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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SRIRAM RANGANATHAN,
SRIDHAR SANKARANARAYANAN, and NARENDRA NAGALLA

Appeal 2017-010684
Application 13/764,330¹
Technology Center 3600

Before BRUCE T. WIEDER, AMEE A. SHAH, and
MATTHEW S. MEYERS, *Administrative Patent Judges*.

WIEDER, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the Examiner’s final rejection of claims 1–5, 7–14, and 16–22. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

CLAIMED SUBJECT MATTER

Appellants’ invention relates to “a system and method for managing cargo transfer operations at a cargo distribution terminal.” (Spec. ¶ 3.)

¹ According to Appellants, the real party in interest is Honeywell International Inc. (Appeal Br. 2.)

Claims 1, 10, and 18 are the independent claims on appeal. Claim 1 is illustrative. It recites:

1. A method comprising:
wirelessly receiving a request associated with loading of cargo at a terminal;
determining a recommended slot in response to the request, the recommended slot comprising a time slot for loading the cargo onto a cargo vehicle, the recommended slot determined using at least one cost function having a plurality of input parameters, the input parameters comprising an availability of the cargo at a particular terminal bay for loading onto the cargo vehicle, a measurement of existing cargo vehicle traffic in and out of the terminal, and a current location of the cargo vehicle at a time when the recommended slot is determined; and
wirelessly transmitting the recommended slot for delivery to a mobile device of an operator of the cargo vehicle.

REJECTION

Claims 1–5, 7–14, and 16–22 are rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more.²

ANALYSIS

Independent claims 1, 10, and 18

“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.” 35 U.S.C. § 101. Section 101, however, “contains an important implicit exception: Laws of nature, natural

² The rejection of claims 1–5, 7–14, and 16–22 under 35 U.S.C. § 103(a) was withdrawn. (*See Answer 2.*)

phenomena, and abstract ideas are not patentable.” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014) (quoting *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)).

Alice applies a two-step framework, earlier set out 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*, 573 U.S. at 217.

Under the two-step framework, it must first be determined if “the claims at issue are directed to a patent-ineligible concept.” *Id.* If the claims are determined to be directed to a patent-ineligible concept, e.g., an abstract idea, then the second step of the framework is applied to determine if “the elements of the claim . . . contain[] an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Id.* at 221 (citing *Mayo*, 566 U.S. at 72–73, 79).

With regard to step one of the *Alice* framework, we apply a “directed to” two prong test to: 1) evaluate whether the claim recites a judicial exception, and 2) if the claim recites a judicial exception, evaluate whether the claim “appl[ies], rel[ies] on, or use[s] the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception.” *See 2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50, 54 (Jan. 7, 2019) (hereinafter “2019 Guidance”).

Here, the Examiner determines that claim 1 is “directed to the abstract idea of ‘managing the loading and unloading of cargo truck [sic] within a terminal.’” (Final Action 4.) The Examiner further determines that “the

concept of ‘managing the loading and unloading of cargo truck [sic] within a terminal’ is a certain method of organizing human activity because it is a concept that relates to managing transactions between people.” (*Id.*)

Appellants disagree and argue that “simply because Claim 1 may involve, at some level, managing the loading and unloading of a cargo truck within a terminal does not mean that the claims are *directed to* that idea.” (Appeal Br. 11.) Rather, Appellants argue, “Claim 1 recites a specific process that uses particular information and techniques and is specifically designed to achieve an improved technological result.” (*Id.*)

Under step one of the *Alice* framework, we “look at the ‘focus of the claimed advance over the prior art’ to determine if the claim’s ‘character as a whole’ is directed to excluded subject matter.” *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016) (quoting *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016)).

The ‘directed to’ inquiry . . . cannot simply ask whether the claims *involve* a patent-ineligible concept, because essentially every routinely patent-eligible claim involving physical products and actions *involves* a law of nature and/or natural phenomenon Rather, the ‘directed to’ inquiry applies a stage-one filter to claims, considered in light of the specification, based on whether ‘their character as a whole is directed to excluded subject matter.’ *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015).

