UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner,

v.

UNILOC 2017 LLC,
Patent Owner.

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Case IPR2018-01757
Patent 8,712,723 B1

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Before SALLY C. MEDLEY, MIRIAM L. QUINN, and
SEAN P. O'HANLON, *Administrative Patent Judges.*

QUINN, *Administrative Patent Judge.*

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. §§ 42.108, 42.122; 35 U.S.C. §§ 315(d), 325(d)

I.   INTRODUCTION

Samsung Electronics America, Inc. ("Petitioner") filed a Petition requesting *inter partes* review of claims 1–7 and 10–19 of U.S. Patent No. 8,712,723 B1 (Ex. 1001, "the '723 patent"). Paper 1 ("Pet."). Uniloc 2017 LLC ("Patent Owner") filed a Preliminary Response. Paper 6 ("Prelim. Resp.").

We have jurisdiction under 35 U.S.C. § 314. Upon considering the record, for reasons discussed below, we do not institute *inter partes* review.

A. Related Matters

The parties indicate that the '723 patent is involved in *Uniloc USA, Inc. v. Samsung Electronics America, Inc.*, Case No. 2-17-cv-00650 (E.D. Tex.) and other proceedings. Pet. 1; Paper 3.

The '723 patent is the subject matter of an ongoing *inter partes* review filed by Apple Inc., IPR2018-00389 (instituted June 27, 2018), which concerns claims 1–3, 5–7, and 10–18. *See* IPR2018-00389 (Paper 7).[1] Apple Inc. filed another petition for *inter partes* review concerning claims 4 and 19 of the '723 patent, but we denied that petition. *See* IPR2018-01027 (Paper 8).

B. The '723 Patent

The '723 patent relates to monitoring and counting periodic human motions, such as steps. Ex. 1001, 1:12–14. The '723 patent states that

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[1] LG Electronics, Inc., HTC Corporation, and HTC America, Inc., have been joined to IPR2018-00389 via grant of the motion for joinder in IPR2018-01458. Paper 13, IPR2018-00389.

inertial sensors (e.g., accelerometers) are used in step counting devices allowing an individual to track the number of daily steps. *Id.* at 1:18–29. One problem recognized in the '723 patent is the limitations of these step counting devices concerning the orientation of the device during use. *Id.* at 1:29–34. Further, motion noise often confuses these devices resulting in missed steps or counting false steps, with a particular problem identified of inaccurate step measurements for slow walkers. *Id.* at 1:35–43.

The '723 patent provides for accurate counting of steps without regard for the orientation of the step counting device, even if that orientation changes during operation. *Id.* at 2:33–38. In particular, the '723 patent describes assigning a dominant axis after determining an orientation of the inertial sensor, where the orientation of the inertial sensor is continuously determined. *Id.* at 2:15–19. In one embodiment, the '723 patent method determines rolling averages of the accelerations of each axis monitored by the inertial sensor in the device. *Id.* at 6:15–21. The largest absolute rolling average indicates the axis most influenced by gravity, which may change over time as the device's orientation changes because of rotation. *Id.* at 6:20–25.

