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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/266,598	11/07/2008	Frederic Bauchot	FR920080048US1	4453

30449 7590 06/12/2017
SCHMEISER, OLSEN & WATTS
22 CENTURY HILL DRIVE
SUITE 302
LATHAM, NY 12110

EXAMINER
PORTER, RACHEL L

ART UNIT	PAPER NUMBER
3626	

NOTIFICATION DATE	DELIVERY MODE
06/12/2017	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte FREDERIC BAUCHOT, JEAN-YVES CLEMENT, GERARD MARMIGERE, and CAROLE TRUNTSCHKA

Appeal 2016-002109
Application 12/266,598
Technology Center 3600

Before CARL W. WHITEHEAD JR., NABEEL U. KHAN, and AMBER L. HAGY, *Administrative Patent Judges*.

HAGY, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants[1] appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 42–57, which are all of the pending claims.[2] We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] Appellants identify the real party in interest as International Business Machines Corporation. (App. Br. 1.)

[2] Claims 1–41 were canceled in an Amendment dated February 13, 2015.

Introduction

According to Appellants, "[t]he present invention relates generally to accident reconstruction, and more particularly to identifying a trajectory for each vehicle involved in an accident." (Spec. 1.) In particular:

> The method begins by plotting on a Cartesian Coordinate Plane GNSS locations corresponding to a vehicle involved in the accident. Next, the method identifies GNSS locations on the Cartesian Coordinate Plane where the vehicle was speeding. Next, the method marks those GNSS locations on the Cartesian Coordinate Plane where the vehicle involved in the accident was skidding. The process of plotting and identifying speeding as well as skidding is repeated for all vehicles involved in the accident. The Cartesian Coordinate plane then having all vehicle trajectories residing therein is sent to an output device.

(Abs.)

Exemplary Claim

Claims 42, 46, 50, and 54 are independent. Claim 42, reproduced below, is exemplary of the claimed subject matter:

> 42. A method for identifying a trajectory for a vehicle involved in an accident, said method comprising:
>
> receiving, by a processor of a computer system from an accident report pertaining to the accident, vehicle data pertaining to the vehicle over a period of time relevant to the accident, said period of time relevant to the accident encompassing I discrete times, wherein I is a positive integer of at least 2, wherein for i = 1, 2, . . . , I: the vehicle data comprises T_i, x_i, y_i, Dx_i, and Dy_i, wherein T_i denotes time i whose value is an integer;
>
> said processor identifying locations (x_i, y_i) determined by a Global Navigation Satellite System (GNSS), such that x_i and y_i denote a position of the vehicle along an x-axis and a y-axis of a cartesian coordinate system, respectively, at time T_i, wherein Dx_i, and Dy_i are values along the x-axis and y-axis such that (Dx_i,

Dy_i) identifies a direction in which the vehicle is pointing, and wherein $T_{i+1} - T_i \geq 2$ for i = 1, 2, . . . , I-1;

for each time interval $(\Delta T)_i$ from time T_i to time T_{i+1} (i = 1, 2, . . . , I-1), said processor computing and plotting a position $(XX, YY)_j$ of the vehicle at each time j for $j = T_i + 1, T_i + 2, \ldots, T_{i+1} - 1$ such that XX and YY denote a position of the vehicle along the x-axis and the y-axis, respectively, at time j, wherein said computing and plotting the position $(XX, YY)_j$ of the vehicle at time j comprises:

determining an integer z that satisfies a condition of $T_z \leq j << T_{z+1}$,

computing a parameter λ according to $\lambda = (j - T_z) / (T_{z+1} - T_z)$,

computing XX at time j as a function of λ, x_i, x_{i+1}, Dx_i, and Dx_{i+1},

computing YY at time j as a function of λ, y_i, Y_{i+1}, Dy_i, and Dy_{i+1}; and

plotting XX and YY at time j as a spatial point on a graph in the cartesian coordinate system; and

after said computing and plotting a position $(XX, YY)_j$ for all said times j for i = 1, 2, ... , I-1, said processor sending the graph of the plotted spatial points to an output device of the computer system.

REJECTION[3]

Claims 42–57 stand rejected under 35 U.S.C. § 101 as directed to patent-ineligible subject matter. (Final Act. 2–3.)

[3] The Examiner's rejection of claims 42–57 under 35 U.S.C. § 103(a) (Final Act. 3–6) has been withdrawn. (Ans. 3.)

