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rs.patents.five@medtronic.com

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* VENKAT R. GADDAM, REID K. BORNHOFT,  
DAVID P. OLSON, LEROY L. PERZ, and MANDLA SHONGWE

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Appeal 2020-000248  
Application 15/601,708  
Technology Center 3700

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Before BIBHU R. MOHANTY, NINA L. MEDLOCK, and  
KENNETH G. SCHOPFER, *Administrative Patent Judges*.

SCHOPFER, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner’s decision to reject claims 1–21. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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<sup>1</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real parties in interest as Medtronic, Inc. and Medtronic plc, “the ultimate parent entity of Medtronic, Inc.” Appeal Br. 3.

## BACKGROUND

The Specification “relates to medical devices and, more particularly, systems and methods for recharging a power source of a medical device.”

## CLAIMS

Claims 1, 13, and 20 are the independent claims on appeal. Claims 1 and 13 are illustrative of the appealed claims and recite:

1. A method comprising:

receiving, by processing circuitry, an activity signal generated by an implantable medical device and indicative of an activity level of a patient during charging of a rechargeable power source of the implantable medical device implanted in the patient;

determining, by the processing circuitry and based on the activity signal, a patient status for the patient during charging of the rechargeable power source; and

controlling, by the processing circuitry and based on the patient status, charging of the rechargeable power source of the implantable medical device via an external charging device.

13. A system comprising:

an implantable medical device comprising processing circuitry and a rechargeable power source, wherein the processing circuitry is configured to:

receive an activity signal generated by the implantable medical device, the activity signal indicative of an activity level of a patient during charging of the rechargeable power source of the implantable medical device implanted in the patient;

determine, based on the activity signal, a patient status for the patient during charging of the rechargeable power source; and

control, based on the patient status, charging of the rechargeable power source of the implantable medical device.

Appeal Br. 33, 36.

## REJECTIONS

1. The Examiner rejects claims 13–19 and 21<sup>2</sup> under 35 U.S.C. § 112(b) as indefinite.
2. The Examiner rejects claims 1–8 and 10 under 35 U.S.C. § 102(a)(1) as anticipated by Scott.<sup>3</sup>
3. The Examiner rejects claims 1, 2, 10–13, 15–18, and 20 under 35 U.S.C. § 102(a)(1) as anticipated by Forsell.<sup>4</sup>
4. The Examiner rejects claims 3–9, 14, 19, and 21 under 35 U.S.C. § 103 as unpatentable over Forsell in view of Scott.

## DISCUSSION

### *Indefiniteness*

With respect to claim 13, the Examiner finds that “it is unclear what is producing [the activity] signal in the implantable medical device. Is it an activity sensor? Is it processing circuitry? What element in the implantable medical device generates the activity signal?” Final Act. 8. The Examiner also states that “[i]t is unclear if the Applicant is requiring the signal to be an activity signal or if the IMD has to be capable of receiving an activity signal.” *Id.* at 3. The Examiner assumes that the claim intends to recite “an activity signal produced by an activity sensor,” but the Examiner finds that “it is unclear . . . if the Applicant is intending for the processing circuitry to be capable of receiving an activity signal and therefore, not requiring the

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<sup>2</sup> The Examiner has withdrawn the rejection of claims 1–10 and 20 under this heading. Ans. 3.

<sup>3</sup> Scott et al., US 2014/0163644 A1, pub. June 12, 2014.

<sup>4</sup> Forsell, US 2011/0278948 A1, pub. Nov. 17, 2011.

activity signal or the activity sensor mak[es] the metes and bounds of the claims unclear.” *Id.*

We disagree for the reasons provided by Appellant. *See* Appeal Br. 10. Specifically, we agree that “[o]ne of ordinary skill in the art would merely understand that claim 13 is not limited to any particular type of component of the implantable medical device that generates the activity signal.” *Id.* This issue relates to the breadth of the claim and the Specification supports the breadth of the claim by providing “examples of how one or more sensors of [the] implantable medical device . . . generate an activity signal, which is received by processing circuitry located within” the implantable medical device. *See id.*; *see also* Spec. ¶ 29. We also note that the claim is written using the open ended language “a system comprising,” which indicates the structure of the device is not limited to the processing circuitry and power source expressly recited in the claim. Thus, one of ordinary skill in the art would understand that the implantable medical device may include other components used to generate an activity signal, such as those specifically recited in the Specification. *See* Reply Br. 5–6.

