UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/987,396	08/07/2020	Steven Wayne Goldstein	CONT-16669490

CONFIRMATION NO. 7859

POWER OF ATTORNEY NOTICE

OC000000061805333

176134
PV Law LLP
5335 Wisconsin Avenue, N.W., Suite 440
Washington, DC 20015

Date Mailed: 09/15/2023

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/07/2023.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/sltorres/

Samsung v. Techiya
IPR2024-01003
Exhibit 1008

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/987,396	08/07/2020	Steven Wayne Goldstein	CONT-16669490

CONFIRMATION NO. 7859

176134
PV Law LLP
5335 Wisconsin Avenue, N.W., Suite 440
Washington, DC 20015

POA ACCEPTANCE LETTER

OC000000061805343

Date Mailed: 09/15/2023

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/07/2023.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/sltorres/

PTO/SB/81B (12-08)
Approved for use through 09/30/2025. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it displays a valid OMB control number

REEXAMINATION – PATENT OWNER POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Control Number(s)	90/019,169
Filing Date(s)	February 24, 2023
First Named Inventor	Steven Wayne Goldstein
Title	Method and Device for Acute Sound Detection and Reproduction
Patent Number	11,244,666
Examiner Name	Ge, Yuzhen
Attorney Docket No(s).	3-00051-666EPR

I hereby revoke all previous patent owner powers of attorney given in the above-identified reexamination proceeding control number(s).

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the Customer Number identified in the box at right as my/our attorney(s) or agent(s) to prosecute the proceeding(s) identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

176134

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) to prosecute the proceeding(s) identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified reexamination proceeding control number(s) (more than one may be changed **only** if they are merged proceedings) to be:

☒ The address associated with the above-identified Customer Number.

OR

☐ The address associated with the Customer Number identified in the box at right:

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the:

☐ Inventor, having ownership of the patent being reexamined.

OR

☒ Patent owner.
Statement under 37 CFR 3.73(b) (Form PTO/SB/96) submitted herewith or filed on _____.

SIGNATURE of Inventor or Patent Owner

Signature	/John P. Keady/	Date	9/6/2023
Name	John P. Keady	Telephone	571-606-1291
Title and Company	Chief Technology Officer and Assistant General Counsel, Staton Techiya, LLC		

NOTE: Signatures of all the inventors or patent owners of the entire interest or their representative(s) are required. If more than one signature is required, submit multiple forms, check the box below, and identify the total number of forms submitted in the blank below.

☐ A total of _____ forms are submitted.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0035. Public burden for this form is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **If filing this completed form by mail, send to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Copied from 90019169 on 09/08/2023

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013). https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf

Routine uses of the information in this record may include disclosure to: 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law; 2) a Federal, state, local, or international agency, in response to its request; 3) a contractor of the USPTO having need for the information in order to perform a contract; 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record; 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record; 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations; 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals; 8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)); 9) the Office of Personnel Management (OPM) for personnel research purposes; and 9) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Additional Uses

Additional USPTO uses of the information in this record may include disclosure to: 1) the International Bureau of the World Intellectual Property Organization, if the record is related to an international application filed under the Patent Cooperation Treaty; 2) the public i) after publication of the application pursuant to 35 U.S.C. 122(b), ii) after issuance of a patent pursuant to 35 U.S.C. 151, iii) if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections, or an issued patent, or iv) without publication of the application or patent under the specific circumstances provided for by 37 CFR 1.14(a)(1)(v)-(vii); and/or 3) the National Archives and Records Administration, for inspection of records.

Copied from 90019169 on 09/08/2023

PTO/SB/96 (11-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Staton Techiya, LLC

Application No./Patent No.: 11,244,666 Filed/Issue Date: February 8, 2022

Titled:
Method and Device for Acute Sound Detection and Reproduction

Staton Techiya, LLC, a Corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;

2. ☐ an assignee of less than the entire right, title, and interest in
(The extent (by percentage) of its ownership interest is _____ %); or

3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel_____, Frame_____, or a copy* is attached.

OR

B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Steven Wayne Goldstein To: Personics Holdings, Inc.

The document was recorded in the United States Patent and Trademark Office at
Reel 054756, Frame 0398, or a copy* is attached.

2. From: John Usher To: Personics Holdings, Inc.

The document was recorded in the United States Patent and Trademark Office at
Reel 054756, Frame 0398, or a copy* is attached.

3. From: Marc Andre Boillot To: Personics Holdings, Inc.

The document was recorded in the United States Patent and Trademark Office at
Reel 054756, Frame 0398, or a copy* is attached.

☒ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ *As required by 37 CFR 3.73(b)(1)(i), if a copy/copies is/are attached, the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/John P. Keady/ 9/6/2023
Signature Date

John P. Keady CTO and Assistant General Counsel
Printed or Typed Name Title or Registration Number

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Copied from 90019169 on 09/08/2023

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Copied from 90019169 on 09/08/2023

Statement under 37 CFR 3.73(b)
Supplemental Sheet to PTO/SB/96

Patent Owner:	Staton Techiya, LLC
Patent No.:	11/244,666
Issued:	February 8, 2022
Titled:	Method and Device for Acute Sound Detection and Reproduction

The chain of title from the inventors to the current assignee continues as follows:

4. From: Personics Holdings, Inc. To: Personics Holdings, LLC
The document was recorded in the United States Patent and Trademark Office at Reel 054756, Frame 0427

5. From: Personics Holdings, Inc. Personics Holdings, LLC To: DM Staton Family Limited Partnership
The document was recorded in the United States Patent and Trademark Office at Reel 054756, Frame 0451

6. From: DM Staton Family Limited Partnership To: Staton Techiya, LLC
The document was recorded in the United States Patent and Trademark Office at Reel 054756, Frame 0494

Copied from 90019169 on 09/08/2023

Trials@uspto.gov
571-272-7822

Paper 10
Date: January 3, 2023

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.

IPR2022-01099
Patent 11,244,666 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 Petition (Paper 3, "Pet.") requesting *inter partes* review of claims 1, 2, and 8–11 ("the challenged claims") of U.S. Patent No. 11,244,666 B2 (Ex. 1001, "the '666 patent"), accompanied by the supporting Declaration of Dr. Nathaniel Polish (Ex. 1002). Staton Techiya, LLC ("Patent Owner") filed a Preliminary Response (Paper 7, "Prelim. Resp."), accompanied by the supporting Declaration of Dr. David Kleinschmidt (Ex. 2001). With our authorization, Petitioner filed a Reply (Paper 8, "Preliminary Reply" or "Prelim. Reply") and Patent Owner filed a Sur-reply (Paper 9, "Preliminary Sur-reply" or "Prelim. Sur-reply") addressing discretion under 35 U.S.C. § 314(a) and whether Platz qualifies as prior art.

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 '666 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. 71.

Patent Owner identifies Staton Techiya, LLC and Synergy IP Corporation as the real parties-in-interest. Paper 5, 1.

B. Related Matters

The parties indicate that the '666 patent is involved in *Staton Techiya, LLC v. Samsung Electronics Co., Ltd.*, Case No. 2:22-cv-00053 (E.D. Tex.). Pet. 71; Paper 5, 1.

Petitioner identifies patents and patent applications that are in the same family as the '666 patent. Pet. 71; Ex. 1015. Pending patent applications that are continuations of the '666 patent include:

U.S. Appln. No. 17/321,892, filed on May 17, 2021 and published on September 2, 2021; and

U.S. Appln. No. 17/592,143, filed on February 3, 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. 71–72.

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

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

IPR2022-01098 (challenging U.S. Patent No. 11,217,237, institution denied); and

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

Id. at 72.

C. The '666 Patent

The '666 patent is titled "Method and Device for Acute Sound Detection and Reproduction." Ex. 1001, code (54). The '666 patent concerns monitoring sound directed to an occluded ear and more particularly, concerns an earpiece that detects acute sounds and allows the acute sounds to be reproduced in an ear canal of the occluded ear. *Id.* at 1:23–28. Figure 1 of the '666 patent, reproduced below, shows an exemplary embodiment of an earpiece.

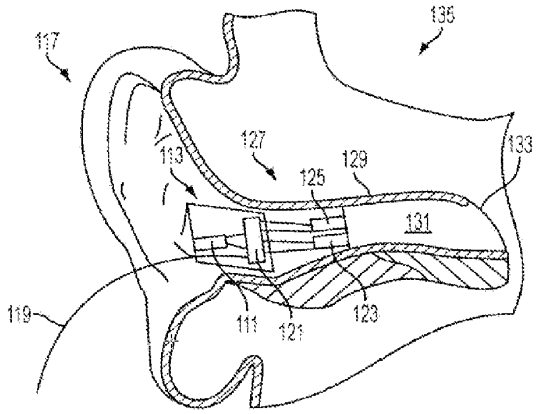


FIG. 1

Figure 1 shows an earpiece including electro-acoustical assembly 113 placed in ear canal 131 of user 135. *Id.* at 4:57–60. The earpiece includes ambient sound microphone (ASM) 111 for capturing ambient sound, ear canal receiver (ECR) (i.e., speaker) 125 for delivering audio to ear canal 131, and ear canal microphone (ECM) 123 for assessing a sound exposure level within ear canal 131. *Id.* at 4:66–5:3, 5:14. The earpiece further includes a processor operatively coupled to ASM 111, ECR 125, and ECM 123. *Id.* at 5:36–40. The earpiece can also include an audio interface operatively coupled to the processor to receive audio content, for example from a media player or cell phone, and direct sound to ear canal 131 via ECR 125. *Id.* at 5:56–59, 6:60–7:4. The processor monitors ambient sound captured by ASM 111 for acute sounds in the environment, such as an abrupt high energy sound corresponding to the onset of a warning sound (e.g., bell, emergency vehicle, security system, etc.), siren (e.g., police car, ambulance, etc.), voice (e.g., "help", "stop", "police", etc.), or specific noise type (e.g., breaking glass, gunshot, etc.). *Id.* at 5:40–47. Using signals from ECM 123, the processor may determine whether a detected acute sound was generated by the earpiece user's voice or an external sound. *Id.* at 8:41–48; 10:8–25. The

processor can adjust the audio content and pass the acute sounds to ear canal 131 via ECR 125 responsive to detecting acute sounds. *Id.* at 7:25–44.

D. Illustrative Claim

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

> [1pre] An earphone comprising:
>
> [1a] a first microphone configured to measure an ambient acoustic environment, wherein the first microphone has a first microphone port that is configured to face away from a user when the earphone is inserted;
>
> [1b] a second microphone configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone, wherein the second microphone has a second microphone port that is configured to face toward the user when the earphone is inserted;
>
> [1c] a speaker configured to play an audio signal;
>
> [1d] a memory that stores instructions; and
>
> [1e] a processor that is configured to execute the instructions to perform operations, wherein the processor is coupled to the first microphone, wherein the processor is coupled to the second microphone, wherein the speaker is coupled to the processor, and the operations comprising:
>
> > [1f] receiving a first microphone signal from the first microphone;
> >
> > [1g] receiving a second microphone signal from the second microphone;
> >
> > [1h] generating an ambient sound signal from at least one of the first microphone signal or the second microphone signal or a combination of both signals;

> [1i] applying an ambient sound gain to the ambient sound signal to generate a modified ambient sound signal;
>
> [1j] mixing the modified ambient sound signal with an audio content signal to generate a mixed audio signal; and
>
> [1k] sending the mixed audio signal to the speaker.

Ex. 1001, 13:44–14:17 (Petitioner's bracketed references added).

E. Asserted Grounds

Petitioner presents the following challenges as summarized in the chart below. Pet. 2. Petitioner supports its challenges with the Declaration of Dr. Nathaniel Polish. Ex. 1002.

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1A	1, 11	103(a)[1]	Platz[2]
1B	2	103(a)	Platz, Kvaløy[3]
1C	8–10	103(a)	Platz, Kvaløy, Inanaga[4]

[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 January 22, 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. 1008, "Kvaløy").
[4] U.S. Patent No. 5,276,740, issued January 4, 1994, to Inanaga et al. (Ex. 1007, "Inanaga").

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
2A	1, 11	103(a)	Victorian[5], Inanaga
2B	2, 8–10	103(a)	Victorian, Inanaga, Kvaløy
3A	1, 11	103(a)	Inanaga
3B	2, 8–10	103(a)	Inanaga, Engle[6]

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 (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.[7] *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

[5] European Patent Pub. No. EP 1519625 A2, published March 30, 2005, to Victorian et al. (Ex. 1006, "Victorian").
[6] U.S. Patent No. 8,477,955 B2, issued July 2, 2013, to Engle et al. (Ex. 1009, "Engle").
[7] Patent Owner does not present objective evidence of nonobviousness at this stage of the proceeding.

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 '666 patent ("POSITA"), which for purposes of this proceeding is no earlier than January 22, 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. 11 (citing Ex. 1002 ¶ 20). Patent Owner "applies the level of ordinary skill in the art that is proposed in the Petition." Prelim. Resp. 11.

We adopt Petitioner's definition of the level of skill in the art, which is consistent with the disclosure of the '666 patent and asserted prior art of record.

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. 11. 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 '666 patent." Prelim. Resp. 11.

We need not construe any claim term to resolve the institution question, and therefore, do not expressly define any claim term in our

Decision. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (explaining that construction is needed only for terms that are in dispute, and only as necessary to resolve the controversy).

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. 19–27; Prelim. Reply 1–5; Prelim. Sur-reply 1–3.

For the reasons discussed in Sections III.E, III.F, and III.G, 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. Challenges 1A, 1B, and 1C Based on Platz

Petitioner contends that claims 1 and 11 would have been obvious in view of Platz. Pet. 12–26. Petitioner contends that claim 2 would have been obvious over Platz in view of Kvaløy. *Id.* at 27–31. Petitioner further contends that claims 8–10 would have been obvious over the combination of Platz, Kvaløy, and Inanaga. *Id.* at 31–35. For the reasons that follow, we are not persuaded that Petitioner establishes a reasonable likelihood of prevailing with respect to any of its challenges applying Platz.

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.

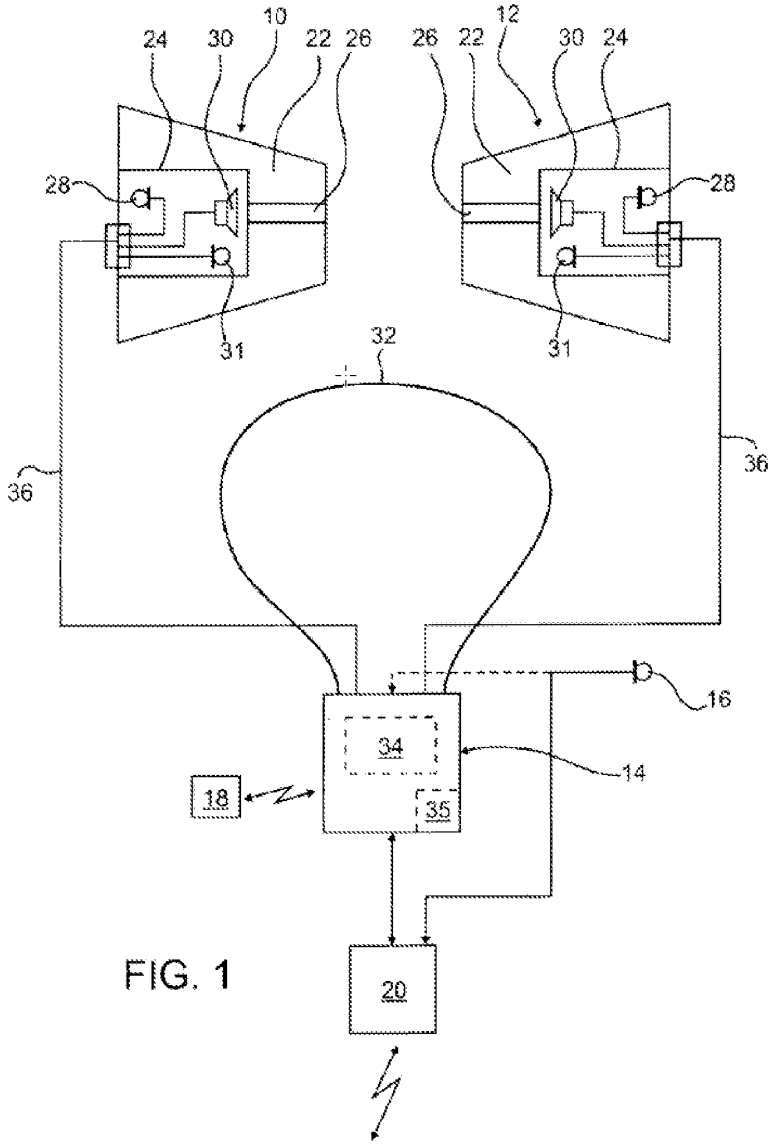


FIG. 1

As shown in Figure 1, the hearing protection system comprises left and right earplugs 10, 12, each of which provide for an acoustic attenuation. *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 that is worn on 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. Ex. 1005 ¶¶ 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. Independent Claim 1

[1pre] "An earphone comprising:"

Petitioner contends that, "[t]o the extent the preamble is limiting, *Platz* discloses or suggests this feature." Pet. 12 (citing Ex. 1002 ¶¶ 51–53). Specifically, Petitioner contends that "*Platz* discloses an active hearing protection system having a left earplug 10, a right earplug 12, and a central unit 14" and that "[a] POSITA would have understood each of *Platz*'s earplugs 10, 12 to comprise '[a]n earphone device' at least because they each include a speaker 30 configured to provide audio signals received from a communication device 20 to the user's ear." *Id.* (citing Ex. 1005 ¶¶ 20, 24,

25; Ex. 1002 ¶ 52). Petitioner also contends that "*Platz*'s earplugs 10, 12 are also of the same general construction as the 'earphone device' (or 'earpiece') described in the '666 patent." *Id.* (citing Ex. 1001, 4:52–65, 6:21–26).

> *[1a] "a first microphone configured to measure an ambient acoustic environment, wherein the first microphone has a first microphone port that is configured to face away from a user when the earphone is inserted;"*

> *[1b] "a second microphone configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone, wherein the second microphone has a second microphone port that is configured to face toward the user when the earphone is inserted;"*

Petitioner contends that "*Platz* discloses that active unit 24 of each earplug 10, 12 includes a microphone 28 configured to 'captur[e] audio signals from ambient sound.'" Pet. 12 (citing Ex. 1005 ¶¶ 22, 25) (alteration by Petitioner). Petitioner contends "*Platz* provides that 'microphone 28 is acoustically oriented towards ambience in order to capture primarily ambient sound.'" *Id.* (citing Ex. 1005 ¶ 42). Petitioner further contends that "*Platz* discloses that active unit 24 also includes a second, inner microphone 31 that 'is acoustically oriented towards the ear canal in order to capture primarily the user's voice.'" *Id.* Petitioner also contends that "*Platz*'s Figure 1 depicts inner microphone 31 as closer than microphone 28 to the outlet of sound channel 26, through which *Platz* indicates active unit 24 is acoustically connected to the ear canal." *Id.* (citing Ex. 1005 ¶¶ 22, 42, Fig. 1; Ex. 1002 ¶ 55).

With respect to the claimed "first microphone port that is configured to face away from a user when the earphone is inserted" and the claimed "second microphone port that is configured to face toward the user when the earphone is inserted," Petitioner contends

> *Platz* does not expressly state "the first microphone ***has a first microphone port***" or that "the second microphone ***has a second microphone port***." However, it would have been obvious to a POSITA to incorporate a port into the microphones 28 and 31 to receive sounds, because this was a common way of designing microphones incorporated into earpieces. Incorporating a port into microphones 28 and 31 would also have been obvious because the port would provide less acoustic impedance to sounds than if the microphone was completely covered by its packaging, which a POSITA would have recognized would have unnecessarily or inappropriately attenuated sounds before reaching the microphone. Thus, a POSITA would have been motivated to incorporate such a port into *Platz*'s microphones 28 and 31 to facilitate or improve their intended purpose of capturing/measuring ambient and ear canal sounds, respectively.
>
> It would also have been obvious to a POSITA to orient microphone 28's port to face away from the user and microphone 31's port to face towards the user, when the earphone is inserted. A POSITA would have recognized, as stated in *Platz,* that it was well known within the art to acoustically orient microphones towards desired sound sources. A POSITA would have been motivated to orient microphone 28's port away from the user to ensure that the microphone performed its intended purpose of capturing ambient sounds, and to orient microphone 31's port towards the user's ear canal to ensure that the microphone performed its intended purpose of capturing sound closer to the user's ear canal.

Id. at 15–16 (citing Ex. 1005 ¶ 42, Fig. 1; Ex. 1002 ¶¶ 59–64 (citing Ex. 1011, 5:40–45, Fig. 1) [8]).

Petitioner relies on Dr. Polish's testimony to support its contentions:

> the '666 patent does not recite a "port" in its specification, but the applicant argued during prosecution that this feature is supported by Figures 1 and 2. . . . As can readily be observed, neither figure depicts a microphone port — only Figure 1 notes

[8] U.S. Patent 6,754,359 B1, issued June 22, 2004, to Svean et al. (Ex. 1011, "Svean").

> two microphones, an ASM 111 and an ECM 123. Applicant's argument supports the notion that microphone ports were so common and well understood that the mere schematic depiction of a microphone would have led a person of ordinary skill in the art to understand that a port was incorporated in said microphone.
>
> Incorporating a port into microphones 28 and 31 would also have been obvious because the port would provide less acoustic impedance to sounds than if the microphone were completely covered by its packaging, which a person of ordinary skill in the art would have recognized would have unnecessarily or inappropriately attenuated sounds before reaching the microphones.
>
> In my opinion, therefore, a person of ordinary skill in the art would have been motivated to incorporate such a port into *Platz*'s microphones 28 and 31 to ensure that the microphones served their intended purposes of capturing/measuring ambient and ear canal sounds, respectively.
>
> It would also have been obvious to a person of ordinary skill in the art to orient the port of microphone 28 to face away from the user and to orient the port of microphone 31 to face towards the user, when the earphone is inserted. A person of ordinary skill in the art would have recognized, as stated in *Platz*, that it was well known within the art to acoustically orient microphones towards desired sources of sound:
>
>> Preferably, each active unit 24 of the earplugs 10, 12 in this case may include **a second microphone 31 which is acoustically oriented towards the ear canal in order to capture primarily the user's voice, whereas the microphone 28 is acoustically oriented towards ambience in order to capture primarily ambient sound.**

Ex. 1002 ¶¶ 60–63 (quoting Ex. 1005 ¶ 42, Fig. 1) (citing Ex. 1004, 73–74).

Dr. Polish further testifies that

> *Svean* shows microphones that face away from the user ("microphone M1) and toward the user ("microphone M2") to

detect, respectively, ambient external sounds and internal ear canal sounds:

> The **sound inlet of microphone M1 is connected to the outside of the earplug, picking up the external sounds**. The microphone M2 is connected to the inner portion of the meatus 3 by means of an acoustic transmission channel T1.

Id. ¶ 63 (quoting Ex. 1011, 5:40–45, Fig. 1).

Patent Owner's Argument

Patent Owner argues that

> Petition's Ground 1 theories fail because they all rely on Platz, which is not available as prior art. The Petition alleges that Platz is available as prior art under 35 U.S.C. § 102(e). For a patent application publication to be available as prior art under that section, the application must have been filed in the United States "before the invention by the applicant for patent." The inventions of the '666 patent claims were reduced to practice no later than November 18, 2006. This was shown by the applicant during prosecution. The PCT application that published as Platz was filed on December 18, 2006. Because Platz was filed after the inventions of the '666 patent, Platz is not available as prior art. Grounds 1A-1C.

Prelim. Resp. 12 (citing Pet. 3; 35 U.S.C. § 102(e); Prelim. Resp. § III; Ex. 1004, 44). We do not reach this argument because we resolve the institution question based on a failure to sufficiently show limitations 1[a] and 1[b] in Petitioner's challenges applying Platz, as discussed in detail below.

Analysis of Petitioner's Contentions for Challenges Applying Platz

As Petitioner acknowledges, Platz does not disclose either a "first microphone port that is configured to face away from a user when the earphone is inserted" or a "second microphone port that is configured to face toward the user when the earphone is inserted." The cited portion of Figure 1

of Svean, reproduced below, shows microphones M1 and M2, but Petitioner does not sufficiently show that it teaches a port, let alone the claimed "first microphone port" and "second microphone port" as recited in claim 1.

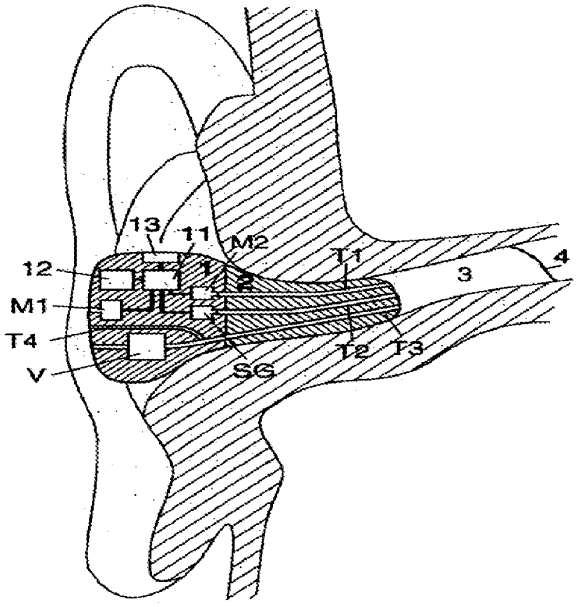


Fig. 1

Figure 1 of Svean illustrates microphones M1 and M2.

In grounds 1B and 1C, Petitioner does not cite Kvaløy or Inanaga to cure the deficiencies of Platz in ground 1A. Instead, Petitioner impermissibly relies on unsupported expert testimony to supply a limitation missing from Platz. Dr. Polish's testimony is not supported because none of the cited references or cited underlying evidence (i.e., Svean) teaches, suggests, or even mentions a port.

The Board's Trial Practice Guide expressly prohibits such an approach:

> Expert testimony, however, cannot take the place of a disclosure in a prior art reference when that disclosure is required as part of the unpatentability analysis . . . . [I]n an obviousness analysis,

> conclusory assertions from a third party about general knowledge in the art cannot, **without supporting evidence of record**, supply a limitation that is not evidently and indisputably within the common knowledge of those skilled in the art. *K/S Himpp v. Hear-Wear Techs., LLC*, 751 F.3d 1362, 1365 (Fed. Cir. 2014). Furthermore, because an inter partes review may only be requested "on the basis of prior art consisting of patents or printed publications," 35 U.S.C. § 311(b), expert testimony cannot take the place of disclosure from patents or printed publications. In other words, expert testimony may explain "patents and printed publications," **but is not a substitute for disclosure in a prior art reference itself**.

Consolidated Trial Practice Guide at 36 (November 2019) ("CTPG") (emphasis added).

In *K/S Himpp*, the Federal Circuit determined that a CRU[9] examiner did not err in deciding to reject a party's contentions that the structural features of certain claims were known prior art elements because the party "failed to point to any evidence on the record." *K/S Himpp*, 751 F.3d at 1366. The court also affirmed the Board's decision to refuse to adopt the party's obviousness contention because the party "failed to cite any evidence on the record to support its contention that" certain claims recited "known prior art elements." *Id.*

Petitioner does not provide a construction or otherwise explain what either the "first microphone port" or the "second microphone port" encompasses. *See* Pet. 11 (Petitioner arguing 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"). The record does not help us ascertain the plain and ordinary meaning of "microphone port." *See* Ex. 1002 ¶ 60 (contending "the

[9] Central Reexamination Unit

'666 patent does not recite a 'port' in the specification"). Notably, the limitations separately recite a first and second "microphone" and a first and second "microphone port." *See* Prelim. Resp. 3–4 (arguing the "microphone port" limitations were added during prosecution to overcome an examiner's rejection). Petitioner also did not point to a description, definition, figure, or mention in *any* reference, that explains what the claim terms mean, *for example*, in terms of their geometry and orientation.[10] As Petitioner does not explain and the record does not show what a "microphone port" is, Petitioner cannot sufficiently show that the prior art teaches or suggests a "first microphone port that is configured to face away from a user when the earphone is inserted" and a "second microphone port that is configured to face toward the user when the earphone is inserted" as recited in claim 1.

For the foregoing reasons, we determine that Petitioner has not met its burden and does not sufficiently show that Platz alone, or in combination with Kvaløy, or in combination with Kvaløy and Inanaga teaches or suggests limitations 1[a] and 1[b] of independent claim 1. As such, Petitioner fails to establish a reasonable likelihood of prevailing with respect to its obviousness challenge to independent claim 1 applying Platz. Petitioner also fails to establish a reasonable likelihood of prevailing with respect to its obviousness challenges to claims 2 and 8–11, which depend from claim 1.

---

[10] This fact alone casts doubt on Dr. Polish's testimony that "microphone ports were so common and well understood that the mere schematic depiction of a microphone would have led a person of ordinary skill in the art to understand that a port was incorporated in said microphone." Ex. 1002 ¶ 60. Moreover, Dr. Polish's testimony regarding a port "in said microphone" only confuses the issue; while the claims separately recite a first and second "microphone" and a first and second "microphone port," it is unclear whether Petitioner a "microphone port" is part of the prior art microphones, part of the earphone housing, or something else.

Petitioner does not cite Kvaløy or Inanaga to cure the deficiencies of Platz, and these references do not cure the deficiencies of Platz with respect to independent claim 1.

F. Challenges 2A and 2B Based on Victorian

Petitioner contends that claims 1 and 11 would have been obvious in view of Victorian and Inanaga. Pet. 36–47. Petitioner contends that claims 2 and 8–10 would have been obvious over the combination of Victorian, Inanaga, and Kvaløy. *Id.* at 47–50. For the reasons that follow, we are not persuaded that Petitioner establishes a reasonable likelihood of prevailing with respect to any of its challenges applying Victorian.

1. Overview of Victorian

Victorian is titled "[e]xternal ear canal voice detection." Ex. 1006, code (54). Victorian discloses an ear-level, full-duplex audio communication system including one or two ear attachment devices that wirelessly communicate to a remote device (e.g., computer, personal digital assistant, cellular phone, walkie talkie, language translator). *Id.* at code (57). Figure 4A of Victorian, reproduced below, is a block diagram showing an embodiment of the circuit of an ear-level device worn by a user. *Id.* ¶ 13.

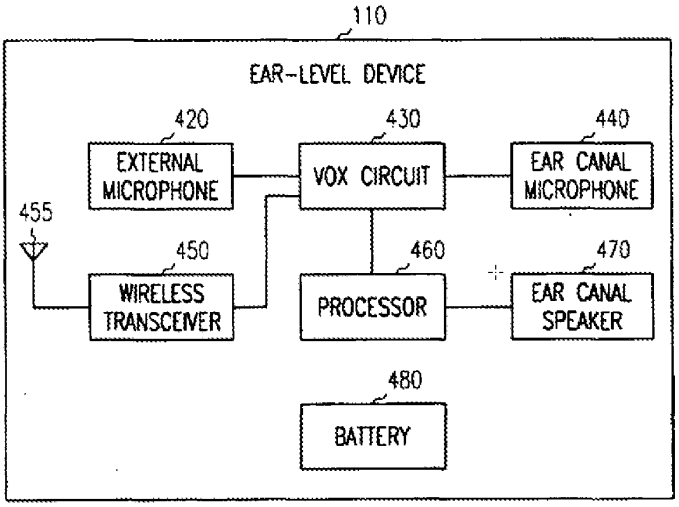


FIG. 4A

As shown in Figure 4A of Victorian, ear-level device 110 includes external microphone 420 which picks up ambient sound, ear canal microphone 440 which detects sound from the user's ear canal including the user's own speech, and ear canal speaker 470 which transmits sound received from a remote device and/or external microphone 420 to the user's ear canal. *Id.* ¶ 30. Ear-level device 110 further includes processor 460 which converts the sound picked up from the ear canal to an electrical signal to be transmitted to the remote device via wireless transceiver 450, and converts the signals received from the remote device via wireless transceiver 450 and/or from external microphone 420 into a sound audible to the user. *Id.* Ear-level device 110 also includes voice operated exchange (VOX) circuit 430 which gates or attenuates one or more sounds detected by external microphone 420, ear canal microphone 440, and wireless transceiver 450, to eliminate or reduce echo and ringing caused by the loop formed by ear canal speaker 470 and ear canal microphone 440. *Id.*

2. Independent Claim 1

[1pre] "An earphone comprising:"

Petitioner contends that "[t]o the extent the preamble is limiting, *Victorian* discloses or suggests this feature." Pet. 36 (citing Ex. 1002 ¶¶ 133–135). According to Petitioner, "*Victorian* discloses an ear-level communication system 100 comprising an ear-level device 110." *Id.* (citing Ex. 1006 ¶ 18). Petitioner further contends that "[e]ar-level device 110 is depicted in the user's ear in Figure 1 of *Victorian*, which also provides that this device can be implemented in an 'in-the-ear' or 'in-the-canal' configuration as shown in Figures 3A and 3B." *Id.* (citing Ex. 1006 ¶¶ 24, 25). Petitioner also contends that "ear-level device 110 can be used as an ear piece." *Id.* (citing Ex. 1006 ¶ 8, Abstract).

