," but merely call for performance of the claimed functions on one or more

"computing device[s]." *Bascom Global Internet Svs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016). Here, Appellants have not presented, nor do we find, any persuasive evidence to support the assertion that the additional elements recited in independent claim 1 amount to significantly more than an abstract idea. For the same reasons, Appellants have not persuaded us that independent claims 19 and 20,[3] and dependent claims 2–4, 6, 7, 9, 11, 12, 16, 18, 21, 22, 24, and 25, which were not argued separately with particularity, recite significantly more than an abstract idea.

Accordingly, having considered the Examiner's rejection in light of each of Appellants' arguments and the evidence of record, we agree with the Examiner that claims 1–4, 6, 7, 9, 11, 12, 16, 18, 21, 22, 24, and 25 are directed to patent-ineligible subject matter under 35 U.S.C. § 101.

Claims 23, 26, and 27

With respect to claims 23, 26, and 27, the Examiner finds these claims recite additional elements that "*do* add significantly more by explaining how user interaction is associated with click data, thereby moving beyond the capabilities of a generic processor." Final Act. 6. Nevertheless, the Examiner rejects claims 23, 26, and 27 based on their dependency on independent claims rejected under § 101. Final Act. 6. Appellants argue it was improper for the Examiner to find these claims recite significantly more

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[3] Independent claims 19 and 20 recite functional steps commensurate with the recited steps of claim 1 and additionally recite the following generic computer elements that, like claim 1's recitation of "by a computing device," do not render an otherwise ineligible abstract idea eligible: "one or more processors," "[n]on-transitory computer-readable media," and/or "non-transitory memory."

than an abstract idea but still reject these claims under 35 U.S.C. § 101.
Appeal Br. 17–18; Reply Br. 12. We agree with Appellants.

Because the Examiner finds that claims 23, 26, and 27 are patent eligible under step 2 of the *Mayo/Alice* framework, we agree with Appellants that the Examiner errs in concluding claims 23, 26, and 27 are directed to patent-ineligible subject matter under 35 U.S.C. § 101.

DECISION

We affirm the Examiner's decision rejecting claims 1–4, 6, 7, 9, 11, 12, 16, 18–22, 24, and 25 under 35 U.S.C. § 101.

We reverse the Examiner's decision rejecting claims 23, 26, and 27 under 35 U.S.C. § 101.

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-IN-PART