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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte FRANCESCO MONTRONE, ROBERT SCHULTE,
WOLFGANG STREER, and ARIANE SUTOR

Appeal 2017-007145
Application 13/028,304¹
Technology Center 3600

Before JAMES R. HUGHES, JENNIFER L. McKEOWN, and
MATTHEW J. McNEILL, *Administrative Patent Judges*.

McNEILL, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1, 6–10, 13, and 14, which are all the claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ According to Appellants, the real party in interest is Siemens Aktiengesellschaft. Br. 1.

STATEMENT OF THE CASE

Introduction

Appellants' application relates to optimizing a maintenance plan for a plant using constraints related to planned outages of the plant. Spec. ¶¶ 1–5.

Claim 1 illustrates the appealed subject matter and read as follows:

1. A method for optimization of maintenance plans for a plant, comprising:

using input data comprising at least one of a plurality of indicia regarding a configuration of the plant wherein the configuration of the plant includes a plurality of plant modules and a plurality of constraints regarding planned outages of the plant;

optimizing said input data by a computer processor, the optimizing comprising,

creating a random sequence of plant modules to traverse by the computer processor,

for each module in the sequence, constructing a set of planned outages, and choosing a plurality of random sequence offsets of planned outages in the set of planned outages,

for each offset of planned outages of the sequence, constructing a set of representative starting dates, and choosing a random sequence of the planned outages in the offset of planned outages,

for each planned outage in the sequence of choosing random sequence of the planned outages, assigning an outage to the starting date which gives best evaluation results for the plant's output; and

generating a maintenance plan using the optimized input data by the computer processor with maximum equivalent power output and availability of the plant per a defined observation period,

wherein the constraint data comprises minimum and maximum operational time between outages, the duration of the

outages, date constraints, and staff constraints, and
wherein each plant module comprises a separate system
of the plant.

The Examiner's Rejections

Claims 13 and 14 stand rejected under pre-AIA 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement. Non-Final Act. 2–3.

Claims 1, 6–10, 13, and 14 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. *Id.* at 3–4.

Claims 1, 6–10, 13, and 14 stand rejected under 35 U.S.C. § 103 as unpatentable over Iino et al. (US 2005/0246039 A1; Nov. 3, 2005) and Hotta et al. (US 2008/0172267 A1; July 17, 2008). *Id.* at 4–8.

ANALYSIS

Written Description

Claims 13 and 14 stand rejected under 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement. Non-Final Act. 2–3. In particular, the Examiner finds the claim limitation “shutting down the plant module” is not supported by the Specification. *Id.* at 3.

Appellants argue the Examiner erred because the Specification supports the disputed limitation. Br. 4. According to Appellants, the Specification discusses plant outages, including outages for modules and sub-modules. *Id.* (citing Spec. ¶¶ 15, 16, 29–32). Appellants argue these outages would necessitate shutting down the plant module, as claimed. *Id.*

Appellants have persuaded us of Examiner error. The Specification teaches maintenance plans that distinguish between operational time and outages. *See, e.g.*, Spec. ¶¶ 15, 16, 29–32. We agree with Appellants that an ordinarily skilled artisan would have understood that the planned outages involve shutting down the relevant modules to achieve an outage. We, therefore, do not sustain the written description rejection of claims 13 and 14.

Patent-Ineligible Subject Matter

Under 35 U.S.C. § 101, a patent may be obtained for “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” The Supreme Court has “long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014) (quoting *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)).

The Supreme Court, in *Alice*, reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66 (2012), “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. Assuming that a claim nominally falls within one of the statutory categories of machine, manufacture, process, or composition of matter, the first step in the analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.* For example, abstract ideas include, but are not limited to, fundamental economic practices, methods of organizing human activities, an idea of itself, and mathematical formulas or

relationships. *Id.* at 2355–57. If the claim is directed to a judicial exception, such as an abstract idea, the second step is to determine whether additional elements in the claim “‘transform the nature of the claim’ into a patent-eligible application.” *Id.* at 2355 (quoting *Mayo*, 566 U.S. at 78). This second step is described as “a search for an “‘inventive concept’”—*i.e.*, an element or combination of elements that is ‘. . . significantly more than . . . the [ineligible concept] itself.’” *Id.* (alteration in original) (quoting *Mayo*, 566 U.S. at 72–73).

