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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* JING SONG, RICHARD DYCHE ANDERSON,  
YANAN ZHAO, and XIAO GUANG YANG

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Appeal 2015-007874  
Application 12/987,190  
Technology Center 2100

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Before ST. JOHN COURTENAY III, SCOTT B. HOWARD, and  
MARC S. HOFF, *Administrative Patent Judges*.

COURTENAY, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 2–7, 11–16, and 19–23. Claims 1, 17, and 18 are canceled. The Examiner indicates that “[c]laims 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.” (Final Act. 2). We have jurisdiction under 35 U.S.C. § 6(b).

We Affirm.

*Invention*

The disclosed and claimed invention on appeal “relates to a method for determining a power capability for a battery.” Spec. ¶ 1.

*Representative Claim*

21. A method for using a power capability for a vehicle battery, comprising:

using a controller to define the power capability of the battery using as inputs to the controller [L1] *a limiting battery voltage* and [L2] *a limiting battery current that is based on a battery current defined by at least one governing equation of a circuit modeling the behavior of the battery*; and

outputting the power capability from the controller to a vehicle control.

(Contested limitations L1 and L2 are emphasized.)

*Rejection*

Claims 2–7, 11–16, and 19–23 are rejected under Pre-AIA 35 U.S.C. § 102(b) as being anticipated by Masuda et al. (US 2009/0058366 A1; Mar. 5, 2009) (hereinafter “Masuda”).

ANALYSIS

We have considered all of Appellants’ arguments and any evidence presented. Based upon our review of the record, we agree with and adopt the Examiner’s finding of anticipation for the reasons discussed below. We highlight and address specific findings and arguments for emphasis in our analysis below.

*Rejection of Independent Claim 21 under 35 U.S.C. § 102(b)*

**Issue:** Under 35 U.S.C. § 102(b), did the Examiner err in finding the Masuda reference expressly or inherently discloses contested limitations L1 and L2, within the meaning of independent claim 21, under a broad but reasonable interpretation? <sup>1</sup>

To the extent Appellants may substantively contest limitation L1, we find no definition in the claim or in the Specification for the recited L1 “*limiting battery voltage*” that would preclude the Examiner’s reading of the limitation on either of the  $V_{\min}$  or  $V_{\max}$  voltages described in Masuda’s formulas (page 7), as cited by the Examiner. (Final Act. 12).

Likewise, regarding limitation L2, we find no definition in the Specification for a “*limiting battery current*” beyond what is required by the claim language (“*a limiting battery current that is based on a battery current defined by at least one governing equation of a circuit modeling the behavior of the battery*”). (Claim 21).<sup>2</sup>

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<sup>1</sup> We give the contested claim limitations the broadest reasonable interpretation consistent with the Specification. *See In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997); *cf.* Spec. ¶ 40 (“While exemplary embodiments are described above, it is not intended that these embodiments describe all possible forms of the invention. Rather, the words used in the specification are words of description rather than limitation, and it is understood that various changes may be made without departing from the spirit and scope of the invention.”).

<sup>2</sup> Because “applicants may amend claims to narrow their scope, a broad construction during prosecution creates no unfairness to the applicant or patentee.” *In re ICON Health and Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007) (citation omitted).

In considering the doctrine of claim differentiation,<sup>3</sup> we note that claim 21 is broader than associated dependent claims 2, 3, 4, 5, and 6, which each recite various ways of determining or defining the “limiting battery current” that are not required within the scope of broader claim 21.

Regarding limitation L2, we note formulas 31, 32, 36, and 37 (relied on by the Examiner, Final Act. 11), and described on Masuda’s page 7, incorporate the battery current values ( $ib_{\max}$  and  $ib_{\min}$ ) and associated formulas 23 and 24, respectively (¶ 90), which the Examiner also relies on for describing the “at least one equation” as recited in each of independent claims 22 and 23.