Enfish, LLC v. Microsoft Corp., 822 F.3d 1327, 1335 (Fed. Cir. 2016). In other words, the first step of the *Alice* framework “asks whether the focus of the claims is on the specific asserted improvement in [the relevant technology] or, instead, on a process that qualifies as an ‘abstract idea’ for which computers are invoked merely as a tool.” *Id.* at 1335–36; *see also* 2019 Guidance at 54–55.

The Specification provides evidence as to what the claimed invention is directed. In this case, the Specification discloses that the invention relates to “managing cargo transfer operations at a cargo distribution terminal.” (Spec. ¶ 3.) Claim 1 provides further evidence. Claim 1 recites “receiving a request associated with loading of cargo,” “determining a recommended slot in response to the request,” and “transmitting the recommended slot . . . to . . . an operator of the cargo vehicle.” In short, claim 1 is directed to a method of organizing human activity, i.e., managing interactions between people. (*See* 2019 Guidance at 52.) It is also directed to a mental process, i.e., scheduling loading/delivery. (*Id.*) This is accomplished by receiving information, analyzing information, and transmitting information.

Although we and the Examiner describe, at different levels of abstraction, to what the claims are directed, it is recognized that “[a]n abstract idea can generally be described at different levels of abstraction.” *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016). That need not and, in this case does not, “impact the patentability analysis.” *Id.* at 1241.

Here, the limitations do not recite implementation details. Instead, they recite functional results to be achieved. In other words, the claims do not recite “a particular way of programming or designing the software . . . , but instead merely claim the resulting [method].” *Id.* “Indeed, the claim language here provides only a result-oriented solution, with insufficient detail for how a computer accomplishes it. Our law demands more.” *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1342 (Fed. Cir. 2017). Claim 1 does not even recite a computer or processor. At best, claim 1 recites “wirelessly receiving” and “wirelessly transmitting”

information, and a generic mobile device. Appellants do not argue that they invented wireless communication or a mobile device.

“[W]e 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.” *Elec. Power Grp.*, 830 F.3d at 1353. “In a similar vein, we have treated analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category.” *Id.* at 1354. “And we have recognized that merely presenting the results of abstract processes of collecting and analyzing information, without more (such as identifying a particular tool for presentation), is abstract as an ancillary part of such collection and analysis.” *Id.* at 1354. “Here, the claims are clearly focused on the combination of those abstract-idea processes.” *Id.* Claim 1 merely implements the abstract idea in the field of scheduling the loading/delivery of cargo.

Appellants seek to analogize claim 1 to the claims in *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016). (Appeal Br. 10–12.) Specifically, Appellants argue that “Claim 1 is limited to a specific process using particular information and techniques to achieve an improved technological result and does not preempt approaches that use different information or different techniques.” (*Id.* at 11.) We disagree. In *McRO*, the court determined that

the claimed improvement here is allowing computers to produce “accurate and realistic lip synchronization and facial expressions in animated characters” that previously could only be produced by human animators. As the district court correctly recognized, this computer automation is realized by improving the prior art through “the use of rules, rather than artists, to set the morph

weights and transitions between phonemes.” The rules are limiting in that they define morph weight sets as a function of the timing of phoneme sub-sequences.

McRO, 837 F.3d at 1313 (citations omitted). In contrast, here, the asserted improvement is to a business practice regarding scheduling the loading/delivery of cargo that does not even recite a computer. Nor, as discussed above, does the claim recite implementation details.

Appellants also argue that claim 1 recites significantly more than the alleged abstract idea. (Appeal Br. 12.) Specifically, Appellants argue that claim 1 “includes various recitations regarding a specific set of operations using specific data, specific tangible objects (such as cargo, a cargo vehicle, and a terminal bay), and specific technologies (such as at least one cost function and mobile device wireless communications.)” (*Id.* at 13.)

