

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD. and
SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner,

v.

STATON TECHIYA, LLC,
Patent Owner.

IPR2022-01098
Patent 11,217,237 B2

Before NATHAN A. ENGELS, MONICA S. ULLAGADDI, and
SCOTT B. HOWARD, *Administrative Patent Judges*.

ULLAGADDI, *Administrative Patent Judge*.

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

I. INTRODUCTION

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (“Petitioner”) filed a Corrected Petition (Paper 4, “Pet.”) requesting *inter partes* review of claims 1–14 (“the challenged claims”) of U.S. Patent No. 11,217,237 B2 (Ex. 1001, “the ’237 patent”), accompanied by the supporting Declaration of Dr. Nathaniel Polish (Ex. 1002). Staton Techiya, LLC (“Patent Owner”) filed a Preliminary Response (Paper 8, “Prelim. Resp.”), accompanied by the supporting Declaration of Mr. Christopher J. Struck (Ex. 2001). With our authorization, Petitioner filed a Reply (Paper 9, “Preliminary Reply” or “Prelim. Reply”) and Patent Owner filed a Sur-reply (Paper 10, “Preliminary Sur-reply” or “Prelim. Sur-reply”) addressing discretion under 35 U.S.C. § 314(a).

The standard for institution is set forth in 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition and the Preliminary 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 (2018); *see also* 37 C.F.R § 42.4(a) (2021) (“The Board institutes the trial on behalf of the Director.”). For the reasons discussed below, we do not institute an *inter partes* review of any of the challenged claims of the ’237 patent.

II. BACKGROUND

A. *Real Parties in Interest*

Petitioner identifies itself, Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc., as the real parties-in-interest. Pet. 69.

Patent Owner identifies Staton Techiya, LLC and Synergy IP Corporation as the real parties-in-interest. Paper 6, 1.

B. Related Matters

The parties indicate that the '237 patent is involved in *Staton Techiya, LLC v. Samsung Electronics Co., Ltd.*, Case No. 2:22-cv-00053 (E.D. Tex.). Pet. 70; Paper 6, 1.

Petitioner identifies patents and patent applications that are in the same family as the '237 patent. Pet. 70; Ex. 1026. A pending patent application that is a continuation of the '237 patent includes U.S. Application No. 17/483,190, filed on September 23, 2021 and published on April 21, 2022.

Petitioner further identifies the following proceedings before the Board in which Petitioner previously challenged other patents of Patent Owner:

IPR2022-00234 (challenging U.S. Patent No. 9,124,982, instituted);
IPR2022-00242 (challenging U.S. Patent No. 8,111,839, instituted);
IPR2022-00243 (challenging U.S. Patent No. 8,111,839, instituted);
IPR2022-00253 (challenging U.S. Patent No. 9,491,542, instituted);
IPR2022-00281 (challenging U.S. Patent No. 9,270,244, instituted);
IPR2022-00282 (challenging U.S. Patent No. 8,315,400, instituted);
IPR2022-00302 (challenging U.S. Patent No. 9,609,424, instituted);
IPR2022-00324 (challenging U.S. Patent No. 8,254,591, instituted);
IPR2022-00369 (challenging U.S. Patent No. 10,405,082, instituted);
IPR2022-00388 (challenging U.S. Patent No. 10,966,015, instituted);
and

IPR2022-00410 (challenging U.S. Patent No. 10,979,836, institution denied).

Pet. 70.

Petitioner further identifies the following proceedings before the Board in which, concurrently with this Petition, Petitioner challenges other patents of Patent Owner:

IPR2022-01078 (challenging U.S. Patent No. 11,057,701, instituted);

IPR2022-01099 (challenging U.S. Patent No. 11,244,666, institution denied); and

IPR2022-01106 (challenging U.S. Patent No. 11,039,259, pending institution decision).

Id. at 71.

C. The '237 Patent

The '237 patent is titled “Method and Device for Voice Operated Control.” Ex. 1001, code (54). The '237 patent concerns sound processing, particularly for voice-operated control, using an earpiece or earphone device in the presence of high-level background sounds. *Id.* at 1:17–39. Figure 1 of the '237 patent, reproduced below, shows an earpiece for voice operated control in accordance with an exemplary embodiment of the invention.