> *[1a] "a first microphone configured to measure an ambient acoustic environment, wherein the first microphone has a first microphone port that is configured to face away from a user when the earphone is inserted;"*

> *[1b] "a second microphone configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone, wherein the second microphone has a second microphone port that is configured to face toward the user when the earphone is inserted;"*

Petitioner contends that "*Victorian* discloses ear-level device 110 including an 'external microphone 420 picks up ambient sound such that a hearing impaired person wearing ear-level device 110 is not "isolated" when communicating to remote device 190.'" Pet. 36 (citing Ex. 1006 ¶ 30). According to Petitioner "it would have been obvious to incorporate a port into microphone 420, and to orient such a port away from the user to detect desired ambient sounds, for the same reasons discussed" with respect to the

challenges applying Platz. *Id.* (citing Ex. 1002 ¶ 137; Pet. § VIII.A.1.b); *see also id.* (citing Ex. 1002 ¶¶ 136–140).

Petitioner further contends that "*Victorian* discloses ear-level device 110 including an '[e]ar canal microphone 440 detects sound from the ear canal.'" Pet. 37 (citing Ex. 1006 ¶ 30) (alteration by Petitioner). According to Petitioner, "[t]he sound includes primarily speech of the person wearing ear-level device 110." *Id.* Petitioner also contends that "[i]t would have been obvious to incorporate a port into microphone 440, and to orient the port to face towards the user, for the same reasons discussed" with respect to the challenges applying Platz. *Id.* at 37–38 (citing Ex. 1002 ¶¶ 141, 142; Pet. § VIII.A.1.b).

Dr. Polish testifies that,

> [w]hile *Victorian* does not expressly state that microphone 420 has a port, it would have been obvious to incorporate a port into microphone 420, and to orient such a port away from the user to detect desired ambient sounds, for the same reasons . . . discussed in Section IX.B.1.b.
>
> . . . .
>
> *Victorian* does not expressly state that the ear canal microphone 440 has a port. However, it would have been obvious to incorporate a port into microphone 440, and to orient the port to face towards the user, for the same reasons . . . discussed in Section IX.B.1.b.

Ex. 1002 ¶¶ 137, 142.

Patent Owner's Argument

Patent Owner contends that "[t]he Petition's Ground 2 theories fail because it would not have been obvious to modify Victorian to be more complicated without any apparent benefit." Prelim. Resp. 12. According to Patent Owner, "[t]he Petition vaguely contends that it would have been

obvious to incorporate Inanaga's teachings into Victorian 'because doing so would have been consistent with and/or improved *Victorian*'s goal of allowing the wearer of the ear-level device to hear ambient sound in the wearer's vicinity while permitting the wearer to also listen to audio content from a remote device.'" *Id.* at 12–13 (citing Pet. 45). Patent Owner contends that this "argument is unpersuasive" and that "[t]he Petition's statement that the proposed modification would be 'consistent with' Victorian's goal is insufficient" because "Victorian already allows the wearer to hear both sounds in their environment and audio content from a remote device when a gating rule is applied (i.e., not in voice detect mode)." *Id.* at 13.

We do not address this argument because we resolve the institution question based on a failure to sufficiently show limitations 1[a] and 1[b] in Petitioner's challenges applying Victorian, as discussed in detail below.

Analysis of Petitioner's Contentions for Challenges Applying Victorian

Victorian does not describe or depict a "microphone port," and Petitioner, again, does not provide a construction or otherwise explain what "a first microphone port" or "a second microphone port" encompasses. Petitioner again fails to point to a description, definition, figure, or mention in *any* reference, that explains what these claim terms mean.

For the reasons discussed above in Section III.E.2 with respect to the challenges applying Platz, we determine that Petitioner has not met its burden and does not sufficiently show that Victorian alone, or in combination with Inanaga, or in combination with Inanaga and Kvaløy teaches or suggests limitations 1[a] and 1[b] of independent claim 1. As such, Petitioner fails to establish a reasonable likelihood of prevailing with respect to its obviousness challenge to independent claim 1 applying Victorian. Petitioner also fails to establish a reasonable likelihood of

prevailing with respect to its obviousness challenges to claims 2 and 8–11, which depend from claim 1. Petitioner does not cite Inanaga or Kvaløy to cure the deficiencies of Victorian, and these references do not cure the deficiencies of Victorian with respect to independent claim 1.

G. Challenges 3A and 3B Based on Inanaga

Petitioner contends that claims 1 and 11 would have been obvious in view of Inanaga. Pet. 53–62. Petitioner further contends that claims 2 and 8–10 would have been obvious over Inanaga in view of Engle. *Id.* at 62–66. For the reasons that follow, we are not persuaded that Petitioner establishes a reasonable likelihood of prevailing with respect to any of its challenges applying Inanaga.

1. Overview of Inanaga

Inanaga is titled "Earphone Device." Ex. 1007, code (54). Inanaga relates to an earphone device that is capable of reducing external noises. *Id.* at 1:8–10. Figure 4 of Inanaga, reproduced below, shows a block diagram of an earphone device.

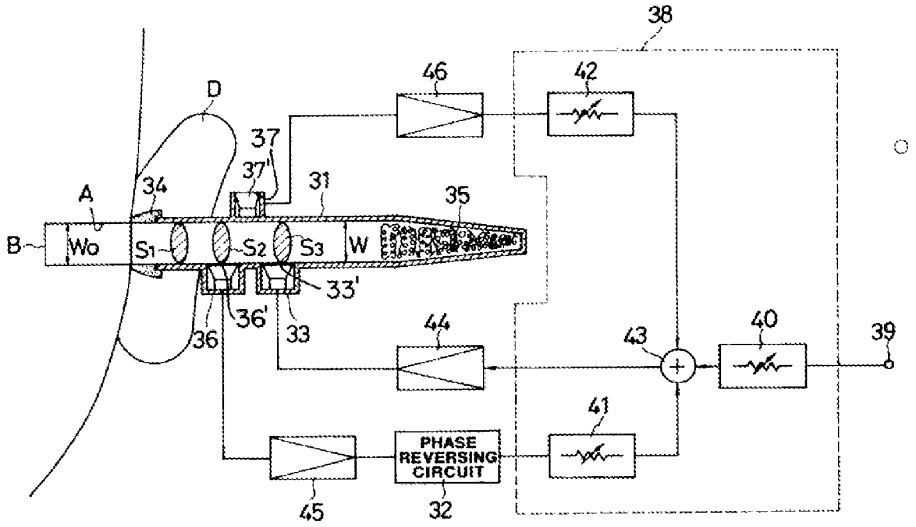


FIG. 4

As shown in Figure 4 of Inanaga, the earphone device comprises acoustic tube 31 which forms an earphone casing and has inner diameter W which is substantially identical with inner diameter W_0 of a user's external auditory canal A. *Id.* at 5:34–37, 5:66. The earphone device further comprises internal microphone unit 36, external microphone unit 37 which picks up external noises, and earphone unit 33 which provides sound to the user's eardrum B via external auditory canal A. *Id.* at 5:34–56, 6:25–27. The earphone device also comprises mixing circuit 38 which is capable of mixing an inputted audio signal (e.g., a music signal from a portable device), a signal obtained by negatively feeding back the signal obtained from internal microphone unit 36, and the external noise signal obtained from external microphone unit 37, at a desired mixing ratio. *Id.* at 5:34–56. Mixing circuit 38 comprises: variable gain control circuits 40, 41, 42 for variably changing the gain of the inputted audio signal, the negatively fed back signal, and the external noise signal; and adder 43 for adding the signals output from variable gain control circuits 40–42 and supplying the output to earphone unit 33. *Id.* at 5:57–65, 6:44–47.

2. Independent Claim 1

[1pre] "An earphone comprising:"

Petitioner contends that "[t]o the extent the preamble is limiting, *Inanaga* discloses or suggests this feature" because "*Inanaga* discloses an 'earphone device.'" Pet. 53 (citing Ex. 1002 ¶ 187; Ex. 1007, 2:29–50, Abstract, Fig. 4).

[1a] "a first microphone configured to measure an ambient acoustic environment, wherein the first microphone has a first

> *microphone port that is configured to face away from a user when the earphone is inserted;"*
>
> *[1b] "a second microphone configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone, wherein the second microphone has a second microphone port that is configured to face toward the user when the earphone is inserted;"*

Petitioner contends that "*Inanaga* discloses an external microphone unit 37 disposed externally [to] the acoustic tube 31, which picks up external noises (ambient sound) and outputs an external noise signal." Pet. 53 (citing Ex. 1007, 5:34–56, Fig. 4). Petitioner further contends that "a POSITA would have understood *Inanaga*'s microphone 37 facing outward of the tube comprises an external microphone facing away from the user when the earphone is inserted." *Id.* at 54 (citing Ex. 1002¶ 190). Petitioner further contends that "it would have been obvious to incorporate a port into microphone 37, and to orient such a port away from the user to detect desired ambient sounds, for the same reasons discussed" with respect to the challenges applying Platz. *Id.* (citing Ex. 1002 ¶ 190; Pet. § VIII.A.1.b.).

Petitioner further contends that "*Inanaga* discloses an internal microphone unit 36 adjacent to the earphone unit 33 provided on the periphery of the acoustic tube 31 and having a vibration plate 36' facing inward of the tube." *Id.* at 55 (citing Ex. 1007, 5:34–56, Fig. 4). Petitioner further contends that "it would have been obvious to a POSITA to incorporate a port into the microphone 36, and to orient the port to face towards the user, for the same reasons discussed" with respect to the challenges applying Platz. *Id.* (citing Ex. 1002 ¶ 193; Pet. § VIII.A.1.b.).

Dr. Polish testifies that

> it would have been obvious to a person of ordinary skill in the art to incorporate a port into the external microphone 37, and to orient such a port away from the user to detect desired ambient sound, for the same reasons . . . discussed above in Section IX.B.1.b.
>
> . . . .
>
> Moreover, it would have been obvious to a person of ordinary skill in the art to incorporate a port into the internal microphone, and to orient the port towards the user, for the same reasons . . . discussed above in Section IX.B.1.b.

Ex. 1002 ¶¶ 190, 193.

Patent Owner's Argument

Patent Owner contends that Petitioner's "Ground 3 theories fail because it would not have been obvious to change Inanaga's geometry as the Petition proposes" and because "Inanaga's geometry is carefully designed." Prelim. Resp. 16. According to Patent Owner, Petitioner references only its arguments for Platz for explaining why it would have been obvious to incorporate a port Inanaga. *Id.* Patent Owner contends that "[r]egardless of whether that argument has merit with respect to Grounds 1A-1C, it does not transfer to Grounds 3A and 3B, where Inanaga—not Platz—is the reference under consideration." *Id.* at 16–17.

Patent Owner further contends that

> the geometry of Inanaga would not benefit from the change required to satisfy limitation 1[b]. The Petition does not explain what the geometry of Inanaga would be under its proposed modification. Regardless, in order to satisfy limitation 1[b], an axis running through the middle of the port must intersect with the user. Such a change to Inanaga's geometry would not have been obvious. Inanaga discloses why inner microphone unit 36 is disposed where it is:

> ***In order to prevent a change in the acoustic impedance***, the earphone unit 33 and ***the inner microphone unit 36 are mounted on the side of the acoustic tube 31 so that the respective vibration plates 33′ and 36′ are mutually parallel*** and the section area S_1 of the acoustic tube is equal to the respective cross-section areas S_2 and S_3 of the mounting portions of the earphone unit 33 and the microphone unit 36.

Prelim. Resp. 17 (quoting Ex. 1007, 6:5–12 (emphasis added by Patent Owner)) (citing Ex. 2001 ¶ 40; Ex. 1004, 74). According to Patent Owner "the rationale proposed for modifying Platz (which is not prior art), even if correct, does not apply to Inanaga" and "there would be no benefit in changing the orientation of microphone unit 36 so that its axis would intersect with the user" because "disturbing the geometry of the earphone device would negatively impact its acoustic characteristics." *Id.* at 18–19 (citing Ex. 2001 ¶ 44).

For the reasons discussed in detail below, we agree that Petitioner does not sufficiently show limitations 1[a] and 1[b] in its challenges applying Inanaga.

Analysis of Petitioner's Contentions for Challenges Applying Inanaga

Inanaga does not disclose, describe, depict, or mention a "microphone port," and Petitioner, again, does not provide a construction or otherwise explain what a "first microphone port" or a "second microphone port" encompasses. Petitioner again fails to point to a description, definition, figure, or mention, in *any* reference, that explains what these claim terms mean.

For the reasons discussed above in Section III.E.2 with respect to the challenges applying Platz, we determine that Petitioner has not met its burden and does not sufficiently show that Inanaga alone, or in combination with Engle teaches or suggests limitations 1[a] and 1[b] of independent claim 1. As such, Petitioner fails to establish a reasonable likelihood of prevailing with respect to its obviousness challenge to independent claim 1 applying Inanaga. Petitioner also fails to establish a reasonable likelihood of prevailing with respect to its obviousness challenges to claims 2 and 8–11, which depend from claim 1. Petitioner does not cite Engle to cure the deficiencies of Inanaga, and Engle does not cure the deficiencies of Inanaga 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 '666 patent are unpatentable.

V. ORDER

In consideration of the foregoing, it is hereby:

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

For PETITIONER:

Ali R. Sharifahmadian
Jeffrey A. Miller
David A. Caine
ARNOLD & PORTER KAYE SCHOLER LLP
ali.sharifahmadian@arnoldporter.com
jmillerptab@apks.com
david.caine@apks.com.com

For PATENT OWNER:

Jacob A. Snodgrass
Bradford Cangro
Jeremy Peterson
PV LAW LLP
jacob.snodgrass@pvuslaw.com
bradford.cangro@pvuslaw.com
jeremy.peterson@pvuslaw.com

The United States Patent and Trademark Office
PATENT TRIAL AND APPEAL BOARD

A petition has been filed in Patent Number 11,244,666, Application Number 16/987,396 on 6/9/2022 (Date).

The Case Number is IPR2022-01099.
(IPR, CBM, PGR, DER #)

To view the documents filed in this petition, go to https://ptab.uspto.gov.

Use the Search PTAB tab and enter the Patent Number or the Trial or Case Number and select the Search button.

Questions regarding this notice should be directed to the Patent Trial and Appeal Board at 571-272-7822.

AO 120 (Rev. 08/10)

TO:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
	2/14/2022	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
STATON TECHIYA, LLC and SYNERGY IP CORP.	SAMSUNG ELECTRONICS CO., LTD. and SAMSUNG ELECTRONICS AMERICA, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	11,244,666	2/8/2022	Staton Techiya, LLC
2	11,217,237	1/4/2022	Staton Techiya, LLC
3	11,057,701	7/6/2021	Staton Techiya, LLC
4	11,039,259	6/15/2021	Staton Techiya, LLC
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/987,396	02/08/2022	11244666	CONT-16669490	7859

150139 7590 01/19/2022

Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

INVENTOR(s) (Please see PAIR WEB site http://pair.uspto.gov for additional inventors):

Steven Wayne Goldstein, Delray Beach, FL;
John Usher, Beer, UNITED KINGDOM;
Marc Andre Boillot, Plantation, FL;

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Staton Techiya LLC, Delray Beach, FL

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

IR103 (Rev. 10/09)

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Steven Wayne Goldstein
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CONT-16669490

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
Change(s) applied to document. /S.D./ 11/11/2021	1	20170124847		2017-05-04	~~Sigh, LLC~~ Schulz et al.	
	2	20060253282		2006-11-09	Gerhard Uwe Schmidt et al.	
	3	20140185828		2014-07-03	~~Gellco Partnership~~ Helbling	
	4	20020135485		2002-09-26	Kaoru Arakawa	
	5	20100136950		2010-06-03	Erik Johan Vendel Backlund et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							
	2							

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.L.S/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Steven Wayne Goldstein
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CONT-16669490

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	8638239		2014-01-28	Fabien Cases et al.	
	2	6226389		2001-05-01	Jerome H. Lemelson et al.	
	3	8514100		2013-08-20	Youji Yamashita	
	4	8493204		2013-07-23	Adrian Wong, et al.	
Change(s) applied to document, /S.D./ 11/11/2021	5	9648436		2017-05-09	Kraft, et al. ~~Doppler Labs, Inc.~~	
	6	9041545		2015-05-26	Eric Allen Zelepugas	
	7					
If you wish to add additional U.S. Patent citation information please click the Add button.						Add
U.S.PATENT APPLICATION PUBLICATIONS						Remove

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.L.S/

FEE ADDRESS INDICATION FORM

Application Number	16987396	Art Unit	2688
Filing Date	07-Aug-2020	Examiner Name	
First Name Inventor	Steven Wayne Goldstein	Attorney Doc. Number	CONT-16669490

INSTRUCTIONS: In order for the fee address identified on this form to be effective, the issue fee must have been paid for the application listed on this form. Only an address represented by a customer number can be established as the fee address for maintenance fee purposes (hereafter, fee address). A fee address should be established when correspondence related to maintenance fees should be mailed to a different address than the correspondence address for the application. For more information on customer numbers, see the Manual of Patent Examining Procedure (MPEP) § 403.

Please recognize as the Fee Address under the provisions of 37 CFR 1.363 the address associated with:

Customer Number:	154598 Staton Techiya, LLC John Keady 9501 Jagged Creek Ct Delray Beach FL 33446 UNITED STATES (571) 606-1291 yasmin.seyal@techiya.co

Signature :

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application.

Signature	/Peter A. Chiabotti/	**Date**	12-22-2021
Name	Peter Allen Chiabotti	**Registration Number**	54603

Electronic Patent Application Fee Transmittal

Application Number:	16987396
Filing Date:	07-Aug-2020
Title of Invention:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION
First Named Inventor/Applicant Name:	Steven Wayne Goldstein
Filer:	Peter Allen Chiabotti/Angela Martin
Attorney Docket Number:	CONT-16669490

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY APPL ISSUE FEE	2501	1	600	600
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**600**

Electronic Acknowledgement Receipt	
EFS ID:	44589055
Application Number:	16987396
International Application Number:	
Confirmation Number:	7859
Title of Invention:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION
First Named Inventor/Applicant Name:	Steven Wayne Goldstein
Customer Number:	150139
Filer:	Peter Allen Chiabotti/Angela Martin
Filer Authorized By:	Peter Allen Chiabotti
Attorney Docket Number:	CONT-16669490
Receipt Date:	22-DEC-2021
Filing Date:	07-AUG-2020
Time Stamp:	15:02:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$600
RAM confirmation Number	E2021BLF02242971
Deposit Account	500951
Authorized User	Angela Martin
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.20 (Post Issuance fees) 37 CFR 1.21 (Miscellaneous fees and charges)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Web85b.pdf	62756 9cdb1d309fec4a69bd424525f6235520845 8eddc	no	2
Warnings:					
Information:					
2	Maintenance Fee Address Change	web85feeaddress.pdf	42461 cfc8c6499464076d5a3eba44fdc215825cc5 927a	no	1
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	40509 478084eca93e5f72c07feefae849ae52d382 a659	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	145726		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Document Description: Issue Fee Payment (PTO-85B)

Issue Fee Transmittal Form

Application Number	Filing Date	First Named Inventor	Atty. Docket No.	Confirmation No.
16987396	07-Aug-2020	Steven Wayne Goldstein	CONT-16669490	7859

TITLE OF INVENTION :

METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION

Entity Status	Application Type	Art Unit	Class - Subclass	EXAMINER
Small	Utility under 35 USC 111(a)	2688	056000	

Issue Fee Due	Publication Due	Total Fee(s) Due	Date Due	Prev. Paid Fee
$600	$0	$600	09-Feb-2022	$0

1.Change of Correspondence Address and/or Indication Of Fee Address (37 CFR 1.33 & 1.363)

Current Correspondence Address:	Current Indicated Fee Address :
150139 Akerman LLP 777 South Flagler Drive Suite 1100 West Tower West Palm Beach FL 33401 UNITED STATES 5616535000 ip@akerman.com	
☐ Change of correspondence address requested, system generated AIA/122-EFS form attached	☒ Fee Address indication requested, system generated SB/47-EFS form attached

2.Entity Status

Change in Entity Status

○ Applicant certifying micro entity status; system generated Micro Entity certification form attached. See 37 CFR 1.29.
Note: Absent a valid certification of micro entity status, issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment. If this box is checked, you will be prompted to choose a micro entity status on the gross income basis (37 CFR 1.29(a)) or the institution of higher education basis (37 CFR 1.29(d)), and make the applicable certification online.

◉ Applicant asserting small entity status. See 37 CFR 1.27.
Note: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

○ Applicant changing to regular undiscounted fee status.
Note: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

Document Description: Issue Fee Payment (PTO-85B)

3.The Following Fee(s) Are Submitted:

☒ Issue Fee	☐ I authorize USPTO to apply my previously paid issue fee to the current fees due
☐ Publication Fee	☐ The Director is hereby authorized to apply my previously paid issue fee to the current fee due and to charge deficient fees to Deposit Account Number _____
☐ Advance Order - # of copies _____	☒ If i**n addition to** the payment of the issue fee amount submitted with this form, there are any discrepancies in any amount(s) due, the Director is authorized to charge any deficiency, or credit any overpayment, to Deposit Account Number 500951 . The **issue fee must be submitted** with this form. **If payment of the issue fee does not accompany this form, checking this box and providing a deposit account number will NOT be effective to satisfy full payment of the fee(s) due.**

4.Firm and/or Attorney Names To Be Printed

NOTE: If no name is listed, no name will be printed
For printing on the patent front page, list to be displayed as entered

1. Akerman LLP
2. Peter A. Chiabotti
3.

5.Assignee Name(s) and Residence Data To Be Printed

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

Name	City	State	Country	Category
Staton Techiya, LLC	Delray Beach	FLORIDA	UNITED STATES	other

6.Signature

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application. I also certify that this Fee(s) Transmittal form is being transmitted to the USPTO via EFS-WEB on the date indicated below.

Signature	/Peter A. Chiabotti/	**Date**	12-22-2021
Name	Peter Allen Chiabotti	**Registration Number**	54603

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

150139 7590 11/09/2021
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

EXAMINER
SNIEZEK, ANDREW L

ART UNIT	PAPER NUMBER
2688	

DATE MAILED: 11/09/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/987,396	08/07/2020	Steven Wayne Goldstein	CONT-16669490	7859

TITLE OF INVENTION: METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	02/09/2022

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

150139 7590 11/09/2021
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)

(Signature)

(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/987,396	08/07/2020	Steven Wayne Goldstein	CONT-16669490	7859

TITLE OF INVENTION: METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	02/09/2022

EXAMINER	ART UNIT	CLASS-SUBCLASS
SNIEZEK, ANDREW L	2688	381-056000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1_____
2_____
3_____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑Issue Fee ❑Publication Fee (if required) ❑Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/987,396	08/07/2020	Steven Wayne Goldstein	CONT-16669490	7859

150139 7590 11/09/2021
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

EXAMINER
SNIEZEK, ANDREW L

ART UNIT	PAPER NUMBER
2688	

DATE MAILED: 11/09/2021

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 02/11)

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 16/987,396	Applicant(s) Goldstein et al.	
	Examiner ANDREW SNIEZEK	Art Unit 2688	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to the response filed 10/25/21.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1,4-11 and 14-15 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☑ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/ANDREW L SNIEZEK/
Primary Examiner, Art Unit 2688

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/25/21 has been entered.

Response to Amendment

3. The affidavit/declaration filed on 10/25/21 under 37 CFR 1.131(a) is sufficient to overcome the Golstein and Terlizzi et al. references, when taken in view of the written specifications of the parent applications.

Allowable Subject Matter

4. Claims 1, 4-9, 10, 11 and 14-15 are allowed.

Examiner's Comments

5. Claims 1, 4-9, 10, 11 and 14-15 have been renumbered as claims 1, 2-7, 11, 8 and 9-10 respectively.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW SNIEZEK whose telephone number is

(571)272-7563. The examiner can normally be reached Monday-Friday 7:00 AM-3:30 PM EST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Lim can be reached on 571-270-1210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: https://patentcenter.uspto.gov. Visit https://www.uspto.gov/patents/apply/patent-center for more information about Patent Center and https://www.uspto.gov/patents/docx for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ANDREW L SNIEZEK/
Primary Examiner, Art Unit 2688

/A.L.S/
Primary Examiner, Art Unit 2688
11/3/21

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

CPC - Searched*		
Symbol	**Date**	**Examiner**
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	09/23/2020	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	01/22/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	03/29/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	05/27/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	08/11/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	11/03/2021	ALS

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	09/23/2020	ALS

/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

See assignee and inventor search history printout	09/23/2020	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	09/23/2020	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	01/22/2021	ALS
See assignee and inventor search history printout	01/22/2021	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	01/22/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	03/29/2021	ALS
See assignee and inventor search history printout	03/29/2021	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	03/29/2021	ALS
IP.com search history printout	03/29/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	05/27/2021	ALS
See assignee and inventor search history printout	05/27/2021	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	05/27/2021	ALS
IP.com search history printout	05/27/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	08/11/2021	ALS
See assignee and inventor search history printout	08/11/2021	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	08/11/2021	ALS
IP.com search history printout	08/11/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	11/03/2021	ALS
See assignee and inventor search history printout	11/03/2021	ALS

/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

prosecution history of parent applications 16/669,490; 16/193,568; 14/574,589 and 12/017878 reviewed	11/03/2021	ALS
IP.com search history printout	11/03/2021	ALS

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
See interference search history printout		03/29/2021	ALS
See interference search history printout		05/27/2021	ALS
See interference search history printout		08/11/2021	ALS
See interference search history printout		11/03/2021	ALS

/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688	

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

CPC

Symbol					Type	Version
G10K	/	11	/	17827	F	2018-01-01
H04R	/	3	/	005	I	2013-01-01
H04R	/	1	/	1016	I	2013-01-01
H04R	/	1	/	1083	I	2013-01-01
H04R	/	3	/	002	I	2013-01-01
G10K	/	11	/	002	I	2013-01-01
H04R	/	29	/	001	I	2013-01-01
H04R	/	2225	/	41	A	2013-01-01
H04R	/	2460	/	05	A	2013-01-01
H04R	/	2499	/	11	A	2013-01-01

CPC Combination Sets

Symbol					Type	Set	Ranking	Version
	/		/					

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 11	
/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688 (Primary Examiner)	03 November 2021 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

U.S. Patent and Trademark Office

Part of Paper No.: 20211103

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

INTERNATIONAL CLASSIFICATION				
CLAIMED				
G10K11/178	/	11	/	178
H04R3/00	/	3	/	00
H04R1/10	/	1	/	10
G10K11/00	/	11	/	00
H04R29/00	/	29	/	00

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
381	56

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 11	
/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688 (Primary Examiner)	03 November 2021 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

U.S. Patent and Trademark Office

Part of Paper No.: 20211103

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	11	10												
----	2	8	11												
----	3	----	12												
2	4	----	13												
3	5	9	14												
4	6	10	15												
5	7														
6	8														
7	9														

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 11	
/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688 (Primary Examiner)	03 November 2021 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

U.S. Patent and Trademark Office Part of Paper No.: 20211103

WEST Search History

Hide Items | Restore | Clear | Close

DATE: Wednesday, November 03, 2021

Hide?	Set Name	Query	Hit Count
Interference			
DB=PGPB,USPT; PLUR=YES; OP=OR			
☐	L36	(earphone and microphone and ambient and (ear adj3 canal) and speaker and memory and processor and gain and mixing and audio).clm.	3
Prior Art			
DB=PGPB; PLUR=YES; OP=OR			
☐	L35	L34 and (earbud or headphone or headset or earpiece)	1
☐	L34	20080165988	1
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L33	L32 and (earbud or headphone or headset or earpiece)	127
☐	L32	L31 and ((mix$3 or conbin$3 or blend$3) with (audio or music or source))	127
☐	L31	L29 and ((gain or multiplier or weight$3 or factor) with (ambient or surround or environmental) with (acoustic or sound))	274
☐	L30	L29 and (L24 or L25 or L26 or L27)	2
☐	L29	ecm or (ear adj4 canal adj4 microphone)	78401
DB=USPT,JPAB,FPRS,PGPB; PLUR=YES; OP=OR			
☐	L28	37603455.FMID.	9
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L27	101401399	17
☐	L26	5299030	12
DB=PGPB; PLUR=YES; OP=OR			
☐	L25	20050207597 or 20030035551 or 20080165988 or 20030151678 or 20060222185	5
DB=USPT; PLUR=YES; OP=OR			
☐	L24	8577052.pn. or 5541359.pn. or 5774567.pn. or 7421084.pn. or 7903826.pn. or 7986802.pn. or 8199942.pn. or 10361673.pn.	8
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L23	L22 and ((gain or multiplier) with (ambient or surround or environmental) with sound)	50
☐	L22	L21 and L5	141
☐	L21	(asm or (ambient adj3 microphone)) same (ecm or (ear adj3 canal adj3 microphone))	552
☐	L20	L19 not L18	46
☐	L19	((detect$3 or sensing) with ((emergency adj3 vehicle) or warning or police or siren or ambulance)) same (((turn adj3 down) or mute) with audio or misic)	66
☐	L18	((detect$3 or sensing) with siren) same (((turn adj3 down) or mute) with audio or misic)	20
☐	L17	(microphone with (detect$3 or sensing) with ((emergency adj3 vehicle) or warning or police or siren or ambulance)) same (((turn adj3 down) or mute) with audio or misic)	3
☐	L16	(microphone with (detect$3 or sensing) with siren) same (((turn adj3 down) or mute) with audio	2

		or misic)	
☐	L15	L14 and ((reduc$3 or (turn$3 adj3 down))near5 volume)	43
☐	L14	(audio near4 (reproduc$4 or payback)) with (warning or notification)	790
☐	L13	L5 and ((notify or notification) with ((acute adj3 sound) or (emergency adj3 vehicle or warning) or police or siren or ambulance))	222
DB=PGPB,USPT; PLUR=YES; OP=OR			
☐	L12	(20080037801 | 6728385 | 20070160243 | 20040037428 | 20070223717 | 6023517 | 20050111683 | 20080137873 | 5251263 | 4837832 | 5867581 | 20060262938 | 8059847 | 20050254665 | 20050105750 | 20040234089 | 6415034)![PN]	17
DB=USPT; PLUR=YES; OP=OR			
☐	L11	("8150044")[PN]	1
☐	L10	("8150044")[URPN]	33
☐	L9	8150044.pn.	1
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L8	L6 not L7	268
☐	L7	L6 and L3	73
☐	L6	L5 and ((notify or notification) near5 (user or person))	341
☐	L5	(earbud or headphone or headset or earpiece) same ((sens$3 or detect$3) with ((acute adj3 sound) or (emergency adj3 vehicle or warning) or police or siren or ambulance))	1057
☐	L4	L1 and (microphone and warning and notification and environment).clm.	7
☐	L3	L2 or G10k$.cpc. or H04R$.cpc.	445691
☐	L2	((((((((G10K11/17827)))))))).cpc. or ((((((((G10K11/002)))))))).cpc. or ((((((((H04R1/1016)))))))).cpc. or ((((((((H04R1/1083)))))))).cpc. or ((((((((H04R3/002)))))))).cpc. or ((((((((H04R3/005)))))))).cpc. or ((((((((H04R29/001)))))))).cpc. or ((((((((H04R2225/41)))))))).cpc. or ((((((((H04R2460/05)))))))).cpc. or ((((((((H04R2499/11)))))))).cpc.	78972
☐	L1	(Stanton near4 techiya).as. or (Steven near4 Goldstein).in. or (john near4 Beer).in. or (Marc near4 Boillot).in.	1260

END OF SEARCH HISTORY

Main Concept Text
==========
An earphone comprising: a first microphone configured to measure an ambient acoustic environment, wherein the first microphone has a first microphone port that is configured to face away from a user when the earphone is inserted; a second microphone configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone, wherein the second microphone has a second microphone port that is configured to face toward the user when the earphone is inserted; a speaker configured to play an audio signal; a memory that stores instructions; and a processor that is configured to execute the instructions to perform operations, wherein the processor is coupled to the first microphone, wherein the processor is coupled to the second microphone, wherein the speaker is coupled to the processor, and the operations comprising: receiving a first microphone signal from the first microphone; receiving a second microphone signal from the second microphone; generating an ambient sound signal from at least one of the first microphone signal or the second microphone signal or a combination of both signals; applying an ambient sound gain to the ambient sound signal to generate a modified ambient sound signal; mixing the modified ambient sound signal with an audio content signal to generate a mixed audio signal; and sending the mixed audio signal to the speaker.

