

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT6665619

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	PARTIAL RELEASE OF SECURITY INTEREST	
CONVEYING PARTY DATA		
	Name	Execution Date
	CITIBANK, N.A.	04/15/2021
RECEIVING PARTY DATA		
Name:	THE NIELSEN COMPANY (US), LLC	
Street Address:	85 BROAD STREET	
City:	NEW YORK	
State/Country:	NEW YORK	
Postal Code:	10004	
Name:	GRACENOTE, INC.	
Street Address:	85 BROAD STREET	
City:	NEW YORK	
State/Country:	NEW YORK	
Postal Code:	10004	
PROPERTY NUMBERS Total: 403		
Property Type	Number	
Application Number:	10029142	
Application Number:	10564297	
Application Number:	11140773	
Application Number:	11140784	
Application Number:	11141434	
Application Number:	11573455	
Application Number:	12141163	
Application Number:	12141337	
Application Number:	12491896	
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Application Number:	12772566	
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Application Number:	13102479	

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Property Type	Number
Application Number:	13220267
Application Number:	13276110
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PCT Number:	US2020032139
PCT Number:	US2020032143
PCT Number:	US2020032350
PCT Number:	US2018032202

CORRESPONDENCE DATA

Fax Number:

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: 2126834120

Email: luis.rodriguez@unitedcorporate.com

Correspondent Name: ELAINE CARRERA

Address Line 1: 32 OLD SLIP

Address Line 2: C/O CAHILL GORDON & REINDEL LLP

Address Line 4: NEW YORK, NEW YORK 10005

NAME OF SUBMITTER: ELAINE CARRERA

SIGNATURE: /ELAINE CARRERA/

DATE SIGNED: 04/20/2021

Total Attachments: 45

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Addendum to Cover Page of Patents Form Cover Sheet

2. Name and address of receiving party(ies)

Gracenote, Inc.
85 Broad Street
New York, NY 10004

PARTIAL RELEASE OF SECURITY INTEREST IN PATENTS

This PARTIAL RELEASE OF SECURITY INTEREST IN PATENTS (this "Partial Release"), dated as of April 15, 2021 (the "Effective Date"), is made by CITIBANK, N.A., in its capacity as Collateral Agent (the "Agent"), in favor of the grantors identified on the signature page hereto (the each a "Grantor" and collectively, the "Grantors").

WHEREAS, pursuant to that certain Intellectual Property Security Agreement, dated as of August 9, 2006, by and among the Agent, the Grantors and certain other parties thereto (as amended and restated as of June 23, 2009 and as otherwise amended, amended and restated, supplemented or otherwise modified from time to time, the "Security Agreement"), each Grantor assigned and granted to the Agent, in its capacity as Collateral Agent, a security interest in and to certain collateral as set forth therein;

WHEREAS, pursuant to the Security Agreement, the Grantors executed and delivered that certain Supplemental Security Agreement, dated as of April 12, 2017, which was recorded with the United States Patent and Trademark Office on April 13, 2017 at Reel/Frame 042262/0601, Supplemental IP Security Agreement, dated as of June 4, 2020, which was recorded with the United States Patent and Trademark Office on June 9, 2020 at Reel/Frame 053473/0001, Corrective Supplemental IP Security Agreement, dated June 4, 2020, which was recorded with the United States Patent and Trademark Office on October 7, 2020 at Reel/Frame 054066/0064, Supplemental IP Security Agreement, dated as of June 4, 2020, which was recorded with the United States Patent and Trademark Office on October 15, 2020 at Reel/Frame 054089/0001, , and Corrective Supplemental IP Security Agreement, dated June 4, 2020, which was recorded with the United States Patent and Trademark Office on November 25, 2020 at Reel/ Frame 054525/0001 (each of the foregoing, a "Supplemental IP Security Agreement" and collectively, the "Supplemental IP Security Agreements");

WHEREAS, pursuant to that certain Release of Security Interests, dated as of the date hereof, between the Agent and the Grantors, the Agent has agreed to release, discharge, terminate and cancel its security interest in certain specified collateral including the Patents and patent applications listed on Schedule A attached hereto (and the inventions and other Proprietary Information (as defined in the Asset and Stock Purchase Agreement, dated as of February 28, 2021, by and among Roku, Inc., Gracenote, Inc., Gracenote Korea Ltd., Nielsen media Research Limited, and The Nielsen Company (US), LLC), claimed therein) (the "Released Collateral").

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Agent hereby agrees as follows:

1. Defined Terms. All capitalized terms used, but not otherwise defined herein, shall have the respective meanings ascribed in or otherwise referenced in the Security Agreement or the Supplemental IP Security Agreements, as applicable.

2. Partial Release. The Agent, without representation or warranty of any kind, hereby releases, discharges, terminates and cancels all of its security interest in and to the Released Collateral. If and to the extent that the Agent has acquired any right, title or interest in and to the Released Collateral under the Security Agreement or the Supplemental IP Security Agreements, the Agent, without representation or warranty of any kind, hereby re-transfers, re-conveys and re-assigns such right, title or interest to each applicable Grantor.

3. Limitation. This Partial Release is applicable only and solely with respect to the Released Collateral and to no other collateral arising under the Security Agreement or the Supplemental IP Security

Agreements (the "Retained Collateral"). The Agent retains all security interests, liens, rights, titles and interests pledged and granted to the Agent under the Security Agreement and the IP Security Agreement with respect to all such Retained Collateral, and the Agent's security interest, liens, rights, titles and interests in such Retained Collateral shall not, and shall not be deemed to, be impaired, interrupted or otherwise modified in any respect by this Partial Release.

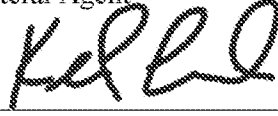
4. Further Assurances. The Agent agrees to take all further actions, and provide to the Grantors and their respective successors, assigns or other legal representatives, all such cooperation and assistance (including, without limitation, the execution and delivery of any and all documents or other instruments), reasonably requested by any Grantor, at such Grantor's sole cost and expense, to more fully and effectively effectuate the purposes of this Partial Release.

5. Governing Law. This Partial Release shall be construed in accordance with and governed by the law of the State of New York.

[Signature Page Follows]

IN WITNESS WHEREOF, the Agent has caused this Partial Release to be executed by its duly authorized representative as of the Effective Date:

CITIBANK, N.A., acting in its capacity as
Collateral Agent

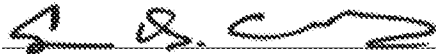
By: _____

Name: Keith Lukasavich
Title: Vice President

Acknowledged and agreed:

THE NIELSEN COMPANY (US), LLC, as Grantor

By:

A handwritten signature in black ink, appearing to read "G. D. Callard", written over a horizontal dotted line.

Name: George D. Callard

Title: President

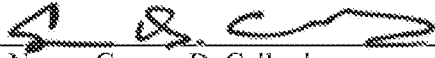
[Patent Release Signature Page]

PATENT
REEL: 056973 FRAME: 0297

Acknowledged and agreed:

GRACENOTE, INC., as Grantor

By:

A handwritten signature in black ink, appearing to read "G. D. Callard", is written over a horizontal line.

Name: George D. Callard

Title: President

[Patent Release Signature Page]

PATENT
REEL: 056973 FRAME: 0298

SCHEDULE A

Released Collateral

Partial Release of Reel/Frame 054066/0064 and Reel/Frame 053473/0001

Application Title	Application Number	Application Filing Date	Patent Number	Issue Date	Assignee
Computing System with Channel-Change-Based Trigger Feature	15/399,404	1/5/2017	N/A	N/A	Gracenote, Inc.
Computing System with Content-Characteristic-Based Trigger Feature	15/399,415	1/5/2017	10,484,758	11/19/2019	Gracenote, Inc.
Computing System with Content-Characteristic-Based Trigger Feature	16/597,597	10/9/2019	10,841,665	11/17/2020	Gracenote, Inc.
Apparatus And Method For Generating Image Feature Data	13/985,129	11/11/2011	8,983,199	3/17/2015	Ensware Co., Ltd.
Detecting and Responding to Rendering of Interactive Video Content	15/620,440	6/12/2017	N/A	N/A	Gracenote, Inc.
Detecting and Responding to Rendering of Interactive Video Content	16/015,771	6/22/2018	N/A	N/A	Gracenote, Inc.
Media Channel Identification and Action with Multi-Media Detection and Disambiguation Based on Matching with Differential Reference-Fingerprint Feature	15/442,114	2/24/2017	9,992,533	6/5/2018	Gracenote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Location	15/179,143	6/10/2016	9,924,222	3/20/2018	Gracenote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Single-Match	15/222,405	7/28/2016	10,063,918	8/28/2018	Gracenote, Inc.
Media Channel Identification with Video Multi-Match Detection and Disambiguation Based on Audio Fingerprint	15/253,354	8/31/2016	9,930,406	3/27/2018	Gracenote, Inc.
Media Channel Identification with Video Multi-Match Detection and Disambiguation Based on Time of Broadcast	15/343,895	11/4/2016	10,045,073	8/7/2018	Gracenote, Inc.

