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EXAMINER	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ROBERT MICHAEL ECKER, KAUSTUBH R. PATIL, JOHN ROBERT HAMILTON, JAMES D. REINKE, and TIMOTHY DAVIS

Appeal 2016-008161
Application 12/361,977[1]
Technology Center 3700

Before DONALD E. ADAMS, ELIZABETH A. LAVIER, and DEVON ZASTROW NEWMAN, *Administrative Patent Judges*.

NEWMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims to an implantable medical device. The Examiner entered final rejections that certain claims were indefinite, and that all claims were obvious and directed to nonstatutory subject matter.

We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM-IN-PART.

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[1] Appellants identify the Real Party in Interest as Medtronic, Inc. App. Br. 3.

STATEMENT OF THE CASE

Background

"A variety of implantable medical devices (IMDs) for delivering a therapy or monitoring a physiologic condition of a patient have been clinically implanted or proposed for clinical implantation in patients." Spec. ¶ 3.

> An implantable medical device may include a master device that communicates with a plurality of slave devices, such as sensor modules, in order to monitor various conditions including, for example, cardiac electrical activity, blood pressure, blood perfusion, and blood oxygen content. Both the master device and the slave devices may be implanted within the body. A bus may be used to provide communication between the master device and the slave devices. . . . Implantable medical devices often deliver life-supporting therapy in the form of electrical stimulation to the patient, which requires a reliable communication protocol between the master device and the implantable sensors.

Id. ¶ 4.

The Specification discloses:

> an implantable medical device that includes a host controller and a plurality of sensor modules that are implanted within a patient. The host controller may control the sensor modules to perform one or more sensor actions in order to facilitate a measurement. The sensor modules may cooperate with each other to coordinate timing for performance of one or more sensor actions across the modules when making a measurement. When making a measurement, multiple sensor actions may need to occur in a particular order in order to obtain valid results for the measurement. In many cases, individual sensor actions may be performed by distinct sensor modules that share a common bus. By coordinating the timing for performance of sensor actions across the sensor modules, the sensor modules are able to control the timing for performance of the sensor

> actions such that all of the sensor actions occur in the desired order even if the individual sensor actions are performed by separate sensor modules.

Id. ¶ 5.

The Claims

Claims 1–3, 14, 15, 17, 18, 22, and 23 are on appeal. Claim 1 is illustrative and reads as follows:

1. An implantable medical device comprising:

> a host controller configured to transmit a signal over a two-wire bus; and
>
> a plurality of sensor modules that are each coupled directly to each wire of the two wire bus to receive the signal from the bus, wherein a timing coordination for performance of sensor actions by each of the plurality of sensor modules is based on the received signal in order to make a measurement, wherein each of the plurality of sensor modules includes one or more light emitters and one or more light detectors.

App. Br. 22 (Claims Appendix).

The Issues

The following rejections are before us to review:

Claims 1–3, 14, 15, 17, 18, 22, and 23 are rejected under pre-AIA 35 U.S.C. § 103(a) as obvious over Roberts[2] in view of Cinbis.[3]

Claims 1–3, 14, 15, 17, 18, 22, and 23 are rejected under 35 U.S.C. § 101 as directed to nonstatutory subject matter.

Claims 14 and 15 are rejected under 35 U.S.C. § 112(b) or 35 U.S.C. §112 (pre-AIA), second paragraph, as indefinite.

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[2] US 6,163,723, issued Dec. 19, 2000 ("Roberts").
[3] US 2008/0208020 A1, pub. Aug. 28, 2008 ("Cinbis").

Obviousness

ISSUE

Does the preponderance of evidence on this record support Examiner's finding that Roberts and Cinbis suggest Appellants' claimed invention?

