



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/553,422	11/25/2014	Stephen Milton	034470-0437403	6195
909	7590	11/07/2019	EXAMINER	
Pillsbury Winthrop Shaw Pittman, LLP			HUANG, MIN	
PO Box 10500			ART UNIT	
McLean, VA 22102			PAPER NUMBER	
			2827	
			NOTIFICATION DATE	
			DELIVERY MODE	
			11/07/2019	
			ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

doCKET_ip@PillsburyLaw.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte STEPHEN MILTON and DUNCAN McCALL

Appeal 2019-000790
Application 14/553,422
Technology Center 2800

Before ROMULO H. DELMENDO, BEVERLY A. FRANKLIN, and
N. WHITNEY WILSON, *Administrative Patent Judges*.

DELMENDO, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), the Appellant¹ appeals from the Primary Examiner’s final decision to reject claims 1–3, 6–10, and 26.² We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42 and as listed in the Application Data Sheet filed November 25, 2014—namely, “PlaceIQ, Inc.,” which is also identified as the real party in interest (Appeal Brief filed July 10, 2018 (“Appeal Br.”) at 2).

² *See* Appeal Br. 4–17; Reply Brief filed November 8, 2018 (“Reply Br.”) at 2–8; Final Office Action entered September 27, 2017 (“Final Act.”) at 2–4; Examiner’s Answer entered September 11, 2018 (“Ans.”) at 2–5.

I. BACKGROUND

The subject matter on appeal relates to a process and system for ascertaining the quality or accuracy of reported geolocations in a collection of location histories associated with plural mobile computing devices that are the subject of targeted advertising (Specification filed November 25, 2014 (“Spec.”) ¶¶ 1–10). In particular, the process involves analyzing, with one or more processors, the collected location histories of plural mobile computing devices by—at least in part—calculating one or more quality attributes, wherein the analysis comprises quantifying a difference between a uniform distribution of digits (pertaining to longitudinal and latitudinal coordinates) and a distribution of digits among geolocation coordinates in the collected location histories, and then calculating one or more quality scores based on the one or more quality attributes (*id.* ¶¶ 5, 41).

Representative claim 1 is reproduced from the Claims Appendix to the Appeal Brief, as follows:

1. A method of ascertaining the accuracy of geolocations in a collection of location histories, the method comprising:
 - obtaining a collection of location histories describing user geolocations over a duration of time exceeding 24 hours,
 - each location history including:
 - a location-history identifier distinguishing the respective location history from other location histories among the collection of location histories, and
 - time-stamped geolocation coordinates specifying geographic locations associated with a respective mobile computing device among a plurality of mobile computing devices each corresponding to at least one of the location histories,

the collection of location histories describing geolocations of the plurality of mobile computing devices over time;

analyzing, with one or more processors, the collection of location histories by, at least in part, calculating one or more quality attributes of the collection of location histories indicative of differences between the collection of location histories and other collections of location histories known to be of adequate quality, wherein analyzing the collection of location histories comprises quantifying an amount of difference between a uniform distribution of digits and a distribution of digits among geolocation coordinates in the collection of location histories;

calculating one or more quality scores based on the one or more quality attributes; and

storing the one or more quality scores in memory.

(Appeal Br. 18 (emphases added)).

II. REJECTION ON APPEAL

Claims 1–3, 6–10, and 26 stand rejected under 35 U.S.C. § 101 as directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more (Ans. 2–5; Final Act. 2–4).

III. DISCUSSION

1. Grouping of Claims

Except for claim 7, the Appellant relies on the same arguments for all claims on appeal (Appeal Br. 5–17).³ Therefore, we decide this appeal on

³ The Appellant states that it “reserve[s] the right to identify other grounds for overcoming the present rejection[] and the cited art” (*id.* at 16). The relevant rule provides, however, that “any arguments or authorities not included in the appeal brief will be refused consideration by the Board for purposes of the present appeal.” 37 C.F.R. § 41.37(c)(1)(iv). *See also In re Watts*, 354 F.2d 1362, 1367–68 (Fed. Cir. 2004).

the basis of claims 1 and 7 only, with all other claims on appeal standing or falling with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