Application Title	Application Number	Application Filing Date	Patent Number	Issue Date	Assignee
Media Channel Identification and Action with Multi-Match Detection Based on Reference Stream Comparison	15/443,580	2/27/2017	10,104,426	10/16/2018	Gracenote, Inc.
Method and System for Detecting and Responding to Changing of Media Channel	15/443,615	2/27/2017	10,045,074	8/7/2018	Gracenote, Inc.
Media Channel Identification with Video Multi-Match Detection and Disambiguation Based on Audio Fingerprint	15/842,189	12/14/2017	10,149,007	12/4/2018	Gracenote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Location	15/842,206	12/14/2017	10,057,638	8/21/2018	Gracenote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Single-Match	16/015,783	6/22/2018	10,567,835	2/18/2020	Gracenote, Inc.
Media Channel Identification and Action with Multi-Match Detection and Disambiguation Based on Matching with Differential Reference-Fingerprint Feature	15/982,437	5/17/2018	10,523,999	12/31/2019	Gracenote, Inc.
Media Channel Identification and Action with Multi-Match Detection and Disambiguation Based on Matching with Differential Reference-Fingerprint Feature	16/017,190	6/25/2018	10,524,000	12/31/2019	Gracenote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Audio Fingerprint	16/017,203	6/25/2018	10,440,430	10/8/2019	Gracenote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Location	16/017,218	6/25/2018	10,412,448	9/10/2019	Gracenote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Time of Broadcast	16/015,800	6/22/2018	10,419,814	9/17/2019	Gracenote, Inc.
Media Channel Identification and Action with Multi-Match Detection Based on Reference Stream Comparison	16/015,811	6/22/2018	10,225,605	3/5/2019	Gracenote, Inc.

Application Title	Application Number	Application Filing Date	Patent Number	Issue Date	Assignee
Method and System for Detecting and Responding to Changing Of Media Channel	16/015,827	6/22/2018	10,531,150	1/7/2020	Gracenote, Inc.
Media Channel Identification and Action with Multi-Match Detection Based on Reference Stream Comparison	16/246,746	1/14/2019	10,575,052	2/25/2020	Gracenote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Time of Broadcast	16/276,050	2/14/2019	10,848,820	11/24/2020	Gracenote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Location	16/274,975	2/13/2019	10,536,746	1/14/2020	Gracenote, Inc.
Media Channel Identification with Video Multi-Match Detection and Disambiguation Based on Audio Fingerprint					
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Single-Match	16/274,966	2/13/2019	10,631,049	4/21/2020	Gracenote, Inc.
	16/276,061	2/14/2019	10,567,836	2/18/2020	Gracenote, Inc.
Media Channel Identification and Action with Multi-Match Detection and Disambiguation Based on Matching with Differential Reference-Fingerprint Feature					
	15/929,180	12/5/2019	N/A	N/A	Gracenote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Location	15/929,167	11/19/2019	N/A	N/A	Gracenote, Inc.
Method and System for Detecting and Responding to Changing of Media Channel					
	15/929,179	12/5/2019	10,805,673	10/13/2020	Gracenote, Inc.
Media Channel Identification and Action with Multi-Match Detection Based on Reference Stream Comparison					
	15/929,193	12/19/2019	N/A	N/A	Gracenote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Single-Match					
	15/929,203	1/10/2020	N/A	N/A	Gracenote, Inc.

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Media Channel Identification with Video Multi-Match Detection and Disambiguation Based on Audio Fingerprint	16/819,657	3/16/2020	N/A	N/A	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	10/564,297	7/5/2004	8,020,000	9/13/2011	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	13/220,267	8/29/2011	8,660,267	2/25/2014	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	14/151,879	1/10/2014	9,066,114	6/23/2015	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	14/659,044	3/16/2015	9,407,962	8/2/2016	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	15/164,605	5/25/2016	9,479,831	10/25/2016	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	15/273,185	9/22/2016	9,712,853	7/18/2017	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	15/622,024	6/13/2017	10,045,054	8/7/2018	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	16/018,022	6/25/2018	10,250,916	4/2/2019	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	16/264,134	1/31/2019	10,595,053	3/17/2020	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	16/815,720	3/11/2020	N/A	N/A	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	12/760,004	4/14/2010	9,015,741	4/21/2015	Gracenote, Inc.

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Method and System for Remotely Controlling Consumer Electronic Devices	14/659,971	3/17/2015	9,992,518	6/5/2018	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	15/287,116	10/6/2016	9,998,767	6/12/2018	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	15/292,705	10/13/2016	9,706,233	7/11/2017	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	15/614,566	6/5/2017	10,250,919	4/2/2019	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/018,050	6/26/2018	10,341,697	7/2/2019	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/390,595	4/22/2019	N/A	N/A	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Device	16/390,627	4/22/2019	N/A	N/A	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/390,631	4/22/2019	N/A	N/A	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Device	16/390,644	4/22/2019	10,701,410	6/30/2020	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/403,075	5/3/2019	N/A	N/A	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/403,084	5/3/2019	N/A	N/A	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/403,089	5/3/2019	10,735,782	8/4/2020	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/403,096	5/3/2019	N/A	N/A	Gracenote, Inc.

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Method and System for Remotely Controlling Consumer Electronic Devices	16/403,105	5/3/2019	N/A	N/A	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/403,111	5/3/2019	N/A	N/A	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/568,407	9/12/2019	10,701,411	6/30/2020	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/568,414	9/12/2019	10,715,841	7/14/2020	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/568,438	9/12/2019	10,701,412	6/30/2020	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/568,445	9/12/2019	10,904,589	1/26/2021	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/775,126	1/28/2020	N/A	N/A	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/828,522	3/24/2020	N/A	N/A	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/845,392	4/10/2020	N/A	N/A	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/836,280	3/31/2020	N/A	N/A	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	16/836,417	3/31/2020	N/A	N/A	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	13/286,138	10/31/2011	8,863,165	10/14/2014	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	15/375,698	12/12/2016	10,506,291	12/10/2019	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/017,900	6/25/2018	N/A	N/A	Gracenote, Inc.

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Method and System for Presenting Additional Content at a Media System	16/017,910	6/25/2018	10,341,734	7/2/2019	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/017,926	6/25/2018	N/A	N/A	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/670,954	10/31/2019	N/A	N/A	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/670,956	10/31/2019	10,904,629	1/26/2021	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/670,961	10/31/2019	N/A	N/A	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/670,965	10/31/2019	N/A	N/A	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/670,983	10/31/2019	10,869,095	12/15/2020	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/835,201	3/30/2020	N/A	N/A	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/835,203	3/30/2020	N/A	N/A	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/835,204	3/30/2020	N/A	N/A	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/835,206	3/30/2020	N/A	N/A	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/835,209	3/30/2020	N/A	N/A	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/835,213	3/30/2020	N/A	N/A	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/835,215	3/30/2020	N/A	N/A	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	16/835,217	3/30/2020	N/A	N/A	Gracenote, Inc.
Selection of Content from a Stream of Video or Audio Data	11/573,455	8/9/2005	8,406,607	3/26/2013	Gracenote, Inc.
Method and Apparatus for Selection of Content from a Stream of Data	13/778,439	2/27/2013	9,143,718	9/22/2015	Gracenote, Inc.
Method and Apparatus for Selection of Content from a Stream of Data	14/789,048	7/1/2015	9,414,008	8/9/2016	Gracenote, Inc.
Method and Apparatus for Selection of Content from a Stream of Data	15/204,366	7/7/2016	9,736,549	8/15/2017	Gracenote, Inc.

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Method and Apparatus for Selection of Content from a Stream of Data	15/285,056	10/4/2016	9,794,644	10/17/2017	Gracenote, Inc.
Method and Apparatus for Selection of Content from a Stream of Data	15/703,687	9/13/2017	9,986,306	5/29/2018	Gracenote, Inc.
Method and Apparatus for Selection of Content from a Stream of Data	15/971,608	8/9/2005	10,555,052	2/4/2020	Gracenote, Inc.
Method and Apparatus for Selection of Content from a Stream of Data	16/734,081	8/9/2005	N/A	N/A	Gracenote, Inc.
Method and Apparatus for Selection of Content from a Stream of Data	16/734,283	1/3/2020	N/A	N/A	Gracenote, Inc.
Identifying Video Content Via Fingerprint Matching	13/735,426	1/7/2013	9,495,451	11/15/2016	Gracenote, Inc.
Identifying Media Content Via Fingerprint Matching	15/287,063	10/6/2016	10,866,988	12/15/2020	Gracenote, Inc.
Video Fingerprinting	14/263,647	4/28/2014	9,323,840	4/26/2016	Gracenote, Inc.
Video Fingerprinting	15/136,412	4/22/2016	N/A	N/A	Gracenote, Inc.
Inserting Advertisements into Video Content	13/826,282	3/14/2013	9,794,642	10/17/2017	Gracenote, Inc.
Inserting Advertisements into Video Content	15/700,054	9/8/2017	10,110,970	10/23/2018	Gracenote, Inc.
Inserting Advertisements into Video Content	16/018,056	6/26/2018	10,595,097	3/17/2020	Gracenote, Inc.
Inserting Advertisements into Video Content	16/779,547	1/31/2020	N/A	N/A	Gracenote, Inc.
Authorizing Devices Based on Identifying Content Distributor	13/826,606	3/14/2013	8,997,164	3/31/2015	Gracenote, Inc.
Authorizing Devices Based on Identifying Content Distributor	14/640,253	3/6/2015	9,596,490	3/14/2017	Gracenote, Inc.
Authorizing Devices Based on Identifying Content Distributor	15/406,887	1/16/2017	N/A	N/A	Gracenote, Inc.
Detecting An Event Within Interactive Media Including Spatialized Multi-Channel Audio Content	13/795,877	3/12/2013	9,372,531	6/21/2016	Gracenote, Inc.
Detecting an Event within Interactive Media Including Spatialized Multi-Channel Audio Content	15/003,658	1/21/2016	10,055,010	8/21/2018	Gracenote, Inc.

