PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

Assignment ID: PATI324177

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
PINDROP SECURITY, INC.	06/26/2024

RECEIVING PARTY DATA

Company Name:	Hercules Capital, Inc., as Agent
Street Address:	1 North B Street, Suite 2000
City:	San Mateo
State/Country:	CALIFORNIA
Postal Code:	94401

PROPERTY NUMBERS Total: 126

Property Type	Number
Patent Number:	10666792
Patent Number:	9824692
Patent Number:	9883040
Patent Number:	9930186
Patent Number:	10027816
Patent Number:	10685008
Patent Number:	10257591
Patent Number:	10141009
Patent Number:	10142463
Patent Number:	10347256
Patent Number:	10553218
Patent Number:	10325601
Patent Number:	10381009
Patent Number:	10397398
Patent Number:	10362172
Patent Number:	10672403
Patent Number:	10692502
Patent Number:	10375248
Patent Number:	10873461
Patent Number:	10867621

Property Type	Number
Patent Number:	10542135
Patent Number:	10623403
Patent Number:	10665244
Patent Number:	11019203
Patent Number:	10440178
Patent Number:	11495244
Patent Number:	10938982
Patent Number:	10904643
Patent Number:	11756564
Patent Number:	10679630
Patent Number:	10854205
Patent Number:	10902105
Patent Number:	10715656
Patent Number:	10841802
Patent Number:	11468901
Patent Number:	10735581
Patent Number:	10715660
Patent Number:	11355103
Patent Number:	11019201
Patent Number:	11646018
Patent Number:	12015637
Patent Number:	11283919
Patent Number:	11335353
Patent Number:	11670304
Patent Number:	11488605
Patent Number:	11445060
Patent Number:	11659082
Patent Number:	11470194
Application Number:	17004921
Patent Number:	11715460
Patent Number:	11657823
Patent Number:	11842748
Patent Number:	11862177
Patent Number:	11748463
Patent Number:	11388490
Application Number:	17159748
Application Number:	17165180
Patent Number:	11611652

Property Type	Number
Patent Number:	11948553
Patent Number:	11632460
Application Number:	17231672
Application Number:	17317559
Patent Number:	11290593
Patent Number:	11895264
Application Number:	17378567
Application Number:	17408281
Application Number:	17475226
Application Number:	17491292
Application Number:	17491312
Patent Number:	11783839
Application Number:	17503152
Patent Number:	11870932
Patent Number:	11727942
Application Number:	17832146
Application Number:	17832404
Patent Number:	11810559
Application Number:	17855149
Patent Number:	12015731
Application Number:	17943893
Patent Number:	11889024
Application Number:	17953156
Application Number:	17960725
Application Number:	17963091
Application Number:	17977521
Application Number:	18109095
Application Number:	18117134
Application Number:	18123463
Patent Number:	12022024
Application Number:	18317799
Application Number:	18321353
Application Number:	18329138
Application Number:	18221802
Application Number:	18235321
Application Number:	18385632
Application Number:	18394300
Application Number:	17079082

Property Type	Number
Application Number:	63515002
Application Number:	63538472
Application Number:	63538476
Application Number:	18388364
Application Number:	18388385
Application Number:	18388412
Application Number:	18388428
Application Number:	18388447
Application Number:	18388457
Application Number:	18515128
Application Number:	63620068
Application Number:	18413524
Application Number:	18422523
Application Number:	18423858
Application Number:	18432316
Application Number:	18436911
Application Number:	18439049
Application Number:	18585366
Application Number:	18598595
Application Number:	63564433
Application Number:	63564440
Application Number:	63564449
Application Number:	63564466
Application Number:	18646228
Application Number:	18646310
Application Number:	18646375
Application Number:	18646431
Application Number:	18646493
Application Number:	18680327
Application Number:	63650979

CORRESPONDENCE DATA

Fax Number: 7147558290

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: (714)755-8102

Email: rhonda.deleon@lw.com

Correspondent Name: Rhonda DeLeon

Address Line 1:   Latham & Watkins LLP, 650 Town Center Drive, 20th Floor

Address Line 4:   Costa Mesa, CALIFORNIA 92626-1925

ATTORNEY DOCKET NUMBER:	054809-0109
NAME OF SUBMITTER:	Rhonda DeLeon
SIGNATURE:	Rhonda DeLeon
DATE SIGNED:	06/26/2024

Total Attachments: 19
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INTELLECTUAL PROPERTY SECURITY AGREEMENT

THIS INTELLECTUAL PROPERTY SECURITY AGREEMENT ("Agreement") dated as of June 26, 2024, is made by PINDROP SECURITY, INC., a Delaware corporation, and each Subsidiary signatory hereto (individually and collectively, the "Grantor"), in favor of Hercules Capital, Inc., in its capacity as administrative agent and collateral agent for itself and Lenders (in such capacity, including any successors or assigns, "Agent").