Appellants urge (App. Br. 7):

The battery current referenced by the Examiner that is not a limiting current is  $I_b$ , which is a measured battery current—see, e.g., Equations 31 and 32 of Masuda referenced by the Examiner. As stated in Masuda, “[t]he current sensor 56 detects a charging-discharging battery current  $I_b$  of the battery 50,” see Paragraph 0025. Therefore,  $I_b$  is not “based on a battery current defined by at least one governing equation of a circuit modeling the behavior of the battery,” as expressly

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<sup>3</sup> “When different words or phrases are used in separate claims, a difference in meaning is presumed.” *Nystrom v. TREX Co., Inc.*, 424 F.3d 1136, 1143 (Fed. Cir. 2005). Under the doctrine of claim differentiation, “the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005). This presumption is “especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim, and one party is urging that the limitation in the dependent claim should be read into the independent claim.” *SunRace Roots Enterprise Co., Ltd. v. SRAM Corp.*, 336 F.3d 1298, 1303 (Fed. Cir. 2003).

claimed in claim 21.

However, we find that Appellants fail to address the Examiner's specific findings, which we find rely on the  $ib_{\max}$  and  $ib_{\min}$  values and associated formulas 23 and 24, respectively (§ 90), which the Examiner also relies on for describing the "at least one equation" as recited in each of independent claims 22 and 23, and are incorporated in the formulas 31, 32, 36, and 37, as cited by the Examiner regarding claim 21. (Final. Act. 11).

We note that claim 23 recites essentially the same limitations as claim 21, but is slightly broader. Regarding claim 22, we find the recited "power capability of the battery as a function of the limiting battery current and a limiting battery voltage is described by formulas 31, 32, 36, and 37 (relied on by the Examiner, Final Act 12), as further explained by Masuda, paragraph 100, as reproduced on page 5 of the Answer:

[0100] According to the third embodiment, the behavior of the battery voltage  $V_b$  is predicted using the battery voltage behavior model that models the relationship of the behavior of the battery voltage  $V_b$  to the behaviors of the internal resistance  $R_i$  and the charging-discharging battery current  $I_b$ . The *charging-discharging power* (i.e., *Win*, *Wout*) of the battery 50 is *limited* such that the battery voltage  $V_b$  can be within a predetermined voltage range (i.e., range between  $V_{\max}$ ,  $V_{\min}$ ).

(Emphasis omitted, italics added).

Given the aforementioned evidence cited by the Examiner, on this record, and for essentially the same reasons articulated by the Examiner in the Answer, we find a preponderance of the evidence supports the Examiner's finding of anticipation regarding each of independent claims 21, 22, and 23. Therefore, we agree with and adopt the Examiner's findings and sustain the anticipation rejection of each independent claim on appeal.

*Remaining Dependent Claims*

Appellants advance no separate, substantive arguments regarding the remaining dependent claims. Arguments not made are waived. *See* 37 C.F.R. § 41.37(c)(1)(iv). Therefore, we sustain the Examiner's anticipation rejection of the remaining dependent claims on appeal.

*Reply Brief*

To the extent Appellants advance new arguments in the Reply Brief not in response to a shift in the Examiner's position in the Answer, we note arguments raised in a Reply Brief that were not raised in the Appeal Brief or are not responsive to arguments raised in the Examiner's Answer will not be considered except for good cause. *See* 37 C.F.R. § 41.41(b)(2).

*Conclusion*

On this record, and based on a preponderance of the evidence, we are not persuaded by Appellants' arguments the Examiner erred regarding the anticipation rejection over Masuda of all claims before us on appeal.

DECISION

We affirm the Examiner's rejection of claims 2–7, 11–16, and 19–23 under 35 U.S.C. § 102(b).

No time for taking any action connected with this appeal may be extended under 37 C.F.R. § 1.136(a)(1). *See* 37 C.F.R. § 41.50(f).

AFFIRMED