

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

Assignment ID: PATI501568

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	SECURITY INTEREST	
CONVEYING PARTY DATA		
Name		Execution Date
Roku, Inc.		09/16/2024
RECEIVING PARTY DATA		
Company Name:	Citibank, N.A.	
Street Address:	6400 Las Colinas Blvd.	
Internal Address:	Attention: Syndications	
City:	Irving	
State/Country:	TEXAS	
Postal Code:	75039	
PROPERTY NUMBERS Total: 1691		
Property Type	Number	
Patent Number:	6909748	
Patent Number:	7979877	
Patent Number:	7388511	
Patent Number:	D546337	
Patent Number:	D558781	
Patent Number:	8296649	
Patent Number:	7975219	
Patent Number:	7885979	
Patent Number:	8020000	
Patent Number:	8677002	
Patent Number:	8406607	
Patent Number:	8239559	
Patent Number:	8171030	
Patent Number:	8229227	
Patent Number:	8378875	
Patent Number:	8385644	
Patent Number:	8189945	
Patent Number:	9015741	
Patent Number:	8195689	

PATENT

508766077

REEL: 068982 FRAME: 0377

Property Type	Number
Patent Number:	8335786
Patent Number:	8666152
Patent Number:	9807462
Patent Number:	8655878
Patent Number:	8522273
Patent Number:	8788578
Patent Number:	D679680
Patent Number:	8660267
Patent Number:	8959108
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Patent Number:	9510044
Patent Number:	9131260
Patent Number:	9286854
Patent Number:	9414105
Patent Number:	8627388
Patent Number:	8938755
Patent Number:	8977721
Patent Number:	9323841
Patent Number:	8781245
Patent Number:	8364703
Patent Number:	8666168
Patent Number:	D676005
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Patent Number:	8837488
Patent Number:	8839065
Patent Number:	9313359
Patent Number:	10032192
Patent Number:	10387920
Patent Number:	9865017
Patent Number:	9299364
Patent Number:	8688731
Patent Number:	9495451
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Patent Number:	8539286
Patent Number:	9363575
Patent Number:	9137578
Patent Number:	9875002
Patent Number:	9143718

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Patent Number:	9372531
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Patent Number:	9146990
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Patent Number:	9058355
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Patent Number:	9396393
Patent Number:	9413799
Patent Number:	9407670
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Patent Number:	9288263
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Patent Number:	9420338
Patent Number:	9794883
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Patent Number:	9185446
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Patent Number:	D783552

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Patent Number:	9436689
Patent Number:	10055010
Patent Number:	10218755
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Patent Number:	11190842
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Property Type	Number
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Property Type	Number
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Patent Number:	11908112
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Application Number:	18409186
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Application Number:	18795541
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PCT Number:	US1376201
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PCT Number:	US1560987
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PCT Number:	US1618914
PCT Number:	US1628583
PCT Number:	US1629221
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PCT Number:	US1631144
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PCT Number:	US1634401
PCT Number:	US1643879
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PCT Number:	US1718189
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Property Type	Number
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PCT Number:	US2061086
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PCT Number:	US2063217
PCT Number:	US2114533
PCT Number:	US2118997
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PCT Number:	US2118995
PCT Number:	US2132301
PCT Number:	US2132302
PCT Number:	US2142250
PCT Number:	US2151554
PCT Number:	US2157088
PCT Number:	US2157333
PCT Number:	US2158171
PCT Number:	US2159185
PCT Number:	US2211913
PCT Number:	US2214960
PCT Number:	US2215832
PCT Number:	US2215987
PCT Number:	US2215990
PCT Number:	US2215991
PCT Number:	US2215993
PCT Number:	US2230514
PCT Number:	US2233860
PCT Number:	US2236119
PCT Number:	US2275320
PCT Number:	US2276780
PCT Number:	US2280057
PCT Number:	US2364411
PCT Number:	US2372261
PCT Number:	US2373612
PCT Number:	US2377906

CORRESPONDENCE DATA**Fax Number:** 6507393900*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:** 6507393939**Email:** jbereznak@jonesday.com,mcarey@jonesday.com**Correspondent Name:** JONES DAY**Address Line 1:** 250 Vesey Street**Address Line 4:** New York, NEW YORK 10281-1047**ATTORNEY DOCKET NUMBER:** 677655.000099**NAME OF SUBMITTER:** John Bereznak**SIGNATURE:** John Bereznak**DATE SIGNED:** 09/18/2024**Total Attachments: 165**

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NOTICE OF GRANT OF SECURITY INTEREST IN PATENTS

THIS NOTICE OF GRANT OF SECURITY INTEREST IN PATENTS (this "Security Grant"), dated as of September 16, 2024, is made by the undersigned grantor (the "Grantor") in favor of CITIBANK, N.A., in its capacity as Administrative Agent for the Secured Parties.

W I T N E S S E T H:

WHEREAS, pursuant to the Credit Agreement, dated as of September 16, 2024 (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Credit Agreement"), among ROKU, INC., a Delaware corporation (the "Borrower"), the other Loan Parties party thereto, the financial institutions party thereto as Lenders and the Administrative Agent, (i) the Lenders and Issuing Banks agreed to provide Commitments and Letters of Credit, as applicable, and (ii) certain other Secured Parties agreed to provide financial accommodations which may from time to time constitute Secured Obligations that the Grantor has agreed to guarantee pursuant to Article X of the Credit Agreement; and

WHEREAS, the Grantor and the Administrative Agent are party to the Pledge and Security Agreement, dated as of September 16, 2024 (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Security Agreement"), pursuant to which the Grantor is required to execute and deliver this Security Grant.

NOW, THEREFORE, in consideration of the premises and to induce the Administrative Agent to enter into the Credit Agreement, the Grantor hereby agrees with the Administrative Agent as follows:

Section 1. Defined Terms. Capitalized terms used herein without definition are used as defined in the Security Agreement.

Section 2. Grant of Security Interest in Patent Collateral. The Grantor hereby pledges, assigns and grants to the Administrative Agent, on behalf of and for the benefit of the Secured Parties, a security interest in all of its right, title and interest in, to and under the following Collateral of the Grantor (the "Patent Collateral"):

(a) all of its U.S. Patents, including, without limitation, those referred to on Schedule 1 hereto;

(b) all reissues, divisions, continuations, renewals, extensions, reexaminations, and continuations-in-part thereof and amendments thereto; and

(c) all rights of any kind whatsoever of the Grantor accruing under any of the foregoing provided by applicable law of any jurisdiction, by international treaties and conventions, and otherwise throughout the world.

Notwithstanding the foregoing, the Patent Collateral shall not include any Excluded Assets.

Section 3. Security Agreement. The security interest granted in connection with this Security Grant is granted to the Administrative Agent pursuant to the Security Agreement, and the Grantor hereby acknowledges and agrees that the rights and remedies of the Administrative Agent with respect to the security interest in the Patent Collateral made and granted hereby are fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein.

Section 4. Grantor Remains Liable. The Grantor hereby agrees that, anything herein to the contrary notwithstanding, the Grantor shall assume full and complete responsibility for the prosecution, defense, enforcement or any other necessary actions in connection with their Patents.

Section 5. Counterparts. This Security Grant may be executed in any number of counterparts, all of which taken together shall constitute one agreement, and any of the parties hereto may execute this Security Grant by signing any such counterpart. Delivery of an executed counterpart of a signature page of this Security Grant by fax or electronic mail transmission shall be effective as delivery of a manually executed counterpart of this Security Grant. This Security Grant and the transactions contemplated hereby shall be deemed to include electronic signatures, deliveries or the keeping of records in electronic form, each of which shall be of the same legal effect, validity or enforceability as a manually executed signature, physical delivery thereof or the use of a paper-based recordkeeping system, as the case may be, to the extent and as provided for in any applicable law, including the Federal Electronic Signatures in Global and National Commerce Act, the New York State Electronic Signatures and Records Act, or any other similar state laws based on the Uniform Electronic Transactions Act. The parties hereto consent to the use of electronic signatures and records with respect to this Security Grant.

Section 6. Recordation. The Grantor authorizes the Commissioner for Patents and any other government officials to record and register this Security Grant upon request by the Administrative Agent.

Section 7. Governing Law. This Security Grant and the rights and obligations of the parties hereto shall be governed by, and construed and interpreted in accordance with, the law of the State of New York.

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, each Grantor has caused this Security Grant to be executed and delivered by its duly authorized officer as of the date first set forth above.

Very truly yours,

Roku, Inc.,
as Grantor

By: 
Name: Dan Jedda
Title: Chief Financial Officer

ACCEPTED AND AGREED
as of the date first above written:

CITIBANK, N.A.,
as Administrative Agent

By:

A handwritten signature in black ink, appearing to read 'J. Wronski', with a large loop at the end.

Name: Jonathan Wronski
Title: Director

SCHEDULE I
TO
NOTICE OF GRANT OF SECURITY INTEREST IN PATENTS

U.S. Patent Registrations

1. U.S. REGISTERED PATENTS

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
Roku, Inc.	US	Method and system for image compression using block size heuristics	US6909748	6/21/2005	US10029142	12/20/2001
Roku, Inc.	US	Advertising methods for advertising time slots and embedded objects	US7979877	7/12/2011	US10745899	12/23/2003
Roku, Inc.	US	System for remote control of identical devices	US7388511	6/17/2008	US10496549	5/25/2004
Roku, Inc.	US	Graphical user interface computer icon for a monitor display	USD546337	7/10/2007	US29213529	9/17/2004
Roku, Inc.	US	Universal music player	USD558781	1/1/2008	US29220974	1/7/2005
Roku, Inc.	US	Method, graphical interface and computer-readable medium for generating a preview of a reformatted preview segment	US8296649	10/23/2012	US11140784	5/31/2005
Roku, Inc.	US	Method, graphical interface and computer-readable medium for reformatting data	US7975219	7/5/2011	US11141434	5/31/2005
Roku, Inc.	US	Method, graphical interface and computer-readable medium	US7885979	2/8/2011	US11140773	5/31/2005

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
		for forming a batch job				
Roku, Inc.	US	Method and device for generating and detecting a fingerprint functioning as a trigger marker in a multimedia signal	US8020000	9/13/2011	US10564297	1/10/2006
Roku, Inc.	US	Streaming media system and method	US8677002	3/18/2014	US11627957	1/27/2007
Roku, Inc.	US	Selection of content from a stream of video or audio data	US8406607	3/26/2013	US11573455	2/9/2007
Roku, Inc.	US	Provisioning and streaming media to wireless speakers from fixed and mobile media sources and clients	US8239559	8/7/2012	US11777935	7/13/2007
Roku, Inc.	US	Method and apparatus for multi-dimensional content search and video identification	US8171030	5/1/2012	US12141337	6/18/2008
Roku, Inc.	US	Methods and apparatus for providing a scalable identification of digital video sequences	US8229227	7/24/2012	US12141163	6/18/2008
Roku, Inc.	US	Method of programming a universal remote control	US8378875	2/19/2013	US12282692	3/6/2009
Roku, Inc.	US	Digital video fingerprinting based on resultant weighted gradient orientation computation	US8385644	2/26/2013	US12491896	6/25/2009

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
Roku, Inc.	US	Digital video content fingerprinting based on scale invariant interest region detection with an array of anisotropic filters	US8189945	5/29/2012	US12612729	11/5/2009
Roku, Inc.	US	Method and system for remotely controlling consumer electronic devices	US9015741	4/21/2015	US12760004	4/14/2010
Roku, Inc.	US	Media fingerprinting and identification system	US8195689	6/5/2012	US12772566	5/3/2010
Roku, Inc.	US	Multi-media content identification using multi-level content signature correlation and fast similarity search	US8335786	12/18/2012	US12788796	5/27/2010
Roku, Inc.	US	Digital video content fingerprinting using image pixel intensity and color information	US8666152	3/4/2014	US12955416	11/29/2010
Roku, Inc.	US	Apparatus and method for aggregating media content	US9807462	10/31/2017	US13082256	4/7/2011
Roku, Inc.	US	Scalable, adaptable, and manageable system for multimedia identification	US8655878	2/18/2014	US13102479	5/6/2011
Roku, Inc.	US	Advertising methods for advertising time slots and	US8522273	8/27/2013	US13175663	7/1/2011

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
		embedded objects				
Roku, Inc.	US	Method and apparatus for customized provisioning of on-line application channels	US8788578	7/22/2014	US13180375	7/11/2011
Roku, Inc.	US	Remote control	USD679680	4/9/2013	US29397869	7/21/2011
Roku, Inc.	US	Method and device for generating and detecting a fingerprint functioning as a trigger marker in a multimedia signal	US8660267	2/25/2014	US13220267	8/29/2011
Roku, Inc.	US	Distributed and tiered architecture for content search and content monitoring	US8959108	2/17/2015	US13276110	10/18/2011
Roku, Inc.	US	Method and system for presenting additional content at a media system	US8863165	10/14/2014	US13286138	10/31/2011
Roku, Inc.	US	TV content segmentation, categorization and identification and time-aligned applications	US9510044	11/29/2016	US13327359	12/15/2011
Roku, Inc.	US	Streaming media system	US9131260	9/8/2015	US13340507	12/29/2011
Roku, Inc.	US	Multi-interface streaming media system	US9286854	3/15/2016	US13347619	1/10/2012
Roku, Inc.	US	Mobile source device media playback over rendering devices at lifestyle-determined locations	US9414105	8/9/2016	US13372516	2/14/2012

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
Roku, Inc.	US	Method and apparatus for channel prioritization	US8627388	1/7/2014	US13431937	3/27/2012
Roku, Inc.	US	Method and apparatus for recurring content searches and viewing window notification	US8938755	1/20/2015	US13431886	3/27/2012
Roku, Inc.	US	Method and apparatus for dynamic prioritization of content listings	US8977721	3/10/2015	US13431910	3/27/2012
Roku, Inc.	US	Method and apparatus for multi-dimensional content search and video identification	US9323841	4/26/2016	US13432914	3/28/2012
Roku, Inc.	US	Digital video content fingerprinting based on scale invariant interest region detection with an array of anisotropic filters	US8781245	7/15/2014	US13455560	4/25/2012
Roku, Inc.	US	Media fingerprinting and identification system	US8364703	1/29/2013	US13463137	5/3/2012
Roku, Inc.	US	Methods and apparatus for providing a scalable identification of digital video sequences	US8666168	3/4/2014	US13488568	6/5/2012
Roku, Inc.	US	Set top box	USD676005	2/12/2013	US29425373	6/21/2012
Roku, Inc.	US	Synchronous media rendering of demuxed media components across multiple devices	US9071418	6/30/2015	US13561031	7/28/2012

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
Roku, Inc.	US	Two tier multiple sliding window mechanism for multideestination media applications	US8837488	9/16/2014	US13561030	7/28/2012
Roku, Inc.	US	Packet loss anticipation and pre emptive retransmission for low latency media applications	US8839065	9/16/2014	US13561029	7/28/2012
Roku, Inc.	US	Media content identification on mobile devices	US9313359	4/12/2016	US13590701	8/21/2012
Roku, Inc.	US	Automatic localization of advertisements	US10032192	7/24/2018	US13621794	9/17/2012
Roku, Inc.	US	System and method for offering and billing advertisement opportunities	US10387920	8/20/2019	US13621782	9/17/2012
Roku, Inc.	US	System and method for providing interactive advertisement	US9865017	1/9/2018	US13621733	9/17/2012
Roku, Inc.	US	Audio content fingerprinting based on two-dimensional constant Q-factor transform representation and robust audio identification for time-aligned applications	US9299364	3/29/2016	US13647996	10/9/2012
Roku, Inc.	US	Media fingerprinting and identification system	US8688731	4/1/2014	US13719603	12/19/2012
Roku, Inc.	US	Identifying video content via fingerprint matching	US9495451	11/15/2016	US13735426	1/7/2013

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
Roku, Inc.	US	Method and apparatus for automatic second screen engagement	US8959562	2/17/2015	US13778100	2/26/2013
Roku, Inc.	US	Method and apparatus of error reporting	US8539286	9/17/2013	US13778088	2/26/2013
Roku, Inc.	US	Method and apparatus for viewing instant replay	US9363575	6/7/2016	US13778094	2/26/2013
Roku, Inc.	US	Method and apparatus for sharing content	US9137578	9/15/2015	US13778068	2/26/2013
Roku, Inc.	US	Method and apparatus for content browsing and selection	US9875002	1/23/2018	US13778105	2/26/2013
Roku, Inc.	US	Method and apparatus for selection of content from a stream of data	US9143718	9/22/2015	US13778439	2/27/2013
Roku, Inc.	US	Display screen with an animated electronic program guide	USD748649	2/2/2016	US29447539	3/4/2013
Roku, Inc.	US	Detecting an event within interactive media including spatialized multi-channel audio content	US9372531	6/21/2016	US13795877	3/12/2013
Roku, Inc.	US	Method for efficient database formation and search on media devices acting synchronously with television programming	US9367544	6/14/2016	US13826502	3/14/2013
Roku, Inc.	US	Authorizing devices based on identifying content distributor	US8997164	3/31/2015	US13826606	3/14/2013
Roku, Inc.	US	Inserting advertisements	US9794642	10/17/2017	US13826282	3/14/2013

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
		into video content				
Roku, Inc.	US	Search and identification of video content	US9146990	9/29/2015	US13839782	3/15/2013
Roku, Inc.	US	Advertising methods for advertising time slots and embedded objects	US9154852	10/6/2015	US13950234	7/24/2013
Roku, Inc.	US	Displaying an actionable element over playing content	US10965991	3/30/2021	US14020295	9/6/2013
Roku, Inc.	US	Method and apparatus of error reporting	US8839050	9/16/2014	US14028428	9/16/2013
Roku, Inc.	US	Media fingerprinting and identification system	US9053104	6/9/2015	US14059688	10/22/2013
Roku, Inc.	US	Identifying video content via color-based fingerprint matching	US9465995	10/11/2016	US14061043	10/23/2013
Roku, Inc.	US	Common event-based multidevice media playback	US8762580	6/24/2014	US14083426	11/18/2013
Roku, Inc.	US	Indirect clock measuring and media adjustment	US8880929	11/4/2014	US14084585	11/19/2013
Roku, Inc.	US	Method and apparatus for channel prioritization	US9288547	3/15/2016	US14148564	1/6/2014
Roku, Inc.	US	Scalable, adaptable, and manageable system for multimedia identification	US8965863	2/24/2015	US14151294	1/9/2014
Roku, Inc.	US	Scalable, adaptable, and manageable system for	US9058355	6/16/2015	US14151335	1/9/2014

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
		multimedia identification				
Roku, Inc.	US	Method and device for generating and detecting a fingerprint functioning as a trigger marker in a multimedia signal	US9066114	6/23/2015	US14151879	1/10/2014
Roku, Inc.	US	Population of customized channels	US9805033	10/31/2017	US14216867	3/17/2014
Roku, Inc.	US	Video fingerprinting	US9323840	4/26/2016	US14263647	4/28/2014
Roku, Inc.	US	Digital video content fingerprinting based on scale invariant interest region detection with an array of anisotropic filters	US9396393	7/19/2016	US14298261	6/6/2014
Roku, Inc.	US	Broadcasting media from a stationary source to multiple mobile devices over wi-fi	US9413799	8/9/2016	US14303502	6/12/2014
Roku, Inc.	US	Broadcasting media from a stationary source to multiple mobile devices over Wi-Fi	US9407670	8/2/2016	US14303527	6/12/2014
Roku, Inc.	US	Method and apparatus for customized provisioning of on-line application channels	US9705947	7/11/2017	US14336480	7/21/2014
Roku, Inc.	US	Client-side video advertisement replacement using automatic content recognition	US10825056	11/3/2020	US14468080	8/25/2014

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
Roku, Inc.	US	Two tier multiple sliding window mechanism for multideestination media applications	US9288263	3/15/2016	US14487045	9/15/2014
Roku, Inc.	US	Packet loss anticipation and preemptive retransmission for low latency media applications	US9756127	9/5/2017	US14487031	9/15/2014
Roku, Inc.	US	Indirect clock measuring and media adjustment	US9118678	8/25/2015	US14489474	9/18/2014
Roku, Inc.	US	Common event-based multidevice media playback	US9338208	5/10/2016	US14505411	10/2/2014
Roku, Inc.	US	System and method for collecting data	US10368121	7/30/2019	US14536463	11/7/2014
Roku, Inc.	US	System and method for fast starting an application	US10114661	10/30/2018	US14536481	11/7/2014
Roku, Inc.	US	System and method for searching multimedia	US9519645	12/13/2016	US14536339	11/7/2014
Roku, Inc.	US	Apparatus and method for content playback utilizing crowd sourced statistics	US9270563	2/23/2016	US14552202	11/24/2014
Roku, Inc.	US	SYSTEM AND METHOD FOR SEARCHING MULTIMEDIA	US11061957	7/13/2021	US14558648	12/2/2014
Roku, Inc.	US	Apparatus and method for providing power on and power off for a display device	US9420338	8/16/2016	US14582117	12/23/2014
Roku, Inc.	US	Wireless streaming system with low	US9794883	10/17/2017	US14582132	12/23/2014

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
		power mode and associated remote control				
Roku, Inc.	US	Apparatus and method for timer-based control of audiovisual output devices	US9693003	6/27/2017	US14582120	12/23/2014
Roku, Inc.	US	Method and apparatus for automatic second screen engagement	US9185446	11/10/2015	US14582113	12/23/2014
Roku, Inc.	US	Distributed and tiered architecture for content search and content monitoring	US9262421	2/16/2016	US14589366	1/5/2015
Roku, Inc.	US	Congestion control method for dynamically maximizing communication link throughout	US9306860	4/5/2016	US14420394	2/9/2015
Roku, Inc.	US	Authorizing devices based on identifying content distributor	US9596490	3/14/2017	US14640253	3/6/2015
Roku, Inc.	US	Method and device for generating and detecting a fingerprint functioning as a trigger marker in a multimedia signal	US9407962	8/2/2016	US14659044	3/16/2015
Roku, Inc.	US	Method and system for remotely controlling consumer electronic devices	US9992518	6/5/2018	US14659971	3/17/2015
Roku, Inc.	US	Authenticating a browser-less data streaming device to a	US9473940	10/18/2016	US14668528	3/25/2015

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
		network with an external browser				
Roku, Inc.	US	Profile driven communication polling for remote control	US9894400	2/13/2018	US14710226	5/12/2015
Roku, Inc.	US	Media fingerprinting and identification system	US9195663	11/24/2015	US14711054	5/13/2015
Roku, Inc.	US	Scalable, adaptable, and manageable system for multimedia identification	US9785708	10/10/2017	US14718218	5/21/2015
Roku, Inc.	US	Automatic content recognition search optimization	US10509824	12/17/2019	US14736158	6/10/2015
Roku, Inc.	US	Synchronous media rendering of demuxed media components across multiple devices	US9479584	10/25/2016	US14754644	6/29/2015
Roku, Inc.	US	Providing a representation for a device connected to a display device	US9613586	4/4/2017	US14755753	6/30/2015
Roku, Inc.	US	Restoring a Disabled Display Device Speaker	US11042347	6/22/2021	US14755833	6/30/2015
Roku, Inc.	US	Method and apparatus for selection of content from a stream of data	US9414008	8/9/2016	US14789048	7/1/2015
Roku, Inc.	US	Automatic content recognition with local matching	US10750236	8/18/2020	US14813416	7/30/2015
Roku, Inc.	US	Detection of smartphone to enable content	US10623796	4/14/2020	US14813703	7/30/2015

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Roku, Inc.	US	Universal remote control with automatic state synchronization	US9601006	3/21/2017	US14814217	7/30/2015
Roku, Inc.	US	Mobile device based control device locator	US10401473	9/3/2019	US14813766	7/30/2015
Roku, Inc.	US	Capture and sharing of broadcast media	US11012756	5/18/2021	US14813584	7/30/2015
Roku, Inc.	US	Audio preferences for media content players	US10091581	10/2/2018	US14813628	7/30/2015
Roku, Inc.	US	Display screen with an animated electronic program guide	USD748131	1/26/2016	US29534716	7/30/2015
Roku, Inc.	US	Display screen with an animated electronic program guide	USD750120	2/23/2016	US29534717	7/30/2015
Roku, Inc.	US	Detecting channel change in automatic content recognition fingerprint matching	US9516377	12/6/2016	US14815256	7/31/2015
Roku, Inc.	US	Overlay content and aggregation of viewing data	US9380325	6/28/2016	US14820484	8/6/2015
Roku, Inc.	US	Content replacement with onscreen displays	US9743153	8/22/2017	US14820490	8/6/2015
Roku, Inc.	US	Content management of a content feed	US9641870	5/2/2017	US14820476	8/6/2015
Roku, Inc.	US	Search and identification of video content	US9959345	5/1/2018	US14828293	8/17/2015
Roku, Inc.	US	Indirect clock measuring and media adjustment	US9804633	10/31/2017	US14834402	8/24/2015
Roku, Inc.	US	Automatic content recognition (ACR) fingerprinting	US9628830	4/18/2017	US14839339	8/28/2015

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		and video encoding				
Roku, Inc.	US	Streaming media system	US9544654	1/10/2017	US14839379	8/28/2015
Roku, Inc.	US	Dynamic generation of trick mode data	US9681198	6/13/2017	US14840962	8/31/2015
Roku, Inc.	US	Audio command interface for a multimedia device	US10048936	8/14/2018	US14857876	9/18/2015
Roku, Inc.	US	Interweaving media content	US10194177	1/29/2019	US14881852	10/13/2015
Roku, Inc.	US	Media fingerprinting and identification system	US9323754	4/26/2016	US14885110	10/16/2015
Roku, Inc.	US	Method and apparatus for automatic second screen engagement	US9479813	10/25/2016	US14923061	10/26/2015
Roku, Inc.	US	Audio device with automatic fan control based on a volume level of audio content	US9621989	4/11/2017	US14926713	10/29/2015
Roku, Inc.	US	Detection of a mobile device to identify user preferences and provide customized functionality or content	US10820032	10/27/2020	US14958283	12/3/2015
Roku, Inc.	US	User identification based on the motion of a device	US10127371	11/13/2018	US14966576	12/11/2015
Roku, Inc.	US	Electronic device	USD783552	4/11/2017	US29548956	12/17/2015
Roku, Inc.	US	Orientation adjustment for casting videos	US9723258	8/1/2017	US14984526	12/30/2015
Roku, Inc.	US	Providing rolling updates of distributed	US10229058	3/12/2019	US14984292	12/30/2015

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		systems with a shared cache				
Roku, Inc.	US	Distributed and tiered architecture for content search and content monitoring	US9436689	9/6/2016	US14990565	1/7/2016
Roku, Inc.	US	Detecting an event within interactive media including spatialized multi-channel audio content	US10055010	8/21/2018	US15003658	1/21/2016
Roku, Inc.	US	Extended selection and alignment of video segments for adaptive streaming	US10218755	2/26/2019	US15010916	1/29/2016
Roku, Inc.	US	Selection and alignment of video segments for adaptive streaming	US10057654	8/21/2018	US15010857	1/29/2016
Roku, Inc.	US	Selection of video segments for adaptive streaming	US10122781	11/6/2018	US15010788	1/29/2016
Roku, Inc.	US	Multi-interface streaming media system	US9848231	12/19/2017	US15043115	2/12/2016
Roku, Inc.	US	System and method for synchronous media rendering over wireless networks with wireless performance monitoring	US9843489	12/12/2017	US15047548	2/18/2016
Roku, Inc.	US	Audio content fingerprinting based on two-dimensional constant Q-factor transform representation and robust audio	US9798513	10/24/2017	US15050123	2/22/2016

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		identification for time-aligned applications				
Roku, Inc.	US	Apparatus and method for content playback utilizing crowd sourced statistics	US9794150	10/17/2017	US15049348	2/22/2016
Roku, Inc.	US	Media Content Identification on Mobile Devices	US11336952	5/17/2022	US15053064	2/25/2016
Roku, Inc.	US	Display screen or portion thereof with animated graphical user interface	USD781911	3/21/2017	US29556313	2/29/2016
Roku, Inc.	US	Display screen or portion thereof with graphical user interface	USD795271	8/22/2017	US29556311	2/29/2016
Roku, Inc.	US	Display screen or portion thereof with animated graphical user interface	USD797121	9/12/2017	US29556309	2/29/2016
Roku, Inc.	US	Creating and fulfilling dynamic advertisement replacement inventory	US9854326	12/26/2017	US15058819	3/2/2016
Roku, Inc.	US	Dynamic video advertisement replacement	US9743154	8/22/2017	US15058750	3/2/2016
Roku, Inc.	US	Brown out condition detection and device calibration	US10437304	10/8/2019	US15070491	3/15/2016
Roku, Inc.	US	Efficient communication interface for casting interactively controlled visual content	US9996311	6/12/2018	US15070800	3/15/2016
Roku, Inc.	US	Media fingerprinting	US9471674	10/18/2016	US15073858	3/18/2016

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		and identification system				
Roku, Inc.	US	Controlling display device settings from a mobile device touch interface	US10528241	1/7/2020	US15076162	3/21/2016
Roku, Inc.	US	Method and apparatus for multi-dimensional content search and video identification	US9489455	11/8/2016	US15078056	3/23/2016
Roku, Inc.	US	Media content matching and indexing	US9813781	11/7/2017	US15081738	3/25/2016
Roku, Inc.	US	Video fingerprinting based on fourier transform of histogram	US9848235	12/19/2017	US15098135	4/13/2016
Roku, Inc.	US	Digital overlay offers on connected media devices	US10075755	9/11/2018	US15130639	4/15/2016
Roku, Inc.	US	Sequentially overlaying media content	US9848214	12/19/2017	US15130823	4/15/2016
Roku, Inc.	US	VIDEO FINGERPRINTING	US11687587	6/27/2023	US15136412	4/22/2016
Roku, Inc.	US	Fingerprinting media content using hashing	US9906831	2/27/2018	US15138678	4/26/2016
Roku, Inc.	US	Distributed and tiered architecture for content search and content monitoring	US9646007	5/9/2017	US15163004	5/24/2016
Roku, Inc.	US	Content comparison testing on linear media streams	US10432994	10/1/2019	US15164714	5/25/2016
Roku, Inc.	US	Frequency capping for media content	US9723347	8/1/2017	US15164682	5/25/2016

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Roku, Inc.	US	Method and device for generating and detecting a fingerprint functioning as a trigger marker in a multimedia signal	US9479831	10/25/2016	US15164605	5/25/2016
Roku, Inc.	US	Media computing device with multiple virtual screens and personal area network capability	US9848247	12/19/2017	US15178544	6/9/2016
Roku, Inc.	US	Media channel identification with multi-match detection and disambiguation based on location	US9924222	3/20/2018	US15179143	6/10/2016
Roku, Inc.	US	Overlay content and aggregation of viewing data	US9661385	5/23/2017	US15182229	6/14/2016
Roku, Inc.	US	Digital video content fingerprinting based on scale invariant interest region detection with an array of anisotropic filters	US9652672	5/16/2017	US15186901	6/20/2016
Roku, Inc.	US	System and method for multiuser interaction with a media computing device with multiple virtual screens and personal area network capability	US10055187	8/21/2018	US15196022	6/28/2016
Roku, Inc.	US	Method and apparatus for selection of	US9736549	8/15/2017	US15204366	7/7/2016