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Detecting an Event Within Interactive Media	16/017,170	6/25/2018	10,156,894	12/18/2018	Gracenote, Inc.
Detecting and Responding to an Event Within an Interactive Videogame	16/168,412	10/23/2018	10,345,892	7/9/2019	Gracenote, Inc.
Detecting and Responding to an Event Within an Interactive Videogame	16/425,490	5/29/2019	10,824,222	11/3/2020	Gracenote, Inc.
Search And Identification Of Video Content	13/839,782	3/15/2013	9,146,990	9/29/2015	Gracenote, Inc.
Search And Identification Of Video Content	14/828,293	8/17/2015	9,959,345	5/1/2018	Gracenote, Inc.
Displaying An Actionable Element Over Playing Content	14/020,295	9/6/2013	N/A	N/A	Gracenote, Inc.
Displaying an Actionable Element Over Playing Content	16/124,928	9/7/2018	N/A	N/A	Gracenote, Inc.
Displaying an Actionable Element Over Playing Content	16/126,771	9/10/2018	N/A	N/A	Gracenote, Inc.
Displaying an Actionable Element Over Playing Content	16/178,116	11/1/2018	N/A	N/A	Gracenote, Inc.
Identifying Video Content Via Color- Based Fingerprint Matching	14/061,043	10/23/2013	9,465,995	10/11/2016	Gracenote, Inc.
Identifying Video Content Via Color- Based Fingerprint Matching	15/286,787	10/6/2016	10,503,956	12/10/2019	Gracenote, Inc.
Identifying Video Content Via Color- Based Fingerprint Matching	16/692,124	11/22/2019	N/A	N/A	Gracenote, Inc.
Dynamic Video Overlays	15/381,496	12/16/2016	10,142,680	11/27/2018	Gracenote, Inc.
Dynamic Video Overlays	15/381,497	12/16/2016	10,785,530	9/22/2020	Gracenote, Inc.
Dynamic Video Overlays	15/381,513	12/16/2016	10,412,447	9/10/2019	Gracenote, Inc.
Dynamic Video Overlays	15/381,556	12/16/2016	10,136,183	11/20/2018	Gracenote, Inc.
Dynamic Video Overlays	15/381,572	12/16/2016	10,123,073	11/5/2018	Gracenote, Inc.
Dynamic Video Overlays	16/140,539	9/25/2018	10,893,320	1/12/2021	Gracenote, Inc.
Dynamic Video Overlays	16/520,294	7/23/2019	10,869,086	12/15/2020	Gracenote, Inc.

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Digital Video Content Fingerprinting Using Image Pixel Intensity and Color Information	12/955,416	11/29/2010	8,666,152	3/4/2014	Gracernote, Inc.
Scalable, Adaptable, and Manageable System for Multimedia Identification	13/102,479	5/6/2011	8,655,878	2/18/2014	Gracernote, Inc.
Scalable, Adaptable, and Manageable System for Multimedia Identification	14/151,335	1/9/2014	9,058,355	6/16/2015	Gracernote, Inc.
Scalable, Adaptable, and Manageable System for Multimedia Identification	14/151,294	1/9/2014	8,965,863	2/24/2015	Gracernote, Inc.
Scalable, Adaptable, and Manageable System for Multimedia Identification	14/718,218	5/21/2015	9,785,708	10/10/2017	Gracernote, Inc.
Content Based Digital Video Fingerprinting Based on Scale Invariant Interest Region Detection with an Array of Anisotropic Filters	12/612,729	11/5/2009	8,189,945	5/29/2012	Gracernote, Inc.
Content Based Digital Video Fingerprinting Based on Scale Invariant Interest Region Detection with an Array of Anisotropic Filters	13/455,560	4/25/2012	8,781,245	7/15/2014	Gracernote, Inc.
Content Based Digital Video Fingerprinting Based on Scale Invariant Interest Region Detection with an Array of Anisotropic Filters	14/298,261	6/6/2014	9,396,393	7/19/2016	Gracernote, Inc.
Content Based Digital Video Fingerprinting Based on Scale Invariant Interest Region Detection with an Array of Anisotropic Filters	15/186,901	6/20/2016	9,652,672	5/16/2017	Gracernote, Inc.
Methods and Apparatus for Providing a Scalable Identification of Digital Video Sequences	12/141,163	6/18/2008	8,729,227	7/24/2012	Gracernote, Inc.
Methods and Apparatus for Providing a Scalable Identification of Digital Video Sequences	13/488,568	6/5/2012	8,666,168	3/4/2014	Gracernote, Inc.
Method And Apparatus For Multi-Dimensional Content Search And Video Identification	12/141,337	6/18/2008	8,171,030	5/1/2012	Gracernote, Inc.
Method And Apparatus For Multi-Dimensional Content Search And Video Identification	13/432,914	3/28/2012	9,323,841	4/26/2016	Gracernote, Inc.

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Method And Apparatus For Multi-Dimensional Content Search And Video Identification	15/078,056	3/23/2016	9,489,455	11/8/2016	Gracenote, Inc.
Method And Apparatus For Multi-Dimensional Content Search And Video Identification	15/290,364	10/11/2016	10,210,252	2/19/2019	Gracenote, Inc.
Method and Apparatus for Multi-Dimensional Content Search and Video Identification	16/240,859	1/7/2019	N/A	N/A	Gracenote, Inc.
Method and Apparatus for Multi-Dimensional Content Search and Video Identification	16/442,006	6/14/2019	N/A	N/A	Gracenote, Inc.
Method and Apparatus for Multi-Dimensional Content Search and Video Identification	16/442,398	6/14/2019	N/A	N/A	Gracenote, Inc.
Method and Apparatus for Multi-Dimensional Content Search and Video Identification	16/442,404	6/14/2019	N/A	N/A	Gracenote, Inc.
Method and Apparatus for Multi-Dimensional Content Search and Video Identification	16/442,414	6/14/2019	N/A	N/A	Gracenote, Inc.
Content Based Digital Video Fingerprinting Based on Resultant Weighted Gradient Orientation Computation	12/491,896	6/25/2009	8,385,644	2/26/2013	Gracenote, Inc.
Media Fingerprinting And Identification System	12/772,566	5/3/2010	8,195,689	6/5/2012	Gracenote, Inc.
Highly Scalable, Accurate and Distortion-Robust Media Fingerprinting and Identification System	13/463,137	5/3/2012	8,364,703	1/29/2013	Gracenote, Inc.
Media Fingerprinting and Identification System	13/719,603	12/19/2012	8,688,731	4/1/2014	Gracenote, Inc.
Highly Scalable, Accurate and Distortion-Robust Media Fingerprinting and Identification System	14/059,688	10/22/2013	9,053,104	6/9/2015	Gracenote, Inc.
Media Fingerprinting and Identification System	14/711,054	5/13/2015	9,195,663	11/24/2015	Gracenote, Inc.
Media Fingerprinting and Identification System	14/985,110	10/16/2015	9,323,754	4/26/2016	Gracenote, Inc.

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Media Fingerprinting and Identification System	15/073,858	3/18/2016	9,471,674	10/18/2016	Gracenote, Inc.
Media Fingerprinting and Identification System	15/265,002	9/14/2016	10,402,443	9/3/2019	Gracenote, Inc.
Media Fingerprinting and Identification System	16/383,473	4/12/2019	N/A	N/A	Gracenote, Inc.
Media Fingerprinting and Identification System	16/355,727	3/16/2019	10,423,654	9/24/2019	Gracenote, Inc.
Media Fingerprinting and Identification System	16/385,575	4/16/2019	N/A	N/A	Gracenote, Inc.
Media Fingerprinting and Identification System	16/387,443	4/17/2019	N/A	N/A	Gracenote, Inc.
Media Fingerprinting and Identification System	16/387,448	4/17/2019	N/A	N/A	Gracenote, Inc.
Media Fingerprinting and Identification System	16/387,456	4/17/2019	N/A	N/A	Gracenote, Inc.
Media Fingerprinting and Identification System	16/365,577	3/26/2019	N/A	N/A	Gracenote, Inc.
Media Fingerprinting and Identification System	16/367,921	3/28/2019	N/A	N/A	Gracenote, Inc.
Media Fingerprinting and Identification System	16/388,740	4/18/2019	N/A	N/A	Gracenote, Inc.
Media Fingerprinting and Identification System	16/388,747	4/18/2019	10,387,482	8/20/2019	Gracenote, Inc.
Media Fingerprinting and Identification System	16/388,750	4/18/2019	N/A	N/A	Gracenote, Inc.
Media Fingerprinting and Identification System	16/553,658	8/28/2019	N/A	N/A	Gracenote, Inc.
Media Fingerprinting and Identification System	16/596,291	10/8/2019	10,579,668	3/3/2020	Gracenote, Inc.
Media Fingerprinting and Identification System	16/869,214	5/7/2020	N/A	N/A	Gracenote, Inc.
Multi-Media Content Identification Using Multi-Level Content Signature Correlation and Fast Similarity Search	12/788,796	5/27/2010	8,335,786	12/18/2012	Gracenote, Inc.
Distributed and Tiered Architecture for Content Search and Content Monitoring	13/276,110	10/18/2011	8,959,108	2/17/2015	Gracenote, Inc.