With regard to the embodiment shown in Figure 8, reproduced below, the '723 patent describes the method for measuring the acceleration along the assigned dominant axis to detect, and count, steps. *See id.* at 12:30–35.
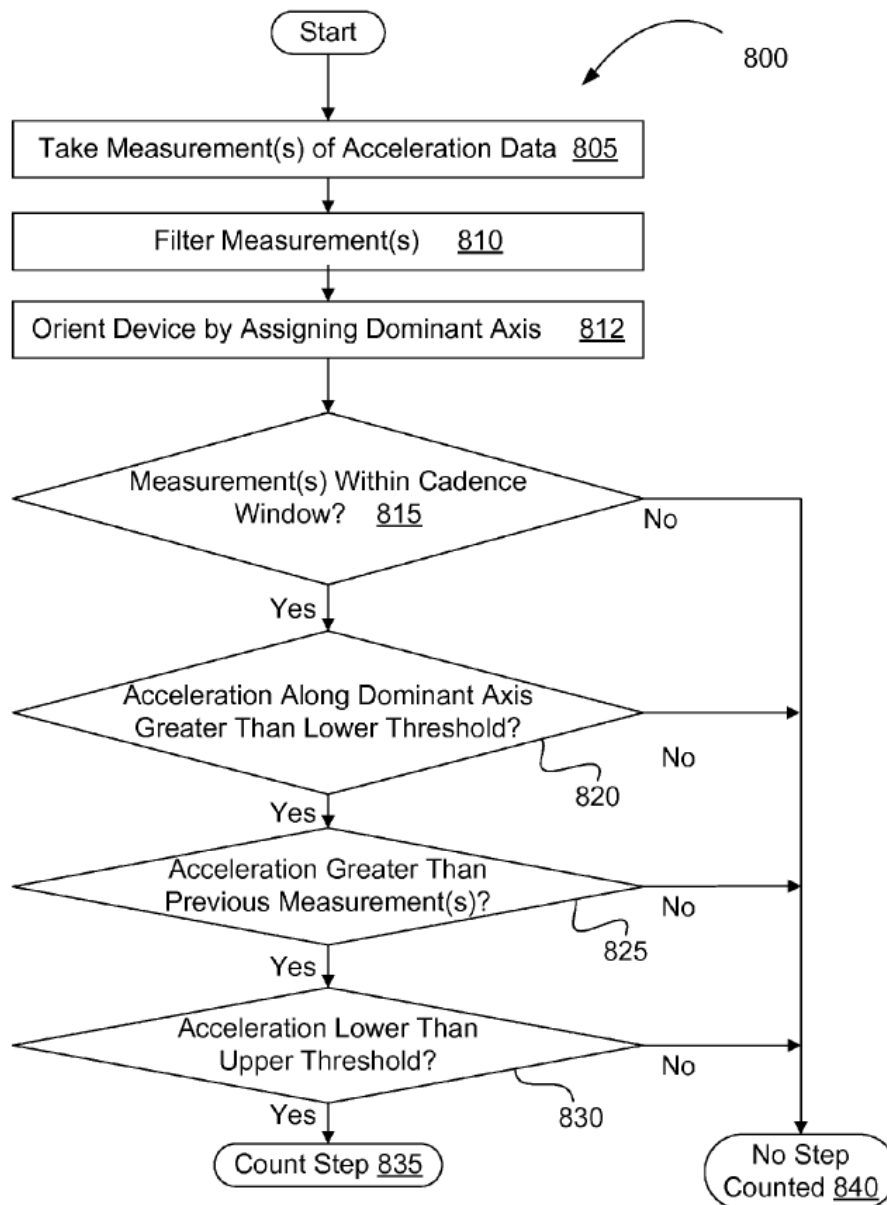
Figure 8

Figure 8 illustrates a diagram for a method of recognizing a step. *Id.* at 12:30–32. After measurements of acceleration data (step 805) and filtering those measurements (step 810), the method evaluates the orientation of the device and assigns a dominant axis (step 812). *Id.* at 12:36–49. A processing logic determines whether a measurement is within a cadence

window (step 815). *Id.* at 12:50–51. The cadence window is the allowable time window for steps to occur. *Id.* at 3:65–66. In one embodiment, the cadence window is determined based on the actual stepping period or actual motion cycle, but default limits or other determiners may be used to set the cadence window. *Id.* at 4:7–27. After each step is counted, the minimum and/or maximum of the cadence window, or window length, may be adjusted based on actual cadence changes. *Id.* Therefore, the cadence window is dynamic such that it is continuously updated. *Id.* at 4:31–33.

If the measurement of acceleration along the dominant axis is within the cadence window, is greater than previous measurements, and is within the range of acceleration thresholds (steps 820, 825, 830), the motion is determined to be a step and is counted (step 835). *Id.* at 12:53–62, 13:37–14:6. Otherwise, the step is not counted (step 840) and the method continues to evaluate subsequent measurements. *Id.* at 12:51–53.

C. Illustrative Claim

Of the challenged claims, claims 1, 5, 10, and 14 are independent. Each of claims 2–4, 6, 7, 11–13, and 15–19 depends directly or indirectly from one of the challenged independent claims.

Claim 1 is illustrative:

1. A method for monitoring human activity using an inertial sensor, comprising:

assigning a dominant axis with respect to gravity based on an orientation of the inertial sensor;

detecting a change in the orientation of the inertial sensor and updating the dominant axis based on the change; and

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