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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 PETER COWAN, JOHN C. VAN GORP,
and DANIEL J. WALL[1]

_____

Appeal 2018-007389
Application 12/886,715
Technology Center 2800
_____

Before CATHERINE Q. TIMM, BEVERLY A. FRANKLIN, and
JEFFREY B. ROBERTSON, *Administrative Patent Judges*.

FRANKIN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants request our review under 35 U.S.C. § 134(a) of the Examiner's decision rejecting claims 1–7 and 9–20. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM.

STATEMENT OF THE CASE

Claim 1 is illustrative of Appellants' subject matter on appeal and is set forth below:

> 1.   A method of analyzing usage of at least one utility by a utility consuming system having one or more utility consuming segments, the method comprising:
>
> generating, via one or more controllers, a first load duration curve (LDC) indicating load characteristics over a first time period;
>
> receiving from a user a selection of a first portion of the first LDC to be analyzed, wherein the first portion represents a second time period less than the first time period;
>
> generating, in a response to the received selection, via the one or more controllers, a second portion of the first LDC to be analyzed, the second portion being generated by comparing the first portion to a plurality of additional portions of the first LDC, wherein the second portion represents a third time period less than the first time period and different from the second time period, and each of the plurality of additional portions represents an additional time period less than the first time period;
>
> generating, via the one or more controllers, a first associated duration chart (ADC) indicative of one or more associated duration parameters relating to the second portion of the first LDC, the associated duration parameters including at least one load characteristic for the third time period; and
>
> storing, via one or more memory devices, the generated first ADC in association with the generated first LDC;

modifying at least one of the utility consuming segments responsive to at least one of the second portion of the first LDC and the first ADC.

The Examiner relies on the following prior art references as evidence of unpatentability:

Sneeringer	US 2004/024717 A1	Feb. 5, 2004
Brickfield	US 2008/0177423 A1	July 24, 2008
Nasle	US 2008/0262820 A1	Oct. 23, 2008
Chassin	US 2010/0107173 A1	Apr. 29, 2010
Tomita	WO 2010082536 A1	July 22, 2010
Noel D. Uri ("Uri")	*Mid-range forecasting of the load duration curve*, Vol. 3, Appl. Math Modelling, Dept. of Energy, 379–383	Oct. 1979
Shmuel Oren ("Oren")	*Capacity Pricing*, Vol. 53, No. 3, Econometrica 545–566	May 1985
Juozas Abaravicius ("Abaravicius")	*More of Less about Data: Analyzing Load Demand in Residential Houses,* ACEEE Summer Study on Energy Efficiency in Bldgs. 12-1–12-12, Lund Univ., Sweden	2006

THE REJECTIONS[2]

1. Claims 1–7 and 9–20 are rejected under 35 U.S.C. § 101 as the claimed invention is directed to non-statutory subject matter because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more. Advisory Act. 2–11.

2. Claims 1, 2, 3, and 5–7, 9, 10, 15, and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sneeringer in view of Abaravicius and Tomita. Advisory Act. 11–20.

3. Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Sneeringer, Abaravicius, and Tomita, and further in view of Chassin. Advisory Act. 20–21.

4. Claims 11 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sneeringer, Abaravicius, and Tomita, and further in view of Uri. Advisory Act. 21–23.

5. Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Sneeringer, Abaravicius, and Tomita, and further in view of Nasle. Advisory Act. 23.

6. Claims 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Sneeringer, Abaravicius, and Tomita, and further in view of Oren. Advisory Act. 23–24.

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[2] In the Advisory Action mailed June 6, 2017, the Examiner sets forth the rejections, which Appellant argues in the Appeal Brief. Appeal Br. 8–15. Thus, we refer to the Advisory Action regarding the rejections of record throughout this decision.

7. Claim 16 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Sneeringer and Abaravicius, and further in view of Brickfield. Advisory Act. 24–25.

8. Claim 18 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Sneeringer, in view of Brickfield, Abaravicius and Tomita. Advisory Act. 25–30.

9. Claim 19 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Sneeringer, in view of Brickfield and Abaravicius. Advisory Act. 30–34.