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Distributed and Tiered Architecture for Content Search and Content Monitoring	14/589,366	1/5/2015	9,262,421	2/16/2016	Gracenote, Inc.
Distributed and Tiered Architecture for Content Search and Content Monitoring	14/990,565	1/7/2016	9,436,689	9/6/2016	Gracenote, Inc.
Distributed and Tiered Architecture for Content Search and Content Monitoring	15/163,004	5/24/2016	9,646,007	5/9/2017	Gracenote, Inc.
TV Content Segmentation, Categorization and Identification and Time-Aligned Applications	13/327,359	12/15/2011	9,510,044	11/29/2016	Gracenote, Inc.
Media Content Identification on Mobile Devices	13/590,701	8/21/2012	9,313,359	4/12/2016	Gracenote, Inc.
Media Content Identification on Mobile Devices	15/053,064	2/25/2016	N/A	N/A	Gracenote, Inc.
Media Content Identification on Mobile Devices	16/441,924	6/14/2019	N/A	N/A	Gracenote, Inc.
Media Content Identification on Mobile Devices	16/441,936	6/14/2019	N/A	N/A	Gracenote, Inc.
Media Content Identification on Mobile Devices	16/441,949	6/14/2019	N/A	N/A	Gracenote, Inc.
Media Content Identification on Mobile Devices	16/441,956	6/14/2019	N/A	N/A	Gracenote, Inc.
Media Content Identification on Mobile Devices	16/441,967	6/14/2019	N/A	N/A	Gracenote, Inc.
Media Content Identification on Mobile Devices	16/441,987	6/14/2019	N/A	N/A	Gracenote, Inc.
Media Content Identification on Mobile Devices	16/441,996	6/14/2019	N/A	N/A	Gracenote, Inc.
Media Content Identification on Mobile Devices	16/442,392	6/14/2019	N/A	N/A	Gracenote, Inc.
AUDIO CONTENT FINGERPRINTING BASED ON TWO-DIMENSIONAL CONSTANT 1-FACTOR TRANSFORM REPRESENTATION AND ROBUST AUDIO IDENTIFICATION FOR TIME-ALIGNED APPLICATIONS	13/647,996	10/9/2012	9,299,364	3/29/2016	Gracenote, Inc.

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AUDIO CONTENT FINGERPRINTING BASED ON TWO-DIMENSIONAL CONSTANT 1-FACTOR TRANSFORM REPRESENTATION AND ROBUST AUDIO IDENTIFICATION FOR TIME-ALIGNED APPLICATIONS	15/050,123	2/22/2016	9,798,513	10/24/2017	Gracenote, Inc.
Method for Efficient Data Base Formation and Search on Portable Media Devices Acting Synchronously with Television Programming	13/826,502	3/14/2013	9,367,544	6/14/2016	Gracenote, Inc.
Robust Audio Identification with Interference Cancellation	15/456,859	3/13/2017	10,360,905	7/23/2019	Gracenote, Inc.
Method To Differentiate And Classify Fingerprints Using Fingerprint Neighborhood Analysis	15/456,861	3/13/2017	N/A	N/A	Gracenote, Inc.
Method to Differentiate and Classify Fingerprints Using Fingerprint Neighborhood Analysis	16/140,531	9/24/2018	N/A	N/A	Gracenote, Inc.
Digital Video Fingerprinting Using Motion Segmentation	15/456,856	3/13/2017	10,318,813	6/11/2019	Gracenote, Inc.
Digital Video Fingerprinting Using Motion Segmentation	16/140,534	9/25/2018	10,733,985	8/4/2020	Gracenote, Inc.
Modifying Playback of Replacement Content Responsive to Detection of Remote Control Signals That Modify Operation of the Playback Device	16/181,961	11/6/2018	10,791,312	9/29/2020	Gracenote, Inc.
Modifying Playback of Replacement Content Responsive to Detection of Remote Control Signals That Control a Device Providing Video to the Playback Device	16/181,978	11/6/2018	10,827,224	11/3/2020	Gracenote, Inc.
Modifying Playback of Replacement Content Based on Control Messages	16/182,201	11/6/2018	N/A	N/A	Gracenote, Inc.
Dynamic Control of Fingerprinting Rate to Facilitate Time-Accurate Revision of Media Content	16/166,561	10/22/2018	10,506,275	12/10/2019	Gracenote, Inc.
Dynamic Control of Fingerprinting Rate to Facilitate Time-Accurate Revision of Media Content	16/166,948	10/22/2018	10,623,800	4/14/2020	Gracenote, Inc.

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Dynamic Control of Fingerprinting Rate to Facilitate Time-Accurate Revision of Media Content	16/674,652	11/5/2019	N/A	N/A	Gracenote, Inc.
Dynamic Control of Fingerprinting Rate to Facilitate Time-Accurate Revision of Media Content	16/790,335	2/13/2020	N/A	N/A	Gracenote, Inc.
Advanced Preparation for Content Revision Based on Expected Latency in Obtaining New Content	16/166,962	10/22/2018	10,820,020	10/27/2020	Gracenote, Inc.
Establishment and Use of Time Mapping Based on Interpolation Using Low-Rate Fingerprinting, to Help Facilitate Frame-Accurate Content Revision	16/166,971	10/22/2018	10,904,587	11/26/2021	Gracenote, Inc.
Establishment and Use of Time Mapping Based on Interpolation Using Low-Rate Fingerprinting, to Help Facilitate Frame-Accurate Content Revision	16/166,981	10/22/2018	10,715,840	7/14/2020	Gracenote, Inc.
Dynamic Playback of Transition Frames While Transitioning Between Playback of Media Streams	16/183,185	11/7/2018	N/A	N/A	Gracenote, Inc.
Dynamic Reduction in Playback of Replacement Content to Help Align End of Replacement Content With End of Replaced Content	16/183,266	11/7/2018	N/A	N/A	Gracenote, Inc.
Detection of Mute and Compensation Therefor During Media Replacement Event	16/433,530	6/6/2019	N/A	N/A	Gracenote, Inc.
Detection of Mute and Compensation Therefor During Media Replacement Event	16/847,532	4/13/2020	N/A	N/A	Gracenote, Inc.
Detection of Media Playback Loudness Level and Corresponding Adjustment to Audio During Media Replacement Event	16/673,859	11/4/2019	N/A	N/A	Gracenote, Inc.
Monitoring Loudness Level During Media Replacement Event Using Shorter Time Constant	16/684,514	11/14/2019	N/A	N/A	Gracenote, Inc.
Detection of Volume Adjustments During Media Replacement Events Using Loudness Level Profiles	16/684,510	11/14/2019	N/A	N/A	Gracenote, Inc.

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Method and System for Use of Earlier and/or Later Single-Match as Basis to Disambiguate Channel Multi-Match with Non-Matching Programs	62/876,363	7/19/2019	N/A	N/A	Gracnote, Inc.
Method and System for Use of Earlier and/or Later Single-Match as Basis to Disambiguate Channel Multi-Match with Non-Matching Programs	16/586,552	9/27/2019	N/A	N/A	Gracnote, Inc.
Method and System for Use of Network Affiliation as Basis to Determine Channel Rendered by Content Presentation Device	62/876,359	7/19/2019	N/A	N/A	Gracnote, Inc.
Method and System for Use of Network Affiliation as Basis to Determine Channel Rendered by Content Presentation Device	16/586,542	9/27/2019	N/A	N/A	Gracnote, Inc.
Scalable, Adaptable, and Manageable System for Multimedia Identification	16/597,648	10/9/2019			Gracnote, Inc.
Fingerprinting Media Content Using Hashing	16/802,820	2/27/2020	N/A	N/A	The Nielsen Company (US), LLC
Use of Steganographically-Encoded Data as Basis to Control Dynamic Content Modification as to at Least One Modifiable Content Segment Identified Based on Fingerprint Analysis	62/863,007	6/18/2019	N/A	N/A	The Nielsen Company (US), LLC
Use of Steganographically-Encoded Data as Basis to Control Dynamic Content Modification as to at Least One Modifiable Content Segment Identified Based on Fingerprint Analysis	15/929,225	2/14/2020	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Determination of Render Delay Feature	62/863,070	6/18/2019	N/A	N/A	The Nielsen Company (US), LLC