RECITALS

A.　Grantor has entered into a Loan and Security Agreement with certain financial institutions party thereto (the "Lenders") and Agent, dated as of the date hereof (as amended, restated, amended and restated, supplemented, or otherwise modified from time to time, the "Loan Agreement"). All capitalized terms used but not defined herein shall have the respective meanings given to them in the Loan Agreement.

B.　Pursuant to the terms of the Loan Agreement, Grantor has granted to Agent for its benefit and the benefit of the Lenders a security interest in all of Grantor's right, title and interest, whether presently existing or hereafter acquired, in, to and under all of the Collateral.

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, and intending to be legally bound, as collateral security for the prompt and complete payment when due of its obligations under the Loan Agreement, Grantor hereby represents, warrants, covenants and agrees as follows:

AGREEMENT

1.　Grant of Security Interest. To secure its obligations under the Loan Agreement, Grantor grants and pledges to Agent for its benefit and the benefit of the Lenders a security interest in all of Grantor's right, title and interest in, to and under its intellectual property (all of which shall collectively be called the "Intellectual Property Collateral"), including, without limitation, the following:

(a)　Any and all copyright rights, copyright applications, copyright registrations and like protections in each work of authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret, now or hereafter existing, created, acquired or held, including without limitation those set forth on Exhibit A attached hereto (collectively, the "Copyrights");

(b)　Any and all trade secrets, and any and all intellectual property rights in computer software and computer software products now or hereafter existing, created, acquired or held;

(c)　Any and all design rights that may be available to Grantor now or hereafter existing, created, acquired or held;

(d)　All patents, patent applications and like protections including, without limitation, improvements, divisions, continuations, renewals, reissues, extensions, re-examination certificates, utility models, and continuations-in-part of the same, including without limitation the patents and patent applications set forth on Exhibit B attached hereto (collectively, the "Patents");

(e)　Any trademark and servicemark rights, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business of Grantor connected with and symbolized by such trademarks, including without limitation those set forth on Exhibit C attached hereto (collectively, the "Trademarks");

(f)　All mask works or similar rights available for the protection of semiconductor chips, now owned or hereafter acquired, including, without limitation those set forth on Exhibit D attached hereto (collectively, the "Mask Works");

(g) Any and all claims for damages by way of past, present and future infringements of any of the rights included above, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the intellectual property rights identified above;

(h) All licenses or other rights to use any of the Copyrights, Patents, Trademarks, or Mask Works and all license fees and royalties arising from such use to the extent permitted by such license or rights;

(i) All amendments, renewals and extensions of any of the Copyrights, Trademarks, Patents, or Mask Works; and

(j) All proceeds and products of the foregoing, including without limitation all payments under insurance or any indemnity or warranty payable in respect of any of the foregoing.

2. <u>Recordation</u>. Grantor authorizes the commissioner for patents at the United States Patent and Trademark Office (the "USPTO"), the commissioner for trademarks at the USPTO and the register of copyrights at the U.S. Copyright Office and any other government officials to record and register this Agreement upon request by Agent.

Grantor hereby authorizes Agent to (a) modify this Agreement by amending the exhibits to this Agreement to include any Intellectual Property Collateral obtained by Grantor subsequent to the date of this Agreement for which the Grantor has provided applicable joinder information pursuant to the requirements of the Loan Documents and (b) file a duplicate original of this Agreement containing amended exhibits reflecting such new Intellectual Property Collateral.