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		content from a stream of data				
Roku, Inc.	US	Streaming synchronized media content to separate devices	US10735508	8/4/2020	US15220696	7/27/2016
Roku, Inc.	US	Media channel identification with multi-match detection and disambiguation based on single-match	US10063918	8/28/2018	US15222405	7/28/2016
Roku, Inc.	US	Flexible output of streaming media	US10110943	10/23/2018	US15225338	8/1/2016
Roku, Inc.	US	Distributed voice processing system	US10388273	8/20/2019	US15233207	8/10/2016
Roku, Inc.	US	Fingerprint layouts for content fingerprinting	US10063917	8/28/2018	US15243658	8/22/2016
Roku, Inc.	US	CROWD SOURCED INDEXING AND/OR SEARCHING OF CONTENT	US11025979	6/1/2021	US15249985	8/29/2016
Roku, Inc.	US	Media channel identification with video multi-match detection and disambiguation based on audio fingerprint	US9930406	3/27/2018	US15253354	8/31/2016
Roku, Inc.	US	System for media distribution and rendering on spatially extended wireless networks	US9686123	6/20/2017	US15260307	9/8/2016
Roku, Inc.	US	Media fingerprinting and identification system	US10402443	9/3/2019	US15265002	9/14/2016

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Roku, Inc.	US	Detecting channel change in automatic content recognition fingerprint matching	US9706261	7/11/2017	US15266524	9/15/2016
Roku, Inc.	US	Method and device for generating and detecting a fingerprint functioning as a trigger marker in a multimedia signal	US9712853	7/18/2017	US15273185	9/22/2016
Roku, Inc.	US	Authenticating a browser-less data streaming device to a network with an external browser	US9667630	5/30/2017	US15280091	9/29/2016
Roku, Inc.	US	Controlling display of media content	US9936263	4/3/2018	US15283932	10/3/2016
Roku, Inc.	US	Method and apparatus for selection of content from a stream of data	US9794644	10/17/2017	US15285056	10/4/2016
Roku, Inc.	US	Systems for synchronous playback of media using a hybrid bluetooth™ and Wi-Fi network	US9780894	10/3/2017	US15285489	10/5/2016
Roku, Inc.	US	Identifying video content via color-based fingerprint matching	US10503956	12/10/2019	US15286787	10/6/2016
Roku, Inc.	US	Identifying media content via fingerprint matching	US10866988	12/15/2020	US15287063	10/6/2016
Roku, Inc.	US	Method and system for remotely controlling consumer	US9998767	6/12/2018	US15287116	10/6/2016

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		electronic devices				
<u>Roku, Inc.</u>	US	Method and apparatus for multi-dimensional content search and video identification	US10210252	2/19/2019	US15290364	10/11/2016
Roku, Inc.	US	Method and system for remotely controlling consumer electronic devices	US9706233	7/11/2017	US15292705	10/13/2016
Roku, Inc.	US	Method and apparatus for automatic second screen engagement	US10602211	3/24/2020	US15332743	10/24/2016
Roku, Inc.	US	Low-latency multimedia using dual wireless adapters	US9699684	7/4/2017	US15336745	10/27/2016
Roku, Inc.	US	Reception of audio commands	US10210863	2/19/2019	US15341552	11/2/2016
Roku, Inc.	US	Media channel identification with multi-match detection and disambiguation based on time of broadcast	US10045073	8/7/2018	US15343895	11/4/2016
Roku, Inc.	US	Searching multimedia based on trigger events	US10261999	4/16/2019	US15343426	11/4/2016
Roku, Inc.	US	Interaction recognition of a television content interaction device	US9866904	1/9/2018	US15348592	11/10/2016
Roku, Inc.	US	System and method for using multiple audio input devices for synchronized and position-based audio	US10097902	10/9/2018	US15358103	11/21/2016

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Roku, Inc.	US	Recommending content based on user behavior tracking and analysis	US10390062	8/20/2019	US15357289	11/21/2016
Roku, Inc.	US	Streaming content based on skip histories	US10637940	4/28/2020	US15357595	11/21/2016
Roku, Inc.	US	Automatic display of closed captioning information	US9749700	8/29/2017	US15357319	11/21/2016
Roku, Inc.	US	Predictive application caching	US10540739	1/21/2020	US15359747	11/23/2016
Roku, Inc.	US	Enhanced trick mode to enable presentation of information related to content being streamed	US10003834	6/19/2018	US15363263	11/29/2016
Roku, Inc.	US	Skipping content of lesser interest when streaming media	US10938871	3/2/2021	US15363236	11/29/2016
Roku, Inc.	US	Method and system for presenting additional content at a media system	US10506291	12/10/2019	US15375698	12/12/2016
Roku, Inc.	US	Semi-automated configuration of a low-latency multimedia playback system	US9847904	12/19/2017	US15379441	12/14/2016
Roku, Inc.	US	System for media rebroadcasting for synchronized rendering across multiple devices	US9973290	5/15/2018	US15381092	12/15/2016
Roku, Inc.	US	Dynamic video overlays	US10123073	11/6/2018	US15381572	12/16/2016
Roku, Inc.	US	Dynamic video overlays	US10136183	11/20/2018	US15381556	12/16/2016
Roku, Inc.	US	Dynamic video overlays	US10412447	9/10/2019	US15381513	12/16/2016
Roku, Inc.	US	Dynamic video overlays	US10785530	9/22/2020	US15381497	12/16/2016

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Roku, Inc.	US	Dynamic video overlays	US10142680	11/27/2018	US15381496	12/16/2016
Roku, Inc.	US	Computing system with content-characteristic-based trigger feature	US10484758	11/19/2019	US15399415	1/5/2017
Roku, Inc.	US	Computing system with channel-change-based trigger feature	US10939185	3/2/2021	US15399404	1/5/2017
Roku, Inc.	US	Digital overlay offers on connected media devices	US10341705	7/2/2019	US15418439	1/27/2017
Roku, Inc.	US	Providing a representation for a device connected to a display device	US9865225	1/9/2018	US15436041	2/17/2017
Roku, Inc.	US	Media channel identification and action with multi-match detection and disambiguation based on matching with differential reference-fingerprint feature	US9992533	6/5/2018	US15442114	2/24/2017
Roku, Inc.	US	Method and system for detecting and responding to changing of media channel	US10045074	8/7/2018	US15443615	2/27/2017
Roku, Inc.	US	Media channel identification and action with multi-match detection based on reference stream comparison	US10104426	10/16/2018	US15443580	2/27/2017
Roku, Inc.	US	Connector device with	US10971866	4/6/2021	US15455561	3/10/2017

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		antenna connection				
Roku, Inc.	US	Audio device with automatic fan control based on a volume level of audio content	US9788111	10/10/2017	US15455520	3/10/2017
Roku, Inc.	US	Automatic content recognition (ACR) fingerprinting and video encoding	US10687092	6/16/2020	US15457483	3/13/2017
Roku, Inc.	US	Digital video fingerprinting using motion segmentation	US10318813	6/11/2019	US15456856	3/13/2017
Roku, Inc.	US	Method to differentiate and classify fingerprints using fingerprint neighborhood analysis	US10956484	3/23/2021	US15456861	3/13/2017
Roku, Inc.	US	Robust audio identification with interference cancellation	US10360905	7/23/2019	US15456859	3/13/2017
Roku, Inc.	US	Content management of a content feed	US10395277	8/27/2019	US15459627	3/15/2017
Roku, Inc.	US	Display diagnostics for enhancing performance of display devices	US10110887	10/23/2018	US15465147	3/21/2017
Roku, Inc.	US	Remote control with configurable buttons	US10217577	2/26/2019	US15477275	4/3/2017
Roku, Inc.	US	Interaction-based user identification	US10452350	10/22/2019	US15478448	4/4/2017
Roku, Inc.	US	Network-based user identification	US10425981	9/24/2019	US15478444	4/4/2017
Roku, Inc.	US	Time and content	US10581941	3/3/2020	US15478413	4/4/2017

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		restrictions based on user-identification				
Roku, Inc.	US	Overlay content and aggregation of viewing data	US9912991	3/6/2018	US15483762	4/10/2017
Roku, Inc.	US	Crowd sourced dynamic generation of trick mode data	US9967634	5/8/2018	US15588314	5/5/2017
Roku, Inc.	US	Method of stabilized adaptive video streaming for high dynamic range (HDR)	US10021159	7/10/2018	US15595991	5/16/2017
Roku, Inc.	US	Method and system for remotely controlling consumer electronic devices	US10250919	4/2/2019	US15614566	6/5/2017
Roku, Inc.	US	Detecting channel change in automatic content recognition fingerprint matching	US9877085	1/23/2018	US15617591	6/8/2017
Roku, Inc.	US	Detecting and responding to rendering of interactive video content	US10972203	4/6/2021	US15620440	6/12/2017
Roku, Inc.	US	Method and device for generating and detecting a fingerprint functioning as a trigger marker in a multimedia signal	US10045054	8/7/2018	US15622024	6/13/2017
Roku, Inc.	US	Timer-based control of audiovisual output devices	US10349131	7/9/2019	US15631508	6/23/2017
Roku, Inc.	US	Orientation adjustment for casting videos	US10021341	7/10/2018	US15633954	6/27/2017

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Roku, Inc.	US	Frequency capping for media content	US10187682	1/22/2019	US15641796	7/5/2017
Roku, Inc.	US	Automatic determination of display device functionality	US10447537	10/15/2019	US15646275	7/11/2017
Roku, Inc.	US	Controlling visual indicators in an audio responsive electronic device, and capturing and providing audio using an API, by native and non-native computing devices and services	US10599377	3/24/2020	US15646379	7/11/2017
Roku, Inc.	US	Dynamic video advertisement replacement	US10110969	10/23/2018	US15650425	7/14/2017
Roku, Inc.	US	Content replacement with onscreen displays	US10057657	8/21/2018	US15658345	7/24/2017
Roku, Inc.	US	Synchronization in audio playback network independent of system clock	US10679673	6/9/2020	US15547106	7/28/2017
Roku, Inc.	US	Self-organizing audio synchronization	US10231008	3/12/2019	US15547093	7/28/2017
Roku, Inc.	US	Audio time synchronization using prioritized schedule	US10614856	4/7/2020	US15547111	7/28/2017
Roku, Inc.	US	Display screen or portion thereof with animated graphical user interface	USD849760	5/28/2019	US29612495	8/1/2017
Roku, Inc.	US	Display screen or portion thereof with animated	USD849759	5/28/2019	US29612494	8/1/2017

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		graphical user interface				
Roku, Inc.	US	Automatic display of closed captioning information	US10194209	1/29/2019	US15689271	8/29/2017
Roku, Inc.	US	Generating playback configurations based on aggregated crowd-sourced statistics	US10516591	12/24/2019	US15690112	8/29/2017
Roku, Inc.	US	Inserting advertisements into video content	US10110970	10/23/2018	US15700054	9/8/2017
Roku, Inc.	US	Flagging advertisement frames for automatic content recognition	US10306333	5/28/2019	US15703391	9/13/2017
Roku, Inc.	US	Cold matching by automatic content recognition	US10803038	10/13/2020	US15703684	9/13/2017
Roku, Inc.	US	Method and apparatus for selection of content from a stream of data	US9986306	5/29/2018	US15703687	9/13/2017
Roku, Inc.	US	Obtaining viewer demographics through advertisement selections	US10277958	4/30/2019	US15725260	10/4/2017
Roku, Inc.	US	Scene frame matching for automatic content recognition	US10922551	2/16/2021	US15726987	10/6/2017
Roku, Inc.	US	Media content matching and indexing	US10187705	1/22/2019	US15728687	10/10/2017
Roku, Inc.	US	Wireless streaming system with low power mode and	US10412676	9/10/2019	US15728875	10/10/2017

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		associated remote control				
Roku, Inc.	US	Aggregating media content in non-temporal format	US10992994	4/27/2021	US15784900	10/16/2017
Roku, Inc.	US	Tracking proximities of devices and/or objects	US10237686	3/19/2019	US15802719	11/3/2017
Roku, Inc.	US	Automatically and programmatically generating scene change markers	US10531138	1/7/2020	US15806384	11/8/2017
Roku, Inc.	US	Enhanced playback bar	US10334326	6/25/2019	US15806379	11/8/2017
Roku, Inc.	US	Multi-interface streaming media system	US10219030	2/26/2019	US15812698	11/14/2017
Roku, Inc.	US	Video fingerprinting based on fourier transform of histogram	US10390083	8/20/2019	US15826044	11/29/2017
Roku, Inc.	US	Providing a representation for a device connected to a display device	US10593287	3/17/2020	US15829256	12/1/2017
Roku, Inc.	US	Interaction recognition of a television content interaction device	US10390086	8/20/2019	US15830689	12/4/2017
Roku, Inc.	US	Creating and fulfilling dynamic advertisement replacement inventory	US10771858	9/8/2020	US15831838	12/5/2017
Roku, Inc.	US	Sequentially overlaying media content	US10334286	6/25/2019	US15842750	12/14/2017
Roku, Inc.	US	Media channel identification with multi-match detection and	US10057638	8/21/2018	US15842206	12/14/2017

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		disambiguation based on location				
Roku, Inc.	US	Media channel identification with video multi-match detection and disambiguation based on audio fingerprint	US10149007	12/4/2018	US15842189	12/14/2017
Roku, Inc.	US	System and method for providing interactive advertisement	US10387949	8/20/2019	US15845595	12/18/2017
Roku, Inc.	US	Mass insertion into single-threaded databases	US10726051	7/28/2020	US15849103	12/20/2017
Roku, Inc.	US	Profile driven communication polling for remote control	US10390073	8/20/2019	US15868622	1/11/2018
Roku, Inc.	US	Fingerprinting media content using hashing	US10116987	10/30/2018	US15886848	2/2/2018
Roku, Inc.	US	Overlay content and aggregation of viewing data	US10313753	6/4/2019	US15895775	2/13/2018
Roku, Inc.	US	Trigger Word Detection With Multiple Digital Assistants	US11145298	10/12/2021	US15895047	2/13/2018
Roku, Inc.	US	Production Console Authorization Permissions	US11238181	2/1/2022	US15896369	2/14/2018
Roku, Inc.	US	Dynamic multi-speaker optimization	US10158960	12/18/2018	US15915740	3/8/2018
Roku, Inc.	US	Enabling interactive control of live television broadcast streams	US10182263	1/15/2019	US15934753	3/23/2018
Roku, Inc.	US	Employing Automatic Content	US11051054	6/29/2021	US15933899	3/23/2018

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		Recognition to Allow Resumption of Watching Interrupted Media Program from Television Broadcast				
Roku, Inc.	US	Targeted content placement using overlays	US10542326	1/21/2020	US15938167	3/28/2018
Roku, Inc.	US	Interactive overlays to determine viewer data	US10462514	10/29/2019	US15938049	3/28/2018
Roku, Inc.	US	Automatically and programmatically generating crowdsourced trailers	US10390110	8/20/2019	US15940386	3/29/2018
Roku, Inc.	US	Crowdsourced prediction of CDN performance for zero buffer delivery of content	US10771522	9/8/2020	US15961054	4/24/2018
Roku, Inc.	US	CUSTOMIZING A GUI BASED ON USER BIOMETRICS	US11216160	1/4/2022	US15960638	4/24/2018
Roku, Inc.	US	CLIENT SIDE STITCHING OF CONTENT INTO A MULTIMEDIA STREAM	US11128914	9/21/2021	US15962030	4/25/2018
Roku, Inc.	US	Remote control with presence sensor	US10455322	10/22/2019	US15962478	4/25/2018
Roku, Inc.	US	Dynamic generation of trick mode data	US10524017	12/31/2019	US15966346	4/30/2018
Roku, Inc.	US	Method and apparatus for selection of content from a stream of data	US10555052	2/4/2020	US15971608	5/4/2018
Roku, Inc.	US	Media channel identification	US10523999	12/31/2019	US15982437	5/17/2018

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		and action with multi-match detection and disambiguation based on matching with differential reference-fingerprint feature				
Roku, Inc.	US	Orientation adjustment for casting videos	US10491855	11/26/2019	US15986206	5/22/2018
Roku, Inc.	US	System and method for configuring an extender device	US10932130	2/23/2021	US15994382	5/31/2018
Roku, Inc.	US	REAL-TIME ASSESSMENT OF MULTIMEDIA SERVICE IN A PARTICULAR ENVIRONMENT	US11395371	7/19/2022	US15994362	5/31/2018
Roku, Inc.	US	Detecting and responding to rendering of interactive video content	US10972204	4/6/2021	US16015771	6/22/2018
Roku, Inc.	US	Method and system for detecting and responding to changing of media channel	US10531150	1/7/2020	US16015827	6/22/2018
Roku, Inc.	US	Media channel identification and action with multi-match detection based on reference stream comparison	US10225605	3/5/2019	US16015811	6/22/2018
Roku, Inc.	US	Media channel identification with multi-match detection and disambiguation based on time of broadcast	US10419814	9/17/2019	US16015800	6/22/2018

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Roku, Inc.	US	Media channel identification with multi-match detection and disambiguation based on single-match	US10567835	2/18/2020	US16015783	6/22/2018
Roku, Inc.	US	Detecting an event within interactive media	US10156894	12/18/2018	US16017170	6/25/2018
Roku, Inc.	US	Method and system for presenting additional content at a media system	US10341734	7/2/2019	US16017910	6/25/2018
Roku, Inc.	US	METHOD AND SYSTEM FOR PRESENTING ADDITIONAL CONTENT AT A MEDIA SYSTEM	US11889155	1/30/2024	US16017900	6/25/2018
Roku, Inc.	US	Method and device for generating and detecting a fingerprint functioning as a trigger marker in a multimedia signal	US10250916	4/2/2019	US16018022	6/25/2018
Roku, Inc.	US	Media channel identification with multi-match detection and disambiguation based on location	US10412448	9/10/2019	US16017218	6/25/2018
Roku, Inc.	US	Media channel identification with video multi-match detection and disambiguation based on audio fingerprint	US10440430	10/8/2019	US16017203	6/25/2018
Roku, Inc.	US	Media channel identification and action with multi-match	US10524000	12/31/2019	US16017190	6/25/2018

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		detection and disambiguation based on matching with differential reference-fingerprint feature				
Roku, Inc.	US	Inserting advertisements into video content	US10595097	3/17/2020	US16018056	6/26/2018
Roku, Inc.	US	Method and system for remotely controlling consumer electronic devices	US10341697	7/2/2019	US16018050	6/26/2018
Roku, Inc.	US	Frame certainty for automatic content recognition	US10715863	7/14/2020	US16023555	6/29/2018
Roku, Inc.	US	Intelligent power reduction in audio amplifiers	US10498306	12/3/2019	US16025376	7/2/2018
Roku, Inc.	US	Media System with Multiple Digital Assistants	US11062702	7/13/2021	US16032724	7/11/2018
Roku, Inc.	US	Local and Cloud Speech Recognition	US11062710	7/13/2021	US16032868	7/11/2018
Roku, Inc.	US	Audio responsive device with play/stop and tell me something buttons	US10777197	9/15/2020	US16032730	7/11/2018
Roku, Inc.	US	Fingerprint layouts for content fingerprinting	US10257570	4/9/2019	US16035051	7/13/2018
Roku, Inc.	US	Selection and alignment of video segments for adaptive streaming	US10609457	3/31/2020	US16036043	7/16/2018
Roku, Inc.	US	INTELLIGENT DOWNLOAD OF CONTENT	US11317127	4/26/2022	US16044748	7/25/2018

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Roku, Inc.	US	WEAVE STREAMING CONTENT INTO A LINEAR VIEWING EXPERIENCE	US11234060	1/25/2022	US16047832	7/27/2018
Roku, Inc.	US	INTERACTIVE CONTENT WHEN THE SECONDARY CONTENT IS SERVER STITCHED	US11418858	8/16/2022	US16047804	7/27/2018
Roku, Inc.	US	MORE SECURE DEVICE PAIRING	US11212847	12/28/2021	US16049976	7/31/2018
Roku, Inc.	US	Digital overlay offers on connected media devices	US10341706	7/2/2019	US16052267	8/1/2018
Roku, Inc.	US	Message Processing Using a Client-Side Control Group	US11641513	5/2/2023	US16102957	8/14/2018
Roku, Inc.	US	Audio command interface for a multimedia device	US10871942	12/22/2020	US16103487	8/14/2018
Roku, Inc.	US	Tunable narrowband infrared receiver	US10361788	7/23/2019	US15999022	8/20/2018
Roku, Inc.	US	Displaying an actionable element over playing content	US10979771	4/13/2021	US16124928	9/7/2018
Roku, Inc.	US	DISPLAYING AN ACTIONABLE ELEMENT OVER PLAYING CONTENT	US11095950	8/17/2021	US16126771	9/10/2018
Roku, Inc.	US	Dynamically adjusting video to improve synchronization with audio	US10834296	11/10/2020	US16128624	9/12/2018

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Roku, Inc.	US	Adaptive switching in a whole home entertainment system	US10805658	10/13/2020	US16128565	9/12/2018
Roku, Inc.	US	User identification based on the motion of a device	US10922400	2/16/2021	US16131378	9/14/2018
Roku, Inc.	US	Identifying audio characteristics of a room using a spread code	US10992336	4/27/2021	US16133817	9/18/2018
Roku, Inc.	US	Wireless audio synchronization using a spread code	US10931909	2/23/2021	US16133813	9/18/2018
Roku, Inc.	US	Dynamically switching to/from a first network during audio playback over hdmi/arc	US10812751	10/20/2020	US16133802	9/18/2018
Roku, Inc.	US	Audio cancellation and content recognition of audio received over hdmi/arc	US10871935	12/22/2020	US16133797	9/18/2018
Roku, Inc.	US	Audio synchronization of a dumb speaker and a smart speaker using a spread code	US10958301	3/23/2021	US16133811	9/18/2018
Roku, Inc.	US	Method to differentiate and classify fingerprints using fingerprint neighborhood analysis	US10970328	4/6/2021	US16140531	9/24/2018
Roku, Inc.	US	Digital video fingerprinting using motion segmentation	US10733985	8/4/2020	US16140534	9/25/2018
Roku, Inc.	US	Dynamic video overlays	US10893320	1/12/2021	US16140539	9/25/2018
Roku, Inc.	US	Robust audio identification	US11132997	9/28/2021	US16140538	9/25/2018

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		with interference cancellation				
Roku, Inc.	US	Dynamic video advertisement replacement	US10728627	7/28/2020	US16144361	9/27/2018
Roku, Inc.	US	Audio preferences for media content players	US10827264	11/3/2020	US16148366	10/1/2018
Roku, Inc.	US	Selection of video segments for adaptive streaming	US10826959	11/3/2020	US16155617	10/9/2018
Roku, Inc.	US	Post-production de-mura of a television using a mobile device	US10638125	4/28/2020	US16157676	10/11/2018
Roku, Inc.	US	Establishment and use of time mapping based on interpolation using low-rate fingerprinting, to help facilitate frame-accurate content revision	US10715840	7/14/2020	US16166981	10/22/2018
Roku, Inc.	US	Dynamic control of fingerprinting rate to facilitate time-accurate revision of media content	US10623800	4/14/2020	US16166948	10/22/2018
Roku, Inc.	US	Establishment and use of time mapping based on interpolation using low-rate fingerprinting, to help facilitate frame-accurate content revision	US10904587	1/26/2021	US16166971	10/22/2018
Roku, Inc.	US	Advanced preparation for content revision based on expected latency in obtaining new content	US10820020	10/27/2020	US16166962	10/22/2018
Roku, Inc.	US	Dynamic control of fingerprinting rate to facilitate	US10506275	12/10/2019	US16166561	10/22/2018

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		time-accurate revision of media content				
Roku, Inc.	US	Detecting and responding to an event within an interactive videogame	US10345892	7/9/2019	US16168412	10/23/2018
Roku, Inc.	US	Displaying an actionable element over playing content	US10965992	3/30/2021	US16178116	11/1/2018
Roku, Inc.	US	MODIFYING PLAYBACK OF REPLACEMENT CONTENT BASED ON CONTROL MESSAGES	US11272252	3/8/2022	US16182201	11/6/2018
Roku, Inc.	US	Modifying playback of replacement content responsive to detection of remote control signals that control a device providing video to the playback device	US10827224	11/3/2020	US16181978	11/6/2018
Roku, Inc.	US	Modifying playback of replacement content responsive to detection of remote control signals that modify operation of the playback device	US10791312	9/29/2020	US16181961	11/6/2018
Roku, Inc.	US	Dynamic Reduction in Playout of Replacement Content to Help Align End of Replacement Content with	US11317143	4/26/2022	US16183266	11/7/2018

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		End of Replaced Content				
Roku, Inc.	US	Dynamic Playout of Transition Frames while Transitioning Between Playout of Media Streams	US11178451	11/16/2021	US16183185	11/7/2018
Roku, Inc.	US	Dynamic multi-speaker optimization	US10638245	4/28/2020	US16184400	11/8/2018
Roku, Inc.	US	NON-TELEVISION EXPERIENCE TRIGGERS	US11483611	10/25/2022	US16194893	11/19/2018
Roku, Inc.	US	INTERWEAVING MEDIA CONTENT	US11297356	4/5/2022	US16217852	12/12/2018
Roku, Inc.	US	Media content matching and indexing	US10827234	11/3/2020	US16217980	12/12/2018
Roku, Inc.	US	ADVANCED LAYER EDITOR	US11150881	10/19/2021	US16220080	12/14/2018
Roku, Inc.	US	Method and apparatus for multi-dimensional content search and video identification	US10977307	4/13/2021	US16240859	1/7/2019
Roku, Inc.	US	Media channel identification and action with multi-match detection based on reference stream comparison	US10575052	2/25/2020	US16246746	1/14/2019
Roku, Inc.	US	Synchronization with synthesized audio clock	US10979757	4/13/2021	US16319991	1/23/2019
Roku, Inc.	US	Method and device for generating and detecting a fingerprint functioning as a trigger marker in	US10595053	3/17/2020	US16264134	1/31/2019

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		a multimedia signal				
Roku, Inc.	US	Extended selection and alignment of video segments for adaptive streaming	US10757153	8/25/2020	US16266402	2/4/2019
Roku, Inc.	US	Multi-interface streaming media system	US10750235	8/18/2020	US16272164	2/11/2019
Roku, Inc.	US	Media channel identification with multi-match detection and disambiguation based on location	US10536746	1/14/2020	US16274975	2/13/2019
Roku, Inc.	US	Media channel identification with video multi-match detection and disambiguation based on audio fingerprint	US10631049	4/21/2020	US16274966	2/13/2019
Roku, Inc.	US	Media channel identification with multi-match detection and disambiguation based on time of broadcast	US10848820	11/24/2020	US16276050	2/14/2019
Roku, Inc.	US	Media channel identification with multi-match detection and disambiguation based on single-match	US10567836	2/18/2020	US16276061	2/14/2019
Roku, Inc.	US	Tracking proximities of devices and/or objects	US10524090	12/31/2019	US16281901	2/21/2019
Roku, Inc.	US	PROVIDING ROLLING UPDATES OF DISTRIBUTED SYSTEMS WITH A	US11630775	4/18/2023	US16281885	2/21/2019

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		SHARED CACHE				
Roku, Inc.	US	Fingerprint layouts for content fingerprinting	US10743062	8/11/2020	US16287752	2/27/2019
Roku, Inc.	US	CONTENT MANAGEMENT OF A CONTENT FEED	US11064253	7/13/2021	US16295626	3/7/2019
Roku, Inc.	US	Media fingerprinting and identification system	US10423654	9/24/2019	US16355727	3/16/2019
Roku, Inc.	US	MEDIA DEVICE UPGRADING SYSTEM	US11399213	7/26/2022	US16357740	3/19/2019
Roku, Inc.	US	Media Fingerprinting and Identification System	US11036783	6/15/2021	US16365577	3/26/2019
Roku, Inc.	US	Obtaining viewer demographics through advertisement selections	US10897657	1/19/2021	US16366790	3/27/2019
Roku, Inc.	US	Media Fingerprinting and Identification System	US11042585	6/22/2021	US16367921	3/28/2019
Roku, Inc.	US	Media Fingerprinting and Identification System	US11074288	7/27/2021	US16383473	4/12/2019
Roku, Inc.	US	Media Fingerprinting and Identification System	US11126650	9/21/2021	US16385575	4/16/2019
Roku, Inc.	US	Media Fingerprinting and Identification System	US11188587	11/30/2021	US16387456	4/17/2019

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Roku, Inc.	US	Media Fingerprinting and Identification System	US11163818	11/2/2021	US16387443	4/17/2019
Roku, Inc.	US	Media Fingerprinting and Identification System	US11120068	9/14/2021	US16387448	4/17/2019
Roku, Inc.	US	Digital overlay offers on connected media devices	US10869078	12/15/2020	US16388097	4/18/2019
Roku, Inc.	US	Digital overlay offers on connected media devices	US10863223	12/8/2020	US16388081	4/18/2019
Roku, Inc.	US	Digital overlay offers on connected media devices	US10863222	12/8/2020	US16388070	4/18/2019
Roku, Inc.	US	Media fingerprinting and identification system	US10387482	8/20/2019	US16388747	4/18/2019
Roku, Inc.	US	Media Fingerprinting and Identification System	US11194854	12/7/2021	US16388740	4/18/2019
Roku, Inc.	US	Media Fingerprinting and Identification System	US11194855	12/7/2021	US16388750	4/18/2019
Roku, Inc.	US	Scene frame matching for automatic content recognition	US10963699	3/30/2021	US16390410	4/22/2019
Roku, Inc.	US	Method and system for remotely controlling consumer electronic device	US10972763	4/6/2021	US16390627	4/22/2019
Roku, Inc.	US	Method and system for remotely	US10701410	6/30/2020	US16390644	4/22/2019

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		controlling consumer electronic device				
Roku, Inc.	US	Method and system for remotely controlling consumer electronic devices	US10972764	4/6/2021	US16390631	4/22/2019
Roku, Inc.	US	Method and system for remotely controlling consumer electronic device	US10979742	4/13/2021	US16390595	4/22/2019
Roku, Inc.	US	Client-side video advertisement replacement using automatic content recognition	US10810629	10/20/2020	US16395509	4/26/2019
Roku, Inc.	US	Creating and fulfilling dynamic advertisement replacement inventory	US10764653	9/1/2020	US16399577	4/30/2019
Roku, Inc.	US	Dynamic video advertisement replacement	US10728629	7/28/2020	US16399548	4/30/2019
Roku, Inc.	US	Dynamic video advertisement replacement	US10728628	7/28/2020	US16399525	4/30/2019
Roku, Inc.	US	Sequentially Overlaying Media Content	US11122317	9/14/2021	US16399267	4/30/2019
Roku, Inc.	US	Sequentially overlaying media content	US10979756	4/13/2021	US16399354	4/30/2019
Roku, Inc.	US	Sequentially Overlaying Media Content	US11064238	7/13/2021	US16399450	4/30/2019
Roku, Inc.	US	Sequentially Overlaying Media Content	US11134293	9/28/2021	US16399401	4/30/2019
Roku, Inc.	US	Method and System for Remotely Controlling	US11064225	7/13/2021	US16403105	5/3/2019