2. *The Examiner's Position*

The Examiner finds that the limitations in the “analyzing” and “calculating” steps highlighted above in reproduced claim 1 are directed to an abstract idea and the remaining claim limitations are “additional elements” in the context of a § 101 analysis (Ans. 2–3). Relying on *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016) and *In re Grams*, 999 F.2d 835 (Fed. Cir. 1989), the Examiner finds that the claim is patent ineligible because the “additional elements” are not sufficient to make the claim as a whole amount to significantly more than the abstract idea itself but, instead, “are merely insignificant extra-solution activity, such as mere data gathering, recited at a high level of generality and/or in a well-understood, routine, and conventional way, of the information needed to carry out the claimed algorithm” (Ans. 3). In support, the Examiner relies on several prior art references—namely, DeWolf et al.⁴ (“DeWolf”), Mehta et al.⁵ (“Mehta”), and Blegen⁶ (*id.*). According to the Examiner, analysis of geolocation history is known in the art, as evidenced by Chowdhary et al.⁷ (“Chowdhary”), and, therefore, the claims are not directed to an improvement in technology (*id.* at 4).

⁴ US 2002/0111172 A1, published Aug. 15, 2002.

⁵ US 2010/0004997 A1, published Jan. 7, 2010.

⁶ US 2010/00882397 A1, published Apr. 1, 2010.

⁷ US 2013/0036238 A1, published Feb. 7, 2013.

3. *The Appellant's Contentions*

The Appellant disputes the Examiner's position that *Electric Power* and *Grams* are controlling or relevant (Appeal Br. 5). The Appellant urges that the rejection must be withdrawn because: (1) the subject matter to which the claims are directed is not similar to any court-recognized abstract idea; (2) the claims recite limited rules in a process specifically designed to achieve an improved technological result; and (3) the claims involve significantly more than the performance of well-understood, routine, and conventional activities previously known in the industry (*id.* at 5–16). According to the Appellant, the Examiner has not provided evidence to support the proposition that the novel and unobvious solution to a problem as recited in the claims is well-understood, routine, and conventional and that the lack of any prior art rejection weighs heavily in favor of a finding to the contrary (*id.* at 16).

Regarding claim 7 (Appeal Br. 20), which depends from claim 1, the Appellant argues that it includes additional rules to achieve an improved technological result, i.e., rules for detecting fraudulent geolocation data (*id.* at 14).

4. *Opinion*

We have fully considered the Appellant's arguments but find them unpersuasive to identify reversible error in the Examiner's rejection for the reasons discussed below. *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011).

A. *Claim Construction*

We start with claim construction. *MyMail, Ltd. v. ooVoo, LLC*, 934 F.3d 1373, 1379 (Fed. Cir. 2019) (“Determining patent eligibility requires a full understanding of the basic character of the claimed subject matter.”).

Claim 1 recites a “method of ascertaining the accuracy of geolocations in a collection of location histories” that are collected from a “plurality of mobile computing devices over [a duration of] time [exceeding 24 hours]” (Appeal Br. 18). Although the Specification states that the number of user devices may be, “e.g., more than 100,000 or more than one million,” Figure 1 discloses an embodiment in which the collection of location histories are based on only *three* user devices (Spec. ¶¶ 12, 34). Indeed, the Specification emphasizes that “the spirit and scope of the present invention [is] as defined by the . . . claims” (*id.* ¶ 21). Therefore, we conclude that the broadest reasonable interpretation consistent with the Specification of a “plurality of mobile computing devices” encompasses as few as two mobile computing devices, and that, as a result, the collection of location of histories may consist of only a few data points obtained during a duration of time slightly exceeding 24 hours (e.g., two geolocation data over a period of about 1 day for each device). *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007) (“W]e look to the specification to see if it provides a definition for claim terms, but otherwise apply a broad interpretation. As this court has discussed, this methodology produces claims with only justifiable breadth.”).

Furthermore, we observe that other than a “distribution of digits” associated with “geolocation coordinates,” claim 1 does not place any limitation on the nature of the “one or more quality attributes” or the manner in which the “one or more quality scores” are determined. Hence, we further conclude that claim 1 reads on any number of significant digits in the phrase “distribution of digits” and any manner of determining the “one or more quality scores.”

B. Principles of Law

Having construed claim 1, we turn to patent eligibility. 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 Bank Int’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. 252, 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).

“[M]erely requir[ing] 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 MPEP § 2106 and as updated in October 2019). 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, as revised, we determine whether the claimed subject matter falls within 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.