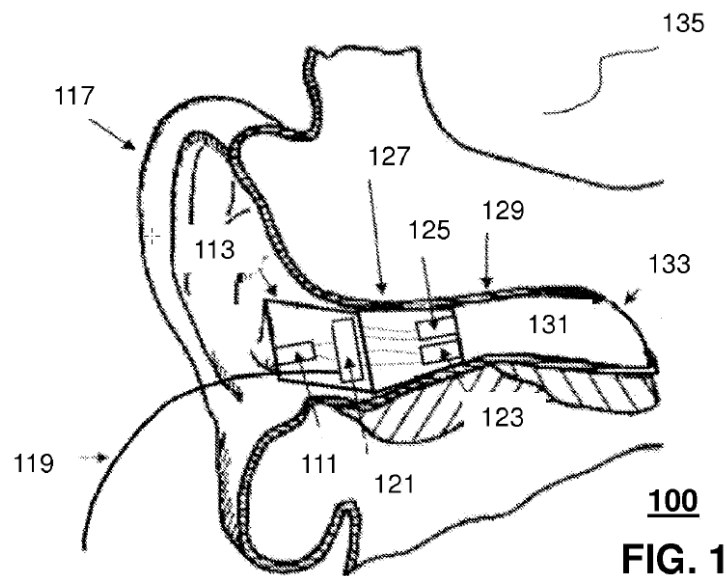


Figure 1 shows earpiece 100 placed in a user's ear canal 131. *Id.* at 4:22–25. Earpiece 100 includes ambient sound microphone (ASM) 111 for capturing ambient sound, ear canal receiver (ECR) (i.e., speaker) 125 for delivering audio content to ear canal 131, and ear canal microphone (ECM) 123 for measuring internal sounds such as spoken voice of the user and residual sounds passing through earpiece 100. *Id.* at 4:31–35, 4:45, 6:59–7:12. Earpiece 100 further includes processor 121 operatively coupled to ASM 111, ECR 125, and ECM 123. *Id.* at 5:22–25. Processor 121 compares the ambient sound and internal sound to determine if the user wearing earpiece 100 is speaking. *Id.* at 7:13–19. Specifically, processor 121 determines whether the sound captured at ASM 11 and ECM 123 corresponds to the user's voice or ambient sounds in the environment by using one or more decisional approaches, such as correlation analysis, level-detection, coherence, or spectral analysis. *Id.* at 7:24–30.

If spoken voice from the user is detected, the ambient sound received at ASM 111 and the internal sound received at ECM 123 are combined to produce a mixed signal. *Id.* at 7:40–64, Fig. 4. If earpiece 100 is delivering audio content to the user, the mixed signal is further mixed with the audio content in order to allow the user to hear themselves when speaking in the presence of audio content delivered to the ear canal via ECR 125. *Id.* at 9:30–54, Fig. 4. According to the '237 patent, earpiece 100 “can further represent a single operational device or a family of devices configured in a master-slave arrangement, for example, a mobile device and an earpiece.” *Id.* at 6:32–35.

In Figure 5, the '237 patent depicts an embodiment which takes as input “the ambient sound microphone (ASM) signals from the left 578 and

right 582 earphone devices and the Ear Canal Microphone (ECM) signals from the left 580 and right 584 signals.” *Id.* at 10:6–10.

D. Illustrative Claim

Claim 1, reproduced below, is the sole independent claim.

[1pre] An earphone device, comprising:

[1a] an ambient microphone that generates a first acoustic signal where the ambient microphone is configured to measure sound in an ambient environment;

[1b] an ear canal microphone that generates a second acoustic signal where the ear canal microphone is configured to measure sound closer to a user’s ear canal than the ambient microphone;

[1c] a speaker configured to play an audio content signal; and

[1d] a processor communicatively linked to the ambient microphone, the ear canal microphone, and the speaker, wherein the processor is configured to perform operations comprising:

[1e] detecting a voice based on an analysis of the first acoustic signal and the second acoustic signal, and wherein the analysis of the first acoustic signal and the second acoustic signal uses at least one of a coherence analysis, correlation analysis, level-detection, spectral analysis, or a combination thereof;

[1f] mixing the first acoustic signal with the audio content signal to generate a mixed audio content signal; and

[1g] sending the mixed audio content signal to the speaker.

