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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
14/699,105 04/29/2015 Douglas P. Looze H22.00010001 2092

68242 7590 12/11/2017
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EXAMINER

SUGLO, JANET L

ART UNIT PAPER NUMBER

2864

NOTIFICATION DATE DELIVERY MODE

12/11/2017

ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DOUGLAS P. LOOZE and PAUL W. KELLEY¹

Appeal 2017-009927
Application 14/699,105²
Technology Center 2800

Before ROMULO H. DELMENDO, BEVERLY A. FRANKLIN, and
SHELDON M. McGEE, *Administrative Patent Judges*.

DELMENDO, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ “Snappafras Corp.” (the Assignee by an Assignment recorded in Reel 035793/Frame 0042) is identified as the applicant (hereinafter “Appellant”) and the real party in interest (Application Data Sheet filed April 29, 2015; Appeal Brief filed March 23, 2017, hereinafter “Appeal Br.,” 1).

² Pursuant to 37 C.F.R. § 1.102(c)(1), a Petition to Make Special Based on Age for Advancement of Examination of this application was filed April 25, 2016 and granted automatically.

The Appellant appeals under 35 U.S.C. § 134(a) from the Primary Examiner's final decision to reject claims 1–9, 12–15, 17, 18, and 20–24 under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter.³ We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

I. BACKGROUND

The subject matter on appeal relates to an automated method for determining a direction of motion of a pedestrian based on manipulation of data obtained from an accelerometer in the pedestrian's mobile device such as a smart phone, a tablet computer, a laptop computer, a wearable computing device, a wearable fitness device, a pedometer, or a personal media player (Specification filed April 29, 2015, hereinafter "Spec.," ¶¶ 3, 28). Representative claim 1 is reproduced from page A1 of the Claims Appendix to the Appeal Brief, with emphasis and some spacing added, as follows:

1. An automated method for determining a direction of motion of a pedestrian, comprising:

obtaining a first series of accelerometer measurements from an accelerometer disposed in a mobile device, the accelerometer measurements in the first series of accelerometer measurements being relative to a reference frame of the mobile device;

³ Appeal Br. 11–27; Reply Brief filed July 14, 2017, hereinafter "Reply Br.," 1–9; Final Office Action entered September 28, 2016, hereinafter "Final Act.," 24; Examiner's Answer entered May 19, 2017, hereinafter "Ans.," 2 (maintaining only the 35 U.S.C. § 101 rejection as to claims 1–9, 12–15, 17, 18, and 20–24 following entry of an Amendment filed December 28, 2016 in reply to the Final Office Action).

obtaining an estimated attitude of the mobile device for each of the accelerometer measurements in the first series of accelerometer measurements;

rotating each accelerometer measurement in the first series of accelerometer measurements using the corresponding estimated attitude of the mobile device to obtain a second series of accelerometer measurements, the accelerometer measurements in the second series of accelerometer measurements being relative to a local level reference frame;

filtering the second series of accelerometer measurements to obtain a first series of frequency components representing acceleration at an estimated stride frequency of the pedestrian in a first direction and a second series of frequency components representing acceleration at the estimated stride frequency of the pedestrian in a second direction that is orthogonal to the first direction;

determining a heading angle of a major axis or a semi-major axis of an ellipse defined at least by one or more frequency components in the first series of frequency components and one or more frequency components in the second series of frequency components, wherein determining the heading angle comprises at least one of:

(a) identifying an ellipse that best fits at least one or more accelerometer measurements in the first series of accelerometer measurements and one or more accelerometer measurements in the second series of accelerometer measurements; and

calculating the major axis or the semi-major axis of the identified ellipse; or

(b) identifying a straight line that best fits a subset of the frequency components in the first series of frequency components and in the second series of frequency components that correspond to an integer number of cycles; and

determining a slope of the straight line;

determining the direction of motion of the pedestrian based on the heading angle; and

displaying the direction of motion of the pedestrian or information derived therefrom on a graphical user interface of the mobile device.

II. DISCUSSION

The Appellant argues the claims together (Appeal Br. 11–26). Therefore, we confine our discussion to claim 1, which we select as representative pursuant to 37 C.F.R. § 41.37(c)(1)(iv). As provided by this rule, claims 2–9, 12–15, 17, 18, and 20–24 stand or fall with claim 1.