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Use of Watermarking to Trigger Fingerprint-Related Action	62/865,613	6/24/2019	N/A	N/A	The Nielsen Company (US), LLC
Use of Watermarking to Trigger Fingerprint-Related Action	15/929,219	2/6/2020	N/A	N/A	The Nielsen Company (US), LLC
Use of Watermarking to Control Abandonment of Dynamic Content Modification	62/882,220	8/2/2019	N/A	N/A	The Nielsen Company (US), LLC
Use of Watermarking to Control Abandonment of Dynamic Content Modification	15/929,212	1/29/2020	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System	62/928,867	10/31/2019	N/A	N/A	The Nielsen Company (US), LLC
Client-Side Advertisement Caching	62/929,046	10/31/2019	N/A	N/A	The Nielsen Company (US), LLC
Dynamic Ad Insertion Decision-making for Linear Live TV	62/914,290	10/11/2019	N/A	N/A	The Nielsen Company (US), LLC
Content Management of a Feed	14/820,476	8/6/2015	9,641,870	5/2/2017	The Nielsen Company (US), LLC
Content Management of a Content Feed	15/459,627	3/15/2017	10,395,277	8/27/2019	The Nielsen Company (US), LLC
Content Management of a Content Feed	16/295,626	3/7/2019	N/A	N/A	The Nielsen Company (US), LLC
Automatic Content Recognition (ACR) Fingerprinting and Video Encoding	14/839,339	8/28/2015	9,628,830	4/18/2017	The Nielsen Company (US), LLC
Automatic Content Recognition (ACR) Fingerprinting and Video Encoding	15/457,483	3/13/2017	10,687,092	6/16/2020	The Nielsen Company (US), LLC
Automatic Content Recognition (ACR) Fingerprinting and Video Encoding	16/868,651	5/7/2020	N/A	N/A	The Nielsen Company (US), LLC

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Content Replacement with Onscreen Displays	14/820,490	8/6/2015	9,743,153	8/22/2017	The Nielsen Company (US), LLC
Content Replacement with Onscreen Displays	15/658,345	7/24/2017	10,057,657	8/21/2018	The Nielsen Company (US), LLC
Detecting Channel Change in Automatic Content Recognition Fingerprint Matching	14/815,256	7/31/2015	9,516,377	12/6/2016	The Nielsen Company (US), LLC
Detecting Channel Change in Automatic Content Recognition Fingerprint Matching	15/266,524	9/15/2016	9,706,261	7/11/2017	The Nielsen Company (US), LLC
Overlay Content and Aggregation of Viewing Data	15/617,591	6/8/2017	9,877,085	1/23/2018	The Nielsen Company (US), LLC
Overlay Content and Aggregation of Viewing Data	14/820,484	8/6/2015	9,380,325	6/28/2016	The Nielsen Company (US), LLC
Overlay Content and Aggregation of Viewing Data	15/182,229	6/14/2016	9,661,385	5/23/2017	The Nielsen Company (US), LLC
Overlay Content and Aggregation of Viewing Data	15/483,762	4/10/2017	9,912,991	3/6/2018	The Nielsen Company (US), LLC
Overlay Content and Aggregation of Viewing Data	15/895,775	2/13/2018	10,313,753	6/4/2019	The Nielsen Company (US), LLC
Providing Restricted Overlay Content to an Authorized Client Device	16/411,533	5/14/2019	10,798,448	10/5/2020	The Nielsen Company (US), LLC
Criteria Verification to Facilitate Providing of Highest Cross per Mile (CPM) Overlays to Client Devices	16/411,602	5/14/2019	10,757,477	8/25/2020	The Nielsen Company (US), LLC
Sequentially Overlaying Media Content	15/130,823	4/15/2016	9,848,214	12/19/2017	The Nielsen Company (US), LLC
Sequentially Overlaying Media Content	15/842,750	12/14/2017	10,334,286	6/25/2019	The Nielsen Company (US), LLC

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Sequentially Overlaying Media Content	16/399,267	4/30/2019	N/A	N/A	The Nielsen Company (US), LLC
Sequentially Overlaying Media Content	16/399,354	4/30/2019	N/A	N/A	The Nielsen Company (US), LLC
Sequentially Overlaying Media Content	16/399,401	4/30/2019	N/A	N/A	The Nielsen Company (US), LLC
Sequentially Overlaying Media Content	16/399,450	4/30/2019	N/A	N/A	The Nielsen Company (US), LLC
Frequency Capping for Media Content	15/164,682	5/25/2016	9,723,347	8/1/2017	The Nielsen Company (US), LLC
Frequency Capping for Media Content	15/641,796	7/5/2017	10,187,682	1/22/2019	The Nielsen Company (US), LLC
Dynamic Video Advertisement Replacement	15/058,750	3/2/2016	9,743,154	8/22/2017	The Nielsen Company (US), LLC
Dynamic Video Advertisement Replacement	15/650,425	7/14/2017	10,110,969	10/23/2018	The Nielsen Company (US), LLC
Dynamic Video Advertisement Replacement	16/144,361	9/7/2018	10,728,627	7/28/2020	The Nielsen Company (US), LLC
Dynamic Video Advertisement Replacement	16/399,525	4/30/2019	10,728,628	7/28/2020	The Nielsen Company (US), LLC
Dynamic Video Advertisement Replacement	16/399,548	4/30/2019	10,728,629	7/28/2020	The Nielsen Company (US), LLC
Creating and Fulfilling Dynamic Advertisement Replacement Inventory	15/058,819	3/2/2016	9,854,326	12/26/2017	The Nielsen Company (US), LLC
Creating and Fulfilling Dynamic Advertisement Replacement Inventory	15/831,838	12/5/2017	10,771,858	9/8/2020	The Nielsen Company (US), LLC

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Creating and Fulfilling Dynamic Advertisement Replacement Inventory	16/399,577	4/30/2019	10,764,653	9/1/2020	The Nielsen Company (US), LLC
Media Content Matching and Indexing	15/081,738	3/25/2016	9,813,761	11/7/2017	The Nielsen Company (US), LLC
Media Content Matching and Indexing	15/728,667	10/10/2017	10,187,705	1/22/2019	The Nielsen Company (US), LLC
Media Content Matching and Indexing	16/217,980	12/12/2018	10,827,234	11/3/2020	The Nielsen Company (US), LLC
Digital Overlay Offers on Connected Media Devices	15/130,639	4/15/2016	10,075,755	9/11/2018	The Nielsen Company (US), LLC
Digital Overlay Offers on Connected Media Devices	15/418,439	1/27/2017	10,341,705	7/2/2019	The Nielsen Company (US), LLC
Digital Overlay Offers on Connected Media Devices	16/052,267	8/1/2018	10,341,706	7/2/2019	The Nielsen Company (US), LLC
Digital Overlay Offers on Connected Media Devices	16/388,070	4/18/2019	10,863,222	12/8/2020	The Nielsen Company (US), LLC
Digital Overlay Offers on Connected Media Devices	16/388,081	4/18/2019	10,863,223	12/8/2020	The Nielsen Company (US), LLC
Digital Overlay Offers on Connected Media Devices	16/388,097	4/18/2019	10,869,078	12/15/2020	The Nielsen Company (US), LLC
Video Fingerprinting Based on Fourier Transform of Histogram	15/098,135	4/13/2016	9,848,235	12/19/2017	The Nielsen Company (US), LLC
Video Fingerprinting Based on Fourier Transform of Histogram	15/826,044	11/29/2017	10,390,083	8/20/2019	The Nielsen Company (US), LLC
Video Fingerprinting Based on Fourier Transform of Histogram	16/502,649	7/3/2019	N/A	N/A	The Nielsen Company (US), LLC

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Fingerprinting Media Content Using Hashing	15/138,678	4/26/2016	9,906,831	2/27/2018	The Nielsen Company (US), LLC
Fingerprinting Media Content Using Hashing	15/886,848	2/2/2018	10,116,987	10/30/2018	The Nielsen Company (US), LLC
Fingerprint Layouts for Content Fingerprinting	15/243,658	8/22/2016	10,063,917	8/28/2018	The Nielsen Company (US), LLC
Fingerprint Layouts for Content Fingerprinting	16/035,051	7/13/2018	10,257,570	4/9/2019	The Nielsen Company (US), LLC
Fingerprint Layouts for Content Fingerprinting	16/287,752	2/27/2019	10,743,062	8/11/2020	The Nielsen Company (US), LLC
Interweaving Media Content	14/981,852	10/13/2015	10,194,177	1/29/2019	The Nielsen Company (US), LLC
Interweaving Media Content	16/217,852	12/12/2018	N/A	N/A	The Nielsen Company (US), LLC
Automatic Content Recognition Search Optimization	14/736,158	6/10/2015	10,509,824	12/17/2019	The Nielsen Company (US), LLC
Automatic Content Recognition Search Optimization	16/588,211	9/30/2019	N/A	N/A	The Nielsen Company (US), LLC
Automatic Content Recognition with Local Matching	14/813,416	7/30/2015	10,750,236	8/18/2020	The Nielsen Company (US), LLC
Content Comparison Testing on Linear Media Streams	15/164,714	5/25/2016	10,432,994	10/1/2019	The Nielsen Company (US), LLC
Content Comparison Testing on Linear Media Streams	16/555,507	8/29/2019	10,721,515	7/21/2020	The Nielsen Company (US), LLC
Interactive Overlays to Determine Viewer Data	15/938,049	3/28/2018	10,462,514	10/29/2019	The Nielsen Company (US), LLC