We do not find this argument persuasive.³ The Federal Circuit has recognized that a process

that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible. “If a claim is directed essentially to a method of calculating, using a mathematical formula, even if the solution is for a specific purpose, the claimed method is nonstatutory.” *Parker v. Flook*, 437 U.S. 584, 595, 98 S. Ct. 2522, 57 L.Ed.2d 451 (1978) (internal quotations omitted).

Digitech Image Techs, LLC v. Elecs. for Imaging, Inc., 758 F.3d 1344, 1351 (Fed. Cir. 2014). Additionally, “under the *Mayo/Alice* framework, a claim directed to a newly discovered law of nature (or natural phenomenon or

³ We acknowledge that some of these considerations may be more properly evaluated under step two of the *Alice* framework. However, for purposes of maintaining consistent treatment within the USPTO, we evaluate it under step one. *See* 2019 Guidance.

abstract idea) cannot rely on the novelty of that discovery for the inventive concept necessary for patent eligibility.” *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1376 (Fed. Cir. 2016). Moreover, “even if a process of collecting and analyzing information is ‘limited to particular content’ or a particular ‘course,’ that limitation does not make the collection and analysis other than abstract.” *SAP America, Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1168 (Fed. Cir. 2018).

The inclusion of a generic “interface” and “processing device” in system claim 10 does not change our determination. (See Spec. ¶¶ 24–26.) “Our prior cases have made clear that mere automation of manual processes using generic computers does not constitute a patentable improvement in computer technology. In those cases, [as in this case,] ‘the focus of the claims is not on such an improvement in computers as tools, but on certain independently abstract ideas that use computers as tools.’” *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1054 (Fed. Cir. 2017) (quoting *Elec. Power Grp.*, 830 F.3d at 1354).

Moreover, Appellants do not argue that they invented wireless receiving or transmitting, or “a mobile device” (claim 1), or an “interface,” or “processing device” (claim 10). Nor do we see how the recitations of “wirelessly receiving,” “wirelessly transmitting,” “a mobile device,” an “interface,” or a “processing device,” even in conjunction with the recited functions, “ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’” *Alice*, 573 U.S. at 221 (brackets in original) (quoting *Mayo*, 566 U.S. at 77). In short, claims 1 and 10 use generic computer and peripheral hardware as a tool to perform the abstract idea.

See, e.g., Credit Acceptance Corp., 859 F.3d at 1055 (and cases cited therein).

In view of the above, we agree with the Examiner that claims 1 and 10 are directed to an abstract idea.

Step two of the *Alice* framework has been described “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.’” *Alice*, 573 U.S. at 217–18 (brackets in original) (quoting *Mayo*, 566 U.S. at 72–73).

Appellants argue that “the operations recited in Claim 1 combine to create an ordered combination that is not well-understood, routine, or conventional and that is not previously known in the industry.” (Appeal Br. 14.) We do not find this argument persuasive.

“It has been clear since *Alice* that a claimed invention’s use of the ineligible concept to which it is directed cannot supply the inventive concept that renders the invention ‘significantly more’ than the ineligible concept.” *BSG Tech LLC v. Buyseasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018). In other words, “[i]f a claim’s only ‘inventive concept’ is the application of an abstract idea using conventional and well-understood techniques, the claim has not been transformed into a patent-eligible application of an abstract idea.” *Id.* at 1290–91.

Claim 1 simply applies the abstract idea using wireless receiving and transmitting, and a generic mobile device, *i.e.*, inarguably conventional and well-understood techniques and components. Even if we consider the analysis performed in the determining step of claim 1 to be novel, as discussed above, “under the *Mayo/Alice* framework, a claim directed to a

newly discovered law of nature (or natural phenomenon or abstract idea) cannot rely on the novelty of that discovery for the inventive concept necessary for patent eligibility.” *Genetic Techs. Ltd.*, 818 F.3d at 1376.

“[T]he relevant question is whether the claims here do more than simply instruct the practitioner to implement the abstract idea . . . on a generic computer.” *Alice*, 573 U.S. at 225. They do not. Claim 1 relates to receiving information, analyzing information, and transmitting information to schedule loading/delivery.