The Examiner also determines that claim 13 is indefinite because the claim requires control of charging, but “it is unclear what is being controlled? Is a second power source being activated to provide power to the rechargeable power source? Does the device alert the patient to move to a recharging station? Is the secondary power source connected to the processing circuitry? Is there a switch?” Final Act. 8–9. The Examiner finds that “it is unclear how the processing circuitry controls charging of the rechargeable power source, [and s]ince the claim does not require an energy

source it is unclear if the Applicant is controlling a structure or stating that the processing circuitry is capable of controlling another structure.” *Id.* at 3. As with the first rejection of claim 13, we agree with Appellant that the Examiner appears to have only indicated in the rejection that the claim is broad and not that any indefiniteness issue exists with respect to the claim requirement that the medical device controls charging of the rechargeable power source. *See* Appeal Br. 10–11; *see also* Reply Br. 6; Spec. ¶ 29.

Regarding claim 14, the Examiner finds that “it is unclear what element of the implantable medical device generates the activity signal to provide current posture. Is a signal from an activity sensor? Or does the processing circuitry receive a posture from memory and that is the current posture?” Final Act. 9. We are persuaded of error for the reasons provided by Appellant, which are substantially the same reasons discussed above with respect to claim 13. *See* Appeal Br. 12.

With respect to claim 15, the Examiner finds that the claim is unclear “because the claim does not positively recite a sensor corresponding to one or more physiological parameters; making it unclear how the sensor signals are received by the processing circuitry.” Final Act. 9. The Examiner rejects claim 16 for the same reasons. *Id.* Again, we are persuaded of error for the reasons provided by Appellant. *See* Appeal Br. 13–14.

The Examiner next rejects claim 17 and 18 because “it is unclear how this occurs[, i.e., how the external charging device receives an output signal and controls the power level,] as the external charging device has no components for controlling or receiving a signal. Does the external charging device have a controller? Does it have a telemetry module? Dependent claims 18 and 19 inherit the same deficiencies.” Final Act. 9. We agree

with Appellant that this rejection is in error for the essentially the same reasons previously discussed. *See* Appeal Br. 14–15.

Claim 21 depends from independent claim 20 and further recites “wherein the activity signal comprises a current posture for the patient and one or more signals related to an activity level of the patient.” Appeal Br. 40. The Examiner determines that the claim “is unclear because . . . the activity signal has not been positively recited making it unclear how it can be further limited.” Final Act. 10–11. The Examiner further explains that “[i]t is not clear what structure(s) change or which one(s) are not used when the activity signal comprises a current posture for the patient.” Ans. 10.

We fail to see how the claim is unclear based on the Examiner’s determination. The rejection and the Examiner’s Answer indicate that the rejection is based on claim 21’s failure to further limit the claim from which it depends, independent claim 20. Yet the Examiner does not explain adequately why the structure of the device must change or why any specific element of the base claim must not be used when the activity signal comprises a posture. Rather, the claim limits claim 20 by further requiring that the activity includes a signal indicative of the current posture and one or more signals related to an activity level of the patient. Thus, the claim is clear that the means provided in claim 20 are further limited because they must be able to perform the functions of claim 20 where the activity signal is a specific signal as required by claim 21.

Based on the foregoing, we are persuaded of error in the rejection of claims 13–19 and 21 under 35 U.S.C. § 112(b). Accordingly, we do not sustain this rejection.

*Anticipation by Scott*

We are persuaded by Appellant’s argument that the Examiner has not established that Scott discloses a method in which a patient status is determined during charging of a rechargeable power source and based on that status, controlling charging of a rechargeable power source in an implantable medical device. *See, e.g.*, Reply Br. 18.

With respect to claim 1, for example, the Examiner finds that Scott teaches a method including determining and controlling steps, as claimed. Final Act. 11 (citing Scott ¶¶ 77, 88, 91, 92, 102). The Examiner explains that Scott discloses that a feedback control signal “is requested by external device 340 when changes in patient activity, patient posture is detected from IMD sensors 324” and that Scott “disclose[s] the feedback control signal is transmitted to external device 340 by telemetry module 320 via link 370 and used by external device 340 to control and optimize power transfer for charging a charge storage device 318.” *Id.* at 6 (citing Scott ¶¶ 76, 109).

“[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). “[A]nticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim . . . .” *In re King*, 801 F.2d 1324, 1326 (Fed. Cir. 1986) (citing *Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick Co.*, 730 F.2d 1452, 1457 (Fed. Cir. 1984)). “[A]bsence from the reference of any claimed element negates anticipation.” *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 1571 (Fed. Cir. 1986).

Here, the Examiner has failed to explain adequately how Scott discloses any determination of a patient status or controlling the charging of



a rechargeable power source of the implantable medical device based on the patient status. In the rejection, the Examiner cites, without explanation, to Scott paragraphs 91 and 92 to show that Scott discloses determining a patient status. Final Act. 11. These paragraphs describe a posture sensor and an activity sensor, but without further explanation, it is not clear how they provide a determination of a patient status that is then used for controlling charging.