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Interactive Overlays to Determine Viewer Data	16/574,858	9/18/2019	10,869,083	12/15/2020	The Nielsen Company (US), LLC
Targeted Content Placement Using Overlays	15/938,167	3/28/2018	10,542,326	1/21/2020	The Nielsen Company (US), LLC
Targeted Content Placement Using Overlays	16/704,356	12/5/2019	N/A	N/A	The Nielsen Company (US), LLC
Employing Automatic Content Recognition to Allow Resumption of Watching Interrupted Media Program from Television Broadcast	15/933,899	3/23/2018	N/A	N/A	The Nielsen Company (US), LLC
Enabling Interactive Control of Live Television Broadcast Streams	15/934,753	3/23/2018	10,182,263	1/15/2019	The Nielsen Company (US), LLC
Enabling Interactive Control of Live Television Broadcast Streams	16/495,337	3/23/2018	N/A	N/A	The Nielsen Company (US), LLC
Obtaining Viewer Demographics Through Advertisement Selections	15/725,260	10/4/2017	10,277,958	4/30/2019	The Nielsen Company (US), LLC
Obtaining Viewer Demographics Through Advertisement Selections	16/366,790	3/27/2019	10,897,657	1/19/2021	The Nielsen Company (US), LLC
Cold Matching by Automatic Content Recognition	15/703,684	9/13/2017	10,803,038	10/13/2020	The Nielsen Company (US), LLC
Flagging Advertisement Frames for Automatic Content Recognition	15/703,391	9/13/2017	10,306,333	5/28/2019	The Nielsen Company (US), LLC
Flagging Advertisement Frames for Automatic Content Recognition	16/409,733	5/10/2019	10,887,667	1/5/2021	The Nielsen Company (US), LLC
Frame Certainty for Automatic Content Recognition	16/023,555	6/29/2018	10,715,863	7/14/2020	The Nielsen Company (US), LLC

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Scene Frame Matching for Automatic Content Recognition	15/726,987	10/6/2017	N/A	N/A	The Nielsen Company (US), LLC
Scene Frame Matching for Automatic Content Recognition	16/390,410	4/22/2019	N/A	N/A	The Nielsen Company (US), LLC
Scene Frame Matching for Automatic Content Recognition	16/447,344	6/20/2019	N/A	N/A	The Nielsen Company (US), LLC
Method and System for Image Compression Using Block Size Heuristics	10/029,142	12/20/2001	6,909,748	6/21/2005	The Nielsen Company (US), LLC
Method, Graphical Interface and Computer-Readable Medium for Forming a Batch Job	11/140,773	5/31/2005	7,885,979	2/8/2011	The Nielsen Company (US), LLC
Method, Graphical Interface and Computer-Readable Medium for Reformatting Data	11/141,434	5/31/2005	7,975,219	7/5/2011	The Nielsen Company (US), LLC
Method, Graphical Interface and Computer-Readable Medium for Generating a Preview of a Reformatted Preview Segment	11/140,784	5/31/2005	8,296,649	10/23/2012	The Nielsen Company (US), LLC
Client-Side Video Advertisement Replacement Using Automatic Content Recognition	14/468,080	8/25/2014	10,825,056	11/3/2020	The Nielsen Company (US), LLC
Client-Side Video Advertisement Replacement Using Automatic Content Recognition	16/395,509	4/26/2019	10,810,629	10/20/2020	The Nielsen Company (US), LLC
Content Modification System with Broadcast Schedule Utilization Feature	62/858,823	6/7/2019	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with In-Band Message Data Utilization Feature	62/858,826	6/7/2019	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Content Presentation Device Grouping Feature	62/858,838	6/7/2019	N/A	N/A	The Nielsen Company (US), LLC

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Content Modification System with Responsive Transmission of Reference Fingerprint Data Feature	16/870,451	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Technical Characteristic-Based Selection Feature	62/858,845	6/7/2019	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System with Technical Characteristic-Based Selection Feature	16/835,935	3/31/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System With Geographic Area-Based Feature	16/936,034	3/31/2020	10,846,506	11/24/2020	The Nielsen Company (US), LLC
Content-Modification System With Geographic Area-Based Feature	16/836,090	3/31/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System with Determination of Input-Buffer Switch Delay Feature	16/870,482	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System with Geographic Area-Based Feature	16/836,253	3/31/2020	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Responsive Transmission of Reference Fingerprint Data Feature	16/872,073	5/11/2020	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Fingerprint Data Match and Mismatch Detection Feature	16/869,860	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System with Use of Multiple Fingerprint Data Types Feature	16/836,170	3/31/2020	10,796,159	10/6/2020	The Nielsen Company (US), LLC
Content Modification System with Overlay Handling Feature	62/858,855	6/7/2019	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System With Overlay Handling Feature	16/855,268	4/22/2020	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Fingerprint Data Mismatch and Responsive Action Feature	16/870,583	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC

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Content Modification System with Issue Detection and Responsive Action Feature	16/835,569	3/31/2020	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Volume Level Adjustment Feature	16/835,635	3/31/2020	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Responsive Transmission of Reference Fingerprint Data Feature	16/870,460	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System With Transmission Delay-Based Feature	16/836,098	3/31/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System With Transmission Delay-Based Feature	16/836,082	3/31/2020	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Testing and Reporting Feature	62/858,840	6/7/2019	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Testing and Reporting Feature	16/850,499	4/16/2020	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with System Resource Request Feature	62/858,856	6/7/2019	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Probability-Based Selection Feature	62/858,859	6/7/2019	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System With Probability-Based Selection Feature	16/853,932	4/21/2020	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Supplemental Content Stitching Feature	62/858,870	6/7/2019	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System with Supplemental Content Stitching Feature	16/866,005	5/4/2020	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Unscheduling Feature	62/858,873	6/7/2019	N/A	N/A	The Nielsen Company (US), LLC

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Content-Modification System with Uncheduling Feature	16/866,023	5/4/2020	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Broadcast Schedule Utilization Feature	62/877,228	7/22/2019	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System with Broadcast Schedule Utilization Feature	62/877,229	7/22/2019	N/A	N/A	The Nielsen Company (US), LLC
System for Dynamic Advertisement Insertion	62/882,360	8/2/2019	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System	62/888,923	8/19/2019	N/A	N/A	The Nielsen Company (US), LLC
Use of In-Band Metadata as Basis to Access Reference Fingerprints to Facilitate Content-Related Action	62/900,037	9/13/2019	N/A	N/A	The Nielsen Company (US), LLC
Use of In-Band Metadata as Basis to Access Reference Fingerprints to Facilitate Content-Related Action	15/929,210	1/28/2020	N/A	N/A	The Nielsen Company (US), LLC
Method and System for Re-Uniting Metadata with Media-Stream Content at a Media Client, to Facilitate Action by the Media Client	62/900,043	9/13/2019	N/A	N/A	The Nielsen Company (US), LLC
Method and System for Re-Uniting Metadata with Media-Stream Content at a Media Client, to Facilitate Action by the Media Client	15/929,211	1/28/2020	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System	62/925,090	10/23/2019	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System	62/925,093	10/23/2019	N/A	N/A	The Nielsen Company (US), LLC
Content Modification System	63/007,339	4/8/2020	N/A	N/A	The Nielsen Company (US), LLC

Partial Release of Reel/Frame 042262/0601

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Computing System with Channel-Change-Based Trigger Feature	15/399,404	1/5/2017	N/A	N/A	Gracenote, Inc.
Computing System with Content-Characteristic-Based Trigger Feature	15/399,415	1/5/2017	10,484,758	11/19/2019	Gracenote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Location	15/179,143	6/10/2016	9,924,222	3/20/2018	Gracenote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Single-Match	15/222,405	7/28/2016	10,063,918	8/28/2018	Gracenote, Inc.
Media Channel Identification with Video Multi-Match Detection and Disambiguation Based on Audio Fingerprint	15/253,354	8/31/2016	9,930,406	3/27/2018	Gracenote, Inc.
Media Channel Identification with Video Multi-Match Detection and Disambiguation Based on Time of Broadcast	15/343,895	11/4/2016	10,045,073	8/7/2018	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	10/564,297	7/5/2004	8,020,000	9/13/2011	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	13/220,267	8/29/2011	8,660,267	2/25/2014	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	14/151,879	1/10/2014	9,066,114	6/23/2015	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	14/659,044	3/16/2015	9,407,962	8/2/2016	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	15/164,605	5/25/2016	9,479,831	10/25/2016	Gracenote, Inc.
Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	15/273,185	9/22/2016	9,712,853	7/18/2017	Gracenote, Inc.