Taking the claim elements separately, the functions performed by the generic components (in both claims 1 and 10) at each step are purely conventional. Receiving, analyzing, and transmitting information are basic computer functions, i.e., they are well-understood, routine, and conventional functions previously known to the industry. *See Elec. Power Grp.*, 830 F.3d at 1356 (The claims “do not include any requirement for performing the claimed functions of gathering, analyzing, and displaying in real time by use of anything but entirely conventional, generic technology. The claims therefore do not state an arguably inventive concept”); *see also In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011) (“Absent a possible narrower construction of the terms ‘processing,’ ‘receiving,’ and ‘storing,’ . . . those functions can be achieved by any general purpose computer without special programming.”).

Because claim 1 does “not call for the involvement of a computer . . . [it] cannot be characterized as an improvement in a computer as a tool. [Claim 1] add[s] nothing to the abstract idea that rises to the level of an ‘inventive concept’ as required by precedent.” *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1139 (Fed. Cir. 2016).

Considered as an ordered combination, the generic computer components of claim 10 and generic mobile device of claim 1 add nothing that is not already present when the steps are considered separately. For example, neither claim 1 nor claim 10 purport to improve the functioning of the components themselves. Nor do they effect an improvement in any other technology or technical field. Instead, claims 1 and 10 amount to nothing significantly more than an instruction to apply the abstract idea using a generic interface, processing device, and mobile device. That is not enough to transform an abstract idea into a patent-eligible invention. *See Alice*, 573 U.S. at 225–26.

In view of the above, we are not persuaded that the Examiner erred in rejecting claims 1 and 10 under § 101. Independent claim 18 contains similar language and is not separately argued. It falls with claims 1 and 10. *See* 37 C.F.R. § 41.37(c)(1)(iv).⁴

Dependent claims 2, 11, and 19

Claim 2 recites: “The method of Claim 1, further comprising: receiving a signal from the mobile device to open an entrance of the terminal when the cargo vehicle arrives at the terminal; and in response to the signal, opening the entrance of the terminal to allow the cargo vehicle to enter the terminal.”

⁴ With regard to Appellants’ arguments pertaining to earlier-issued guidance, we note that “[e]ligibility-related guidance issued prior to the Ninth Edition, R–08.2017, of the MPEP (published Jan. 2018) should not be relied upon.” (2019 Guidance at 51.)

Appellants argue that “the Examiner has not evaluated the recited elements of Claims 2, 11, and 19.” (Appeal Br. 17.) Nor, Appellants argue, can it “be said that each of Claims 2, 11, and 19 is an abstract idea or that the elements recited in Claims 2, 11, and 19 are purely conventional.” (*Id.*)

The Examiner answers that “claims 2, 11, and 19 recite additional generic computer components (i.e. [sic, e.g.,] a signal) that perform routine and conventional functions that are not significantly more than the abstract idea identified above.” (Answer 10.) The Examiner further answers that “the electronic door opening via a wireless signal is a routine and conventional function well known in the industry, and as claimed, has no functional relationship to claim 1 with respect to the received request, determined timeslot, or transmitted recommended time slot [sic].” (*Id.* at 10–11.)

We are not persuaded of error. We note, again, that “the claim language here provides only a result-oriented solution, with insufficient detail for how a computer accomplishes it. Our law demands more.” *Intellectual Ventures I LLC*, 850 F.3d at 1342. Nor do Appellants persuasively argue what claim elements are alleged to have not been sufficiently evaluated or why the Examiner’s determination that “door opening via a wireless signal is a routine and conventional function” is in error. (*See* Answer 10.)

Nor, applying a broadest reasonable interpretation, does claim 2 require more than, e.g., a terminal worker receiving a text message to open an entrance when the vehicle arrives, and, in response, opening the entrance. In short, claim 2, at best, recites the abstract idea of following instructions, that is, a method of organizing human activity. And Appellants do not argue

why the incorporation of two abstract ideas (one from claim 1 and one from claim 2) would render the claim non-abstract. *See RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017).

