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BENOIT & COTE
560 boul. Cremazie est
Suite 300
Montreal, QC H2P 1E8
CANADA

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARKUS KOSTRZEWA, THOMAS MAIER and STEFAN KLEPEL[1]

Appeal 2017-000728
Application 12/695,235
Technology Center 1600

Before RICHARD M. LEBOVITZ, JOHN G. NEW, and ROBERT A. POLLOCK, *Administrative Patent Judges*.

POLLOCK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejections of claims 1–14 as unpatentable. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] According to Appellants, the Real Party in Interest is Bruker Daltonik GmbH of Bremen, Germany. App. Br. 1.

STATEMENT OF THE CASE

Appellants' "invention relates to the mass spectrometric identification of microorganisms in complex samples with mixed cultures." Spec. ¶ 1. "In practice, a simple and low-cost method for the mass spectrometric identification of microorganisms based on MALDI (matrix-assisted laser desorption/ionization) time-of-flight mass spectra has gained wide-spread acceptance by microbiologists." *Id.* ¶ 5. "In order to identify microorganisms, a mass spectrum of the sample is acquired and compared with mass spectra of known microorganisms, which are available as reference spectra in a library." *Id.* ¶ 6. "The identification method according to the invention comprises combining at least two reference spectra to form a combination spectrum and extending a similarity analysis to the combination spectrum." *Id.* ¶ 13.

Claims 1 and 11 are independent. Claim 1 is representative:

> 1. A method for identifying microorganisms present in a sample, comprising:
>
> (a) acquiring a mass spectrum of the sample using a mass analyzer;
>
> (b) comparing the sample mass spectrum to each of a plurality of reference mass spectra, wherein each reference mass spectrum is a mass spectrum of a known microorganism;
>
> (c) selecting as a best set of reference mass spectra, those reference mass spectra that are found to most closely match the sample spectrum in the comparisons in step (b);
>
> (d) combining a plurality of the reference mass spectra of microorganisms of different species in said best set to form a combination spectrum, wherein mass signals from different reference mass spectra that correspond to the same

mass are combined to form one signal in the combination spectrum; and

(e) comparing the sample mass spectrum to the combination spectrum.

STATEMENT OF THE REJECTION

Claims 1–14 stand rejected under 35 U.S.C. § 101 as drawn to non-statutory subject matter.

ANALYSIS

We have reviewed Appellants' contentions that the Examiner erred in rejecting claims 1–14 as drawn to non-statutory subject matter under 35 U.S.C. § 101. App. Br. 3–11; Reply 1–6. We disagree with Appellants' contentions and adopt the Examiner's findings and conclusion. *See* Ans. 3–7. We provide the following comments for clarity and emphasis.

Section 101 of the Patent Statute broadly provides that, "[w]hoever 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." Supreme Court precedent, however, provides three specific exceptions to the broad categories of eligible subject matter under § 101: laws of nature, natural phenomena, and abstract ideas. *Bilski v. Kappos*, 561 U.S. 593, 625 (2010). "The 'abstract ideas' category embodies 'the longstanding rule that '[a]n idea of itself is not patentable.'" *Alice Corp. Pty. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). For example, as explained by the Federal Circuit, collecting and analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, are "mental

processes within the abstract-idea category." *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1093 (Fed. Cir. 2016).

In *Alice*, the Supreme Court referred to the two-step analysis set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 132 S. Ct. 1289 (2012), as providing "a 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 (citing *Mayo*, 132 S. Ct. at 1289). Under *Alice*, "[w]e must first determine whether the claims at issue are directed to a patent-ineligible concept." *Id.* Next, "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.* (citing *Mayo*, 132 S. Ct. at 1297–98).

To be patentable under *Mayo*, a claim must do more than simply state the law of nature or abstract idea and add the words "'apply it.'" *Mayo*, 132 S. Ct. at 1294; *Benson*, 409 U.S. at 67. Likewise, "[s]imply appending conventional steps, specified at a high level of generality," is not "enough" for patent eligibility. *Alice*, 134 S. Ct. at 2357 (quoting *Mayo*, 132 S. Ct. at 1300). Moreover, "[w]hile preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility. . . . Where 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), *cert. denied*, No. 15-1182, 2016 WL 1117246 (U.S. June 27, 2016); *see also Vehicle Intelligence & Safety LLC v. Mercedes-Benz USA, LLC*, 635 F. App'x 914, 918 (Fed.