Ex. 1001, 12:38–59 (Petitioner’s bracketed numbering added).

E. Asserted Grounds

Petitioner presents the following challenges as summarized in the chart below. Pet. 2.

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1A	1, 2, 5, 10–14	103(a) ¹	Platz ² , Kvaløy ³
1B	3, 4	103(a)	Platz, Kvaløy, Hotvet ⁴
1C	6–9	103(a)	Platz, Kvaløy, Kondo ⁵
2A	1, 5, 10–12, 14	103(a)	Dijkstra ⁶ , Kvaløy, Melanson ⁷
2B	2–4, 13	103(a)	Dijkstra, Kvaløy, Melanson, Hotvet
2C	6–9	103(a)	Dijkstra, Kvaløy, Melanson, Kondo

III. ANALYSIS

A. Legal Standards

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284 (2011) (“AIA”), included revisions to 35 U.S.C. § 103 that became effective after the effective filing date of the challenged claims. The earliest possible filing date is April 13, 2007. Ex. 1001, code (60). Therefore, we apply the pre-AIA version of 35 U.S.C. § 103(a).

² U.S. Patent Pub. No. 2010/0119077 A1, published May 13, 2010, to Platz et al. (Ex. 1005, “Platz”).

³ U.S. Patent No. 6,728,385 B2, issued April 27, 2004, to Kvaløy et al. (Ex. 1006, “Kvaløy”).

⁴ U.S. Patent No. 5,550,923, published August 27, 1996, to Hotvet (Ex. 1007, “Hotvet”).

⁵ Japanese Patent No. 3353701 B2, issued December 3, 2002, to Kondo et al. (Ex. 1008, “Kondo”).

⁶ European Patent Pub. No. EP 1640972 A1, published March 29, 2006, to Dijkstra et al. (Ex. 1009, “Dijkstra”).

⁷ U.S. Patent No. 7,903,825 B1, issued March 8, 2011, to Melanson (Ex. 1006, “Melanson”).

(2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness.⁸ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). According to Petitioner,

[a] person of ordinary skill in the art at the time of the alleged invention of the ’237 patent (“POSITA”), which for purposes of this proceeding is no earlier than April 13, 2007, would have had a bachelor’s degree in electrical engineering, computer science, or a similar field and two years of experience in the design of digital audio systems and associated signal processing. The POSITA could have also obtained similar knowledge and experience through other means.

Pet. 7 (citing Ex. 1002 ¶ 20). Patent Owner “applies the level of ordinary skill in the art that is proposed in the Petition.” Prelim. Resp. 14.

At this stage of the proceeding, we adopt Petitioner’s definition of the level of skill in the art, which is consistent with the disclosure of the ’237 patent and asserted prior art of record.

⁸ Patent Owner does not present objective evidence of nonobviousness at this stage of the proceeding.

C. Claim Construction

In *inter partes* review proceedings, we construe claims using the same claim construction standard that would be used in a civil action under 35 U.S.C. § 282(b), as articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc), and its progeny. *See* 37 C.F.R. § 42.100(b).

Petitioner contends that “no express constructions of the claims are necessary to assess whether the prior art reads on the Challenged Claims” and that “the claims should be given their plain and ordinary meaning.” Pet. 8. Patent Owner “proposes that all claim terms be afforded their plain and ordinary meaning as understood by a person of ordinary skill in the art at the time of the invention of the ’237 patent.” Prelim. Resp. 14.

Below, we address why Petitioner’s challenges do not sufficiently show that either the combination of Platz and Kvaløy or the combination Dijkstra, Kvaløy, and Melanson teaches or suggest “level-detection” as recited in claim 1 because Petitioner does not explain how we should interpret “level-detection” or what this term encompasses.

D. Discretion to Deny Under 35 U.S.C. § 314(a)

The parties present arguments regarding exercising our discretion to deny institution under 35 U.S.C. § 314(a). Pet. 66–69; Prelim. Resp. 30–38; Prelim. Reply 1–5; Prelim. Sur-reply 1–5. For the reasons discussed below, we deny institution on the merits of Petitioner’s challenges and as such, do not address the parties’ arguments regarding the issue of whether to exercise our discretion to deny institution under 35 U.S.C. § 314(a).