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Method and System for Remotely Controlling Consumer Electronic Devices	12/760,004	4/14/2010	9,015,741	4/21/2015	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	14/659,971	3/17/2015	9,992,518	6/5/2018	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	15/287,116	10/6/2016	9,998,767	6/12/2018	Gracenote, Inc.
Method and System for Remotely Controlling Consumer Electronic Devices	15/292,705	10/13/2016	9,706,233	7/11/2017	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	13/286,138	10/31/2011	8,863,165	10/14/2014	Gracenote, Inc.
Method and System for Presenting Additional Content at a Media System	15/375,698	12/12/2016	10,506,291	12/10/2019	Gracenote, Inc.
Selection of Content from a Stream of Video or Audio Data	11/573,455	8/9/2005	8,406,607	3/26/2013	Gracenote, Inc.
Method and Apparatus for Selection of Content from a Stream of Data	13/778,439	2/27/2013	9,143,718	9/22/2015	Gracenote, Inc.
Method and Apparatus for Selection of Content from a Stream of Data	14/789,048	7/1/2015	9,414,008	8/9/2016	Gracenote, Inc.
Method and Apparatus for Selection of Content from a Stream of Data	15/204,366	7/7/2016	9,736,549	8/15/2017	Gracenote, Inc.
Method and Apparatus for Selection of Content from a Stream of Data	15/285,056	10/4/2016	9,794,644	10/17/2017	Gracenote, Inc.
Identifying Video Content Via Fingerprint Matching	13/735,426	1/7/2013	9,495,451	11/15/2016	Gracenote, Inc.
Identifying Media Content Via Fingerprint Matching	15/287,063	10/6/2016	10,866,988	12/15/2020	Gracenote, Inc.
Video Fingerprinting	14/263,647	4/28/2014	9,323,840	4/26/2016	Gracenote, Inc.
Video Fingerprinting	15/136,412	4/22/2016	N/A	N/A	Gracenote, Inc.
Inserting Advertisements into Video Content	13/826,282	3/14/2013	9,794,642	10/17/2017	Gracenote, Inc.
Authorizing Devices Based on Identifying Content Distributor	13/826,606	3/14/2013	8,997,164	3/31/2015	Gracenote, Inc.

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Authorizing Devices Based on Identifying Content Distributor	14/640,253	3/6/2015	9,596,490	3/14/2017	Gracenote, Inc.
Authorizing Devices Based on Identifying Content Distributor	15/406,887	1/16/2017	N/A	N/A	Gracenote, Inc.
Detecting An Event Within Interactive Media Including Spatialized Multi-Channel Audio Content	13/795,877	3/12/2013	9,372,531	6/21/2016	Gracenote, Inc.
Detecting an Event within Interactive Media Including Spatialized Multi-Channel Audio Content	15/003,658	1/21/2016	10,055,010	8/21/2018	Gracenote, Inc.
Search And Identification Of Video Content	13/839,782	3/15/2013	9,146,990	9/29/2015	Gracenote, Inc.
Search And Identification Of Video Content	14/828,293	8/17/2015	9,959,345	5/1/2018	Gracenote, Inc.
Displaying An Actionable Element Over Playing Content	14/020,295	9/6/2013	N/A	N/A	Gracenote, Inc.
Identifying Video Content Via Color- Based Fingerprint Matching	14/061,043	10/23/2013	9,465,995	10/11/2016	Gracenote, Inc.
Identifying Video Content Via Color- Based Fingerprint Matching	15/286,787	10/6/2016	10,503,956	12/10/2019	Gracenote, Inc.
Dynamic Video Overlays	15/381,496	12/16/2016	10,142,680	11/27/2018	Gracenote, Inc.
Dynamic Video Overlays	15/381,497	12/16/2016	10,785,530	9/22/2020	Gracenote, Inc.
Dynamic Video Overlays	15/381,513	12/16/2016	10,412,447	9/10/2019	Gracenote, Inc.
Dynamic Video Overlays	15/381,556	12/16/2016	10,136,183	11/20/2018	Gracenote, Inc.
Dynamic Video Overlays	15/381,572	12/16/2016	10,123,073	11/6/2018	Gracenote, Inc.
Dynamic Video Overlays	16/140,559	9/25/2018	10,893,320	1/12/2021	Gracenote, Inc.
Digital Video Content Fingerprinting Using Image Pixel Intensity and Color Information					Gracenote, Inc.
Scalable, Adaptable, and Manageable System for Multimedia Identification	12/955,416	11/29/2010	8,666,152	3/4/2014	Gracenote, Inc.
	13/102,479	5/6/2011	8,655,878	2/18/2014	Gracenote, Inc.

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Scalable, Adaptable, and Manageable System for Multimedia Identification	14/151,335	1/9/2014	9,058,355	6/16/2015	Gracenote, Inc.
Scalable, Adaptable, and Manageable System for Multimedia Identification	14/151,294	1/9/2014	8,965,863	2/24/2015	Gracenote, Inc.
Scalable, Adaptable, and Manageable System for Multimedia Identification	14/718,218	5/21/2015	9,785,708	10/10/2017	Gracenote, Inc.
Content Based Digital Video Fingerprinting Based on Scale Invariant Interest Region Detection with an Array of Anisotropic Filters	12/612,729	11/5/2009	8,189,945	5/29/2012	Gracenote, Inc.
Content Based Digital Video Fingerprinting Based on Scale Invariant Interest Region Detection with an Array of Anisotropic Filters	13/455,560	4/25/2012	8,781,245	7/15/2014	Gracenote, Inc.
Content Based Digital Video Fingerprinting Based on Scale Invariant Interest Region Detection with an Array of Anisotropic Filters	14/298,261	6/6/2014	9,396,393	7/19/2016	Gracenote, Inc.
Content Based Digital Video Fingerprinting Based on Scale Invariant Interest Region Detection with an Array of Anisotropic Filters	15/186,901	6/20/2016	9,652,672	5/16/2017	Gracenote, Inc.
Methods and Apparatus for Providing a Scalable Identification of Digital Video Sequences	12/141,163	6/18/2008	8,229,227	7/24/2012	Gracenote, Inc.
Methods and Apparatus for Providing a Scalable Identification of Digital Video Sequences	13/488,568	6/5/2012	8,666,168	3/4/2014	Gracenote, Inc.
Method And Apparatus For Multi-Dimensional Content Search And Video Identification	12/141,337	6/18/2008	8,171,030	5/1/2012	Gracenote, Inc.
Method And Apparatus For Multi-Dimensional Content Search And Video Identification	13/432,914	3/28/2012	9,323,841	4/26/2016	Gracenote, Inc.
Method And Apparatus For Multi-Dimensional Content Search And Video Identification	15/078,056	3/23/2016	9,489,455	11/8/2016	Gracenote, Inc.

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Method And Apparatus For Multi- Dimensional Content Search And Video Identification	15/290,364	10/11/2016	10,210,252	2/19/2019	Gracenote, Inc.
Content Based Digital Video Fingerprinting Based on Resultant Weighted Gradient Orientation Computation	12/491,896	6/25/2009	8,385,644	2/26/2013	Gracenote, Inc.
Media Fingerprinting And Identification System	12/772,566	5/3/2010	8,195,689	6/5/2012	Gracenote, Inc.
Highly Scalable, Accurate and Distortion-Robust Media Fingerprinting and Identification System	13/463,137	5/3/2012	8,364,703	1/29/2013	Gracenote, Inc.
Media Fingerprinting and Identification System	13/719,603	12/19/2012	8,688,731	4/1/2014	Gracenote, Inc.
Highly Scalable, Accurate and Distortion-Robust Media Fingerprinting and Identification System	14/059,688	10/22/2013	9,053,104	6/9/2015	Gracenote, Inc.
Media Fingerprinting and Identification System	14/711,054	5/13/2015	9,195,663	11/24/2015	Gracenote, Inc.
Media Fingerprinting and Identification System	14/885,110	10/16/2015	9,323,754	4/26/2016	Gracenote, Inc.
Media Fingerprinting and Identification System	15/073,858	3/18/2016	9,471,674	10/18/2016	Gracenote, Inc.
Media Fingerprinting and Identification System	15/265,002	9/14/2016	10,402,443	9/3/2019	Gracenote, Inc.
Multi-Media Content Identification Using Multi-Level Content Signature Correlation and Fast Similarity Search	12/788,796	5/27/2010	8,335,786	12/18/2012	Gracenote, Inc.
Distributed and Tiered Architecture for Content Search and Content Monitoring	13/276,110	10/18/2011	8,959,108	2/17/2015	Gracenote, Inc.
Distributed and Tiered Architecture for Content Search and Content Monitoring	14/589,366	1/5/2015	9,262,421	2/16/2016	Gracenote, Inc.
Distributed and Tiered Architecture for Content Search and Content Monitoring	14/990,565	1/7/2016	9,436,689	9/6/2016	Gracenote, Inc.
Distributed and Tiered Architecture for Content Search and Content Monitoring	15/163,004	5/24/2016	9,646,007	5/9/2017	Gracenote, Inc.
TV Content Segmentation, Categorization and Identification and Time-Aligned Applications	13/327,359	12/15/2011	9,510,044	11/29/2016	Gracenote, Inc.

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TV Content Segmentation, Categorization and Identification and Time-Aligned Applications	15/297,658	10/19/2016	N/A	N/A	Gracernote, Inc.
Media Content Identification on Mobile Devices	13/590,701	8/21/2012	9,313,359	4/12/2016	Gracernote, Inc.
Media Content Identification on Mobile Devices	15/053,064	2/25/2016	N/A	N/A	Gracernote, Inc.
AUDIO CONTENT FINGERPRINTING BASED ON TWO-DIMENSIONAL CONSTANT 1-FACTOR TRANSFORM REPRESENTATION AND ROBUST AUDIO IDENTIFICATION FOR TIME-ALIGNED APPLICATIONS	13/647,996	10/9/2012	9,299,364	3/29/2016	Gracernote, Inc.
AUDIO CONTENT FINGERPRINTING BASED ON TWO-DIMENSIONAL CONSTANT 1-FACTOR TRANSFORM REPRESENTATION AND ROBUST AUDIO IDENTIFICATION FOR TIME-ALIGNED APPLICATIONS	15/050,123	2/22/2016	9,798,513	10/24/2017	Gracernote, Inc.
Method for Efficient Data Base Formation and Search on Portable Media Devices Acting Synchronously with Television Programming	13/826,502	3/14/2013	9,367,544	6/14/2016	Gracernote, Inc.
Method for Efficient Data Base Formation and Search on Portable Media Devices Acting Synchronously with Television Programming	15/155,428	5/16/2016	N/A	N/A	Gracernote, Inc.
Digital Video Fingerprinting Using Motion Segmentation	15/456,856	3/13/2017	10,318,813	6/11/2019	Gracernote, Inc.
Robust Audio Identification with Interference Cancellation	15/456,859	3/13/2017	10,360,905	7/23/2019	Gracernote, Inc.
Method To Differentiate And Classify Fingerprints Using Fingerprint Neighborhood Analysis	15/456,861	3/13/2017	N/A	N/A	Gracernote, Inc.