Alice Step One

“[T]he first step in the *Alice* inquiry . . . asks whether the focus of the claims is on the specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an ‘abstract idea’ for which computers are invoked merely as a tool.” *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016). “The abstract idea exception prevents patenting a result where ‘it matters not by what process or machinery the result is accomplished.’” *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1312 (Fed. Cir. 2016) (quoting *O’Reilly v. Morse*, 56 U.S. (15 How.) 62, 113 (1854)). “We therefore look to whether the claims . . . focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery.” *McRO*, 837 F.3d at 1314.

Appellants do not specifically argue the Examiner erred in concluding the claims are directed to an abstract idea. *See* Br. 4–5. Instead, Appellants argue the Examiner erred in applying *Alice* step two. Accordingly, we are

not persuaded of Examiner error with respect to *Alice* step one and turn to *Alice* step two.

Alice Step Two

The second step in the *Alice* analysis requires a search for an “inventive concept” that “must be significantly more than the abstract idea itself, and cannot simply be an instruction to implement or apply the abstract idea on a computer.” *Bascom Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349 (Fed. Cir. 2016). There must be more than “computer functions [that] are ‘well-understood, routine, conventional activit[ies]’ previously known to the industry.” *Alice*, 134 S. Ct. at 2359 (second alteration in original) (quoting *Mayo*, 566 U.S. at 73).

Appellants argue claims 1 and 10 are directed to significantly more than an abstract idea. Br. 4–5. Appellants also argue the Examiner provides no details, rationale, or application for Appellants to address. *Id.* Appellants argue the claims are directed to an improvement for optimizing maintenance plans for a plant that has not been long prevalent or fundamental to the practice. *Id.* at 5. Appellants argue that the Examiner has not established that it is “unquestionably well-known” that the claims are directed solely to the abstract idea because, for example, “creating a random sequence of plant modules to traverse by the computer processor” is more than merely data collection and/or data analysis. *Id.*

Appellants also argue the claims amount to more than mere instructions to implement the idea on a computer. Br. 5. Appellants argue the claims are not solely directed to data collection and analysis, and include specific steps to achieve the claimed optimization, thus amounting to significantly more than the asserted judicial exception. *Id.*

Appellants have not persuaded us of Examiner error. Claim 1 is generally directed to a method for optimization of maintenance plans for a plant. The method includes using input data comprising indicia regarding a configuration of the plan, where the configuration includes plant modules and constraints regarding planned outages. The optimization includes creating a random sequence of plant modules and, for each module, performing a sequence of steps to create and test a planned outage, determining which outage works best for the plant's output. Next, a maintenance plan is generated using the optimized data. Thus, claim 1 recites a business method for generating a maintenance plan for a plant using information regarding the plant's modules and business constraints, such as operational time between outages, outage duration, and data and staff constraints. The computer limitations in claim 1 are merely tools to achieve this method. Our reviewing court has also "made clear that mere automation of manual processes using generic computers does not constitute a patentable improvement in computer technology." *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1055 (Fed. Cir. 2017). Like the claims in *Credit Acceptance*, the focus of the claims is on the business practice, "and the recited generic computer elements 'are invoked merely as a tool.'" *Id.* (citing *Enfish*, 822 F.3d 1327); see also *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1334 (Fed. Cir. 2015) (collecting cases).