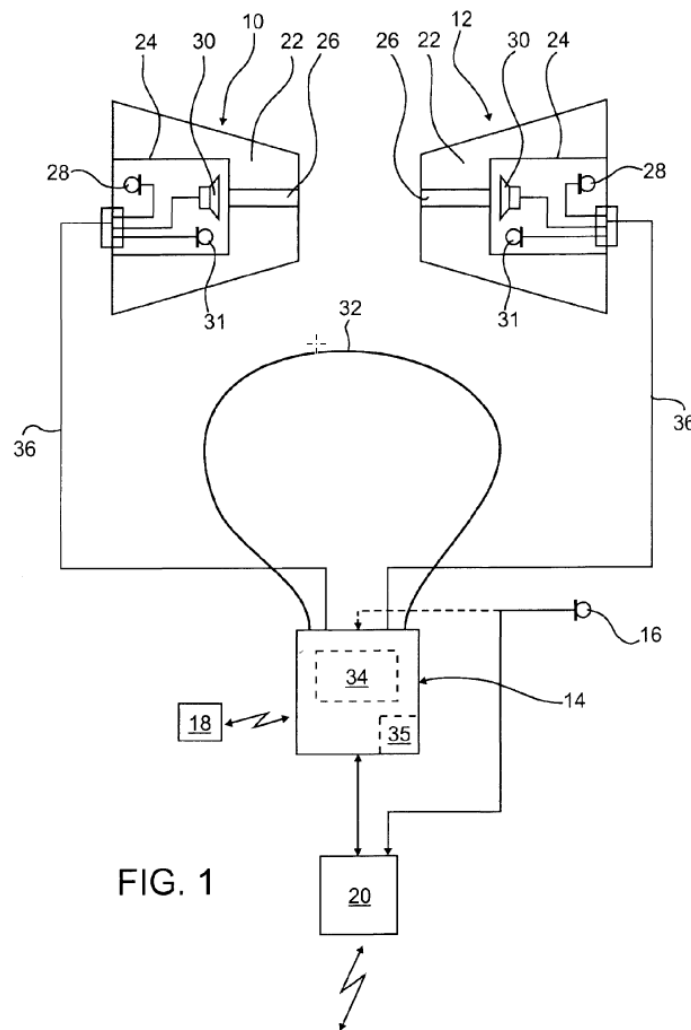
E. Ground 1A: Obviousness over Platz and Kvaløy

Petitioner argues that claims 1, 2, 5, and 10–14 would have been obvious in view of Platz and Kvaløy. Pet. 8–33. For the reasons that follow,

we are not persuaded that Petitioner sufficiently demonstrates a reasonable likelihood of prevailing with respect to any of claims 1, 2, 5, and 10–14.

1. Overview of Platz

Platz is titled “Active Hearing Protection System.” Ex. 1005, code (54). Platz relates to providing hearing protection to a user. *Id.* ¶ 12. Figure 1 of Platz, reproduced below, shows a hearing protection system to be worn by the user.



As shown in Figure 1, the hearing protection system comprises left and right earplugs 10, 12, each providing acoustic attenuation and comprising active unit 24. *Id.* ¶ 2. Active unit 24 comprises microphone 28 for capturing audio

signals from ambient sound and loudspeaker 30 for providing audio signals into the user's ear canal via sound channel 26. *Id.* ¶ 22. The hearing protection system further comprises wearable central unit 14 to be worn at the user's body. *Id.* ¶ 23. Central unit 14 comprises audio signal processing unit 34 for receiving and processing the audio signals captured by microphones 28 and for supplying loudspeakers 30 with audio signals to be reproduced in the user's ear. *Id.*

Central unit 14 is connected to communication device 20 such as a mobile phone or walkie-talkie. *Id.* ¶¶ 20, 24. Once an audio signal from communication device 20 is detected, central unit 14 switches to a “communication mode” in which input from right ear microphone 28 is replaced by the audio signals from communication device 20. *Id.* ¶ 35. A mixture of audio signals representative of the ambient sound as captured by left ear microphone 28 and the audio signals provided by communication device 20 is then provided to both loudspeakers 30. *Id.* ¶¶ 35–36. For bidirectional communication, active unit 24 may include inner microphone 31 to capture primarily the user's voice, in which case central unit 14 performs blind source separation (BSS) on the audio signals provided by microphones 28, 31 in order to separate the user's voice from background noise. *Id.* ¶ 25, 42.