3. <u>Loan Documents</u>. This Agreement has been entered into pursuant to and in conjunction with the Loan Agreement, which is hereby incorporated by reference. The provisions of the Loan Agreement shall supersede and control over any conflicting or inconsistent provision herein. The rights and remedies of Agent with respect to the Intellectual Property Collateral are as provided by the Loan Agreement and related documents, and nothing in this Agreement shall be deemed to limit such rights and remedies.

4. <u>Execution in Counterparts</u>. This Agreement and any amendments, waivers, consents or supplements hereto may be executed in any number of counterparts, and by different parties hereto in separate counterparts, each of which when so delivered shall be deemed an original, but all of which counterparts shall constitute but one and the same instrument. Delivery of an executed counterpart of a signature page of this Agreement by facsimile, portable document format (.pdf) or other electronic transmission will be as effective as delivery of a manually executed counterpart hereof.

5. <u>Successors and Assigns</u>. The provisions of this Agreement shall inure to the benefit of the parties hereto and their respective successors and assigns. Grantor shall not assign its obligations under this Agreement without Agent's express prior written consent, and any such attempted assignment shall be void and of no effect. With prior notice to Grantor, Agent may assign, transfer, or endorse its rights hereunder pursuant to the terms of the Loan Agreement, and all of such rights shall inure to the benefit of Agent's successors and assigns.

6. <u>Governing Law</u>. This Agreement has been negotiated and delivered to Agent in the state of California, and shall have been accepted by Agent in the state of California. This Agreement shall be governed by, and construed and enforced in accordance with, the laws of the state of California, excluding conflict of laws principles that would cause the application of laws of any other jurisdiction.

7. <u>Electronic Execution of Certain Other Documents</u>. The words "execution," "execute", "signed," "signature," and words of like import in or related to any document to be signed in connection with this Agreement and the transactions contemplated hereby (including without limitation assignments, assumptions, amendments, waivers and consents) shall be deemed to include electronic signatures, the electronic matching of assignment terms and contract formations on electronic platforms approved by Agent, or the keeping of records in electronic form, each of which shall be of the same legal effect, validity or enforceability as a manually executed signature or the use of a paper-based recordkeeping system, as the case may be, to the extent and as provided for in any applicable law,

including the Federal Electronic Signatures in Global and National Commerce Act, the California Uniform Electronic Transaction Act, or any other similar state laws based on the Uniform Electronic Transactions Act.

[Signature Pages Follow]

IN WITNESS WHEREOF, the parties have caused this Intellectual Property Security Agreement to be duly executed by its officers thereunto duly authorized as of the first date written above.

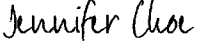GRANTOR:

PINDROP SECURITY, INC., a Delaware corporation

By: _____
Name: Jeffrey Hoffman
Title: Chief Financial Officer and Treasurer

[Signature Page to Intellectual Property Security Agreement]

AGENT:

HERCULES CAPITAL, INC.

By: Jennifer Choe

Title: Deputy General Counsel, Portfolio Transactions

[Signature Page to Intellectual Property Security Agreement]

Copyrights

None. [1]

_____

[1] The Company owns no registered copyrights, but it holds copyright protection in each software product.

US-DOCS\151320048.8

[Non-public application]	18/646310 4/25/2024	
[Non-public application]	18/646375 4/25/2024	
[Non-public application]	18/646431 4/25/2024	
[Non-public application]	18/646493 4/25/2024	
[Non-public application]	18/680327 5/31/2024	
[Non-public application]	63/650979 5/23/2024	

Mark	International Class(es)	Application No. Filing Date	Registration No. Registration Date
PINDROP	9	85447840 14-OCT-2011	4276825 15-JAN-2013
PINDROP	9	86422491 13-OCT-2014	4755138 16-JUN-2015
PINDROP	42	86422493 13-OCT-2014	4755139 16-JUN-2015
PINDROP	42	87279521 23-DEC-2016	5246061 18-JUL-2017
PINDROP VOICEPRINTING	9	87279516 23-DEC-2016	5926948 03-DEC-2019
PINDROP VOICEPRINTING	42	87980693 23-DEC-2016	5783356 18-JUN-2019
SPOOF PROOF	42	87565819 11-AUG-2017	5587583 16-OCT-2018
TONEPRINTING	9, 42	87278774 22-DEC-2016	5566464 18-SEP-2018
VERICALL	42	87660868 26-OCT-2017	5587871 16-OCT-2018

TRADE NAMES

None.