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		Consumer Electronic Devices				
Roku, Inc.	US	Method and System for Remotely Controlling Consumer Electronic Devices	US11140425	10/5/2021	US16403111	5/3/2019
Roku, Inc.	US	Method and System for Remotely Controlling Consumer Electronic Devices	US11064224	7/13/2021	US16403096	5/3/2019
Roku, Inc.	US	Method and system for remotely controlling consumer electronic devices	US10735782	8/4/2020	US16403089	5/3/2019
Roku, Inc.	US	Method and System for Remotely Controlling Consumer Electronic Devices	US11070852	7/20/2021	US16403084	5/3/2019
Roku, Inc.	US	Method and System for Remotely Controlling Consumer Electronic Devices	US11064223	7/13/2021	US16403075	5/3/2019
Roku, Inc.	US	Criteria verification to facilitate providing of highest cost per mile (CPM) overlays to client devices	US10757477	8/25/2020	US16411602	5/14/2019
Roku, Inc.	US	Providing restricted overlay content to an authorized client device	US10798448	10/6/2020	US16411533	5/14/2019

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Roku, Inc.	US	Detecting and responding to an event within an interactive videogame	US10824222	11/3/2020	US16425490	5/29/2019
Roku, Inc.	US	PROVIDING OVER-THE-AIR CONTENT TO ANY DEVICE	US11240555	2/1/2022	US16430982	6/4/2019
Roku, Inc.	US	DETECTION OF MUTE AND COMPENSATION THEREFOR DURING MEDIA REPLACEMENT EVENT	US11245958	2/8/2022	US16433530	6/6/2019
Roku, Inc.	US	Method and Apparatus for Multi-Dimensional Content Search and Video Identification	US11281718	3/22/2022	US16442404	6/14/2019
Roku, Inc.	US	Media Content Identification on Mobile Devices	US11445242	9/13/2022	US16441996	6/14/2019
Roku, Inc.	US	Media Content Identification on Mobile Devices	US11706481	7/18/2023	US16441987	6/14/2019
Roku, Inc.	US	Media Content Identification on Mobile Devices	US11140439	10/5/2021	US16441967	6/14/2019
Roku, Inc.	US	Media content identification on mobile devices	US10986399	4/20/2021	US16441956	6/14/2019
Roku, Inc.	US	Media Content Identification on Mobile Devices	US11729458	8/15/2023	US16441949	6/14/2019
Roku, Inc.	US	Media Content Identification on Mobile Devices	US11564001	1/24/2023	US16441924	6/14/2019
Roku, Inc.	US	Method and Apparatus for Multi-Dimensional Content Search and Video Identification	US11288314	3/29/2022	US16442414	6/14/2019

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Roku, Inc.	US	Method and Apparatus for Multi-Dimensional Content Search and Video Identification	US11288313	3/29/2022	US16442398	6/14/2019
Roku, Inc.	US	Method and Apparatus for Multi-Dimensional Content Search and Video Identification	US11288312	3/29/2022	US16442006	6/14/2019
Roku, Inc.	US	Scene Frame Matching for Automatic Content Recognition	US11144765	10/12/2021	US16447344	6/20/2019
Roku, Inc.	US	BROWN OUT CONDITION DETECTION AND DEVICE CALIBRATION	US11023027	6/1/2021	US16448203	6/21/2019
Roku, Inc.	US	Automatically and programmatically generating crowdsourced trailers	US10972812	4/6/2021	US16459730	7/2/2019
Roku, Inc.	US	NETWORK-BASED USER IDENTIFICATION	US11122636	9/14/2021	US16459728	7/2/2019
Roku, Inc.	US	Recommending content based on user behavior tracking and analysis	US10834448	11/10/2020	US16459722	7/2/2019
Roku, Inc.	US	Video Fingerprinting Based on Fourier Transform of Histogram	US11546656	1/3/2023	US16502649	7/3/2019
Roku, Inc.	US	Media Fingerprinting and Identification System	US11366847	6/21/2022	US16502857	7/3/2019
Roku, Inc.	US	Dynamic video overlays	US10869086	12/15/2020	US16520294	7/23/2019

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Roku, Inc.	US	MULTI-AGENT RING-BUFFER	US11132240	9/28/2021	US16542915	8/16/2019
Roku, Inc.	US	MOBILE DEVICE BASED CONTROL DEVICE LOCATOR	US11327150	5/10/2022	US16545426	8/20/2019
Roku, Inc.	US	Media Fingerprinting and Identification System	US11334615	5/17/2022	US16553658	8/28/2019
Roku, Inc.	US	USING NON-AUDIO DATA EMBEDDED IN AN AUDIO SIGNAL	US11361773	6/14/2022	US16553579	8/28/2019
Roku, Inc.	US	Content comparison testing on linear media streams	US10721515	7/21/2020	US16555507	8/29/2019
Roku, Inc.	US	WIRELESS STREAMING SYSTEM WITH LOW POWER MODE AND ASSOCIATED REMOTE CONTROL	US11026174	6/1/2021	US16556513	8/30/2019
Roku, Inc.	US	Smart Remote Control for Audio Responsive Media Device	US11924511	3/5/2024	US16566513	9/10/2019
Roku, Inc.	US	Method and system for remotely controlling consumer electronic devices	US10904589	1/26/2021	US16568445	9/12/2019
Roku, Inc.	US	Method and system for remotely controlling consumer electronic devices	US10701412	6/30/2020	US16568438	9/12/2019
Roku, Inc.	US	Method and system for	US10715841	7/14/2020	US16568414	9/12/2019

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		remotely controlling consumer electronic devices				
Roku, Inc.	US	Method and system for remotely controlling consumer electronic devices	US10701411	6/30/2020	US16568407	9/12/2019
Roku, Inc.	US	ENABLING INTERACTIVE CONTROL OF LIVE TELEVISION BROADCAST STREAMS	US11172262	11/9/2021	US16495337	9/18/2019
Roku, Inc.	US	Interactive overlays to determine viewer data	US10869083	12/15/2020	US16574858	9/18/2019
Roku, Inc.	US	Method and System for Use of Network Affiliation as Basis to Determine Channel Rendered by Content Presentation Device	US11202109	12/14/2021	US16586542	9/27/2019
Roku, Inc.	US	Method and System for Use of Earlier and/or Later Single-Match as Basis to Disambiguate Channel Multi-Match with Non-Matching Programs	US11722729	8/8/2023	US16586552	9/27/2019
Roku, Inc.	US	Automatic Content Recognition Search Optimization	US11294956	4/5/2022	US16588211	9/30/2019
Roku, Inc.	US	Media fingerprinting	US10579668	3/3/2020	US16596291	10/8/2019

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		and identification system				
Roku, Inc.	US	Computing system with content-characteristic-based trigger feature	US10841665	11/17/2020	US16597597	10/9/2019
Roku, Inc.	US	AUTOMATIC DETERMINATION OF DISPLAY DEVICE FUNCTIONALITY	US11140034	10/5/2021	US16653118	10/15/2019
Roku, Inc.	US	MEASURING AND EVALUATING A TEST SIGNAL GENERATED BY A DEVICE UNDER TEST (DUT)	US11153043	10/19/2021	US16662785	10/24/2019
Roku, Inc.	US	Method and system for presenting additional content at a media system	US10869095	12/15/2020	US16670983	10/31/2019
Roku, Inc.	US	Method and system for presenting additional content at a media system	US10979772	4/13/2021	US16670965	10/31/2019
Roku, Inc.	US	METHOD AND SYSTEM FOR PRESENTING ADDITIONAL CONTENT AT A MEDIA SYSTEM	US11102550	8/24/2021	US16670961	10/31/2019
Roku, Inc.	US	Method and system for presenting additional content at a media system	US10904629	1/26/2021	US16670956	10/31/2019

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Roku, Inc.	US	METHOD AND SYSTEM FOR PRESENTING ADDITIONAL CONTENT AT A MEDIA SYSTEM	US11743543	8/29/2023	US16670954	10/31/2019
Roku, Inc.	US	AD-HOC LIGHTWEIGHT mPOS REMOTE CONTROL	US11475433	10/18/2022	US16669664	10/31/2019
Roku, Inc.	US	MANAGING LOW FREQUENCIES OF AN OUTPUT SIGNAL	US11218805	1/4/2022	US16671991	11/1/2019
Roku, Inc.	US	CROSS-PLATFORM MEDIA REDIRECTION AND INTEROPERABILITY	US11356729	6/7/2022	US16610265	11/1/2019
Roku, Inc.	US	DETECTION OF MEDIA PLAYBACK LOUDNESS LEVEL AND CORRESPONDING ADJUSTMENT TO AUDIO DURING MEDIA REPLACEMENT EVENT	US11347470	5/31/2022	US16673859	11/4/2019
Roku, Inc.	US	Dynamic control of fingerprinting rate to facilitate time-accurate revision of media content	US10979758	4/13/2021	US16674652	11/5/2019
Roku, Inc.	US	Detection of Volume Adjustments During Media Replacement Events Using	US11068232	7/20/2021	US16684510	11/14/2019

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		Loudness Level Profiles				
Roku, Inc.	US	MONITORING LOUDNESS LEVEL DURING MEDIA REPLACEMENT EVENT USING SHORTER TIME CONSTANT	US11042353	6/22/2021	US16684514	11/14/2019
Roku, Inc.	US	AUDIO SEARCH RESULTS IN A MULTI-CONTENT SOURCE ENVIRONMENT	US11178464	11/16/2021	US16686966	11/18/2019
Roku, Inc.	US	Media channel identification with multi-match detection and disambiguation based on location	US11012738	5/18/2021	US15929167	11/19/2019
Roku, Inc.	US	IN-SYNC DIGITAL WAVEFORM COMPARISON TO DETERMINE PASS/FAIL RESULTS OF A DEVICE UNDER TEST (DUT)	US11102596	8/24/2021	US16688301	11/19/2019
Roku, Inc.	US	Automatic audio source selection system	US10848829	11/24/2020	US16689556	11/20/2019
Roku, Inc.	US	LOW LATENCY DISTRIBUTION OF AUDIO USING A SINGLE RADIO	US11197054	12/7/2021	US16689749	11/20/2019
Roku, Inc.	US	Identifying Video Content	US11308731	4/19/2022	US16692124	11/22/2019

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		via Color-Based Fingerprint Matching				
Roku, Inc.	US	SOUND GENERATION WITH ADAPTIVE DIRECTIVITY	US11317206	4/26/2022	US16697744	11/27/2019
Roku, Inc.	US	USB-BASED MEDIA DEVICE UPGRADING SYSTEM	US11190842	11/30/2021	US16700608	12/2/2019
Roku, Inc.	US	NETWORK-BASED MEDIA DEVICE UPGRADING SYSTEM	US11317152	4/26/2022	US16700600	12/2/2019
Roku, Inc.	US	Intelligent power reduction in audio amplifiers	US10924079	2/16/2021	US16701834	12/3/2019
Roku, Inc.	US	Speaker normalization system	US10924853	2/16/2021	US16702853	12/4/2019
Roku, Inc.	US	Targeted Content Placement Using Overlays	US11039222	6/15/2021	US16704356	12/5/2019
Roku, Inc.	US	Method and system for detecting and responding to changing of media channel	US10805673	10/13/2020	US15929179	12/5/2019
Roku, Inc.	US	Media channel identification and action with multi-match detection and disambiguation based on matching with differential reference-fingerprint feature	US10972786	4/6/2021	US15929180	12/5/2019
Roku, Inc.	US	AUDIO TIME SYNCHRONIZATION USING PRIORITIZED SCHEDULE	US11437075	9/6/2022	US16709113	12/10/2019

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Roku, Inc.	US	Tracking proximities of devices and/or objects	US10939234	3/2/2021	US16712738	12/12/2019
Roku, Inc.	US	Media channel identification and action with multi-match detection based on reference stream comparison	US10939162	3/2/2021	US15929193	12/19/2019
Roku, Inc.	US	Generating Playback Configurations Based on Aggregated Crowd-Sourced Statistics	US11489748	11/1/2022	US16725075	12/23/2019
Roku, Inc.	US	Method and apparatus for selection of content from a stream of data	US10924816	2/16/2021	US16734283	1/3/2020
Roku, Inc.	US	Method and apparatus for selection of content from a stream of data	US10945049	3/9/2021	US16734081	1/3/2020
Roku, Inc.	US	CONTROLLING DISPLAY DEVICE SETTINGS FROM A MOBILE DEVICE TOUCH INTERFACE	US11372531	6/28/2022	US16736283	1/7/2020
Roku, Inc.	US	Media channel identification with multi-match detection and disambiguation based on single-match	US11012743	5/18/2021	US15929203	1/10/2020
Roku, Inc.	US	Using non-audio data embedded in an audio signal	US10904606	1/26/2021	US16750191	1/23/2020
Roku, Inc.	US	Method and System for Re-	US11153616	10/19/2021	US15929211	1/28/2020

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		Uniting Metadata with Media-Stream Content at a Media Client, to Facilitate Action by the Media Client				
Roku, Inc.	US	Method and system for remotely controlling consumer electronic device	US10972766	4/6/2021	US16775126	1/28/2020
Roku, Inc.	US	Use of In-Band Metadata as Basis to Access Reference Fingerprints to Facilitate Content-Related Action	US11233840	1/25/2022	US15929210	1/28/2020
Roku, Inc.	US	Use of watermarking to control abandonment of dynamic content modification	US11006191	5/11/2021	US15929212	1/29/2020
Roku, Inc.	US	RECEIVER FOR HIGH PRECISION SYNCHRONIZATION IN A SHARED MEDIUM	US11405173	8/2/2022	US16777094	1/30/2020
Roku, Inc.	US	Inserting Advertisements Into Video Content	US11265617	3/1/2022	US16779547	1/31/2020
Roku, Inc.	US	Dynamic control of fingerprinting rate to facilitate time-accurate revision of media content	US10992981	4/27/2021	US16790335	2/13/2020
Roku, Inc.	US	Use of Steganographicaly-Encoded Data as Basis to Control Dynamic	US11234050	1/25/2022	US15929225	2/14/2020

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		Content Modification as to at Least One Modifiable-Content Segment Identified Based on Fingerprint Analysis				
Roku, Inc.	US	DO NOT DISTURB FUNCTIONALITY FOR VOICE RESPONSIVE DEVICES	US11545148	1/3/2023	US16808588	3/4/2020
Roku, Inc.	US	Providing a representation for a device connected to a display device	US10971111	4/6/2021	US16811392	3/6/2020
Roku, Inc.	US	Passive Data Collection from Third-Party Channel Applications	US11297377	4/5/2022	US16812621	3/9/2020
Roku, Inc.	US	Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	US11109074	8/31/2021	US16815720	3/11/2020
Roku, Inc.	US	MEDIA CHANNEL IDENTIFICATION WITH VIDEO MULTI-MATCH DETECTION AND DISAMBIGUATION BASED ON AUDIO FINGERPRINT	US11089360	8/10/2021	US16819657	3/16/2020
Roku, Inc.	US	STREAMING CONTENT BASED ON SKIP HISTORIES	US11005956	5/11/2021	US16819594	3/16/2020

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Roku, Inc.	US	POST-PRODUCTION DE-MURA OF A TELEVISION USING A MOBILE DEVICE	US11134241	9/28/2021	US16826645	3/23/2020
Roku, Inc.	US	Method and System for Remotely Controlling Consumer Electronic Devices	US11206435	12/21/2021	US16828522	3/24/2020
Roku, Inc.	US	Controlling visual indicators in an audio responsive electronic device, and capturing and providing audio using an api, by native and non-native computing devices and services	US11126389	9/21/2021	US16828048	3/24/2020
Roku, Inc.	US	METHOD AND SYSTEM FOR PRESENTING ADDITIONAL CONTENT AT A MEDIA SYSTEM	US11445258	9/13/2022	US16835215	3/30/2020
Roku, Inc.	US	METHOD AND SYSTEM FOR PRESENTING ADDITIONAL CONTENT AT A MEDIA SYSTEM	US11336964	5/17/2022	US16835213	3/30/2020
Roku, Inc.	US	DYNAMIC BATTERY BACK-UP FOR SET-TOP-BOXES	US11625085	4/11/2023	US16834095	3/30/2020
Roku, Inc.	US	Content-Modification System with Volume Level Adjustment Feature	US11134305	9/28/2021	US16835635	3/31/2020

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Roku, Inc.	US	Content-Modification System with Issue Detection and Responsive Action Feature	US12028571	7/2/2024	US16835569	3/31/2020
Roku, Inc.	US	Content-modification system with use of multiple fingerprint data types feature	US10796159	10/6/2020	US16836170	3/31/2020
Roku, Inc.	US	Content-Modification System with Transmission Delay-Based Feature	US11153648	10/19/2021	US16836082	3/31/2020
Roku, Inc.	US	Content-modification system with transmission delay-based feature	US10972794	4/6/2021	US16836098	3/31/2020
Roku, Inc.	US	Content-modification system with geographic area-based feature	US10846506	11/24/2020	US16836034	3/31/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH TECHNICAL CHARACTERISTIC-BASED SELECTION FEATURE	US11418835	8/16/2022	US16835935	3/31/2020
Roku, Inc.	US	Method and System for Remotely Controlling Consumer Electronic Devices	US11134281	9/28/2021	US16836417	3/31/2020
Roku, Inc.	US	Method and System for Remotely Controlling Consumer	US11134280	9/28/2021	US16836280	3/31/2020

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		Electronic Devices				
Roku, Inc.	US	Method and System for Remotely Controlling Consumer Electronic Devices	US11166056	11/2/2021	US16845392	4/10/2020
Roku, Inc.	US	DETECTION OF MUTE AND COMPENSATION THEREFOR DURING MEDIA REPLACEMENT EVENT	US11317144	4/26/2022	US16847532	4/13/2020
Roku, Inc.	US	Content-Modification System with Testing and Reporting Feature	US11336949	5/17/2022	US16850499	4/16/2020
Roku, Inc.	US	Content-Modification System with Probability-Based Selection Feature	US11546647	1/3/2023	US16853932	4/21/2020
Roku, Inc.	US	Content-Modification System with Overlay Handling Feature	US11134292	9/28/2021	US16855268	4/22/2020
Roku, Inc.	US	Content-Modification System with Unscheduling Feature	US11109088	8/31/2021	US16866023	5/4/2020
Roku, Inc.	US	Content-Modification System with Supplemental Content Stitching Feature	US11418826	8/16/2022	US16866005	5/4/2020
Roku, Inc.	US	Media Fingerprinting and Identification System	US11455328	9/27/2022	US16869214	5/7/2020

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Roku, Inc.	US	Automatic Content Recognition (ACR) Fingerprinting and Video Encoding	US11051055	6/29/2021	US16868651	5/7/2020
Roku, Inc.	US	Content-Modification System With Responsive Transmission of Reference Fingerprint Data Feature	US11736742	8/22/2023	US16870460	5/8/2020
Roku, Inc.	US	Content-Modification System with Fingerprint Data Mismatch and Responsive Action Feature	US11386696	7/12/2022	US16870583	5/8/2020
Roku, Inc.	US	Content-Modification System with Fingerprint Data Match and Mismatch Detection Feature	US11373440	6/28/2022	US16869860	5/8/2020
Roku, Inc.	US	Content-Modification System With Determination of Input-Buffer Switching Delay Feature	US11395037	7/19/2022	US16870482	5/8/2020
Roku, Inc.	US	Content-Modification System With Responsive Transmission of Reference Fingerprint Data Feature	US11653037	5/16/2023	US16870451	5/8/2020
Roku, Inc.	US	Content-Modification System With Responsive Transmission of Reference	US11632598	4/18/2023	US16872073	5/11/2020

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		Fingerprint Data Feature				
Roku, Inc.	US	PROVIDING SAFETY AND ENVIRONMENTAL FEATURES USING HUMAN PRESENCE DETECTION	US11395232	7/19/2022	US15930706	5/13/2020
Roku, Inc.	US	PROVIDING CUSTOMIZED ENTERTAINMENT EXPERIENCE USING HUMAN PRESENCE DETECTION	US11202121	12/14/2021	US15930704	5/13/2020
Roku, Inc.	US	PROVIDING ENERGY-EFFICIENT FEATURES USING HUMAN PRESENCE DETECTION	US11736767	8/22/2023	US15930712	5/13/2020
Roku, Inc.	US	Media Fingerprinting and Identification System	US11449540	9/20/2022	US16874896	5/15/2020
Roku, Inc.	US	Method and System for Remotely Controlling Consumer Electronic Devices	US11297359	4/5/2022	US16881397	5/22/2020
Roku, Inc.	US	Establishment and Use of Time Mapping Based on Interpolation Using Low-Rate Fingerprinting, to Help Facilitate Frame-Accurate Content Revision	US11044499	6/22/2021	US16890592	6/2/2020

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Roku, Inc.	US	Content-modification system with system resource request feature	US10986382	4/20/2021	US16895685	6/8/2020
Roku, Inc.	US	Content-Modification System with Broadcast Schedule Utilization Feature	US11627347	4/11/2023	US16895794	6/8/2020
Roku, Inc.	US	Content Comparison Testing on Linear Media Streams	US11057662	7/6/2021	US16899261	6/11/2020
Roku, Inc.	US	Content-Modification System with Determination of Input-Buffer Switching Delay Feature	US11245870	2/8/2022	US16905172	6/18/2020
Roku, Inc.	US	DYNAMIC VIDEO ADVERTISEM ENT REPLACEMEN T	US11146861	10/12/2021	US16908677	6/22/2020
Roku, Inc.	US	MODULATING A QUALITY OF MEDIA CONTENT	US11678001	6/13/2023	US16909222	6/23/2020
Roku, Inc.	US	Digital Video Fingerprinting Using Motion Segmentation	US11302315	4/12/2022	US16916179	6/30/2020
Roku, Inc.	US	PROTOCOL-BASED GRAPHICS COMPOSITOR	US11138687	10/5/2021	US16921281	7/6/2020
Roku, Inc.	US	MODIFYING GRAPHICS RENDERING BY TRANSCODIN G A SERIALIZED COMMAND STREAM	US11348199	5/31/2022	US16921321	7/6/2020

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Roku, Inc.	US	AUTOMATIC CONTENT RECOGNITION WITH LOCAL MATCHING	US11240556	2/1/2022	US16924119	7/8/2020
Roku, Inc.	US	Cold Matching by Automatic Content Recognition	US11379448	7/5/2022	US16946862	7/9/2020
Roku, Inc.	US	Advanced Preparation for Content Revision Based on Expected Latency in Obtaining New Content	US11184649	11/23/2021	US16924806	7/9/2020
Roku, Inc.	US	Frame replacement without overrun	US11206446	12/21/2021	US16925552	7/10/2020
Roku, Inc.	US	Fingerprint Layouts For Content Fingerprinting	US11128915	9/21/2021	US16925730	7/10/2020
Roku, Inc.	US	Method and System for Detecting and Responding to Changing of Media Channel	US11089357	8/10/2021	US16946888	7/10/2020
Roku, Inc.	US	Providing Restricted Overlay Content to an Authorized Client Device	US11212582	12/28/2021	US16928770	7/14/2020
Roku, Inc.	US	Criteria Verification to Facilitate Providing of Highest Cost per Mile (CPM) Overlays to Client Devices	US11212581	12/28/2021	US16928765	7/14/2020
Roku, Inc.	US	Dynamic Video Overlays	US11470383	10/11/2022	US16928683	7/14/2020
Roku, Inc.	US	Client-Side Video Advertisement Replacement Using Automatic	US11276086	3/15/2022	US16930087	7/15/2020

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		Content Recognition				
Roku, Inc.	US	Method to Differentiate and Classify Fingerprints Using Fingerprint Neighborhood Analysis	US11361017	6/14/2022	US16929858	7/15/2020
Roku, Inc.	US	CREATING AND FULFILLING DYNAMIC ADVERTISEMENTS REPLACEMENT INVENTORY	US11159859	10/26/2021	US16931402	7/16/2020
Roku, Inc.	US	Content-Modification System with Broadcast Schedule Utilization Feature	US11381864	7/5/2022	US16934974	7/21/2020
Roku, Inc.	US	Content-Modification System with Broadcast Schedule Utilization Feature	US11297367	4/5/2022	US16934972	7/21/2020
Roku, Inc.	US	SECURE REMOTE-LESS CONFIGURATION OF A MEDIA PLAYBACK DRIVE	US11184657	11/23/2021	US16934210	7/21/2020
Roku, Inc.	US	Responding to Emergency-Alert Audio Tone by Abandoning Dynamic Content Modification	US11632597	4/18/2023	US16947182	7/22/2020
Roku, Inc.	US	MASS INSERTION INTO SINGLE-THREADED DATABASES	US11663242	5/30/2023	US16939758	7/27/2020

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Roku, Inc.	US	STREAMING SYNCHRONIZED MEDIA CONTENT TO SEPARATE DEVICES	US11582300	2/14/2023	US16940600	7/28/2020
Roku, Inc.	US	Method and System for Remotely Controlling Consumer Electronic Device	US11611783	3/21/2023	US16942711	7/29/2020
Roku, Inc.	US	MULTI-INTERFACE STREAMING MEDIA SYSTEM	US11523173	12/6/2022	US16987004	8/6/2020
Roku, Inc.	US	Content-Modification System with Use of Multiple Fingerprint Data Types Feature	US11450110	9/20/2022	US16994033	8/14/2020
Roku, Inc.	US	Authorizing Devices Based on Identifying Content Distributor	US11206434	12/21/2021	US16947748	8/14/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH BROADCAST SCHEDULE UTILIZATION FEATURE	US11095944	8/17/2021	US16996701	8/18/2020
Roku, Inc.	US	MODIFYING PLAYBACK OF REPLACEMENT CONTENT RESPONSIVE TO DETECTION OF REMOTE CONTROL SIGNALS THAT CONTROL A DEVICE PROVIDING	US11323777	5/3/2022	US17003211	8/26/2020

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		VIDEO TO THE PLAYBACK DEVICE				
Roku, Inc.	US	MODIFYING PLAYBACK OF REPLACEMENT CONTENT RESPONSIVE TO DETECTION OF REMOTE CONTROL SIGNALS THAT MODIFY OPERATION OF THE PLAYBACK DEVICE	US11303870	4/12/2022	US17003203	8/26/2020
Roku, Inc.	US	Detecting and Responding to an Event within an Interactive Videogame	US11068042	7/20/2021	US16947969	8/26/2020
Roku, Inc.	US	Method and Apparatus for Multi-Dimensional Content Search and Video Identification	US11126654	9/21/2021	US17017589	9/10/2020
Roku, Inc.	US	STREAMING A VIDEO CHAT FROM A MOBILE DEVICE TO A DISPLAY DEVICE USING A ROTATING BASE	US11178357	11/16/2021	US17028561	9/22/2020
Roku, Inc.	US	RECOMMENDING CONTENT BASED ON USER BEHAVIOR TRACKING AND ANALYSIS	US11457261	9/27/2022	US17039184	9/30/2020
Roku, Inc.	US	SYSTEM AND METHOD FOR AN	US11546758	1/3/2023	US17061996	10/2/2020

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		EXTENDER DEVICE				
Roku, Inc.	US	Computing System with Content-Characteristic-Based Trigger Feature	US11706500	7/18/2023	US17066028	10/8/2020
Roku, Inc.	US	Dynamic Ad Insertion Decision-Making for Linear Live TV	US11900411	2/13/2024	US16949014	10/9/2020
Roku, Inc.	US	ADAPTIVE SWITCHING IN A WHOLE HOME ENTERTAINMENT SYSTEM	US11611788	3/21/2023	US17066595	10/9/2020
Roku, Inc.	US	Content-Modification System With Geographic Area-Based Feature	US11900719	2/13/2024	US17069356	10/13/2020
Roku, Inc.	US	Media Channel Identification with Multi-Match Detection and Disambiguation Based on Time of Broadcast	US11206447	12/21/2021	US16949183	10/19/2020
Roku, Inc.	US	AUTOMATIC AUDIO SOURCE SELECTION SYSTEM	US11729471	8/15/2023	US17076296	10/21/2020
Roku, Inc.	US	Content-Modification System With Delay Buffer Feature	US11363321	6/14/2022	US17086119	10/30/2020
Roku, Inc.	US	Content-Modification System with Client-Side Advertisement Caching	US11190854	11/30/2021	US16949515	10/31/2020
Roku, Inc.	US	Digital Overlay Offers On	US11218761	1/4/2022	US17090126	11/5/2020

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		Connected Media Devices				
Roku, Inc.	US	Interactive Overlays To Determine Viewer Data	US11140435	10/5/2021	US17094150	11/10/2020
Roku, Inc.	US	Identifying Video Content via Fingerprint Matching	US11886500	1/30/2024	US17096826	11/12/2020
Roku, Inc.	US	RADIO FREQUENCY REMOTE CONTROL	US11477851	10/18/2022	US17096530	11/12/2020
Roku, Inc.	US	Dynamic Video Overlays	US11425454	8/23/2022	US17098409	11/15/2020
Roku, Inc.	US	Content-Modification System With Multiple Video Buffers Feature	US11381855	7/5/2022	US16951180	11/18/2020
Roku, Inc.	US	Flagging Advertisement Frames for Automatic Content Recognition	US11303974	4/12/2022	US17247070	11/27/2020
Roku, Inc.	US	AUDIO CANCELLATION AND CONTENT RECOGNITION OF AUDIO RECEIVED OVER HDMI/ARC	US11392342	7/19/2022	US17109698	12/2/2020
Roku, Inc.	US	Advertising Campaign to Viewing Device Suitability Matching	US11238487	2/1/2022	US17115363	12/8/2020
Roku, Inc.	US	Replacement Advertisement Selection After Channel Changes	US11250480	2/15/2022	US17118400	12/10/2020
Roku, Inc.	US	Establishment and Use of Time Mapping Based on Interpolation Using Low-Rate	US11284131	3/22/2022	US17247517	12/15/2020

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		Fingerprinting, to Help Facilitate Frame-Accurate Content Revision				
Roku, Inc.	US	USING NON-AUDIO DATA EMBEDDED IN AN AUDIO SIGNAL	US11553237	1/10/2023	US17123239	12/16/2020
Roku, Inc.	US	Obtaining Viewer Demographics Through Advertisement Selections	US11184682	11/23/2021	US17128860	12/21/2020
Roku, Inc.	US	Scene Frame Matching for Automatic Content Recognition	US11361549	6/14/2022	US17142619	1/6/2021
Roku, Inc.	US	TRANSMITTING MESSAGES TO A DISPLAY DEVICE BASED ON DETECTED AUDIO OUTPUT	US11169771	11/9/2021	US17146080	1/11/2021
Roku, Inc.	US	Content-Modification System With Feature For Managing Multiple Content-Modification Requests	US11297385	4/5/2022	US17146569	1/12/2021
Roku, Inc.	US	SKIPPING CONTENT OF LESSER INTEREST WHEN STREAMING MEDIA	US11431772	8/30/2022	US17148711	1/14/2021
Roku, Inc.	US	SPEAKER NORMALIZATION SYSTEM	US11212615	12/28/2021	US17148703	1/14/2021
Roku, Inc.	US	Method and Apparatus for Selection of	US11368764	6/21/2022	US17148700	1/14/2021