2. Overview of *Kvaløy*

Kvaløy is titled “Voice Detection and Discrimination Apparatus and Method.” Ex. 1006, code (54). *Kvaløy* relates to voice detection and discrimination in a hearing protection arrangement that includes voice activated control. *Id.* at 1:16–44. Specifically, *Kvaløy* discloses voice detection in an earplug shaped hearing protective voice communication terminal. *Id.* at 3:12–14, Fig. 1. The disclosed earplug includes outer

microphone M1 for picking up ambient sound and inner microphone M2 for picking up sound in the meatus or ear canal. *Id.* at 4:13–17, 5:3–4, 5:11–15.

Kvaløy discloses:

When the apparatus according to the invention is carried by a user in a noisy environment there will normally be a significant difference in the sound, also referred to as acoustic field or acoustic signal strength between the inside and outside of the apparatus, as detected by the two electroacoustic transducer elements **M1** and **M2**. When the user of the hearing protector speaks, the signal from his voice produces a signal in the inner electroacoustic transducer element **M2**. The difference in signal strength as detected by the two electroacoustic transducer elements **M1**, **M2** then decreases. When such a decrease in signal difference is detected, this is interpreted as a voice signal being present. . . .

Id. at 4:42–53. Kvaløy further discloses:

When the difference signal [representing the difference in signal strength from microphones **M1**, **M2**] is less negative than a certain limit a decision is made that the user of the equipment is speaking. When the difference signal is more negative than this limit the user is considered not to be speaking.

Id. at 6:55–7:4.

3. Independent Claim 1

[1e] “detecting a voice based on an analysis of the first acoustic signal and the second acoustic signal, and wherein the analysis of the first acoustic signal and the second acoustic signal uses at least one of a coherence analysis, correlation analysis, level-detection, spectral analysis, or a combination thereof;”

Petitioner states that “*Platz* . . . arguably does not provide details for how to detect a voice based on an analysis of the audio signals received from microphones 28, 31.” Pet. 17 (citing Ex. 1002 ¶ 73 (citing Ex. 1005 ¶ 38)).

Petitioner contends that “*Kvaløy* provides for ‘voice detection’ in noisy

environments ‘with improved voice detection capability and which has a reduced false activation due to acoustic noise.’” *Id.* (citing Ex. 1006, 2:14–24; Ex. 1002 ¶ 74). Petitioner contends that “*Kvaløy* describes an embodiment ‘where the voice detection and discrimination is included in an earplug based hearing protective voice communication terminal.’” *Id.* (citing 3:12–14, 3:39–41).

According to Petitioner, “*Kvaløy* teaches that, when a user speaks, ‘the signal from his voice produces a signal in the inner [microphone] M2,’ causing the difference between the signals detected by microphones M1 and M2 to decrease.” *Id.* at 18–19 (citing Ex. 1006, 4:42–52) (alteration by Petitioner). “*Kvaløy* discloses that, ‘[w]hen such a decrease in signal difference is detected, this is interpreted as a voice signal being present.’” *Id.* at 19 (citing Ex. 1006, 4:52–55) (alteration by Petitioner). Petitioner contends that “*Kvaløy* discloses performing a signal strength comparison of the signals from outer microphone M1 and inner microphone M2 to produce a difference signal representing the difference between the strength of the two signals.” *Id.* (citing Ex. 1006, 6:50–65). Petitioner further contends that

[a] POSITA would have understood *Kvaløy*’s detection of a user’s voice by comparing the strength of two signals to teach or suggest detecting voice using level detection for at least the reason that it is consistent with how the ’237 patent describes detecting voice based on level-detection—i.e., by “compar[ing] a Sound Pressure Level (SPL) between the ambient sound and internal sound to determine if the sound originates from the wearer’s voice.”. Having reviewed *Kvaløy*, a POSITA would have recognized that the strength of the signals comprise sound pressure levels of the signals.

Id. (citing Ex. 1001, 8:28–38; Ex. 1002 ¶¶ 78, 79 (citing Exs. 1005, 1012⁹)).

