PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

Assignment ID: PATI325436

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	RELEASE OF SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
JPMorgan Chase Bank, N.A., as Administrative Agent	06/26/2024

RECEIVING PARTY DATA

Company Name:	Pindrop Security, Inc.
Street Address:	1115 Howell Mill Road NW, Suite 700
City:	Atlanta
State/Country:	GEORGIA
Postal Code:	30318

PROPERTY NUMBERS Total: 126

Property Type	Number
Patent Number:	10141009
Patent Number:	10666792
Patent Number:	10257591
Patent Number:	9930186
Patent Number:	10672403
PCT Number:	US1813965
Patent Number:	10397398
Patent Number:	10325601
Patent Number:	10692502
PCT Number:	US1750927
Patent Number:	9883040
Patent Number:	10381009
PCT Number:	US1752335
Patent Number:	9824692
Patent Number:	10142463
Patent Number:	10362172
Patent Number:	10347256
Patent Number:	10553218
Patent Number:	10685008
PCT Number:	US1752316

Property Type	Number
Patent Number:	10027816
PCT Number:	US1817249
Patent Number:	10873461
PCT Number:	US1841779
Patent Number:	10375248
Patent Number:	10623403
Patent Number:	10665244
Patent Number:	10440178
Patent Number:	11019203
Patent Number:	10867621
Patent Number:	10542135
PCT Number:	US1921063
PCT Number:	US1919349
PCT Number:	US1921062
PCT Number:	US1919353
Patent Number:	11495244
Patent Number:	10904643
Application Number:	16442279
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
Application Number:	16841473
Patent Number:	11646018
Patent Number:	11470194
Patent Number:	11283919
Patent Number:	11335353
Patent Number:	11488605
Patent Number:	11670304
Patent Number:	11445060
Application Number:	17004921
Patent Number:	11659082

Property Type	Number
Application Number:	17079082
Application Number:	17066210
Patent Number:	11657823
Application Number:	17159748
PCT Number:	US2120891
Application Number:	17192464
Application Number:	17121291
Application Number:	17155851
Application Number:	17165180
Patent Number:	11632460
Patent Number:	11388490
Application Number:	17157837
Application Number:	17231672
PCT Number:	US2127474
Application Number:	17317559
Patent Number:	11290593
Patent Number:	10938982
Patent Number:	11611652
Application Number:	17365970
Application Number:	17378567
PCT Number:	US2146901
Application Number:	17408281
Application Number:	17475226
PCT Number:	US2149809
Application Number:	17491292
Application Number:	17503152
Application Number:	17491312
Application Number:	17491363
PCT Number:	US2155267
Application Number:	17706398
PCT Number:	US2232065
Application Number:	17832404
Application Number:	17832146
Application Number:	17855149
PCT Number:	US2235766
Application Number:	17746832
Application Number:	63399132
PCT Number:	US2236506

Property Type	Number
Application Number:	17833674
Application Number:	17857618
Application Number:	63389283
Application Number:	63392077
Application Number:	17963091
Application Number:	17948991
Application Number:	17943893
Application Number:	17953156
Application Number:	63402624
Application Number:	17960725
PCT Number:	US2245777
Application Number:	17977521
PCT Number:	US2248365
Application Number:	63443598
Application Number:	63443599
Application Number:	63443601
Application Number:	63443603
Application Number:	63443604
Application Number:	18321353
Application Number:	18109095
Application Number:	63427498
Application Number:	18117134
Application Number:	18123463
Application Number:	63452351
Application Number:	18301897
Application Number:	63497587
Application Number:	18317799
Application Number:	63462913
Application Number:	18329138
Application Number:	63503903

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: 24

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RELEASE OF SECURITY INTERESTS IN PATENTS

THIS RELEASE OF SECURITY INTERESTS IN PATENTS ("Release") is made as of this 26th day of June 2024, by JPMorgan Chase Bank, N.A., in its capacity as the administrative agent (the "Administrative Agent") for the Lenders (as defined in the Security Agreement, as defined below), in favor of Pindrop Security, Inc., a Delaware corporation ("Grantor").

WHEREAS, pursuant to that certain Patent Security Agreement dated as of July 20, 2023 made by Grantor in favor of the Administrative Agent (the "Security Agreement") and recorded with the U.S. Patent and Trademark Office on July 31, 2023 at Reel/Frame No. 64443/0584, a security interest was granted by Grantor to the Administrative Agent in the Patent Collateral (as defined in the Security Agreement), including the United States patents and patent applications set forth in Schedule A hereto;

WHEREAS, the Administrative Agent now desires to terminate the Security Agreement and terminate, release and discharge its security interest in all Patent Collateral;

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, and upon the terms set forth in this Release, the Administrative Agent hereby states as follows:

1.   Release of Security Interest. The Administrative Agent, on its and the Lenders' behalf, hereby terminates the Security Agreement and terminates, releases, cancels and discharges the collateral pledges, grants, liens and security interests granted by Grantor in favor of the Administrative Agent in and to the Patent Collateral.

2.   Recordation of Release. The Administrative Agent understands and agrees that this Release may be recorded by or for Grantor, or its successors or assigns, with the United States Patent and Trademark Office.

3.   Governing Law. This Release shall be governed by, and construed and enforced in accordance with, the laws of the State of New York, excluding conflict of laws principles that would cause the application of laws of any other jurisdiction.