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		Content from a Stream of Data				
Roku, Inc.	US	Media Channel Identification and Action with Multi-Match Detection Based on Reference Stream Comparison	US11463765	10/4/2022	US17248352	1/21/2021
Roku, Inc.	US	TRACKING PROXIMITIES OF DEVICES AND/OR OBJECTS	US11412346	8/9/2022	US17156937	1/25/2021
Roku, Inc.	US	WIRELESS AUDIO SYNCHRONIZATION USING A SPREAD CODE	US11558579	1/17/2023	US17157215	1/25/2021
Roku, Inc.	US	Content-Modification System With Feature For Detecting And Responding To A Content Modification By A Tuner Device	US11575963	2/7/2023	US17162310	1/29/2021
Roku, Inc.	US	Content-Modification System With Feature For Detecting And Responding To A Content Modification By A Tuner Device	US11343565	5/24/2022	US17162299	1/29/2021
Roku, Inc.	US	Content-Modification System With Feature For Detecting And Responding To Content Modifications By Tuner Devices	US11533533	12/20/2022	US17162490	1/29/2021
Roku, Inc.	US	Smart switch with functionalities	US11860654	1/2/2024	US17165700	2/2/2021

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		determined based on a grounded conductor connection				
Roku, Inc.	US	Computing System with Channel-Change-Based Trigger Feature	US11778285	10/3/2023	US17175788	2/15/2021
Roku, Inc.	US	Content-Modification System with Jitter Effect Mitigation Feature	US11539987	12/27/2022	US17180231	2/19/2021
Roku, Inc.	US	Media channel identification and action with multi-match detection and disambiguation based on matching with differential reference-fingerprint feature	US11290776	3/29/2022	US17249107	2/19/2021
Roku, Inc.	US	Content-Modification System with Jitter Effect Mitigation Feature	US11528514	12/13/2022	US17180213	2/19/2021
Roku, Inc.	US	Content-Modification System with Jitter Effect Mitigation Feature	US11228798	1/18/2022	US17180242	2/19/2021
Roku, Inc.	US	Content-Modification System with Jitter Effect Mitigation Feature	US11490154	11/1/2022	US17180263	2/19/2021
Roku, Inc.	US	Content-Modification System with Jitter Effect Mitigation Feature	US11523149	12/6/2022	US17180289	2/19/2021

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Roku, Inc.	US	Detecting and Responding to Rendering of Interactive Video Content	US11936467	3/19/2024	US17249318	2/26/2021
Roku, Inc.	US	AUDIO SYNCHRONIZATION OF A DUMB SPEAKER AND A SMART SPEAKER USING A SPREAD CODE	US11177851	11/16/2021	US17188599	3/1/2021
Roku, Inc.	US	Automatically and programmatically generating crowdsourced trailers	US11356750	6/7/2022	US17189558	3/2/2021
Roku, Inc.	US	Displaying An Actionable Element Over Playing Content	US11140452	10/5/2021	US17190859	3/3/2021
Roku, Inc.	US	Displaying An Actionable Element Over Playing Content	US11134314	9/28/2021	US17190870	3/3/2021
Roku, Inc.	US	Content-Modification System With Transmission Delay-Based Feature	US11343571	5/24/2022	US17191372	3/3/2021
Roku, Inc.	US	Dynamic Control of Fingerprinting Rate to Facilitate Time-Accurate Revision of Media Content	US11290770	3/29/2022	US17196762	3/9/2021
Roku, Inc.	US	SYSTEM OF CAPTURE AND SHARING OF MEDIA	US11463781	10/4/2022	US17198865	3/11/2021
Roku, Inc.	US	Content-Modification System With System Resource Request Feature	US11310543	4/19/2022	US17201322	3/15/2021

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Roku, Inc.	US	IDENTIFYING ELECTRONIC DEVICES IN A ROOM USING A SPREAD CODE	US11671139	6/6/2023	US17208479	3/22/2021
Roku, Inc.	US	Use of video frame format as basis for differential handling of automatic content recognition and associated action	US11641495	5/2/2023	US17208283	3/22/2021
Roku, Inc.	US	SYNCHRONIZATION WITH SYNTHESIZED AUDIO CLOCK	US11627365	4/11/2023	US17212178	3/25/2021
Roku, Inc.	US	DYNAMIC DOMAIN-ADAPTED AUTOMATIC SPEECH RECOGNITION SYSTEM	US11862152	1/2/2024	US17214462	3/26/2021
Roku, Inc.	US	Dynamic Control of Fingerprinting Rate to Facilitate Time-Accurate Revision of Media Content	US11503362	11/15/2022	US17213921	3/26/2021
Roku, Inc.	US	STREAMING CONTENT BASED ON SKIP HISTORIES	US11381654	7/5/2022	US17217278	3/30/2021
Roku, Inc.	US	CONNECTOR DEVICE WITH ANTENNA CONNECTION	US11923606	3/5/2024	US17223936	4/6/2021
Roku, Inc.	US	Use of Watermarking to Control Abandonment of Dynamic Content Modification	US11343593	5/24/2022	US17301705	4/12/2021
Roku, Inc.	US	Content modification system with	US11190825	11/30/2021	US17229129	4/13/2021

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		prioritized content delivery feature				
Roku, Inc.	US	Content-Modification System with Feature For Controlling Viewer Exposure To Spoilers In Advertisements	US11388473	7/12/2022	US17228850	4/13/2021
Roku, Inc.	US	Content Modification System With Viewer Behavior-Based Content Delivery Selection Feature	US11494803	11/8/2022	US17229117	4/13/2021
Roku, Inc.	US	Media Channel Identification with Multi-Match Detection and Disambiguation Based on Location	US11317142	4/26/2022	US17301787	4/14/2021
Roku, Inc.	US	ELECTRONIC DEVICE	USD992523	7/18/2023	US29778950	4/15/2021
Roku, Inc.	US	Media Channel Identification with Multi-Match Detection and Disambiguation Based on Single-Match	US11336956	5/17/2022	US17301825	4/15/2021
Roku, Inc.	US	REMOTE CONTROL	USD991223	7/4/2023	US29782400	5/6/2021
Roku, Inc.	US	Establishment and Use of Time Mapping Based on Interpolation Using Low-Rate Fingerprinting, to Help Facilitate Frame-Accurate Content Revision	US11303939	4/12/2022	US17302720	5/11/2021

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Roku, Inc.	US	RESTORING A DISABLED DISPLAY DEVICE SPEAKER	US11561759	1/24/2023	US17320653	5/14/2021
Roku, Inc.	US	Monitoring Loudness Level During Media Replacement Event Using Shorter Time Constant	US11372617	6/28/2022	US17325075	5/19/2021
Roku, Inc.	US	SEARCHING AND DISPLAYING MULTIMEDIA SEARCH RESULTS	US11681741	6/20/2023	US17327486	5/21/2021
Roku, Inc.	US	Local and Cloud Speech Recognition	US11804227	10/31/2023	US17327115	5/21/2021
Roku, Inc.	US	Employing Automatic Content Recognition to Allow Resumption of Watching Interrupted Media Program From Television Broadcast	US11252446	2/15/2022	US17329773	5/25/2021
Roku, Inc.	US	CONTENT COMPARISON TESTING ON LINEAR MEDIA STREAMS	US11265592	3/1/2022	US17329806	5/25/2021
Roku, Inc.	US	Automatic Content Recognition (ACR) Fingerprinting And Video Encoding	US11539986	12/27/2022	US17331137	5/26/2021
Roku, Inc.	US	REMOTE CONTROL SYSTEM FOR IMPROVING TARGET SPECIFICITY	US11670161	6/6/2023	US17332342	5/27/2021

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Roku, Inc.	US	Brown Out Condition Detection and Device Calibration	US11983057	5/14/2024	US17335825	6/1/2021
Roku, Inc.	US	Crowd Sourced Indexing And/Or Searching of Content	US11700410	7/11/2023	US17335714	6/1/2021
Roku, Inc.	US	OVERRIDING MULTIMEDIA DEVICE	US11523189	12/6/2022	US17337063	6/2/2021
Roku, Inc.	US	Method and System for Remotely Controlling Consumer Electronic Devices	US11856155	12/26/2023	US17303911	6/10/2021
Roku, Inc.	US	Method and System for Remotely Controlling Consumer Electronic Devices	US11818403	11/14/2023	US17303910	6/10/2021
Roku, Inc.	US	Measuring and Evaluating a Test Signal Generated by a Device Under Test (DUT)	US11632200	4/18/2023	US17345812	6/11/2021
Roku, Inc.	US	INTELLIGENT USER INTERFACE CUSTOMIZATION FOR ONE-HANDED USE	US11868595	1/9/2024	US17345708	6/11/2021
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH QUIET CONTENT DETECTION FEATURE	US11962870	4/16/2024	US17345664	6/11/2021
Roku, Inc.	US	Server-side Matching of Supplemental Content Audio to Perceived	US11750881	9/5/2023	US17345614	6/11/2021

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		Audio by End-user				
Roku, Inc.	US	Media System With Multiple Digital Assistants	US11646025	5/9/2023	US17347021	6/14/2021
Roku, Inc.	US	Content-Modification System With Content Segment Frequency Feature	US11523150	12/6/2022	US17348156	6/15/2021
Roku, Inc.	US	VOICE CONTROL DEVICE WITH PUSH-TO-TALK (PTT) AND MUTE CONTROLS	US12033625	7/9/2024	US17348928	6/16/2021
Roku, Inc.	US	Detection of Volume Adjustments During Media Replacement Events Using Loudness Level Profiles	US11556304	1/17/2023	US17350557	6/17/2021
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH VOLUME-LEVEL DETECTION FEATURE	US11477520	10/18/2022	US17351976	6/18/2021
Roku, Inc.	US	Media Fingerprinting and Identification System	US11625427	4/11/2023	US17355058	6/22/2021
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH HOUSEHOLD COORDINATION FEATURE	US11456993	9/27/2022	US17356485	6/23/2021
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH USER	US11695989	7/4/2023	US17358537	6/25/2021

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		EXPERIENCE ANALYSIS FEATURE				
Roku, Inc.	US	Content-Modification System with Advertisement Reconciliation Feature	US11601695	3/7/2023	US17361885	6/29/2021
Roku, Inc.	US	Media Channel Identification with Video Multi-Match Detection and Disambiguation Based on Audio Fingerprint	US11412296	8/9/2022	US17305116	6/30/2021
Roku, Inc.	US	Method and System for Detecting and Responding to Changing of Media Channel	US11432037	8/30/2022	US17305356	7/6/2021
Roku, Inc.	US	Use of In-Band Data to Correct Schedule Drift	US11695972	7/4/2023	US17305613	7/12/2021
Roku, Inc.	US	POWER CONTROL FOR SPEAKER DEVICES IN A WIRELESS MEDIA SYSTEM	US11792568	10/17/2023	US17373166	7/12/2021
Roku, Inc.	US	Content-Modification System with Feature for Prioritizing Channels Used in Channel Identification	US11800170	10/24/2023	US17378943	7/19/2021
Roku, Inc.	US	AMBIENT LIGHT SENSOR BASED PICTURE ENHANCEMENT	US11490151	11/1/2022	US17382683	7/22/2021
Roku, Inc.	US	Content-modification system with	US12075108	8/27/2024	US17386257	7/27/2021

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		unscheduling feature				
Roku, Inc.	US	Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal	US11641494	5/2/2023	US17387333	7/28/2021
Roku, Inc.	US	RESUMING PLAYBACK ON MULTIPLE STREAMING DEVICES	US11716498	8/1/2023	US17389568	7/30/2021
Roku, Inc.	US	Content-modification system with overlay handling feature	US11617001	3/28/2023	US17399507	8/11/2021
Roku, Inc.	US	Robust Audio Identification with Interference Cancellation	US11631404	4/18/2023	US17444946	8/12/2021
Roku, Inc.	US	SERVER-SIDE SCENE CHANGE CONTENT STITCHING	US11388474	7/12/2022	US17405902	8/18/2021
Roku, Inc.	US	Media Fingerprinting and Identification System	US11630858	4/18/2023	US17408248	8/20/2021
Roku, Inc.	US	IN-SYNC DIGITAL WAVEFORM COMPARISON TO DETERMINE PASS/FAIL RESULTS OF A DEVICE UNDER TEST (DUT)	US11843921	12/12/2023	US17409160	8/23/2021
Roku, Inc.	US	Trigger Word Detection With Multiple Digital Assistants	US11664026	5/30/2023	US17412527	8/26/2021

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Roku, Inc.	US	Content-modification system with volume level adjustment feature	US11589108	2/21/2023	US17459206	8/27/2021
Roku, Inc.	US	Method and system for remotely controlling consumer electronic devices	US12052445	7/30/2024	US17446564	8/31/2021
Roku, Inc.	US	Dynamic Replacement of Objectionable Content in Linear Content Streams	US11758220	9/12/2023	US17446866	9/3/2021
Roku, Inc.	US	Use of Primary and Backup Instances of Supplemental Content to Facilitate Dynamic Content Modification	US11463744	10/4/2022	US17446870	9/3/2021
Roku, Inc.	US	ADVANCED LAYER EDITOR	US11825149	11/21/2023	US17470313	9/9/2021
Roku, Inc.	US	DEMOGRAPHIC CLASSIFICATION OF MEDIA ACCOUNTS BASED ON MEDIA CONTENT DATA	US11765416	9/19/2023	US17476026	9/15/2021
Roku, Inc.	US	Method and System for Re-Uniting Metadata with Media-Stream Content at a Media Client, to Facilitate Action by the Media Client	US11689751	6/27/2023	US17447711	9/15/2021
Roku, Inc.	US	MULTI-AGENT RING-BUFFER	US11922234	3/5/2024	US17485909	9/27/2021

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Roku, Inc.	US	DETECTION OF DOWNSTREAM SMART DEVICES	US11515726	11/29/2022	17/490,990	9/30/2021
Roku, Inc.	US	Content-Modification System with Client-Side Advertisement Caching	US11985393	5/14/2024	US17498456	10/11/2021
Roku, Inc.	US	Method and System for Use of Network Affiliation as Basis to Determine Channel Rendered by Content Presentation Device	US11445226	9/13/2022	17/450,610	10/12/2021
Roku, Inc.	US	PORT-CONNECTED TELEVISION UPGRADER DEVICE	US11838589	12/5/2023	US17499133	10/12/2021
Roku, Inc.	US	PROVING PHYSICAL POSSESSION OF INTERNET-OF-THINGS (IOT) DEVICES	US11463130	10/4/2022	US17500005	10/13/2021
Roku, Inc.	US	Dynamic playout of transition frames while transitioning between play out of media streams	US11503366	11/15/2022	US17450790	10/13/2021
Roku, Inc.	US	Customizing search results in a multi-content source environment	US11595729	2/28/2023	US17501303	10/14/2021
Roku, Inc.	US	Advanced Preparation for Content Revision Based on Expected Latency in	US11496781	11/8/2022	17/451,055	10/15/2021

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		Obtaining New Content				
Roku, Inc.	US	Content modification system with prioritized content delivery feature	US11523162	12/6/2022	17/504,113	10/18/2021
Roku, Inc.	US	AUDIO SYNCHRONIZATION OF A DUMB SPEAKER AND A SMART SPEAKER USING A SPREAD CODE	US11438025	9/6/2022	US17506801	10/21/2021
Roku, Inc.	US	Advanced creation of slightly-different-duration versions of a supplemental content segment, and selection and use of an appropriate-duration version, to facilitate dynamic content modification	US12028561	7/2/2024	US17508158	10/22/2021
Roku, Inc.	US	Real-time altering of supplemental content duration in view of duration of modifiable content segment, to facilitate dynamic content modification	US11917231	2/27/2024	US17508195	10/22/2021
Roku, Inc.	US	NETWORK-BASED AUDIO PLAYBACK	US11943497	3/26/2024	17/510,954	10/26/2021
Roku, Inc.	US	Content-Modification System with Local Avail Detection Feature	US11490143	11/1/2022	17/513,272	10/28/2021
Roku, Inc.	US	Content-modification system with local	US11606588	3/14/2023	17/513,482	10/28/2021

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		avail correction feature				
Roku, Inc.	US	TRANSMITTING MESSAGES TO A DISPLAY DEVICE BASED ON DETECTED AUDIO OUTPUT	US11954400	4/9/2024	US17514791	10/29/2021
Roku, Inc.	US	MACHINE LEARNING FOR ADAPTIVE BITRATE SELECTION	US11800167	10/24/2023	US17515225	10/29/2021
Roku, Inc.	US	STREAMING A VIDEO CHAT FROM A MOBILE DEVICE TO A DISPLAY DEVICE USING A ROTATING BASE	US11589004	2/21/2023	17/518,785	11/4/2021
Roku, Inc.	US	Synchronization of multimedia content presentation across multiple devices in a watch party	US11757992	9/12/2023	US17520431	11/5/2021
Roku, Inc.	US	Speaker audio configuration system	US11611827	3/21/2023	17/527,575	11/16/2021
Roku, Inc.	US	Customized device pairing based on device features	US11889566	1/30/2024	17/527,562	11/16/2021
Roku, Inc.	US	Authorizing Devices Based on Identifying Content Distributor	US11638045	4/25/2023	17/455,077	11/16/2021
Roku, Inc.	US	Control a dimming level of an illumination load by a dimmer device	US11375588	6/28/2022	US17529940	11/18/2021
Roku, Inc.	US	Secure remote-less configuration	US11523158	12/6/2022	17/532,546	11/22/2021

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		of a media playback device				
Roku, Inc.	US	Dynamic Tone Mapping	US11734806	8/22/2023	US17534613	11/24/2021
Roku, Inc.	US	CUSTOMIZING A USER INTERFACE BASED ON USER CAPABILITIES	US11740771	8/29/2023	17/536,865	11/29/2021
Roku, Inc.	US	Use of In-Band Metadata as Basis to Access Reference Fingerprints to Facilitate Content-Related Action	US11792254	10/17/2023	17/644,183	12/14/2021
Roku, Inc.	US	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	US11962846	4/16/2024	17/644,120	12/14/2021
Roku, Inc.	US	AUTOMATIC CONTENT RECOGNITION WITH LOCAL MATCHING	US11683560	6/20/2023	17/644,437	12/15/2021
Roku, Inc.	US	Production Console Authorization Permissions	US11822703	11/21/2023	17/644,444	12/15/2021
Roku, Inc.	US	Media channel identification and action, with disambiguation through client-side fingerprint matching of channel-specific icon	US11638058	4/25/2023	US17644658	12/16/2021

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Roku, Inc.	US	Media channel identification and action, with disambiguation through client-side fingerprint matching of channel-specific icon	US11722721	8/8/2023	17/644,660	12/16/2021
Roku, Inc.	US	MANAGING LOW FREQUENCIES OF AN OUTPUT SIGNAL	US11743644	8/29/2023	17/552,893	12/16/2021
Roku, Inc.	US	Advertising Campaign to Viewing Device Suitability Matching	US11514472	11/29/2022	17/562,533	12/27/2021
Roku, Inc.	US	Replacement Advertisement Selection After Channel Changes	US11769179	9/26/2023	17/564,674	12/29/2021
Roku, Inc.	US	PROVIDING OVER-THE-AIR CONTENT TO ANY DEVICE	US11611797	3/21/2023	17/567,585	1/3/2022
Roku, Inc.	US	Employing Automatic Content Recognition to Allow Resumption of Watching Interrupted Media Program from Television Broadcast	US11563988	1/24/2023	17/572,970	1/11/2022
Roku, Inc.	US	Use of Watermarking to Trigger Fingerprint-Related Action	US12015833	6/18/2024	17/648,638	1/21/2022
Roku, Inc.	US	MODIFYING PLAYBACK OF REPLACEMENT CONTENT BASED ON	US11765426	9/19/2023	17/649,002	1/26/2022

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		CONTROL MESSAGES				
Roku, Inc.	US	Centralized mediation between ad-replacement platforms	US12034983	7/9/2024	17/650,411	2/9/2022
Roku, Inc.	US	Establishment and Use of Time Mapping Based on Interpolation Using Low-Rate Fingerprinting, to Help Facilitate Frame-Accurate Content Revision	US11665378	5/30/2023	17/650,485	2/9/2022
Roku, Inc.	US	Method and Apparatus for Multi-Dimensional Content Search and Video Identification	US11803591	10/31/2023	17/673,281	2/16/2022
Roku, Inc.	US	HDMI CUSTOMIZED AD INSERTION	US11785300	10/10/2023	US17674339	2/17/2022
Roku, Inc.	US	Media channel identification and action with multi-match detection and disambiguation based on matching with differential reference-fingerprint feature	US11617009	3/28/2023	17/651,494	2/17/2022
Roku, Inc.	US	PROVIDING SAFETY AND ENVIRONMENTAL FEATURES USING HUMAN PRESENCE DETECTION	US11902901	2/13/2024	US17678461	2/23/2022
Roku, Inc.	US	Content-Modification	US11659237	5/23/2023	17/679,591	2/24/2022

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		System With Feature For Managing Multiple Content-Modification Requests				
Roku, Inc.	US	Dynamic configuration of display controller based on configuration of connected display panel	US11749227	9/5/2023	17/652,895	2/28/2022
Roku, Inc.	US	Establishment and Use of Time Mapping Based on Interpolation Using Low-Rate Fingerprinting, to Help Facilitate Frame-Accurate Content Revision	US11882321	1/23/2024	17/653,183	3/2/2022
Roku, Inc.	US	Content-Modification System With System Resource Request Feature	US11924480	3/5/2024	17/691,386	3/10/2022
Roku, Inc.	US	Responsive to detection of remote control signals that modify operation of the playback device	US11937026	3/19/2024	17/692,786	3/11/2022
Roku, Inc.	US	INTELLIGENT DOWNLOAD OF CONTENT	US11638046	4/25/2023	US17692854	3/11/2022
Roku, Inc.	US	Automatic offering and switching to a higher quality media stream	US11627368	4/11/2023	US17696607	3/16/2022
Roku, Inc.	US	Automatically Determining an Optimal Supplemental Content Spot in a Media Stream	US11770566	9/26/2023	US17696611	3/16/2022
Roku, Inc.	US	Media device upgrading system	US11665400	5/30/2023	US17699733	3/21/2022

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		over a wireless network				
Roku, Inc.	US	Preserving channel lock and performing dynamic AD insertion (DAI) in a multi-device setup	US11838581	12/5/2023	17/702,239	3/23/2022
Roku, Inc.	US	MODIFYING PLAYBACK OF REPLACEMENT CONTENT RESPONSIVE TO DETECTION OF REMOTE CONTROL SIGNALS THAT CONTROL A DEVICE PROVIDING VIDEO TO THE PLAYBACK DEVICE	US11895370	2/6/2024	17/706,417	3/28/2022
Roku, Inc.	US	Passive Data Collection from Third-Party Channel Applications	US11659230	5/23/2023	17/712,734	4/4/2022
Roku, Inc.	US	Use of Watermarking to Control Abandonment of Dynamic Content Modification	US11792493	10/17/2023	17/658,401	4/7/2022
Roku, Inc.	US	Content-Modification System with Testing and Reporting Feature	US11962839	4/16/2024	17/720,985	4/14/2022
Roku, Inc.	US	Audio enhancements based on video detection	US11871196	1/9/2024	US17721711	4/15/2022
Roku, Inc.	US	Media Content Identification on Mobile Devices	US11736762	8/22/2023	17/722,523	4/18/2022

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Roku, Inc.	US	Media Channel Identification with Multi-Match Detection and Disambiguation Based on Single-Match	US11627372	4/11/2023	17/659,638	4/18/2022
Roku, Inc.	US	Content-Modification System With Transmission Delay-Based Feature	US11700423	7/11/2023	17/723,695	4/19/2022
Roku, Inc.	US	Generating crowdsourced trailers based on forward or rewind commands	US11838604	12/5/2023	17/730,454	4/27/2022
Roku, Inc.	US	DETECTION OF MEDIA PLAYBACK LOUDNESS LEVEL AND CORRESPONDING ADJUSTMENT TO AUDIO DURING MEDIA REPLACEMENT EVENT	US11740860	8/29/2023	17/730,515	4/27/2022
Roku, Inc.	US	MOBILE DEVICE BASED CONTROL DEVICE LOCATOR	US11808875	11/7/2023	US17736614	5/4/2022
Roku, Inc.	US	AUDIO DUPLICATION AND REDIRECTION SYSTEM	US11924505	3/5/2024	US17737217	5/5/2022
Roku, Inc.	US	Television upgrade	US11962841	4/16/2024	US17740907	5/10/2022
Roku, Inc.	US	Rendering a Dynamic Endemic Banner on Streaming Platforms Using Content	US11750896	9/5/2023	US17741855	5/11/2022

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		Recommendation Systems				
Roku, Inc.	US	Method and Apparatus for Selection of Content from a Stream of Data	US11617018	3/28/2023	17/742,135	5/11/2022
Roku, Inc.	US	Managing content replacement in a content modification system	US11882322	1/23/2024	US17742920	5/12/2022
Roku, Inc.	US	Managing content segments of linear TV content and over-the-top (OTT) content	US11606591	3/14/2023	US17746689	5/17/2022
Roku, Inc.	US	Monitoring Loudness Level During Media Replacement Event Using Shorter Time Constant	US11748055	9/5/2023	17/750,012	5/20/2022
Roku, Inc.	US	Content-Modification System with Fingerprint Data Mismatch and Responsive Action Feature	US11657645	5/23/2023	17/825,638	5/26/2022
Roku, Inc.	US	Content-Modification System with Fingerprint Data Match and Mismatch Detection Feature	US11645866	5/9/2023	17/825,465	5/26/2022
Roku, Inc.	US	MODIFYING GRAPHICS RENDERING BY TRANSCODING A SERIALIZED COMMAND STREAM	US11682102	6/20/2023	US17825172	5/26/2022

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
Roku, Inc.	US	Content-Modification System With Multiple Video Buffers Feature	US11722715	8/8/2023	17/828,623	5/31/2022
Roku, Inc.	US	AUDIO CANCELLATION AND CONTENT RECOGNITION OF AUDIO RECEIVED OVER HDMI/ARC	US11625215	4/11/2023	US17830869	6/2/2022
Roku, Inc.	US	Content-Modification System with Feature For Controlling Viewer Exposure To Spoilers In Advertisements	US12003812	6/4/2024	17831806	6/3/2022
Roku, Inc.	US	MEDIA DEVICE UPGRADING SYSTEM WITH A NATIVE USER INTERFACE	US11665401	5/30/2023	US17835346	6/8/2022
Roku, Inc.	US	Speaker-Identification Model for Controlling Operation of a Media Player	US11641505	5/2/2023	US17838847	6/13/2022
Roku, Inc.	US	Content-Modification System With Determination of Input-Buffer Switching Delay Feature	US11711574	7/25/2023	US17839858	6/14/2022
Roku, Inc.	US	Content Modification System With Viewer Behavior-Based Content Delivery Selection Feature	US11900414	2/13/2024	17808159	6/22/2022

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
Roku, Inc.	US	REAL-TIME ASSESSMENT OF MULTIMEDIA SERVICE IN A PARTICULAR ENVIRONMENT	US11832355	11/28/2023	US17848080	6/23/2022
Roku, Inc.	US	HIGH PRECISION SYNCHRONIZATION IN A SHARED MEDIUM	US11936765	3/19/2024	US17849368	6/24/2022
Roku, Inc.	US	Control a dimming level of an illumination load by a dimmer device	US11690149	6/27/2023	US17848796	6/24/2022
Roku, Inc.	US	Dynamic Collection and Reporting of Customer Premises Context Information in Response to Predicted Emergency Event	US11763656	9/19/2023	17/860,649	7/8/2022
Roku, Inc.	US	Rendering a Dynamic Endemic Banner on Streaming Platforms Using Content Recommendation Systems and Content Affinity Modeling	US11948172	4/2/2024	US17860686	7/8/2022
Roku, Inc.	US	SKIPPING THE OPENING SEQUENCE OF STREAMING CONTENT	US11930058	3/12/2024	US17861488	7/11/2022
Roku, Inc.	US	Content modification system with technical characteristic-	US12010376	6/11/2024	17/868258	7/19/2022

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
		based selection feature				
Roku, Inc.	US	Emotion Evaluation of Contents	US11930226	3/12/2024	US17877124	7/29/2022
Roku, Inc.	US	TRACKING PROXIMITIES OF DEVICES AND/OR OBJECTS	US11997562	5/28/2024	US17880293	8/3/2022
Roku, Inc.	US	Rendering a dynamic endemic banner on streaming platforms using content recommendation systems and content modeling for user exploration and awareness	US11895372	2/6/2024	US17882184	8/5/2022
Roku, Inc.	US	Using motion and presence of an end-user to switch operational modes of an internet of things device	US11700422	7/11/2023	17/884,718	8/10/2022
Roku, Inc.	US	Use of Primary and Backup Instances of Supplemental Content to Facilitate Dynamic Content Modification	US11653038	5/16/2023	US17886034	8/11/2022
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH HOUSEHOLD COORDINATION FEATURE	US11876776	1/16/2024	US17885635	8/11/2022
Roku, Inc.	US	Rendering a Dynamic Endemic Banner on Streaming Platforms Using Content	US11838592	12/5/2023	US17889975	8/17/2022

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
		Recommendation systems and advanced banner personalization				
Roku, Inc.	US	AUDIO TIME SYNCHRONIZATION USING PRIORITIZED SCHEDULE	US11922976	3/5/2024	US17897894	8/29/2022
Roku, Inc.	US	Fast boot system	US12056496	8/6/2024	US17898838	8/30/2022
Roku, Inc.	US	IPv6 connectivity test and DNS improvements	US12034618	7/9/2024	US17940673	9/8/2022
Roku, Inc.	US	Content Display and Clustering System	US11941067	3/26/2024	US17943526	9/13/2022
Roku, Inc.	US	DYNAMIC PROVISIONING OF IOT DEVICES FROM AN ONLINE APPLICATION MARKETPLACE	US11888641	1/30/2024	17/932,456	9/15/2022
Roku, Inc.	US	Content Modification System With Viewer Behavior-Based Content Delivery Selection Feature	US11922458	3/5/2024	US17932323	9/15/2022
Roku, Inc.	US	Dynamic Playout of Transition Frames while Transitioning Between Playout of Media Streams	US11812103	11/7/2023	US18046193	10/13/2022
Roku, Inc.	US	Using Gestures to Control a Media Player	US11868538	1/9/2024	US17973150	10/25/2022
Roku, Inc.	US	DETECTION OF DOWNSTREAM SMART DEVICES	US12027854	7/2/2024	US17977924	10/31/2022

