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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte BRADLEY L. SPARE
and ROBERT SEAN MURPHY

Appeal 2019-005007
Application 12/625,143
Technology Center 1700

Before MICHAEL P. COLAIANNI, GEORGE C. BEST, and
DEBRA L. DENNETT, *Administrative Patent Judges*.

BEST, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner’s decision to finally reject claims 42–61 of Application 12/625,143. Final Act. (Mar. 7, 2018). We have jurisdiction under 35 U.S.C. § 6.

For the reasons set forth below, we *reverse*.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies Apple Inc. as the real party in interest. Appeal Br. 3.

I. BACKGROUND

The '143 Application describes systems for monitoring and responding to forces on an electronic device's battery. Spec. ¶¶ 2, 5–7. According to the Specification, these forces may be caused by heat or a physically adjacent object. *Id.* ¶ 3. The '143 Application describes that the detection of intense forces may predict battery failure. *Id.*

Claim 42 is representative of the '143 Application's claims and is reproduced below from the claims listing in the Claims Appendix to the Appeal Brief:

42. An electronic device, comprising:

a rigid enclosure containing operational components, the operational components comprising:

a battery cell;

an external force sensor coupled with an exterior surface of the battery cell and *configured to detect physical contact with an external surface of the battery cell*, the external force sensor further configured to generate a first sense signal indicative of the contact in response to the detected contact;

an internal force sensor positioned within the battery cell configured to detect an internal force generated by conditions internal to the battery cell, and generate a second sense signal indicative of a magnitude of the internal force in response to the detected internal force; and

a processor coupled with the internal and the external force sensors *configured to receive the first sense signal and the second sense signal and alter a facility of the electronic device based on the received first and second sense signals such that the facility of the electronic device is altered during operation of the electronic device and in response to a force detected by the external force sensor or internal force sensor.*

Appeal Br. (Claims App.) 21 (emphasis added).

II. REJECTIONS

On appeal, the Examiner maintains the following rejections:

1. Claims 42–61 are rejected under 35 U.S.C. § 112, ¶ 2 as indefinite. Final Act. 3.
2. Claims 42, 49, and 50 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Hong,² Notten,³ Cassidy,⁴ and Arakelian.⁵ Final Act. 4.
3. Claims 43–48 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Hong, Notten, Cassidy, Arakelian, and Ryu.⁶ Final Act. 7.
4. Claims 51–61 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Hong, Notten, Ryu, Cassidy, and Arakelian. Final Act. 9.

III. DISCUSSION

There are three independent claims on appeal: claims 42, 51, and 56. Appeal Br. 21, 22–23. For the reasons set forth below, we need only discuss claim 42 without reaching Appellant’s separate arguments for reversal of the rejections of claims 49, 51–53, and 55–61. *Id.* at 11–19. Claims 51 and 56 will stand or fall with claim 42; dependent claims 43–50, 52–55, and 57–61

² US 2006/0093896 A1, published May 4, 2006.

³ WO 2006/077519 A1, published July 27, 2006.

⁴ US 2007/0105010 A1, published May 10, 2007.

⁵ US 2007/0024236 A1, published Feb. 1, 2007.

⁶ US 2007/0054157 A1, published Mar. 8, 2007.

will stand or fall with their parent independent claims. 37 C.F.R.
§ 41.37(c)(1)(iv).

A. Rejection of claims 42–61 under 35 U.S.C. § 112, ¶ 2 as indefinite.

The Examiner rejected claim 42 as indefinite. Final Act. 3.

Claim 42 recites “alter a facility of the electronic device.” The Examiner determined that this claim is indefinite because it is unclear as to what “facility is altered and in what manner.” *Id.* The Examiner concluded that the output of the “electronic device/controller” for altering this facility is similarly unclear. *Id.* The Examiner rejected claim 42 under § 112, ¶ 2 because “one of ordinary skill in the art at the time of the invention would not have known how to implement the controller in a novel manner over that of the prior art presented on the record. What scope of the instant claim is outside that of the prior art?” *Id.* at 2.

Appellant asserts that the Examiner reversibly erred as there is no requirement to explain what claim scope is outside of the prior art. Appeal Br. 6. Appellant argues that the Specification informs those skilled in the art about the scope of claim 42 with reasonable certainty. *Id.* To support this argument, Appellant directs our attention (*id.*) to the following description in the Specification:

Processor output 121 may be one or more signals that can control a facility related to charging or drawing current from battery 104, or that can control any other facility related to any other feature of electronic device 100 and its maintenance, including, but not limited to, a backlight, a hard disk, a CPU, a charger for the battery, an input or output component of the device, a fan or cooling unit, a backup system, a failover system (e.g., a system that may switch over to a backup system), a

redundant system, a memory component device, an audible and/or visual alarm, a dialog box, a user interface, and the like. Spec. 26:10–24. Appellant also relies upon claim 51 (Appeal Br. 6), which recites “wherein the facility altered includes operation of a cooling unit.” *Id.* at (Claims App.) 23. Appellant notes that claims 60 and 61 similarly recite components of an electronic device and a system, respectively, whose functions are likewise altered. Appeal Br. 6; *see id.* at (Claims App.) 24.