SERVICE MARKS

None.

Enrollment And Authentication Over A Phone Call In Call Centers	17491292 2021-09-30	(20220141334)
Enrollment And Authentication Over A Phone Call In Call Centers	17491312 2021-09-30	(20220165275)

Enrollment and authentication over a phone call in call centers	17491363 2021-09-30	11783839 2023-10-10
Audiovisual Deepfake Detection	17503152 2021-10-15	(20220121868)
Systems and methods of gateway detection in a telephone network	17706398 2022-03-28	11870932 2024-01-09
Age compensation in biometric systems using time-interval, gender and age	17746832 2022-05-17	11727942 2023-08-15
Limiting Identity Space For Voice Biometric Authentication	17832146 2022-06-03	(20220392452)
Limiting Identity Space For Voice Biometric Authentication	17832404 2022-06-03	(20220392453)
Unsupervised keyword spotting and word discovery for fraud analytics	17833674 2022-06-06	11810559 2023-11-07
Speaker Embedding Conversion For Backward And Cross-Channel Compatibility	17855149 2022-06-30	(20230005486)
Call Classification Through Analysis Of Dtmf Events	17857618 2022-07-05	12015731 6/18/2024
Method And Apparatus For Threat Identification Through Analysis Of Communications Signaling, Events, And Participants	17943893 2022-09-13	(20230007120)
Caller verification via carrier metadata	17948991 2022-09-20	11889024 2024-01-30
Voice Modification Detection Using Physical Models Of Speech Production	17953156 2022-09-26	(20230015189)
Age Estimation From Speech	17960725 2022-10-05	(20230107741)

Patents

U.S. Patents

Title	Application No. Application Date	(Publication No.) Patent No. Issue Date
Apparatus and method for detecting new calls from a known robocaller and identifying relationships among telephone calls	15217780 2016-07-22	10666792 2020-05-26
End-to-end speaker recognition using deep neural network	15262748 2016-09-12	9824692 2017-11-21
Fraud detection in interactive voice response systems	15294538 2016-10-14	9883040 2018-01-30
Call detail record analysis to identify fraudulent activity	15294576 2016-10-14	9930186 2018-03-27
Call authentication using call forwarding	15445569 2017-02-28	10027816 2018-07-17
Feature embeddings with relative locality for fast profiling of users on streaming data	15587143 2017-05-04	10685008 2020-06-16
Call classification through analysis of DTMF events	15600625 2017-05-19	10257591 2019-04-09
System and method for cluster-based audio event detection	15610378 2017-05-31	10141009 2018-11-27
Method and apparatus for threat identification through analysis of communications signaling, events, and participants	15666917 2017-08-02	10142463 2018-11-27
Channel-compensated low-level features for speaker recognition	15709024 2017-09-19	10347256 2019-07-09
Dimensionality reduction of baum-welch statistics for speaker recognition	15709232 2017-09-19	10553218 2020-02-04
Speaker recognition in the call center	15709290 2017-09-19	10325601 2019-06-18

PATENT
REEL: 067867 FRAME: 0875

EXHIBIT C

Trademarks

TRADEMARKS

U.S. Trademarks

Mark	International Class(es)	Application No. Filing Date	Registration No. Registration Date
DEEP VOICE	42	87730038 21-DEC-2017	5734834 23-APR-2019
DEEP VOICE	9	87730034 21-DEC-2017	5734833 23-APR-2019
Design Only	9, 37, 42	88820223 04-MAR-2020	6290839 09-MAR-2021
P	9, 37, 42	97241365 27-JAN-2022	7243868 12-DEC-2023
P PINDROP	9, 37, 42	97241367 27-JAN-2022	7243869 12-DEC-2023
PHONEPRINT	9, 42	87279520 23-DEC-2016	5944488 24-DEC-2019
PHONEPRINTING	9	87278768 22-DEC-2016	5566463 18-SEP-2018
PHONEPRINTING	42	87278772 22-DEC-2016	5264879 15-AUG-2017
PINDROP	9, 42	85447823 14-OCT-2011	4276824 15-JAN-2013

