

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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OTICON MEDICAL AB; OTICON MEDICAL LLC;  
WILLIAM DEMANT HOLDING A/S,  
Petitioner,

v.

COCHLEAR BONE ANCHORED SOLUTIONS AB,  
Patent Owner.

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IPR2017-01018<sup>1</sup>  
Patent 7,043,040 B2

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Before JAMES B. ARPIN, BARBARA A. PARVIS, and  
AMANDA F. WIEKER, *Administrative Patent Judges*.

WIEKER, *Administrative Patent Judge*.

JUDGMENT  
Final Written Decision on Remand  
Determining Challenged Claim Unpatentable  
*35 U.S.C. §§ 144, 318(a)*

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<sup>1</sup> Case IPR2017-01019 has been consolidated with this proceeding.

## I. INTRODUCTION

### *A. Background*

In IPR2017-01018 and IPR2017-01019, Oticon Medical AB, Oticon Medical LLC, and William Demant Holding A/S (“Petitioner”) filed Petitions requesting *inter partes* reviews of claims 1–13 of U.S. Patent No. 7,043,040 B2 (Ex. 1001, “the ’040 patent”), across the two petitions. Paper 1 (“Pet.”);<sup>2</sup> IPR2017-01019, Paper 1. We partially instituted trial in both proceedings, and consolidated them. Paper 7 (instituting), 27; IPR2017-01019, Paper 7 (instituting), 20; Paper 9 (consolidating).

After institution, Patent Owner filed a Response (Paper 23), as well as a statutory disclaimer of claims 1–3 and 13 (Paper 24). Petitioner filed a Reply (Paper 28). Moreover, as required by *SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348 (2018), we incorporated into this proceeding those grounds asserted by Petitioner for which institution previously had been denied, and authorized the parties to conduct supplemental briefing directed to the newly added grounds. Paper 33, 3–5. Specifically, Patent Owner filed a Supplemental Response (Paper 35, “Supp. Resp.”) and Petitioner filed a Supplemental Reply (Paper 40, “Supp. Reply”). An oral hearing was held on July 11, 2018. Paper 51.<sup>3</sup>

On August 21, 2018, we entered a Final Written Decision addressing claims 4–12 (claims 1–3 and 13 having been disclaimed), pursuant to 35

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<sup>2</sup> Unless noted by the prefix “–1019,” all citations to papers or exhibits herein refer to filings in IPR2017-01018.

<sup>3</sup> For a more complete recitation of the procedural background of this proceeding, please see pages 2–4 of the August, 21, 2018, Final Written Decision.

U.S.C. § 318(a) and 37 C.F.R. § 42.73. In that Decision, we determined that Petitioner had met its burden of demonstrating that challenged claims 4–6, 11, and 12 are unpatentable by a preponderance of the evidence, and determined that Petitioner had *not* met its burden of demonstrating that challenged claims 7–10 are unpatentable by a preponderance of the evidence. Paper 52 (“Final Dec.”).

Patent Owner appealed our Final Written Decision regarding claims 4–6, 11, and 12 to the U.S. Court of Appeals for the Federal Circuit (“the Federal Circuit”), and Petitioner cross-appealed our Final Written Decision regarding claims 7–10. Papers 53–54; *Cochlear Bone Anchored Solutions AB v. Oticon Med. AB*, 958 F.3d 1348, 1352 (Fed. Cir. 2020). The Federal Circuit affirmed the Final Written Decision as to claims 4–9 and 11–12, but vacated and remanded the Decision regarding claim 10. *Cochlear*, 958 F.3d at 1361.

