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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte LISA LUST, DANIELYOUNGNER, and DOUG CARLSON

Appeal 2014-008161
Application 13/162,169[1]
Technology Center 2600

Before ELENI MANTIS MERCADER, JOHN P. PINKERTON, and STACY B. MARGOLIES, *Administrative Patent Judges*.

MARGOLIES, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal arises under 35 U.S.C. § 134(a) from the rejection of claims 1–3 and 5–21. No other claims are pending. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse and enter a new ground of rejection under 37 C.F.R. § 41.50(b).

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[1] According to Appellants, the real party in interest is Honeywell International Inc. App. Br. 2.

SUMMARY OF THE INVENTION

The invention is generally directed to an optical microphone. Abstract.

Claim 1 is illustrative of the subject matter on appeal and is reproduced below (with the disputed limitation emphasized):

> 1. An optical microphone comprising:
>
> a semiconducting laser that includes a p-n junction within a cavity;
>
> an acoustic membrane that receives coherent light emitted from the semiconducting laser and directs reflected light back toward the cavity, the phase of the reflected light being dependent upon a distance of the acoustic membrane from the cavity, wherein the acoustic membrane flexes in response to pressure waves; and
>
> *an electrical conductor that provides power to the semiconducting laser and monitors the p-n junction voltage of the semiconducting laser by directly outputting voltage levels that fluctuate during operation of the optical microphone.*

REFERENCE AND REJECTION

The Examiner rejected claims 1–3 and 5–21 under 35 U.S.C. § 102(b) as being anticipated by Carr (US 7,355,720 B1; issued Apr. 8, 2008). Final Act. 2–6.

ISSUE

The issue is whether the Examiner erred in finding that Carr discloses "an electrical conductor that provides power to the semiconducting laser and monitors the p-n junction voltage of the semiconducting laser by directly outputting voltage levels that fluctuate during operation of the optical

microphone," as recited in independent claim 1 and similarly recited in independent claims 16 and 20.

ANALYSIS

The Examiner finds that Carr's disclosure of an optical microphone with electrical wiring, external electrical connections, and contact pads meets the electrical conductor claim limitation. Final Act. 3; Ans. 4–5. The Examiner reasons that there is no structural difference between Carr's electrical conductors and the claimed electrical conductor, and that Carr's electrical conductors will perform the claimed function of outputting fluctuating voltage levels during operation of the optical microphone. Final Act. 3; Ans. 7–10.

Appellants argue that the Examiner fails to cite any support for the finding that Carr's conductors are capable of performing the claimed functions, and that Carr's conductors are not needed to perform the functions because Carr uses an external photodetector to detect the change in lasing characteristics of the VCSEL by monitoring its output light. Reply 3.

We are persuaded that the Examiner erred. Claim 1 requires an electrical conductor that "monitors the p-n junction voltage of the semiconducting laser by directly outputting voltage levels that fluctuate during operation of the optical microphone." The Examiner fails to provide sufficient evidence showing or reasoning explaining that Carr inherently discloses that the electrical wiring connecting VCSEL 16 to substrate 18 along with the external electrical connections and contact pads perform the claimed monitoring, given the presence of photodetector 32. *See In re Schreiber*, 128 F.3d 1473, 1478–79 (Fed. Cir. 1997). Carr discloses that

photodetector 32 detects the change in intensity of the beam of lasing light from VCSEL 16 and "generate[s] therefrom an electrical output signal which varies with the displacement of the light-reflective diffractive lens." Carr, 2:35–40. Carr discloses that photodetector 32 can be located in different locations with respect to VCSEL 16, including as part of the same apparatus (*id.* at 2:24–40) and on the same substrate as the VCSEL (*id.* at 2:18–23). Carr discloses an embodiment in which photodetector 32 is located beneath VCSEL 16 and is connected to substrate 18 via electrical wiring different from electrical wiring that connects VCSEL 16 to substrate 18. *Id.* at 7:12–16; *see also id.* at 5:18–42. The Examiner fails to sufficiently explain how Carr's electrical wiring connecting VCSEL 16 to substrate 18 necessarily "monitors the p-n junction voltage . . . by directly outputting voltage levels that fluctuate during operation of the optical microphone" given that photodetector 32 detects the change in intensity of the beam of lasing light from VCSEL 16 and generates an electrical output signal which varies with the displacement of the light-reflective diffractive lens. *Id.* at 2:35–40, 6:23–25. Thus, we reverse the Examiner's anticipation rejection of claim 1 and claims 2–15, which depend directly or indirectly from claim 1.

The Examiner relies on a similar analysis for rejecting independent claims 16 and 20 as anticipated by Carr. *See* Final Act. 2–3 and 6. For the reasons set forth above, we reverse the Examiner's rejection of claims 16–21.

We enter a new ground of rejection of claims 1–3 and 5–21 under 35 U.S.C. § 112, first paragraph (pre-AIA) for failing to meet the written description requirement. Claim 1 recites an optical microphone comprising,

among other things, "an electrical conductor that provides power to the semiconducting laser and monitors the p-n junction voltage of the semiconducting laser by directly outputting voltage levels that fluctuate during operation of the optical microphone." There is no description in Appellants' specification of such a conductor. The closest description is of bonded wire 23 and reads: "The bonded wire 23 is able to supply current from a current source to the semiconducting laser 12 in order to power the semiconducting laser 12 and also enable monitoring of the p-n junction 14 voltage." Spec. ¶ 21. A wire that *enables* monitoring, however, is different from *an electrical conductor that monitors*, as required by the claim. The specification does not describe a conductor that monitors as claimed. In others words, there is no disclosure of how a conductor (i.e., wire) monitors. Electrical wires (i.e., conductors) conduct electricity allowing transmission of signals, but in no way do they monitor. One skilled in the art at the time of the invention would, at best, attribute enablement of different functions such as monitoring through the transmission of signals, but the wires/conductors themselves do not monitor. We thus determine that Appellants' specification fails to provide written description support for claim 1 and its dependent claims 2, 3, 5–15. Because independent claim 16 likewise requires "using an electrical conductor to provide power to the semiconducting laser and monitor the p-n junction voltage of the semiconducting laser" and independent claim 20 similarly requires "wherein the electrical conductor monitors the voltage changes at the p-n junction," we reject those claims, and dependent claims 17–19 and 21, for failure to meet the written description requirement for the same reason.

Because our rationale for rejecting the pending claims differs from that of the Examiner, we enter a new ground of rejection.

DECISION

We reverse the Examiner's rejection of claims 1–3 and 5–21.

We enter a new ground of rejection of claims 1–3 and 5–21 under 35 U.S.C. § 112, first paragraph, pursuant to our authority under 37 C.F.R. § 41.50(b).

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides that "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review."

37 C.F.R. § 41.50(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

> (1) *Reopen prosecution*. Submit an appropriate amendment of the claims so rejected or new Evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .
>
> (2) *Request rehearing*. Request that the proceeding be reheard under § 41.52 by the Board upon the same Record. . . .

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

<u>REVERSED</u>
<u>37 C.F.R. § 41.50(b)</u>