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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* ALI HASSANI, SCOTT ANDREW AMMAN,  
FRANCOIS CHARETTE, JOHN EDWARD HUBER,  
BRIGITTE FRANCES MORA RICHARDSON,  
GINTARAS VINCENT PUSKORIUS, AN JI, and  
RANJANI RANGARAJAN<sup>1</sup>

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Appeal 2018-002845  
Application 14/931,132  
Technology Center 2600

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Before ROBERT E. NAPPI, JOHN P. PINKERTON and  
JOHN D. HAMANN, *Administrative Patent Judges*.

NAPPI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1 through 20. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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<sup>1</sup> According to Appellants, Ford Global Technologies LLC. is the real party in interest. App. Br. 3.

## INVENTION

The invention is directed to a generating a speech utterance set for speech recognition training. Abstract. Claim 17 is representative of the invention and is reproduced below.

17. A system comprising:

a controller programmed to create a speech utterance set for speech recognition training by, in response to receiving data representing a neutral utterance and parameter values defining signal noise, generating data representing a Lombard effect version of the neutral utterance using a transfer function associated with the parameter values and defining distortion between neutral and Lombard effect versions of a same utterance due to the signal noise.

## EXAMINER'S REJECTION<sup>2</sup>

The Examiner has rejected claims 1 through 20 under 35 U.S.C. § 101 for being directed to patent-ineligible subject matter. Final Act. 4–6.

## 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.

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<sup>2</sup> Throughout this Decision we refer to the Appeal Brief (“App. Br.”) filed August 23, 2017, the Reply Brief (“Reply Br.”) filed January 22, 2018, Final Office Action (“Final Act.”) mailed March 20, 2017, and the Examiner’s Answer (“Ans.”) mailed November 22, 2017.

There are, however, three judicially created exceptions to the broad categories of patent-eligible subject matter in 35 U.S.C. § 101: “[l]aws of nature, natural phenomena, and abstract ideas.” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012). The Supreme Court sets forth a two-part “framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 134 S. Ct. at 2355.

First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts. . . . [*Mayo*, 566 U.S. at 76–77]. If so, we then ask, “[w]hat else is there in the claims before us?” *Id.*, at [77–78]. To answer that question, we consider the elements of each 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. *Id.*, at [78–79]. We have described step two of this analysis as a search for an “‘inventive concept’”—*i.e.*, 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.” *Id.*, at [71–73].

*Id.*

Although an abstract idea itself is patent ineligible, an application of the abstract idea may be patent eligible. *Alice*, 134 S. Ct. at 2355. Thus, we must consider “the elements of each 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.” *Id.* (quoting *Mayo*, 566 U.S. at 79, 78). The claim must contain elements or a combination of elements that are “sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [abstract idea]

itself.” *Id.* (quoting *Mayo*, 566 U.S. at 72–73). The Federal Circuit has explained that, in determining whether claims are patent-eligible under Section 101, “the decisional mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive nature can be seen—what prior cases were about, and which way they were decided.” *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016). The Federal Circuit also noted in that decision that “examiners are to continue to determine if the claim recites (i.e., sets forth or describes) a concept that is similar to concepts previously found abstract by the courts.” *Id.* at 1294 n.2.

#### ANALYSIS

We have reviewed Appellants’ arguments in the Briefs, the Examiner’s rejection, and the Examiner’s response to Appellants’ arguments. Appellants’ arguments have not persuaded us of error in the Examiner’s conclusion that the claims are directed to patent-ineligible subject matter.

Appellants argue that the Examiner’s rejection of claims 1 through 20 under 35 U.S.C. § 101 is in error as the Examiner has not demonstrated that the concept of creating a speech utterance set associated with a specific noise signal for speech recognition training is directed to an abstract idea by demonstrating that it is similar to what the courts have identified as abstract ideas. App. Br. 8; Reply Br. 1–2. Appellants argue that *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.* 758 F.3d 1344 (Fed. Cir. 2014) and *Gottschalk v Benson* 93 S. Ct. 253 (1972), cited by the Examiner, dealt with dissimilar concepts and are irrelevant to the claims at issue. App. Br. 8.

The Examiner provides a detailed response to Appellants’ arguments

on pages 3 through 6 of the Answer. The Examiner considers the “claimed invention is basically identified and related to a concept of manipulating/applying a transfer function (mathematical relationship) on/to neutral utterances with noise signal (as input data) to generate Lombard effected utterance (output data), which is substantially directed to or interpreted as an abstract idea of ‘mathematical relationship/formula’”

Answer 3–4. Further, the Examiner states:

Further, one of ordinary skill in the art would recognize that (i) a transfer function itself is a mathematical relationship/formula between input and output data, so as being a “mathematical relationship” as an abstract idea; and (ii) simply applying a generic transfer function to one type of data to generate another type of data without sufficient/necessary definitions/descriptions for the transfer function itself, is also directed to an abstract idea (such as a generic idea/concept of applying/using a generic mathematical relationship/formula, or merely mentally processing immature idea/function). Furthermore, it is noted that the limitation of “the transfer function defines distortion between neural and Lombard effect versions of a same utterance due to the specified noise signal”, only describes the data/information (such as the input utterance and noise and output utterance) **outside of** the transfer function, but for the transfer function itself it merely recites a generic feature of “distortion”, **without** any specific definition/description of the function itself (such as specific equation, parameters, and/or or rules/algorithms **belonging to** or **included within** the transfer function).