Cir. 2015), *cert. denied*, No. 15-1201, 2016 WL 1171121 (U.S. May 31, 2016) ("And while assessing the preemptive effect of a claim helps to inform the *Mayo/Alice* two-step analysis, the mere existence of a non-preempted use of an abstract idea does not prove that a claim is drawn to patent-eligible subject matter.").

With respect to step one of the *Mayo/Alice* analysis, Appellants argue that the claims are not directed to "the abstract idea of 'combining and comparing of data'" but to "'[a] method for identifying microorganisms in a sample," which "allow[s] the identification of individual physical microorganism components of the complex sample." App. Br. 4–5. In particular, Appellants admit that the "steps of comparing spectra and selecting the best set may be accomplished . . . manually," but argue that the step of "acquiring a mass spectrum of the sample using a mass analyzer" "removes the claim as a whole from the realm of abstract data processing," *Id.* at 5. We do not find Appellants' argument persuasive.

"[M]erely selecting information, by content or source, for collection, analysis, and display does nothing significant to differentiate a process from ordinary mental processes, whose implicit exclusion from § 101 undergirds the information-based category of abstract ideas." *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1355 (Fed. Cir. 2016). The claims in *Electric Power* were "directed to 'the abstract idea of monitoring and analyzing data from disparate sources.'" *Id.* at 1352. That the data was derived from an electric power grid did not remove the claims from the realm of abstract ideas under § 101. *See id.* at 1355 (noting that the claims did not require non-conventional elements or "even a 'non-conventional and non-generic arrangement of known, conventional pieces'") (citation omitted). Here, as

set forth in the Examiner's Answer, "acquiring a mass spectrum using a mass analyzer is not only a routinely practiced and well known technique" that, in the context of the claims before us, merely indicates "a step of data gathering such that the abstract idea could be performed." Ans. 6. Accordingly, we agree with the Examiner that the step of acquiring a mass spectrum of the sample using a mass analyzer does not remove it from the domain of abstract ideas. *See id.*

With respect to step 2 of the analysis, Appellants argue that the Examiner ignored or disregarded the data acquiring and combining steps and, therefore, did not properly consider the claims as a whole. *See* App. Br. 8. But as noted above, the Examiner's analysis did take into account data acquiring step. Moreover, Appellants do not convince us that the combining step is any more than data manipulation[2] and, thus, the implementation of an abstract idea. "[A] claim for a *new* abstract idea is still an abstract idea." *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) (quoting *Mayo*, 132 S. Ct at 1304). Just because an invention "effectuate[s] a practical result and benefit not previously attained," does not immunize it from invalidity under § 101 of the Patent Statute. *Ariosa*, 788 F.3d at 1381 (J. Reyna concurring) (citation omitted). Appellants did not explain how the process, itself, was new. As held in *Parker v. Flook*, 437 U.S. 584, 591–92 (1978):

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[2] Although Appellants point to the use of a weighting factor and iterative analyses in claims 2 and 3, these too invoke the abstract idea of data manipulation and do not materially affect our analysis. *See* App. Br. 10.

> The process itself, not merely the mathematical algorithm, must be new and useful. Indeed, the novelty of the mathematical algorithm is not a determining factor at all. Whether the algorithm was in fact known or unknown at the time of the claimed invention, as one of the "basic tools of scientific and technological work," it is treated as though it were a familiar part of the prior art.

Thus, considering the claims as a whole, the sum of the individual steps fail to provide significantly more than the judicial exception itself.

Appellants also argue that, the claims as a whole do not monopolize the abstract idea of combining and comparing data, particularly as they are limited to the use of a mass analyzer. App. Br. 8–9. We do not find Appellants' arguments persuasive. Even "the absence of complete preemption does not demonstrate patent eligibility." *Ariosa*, 788 F.3d at 1379. "Where a patent's claims are deemed only to disclose patent ineligible subject matter under the *Mayo* framework, as they are in this case, preemption concerns are fully addressed and made moot." *Id.*

For the above reasons, and those set forth in the Examiner's Answer, we sustain the rejection.

SUMMARY

We *affirm* the rejection of claims 1–14 under 35 U.S.C. § 101 as drawn to non-statutory subject matter.

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).

AFFIRMED