Patent Owner’s Arguments

Patent Owner contends that Kvaløy does not teach or suggest that “the analysis of the first acoustic signal and the second acoustic signal uses at least one of a coherence analysis, correlation analysis, level-detection, spectral analysis, or a combination thereof” and in particular, does not teach the level-detection analysis, because it “discloses a difference value representing the difference in the acoustic signal strength between the ECM signal and the ASM signal.” Prelim. Resp. 15–16. Mr. Struck testifies that “[a] person of ordinary skill in the art would have understood that coherence analysis, correlation analysis, level-detection, and spectral analysis (i.e., the methods included in claim 1 of the ’237 patent) are different than a difference method of signal comparison (i.e., the method that Kvaløy discloses).” Ex. 2001 ¶ 46.

Patent Owner further contends that, “[u]nder the method employed by Kvaløy, the levels of each of the inner and outer signals are not considered by, for example, comparison to a threshold,” and instead, “only the difference between the two signals is considered.” Prelim. Sur-reply 1. Thus, according to Patent Owner, “two relatively low signals (inner and outer) and two relatively high signals would yield the same decision as to the presence of a voice so long as the difference between the two signals is the same.” *Id.* Patent Owner further contends that “Petitioners also do not argue that ‘level-detection’ should be construed differently than its ordinary meaning.” *Id.* at 2 (citing Pet. 8). Patent Owner takes the position that the level-detection

⁹ U.S. Patent No. 7,844,248 B2, filed August 11, 2006, issued November 30, 2010, to Sotack (Ex. 1012, “Sotack”).

analysis includes comparison of an ambient sound or internal sound to a predetermined threshold, but excludes comparison of sound pressure levels.

Id. (Patent Owner arguing that “Petitioners appear to rely on the ’237 patent’s disclosure that, *after* a positive determination that either an ambient sound or internal sound exceeds a predetermine threshold (i.e., *after* the ‘level detection’ analysis), sound pressure levels are compared” (citing Ex. 1001, 8:28–38; Prelim. Reply 1)).

Beyond asserting that “level-detection” should be given its plain and ordinary meaning, Petitioner does not present argument or evidence that informs us how to interpret this term. Pet. 7–8 (“Given the close correlation and substantial identity between the prior art references and the Challenged Claims, Petitioners believe that no express constructions of the claims are necessary to assess whether the prior art reads on the Challenged Claims. Thus, the claims should be given their plain and ordinary meaning.”). The record, however, does not make clear what the plain and ordinary meaning of “level-detection” is. Petitioner’s challenge does not indicate, for example, whether Petitioner considers “level-detection” a term of art, or whether Petitioner takes the position that Patent Owner acted as its own lexicographer. *See generally* Pet.

With respect to the claimed level-detection method, the ’237 patent discloses that

[i]n [an] . . . arrangement based on level detection, the processor **121** determines if either the ambient sound or internal sound exceeds a predetermined threshold, and if so, compares a Sound Pressure Level (SPL) between the ambient sound and internal sound to determine if the sound originates from the wearer’s voice. In general, the SPL at the ECM **123** is higher than the SPL at the ASM **111** if the wearer of the earpiece **100** is speaking. Accordingly, a first metric in determining whether the sound

captured at the ASM **111** and ECM **123** is to compare the SPL levels at both microphones.

Ex. 1001, 8:28–38. Based on this disclosure, Patent Owner’s position that “level-detection” as disclosed in the ’237 patent requires “determin[ing] if either the ambient sound or internal sound exceeds a predetermined threshold” prior to “compar[ing] a Sound Pressure Level (SPL) between the ambient sound and internal sound” has merit. Prelim. Resp. 2. Kvaløy discloses that

When the apparatus according to the invention is carried by a user in a noisy environment there will normally be a significant difference in the sound, also referred to as acoustic field or acoustic signal strength between the inside and outside of the apparatus, as detected by the two electroacoustic transducer elements **M1** and **M2**. When the user of the hearing protector speaks, the signal from his voice produces a signal in the inner electroacoustic transducer element **M2**. The difference in signal strength as detected by the two electroacoustic transducer elements **M1**, **M2** then decreases. When such a decrease in signal difference is detected, this is interpreted as a voice signal being present, and an output for controlling a voice operated system **29** is generated by the output means **13**.