ANALYSIS

The Examiner has rejected claims 1–3, 14, 15, 17, 18, 22, and 23 as obvious over Roberts in view of Cinbis. Ans. 5–10; 27–33. The Examiner finds that these references suggest to the ordinarily skilled artisan each limitation of the pending claims. *Id.*

Specifically with regard to the arguments raised on appeal, the Examiner finds that Roberts discloses "a plurality of sensor modules (319, 320) (Fig. 5) (col. 11, lines 57–61) that are each coupled directly to each wire of the two wire bus (Fig. 5) to receive the signal from the bus (col. 12, lines 56–59)." *Id.* at 6. The Examiner further stated in the Final Rejection that "elements 327 and 328 of Roberts are now included as part of the claimed wires. Fig. 5 shows the direction of current flowing in which when the circuit is complete, each of the wires of Roberts is directly connected to each of the sensor modules of Roberts." Final Act. 11.[4]

Appellants argue that the Examiner's interpretation of diodes 327 and 328 as wires is unreasonable because "a person skilled in the art would not interpret a diode as a wire because diodes are electronic components and wires are used to connect electronic components." App. Br. 19. According

[4] Examiner's Final Action, mailed November 17, 2015 ("Final Act.").

to Appellants, the skilled artisan would therefore not interpret diodes 327 and 328 as wires in a "two wire bus." *Id.*

Appellants also argue that Roberts does not teach the limitation "a plurality of sensor modules that are each coupled directly to each wire of the two wire bus to receive the signal from the bus." *Id.* at 20. Appellants argue "each of sensor 319 and sensor 320 is only connected to a single conductor of conductors 315 [sic, 313] and 315" and thus fails to teach the "coupled directly to each wire" portion of the limitation. *Id.*

The Examiner responds that "Appellants' specification refers to the wires of the claimed 'two-wire bus' multiple times and consistently refers to the wires as 'conductors.'" Ans. 31 (citing Spec. ¶¶ 57, 59). Accordingly, and further because the Examiner "could not find any portion of Appellants' specification which limits the wires as only meaning 'used to connect electronic components' as argued [by Appellants]", the Examiner finds that interpreting "wires" to mean "a conductor" is consistent with the usage in the Specification and as understood by the skilled artisan. *Id.* at 31–32.

With regard to the question of whether Roberts discloses "a plurality of sensor modules that are each coupled directly to each wire of the two wire bus to receive the signal from the bus", the Examiner provides two versions of Figure 5, annotated to show the Examiner's findings regarding how Roberts meets the limitation:

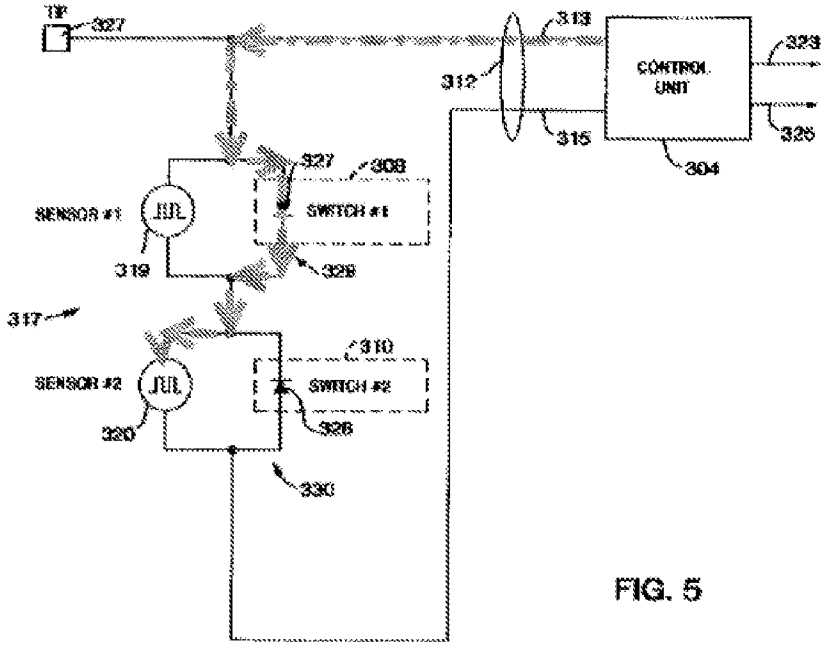

FIG. 5

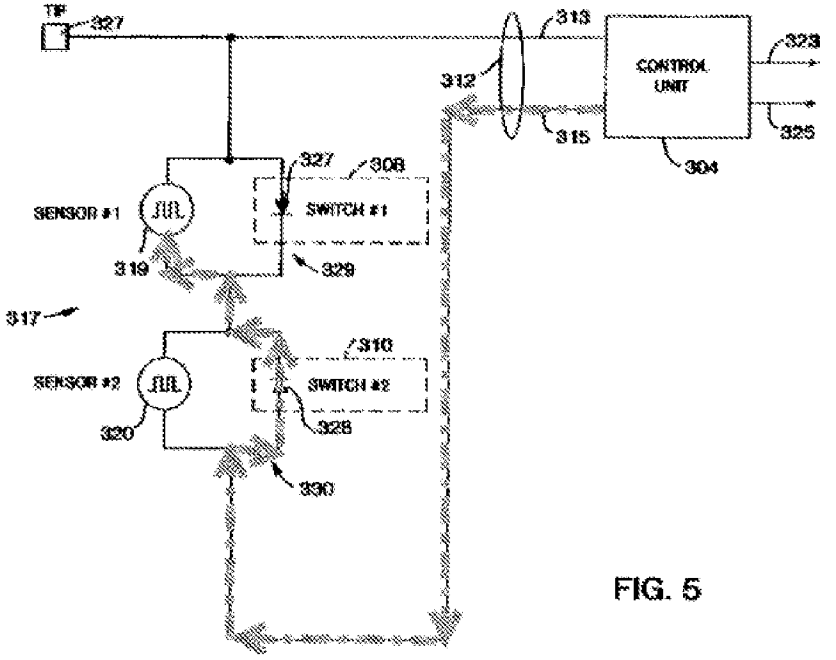

FIG. 5

Figure 5, shown above with the Examiner's two annotations, "shows a switching architecture for selectively activating and deactivating each of two sensors connected in series to a pair of lead conductors." Roberts 3:49–52.

We agree with Appellants that the Examiner has not shown that Roberts discloses "a plurality of sensor modules that are each coupled directly to each wire of the two wire bus to receive the signal from the bus." As shown in the annotated versions of Figure 5 above, each of the wires 313 and 315 must pass through a switch prior to connecting to the sensor identified by the Examiner as the sensor that is "coupled directly" to the bus. A "switch" is "[a] device used to break or open an electric circuit or to divert current from one conductor to another."[5] Based on this meaning, we agree with Appellants that the skilled artisan would not understand Roberts' teaching of routing a wire to a sensor *through a switch* to meet the claim limitation "coupled directly."

A prima facie case for obviousness "requires a suggestion of all limitations in a claim," *CFMT, Inc. v. Yieldup International Corp*., 349 F.3d 1333, 1342 (Fed. Cir. 2003), and "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does," *KSR International Co. v. Teleflex Inc*., 550 U.S. 398, 418 (2007). Absent this showing, which we do not find on this record, we are constrained to reverse the rejection of claim 1. We likewise reverse the rejection of claims 2, 3, 14, 15, 17, 18, 22, and 23, as each claim either depends from claim 1 or similarly includes the "directly coupled" claim limitation.

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[5] The American Heritage Dictionary of the English Language, (https://www.ahdictionary.com/word/search.html?q=switch, definition 2.a., accessed November 7, 2017).

Statutory Subject Matter:

ISSUE

Does the evidence of record support Examiner's finding that Appellants' claimed invention is directed to non-statutory subject matter?

ANALYSIS

In analyzing patent eligibility under 35 U.S.C. § 101, the Supreme Court has set forth a "framework for distinguishing patents that claim [patent-ineligible] laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014). According to that framework, first "we determine whether the claims at issue are directed to one of those patent-ineligible concepts." *Id.* "If so, we then ask, '[w]hat else is there in the claims before us?'" *Id.* (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 78 (2012)). To answer this second question,

> we consider the elements of each claim both individually and as an ordered combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application. [The Supreme Court has] described step two of this analysis as a search for an inventive concept — *i.e.*, an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.

Id. (internal citations and quotation marks omitted).

The Examiner finds that Appellants' claimed device is directed to non-statutory subject matter. *See* Ans. 13–27. According to the Examiner, the claims are directed to an "abstract idea, as evidenced by the claim language of 'a time coordination of sensor actions by each of the plurality of

sensor modules is based on the received signal in order to make a measurement.'" Ans. 4. The Examiner finds that:

> [t]he abstract idea may be summarized as synchronizing or time stamping data measurements and/or buffering sample collection. For example, the claim language encompasses a person winking their eye according to a mentally thought out pattern of blinking their eye. This claim language, being viewed in the context of the claim as a whole, clearly seeks to tie up the abstract idea.[6]

Id. For step two of the analysis, the Examiner concluded that the claims

> do not appear to recite additional elements that amount to significantly more [because they] (1) are merely data gathering, audience determining, and/or stimuli producing implementation(s) and/or steps that do not apply the judicial exception in a novel manner, but rather are a pre-requisite because they supply the data, determine the audience, and/or produce the stimuli; (2) fail to be tied to a particular machine or apparatus, or transform a particular article to a different state or thing; and/or (3) are (i) mere instructions to implement the idea on a computer, and/or (ii) recitation of generic computer structure that serves to perform generic computer functions that are well understood, routine, and conventional activities previously known to the pertinent industry.