C. Analysis

1. Guidance Step 1

We find that, under Step 1 of the Guidance, claim 1 falls within the four statutory categories of patent subject matter identified by 35 U.S.C. § 101. Specifically, claim 1 recites a method of ascertaining the accuracy of geolocations in a collection of location histories.

2A(1). Guidance Step 2A, Prong 1

Under the first prong of Step 2A, we find that claim 1 sets forth or describes a judicial exception (i.e., an abstract idea) by reciting the steps of: (i) “analyzing . . . with one or more processors” (i.e., “calculating one or more quality attributes of the collection of location histories” by “quantifying an amount of difference between a uniform distribution of digits and a distribution of digits among geolocation coordinates in the collection of location histories”); and (ii) “calculating one or more quality scores,” as highlighted in reproduced claim 1 above. As we construed claim 1 above, the collection of location histories may consist of only a few geolocation coordinates based on data obtained from only two (i.e., “a plurality”) mobile computing devices over a period of slightly over 1 day. Although claim 1 recites “one or more processors,” that recitation merely specifies generic computer components. In addition, the “calculating one or more quality scores” step—by virtue of its breadth—reads on subjective quality that meets or exceeds any arbitrary threshold. Thus, although we

concur with the Appellant that *Electric Power* and *Grams* are not directly on point, we find that the “analyzing” and “calculating” steps amount to determinations involving simple mathematical operations such as subtraction and numerical comparisons, both of which may be performed in a human mind—i.e., the steps squarely fall into the categories of mathematical concepts (mathematical calculations) and mental processes. *See October 2019 Update: Subject Matter Eligibility* at 8, n. 53 (citing *Revised 101 Guidelines*, 84 Fed. Reg. at 52, n. 14 (“If a claim, under its broadest reasonable interpretation, covers performance in the mind but for the recitation of generic computer components, then it is still in the mental processes category unless the claim cannot practically be performed in the mind.”)).

2A(2). Guidance Step 2A, Prong 2

Next, we address the second prong of Step 2A to determine whether additional elements in the claim integrate the judicial exception into a practical application. The “additional elements” in the claim, which are identified by the Examiner (Ans. 2–3), merely recite, at a high level of generality, collection of location histories data and storing the quality scores in a memory. Therefore, the claim as a whole, taken together with these additional elements individually and in combination, does not integrate the judicial exception into a practical application. *Alice* 573 U.S. at 221 (“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].’”) (Internal citation omitted). *Cf. Diehr*, 450 U.S. 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.”).

2B. Guidance Step 2B

Under Step 2B, we discern no error in the Examiner’s determination that the additional elements, taken individually and in combination, do not result in the claim, as a whole, amounting to significantly more than the judicial exception. Consistent with the PTO’s Memorandum to Patent Examiners dated April 19, 2018 on *Berkheimer v. HP Inc.*, 881 F.3d 1360 (Fed. Cir. 2018), the documentary evidence cited in the Answer support the Examiner’s position that the improvement described in the Specification, to the extent they are captured in claim 1 as broadly recited, constitute well-understood, routine, and conventional activities. Blegen, for example, describes a method for targeting advertisements to users of mobile devices based on geo-temporal models, wherein “a statistical model using, for example, Bayesian networks, neural networks, probability distribution functions, and the like” is used to analyze the accuracy of the data including time-stamped device location information gathered over a certain period of time (e.g., several days) and to update the data (*see* Blegen ¶¶ 60, 63; Fig. 2 (showing three mobile devices **216** in a network)).

Thus, in view of our analysis under the steps of the PTO’s Revised Guidance as updated in October 2019, we conclude that claim 1 is directed to patent ineligible subject matter.

D. Dependent Claim 7

As for dependent claim 7, we are not persuaded that more specific rules (relative to independent claim 1) rescue the claim from patent ineligibility. “[A] claim for a *new* abstract idea is still an abstract idea.”

Appeal 2019-000790
Application 14/553,422

Synopsys, Inc. v. Mentor Graphics Corporation, 839 F.3d 1138, 1151 (Fed. Cir. 2016).

For these reasons, we uphold the Examiner’s rejection as maintained against claims 1 and 7.

IV. CONCLUSION

In summary, we decide this appeal, as follows:

Claims Rejected	35 U.S.C. §	Evidentiary Basis	Affirmed	Reversed
1–3, 6–10, 26	101	DeWolf, Mehta, Blegen, Chowdhary	1–3, 6–10, 26	

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