(No Concept Modifiers)
==========

(No Filters)
==========

Options
=======
De-dup: None
Cut-off: None
Sort: Relevance

Content: Non-Patent Literature (23)
==========
IEEE Xplore Publications: IEEE Periodicals
IEEE Xplore Publications: IEEE Conferences
IEEE Xplore Publications: IEEE Standards
IEEE Xplore Publications: IEEE Early Access
IEEE Xplore Publications: SMPTE Periodicals
IEEE Xplore Publications: SMPTE Conferences
IEEE Xplore Publications: SMPTE Standards
IEEE Xplore Publications: MIT Press eBooks
IEEE Xplore Publications: Wiley-IEEE eBooks
IEEE Xplore Publications: IBM Periodicals
IEEE Xplore Publications: URSI Periodicals
IEEE Xplore Publications: VDE Conferences
IEEE Xplore Publications: Periodicals from China
IP.com Prior Art Database: The IP.com Journal
IP.com Prior Art Database: Internet Society RFC
IP.com Prior Art Database: IBM TDB Archive
IP.com Prior Art Database: Legacy Journals
IP.com Prior Art Database: Software Patent Institute
OnePetro.org: Periodicals at OnePetro.org
OnePetro.org: Conferences at OnePetro.org

Other Literature: IBM Redbooks
Other Literature: PubMed Central
Other Literature: arXiv.org

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/987,396	Filing Date 08/07/2020	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $230 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

AMENDMENT	10/25/2021	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 11	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 1	Minus	*** 3	= 0		x $240 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/MARQUITA D JONES/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	16/987,396	Filing Date	2020-08-07	Docket Number (if applicable)	CONT-16669490	Art Unit	2688
First Named Inventor	GOLDSTEIN, Steven Wayne			Examiner Name	SNIEZEK, ANDREW L		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☐ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to
Deposit Account No _____

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature
Applicant Signature

PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/John P. Keady/	Date (YYYY-MM-DD)	2021-10-22
Name	John P. Keady	Registration Number	56389

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PATENT
CONT-16669490

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant:	GOLDSTEIN, Steven Wayne	Conf.: 7859
Appl. No.:	16/987,396	Group: 2688
Filed:	7 Aug. 2020	Examiner: Sniezek, Andrew L
For:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

DECLARATION OF PRIOR INVENTION IN A WTO MEMBER COUNTRY TO OVERCOME A CITED PATENT PURSUANT TO 37 C.F.R. § 1.131

COMMISSIONER FOR PATENTS
P.O. BOX 1450
Alexandria, Virginia 22313-1450

Sir:

1. This Declaration is to establish completion of the invention in this application in the United States, at a date prior to 5 Jan 2007, that is the effective date of the prior art. US Patent Pub. 2008/0165988 (U.S. Pat. App. No. 11/650,002) to Terlizzi that was cited by the Examiner in the Official Action dated 16 August 2021, in the above-identified application.

2. The person(s) making this declaration is the inventor of the invention claimed in the captioned application.

3. To establish the date of completion of the invention of this application, the following attached documents are submitted as evidence:

   (a) Exhibit A: Goldstein (US Patent Pub. 2016/0249128, U.S. Pat. App. No. 15/144,741) having a priority date to 18 Nov. 2006, cited by the Examiner as showing the claimed invention by the same inventor.

4. The inventor believes that the facts shown in these documents are of such character and weight to establish reduction to practice or conception prior to the date of 5 Jan. 2007 (the effective date of Terlizzi) with due diligence to a subsequent reduction to

practice. As evidence of prior invention, the following items are attached and the inventor asserts a date for the evidence prior to 5 Jan. 2007:

Exhibit A: Goldstein (US Patent Pub. 2016/0249128, U.S. Pat. App. No. 15/144,741) having a priority date to 18 Nov. 2006, cited by the Examiner as showing the claimed invention by the same inventor.

The inventor hereby declares that all statements made herein are true or believed to be true; and further that these statements are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code and that willful false statements may jeopardize the validity of the application or any patent issued thereon.

5. Signature:

Inventors:

Full name of first inventor: Steven Wayne Goldstein

Inventor's signature Steve Goldstein

Date 7 Sept 2021 Citizenship: USA

Residence: Florida, USA

Post Office Address: c/o Staton Techiya LLC, 9501 Jagged Creek Ct., Delray Beach, FL 33446

Electronic Patent Application Fee Transmittal

Application Number:	16987396
Filing Date:	07-Aug-2020
Title of Invention:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION
First Named Inventor/Applicant Name:	Steven Wayne Goldstein
Filer:	John Patrick Keady
Attorney Docket Number:	CONT-16669490

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
RCE- 1ST REQUEST	2801	1	680	680
		Total in USD ($)		**680**

Electronic Acknowledgement Receipt	
EFS ID:	44109706
Application Number:	16987396
International Application Number:	
Confirmation Number:	7859
Title of Invention:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION
First Named Inventor/Applicant Name:	Steven Wayne Goldstein
Customer Number:	150139
Filer:	John Patrick Keady
Filer Authorized By:	
Attorney Docket Number:	CONT-16669490
Receipt Date:	25-OCT-2021
Filing Date:	07-AUG-2020
Time Stamp:	11:09:03
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$680
RAM confirmation Number	E20210OB11434411
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	16987396_RCE.pdf	1349905 5ab4942b3cd4281488bf1cbe858a3c1475324ce5	no	3
Warnings:					
Information:					
2	Amendment Submitted/Entered with Filing of CPA/RCE	16987396_RFOA_JPK-16DEC2021.pdf	208399 2ce3ac17e56e367287b6cbcd6a75e2492b475dc8	no	6
Warnings:					
Information:					
3	Affidavit-Rule 131-pre-AIA (FTI) ONLY	16987396_131_declaration_pdf.pdf	640434 14d7087a83e4bc8a66734e1a5de40c0cd4bd920e	no	2
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	38269 8c6d5c204e7d04f6b5538a56771352e6fb67348c	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2237007		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	:	16/987,396	CONFIRMATION NO. 7859
APPLICATION OF	:	GOLDSTEIN, Steven Wayne	
DATE FILED	:	7 Aug. 2020	
EXAMINER	:	SNIEZEK, ANDREW L	
TC/A.U.	:	2688	
DOCKET	:	CONT-16669490	
TITLE	:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

RESPONSE TO OFFICE ACTION

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Date: October 25, 2021

Sir:

These remarks are filed, along with a Request for Continued Examination, in response to the Final Office Action dated 16 Aug. 2021. Please amend the above-identified patent application as follows:

- **Amendments to the Claims** begin on page 2 of this paper; and
- **Remarks/Arguments** begin on page 5 of this paper.

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.(previously presented) An earphone comprising:

a first microphone configured to measure an ambient acoustic environment, wherein the first microphone has a first microphone port that is configured to face away from a user when the earphone is inserted;

a second microphone configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone, wherein the second microphone has a second microphone port that is configured to face toward the user when the earphone is inserted;

a speaker configured to play an audio signal;

a memory that stores instructions; and

a processor that is configured to execute the instructions to perform operations, wherein the processor is coupled to the first microphone, wherein the processor is coupled to the second microphone, wherein the speaker is coupled to the processor, and the operations comprising:

receiving a first microphone signal from the first microphone;

receiving a second microphone signal from the second microphone;

generating an ambient sound signal from at least one of the first microphone signal or the second microphone signal or a combination of both signals;

applying an ambient sound gain to the ambient sound signal to generate a modified ambient sound signal;

mixing the modified ambient sound signal with an audio content signal to generate a mixed audio signal; and

sending the mixed audio signal to the speaker.

2.(cancelled)

3.(cancelled)

4.(previously presented) The earphone according to claim 1, where the operations further comprise:

detecting an acute sound by analyzing at least one of the first microphone signal or the second microphone signal or a combination of both signals; and

determining whether the acute sound is a user's voice by analyzing at least one of the first microphone signal or the second microphone signal or a combination of both signals.

5.(previously presented) The earphone according to claim 4, where the operations further comprise:

determining whether the acute sound is a warning sound or siren by analyzing the spectrum of at least one of the first microphone signal or the second microphone signal or a combination of both signals.

6.(previously presented) The earphone according to claim 5, where the operations further comprise:

decreasing a volume of the audio playback when a warning or siren is detected.

7.(previously presented) The earphone according to claim 6, where the operations further comprise:

sending a notification signal to the speaker.

8.(previously presented) The earphone according to claim 6, wherein the warning is at least one of a bell or the sound of an emergency vehicle or the sound of a security system or a combination.

9.(currently amended) The earphone according to claim 6, wherein the ~~alarm~~ siren is at least one of a police siren or an ambulance siren or a car honking or a combination.

10.(previously presented) The earphone according to claim 1, wherein the earphone includes a sealing section.

11.(previously presented) The earphone according to claim 4, where the operations further comprise:

adjusting the mixed audio signal when the user's voice is detected.

12.(cancel)

13.(cancel)

14.(previously presented) The earphone according to claim 11, where the operation of adjusting the mixed audio signal is to reduce the audio content signal and increase the ambient sound signal.

15.(previously presented) The earphone according to claim 14, where the mixed audio signal includes a noise reduction signal derived from the second microphone signal.

REMARKS

The foregoing amendments and the following remarks are made in response to the Final Office Action dated 16 Aug. 2021 ("Final Office Action").

At the time of the Office Action, the Examiner noted that claims 1, 4-11 and 14-15 were pending. The Examiner has rejected claims 1, 4-11 and 14 under pre AIA 35 U.S.C. § 102(e) and claims 1, 4-9, 10, 11, 14 and 15 under pre AIA 35 U.S.C. § 103(a).

In view of the arguments set forth below, and the attached 37 CFR 1.131 declaration applicable to pre-AIA examination, claims 1, 4-11 and 14-15 are allowable, and the Examiner is respectfully requested to withdraw the rejection and issue a Notice of Allowance.

I. Rejections Under 35 U.S.C. § 102

The Examiner rejected claims 1, 4-11 and 14 under pre-AIA 35 U.S.C. 102(e) as being anticipated by Goldstein (US Patent Pub. 2016/0249128, U.S. Pat. App. No. 15/144,741).

Applicant directs the Examiner's attention to the attached 37 CFR 1.131 declaration, and the Inventorship of the present application, Steven Wayne Goldstein, which has the identical inventorship of Goldstein (2016/0249128). Applicant additionally directs attention to reel 042992/0524 where Goldstein (2016/0249128) is assigned to the same entity as the present Application, Staton Techiya LLC.

Thus, any invention disclosed but not claimed in Goldstein (2016/0249128) was derived by the same inventor in the present application, and thus Goldstein (2016/0249128) is not a reference by "another", and therefore is not prior art under pre-AIA 35 U.S.C. 102(e).

Additionally, the Examiner cited reference Goldstein (US Patent Pub. 2016/0249128, U.S. Pat. App. No. 15/144,741), as evidenced by the Examiner in issuing the 35 USC 102(e) rejection using Goldstein, and the attached 37 CFR 1.131 declaration, shows that the current Inventor of the present application, has to such character and weight, established reduction to practice or conception prior to the date of 5 Jan. 2007 of Terlizzi et al. (US Patent Pub. 2008/0165988). Thus, the present application has at least a reduction to practice date equivalent to the effective filing date (i.e., priority) of Goldstein (US Patent Pub. 2016/0249128, U.S. Pat. App. No. 15/144,741) of 18 Nov. 2006.

For the foregoing reasons, the Examiner is respectfully requested to withdraw the rejections of claims under pre-AIA 35 U.S.C. § 102(e) and issue a Notice of Allowance for claims 1, 4-11 and 14.

II. Rejections Under 35 U.S.C. § 103

The Examiner has rejected claims 1, 4-9, 11, 14 and 15 under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Terlizzi et al. (US Patent Pub. 2008/0165988) in view of Dijkstra et al. (US Patent Pub. 2007/0147635) and further in view of Gauger et al. (US Patent Pub. 2006/0262938), and rejected claim 10 as being unpatentable over Terlizzi, Dijkstra, Gauger as applied to claim 1 and Stites, III (U.S. Pat. No. 5,208,967).

As set forth on pages 2-6 of the Office Action, the Examiner relies on Terlizzi to teach several of the incremental features of claims 1, 4-9, 11, 14 and 15 in combination with Dijkstra, Gauger, and Stites. However, as indicated above the Applicant has submitted a 37 C.F.R. § 1.131 declaration supporting the antedating of Terlizzi by the present application. Thus, the Applicant contests the combination of Terlizzi, Dijkstra, Gauger, and Stites.

In view of the above, the Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1, 4-10, 11, 14 and 15 under 35 U.S.C. 103(a).

III. Conclusion

Because all claims are believed to define over prior art of record, Applicant respectfully requests an early indication of allowability. If the Examiner has any questions concerning this application, the Examiner is requested to contact the undersigned at 571-606-1291 in the Washington D.C. Metro area.

Respectfully submitted,

TECHIYA LLC

Date: October 25, 2021

/John P. Keady/

John P. Keady
Assistant General Counsel: Intellectual Property
and Chief Technical Officer
Staton Techiya LLC
Reg. No. 56,389
571-606-1291

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/987,396	08/07/2020	Steven Wayne Goldstein	CONT-16669490	7859

150139 7590 08/16/2021
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

EXAMINER
SNIEZEK, ANDREW L

ART UNIT	PAPER NUMBER
2688	

NOTIFICATION DATE	DELIVERY MODE
08/16/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip@akerman.com
jp.keady@techiya.co
personics_docketing@cardinal-ip.com

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No. 16/987,396	Applicant(s) Goldstein et al.	
	Examiner ANDREW SNIEZEK	Art Unit 2688	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 8/4/21.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☑ This action is **FINAL.** 2b) ☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1,4-11 and 14-15 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1,4-11 and 14-15 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Claim Rejections - 35 USC § 103

2. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

3. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented 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. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under pre-AIA 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of pre-AIA 35 U.S.C. 103(c) and potential pre-AIA 35 U.S.C. 102(e), (f) or (g) prior art under pre-AIA 35 U.S.C. 103(a).

5. Claims 1, 4-9, 11, 14 and 15 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Terlizzi et al. (US 2008/0165988 A1), cited by applicant in view of Dijkstra et al. (US 2007/0147635 A1) and Gauger, Jr. et al. (US 2006/0262938 A1).

Re claim 1: Terlizzi et al. teaches an earphone arrangement (the specific circuit arrangement of which can be seen in figure 2 for blending signals, which as discussed with respect to figure 9 can be included in the earpiece) comprising:

a first microphone configured to measure an ambient acoustic environment (2250, capable of picking up ambient sounds); a second microphone (2106) configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone (note locations of microphones 2106 and 2250 are used at different locations relative to a user's ear and therefor ear canal); a speaker (2102, 2104) configured to play an audio signal; and

a processor (2210) that is configured to execute instructions to perform operations, wherein the processor is coupled to the first microphone (figure 2), wherein the processor is coupled to the second microphone (figure 2), wherein the speaker is coupled to the processor (figure 2), and the operations comprising: receiving a first microphone signal from the first microphone (figure 2, via use of element 2222); receiving a second microphone signal from the second microphone (figure 2, via use of element 2222); generating an ambient sound signal from at least one of the first microphone signal or the second microphone signal or a combination of both signals (paragraph [0028]);

applying an ambient sound gain to the ambient sound signal to generate a modified ambient sound signal (paragraph [0028] by the use of parameters for amplification gain);

mixing (use or combiner (2224)) the modified ambient sound signal with an audio content signal (from music storage (2230) to generate a mixed audio signal; and sending the mixed audio signal to the speaker (figure 2, by use of (2226)).

Terlizzi et al. additionally teaches that the invention can be used with a variety of devices including earpieces/earbuds (devices worn inside ear) but does not provide the specific structural features of these earbuds as now amended. Dijkstra et al. teaches in the similar environment that earpieces can include a microphone (M1) configured to face away from a user and a microphone (M2) that is configured to face toward a user when the earpiece is inserted in a user. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate this teaching as taught by Dijkstra et al. into the device of Terlizzi et al. to predictably provide a structural way of forming the earpiece/earbuds in Terlizzi et al. Therefor the claimed subject matter would have been obvious at the time of the invention. Additionally, Terlizzi et al., teaching to use a processor for instruction operations, does not specifically teach the processor performs instruction that have been stored in a memory as set forth. Gauger, Jr. et al. teaches in a similar environment to use processors that are controlled by memory stored instructions (paragraph [0155]) as a means for performing audio processing. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate such a feature into the arrangement of Terlizzi

et al. and Dijkstra et al. as applied to predictably provide a means for instructing the audio processing as taught in Terlizzi et al. Therefor the claimed subject matter would have been obvious at the time of the invention.

Re claim 4: note Terlizzi et al., paragraph [0040] in which a voice may be detected. This voice corresponds to the claimed acute user's voice as set forth.

Re claim 5: see discussion in Terlizzi et al., paragraph [0038] in which acute sounds such as warning sounds of a car horn can be detected by the use of filters by analyzing a spectrum of the sound (volume or frequency). These horn sounds include horn sounds of emergency vehicles as alternatively set forth in claim 8.

Re claims 6 and 8: muting sounds, Terlizzi et al., paragraph [0038] satisfies the claimed decreasing a volume as set forth, i.e. decreasing to a zero value which is responsive to sounds of vehicles (including emergency vehicles) provided by the sound produced by a horn of these types of vehicles.

Re claim 7: sending a notification as set forth is satisfied by providing a warning, Terlizzi et al., paragraph [0038]

Re claim 9: the alternative alarm (warning) as set forth is taught by "car horns", Terlizzi et al., paragraph [0038]

Re claim 11: the adjustment of mixed audio when a voice is detected is taught by the blending operations as taught in paragraph [0040] or Tertizzi et al.

Re claim 14: see Terlizzi et al., paragraph [0040] which as previously discussed in paragraph [0036] can include a volume level adjustments (i.e. increase or decrease) of the background and internal sounds to blend.

Re claim 15: note for example paragraphs [0006 and 0028] which includes the use of noise reduction when producing a mixed audio with this noise reduction based on the hardware configuration which as previously discussed includes obtained microphone signal(s) as set forth

9. Claim 10 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Terlizzi et al. (US 2008/0165988 A1), cited by applicant in view of Dijkstra et al. (US 2007/0147635 A1) and Gauger, Jr. et al. (US 2006/0262938 A1) as applied to claims 1, 4-9, 11, 14 and 15 above, and further in view of Stites, III (U.S. Patent 5,208,867). The teaching of Terlizzi et al. (US 2008/0165988 A1), Dijkstra et al. (US 2007/0147635 A1) and Gauger, Jr. et al. (US 2006/0262938 A1) is discussed above and incorporated herein. This combination of references does not teach the use of a sealing section on the earphone (earpiece). Stites, III teaches in a similar environment to use sealing sections (49) of an earpiece to produce a sealed era canal so that a voice can be detected external to the ear canal (figure 5 along with column 10, lies 27-45). It would have been obvious to one of ordinary skill in the art before the filing of the invention to incorporate such a sealing section in the earpiece used in the combination of Terlizzi et al. (US 2008/0165988 A1), Dijkstra et al. (US 2007/0147635 A1) and Gauger, Jr. et al. (US 2006/0262938 A1) as applied to predictably seal the ear canal when detecting a voice through the use of microphone external to the ear canal. Therefore, the claimed subject matter would have been obvious before the filing of the invention.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claim(s) 1, 4-11 and 14 is/are rejected under pre-AIA 35 U.S.C. 102(e) as being anticipated by Goldstein (US 2016/0249128 A1).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under pre-AIA 35 U.S.C. 102(e). This rejection under pre-AIA 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor or joint inventors (i.e., the inventive entity) of this application and is thus not the invention "by another," or if the same invention is not being claimed, by an appropriate showing under 37 CFR 1.131(a).

Re claim 1: Goldstein teaches an earphone comprising:

a first microphone (110), figure 1 configured to measure an ambient acoustic environment, wherein the first microphone has a first microphone port (inherent opening to allow detection of ambient acoustic sounds) that is configured to face away from a user when the earphone is inserted;

a second microphone (130), figure 1 configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone, wherein the second microphone has a second microphone port (inherent opening to allow detection of the acoustic environment seconds) that is configured to face toward the user when the earphone is inserted:

a speaker (120) configured to play an audio signal;

a memory that stores instructions (paragraph [0027] and figure 2, memory used with a processor for controlling operation); and

a processor that is configured to execute the instructions to perform operations (paragraph [0027], and figure 2 processor used with a memory for controlling operation), wherein

the processor is coupled to the first microphone, wherein the processor is coupled to the second microphone, wherein the speaker is coupled to the processor (see figure 2), and the operations comprising:

receiving a first microphone signal from the first microphone (see figure 2);

receiving a second microphone signal from the second microphone (see figure 2);

generating an ambient sound signal from at least one of the first signal or the second microphone signal or a combination of both signals microphone (note 110 is for the generating of an ambient sound signal that is detected);

applying an ambient sound gain (paragraph [0043] in the form of a spectral gain) to the ambient sound signal to generate a modified ambient sound signal;

mixing the modified ambient sound signal with an audio content signal to generate a mixed audio signal (paragraph [0043]); and

sending the mixed audio signal to the speaker (120, delivering the audio to the ear canal, paragraph [0043]).

Re claim 4: see discussion in paragraph [0060] for the detection of a user's voice captured by microphone (110) and use of a voice activity detector satisfying the detecting and determining features as set forth.

Re claim 5: see discussion in paragraphs [0007 and 0025] for the detection of a warning sound(s) with a processor looking at the spectrums captured as discussed in paragraph [0060]

Re claim 6: see discussion in paragraph [0066] in which audio playback is attenuated when a warning sound is detected. This attenuation satisfies the claimed deceasing the volume.

Re claim 7: see sending an audible notification (paragraph [0067] which would be through the use of a speaker as set forth.

Re claim 8: note paragraph [0065] teaching warning sounds satisfying at least one of the alternative claimed warnings as set forth

Re claim 9: note paragraph [0065] teaching siren sounds satisfying at least one of the alternative claimed warnings as set forth

Re claim 10: the claimed sealing section is taught by that portion of the earpiece that is in contact with the ear as depicted in figure 1

Re claim 11: note teachings in paragraph [0057] changing volume levels of the mixed signal when a phone call is detected, which as taught in paragraph [0060] would include a user's voice detection arrangement.

Re claim 14: the reduction of audio content and increase of ambient content is satisfied by the ramping down of volume and ramping up of volume as discussed in paragraph [0057]

Response to Arguments

12. Applicant's arguments with respect to claim(s) 1, 4-11 and 14-15 have been considered but are moot because they are based on newly set forth limitations and not

directed to previously claimed limitations as art as was applied in the prior rejection of record. The art now applied is based on the amendments made to the claim(s).

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW SNIEZEK whose telephone number is (571)272-7563. The examiner can normally be reached on Monday-Friday 7:00 AM-3:30 PM EST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant can directly call the examiner or use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Lim can be reached on 571-270-1210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ANDREW L SNIEZEK/
Primary Examiner, Art Unit 2688

/A.L.S/
Primary Examiner, Art Unit 2688
8/11/21

Notice of References Cited	Application/Control No. 16/987,396	Applicant(s)/Patent Under Reexamination Goldstein et al.	
	Examiner ANDREW SNIEZEK	Art Unit 2688	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20070147635-A1	06-2007	Dijkstra; Evert	H04R25/40	381/94.1
*	B	US-20160249128-A1	08-2016	Goldstein; Steven Wayne	H04R29/00	1/1
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

CPC - Searched*		
Symbol	**Date**	**Examiner**
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	09/23/2020	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	01/22/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	03/29/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	05/27/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	08/11/2021	ALS

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**

/ANDREW L SNIEZEK/
Primary Examiner, Art Unit 2688

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	09/23/2020	ALS
See assignee and inventor search history printout	09/23/2020	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	09/23/2020	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	01/22/2021	ALS
See assignee and inventor search history printout	01/22/2021	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	01/22/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	03/29/2021	ALS
See assignee and inventor search history printout	03/29/2021	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	03/29/2021	ALS
IP.com search history printout	03/29/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	05/27/2021	ALS
See assignee and inventor search history printout	05/27/2021	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	05/27/2021	ALS
IP.com search history printout	05/27/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	08/11/2021	ALS
See assignee and inventor search history printout	08/11/2021	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	08/11/2021	ALS
IP.com search history printout	08/11/2021	ALS

/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
See interference search history printout		03/29/2021	ALS
See interference search history printout		05/27/2021	ALS
See interference search history printout		08/11/2021	ALS

/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688	

Main Concept Text
==========
An earphone comprising: a first microphone configured to measure an ambient acoustic environment,_wherein the first microphone has a first microphone port that is configured to face away from a user when the earphone is inserted; a second microphone configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone, wherein the second microphone has a second microphone port that is configured to face toward the user when the earphone is inserted: a speaker configured to play an audio signal; a memory that stores instructions; and a processor that is configured to execute the instructions to perform operations, wherein the processor is coupled to the first microphone, wherein the processor 1s coupled to the second microphone, wherein the speaker is coupled to the processor, and the operations comprising: receiving a first microphone signal from the first microphone; receiving a second microphone signal from the second microphone; generating an ambient sound signal from at least one of the first microphone signal or the second microphone signal or a combination of both signals; applying an ambient sound gain to the ambient sound signal to generate a modified ambient sound signal; mixing the modified ambient sound signal with an audio content signal to generate a mixed audio signal; and sending the mixed audio signal to the speaker.

(No Concept Modifiers)
==========

(No Filters)
==========

Options
=======
De-dup: None
Cut-off: None
Sort: Relevance

Content: Non-Patent Literature (23)
==========
IEEE Xplore Publications: IEEE Periodicals
IEEE Xplore Publications: IEEE Conferences
IEEE Xplore Publications: IEEE Standards
IEEE Xplore Publications: IEEE Early Access
IEEE Xplore Publications: SMPTE Periodicals
IEEE Xplore Publications: SMPTE Conferences
IEEE Xplore Publications: SMPTE Standards
IEEE Xplore Publications: MIT Press eBooks
IEEE Xplore Publications: Wiley-IEEE eBooks
IEEE Xplore Publications: IBM Periodicals
IEEE Xplore Publications: URSI Periodicals
IEEE Xplore Publications: VDE Conferences
IEEE Xplore Publications: Periodicals from China
IP.com Prior Art Database: The IP.com Journal
IP.com Prior Art Database: Internet Society RFC
IP.com Prior Art Database: IBM TDB Archive
IP.com Prior Art Database: Legacy Journals
IP.com Prior Art Database: Software Patent Institute
OnePetro.org: Periodicals at OnePetro.org
OnePetro.org: Conferences at OnePetro.org

Other Literature: IBM Redbooks
Other Literature: PubMed Central
Other Literature: arXiv.org

WEST Search History

Hide Items | Restore | Clear | Close

DATE: Wednesday, August 11, 2021

Hide?	Set Name	Query	Hit Count
DB=PGPB; PLUR=YES; OP=OR			
☐	L35	L34 and (earbud or headphone or headset or earpiece)	1
☐	L34	20080165988	1
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L33	l32 and (earbud or headphone or headset or earpiece)	125
☐	L32	L31 and ((mix$3 or conbin$3 or blend$3) with (audio or music or source))	125
☐	L31	l29 and ((gain or multiplier or weight$3 or factor) with (ambient or surround or environmental) with (acoustic or sound))	269
☐	L30	L29 and (l24 or l25 or l26 or l27)	2
☐	L29	ecm or (ear adj4 canal adj4 microphone)	77026
DB=USPT,JPAB,FPRS,PGPB; PLUR=YES; OP=OR			
☐	L28	37603455.FMID.	9
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L27	101401399	16
☐	L26	5299030	12
DB=PGPB; PLUR=YES; OP=OR			
☐	L25	20050207597 or 20030035551 or 20080165988 or 20030151678 or 20060222185	5
DB=USPT; PLUR=YES; OP=OR			
☐	L24	8577052.pn. or 5541359.pn. or 5774567.pn. or 7421084.pn. or 7903826.pn. or 7986802.pn. or 8199942.pn. or 10361673.pn.	8
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L23	L22 and ((gain or multiplier) with (ambient or surround or environmental) with sound)	50
☐	L22	L21 and L5	139
☐	L21	(asm or (ambient adj3 microphone)) same (ecm or (ear adj3 canal adj3 microphone))	536
☐	L20	L19 not L18	46
☐	L19	((detect$3 or sensing) with ((emergency adj3 vehicle) or warning or police or siren or ambulance)) same (((turn adj3 down) or mute) with audio or misic)	66
☐	L18	((detect$3 or sensing) with siren) same (((turn adj3 down) or mute) with audio or misic)	20
☐	L17	(microphone with (detect$3 or sensing) with ((emergency adj3 vehicle) or warning or police or siren or ambulance)) same (((turn adj3 down) or mute) with audio or misic)	3
☐	L16	(microphone with (detect$3 or sensing) with siren) same (((turn adj3 down) or mute) with audio or misic)	2
☐	L15	L14 and ((reduc$3 or (turn$3 adj3 down))near5 volume)	42
☐	L14	(audio near4 (reproduc$4 or payback)) with (warning or notification)	783
☐	L13	L5 and ((notify or notification) with ((acute adj3 sound) or (emergency adj3 vehicle or warning) or police or siren or ambulance))	216

DB=PGPB,USPT; PLUR=YES; OP=OR

☐	L12	(20080037801 | 6728385 | 20070160243 | 20040037428 | 20070223717 | 6023517 | 20050111683 | 20080137873 | 5251263 | 4837832 | 5867581 | 20060262938 | 8059847 | 20050254665 | 20050105750 | 20040234089 | 6415034)![PN]	17

DB=USPT; PLUR=YES; OP=OR

☐	L11	("8150044")[PN]	1
☐	L10	("8150044")[URPN]	29
☐	L9	8150044.pn.	1

DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR

☐	L8	L6 not L7	262
☐	L7	L6 and L3	71
☐	L6	L5 and ((notify or notification) near5 (user or person))	333
☐	L5	(earbud or headphone or headset or earpiece) same ((sens$3 or detect$3) with ((acute adj3 sound) or (emergency adj3 vehicle or warning) or police or siren or ambulance))	1037
☐	L4	L1 and (microphone and warning and notification and environment).clm.	6
☐	L3	L2 or G10k$.cpc. or H04R$.cpc.	438688
☐	L2	(((((((G10K11/17827))))))).cpc. or (((((((G10K11/002))))))).cpc. or (((((((H04R1/1016))))))).cpc. or (((((((H04R1/1083))))))).cpc. or (((((((H04R3/002))))))).cpc. or (((((((H04R3/005))))))).cpc. or (((((((H04R29/001))))))).cpc. or (((((((H04R2225/41))))))).cpc. or (((((((H04R2460/05))))))).cpc. or (((((((H04R2499/11))))))).cpc.	76916
☐	L1	(Stanton near4 techiya).as. or (Steven near4 Goldstein).in. or (john near4 Beer).in. or (Marc near4 Boillot).in.	1251

END OF SEARCH HISTORY

Electronic Acknowledgement Receipt

EFS ID:	43429985
Application Number:	16987396
International Application Number:	
Confirmation Number:	7859
Title of Invention:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION
First Named Inventor/Applicant Name:	Steven Wayne Goldstein
Customer Number:	150139
Filer:	John Patrick Keady
Filer Authorized By:	
Attorney Docket Number:	CONT-16669490
Receipt Date:	04-AUG-2021
Filing Date:	07-AUG-2020
Time Stamp:	19:44:07
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant Arguments/Remarks Made in an Amendment	16987396_ROA_JPK-4AUG2021.pdf	187257 a24392a89da39bc3e4fe275c7edbb61dce88e952	no	8

Warnings:

Information:	
Total Files Size (in bytes):	187257

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	:	16/987,396	CONFIRMATION NO. 7859
APPLICATION OF	:	GOLDSTEIN, Steven Wayne	
DATE FILED	:	7 Aug. 2020	
EXAMINER	:	SNIEZEK, ANDREW L	
TC/A.U.	:	2688	
DOCKET	:	CONT-16669490	
TITLE	:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

RESPONSE TO OFFICE ACTION

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Date: August 4, 2021

Sir:

These remarks are filed in response to the Final Office Action dated 1 June 2021. Please amend the above-identified patent application as follows:

- **Amendments to the Claims** begin on page 2 of this paper; and
- **Remarks/Arguments** begin on page 5 of this paper.

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.(currently amended) An earphone comprising:

a first microphone configured to measure an ambient acoustic environment, wherein the first microphone has a first microphone port that is configured to face away from a user when the earphone is inserted;

a second microphone configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone, wherein the second microphone has a second microphone port that is configured to face toward the user when the earphone is inserted;

a speaker configured to play an audio signal;

a memory that stores instructions; and

a processor that is configured to execute the instructions to perform operations, wherein the processor is coupled to the first microphone, wherein the processor is coupled to the second microphone, wherein the speaker is coupled to the processor, and the operations comprising:

receiving a first microphone signal from the first microphone;

receiving a second microphone signal from the second microphone;

generating an ambient sound signal from at least one of the first microphone signal or the second microphone signal or a combination of both signals;

applying an ambient sound gain to the ambient sound signal to generate a modified ambient sound signal;

mixing the modified ambient sound signal with an audio content signal to generate a mixed audio signal; and

sending the mixed audio signal to the speaker.