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IN WITNESS WHEREOF, the Administrative Agent has caused this Release to be executed by its authorized officer as of the date of this Release.

JPMORGAN CHASE BANK, N.A., as Administrative Agent

By: _Mike McKenzie_
Name: Mike McKenzie
Title: Vice President

SCHEDULE A

Patents and Patent Applications

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
SYSTEM AND METHOD FOR CLUSTER-BASED AUDIO EVENT DETECTION	10141009	5/31/2017	United States of America	Pindrop Security, Inc.
APPARATUS AND METHOD FOR DETECTING NEW CALLS FROM A KNOWN ROBOCALLER AND IDENTIFYING RELATIONSHIPS AMONG TELEPHONE CALLS	10666792	7/22/2016	United States of America	Pindrop Security, Inc.
CALL CLASSIFICATION THROUGH ANALYSIS OF DTMF EVENTS	10257591	5/19/2017	United States of America	Pindrop Security, Inc.
CALL DETAIL RECORD ANALYSIS TO IDENTIFY FRAUDULENT ACTIVITY	9930186	10/14/2016	United States of America	Pindrop Security, Inc.
AGE COMPENSATION IN BIOMETRIC SYSTEMS USING TIME-INTERVAL, GENDER AND AGE	10672403	2/7/2018	United States of America	Pindrop Security, Inc.
AUTHENTICATION USING DTMF TONES	PCT/US2018/013965	1/17/2018	P.C.T.	Pindrop Security, Inc.
AUTHENTICATION USING DTMF TONES	10397398	1/16/2018	United States of America	Pindrop Security, Inc.
SPEAKER RECOGNITION IN THE CALL CENTER	10325601	9/19/2017	United States of America	Pindrop Security, Inc.
METHOD AND APPARATUS FOR DETECTING SPOOFING CONDITIONS	10692502	3/2/2018	United States of America	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	PCT/US2017/050927	9/11/2017	P.C.T.	Pindrop Security, Inc.
FRAUD DETECTION IN INTERACTIVE VOICE RESPONSE SYSTEMS	9883040	10/14/2016	United States of America	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	10381009	11/20/2017	United States of America	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
IMPROVEMENTS OF SPEAKER RECOGNITION IN THE CALL CENTER	PCT/US2017/052335	9/19/2017	P.C.T.	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	9824692	9/12/2016	United States of America	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	10142463	8/2/2017	United States of America	Pindrop Security, Inc.
FRAUD DETECTION IN INTERACTIVE VOICE RESPONSE SYSTEMS	10362172	1/25/2018	United States of America	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	10347256	9/19/2017	United States of America	Pindrop Security, Inc.
DIMENSIONALITY REDUCTION OF BAUM-WELCH STATISTICS FOR SPEAKER RECOGNITION	10553218	9/19/2017	United States of America	Pindrop Security, Inc.
FEATURE EMBEDDINGS WITH RELATIVE LOCALITY FOR FAST PROFILING OF USERS ON STREAMING DATA	10685008	5/4/2017	United States of America	Pindrop Security, Inc.
DIMENSIONALITY REDUCTION OF BAUM WELCH STATISTICS FOR SPEAKER RECOGNITION	PCT/US2017/052316	9/19/2017	P.C.T.	Pindrop Security, Inc.
CALL AUTHENTICATION USING CALL FORWARDING	10027816	2/28/2017	United States of America	Pindrop Security, Inc.
AGE COMPENSATION IN BIOMETRIC SYSTEMS USING TIME-INTERVAL, GENDER AND AGE	PCT/US2018/017249	2/7/2018	P.C.T.	Pindrop Security, Inc.
CALL DETAIL RECORD ANALYSIS TO IDENTIFY FRAUDULENT ACTIVITY AND FRAUD DETECTION IN INTERACTIVE VOICE RESPONSE SYSTEMS	3001839	4/12/2018	Canada	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
CALL DETAIL RECORD ANALYSIS TO IDENTIFY FRAUDULENT ACTIVITY AND FRAUD DETECTION IN INTERACTIVE VOICE RESPONSE SYSTEMS	2016338689	4/10/2018	Australia	Pindrop Security, Inc.
ZERO-KNOWLEDGE MULTIPARTY SECURE SHARING OF VOICEPRINTS	10873461	7/13/2018	United States of America	Pindrop Security, Inc.
ZERO-KNOWLEDGE MULTIPARTY SECURE SHARING OF VOICEPRINTS	PCT/US2018/041779	7/12/2018	P.C.T.	Pindrop Security, Inc.
CALL AUTHENTICATION USING CALL FORWARDING	10375248	7/3/2018	United States of America	Pindrop Security, Inc.
LEVERAGING MULTIPLE AUDIO CHANNELS FOR AUTHENTICATION	10623403	1/4/2019	United States of America	Pindrop Security, Inc.
LEVERAGING MULTIPLE AUDIO CHANNELS FOR AUTHENTICATION	10665244	1/4/2019	United States of America	Pindrop Security, Inc.
CALLER ID VERIFICATION USING CALL IDENTIFICATION AND BLOCK LISTS	10440178	3/1/2019	United States of America	Pindrop Security, Inc.
SILENT CALLER ID VERIFICATION USING CALLBACK REQUEST	11019203	2/27/2019	United States of America	Pindrop Security, Inc.
SYSTEM AND METHOD FOR CLUSTER-BASED AUDIO EVENT DETECTION	10867621	11/26/2018	United States of America	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	10542135	11/26/2018	United States of America	Pindrop Security, Inc.
CALL CLASSIFICATION THROUGH ANALYSIS OF DTMF EVENTS	2017305245	2/15/2019	Australia	Pindrop Security, Inc.
CALLER ID VERIFICATION USING CALL IDENTIFICATION AND BLOCK LISTS	PCT/US2019/021063	3/7/2019	P.C.T.	Pindrop Security, Inc.