Ex. 1006, 4:42–55. Kvaløy further discloses that

The signal from electroacoustic transducer element **M1** is amplified in amplifier **21** and filtered in a bandpass filter **22** before it is fed to a signal strength detector. Likewise the signal from electroacoustic transducer element **M2** is amplified in filtered in bandpass filter **25** before it is fed to a signal strength detector **26**. The outputs from the two signal strength detectors **23**, **26** are compared in the signal strength comparison unit **27** which also provides as an output a difference signal representing the difference in signal strength from the two electroacoustic transducer elements. This difference signal output is input to the decision block **28**. The difference signal has a negative dB value. When the difference signal is less negative than a certain limit a decision is made that the user of the equipment is speaking.

When the difference signal is more negative than this limit the user is considered not to be speaking.

Id. at 6:55–7:4.

We agree with Patent Owner that Petitioner has not sufficiently shown that the portions of Kvaløy cited by Petitioner teach or suggest comparing, individually, the signals detected by electrostatic transducer elements M1 and M2 to a predetermined threshold. *Compare id.*, with Ex. 1001, 8:28–30; Prelim. Resp. 2. Petitioner does not argue or explain why we should exclude from the construction of “level-detection” the initial comparison to a threshold, which is disclosed in close proximity to the disclosure of an “arrangement based on level detection” in the ’237 patent, and we cannot readily discern any such reason from the ’237 patent or the record. *See* Pet. 17–21; Ex. 1002 ¶¶ 73–83.

For the foregoing reasons, we are not persuaded that Petitioner meets its burden and sufficiently shows that the combination of Platz and Kvaløy teaches or suggests limitation 1[e], and in specific that Kvaløy teaches or suggests “level-detection” as recited in limitation 1[e] of independent claim 1.

4. Grounds 1A, 1B, and 1C—Dependent Claims 2–14

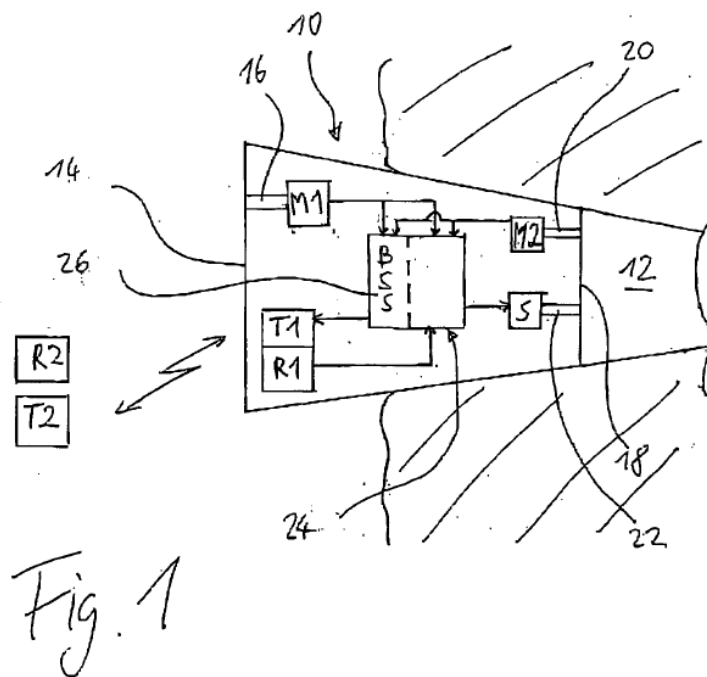
In Ground 1A, Petitioner argues that dependent claims 2, 5, and 10–14 would have been obvious over Platz and Kvaløy. Pet. 23–33. In Ground 1B, Petitioner argues that claims 3 and 4 would have been obvious in view of Platz, Kvaløy, and Hotvet. *Id.* at 33–37. In Ground 1C, Petitioner argues that claims 6–9 would have been obvious in view of Platz, Kvaløy, and Kondo. *Id.* at 38–44. Petitioner’s showing for dependent claims 3, 4, and 6–9 does not cure the deficiencies noted above with respect to independent claim 1.