2.(cancelled)

3.(cancelled)

4.(previously presented) The earphone according to claim 1, where the operations further comprise:

detecting an acute sound by analyzing at least one of the first microphone signal or the second microphone signal or a combination of both signals; and

determining whether the acute sound is a user's voice by analyzing at least one of the first microphone signal or the second microphone signal or a combination of both signals.

5.(previously presented) The earphone according to claim 4, where the operations further comprise:

determining whether the acute sound is a warning sound or siren by analyzing the spectrum of at least one of the first microphone signal or the second microphone signal or a combination of both signals.

6.(previously presented) The earphone according to claim 5, where the operations further comprise:

decreasing a volume of the audio playback when a warning or siren is detected.

7.(previously presented) The earphone according to claim 6, where the operations further comprise:

sending a notification signal to the speaker.

8.(previously presented) The earphone according to claim 6, wherein the warning is at least one of a bell or the sound of an emergency vehicle or the sound of a security system or a combination.

9.(currently amended) The earphone according to claim 6, wherein the ~~alarm~~ siren is at least one of a police siren or an ambulance siren or a car honking or a combination.

10.(previously presented) The earphone according to claim 1, wherein the earphone includes a sealing section.

11.(previously presented) The earphone according to claim 4, where the operations further comprise:

adjusting the mixed audio signal when the user's voice is detected.

12.(cancel)

13.(cancel)

14.(previously presented) The earphone according to claim 11, where the operation of adjusting the mixed audio signal is to reduce the audio content signal and increase the ambient sound signal.

15.(currently amended) The earphone according to claim 14, where the mixed audio signal ~~only~~ includes a noise reduction signal derived from the second microphone signal~~and the ambient sound signal~~.

REMARKS

The foregoing amendments and the following remarks are made in response to the Final Office Action dated 2 Apr. 2021 ("Final Office Action").

At the time of the Office Action, the Examiner noted that claims 1, 4-11 and 14-15 were pending. The Examiner has objected to claims 9 and 15 for informalities, rejected claims 1, 4-11 and 14-15 under pre AIA 35 U.S.C. § 103(a). In order to expedite prosecution, claims 2-3 have been cancelled rendering the 35 U.S.C. § 112.

In view of the arguments set forth below, claims 1, 4-11 and 14-15 are allowable, and the Examiner is respectfully requested to withdraw the rejection and issue a Notice of Allowance.

NOTE

Applicant appreciates the Examiners' thoroughness in reviewing the Applicant cited art.

I. CLAIM OBJECTIONS

The Examiner has objected to claims 9 and 15 for informalities. Applicant appreciates the Examiner's comments and has amended claims 9 and 15 rendering the Examiner's objection mute. In view of the above, the Applicant respectfully requests reconsideration and withdrawal of the claim objections.

II. 35 U.S.C § 103(a)

The Examiner has rejected Claims 1, 4-9, 11,14, and 15 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Terlizzi et al., US 2008/0165988 A1 (hereafter Terlizzi), and further in view of Gauger, Jr. et al., US 2006/0262938 A1 (hereafter Gauger). The Examiner has also rejected Claim 10 under pre 35 U.S.C. 103(a) as being unpatentable over Terlizzi and Gauger as applied to claims 1, 4-9, 11, 14 and 15 above, and further in view of Stites, III, US Pat. No. 5208867 (hereafter Stites).

In the interest of expedited prosecution Applicant has amended claim 1, to further distinguish the first and second microphone orientations (i.e. the associated microphone port through which measurements are taken).

Amended claim 1 currently states:

1.(currently amended) An earphone comprising:

a first microphone configured to measure an ambient acoustic environment, wherein the first microphone has a first microphone port that is configured to face away from a user when the earphone is inserted;

a second microphone configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone, wherein the second microphone has a second microphone port that is configured to face toward the user when the earphone is inserted;

a speaker configured to play an audio signal;

a memory that stores instructions; and

a processor that is configured to execute the instructions to perform operations, wherein the processor is coupled to the first microphone, wherein the processor is coupled to the second microphone, wherein the speaker is coupled to the processor, and the operations comprising:

receiving a first microphone signal from the first microphone;

receiving a second microphone signal from the second microphone;

generating an ambient sound signal from at least one of the first microphone signal or the second microphone signal or a combination of both signals;

applying an ambient sound gain to the ambient sound signal to generate a modified ambient sound signal;

mixing the modified ambient sound signal with an audio content signal to generate a mixed audio signal; and

sending the mixed audio signal to the speaker.

The support for the clarification can be found in at least Figures 1 and 2 of the present application, where the second microphone is often referred to as an ear canal microphone (ECM) since it samples the acoustic environment that is closer to the ear canal region. This region is more useful in determining the noise that is to reach the user's tympanic membrane

(hence amended claim 15). Where the terms "face toward" and "face away" can be interpreted as an orientation of an axis running through the middle of the port intersecting with a user or not, respectively. This can be seen in the non limiting example of Figure 1 where the ASM faces away (i.e., measures in a direction away) from the user, and the ECM 123 faces toward it (i.e., measure in a direction toward the user).

Terlizzi describes a listening device 2100 (e.g. headphones) connected to an audio generation device (e.g., cell phone). With regards to the listening device 210, Terlizzi states that it can include speakers and multiple microphones (Terlizzi, [0020]) Terlizzi also states that a speaker and multiple "directional" microphones can be included in a single earpiece (Terlizzi, [0020]). The multiple microphones are to sample different directions in the user's environment (i.e. away from the user). However Terlizzi should not be interpreted in a way that frustrates its stated purpose "to receive sounds from the user's environment and combine them with sound generated by the device " (Terlizzi, [0006]). The second microphone (e.g., ECM) of Amended claim 1 is aimed toward the user,.. not toward the user's environment. Hence Terlizzi fails to show, teach, or suggest the orientation of the second microphone port, which has practical function of aiding in noise reduction calculation, not anticipated by Terlizzi.

Gauger and Stites, additionally fail to show, suggest or teach such a feature.

Thus Gauger and/or Stites even if combined with Terlizzi, although Applicant does not admit the references are combinable, fail to show all the features of amended claim 1.

For these reasons at least, amended independent claim 1 defines over the cited references and thus claim 1 and the claims dependent therefrom are allowable, and the Examiner is respectfully requested to withdraw the rejections under 35 U.S.C. § 103 and issue a Notice of Allowance of claims 1, 4-11 and 14-15.

INTERVIEW REQUEST

Applicant request that if the Examiner deems the amended claim still not allowable that an interview be conducted to discuss the remaining issues.

Should the Examiner believe that anything further is necessary, the Examiner is respectfully requested to contact the undersigned representative at the telephone number listed below.

Respectfully submitted,

TECHIYA LLC

Date: August 4, 2021

/John P. Keady/

John P. Keady
Assistant General Counsel: Intellectual Property
and Chief Technical Officer
Staton Techiya LLC
Reg. No. 56,389
571-606-1291

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/987,396	08/07/2020	Steven Wayne Goldstein	CONT-16669490	7859

150139 7590 06/01/2021
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

EXAMINER
SNIEZEK, ANDREW L

ART UNIT	PAPER NUMBER
2688	

NOTIFICATION DATE	DELIVERY MODE
06/01/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip@akerman.com
jp.keady@techiya.co
personics_docketing@cardinal-ip.com

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No. 16/987,396	Applicant(s) Goldstein et al.	
	Examiner ANDREW SNIEZEK	Art Unit 2688	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 5/25/21.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1,4-11 and 14-15 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1,4-11 and 14-15 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/25/21 has been entered.

Information Disclosure Statement

3. The information disclosure statement filed 5/14/21 has been considered.

Claim Objections

4. Claims 9 and 15 are objected to because of the following informalities: The term “the alarm”, claim 9 is not consistent with the term “a warning” claim 6. Also claim 15 sets forth that the mixed audio only includes a noise reduction signal and ambient sound which is not consistent with the mixed audio of claim 1 in which the mixed audio includes audio content. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of

rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

6. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented 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. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under pre-AIA 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of pre-AIA 35 U.S.C. 103(c) and potential pre-AIA 35 U.S.C. 102(e), (f) or (g) prior art under pre-AIA 35 U.S.C. 103(a).

8. Claims 1, 4-9, 11, 14 and 15 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Terlizzi et al. (US 2008/0165988 A1), cited by applicant in view of Gauger, Jr. et al. (US 2006/0262938 A1).

Re claim 1: Terlizzi et al. teaches an earphone arrangement (the specific circuit arrangement of which can be seen in figure 2 for blending signals, which as discussed with respect to figure 9 can be included in the earpiece) comprising:

a first microphone configured to measure an ambient acoustic environment (2250, capable of picking up ambient sounds); a second microphone (2106) configured to

measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone (note locations of microphones 2106 and 2250 are used at different locations relative to a user's ear and therefor ear canal); a speaker (2102, 2104) configured to play an audio signal; and

a processor (2210) that is configured to execute instructions to perform operations, wherein the processor is coupled to the first microphone (figure 2), wherein the processor is coupled to the second microphone (figure 2), wherein the speaker is coupled to the processor (figure 2), and the operations comprising: receiving a first microphone signal from the first microphone (figure 2, via use of element 2222); receiving a second microphone signal from the second microphone (figure 2, via use of element 2222); generating an ambient sound signal from at least one of the first microphone signal or the second microphone signal or a combination of both signals (paragraph [0028]);

applying an ambient sound gain to the ambient sound signal to generate a modified ambient sound signal (paragraph [0028] by the use of parameters for amplification gain);

mixing (use or combiner (2224)) the modified ambient sound signal with an audio content signal (from music storage (2230) to generate a mixed audio signal; and

sending the mixed audio signal to the speaker (figure 2, by use of (2226)).

Terlizzi et al., teaching to use a processor for instruction operations, does not specifically teach the processor performs instruction that have been stored in a memory as set forth. Gauger, Jr. et al. teaches in a similar environment to use processors that are controlled by memory stored instructions (paragraph [0155]) as a means for

performing audio processing. It would have been obvious to one of ordinary skill in the art before the filing of the invention to incorporate such a feature into the arrangement of Terlizzi et al. to predictably provide a means for instructing the audio processing as taught in Terlizzi et al.. Therefor the claimed subject matter would have been obvious before the filing of the invention.

Re claim 4: note Terlizzi et al., paragraph [0040] in which a voice may be detected. This voice corresponds to the claimed acute user's voice as set forth.

Re claim 5: see discussion in Terlizzi et al., paragraph [0038] in which acute sounds such as warning sounds of a car horn can be detected by the use of filters by analyzing a spectrum of the sound (volume or frequency). These horn sounds include horn sounds of emergency vehicles as alternatively set forth in claim 8.

Re claims 6 and 8: muting sounds, Terlizzi et al., paragraph [0038] satisfies the claimed decreasing a volume as set forth, i.e. decreasing to a zero value which is responsive to sounds of vehicles (including emergency vehicles) provided by the sound produced by a horn of these types of vehicles.

Re claim 7: sending a notification as set forth is satisfied by providing a warning, Terlizzi et al., paragraph [0038]

Re claim 9: the alternative alarm (warning) as set forth is taught by "car horns", Terlizzi et al., paragraph [0038]

Re claim 11: the adjustment of mixed audio when a voice is detected is taught by the blending operations as taught in paragraph [0040] or Tertizzi et al.

Re claim 14: see Terlizzi et al., paragraph [0040] which as previously discussed in paragraph [0036] can include a volume level adjustments (i.e. increase or decrease) of the background and internal sounds to blend.

Re claim 15: note for example paragraphs [0006 and 0028] which includes the use of noise reduction when producing a mixed audio as set forth

9. Claim 10 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Terlizzi et al. (US 2008/0165988 A1), cited by applicant in view of Gauger, Jr. et al. (US 2006/0262938 A1) as applied to claims 1, 4-9, 11, 14 and 15 above, and further in view of Stites, III (U.S. Patent 5,208,867) .

The teaching of Terlizzi et al. (US 2008/0165988 A1), cited by applicant in view of Gauger, Jr. et al. (US 2006/0262938 A1)is discussed above and incorporated herein. This combination of references does not teach the use of a sealing section on the earphone (earpiece). Stites, III teaches in a similar environment to use sealing sections (49) of an earpiece to produce a sealed era canal so that a voice can be detected external to the ear canal (figure 5 along with column 10, lies 27-45). It would have been obvious to one of ordinary skill in the art before the filing of the invention to incorporate such a sealing section in the earpiece used in the combination of Terlizzi et al. and Gauger Jr. et al. as applied to predictably seal the ear canal when detecting a voice through the use of microphone external to the ear canal. Therefore, the claimed subject matter would have been obvious before the filing of the invention.

Response to Arguments

10. Applicant's arguments, see page 1, directed to the cancellation of claims 2-3 filed 5/14/21, have been fully considered and are persuasive. The 35 USC § 112 of claims 2-3 has been withdrawn.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW SNIEZEK whose telephone number is (571)272-7563. The examiner can normally be reached on Monday-Friday 7:00 AM-3:30 PM EST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Lim can be reached on 571-270-1210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access

to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ANDREW L SNIEZEK/
Primary Examiner, Art Unit 2688

/A.L.S/
Primary Examiner, Art Unit 2688
5/27/21

Notice of References Cited	Application/Control No. 16/987,396	Applicant(s)/Patent Under Reexamination Goldstein et al.	
	Examiner ANDREW SNIEZEK	Art Unit 2688	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20060262938-A1	11-2006	Gauger; Daniel M. JR.	G10L21/02	381/56
*	B	US-5208867-A	05-1993	Stites, III; George M.	H04R25/407	381/361
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

CPC - Searched*		
Symbol	**Date**	**Examiner**
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	09/23/2020	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	01/22/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	03/29/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	05/27/2021	ALS

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

Search Notes		
Search Notes	**Date**	**Examiner**
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	09/23/2020	ALS
See assignee and inventor search history printout	09/23/2020	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	09/23/2020	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	01/22/2021	ALS
See assignee and inventor search history printout	01/22/2021	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	01/22/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	03/29/2021	ALS
See assignee and inventor search history printout	03/29/2021	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	03/29/2021	ALS
IP.com search history printout	03/29/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	05/27/2021	ALS
See assignee and inventor search history printout	05/27/2021	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	05/27/2021	ALS
IP.com search history printout	05/27/2021	ALS

/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
See interference search history printout		03/29/2021	ALS
See interference search history printout		05/27/2021	ALS

/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688	

Main Concept Text
==========
An earphone comprising: a first microphone configured to measure an ambient acoustic environment; a second microphone configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone; a speaker configured to play an audio signal; a memory that stores instructions; and a processor that is configured to execute the instructions to perform operations, wherein the processor is coupled to the first microphone, wherein the processor is coupled to the second microphone, wherein the speaker is coupled to the processor, and the operations comprising: receiving a first microphone signal from the first microphone; receiving a second microphone signal from the second microphone; generating an ambient sound signal from at least one of the first microphone signal or the second microphone signal or a combination of both signals; applying an ambient sound gain to the ambient sound signal to generate a modified ambient sound signal; mixing the modified ambient sound signal with an audio content signal to generate a mixed audio signal; and sending the mixed audio signal to the speaker.

(No Concept Modifiers)
==========

(No Filters)
==========

Options
==========
De-dup: None
Cut-off: None
Sort: Relevance

Content: Non-Patent Literature (23)
==========
IEEE Xplore Publications: IEEE Periodicals
IEEE Xplore Publications: IEEE Conferences
IEEE Xplore Publications: IEEE Standards
IEEE Xplore Publications: IEEE Early Access
IEEE Xplore Publications: SMPTE Periodicals
IEEE Xplore Publications: SMPTE Conferences
IEEE Xplore Publications: SMPTE Standards
IEEE Xplore Publications: MIT Press eBooks
IEEE Xplore Publications: Wiley-IEEE eBooks
IEEE Xplore Publications: IBM Periodicals
IEEE Xplore Publications: URSI Periodicals
IEEE Xplore Publications: VDE Conferences
IEEE Xplore Publications: Periodicals from China
IP.com Prior Art Database: The IP.com Journal
IP.com Prior Art Database: Internet Society RFC
IP.com Prior Art Database: IBM TDB Archive
IP.com Prior Art Database: Legacy Journals
IP.com Prior Art Database: Software Patent Institute
OnePetro.org: Periodicals at OnePetro.org
OnePetro.org: Conferences at OnePetro.org
Other Literature: IBM Redbooks
Other Literature: PubMed Central
Other Literature: arXiv.org

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16987396
Filing Date	2020-08-07
First Named Inventor	GOLDSTEIN, Steven Wayne
Art Unit	2688
Examiner Name	SNIEZEK, ANDREW L
Attorney Docket Number	CONT-16669490

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	8577052		2013-11-05	Michael W. Silber, et al.	
	2	5541359		1996-07-30	Young-Man Lee	
	3	5774567		1998-06-30	Lawrence F. Heyl	
	4	7421084		2008-09-02	Christopher Michael Jubien, et al.	
	5	7903826		2011-03-08	Johan Boersma	
	6	7986802		2011-07-26	Carl R. Ziller	
	7	8199942		2012-06-12	Xiadong Mao	
	8	10361673		2019-07-23	Takeo Matsukawa	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

EFS Web 2.1.18

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.L.S/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16987396
	Filing Date	2020-08-07
	First Named Inventor	GOLDSTEIN, Steven Wayne
	Art Unit	2688
	Examiner Name	SNIEZEK, ANDREW L
	Attorney Docket Number	CONT-16669490

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20050207597		2005-09-22	Takahisa Kageyama	
	2	20030035551		2003-02-20	John Light, et al.	
	3	20080165988		2008-07-10	Jeffrey J. Terlizzi, et al.	
	4	20030151678		2003-08-14	Moo-Soon Lee, et al.	
	5	20060222185		2006-10-05	Medford Dyer, et al.	
	6					

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	JP5299030	JP		2013-09-25	千智 劒持志朗 鈴木恭輔 松本		
	2	CN101401399	CN		2009-04-01	约翰娜·布尔斯马		

EFS Web 2.1.18 ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.L.S/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16987396
	Filing Date	2020-08-07
	First Named Inventor	GOLDSTEIN, Steven Wayne
	Art Unit	2688
	Examiner Name	SNIEZEK, ANDREW L
	Attorney Docket Number	CONT-16669490

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/ANDREW L SNIEZEK/ (05/25/2021)	Date Considered	05/25/2021

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.L.S/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16987396
	Filing Date	2020-08-07
	First Named Inventor	GOLDSTEIN, Steven Wayne
	Art Unit	2688
	Examiner Name	SNIEZEK, ANDREW L
	Attorney Docket Number	CONT-16669490

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

X A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/John P. Keady/	Date (YYYY-MM-DD)	2021-05-14
Name/Print	John P. Keady	Registration Number	56389

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.L.S/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.L.S/

WEST Search History

Hide Items | Restore | Clear | Close

DATE: Thursday, May 27, 2021

Hide?	Set Name	Query	Hit Count
DB=USPT,JPAB,FPRS,PGPB; PLUR=YES; OP=OR			
☐	L28	37603455.FMID.	9
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L27	101401399	15
☐	L26	5299030	12
DB=PGPB; PLUR=YES; OP=OR			
☐	L25	20050207597 or 20030035551 or 20080165988 or 20030151678 or 20060222185	5
DB=USPT; PLUR=YES; OP=OR			
☐	L24	8577052.pn. or 5541359.pn. or 5774567.pn. or 7421084.pn. or 7903826.pn. or 7986802.pn. or 8199942.pn. or 10361673.pn.	8
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L23	L22 and ((gain or multiplier) with (ambient or surround or environmental) with sound)	50
☐	L22	L21 and L5	135
☐	L21	(asm or (ambient adj3 microphone)) same (ecm or (ear adj3 canal adj3 microphone))	517
☐	L20	L19 not L18	46
☐	L19	((detect$3 or sensing) with ((emergency adj3 vehicle) or warning or police or siren or ambulance)) same (((turn adj3 down) or mute) with audio or misic)	66
☐	L18	((detect$3 or sensing) with siren) same (((turn adj3 down) or mute) with audio or misic)	20
☐	L17	(microphone with (detect$3 or sensing) with ((emergency adj3 vehicle) or warning or police or siren or ambulance)) same (((turn adj3 down) or mute) with audio or misic)	3
☐	L16	(microphone with (detect$3 or sensing) with siren) same (((turn adj3 down) or mute) with audio or misic)	2
☐	L15	L14 and ((reduc$3 or (turn$3 adj3 down))near5 volume)	40
☐	L14	(audio near4 (reproduc$4 or payback)) with (warning or notification)	774
☐	L13	L5 and ((notify or notification) with ((acute adj3 sound) or (emergency adj3 vehicle or warning) or police or siren or ambulance))	208
DB=PGPB,USPT; PLUR=YES; OP=OR			
☐	L12	(20080037801 | 6728385 | 20070160243 | 20040037428 | 20070223717 | 6023517 | 20050111683 | 20080137873 | 5251263 | 4837832 | 5867581 | 20060262938 | 8059847 | 20050254665 | 20050105750 | 20040234089 | 6415034)![PN]	17
DB=USPT; PLUR=YES; OP=OR			
☐	L11	("8150044")[PN]	1
☐	L10	("8150044")[URPN]	27
☐	L9	8150044.pn.	1
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L8	L6 not L7	262

☐	L7	L6 and L3	66
☐	L6	L5 and ((notify or notification) near5 (user or person))	328
☐	L5	(earbud or headphone or headset or earpiece) same ((sens$3 or detect$3) with ((acute adj3 sound) or (emergency adj3 vehicle or warning) or police or siren or ambulance))	1014
☐	L4	L1 and (microphone and warning and notification and environment).clm.	6
☐	L3	L2 or G10k$.cpc. or H04R$.cpc.	428101
☐	L2	(((((((G10K11/17827))))))).cpc. or (((((((G10K11/002))))))).cpc. or (((((((H04R1/1016))))))).cpc. or (((((((H04R1/1083))))))).cpc. or (((((((H04R3/002))))))).cpc. or (((((((H04R3/005))))))).cpc. or (((((((H04R29/001))))))).cpc. or (((((((H04R2225/41))))))).cpc. or (((((((H04R2460/05))))))).cpc. or (((((((H04R2499/11))))))).cpc.	73990
☐	L1	(Stanton near4 techiya).as. or (Steven near4 Goldstein).in. or (john near4 Beer).in. or (Marc near4 Boillot).in.	1239

END OF SEARCH HISTORY

PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	16987396	Filing Date	2020-08-07	Docket Number (if applicable)	CONT-16669490	Art Unit	2688
First Named Inventor	STEVEN WAYNE GOLDSTEIN			Examiner Name	SNIEZEK, ANDREW L		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☒ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☐ Enclosed

- ☐ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☐ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No _____

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

X Patent Practitioner Signature
Applicant Signature

PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/John P Keady/	Date (YYYY-MM-DD)	2021-05-24
Name	John P. Keady	Registration Number	56389

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	16987396
Filing Date:	07-Aug-2020
Title of Invention:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION
First Named Inventor/Applicant Name:	Steven Wayne Goldstein
Filer:	John Patrick Keady
Attorney Docket Number:	CONT-16669490

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
RCE- 1ST REQUEST	2801	1	680	680
		Total in USD ($)		**680**

Electronic Acknowledgement Receipt	
EFS ID:	42810938
Application Number:	16987396
International Application Number:	
Confirmation Number:	7859
Title of Invention:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION
First Named Inventor/Applicant Name:	Steven Wayne Goldstein
Customer Number:	150139
Filer:	John Patrick Keady
Filer Authorized By:	
Attorney Docket Number:	CONT-16669490
Receipt Date:	25-MAY-2021
Filing Date:	07-AUG-2020
Time Stamp:	11:09:28
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$680
RAM confirmation Number	E20215OB11052806
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	16987396_RCE_JPK.pdf	1350152 205e9151a6561513037ea845cb5e91a21f36b06d	no	3
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30750 e130fbe68df7ee5be3b382bc5c96e2b7c4cc3b8e	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1380902		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/987,396	Filing Date 08/07/2020	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $230 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

AMENDMENT	05/25/2021	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 10	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 1	Minus	*** 3	= 0		x $240 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	SLIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/MONIQUE BENJAMIN/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/987,396	Filing Date 08/07/2020	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $230 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

AMENDMENT	05/14/2021	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 10	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 1	Minus	*** 3	= 0		x $240 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/SHEILA D CHAPMAN/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16987396
Filing Date	2020-08-07
First Named Inventor	GOLDSTEIN, Steven Wayne
Art Unit	2688
Examiner Name	SNIEZEK, ANDREW L
Attorney Docket Number	CONT-16669490

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	8577052		2013-11-05	Michael W. Silber, et al.	
	2	5541359		1996-07-30	Young-Man Lee	
	3	5774567		1998-06-30	Lawrence F. Heyl	
	4	7421084		2008-09-02	Christopher Michael Jubien, et al.	
	5	7903826		2011-03-08	Johan Boersma	
	6	7986802		2011-07-26	Carl R. Ziller	
	7	8199942		2012-06-12	Xiadong Mao	
	8	10361673		2019-07-23	Takeo Matsukawa	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16987396
	Filing Date	2020-08-07
	First Named Inventor	GOLDSTEIN, Steven Wayne
	Art Unit	2688
	Examiner Name	SNIEZEK, ANDREW L
	Attorney Docket Number	CONT-16669490

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20050207597		2005-09-22	Takahisa Kageyama	
	2	20030035551		2003-02-20	John Light, et al.	
	3	20080165988		2008-07-10	Jeffrey J. Terlizzi, et al.	
	4	20030151678		2003-08-14	Moo-Soon Lee, et al.	
	5	20060222185		2006-10-05	Medford Dyer, et al.	
	6					

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	JP5299030	JP		2013-09-25	千智 劒持志朗 鈴木恭輔 松本		
	2	CN101401399	CN		2009-04-01	约翰娜·布尔斯马		

EFS Web 2.1.18

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16987396
	Filing Date	2020-08-07
	First Named Inventor	GOLDSTEIN, Steven Wayne
	Art Unit	2688
	Examiner Name	SNIEZEK, ANDREW L
	Attorney Docket Number	CONT-16669490

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16987396
	Filing Date	2020-08-07
	First Named Inventor	GOLDSTEIN, Steven Wayne
	Art Unit	2688
	Examiner Name	SNIEZEK, ANDREW L
	Attorney Docket Number	CONT-16669490

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/John P. Keady/	Date (YYYY-MM-DD)	2021-05-14
Name/Print	John P. Keady	Registration Number	56389

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	16987396
Filing Date:	07-Aug-2020
Title of Invention:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION
First Named Inventor/Applicant Name:	Steven Wayne Goldstein
Filer:	John Patrick Keady
Attorney Docket Number:	CONT-16669490

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	130	130
		Total in USD ($)		**130**

Electronic Acknowledgement Receipt	
EFS ID:	42720976
Application Number:	16987396
International Application Number:	
Confirmation Number:	7859
Title of Invention:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION
First Named Inventor/Applicant Name:	Steven Wayne Goldstein
Customer Number:	150139
Filer:	John Patrick Keady
Filer Authorized By:	
Attorney Docket Number:	CONT-16669490
Receipt Date:	14-MAY-2021
Filing Date:	07-AUG-2020
Time Stamp:	00:43:24
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$130
RAM confirmation Number	E20215D145032386
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant Arguments/Remarks Made in an Amendment	16987396_RFOA_JPK-13MAY2021.pdf	163959 b0ddaee04e00234ade1624bd4c170ea53ce00b45	no	5
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	16987396_IDS_JPK-13MAY2021.pdf	1041421 a6aaa5e24dd1de11ac89d810c7e6b7f3fab07c08	no	5
Warnings:					
Information:					
A U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form. You may remove the form to add the required data in order to correct the Informational Message or if you chose not to, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
3	Fee Worksheet (SB06)	fee-info.pdf	30561 e7fd23d544af4681987e63d2d3aec366c894ae73	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1235941		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	:	16/987,396	CONFIRMATION NO. 7859
APPLICATION OF	:	GOLDSTEIN, Steven Wayne	
DATE FILED	:	7 Aug. 2020	
EXAMINER	:	SNIEZEK, ANDREW L	
TC/A.U.	:	2688	
DOCKET	:	CONT-16669490	
TITLE	:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

RESPONSE TO OFFICE ACTION

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Date: May 13, 2021

Sir:

These remarks are filed in response to the Final Office Action dated 2 Apr. 2021. Please amend the above-identified patent application as follows:

- **Amendments to the Claims** begin on page 2 of this paper; and
- **Remarks/Arguments** begin on page 5 of this paper.

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.(previously presented) An earphone comprising:

a first microphone configured to measure an ambient acoustic environment;

a second microphone configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone;

a speaker configured to play an audio signal;

a memory that stores instructions; and

a processor that is configured to execute the instructions to perform operations, wherein the processor is coupled to the first microphone, wherein the processor is coupled to the second microphone, wherein the speaker is coupled to the processor, and the operations comprising:

receiving a first microphone signal from the first microphone;

receiving a second microphone signal from the second microphone;

generating an ambient sound signal from at least one of the first microphone signal or the second microphone signal or a combination of both signals;

applying an ambient sound gain to the ambient sound signal to generate a modified ambient sound signal;

mixing the modified ambient sound signal with an audio content signal to generate a mixed audio signal; and

sending the mixed audio signal to the speaker.

2.(cancelled)

3.(cancelled)

4.(previously presented) The earphone according to claim 1, where the operations further comprise:

detecting an acute sound by analyzing at least one of the first microphone signal or the second microphone signal or a combination of both signals; and

determining whether the acute sound is a user's voice by analyzing at least one of the first microphone signal or the second microphone signal or a combination of both signals.

5.(previously presented) The earphone according to claim 4, where the operations further comprise:

determining whether the acute sound is a warning sound or siren by analyzing the spectrum of at least one of the first microphone signal or the second microphone signal or a combination of both signals.

6.(previously presented) The earphone according to claim 5, where the operations further comprise:

decreasing a volume of the audio playback when a warning or siren is detected.

7.(previously presented) The earphone according to claim 6, where the operations further comprise:

sending a notification signal to the speaker.

8.(previously presented) The earphone according to claim 6, wherein the warning is at least one of a bell or the sound of an emergency vehicle or the sound of a security system or a combination.

9.(previously presented) The earphone according to claim 6, wherein the alarm is at least one of a police siren or an ambulance siren or a car honking or a combination.

10.(previously presented) The earphone according to claim 1, wherein the earphone includes a sealing section.

11.(previously presented) The earphone according to claim 4, where the operations further comprise:

adjusting the mixed audio signal when the user's voice is detected.

12.(cancel)

13.(cancel)

14.(previously presented) The earphone according to claim 11, where the operation of adjusting the mixed audio signal is to reduce the audio content signal and increase the ambient sound signal.

15.(previously presented) The earphone according to claim 14, where the mixed audio signal only includes a noise reduction signal and the ambient sound signal.

REMARKS

The foregoing amendments and the following remarks are made in response to the Final Office Action dated 2 Apr. 2021 ("Final Office Action").

At the time of the Office Action, the Examiner noted that claims 1-11 and 14-15 were pending. The Examiner rejected claims 2-3 under 35 U.S.C. § 112. In order to expedite prosecution, claims 2-3 have been cancelled rendering the 35 U.S.C. § 112.

In view of the arguments set forth below, claims 1, 4-11 and 14-15 are allowable, and the Examiner is respectfully requested to withdraw the rejection and issue a Notice of Allowance.

Should the Examiner believe that anything further is necessary, the Examiner is respectfully requested to contact the undersigned representative at the telephone number listed below.

Respectfully submitted,

TECHIYA LLC

Date: May 13, 2021

/John P. Keady/

John P. Keady
Assistant General Counsel: Intellectual Property
and Chief Technical Officer
Staton Techiya LLC
Reg. No. 56,389
571-606-1291

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	:	16/987,396	CONFIRMATION NO. 7859
APPLICATION OF	:	GOLDSTEIN, Steven Wayne	
DATE FILED	:	7 Aug. 2020	
EXAMINER	:	SNIEZEK, ANDREW L	
TC/A.U.	:	2688	
DOCKET	:	CONT-16669490	
TITLE	:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

RESPONSE TO OFFICE ACTION

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Date: May 13, 2021

Sir:

These remarks are filed in response to the Final Office Action dated 2 Apr. 2021. Please amend the above-identified patent application as follows:

- **Amendments to the Claims** begin on page 2 of this paper; and
- **Remarks/Arguments** begin on page 5 of this paper.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/987,396	08/07/2020	Steven Wayne Goldstein	CONT-16669490	7859

150139 7590 04/02/2021
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

EXAMINER
SNIEZEK, ANDREW L

ART UNIT	PAPER NUMBER
2688	

NOTIFICATION DATE	DELIVERY MODE
04/02/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip@akerman.com
jp.keady@techiya.co
personics_docketing@cardinal-ip.com

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No. 16/987,396	Applicant(s) Goldstein et al.	
	Examiner ANDREW SNIEZEK	Art Unit 2688	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 3/18/21.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☑ This action is **FINAL.** 2b) ☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-11 and 14-15 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☑ Claim(s) 1,4-11 and 14-15 is/are allowed.