Claims 11 and 19 are not separately argued and fall with claim 2. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Claims 3, 12, and 20 and claims 4, 13, and 21

Claim 3 recites: “The method of Claim 1, further comprising: upon completion of the loading of the cargo at the terminal, wirelessly transmitting a digitally-signed document to the mobile device.”

Claim 4 recites: “The method of Claim 3, wherein the digitally-signed document comprises at least one of: a bill of lading and a filling advisory note.”

Again, Appellants argue that “the Examiner has not evaluated the recited elements of Claims 3, 12, and 20.” (Appeal Br. 18.) Nor, Appellants argue, can it “be said that each of Claims 3, 12, and 20 is an abstract idea or that the elements recited in Claims 3, 12, and 20 are purely conventional.” (*Id.*) Appellants make similar arguments for claims 4, 13, and 21. (*See* Appeal Br. 19–20.)

The Examiner answers that “[s]imilarly, claims 3, 12 and 20 recite additional generic computer components (i.e. transmitting a digitally-signed document to the mobile device) that perform routine and conventional functions that are not significantly more than the abstract idea identified above.” (Answer 11.) The Examiner also answers that the claims merely “further describe the identified abstract idea” and that “[n]othing in

dependent claims 4, 13, and 21 alter [sic] the significantly more analysis.”
(*Id.*)

As an initial matter, we note that the Federal Circuit has “long held that if a limitation claims (a) printed matter that (b) is not functionally or structurally related to the physical substrate holding the printed matter, it does not lend any patentable weight to the patentability analysis.” *In re DiStefano*, 808 F.3d 845, 848 (Fed. Cir. 2015). Here, the content of the transmitted message is not functionally or structurally related to the mobile device, and is entitled to no patentable weight.

Thus, claim 3 merely adds an additional step of “wirelessly transmitting” and claim 4 merely adds printed matter entitled to no patentable weight. Appellants do not persuasively argue why the Examiner erred in determining that the step in claim 3 of wirelessly transmitting is more than a routine and conventional function, or why “provid[ing] only a result-oriented solution, with insufficient detail for how [it is accomplished]” results in the claim becoming patent-eligible. *See Intellectual Ventures I LLC*, 850 F.3d at 1342. We are not persuaded of error. Claims 12 and 20 are not separately argued from claim 3 and fall with claim 3, and claims 13 and 21 are not separately argued from claim 4 and fall with claim 4. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Claims 7, 17, and 22

Claim 7 recites: “The method of Claim 1, wherein transmitting the recommended slot comprises transmitting the recommended slot to a dispatch office of a carrier company that operates the cargo vehicle.”

Again, Appellants argue that “the Examiner has not evaluated the recited elements of Claims 7, 17, and 22.” (Appeal Br. 21.) Nor, Appellants argue, can it “be said that each of Claims 7, 17, and 22 is an abstract idea or that the elements recited in Claims 7, 17, and 22 are purely conventional.” (*Id.*)

Again, the Examiner answers that the limitation of claim 7 merely “further describe[s] the identified abstract idea.” (Answer 11.) We agree.

Appellants do not persuasively argue why specifying a particular location to transmit information would alter the Examiner’s determination that the claims are directed to the abstract idea of managing the loading and unloading of a cargo truck, or more simply scheduling the loading/delivery of cargo by receiving information, analyzing information, and transmitting information. And, again, “the claim language here provides only a result-oriented solution, with insufficient detail for how a computer accomplishes it. Our law demands more.” *Intellectual Ventures I LLC*, 850 F.3d at 1342.

We are not persuaded of error. Claims 17 and 22 are not separately argued and fall with claim 7. *See* 37 C.F.R. § 41.37(c)(1)(iv).

DECISION

The Examiner’s rejection of claims 1–5, 7–14, and 16–22 under 35 U.S.C. § 101 is affirmed.

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).

AFFIRMED