CALL CLASSIFICATION THROUGH ANALYSIS OF DTMF EVENTS	3032807	2/1/2019	Canada	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
LEVERAGING MULTIPLE AUDIO CHANNELS FOR AUTHENTICATION	PCT/US2019/019349	2/25/2019	P.C.T.	Pindrop Security, Inc.
SILENT CALLER ID VERIFICATION USING CALLBACK REQUEST	PCT/US2019/021062	3/7/2019	P.C.T.	Pindrop Security, Inc.
LEVERAGING MULTIPLE AUDIO CHANNELS FOR AUTHENTICATION	PCT/US2019/019353	2/25/2019	P.C.T.	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3494690	2/14/2019	European Patent Office	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3494690	8/2/2017	Austria	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3494690	8/2/2017	Belgium	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3494690	8/2/2017	Switzerland	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3494690	8/2/2017	Germany	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3494690	8/2/2017	Spain	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3494690	8/2/2017	France	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3494690	8/2/2017	United Kingdom	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3494690	8/2/2017	Ireland	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3494690	8/2/2017	Italy	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3494690	8/2/2017	Luxembourg	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3494690	8/2/2017	Netherlands	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3494690	8/2/2017	Norway	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3494690	8/2/2017	Turkey	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	2017306302	2/26/2019	Australia	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3032817	2/1/2019	Canada	Pindrop Security, Inc.
CALL DETAIL RECORD ANALYSIS TO IDENTIFY FRAUDULENT ACTIVITY AND FRAUD DETECTION IN INTERACTIVE VOICE RESPONSE SYSTEMS	2019200722	2/4/2019	Australia	Pindrop Security, Inc.
VOICE MODIFICATION DETECTION USING PHYSICAL MODELS OF SPEECH PRODUCTION	11495244	4/4/2019	United States of America	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	3501025	3/18/2019	European Patent Office	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	3501025	9/11/2017	Switzerland	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	3501025	9/11/2017	Germany	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	3501025	9/11/2017	Spain	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	3501025	9/11/2017	France	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	3501025	9/11/2017	United Kingdom	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	3501025	9/11/2017	Ireland	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	3501025	9/11/2017	Italy	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3516652	3/13/2019	European Patent Office	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3516652	9/19/2017	Austria	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3516652	9/19/2017	Belgium	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3516652	9/19/2017	Switzerland	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3516652	9/19/2017	Germany	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3516652	9/19/2017	Spain	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3516652	9/19/2017	France	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3516652	9/19/2017	United Kingdom	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3516652	9/19/2017	Ireland	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3516652	9/19/2017	Italy	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	17778046.7	9/19/2017	Liechtenstein	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3516652	9/19/2017	Luxembourg	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3516652	9/19/2017	Netherlands	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3516652	9/19/2017	Norway	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3516652	9/19/2017	Turkey	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	3036533	3/11/2019	Canada	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	2017322591	4/12/2019	Australia	Pindrop Security, Inc.
A TERMINAL BETWEEN THE SPEAKER RECOGNITION USING A DEEP NEURAL NETWORK	7173974	3/8/2019	Japan	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3036561	3/11/2019	Canada	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	201947014575	4/11/2019	India	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	2017327003	4/18/2019	Australia	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	10-2072782	4/9/2019	South Korea	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	11201902122Y	3/11/2019	Singapore	Pindrop Security, Inc.
