UNITED STATES PATENT AND TRADEMARK OFFICE

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13/494,907	06/12/2012	Parin Patel	4860P10981	1075

			EXAMINER

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EXAMINER
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL
AND APPEAL BOARD

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Ex parte PARIN PATEL[1]

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Appeal 2018-006117
Application 13/494,907
Technology Center 2800

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Before BEVERLY A. FRANKLIN, BRIAN D. RANGE, and LILAN REN,
Administrative Patent Judges.

FRANKLIN, *Administrative Patent Judge.*

DECISION ON APPEAL

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[1] Appellant identifies the real party in interest as Apple Inc.

Appellant requests our review under 35 U.S.C. § 134(a) of the Examiner's decision rejecting claims 1, 2, 4–8 and 10–15. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

STATEMENT OF THE CASE

Claim 1 is illustrative of Appellant's subject matter on appeal and is set forth below:

1. A packaged sensor integrated circuit comprising:
   a single integrated circuit (IC) package having integrated therein

   (a) a sensing element to provide a sensor signal indicative of movement of the IC package,

   (b) an analog to digital converter (ADC) coupled to the sensing element to sample the sensor signal,

   (c) a hardware state machine to filter the sampled sensor data from the ADC to obtain filtered sensor data, and to match the filtered sensor data with one of a plurality of predetermined sensor data patterns, the matched one of the plurality of predetermined sensor data patterns being a recognized pattern, and to generate context information based on the recognized pattern, and

   (d) a communications interface to provide the context information to an external processor, wherein the recognized pattern indicates walking and the context information provided by the communication interface includes a step count.

THE REJECTIONS

1. Claims 1, 2, 4–6 and 14–15 are rejected under pre-AIA 35 U.S.C.
§ 102(e) as being anticipated by InvenSense, "MPU-6000 and MPU-6050
Product Specification Revision 3.3", hereinafter "InvenSense".

2. Claims 7–8 and 10–13 are rejected under pre-AIA 35 U.S.C.
§ 103(a) as being unpatentable over InvenSense.

ANALYSIS

For purposes of this appeal, we address separately argued claims, and
the remaining claims stand or fall with the argued claims, consistent with 37
C.F.R. § 41.37(c)(1)(iv).

Upon consideration of the evidence and each of the respective
positions set forth in the record, we find that the preponderance of evidence
supports the Examiner's findings and conclusion that the subject matter of
Appellant's claims is unpatentable over the applied art. Accordingly, we
sustain each of the Examiner's rejections on appeal for the reasons set forth
in the Final Office Action and in the Answer, and affirm, and add the
following for emphasis.

Rejection 1

Appellant argues that InvenSense does not disclose "(c) a hardware
state machine to filter the sampled sensor data from the ADC to obtain
filtered sensor data, and to match the filtered sensor data with one of a
plurality of predetermined sensor data patterns, the matched one of the

plurality of predetermined sensor data patterns being a recognized pattern, and to generate context information based on the recognized pattern." Appellant argues that InvenSense's Internal Digital Motion Processing (DMP) is not a "hardware state machine". Appeal Br. 7–8. We are unpersuaded by such argument for the reasons provided by the Examiner on pages 3–4 of the Answer. Therein, the Examiner refers to ¶ [0017] of the Specification (reproduced below), useful for claim interpretation of "hardware state machine":

> [0017] Certain terminology is used in the following description to describe features of the invention. For example, the terms "module" or "logic" are representative of hardware and/or software configured to perform one or more functions. For instance, examples of "hardware" include, but are not limited or restricted to an integrated circuit such as a processor (e.g., microprocessor, application specific integrated circuit, a digital signal processor, a microcontroller, system-on-a-chip, etc.). A "hardware state machine" as used here refers to hardwired logic configured with operational states required to solve a specific problem or perform a specific task, in the manner of a finite state machine. The hardware state machine may include, for instance, simple logic gates, multiplexers, timers, counters, and thresholds. Given the function of the state machine is bounded the hardware state machine consumes low amounts of power.