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
Roku, Inc.	US	OVERRIDING MULTIMEDIA DEVICE	US11843836	12/12/2023	US18052437	11/3/2022
Roku, Inc.	US	Method and System for Controlling Lighting in a Viewing Area of a Content-Presentation Device	US11695980	7/4/2023	17/981,731	11/7/2022
Roku, Inc.	US	Content-Modification System With Feature For Detecting And Responding To Content Modifications By Tuner Devices	US11785291	10/10/2023	US17981868	11/7/2022
Roku, Inc.	US	Content-Modification System With Content Segment Frequency Feature	US11843810	12/12/2023	US17990252	11/18/2022
Roku, Inc.	US	Content-Modification System with Probability-Based Selection Feature	US11843813	12/12/2023	US18058190	11/22/2022
Roku, Inc.	US	Platform for Visual Tracking of User Fitness	US11951357	4/9/2024	18/071,870	11/30/2022
Roku, Inc.	US	Methods and Systems for Determining Creation Attributes of Video Content	US11818443	11/14/2023	18/061,076	12/2/2022
Roku, Inc.	US	Actor-Replacement System for Videos	US11749311	9/5/2023	18/062,410	12/6/2022
Roku, Inc.	US	Secure remote-less configuration of a media playback device	US12041282	7/16/2024	US18076177	12/6/2022

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
Roku, Inc.	US	Automated trailer generation	US11838605	12/5/2023	US18076476	12/7/2022
Roku, Inc.	US	Method and System for Generating Synthetic Video Advertisements	US11741996	8/29/2023	18/088,678	12/26/2022
Roku, Inc.	US	Content System with User-Input Based Video Content Generation Feature	US11769531	9/26/2023	18/149,492	1/3/2023
Roku, Inc.	US	STREAMING A VIDEO CHAT FROM A MOBILE DEVICE TO A DISPLAY DEVICE USING A ROTATING BASE	US11997424	5/28/2024	US18157110	1/20/2023
Roku, Inc.	US	Method and system for generating a visual composition of user reactions in a shared content viewing session	US11936948	3/19/2024	18/158,546	1/24/2023
Roku, Inc.	US	Content-Modification System with Advertisement Reconciliation Feature	US11831930	11/28/2023	US18101766	1/26/2023
Roku, Inc.	US	Dynamic control of media-content presentation based on user presence and/or user profile	US11985385	5/14/2024	18/107,675	2/9/2023
Roku, Inc.	US	Robust Audio Identification with Interference Cancellation	US11869261	1/9/2024	US18172755	2/22/2023
Roku, Inc.	US	PROVIDING ROLLING UPDATES OF DISTRIBUTED	US11966337	4/23/2024	US18115856	3/1/2023

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
		SYSTEMS WITH A SHARED CACHE				
Roku, Inc.	US	Video System with Scene-Based Object Insertion Feature	US11769312	9/26/2023	18/177,849	3/3/2023
Roku, Inc.	US	INTELLIGENT DOWNLOAD OF CONTENT	US12015810	6/18/2024	US18182705	3/13/2023
Roku, Inc.	US	Message Processing Using a Client-Side Control Group	US11882342	1/23/2024	US18188203	3/22/2023
Roku, Inc.	US	Media System With Multiple Digital Assistants	US11961521	4/16/2024	US18188648	3/23/2023
Roku, Inc.	US	Speaker-Identification Model for Controlling Operation of a Media Player	US12075119	8/27/2024	18/189,701	3/24/2023
Roku, Inc.	US	Trigger Word Detection With Multiple Digital Assistants	US11935537	3/19/2024	US18303336	4/19/2023
Roku, Inc.	US	Dynamic Tone Mapping	US11908112	2/20/2024	US18303376	4/19/2023
Roku, Inc.	US	REMOTE CONTROL SYSTEM FOR IMPROVING TARGET SPECIFICITY	US11875672	1/16/2024	US18303625	4/20/2023
Roku, Inc.	US	Computing device upgrading system over a wireless network	US11962853	4/16/2024	US18137479	4/21/2023
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH USER EXPERIENCE ANALYSIS FEATURE	US12035003	7/9/2024	US18315856	5/11/2023
Roku, Inc.	US	Method and System for	US11942116	3/26/2024	18/319,033	5/17/2023

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
		Generating Synthetic Video Advertisements				
Roku, Inc.	US	REMOTE CONTROL	USD1035623	7/16/2024	US29892498	5/18/2023
Roku, Inc.	US	RESUMING PLAYBACK ON MULTIPLE STREAMING DEVICES	US12003805	6/4/2024	US18204154	5/31/2023
Roku, Inc.	US	Content System with Sentiment-Based Content Modification Feature	US11894022	2/6/2024	18/340,820	6/23/2023
Roku, Inc.	US	Content System with Lighting Device Calibration Feature	US12016100	6/18/2024	18/340,814	6/23/2023
Roku, Inc.	US	Media System with Presentation Area Data Analysis and Segment Insertion Feature	US11949965	4/2/2024	18/340,811	6/23/2023
Roku, Inc.	US	Reverse wireless discovery for adding an iot device to an iot ecosystem	US11792080	10/17/2023	18/348,117	7/6/2023
Roku, Inc.	US	Actor-Replacement System for Videos	US12014753	6/18/2024	18/349,551	7/10/2023
Roku, Inc.	US	Hub Station with Channel Switching Feature	US11956175	4/9/2024	18/363,550	8/1/2023
Roku, Inc.	US	DEMOGRAPHIC CLASSIFICATION OF MEDIA ACCOUNTS BASED ON MEDIA CONTENT DATA	US12069325	8/20/2024	US18229046	8/1/2023
Roku, Inc.	US	Interactive Media Object	US11961171	4/16/2024	18364092	8/2/2023

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
		System with Modular-Based Feature				
Roku, Inc.	US	Automatically Determining an Optimal Supplemental Content Spot in a Media Stream	US12047617	7/23/2024	US18364881	8/3/2023
Roku, Inc.	US	Dynamic Collection and Reporting of Customer Premises Context Information in Response to Predicted Emergency Event	US12014615	6/18/2024	18/365,407	8/4/2023
Roku, Inc.	US	Flagging advertisement frames for automatic content recognition	10887667	1/5/2021	16409733	5/10/2019
Roku, Inc.	US	Scalable, adaptable, and manageable system for multimedia identification	RE48791	10/26/2021	16597648	10/9/2019
Roku, Inc.	US	Content-modification system with geographic area-based feature	11354323	6/7/2022	16836090	3/31/2020
Roku, Inc.	US	Content-modification system with use of multiple fingerprint data types feature	11770593	9/26/2023	17883992	8/9/2022
Roku, Inc.	US	Video-content system with narrative-based video content	12039653	7/16/2024	18325411	5/30/2023

Grantor	Country	Patent Title	Patent Number	Issue Date	Application Number	Application Date
		generation feature				

2. U.S. PATENT APPLICATIONS

Grantor	Country	Patent Application Title	Application Number	Application Date
Roku, Inc.	US	Apparatus and method for presentation of portably-stored content on an high-definition display	US10665978	9/19/2003
Roku, Inc.	US	METHOD AND DEVICE FOR GENERATING AND DETECTING A FINGERPRINT FUNCTIONING AS A TRIGGER MARKER IN A MULTIMEDIA SIGNAL	PCT/IB2004/051128	7/5/2004
Roku, Inc.	US	APPARATUS AND METHOD FOR PRESENTATION OF PORTABLY-STORED CONTENT ON AN HIGH-DEFINITION DISPLAY	PCT/US2004/030424	9/16/2004
Roku, Inc.	US	ADVERTISING METHODS FOR ADVERTISING TIME SLOTS AND EMBEDDED OBJECTS	PCT/US2004/042468	12/22/2004
Roku, Inc.	US	UNIVERSAL MUSIC APPARATUS FOR UNIFYING ACCESS TO MULTIPLE SPECIALIZED MUSIC SERVERS	US60642287	1/7/2005
Roku, Inc.	US	METHOD, APPARATUS, SYSTEM AND COMPUTER READABLE MEDIUM FOR PROVIDING A UNIVERSAL MEDIA DATA INTERFACE TO CONTROL A UNIVERSAL MEDIA APPARATUS	US60695578	6/29/2005
Roku, Inc.	US	SELECTION OF CONTENT FROM A STREAM OF VIDEO OR AUDIO DATA	PCT/IB2005/052642	8/9/2005
Roku, Inc.	US	UNIVERSAL MUSIC APPARATUS FOR UNIFYING ACCESS TO	US11327180	1/6/2006

Grantor	Country	Patent Application Title	Application Number	Application Date
		MULTIPLE SPECIALIZED MUSIC SERVERS		
Roku, Inc.	US	A TECHNIQUE FOR STREAMING AUDIO AND MULTIMEDIA OVER A WIRELESS NETWORK	US60766573	1/28/2006
Roku, Inc.	US	METHOD, APPARATUS, SYSTEM AND COMPUTER READABLE MEDIUM FOR PROVIDING A UNIVERSAL MEDIA INTERFACE TO CONTROL A UNIVERSAL MEDIA APPARATUS	US11479156	6/29/2006
Roku, Inc.	US	PROVINDING A UNIVERSAL MEDIA INTERFACE TO CONTROL A UNIVERSAL MEDIA APPARATUS	PCT/US2006/025988	6/29/2006
Roku, Inc.	US	TECHNIQUE FOR STREAMING AUDIO TO WIRELESS SPEAKERS, AUTOMATIC PROVISIONING OF WIRELESS SPEAKERS FROM A DYNAMIC MOBILE MEDIA SOURCE AND SPEAKER DESIGN	US60767555	7/15/2006
Roku, Inc.	US	STREAMING MEDIA SYSTEM AND METHOD	PCT/US2007/061229	1/29/2007
Roku, Inc.	US	Method And Apparatus For Multi-Dimensional Content Search And Video Identification	US60944668	6/18/2007
Roku, Inc.	US	Methods and Apparatus for Providing a Scalable Identification of Digital Video Sequences	US60944643	6/18/2007
Roku, Inc.	US	PROVISIONING AND STREAMING MEDIA TO WIRELESS SPEAKERS FROM FIXED AND MOBILE MEDIA SOURCES AND CLIENTS	PCT/US2007/073620	7/16/2007
Roku, Inc.	US	Content Based Digital Video Fingerprinting Based on Resultant Weighted Gradient Orientation Computation	US61078941	7/8/2008

Grantor	Country	Patent Application Title	Application Number	Application Date
Roku, Inc.	US	Method and System for Remotely Controlling Media Systems	US61170586	4/17/2009
Roku, Inc.	US	Content Based Digital Video Fingerprinting Based on Scale Invariant Interest Region Detection with an Array of Anisotropic Filters	US61181521	5/27/2009
Roku, Inc.	US	Multi-Media Content Identification Using Multi-Level Content Signature Correlation and Fast Similarity Search	US61181806	5/28/2009
Roku, Inc.	US	Highly Scalable, Accurate and Distortion-Robust Media Fingerprinting and Identification System	US61185670	6/10/2009
Roku, Inc.	US	Digital Video Content Fingerprinting Using Image Pixel Intensity and Color Information	US61266668	12/4/2009
Roku, Inc.	US	Method And System For Remotely Controlling Consumer Electronic Devices	US61293798	1/11/2010
Roku, Inc.	US	Audio-Video Synchronization Based On Content Fingerprinting	US61322514	4/9/2010
Roku, Inc.	US	Scalable, Adaptable, and Manageable System for Multimedia Identification	US61331965	5/6/2010
Roku, Inc.	US	Scale/Affine Invariant Interest Region Detection with an Array of Anisotropic Filters for Video Fingerprinting	US61331879	5/6/2010
Roku, Inc.	US	Enabling Video/Audio-Content-Synchronous Applications On A Mobile Device	US61377350	8/26/2010
Roku, Inc.	US	Distributed and Tiered Architecture for Content Search and Content Monitoring	US61393971	10/18/2010

Grantor	Country	Patent Application Title	Application Number	Application Date
Roku, Inc.	US	Method and System for Presenting Additional Content at a Media System	US61409018	11/1/2010
Roku, Inc.	US	Apparatus and Method for Multi-User Construction of Tagged Video Data	US12952958	11/23/2010
Roku, Inc.	US	TV Content Segmentation, Categorization and Identification and Time-Aligned Applications	US61423205	12/15/2010
Roku, Inc.	US	TECHNIQUES FOR REAL TIME MULTI DESTINATION MEDIA DISTRIBUTION, CONTROL AND SETUP	US61442574	2/14/2011
Roku, Inc.	US	Scale/Affine Invariant Interest Region Detection with an Array of Anisotropic Filters for Video Fingerprinting	US13076628	3/31/2011
Roku, Inc.	US	ELECTRONIC DEVICE	US29397167	7/12/2011
Roku, Inc.	US	TECHNIQUES FOR BROADCASTING MEDIA OVER A LOCAL NETWORK TO MULTIPLE DESTINATIONS	US61512924	7/29/2011
Roku, Inc.	US	Robust Audio Identification and Time-Aligned Applications	US61544035	10/6/2011
Roku, Inc.	US	Robust Audio Identification and Time-Aligned Applications	US61543943	10/6/2011
Roku, Inc.	US	Internet Access Card For Deployment Within A Television	US13286122	10/31/2011
Roku, Inc.	US	APPARATUS AND METHOD FOR MULTI-USER CONSTRUCTION OF TAGGED VIDEO DATA	PCT/US2011/061926	11/22/2011
Roku, Inc.	US	Method and Apparatus for Synchronous Television/Media Content Identification on Mobile/Media Devices	US61601234	2/21/2012
Roku, Inc.	US	Method for Efficient Data Base Formation and Search on Portable Media Devices	US61610672	3/14/2012

Grantor	Country	Patent Application Title	Application Number	Application Date
		Acting Synchronously with Television Programming		
Roku, Inc.	US	Method and Apparatus for Handling Content Requests and Playlist Information	US13431928	3/27/2012
Roku, Inc.	US	Method and Apparatus for Dynamic Prioritization of Content Through Interactive Browsing	US13431901	3/27/2012
Roku, Inc.	US	Method and Apparatus for Identifying and Recommending Content	US13431866	3/27/2012
Roku, Inc.	US	METHOD AND APPARATUS FOR DYNAMIC PRIORITIZATION OF CONTENT THROUGH INTERACTIVE BROWSING	US13431918	3/27/2012
Roku, Inc.	US	METHOD AND APPARATUS FOR DISPLAYING INFORMATION ON A SECONDARY SCREEN	US13431923	3/27/2012
Roku, Inc.	US	METHOD AND APPARATUS FOR SHARING CONTENT	US13431932	3/27/2012
Roku, Inc.	US	METHOD AND APPARATUS FOR CUSTOMIZED PROVISIONING OF ON-LINE APPLICATION CHANNELS	PCT/US2012/046107	7/10/2012
Roku, Inc.	US	A CONGESTION CONTROL METHOD FOR DYNAMICALLY MAXIMIZING COMMUNICATION LINK THROUGHPUT	US61715322	10/18/2012
Roku, Inc.	US	COMMON EVENT-BASED MULTIDEVICE MEDIA PLAYBACK	US61727624	11/16/2012
Roku, Inc.	US	INDIRECT RENDERING CLOCK MEASUREMENT AND MEDIA ADJUSTMENT	US61728212	11/19/2012
Roku, Inc.	US	Inserting Advertisements into Video Content	US61749518	1/7/2013

Grantor	Country	Patent Application Title	Application Number	Application Date
Roku, Inc.	US	Authorizing Devices Based On Identifying Content Distributor	US61749524	1/7/2013
Roku, Inc.	US	Search And Identification Of Video Content	US61749819	1/7/2013
Roku, Inc.	US	METHOD AND APPARATUS FOR BANDWIDTH ALLOCATION	US13778076	2/26/2013
Roku, Inc.	US	METHOD AND APPARATUS FOR VOLUME CONTROL ON A REMOTE CONTROL	US13783154	3/1/2013
Roku, Inc.	US	METHOD AND APPARATUS FOR ACTIVATING A SYSTEM THROUGH A REMOTE CONTROL	US13783169	3/1/2013
Roku, Inc.	US	METHOD AND APPARATUS FOR DISPLAYING INFORMATION ON A SECONDARY SCREEN	PCT/US2013/033928	3/26/2013
Roku, Inc.	US	METHOD AND APPARATUS FOR IDENTIFYING AND RECOMMENDING CONTENT	PCT/US2013/033929	3/26/2013
Roku, Inc.	US	METHOD AND APPARATUS UTILIZING MULTIPLE REMOTE CONTROLS AND HEADSETS	US13887188	5/3/2013
Roku, Inc.	US	BROADCASTING MEDIA FROM A STATIONARY SOURCE TO MULTIPLE MOBILE DEVICES OVER WI-FI	US61833928	6/12/2013
Roku, Inc.	US	SYNCHRONOUS PLAYBACK OF MEDIA USING A WI-FI NETWORK WITH THE MEDIA ORIGINATING FROM A BLUETOOTH SOURCE	US61833927	6/12/2013
Roku, Inc.	US	METHOD AND APPARATUS FOR POPULATION OF CUSTOMIZED CHANNELS	US13921029	6/18/2013

Grantor	Country	Patent Application Title	Application Number	Application Date
Roku, Inc.	US	A CONGESTION CONTROL METHOD FOR DYNAMICALLY MAXIMIZING COMMUNICATION LINK THROUGHPUT	PCT/IB2013/059334	10/14/2013
Roku, Inc.	US	COMMON EVENT-BASED MULTIDEVICE MEDIA PLAYBACK	PCT/US2013/070634	11/18/2013
Roku, Inc.	US	AUTHORIZING DEVICES BASED ON IDENTIFYING CONTENT DISTRIBUTOR	PCT/US2013/076201	12/18/2013
Roku, Inc.	US	METHOD OF POWERING ON AND POWERING OFF A DISPLAY DEVICE	US61923598	1/3/2014
Roku, Inc.	US	METHOD AND APPARATUS FOR INITIATING A TELEVISION TIMER	US61923600	1/3/2014
Roku, Inc.	US	METHOD OF SELECTING A PORT	US61923603	1/3/2014
Roku, Inc.	US	Method For Valuing And Targeting Advertising Using Media Content Recognition	US61940921	2/18/2014
Roku, Inc.	US	Client-Side Video Advertisement Replacement Using Automatic Content Recognition	US61981045	4/17/2014
Roku, Inc.	US	System And Method For Predicting Buffering And Network Shaping	US14287276	5/27/2014
Roku, Inc.	US	MANAGING A COMMON SHARED PLAYQUEUE ON MULTIPLE DEVICES	US62015374	6/20/2014
Roku, Inc.	US	METHOD AND SYSTEM FOR PRESENTING ADDITIONAL CONTENT AT A MEDIA SYSTEM	US14475971	9/3/2014
Roku, Inc.	US	Video Overlay Formats, Targeting Capabilities, and Call-to-Action Options	US62049995	9/12/2014
Roku, Inc.	US	Associating Media Content	US62064949	10/16/2014
Roku, Inc.	US	ACR Fingerprinting and Video Encoding	US62095539	12/22/2014
Roku, Inc.	US	APPARATUS AND METHOD FOR NAMING A	US62096527	12/23/2014

Grantor	Country	Patent Application Title	Application Number	Application Date
		DEVICE CONNECTED TO A TELEVISION		
Roku, Inc.	US	APPARATUS AND METHOD FOR RESTORING A DISABLED TELEVISION SPEAKER	US62096530	12/23/2014
Roku, Inc.	US	COMMON EVENT-BASED MULTIDEVICE MEDIA SYNCHRONIZATION AND QUALITY ANALYSIS	US62117899	2/18/2015
Roku, Inc.	US	AUTHENTICATION OF A BROWSER-LESS DATA STREAMING DEVICE TO A NETWORK WITH AN EXTERNAL BROWSER	US62118928	2/20/2015
Roku, Inc.	US	DYNAMIC RECONFIGURATION OF NETWORK TOPOLGY FOR REDUCED LATENCY IN MEDIA TRANSMISSIONS	US62140427	3/30/2015
Roku, Inc.	US	COORDINATING STATE CHANGES AMONGST MULTIPLE PLAYBACK DEVICES	US62140416	3/30/2015
Roku, Inc.	US	VIDEO FINGERPRINTING	PCT/US2015/027117	4/22/2015
Roku, Inc.	US	Television Content Replacement	US62151912	4/23/2015
Roku, Inc.	US	Automatic Content Recognition (ACR) Fingerprint Local Matching	US62151915	4/23/2015
Roku, Inc.	US	Automatic Content Recognition (ACR) Fingerprint Sequence Matching	US62151914	4/23/2015
Roku, Inc.	US	COLLABORATIVE SMART MEDIA PLAYLISTS	US62157473	5/6/2015
Roku, Inc.	US	MULTIPLE MICROPHONES FOR SYNCHRONIZED VOICE INTERACTION	US62157474	5/6/2015
Roku, Inc.	US	SYNCHRONIZED MULTI-DEVICE MOBILE GAMING	US62171217	6/4/2015
Roku, Inc.	US	Detecting Channel Changes in Automatic Content Recognition (ACR) Fingerprint Matching	US62175145	6/12/2015

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Roku, Inc.	US	MANAGING A COMMON SHARED PLAY QUEUE ON MULTIPLE DEVICES	US14746806	6/22/2015
Roku, Inc.	US	AUTOMATIC CONTENT RECOGNITION FINGERPRINT SEQUENCE MATCHING	US14801307	7/16/2015
Roku, Inc.	US	AUDIO COMMAND INTERFACE FOR A MULTIMEDIA DEVICE	US62212423	8/31/2015
Roku, Inc.	US	CROWD SOURCED INDEXING AND/OR SEARCHING OF CONTENT	US62212390	8/31/2015
Roku, Inc.	US	ADVERTISING METHODS FOR ADVERTISING TIME SLOTS AND EMBEDDED OBJECTS	US14842709	9/1/2015
Roku, Inc.	US	Creating and Fulfilling Dynamic Advertisement Replacement Inventory	US62216216	9/9/2015
Roku, Inc.	US	Digital Overlay Offers on Connected Media Device	US62220466	9/18/2015
Roku, Inc.	US	Frequency Capping for Multimedia Content	US62235811	10/1/2015
Roku, Inc.	US	Sequentially Overlaying Multimedia Content	US62235856	10/1/2015
Roku, Inc.	US	EXTENDED DISTRIBUTED TRAFFIC AGGREGATION SYSTEM ENABLING LONG RANGE WI-FI MEDIA RENDERING	US62243604	10/19/2015
Roku, Inc.	US	Media Content Matching and Indexing	US62247060	10/27/2015
Roku, Inc.	US	SYSTEM AND METHOD FOR COLLECTING DATA	PCT/US2015/058889	11/3/2015
Roku, Inc.	US	SYSTEM AND METHOD FOR FAST STARTING AN APPLICATION	PCT/US2015/058894	11/3/2015
Roku, Inc.	US	APPARATUS AND METHOD FOR CONTENT PLAYBACK UTILIZING CROWD SOURCED STATISTICS	PCT/US2015/060987	11/17/2015
Roku, Inc.	US	Dynamic Video Overlays	US62268410	12/16/2015
Roku, Inc.	US	CONTROLLING DISPLAY OF MEDIA CONTENT	US62272753	12/30/2015

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Roku, Inc.	US	Video Classifier	US62275081	1/5/2016
Roku, Inc.	US	SYNCHRONIZATION IN AUDIO PLAYBACK NETWORK INDEPENDENT OF SYSTEM CLOCK	PCT/DK2016/050022	1/27/2016
Roku, Inc.	US	SELF-ORGANIZING AUDIO SYNCHRONIZATION	PCT/DK2016/050021	1/27/2016
Roku, Inc.	US	AUDIO TIME SYNCHRONIZATION USING PRIORITIZED SCHEDULE	PCT/DK2016/050023	1/27/2016
Roku, Inc.	US	A/B Testing on Linear TV Streams	US62296513	2/17/2016
Roku, Inc.	US	SYNCHRONOUS MEDIA RENDERING OVER WIRELESS NETWORKS WITH WIRELESS PERFORMANCE MONITORING	PCT/US2016/018543	2/18/2016
Roku, Inc.	US	Video Fingerprinting Based on Fourier Transform of Histogram	US62298376	2/22/2016
Roku, Inc.	US	AUTHENTICATING A BROWSER-LESS DATA STREAMING DEVICE TO A NETWORK WITH AN EXTERNAL BROWSER	PCT/US2016/018914	2/22/2016
Roku, Inc.	US	Fingerprinting Media Content Using a Hash-Map	US62299455	2/24/2016
Roku, Inc.	US	DISPLAY SCREEN OR PORTION THEREOF WITH GRAPHICAL USER INTERFACE	US29556306	2/29/2016
Roku, Inc.	US	Method and System for Media Channel Identification with Multi-Match Detection and Disambiguation, and Channel-Changing Detection	US62301293	2/29/2016
Roku, Inc.	US	Method and System for Media Channel Identification with Multi-match Detection and Disambiguation, and Channel-changing Detection	US62301616	2/29/2016
Roku, Inc.	US	Method and System for Media Channel Identification with Multi-match Detection and	US62301623	2/29/2016

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		Disambiguation, and Channel-changing Detection		
Roku, Inc.	US	Method To Differentiate And Classify Fingerprints Using Fingerprint Neighborhood Analysis	US62306700	3/11/2016
Roku, Inc.	US	Actional Event Detection For Enhance Television Delivery And Ad Monitoring Based On Video-Audio Content Fingerprinting	US62306755	3/11/2016
Roku, Inc.	US	Enabling Video/Audio-Content-Synchronous Applications On A Mobile Device	US62306771	3/11/2016
Roku, Inc.	US	Method for Valuing and Targeting Advertising Using Media Content Recognition	US62306692	3/11/2016
Roku, Inc.	US	Robust Audio Identification with Interference Cancellation	US62306707	3/11/2016
Roku, Inc.	US	Digital Video Fingerprinting Using Motion Segmentation	US62306719	3/11/2016
Roku, Inc.	US	Audio-Video Synchronization Based on Content Fingerprinting	US62306733	3/11/2016
Roku, Inc.	US	TWO TIER MULTIPLE SLIDING WINDOW MECHANISM FOR MULTIDESTINATION MEDIA APPLICATIONS	US15069967	3/15/2016
Roku, Inc.	US	Layouts of Dividing Frame to Perform Ordinal Fingerprinting	US62309366	3/16/2016
Roku, Inc.	US	DYNAMIC RECONFIGURATION OF NETWORK TOPOLGY FOR REDUCED LATENCY IN MEDIA TRANSMISSIONS	US15085975	3/30/2016
Roku, Inc.	US	COORDINATING STATE CHANGES AMONG MULTIPLE MEDIA SOURCE DEVICES AND MEDIA DESTINATION DEVICES	US15085952	3/30/2016
Roku, Inc.	US	STREAMING SYNCHRONIZED MEDIA CONTENT TO SEPARATE DEVICES	US62317870	4/4/2016

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Roku, Inc.	US	AUTOMATIC CONTENT RECOGNITION FINGERPRINT SEQUENCE MATCHING	PCT/US2016/028583	4/21/2016
Roku, Inc.	US	AUTOMATIC CONTENT RECOGNITION FINGERPRINT SEQUENCE MATCHING	PCT/US2016/029221	4/25/2016
Roku, Inc.	US	CONTENT REPLACEMENT WITH ONSCREEN DISPLAYS	PCT/US2016/029227	4/25/2016
Roku, Inc.	US	MEDIA COMPUTING DEVICE WITH MULTIPLE VIRTUAL SCREENS	US62328562	4/27/2016
Roku, Inc.	US	COLLABORATIVE INTELLIGENT MEDIA PLAYLISTS	US15147584	5/5/2016
Roku, Inc.	US	MULTIPLE MICROPHONES FOR SYNCHRONIZED VOICE INTERACTION	US15147626	5/5/2016
Roku, Inc.	US	SYSTEM AND METHOD FOR MULTIUSER INTERACTION WITH HDMI-BASED COMPUTING DEVICE	US62332476	5/6/2016
Roku, Inc.	US	COLLABORATIVE INTELLIGENT MEDIA PLAYLISTS	PCT/US2016/031144	5/6/2016
Roku, Inc.	US	PROFILE DRIVEN COMMUNICATION POLLING FOR REMOTE CONTROL	PCT/US2016/031739	5/11/2016
Roku, Inc.	US	Method for Efficient Database Formation and Search on Media Devices Acting Synchronously with Television Programming	US15155428	5/16/2016
Roku, Inc.	US	DETECTING CHANNEL CHANGE IN AUTOMATIC CONTENT RECOGNITION FINGERPRINT MATCHING	PCT/US2016/034401	5/26/2016
Roku, Inc.	US	SYNCHRONIZED MULTI-DEVICE MOBILE GAMING	US15175026	6/6/2016
Roku, Inc.	US	SYNCHRONIZATION WITH SYNTHESIZED AUDIO CLOCK	PCT/DK2016/050256	7/25/2016

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Roku, Inc.	US	DETECTION OF A SMARTPHONE TO ENABLE CONTENT	PCT/US2016/043879	7/25/2016
Roku, Inc.	US	SOLID-STATE CAPTURE OF BROADCAST MEDIA	PCT/US2016/043876	7/25/2016
Roku, Inc.	US	MOBILE DEVICE BASED CONTROL DEVICE LOCATOR	PCT/US2016/044054	7/26/2016
Roku, Inc.	US	AUDIO PREFERENCES FOR MEDIA CONTENT PLAYERS	PCT/US2016/044053	7/26/2016
Roku, Inc.	US	A UNIVERSAL REMOTE CONTROL WITH AUTOMATIC STATE SYNCHRONIZATION	PCT/US2016/044052	7/26/2016
Roku, Inc.	US	LOW-LATENCY MULTIMEDIA USING DUAL WIRELESS ADAPTERS	US62367930	7/28/2016
Roku, Inc.	US	DYNAMIC VIDEO ADVERTISEMENT REPLACEMENT	PCT/US2016/047203	8/16/2016
Roku, Inc.	US	DYNAMIC GENERATION OF TRICK MODE DATA	PCT/US2016/049238	8/29/2016
Roku, Inc.	US	CROWD SOURCED INDEXING AND/OR SEARCHING OF CONTENT	PCT/US2016/049234	8/29/2016
Roku, Inc.	US	AUDIO COMMAND INTERFACE FOR A MULTIMEDIA DEVICE	PCT/US2016/049677	8/31/2016
Roku, Inc.	US	DIGITAL OVERLAY OFFERS ON CONNECTED MEDIA DEVICES	PCT/US2016/051532	9/13/2016
Roku, Inc.	US	MULTI-REQUEST AGGREGATION	US15272520	9/22/2016
Roku, Inc.	US	MULTI-REQUEST AGGREGATION	PCT/IL2016/051054	9/22/2016
Roku, Inc.	US	MEDIA CONTENT MATCHING AND INDEXING	PCT/US2016/053998	9/27/2016
Roku, Inc.	US	FREQUENCY CAPPING FOR MULTIMEDIA CONTENT	PCT/US2016/053997	9/27/2016
Roku, Inc.	US	SEQUENTIALLY OVERLAYING MEDIA CONTENT	PCT/US2016/053996	9/27/2016
Roku, Inc.	US	TWO TIER MULTIPLE SLIDING WINDOW	US15281009	9/29/2016