7) ☑ Claim(s) 2-3 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

> (a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 2-3 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for applications subject to pre-AIA 35 U.S.C. 112, the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 2, sets forth by amendment that the ambient sound gain is set to 0.0 so ambient sound is in the mixing operation. This feature is not disclosed in the written specification as originally filed and therefor constitutes “New Matter” which must be cancelled. Claim 3 inherits the language form claim 2.

Allowable Subject Matter

4. Claims 1, 4-11 and 14-15 are allowed.

5. The following is an examiner's statement of reasons for allowance: The claimed earphone which includes in combination a first and second microphones (one of which being closer to an ear canal) producing signals used to produce an ambient sound signal to which an ambient sound gain is applied to generate a modified ambient sound signal which is then mixed with an audio content signal to generate a mixed sound signal that is provided to a speaker as set forth in claim 1 is neither taught by nor an obvious variation of the art of record. The limitations of claims 4-11 and 14-15 depend upon those features of claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kim et al., found during an updated search teaches an arrangement that uses two microphones (250, 260) for the detection of ambient noise, controls the gain of the audio output to a speaker (provided in 220). This reference taken along of in obvious combination does not include the specific of the earphone with respect to claim 1 indicated as being directed to allowable subject matter.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW SNIEZEK whose telephone number is (571)272-7563. The examiner can normally be reached on Monday-Friday 7:00 AM-3:30 PM EST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Lim can be reached on 571-270-1210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ANDREW L SNIEZEK/
Primary Examiner, Art Unit 2688

/A.L.S/
Primary Examiner, Art Unit 2688
3/29/21

Notice of References Cited	Application/Control No. 16/987,396	Applicant(s)/Patent Under Reexamination Goldstein et al.	
	Examiner ANDREW SNIEZEK	Art Unit 2688	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-8792648-B2	07-2014	Kim; Hee Young	H04R3/005	381/57
	B					
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

CPC - Searched*		
Symbol	**Date**	**Examiner**
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	09/23/2020	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	01/22/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	03/29/2021	ALS

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

Search Notes		
Search Notes	**Date**	**Examiner**
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	09/23/2020	ALS
See assignee and inventor search history printout	09/23/2020	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	09/23/2020	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	01/22/2021	ALS
See assignee and inventor search history printout	01/22/2021	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	01/22/2021	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	03/29/2021	ALS
See assignee and inventor search history printout	03/29/2021	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	03/29/2021	ALS
IP.com search history printout	03/29/2021	ALS

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
See interference search history printout		03/29/2021	ALS

/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688	

WEST Search History

Hide Items | Restore | Clear | Close

DATE: Monday, March 29, 2021

Hide?	Set Name	Query	Hit Count
Prior Art			
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L25	l1 and ((ambient adj3 gain) and speaker and (ear adj3 canal) and mix$3)	20
☐	L23	L22 and ((gain or multiplier) with (ambient or surround or environmental) with sound)	50
☐	L22	L21 and l5	133
☐	L21	(asm or (ambient adj3 microphone)) same (ecm or (ear adj3 canal adj3 microphone))	503
☐	L20	L19 not L18	46
☐	L19	((detect$3 or sensing) with ((emergency adj3 vehicle) or warning or police or siren or ambulance)) same (((turn adj3 down) or mute) with audio or misic)	66
☐	L18	((detect$3 or sensing) with siren) same (((turn adj3 down) or mute) with audio or misic)	20
☐	L17	(microphone with (detect$3 or sensing) with ((emergency adj3 vehicle) or warning or police or siren or ambulance)) same (((turn adj3 down) or mute) with audio or misic)	3
☐	L16	(microphone with (detect$3 or sensing) with siren) same (((turn adj3 down) or mute) with audio or misic)	2
☐	L15	L14 and ((reduc$3 or (turn$3 adj3 down))near5 volume)	40
☐	L14	(audio near4 (reproduc$4 or payback)) with (warning or notification)	769
☐	L13	L5 and ((notify or notification) with ((acute adj3 sound) or (emergency adj3 vehicle or warning) or police or siren or ambulance))	204
DB=PGPB,USPT; PLUR=YES; OP=OR			
☐	L12	(20080037801 | 6728385 | 20070160243 | 20040037428 | 20070223717 | 6023517 | 20050111683 | 20080137873 | 5251263 | 4837832 | 5867581 | 20060262938 | 8059847 | 20050254665 | 20050105750 | 20040234089 | 6415034)![PN]	17
DB=USPT; PLUR=YES; OP=OR			
☐	L11	("8150044")[PN]	1
☐	L10	("8150044")[URPN]	27
☐	L9	8150044.pn.	1
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L8	L6 not L7	260
☐	L7	L6 and L3	66
☐	L6	L5 and ((notify or notification) near5 (user or person))	326
☐	L5	(earbud or headphone or headset or earpiece) same ((sens$3 or detect$3) with ((acute adj3 sound) or (emergency adj3 vehicle or warning) or police or siren or ambulance))	1005
☐	L4	L1 and (microphone and warning and notification and environment).clm.	6
☐	L3	L2 or G10k$.cpc. or H04R$.cpc.	425568
☐	L2	(((((G10K11/17827))))).cpc. or (((((G10K11/002))))).cpc. or (((((H04R1/1016))))).cpc. or (((((H04R1/1083))))).cpc. or (((((H04R3/002))))).cpc. or (((((H04R3/005))))).cpc. or (((((H04R29/001))))).cpc. or (((((H04R2225/41))))).cpc. or (((((H04R2460/05))))).cpc. or	73244

		(((((H04R2499/11))))).cpc.	
☐	L1	(Stanton near4 techiya).as. or (Steven near4 Goldstein).in. or (john near4 Beer).in. or (Marc near4 Boillot).in.	1235

Interference

DB=PGPB,USPT; PLUR=YES; OP=OR

☐	L24	(microphone and ambient and gain and speaker and mix $ 3).clm.	30

END OF SEARCH HISTORY

Main Concept Text
==========
An earphone communication device configured to detect a warning comprising: a first microphone configured to measure an ambient acoustic environment; a second microphone configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone: a speaker configured to play an audio content signal; a memory that stores instructions; and a processor that is configured to execute the instructions to perform operations, wherein the processor is coupled to the first microphone, wherein the processor is coupled to the second microphone, wherein the speaker is communicatively coupled to the processor, and the operations comprising: receiving a first microphone signal from the first microphone: receiving a second microphone signal from the second microphone: _generating an ambient sound signal from at least one of the first microphone signal or the second microphone signal or a combination of both signals: _applying an ambient sound gain to the ambient sound signal to generate a modified ambient sound signal: _mixing the modified ambient sound signal with an audio content signal to generate a mixed audio signal: and _sending the mixed audio signal to the speaker.

(No Concept Modifiers)
==========

(No Filters)
==========

Options
=======
De-dup: None
Cut-off: None
Sort: Relevance

Content: Non-Patent Literature (24)
==========
IEEE Xplore Publications: IEEE Periodicals
IEEE Xplore Publications: IEEE Conferences
IEEE Xplore Publications: IEEE Standards
IEEE Xplore Publications: IEEE Early Access
IEEE Xplore Publications: SMPTE Periodicals
IEEE Xplore Publications: SMPTE Conferences
IEEE Xplore Publications: SMPTE Standards
IEEE Xplore Publications: MIT Press eBooks
IEEE Xplore Publications: Wiley-IEEE eBooks
IEEE Xplore Publications: IBM Periodicals
IEEE Xplore Publications: URSI Periodicals
IEEE Xplore Publications: VDE Conferences
IEEE Xplore Publications: Periodicals from China
IP.com Prior Art Database: The IP.com Journal
IP.com Prior Art Database: Internet Society RFC
IP.com Prior Art Database: IBM TDB Archive
IP.com Prior Art Database: Legacy Journals
IP.com Prior Art Database: Software Patent Institute
OnePetro.org: Periodicals at OnePetro.org
OnePetro.org: Conferences at OnePetro.org
OnePetro.org: Standards at OnePetro.org
Other Literature: IBM Redbooks
Other Literature: PubMed Central

Other Literature: arXiv.org

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/987,396	Filing Date 08/07/2020	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $230 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

AMENDMENT	03/18/2021	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 13	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 1	Minus	*** 3	= 0		x $240 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	SLIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/APRIL L. WALKER/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	42223281
Application Number:	16987396
International Application Number:	
Confirmation Number:	7859
Title of Invention:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION
First Named Inventor/Applicant Name:	Steven Wayne Goldstein
Customer Number:	150139
Filer:	John Patrick Keady
Filer Authorized By:	
Attorney Docket Number:	CONT-16669490
Receipt Date:	18-MAR-2021
Filing Date:	07-AUG-2020
Time Stamp:	22:51:25
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant Arguments/Remarks Made in an Amendment	16987396_RNFOA_JPK.pdf	203391 4e196da05c08226aa8aaf74b0e96f4e037e3057d	no	7

Warnings:

Information:	
Total Files Size (in bytes):	203391

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	:	16/987,396	CONFIRMATION NO. 7859
APPLICATION OF	:	GOLDSTEIN, Steven Wayne	
DATE FILED	:	7 Aug. 2020	
EXAMINER	:	SNIEZEK, ANDREW L	
TC/A.U.	:	2688	
DOCKET	:	CONT-16669490	
TITLE	:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

RESPONSE TO OFFICE ACTION

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Date: March 18, 2021

Sir:

These remarks are filed in response to the Final Office Action dated 28 Jan. 2021. Please amend the above-identified patent application as follows:

- **Amendments to the Claims** begin on page 2 of this paper; and
- **Remarks/Arguments** begin on page 6 of this paper.

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.(currently amended) An earphone ~~communication device~~ ~~configured to detect a warning~~ comprising:

a first microphone configured to measure an ambient acoustic environment;

a second microphone configured to measure an acoustic environment closer the ear canal of a wearer than that measured by the first microphone;

a speaker configured to play an audio ~~content~~ signal;

a memory that stores instructions; and

a processor that is configured to execute the instructions to perform operations, wherein the processor is coupled to the first microphone, wherein the processor is coupled to the second microphone, wherein the speaker is ~~communicatively~~ coupled to the processor, and the operations comprising:

receiving a first microphone signal from the first microphone;

receiving a second microphone signal from the second microphone;

generating an ambient sound signal from at least one of the first microphone signal or the second microphone signal or a combination of both signals;

applying an ambient sound gain to the ambient sound signal to generate a modified ambient sound signal;

mixing the modified ambient sound signal with an audio content signal to generate a mixed audio signal; and

sending the mixed audio signal to the speaker.

~~analyzing the microphone signal to detect a warning; and~~

~~if a warning is detected then sending a notification signal.~~

2.(currently amended) The ~~communication device~~ earphone according to claim 1, where the ~~communication device is a phone~~ operations further comprise:

setting the ambient sound gain to 0.0 so that there is no ambient sound signal in the mixing operation;

generating a noise control signal using at least one of the first microphone signal or the second microphone signal or a combination of both signals.

3.(currently amended) The ~~communication device~~ earphone according to claim 2, wherein the mixing operation includes mixing the audio content signal with the noise control signal to generate the mixed audio signal~~where the speaker is part of an earphone~~.

4.(currently amended) The ~~communication device~~ earphone according to claim [[3]]1, where the ~~speaker is connected to the processor~~ operations further comprise:

detecting an acute sound by analyzing at least one of the first microphone signal or the second microphone signal or a combination of both signals; and

determining whether the acute sound is a user's voice by analyzing at least one of the first microphone signal or the second microphone signal or a combination of both signals.

5.(currently amended) The ~~communication device~~ earphone according to claim 4, where the operations further comprise:

~~sending an audio playback signal to the speaker.~~

determining whether the acute sound is a warning sound or siren by analyzing the spectrum of at least one of the first microphone signal or the second microphone signal or a combination of both signals.

6.(currently amended) The ~~communication device~~ earphone according to claim 5, where the operations further comprise:

decreasing a volume of the audio playback when a warning or siren is detected.

7.(currently amended) The ~~communication device~~ earphone according to claim [[1]]6, where the operations further comprise:

sending ~~the~~ a notification signal to the speaker.

8.(currently amended) The ~~communication device~~ earphone according to claim [[1]]6, wherein the warning is at least one of a bell or the sound of an emergency vehicle or the sound of a security system or a combination.

~~the operations further comprise:~~

~~sending the notification signal to a user of the communication device.~~

9.(currently amended) The ~~communication device~~ earphone according to claim [[1]]6, wherein the ~~warning is a vocal warning~~ alarm is at least one of a police siren or an ambulance siren or a car honking or a combination.

10.(currently amended) The ~~communication device~~ earphone according to claim 1, wherein the ~~warning is a warning sound~~ earphone includes a sealing section .

11.(currently amended) The ~~communication device~~ earphone according to claim [[1]]4, where the ~~warning is an alarm.~~ operations further comprise:

adjusting the mixed audio signal when the user's voice is detected.

12.(cancel)

13.(cancel)

14.(currently amended) The ~~communication device~~ earphone according to claim [[2]]11, where the ~~speaker is housed within an earpiece that is communicatively connected to the phone.~~ operation of adjusting the mixed audio signal is to reduce the audio content signal and increase the ambient sound signal.

15.(new) The earphone according to claim 14, where the mixed audio signal only includes a noise reduction signal and the ambient sound signal.

REMARKS

The foregoing amendments and the following remarks are made in response to the Office Action dated 28 Jan. 2021 ("Office Action").

At the time of the Office Action, the Examiner noted that claims 1-14 were pending. The Examiner rejected claims 1-11 and 14 under 35 U.S.C. § 102(b) as discussed in further detail below. In order to expedite prosecution, claims 1-11 and 14 have been amended and claim 15 is new.

In view of the arguments set forth below, claims 1-11 and 14-15 are allowable, and the Examiner is respectfully requested to withdraw the rejection and issue a Notice of Allowance.

I. Rejections Under 35 U.S.C. § 102

The Examiner rejected claims 1-11 and 14 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Publication No. 2004/0179694 to *Alley*.

To expedite prosecution Applicant has amended independent claim 1. Note that "…the determining of whether an acute sound is a warning sound…", is now in amended claim 5.

The rejection is mute in light of the amendments of claim 1, for example:

1. *Alley* is silent with respect to two microphones in an earphone, it discusses a safety apparatus with a single microphone;
2. *Alley* is silent with regards to generating a modified ambient sound signal by applying an ambient sound gain to the ambient sound signal, *Alley* mutes or lowers the volume on output already playing; and
3. *Alley* is silent with regards to mixing the modified ambient sound signal with an audio content signal, as mentioned *Alley* simply mutes or lowers the volume of the output. *Alley* does not discuss mixing the modified ambient sound signal with an audio content signal.

For at least these three reasons *Alley* fails to show, suggest or teach all the features of independent claim 1, and since claims 2-11 and 14-15 depend on independent amended claim 1, amended claim 1 is allowable as are the dependent claims 2-11 and 14-15.

Therefore, for at least the reasons set forth above, independent claim 1, and those claims depending therefrom, are allowable. Therefore, the Examiner is respectfully requested to withdraw the rejections under 35 U.S.C. § 102(b) and issue a Notice of Allowance.

II. Conclusion

For at least the reasons given above, claims 1-11 and 14-15 are allowable, and the Examiner is respectfully requested to withdraw all rejections. Should the Examiner believe that anything further is necessary, the Examiner is respectfully requested to contact the undersigned representative at the telephone number listed below.

Respectfully submitted,

TECHIYA LLC

Date: March 18, 2021

/John P. Keady/

John P. Keady
Assistant General Counsel: Intellectual Property
and Chief Technical Officer
Staton Techiya LLC
Reg. No. 56,389
571-606-1291

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/987,396	08/07/2020	Steven Wayne Goldstein	CONT-16669490	7859

150139 7590 01/28/2021
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

EXAMINER
SNIEZEK, ANDREW L

ART UNIT	PAPER NUMBER
2688	

NOTIFICATION DATE	DELIVERY MODE
01/28/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip@akerman.com
jp.keady@techiya.co
personics_docketing@cardinal-ip.com

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No. 16/987,396	Applicant(s) Goldstein et al.	
	Examiner ANDREW SNIEZEK	Art Unit 2688	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 12/28/20.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-11 and 14 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-11 and 14 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Claim Rejections - 35 USC § 102

2. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

3. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim(s) 1-11 and 14 is/are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Alley (US 2004/0179694 A1).

Re claim 1: Alley teaches a communication device (combination of an audio device, safety apparatus and headphones/ speakers) configured to detect a warning (trigger event, paragraph [0033]) comprising: a microphone (17) configured to measure an acoustic environment (ambient space, paragraph [0025]); a speaker (output element connected to (15) figure 4) configured to play an audio content signal (such as music, paragraph [0024]); a memory (91) that stores instructions as set user; and

a processor (99) that executes the instructions to perform operations, where the processor is coupled to the microphone (see figure 4), where the speaker is communicatively coupled to the processor (see figure 4), and the operations comprising:

receiving a microphone signal from the microphone (see figure 4 in which the microphone signal (retrieved at (17) is received by the processor (99) after passing through elements (90 and 92);

analyzing the microphone signal to detect a warning (see discussion in paragraphs ([0025-0028] the noise from the ambient environment to determine relevant sounds such as siren sounds are present); and if a warning is detected then sending a notification signal (action taken by processor (paragraph [0027]).

Re claim 2: note paragraph [0017] in which a headphone satisfies the claimed phone

Re claim 3: note paragraph [0017], earphone

Re claim 4: see arrangement in figure 4 in which a speaker attached at (15) is connected to processor (99)

Re claim 5: note audio playback in the form of music can be sent to the speaker (discussion in paragraph [0024])

Re claim 6: note paragraph [0023] in which sound volume can be lowered satisfying the claimed decrease a volume as set forth.

Re claim 7: the claimed notification signal as set forth is taught by the use of “three beeps”, paragraph [0023]

Re claim 8: note the notification can be sent to a user wearing the headset/headphones as generally discussed throughout the reference

Re claim 9: note the arrangement of notification can be used with a variety of audio devices including a cell phone (paragraph [0024]) which device is used for producing audio/vocal sounds from/to the user; which used in an arrangement the lowers the volume of these sounds (vocal sounds) as a means of notification would constitute a vocal warning as set forth

Re claim 10 and 11: the warning sound as set forth in claim 10 is taught by the use of "three beeps", paragraph [0023]; which as set forth in claim 11 constitutes an "alarm" sound as set forth in claim 11.

Re claim 14: see discussions in paragraphs [0015, 0034-0035] in which the phone in the form of a headphone or earphone includes speakers within earpieces that house speakers that provide communications when in operation.

Response to Arguments

5. Applicant's arguments, see response section I, filed 12/28/20, with respect to the rejection(s) of claim(s) 4-6, 8 and 12-13 under 35 USC §112 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

Applicant's arguments, see response section II, filed 12/28/20, with respect to the rejection(s) of claim(s) 1-3, 7, 9-11 and 14 under 35 USC §102 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art; See rejections above.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cohen et al. teaches a related invention that provides directional

cues/notifications to a user to inform the user of a direction of a detected particular sound such as detected sounds from an emergency vehicle that is passing the user.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW SNIEZEK whose telephone number is (571)272-7563. The examiner can normally be reached on Monday-Friday 7:00 AM-3:30 PM EST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Lim can be reached on 571-270-1210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system.

Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ANDREW L SNIEZEK/
Primary Examiner, Art Unit 2688

/A.L.S/
Primary Examiner, Art Unit 2688
1/22/21

Notice of References Cited	Application/Control No. 16/987,396	Applicant(s)/Patent Under Reexamination Goldstein et al.	
	Examiner ANDREW SNIEZEK	Art Unit 2688	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20040179694-A1	09-2004	Alley, Kenneth A.	H03G3/32	381/55
*	B	US-20110069845-A1	03-2011	Cohen; Alexander J.	G01H3/14	381/73.1
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

CPC - Searched*		
Symbol	**Date**	**Examiner**
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	09/23/2020	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	01/22/2021	ALS

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

Search Notes		
Search Notes	**Date**	**Examiner**
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	09/23/2020	ALS
See assignee and inventor search history printout	09/23/2020	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	09/23/2020	ALS
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	01/22/2021	ALS
See assignee and inventor search history printout	01/22/2021	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14 /574,589 and 12/017878 reviewed	01/22/2021	ALS

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**

/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688	

WEST Search History

Hide Items | Restore | Clear | Close

DATE: Friday, January 22, 2021

Hide?	Set Name	Query	Hit Count
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L20	L19 not l18	46
☐	L19	((detect$3 or sensing) with ((emergency adj3 vehicle) or warning or police or siren or ambulance)) same (((turn adj3 down) or mute) with audio or misic)	66
☐	L18	((detect$3 or sensing) with siren) same (((turn adj3 down) or mute) with audio or misic)	20
☐	L17	(microphone with (detect$3 or sensing) with ((emergency adj3 vehicle) or warning or police or siren or ambulance)) same (((turn adj3 down) or mute) with audio or misic)	3
☐	L16	(microphone with (detect$3 or sensing) with siren) same (((turn adj3 down) or mute) with audio or misic)	2
☐	L15	L14 and ((reduc$3 or (turn$3 adj3 down))near5 volume)	38
☐	L14	(audio near4 (reproduc$4 or payback)) with (warning or notification)	749
☐	L13	L5 and ((notify or notification) with ((acute adj3 sound) or (emergency adj3 vehicle or warning) or police or siren or ambulance))	200
DB=PGPB,USPT; PLUR=YES; OP=OR			
☐	L12	(20080037801 | 6728385 | 20070160243 | 20040037428 | 20070223717 | 6023517 | 20050111683 | 20080137873 | 5251263 | 4837832 | 5867581 | 20060262938 | 8059847 | 20050254665 | 20050105750 | 20040234089 | 6415034)![PN]	17
DB=USPT; PLUR=YES; OP=OR			
☐	L11	("8150044")[PN]	1
☐	L10	("8150044")[URPN]	25
☐	L9	8150044.pn.	1
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L8	L6 not L7	257
☐	L7	L6 and L3	65
☐	L6	L5 and ((notify or notification) near5 (user or person))	322
☐	L5	(earbud or headphone or headset or earpiece) same ((sens$3 or detect$3) with ((acute adj3 sound) or (emergency adj3 vehicle or warning) or police or siren or ambulance))	991
☐	L4	L1 and (microphone and warning and notification and environment).clm.	6
☐	L3	L2 or G10k$.cpc. or H04R$.cpc.	417641
☐	L2	((((G10K11/17827)))).cpc. or ((((G10K11/002)))).cpc. or ((((H04R1/1016)))).cpc. or ((((H04R1/1083)))).cpc. or ((((H04R3/002)))).cpc. or ((((H04R3/005)))).cpc. or ((((H04R29/001)))).cpc. or ((((H04R2225/41)))).cpc. or ((((H04R2460/05)))).cpc. or ((((H04R2499/11)))).cpc.	71063
☐	L1	(Stanton near4 techiya).as. or (Steven near4 Goldstein).in. or (john near4 Beer).in. or (Marc near4 Boillot).in.	1222

END OF SEARCH HISTORY

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/987,396	08/07/2020	Steven Wayne Goldstein	CONT-16669490

CONFIRMATION NO. 7859

POA ACCEPTANCE LETTER

150139
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

OC000000122314778

Date Mailed: 12/30/2020

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 12/28/2020.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/qnguyen/

Electronic Acknowledgement Receipt

EFS ID:	41504492
Application Number:	16987396
International Application Number:	
Confirmation Number:	7859
Title of Invention:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION
First Named Inventor/Applicant Name:	Steven Wayne Goldstein
Customer Number:	150139
Filer:	John Patrick Keady
Filer Authorized By:	
Attorney Docket Number:	CONT-16669490
Receipt Date:	28-DEC-2020
Filing Date:	07-AUG-2020
Time Stamp:	21:21:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant Arguments/Remarks Made in an Amendment	16987396_ROA_JPK.pdf	256334 fcca01155a8803c4d0b3d0a2d8c0c3053f2b1cd7	no	7

Warnings:

Information:	
Total Files Size (in bytes):	256334

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	:	16/987,396	CONFIRMATION NO. 7859
APPLICATION OF	:	GOLDSTEIN, Steven Wayne	
DATE FILED	:	7 Aug. 2020	
EXAMINER	:	SNIEZEK, ANDREW L	
TC/A.U.	:	2688	
DOCKET	:	CONT-16669490	
TITLE	:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

RESPONSE TO OFFICE ACTION

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Date: December 28, 2020

Sir:

These remarks are filed in response to the Final Office Action dated 28 Sept. 2020. Please amend the above-identified patent application as follows:

- **Amendments to the Claims** begin on page 2 of this paper; and
- **Remarks/Arguments** begin on page 5 of this paper.

47566182;1

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.(original) A communication device configured to detect a warning comprising:

a microphone configured to measure an acoustic environment;

a speaker configured to play an audio content signal;

a memory that stores instructions; and

a processor that executes the instructions to perform operations, where the processor is coupled to the microphone, where the speaker is communicatively coupled to the processor, and the operations comprising:

receiving a microphone signal from the microphone;

analyzing the microphone signal to detect a warning; and

if a warning is detected then sending a notification signal.

2.(original) The communication device according to claim 1, where the communication device is a phone.

3.(original) The communication device according to claim 2, where the speaker is part of an earphone.

4.(currently amended) The communication device according to claim 3, where the speaker is connected to ~~a logic circuit which is communicatively coupled wirelessly to~~ the processor.

5.(original) The communication device according to claim 4, where the operations further comprise:

sending an audio playback signal to the speaker.

6.(original) The communication device according to claim 5, where the operations further comprise:

decreasing a volume of the audio playback when a warning is detected.

7.(original) The communication device according to claim 1, where the operations further comprise:

sending the notification signal to the speaker.

8.(currently amended) The communication device according to claim 1, where the operations further comprise:

sending the notification signal to a user of the communication device~~the remote server~~.

9.(original) The communication device according to claim 1, where the warning is a vocal warning.

10.(original) The communication device according to claim 1, where the warning is a warning sound.

11.(original) The communication device according to claim 1, where the warning is an alarm.

12.(cancel)

13.(cancel)

14.(original) The communication device according to claim 2, where the speaker is housed within an earpiece that is communicatively connected to the phone.

REMARKS

The foregoing amendments and the following remarks are made in response to the Office Action dated 28 Sept. 2020 ("Office Action").

At the time of the Office Action, the Examiner noted that claims 1-14 were pending. The Examiner rejected claims 4-6, 8, and 12-13 under 35 U.S.C. § 112(a) and has rejected claims 1-3, 7, 9-11 and 14 under 35 U.S.C. § 102 as discussed in further detail below. In order to expedite prosecution, claims 4 and 8 have been amended.

In view of the arguments set forth below, claims 1-11 and 14 are allowable, and the Examiner is respectfully requested to withdraw the rejection and issue a Notice of Allowance.

I. Rejections Under 35 U.S.C. § 112

The Examiner rejected claims 4-6, 8, and 12-13 under 35 U.S.C. § 112(a). Applicant directs the Examiner's attention to the amendment of claims 4 and 8, and the cancellation of claims 12-13, making the rejection mute.

At least for the reasons above, withdrawal of the rejection is respectfully requested.

II. Rejections Under 35 U.S.C. § 102

The Examiner rejected claims 1-3, 7, 9-11 and 14 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publication No. 2008/0240458 to *Goldstein.*

The Examiner has indicated "... this rejection under pre-AIA U.S.C 102(e) might be overcome by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor or joint inventors (i.e., the inventive entity) of this application and is thus not the invention "by another" (Office Action #10)

Indeed, the present application and *Goldstein* does have common inventorship with respect to the current claims, and additionally both are assigned to same entity Staton Techiya LLC, and hence *Goldstein* as indicated below.

With respect to *Goldstein*:

Reel/Frame: 042992 / 0524 **Received:** 06/26/2017 **Recorded:** 06/26/2017 **Mailed:** 07/14/2017 **Pages:** 18
Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).
Assignor: DM STATION FAMILY LIMITED PARTNERSHIP, ASSIGNEE OF STATON FAMILY INVESTMENTS, LTD. **Exec Dt:** 06/21/2017
Assignee: STATON TECHIYA, LLC
6800 BROKEN SOUND PARKWAY, SUITE 200
BOCA RATON, FLORIDA 33487
Correspondent: AKERMAN LLP
P.O. BOX 3188
WEST PALM BEACH, FL 33402-3188

With respect to the present application the present application additionally is assignable to (being processed) the same entity. Note that the present application is a continuation of 16/669,490 who's assignment is:

Reel/Frame: 051967 / 0627 **Received:** 02/28/2020 **Recorded:** 02/28/2020 **Mailed:** 03/03/2020 **Pages:** 15
Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).
Assignor: DM STATON FAMILY LIMITED PARTNERSHIP **Exec Dt:** 06/21/2017
Assignee: STATON TECHIYA, LLC
16193 BRIDLEWOOD CIRCLE
DELRAY BEACH, FLORIDA 33445

The present application is assigned to Staton Techiya LLC as well (a statement under 37 CFR 3.73 (c) has been filed for the present application).

Therefore, for at least the reasons set forth above, independent claim 1, and those claims depending therefrom, are allowable. Therefore, the Examiner is respectfully requested to withdraw the rejections under 35 U.S.C. § 102(e) and issue a Notice of Allowance.

III. <u>Conclusion</u>

For at least the reasons given above, claims 1-11 and 14 are allowable, and the Examiner is respectfully requested to withdraw all rejections. Should the Examiner believe that anything further is necessary, the Examiner is respectfully requested to contact the undersigned representative at the telephone number listed below.

Respectfully submitted,

TECHIYA LLC

Date: December 28, 2020

/John P. Keady/

John P. Keady
Assistant General Counsel: Intellectual Property
and Chief Technical Officer
Staton Techiya LLC
Reg. No. 56,389
571-606-1291

PTO/SB/80 (11-08)
Approved for use through 11/30/2011. OMB 0651-0035
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

☑ Practitioners associated with the Customer Number: 150139

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

☑ The address associated with Customer Number: 150139

OR

☐ Firm or Individual Name			
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee Name and Address:

Staton Techiya LLC. 16193 Bridlewood Circle, Delray Beach, FL 33445

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	8-14-17
Name	DANIEL C. STATON	Telephone	513-404-0099
Title	MANAGING MEMBER		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Staton Techiya, LLC

Application No./Patent No.: 16/987396 Filed/Issue Date: 08-07-2020

Titled: Method And Device For Acute Sound Detection And Reproduction

Staton Techiya, LLC, a limited liability company

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Steven Wayne Goldstein, Marc Andre Boillot, John Usher To: Personics Holdings, Inc

The document was recorded in the United States Patent and Trademark Office at Reel 051967, Frame 0557, or for which a copy thereof is attached.

2. From: Personics Holdings, Inc To: Personics Holdings, LLC

The document was recorded in the United States Patent and Trademark Office at Reel 051967, Frame 0580, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: Personics Holdings, Inc. and Personics Holdings, LLC To: DM Staton Family Limited Partnership

The document was recorded in the United States Patent and Trademark Office at
Reel 051967, Frame 0606, or for which a copy thereof is attached.

