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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SAMEERA PODURI, DISHA AHUJA,
VICTOR KULIK, PAYAM PAKZAD, and RAVI PALANKI

Appeal 2018-003108
Application 14/044,775
Technology Center 2800

Before ADRIENE LEPIANE HANLON, LINDA M. GAUDETTE, and SHELDON M. McGEE, *Administrative Patent Judges*.

McGEE, *Administrative Patent Judge.*

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant[1] seeks our review of the Examiner's decision to reject claims 1–3, 11–33, and 35–40 under 35 U.S.C. § 101. Final 9; App. Br. 6.

We have jurisdiction. 35 U.S.C. § 6.

We reverse.

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[1] Appellant is the Applicant, Qualcomm Incorporated, which is also identified as the real party in interest. App. Br. 3.

SUBJECT MATTER

The subject matter on appeal relates to "[p]edometers and step detectors based on inertial sensors [which] have found various applications in fitness, health monitoring, positioning systems, and more." Spec. ¶ 2. Accurately detecting steps via a mobile device, such as a mobile phone, is problematic "because the mobile device can be carried in any of a variety of locations (e.g., a pedestrian's hand, pocket, purse, etc.) and [is] subject to combined motion" such as a swinging arm. *Id.* "As such, step detection in mobile devices performed when such swinging is occurring can be highly inaccurate." *Id.* The invention purports to address such inaccuracies. *Id.* ¶ 3.

Independent claim 1 is illustrative of the claimed subject matter and is copied below with key limitations italicized for emphasis:

> 1. A method of swing compensation in step detection, the method comprising:
>
> obtaining acceleration data indicative of movement of a mobile device;
>
> determining whether the mobile device may be swinging in a hand of a user of the mobile device, wherein the determining whether the mobile device may be swinging in a hand of a user of the mobile device comprises *determining, with a processing unit, that twice a frequency determined from the acceleration data falls within a predetermined range of known step rates*; and
>
> outputting step data based on:
>
> the acceleration data, and
>
> the determination whether the mobile device may be swinging in the hand of the user;
>
> wherein outputting the step data comprises:
>
> providing the step data to an application executed by the mobile device, or
>
> causing the mobile device to send the step data to a separate device, or

any combination thereof.

App. Br. 15.

OPINION

We review the Examiner's 35 U.S.C. § 101 rejection of claims 1–9, 11–33, and 35–40 – the sole rejection on appeal – under the recently published revised guidance governing the application of 35 U.S.C. § 101. USPTO's January 7, 2019 Memorandum, *2019 Revised Patent Subject Matter Eligibility Guidance* ("Memorandum"). Under the Memorandum, we first determine whether the claims recite:

(1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity, or mental processes); and, if so,

(2) additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h)).

Applying the guidance set forth in the Memorandum to the claims at issue here, we determine that each independent claim 1, 18, 27, and 35 recites multiple abstract ideas – namely the mathematical concept of performing a calculation, and the mental process of determining if a calculated value falls within a range of other values.

Specifically, claim 1 recites a method of swing compensation, comprising, *inter alia*, "obtaining acceleration data" from a mobile device, and "determining whether the mobile device may be swinging in a hand of a user of the mobile device [which] comprises determining, with a processing unit, that *twice a frequency determined from the acceleration data falls within a predetermined range of known step rates*" (emphasis added). Thus,

claim 1 requires multiplying the frequency value obtained from acceleration data by a factor of 2 – a simple mathematical calculation. Claim 1 also requires determining whether the calculated frequency value "falls within a predetermined range of known step rates." Such a determination is a data comparison that can be performed in the human mind.

Because independent claims 18, 27, and 35 contain similar limitations as those recited in claim 1, they also recite the abstract ideas of performing a mathematical calculation and a mental process. App. Br. 17–18, 19–20, 21.

Consistent with the Memorandum's guidance, because each of the independent claims recites multiple abstract ideas, we now turn to whether the independent claims integrate those abstract ideas into a practical application, and are, thus, patent eligible. Upon review of the Specification, as well as Appellant's arguments set forth in the Appeal and Reply Briefs, we determine that these claims are directed to the practical application of improving step detection accuracy in a mobile device, and are patent eligible under 35 U.S.C. § 101. *See* MPEP § 2106.05(a).

Here, the Specification informs us that step detection in a mobile device "can be highly inaccurate" when the user's arm is swinging, and that the invention is concerned with "increasing step detection accuracy in mobile devices by determining whether such swinging is taking place." Spec. ¶¶ 2–3. The claimed method (claim 1), apparatus (claim 18), device (claim 27), and software (claim 35) "purport to improve the functioning of . . . the technical field" of step detection accuracy in a mobile device. *Alice Corp. Pty. Ltd. v. CLS Bank Intern.*, 573 U.S. 208, 225 (2014); *see* Spec. ¶¶ 5, 13, 61 (explaining how "[d]etermining whether the mobile device may be swinging . . . can include conducting a frequency analysis of

the acceleration data," including determining a "frequency" (i.e., step-rate) from acceleration data, and then determining whether twice that frequency falls within a predetermined range of known step rates, and how the analysis technique purports to provide increased step detection accuracy, and "ultimately provid[es] a better user experience" for individuals using a pedometer or fitness/health monitoring applications on a mobile device).

In view of such purported improvements, and because the specific techniques for realizing such purported improvements are recited in each independent claim, we determine that the claims integrate the abstract ideas recited therein into a practical application as set forth in the Memorandum. It follows that these claims and the claims dependent therefrom are patent eligible.

For these reasons, we do not sustain the Examiner's rejection of claims 1–9, 11–33, and 35–40 under 35 U.S.C. § 101.

DECISION

The rejection of claims 1–9, 11–33, and 35–40 under 35 U.S.C. § 101 is reversed.

REVERSED