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		MECHANISM FOR MULTIDESTINATION MEDIA APPLICATIONS		
Roku, Inc.	US	MULTICHANNEL AUDIO INTERCEPTION AND REDIRECTION FOR MULTIMEDIA DEVICES	US15284518	10/3/2016
Roku, Inc.	US	SYSTEM FOR SYNCHRONOUS PLAYBACK OF MEDIA USING A HYBRID BLUETOOTH™ AND WI-FI NETWORK	US15286516	10/5/2016
Roku, Inc.	US	DOWNLOAD ACCELERATION USING DYNAMIC NUMBER OF CONNECTIONS AND DYNAMIC CHUNK SIZE	PCT/IL2016/051103	10/10/2016
Roku, Inc.	US	DYNAMIC RECONFIGURATION OF NETWORK TOPOLOGY FOR LOW-LATENCY MEDIA TRANSMISSIONS	US15294596	10/14/2016
Roku, Inc.	US	COORDINATING STATE CHANGES AMONG MULTIPLE MEDIA DEVICES	US15294263	10/14/2016
Roku, Inc.	US	TV Content Segmentation, Categorization and Identification and Time-Aligned Applications	US15297658	10/19/2016
Roku, Inc.	US	SYSTEM FOR MEDIA DISTRIBUTION AND RENDERING ON SPATIALLY EXTENDED WIRELESS NETWORKS	PCT/US2016/057772	10/19/2016
Roku, Inc.	US	PROVIDING ROLLING UPDATES OF DISTRIBUTED SYSTEMS WITH A SHARED CACHE	PCT/US2016/065625	12/8/2016
Roku, Inc.	US	USER IDENTIFICATION BASED ON THE MOTION OF A DEVICE	PCT/US2016/065634	12/8/2016
Roku, Inc.	US	ORIENTATION ADJUSTMENT FOR CASTING VIDEOS	PCT/US2016/066637	12/14/2016
Roku, Inc.	US	CONTROLLING DISPLAY OF MEDIA CONTENT	PCT/US2016/066906	12/15/2016

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Roku, Inc.	US	DYNAMIC VIDEO OVERLAYS	PCT/US2016/067250	12/16/2016
Roku, Inc.	US	SYNCHRONIZED MULTI-DEVICE MOBILE GAMING	US15389438	12/22/2016
Roku, Inc.	US	WIRELESS MEDIA HUB	US62442969	1/5/2017
Roku, Inc.	US	COMPUTING SYSTEM WITH CONTENT-CHARACTERISTIC-BASED TRIGGER FEATURE	PCT/US2017/012338	1/5/2017
Roku, Inc.	US	COMPUTING SYSTEM WITH CHANNEL-CHANGE-BASED TRIGGER FEATURE	PCT/US2017/012336	1/5/2017
Roku, Inc.	US	AUTHORIZING DEVICES BASED ON IDENTIFYING CONTENT DISTRIBUTOR	US15406887	1/16/2017
Roku, Inc.	US	ENHANCED HOME MEDIA EXPERIENCE USING A WIRELESS MEDIA HUB	US62449576	1/23/2017
Roku, Inc.	US	CONTENT COMPARISON TESTING ON LINEAR MEDIA STREAMS	PCT/US2017/016666	2/6/2017
Roku, Inc.	US	VIDEO FINGERPRINTING BASED ON FOURIER TRANSFORM OF HISTOGRAM	PCT/US2017/017797	2/14/2017
Roku, Inc.	US	FINGERPRINTING MEDIA CONTENT USING HASHING	PCT/US2017/018189	2/16/2017
Roku, Inc.	US	ENHANCED HOME MEDIA EXPERIENCE USING A WIRELESS MEDIA HUB	US15436723	2/17/2017
Roku, Inc.	US	MEDIA CHANNEL IDENTIFICATION AND ACTION WITH MULTI-MATCH DETECTION BASED ON REFERENCE STREAM COMPARISON	PCT/US2017/019979	2/28/2017
Roku, Inc.	US	MEDIA CHANNEL IDENTIFICATION WITH VIDEO MULTI-MATCH DETECTION AND DISAMBIGUATION BASED ON TIME OF BROADCAST	PCT/US2017/019949	2/28/2017
Roku, Inc.	US	METHOD AND SYSTEM FOR DETECTING AND RESPONDING TO	PCT/US2017/020003	2/28/2017

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		CHANGING OF MEDIA CHANNEL		
Roku, Inc.	US	MEDIA CHANNEL IDENTIFICATION WITH MULTI-MATCH DETECTION AND DISAMBIGUATION BASED ON SINGLE-MATCH	PCT/US2017/019946	2/28/2017
Roku, Inc.	US	MEDIA CHANNEL IDENTIFICATION WITH MULTI-MATCH DETECTION AND DISAMBIGUATION BASED ON LOCATION	PCT/US2017/019915	2/28/2017
Roku, Inc.	US	MEDIA CHANNEL IDENTIFICATION AND ACTION WITH MULTI-MATCH DETECTION AND DISAMBIGUATION BASED ON MATCHING WITH DIFFERENTIAL REFERENCE-FINGERPRINT FEATURE	PCT/US2017/019974	2/28/2017
Roku, Inc.	US	Media Channel Identification with Video Multi-Match Detection and Disambiguation Based on Audio Fingerprint	PCT/US2017/019908	2/28/2017
Roku, Inc.	US	FINGERPRINT LAYOUTS FOR CONTENT FINGERPRINTING	PCT/US2017/021690	3/9/2017
Roku, Inc.	US	BROWN OUT CONDITION DETECTION AND DEVICE CALIBRATION	PCT/US2017/022117	3/13/2017
Roku, Inc.	US	EFFICIENT COMMUNICATION INTERFACE FOR CASTING INTERACTIVELY CONTROLLED VISUAL CONTENT	PCT/US2017/022086	3/13/2017
Roku, Inc.	US	CONTROLLING DISPLAY DEVICE SETTINGS FROM A MOBILE DEVICE TOUCH INTERFACE	PCT/US2017/022723	3/16/2017
Roku, Inc.	US	Enabling Interactive Control of Live Television Broadcast Streams	US62476152	3/24/2017
Roku, Inc.	US	Employing Automatic Content Recognition to Allow	US62476159	3/24/2017

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		Resumption of Watching Interrupted Media Program from Television Broadcast		
Roku, Inc.	US	Interactive Overlays to Determine Viewer Data	US62478185	3/29/2017
Roku, Inc.	US	Targeted Content Placement Using Overlays	US62478196	3/29/2017
Roku, Inc.	US	Distributed and Tiered Architecture for Content Search and Content Monitoring	US15477135	4/3/2017
Roku, Inc.	US	STREAMING SYNCHRONIZED MEDIA CONTENT TO SEPARATE DEVICES	PCT/US2017/025910	4/4/2017
Roku, Inc.	US	LOW-LATENCY MULTIMEDIA USING DUAL WIRELESS ADAPTERS	US62483286	4/7/2017
Roku, Inc.	US	SYSTEM FOR MEDIA AGGREGATION AND REBROADCASTING FOR SYNCHRONIZED RENDERING ACROSS MULTIPLE DEVICES	US62483267	4/7/2017
Roku, Inc.	US	SLAVE REQUESTED AUDIO SYNCHRONIZATION	PCT/EP2017/058395	4/7/2017
Roku, Inc.	US	MEDIA COMPUTING DEVICE WITH MULTIPLE VIRTUAL SCREENS	PCT/US2017/029977	4/27/2017
Roku, Inc.	US	CROSS-PLATFORM MEDIA REDIRECTION AND INTEROPERABILITY	US62501037	5/3/2017
Roku, Inc.	US	ENHANCED MULTICHANNEL AUDIO INTERCEPTION AND REDIRECTION FOR MULTIMEDIA DEVICES	US62503916	5/9/2017
Roku, Inc.	US	ENHANCED MULTICHANNEL AUDIO INTERCEPTION AND REDIRECTION FOR MULTIMEDIA DEVICES	US15599454	5/18/2017
Roku, Inc.	US	LOW-LATENCY MULTIMEDIA USING DUAL WIRELESS ADAPTERS	US15599330	5/18/2017

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Roku, Inc.	US	LOW-LATENCY MULTIMEDIA USING DUAL WIRELESS ADAPTERS	US15616650	6/7/2017
Roku, Inc.	US	SYNCHRONOUS MEDIA RENDERING OVER A SPATIALLY EXTENDED WIRELESS NETWORK	US15618541	6/9/2017
Roku, Inc.	US	Frame Certainty for Automatic Content Recognition	US62527305	6/30/2017
Roku, Inc.	US	LOW-LATENCY MULTIMEDIA USING DUAL WIRELESS ADAPTERS	PCT/US2017/044467	7/28/2017
Roku, Inc.	US	DISTRIBUTED VOICE PROCESSING SYSTEM	PCT/US2017/044879	8/1/2017
Roku, Inc.	US	FLEXIBLE OUTPUT OF STREAMING MEDIA	PCT/US2017/044882	8/1/2017
Roku, Inc.	US	INTELLIGENT DOWNLOAD OF CONTENT	US62546592	8/17/2017
Roku, Inc.	US	MESSAGE PROCESING USING A CLIENT-SIDE CONTROL GROUP	US62547470	8/18/2017
Roku, Inc.	US	REMOTE CONTROL WITH PRESENCE SENSOR	US62547471	8/18/2017
Roku, Inc.	US	AUDIO RESPONSIVE DEVICE WITH PLAY/STOP AND TELL ME SOMETHING BUTTONS	US62550932	8/28/2017
Roku, Inc.	US	LOCAL AND CLOUD SPEECH RECOGNITION	US62550935	8/28/2017
Roku, Inc.	US	MEDIA SYSTEM WITH MULTIPLE DIGITAL ASSISTANTS	US62550940	8/28/2017
Roku, Inc.	US	INTERACTIVE CONTENT WHEN THE SECONDARY CONTENT IS SERVER STITCHED	US62553360	9/1/2017
Roku, Inc.	US	CLIENT SIDE STITCHING OF SECONDARY CONTENT	US62553366	9/1/2017
Roku, Inc.	US	WEAVE STREAMING CONTENT INTO A LINEAR VIEWING EXPERIENCE	US62553373	9/1/2017
Roku, Inc.	US	IMPROVED RECEPTION OF AUDIO COMMANDS	PCT/US2017/050629	9/8/2017

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Roku, Inc.	US	INTERACTION RECOGNITION OF A TELEVISION CONTENT INTERACTION DEVICE	PCT/US2017/050624	9/8/2017
Roku, Inc.	US	MULTICHANNEL AUDIO INTERCEPTION AND REDIRECTION FOR MULTIMEDIA DEVICES	PCT/US2017/054937	10/3/2017
Roku, Inc.	US	ENHANCED TRICK MODE TO ENABLE PRESENTATION OF INFORMATION RELATED TO CONTENT BEING STREAMED	PCT/US2017/060339	11/7/2017
Roku, Inc.	US	AUTOMATIC DISPLAY OF CLOSED CAPTIONING INFORMATION	PCT/US2017/060344	11/7/2017
Roku, Inc.	US	SKIPPING CONTENT OF LESSER INTEREST WHEN STREAMING MEDIA	PCT/US2017/060549	11/8/2017
Roku, Inc.	US	RECOMMENDING CONTENT BASED ON USER BEHAVIOR TRACKING AND ANALYSIS	PCT/US2017/060575	11/8/2017
Roku, Inc.	US	PREDICTIVE APPLICATION CACHING	PCT/US2017/060547	11/8/2017
Roku, Inc.	US	STREAMING CONTENT BASED ON SKIP HISTORIES	PCT/US2017/061536	11/14/2017
Roku, Inc.	US	SEMI-AUTOMATED CONFIGURATION OF A LOW-LATENCY MULTIMEDIA PLAYBACK SYSTEM	US15847910	12/19/2017
Roku, Inc.	US	ENHANCED HOME MEDIA EXPERIENCE USING A WIRELESS MEDIA HUB	PCT/US2018/012554	1/5/2018
Roku, Inc.	US	CONNECTOR DEVICE WITH ANTENNA CONNECTION	PCT/US2018/021705	3/9/2018
Roku, Inc.	US	DISPLAY DIAGNOSTICS FOR ENHANCING PERFORMANCE OF DISPLAY DEVICES	PCT/US2018/023101	3/19/2018
Roku, Inc.	US	MEDIA DEVICE UPGRADING SYSTEM	US62646994	3/23/2018

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Roku, Inc.	US	EMPLOYING AUTOMATIC CONTENT RECOGNITION TO ALLOW RESUMPTION OF WATCHING INTERRUPTED MEDIA PROGRAM FROM TELEVISION BROADCAST	PCT/US2018/024035	3/23/2018
Roku, Inc.	US	ENABLING INTERACTIVE CONTROL OF LIVE TELEVISION BROADCAST STREAMS	PCT/US2018/024165	3/23/2018
Roku, Inc.	US	REMOTE CONTROL WITH CONFIGURABLE BUTTONS	PCT/US2018/024507	3/27/2018
Roku, Inc.	US	INTERACTIVE OVERLAYS TO DETERMINE VIEWER DATA	PCT/US2018/024740	3/28/2018
Roku, Inc.	US	TARGETED CONTENT PLACEMENT USING OVERLAYS	PCT/US2018/024756	3/28/2018
Roku, Inc.	US	TIME AND CONTENT RESTRICTIONS BASED ON USER-IDENTIFICATION	PCT/US2018/026032	4/4/2018
Roku, Inc.	US	NETWORK-BASED USER IDENTIFICATION	PCT/US2018/026033	4/4/2018
Roku, Inc.	US	INTERACTION-BASED USER IDENTIFICATION	PCT/US2018/026034	4/4/2018
Roku, Inc.	US	CROSS-PLATFORM MEDIA REDIRECTION AND INTEROPERABILITY	PCT/US2018/030801	5/3/2018
Roku, Inc.	US	DETECTING AND RESPONDING TO RENDERING OF INTERACTIVE VIDEO CONTENT	PCT/US2018/032202	5/11/2018
Roku, Inc.	US	METHOD AND SYSTEM FOR PRESENTING ADDITIONAL CONTENT AT A MEDIA SYSTEM	US16017926	6/25/2018
Roku, Inc.	US	FRAME CERTAINTY FOR AUTOMATIC CONTENT RECOGNITION	PCT/US2018/040371	6/29/2018
Roku, Inc.	US	AUTOMATIC DETERMINATION OF DISPLAY DEVICE FUNCTIONALITY	PCT/US2018/041401	7/10/2018
Roku, Inc.	US	CONTROLLING VISUAL INDICATORS IN AN	PCT/US2018/041402	7/10/2018

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		AUDIO RESPONSIVE DEVICE, AND CAPTURING AND PROVIDING AUDIO USING AN API		
Roku, Inc.	US	Dynamic Control of Fingerprinting Rate to Facilitate Time-accurate Revision of Playback Content	US62698629	7/16/2018
Roku, Inc.	US	Modifying Playback of Replacement Content Responsive to Detection of Remote Control Signals that Modify Operation of the Playback Device	US62698781	7/16/2018
Roku, Inc.	US	Modifying Playback of Replacement Content Based on Control Messages	US62700410	7/19/2018
Roku, Inc.	US	Modifying Playback of Replacement Content Responsive to Detection of Remote Control Signals That Control a Device Providing Video to the Playback Device	US62700409	7/19/2018
Roku, Inc.	US	Advanced Preparation for Content Revision Based on Expected Latency in Obtaining New Content	US62700647	7/19/2018
Roku, Inc.	US	Establishment and Use of Time Mapping Based on Interpolation Using Low-Rate Fingerprinting, to Help Facilitate Frame-Accurate Content Revision	US62700660	7/19/2018
Roku, Inc.	US	CLIENT SIDE STITCHING OF SECONDARY CONTENT	US16047822	7/27/2018
Roku, Inc.	US	Dynamic Reduction in Playout of Replacement Content to Help Align End of Replacement Content with End of Replaced Content	US62765276	8/17/2018
Roku, Inc.	US	Dynamic Playout of Transition Frames while Transitioning between Playout of Media Streams	US62765161	8/17/2018
Roku, Inc.	US	INTELLIGENT DOWNLOAD OF CONTENT	PCT/US2018/000262	8/17/2018

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Roku, Inc.	US	REMOTE CONTROL WITH PRESENCE SENSOR	PCT/US2018/000260	8/17/2018
Roku, Inc.	US	MESSAGE PROCESSING USING A CLIENT-SIDE CONTROL GROUP	PCT/US2018/000255	8/17/2018
Roku, Inc.	US	MEDIA SYSTEM WITH MULTIPLE DIGITAL ASSISTANTS	PCT/US2018/048106	8/27/2018
Roku, Inc.	US	LOCAL AND CLOUD SPEECH RECOGNITION	PCT/US2018/048101	8/27/2018
Roku, Inc.	US	AUDIO RESPONSIVE DEVICE WITH PLAY/STOP AND TELL ME SOMETHING BUTTONS	PCT/US2018/048104	8/27/2018
Roku, Inc.	US	WEAVE STREAMING CONTENT INTO A LINEAR VIEWING EXPERIENCE	PCT/US2018/048760	8/30/2018
Roku, Inc.	US	CLIENT SIDE STITCHING OF SECONDARY CONTENT	PCT/US2018/048754	8/30/2018
Roku, Inc.	US	INTERACTIVE CONTENT WHEN THE SECONDARY CONTENT IS SERVER STITCHED	PCT/US2018/048757	8/30/2018
Roku, Inc.	US	FLAGGING ADVERTISEMENT FRAMES FOR AUTOMATIC CONTENT RECOGNITION	PCT/US2018/050184	9/10/2018
Roku, Inc.	US	COLD MATCHING BY AUTOMATIC CONTENT RECOGNITION	PCT/US2018/050230	9/10/2018
Roku, Inc.	US	SMART REMOTE CONTROL FOR AUDIO RESPONSIVE MEDIA DEVICE	US62741060	10/4/2018
Roku, Inc.	US	TRACKING PROXIMITIES OF DEVICES AND/OR OBJECTS	PCT/US2018/058649	11/1/2018
Roku, Inc.	US	AUTOMATICALLY AND PROGRAMMATICALLY GENERATING SCENE CHANGE MARKERS	PCT/US2018/059519	11/7/2018
Roku, Inc.	US	ENHANCED PLAYBACK BAR	PCT/US2018/059521	11/7/2018
Roku, Inc.	US	Detection of Mute and Compensation Therefor	US62768587	11/16/2018

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		During Media Replacement Event		
Roku, Inc.	US	Detection of Media Playback Loudness Level and Corresponding Adjustment to Audio During Media Replacement Event	US62768596	11/16/2018
Roku, Inc.	US	AD-HOC LIGHTWEIGHT MPOS REMOTE CONTROL	US62769981	11/20/2018
Roku, Inc.	US	MASS INSERTION INTO SINGLE-THREADED DATABASES	PCT/US2018/062562	11/27/2018
Roku, Inc.	US	PROVIDING OVER-THE-AIR CONTENT TO ANY DEVICE	US62775453	12/5/2018
Roku, Inc.	US	LOW LATENCY DISTRIBUTION OF AUDIO USING A SINGLE RADIO	US62775450	12/5/2018
Roku, Inc.	US	DOWNLOADABLE AVOD CONTENT	US62775452	12/5/2018
Roku, Inc.	US	AUDIO SEARCH RESULTS IN A MULTI-CONTENT SOURCE ENVIRONMENT	US62779698	12/14/2018
Roku, Inc.	US	TRIGGER WORD DETECTION WITH MULTIPLE DIGITAL ASSISTANTS	PCT/US2019/017429	2/11/2019
Roku, Inc.	US	PRODUCTION CONSOLE AUTHORIZATION PERMISSIONS	PCT/US2019/017428	2/11/2019
Roku, Inc.	US	DYNAMIC MULTI-SPEAKER OPTIMIZATION	PCT/US2019/021262	3/8/2019
Roku, Inc.	US	MEDIA DEVICE UPGRADING SYSTEM	PCT/US2019/023102	3/20/2019
Roku, Inc.	US	CROWDSOURCED PREDICTION OF CDN PERFORMANCE FOR ZERO BUFFER DELIVERY OF CONTENT	PCT/US2019/028892	4/24/2019
Roku, Inc.	US	CLIENT SIDE STITCHING OF CONTENT INTO A MULTIMEDIA STREAM	PCT/US2019/028893	4/24/2019
Roku, Inc.	US	Content Modification System with Fingerprint Data Match and Mismatch Detection Feature	US62846416	5/10/2019
Roku, Inc.	US	Content Modification System with Responsive Transmission	US62846391	5/10/2019

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		of Reference Fingerprint Data Feature		
Roku, Inc.	US	Content Modification System with Geographic Area-Based Feature	US62846401	5/10/2019
Roku, Inc.	US	Content Modification System with Responsive Transmission of Reference Fingerprint Data Feature	US62846385	5/10/2019
Roku, Inc.	US	Content Modification System with Broadcast Delay-Based Feature	US62846405	5/10/2019
Roku, Inc.	US	Content Modification System with Use of Multiple Fingerprint Data Types Feature	US62846421	5/10/2019
Roku, Inc.	US	Content Modification System with Render Delay-Based Feature	US62846409	5/10/2019
Roku, Inc.	US	Content Modification System with Issue Detection and Responsive Action Feature	US62846429	5/10/2019
Roku, Inc.	US	Content Modification System with Geographic Area-Based Feature	US62846396	5/10/2019
Roku, Inc.	US	Content Modification System with Geographic Area-Based Feature	US62846403	5/10/2019
Roku, Inc.	US	Content Modification System with Fingerprint Data Multimatch Detection Feature	US62846413	5/10/2019
Roku, Inc.	US	Content Modification System with Fingerprint Data Mismatch and Responsive Action Feature	US62846425	5/10/2019
Roku, Inc.	US	Content Modification System with Volume Level Adjustment Feature	US62846433	5/10/2019
Roku, Inc.	US	SYSTEM AND METHOD FOR CONFIGURING AN EXTENDER DEVICE	PCT/US2019/034876	5/31/2019
Roku, Inc.	US	REAL-TIME ASSESSMENT OF MULTIMEDIA SERVICE IN A PARTICULAR ENVIRONMENT	PCT/US2019/034873	5/31/2019
Roku, Inc.	US	DOWNLOADABLE AVOD CONTENT	US16430990	6/4/2019

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Roku, Inc.	US	Content Modification System with Unscheduling Feature	US62858873	6/7/2019
Roku, Inc.	US	Content Modification System with Probability-Based Selection Feature	US62858859	6/7/2019
Roku, Inc.	US	Content Modification System with System Resource Request Feature	US62858856	6/7/2019
Roku, Inc.	US	Content Modification System with Overlay Handling Feature	US62858855	6/7/2019
Roku, Inc.	US	Content Modification System with Content Presentation Device Grouping Feature	US62858838	6/7/2019
Roku, Inc.	US	Content Modification System with Broadcast Schedule Utilization Feature	US62858823	6/7/2019
Roku, Inc.	US	Content Modification System with In-Band Message Data Utilization Feature	US62858826	6/7/2019
Roku, Inc.	US	Content Modification System with Testing and Reporting Feature	US62858840	6/7/2019
Roku, Inc.	US	Content Modification System with Technical Characteristic-Based Selection Feature	US62858845	6/7/2019
Roku, Inc.	US	Content Modification System with Supplemental Content Stitching Feature	US62858870	6/7/2019
Roku, Inc.	US	DYNAMIC CONTROL OF FINGERPRINTING RATE TO FACILITATE TIME-ACCURATE REVISION OF MEDIA CONTENT	PCT/US2019/035955	6/7/2019
Roku, Inc.	US	DYNAMIC CONTROL OF FINGERPRINTING RATE TO FACILITATE TIME-ACCURATE REVISION OF MEDIA CONTENT	PCT/US2019/035961	6/7/2019
Roku, Inc.	US	DYNAMIC REDUCTION IN PLAYOUT OF REPLACEMENT CONTENT TO HELP ALIGN END OF REPLACEMENT CONTENT WITH END OF REPLACED CONTENT	PCT/US2019/036001	6/7/2019
Roku, Inc.	US	ESTABLISHMENT AND USE OF TIME MAPPING-	PCT/US2019/035973	6/7/2019

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		BASED ON INTERPOLATION USING LOW-MATE FINGERPRINTING, TO HELP FACILITATE FRAME-ACCURATE CONTENT REVISION		
Roku, Inc.	US	ADVANCED PREPARATION FOR CONTENT REVISION BASED ON EXPECTED LATENCY IN OBTAINING NEW CONTENT	PCT/US2019/035967	6/7/2019
Roku, Inc.	US	ESTABLISHMENT AND USE OF TIME MAPPING BASED ON INTERPOLATION USING LOW-RATE FINGERPRINTING, TO HELP FACILITATE FRAME-ACCURATE CONTENT REVISION	PCT/US2019/035974	6/7/2019
Roku, Inc.	US	DYNAMIC PLAYOUT OF TRANSITION FRAMES WHILE TRANSITIONING BETWEEN PLAYOUT OF MEDIA STREAMS	PCT/US2019/035996	6/7/2019
Roku, Inc.	US	Media Content Identification on Mobile Devices	US16442392	6/14/2019
Roku, Inc.	US	Media Content Identification on Mobile Devices	US16441936	6/14/2019
Roku, Inc.	US	Detection of Media Playback Loudness Level and Corresponding Adjustment to Audio During Media Replacement Event	US62861474	6/14/2019
Roku, Inc.	US	DO NOT DISTURB FUNCTIONALITY FOR VOICE RESPONSIVE DEVICES	US62862735	6/18/2019
Roku, Inc.	US	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	US62863007	6/18/2019

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Roku, Inc.	US	Content Modification System with Determination of Render Delay Feature	US62863070	6/18/2019
Roku, Inc.	US	Use of Watermarking to Trigger Fingerprint-Related Action	US62865613	6/24/2019
Roku, Inc.	US	INTELLIGENT POWER REDUCTION IN AUDIO AMPLIFIERS	PCT/US2019/040287	7/2/2019
Roku, Inc.	US	MODIFYING PLAYBACK OF REPLACEMENT CONTENT RESPONSIVE TO DETECTION OF REMOTE CONTROL SIGNALS THAT CONTROL A DEVICE PROVIDING VIDEO TO THE PLAYBACK DEVICE	PCT/US2019/040550	7/3/2019
Roku, Inc.	US	MODIFYING PLAYBACK OF REPLACEMENT CONTENT RESPONSIVE TO DETECTION OF REMOTE CONTROL SIGNALS THAT MODIFY OPERATION OF THE PLAYBACK DEVICE	PCT/US2019/040546	7/3/2019
Roku, Inc.	US	MODIFYING PLAYBACK OF REPLACEMENT CONTENT BASED ON CONTROL MESSAGES	PCT/US2019/040553	7/3/2019
Roku, Inc.	US	MORE SECURE DEVICE PAIRING	PCT/US2019/041956	7/16/2019
Roku, Inc.	US	Method and System for Use of Network Affiliation as Basis to Determine Channel Rendered by Content Presentation Device	US62876359	7/19/2019
Roku, Inc.	US	Method and System for Use of Earlier and/or Later Single-Match as Basis to Disambiguate Channel Multi-Match with Non-Matching Programs	US62876363	7/19/2019
Roku, Inc.	US	Content Modification System with Broadcast Schedule Utilization Feature	US62877223	7/22/2019

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Roku, Inc.	US	Content Modification System with Broadcast Schedule Utilization Feature	US62877228	7/22/2019
Roku, Inc.	US	Content Modification System with Broadcast Schedule Utilization Feature	US62877219	7/22/2019
Roku, Inc.	US	Content Modification System with Broadcast Schedule Utilization Feature	US62877229	7/22/2019
Roku, Inc.	US	SYSTEM AND METHOD FOR COLLECTING DATA	US16524969	7/29/2019
Roku, Inc.	US	Use of Watermarking to Control Abandonment of Dynamic Content Modification	US62882220	8/2/2019
Roku, Inc.	US	System for Dynamic Advertisement Insertion	US62882360	8/2/2019
Roku, Inc.	US	Content Modification System	US62888923	8/19/2019
Roku, Inc.	US	TUNABLE NARROWBAND INFRARED RECEIVER	PCT/US2019/047139	8/20/2019
Roku, Inc.	US	DYNAMICALLY ADJUSTING VIDEO TO IMPROVE SYNCHRONIZATION WITH AUDIO	PCT/US2019/050317	9/10/2019
Roku, Inc.	US	ADAPTIVE SWITCHING IN A WHOLE HOME ENTERTAINMENT SYSTEM	PCT/US2019/050316	9/10/2019
Roku, Inc.	US	Use of In-Band Metadata as Basis to Access Reference Fingerprints to Facilitate Content-Related Action	US62900037	9/13/2019
Roku, Inc.	US	Method and System for Re-Uniting Metadata with Media-Stream Content at a Media Client, to Facilitate Action by the Media Client	US62900043	9/13/2019
Roku, Inc.	US	USB-BASED MEDIA DEVICE UPGRADING SYSTEM	US62900913	9/16/2019
Roku, Inc.	US	NETWORK-BASED MEDIA DEVICE UPGRADING SYSTEM	US62900919	9/16/2019
Roku, Inc.	US	DYNAMICALLY SWITCHING TO/FROM A FIRST NETWORK DURING	PCT/US2019/051252	9/16/2019

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		AUDIO PLAYBACK OVER HDMI/ARC		
Roku, Inc.	US	AUDIO CANCELLATION AND CONTENT RECOGNITION OF AUDIO RECEIVED OVER HDMI/ARC	PCT/US2019/051250	9/16/2019
Roku, Inc.	US	AUDIO SYNCHRONIZATION OF A DUMB SPEAKER AND A SMART SPEAKER USING A SPREAD CODE	PCT/US2019/051249	9/16/2019
Roku, Inc.	US	IDENTIFYING AUDIO CHARACTERISTICS OF A ROOM USING A SPREAD CODE	PCT/US2019/051398	9/17/2019
Roku, Inc.	US	WIRELESS AUDIO SYNCHRONIZATION USING A SPREAD CODE	PCT/US2019/051397	9/17/2019
Roku, Inc.	US	SMART REMOTE CONTROL FOR AUDIO RESPONSIVE MEDIA DEVICE	PCT/US2019/053992	10/1/2019
Roku, Inc.	US	Detection of Media Playback Loudness Level and Corresponding Adjustment to Audio During Media Replacement Event	US62909676	10/2/2019
Roku, Inc.	US	DETECTION OF MUTE AND COMPENSATION THEREFOR DURING MEDIA REPLACEMENT EVENT	PCT/US2019/054798	10/4/2019
Roku, Inc.	US	POST-PRODUCTION DEMURA OF A TELEVISION USING A MOBILE DEVICE	PCT/US2019/055367	10/9/2019
Roku, Inc.	US	Content Modification System	US62914309	10/11/2019
Roku, Inc.	US	Dynamic Ad Insertion Decision-making for Linear Live TV	US62914290	10/11/2019
Roku, Inc.	US	Content Modification System	US62925093	10/23/2019
Roku, Inc.	US	Content Modification System	US62925090	10/23/2019
Roku, Inc.	US	Method and System for Use of Automatic Content Recognition to Trigger	US16668833	10/30/2019