The Examiner states that, in view of the above excerpt from the Specification, the term "hardware state machine" encompasses a hardwired logic configured to solve a specific problem or task in a manner of a finite state machine. Ans. 4. The Examiner states that it is known in the art that a finite state machine is a mathematical model of computation, and notably,

this statement is not disputed by Appellant as no Reply Brief has been filed.[2]
Ans. 4. As such, the claim term "hardware state machine" is properly
interpreted within this aforementioned context. The Examiner further states
that this model of computation can change operational states in response to
external inputs, such as readings of sensor output. The Examiner states that
in this case, the reading of accelerometer/gyroscope output data can change
the operational state with movement of the user. This is done in order to
detect if a user is standing, walking or running. The Examiner states that
InvenSense determines if a user is walking and maintains a step count. This
is done by the digital motion processing and gesture recognition
algorithms which are a mathematical model of computation (InvenSense, p.
11, section 5.4, first and fourth elements). Ans. 4.

The Examiner also states that the specific task that Appellant is trying
to solve or determine is a step count while walking (i.e. pedometer
configuration) (see Appellant's abstract). This data is obtained from the
motion sensors (i.e., accelerometers and gyroscopes, see ¶ 0007 of the
Specification). Ans. 4.

The Examiner states that InvenSense discloses MPU-60X0, which is a
motion interface, which tracks the motion of the user in all directions
(InvenSense, 9 axis, p. 10, section 5.3 first element), using accelerometers
and gyroscope output data and determines a step count (InvenSense, p. 11,
and last element of section 5.4). Ans. 4. The Examiner states that the DMP
offloads the intensive motion processing computations requirements from

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[2] A factual finding not shown by the Appellant to be erroneous may be
accepted as fact. *In re Kunzmann*, 326 F.2d 424, 425 n.3 (CCPA 1964).

the system processor which minimizes the need for frequent polling
and therefore enabling low power consumption. InvenSense, p. 7, ¶¶ 1, 2
and 4. Ans. 4.

The Examiner therefore concludes that InvenSense anticipates the
claimed subject matter in this regard. Appellant has not persuaded us to the
contrary.

Appellant next argues that although InvenSense's DMP engine
maintains the step count, there is no teaching of the DMP engine regarding
filtering the sampled sensor data from the ADC to obtain filtered sensor
data, and matching the filtered sensor data with one of a plurality
of predetermined sensor data patterns, as recited in claim 1. Appeal Br. 8–9.

However, we agree with the Examiner's stated reply made on page 5
of the Answer. Therein, the Examiner points to the fact that InvenSense
discloses such features. See InvenSense, p. 11, section 5.4 (fifth element,
the DMP has low pass filters). The Examiner states that therefore the
sampled sensor data from the ADC is filtered. The Examiner also refers to
page 24 of InvenSense, disclosing that the ADC is connected to the DMP
which determines a sensor pattern in order to determine how many steps
have been taken by the user. The Examiner also refers to InvenSense, p. 11,
and section 5.4, last element. Ans. 5. The Examiner states that
InvenSense's system recognizes how many steps have been taken by the
user, and therefore it recognizes predetermined sensor data patterns when is
analyzed by the digital motion processor (DMP). Ans. 5.

In view of the above, we are unpersuaded of error in the Examiner's
anticipation rejection and affirm.

Rejection 2

Appellant addresses Rejection 2 on pages 9–10 of the Appeal Brief. Appellant argue that there are significant differences between the applied art and the claimed subject matter, without specifically discussing which elements differ and why. If this is an implicit reliance upon the same arguments presented with regard to Rejection 1, we are unpersuaded for the same reasons, discussed *supra*. Otherwise, Appellant merely states that the claim subject matter is not taught by the applied art without specifically identifying how the Examiner erred. A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim. 37 C.F.R. § 41.37(c)(1)(iv), last sentence.

In view of the above, we affirm Rejection 2.

DECISION

Each rejection is affirmed.

TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

ORDER

AFFIRMED