End-To-End Speaker Recognition Using Deep Neural Network	17963091 2022-10-10	(20230037232)
Cross-Lingual Speaker Recognition	17977521 2022-10-31	(20230137652)
Systems And Methods For Jip And Clli Matching In Telecommunications Metadata And Machine-Learning	18109095 2023-02-13	(20230262161)
Systems And Methods For Stir-Shaken Attestation Using Spid	18117134 2023-03-03	(20230284016)
Telecommunications Validation System And Method	18123463 2023-03-20	(20230247132)
Systems And Methods Employing Graph-Derived Features For Fraud Detection	18301897 2023-04-17	12022024 6/25/2024
Authentication Using Dtmf Tones	18317799 2023-05-15	(20230283711)
Channel-Compensated Low-Level Features For Speaker Recognition	18321353 2023-05-22	(20230290357)
Speaker Recognition In The Call Center	18329138 2023-06-05	(20230326462)
Carrier Signaling Based Authentication And Fraud Detection	18221802 2023-07-13	(20240022662)
Omni Channel Authentication	18235321 2023-08-17	(20240064152)
Unsupervised Keyword Spotting And Word Discovery For Fraud Analytics	18385632 2023-10-31	(20240062753)
Robust Spoofing Detection System Using Deep Residual Neural Networks	18221802 2023-07-13	(20240153510)
[Non-public application]	17/079082 10/23/2020	
[Non-public application]	63/515002 7/21/2023	
[Non-public application]	63/538472 9/14/2023	
[Non-public application]	63/538476 9/14/2023	

EXHIBIT D

Mask Works

[None.]

Caller ID verification using call identification and block lists	16289957 2019-03-01	10440178 2019-10-08
Voice modification detection using physical models of speech production	16375785 2019-04-04	11495244 2022-11-08
Telecommunications Validation System And Method	16375853 2019-04-04	10938982 2021-03-02

Call classification through analysis of DTMF events	16378286 2019-04-08	10904643 2021-01-26
Deep neural network based speech enhancement	16442279 2019-06-14	11756564 2023-09-12
Speaker recognition in the call center	16442368 2019-06-14	10679630 2020-06-09
Channel-compensated low-level features for speaker recognition	16505452 2019-07-08	10854205 2020-12-01
Fraud detection in interactive voice response systems	16515823 2019-07-18	10902105 2021-01-26
Method and apparatus for threat identification through analysis of communications signaling events, and participants	16522450 2019-07-25	10715656 2020-07-14
Call authentication using call forwarding	16531501 2019-08-05	10841802 2020-11-17
End-to-end speaker recognition using deep neural network	16536293 2019-08-08	11468901 2022-10-11
Authentication using DTMF tones	16551327 2019-08-26	10735581 2020-08-04
Caller ID verification using call identification and block lists	16595168 2019-10-07	10715660 2020-07-14
Unsupervised keyword spotting and word discovery for fraud analytics	16775149 2020-01-28	11355103 2022-06-07

Title	Application No. Application Date	(Publication No.) Patent No. Issue Date
Fraud detection in interactive voice response systems	17157837 2021-01-25	11748463 2023-09-05
Call classification through analysis of DTMF events	17157848 2021-01-25	11388490 2022-07-12

Title	Application No. Application Date	(Publication No.) Patent No. Issue Date
Dynamic Account Risk Assessment From Heterogeneous Events	17159748 2021-01-27	(20210240837)
Cross-Channel Enrollment And Authentication Of Voice Biometrics	17165180 2021-02-02	(20210241776)
Telecommunications Validation System And Method	17186815 2021-02-26	11611652 2023-03-21
Systems and methods of speaker-independent embedding for identification and verification from audio	17192464 2021-03-04	11948553 2024-04-02
Systems and methods employing graph-derived features for fraud detection	17201849 2021-03-15	11632460 2023-04-18
Passive And Continuous Multi-Speaker Voice Biometrics	17231672 2021-04-15	(20210326421)
Silent Caller Id Verification Using Callback Request	17317559 2021-05-11	(20210281680)
Systems and methods of gateway detection in a telephone network	17317575 2021-05-11	11290593 2022-03-29
Fraud importance system	17365970 2021-07-01	11895264 2024-02-06
Systems And Methods For Authentication Using Browser Fingerprinting	17378567 2021-07-16	(20230015583)
Title	Application No. Application Date	(Publication No.) Patent No. Issue Date
Speaker Recognition With Quality Indicators	17408281 2021-08-20	(20220059121)
Speaker Specific Speech Enhancement	17475226 2021-09-14	(20220084509)