10. Claim 20 is rejected under 35 U.S.C. §103(a) as being unpatentable over Sneeringer in view of Brickfield, Abaravicius, Oren, and Tomita. Advisory Act. 34–39.

ANALYSIS

We select claim 1 as representative and address the claims separately to the extent they are so argued by Appellants. 37 C.F.R. § 41.37(c)(1)(iv).

Upon consideration of the evidence and each of the respective positions set forth in the record, we find that the preponderance of evidence supports the Examiner's findings and conclusion that the subject matter of Appellants' claims is unpatentable under § 101 and over the applied art. Accordingly, we sustain each of the Examiner's rejections on appeal essentially for the reasons set forth in the Final Office Action and in the Answer, and add the following for emphasis.

Rejection 1

For the reasons discussed below, we are unpersuaded by Appellants' arguments that the claimed subject matter has not been shown to be patent-ineligible as directed to a judicial exception without reciting significantly more.

An invention is patent-eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. The Supreme Court, however, 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 Banklnt'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 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, 69

(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. 52, 267—68 (1854))); and manufacturing flour (*Benson*, 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 187; *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 *Benson* and *Flook*); *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 (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.* (quoting *Mayo*, 566 U.S. at 77). "[Merely requiring] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

The PTO recently published revised guidance on the application of § 101 with regard to the first step of the *Alice/Mayo* test (i.e., Step 2A of the USPTO's Subject Matter Eligibility Guidance as incorporated into M.P.E.P. § 2106). USPTO's January 7, 2019, *2019 Revised Patent Subject Matter Eligibility Guidance* ("Revised Guidance"). 84 Fed. Reg. 50 (Jan. 7, 2019). Thus, under Step 1 of the Guidance, we determine whether the claimed subject matter falls within the one of the four statutory categories: process, machine, manufacture, or composition of matter. Step 2A of the Guidance is two-pronged, under which we 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* 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, under Step 2B, 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 84 Fed. Reg. at 56.

Guidance Step 1

Following the aforementioned revised guidance, initially, there is no dispute that claims 1–7 and 9–20 fall within one of the four statutory categories of invention under Step 1 of the Guidance. Accordingly, we turn next to Step 2A(1) of the Revised Guidance.

Guidance Step 2A, Prong 1

Under Step 2A(1), we find that claim 1 recites a judicial exception in the form of mathematical concepts such as in reciting "generating, via one or more controllers, a first load duration curve (LDC)", for the reasons expressed by the Examiner in the record, which we do not repeat herein. Advisory Act. 2–11. Thus, claim 1 recites a judicial exception in the form of mathematical concepts. *SAP America, Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1163 (Fed. Cir. 2018) (holding that claims to a "series of mathematical calculations based on selected information" are directed to abstract ideas).

Guidance Step 2A, Prong 2

As a result, we next turn to Step 2A(2) of the Revised Guidance to determine whether the claims integrate the judicial exception into a practical application. *Diehr*, 450 U.S. at 187 ("A claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula.").

We refer to Appellants' position as presented on pages 7–14 of the Appeal Brief and page 2 of the Reply Brief, which we do not repeat herein.

It is the Examiner's position that, in contrast to *Diehr*, the combination of elements recited in Appellants' claim 1 (as well as claim 18) does not impose meaningful limits on the mathematical operation because the claim is reciting the collection and analysis of received data. Ans. 3. The Examiner also states that modifying at least one segment of a utility consuming system responsive to at least one of the second portion of the first LDC (load duration curve) and the first ADC (associated duration curve) is a broad generic recitation and can also be considered as extra-solution activity. *Id.*

We agree with the Examiner that the modifying step is a broad generic recitation, and can also be considered as extra-solution activity. In other words, this additional element is broadly recited such that it merely generally links the judicial exception to a technological environment and there is no significant extra-solution (pre-solution or post-solution) activity to the judicial exception. MPEP § 2106.05(e)–(h). Appellants argue that the Examiner has not described the claim limitation as being an **insignificant** [emphasis added] extra-solution activity, and submit that the act of modifying at least one segment of a utility consuming segment is not insignificant and leads to a real world result. Reply Br. 2.