Answer 4–5.

We concur with the Examiner’s rationale in finding that the claims recite an abstract idea. Claim 17 recites a controller that a) receives data representing a neutral utterance and values defining

signal noise, and b) generates data using a transfer function.<sup>3</sup> As identified by the Examiner a transfer function is a mathematical algorithm. Answer 4. The definition of transfer function is “the mathematical relationship between the output of a control system and its input,” McGraw-Hill Dictionary of Scientific and Technical Terms, Fifth Ed. 1994. Thus, claim 17 is reciting a controller that receives data (information) and performs a mathematical algorithm to generate data. As our reviewing court has said “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... In a similar vein, we have treated analyzing information ... by mathematical algorithms, without more... as within the abstract-idea category.” *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350, 1353–54 (Fed. Cir. 2016). The limitations directed to the data representing neutral utterances, parameter values of noise or Lombard effect version of the neutral utterance, merely define the content of the data and do not change the character of the data to something else, i.e., the limitations just identify the data as being of a particular type and do not make it something other than data. Thus, we are not persuaded by Appellants’ argument that the Examiner’s application of *Digitech* and *Gottschalk*, as demonstrating that claims directed to mathematical algorithms are not patent eligible, is inapplicable to the current claims. The distinction Appellants rely upon, data representing utterances and noise, merely relates to the

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<sup>3</sup> Appellants’ arguments group claims 1 through 20. In accordance with 37 C.F.R. § 41.37(c)(1)(iv) we select claim 17 as representative of the group.

content of the data, which does not make the data less of an abstract concept. Accordingly, we are not persuaded the Examiner erred in finding that representative claim 17 is directed to an abstract idea.

Appellants further argue that even if the claims recite an abstract idea the rejection is in error as the claims recite significantly more than the abstract idea. App. Br. 9–11. Appellants argue the claimed controller is used to create a speech utterance set for speech recognition training, which is significantly more than what is routine and conventional in the field as no anticipation or obviousness rejections are applied. App. Br. 10. Appellants argue that the claims do not preempt every application of the idea. Answer 10 (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014); Reply Br. 2. Appellants state: “[i]n the instant application, the claims also resolve a particular problem relating to an ‘involuntary tendency of a person speaking in a noisy environment to introduce distortions into their speech so as to ensure understanding in the presence of audible interference’ via a specific technical solution.” App. Br. 10.

The Examiner addresses these arguments by stating that the claims merely recite generic components to implement the abstract idea and Appellants have not shown that the claims recite an improvement in computer related technology. Answer 6–7. Thus, the Examiner does not consider the claims to recite significantly more than the abstract idea.

Appellants’ arguments have not persuaded us the Examiner erred in not considering the claims to recite significantly more than the abstract idea. Appellants’ argument that the claims are directed to

significantly more than an abstract idea because they are more than what is routine as shown by the lack of an anticipation or obviousness rejection is not persuasive. App. Br. 10. Although the second step in the *Alice/Mayo* analysis includes a search for an inventive concept, the analysis is not an evaluation of novelty or nonobviousness, but rather, a search for “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*, 134 S. Ct. at 2355. A novel and nonobvious claim directed to a purely abstract idea is, nonetheless, patent-ineligible. *See Mayo*, 132 S. Ct. at 1304; *see also Diamond v. Diehr*, 450 U.S. 175, 188–89 (1981) (“The novelty of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.”); *see also Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1315 (Fed. Cir. 2016) (explaining that a jury’s determination that certain prior art did not anticipate or render obvious the asserted claims did “not resolve the question of whether the claims embody an inventive concept at the second step of *Mayo/Alice*”). Further we are not persuaded by Appellants’ preemption argument. Our reviewing court has said “[w]here a patent’s claims are deemed only to disclose patent ineligible subject matter under the *Mayo* framework, [] preemption concerns are fully addressed and made moot.” *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015). Finally, Appellants’ arguments, that the claims are directed to solving a technical problem

relating to understanding a person speaking in the presence of audible interference, are not persuasive as they are not commensurate with the scope of the claims. As discussed above, claim 17 is directed to generating a training set (of data) based upon using a transfer function on received data. Representative claim 17 does not recite that the received data (neural utterance) is spoken data that the controller is trying to understand, or that the training data (the created data) is actually being used in a step to improve the understanding of a person speaking in the presence of noise, i.e., the claim recites receiving and creating the data, but not using it in the manner to implement the asserted technical solution. Accordingly, we are not persuaded that claim 17 recites significantly more than the abstract concept of applying a mathematical algorithm to data and, as such, are not persuaded of error in the Examiner's rejection of representative claim 17. Accordingly, we sustain the Examiner's rejection of claims 1 through 20 as directed to patent-ineligible subject matter.

#### DECISION

We affirm the Examiner's rejections of claims 1 through 20 under 35 U.S.C. § 101.

Additionally, should there be further prosecution of this application the Examiner is encouraged to evaluate whether independent claims 1 and 17 are single means claims. *See* MPEP 2181 (I) and (V).

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)(iv) (2016).

AFFIRMED