CALL CLASSIFICATION THROUGH ANALYSIS OF DTMF EVENTS	10904643	4/8/2019	United States of America	Pindrop Security, Inc.
DEEP NEURAL NETWORK BASED SPEECH ENHANCEMENT	16/442279	6/14/2019	United States of America	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, & PARTICIPANTS	2019204617	6/28/2019	Australia	Pindrop Security, Inc.
SPEAKER RECOGNITION IN THE CALL CENTER	10679630	6/14/2019	United States of America	Pindrop Security, Inc.
METHOD AND APPARATUS FOR DETECTING SPOOFING CONDITIONS	18712052.2	8/14/2019	European Patent Office	Pindrop Security, Inc.
METHOD AND APPARATUS FOR DETECTING SPOOFING CONDITIONS	2018226844	8/26/2019	Australia	Pindrop Security, Inc.
METHOD AND APPARATUS FOR DETECTING SPOOFING CONDITIONS	3054063	8/19/2019	Canada	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	10854205	7/8/2019	United States of America	Pindrop Security, Inc.
FRAUD DETECTION IN INTERACTIVE VOICE RESPONSE SYSTEMS	10902105	7/18/2019	United States of America	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING EVENTS, AND PARTICIPANTS	10715656	7/25/2019	United States of America	Pindrop Security, Inc.
CALL AUTHENTICATION USING CALL FORWARDING	10841802	8/5/2019	United States of America	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	11468901	8/8/2019	United States of America	Pindrop Security, Inc.
AUTHENTICATION USING DTMF TONES	10735581	8/26/2019	United States of America	Pindrop Security, Inc.
CALL DETAIL RECORD ANALYSIS TO IDENTIFY FRAUDULENT ACTIVITY AND FRAUD DETECTION IN INTERACTIVE VOICE RESPONSE SYSTEMS	2019229365	9/11/2019	Australia	Pindrop Security, Inc.
CALLER ID VERIFICATION USING CALL IDENTIFICATION AND BLOCK LISTS	10715660	10/7/2019	United States of America	Pindrop Security, Inc.
UNSUPERVISED KEYWORD SPOTTING AND WORD DISCOVERY FOR FRAUD ANALYTICS	11355103	1/28/2020	United States of America	Pindrop Security, Inc.
UNSUPERVISED KEYWORD SPOTTING AND WORD DISCOVERY FOR FRAUD ANALYTICS	PCT/US2020/015310	1/28/2020	P.C.T.	Pindrop Security, Inc.
SYSTEMS AND METHODS OF GATEWAY DETECTION IN A TELEPHONE NETWORK	11019201	2/6/2020	United States of America	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	10-2198835	1/28/2020	South Korea	Pindrop Security, Inc.
SYSTEM AND METHODS FOR END-TO-END ARCHITECTURES FOR VOICE SPOOFING DETECTION	16/841473	4/6/2020	United States of America	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
DETECTION OF CALLS FROM VOICE ASSISTANTS	11646018	3/25/2020	United States of America	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	3066442	1/3/2020	Canada	Pindrop Security, Inc.
CALL DETAIL RECORD ANALYSIS TO IDENTIFY FRAUDULENT ACTIVITY AND FRAUD DETECTION IN INTERACTIVE VOICE RESPONSE SYSTEMS	19181536.4	6/20/2019	European Patent Office	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	3075049	3/10/2020	Canada	Pindrop Security, Inc.
CALLER VERIFICATION VIA CARRIER METADATA	11470194	8/13/2020	United States of America	Pindrop Security, Inc.
CALLER ID VERIFICATION USING CALL IDENTIFICATION AND BLOCK LISTS	11283919	4/27/2020	United States of America	Pindrop Security, Inc.
AGE COMPENSATION IN BIOMETRIC SYSTEMS USING TIME-INTERVAL, GENDER AND AGE	11335353	6/1/2020	United States of America	Pindrop Security, Inc.
METHOD AND APPARATUS FOR DETECTING SPOOFING CONDITIONS	11488605	6/22/2020	United States of America	Pindrop Security, Inc.
SPEAKER RECOGNITION IN THE CALL CENTER	11670304	6/8/2020	United States of America	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING EVENTS, AND PARTICIPANTS	11445060	7/13/2020	United States of America	Pindrop Security, Inc.
CALL AUTHENTICATION AT THE CALL CENTER USING A MOBILE DEVICE	17/004921	8/27/2020	United States of America	Pindrop Security, Inc.
AUTHENTICATION USING DTMF TONES	11659082	8/3/2020	United States of America	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
JOINT ESTIMATION OF ACOUSTIC PARAMETERS FROM SINGLE-MICROPHONE SPEECH	17/079082	10/23/2020	United States of America	Pindrop Security, Inc.
Z-VECTORS: SPEAKER EMBEDDINGS FROM RAW AUDIO USING SINCNET, EXTENDED CNN ARCHITECTURE AND IN-NETWORK AUGMENTATION TECHNIQUES	17/066210	10/8/2020	United States of America	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	3096378	10/19/2020	Canada	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	20209613.7	11/24/2020	European Patent Office	Pindrop Security, Inc.
DEEP NEURAL NETWORK BASED SPEECH ENHANCEMENT	19819546.3	12/23/2020	European Patent Office	Pindrop Security, Inc.
DEEP NEURAL NETWORK BASED SPEECH ENHANCEMENT	3099805	11/9/2020	Canada	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	11657823	11/30/2020	United States of America	Pindrop Security, Inc.
DYNAMIC ACCOUNT RISK ASSESSMENT FROM HETEROGENEOUS EVENTS	17/159748	1/27/2021	United States of America	Pindrop Security, Inc.