4. From: DM Staton Family Limited Partnership To: Staton Techiya, LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 051967, Frame 0627, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☑ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Peter A. Chiabotti/	December 28, 2020
Signature	Date
Peter A. Chiabotti	54603
Printed or Typed Name	Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	41500840
Application Number:	16987396
International Application Number:	
Confirmation Number:	7859
Title of Invention:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION
First Named Inventor/Applicant Name:	Steven Wayne Goldstein
Customer Number:	150139
Filer:	Peter Allen Chiabotti/Angela Martin
Filer Authorized By:	Peter Allen Chiabotti
Attorney Docket Number:	CONT-16669490
Receipt Date:	28-DEC-2020
Filing Date:	07-AUG-2020
Time Stamp:	16:27:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	11472-27-3_POA-Executed.PDF	68755 f58120e904276d6eba18a5c4a5aa2ce720df5f06	no	1

Warnings:

Information:					
2	Assignee showing of ownership per 37 CFR 3.73	11472-27-3_CFR_Statement.PDF	125262 c4ede1032dbc934456f42e6945bf16d95862 46c2	no	3
Warnings:					
Information:					
		Total Files Size (in bytes):	194017		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/987,396	Filing Date 08/07/2020	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $460 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	12/27/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 12	Minus	** 20	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 1	Minus	*** 3	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	SLIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/APRIL L. WALKER/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/987,396	08/07/2020	Steven Wayne Goldstein	CONT-16669490

CONFIRMATION NO. 7859

PUBLICATION NOTICE

OC000000121458880

150139
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

Title:METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION

Publication No.US-2020-0365132-A1
Publication Date:11/19/2020

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently https://portal.uspto.gov/pair/PublicPair. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/987,396	08/07/2020	Steven Wayne Goldstein	CONT-16669490	7859

150139 7590 09/28/2020
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

EXAMINER
SNIEZEK, ANDREW L

ART UNIT	PAPER NUMBER
2688	

NOTIFICATION DATE	DELIVERY MODE
09/28/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip@akerman.com
jp.keady@techiya.co
personics_docketing@cardinal-ip.com

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No. 16/987,396	Applicant(s) Goldstein et al.	
	Examiner ANDREW SNIEZEK	Art Unit 2688	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 8/7/20.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-14 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-14 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 8/7/20 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Information Disclosure Statement

2. The information disclosure statement filed 8/7/20 has been considered.

Drawings

3. The drawings filed 8/7/20 are acceptable to the examiner.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

> (a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 4-6, 8 and 12-13 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 4 sets forth that “the speaker is connected logic circuit which is communicatively couple wirelessly to a processor”. This claimed limitation is not described in the specification in such a way as to enable one

skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use this feature of the invention. The limitations of claims 5-6 inherit the limitations of claim 4. Claim 8 sets forth that the notification signal is sent to a "remote server". This claimed limitation is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use this feature of the invention. Claim 12 sets forth that the communication device is "integrated into a vehicle". This claimed limitation is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use this feature of the invention. The limitations of claim 13 depend upon those features of claim 12

6. The following is a quotation of 35 U.S.C. 112(b):

> (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 8 is rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor (or for applications subject to pre-AIA 35 U.S.C. 112, the applicant), regards as the invention.

Claim 8, line 3 sets forth "the remote sever" lacking positive antecedent basis.

Claim Rejections - 35 USC § 102

8. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of

rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

9. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claim(s) 1-3, 7, 9-11 and 14 is/are rejected under pre-AIA 35 U.S.C. 102(e) as being anticipated by Goldstin et al. (US 2008/0240458 A1).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under pre-AIA 35 U.S.C. 102(e). This rejection under pre-AIA 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor or joint inventors (i.e., the inventive entity) of this application and is thus not the invention "by another," or if the same invention is not being claimed, by an appropriate showing under 37 CFR 1.131(a).

Re claim 1: Goldstein et al. teaches a communication device (earpiece) configured to detect a warning comprising: a microphone (110) configured to measure an acoustic environment (ambient sound monitoring; paragraph [0025]); a speaker (ECR 120, figure 2) configured to play an audio content signal (such as music, figure 2); a memory that stores instructions (paragraph [0029]); and

a processor that executes the instructions to perform operations (paragraph [0029]), where the processor is coupled to the microphone (figure 2), where the speaker is communicatively coupled to the processor (figure 2), and the operations comprising:

receiving a microphone signal from the microphone (paragraph [0028] to monitor sounds captured by the microphone);

analyzing (paragraph [0051, 0053]) the microphone signal to detect a warning (such as a siren or a voice, paragraph [0028]; and

if a warning is detected then sending a notification signal (paragraph [0056]).

Re claim 2: note that the communication device can include a phone, (paragraph [0032] when the device is configured as a master–slave arrangement and the mobile device is a phone such as a cell phone (paragraph [0056])

Re claim 3: note paragraph [0025] in which an earpiece, i.e. earphone when the earpiece is used during a call (paragraph [0054]) includes the ECR arrangement including a speaker (figure 2)

Re claim 14: note arrangement in figure 1 along with figure 8 showing a communicatively connection to a device (150) that can include a phone as set forth

Re claim 7: note that a notification can be an audible notification (paragraph [006]) that is sent to a speaker (such as the speaker depicted in figure 8)

Re claims 9-11: the claimed warnings including a “vocal warning), claim 9; a warning sound (claim 10) and an alarm (claim 11 are satisfied by the teaching in paragraph [0038]

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ishige teaches a related arrangement that can distinguish an alarm sound from an environmental sound.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW SNIEZEK whose telephone number is (571)272-7563. The examiner can normally be reached on Monday-Friday 7:00 AM-3:30 PM EST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Lim can be reached on 571-270-1210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access

to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ANDREW L SNIEZEK/
Primary Examiner, Art Unit 2688

/A.L.S/
Primary Examiner, Art Unit 2688
9/23/20

Notice of References Cited	Application/Control No. 16/987,396	Applicant(s)/Patent Under Reexamination Goldstein et al.	
	Examiner ANDREW SNIEZEK	Art Unit 2688	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20080240458-A1	10-2008	Goldstein; Steven W.	H04R1/1083	381/72
*	B	US-6023517-A	02-2000	Ishige; Ryuuichi	H04R25/505	381/312
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/987,396	Goldstein et al.
	Examiner	**Art Unit**
	ANDREW SNIEZEK	2688

CPC - Searched*		
Symbol	**Date**	**Examiner**
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11	09/23/2020	ALS

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
G10K11/17827, 11/002; H04R1/1016, 1/1083, 3/002, 3/005, 29/001, 2225/41, 2460/05, 2499/11 (West--text limited--see search history printout)	09/23/2020	ALS
See assignee and inventor search history printout	09/23/2020	ALS
prosecution history of parent applications 16/669,490; 16/193,568; 14/574,589 and 12/017878 reviewed	09/23/2020	ALS

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**

/ANDREW L SNIEZEK/ Primary Examiner, Art Unit 2688	

Bibliographic Data

Application No: 16/987,396

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No | ☐ Met After Allowance

Verified and Acknowledged: /ANDREW L SNIEZEK/ | Examiner's Signature | Initials

Title: METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
08/07/2020 **RULE**	381	2688	CONT-16669490

APPLICANTS

Staton Techiya LLC, Delray Beach, FL,

INVENTORS

Steven Wayne Goldstein, Delray Beach, FL, UNITED STATES

John Usher, Beer, UNITED KINGDOM

Marc Andre Boillot, Plantation, FL, UNITED STATES

CONTINUING DATA

This application is a CON of 16669490 10/30/2019

16669490 is a CON of 16193568 11/16/2018 PAT 10535334

16193568 is a CON of 14574589 12/18/2014 PAT 10134377

14574589 is a CON of 12017878 01/22/2008 PAT 8917894

12017878 has PRO of 60885917 01/22/2007

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

08/13/2020

**** SMALL ENTITY ****

STATE OR COUNTRY

UNITED STATES

ADDRESS

Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401
UNITED STATES

FILING FEE RECEIVED

$785

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Steven Wayne Goldstein
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CONT-16669490

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	8638239		2014-01-28	Fabien Cases et al.	
	2	6226389		2001-05-01	Jerome H. Lemelson et al.	
	3	8514100		2013-08-20	Youji Yamashita	
	4	8493204		2013-07-23	Adrian Wong, et al.	
	5	9648436		2017-05-09	Doppler Labs, Inc.	
	6	9041545		2015-05-26	Eric Allen Zelepugas	
	7					
If you wish to add additional U.S. Patent citation information please click the Add button.						Add
U.S.PATENT APPLICATION PUBLICATIONS						Remove

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.L.S/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Steven Wayne Goldstein
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CONT-16669490

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20170124847		2017-05-04	Sigh, LLC	
	2	20060253282		2006-11-09	Gerhard Uwe Schmidt et al.	
	3	20140185828		2014-07-03	Cellco Partnership	
	4	20020135485		2002-09-26	Kaoru Arakawa	
	5	20100136950		2010-06-03	Erik Johan Vendel Backlund et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							
	2							

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.L.S/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Steven Wayne Goldstein
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CONT-16669490

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/ANDREW L SNIEZEK/ (09/22/2020)	Date Considered	09/22/2020

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.L.S/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Steven Wayne Goldstein
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CONT-16669490

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

X A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/John P. Keady/	Date (YYYY-MM-DD)	2020-08-07
Name/Print	John P. Keady	Registration Number	56389

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.L.S/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.L.S/

WEST Search History

Hide Items | Restore | Clear | Close

DATE: Wednesday, September 23, 2020

Hide?	Set Name	Query	Hit Count
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L13	L5 and ((notify or notification) with ((acute adj3 sound) or (emergency adj3 vehicle or warning) or police or siren or ambulance))	192
DB=PGPB,USPT; PLUR=YES; OP=OR			
☐	L12	(20080037801 | 6728385 | 20070160243 | 20040037428 | 20070223717 | 6023517 | 20050111683 | 20080137873 | 5251263 | 4837832 | 5867581 | 20060262938 | 8059847 | 20050254665 | 20050105750 | 20040234089 | 6415034)![PN]	17
DB=USPT; PLUR=YES; OP=OR			
☐	L11	("8150044")[PN]	1
☐	L10	("8150044")[URPN]	23
☐	L9	8150044.pn.	1
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD,FPRS; PLUR=YES; OP=OR			
☐	L8	L6 not L7	255
☐	L7	L6 and L3	63
☐	L6	L5 and ((notify or notification) near5 (user or person))	318
☐	L5	(earbud or headphone or headset or earpiece) same ((sens$3 or detect$3) with ((acute adj3 sound) or (emergency adj3 vehicle or warning) or police or siren or ambulance))	959
☐	L4	L1 and (microphone and warning and notification and environment).clm.	4
☐	L3	L2 or G10k$.cpc. or H04R$.cpc.	407923
☐	L2	((G10K11/17827)).cpc. or ((G10K11/002)).cpc. or ((H04R1/1016)).cpc. or ((H04R1/1083)).cpc. or ((H04R3/002)).cpc. or ((H04R3/005)).cpc. or ((H04R29/001)).cpc. or ((H04R2225/41)).cpc. or ((H04R2460/05)).cpc. or ((H04R2499/11)).cpc.	68136
☐	L1	(Stanton near4 techiya).as. or (Steven near4 Goldstein).in. or (john near4 Beer).in. or (Marc near4 Boillot).in.	1206

END OF SEARCH HISTORY

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
16/987,396	08/07/2020		785	CONT-16669490	14	1

CONFIRMATION NO. 7859

FILING RECEIPT

OC000000119212333

150139
Akerman LLP
777 South Flagler Drive
Suite 1100 West Tower
West Palm Beach, FL 33401

Date Mailed: 08/14/2020

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Steven Wayne Goldstein, Delray Beach, FL;
John Usher, Beer, UNITED KINGDOM;
Marc Andre Boillot, Plantation, FL;

Applicant(s)

Staton Techiya LLC, Delray Beach, FL

Assignment For Published Patent Application

Staton Techiya LLC, Delray Beach, FL

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 16/669,490 10/30/2019
which is a CON of 16/193,568 11/16/2018 PAT 10535334
which is a CON of 14/574,589 12/18/2014 PAT 10134377
which is a CON of 12/017,878 01/22/2008 PAT 8917894
which claims benefit of 60/885,917 01/22/2007

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 08/13/2020

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/987,396**

Projected Publication Date: 11/19/2020

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****
Title

METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor

community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/987,396

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	75		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	330		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	14 minus 20 =	*	x 50 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	*	x 230 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	785		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
AMENDMENT A	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
AMENDMENT A	Application Size Fee (37 CFR 1.16(s))									
AMENDMENT A	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
AMENDMENT B	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
AMENDMENT B	Application Size Fee (37 CFR 1.16(s))									
AMENDMENT B	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

DocCode – SCORE

SCORE Placeholder Sheet for IFW Content

Application Number: 16987396 Document Date: 08/07/2020

The presence of this form in the IFW record indicates that the following document type was received in electronic format on the date identified above. This content is stored in the SCORE database.

Since this was an electronic submission, there is no physical artifact folder, no artifact folder is recorded in PALM, and no paper documents or physical media exist. The TIFF images in the IFW record were created from the original documents that are stored in SCORE.

- Drawing

At the time of document entry (noted above):

- USPTO employees may access SCORE content via DAV or via the SCORE web page.
- External customers may access SCORE content via PAIR using the Supplemental Content tab.

Form Revision Date: March 1, 2019

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Steven Wayne Goldstein
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CONT-16669490

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	8638239		2014-01-28	Fabien Cases et al.	
	2	6226389		2001-05-01	Jerome H. Lemelson et al.	
	3	8514100		2013-08-20	Youji Yamashita	
	4	8493204		2013-07-23	Adrian Wong, et al.	
	5	9648436		2017-05-09	Doppler Labs, Inc.	
	6	9041545		2015-05-26	Eric Allen Zelepugas	
	7					
If you wish to add additional U.S. Patent citation information please click the Add button.						Add
U.S.PATENT APPLICATION PUBLICATIONS						Remove

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	
	Filing Date	
	First Named Inventor	Steven Wayne Goldstein
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CONT-16669490

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20170124847		2017-05-04	Sigh, LLC	
	2	20060253282		2006-11-09	Gerhard Uwe Schmidt et al.	
	3	20140185828		2014-07-03	Cellco Partnership	
	4	20020135485		2002-09-26	Kaoru Arakawa	
	5	20100136950		2010-06-03	Erik Johan Vendel Backlund et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							
	2							

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

EFS Web 2.1.18

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	
	Filing Date	
	First Named Inventor	Steven Wayne Goldstein
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CONT-16669490

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	
	Filing Date	
	First Named Inventor	Steven Wayne Goldstein
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CONT-16669490

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/John P. Keady/	Date (YYYY-MM-DD)	2020-08-07
Name/Print	John P. Keady	Registration Number	56389

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/AIA/01 (05-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [x] The attached application, or
- [ ] United States application or PCT international application number _____

filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: _____ Date (Optional): 12/10/14

Signature: Marc Andre Boillot

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2

PTO/AIA/01 (06-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [x] The attached application, or
- [ ] United States application or PCT international application number _____

  filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: J. Usher Date (Optional): 11 Dec 2014

Signature: John Usher

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/01 (06-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [x] The attached application, or
- [ ] United States application or PCT international application number _____ filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Steven Wayne Goldstein Date (Optional) : _____

Signature: /Steven Wayne Goldstein/

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

ABSTRACT

Earpieces and methods for acute sound detection and reproduction are provided. A method can include measuring an external ambient sound level (xASL), monitoring a change in the xASL for detecting an acute sound, estimating a proximity of the acute sound, and upon detecting the acute sound and its proximity, reproducing the acute sound within an ear canal, where the ear canal is at least partially occluded by an earpiece. Other embodiments are disclosed.

CLAIMS

What is claimed is:

1. A communication device configured to detect a warning comprising:

a microphone configured to measure an acoustic environment;

a speaker configured to play an audio content signal;

a memory that stores instructions; and

a processor that executes the instructions to perform operations, where the processor is coupled to the microphone, where the speaker is communicatively coupled to the processor, and the operations comprising:

receiving a microphone signal from the microphone;

analyzing the microphone signal to detect a warning; and

if a warning is detected then sending a notification signal.

2. The communication device according to claim 1, where the communication device is a phone.

3. The communication device according to claim 2, where the speaker is part of an earphone.

4. The communication device according to claim 3, where the speaker is connected to a logic circuit which is communicatively coupled wirelessly to the processor.

5. The communication device according to claim 4, where the operations further comprise:

sending an audio playback signal to the speaker.

6. The communication device according to claim 5, where the operations further comprise:

decreasing a volume of the audio playback when a warning is detected.

7. The communication device according to claim 1, where the operations further comprise:

sending the notification signal to the speaker.

8. The communication device according to claim 1, where the operations further comprise:

sending the notification signal to the remote server.

9. The communication device according to claim 1, where the warning is a vocal warning.

10. The communication device according to claim 1, where the warning is a warning sound.

11. The communication device according to claim 1, where the warning is an alarm.

12. The communication device according to claim 1, where the communication device is configured to be integrated into a vehicle.

13. The communication device according to claim 12, where the warning is a car horn.

14. The communication device according to claim 2, where the speaker is housed within an earpiece that is communicatively connected to the phone.

.

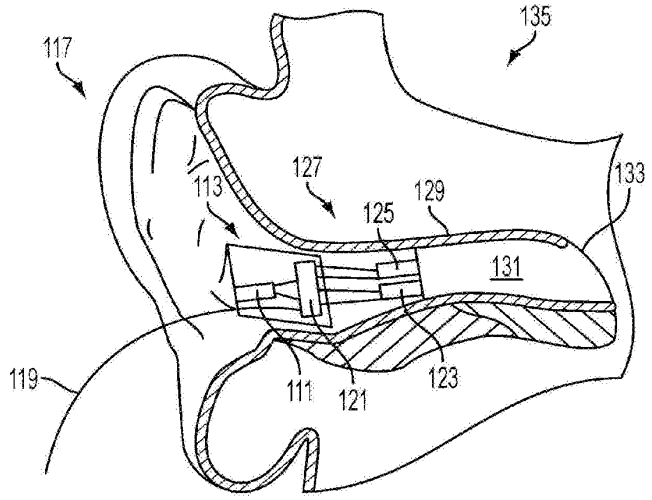

135
117
127
113
129
125
133
131
119
111
121
123

FIG. 1

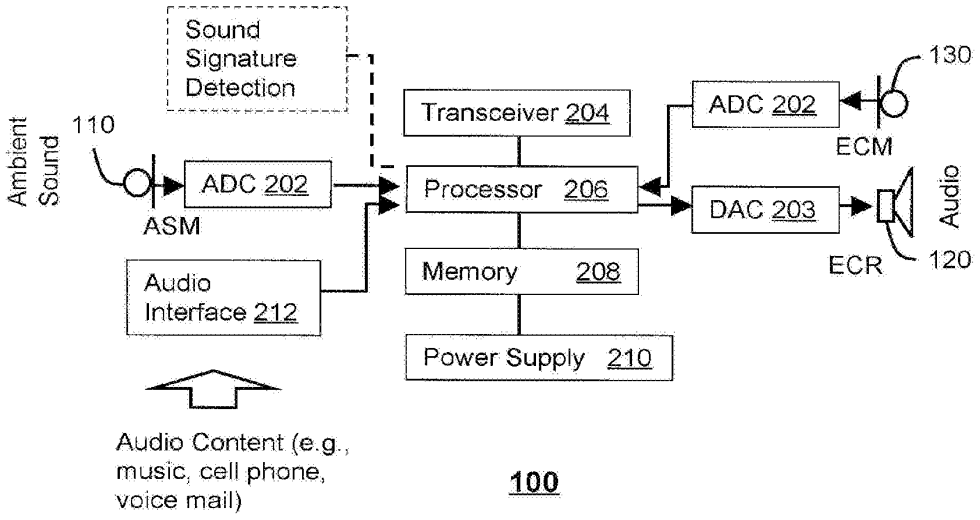
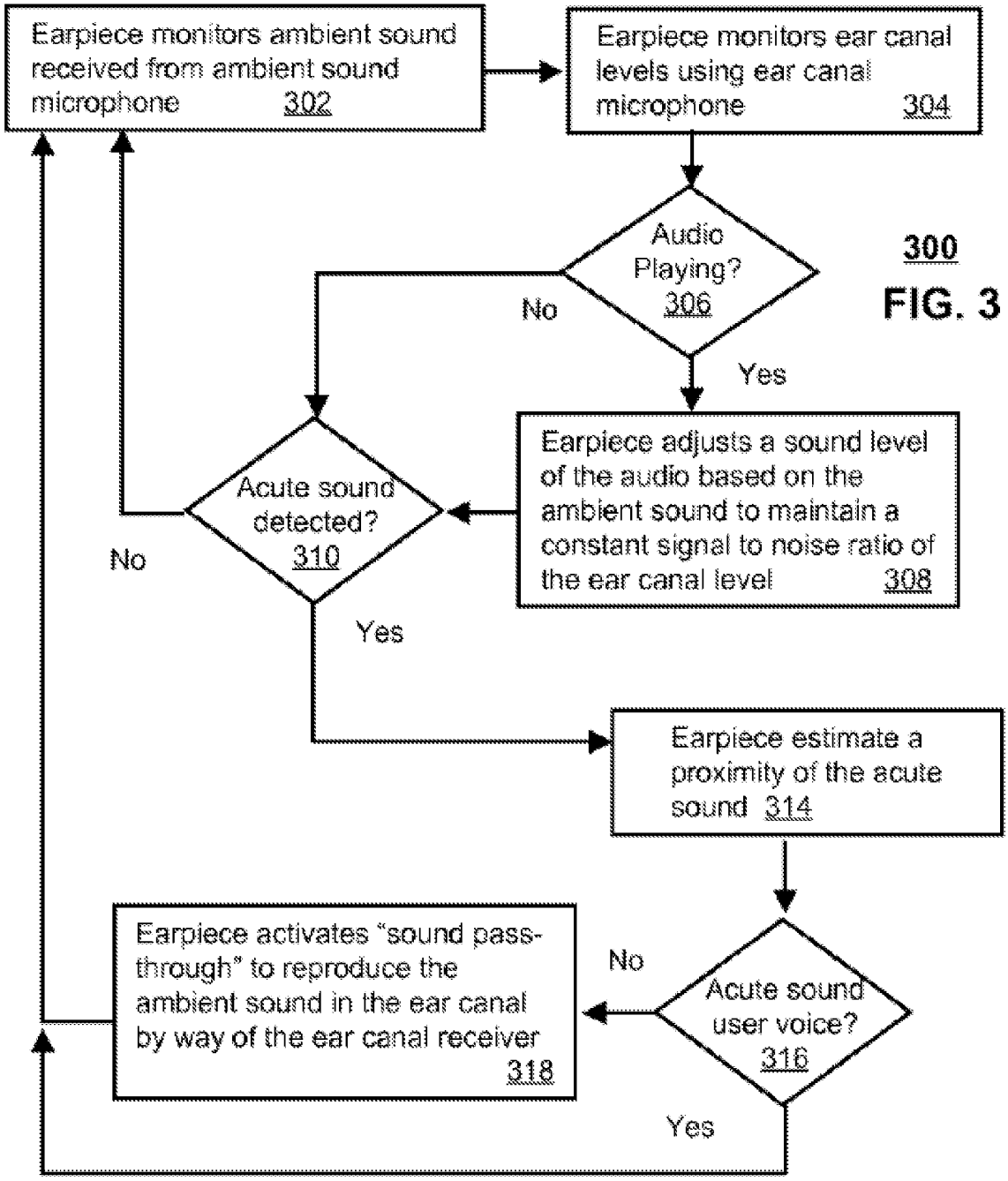

Sound Signature Detection
Ambient Sound
110
ASM
ADC 202
Audio Interface 212
Transceiver 204
Processor 206
Memory 208
Power Supply 210
ADC 202
130
ECM
DAC 203
Audio
ECR
120
Audio Content (e.g., music, cell phone, voice mail)
100

FIG. 2


Earpiece monitors ambient sound received from ambient sound microphone 302
Earpiece monitors ear canal levels using ear canal microphone 304
Audio Playing? 306
No
Yes
300
FIG. 3
Earpiece adjusts a sound level of the audio based on the ambient sound to maintain a constant signal to noise ratio of the ear canal level 308
Acute sound detected? 310
No
Yes
Earpiece estimate a proximity of the acute sound 314
Acute sound user voice? 316
No
Yes
Earpiece activates "sound pass-through" to reproduce the ambient sound in the ear canal by way of the ear canal receiver 318

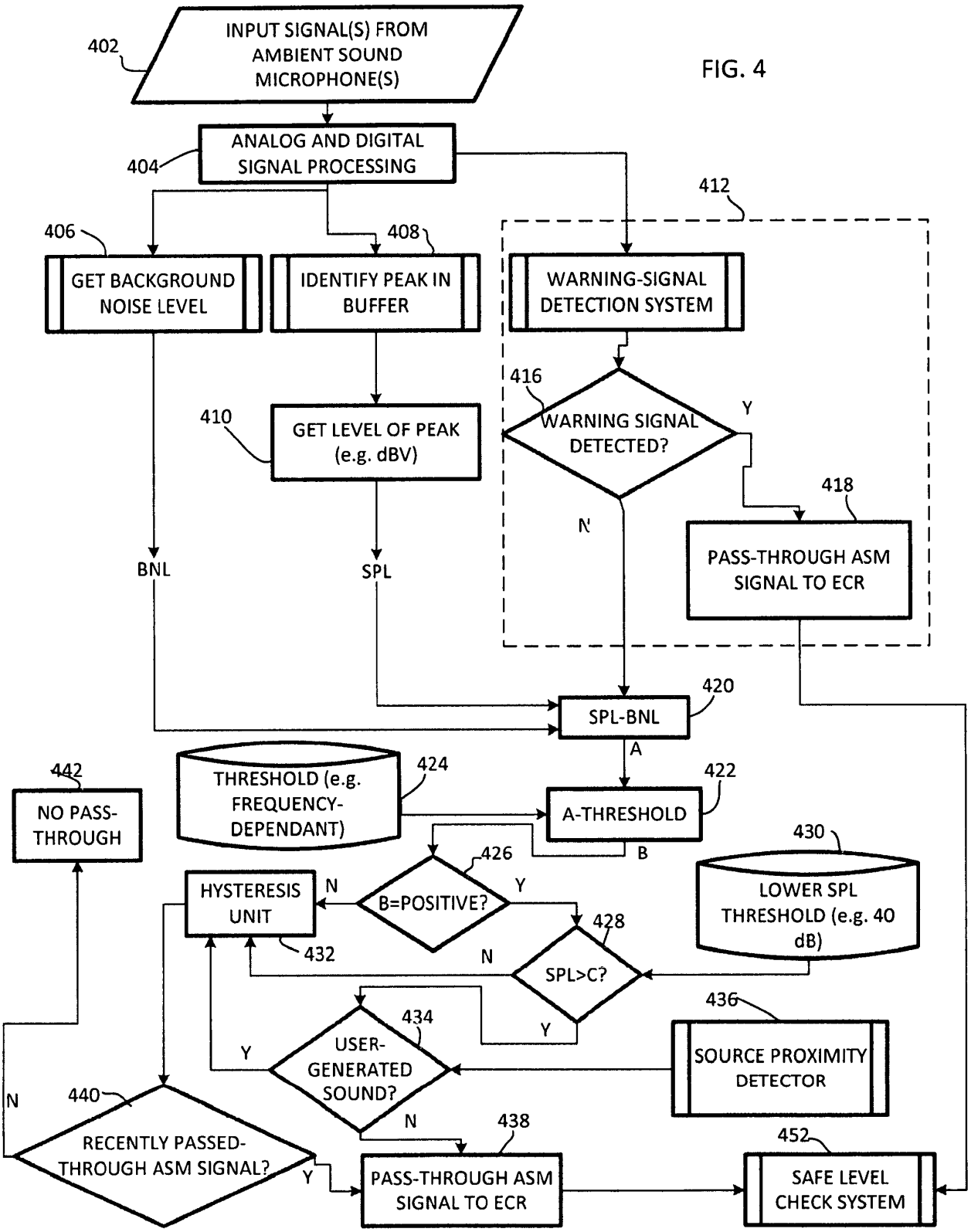
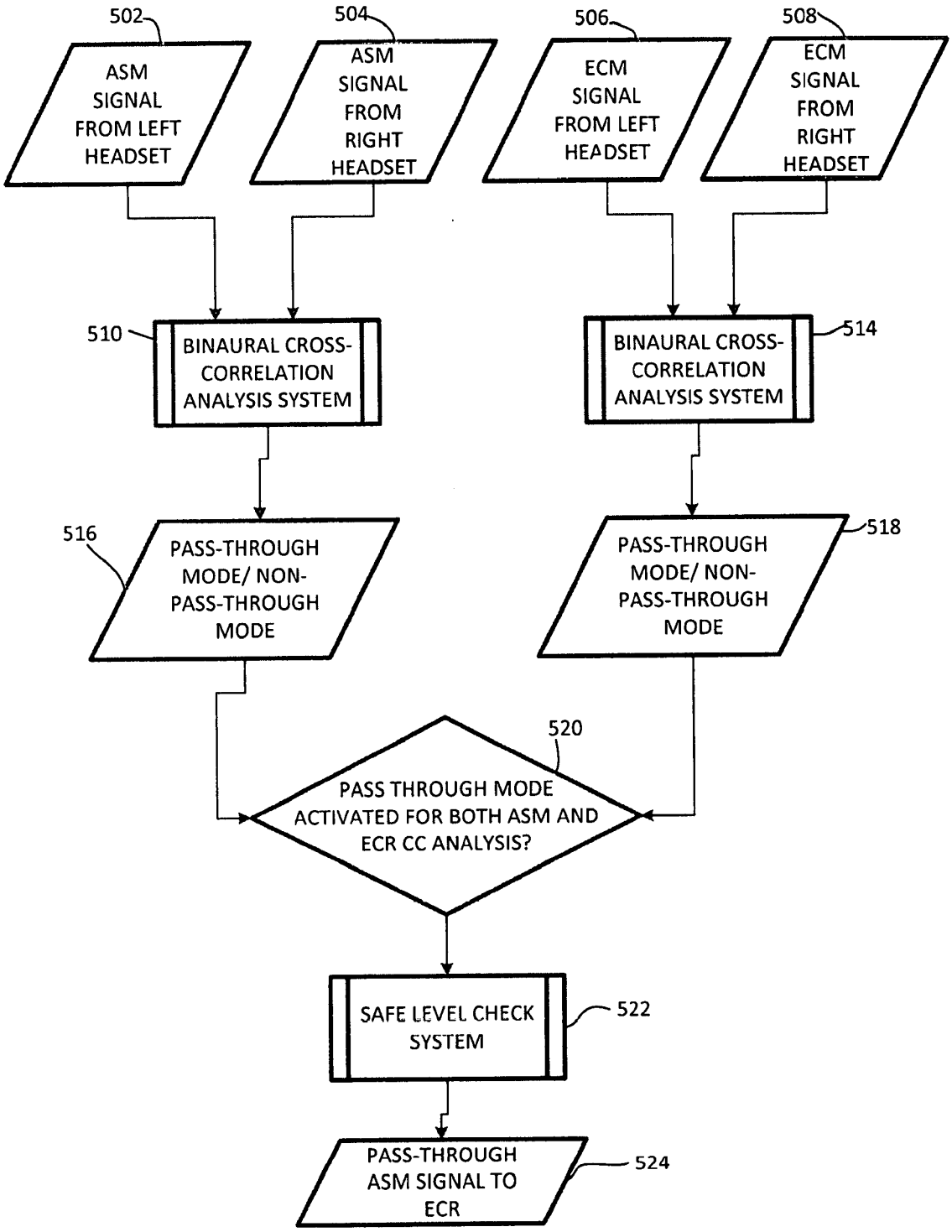

402
INPUT SIGNAL(S) FROM AMBIENT SOUND MICROPHONE(S)
404
ANALOG AND DIGITAL SIGNAL PROCESSING
406
GET BACKGROUND NOISE LEVEL
408
IDENTIFY PEAK IN BUFFER
412
WARNING-SIGNAL DETECTION SYSTEM
416
WARNING SIGNAL DETECTED?
Y
N
410
GET LEVEL OF PEAK (e.g. dBV)
418
PASS-THROUGH ASM SIGNAL TO ECR
BNL
SPL
420
SPL-BNL
A
B
442
NO PASS-THROUGH
424
THRESHOLD (e.g. FREQUENCY-DEPENDANT)
422
A-THRESHOLD
430
LOWER SPL THRESHOLD (e.g. 40 dB)
426
B=POSITIVE?
HYSTERESIS UNIT
432
428
SPL>C?
436
SOURCE PROXIMITY DETECTOR
434
USER-GENERATED SOUND?
440
RECENTLY PASSED-THROUGH ASM SIGNAL?
438
PASS-THROUGH ASM SIGNAL TO ECR
452
SAFE LEVEL CHECK SYSTEM

FIG. 4

FIG. 5


502
ASM SIGNAL FROM LEFT HEADSET
504
ASM SIGNAL FROM RIGHT HEADSET
506
ECM SIGNAL FROM LEFT HEADSET
508
ECM SIGNAL FROM RIGHT HEADSET
510
BINAURAL CROSS-CORRELATION ANALYSIS SYSTEM
514
BINAURAL CROSS-CORRELATION ANALYSIS SYSTEM
516
PASS-THROUGH MODE/ NON-PASS-THROUGH MODE
518
PASS-THROUGH MODE/ NON-PASS-THROUGH MODE
520
PASS THROUGH MODE ACTIVATED FOR BOTH ASM AND ECR CC ANALYSIS?
SAFE LEVEL CHECK SYSTEM
522
PASS-THROUGH ASM SIGNAL TO ECR
524