US-DOCS\151320048.8

Systems and methods of gateway detection in a telephone network	16784071 2020-02-06	11019201 2021-05-25
Detection of calls from voice assistants	16829705 2020-03-25	11646018 2023-05-09
Systems And Methods For End-To-End Architectures For Voice Spoofing Detection	16841473 2020-04-06	12015637 6/18/2024

Caller ID verification using call identification and block lists	16859370 2020-04-27	11283919 2022-03-22
Age compensation in biometric systems using time-interval, gender and age	16889337 2020-06-01	11335353 2022-05-17
Speaker recognition in the call center	16895750 2020-06-08	11670304 2023-06-06
Method and apparatus for detecting spoofing conditions	16907951 2020-06-22	11488605 2022-11-01
Method and apparatus for threat identification through analysis of communications signaling events, and participants	16927464 2020-07-13	11445060 2022-09-13
Authentication using DTMF tones	16983967 2020-08-03	11659082 2023-05-23
Caller verification via carrier metadata	16992789 2020-08-13	11470194 2022-10-11
Call Authentication At The Call Center Using A Mobile Device	17004921 2020-08-27	(20200396331)
Z-vectors: speaker embeddings from raw audio using sincnet, extended CNN architecture and in-network augmentation techniques	17066210 2020-10-08	11715460 2023-08-01
Channel-compensated low-level features for speaker recognition	17107496 2020-11-30	11657823 2023-05-23
System and method for cluster-based audio event detection	17121291 2020-12-14	11842748 2023-12-12
Robust spoofing detection system using deep residual neural networks	17155851 2021-01-22	11862177 2024-01-02

[Non-public application]	18/388364 11/9/2023	
[Non-public application]	18/388385 11/9/2023	
[Non-public application]	18/388412 11/9/2023	
[Non-public application]	18/388428 11/9/2023	
[Non-public application]	18/388447 11/9/2023	
[Non-public application]	18/388457 11/9/2023	
Behavioral Biometrics Using Keypress Temporal Information	18/515128 11/20/2023	(20240169040)
[Non-public application]	63/620068 1/11/2024	
[Non-public application]	18/413524 1/16/2024	
[Non-public application]	18/422523 1/25/2024	
Caller Verification Via Carrier Metadata	18/423858 1/26/2024	(20240171680)
[Non-public application]	18/432316 2/5/2024	
[Non-public application]	18/436911 2/8/2024	
[Non-public application]	18/439049 2/12/2024	
[Non-public application]	18/585366 2/23/2024	
[Non-public application]	18/598595 3/7/2024	
[Non-public application]	63/564433 3/12/2024	
[Non-public application]	63/564440 3/12/2024	

[Non-public application]	63/564449 3/12/2024	
[Non-public application]	63/564466 3/12/2024	
[Non-public application]	18/646228 4/25/2024	

Title	Application No. Application Date	(Publication No.) Patent No. Issue Date
End-to-end speaker recognition using deep neural network	15818231 2017-11-20	10381009 2019-08-13
Authentication using DTMF tones	15872639 2018-01-16	10397398 2019-08-27
Fraud detection in interactive voice response systems	15880287 2018-01-25	10362172 2019-07-23
Age compensation in biometric systems using time-interval, gender and age	15890967 2018-02-07	10672403 2020-06-02
Method and apparatus for detecting spoofing conditions	15910387 2018-03-02	10692502 2020-06-23
Call authentication using call forwarding	16026498 2018-07-03	10375248 2019-08-06
Zero-knowledge multiparty secure sharing of voiceprints	16035301 2018-07-13	10873461 2020-12-22
System and method for cluster-based audio event detection	16200283 2018-11-26	10867621 2020-12-15
Method and apparatus for threat identification through analysis of communications signaling, events, and participants	16200379 2018-11-26	10542135 2020-01-21
Leveraging multiple audio channels for authentication	16240481 2019-01-04	10623403 2020-04-14
Leveraging multiple audio channels for authentication	16240602 2019-01-04	10665244 2020-05-26
Silent caller ID verification using callback request	16287879 2019-02-27	11019203 2021-05-25