SYSTEMS AND METHODS OF SPEAKER-INDEPENDENT EMBEDDING FOR IDENTIFICATION AND VERIFICATION FROM AUDIO	PCT/US2021/020891	3/4/2021	P.C.T.	Pindrop Security, Inc.
SYSTEMS AND METHODS OF SPEAKER-INDEPENDENT EMBEDDING FOR IDENTIFICATION AND VERIFICATION FROM AUDIO	17/192464	3/4/2021	United States of America	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
SYSTEM AND METHOD FOR CLUSTER-BASED AUDIO EVENT DETECTION	17/121291	12/14/2020	United States of America	Pindrop Security, Inc.
ROBUST SPOOFING DETECTION SYSTEM USING DEEP RESIDUAL NEURAL NETWORKS	17/155851	1/22/2021	United States of America	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	10-2239129	12/29/2020	South Korea	Pindrop Security, Inc.
CROSS-CHANNEL ENROLLMENT AND AUTHENTICATION OF VOICE BIOMETRICS	17/165180	2/2/2021	United States of America	Pindrop Security, Inc.
SYSTEMS AND METHODS EMPLOYING GRAPH-DERIVED FEATURES FOR FRAUD DETECTION	11632460	3/15/2021	United States of America	Pindrop Security, Inc.
CALL CLASSIFICATION THROUGH ANALYSIS OF DTMF EVENTS	11388490	1/25/2021	United States of America	Pindrop Security, Inc.
FRAUD DETECTION IN INTERACTIVE VOICE RESPONSE SYSTEMS	17/157837	1/25/2021	United States of America	Pindrop Security, Inc.
PASSIVE AND CONTINUOUS MULTI-SPEAKER VOICE BIOMETRICS	17/231672	4/15/2021	United States of America	Pindrop Security, Inc.
PASSIVE AND CONTINUOUS MULTI-SPEAKER VOICE BIOMETRICS	PCT/US2021/027474	4/15/2021	P.C.T.	Pindrop Security, Inc.
SILENT CALLER ID VERIFICATION USING CALLBACK REQUEST	17/317559	5/11/2021	United States of America	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3117645	5/10/2021	Canada	Pindrop Security, Inc.
SYSTEMS AND METHODS OF GATEWAY DETECTION IN A TELEPHONE NETWORK	11290593	5/11/2021	United States of America	Pindrop Security, Inc.
TELECOMMUNICATIONS VALIDATION SYSTEM AND METHOD	10938982	4/4/2019	United States of America	Pindrop Security, Inc.
TELECOMMUNICATIONS VALIDATION SYSTEM AND METHOD	11611652	2/26/2021	United States of America	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
FRAUD IMPORTANCE SYSTEM	17/365970	7/1/2021	United States of America	Pindrop Security, Inc.
SYSTEMS AND METHODS FOR AUTHENTICATION USING BROWSER FINGERPRINTING	17/378567	7/16/2021	United States of America	Pindrop Security, Inc.
IMPROVING SPEAKER RECOGNITION WITH QUALITY INDICATORS	PCT/US2021/046901	8/20/2021	P.C.T.	Pindrop Security, Inc.
SPEAKER RECOGNITION WITH QUALITY INDICATORS	17/408281	8/20/2021	United States of America	Pindrop Security, Inc.
SPEAKER SPECIFIC SPEECH ENHANCEMENT	17/475226	9/14/2021	United States of America	Pindrop Security, Inc.
SPEAKER SPECIFIC SPEECH ENHANCEMENT	PCT/US2021/049809	9/10/2021	P.C.T.	Pindrop Security, Inc.
ENROLLMENT AND AUTHENTICATION OVER A PHONE CALL IN CALL CENTERS	17/491292	9/30/2021	United States of America	Pindrop Security, Inc.
AUDIOVISUAL DEEPFAKE DETECTION	17/503152	10/15/2021	United States of America	Pindrop Security, Inc.
SYSTEMS AND METHODS FOR END-TO-END ARCHITECTURES FOR VOICE SPOOFING DETECTION	2020271801	9/25/2021	Australia	Pindrop Security, Inc.
SYSTEMS AND METHODS FOR END-TO-END ARCHITECTURES FOR VOICE SPOOFING DETECTION	3135210	9/27/2021	Canada	Pindrop Security, Inc.
SYSTEMS AND METHODS FOR END-TO-END ARCHITECTURES FOR VOICE SPOOFING DETECTION	20786776.3	10/12/2021	European Patent Office	Pindrop Security, Inc.
ENROLLMENT AND AUTHENTICATION OVER A PHONE CALL IN CALL CENTERS	17/491312	9/30/2021	United States of America	Pindrop Security, Inc.
ENROLLMENT AND AUTHENTICATION OVER A PHONE CALL IN CALL CENTERS	17/491363	9/30/2021	United States of America	Pindrop Security, Inc.
AUDIOVISUAL DEEPFAKE DETECTION	PCT/US2021/055267	10/15/2021	P.C.T.	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
METHOD AND APPARATUS FOR DETECTING SPOOFING CONDITIONS	2021277642	11/30/2021	Australia	Pindrop Security, Inc.
CALLER VERIFICATION VIA CARRIER METADATA	20854174.8	1/19/2022	European Patent Office	Pindrop Security, Inc.
CALLER VERIFICATION VIA CARRIER METADATA	3148829	1/26/2022	Canada	Pindrop Security, Inc.
CALL AUTHENTICATION AT THE CALL CENTER USING A MOBILE DEVICE	20859570.2	2/7/2022	European Patent Office	Pindrop Security, Inc.
CALL AUTHENTICATION AT THE CALL CENTER USING A MOBILE DEVICE	3150456	2/8/2022	Canada	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	2021286422	12/17/2021	Australia	Pindrop Security, Inc.
SYSTEMS AND METHODS OF GATEWAY DETECTION IN A TELEPHONE NETWORK	17/706398	3/28/2022	United States of America	Pindrop Security, Inc.
Z-VECTORS: SPEAKER EMBEDDINGS FROM RAW AUDIO USING SINCNET, EXTENDED CNN ARCHITECTURE AND IN-NETWORK AUGMENTATION TECHNIQUES	2020363882	3/8/2022	Australia	Pindrop Security, Inc.