F. Ground 2A: Obviousness over Dijkstra, Kvaløy, and Melanson

Petitioner argues that claims 1, 5, 10–12, and 14 would have been obvious in view of Dijkstra, Kvaløy, and Melanson. Pet. 44–58. For the reasons that follow, we are not persuaded that Petitioner sufficiently demonstrates a reasonable likelihood of prevailing with respect to any of claims 1, 5, 10–12, and 14.

1. Overview of Dijkstra

Dijkstra is titled “System and method for separation of a users voice from ambient sound.” Ex. 1009, code (54). Figure 1 of Dijkstra, reproduced below, shows a device to be worn at the user’s ear.



As shown in Figure 1, device 10 is to be worn at the user's ear. *Id.*, code (57). Device 10 comprises first microphone M1 oriented outwardly towards the environment, second microphone M2 oriented inwardly toward the user's ear canal 12, and audio signal processing unit 24, 26 for processing audio signals from microphones M1, M2 by a blind source

separation (BSS) algorithm adapted to separate the user's voice from ambient sound. *Id.* Device 10 further comprises speaker S adapted to provide an external audio signal to the user's ear. *Id.* ¶ 17; *see id.* ¶¶ 29, 30.

2. Overview of Melanson

Melanson discloses headphones with a personal audio playback device having gain control responsive to environmental sounds. Ex. 1010, code (57). Melanson discloses that a microphone input can be “mixed with the program audio, so that the user is made more aware of the external environment while the sound is present.” *Id.* at 7:19–22.

3. Independent Claim 1

[1e] “detecting a voice based on an analysis of the first acoustic signal and the second acoustic signal, and wherein the analysis of the first acoustic signal and the second acoustic signal uses at least one of a coherence analysis, correlation analysis, level-detection, spectral analysis, or a combination thereof;”

Petitioner contends that “*Dijkstra* discloses audio signal processing unit 24 including a unit 26 configured to apply a BSS algorithm to audio signals provided by microphone M1 and microphone M2 in order to separate voice from ambient sound within the signals.” Pet. 50 (citing Ex. 1009 ¶¶ 29, 31). Petitioner acknowledges that “*Dijkstra*, however, does not disclose detecting a voice based on an analysis of the audio signals received from microphones M1 and M2.” *Id.* (citing Ex. 1002 ¶ 168). Petitioner contends that

Kvaløy discloses a processor configured to detect a user's voice based on the signal from an outer microphone M1 and the signal from an inner microphone M2 (“detecting a voice based on an analysis of the first acoustic signal and the second acoustic signal”) by comparing the strength of the two signals (“wherein

the analysis of the first acoustic signal and the second acoustic signal uses . . . level-detection”).

Id. at 50–51 (citing Ex. 1002 ¶ 169; Pet. § VIII.A.1.f) (alteration by Petitioner). That is, Petitioner relies on Kvaløy in the same manner that it did in Ground 1A applying Platz and Kvaløy. For the reasons set forth above in Section III.E, we are not persuaded that Petitioner’s challenge sufficiently shows that the combination of Dijkstra, Kvaløy, and Melanson teaches or suggests limitation 1[e]. More particularly, we are not persuaded that Petitioner shows that that Kvaløy teaches “level-detection” as set forth in claim 1.

4. Grounds 2A, 2B, and 2C–Dependent Claims 2–14

In Ground 2A, Petitioner argues that dependent claims 5, 10–12, and 14 would have been obvious over Dijkstra, Kvaløy, and Melanson. Pet. 55–58. In Ground 2B, Petitioner argues that claims 2–4 and 13 would have been obvious in view of Dijkstra, Kvaløy, Melanson, and Hotvet. *Id.* at 58–62. In Ground 2C, Petitioner argues that claims 6–9 would have been obvious in view of Dijkstra, Kvaløy, Melanson, and Kondo. *Id.* at 63–65. Petitioner’s showing for dependent claims 2–14 does not cure the deficiencies noted above with respect to independent claim 1.

IV. CONCLUSION

For the foregoing reasons, we conclude that the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that any of the challenged claims of the ’237 patent are unpatentable.

V. ORDER

In consideration of the foregoing, it is hereby:

IPR2022-01098
Patent 11,217,237 B2

ORDERED the Petition is *denied* as to all challenged claims, and no trial is instituted.

IPR2022-01098
Patent 11,217,237 B2

For PETITIONER:

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