However, while claim 1 includes a postsolution step of "modifying at least one of the utility segments . . .", this limitation does not have any specificity to it to render it more than insignificant post-solution activity. Unlike in *Diamond v. Diehr*, 450 U.S. 175 (1981), where the post-solution activity, namely controlling the press is very specific with respect to

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designated outcomes of the mathematical calculation, namely "to open when the comparison indicates equivalence, meaning that the molded product is cured," the present claims are too generic to constitute significantly more. *See also Classen Immunotherapies Inc. v. Biogen IDEC*, 659 F.3d 1057, 1066–68 (Fed. Cir. 2011) (the immunization step, which only immunized where the analysis step resulted in showing lower risk for chronic immune-mediated diseases, was meaningful because it integrated the results of the analysis into a specific and tangible method). *Cf. Electric Power Group, LLC v. Alstom, S.A.*, 830 F.3d 1350, 1356 (Fed. Cir. 2016) (claiming a particular solution to a problem or a particular way to achieve a desired outcome may provide significantly more). The phrase "modifying at least one of the utility consuming segments responsive to at least one of the second portion of the first LDC and the first ADC" lacks detail concerning the modification (as stated by the Examiner, this is "a broad generic recitation" (Ans. 3)).

Further, taking the claims as a whole and considering the steps of the claimed method of analyzing usage of at least one utility by a utility consuming system having one or more utility consuming segments, including modifying at least one of the utility consuming segments, such steps are insufficient to integrate the the mathematical limitations that are judicial exceptions into a practical application. The claims are not directed to more than applying the judicial exception in a generic way concerning a method of analyzing usage of a utility by a utility consuming system, including modifying at least one of the utility consuming segments. MPEP § 2106.05(f). Here, the method of analyzing usage of a utility merely defines the field of use linked to the judicial exception. There is no

description of transforming the method of analyzing usage of a utility or any
actual description of improving the method of analyzing usage of a utility
(there is no sufficient detail of the modification). *See* MPEP § 2106.05(c).

Having determined that claim 1 recites a judicial exception, but
the additional elements recited in the claim do not integrate the judicial
exception into a practical application, i.e., the claim is directed to an
abstract idea, we proceed to Step 2B of the Guidance.

Guidance Step 2B

Only if a claim (1) recites a judicial exception and (2) does not
integrate that exception into a practical application, as in the instant case, do
we next, under Step 2B, conduct the following analysis. We note that under
Step 2B of the Guidance, we determine whether the claim provides an
"inventive concept," i.e., whether the additional elements beyond the
judicial exception, individually and in combination, amount to
"significantly more" than the judicial exception itself. Guidance, 84 Fed.
Reg. at 56. According to the Guidance, "simply append[ing] well-
understood, routine, conventional activities previously known to the
industry, specified at a high level of generality," is indicative that an
inventive concept is absent. *Id.* at 56.

The Examiner determines that the additional elements simply append
well-understood, routine, conventional activities previously known to the
industry, specified at a high level of generality, to the judicial exception
(Advisory Act. 3–4). Therein, the Examiner states:

> The claim(s) does/do not include additional elements that are
> sufficient to amount to significantly more than the judicial exception
> because receiving from a user a selection of a first portion of the first
> LDC to be analyzed, wherein the first portion represents a second time

period less than the first time period can be considered to be receiving data and selecting data necessary to perform the abstract idea and is therefore considered extra-solution activity. Storing, via one or more memory devices, the generated first ADC in association with the generated first LDC is merely storing the gathered data and utilizing a generic computer (a controller to process the data) is considered to be routine in any computer implementation.

Appellants disagree with this position. *See, e.g.,* Appeal Br. 13. Therein, Appellants state:

Accordingly, in light of the sheer level of specificity and number of ordered limitations recited therein, the claims at issue cannot be considered a conventional arrangement of known parts based on previous case law and common knowledge within the industry. The claims recite a specific technological solution to a technological problem and therefore recite "significantly more" than the alleged abstract idea under step two of the Alice test. Accordingly, the rejections of the independent claims under 35 U.S.C. §101 should be withdrawn.