Z-VECTORS: SPEAKER EMBEDDINGS FROM RAW AUDIO USING SINCNET, EXTENDED CNN ARCHITECTURE AND IN-NETWORK AUGMENTATION TECHNIQUES	3154309	3/10/2022	Canada	Pindrop Security, Inc.
Z-VECTORS: SPEAKER EMBEDDINGS FROM RAW AUDIO USING SINCNET, EXTENDED CNN ARCHITECTURE AND IN-NETWORK AUGMENTATION TECHNIQUES	20874571.1	3/9/2022	European Patent Office	Pindrop Security, Inc.
CALL CLASSIFICATION THROUGH ANALYSIS OF DTMF EVENTS	2022201831	3/16/2022	Australia	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
LIMITING IDENTITY SPACE FOR VOICE BIOMETRIC AUTHENTICATION	PCT/US2022/032065	6/3/2022	P.C.T.	Pindrop Security, Inc.
LIMITING IDENTITY SPACE FOR VOICE BIOMETRIC AUTHENTICATION	17/832404	6/3/2022	United States of America	Pindrop Security, Inc.
LIMITING IDENTITY SPACE FOR VOICE BIOMETRIC AUTHENTICATION	17/832146	6/3/2022	United States of America	Pindrop Security, Inc.
SPEAKER EMBEDDING CONVERSION FOR BACKWARD AND CROSS-CHANNEL COMPATABILITY	17/855149	6/30/2022	United States of America	Pindrop Security, Inc.
SPEAKER EMBEDDING CONVERSION OF BACKWARD AND CROSS-CHANNEL COMPATABILITY	PCT/US2022/035766	6/30/2022	P.C.T.	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	10202205655Y	5/25/2022	Singapore	Pindrop Security, Inc.
DYNAMIC ACCOUNT RISK AND ASSESSMENT FROM HETEROGENEOUS EVENTS	2021216997	6/19/2022	Australia	Pindrop Security, Inc.
DYNAMIC ACCOUNT RISK AND ASSESSMENT FROM HETEROGENEOUS EVENTS	21750003.2	6/21/2022	European Patent Office	Pindrop Security, Inc.
DYNAMIC ACCOUNT RISK AND ASSESSMENT FROM HETEROGENEOUS EVENTS	3166258	6/27/2022	Canada	Pindrop Security, Inc.
CROSS-CHANNEL ENROLLMENT AND AUTHENTICATION OF VOICE BIOMETRICS	21751168.2	6/21/2022	European Patent Office	Pindrop Security, Inc.
CROSS-CHANNEL ENROLLMENT AND AUTHENTICATION OF VOICE BIOMETRICS	3166263	6/27/2022	Canada	Pindrop Security, Inc.
AGE COMPENSATION IN BIOMETRIC SYSTEMS USING TIME-INTERVAL, GENDER AND AGE	17/746832	5/17/2022	United States of America	Pindrop Security, Inc.
OMNI CHANNEL AUTHENTICATION	63/399132	8/18/2022	United States of America	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
SYSTEMS AND METHODS FOR AUTHENTICATION USING BROWSER FINGERPRINTING	PCT/US2022/036506	7/8/2022	P.C.T.	Pindrop Security, Inc.
UNSUPERVISED KEYWORD SPOTTING AND WORD DISCOVERY FOR FRAUD ANALYTICS	17/833674	6/6/2022	United States of America	Pindrop Security, Inc.
SYSTEMS AND METHODS OF SPEAKER-INDEPENDENT EMBEDDING FOR IDENTIFICATION AND VERIFICATION FROM AUDIO	21764771.8	8/16/2022	European Patent Office	Pindrop Security, Inc.
SYSTEMS AND METHODS OF SPEAKER-INDEPENDENT EMBEDDING FOR IDENTIFICATION AND VERIFICATION FROM AUDIO	2021231850	8/12/2022	Australia	Pindrop Security, Inc.
SYSTEMS AND METHODS OF SPEAKER-INDEPENDENT EMBEDDING FOR IDENTIFICATION AND VERIFICATION FROM AUDIO	3171475	8/16/2022	Canada	Pindrop Security, Inc.
SYSTEMS AND METHODS EMPLOYING GRAPH-DERIVED FEATURES FOR FRAUD DETECTION	21771023.5	8/16/2022	European Patent Office	Pindrop Security, Inc.
SYSTEMS AND METHODS EMPLOYING GRAPH-DERIVED FEATURES FOR FRAUD DETECTION	2021239845	8/12/2022	Australia	Pindrop Security, Inc.
GRAPH-DERIVED FEATURES FOR FRAUD DETECTION	3171476	8/16/2022	Canada	Pindrop Security, Inc.
CALL CLASSIFICATION THROUGH ANALYSIS OF DTMF EVENTS	3178322	10/3/2022	Canada	Pindrop Security, Inc.
CALL CLASSIFICATION THROUGH ANALYSIS OF DTMF EVENTS	17/857618	7/5/2022	United States of America	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	3179080	10/12/2022	Canada	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
CROSS-CHANNEL ENROLLMENT AND AUTHENTICATION OF VOICE BIOMETRICS	202227045378	8/9/2022	India	Pindrop Security, Inc.
SPEECH BANDWIDTH EXPANSION FOR SPEAKER RECOGNITION ON TELEPHONY AUDIO	2022-543649	7/15/2022	Japan	Pindrop Security, Inc.
SPEECH BANDWIDTH EXPANSION FOR SPEAKER RECOGNITION ON TELEPHONY AUDIO	10-2022-7029052	8/23/2022	South Korea	Pindrop Security, Inc.
SPEECH BANDWIDTH EXPANSION FOR SPEAKER RECOGNITION ON TELEPHONY AUDIO	1-2022-551965	8/1/2022	Philippines	Pindrop Security, Inc.
CROSS-CHANNEL ENROLLMENT AND AUTHENTICATION OF VOICE BIOMETRICS	11202251604N	7/26/2022	Singapore	Pindrop Security, Inc.
CROSS-CHANNEL ENROLLMENT AND AUTHENTICATION OF VOICE BIOMETRICS	1-2022-04892	8/2/2022	Vietnam	Pindrop Security, Inc.
CARRIER SIGNALING BASED AUTHENTICATION AND FRAUD DETECTION	63/389283	7/14/2022	United States of America	Pindrop Security, Inc.
ROBUST SPOOFING DETECTION SYSTEM USING DEEP RESIDUAL NEURAL NETWORKS	2021212621	7/15/2022	Australia	Pindrop Security, Inc.
ROBUST SPOOFING DETECTION SYSTEM USING DEEP RESIDUAL NEURAL NETWORKS	3168248	7/15/2022	Canada	Pindrop Security, Inc.
ROBUST SPOOFING DETECTION SYSTEM USING DEEP RESIDUAL NEURAL NETWORKS	21747446.9	7/15/2022	European Patent Office	Pindrop Security, Inc.