Whether a claim is indefinite under 35 U.S.C. § 112, ¶ 2 requires giving the claims the broadest reasonable interpretation and then determining whether the metes and bounds of the claimed invention are unclear. *In re Packard*, 751 F.3d 1307, 1310 (Fed. Cir. 2014). The Board has explained that “[t]he Office ‘determines the scope of claims . . . not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction ‘in light of the specification as it would be interpreted by one of ordinary skill in the art.’” *Ex parte McAward*, No. 2015-006416, 2017 WL 3669566, at *2 (PTAB August 25, 2017) (precedential in relevant part) (alteration in original) (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc)) (available at <http://bit.ly/2xEGpee>).

In this case, we agree with Appellant that, based on the Specification, one of ordinary skill in the art would understand with a reasonable certainty what facilities may be altered within the scope of claim 42. Appellant, moreover, persuasively argues that the Examiner rejected claim 42 under an incorrect application of law. *See* Appeal Br. 5–6; Reply Br. 2–3.

Thus, we conclude that the rejected claim meets the necessary thresholds of clarity and precision when read through the eyes of a skilled

artisan and in view of this disclosure. We, therefore, reverse the Examiner's rejection of claims 42–61. 37 C.F.R. § 41.37(c)(1)(iv).

B. Rejection of Claims 42, 49, and 50 under 35 U.S.C. § 103(a) as unpatentable over the combination of Hong, Notten, Cassidy, and Arakelian.

The patent examiner bears the initial burden of establishing a prima facie case that an application's claims would have been obvious based upon what was known in the prior art. *In re Dillon*, 919 F.2d 688, 701 (Fed. Cir. 1990).

Here, the Examiner relied on Hong, which discloses a secondary battery comprising safety device 120. Final Act. 4. The Examiner found that Hong's safety device 120 renders obvious the claimed "external force sensor" recited in claim 42 because safety device 120 is: (i) coupled to the battery's exterior surface and (ii) capable of sending a signal after detecting an external source. *Id.* (citing Hong Fig. 1); *see also* Hong ¶ 67 (disclosing that safety device 120 has "a resistance value which changes . . . during swelling" of the battery cell). The Examiner found that Hong's secondary battery is "capable of corresponding to two states, a normal state and [a] swelled state; in both states, Hong would be in contact with the surface of the battery cell and generate a single [*sic*, signal] in response to the condition of such surface." Final Act. 4.

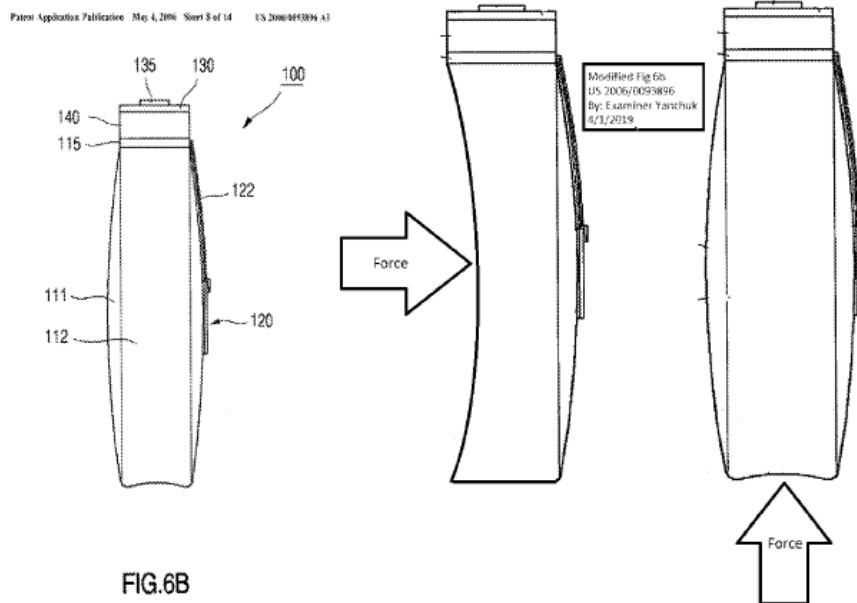
The Examiner found that Cassidy teaches an electronic device comprising a battery and a processor. *Id.* at 5. The Examiner determined that "[i]t would have been obvious to one of ordinary skill in the art at the time of invention to modify [Cassidy's] batter[y] . . . to include [Hong's] external pressure sensors . . . to increase the battery life by being able to suppress temperature increases detected by the sensor." *Id.* at 4.