Partial Release of Reel/Frame 054525/0001 and Reel/Frame 054089/0001

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Computing System with Channel-Change-Based Trigger Feature	PCT/US2017/0 12335	1/5/2017	N/A	N/A	Gracernote, Inc.
Computing System with Content-Characteristic-Based Trigger Feature	PCT/US2017/0 12338	1/5/2017	N/A	N/A	Gracernote, Inc.
Detecting and Responding to Rendering of Interactive Video Content	PCT/US2018/032202	5/11/2018	WO2018/0231393	12/20/2018	Gracernote, Inc.
Media Channel Identification and Action with Multi-Media Detection and Disambiguation Based on Matching with Differential Reference-Fingerprint Feature	PCT/US2017/0 19974	2/28/2017	N/A	N/A	Gracernote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Location	PCT/US2017/0 19915	2/28/2017	N/A	N/A	Gracernote, Inc.
Media Channel Identification with Multi-Match Detection and Disambiguation Based on Single-Match	PCT/US2017/0 19946	2/28/2017	N/A	N/A	Gracernote, Inc.
Media Channel Identification with Video Multi-Match Detection and Disambiguation Based on Audio Fingerprint	PCT/US2017/0 19908	2/28/2017	N/A	N/A	Gracernote, Inc.
Media Channel Identification with Video Multi-Match Detection and Disambiguation Based on Time of Broadcast	PCT/US2017/0 19949	2/28/2017	N/A	N/A	Gracernote, Inc.
Media Channel Identification and Action with Multi-Match Detection Based on Reference Stream Comparison	PCT/US2017/0 19979	2/28/2017	N/A	N/A	Gracernote, Inc.
Method and System for Detecting and Responding to Changing of Media Channel	PCT/US2017/0 20003	2/28/2017	N/A	N/A	Gracernote, Inc.
Video Fingerprinting	PCT/US2015/0 27117	4/22/2015	N/A	N/A	Gracernote, Inc.

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Authorizing Devices Based on Identifying Content Distributor	PCT/US2013/0 76201	12/18/2013	N/A	N/A	Gracenote, Inc.
Dynamic Video Overlays	PCT/US2016/0 67250	12/16/2016	N/A	N/A	Gracenote, Inc.
Modifying Playback of Replacement Content Responsive to Detection of Remote Control Signals That Modify Operation of the Playback Device	PCT/US2019/0 40546	7/3/2019	N/A	N/A	Gracenote, Inc.
Modifying Playback of Replacement Content Responsive to Detection of Remote Control Signals That Control a Device Providing Video to the Playback Device	PCT/US2019/0 40550	7/3/2019	N/A	N/A	Gracenote, Inc.
Modifying Playback of Replacement Content Based on Control Messages	PCT/US2019/0 40553	7/3/2019	N/A	N/A	Gracenote, Inc.
Dynamic Control of Fingerprinting Rate to Facilitate Time-Accurate Revision of Playback Content	PCT/US2019/0 35955	6/7/2019	N/A	N/A	Gracenote, Inc.
Dynamic Control of Fingerprinting Rate to Facilitate Time-Accurate Revision of Media Content	PCT/US2019/0 35961	6/7/2019	N/A	N/A	Gracenote, Inc.
Advanced Preparation for Content Revision Based on Expected Latency in Obtaining New Content	PCT/US2019/0 35967	6/7/2019	N/A	N/A	Gracenote, Inc.
Establishment and Use of Time Mapping Based on Interpolation Using Low-Rate Fingerprinting, to Help Facilitate Frame-Accurate Content Revision	PCT/US2019/0 35973	6/7/2019	N/A	N/A	Gracenote, Inc.
Establishment and Use of Time Mapping Based on Interpolation Using Low-Rate Fingerprinting, to Help Facilitate Frame-Accurate Content Revision	PCT/US2019/0 35974	6/7/2019	N/A	N/A	Gracenote, Inc.
Dynamic Playback of Transition Frames while Transitioning Between Playback of Media Streams	PCT/US2019/0 35996	6/7/2019	N/A	N/A	Gracenote, Inc.

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Dynamic Reduction in Playback of Replacement Content to Help Align End of Replacement Content with End of Replaced Content	PCT/US2019/0 36001	6/7/2019	N/A	N/A	Gracenote, Inc.
Detection of Mute and Compensation Therefor During Media Replacement Event	PCT/US2019/0 54798	10/4/2019	N/A	N/A	Gracenote, Inc.
Volume Edge Case For DAI – Monitor Loudness Level During Media Content Replacement Event Using Shorter Time Co	PCT/US2019/0 61632	11/15/2019	N/A	N/A	Gracenote, Inc.
Volume Edge Case for DAI – Detect Volume Adjustments Using Loudness Level Profile	PCT/US2019/0 61633	11/15/2019	N/A	N/A	Gracenote, Inc.
Detection of Media Playback Audio Volume Level and Corresponding Adjustment to Audio During Media Replacement Event	PCT/US2019/0 59882	11/5/2019	N/A	N/A	Gracenote, Inc.
Detecting Channel Change in Automatic Content Recognition Fingerprint Matching	PCT/US2016/0 34401	5/26/2016	N/A	N/A	The Nielsen Company (US), LLC
Sequentially Overlaying Media Content	PCT/US2016/0 53996	9/27/2016	N/A	N/A	The Nielsen Company (US), LLC
Frequency Capping for Multimedia Content	PCT/US2016/0 53997	9/27/2016	N/A	N/A	The Nielsen Company (US), LLC
Dynamic Video Advertisement Replacement	PCT/US2016/0 47203	8/16/2016	N/A	N/A	The Nielsen Company (US), LLC
Media Content Matching and Indexing	PCT/US2016/0 53998	9/27/2016	N/A	N/A	The Nielsen Company (US), LLC
Digital Overlay Offers on Connected Media Devices	PCT/US2016/0 51532	9/13/2016	N/A	N/A	The Nielsen Company (US), LLC
Fingerprint Layouts for Content Fingerprinting	PCT/US2017/0 21690	3/9/2017	N/A	N/A	The Nielsen Company (US), LLC

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Automatic Content Recognition Fingerprint Sequence Matching	PCT/US2016/0 28583	4/21/2016	N/A	N/A	The Nielsen Company (US), LLC
Automatic Content Recognition Fingerprint Sequence Matching	PCT/US2016/0 29221	4/25/2016	N/A	N/A	The Nielsen Company (US), LLC
Targeted Content Placement Using Overlays	PCT/US2018/0 24756	3/28/2018	N/A	N/A	The Nielsen Company (US), LLC
Enabling Interactive Control of Live Television Broadcast Streams	16/495,337	3/23/2018	N/A	N/A	The Nielsen Company (US), LLC
Enabling Interactive Control of Live Television Broadcast Streams	PCT/US2018/0 24165	3/23/2018	N/A	N/A	The Nielsen Company (US), LLC
Cold Matching by Automatic Content Recognition	PCT/US2018/0 50230	9/10/2018	N/A	N/A	The Nielsen Company (US), LLC
Flagging Advertisement Frames for Automatic Content Recognition	PCT/US2018/0 50184	9/10/2018	N/A	N/A	The Nielsen Company (US), LLC
Frame Certainty for Automatic Content Recognition	PCT/US2018/0 40371	6/29/2018	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System with Responsive Transmission of Reference Fingerprint Data Feature	PCT/US2020/0 32106	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System with Geographic Area-Based Feature	PCT/US2020/0 32110	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System With Geographic Area-Based Feature	PCT/US2020/0 32143	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System With Geographic Area-Based Feature	PCT/US2020/0 32122	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System with Responsive Transmission of Reference Fingerprint Data Feature	PCT/US2020/0 32350	5/11/2020	N/A	N/A	The Nielsen Company (US), LLC

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Content Modification System with Fingerprint Data Match and Mismatch Detection Feature	PCT/US2020/0 32127	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System with Use of Multiple Fingerprint Data Types Feature	PCT/US2020/0 32133	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System with Fingerprint Data Mismatch and Responsive Action Feature	PCT/US2020/0 32113	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System with Issue Detection and Responsive Action Feature	PCT/US2020/0 32135	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System with Volume Level Adjustment Feature	PCT/US2020/0 32138	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System with Responsive Transmission of Reference Fingerprint Data Feature	PCT/US2020/0 32139	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC
Content-Modification System with Transmission Delay-Based Feature	PCT/US2020/0 32118	5/8/2020	N/A	N/A	The Nielsen Company (US), LLC