We agree with and adopt the Examiner's aforementioned discussion of the additional claim elements (as quoted above). Elements that have been recognized as well-understood, routine, or conventional activity include storing and retrieving information in memory. *Versata Dev. Group, Inc. v. SAP Am., Inc.,* 793 F.3d 1306, 1334 (Fed. Cir. 2015). MPEP § 2106.05(d)(II).

In view of the above, we affirm Rejection 1.

Rejections 2–10

As an initial matter, our determinations with respect to Rejection 2 is dispositive for Rejections 3–10 (Appellants rely upon the same arguments (Appeal Br. 16)).

Beginning on page 15 of the Appeal Brief, Appellants state:

The Advisory Action asserts that Sneeringer teaches "the customer is provided the capability of downloading any piece, part or all of the data collected - paragraph 0115" and that Tomita teaches modifying utility segments in response to the second portion of the LDC or the ADC, as recited in claim 1. (Advisory Action at p. 13-14.)

However, Sneeringer does not disclose using one or more controllers to generate a second portion of the first LDC, wherein the second portion represents a third time period that is different from the second time period. Sneeringer discloses having a user select portions of data to display or download, which is fundamentally different than having one or more controllers perform analysis on a first portion of an LDC and in response produce a second portion of the first LDC that is different than the first portion provided by a user. Abaravicius does not cure the deficiencies of Sneeringer in disclosing all of the limitations of the claims.

Further, Tomita does not mention LDCs or ADCs. Tomita therefore does not teach or suggest "modifying at least one of the utility consuming segments responsive to at least one of the second portion of the first LDC and the first ADC," as recited in claim 1.

Accordingly, the proposed combination of Sneeringer, Abaravicius, and Tomita does not teach or suggest ". . . generating, in a response to the received selection, via the one or more controllers, a second portion of the first LDC to be analyzed, the second portion being generated by comparing the first portion to a plurality of additional portions of the first LDC, wherein the second portion represents a third time period less than the first time period and different from the second time period, and each of the plurality of additional portions represents an additional time period less than the first time period; generating, via the one or more controllers, a first associated duration chart (ADC) indicative of one or more associated duration parameters relating to the second portion of the first LDC, the associated duration parameters including at least one load characteristic for the third time period; storing, via one or morememory devices, the generated first ADC in association with the generated first LDC; and modifying at least one of the utility

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consuming segments responsive to at least one of the second portion
of the first LDC and the first ADC" as recited in claim 1.
Accordingly, the rejection of claim 1 should be withdrawn.

We agree with the Examiner (Ans. 16) that the test for obviousness is
what the combined teachings of the references would have suggested to
those of ordinary skill in the art; one cannot show non-obviousness by
attacking references individually where the rejections are based on
combinations of references. *In re Young*, 927 F.2d 588, 591 (Fed. Cir.
1991); *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097-98 (Fed. Cir. 1986); *In
re Keller*, 642 F.2d 413, 425 (CCPA 1981). We refer to the Examiner's
statement of the rejection made on pages 11–20 of the Advisory Action
regarding the combination of teachings for Rejection 2 in this regard.

We also agree with the Examiner that Sneeringer discloses generating
load profiles, tables and curves, and teaches that a plethora of different times
periods may be utilized for data analysis (for example, once the
load information is accessible, it may be presented in whatever time period
the customer wishes to see or analyze in terms of load profile and load
characteristics (Sneeringer, ¶ 0110)). Ans. 19. The Examiner finds (and we
agree) that Sneeringer, as modified by Tomita, discloses modifying at least
one of the utility consuming segments responsive to at least one of the
second portion of the first LDC and the first ADC. *Id.*

In reply, Appellants emphasize that the combination fails to generate
the second portion of the first LDC to be analyzed **via the one or more
controllers**. Reply Br. 3. We refer to the Examiner's findings made on
page 12 of the Advisory Office Action which explains how Sneeringer
suggests this aspect of the claims. We are unpersuaded that the method
taught by Sneeringer is distinguishable from the method recited in the

claims. As mentioned, *supra*, Sneeringer discloses generating load profiles, tables, curves, etc., and how users implement the system accordingly. Ans. 19.

In view of the above, we affirm Rejections 2–10.

DECISION

Each rejection is affirmed.

TIME PERIOD

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).

ORDER
AFFIRMED