ANALYSIS

We have reviewed the Examiner's rejection in light of Appellants' arguments the Examiner has erred. We disagree with Appellants' conclusions and we adopt as our own: (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken (Final Act. 2–3) and (2) the reasons set forth by the Examiner in the Examiner's Answer in response to Appellants' Appeal Brief. (Ans. 2–6.) We concur with the conclusions reached by the Examiner, and we highlight the following for emphasis.[4]

Under 35 U.S.C. § 101, 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 § 101 to include an implicit exception: "[l]aws of nature, natural phenomena, and abstract ideas" are not patentable. *See, e.g., Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014).

The Supreme Court, in *Alice*, reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1300 (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 Corp.*, 134 S. Ct. at 2355. The first step in that analysis is to "determine whether the claims at issue are directed to one of those patent-ineligible concepts," *id.*, e.g., to an abstract idea. If the claims are not directed to a patent-ineligible concept, the

[4] Only those arguments made by Appellants have been considered in this decision. Arguments Appellants did not make have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2014).

inquiry ends. Otherwise, the inquiry proceeds to the second step, where the elements of the claims are considered "individually and 'as an ordered combination'" to determine whether there are additional elements that "'transform the nature of the claim' into a patent-eligible application." *Alice Corp.*, 134 S. Ct. at 2355 (quoting *Mayo*, 132 S. Ct. at 1297).

The Court acknowledged in *Mayo* that "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo*, 132 S. Ct. at 1293. 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. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016).

Here, in rejecting claims 42–57 under 35 U.S.C. § 101, the Examiner concludes the claims are directed to the "abstract idea of a mathematical relationship or formula." (Final Act. 2.) Appellants agree "the claims include the abstract idea of a mathematical relationship or formula." (App. Br. 15.) We also agree.

Because we agree with the Examiner, at step one of the analysis, that the claims are directed to an abstract idea, we turn to the second step of the analysis, in which we must determine whether the additional elements of the claims transform them into patent-eligible subject matter. Appellants present four "alternative" arguments at this step. Appellants first argue the claims "use special purpose hardware"; in particular, Appellants argue although the claims include steps that "may be performed by a generic processor, the claims comprise additional limitations utilizing special purpose hardware including a Global Satellite System (GNSS) that

determines the locations (x_i, y_i)." (App. Br. 16.) Appellants note that the Specification includes examples of GNSS, which "include, *inter alia*, Global Positioning System (GPS)." (*Id.*) Appellants then contend "the claimed features cannot be implemented with a generic processor alone" and "the processor acts in concert with the recited features of the special purpose hardware of the Global Navigation Satellite System to realize the claim's purpose, namely to identify a trajectory for a vehicle involved in an accident as recited in the claim's preamble." (*Id.*)

We disagree with Appellants' argument that the claims use special purpose hardware. Although the claims recite certain data used by the processor includes "locations (x_i, y_i) determined by a Global Navigation Satellite System" (e.g., App. Br. 39 (Claims App'x)), the claimed invention has no application to the operation of the GNSS. As our reviewing court has explained, "[i]t is well-settled that mere recitation of concrete, tangible components is insufficient to confer patent eligibility to an otherwise abstract idea. Rather, the components must involve more than performance of '"well-understood, routine, conventional activit[ies]" previously known to the industry.'" *In re TLI Comms. LLC Patent Litigation*, 823 F.3d 607, 613 (Fed. Cir. 2016) (quoting *Alice*, 134 S. Ct. at 2359)). The Examiner finds, and we agree, "[t]he GNSS is merely used to capture/gather and transmit data, a well-known and routine computer function. The current invention fails to improve another technology/technical field and does not improve the functioning of a computer itself." (Advisory Action dated Mar. 6, 2015, at 2; *see also* Ans. 6.)

Appellants next argue the claims require "significantly more" than the recited algorithm because they also require "plotting and outputting the

positions (XX, YY) representing the trajectory for a vehicle involved in an accident," which "may be used to solve problems in the prior art by identifying or determining: (i) the party at fault in the accident and/or (ii) the events immediately preceding the accident or subsequent thereto." (App. Br. 17.) We are not persuaded of error. We note the Supreme Court has rejected the notion that "'implement[ing] a principle in some specific fashion' will 'automatically fal[l] within the patentable subject matter of § 101.'" *Alice*, 134 S. Ct. at 2358 (alterations in original) (citation omitted). In addition, the steps that Appellants identify, i.e., "plotting and outputting" data, are part of the abstract idea itself of manipulating data by using a mathematical algorithm or formula. Directing these concepts to useful applications does not, alone, render them patent eligible. *See Parker v. Flook*, 437 U.S. 584, 595 (1978) (noting that "'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,'" *quoting In re Richman*, 563 F.2d 1026, 1030 (CCPA 1977)); *see also In re Salwan*, Appeal No. 2016-2079, __ F.3d __, 2017 WL 957239 at *3 (Fed. Cir. Mar. 13, 2017) (affirming rejection under § 101 of claims directed to "storing, communicating, transferring and reporting patient health information," noting that "while these concepts may be directed to practical concepts, they are fundamental economic and conventional business practices").