The claims at issue here are different than in cases such as *DDR Holdings*. The Federal Circuit in *DDR Holdings* found claims necessarily rooted in computer technology to be patent eligible, but issued a relevant warning:

We caution, however, that not all claims purporting to

address Internet-centric challenges are eligible for patent. For example, in our recently-decided *Ultramercial* opinion, the patentee argued that its claims were “directed to a specific method of advertising and content distribution that was previously unknown and never employed on the Internet before.” But this alone could not render its claims patent-eligible. In particular, we found the claims to merely recite the abstract idea of “offering media content in exchange for viewing an advertisement,” along with “routine additional steps such as updating an activity log, requiring a request from the consumer to view the ad, restrictions on public access, and use of the Internet.”

DDR Holdings, LLC v. Hotels.com, L.P., 773 F.3d 1245, 1258 (Fed. Cir. 2014) (citations omitted).

The claims in *DDR Holdings* addressed a problem unique to the Internet in a manner that was “not merely the routine or conventional use of the Internet.” *Id.* at 1259. In particular, rather than the expected behavior of simply sending the website visitor to a third-party website, the claimed invention behaved in a manner different than expected by sending a website visitor to a hybrid web page presenting information from a third-party with the look and feel of the host website. *Id.* at 1258–59. In contrast, Appellants have not identified any unconventional behavior by the recited computer limitations in claim 1. Instead, claim 1 recites using conventional computer techniques such as retrieving data, comparing data, and making determinations based on these comparisons. The nature of claim 1 as a whole is not to define a specific technological improvement, but to recite the steps necessary to perform the abstract idea itself. Claim 1 employs “generic processes and machinery” to achieve results, and is not focused on “a specific means or method that improves the relevant technology.” *McRO*, 837 F.3d at 1314.

We, therefore, sustain the patent-ineligible subject matter rejection of claim 1. We also sustain the rejection of independent claim 10, for which Appellants provide no separate argument. *See* Br. 4–5. We also sustain the patent-ineligible subject matter rejection of dependent claims 6–9, 13, and 14, for which Appellants provide no separate argument. *See id.*

Obviousness

The Examiner finds the combination of Iino and Hotta teaches or suggests “using input data comprising at least one of a plurality of indicia regarding a configuration of the plant wherein the configuration of the plant includes . . . a plurality of constraints regarding planned outages of the plant” and “wherein the constraint data comprises minimum and maximum operational time between outages, the duration of the outages, date constraints, and staff constraints.” Non-Final Act. 5–6; Ans. 3–4. In particular, the Examiner finds Iino teaches using a known shutdown and startup time of a plant, which necessarily fixes the duration of a shutdown period. Ans. 3–4. The Examiner finds Iino teaches “greater detail concerning the operation of the plant, but this greater detail necessarily reads on the broader claim language of simply optimizing on a time period.” *Id.* at 4.

Appellants argue the Examiner erred in finding Iino teaches the claimed “constraints,” including “minimum and maximum operation time between outages, the duration of the outages, date constraints, and staff constraints.” Br. 6–9. In particular, Appellants argue Iino teaches startup and shutdown times for the plant, but these teachings do not relate to constraints on outages, such as the minimum and maximum operational time between outages, date constraints, and staff constraints. *Id.* at 6–7.

Appellants have persuaded us of Examiner error. The Examiner has not sufficiently explained how Iino's teachings regarding the startup and shutdown times of a plant comprise the claimed "minimum and maximum operation time between outages" or "staff constraints," as recited in claim 1. Although these dates may be related to outages, the Examiner has not explained how the startup and shutdown times of a plant relate to constraints on determining a maintenance plan for that plant, where the constraints include these additional features.

Accordingly, on this record we do not sustain the obviousness rejection of independent claim 1. We also do not sustain the obviousness rejection of independent claim 10, which recites commensurate limitations, or dependent claims 6–9, 13, and 14, which depend from claim 1.

DECISION

Because we have sustained at least one ground of rejection with respect to each claim on appeal, we affirm the decision of the Examiner rejecting claims 1, 6–10, 13, and 14. *See* 37 C.F.R. § 41.50(a)(1).

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). *See* 37 C.F.R. § 41.50(f).

AFFIRMED