ROBUST SPOOFING DETECTION SYSTEM USING DEEP RESIDUAL NEURAL NETWORKS	2022-543650	7/15/2022	Japan	Pindrop Security, Inc.
ROBUST SPOOFING DETECTION SYSTEM USING DEEP RESIDUAL NEURAL NETWORKS	10-2022-7029053	8/23/2022	South Korea	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
A ZERO-SHOT APPROACH TO IDENTIFYING CHILDREN'S SPEECH IN AUTOMATIC GENDER CLASSIFICATION	63/392077	7/25/2022	United States of America	Pindrop Security, Inc.
END-TO-END SPEAKER RECOGNITION USING DEEP NEURAL NETWORK	17/963091	10/10/2022	United States of America	Pindrop Security, Inc.
CALLER VERIFICATION VIA CARRIER METADATA	17/948991	9/20/2022	United States of America	Pindrop Security, Inc.
TERMINAL BETWEEN THE SPEAKER RECOGNITION USING A DEEP NEURAL NETWORK	2022-104204	6/29/2022	Japan	Pindrop Security, Inc.
METHOD AND APPARATUS FOR THREAT IDENTIFICATION THROUGH ANALYSIS OF COMMUNICATIONS SIGNALING, EVENTS, AND PARTICIPANTS	17/943893	9/13/2022	United States of America	Pindrop Security, Inc.
VOICE MODIFICATION DETECTION USING PHYSICAL MODELS OF SPEECH PRODUCTION	17/953156	9/26/2022	United States of America	Pindrop Security, Inc.
SYSTEMS AND METHODS OF SPEAKER-INDEPENDENT EMBEDDING FOR IDENTIFICATION AND VERIFICATION FROM AUDIO	10-2022-7034198	9/30/2022	South Korea	Pindrop Security, Inc.
SYSTEMS AND METHODS OF SPEAKER-INDEPENDENT EMBEDDING FOR IDENTIFICATION AND VERIFICATION FROM AUDIO	11202252643D	8/30/2022	Singapore	Pindrop Security, Inc.
SYSTEMS AND METHODS OF SPEAKER-INDEPENDENT EMBEDDING FOR IDENTIFICATION AND VERIFICATION FROM AUDIO	2022-552583	8/31/2022	Japan	Pindrop Security, Inc.
SPEAKER AND INTENT RECOGNITION	63/402624	8/31/2022	United States of America	Pindrop Security, Inc.
AGE ESTIMATION FROM SPEECH	17/960725	10/5/2022	United States of America	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
PASSIVE AND CONTINUOUS MULTI-SPEAKER VOICE BIOMETRICS	21789203.3	9/29/2022	European Patent Office	Pindrop Security, Inc.
PASSIVE AND CONTINUOUS MULTI-SPEAKER VOICE BIOMETRICS	2021254787	9/29/2022	Australia	Pindrop Security, Inc.
PASSIVE AND CONTINUOUS MULTI-SPEAKER VOICE BIOMETRICS	3184478	11/22/2022	Canada	Pindrop Security, Inc.
PASSIVE AND CONTINUOUS MULTI-SPEAKER VOICE BIOMETRICS	10-2022-7039892	11/15/2022	South Korea	Pindrop Security, Inc.
PASSIVE AND CONTINUOUS MULTI-SPEAKER VOICE BIOMETRICS	11202253750C	9/30/2022	Singapore	Pindrop Security, Inc.
PASSIVE AND CONTINUOUS MULTI-SPEAKER VOICE BIOMETRICS	2022-561448	10/7/2022	Japan	Pindrop Security, Inc.
AGE ESTIMATION FROM SPEECH	PCT/US2022/045777	10/5/2022	P.C.T.	Pindrop Security, Inc.
CROSS-LINGUAL SPEAKER RECOGNITION	17/977521	10/31/2022	United States of America	Pindrop Security, Inc.
CROSS-LINGUAL SPEAKER RECOGNITION	PCT/US2022/048365	10/31/2022	P.C.T.	Pindrop Security, Inc.
SYSTEMS AND METHODS FOR CALL FRAUD ANALYSIS USING A MACHINE-LEARNING ARCHITECTURE AND MAINTAINING CALLER ANI PRIVACY	63/443598	2/6/2023	United States of America	Pindrop Security, Inc.
SYSTEMS AND METHODS FOR CALL FRAUD ANALYSIS USING A MACHINE-LEARNING ARCHITECTURE AND MAINTAINING CALLER ANI PRIVACY	63/443599	2/6/2023	United States of America	Pindrop Security, Inc.
SYSTEMS AND METHODS FOR CALL FRAUD ANALYSIS USING A MACHINE-LEARNING ARCHITECTURE AND MAINTAINING CALLER ANI PRIVACY	63/443601	2/6/2023	United States of America	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
SYSTEMS AND METHODS FOR CALL FRAUD ANALYSIS USING A MACHINE-LEARNING ARCHITECTURE AND MAINTAINING CALLER ANI PRIVACY	63/443603	2/6/2023	United States of America	Pindrop Security, Inc.
SYSTEMS AND METHODS FOR CALL FRAUD ANALYSIS USING A MACHINE-LEARNING ARCHITECTURE AND MAINTAINING CALLER ANI PRIVACY	63/443604	2/6/2023	United States of America	Pindrop Security, Inc.
CHANNEL-COMPENSATED LOW-LEVEL FEATURES FOR SPEAKER RECOGNITION	18/321353	5/22/2023	United States of America	Pindrop Security, Inc.
SYSTEMS AND METHODS FOR JIP AND CLLI MATCHING IN TELECOMMUNICATIONS METADATA AND MACHINE-LEARNING	18/109095	2/13/2023	United States of America	Pindrop Security, Inc.
SYSTEMS AND METHODS FOR JIP AND CLLI MATCHING IN TELECOMMUNICATIONS METADATA AND MACHINE-LEARNING	3189600	2/14/2023	Canada	Pindrop Security, Inc.
IMPROVING SPEAKER RECOGNITION WITH QUALITY INDICATORS	3190161	1/24/2023	Canada	Pindrop Security, Inc.
BEHAVIORAL BIOMETRICS USING KEYPRESS TEMPORAL INFORMATION	63/427498	11/23/2022	United States of America	Pindrop Security, Inc.
ENROLLMENT AND AUTHENTICATION OVER A PHONE CALL IN CALL CENTERS	Based on PCT/US2021/052909	3/28/2023	Canada	Pindrop Security, Inc.
SYSTEMS AND METHODS FOR STIR-SHAKEN ATTESTATION USING SPID	18/117134	3/3/2023	United States of America	Pindrop Security, Inc.