Subsequently, we held a conference call with the parties to discuss the procedure on remand. During that call, we discussed the parties’ agreement that no additional briefing, submission of additional evidence, or oral argument was requested and, accordingly, none was authorized. Paper 55, 2. We further confirmed the parties’ agreement that the scope of the issues the Board will consider on remand is limited to:

(1) “whether the directivity-dependent-microphone alternative [of claim 10] is outside the scope of § 112, ¶6, because it recites a structure (the directivity dependent microphone) that sufficiently corresponds to the claimed directivity means”; and

(2) “whether any asserted prior-art challenges render the directivity-dependent-microphone alternative within claim 10 unpatentable, if considered on its own, and whether, if so, claim 10 as a whole is unpatentable on that ground.”

*Id.* (formatting added); *see also Cochlear*, 958 F.3d at 1360. Accordingly, this Final Written Decision on Remand addresses claim 10, consistent with the Federal Circuit’s decision.

### *B. Related Proceedings*

The parties represent that the ’040 patent is at issue in district court litigation, *Cochlear Ltd. et al. v. Oticon Medical AB et al.*, No. 1:16-cv-01700 (D. Colo.), and in an arbitration proceeding under the Arbitration Rules of the Arbitration Institute of the Stockholm Chamber of Commerce (SCC Arbitration No V2016/181). Pet. 1–2; Paper 4, 2.

### *C. The ’040 Patent*

The ’040 patent, entitled “Hearing Aid Apparatus,” issued on May 9, 2006. Ex. 1001, codes (45), (54). The ’040 patent explains that prior art bone anchored hearing aids were useful in treating certain types of hearing loss. *Id.* at 1:45–50, 1:62–67. The ’040 patent describes operation of these devices as follows:

In such a bone anchored hearing aid the sound information is mechanically transmitted by means of a vibrator via the skull bone to the inner ear of a patient. The hearing aid device is connected to an implanted titanium screw installed in the bone behind the poor, external ear[, i.e., the external portion of a deaf ear,] and the sound is transmitted via the skull bone to the cochlea (inner ear) of this poor ear.

*Id.* at 1:52–58. According to the ’040 patent, however, these devices were not used for patients with “unilateral hearing loss, i.e.[,] individuals with [] normal or [] slightly impaired hearing on one ear and a profound hearing loss in the inner ear on the other side of the head.” *Id.* at 1:8–11, 2:1–5. Consequently, the ’040 patent seeks to provide a hearing aid for

rehabilitation of unilateral hearing loss based on this bone conducting principle. *Id.* at 2:5–12.

Figure 1 of the '040 patent is reproduced below.

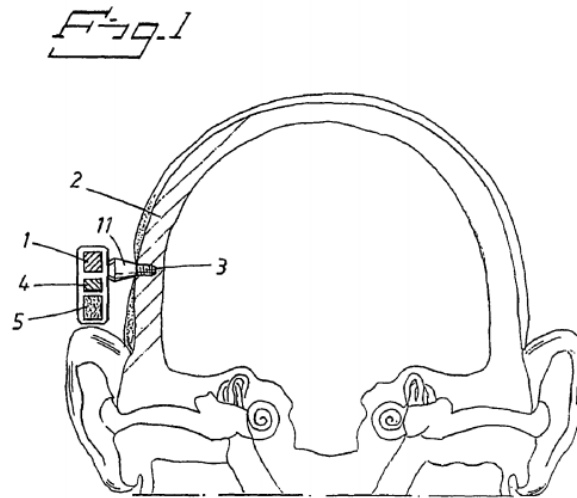


Figure 1 depicts a patient's skull with a hearing aid located near the patient's deaf ear. *Id.* at 2:33, 2:44–50 (also noting that the patient's other ear is “normal or [has] only [] slightly impaired hearing”). Skin penetrating spacer 11 is anchored to skull bone 2 by fixture 3. *Id.* at 2:50–53.

A housing at the opposite end of spacer 11 includes vibrator 1, microphone 5, and electronic circuitry 4. *Id.* at 2:50–55. Because high frequencies are attenuated during bone conduction across the skull, the frequency characteristics of the hearing aid are adapted such that “the amplification is higher in the treble . . . than in the bass.” *Id.* at 2:56–62.

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