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		Dynamic Ad Insertion in Response to Repeat Payout of Ad		
Roku, Inc.	US	Client-Side Advertisement Caching	US62929046	10/31/2019
Roku, Inc.	US	Content Modification System	US62928867	10/31/2019
Roku, Inc.	US	DETECTION OF MEDIA PLAYBACK LOUDNESS LEVEL AND CORRESPONDING ADJUSTMENT TO AUDIO DURING MEDIA REPLACEMENT EVENT	PCT/US2019/059882	11/5/2019
Roku, Inc.	US	DETECTION OF VOLUME ADJUSTMENTS DURING MEDIA REPLACEMENT EVENTS USING LOUDNESS LEVEL PROFILES	PCT/US2019/061633	11/15/2019
Roku, Inc.	US	MONITORING LOUDNESS LEVEL DURING MEDIA REPLACEMENT EVENT USING SHORTER TIME CONSTANT	PCT/US2019/061632	11/15/2019
Roku, Inc.	US	NON-TELEVISION EXPERIENCE TRIGGERS	PCT/US2019/062131	11/19/2019
Roku, Inc.	US	AD-HOC LIGHTWEIGHT MPOS REMOTE CONTROL	PCT/US2019/062133	11/19/2019
Roku, Inc.	US	DOWNLOADABLE AVOD CONTENT	PCT/US2019/064446	12/4/2019
Roku, Inc.	US	PROVIDING OVER-THE-AIR CONTENT TO ANY DEVICE	PCT/US2019/064442	12/4/2019
Roku, Inc.	US	LOW LATENCY DISTRIBUTION OF AUDIO USING A SINGLE RADIO	PCT/US2019/064445	12/4/2019
Roku, Inc.	US	ADVANCED LAYER EDITOR	PCT/US2019/065637	12/11/2019
Roku, Inc.	US	AUDIO SEARCH RESULTS IN A MULTI-CONTENT SOURCE ENVIRONMENT	PCT/US2019/065620	12/11/2019
Roku, Inc.	US	Use of Watermarking to Trigger Fingerprint-Related Action	US15929219	2/6/2020
Roku, Inc.	US	PREDICTIVE PLATFORM FOR DETERMINING INCREMENTAL LIFT	PCT/US2020/018418	2/14/2020

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Roku, Inc.	US	Fingerprinting Media Content Using Hashing	US16802820	2/27/2020
Roku, Inc.	US	METHOD AND APPARATUS FOR AUTOMATIC SECOND SCREEN ENGAGEMENT	US16828623	3/24/2020
Roku, Inc.	US	METHOD AND SYSTEM FOR PRESENTING ADDITIONAL CONTENT AT A MEDIA SYSTEM	US16835217	3/30/2020
Roku, Inc.	US	METHOD AND SYSTEM FOR PRESENTING ADDITIONAL CONTENT AT A MEDIA SYSTEM	US16835209	3/30/2020
Roku, Inc.	US	METHOD AND SYSTEM FOR PRESENTING ADDITIONAL CONTENT AT A MEDIA SYSTEM	US16835206	3/30/2020
Roku, Inc.	US	METHOD AND SYSTEM FOR PRESENTING ADDITIONAL CONTENT AT A MEDIA SYSTEM	US16835204	3/30/2020
Roku, Inc.	US	METHOD AND SYSTEM FOR PRESENTING ADDITIONAL CONTENT AT A MEDIA SYSTEM	US16835203	3/30/2020
Roku, Inc.	US	METHOD AND SYSTEM FOR PRESENTING ADDITIONAL CONTENT AT A MEDIA SYSTEM	US16835201	3/30/2020
Roku, Inc.	US	Content-Modification System With Geographic Area-Based Feature	US16836253	3/31/2020
Roku, Inc.	US	Content Modification System	US63007339	4/8/2020
Roku, Inc.	US	DYNAMIC MULTI-SPEAKER OPTIMIZATION	US16859678	4/27/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH RESPONSIVE TRANSMISSION OF REFERENCE FINGERPRINT DATA FEATURE	PCT/US2020/032139	5/8/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH ISSUE DETECTION AND	PCT/US2020/032135	5/8/2020

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		RESPONSIVE ACTION FEATURE		
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH FINGERPRINT DATA MISMATCH AND RESPONSIVE ACTION FEATURE	PCT/US2020/032113	5/8/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH VOLUME LEVEL ADJUSTMENT FEATURE	PCT/US2020/032138	5/8/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH USE OF MULTIPLE FINGERPRINT DATA TYPES FEATURE	PCT/US2020/032133	5/8/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH FINGERPRINT DATA MATCH AND MISMATCH DETECTION FEATURE	PCT/US2020/032127	5/8/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH TRANSMISSION DELAY-BASED FEATURE	PCT/US2020/032118	5/8/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH GEOGRAPHIC AREA-BASED FEATURE	PCT/US2020/032143	5/8/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH GEOGRAPHIC AREA-BASED FEATURE	PCT/US2020/032122	5/8/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH DETERMINATION OF INPUT-BUFFER SWITCHING DELAY FEATURE	PCT/US2020/032120	5/8/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH GEOGRAPHIC AREA-BASED FEATURE	PCT/US2020/032110	5/8/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH RESPONSIVE TRANSMISSION OF REFERENCE	PCT/US2020/032106	5/8/2020

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		FINGERPRINT DATA FEATURE		
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH RESPONSIVE TRANSMISSION OF REFERENCE FINGERPRINT DATA FEATURE	PCT/US2020/032350	5/11/2020
Roku, Inc.	US	Content-Modification System with Content-Presentation Device Grouping Feature	US16892131	6/3/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH UNSCHEDULING FEATURE	PCT/US2020/036461	6/5/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH OVERLAY HANDLING FEATURE	PCT/US2020/036451	6/5/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH SUPPLEMENTAL CONTENT STITCHING FEATURE	PCT/US2020/036459	6/5/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH PROBABILITY-BASED SELECTION FEATURE	PCT/US2020/036456	6/5/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH TESTING AND REPORTING FEATURE	PCT/US2020/036445	6/5/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH TECHNICAL CHARACTERISTIC-BASED SELECTION FEATURE	PCT/US2020/036448	6/5/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH CONTENT-PRESENTATION DEVICE GROUPING FEATURE	PCT/US2020/036443	6/5/2020
Roku, Inc.	US	Content-Modification System with In-Band Message Data Utilization Feature	US16895806	6/8/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH SYSTEM RESOURCE REQUEST FEATURE	PCT/US2020/036633	6/8/2020

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Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH BROADCAST SCHEDULE UTILIZATION FEATURE	PCT/US2020/036622	6/8/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH IN-BAND MESSAGE DATA UTILIZATION FEATURE	PCT/US2020/036632	6/8/2020
Roku, Inc.	US	DO NOT DISTURB FUNCTIONALITY FOR VOICE RESPONSIVE DEVICES	PCT/US2020/036912	6/10/2020
Roku, Inc.	US	USE OF WATERMARKING TO TRIGGER FINGERPRINT-RELATED ACTION	PCT/US2020/037898	6/16/2020
Roku, Inc.	US	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	PCT/US2020/037884	6/16/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH DETERMINATION OF INPUT-BUFFER SWITCHING DELAY FEATURE	PCT/US2020/038387	6/18/2020
Roku, Inc.	US	Content-Modification System with Jitter Effect Mitigation Feature	US63046014	6/30/2020
Roku, Inc.	US	Content-Modification System with Jitter Effect Mitigation Feature	US63046028	6/30/2020
Roku, Inc.	US	Content-Modification System with Jitter Effect Mitigation Feature	US63046035	6/30/2020
Roku, Inc.	US	Content-Modification System with Jitter Effect Mitigation Feature	US63046022	6/30/2020
Roku, Inc.	US	Content-Modification System with Jitter Effect Mitigation Feature	US63046043	6/30/2020

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Roku, Inc.	US	Replacement Advertising Selection Using Viewer Switching Behavior And Pay Points	US63053998	7/20/2020
Roku, Inc.	US	METHOD AND SYSTEM FOR USE OF NETWORK AFFILIATION AS BASIS TO DETERMINE CHANNEL RENDERED BY CONTENT PRESENTATION DEVICE	PCT/US2020/042742	7/20/2020
Roku, Inc.	US	METHOD AND SYSTEM FOR USE OF EARLIER AND/OR LATER SINGLE-MATCH AS BASIS TO DISAMBIGUATE CHANNEL MULTI-MATCH WITH NON-MATCHING PROGRAMS	PCT/US2020/042743	7/20/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH BROADCAST SCHEDULE UTILIZATION FEATURE	PCT/US2020/042906	7/21/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH BROADCAST SCHEDULE UTILIZATION FEATURE	PCT/US2020/042990	7/22/2020
Roku, Inc.	US	Real-time Guaranteed Campaign Delivery Optimization Using Broadcast Schedules And Historic Viewing Data	US63056988	7/27/2020
Roku, Inc.	US	Viewer Retention Through Targeted Advertisements Based On Viewer Behavior	US63056990	7/27/2020
Roku, Inc.	US	Increasing Advertisement Revenue By Repeated Re-Evaluation Of Value Of Advertisement Spot	US63057834	7/28/2020
Roku, Inc.	US	Advertising Campaign To Viewing Device Suitability Matching	US63059118	7/30/2020
Roku, Inc.	US	Replacement Advertisement Selection After Channel Changes	US63059119	7/30/2020
Roku, Inc.	US	USE OF WATERMARKING TO CONTROL ABANDONMENT OF	PCT/US2020/044762	8/3/2020

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		DYNAMIC CONTENT MODIFICATION		
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH BROADCAST SCHEDULE UTILIZATION FEATURE	PCT/US2020/046922	8/19/2020
Roku, Inc.	US	USE OF IN-BAND METADATA AS BASIS TO ACCESS REFERENCE FINGERPRINTS TO FACILITATE CONTENT-RELATED ACTION	PCT/US2020/049374	9/4/2020
Roku, Inc.	US	METHOD AND SYSTEM FOR USE OF AUTOMATIC CONTENT RECOGNITION TO TRIGGER DYNAMIC AD INSERTION IN RESPONSE TO REPEAT PLAYOUT OF AD	PCT/US2020/049356	9/4/2020
Roku, Inc.	US	METHOD AND SYSTEM FOR RE-UNITING METADATA WITH MEDIA-STREAM CONTENT AT A MEDIA CLIENT, TO FACILITATE ACTION BY THE MEDIA CLIENT	PCT/US2020/049362	9/4/2020
Roku, Inc.	US	Content-Modification System	US63082892	9/24/2020
Roku, Inc.	US	Media Content Matching and Indexing	US16948766	9/30/2020
Roku, Inc.	US	DYNAMIC AD INSERTION DECISION-MAKING FOR LINEAR LIVE TV	PCT/US2020/070645	10/9/2020
Roku, Inc.	US	Replacement Advertising Selection Using Viewer Switching Behavior and Pay Points	US17076404	10/21/2020
Roku, Inc.	US	MEASURING AND EVALUATING A TEST SIGNAL GENERATED BY A DEVICE UNDER TEST (DUT)	PCT/US2020/057076	10/23/2020
Roku, Inc.	US	Adjustment of Supplemental Content Duration to Avoid Flash Frames	US63198596	10/29/2020
Roku, Inc.	US	Automated Replacement of Unwanted and Unethical Adverts in Linear TV Streams	US63198593	10/29/2020

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Roku, Inc.	US	Using Multiple Video Buffers to Increase Success Rate of Content-Modification Operations	US63198594	10/29/2020
Roku, Inc.	US	Adjustment of Supplemental Content Duration to Avoid Pauses in Consecutive Content-Modification Operations	US63198595	10/29/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH DELAY BUFFER FEATURE	PCT/US2020/058399	10/30/2020
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH CLIENT-SIDE ADVERTISEMENT CACHING	PCT/US2020/070730	10/31/2020
Roku, Inc.	US	MANAGING LOW FREQUENCIES OF AN OUTPUT SIGNAL	PCT/US2020/058576	11/2/2020
Roku, Inc.	US	Content-Modification System with Local Avail Detection Feature	US63109208	11/3/2020
Roku, Inc.	US	RECEIVER FOR HIGH PRECISION SYNCHRONIZATION IN A SHARED MEDIUM	PCT/US2020/058885	11/4/2020
Roku, Inc.	US	Real-time Guaranteed Campaign Delivery Optimization Using Broadcast Schedules and Historic Viewing Data	US17089930	11/5/2020
Roku, Inc.	US	Viewer Retention Through Targeted Advertisements Based on Viewer Behavior	US17096542	11/12/2020
Roku, Inc.	US	RADIO FREQUENCY REMOTE CONTROL	PCT/US2021/058574	11/12/2020
Roku, Inc.	US	TRANSMITTING COMMANDS TO A DISPLAY DEVICE BASED ON DETECTED AUDIO OUTPUT	US63113628	11/13/2020
Roku, Inc.	US	SOUND GENERATION WITH ADAPTIVE DIRECTIVITY	PCT/US2020/061012	11/18/2020
Roku, Inc.	US	IN-SYNC DIGITAL WAVEFORM COMPARISON TO DETERMINE PASS/FAIL	PCT/US2020/061086	11/18/2020

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		RESULTS OF A DEVICE UNDER TEST (DUT)		
Roku, Inc.	US	AUTOMATIC AUDIO SOURCE SELECTION SYSTEM	PCT/US2020/061069	11/18/2020
Roku, Inc.	US	Server-side Matching of Supplemental Content Audio to Perceived Audio by End-user	US63117670	11/24/2020
Roku, Inc.	US	Content-Modification System With Content Segment Frequency Feature	US63119225	11/30/2020
Roku, Inc.	US	Increasing Advertisement Revenue by Repeated Re-Evaluation of Value of Advertisement Spot	US17108281	12/1/2020
Roku, Inc.	US	SPEAKER NORMALIZATION SYSTEM	PCT/US2020/063217	12/4/2020
Roku, Inc.	US	Use of Video Frame Format as Basis for Differential Handling of Automatic Content Recognition and Associate Action	US63199110	12/7/2020
Roku, Inc.	US	Media Channel Identification and Action with Multi-Match Disambiguation Feature	US63126383	12/16/2020
Roku, Inc.	US	Media Channel Identification and Action with Multi-Match Disambiguation Feature	US63126384	12/16/2020
Roku, Inc.	US	AUDIO COMMAND INTERFACE FOR A MULTIMEDIA DEVICE	US17130807	12/22/2020
Roku, Inc.	US	USING NON-AUDIO DATA EMBEDDED IN AN AUDIO SIGNAL	PCT/US2021/014533	1/22/2021
Roku, Inc.	US	Content-Modification System With Advertisement Revenue Optimization And Viewer Retention Features	US63148223	2/11/2021
Roku, Inc.	US	Content-Modification System With Feature For Exposing Multiple Devices In A Household To The Same Advertisement	US63148220	2/11/2021
Roku, Inc.	US	Content-Modification System with Volume-Level Detection Feature	US63148268	2/11/2021

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Roku, Inc.	US	Content-Modification System With Feature For Controlling Viewer Exposure To Spoilers In Advertisements	US63148221	2/11/2021
Roku, Inc.	US	Content Modification System With Viewer Behavior-Based Content Delivery Selection Feature	US63148568	2/11/2021
Roku, Inc.	US	Content-Modification System With Advertisement Reconciliation Feature	US63148219	2/11/2021
Roku, Inc.	US	Content Modification System with Viewer Behavior-Based Content Delivery Selection Feature	US63148575	2/11/2021
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH USER EXPERIENCE ANALYSIS FEATURE	US63148582	2/11/2021
Roku, Inc.	US	Centralized Application of Policy Rules to Dynamically Define Ad-Inventories for Dynamic Ad Replacement	US63200092	2/12/2021
Roku, Inc.	US	Use of SCTE Data to Facilitate Ad Harvesting for Dynamic Ad Replacement	US63200090	2/12/2021
Roku, Inc.	US	Use of SCTE Data to Correct Schedule Drift	US63200093	2/12/2021
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH HOUSEHOLD COORDINATION FEATURE	US63149532	2/15/2021
Roku, Inc.	US	INTELLIGENT POWER REDUCTION IN AUDIO AMPLIFIERS	US17176900	2/16/2021
Roku, Inc.	US	CONTENT-MODIFICATION SYSTEM WITH QUIET CONTENT DETECTION FEATURE	US63150490	2/17/2021
Roku, Inc.	US	Content-Modification System With Feature For Detecting And Responding To Content Modifications By Tuner Devices	PCT/US2021/018997	2/22/2021
Roku, Inc.	US	Content-Modification System With Feature For Detecting And Responding To A	PCT/US2021/018974	2/22/2021

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		Content Modification By A Tuner Device		
Roku, Inc.	US	Content-Modification System With Feature For Detecting And Responding To A Content Modification By A Tuner Device	PCT/US2021/018995	2/22/2021
Roku, Inc.	US	DETECTING AND SWITCHING WIRELESS NETWORKS	US63163549	3/19/2021
Roku, Inc.	US	Content-Modification System with Feature for Prioritizing Channels Used in Channel Identification	US63166052	3/25/2021
Roku, Inc.	US	Content-Modification System with Advertisement Revenue Optimization and Viewer Retention Features	US17223223	4/6/2021
Roku, Inc.	US	REMOTE CONTROL	US29777999	4/9/2021
Roku, Inc.	US	VOICE COMMAND RECOGNITION SYSTEM	US17315704	5/10/2021
Roku, Inc.	US	PROVIDING CUSTOMIZED ENTERTAINMENT EXPERIENCE USING HUMAN PRESENCE DETECTION	PCT/US2021/032301	5/13/2021
Roku, Inc.	US	PROVIDING ENERGY-EFFICIENT FEATURES USING HUMAN PRESENCE DETECTION	PCT/US2021/032302	5/13/2021
Roku, Inc.	US	DETECTING AND SWITCHING WIRELESS NETWORKS	US17321075	5/14/2021
Roku, Inc.	US	ENVIRONMENTALLY AWARE REMOTE CONTROL	US17332353	5/27/2021
Roku, Inc.	US	CLOUD COMPUTATION FOR APPLICATIONS ON MEDIA DEVICES	US63194749	5/28/2021
Roku, Inc.	US	Use of In-Band Data to Facilitate Ad Harvesting for Dynamic Ad Replacement	US17303704	6/4/2021
Roku, Inc.	US	Content-modification system with feature for exposing multiple devices in a household to the same or similar advertisements	US17343310	6/9/2021

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Roku, Inc.	US	Method and System for Remotely Controlling Consumer Electronic Devices	US17303912	6/10/2021
Roku, Inc.	US	Method and System for Remotely Controlling Consumer Electronic Devices	US17304158	6/15/2021
Roku, Inc.	US	Replacement Advertising Selection Using Viewer Switching Behavior And Pay Points	PCT/US2021/042250	7/19/2021
Roku, Inc.	US	PROVIDING CUSTOMIZED ENTERTAINMENT EXPERIENCE USING HUMAN PRESENCE DETECTION	US17459632	8/27/2021
Roku, Inc.	US	IMPROVED NETWORK PATH SELECTION IN A SINGLE SERVICE SET ID	US63246723	9/21/2021
Roku, Inc.	US	SMART WI-FI CHANNEL SELECTION	US63246729	9/21/2021
Roku, Inc.	US	Controlling visual indicators in an audio responsive electronic device, and capturing and providing audio using an API, by native and non-native computing devices and services	US17481141	9/21/2021
Roku, Inc.	US	STREAMING A VIDEO CHAT FROM A MOBILE DEVICE TO A DISPLAY DEVICE USING A ROTATING BASE	PCT/US2021/051554	9/22/2021
Roku, Inc.	US	ORDER AN ADVERTISED SUBJECT FROM A THIRD PARTY SHOPPING SYSTEM	US17488929	9/29/2021
Roku, Inc.	US	COMBINED MEDIA CAPABILITY FOR MULTIPLE MEDIA DEVICES	17/492,120	10/1/2021
Roku, Inc.	US	AUTOMATIC DETERMINATION OF DISPLAY DEVICE FUNCTIONALITY	17/494,567	10/5/2021
Roku, Inc.	US	REMOTE CONTROL BUTTON DETECTION	17/495,187	10/6/2021
Roku, Inc.	US	Adjustment of Supplemental Content Duration to Avoid	PCT/US2021/057088	10/28/2021

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		Pauses in Consecutive Content-Modification Operations		
Roku, Inc.	US	Content-Modification System with Local Avail Detection Feature	PCT/US2021/057333	10/29/2021
Roku, Inc.	US	TRANSMITTING COMMANDS TO A DISPLAY DEVICE BASED ON DETECTED AUDIO OUTPUT	PCT/US2021/058171	11/5/2021
Roku, Inc.	US	Method and System for Remotely Controlling Consumer Electronic Devices	17/454,753	11/12/2021
Roku, Inc.	US	Content-Modification System With Multiple Video Buffers Feature	PCT/US2021/059185	11/12/2021
Roku, Inc.	US	Cooling Subsystems for Peripheral Devices	17/534,063	11/23/2021
Roku, Inc.	US	DISCOVERY AND CONTROL OF A MEDIA DEVICE FROM ANYWHERE	17/534,625	11/24/2021
Roku, Inc.	US	DYNAMIC SPLASH SCREEN DURING AN APPLICATION LAUNCH SEQUENCE FOR MEDIA STREAMING DEVICES	US17547713	12/10/2021
Roku, Inc.	US	Computing System with Device Attestation Feature	63/265,678	12/17/2021
Roku, Inc.	US	Computing System with Device Attestation Feature	63/265,768	12/20/2021
Roku, Inc.	US	DETECTION OF MUTE AND COMPENSATION THEREFOR DURING MEDIA REPLACEMENT EVENT	17/563,713	12/28/2021
Roku, Inc.	US	Power Monitoring of Devices	17565803	12/30/2021
Roku, Inc.	US	Content-Modification System With Feature For Managing Multiple Content-Modification Requests	PCT/US2022/011913	1/11/2022
Roku, Inc.	US	Coordinated processing of food ordering based on media content presentation	US17586499	1/27/2022
Roku, Inc.	US	Computing System with Device Attestation Feature	63/267,363	1/31/2022

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Roku, Inc.	US	SMART SWITCH	PCT/US22/14960	2/2/2022
Roku, Inc.	US	Content Modification System With Viewer Behavior-Based Content Delivery Selection Feature	PCT/US2022/015832	2/9/2022
Roku, Inc.	US	Content-Modification System with Advertisement Reconciliation Feature	PCT/US2022/015987	2/10/2022
Roku, Inc.	US	Content-Modification System with Feature For Exposing Multiple Devices In A Household To The Same Advertisement	PCT/US2022/015990	2/10/2022
Roku, Inc.	US	Content-Modification System with Feature For Controlling Viewer Exposure To Spoilers In Advertisements	PCT/US2022/015991	2/10/2022
Roku, Inc.	US	Content-Modification System with Advertisement Revenue Optimization and Viewer Retention Features	PCT/US2022/015993	2/10/2022
Roku, Inc.	US	Computing System with Device Attestation Feature	17676058	2/18/2022
Roku, Inc.	US	Product metrics monitoring and anomaly detection using machine learning models	17/652,875	2/28/2022
Roku, Inc.	US	Automatic classification of audio content as either primarily speech or primarily non-speech, to facilitate dynamic application of dialogue enhancement	17/654,339	3/10/2022
Roku, Inc.	US	User interface responsive to background video	17/695,527	3/15/2022
Roku, Inc.	US	Rendering a Dynamic Endemic Banner on Streaming Platforms Using Content Recommendation Systems	63/326,555	4/1/2022
Roku, Inc.	US	Dynamic triggering and processing of purchase based on computer detection of media object	US17659456	4/15/2022
Roku, Inc.	US	Distributing digital data in a distributed computing environment	17/726,280	4/21/2022

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Roku, Inc.	US	Content-Modification System with Supplemental Content Stitching Feature	17/726,243	4/21/2022
Roku, Inc.	US	Content classifiers for automatic picture and sound modes	US17743898	5/13/2022
Roku, Inc.	US	Compression loaded slit shaped waveguide	US17664099	5/19/2022
Roku, Inc.	US	REMOTE CONTROL SYSTEM FOR IMPROVING TARGET SPECIFICITY	PCT/US22/30514	5/23/2022
Roku, Inc.	US	Placing orders for a subject included in a multimedia segment of a content channel	US17752376	5/24/2022
Roku, Inc.	US	CLOUD COMPUTATION FOR APPLICATIONS ON MEDIA DEVICES	US17825164	5/26/2022
Roku, Inc.	US	SERVER-SIDE STREAMING CONTENT STITCHING	US17835337	6/8/2022
Roku, Inc.	US	USING NON-AUDIO DATA EMBEDDED IN AN AUDIO SIGNAL	US17836269	6/9/2022
Roku, Inc.	US	VOICE CONTROL DEVICE WITH PUSH-TO-TALK (PTT) AND MUTE CONTROLS	PCT/US22/33860	6/16/2022
Roku, Inc.	US	Replacement of Digital Content in Data Streams	US17846477	6/22/2022
Roku, Inc.	US	POWER CONTROL FOR SPEAKER DEVICES IN A WIRELESS MEDIA SYSTEM	PCT/US22/36119	7/5/2022
Roku, Inc.	US	Automatic Parental Control using a remote control or mobile app	US17862273	7/11/2022
Roku, Inc.	US	Program searching for people with visual impairments or blindness	US17869868	7/21/2022
Roku, Inc.	US	Object identification and similarity analysis for content acquisition	US17815880	7/28/2022
Roku, Inc.	US	Compression loaded slit shaped waveguide	US17816752	8/2/2022
Roku, Inc.	US	Using movement of an end-user between monitored environments to trigger an	17/884,720	8/10/2022

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		action at an internet of things device		
Roku, Inc.	US	Using Motion and Presence of an End-User In and Out of a Monitored Environment to Trigger an Action at an Internet of Things Device	17/884,722	8/10/2022
Roku, Inc.	US	DYNAMIC PRIVATE WI-FI CHANNEL SELECTION	US17886964	8/12/2022
Roku, Inc.	US	INTERACTIVE CONTENT WHEN THE SECONDARY CONTENT IS SERVER STITCHED	US17888141	8/15/2022
Roku, Inc.	US	Recommendation system with reduced bias based on a view history	US17890491	8/18/2022
Roku, Inc.	US	PROVING PHYSICAL POSSESSION OF INTERNET-OF-THINGS (IOT) DEVICES	PCT/US22/75320	8/23/2022
Roku, Inc.	US	PROVING PHYSICAL POSSESSION OF INTERNET-OF-THINGS (IOT) DEVICES	US17822827	8/29/2022
Roku, Inc.	US	Dynamic Video Overlays	US17899219	8/30/2022
Roku, Inc.	US	NETWORK PATH SELECTION IN A SINGLE SERVICE SET ID	US17939494	9/7/2022
Roku, Inc.	US	USE OF CROWDSOURCING AS BASIS TO PREDICT EMERGENCY IMPACT AND TO FACILITATE EMERGENCY RESPONSE	17/932,435	9/15/2022
Roku, Inc.	US	Distributed maintenance of operational data among iot devices, with soft-wiring or other configuration	17/932,444	9/15/2022
Roku, Inc.	US	Decoupling IOT devices with soft-wiring or other configuration, including dynamic variance of control group pairings based on context such as time and/or location	17/932,455	9/15/2022
Roku, Inc.	US	Demand side platform identity graph enhancement through	US17932985	9/16/2022

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		machine learning (ML) inferencing		
Roku, Inc.	US	NON-TELEVISION EXPERIENCE TRIGGERS	US17933141	9/19/2022
Roku, Inc.	US	DETECTION OF DOWNSTREAM SMART DEVICES	PCTUS2276780	9/21/2022
Roku, Inc.	US	Video-Generation System with Structured Data-Based Video Generation Feature	17958397	10/2/2022
Roku, Inc.	US	Stochastic content candidate selection for content recommendation	US17937497	10/3/2022
Roku, Inc.	US	Tailoring and Censoring Content Based on a Detected Audience	US17937501	10/3/2022
Roku, Inc.	US	Displaying multiple multimedia segments in a display device	US17963456	10/11/2022
Roku, Inc.	US	Displaying multimedia segments in a display device	US17963459	10/11/2022
Roku, Inc.	US	Multimedia formats for multiple display areas in a display device	US17963466	10/11/2022
Roku, Inc.	US	Online Automatic Hyperparameter Tuning	US17965284	10/13/2022
Roku, Inc.	US	Candidate ranking for content recommendation	US17965176	10/13/2022
Roku, Inc.	US	RADIO FREQUENCY REMOTE CONTROL	US17968708	10/18/2022
Roku, Inc.	US	AD-HOC LIGHTWEIGHT mPOS REMOTE CONTROL	US17968659	10/18/2022
Roku, Inc.	US	Content System with Event Identification and Audio-Based Editing Feature	18/051,568	11/1/2022
Roku, Inc.	US	MULTI-INTERFACE STREAMING MEDIA SYSTEM	US17978837	11/1/2022
Roku, Inc.	US	Content-Modification System with Jitter Effect Mitigation Feature	US17978761	11/1/2022
Roku, Inc.	US	Private listening system for streaming audio and video	US17980292	11/3/2022
Roku, Inc.	US	Recommendation system forward simulator	US17983138	11/8/2022
Roku, Inc.	US	Air filter and wiper blades for reducing particle inside electronic devices	US18056352	11/17/2022

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Roku, Inc.	US	CONTROL A DIMMING LEVEL OF AN ILLUMINATION LOAD BY A DIMMER DEVICE	PCTUS2280057	11/17/2022
Roku, Inc.	US	Controlling Media-Content Presentation Based on Movement of Media-Player Device from Home Location to Visited Location	18/060,451	11/30/2022
Roku, Inc.	US	Dynamic Reconfiguration of Control-Group Pairing in Response to Operational Failure	18/060,447	11/30/2022
Roku, Inc.	US	Trigger activated enhancement of content user experience	US18076601	12/7/2022
Roku, Inc.	US	Demographic predictions for content items	US18076955	12/7/2022
Roku, Inc.	US	Placing orders for a subject included in a multimedia segment	US18079204	12/12/2022
Roku, Inc.	US	Generating a User Avatar for Video Communications	18/065,026	12/13/2022
Roku, Inc.	US	Advertisement placement for stream media	US18085058	12/20/2022
Roku, Inc.	US	Interest based recommendation system	US18089343	12/27/2022
Roku, Inc.	US	Content acquisition system	US18091234	12/29/2022
Roku, Inc.	US	Expandable accordion-style cable overmold for secure connection	US18148667	12/30/2022
Roku, Inc.	US	Audio System with Dynamic Audio Setting Adjustment Feature	US18163207	2/1/2023
Roku, Inc.	US	Reducing active user bias for content recommendation models	US18107858	2/9/2023
Roku, Inc.	US	Use of Obfuscation Marker to Obfuscate a Face Image and Enable Computerized Face Identification	18/167,307	2/10/2023
Roku, Inc.	US	Reinforcement learning (rl) model for optimizing long term revenue	US18108090	2/10/2023
Roku, Inc.	US	Multimodal analysis for content item semantic retrieval and identification	US18167724	2/10/2023