The Examiner finds that the invention recited in claim 1 “is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more” (Final Act. 2; Ans. 2–3). Specifically, the Examiner finds that the claim does not include elements sufficient to confer patent eligibility “because the only . . . elements [other than the abstract idea] are using an accelerometer to collect data, which is mere data gathering recited at a high level of generality, and displaying the action on the display of a mobile device, which is insignificant extra-resolution activity using conventional equipment” (*id.* at 3). Thus, according to the Examiner, “[t]he claim as a whole does not confine the claim to a particular useful application, and it does not amount to significantly more than the abstract idea itself” (*id.* at 3–4).

The Appellant contends that “[w]hen viewing the claims as a whole, the claims are directed to a non-abstract process implemented in software for taking data obtained from sensors and processing that data in a novel and non-obvious way to generate a pedestrian direction of motion” (Appeal Br. 16). According to the Appellant, conventional devices for determining a pedestrian’s direction of motion does not properly account for “side-to-side

motion experienced by the device” and, when such devices are further away from the pedestrian’s body, the device’s accuracy is diminished (*id.*). The Appellant urges that the claimed invention solves this problem by considering a heading angle, which is determined in one of two ways “(a)” and “(b),” as recited in reproduced claim 1 above (*id.* at 16–17). In support of patent eligibility, the Appellant relies on several court precedents (*id.* at 18–26).

We do not find the Appellant’s arguments sufficient to identify any reversible error in the Examiner’s rejection.⁴ Because we are in complete agreement with the Examiner’s reasoning and rebuttal to the Appellant’s arguments on appeal, we adopt them as our own and add the following for emphasis.

The Supreme Court of the United States reaffirmed the long-held principle that 35 U.S.C. § 101 contains an “important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014) (quoting *Assoc. for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107, 2116 (2013)). The Court provided a two-step analytical framework for determining whether a claim is patent eligible. *Id.* at 2355. The first step requires determining whether the claim is directed to one of these exceptions, such as an abstract idea. *Id.* If so, the second step requires determining “[w]hat else is there in the claims before us?” *Id.* (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1297 (2012)). That step involves searching for an inventive concept—i.e., an element or combination of elements in the claim that is “sufficient to ensure

⁴ See *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011).

that the patent in practice amounts to significantly more than a patent upon the [abstract idea] itself.” *Id.* (quoting *Mayo*, 132 S. Ct. at 1294).

Applying this framework, we find that claim 1 is directed to the simple concept of taking account of a pedestrian’s heading angle to improve the determination of a pedestrian’s direction of motion (claim 1; *see also* Spec. ¶¶ 2–3). A patent on such a concept would preempt its use in all fields and would effectively grant a monopoly over the abstract idea of taking into account side-to-side motion in determining direction of motion. *Alice*, 134 S. Ct. at 2354.

Having determined that the inventive concept is directed to an abstract idea, we look to see if claim 1 recites any additional element or combination of elements sufficient to ensure that any patent issuing with the claim amounts to “significantly more” than the abstract. We find, as did the Examiner (Final Act. 3–4; Ans. 4), that the claim fails to include any such element or combination of elements. As the Examiner states, “the only additional elements are using an accelerometer to collect data, which is mere data gathering recited at a high level of generality, and displaying the action on the display of a mobile device, which is insignificant extra-solution activity using conventional equipment” (Final Act. 3–4). Although the Appellant argues that claim 1 is “directed to a non-abstract process implemented in software for taking data obtained from sensors and processing that data in a novel and non-obvious way to generate a pedestrian direction of motion” (Appeal Br. 16) and that such an implementation solves a problem in conventional devices (*id.* at 16–17), Appellant fails to direct us to sufficient evidence establishing that any problem has been solved or that a person skilled in the art would not have considered motion in all directions,

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including side-to-side or angular motion, in determining a direction of motion. *Cf. In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (mere lawyer's arguments or conclusory statements, which are unsupported by concrete factual evidence, are entitled to little probative value).

For these reasons and those given by the Examiner, we sustain the Examiner's rejection.

III. SUMMARY

The Examiner's final decision to reject claims 1–9, 12–15, 17, 18, and 20–24 under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter 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).

AFFIRMED