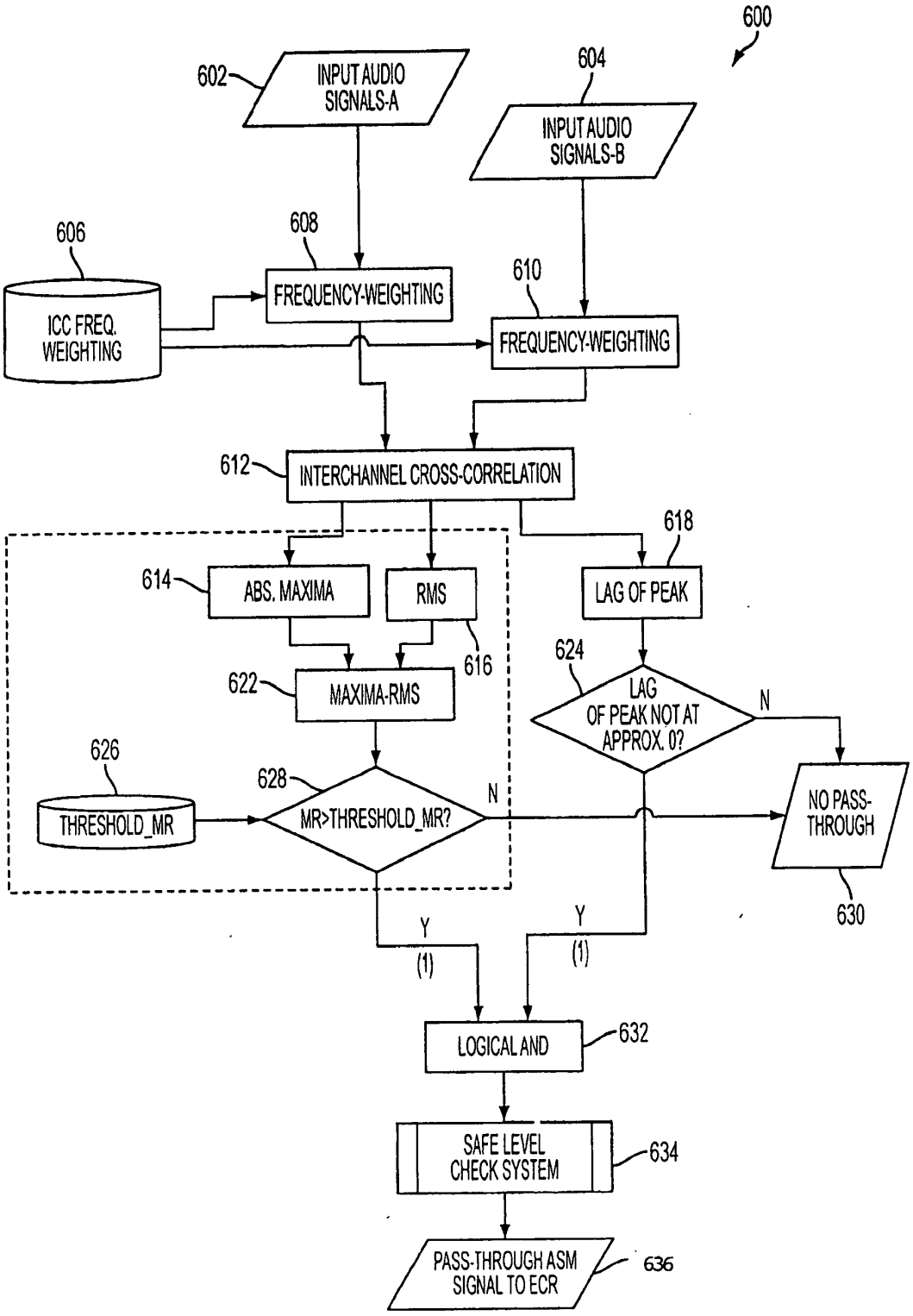
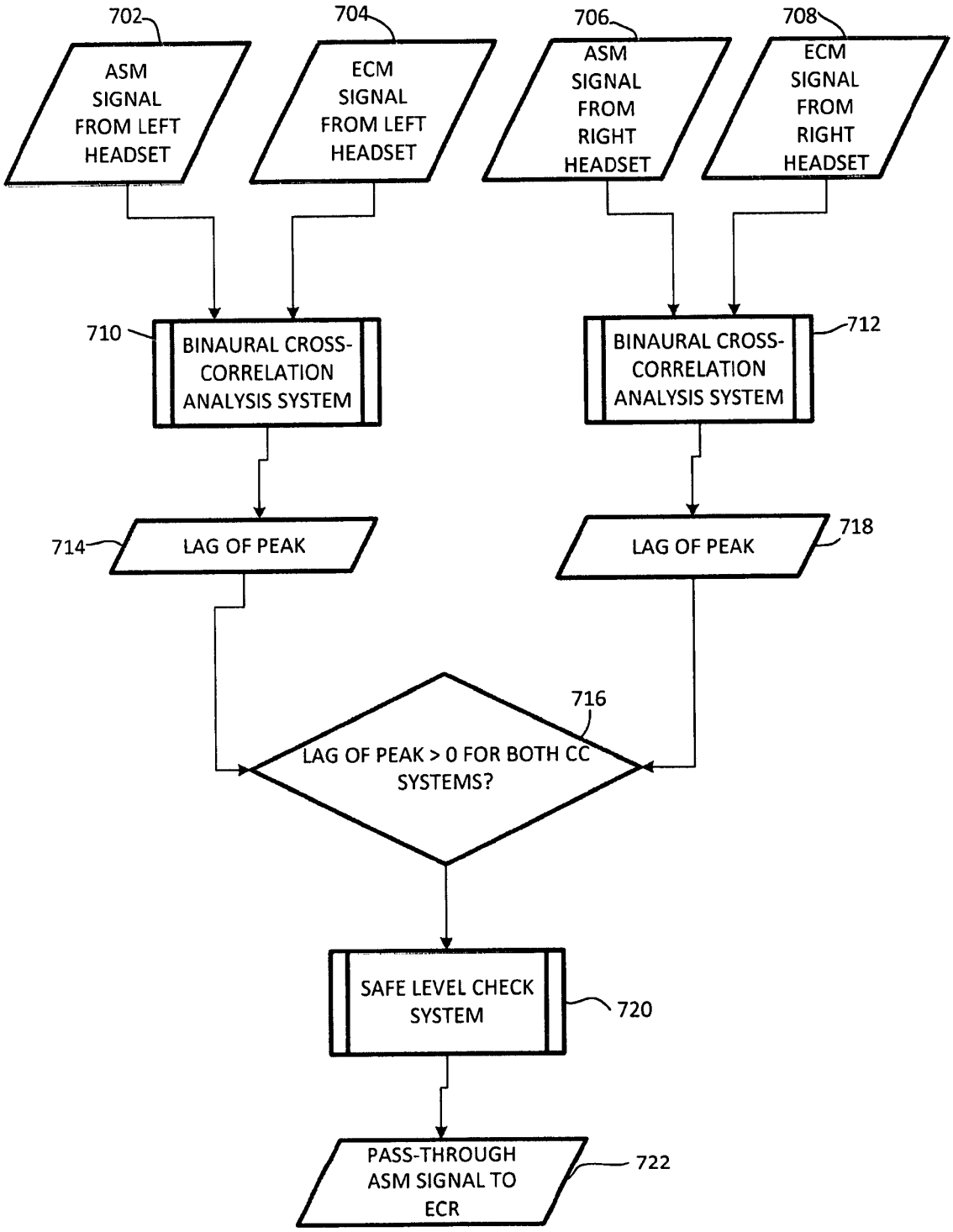

600
602
INPUT AUDIO SIGNALS-A
604
INPUT AUDIO SIGNALS-B
606
ICC FREQ. WEIGHTING
608
FREQUENCY-WEIGHTING
610
FREQUENCY-WEIGHTING
612
INTERCHANNEL CROSS-CORRELATION
614
ABS. MAXIMA
RMS
616
618
LAG OF PEAK
622
MAXIMA-RMS
624
LAG OF PEAK NOT AT APPROX. 0?
N
626
THRESHOLD_MR
628
MR>THRESHOLD_MR?
N
NO PASS-THROUGH
630
Y
(1)
Y
(1)
LOGICAL AND
632
SAFE LEVEL CHECK SYSTEM
634
PASS-THROUGH ASM SIGNAL TO ECR
636

FIG. 6

FIG. 7


702
ASM SIGNAL FROM LEFT HEADSET
704
ECM SIGNAL FROM LEFT HEADSET
706
ASM SIGNAL FROM RIGHT HEADSET
708
ECM SIGNAL FROM RIGHT HEADSET
710
BINAURAL CROSS-CORRELATION ANALYSIS SYSTEM
712
BINAURAL CROSS-CORRELATION ANALYSIS SYSTEM
714
LAG OF PEAK
718
LAG OF PEAK
716
LAG OF PEAK > 0 FOR BOTH CC SYSTEMS?
SAFE LEVEL CHECK SYSTEM
720
PASS-THROUGH ASM SIGNAL TO ECR
722

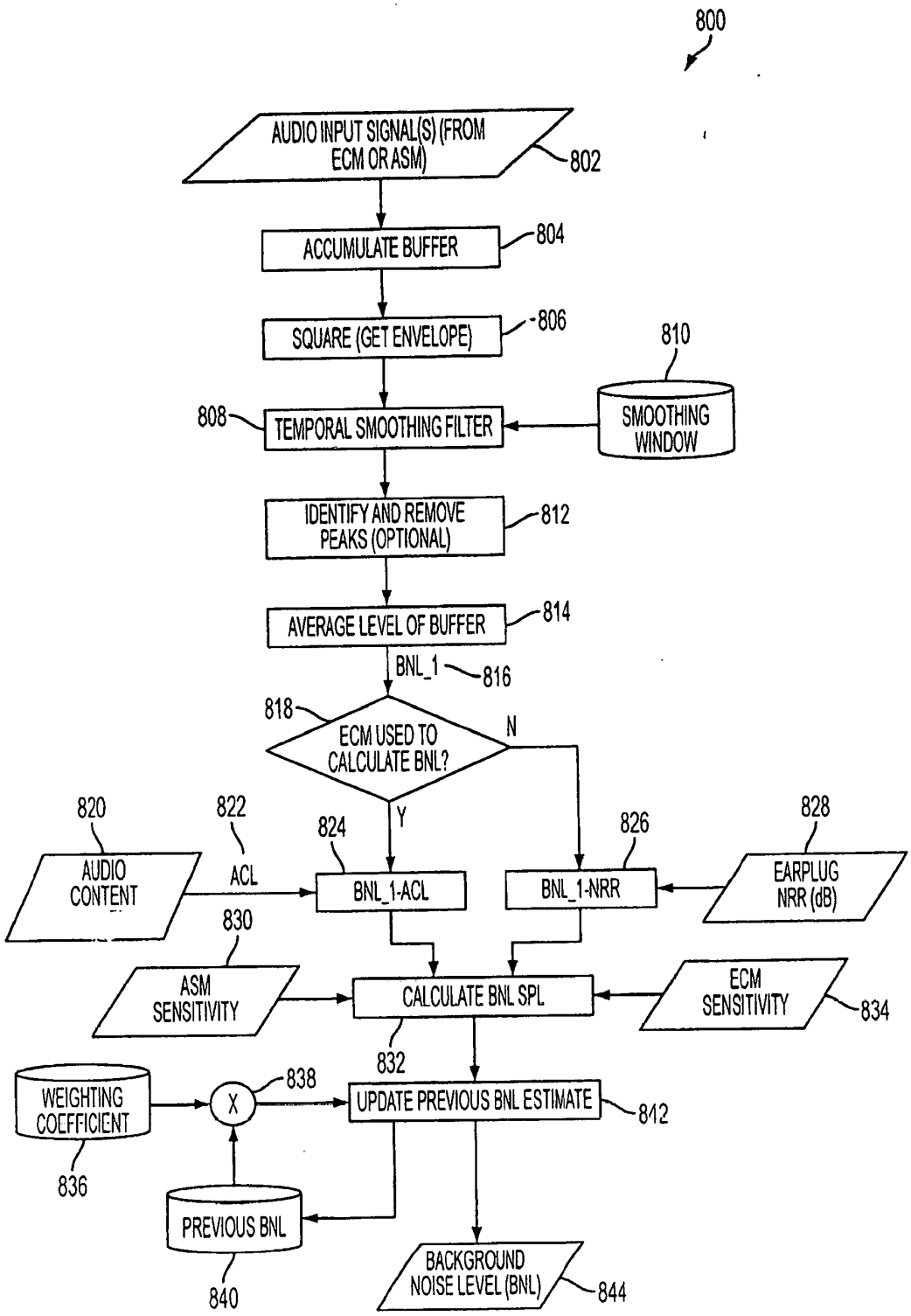

800
AUDIO INPUT SIGNAL(S) (FROM ECM OR ASM)
802
ACCUMULATE BUFFER
804
SQUARE (GET ENVELOPE)
806
810
SMOOTHING WINDOW
808
TEMPORAL SMOOTHING FILTER
IDENTIFY AND REMOVE PEAKS (OPTIONAL)
812
AVERAGE LEVEL OF BUFFER
814
BNL_1
816
818
ECM USED TO CALCULATE BNL?
N
Y
820
822
824
826
828
AUDIO CONTENT
ACL
BNL_1-ACL
BNL_1-NRR
EARPLUG NRR (dB)
830
ASM SENSITIVITY
CALCULATE BNL SPL
ECM SENSITIVITY
834
832
WEIGHTING COEFFICIENT
X
838
UPDATE PREVIOUS BNL ESTIMATE
842
836
PREVIOUS BNL
840
BACKGROUND NOISE LEVEL (BNL)
844

FIG. 8

FIG. 9

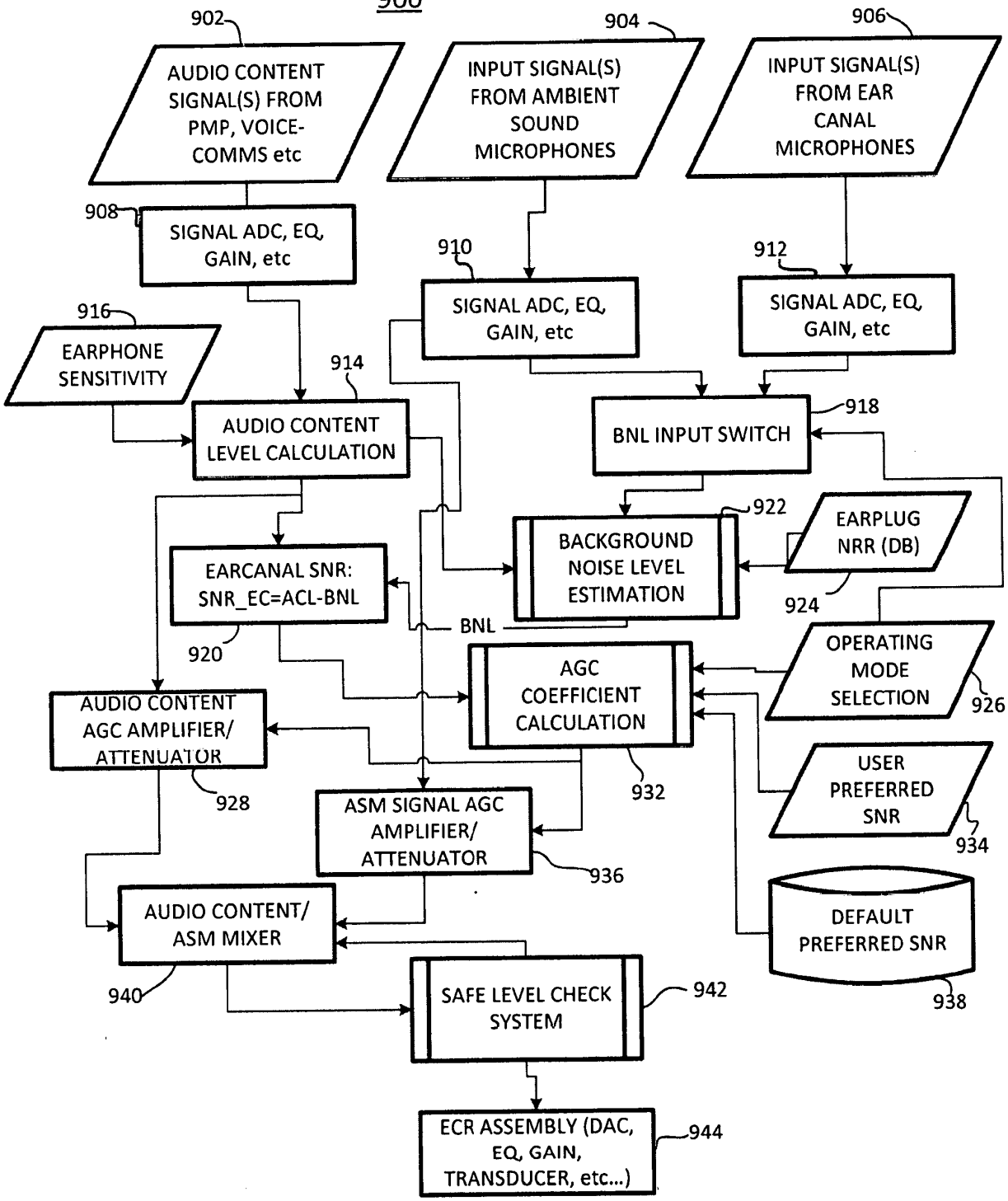
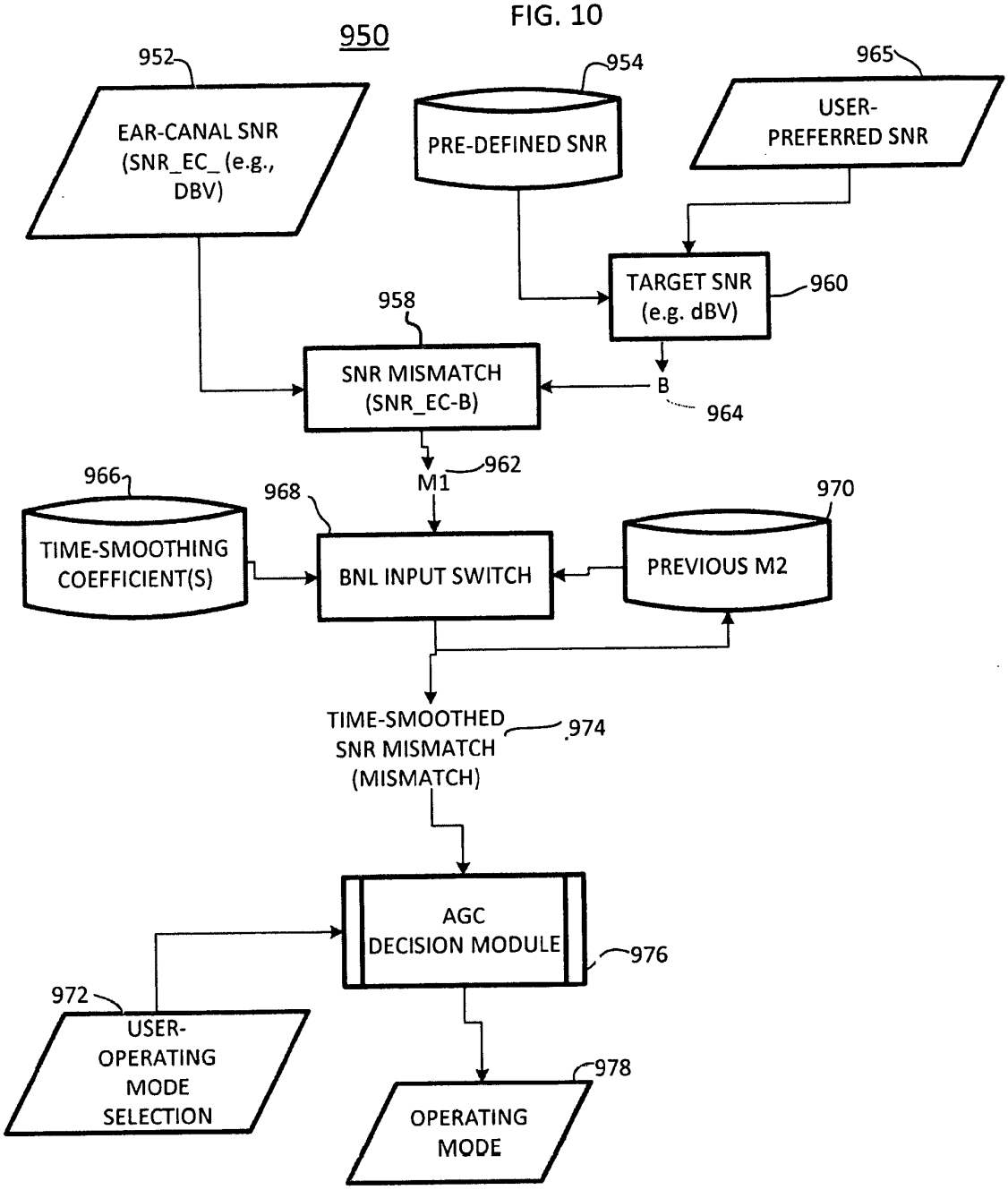

900
902
AUDIO CONTENT SIGNAL(S) FROM PMP, VOICE-COMMS etc
904
INPUT SIGNAL(S) FROM AMBIENT SOUND MICROPHONES
906
INPUT SIGNAL(S) FROM EAR CANAL MICROPHONES
908
SIGNAL ADC, EQ, GAIN, etc
910
SIGNAL ADC, EQ, GAIN, etc
912
SIGNAL ADC, EQ, GAIN, etc
916
EARPHONE SENSITIVITY
914
AUDIO CONTENT LEVEL CALCULATION
918
BNL INPUT SWITCH
922
BACKGROUND NOISE LEVEL ESTIMATION
EARPLUG NRR (DB)
924
EARCANAL SNR: SNR_EC=ACL-BNL
BNL
920
OPERATING MODE SELECTION
926
AGC COEFFICIENT CALCULATION
AUDIO CONTENT AGC AMPLIFIER/ ATTENUATOR
928
932
USER PREFERRED SNR
934
ASM SIGNAL AGC AMPLIFIER/ ATTENUATOR
936
AUDIO CONTENT/ ASM MIXER
DEFAULT PREFERRED SNR
940
SAFE LEVEL CHECK SYSTEM
942
938
ECR ASSEMBLY (DAC, EQ, GAIN, TRANSDUCER, etc...)
944

FIG. 10


950
952
EAR-CANAL SNR (SNR_EC_ (e.g., DBV)
954
PRE-DEFINED SNR
965
USER-PREFERRED SNR
TARGET SNR (e.g. dBV)
960
958
SNR MISMATCH (SNR_EC-B)
B
964
M1
962
966
TIME-SMOOTHING COEFFICIENT(S)
968
BNL INPUT SWITCH
970
PREVIOUS M2
TIME-SMOOTHED SNR MISMATCH (MISMATCH)
974
AGC DECISION MODULE
976
972
USER-OPERATING MODE SELECTION
978
OPERATING MODE

METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION

CROSS-REFERENCE TO RELATED APPLICATION(S)

[0001] This is a continuation of and claims priority to U.S. Patent Application No. 16/669,490, filed 30 Oct. 2019, which is a continuation of and claims priority to U.S. Patent Application No. 16/193,568, filed 16 Nov. 2018, now U.S. Patent No. 10,535,334, which is a continuation of and claims priority to U.S. Patent Application Serial No. 14/574,589, filed on December 18, 2014, now U.S. Patent No. 10,134,377, which claims priority to and is a continuation of U.S. Patent Application Serial No. 12/017,878, filed on January 22, 2008, now U.S. Patent No. 8,917,894, which claims the benefit of U.S. Provisional Patent Application Serial No. 60/885,917, filed on January 22, 2007, all of which are herein incorporated by reference in their entireties.

FIELD OF THE INVENTION

[0002] The present invention relates to a device that monitors sound directed to an occluded ear, and more particularly, though not exclusively, to an earpiece and method of operating an earpiece that detects acute sounds and allows the acute sounds to be reproduced in an ear canal of the occluded ear.

BACKGROUND

[0003] Since the advent of industrialization over two centuries ago, the human auditory system has been increasingly stressed to tolerate high noise levels to which it had hitherto been unexposed. Recently, human knowledge of the causes of hearing damage have been researched intensively and models for predicting hearing loss have been developed and verified with empirical data from decades of scientific research. Yet it can be strongly argued that the danger of permanent hearing damage is more present in our daily lives than ever, and that sound levels from personal audio systems in particular (i.e. from portable audio devices), live sound events, and the urban environment are a ubiquitous threat to healthy auditory functioning across the global population.

[0004] Environmental noise is constantly presented in industrialized societies given the ubiquity of external sound intrusions. Examples include people talking on their cell phones, blaring music in health clubs, or the constant hum of air conditioning systems in schools and office buildings.

Excess noise exposure can also induce auditory fatigue, possibly comprising a person's listening abilities. On a daily basis, people are exposed to various environmental sounds and noises within their environment, such as the sounds from traffic, construction, and industry.

[0005] To combat the undesired cacophony of annoying sounds, people are arming themselves with portable audio playback devices to drown out intrusive noise. The majority of devices providing the person with audio content do so using insert (or in-ear) earbuds. These earbuds deliver sound directly to the ear canal at high sound levels over the background noise even though the earbuds generally provide little to no ambient sound isolation. Moreover, when people wear earbuds (or headphones) to listen to music, or engage in a call using a telephone, they can effectively impair their auditory judgment and their ability to discriminate between sounds. With such devices, the person is immersed in the audio experience and generally less likely to hear warning sounds within their environment. In some cases, the user may even tum up the volume to hear their personal audio over environmental noises. It also puts them at high sound exposure risk which can potentially cause long term hearing damage.

[0006] With earbuds, personal audio reproduction levels can reach in excess of 100 dB. This is enough to exceed recommended daily sound exposure levels in less than a minute and to cause permanent acoustic trauma. Furthermore, rising population densities have continually increased sound levels in society. According to researchers, 40% of the European community is continuously exposed to transportation noise of 55 dBA and 20% are exposed to greater than 65 dBA. This level of 65 dBA is considered by the World Health Organization to be intrusive or annoying, and as mentioned, can lead to users of personal audio devices increasing reproduction levels to compensate for ambient noise.

[0007] A need therefore exists for enhancing the user's ability to listen in the environment without harming his or her hearing faculties.

SUMMARY

[0008] Embodiments in accordance with the present invention provide a method and device for acute sound detection and reproduction.

[0009] In a first embodiment, an earpiece can include an Ambient Sound Microphone (ASM) to capture ambient sound, at least one Ear Canal Receiver (ECR) to deliver audio to an ear canal; and a processor

operatively coupled to the ASM and the at least one ECR. The processor can monitor a change in the ambient sound level to detect an acute sound from the change. The acute sound can be reproduced within the ear canal via the ECR responsive to detecting the acute sound.

[0010] The processor can pass (transmit) sound from the ASM directly to the ECR to produce sound within the ear canal at a same sound pressure level (SPL) as the acute sound measured at an entrance to the ear canal. In one arrangement, the processor can maintain an approximately constant ratio between an audio content level (ACL) and an internal ambient sound level (iASL) measured within the ear canal. In one arrangement, the processor can measure an external ambient sound level (xASL) of the ambient sound with the ASM and subtract an attenuation level of the earpiece from the xASL to estimate the internal ambient sound level (iASL) within the ear canal.

[0011] The earpiece can further include an Ear Canal Microphone (ECM) to measure an ear canal sound level (ECL) within the ear canal. In this configuration, the processor can estimate the internal ambient sound level (iASL) within the ear canal by subtracting an estimated audio content sound level (ACL) from the ECL. For instance, the processor can measure a voltage level of the audio content sent to the ECR, and apply a transfer function of the ECR to convert the voltage level to the ACL. The processor can be located external to the earpiece on a portable computing device.

[0012] In a second embodiment, an earpiece can comprise an Ambient Sound Microphone (ASM) to capture ambient sound, at least one Ear Canal Receiver (ECR) to deliver audio to an ear canal, an audio interface operatively coupled to the processor to receive audio content, and a processor operatively coupled to the ASM and the at least one ECR. The processor can monitor a change in the ambient sound level to detect an acute sound from the change, adjust an audio content level (ACL) of the audio content delivered to the ear canal, and reproduce the acute sound within the ear canal via the ECR responsive to detecting the acute sound and based on the ACL.

[0013] The audio interface can receive the audio content from at least one among a portable music player, a cell phone, and a portable communication device. During operation, the processor can maintain an approximately constant ratio between an audio content level (ACL) and an internal ambient sound level (iASL) measured within the ear canal. In one arrangement, the processor can mute the audio content and pass the acute sound to the ECR for reproducing the acute sound within the ear canal. In another arrangement, the processor can amplify the acute sound with respect to the audio content level (ACL).

[0014] In a third embodiment, a method for acute sound detection and reproduction can include the steps of measuring an ambient sound level (xASL) of ambient sound external to an ear canal at least partially occluded by the earpiece, monitoring a change in the xASL for detecting an acute sound, and reproducing the acute sound within the ear canal responsive to detecting the acute sound. The reproducing can include enhancing the acute sound over the ambient sound. The step of reproducing can produce sound within the ear canal at a same sound pressure level (SPL) as the acute sound measured at an entrance to the ear canal.

[0015] The method can further include receiving audio content from an audio interface that is directed to the ear canal, and maintaining an approximately constant ratio between a level of the audio content (ACL) and a level of an internal ambient sound level (iASL) measured within the ear canal. The ACL can be determined by measuring a voltage level of the audio content sent to the ECR, and applying a transfer function of the ECR to convert the voltage level to the ACL. The method can further include measuring an Ear Canal Level (ECL) within the ear canal, and subtracting the ACL from the ECL to estimate the iASL. The iASL can be estimated by subtracting an attenuation level of the earpiece from the xASL.

[0016] In a fourth embodiment, a method for acute sound detection and reproduction suitable for use with an earpiece can include the steps of measuring an external ambient sound level (xASL) in an ear canal at least partially occluded by the earpiece, monitoring a change in the xASL for detecting an acute sound, estimating a proximity of the acute sound, and reproducing the acute sound within the ear canal responsive to detecting the acute sound based on the proximity. The step of estimating a proximity can include performing a cross correlation analysis between at least two microphones, identifying a peak in the cross correlation and an associated time lag, and determining the direction from the associated time lag. The method can further include identifying whether the acute sound is a vocal signal produced by a user operating the earpiece or a sound source external from the user.

[0017] In a fifth embodiment, a method for acute sound detection and reproduction suitable for use with an earpiece can include measuring an external ambient sound level (xASL) due to ambient sound outside of an ear canal at least partially occluded by the earpiece, measuring an internal ambient sound level (iASL) due to residual ambient sound within the ear canal at least partially occluded by the earpiece, monitoring a high frequency change between the xASL and the iASL with respect to a low frequency change between the xASL and the iASL for detecting an acute sound, and reproducing the xASL within the ear canal responsive to detecting the high frequency change. The method can further

include determining a proximity of a sound source producing the acute sound.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] FIG. 1 is a pictorial diagram of an earpiece in accordance with an exemplary embodiment;

[0019] FIG. 2 is a block diagram of the earpiece in accordance with an exemplary embodiment;

[0020] FIG. 3 is a flowchart of a method for acute sound detection m accordance with an exemplary embodiment;

[0021] FIG. 4 is a more detailed approach to the method of FIG. 3 m accordance with an exemplary embodiment;

[0022] FIG. 5 is a flowchart of a method for acute sound source proximity in accordance with an exemplary embodiment;

[0023] FIG. 6 is a flowchart of a method for binaural analysis in accordance with an exemplary embodiment;

[0024] FIG. 7 is a flowchart of a method for logic control in accordance with an exemplary embodiment;

[0025] FIG. 8 is a flowchart of a method for estimating background noise level in accordance with an exemplary embodiment;

[0026] FIG. 9 is a flowchart of a method for maintaining constant audio content level (ACL) to internal ambient sound level (iASL) in accordance with an exemplary embodiment; and

[0027] FIG. 10 is a flowchart of a method for adjusting audio content gain in accordance with an exemplary embodiment.

DETAILED DESCRIPTION

[0028] The following description of at least one exemplary embodiment is merely illustrative in nature and is in no way intended to limit the invention, its application, or uses.

[0029] Processes, techniques, apparatus, and materials as known by one of ordinary skill in the relevant art may not be discussed in detail but are intended to be part of the enabling description where appropriate, for example the fabrication and use of transducers. Additionally in at least one exemplary embodiment the sampling rate of the transducers can be varied to pick up pulses of sound, for example less than 50 milliseconds.

[0030] In all of the examples illustrated and discussed herein, any specific values, for example the sound pressure level change, should be interpreted to be illustrative only and non-limiting. Thus, other examples of the exemplary embodiments could have different values.

[0031] Note that similar reference numerals and letters refer to similar items in the following figures, and thus once an item is defined in one figure, it may not be discussed for following figures.

[0032] Note that herein when referring to correcting or preventing an error or damage (e.g., hearing damage), a reduction of the damage or error and/or a correction of the damage or error are intended.