We are also not persuaded of Examiner error by Appellants' next argument, that the "the claims do not preempt inventive activity in the field of identifying a trajectory for a vehicle involved in an accident." (App. Br. 22; *see also id.* at 18–21.) We agree the Supreme Court has described "the

concern that drives this exclusionary principle [i.e., the exclusion of abstract ideas from patent eligible subject matter] as one of pre-emption." *Alice*, 134 S. Ct. at 2354. But characterizing pre-emption as a driving concern for patent eligibility is not the same as characterizing preemption as the sole test for patent eligibility. As our reviewing court has explained, "[t]he Supreme Court has made clear that the principle of preemption is the basis for the judicial exceptions to patentability" and "[f]or this reason, questions on preemption are *inherent in and resolved by the § 101 analysis*." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (emphasis added) (citing *Alice*, 134 S. Ct. at 2354). And although "preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility." *Id.* Moreover, "[w]here a patent's claims are deemed only to disclose patent ineligible subject matter under the [*Alice/Mayo*] framework . . . , preemption concerns are fully addressed and made moot." *Id.*; *see also OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362–63 (Fed. Cir. 2015), *cert. denied*, 136 S. Ct. 701 (2015)("[T]hat the claims do not preempt all price optimization or may be limited to price optimization in the ecommerce setting do not make them any less abstract.").

Finally, Appellants argue the claims "recite . . . specific limitations that are not well-understood, routine and conventional in the field of identifying a trajectory for a vehicle involved in an accident." (App. Br. 23.) This argument is also not persuasive of error. The limitations identified by Appellants involve only basic functions of receiving and processing data. And to the extent Appellants maintain that the limitations of the claims necessarily amount to "significantly more" than an abstract idea because the

claimed method is allegedly patentable over the prior art, Appellants misapprehend the controlling precedent. Although the second step in the *Alice/Mayo* framework is termed a search for an "inventive concept," the analysis is not an evaluation of novelty or non-obviousness, 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.

For the foregoing reasons, we are not persuaded of error in the Examiner's rejection of independent claims 42, 46, 50, and 54 under 35 U.S.C. § 101 and we, therefore, sustain that rejection, along with the rejection of dependent claims 43, 47, 51, and 55, which Appellants do not argue separately. (App. Br. 25.)

Although Appellants present additional arguments with regard to dependent claims 44, 45, 48, 49, 52, 53, 56, and 57 (App. Br. 26–29), those arguments do not persuade us of error. According to Appellants, each of these claims adds additional "computing" and "determining" steps that "do not use a mathematical formula or relationship, but rather use comparison operations to determine whether the vehicle is speeding or is not speeding [or skidding or not skidding] in each time interval, which is significantly more than the abstract idea of using a mathematical formula or relationship." (*Id.* at 26, 28.) We disagree. Each of these steps involves a mathematical relationship—namely, determining whether one data set (e.g., "average speed V_i") is of greater numerical value than (i.e., "exceeds" the value of) another set (e.g., "specified speed threshold (V_{th})." (App. Br. 26 (Claims

App'x).) This is a mathematical relationship of the simplest kind—the relative size of one numerical value compared to another. *Cf. Parker*, 437 U.S. at 595 (concluding that claims directed to "calculating alarm limit values," wherein the "alarm limits" were threshold values that, if exceeded, would trigger warning alarms, were directed to patent ineligible subject matter). We conclude the added steps represent routine "data-gathering" and processing steps, and, thus, do not add "significantly more" to the underlying abstract idea. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370 (Fed. Cir. 2011).

Appellants' remaining arguments with regard to the dependent claims are substantively the same as the arguments we have addressed with regard to the independent claims, and, thus, are not persuasive for the reasons addressed herein.

For the foregoing reasons, we are not persuaded of error in the Examiner's rejection of dependent claims 44, 45, 48, 49, 52, 53, 56, and 57 under 35 U.S.C. § 101, and we, therefore, sustain that rejection.

DECISION

For the above reasons, the Examiner's rejection of claims 42–57 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)(1)(iv).

<u>AFFIRMED</u>