In the Answer, with respect to the rejection over Forsell, the Examiner finds that “‘patient status’ has not been defined and includes the energy requirements of the individual . . . as obtained from the parameters received of the patient consisting of body temperature, blood pressure, heartbeats and breathing.” Ans. 13. However, the Examiner does not provide further explanation regarding how Scott discloses determining a patient status. *See id.* at 10–11.

In view of the foregoing, we find that the Examiner has not established that Scott discloses a method including a determining step and a controlling step as required by claim 1. Accordingly, we do not sustain the rejection of claims 1–8 and 10 as anticipated by Scott.

*Anticipation by Forsell*

We are also persuaded of error in the rejection over Forsell for reasons similar to those discussed above.

With respect to claim 1, the Examiner finds that Forsell discloses a method including the claimed determining and controlling steps. Final Act. 14–15 (citing Forsell ¶¶ 250–253). Regarding the determination of a patient status, the Examiner finds that

Forsell teaches using the obtained signal (blood pressure, body temperature, heartbeats, and breathing) which are indicative of

an activity level and determining a patient status (which is a broad term and includes anything from the patient is alive, to how much energy the patient has consumed) for controlling charging of the rechargeable power source.

*Id.* at 7. The Examiner further explains that the rejection relies on the determination of “the currently required amount of energy . . . based on measurements” of Forsell’s sensors as the claimed determination of a patient status. Ans. 12 (emphasis omitted). And as noted above, the Examiner also determines that “‘patient status’ has not been defined and includes the energy requirements of the individual . . . as obtained from the parameters received of the patient consisting of body temperature, blood pressure, heartbeats and breathing.” *Id.* at 13.

We agree with Appellant that the Examiner does not explain adequately how Forsell discloses a determining and controlling step as claimed. Specifically, we agree with Appellant that the Examiner fails to establish that Forsell discloses determining a patient status. To the extent the Examiner relies on the “energy requirements of the individual” as a patient status, we agree with Appellant that the Examiner has not cited to any portion of Forsell that explains that the activity signals relied upon are used to determine the energy requirements of the patient. *See* Reply Br. 21–22. Rather, Forsell discloses that the energy balance or the currently required amount of energy is determined based on measured activity signals and that this determination is related to the energy used or the energy required by the implantable medical device. *See* Forsell ¶¶ 250, 253. Thus, the energy determination relates to the status of the medical device and not the status of the patient. Also, we note that Forsell separately discloses detecting the “current condition of the patient” based on parameters

including body temperature, blood pressure, heartbeats, breathing. *Id.* ¶ 250. However, Forsell does not disclose that subsequent control of charging of a rechargeable power source is based on the current condition of the patient. *See, e.g., id.*

Based on the foregoing, we find that the Examiner has not established that Forsell discloses a method including a determining step and a controlling step as required by claim 1, or the similar requirements of independent claims 13 and 20. Accordingly, we do not sustain the rejection of claims 1, 2, 10–13, 15–18, and 20 as anticipated by Forsell.

*Obviousness*

With respect to the rejection of claims 3–9, 14, 19, and 21 as obvious, the Examiner does not provide any further reasoning or citation to evidence that cures the deficiency in the rejections of the independent claims, as discussed above. Accordingly, we also do not sustain the rejection of claims 3–9, 14, 19, and 21 as obvious over Forsell and Scott.

CONCLUSION

We REVERSE the rejections of claims 1–21.

In summary:

| <b>Claims Rejected</b> | <b>35 U.S.C. §</b> | <b>Reference(s)/Basis</b> | <b>Affirmed</b> | <b>Reversed</b>        |
|------------------------|--------------------|---------------------------|-----------------|------------------------|
| 13–19, 21              | 112(b)             | Indefiniteness            |                 | 13–19, 21              |
| 1–8, 10                | 102(a)(1)          | Scott                     |                 | 1–8, 10                |
| 1, 2, 10–13, 15–18, 20 | 102(a)(1)          | Forsell                   |                 | 1, 2, 10–13, 15–18, 20 |

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| <b>Claims Rejected</b> | <b>35 U.S.C. §</b> | <b>Reference(s)/Basis</b> | <b>Affirmed</b> | <b>Reversed</b> |
|------------------------|--------------------|---------------------------|-----------------|-----------------|
| 3-9, 14, 19, 21        | 103                | Forsell, Scott            |                 | 3-9, 14, 19, 21 |
| <b>Overall Outcome</b> |                    |                           |                 | 1-21            |

REVERSED