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Roku, Inc.	US	Playing media contents based on metadata indicating content categories	US18115951	3/1/2023
Roku, Inc.	US	Video System with Object Replacement and Insertion Features	18/177,897	3/3/2023
Roku, Inc.	US	SYNCHRONIZATION WITH SYNTHESIZED AUDIO CLOCK	US18120180	3/10/2023
Roku, Inc.	US	Managing content segments of linear TV content and over-the-top (OTT) content	US18121440	3/14/2023
Roku, Inc.	US	Automatically Determining an Optimal Supplemental Content Spot in a Media Stream	PCT/US23/64411	3/15/2023
Roku, Inc.	US	Real-time objects insertion into content based on frame identifiers	US18189518	3/24/2023
Roku, Inc.	US	Adaptive Audio Bitrate Selection	US18126838	3/27/2023
Roku, Inc.	US	Content-modification system with overlay handling feature	US18127434	3/28/2023
Roku, Inc.	US	DYNAMIC BATTERY BACK-UP FOR SET-TOP-BOXES	US18132478	4/10/2023
Roku, Inc.	US	Heterogenous GraphSage using Offset Temporal Learning for Search Personalization	US63459539	4/14/2023
Roku, Inc.	US	Contextual-based motion control of a user interface	US18300564	4/14/2023
Roku, Inc.	US	Personalised Retrieval System	US63496272	4/14/2023
Roku, Inc.	US	Multiple Query Projections for Deep Machine Learning	US63459536	4/14/2023
Roku, Inc.	US	Model Customization for Domain-Specific Tasks	US63459530	4/14/2023
Roku, Inc.	US	IDENTIFYING ELECTRONIC DEVICES IN A ROOM USING A SPREAD CODE	US18303367	4/19/2023
Roku, Inc.	US	MASS INSERTION INTO SINGLE-THREADED DATABASES	US18303615	4/20/2023
Roku, Inc.	US	MEDIA DEVICE UPGRADING SYSTEM	US18137475	4/21/2023

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		WITH NETWORKING CAPABILITIES		
Roku, Inc.	US	SEARCHING AND DISPLAYING MULTIMEDIA SEARCH RESULTS	US18139576	4/26/2023
Roku, Inc.	US	Map generator for map-based device management	US18141120	4/28/2023
Roku, Inc.	US	MODULATING A QUALITY OF MEDIA CONTENT	US18141727	5/1/2023
Roku, Inc.	US	Media channel identification and action, with disambiguation through client-side fingerprint matching of channel-specific icon	US18309989	5/1/2023
Roku, Inc.	US	Deep machine learning content item ranker	US18195041	5/9/2023
Roku, Inc.	US	CONTROL A DIMMING LEVEL OF AN ILLUMINATION LOAD BY A DIMMER DEVICE	US18195799	5/10/2023
Roku, Inc.	US	Method and System for Re-Uniting Metadata with Media-Stream Content at a Media Client, to Facilitate Action by the Media Client	US18197650	5/15/2023
Roku, Inc.	US	Power Monitoring of Devices	US18198153	5/16/2023
Roku, Inc.	US	Use of Relative Time of Receipt of Voice Command as a Basis to Control Response to Voice Command	18197880	5/16/2023
Roku, Inc.	US	VIDEO FINGERPRINTING	US18318772	5/17/2023
Roku, Inc.	US	Using motion and presence of an end-user to switch operational modes of an internet of things device	18/319,015	5/17/2023
Roku, Inc.	US	Method and System for Controlling Lighting in a Viewing Area of a Content-Presentation Device	18/319,024	5/17/2023
Roku, Inc.	US	Media Device Simulator	US18200299	5/22/2023
Roku, Inc.	US	Hybrid machine learning classifiers for user response statements	US18204048	5/31/2023

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Roku, Inc.	US	User control mode of a companion application	US18204168	5/31/2023
Roku, Inc.	US	Lighting Device with Audio Signal Control Feature	18/327,199	6/1/2023
Roku, Inc.	US	Computing system with content-characteristic-based trigger feature	US18204458	6/1/2023
Roku, Inc.	US	Content System with Summary-Based Content Generation Feature	18/328,560	6/2/2023
Roku, Inc.	US	Method to reuse scan results from WiFi remote in player/Tv	US18205275	6/2/2023
Roku, Inc.	US	Media System with Closed-Captioning Data and/or Subtitle Data Generation Features	18/328,358	6/2/2023
Roku, Inc.	US	Unsupervised cue point discovery for episodic content	US18205802	6/5/2023
Roku, Inc.	US	ELECTRONIC DEVICE	US29894349	6/8/2023
Roku, Inc.	US	Transcription knowledge graph	US18332410	6/9/2023
Roku, Inc.	US	Exploring user interests with multi-arm bandit (MAB), contextual MAB, and reinforcement learning in recommendation	US18208717	6/12/2023
Roku, Inc.	US	Machine-Based Classification of Object Motion as Human or Non-Human as Basis to Facilitate Controlling Whether to Trigger Device Action	18208449	6/12/2023
Roku, Inc.	US	Automated Payments Performance Monitoring, Alerting and Recommendation Framework	18/339,419	6/22/2023
Roku, Inc.	US	CUSTOMIZING A USER INTERFACE BASED ON USER CAPABILITIES	US18212750	6/22/2023
Roku, Inc.	US	Content System with Speech-Related Audio Content Replacement Feature	18/340,808	6/23/2023
Roku, Inc.	US	Search systems based on user relevance and revenue generation	US63523288	6/26/2023

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Roku, Inc.	US	Automatic parental control based on an identified audience	US18344451	6/29/2023
Roku, Inc.	US	Object injection framework for dynamic and interactive screensaver	US18216453	6/29/2023
Roku, Inc.	US	Context classification of streaming content using machine learning	US18216894	6/30/2023
Roku, Inc.	US	MODIFYING PLAYBACK OF REPLACEMENT CONTENT BASED ON CONTROL MESSAGES	US18218865	7/6/2023
Roku, Inc.	US	Incremental Reach Planner	US18218786	7/6/2023
Roku, Inc.	US	Dynamic configuration of display controller based on configuration of connected display panel	18/348,025	7/6/2023
Roku, Inc.	US	Crowd Sourced Indexing And/Or Searching of Content	US18220630	7/11/2023
Roku, Inc.	US	MANAGING LOW FREQUENCIES OF AN OUTPUT SIGNAL	US18220624	7/11/2023
Roku, Inc.	US	Rendering a Dynamic Endemic Banner on Streaming Platforms Using Content Recommendation Systems	US18353935	7/18/2023
Roku, Inc.	US	PROVIDING ENERGY-EFFICIENT FEATURES USING HUMAN PRESENCE DETECTION	US18223891	7/19/2023
Roku, Inc.	US	REAL-TIME ASSESSMENT OF MULTIMEDIA SERVICE IN A PARTICULAR ENVIRONMENT	US18356695	7/21/2023
Roku, Inc.	US	System performance degradation mitigation based on different compute resource characteristics	US18226070	7/25/2023
Roku, Inc.	US	Utilizing a single buffer for a dynamic number of players, each using a dynamically sized buffer	US18227178	7/27/2023
Roku, Inc.	US	STREAMING-MEDIA SYSTEM WITH PUBLISHER SYSTEM	18/360,458	7/27/2023

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		INTEGRATION AND ADVERTISEMENT PRESENTATION FEATURE		
Roku, Inc.	US	Secure payment using a radio frequency identification (RFID) enabled remote control	US18228402	7/31/2023
Roku, Inc.	US	Interactive Media Object System with Modular-Based Feature	63/516,707	7/31/2023
Roku, Inc.	US	ENHANCING TRANSFER LEARNING FOR LARGE LANGUAGE MODELS	63/516,716	7/31/2023
Roku, Inc.	US	Web-based content presentation via smart television device application	US18228413	7/31/2023
Roku, Inc.	US	Dynamic Replacement of Objectionable Content in Linear Content Streams	US18362598	7/31/2023
Roku, Inc.	US	USING A LARGE LANGUAGE MODEL TO IMPROVE TRAINING DATA	63/516,720	7/31/2023
Roku, Inc.	US	SYNCHRONIZATION OF MULTIMEDIA CONTENT PRESENTATION ACROSS MULTIPLE DEVICES IN A WATCH PARTY	US18229113	8/1/2023
Roku, Inc.	US	Personalized content related to content being viewed	US18364169	8/2/2023
Roku, Inc.	US	Internet of things application store	US18231556	8/8/2023
Roku, Inc.	US	Software development platform for internet of things applications	US18231899	8/9/2023
Roku, Inc.	US	HDMI CUSTOMIZED AD INSERTION	US18446596	8/9/2023
Roku, Inc.	US	Personalized hyperparameter tuning with contextual multi-arm bandit and reinforcement learning	US18232468	8/10/2023
Roku, Inc.	US	System performance degradation mitigation based on prioritizable mitigating actions	US18232474	8/10/2023
Roku, Inc.	US	Doorbell Device with Current Configuration Feature	18448322	8/11/2023

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Roku, Inc.	US	CODE MIGRATION AND DEPLOYMENT IN AN INTERNET-OF-THINGS (IOT) ENVIRONMENT	US 18234153	8/15/2023
Roku, Inc.	US	Content System with User-Input Based Video Content Generation Feature	18/449,801	8/15/2023
Roku, Inc.	US	Video System with Scene-Based Object Insertion Feature	18/449,789	8/15/2023
Roku, Inc.	US	Fast boot system	PCT/US2023/072261	8/16/2023
Roku, Inc.	US	Locating and identifying remote controls	US18234979	8/17/2023
Roku, Inc.	US	Unification reduction of complex traversal and search application programming interface	US18238030	8/25/2023
Roku, Inc.	US	Machine learning model selection for camera systems	US18455758	8/25/2023
Roku, Inc.	US	Connected camera network with shared camera system video streams	US18457965	8/29/2023
Roku, Inc.	US	Interactive Supplemental Content Platform	US18239605	8/29/2023
Roku, Inc.	US	MACHINE LEARNING FOR ADAPTIVE BITRATE SELECTION	US18462635	9/7/2023
Roku, Inc.	US	Optimization of IPV6 and DNS connectivity	PCT/US23/73612	9/7/2023
Roku, Inc.	US	Dynamic Triggering and Processing of a Purchase Based on Computer Detection of Media Object	18/464,617	9/11/2023
Roku, Inc.	US	Local and Cloud Speech Recognition	US18465758	9/12/2023
Roku, Inc.	US	Quick Setup of New IoT Devices Using WiFi	18/466,057	9/13/2023
Roku, Inc.	US	Content Delivery Optimization Based on Predicted Effectiveness of Linear Content Schedule	US18368793	9/15/2023
Roku, Inc.	US	POWER CONTROL FOR SPEAKER DEVICES IN A WIRELESS MEDIA SYSTEM	US18369092	9/15/2023
Roku, Inc.	US	User-based content filtering	US18468017	9/15/2023

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Roku, Inc.	US	Customized Audio Filtering of Content	US18468386	9/15/2023
Roku, Inc.	US	Smart Doorbell	US18467829	9/15/2023
Roku, Inc.	US	RETRIEVAL OPTIMIZATION USING REINFORCEMENT LEARNING	63/584,355	9/21/2023
Roku, Inc.	US	RETRIEVAL STRATEGY SELECTION OPTIMIZATION USING REINFORCEMENT LEARNING	63/584,359	9/21/2023
Roku, Inc.	US	Internet of things device-based monitoring and alerting	US18371033	9/21/2023
Roku, Inc.	US	MOBILE DEVICE BASED CONTROL DEVICE LOCATOR	US18474099	9/25/2023
Roku, Inc.	US	Multi-alert-level monitoring and alerting for premises using internet of things devices	US18374463	9/28/2023
Roku, Inc.	US	Reducing internet of things (IoT) Camera Alerts and Network bandwidth with assisted Cold/Hot Zone Determination	US18478543	9/29/2023
Roku, Inc.	US	Methods and Systems for Determining Creation Attributes of Video Content	18/480,680	10/4/2023
Roku, Inc.	US	Mesh network relay	US18377055	10/5/2023
Roku, Inc.	US	Alert system for reducing false positives	US18482214	10/6/2023
Roku, Inc.	US	Selective communication scheme utilization for reducing power consumption for a battery-powered device	US18482739	10/6/2023
Roku, Inc.	US	Automated trailer generation	US18484041	10/10/2023
Roku, Inc.	US	FRAME CLASSIFICATION TO GENERATE TARGET MEDIA CONTENT	18/485,891	10/12/2023
Roku, Inc.	US	Preserving channel lock and performing dynamic AD insertion (DAI) in a multi-device setup	US18486321	10/13/2023

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Roku, Inc.	US	Camera time-based motion trails and motion heat-maps for periodic captured images	US18486464	10/13/2023
Roku, Inc.	US	Media device user interface and content personalization using natural language prompts	US18486515	10/13/2023
Roku, Inc.	US	Smart Water Valve Charged By Water Flow	18/380,650	10/16/2023
Roku, Inc.	US	Network Device with Credential-Related Message Content Selection Feature	18/489,169	10/18/2023
Roku, Inc.	US	Rendering a Dynamic Endemic Banner on Streaming Platforms Using Content Recommendation systems and advanced banner personalization	US18494814	10/26/2023
Roku, Inc.	US	SMART SWITCH WITH FUNCTIONALITIES DETERMINED BASED ON A GROUNDED CONDUCTOR CONNECTION	US18384349	10/26/2023
Roku, Inc.	US	Association of media device profiles and application profiles for a seamless viewing experience	US18495376	10/26/2023
Roku, Inc.	US	Private listening system for streaming audio and video	PCTUS2023077906	10/26/2023
Roku, Inc.	US	Dynamic offloading of machine learning tasks to more capable nodes	18/496,459	10/27/2023
Roku, Inc.	US	PORT-CONNECTED TELEVISION UPGRADER DEVICE	US18384936	10/30/2023
Roku, Inc.	US	OVERRIDING MULTIMEDIA DEVICE	US18498622	10/31/2023
Roku, Inc.	US	PROCESSING AND CONTEXTUAL UNDERSTANDING OF VIDEO SEGMENTS	18/498,951	10/31/2023
Roku, Inc.	US	SCENE BREAK DETECTION	18/498,917	10/31/2023
Roku, Inc.	US	CONTEXTUAL UNDERSTANDING OF MEDIA CONTENT TO	18/498,867	10/31/2023

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		GENERATE TARGETED MEDIACONTENT		
Roku, Inc.	US	Media device with picture quality enhancement feature	US18499931	11/1/2023
Roku, Inc.	US	Content-Modification System with Probability-Based Selection Feature	US18500313	11/2/2023
Roku, Inc.	US	Using MM Wave to collect viewer data	18/502,721	11/6/2023
Roku, Inc.	US	PRODUCTION PLATFORM	18/503,726	11/7/2023
Roku, Inc.	US	TECHNIQUES FOR CONTENT RECOMMENDATION IN MULTIMEDIA ENVIRONMENTS	18/505,398	11/9/2023
Roku, Inc.	US	DYNAMIC DOMAIN-ADAPTED AUTOMATIC SPEECH RECOGNITION SYSTEM	US18511077	11/16/2023
Roku, Inc.	US	Using Gestures to Control a Media Player	18/510,953	11/16/2023
Roku, Inc.	US	USE A GENERATIVE MODEL TO CREATE SYNTHETIC USERS FOR TESTING AND ANALYSIS	18/511,873	11/16/2023
Roku, Inc.	US	INTELLIGENT USER INTERFACE CUSTOMIZATION FOR ONE-HANDED USE	US18512274	11/17/2023
Roku, Inc.	US	AUDIO ENHANCEMENTS BASED ON VIDEO DETECTION	US18519299	11/27/2023
Roku, Inc.	US	Media content item recommendations based on predicted user interaction embeddings	US18524831	11/30/2023
Roku, Inc.	US	CUSTOMIZED DEVICE PAIRING BASED ON DEVICE FEATURES	US18524455	11/30/2023
Roku, Inc.	US	Message Processing Using a Client-Side Control Group	US18528193	12/4/2023
Roku, Inc.	US	Media System with Selective Message Output Feature	18/529,753	12/5/2023
Roku, Inc.	US	Managing content replacement in a content modification system	US18532513	12/7/2023

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Roku, Inc.	US	PROVIDING SAFETY AND ENVIRONMENTAL FEATURES USING HUMAN PRESENCE DETECTION	US18535352	12/11/2023
Roku, Inc.	US	Rendering a dynamic endemic banner on streaming platforms using content recommendation systems and content modeling for user exploration and awareness	US18536627	12/12/2023
Roku, Inc.	US	DYNAMIC PROVISIONING OF IOT DEVICES FROM AN ONLINE APPLICATION MARKETPLACE	18/542,199	12/15/2023
Roku, Inc.	US	TRACKING PROXIMITIES OF DEVICES AND/OR OBJECTS	US18391508	12/20/2023
Roku, Inc.	US	Hybrid machine learning classifiers for managing user reports	US18392877	12/21/2023
Roku, Inc.	US	Deep video understanding with large language models	US18392340	12/21/2023
Roku, Inc.	US	Model Customization for Domain-Specific Tasks	US18391979	12/21/2023
Roku, Inc.	US	Content System with Sentiment-Based Content Modification Feature	18/392,413	12/21/2023
Roku, Inc.	US	Generating short-form content from full-length media using a machine learning model	US18394923	12/22/2023
Roku, Inc.	US	Multiple Query Projections for Deep Machine Learning	US18394103	12/22/2023
Roku, Inc.	US	THREAD WATCHDOG MANAGER	63/614,235	12/22/2023
Roku, Inc.	US	Search systems based on user relevance and reward generation	US18394965	12/22/2023
Roku, Inc.	US	INTERNET OF THINGS CAMERA OCCLUSION REMOVAL BASED ON PRIOR IMAGE DATA	18/397,497	12/27/2023
Roku, Inc.	US	Internet of things camera-based item search	US18398616	12/28/2023
Roku, Inc.	US	Personalised Retrieval System	US18398495	12/28/2023
Roku, Inc.	US	MULTIMEDIA DATA SEARCH USING MULTI-	18/401,144	12/29/2023

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		MODAL FEATURE EMBEDDINGS		
Roku, Inc.	US	CONTEXT-AWARE DEVICE CONFIGURATION PROFILES	18/400,882	12/29/2023
Roku, Inc.	US	DISTRIBUTED COMPUTING TO IMPLMENT PRIVACY POLICIES ON EDGE DEVICES	18/401,110	12/29/2023
Roku, Inc.	US	OPTIMIZING AUTOMATIC CONTENT RECOGNITION QUERIES BASED ON CONTENT UNDERSTANDING	18/401,438	12/30/2023
Roku, Inc.	US	Smart Remote Control for Audio Responsive Media Device	US18409186	1/10/2024
Roku, Inc.	US	Moving around the movie timeline using segements	63/620,402	1/12/2024
Roku, Inc.	US	Dynamic Tone Mapping	US18411985	1/12/2024
Roku, Inc.	US	CONTENT ITEM TRANSLATION AND SEARCH	18/415,337	1/17/2024
Roku, Inc.	US	SYNCHRONIZATION WITH SYNTHESIZED AUDIO CLOCK	US18415349	1/17/2024
Roku, Inc.	US	MULTI-AGENT RING-BUFFER	US18416587	1/18/2024
Roku, Inc.	US	Retrieval Optimization using Reinforcement Learning	18/423,825	1/26/2024
Roku, Inc.	US	USING A LARGE LANGUAGE MODEL TO IMPROVE TRAINING DATA	18/423,789	1/26/2024
Roku, Inc.	US	ENHANCING TRANSFER LEARNING FOR LARGE LANGUAGE MODELS	18/423,802	1/26/2024
Roku, Inc.	US	RETRIEVAL STRATEGY SELECTION OPTIMIZATION USING REINFORCEMENT LEARNING	18/423,834	1/26/2024
Roku, Inc.	US	AUDIO TIME SYNCHRONIZATION USING PRIORITIZED SCHEDULE	US18424350	1/26/2024

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Roku, Inc.	US	CONNECTOR DEVICE WITH ANTENNA CONNECTION	US18424328	1/26/2024
Roku, Inc.	US	Emotion Evaluation of Contents	US18425803	1/29/2024
Roku, Inc.	US	SKIPPING THE OPENING SEQUENCE OF STREAMING CONTENT	US18429591	2/1/2024
Roku, Inc.	US	AUDIOVISUAL SYNCHRONIZATION FOR PERIPHERAL AUDIO DEVICES	18/431,150	2/2/2024
Roku, Inc.	US	Trigger Word Detection With Multiple Digital Assistants	US18431516	2/2/2024
Roku, Inc.	US	Method and System for Generating a Visual Composition of User Reactions in a Shared Content Viewing Session	18/434,135	2/6/2024
Roku, Inc.	US	Content Display and Clustering System	US18435171	2/7/2024
Roku, Inc.	US	RECEIVER FOR HIGH PRECISION SYNCHRONIZATION	US18437290	2/9/2024
Roku, Inc.	US	GENERATING AND PROVIDING VISUAL CONTENT ITEMS FOR DISPLAY	18/438,946	2/12/2024
Roku, Inc.	US	THREAD WATCHDOG MANAGER	18/440,815	2/13/2024
Roku, Inc.	US	Method and System for Generating Synthetic Video Advertisements	18/440,353	2/13/2024
Roku, Inc.	US	Television upgrade	US18440313	2/13/2024
Roku, Inc.	US	Content System with Related Segment Feature	18/441,377	2/14/2024
Roku, Inc.	US	Heterogenous Graph Neural Network Using Offset Temporal Learning For Search Personalization	US18582249	2/20/2024
Roku, Inc.	US	Media System with Presentation Area Data Analysis and Segment Insertion Feature	18/586,269	2/23/2024
Roku, Inc.	US	Rendering a Dynamic Endemic Banner on Streaming Platforms Using Content	US18588189	2/27/2024

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		Recommendation Systems and Content Affinity Modeling		
Roku, Inc.	US	Interactive Media Object System with Modular-Based Feature	18/593,130	3/1/2024
Roku, Inc.	US	LLMs as an Encoder	18/594,342	3/4/2024
Roku, Inc.	US	CUSTOMIZATION OF MEDIA CONTENT WITH AN ANIMATED BACKGROUND	18/594,504	3/4/2024
Roku, Inc.	US	Knowledge base entity classification	US18596391	3/5/2024
Roku, Inc.	US	Moving around the movie timeline using segments	18/597,099	3/6/2024
Roku, Inc.	US	TRANSMITTING MESSAGES TO A DISPLAY DEVICE BASED ON DETECTED AUDIO OUTPUT	US18596725	3/6/2024
Roku, Inc.	US	Hub Station with Channel Switching Feature	18/597,489	3/6/2024
Roku, Inc.	US	Platform for Visual Tracking of User Fitness	18/597,475	3/6/2024
Roku, Inc.	US	High quality metadata creation for content using noisy sources	US18598002	3/7/2024
Roku, Inc.	US	Media System With Multiple Digital Assistants	US18598339	3/7/2024
Roku, Inc.	US	Content System with Aspect Ratio-Related Supplemental Video Content Feature	18/600,895	3/11/2024
Roku, Inc.	US	COMPUTING DEVICE UPGRADING SYSTEM OVER A WIRELESS NETWORK	US18601126	3/11/2024
Roku, Inc.	US	PROVIDING ROLLING UPDATES OF DISTRIBUTED SYSTEMS WITH A SHARED CACHE	US18600971	3/11/2024
Roku, Inc.	US	Brown Out Condition Detection and Device Calibration	US18603741	3/13/2024
Roku, Inc.	US	PERSONALIZATION OF USER INTERFACE TEMPLATES	18/611,562	3/20/2024
Roku, Inc.	US	Electronic Device	US29933757	3/21/2024

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Roku, Inc.	US	Television accessory and pair of television accessories	US29933763	3/21/2024
Roku, Inc.	US	Remote control and remote control with light display	US29933758	3/21/2024
Roku, Inc.	US	IDENTIFYING HIGH-ENGAGEMENT CONTENT ITEMS ON DIGITAL CONTENT PLATFORMS	18/621,957	3/29/2024
Roku, Inc.	US	Roku Discovery Protocol	18/628139	4/5/2024
Roku, Inc.	US	COMBINED MEDIA CAPABILITY FOR MULTIPLE MEDIA DEVICES	US18628254	4/5/2024
Roku, Inc.	US	Dynamic control of media-content presentation based on user presence and/or user profile	18633196	4/11/2024
Roku, Inc.	US	Secure device access and module loading using authorization token	US18634492	4/12/2024
Roku, Inc.	US	RESUMING PLAYBACK ON MULTIPLE STREAMING DEVICES	US18647448	4/26/2024
Roku, Inc.	US	INTELLIGENT DOWNLOAD OF CONTENT	US18654964	5/3/2024
Roku, Inc.	US	Content item recommendations	US18659542	5/9/2024
Roku, Inc.	US	Content System with Lighting Device Calibration Feature	18/662,309	5/13/2024
Roku, Inc.	US	Use of Watermarking to Trigger Fingerprint-Related Action	US18661845	5/13/2024
Roku, Inc.	US	DYNAMIC ADVERTISEMENT PLACEMENT BASED ON CONTENT UNDERSTANDING AND USER DATA	18/663,999	5/14/2024
Roku, Inc.	US	DETECTION OF DOWNSTREAM SMART DEVICES	US18664485	5/15/2024
Roku, Inc.	US	Dynamic Collection and Reporting of Customer Premises Context Information in Response to Predicted Emergency Event	18/664,758	5/15/2024

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Roku, Inc.	US	Actor-Replacement System for Videos	18/666,243	5/16/2024
Roku, Inc.	US	Elo popularity score and Elo personalized ranking score	US18667192	5/17/2024
Roku, Inc.	US	Patent idea for doorbell and chime controller	63/648,791	5/17/2024
Roku, Inc.	US	Computing System with Functionality Related to a Machine-Learning Model Store	18/667,823	5/17/2024
Roku, Inc.	US	SUBGRAPH PATTERN EXTRACTION	63/650,336	5/21/2024
Roku, Inc.	US	VOICE CONTROL DEVICE WITH PUSH-TO-TALK (PTT) AND MUTE CONTROLS	US18670478	5/21/2024
Roku, Inc.	US	REMOTE CONTROL SYSTEM FOR MULTIPLE MULTIMEDIA DEVICES	18/671,725	5/22/2024
Roku, Inc.	US	Dynamic content filling system for avoidance of slate playback during live streams	US18675874	5/28/2024
Roku, Inc.	US	USER ACCESS CONTROL ON A NEED-BY-NEED BASIS	18/675,543	5/28/2024
Roku, Inc.	US	CONFIGURING THE APPEARANCE AND VISIBILITY OF ELECTRONIC DEVICES	18/676,177	5/28/2024
Roku, Inc.	US	OBJECT AND EVENT CLASSIFICATION BASED ON STATIC VIDEO FRAMES	18/676,199	5/28/2024
Roku, Inc.	US	LLM-Based Dialogue State Tracking for TV	18/678,283	5/30/2024
Roku, Inc.	US	DATA EXTRACTION AND ENHANCEMENT USING ARTIFICIAL INTELLIGENCE	18/680,112	5/31/2024
Roku, Inc.	US	Video-Content System with Narration-Based Video Content Generation Feature	18/732,194	6/3/2024
Roku, Inc.	US	Computing System with Personalized Educational Content Generation Feature	18/732,183	6/3/2024
Roku, Inc.	US	IPv6 connectivity test and DNS improvements	US18732963	6/4/2024

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Roku, Inc.	US	Interest Based Conversational Recommendation System	US18734961	6/5/2024
Roku, Inc.	US	Automatically Determining an Optimal Supplemental Content Spot in a Media Stream	US18736900	6/7/2024
Roku, Inc.	US	SECURE REMOTE-LESS CONFIGURATION OF A MEDIA PLAYBACK DRIVE	US18742516	6/13/2024
Roku, Inc.	US	Search systems based on user relevance and revenue generation	US18744191	6/14/2024
Roku, Inc.	US	CUSTOMIZATION OF TARGETED MEDIA CONTENT	18/744,307	6/14/2024
Roku, Inc.	US	Fast boot system	US18743371	6/14/2024
Roku, Inc.	US	Energy harvesting, automatic recharging, and power consumption reduction for smart home sensors, devices, and networks	US18750717	6/21/2024
Roku, Inc.	US	DYNAMIC RENDERING OF A CONTEXTUALIZED ADVERTISEMENT	18/755,484	6/26/2024
Roku, Inc.	US	Content presentation using an exploitation-exploration paradigm	US18760881	7/1/2024
Roku, Inc.	US	DEMOGRAPHIC CLASSIFICATION OF MEDIA ACCOUNTS BASED ON MEDIA CONTENT DATA	US18761042	7/1/2024
Roku, Inc.	US	Symmetrical light bar layout for audio/visual device	US18762262	7/2/2024
Roku, Inc.	US	Camera IR filter operation verification by use of audio	18763571	7/3/2024
Roku, Inc.	US	REMOTE CONTROL	US29951420	7/9/2024
Roku, Inc.	US	Speaker-Identification Model for Controlling Operation of a Media Player	18/768,729	7/10/2024
Roku, Inc.	US	CONTENT ITEM POSITIONING	18/780,008	7/22/2024
Roku, Inc.	US	INTELLIGENT AND ADJUSTABLE CONFIGURATION AND	18/780,189	7/22/2024

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		PRESENTATION OF MEDIA CONTENT		
Roku, Inc.	US	GAMMA ADJUSTMENT FOR VIDEO DISPLAY	18/779,299	7/22/2024
Roku, Inc.	US	DYNAMIC AUTOMATION OF SECURITY SYSTEM USING MACHINE LEARNING	18/787,063	7/29/2024
Roku, Inc.	US	Automated Product Review Analysis Using GPT	18/788,469	7/30/2024
Roku, Inc.	US	SEARCHING AND DISPLAYING MULTIMEDIA SEARCH RESULTS	18788277	7/30/2024
Roku, Inc.	US	Query Planner Agent	18/790,143	7/31/2024
Roku, Inc.	US	AUTOMATED QUALITY CONTROL ANALYSIS OF MEDIA CONTENT	18/795,541	8/6/2024
Roku, Inc.	US	USING GENERATIVE MACHINE-LEARNING TO INTERPOLATE DROPPED FRAMES	18/802,695	8/13/2024
Roku, Inc.	US	BETTING USER INTERFACE FOR A LIVE EVENT BASED ON CONTENT DETECTION	63/682,741	8/13/2024
Roku, Inc.	US	LIGHT SOURCE CALIBRATION	18/804,534	8/14/2024
Roku, Inc.	US	AI-based noise metric	18805231	8/14/2024
Roku, Inc.	US	USER SETTING FOR MATERIALITY OF A BETTING MARKET ODDS CHANGE	63/683,102	8/14/2024
Roku, Inc.	US	CONVERSATIONAL ARTIFICIAL INTELLIGENCE SYSTEM FOR MEDIA DEVICES	18/808,361	8/19/2024
Roku, Inc.	US	In-sync digital waveform comparison to determine pass/fail results of a device under test (DUT)	18383319	10/24/2023
Roku, Inc.	US	Audio duplication and redirection system	18427071	1/30/2024