Title	Patent No. or Application No.	Date Filed/Application Date	Country	Assignee
SYSTEMS AND METHODS FOR JIP AND CLLI MATCHING IN TELECOMMUNICATIONS METADATA AND MACHINE-LEARING	3191780	3/3/2023	Canada	Pindrop Security, Inc.
SPEAKER SPECIFIC SPEECH ENHANCEMENT	3193267	2/27/2023	Canada	Pindrop Security, Inc.
TELECOMMUNICATIONS VALIDATION SYSTEM AND METHOD	18/123463	3/20/2023	United States of America	Pindrop Security, Inc.
AUDIOVISUAL DEEPFAKE DETECTION	3198473	4/11/2023	Canada	Pindrop Security, Inc.
AUDIOVISUAL DEEPFAKE DETECTION	21881214.7	4/13/2023	European Patent Office	Pindrop Security, Inc.
AUDIOVISUAL DEEPFAKE DETECTION	2023-523075	4/14/2023	Japan	Pindrop Security, Inc.
AUDIOVISUAL DEEPFAKE DETECTION	10-2023-7015335	5/4/2023	South Korea	Pindrop Security, Inc.
AUDIOVISUAL DEEPFAKE DETECTION	11202302770	4/11/2023	Singapore	Pindrop Security, Inc.
PRESENTATION ATTACKS IN REVERBERANT CONDITIONS	63/452351	3/15/2023	United States of America	Pindrop Security, Inc.
SYSTEMS AND METHODS EMPLOYING GRAPH-DERIVED FEATURES FOR FRAUD DETECTION	18/301897	4/17/2023	United States of America	Pindrop Security, Inc.
DEEPFAKE DETECTION IN A CALL CENTER	63/497587	4/21/2023	United States of America	Pindrop Security, Inc.
AUTHENTICATION USING DTMF TONES	18/317799	5/15/2023	United States of America	Pindrop Security, Inc.
ACTIVE VOICE LIVENESS DETECTION SYSTEM	63/462913	4/28/2023	United States of America	Pindrop Security, Inc.
SPEAKER RECOGNITION IN THE CALL CENTER	18/329138	6/5/2023	United States of America	Pindrop Security, Inc.
DEEPFAKE DETECTION	63/503903	5/23/2023	United States of America	Pindrop Security, Inc.