Id.

The Examiner did not separately address claims 1–3, 14, 15, 17, 18, 22, and 23 as to the § 101 rejection, but rejected the claims together based on the reasoning described above. Our analysis focuses on claim 1 as representative.

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[6] Both Examiner and Appellants address whether the rejection qualifies for "the streamlined eligibility analysis" or whether a "full analysis using the two-step test" is required. *See, e.g.*, Ans. 4. Because we apply the framework under *Alice*, summarized above, we do not address the applicability of the more simplified analysis.

On this record, even if the Examiner is correct in asserting that Appellants' claim 1 includes "the abstract idea [of] synchronizing or time stamping data measurements and/or buffering sample collection" (Ans. 16; *see id.* at 3–4), i.e., the first step of the *Alice* test; the Examiner failed to establish that the remaining elements of Appellants' claim, when read as a whole, are conventional, routine, and well-understood, i.e., the second step of the *Alice* test. The Examiner has, at best, relied upon the combination of Roberts and Cinbis to support an assertion that certain elements of Appellants' claimed invention are conventional, routine, and well-understood (*see, e.g.,* Ans. 27–32). However, for the reasons discussed above, we are not persuaded by the Examiner's assertion. Thus, because the Examiner failed to establish that Appellants' claimed invention, when read as a whole, fails to meet the second step of the *Alice* test, we are compelled to reverse this rejection.

For the reasons above, we conclude that the Examiner did not establish by a preponderance of the evidence that claims 1–3, 14, 15, 17, 18, 22, and 23 are unpatentable under 35 U.S.C. § 101.

Indefiniteness

ISSUE

Does the preponderance of evidence on this record support Examiner's finding that claims 14 and 15 are indefinite?

ANALYSIS

The Examiner has rejected claims 14 and 15 as indefinite. The Examiner finds that the claim limitation in claim 14 "wherein a first sensor module within the plurality of sensor modules is further configured to perform a first sensor action prior to performing a second sensor action for

each measurement" is ambiguous because claim 14's language implies multiple measurements without proper antecedence. Ans. 3. The Examiner further finds claim 15 is dependent on claim 14, but does not cure the ambiguities. *Id.*

Appellants do not contest or address this rejection in the Appeal Brief.[7] Therefore, we summarily affirm this rejection. *See* Manual of Patent Examining Procedure § 1205.02 ("If a ground of rejection stated by the examiner is not addressed in the appellant's brief, appellant has waived any challenge to that ground of rejection and the Board may summarily sustain it.").

SUMMARY

We reverse the rejection of claims 1–3, 14, 15, 17, 18, 22, and 23 under pre-AIA 35 U.S.C. § 103(a) as obvious over Roberts in view of Cinbis.

We reverse the rejection of claims 1–3, 14, 15, 17, 18, 22, and 23 under 35 U.S.C. § 101 as directed to nonstatutory subject matter.

We affirm the rejection of claims 14 and 15 under 35 U.S.C. § 112(b) or 35 U.S.C. §112 (pre-AIA), second paragraph, as indefinite.

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[7] Appellants list the indefmiteness rejection in their Reply Brief as being among those to be reviewed on appeal (*see* Reply Br. 3), but make no further mention of it. Even had Appellants offered substantive arguments regarding the indefiniteness rejection in their Reply Brief, such arguments would have been new, and thus inappropriate as untimely, in the absence of good cause. *See Ex parte Borden*, 93 USPQ2d 1473, 1477 (BPAI 2010) (informative).

TIME PERIOD FOR RESPONSE

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-IN-PART

Notice of References Cited	Application/Control No. 12/361,977	Applicant(s)/Patent Under Patent Appeal No.	
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U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
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