[0033] At least one exemplary embodiment of the invention is directed to an earpiece for ambient sound monitoring and warning detection. Reference is made to FIG. 1 in which an earpiece device, generally indicated as earpiece 100, is constructed in accordance with at least one exemplary embodiment of the invention. As illustrated, earpiece 100 depicts an electro- acoustical assembly 113 for an in-the-ear acoustic assembly, as it would typically be placed in the ear canal 131 of a user 135. The earpiece 100 can be an in the ear earpiece, behind the ear earpiece, receiver in the ear, open-fit device, or any other suitable earpiece type. The earpiece 100 can be partially or fully occluded in the ear canal, and is suitable for use with users having healthy or abnormal auditory functioning.

[0034] Earpiece 100 includes an Ambient Sound Microphone (ASM) Ill to capture ambient sound, an Ear Canal Receiver (ECR) 125 to deliver audio to an ear canal 131, and an Ear Canal Microphone (ECM) 123 to assess a sound exposure level within the ear canal. The earpiece 100 can partially or fully occlude the ear canal 131 to provide various degrees of acoustic isolation. The assembly is designed to be inserted into the user's ear canal 131, and to form an acoustic seal with the walls 129 of the ear canal at a location 127 between the entrance 117 to the ear canal and the tympanic membrane (or ear drum) 133. Such a seal is typically achieved by means of a soft and compliant housing of assembly 113. Such a seal is pertinent to the performance of the system in that it creates a closed cavity 131 of approximately

5 cc between the in-ear assembly 113 and the tympanic membrane 133. As a result of this seal, the ECR (speaker) 125 is able to generate a full range bass response when reproducing sounds for the user. This seal also serves to significantly reduce the sound pressure level at the user's eardrum 133 resulting from the sound field at the entrance to the ear canal. This seal is also the basis for the sound isolating performance of the electro-acoustic assembly 113.

[0035] Located adjacent to the ECR 125, is the ECM 123, which is acoustically coupled to the (closed) ear canal cavity 131. One of its functions is that of measuring the sound pressure level in the ear canal cavity 131 as a part of testing the hearing acuity of the user as well as confirming the integrity of the acoustic seal and the working condition of itself and the ECR. The ASM 111 is housed in an assembly 113 and monitors sound pressure at the entrance to the occluded or partially occluded ear canal. All transducers shown can receive or transmit audio signals to a processor 121 that undertakes audio signal processing and provides a transceiver for audio via the wired or wireless communication path 119.

[0036] Referring to FIG. 2, a block diagram of the earpiece 100 in accordance with an exemplary embodiment is shown. As illustrated, the earpiece 100 can include a processor 206 operatively coupled to the ASM 111, ECR 125, and ECM 123 via one or more Analog to Digital Converters (ADC) 202 and Digital to Analog Converters (DAC) 203. The processor 206 can monitor the ambient sound captured by the ASM 111 for acute sounds in the environment, such as an abrupt high energy sound corresponding to the on-set of a warning sound (e.g., bell, emergency vehicle, security system, etc.), siren (e.g., police car, ambulance, etc.), voice (e.g., "help", "stop", "police", etc.), or specific noise type (e.g., breaking glass, gunshot, etc.). The processor 206 can utilize computing technologies such as a microprocessor, Application Specific Integrated Chip (ASIC), and/or digital signal processor (DSP) with associated storage memory 208 such as Flash, ROM, RAM, SRAM, DRAM or other like technologies for controlling operations of the earpiece device 100. The memory 208 can store program instructions for execution on the processor 206 as well as captured audio processing data.

[0037] The earpiece 100 can include an audio interface 212 operatively coupled to the processor 206 to receive audio content, for example from a media player or cell phone, and deliver the audio content to the processor 206. The processor 206 responsive to detecting acute sounds can adjust the audio content and pass the acute sounds directly to the ear canal. For instance, the processor can lower a volume of the audio content responsive to detecting an acute sound for transmitting the acute sound to the ear canal. The processor 206 can also actively monitor the sound exposure level inside the

ear canal and adjust the audio to within a safe and subjectively optimized listening level range.

[0038] The earpiece 100 can further include a transceiver 204 that can support singly or in combination any number of wireless access technologies including without limitation Bluetooth.TM., Wireless Fidelity (WiFi), Worldwide Interoperability for Microwave Access (WiMAX), and/or other short or long range communication protocols. The transceiver 204 can also provide support for dynamic downloading over-the-air to the earpiece 100. It should be noted also that next generation access technologies can also be applied to the present disclosure.

[0039] The power supply 210 can utilize common power management technologies such as replaceable batteries, supply regulation technologies, and charging system technologies for supplying energy to the components of the earpiece 100 and to facilitate portable applications. A motor (not shown) can be a single supply motor driver coupled to the power supply 210 to improve sensory input via haptic vibration. As an example, the processor 206 can direct the motor to vibrate responsive to an action, such as a detection of a warning sound or an incoming voice call.

[0040] The 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. In the latter embodiment, the components of the earpiece 100 can be reused in different form factors for the master and slave devices.

[0041] FIG. 3 is a flowchart of a method 300 for acute sound detection and reproduction in accordance with an exemplary embodiment. The method 300 can be practiced with more or less than the number of steps shown and is not limited to the order shown. To describe the method 300, reference will be made to components of FIG. 2, although it is understood that the method 300 can be implemented in any other manner using other suitable components. The method 300 can be implemented in a single earpiece, a pair of earpieces, headphones, or other suitable headset audio delivery devices.

[0042] The method 300 can start in a state wherein the earpiece 100 has been inserted and powered on. As shown in step 302, the earpiece 100 can monitor the environment for ambient sounds received at the ASM 111. Ambient sounds correspond to sounds within the environment such as the sound of traffic noise, street noise, conversation babble, or any other acoustic sound. Ambient sounds can also correspond to industrial sounds present in an industrial setting, such as factory noise, lifting vehicles, automobiles, and robots to name a few.

[0043] Although the earpiece 100 when inserted in the ear can partially occlude the ear canal, the earpiece 100 may not completely attenuate the ambient sound. During the monitoring of ambient sounds in the environment, the earpiece 100 also monitors ear canal levels via the ECM 123 as shown in step 304. The passive aspect of the physical earpiece 100, due to the mechanical and sealing properties, can provide upwards of a 22-26 dB noise reduction. However, portions of ambient sounds higher than 26 dB can still pass through the earpiece 100 into the ear canal. For instance, high energy low frequency sounds are not completely attenuated. Accordingly, residual sound may be resident in the ear canal and heard by the user.

[0044] Sound within the ear canal 131 can also be provided via the audio interface 212. The audio interface 212 can receive the audio content from at least one among a portable music player, a cell phone, and a portable communication device. The audio interface 212 responsive to user input can direct sound to the ECR 125. For instance, a user can elect to play music through the earpiece 100 which can be audibly presented to the ear canal 131 for listening. The user can also elect to receive voice communications (e.g., cell phone, voice mail, messaging) via the earpiece 100. For instance, the user can receive audio content for voice mail or a phone call directed to the ear canal via the ECR 125. As shown in step 304, the earpiece 100 can monitor ear canal levels due to ambient sound and user selected sound via the ECM 123.

[0045] If at step 306, audio is playing (e.g., music, cell phone, etc.), the earpiece 100 adjusts a sound level of the audio based on the ambient sound to maintain a constant signal to noise ratio with respect to the ear canal level at step 308. For instance, the processor 206 can selectively amplify or attenuate audio content received from the audio interface 212 before it is delivered to the ECR 125. The processor 206 estimates a background noise level from the ambient sound received at the ASM 111, and adjusts the audio level of delivered audio content (e.g., music, cell phone audio) to maintain a constant signal (e.g., audio content) to noise level (e.g., ambient sound). By way of example, if the background noise level increases due to traffic sounds, the earpiece 100 automatically increases the volume of the audio content. Similarly, if the background noise level decreases, the earpiece 100 automatically decreases the volume of the audio content. The processor 206 can track variations on the ambient sound level to adjust the audio content level.

[0046] If at step 310, an acute sound is detected within the ambient sound, the earpiece 100 activates "sound pass-through" to reproduce the ambient sound in the ear canal by way of the ECR 125. The processor 206 permits the ambient sound to pass through the ECR 125 to the ear canal 131 directly for

example by replicating the ambient sound external to the ear canal within the ear canal. This is important if the acute sound corresponds to an on-set for a warning sound such as a bell, a car, or an object. In such regard, the ambient sound containing the acute sound is presented directly to the ear canal in an original form. Although, the earpiece 100 inherently provides attenuation due to the physical and mechanical aspects of the earpiece and its sealing properties, the processor 206 can reproduce the ambient sound within the ear canal 131 at an original amplitude level and frequency content to provide "transparency". For instance, the processor 206 measures and applies a transfer function of the ear canal to the passed ambient sound signal to provide an accurate reproduction of the ambient sound within the ear canal.

[0047] In one embodiment, the earpiece 100 looks for temporal and spectral characteristics in the ambient sound for detecting acute sounds. For instance, as will be explained ahead, the processor 206 looks for an abrupt change in the Sound Pressure Level (SPL) of an ambient sound across a small time period. The processor 206 can also detect abrupt magnitude changes across frequency sub-bands (e.g. filter-bank, FFT, etc.). Notably, the processor 206 can search for on-sets (e.g., fast rising amplitude wave-front) of an acute sound or other abrupt feature characteristics without initially attempting to initially identify or recognize the sound source. That is, the processor 206 is actively listening for a presence of acute sounds before identifying the type of sound source.

[0048] Even though the earplug inherently provides a certain attenuation level (e.g., noise reduction rating), the processor 206 in view of the ear canal level (ECL) and ambient sound level (ASL) can reproduce the ambient sound within the ear canal to allow the user to make an informed decision with regard to the acute sound. The ECL corresponds to all sounds within the ear canal and includes the internal ambient sound level (iASL) resulting from residual ambient sounds through the earpiece and the audio content level (ACL) resulting from the audio delivered via the audio interface 212. Briefly, xASL is the external ambient sound external to the ear canal and the earpiece (e.g., ambient sound outside the ear canal). iASL is the residual ambient sound that remains internal in the ear canal. The following equations describe the relationship among terms:

iASL=xASL-NRR (EQ 1)

iASL=ECL-ACL (EQ 2)

[0049] As EQ 1 shows, the iASL is the difference between the external ambient sound (xASL) and the attenuation of the earpiece (Noise Reduction Rating) due to the physical and sealing properties of the earpiece. The processor 206 can measure an external ambient sound level (xASL) of the

ambient sound with the ASM 111 and subtracts an attenuation level of the earpiece (NRR) from the xASL to estimate the internal ambient sound level (iASL) within the ear canal.

[0050] EQ 2 is an alternate, or supplemental, method for calculating the iASL as the difference between the ECL and the Audio Content Level (ACL). By way of the ECM 123, the processor 206 can estimate an internal ambient sound level (iASL) within the ear canal by subtracting the estimated audio content sound level (ACL) from the ECL. The processor 206 measures a voltage level of the audio content sent to the ECR 125, and applies a transfer function of the ECR 125 to convert the voltage level to the ACL.

[0051] The processor 206 evaluates the equations above to pass sound from the ASM 111 directly to the ECR 125 to produce sound within the ear canal at a same sound pressure level (SPL) and frequency representation as the acute sound measured at an entrance to the ear canal. Further, the processor 206 can maintain an approximately constant ratio between an audio content level (ACL) and an internal ambient sound level (iASL) measured within the ear canal.

[0052] At step 314, the earpiece 100 can estimate a proximity of the acute sound. For instance, as will be shown ahead, the processor 206 can perform a correlation analysis on at least two microphones to determine whether the sound source is internal (e.g., the user) or external (e.g., an object other than the user). At step 316, the earpiece 100 determines whether it is the user's voice that generates the acute sound when the user speaks, or whether it is an external sound such as a vehicle approaching the user. If at step 316, the processor 206 determines that the acute sound is a result of the user speaking, the processor 206 does not activate a pass-through mode, since this is not considered an external warning sound. The pass-through mode permits ambient sound detected at the ASM 111 to be transmitted directly to the ear canal. If however, the acute sound corresponds to an external sound source, such as an on-set of a warning sound, the earpiece at step 318 activates "sound pass-through" to reproduce the ambient sound in the ear canal by way of the ECR 125. The earpiece 100 can also present an audible notification to the user indicating that an external sound source generating the acute sound has been detected. The method 300 can proceed back to step 302 to continually monitor for acute sounds in the environment.

[0053] FIG. 4 is a detailed approach to the method 400 of FIG. 3 for an Acute-Sound Pass- Through System (ACPTS) in accordance with an exemplary embodiment. The method 400 can be practiced with more or less than the number of steps shown and is not limited to the order shown. To describe the method 400, reference will be made to components of FIG. 2, although it is understood that the method 400 can be implemented in any other manner using other suitable components. The method 400

can be implemented in a single earpiece, a pair of earpieces, headphones, or other suitable headset audio delivery devices.

[0054] At step 402, the earpiece 100 captures ambient sound signals from the ASM 111. At step 404, the processor 206 applies analog and discrete time signal processing to condition and compensate the ambient sound signal for the ASM 111 transducer. At step 406, the processor 206 estimates a background noise level (BNL) as will be discussed ahead. At step 408, the processor 206 identifies at least one peak in a data buffer storing a portion of the ambient sound signal. The processor 206 at step 410 gets a level of the peak (e.g., dBV). Block 412 presents a method for warning signal detection (e.g. car horns, klaxons). When a warning signal is detected at step 416, the processor 206 invokes at step 418 a pass-through mode whereby the ASM signal is reproduced with the ECR 125. Upon activating pass-through mode, the processor 206 can perform a safe level check at step 452. If a warning signal is not detected, the method 400 proceeds to step 420.

[0055] At step 420, the processor 206 subtracts the estimated BNL from an SPL of the ambient sound signal to produce signal "A". A high energy level transient signal is indicative of an acute sound. At step 422, a frequency dependent threshold is retrieved at step 424, and subtracted from signal "A", as shown in step 422 to produce signal "B". At step 426, the processor 206 determines if signal "B" is positive. If not, the processor 206 performs a hysterisis to determine if the acute sound has already been detected. If not, the processor at step 428 determines if an SPL of the ambient sound is greater than a signal "C" (e.g. threshold). If the SPL is greater than signal "C", the earpiece generates a user generated sound at step 434. The signal "C" is used to ensure that the SPL between the signal and background noise is positive and greater than a predetermined amount. For instance, a low SPL threshold (e.g., "C" 40 dB) can be used as shown in step 430, although it can adapt to different environmental conditions. The low SPL threshold provides an absolute measure to the SPL difference. At step 436, a proximity of a sound source generating the acute sound can be estimated as will be discussed ahead. The method 400 can continue to step 432.

[0056] Briefly, if a transient, high-level sound (or acute sound) is detected in the ambient sound signal (ASM input signal), then it is converted to a level, and its magnitude compared with the BNL is calculated. The magnitude of this resulting difference (signal "A") is compared with the threshold (see step 422). If the value is positive, and the level of the transient is greater than a predefined threshold (see step 428), the processor 206 invokes the optional Source Proximity Detector at step 436, which determines if the acute sound was created by the User's voice (i.e., a user generated sound). If a user-generated sound is NOT detected, then Pass-through operation at step 438 is invoked, whereby the

ambient sound signal is reproduced with the ECR 125. If the difference signal at step 428 is not positive, or the level of the identified transient is too low, then the hysteresis is invoked at step 432. The processor 206 decides if the pass-through was recently used at step 440 (e.g. in the last 10 ms). If pass-through mode was recently activated, then processor 206 invokes the pass-through system at step 438; otherwise there is no pass-through of the ASM signal to the ECR as shown at step 442. Upon activating pass-through mode, the processor 206 can perform a safe level check at step 452.

[0057] FIG. 5 is a flowchart of a method 500 for acute sound source proximity. The method 500 can be practiced with more or less than the number of steps shown and is not limited to the order shown. To describe the method 500, reference will be made to components of FIG. 2, although it is understood that the method 500 can be implemented in any other manner using other suitable components. The method 500 can be implemented in a single earpiece, a pair of earpieces, headphones, or other suitable headset audio delivery devices.

[0058] Briefly, FIG. 5 describes a method 500 for Source Proximity Detection (SPD) to determine if the Acute sound detected was created by the User's voice operating the earpiece 100. The SPD method 500 uses as its inputs the external ambient sound signals from left and right electro-acoustic earpiece 100 assemblies (e.g., a headphone). In some embodiments the SPD method 500 employs Ear Canal Microphone (ECM) signals from left and right earpiece 100 assemblies placed on left and right ears respectively. The processor 206 performs an electronic cross-correlation between the external ambient sound signals to determine a Pass-through or Non Pass-through operating mode. In the described embodiment whereby the cross-correlation of both the ASM and ECM signals is involved, a pass-through mode is invoked when the cross- correlation analysis for both the left and right earpiece 100 assemblies return a "Pass-through" operating mode, as determined by a logical AND unit.

[0059] For instance, at step 502 a left ASM signal from a left headset incorporating the earpiece 100 assembles is received. Simultaneously, at step 504 a right ASM signal from a right headset is received. At step 510, the processor 206 performs a binaural cross correlation on the left ASM signal and the right ASM signal to evaluate a pass through mode 516. At step 506 a left ECM signal from the left headset is received. At step 508, a right ECM signal from the right headset is received. At step 514, the processor 206 performs a binaural cross correlation on the left ECM signal and the right ECM signal to evaluate a pass through mode 518. A pass through mode 524 is invoked if both the ASM and ECM cross correlation analysis are the same as determined in step 520. A safe level check can be performed by processor 206 at step 522.

[0060] FIG. 6 is a flowchart of a method 600 for binaural analysis. The method 600 can be

practiced with more or less than the number of steps shown and is not limited to the order shown. To describe the method 600, reference will be made to components of FIG. 2, although it is understood that the method 600 can be implemented in any other manner using other suitable components. The method 600 can be implemented in a single earpiece, a pair of earpieces, headphones, or other suitable headset audio delivery devices.

[0061] Briefly, FIG. 6 describes a component of the SPD method 500 wherein a cross-correlation of two input audio signals 602 and 604 (e.g., left and right ASM signals) is calculated. The input signals may first be weighted using a frequency-dependent filter (e.g. an FIR-type filter) using filter coefficients 606 and filtering networks 608 and 610. Alternatively, an interchannel cross- correlation calculated with function 612 can return a frequency-dependent correlation such as a coherence function. The absolute maximum peak of a calculated cross-correlation 614 can be subtracted from a mean (or RMS) 616 correlation, with subtractor 622, and compared 628 with a predefined threshold 626, to determine if the peak is significantly greater than the average correlation (i.e. a test for peakedness). Alternatively, the maxima of the peak may simply be compared with the threshold 628 without the subtraction process 622. If the lag-time of the peak 618 is at approximately lag-sample 0, then the sound source is determined, at step 624, as being on the interaural axis-indicative of User-generated speech, and a no-pass through mode is returned 630 (a further function described in FIG. 7 may be used to confirm that the sound source originates in the User-head, rather than external to the user- and further confirming that the acute sound is a User-generated voice sound). The logical AND unit 632 activates the pass- through mode 636 if both criteria in the decision units 628 and 624 confirm that the absolute maxima of the peak is above a predefined threshold 626, AND the lag of the peak is NOT at approximately lag sample zero. A safe level check may be performed by processor 206 at step 634.

[0062] FIG. 7 is a flowchart of a method 700 for logic control. The method 700 can be practiced with more or less than the number of steps shown and is not limited to the order shown. To describe the method 700, reference will be made to components of FIG. 2, although it is understood that the method 700 can be implemented in any other manner using other suitable components. The method 700 can be implemented in a single earpiece, a pair of earpieces, headphones, or other suitable headset audio delivery devices.

[0063] Briefly, FIG. 7 describes a further component of the SPD method 500, which is optional to confirm that the acute sound source is from a location indicative of user-generated speech; i.e. inside the head. Method steps 702-712 are similar to Method steps 502-514 of FIG. 5. The cross- correlations

of step 710 and 712 provide a time-lag of the maximum absolute peak for a pair of input signals; the ASM and ECM signals for the same headset (e.g. the ASM and ECM for the left headset). At step 714 a left lag of a peak of the left cross correlation is determined, and simultaneously, a right lag of a peak of the right cross correlation is determined at step 718. If a lag of a respective peak is greater than zero--this indicates that the sound arrived at the ECM signal before the ASM signal. Decision step 716 determines if the lag is greater than zero for both the left and right headsets- and activates the pass-through mode 722 if so. A safe level check may be performed by processor 206 at step 720.

[0064] FIG. 8 is a flowchart of a method 800 for estimating background sound level. The method 800 can be practiced with more or less than the number of steps shown and is not limited to the order shown. To describe the method 800, reference will be made to components of FIG. 2, although it is understood that the method 800 can be implemented in any other manner using other suitable components. The method 800 can be implemented in a single earpiece, a pair of earpieces, headphones, or other suitable headset audio delivery devices.

[0065] Briefly, method 800 receives as its input 802 either or both the ASM signal from ASM 111 and a signal from the ECM 123. An audio buffer 804 of the input audio signal is accumulated (e.g. 10 ms of data), which is then processed by squaring step 806 to obtain the temporal envelope. The envelope is smoothed (e.g. an FIR-type low-pass digital filter) at step 808 using a smoothing window 810 stored in data memory (e.g. a Hanning or Hamming shaped window). At step 812, transient peaks in the input buffer can be identified and removed to determine a "steady-state" Background Noise Level (BNL). At step 814 an average BNL 816 can be obtained (similar to, or the same as, the RMS) that is frequency dependent or a single value averaged over all frequencies. If the ECM 123 is used to determine the BNL, then decision step 818 adjusts the ambient BNL estimation to provide an equivalent ear-canal BNL SPL, by deducting an Earpiece Noise Reduction Rating 828 from the BNL estimate 826. Alternatively, if the ECM 123 is used, then the Audio Content SPL level (ACL) 822 of any reproduced Audio Content 820 is deducted from the ECM level at step 824. The updated BNL estimate is then converted to a Sound Pressure Level (SPL) equivalent 832 (i.e. substantially equal to the SPL at the ear-drum in which the earphone device is inserted) by taking into account the sensitivity (e.g. measured in V per dB) of either the ASM 111 or ECM 123 at steps 830 and 834 respectively. The resulting BNL SPL is then combined at step 842 with the previous BNL estimate 840, by averaging 838 a weighted previous BNL (weighted with coefficient 836), to give a new ear-canal BNL 844.

[0066] FIG. 9 is a flowchart of a method 900 for maintaining constant audio content level (ACL) to

internal ambient sound level (iASL). The method 900 can be practiced with more or less than the number of steps shown and is not limited to the order shown. To describe the method 900, reference will be made to components of FIG. 2, although it is understood that the method 900 can be implemented in any other manner using other suitable components. The method 900 can be implemented in a single earpiece, a pair of earpieces, headphones, or other suitable headset audio delivery devices.

[0067] Briefly, FIG. 9 describes a method 900 for Constant Signal-to-Noise Ratio (CSNRS). At step 904 an input signal is captured from the ASM 111 and processed at step 910 (e.g. ADC, EQ, gain). Similarly, at step 906 an input signal from the ECM 123 is captured and processed at step 912. The method 900 also receives as input an Audio Content signal 902, e.g. a music audio signal from a portable Media Player or mobile-phone, which is processed with an analog and digital signal processing system as shown in step 908. An Audio Content Level (ACL) is determined at step 914 based on an earpiece sensitivity from step 916, and returns a dBV value.

[0068] In one exemplary embodiment, method 900 calculates a RMS value over a window (e.g. the last 100 ms). The RMS value can then be first weighted with a first weighting coefficient and then averaged with a weighted previous level estimate. The ACL is converted to an equivalent SPL value (ACL), which may use either a look-up-table or algorithm to calculate the ear-canal SPL of the signal if it was reproduced with the ECR 125. To calculate the equivalent ear canal SPL, the sensitivity of the ear canal receiver can be factored in during processing.

[0069] At step 922 the BNL is estimated using inputs from either or both the ASM signal at step 902, and/or the ECM signal at step 906. The BNL may be adjusted by the earpiece noise reduction rating 924. These signals are selected using the BNL input switch at step 918, which may be controlled automatically or with a specific user-generated manual operation at step 926. The Ear-Canal SNR is calculated at step 920 by differencing the ACL from step 914 and the BNL from step 922 and the resulting SNR 930 is passed to the method step 932 for AGC coefficient calculation. The AGC coefficient calculation 932 calculates gains for the Audio Content signal and ASM signal from the Automatic Gain Control steps 928 and 936 (for the Audio Content and ASM signals, respectively). AGC coefficient calculation 932 may use a default preferred SNR 938 or a user- preferred SNR 934 in its calculation. After the ASM signal and Audio content signal have been processed by the AGCs 928 and 936, the two signals are mixed at step 940.

[0070] At step 942, a safe-level check determines if the resulting mixed signal is too high, if it were reproduced with the ECR 125 as shown in block 944. The safe-level check can use information

regarding the user's listening history to determine if the user's sound exposure is such that it may cause a temporary or a permanent hearing threshold shift. If such high levels are measured, then the safe-level check reduces the signal level of the mixed signals via a feedback path to step 940. The resulting audio signal generated after step 942 is then reproduced with the ECR 125.

[0071] FIG. 10 is a flowchart of a method 950 for maintaining a constant signal to noise ratio based on automatic gain control (AGC). The method 950 can be practiced with more or less than the number of steps shown and is not limited to the order shown. To describe the method 950, reference will be made to components of FIG. 2, although it is understood that the method 950 can be implemented in any other manner using other suitable components. The method 950 can be implemented in a single earpiece, a pair of earpieces, headphones, or other suitable headset audio delivery devices.

[0072] Method 950 describes calculation of AGC coefficients. The method 950 receives as its inputs an Ear Canal SNR 952 and a target SNR 960 to provide a SNR mismatch 958. The target SNR 964 is chosen from a pre-defined SNR 954, sorted in computer memory or a manually defined SNR 956. At step 958, a difference is calculated between the actual ear-canal SNR and the target SNR to produce the mismatch 962. The mismatch level 962 is smoothed over time at step 968, which uses a previous mismatch 970 that is weighted using single or multiple weighting coefficients 966, to give a new time-smoothed SNR mismatch 974. Depending on the magnitude of this mismatch, various operating modes 972, 978 can be invoked, for example, as described by the AGC decision module 976 (step 932 in FIG. 9).

[0073] While the present invention has been described with reference to exemplary embodiments, it is to be understood that the invention is not limited to the disclosed exemplary embodiments. The scope of the following claims is to be accorded the broadest interpretation so as to encompass all modifications, equivalent structures and functions of the relevant exemplary embodiments. Thus, the description of the invention is merely exemplary in nature and, thus, variations that do not depart from the gist of the invention are intended to be within the scope of the exemplary embodiments of the present invention. Such variations are not to be regarded as a departure from the spirit and scope of the present invention.

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION
First Named Inventor/Applicant Name:	Steven Wayne Goldstein
Filer:	John Patrick Keady
Attorney Docket Number:	CONT-16669490

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	75	75
UTILITY SEARCH FEE	2111	1	330	330
UTILITY EXAMINATION FEE	2311	1	380	380
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**785**

Electronic Acknowledgement Receipt	
EFS ID:	40219860
Application Number:	16987396
International Application Number:	
Confirmation Number:	7859
Title of Invention:	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION
First Named Inventor/Applicant Name:	Steven Wayne Goldstein
Customer Number:	150139
Filer:	John Patrick Keady
Filer Authorized By:	
Attorney Docket Number:	CONT-16669490
Receipt Date:	07-AUG-2020
Filing Date:	
Time Stamp:	00:27:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$785
RAM confirmation Number	E202087128598056
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	WebADS.pdf	152813 58a01cb589bef61d805f734e628e68cd6fd9d53f	no	9
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	CONT-16669490_ids.pdf	1035001 3cef149584749dca286868e03352436ae01eeaeb	no	5
Warnings:					
Information:					
A U.S. Patent Number Citation is required in the Information Disclosure Statement (IDS) form. You may remove the form to add the required data in order to correct the Informational Message or if you chose not to, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
3	Oath or Declaration filed	CONT-16669490_oath.pdf	235475 23b096732c2817df3ca3c3daa96c31cd9f7bb54d	no	3
Warnings:					
Information:					
4	Abstract	CONT_16669490_abstract.pdf	86387 fe50997d18837e5c80fd2404cf90f931dce6d023	no	1
Warnings:					
Information:					
5	Claims	CONT-16669490_claims.pdf	119815 6b84108fa1621dc9f3d1fa2f8bc7dff23c603ae2	no	2
Warnings:					
Information:					

6	Drawings-other than black and white line drawings	CONT-16669490_drawings.pdf	565490 710d0006f3e095d3a7b3845ce2c1c3896bbae282	no	9
Warnings:					
Information:					
7	Specification	CONT-16669490_spec.pdf	355624 b7be2270958b5f2c379c0f6c28caf1f0c8d90118	no	17
Warnings:					
Information:					
8	Fee Worksheet (SB06)	fee-info.pdf	35221 133426c97a3ba7eef46606c9a7912c043176b22f	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2585826		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CONT-16669490
	Application Number	
Title of Invention	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Steven	Wayne	Goldstein	

Residence Information (Select One) ◉ US Residency ◯ Non US Residency ◯ Active US Military Service

City	Delray Beach	State/Province	FL	Country of Residence i	US

Mailing Address of Inventor:

Address 1	16193 Bridlewood Circle		
Address 2			
City	Delray Beach	State/Province	FL
Postal Code	33445	Country i	US

Inventor 2

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	John		Usher	

Residence Information (Select One) ◯ US Residency ◉ Non US Residency ◯ Active US Military Service

City	Beer	Country of Residence i	GB

Mailing Address of Inventor:

Address 1	1 Lion Villa Causeway		
Address 2			
City	Beer Devon, OT	State/Province	OT
Postal Code	EX123LB	Country i	GB

Inventor 3

Legal Name

PTO/AIA/14 (08-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CONT-16669490
	Application Number	
Title of Invention	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

Prefix	**Given Name**	**Middle Name**	**Family Name**	**Suffix**
	Marc	Andre	Boillot	

Residence Information (Select One) ◉ US Residency ◯ Non US Residency ◯ Active US Military Service

City	Plantation	**State/Province**	FL	**Country of Residence** i	US

Mailing Address of Inventor:

Address 1	16193 bridlewood circle		
Address 2			
City	Delray Beach	**State/Province**	FL
Postal Code	33445	**Country** i	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	150139		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION		
Attorney Docket Number	CONT-16669490	**Small Entity Status Claimed**	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	9	**Suggested Figure for Publication (if any)**	4

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country i

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CONT-16669490
	Application Number	
Title of Invention	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	150139		

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix	Remove
Registration Number					

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix	Remove
Registration Number					

Additional Representative Information blocks may be generated within this form by selecting the **Add** button.

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	16669490	2019-10-30

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CONT-16669490
	Application Number	
Title of Invention	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

Prior Application Status	Patented			Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16669490	Continuation of	16193568	2018-11-16	10535334	2020-01-14

Prior Application Status	Patented			Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16193568	Continuation of	14574589	2014-12-18	10134377	2018-11-20

Prior Application Status	Patented			Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14574589	Continuation of	12017878	2008-01-22	8917894	2014-12-23

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
12017878	Claims benefit of provisional	60885917	2007-01-22

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
	US		

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

PTO/AIA/14 (08-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CONT-16669490
	Application Number	
Title of Invention	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CONT-16669490
	Application Number	
Title of Invention	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CONT-16669490
	Application Number	
Title of Invention	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

○ Assignee	○ Legal Representative under 35 U.S.C. 117	○ Joint Inventor
◉ Person to whom the inventor is obligated to assign.	○ Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	Staton Techiya LLC		
Mailing Address Information For Applicant:			
Address 1	16193 bridlewood circle		
Address 2			
City	Delray Beach	**State/Province**	FL
Country[i]	US	Postal Code	33445
Phone Number		Fax Number	
Email Address	Daniel@techiya.co		

Additional Applicant Data may be generated within this form by selecting the Add button.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CONT-16669490
	Application Number	
Title of Invention	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☒

Organization Name	Staton Techiya LLC		
Mailing Address Information For Assignee including Non-Applicant Assignee:			
Address 1	16193 bridlewood circle		
Address 2			
City	Delray Beach	**State/Province**	FL
Country i	US	Postal Code	33445
Phone Number		Fax Number	
Email Address	Daniel@techiya.co		

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CONT-16669490
	Application Number	
Title of Invention	METHOD AND DEVICE FOR ACUTE SOUND DETECTION AND REPRODUCTION	

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/John P. Keady/			Date (YYYY-MM-DD)	
First Name	John	Last Name	Keady	Registration Number	56389

Additional Signature may be generated within this form by selecting the Add button.