

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

META PLATFORMS, INC.,
META PLATFORMS TECHNOLOGIES, LLC, and
TWISTED PIXEL GAMES, LLC,
Petitioner,

v.

EIGHT KHZ, LLC,
Patent Owner.

IPR2023-01023
Patent 10,798,509 B1

Before JUSTIN T. ARBES, LYNNE H. BROWNE, and
SCOTT RAEVSKY, *Administrative Patent Judges*.

BROWNE, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Meta Platforms, Inc., Meta Platforms Technologies, LLC, and Twisted Pixel Games, LLC (“Petitioner”) filed a Petition (Paper 2 (“Pet.”)), seeking *inter partes* review of claims 1–14 and 17–20 (the “challenged claims”) of U.S. Patent No. 10,798,509 B1 (Ex. 1001 (“the ’509 patent”). See Pet. 2. Eight KHZ, LLC (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”). With our prior authorization (Ex. 1144), Petitioner filed a Preliminary Reply (Paper 8, “Prelim. Reply”) and Patent Owner filed a Preliminary Sur-Reply (Paper 9, “Prelim. Sur-reply”).

Institution of an *inter partes* review is authorized by statute when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); see 37 C.F.R. § 42.108 (2022). Upon consideration of the Petition and Preliminary Response we conclude that the information presented shows that there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of at least one challenged claim of the ’509 patent.

A. *Related Matters*

The parties indicate that the ’509 patent is involved in *Eight kHz, LLC v. Meta Platforms, Inc.; Meta Platforms Technologies, LLC; Twisted Pixel Games, LLC*, 6:22-cv-00575-ADA (W.D. Tex. 2022) (“the related District Court litigation”). Pet. 71; Paper 5.

The parties identify U.S. Application Nos. 17/062,633 and 17/520,584 as applications related to the ’509 patent. Pet. 71; Paper 5. Petitioner additionally identifies U.S. Application Nos. 15/049,071, 15/424,901,

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15/944,796, 16/162,416, 16/445,268, and 16/938,936 as applications related to the '509 patent. Pet. 71.

Patent Owner identifies U.S. Patent Nos. 11,172,316, 10,440,489, 10,117,038, 9,980,072, and 9,591,427 as patents related to the '509 patent. Paper 5.

Additionally, the following proceedings before the Board involve the same parties as the instant proceeding: IPR2023-01003 (U.S. Patent No. 9,226,090 B1), IPR2023-01004 (U.S. Patent No. 9,282,196 B1), IPR2023-01005 (U.S. Patent No. 9,674,628 B1), IPR2023-01019 (U.S. Patent No. 10,368,179 B1), IPR2023-01020 (U.S. Patent No. 10,448,184 B1), IPR2023-01021 (U.S. Patent No. 10,917,737 B2), IPR2023-01022 (U.S. Patent No. 11,172,316 B1), and IPR2023-01024 (U.S. Patent No. 11,290,836 B2).

B. The '509 Patent (Ex. 1001)

The '509 patent for a “Wearable Electronic Device Displays a 3D Zone from Where Binaural Sound Emanates” relates to “creat[ing] and maintain[ing] virtual environments, virtual reality, and augmented reality.” Ex. 1001, code (54), 1:7–23. According to the '509 patent, Head Related Transfer Functions (“HRTFs”) may be used to artificially create localized binaural sound, but HRTFs vary depending on various individual physiological traits and are difficult to measure and obtain. *Id.* at 1:7–23. The '509 patent seeks to obtain more accurate HRTFs and “accurately localize binaural sound.” *Id.* at 2:59–65.

Accordingly, the '509 patent discloses a portable electronic device (“PED”) that “divides an area around a user into a three-dimensional ([‘3D[’]) zone” and a head-worn device that displays the zone when the

head-worn device detects that the user is leaving the zone and “plays binaural sound that emanates to the user from sound localization points ([‘]SLPs[’]) inside the zone.” Ex. 1001, code (57).

C. Challenged Claims

Petitioner challenges claims 1–14 and 17–20 of the ’509 patent. Pet. 4–70. Of the challenged claims, claims 1, 9, and 17 are independent. Independent claims 1 and 9 are illustrative of the challenged claims and are reproduced below with Petitioner’s labeling of the limitations for ease of reference.

1. 1[pre] A method comprising:

1[a] dividing, with a portable electronic device (PED) held in a hand of a user, an area around the user into a zone that includes multiples sound localization points (SLPs) from where binaural sound originates to the user;

1[b] determining, with a wearable electronic device (WED) worn on a head of the user, when the user is located inside the zone;

1[c] highlighting, while the user is located in the zone and with a display of the WED, one of the multiple SLPs in the zone when the PED held in the hand of the user is pointed at the one of the multiple SLPs in the zone; and

1[d] playing, with the WED worn on the head of the user, the binaural sound that emanates from the one of the multiple SLPs in response to the one of the multiple SLPs being pointed at by the PED held in the hand of the user.

Ex. 1001, 40:58–41–7.

9. 9[pre] A non-transitory computer readable storage medium storing instructions that one or more electronic devices execute as a method, the method comprising:

9[a] dividing, with a portable electronic device (PED) held in a hand of a user, an area around the user into a zone that includes sound localization points (SLPs) in empty space from where binaural sound originates to the user;

9[b] determining, with a wearable electronic device (WED) worn on a head of the user, when the user is located inside the zone;

9[c] determining, with the WED worn on the head of the user, when the user is leaving the zone; and

9[d] displaying, with the WED worn on the head of the user, a three dimensional (3D) virtual image of the zone in response to the WED determining that the user is leaving the zone.

Ex. 1001, 41:57–42:4.

D. The Alleged Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability (Pet. 2–3):¹

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–14, 17–20	103	Pedrotti, ² Jang, ³ Begault ⁴
1–14, 17–20	103	McCulloch, ⁵ Pedrotti, Flaks ⁶

E. Evidence

In support of its proposed grounds, Petitioner relies on the Declaration of Gregory F. Welch, Ph.D. (“Dr. Welch”). In support of its Preliminary

¹ Petitioner supports its challenge with the Declaration of Dr. Gregory F. Welch. Ex. 1003.

² U.S. Patent No. 9,851,786 B2, filed July 7, 2015, issued December 26, 2017 (Ex. 1005, “Pedrotti”).

³ U.S. Patent No. 8,520,872 B2, issued August 27, 2013 (Ex. 1006, “Jang”).

⁴ DURAND R. BEGAULT, NAT’L AERONAUTICS AND SPACE ADMIN., 3D SOUND FOR VIRTUAL REALITY AND MULTIMEDIA (2000) (Ex. 1007, “Begault”).

⁵ U.S. Patent No. 9,041,622 B2, issued May 26, 2015 (Ex. 1008, “McCulloch”).

⁶ U.S. Patent No. 8,767,968 B2, issued July 1, 2014 (Ex. 1009, “Flaks”).

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