Appellant argues, *inter alia*, that the Examiner has not articulated a sufficient reason why one of ordinary skill in the art would have combined the teachings of Cassidy and Hong. Appeal Br. 10. In particular, Appellant contends that the Examiner has not adequately explained how Cassidy’s intravenous fluid warmer can be modified to incorporate Hong’s battery case with safety device 120 attached thereto. *Id.*

Appellant also argues that “there is no evidence that [Hong’s] sensor 120 . . . , configured to detect swelling, would [have] necessarily be[en] capable of detecting physical contact as claimed.” *Id.*

In response, the Examiner argued that one having ordinary skill in the art would have been motivated to utilize Hong’s battery within Cassidy’s larger system “whereby [Cassidy’s] larger system sends and receives signals from [Hong’s] specific battery.” Answer 7. The Examiner provides modified depictions of Hong’s Figure 6b, which purportedly demonstrate how Hong’s battery is capable of detecting external forces. *Id.* at 5.

The Examiner’s modifications to Hong’s Figure 6b, reproduced below, illustrates lateral views of the effects of external forces on a battery:



The Examiner’s modifications to Hong’s figure 6b illustrate features of secondary battery 100, including safety device 120, which is electrically connected to protective circuit module 130 via flexible wiring pattern 122 for detecting swelling in first regions 111. Answer 5–6; Hong ¶¶ 67–69, 72, 73, 75. According to the Examiner, Hong’s “force sensor activates based upon the change of shape because of an applied force.” Answer 5. The Examiner reasons that because “[e]xternal pressure applied to a casing is predictable natural occurring phenomenon, the sensors of the prior art are capable of detecting force as shown above.” *Id.* at 6.

Appellant, however, argues that “the Examiner’s attempted fabrication of effects in *Hong* are not supported by that document, and are not even reasonably likely to be a correct interpretation of how contact with the *Hong* battery would [have] affect[ed] that device.” Reply Br. 5. Appellant reiterates arguments made in the Appeal Brief (*id.* at 3), including that Hong’s alleged sensor would not have necessarily detected physical contact.

Elements found to be inherently present must necessarily be present in or result from the prior art. *In re Montgomery*, 677 F.3d 1375, 1379–80 (Fed. Cir. 2012). “Inherency . . . may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *In re Olerich*, 666 F.2d 578, 581 (CCPA 1981) (quoting *Hansgirk v. Kemmer*, 102 F.2d 212, 214 (CCPA 1939)).

To the extent the Examiner concluded that Hong’s regions 111 would have inherently swelled as a consequence of naturally occurring phenomenon (Answer 5–6), we are not convinced. The Examiner’s conjecture that an external force *may* cause Hong’s battery 100 to change shape does not mean that sensor 120 *necessarily* detects physical contact

with the battery's external surfaces. Hong discloses that external regions 111, 112, or 113 may be constructed of metal, such as aluminum. *See* Hong ¶ 69. The Examiner has not adequately explained how any degree of physical contact with these metallic or aluminum surfaces 111, 112, or 113 would have invariably caused swelling in region 111 coupled to sensor 120.

The Examiner, moreover, has not provided any argument or reasoning supported by adequate facts to explain why a person of ordinary skill in the art would have been motivated to make such changes to either Hong's battery or Cassidy's intravenous fluid warming system to derive the claimed electronic device. In the absence of such an explanation, we cannot affirm the rejection of claim 42. *See In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”).

In view of the foregoing, we reverse the Examiner's rejection of claims 42, 49, and 50. 37 C.F.R. § 41.37(c)(1)(iv).

C. Rejections of Claims 43–48 and 51–61 under 35 U.S.C. § 103(a) as unpatentable over the combination of Hong, Notten, Cassidy, Arakelian, and Ryu.

As we discussed in connection with claim 42, the Examiner erred by determining that one of ordinary skill in the art would have been led by Hong's safety device 120 to modify the battery in Cassidy's intravenous fluid warming system. *See* § III.B *supra*.

We, therefore, reverse the rejections of claims 43–48 and 51–61. 37 C.F.R. § 41.37(c)(1)(iv).

IV. CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
42-61	112, ¶ 2	Indefiniteness		42-61
42, 49, 50	103(a)	Hong, Notten, Cassidy, Arakelian		42, 49, 50
43-48	103(a)	Hong, Notten, Cassidy, Arakelian, Ryu		43-48
51-61	103(a)	Hong, Notten, Ryu, Cassidy, Arakelian		51-61
Overall Outcome				42-61

REVERSED