Declaration of Nathaniel Polish in Support of Petition for *Inter Partes* Review of U.S. Patent No. 9,762,636 B2

# UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE PATENT TRIAL AND APPEAL BOARD Google LLC, Petitioner V. WAG Acquisition, L.L.C. Patent Owner IPR2022-01413 U.S. Patent No. 9,762,636 B2 Issue Date: September 12, 2017

DECLARATION OF NATHANIEL POLISH, Ph.D.

Title: STREAMING MEDIA DELIVERY SYSTEM



Declaration of Nathaniel Polish in Support of Petition for *Inter Partes* Review of U.S. Patent No. 9,762,636 B2

### **TABLE OF CONTENTS**

INTI	ODII			
INTRODUCTION AND QUALIFICATIONS6				
A.	Qual	ifications and Experience	6	
B.	Mate	erials Considered	10	
PER	ERSON OF ORDINARY SKILL IN THE ART			
STATEMENT OF LEGAL PRINCIPLES			16	
A.	Clair	n Construction	16	
B.	Obvi	ousness	18	
TECHNOLOGY BACKGROUND24				
A.	Strea	ming Media Data over the Internet	24	
B.	Inter	net Transfer Protocols	27	
C.	Digit	tal Audio and Video	28	
D.	Pull-	Based Streaming Systems	30	
THE '636 PATENT			32	
A.	Overview of the Specification3		32	
B.	Prosecution History3		35	
C.	Relat	ted Inter Partes Review Proceedings	37	
D.	The Challenged Claims41			
			12	
A.				
	2.	Narayan [EX1005]	47	
	3.	Ravi [EX1004]	48	
B.	Grou	and 1: Claims 1-12 Are Obvious Over Carmel	51	
	1.	Claim 1 (Independent)	51	
	A. B. PERS STAR A. B. TECS A. B. C. D. THE A. B. C. APPE CLA A.	A. Qual B. Mate PERSON C STATEME A. Clair B. Obvi TECHNOL A. Strea B. Inter C. Digit D. Pull- THE '636 I A. Over B. Prose C. Relat D. The C APPLICAT CLAIMS A. Brief 1. 2. 3. B. Groun	A. Qualifications and Experience B. Materials Considered	

## TABLE OF CONTENTS

(continued)

Page

(a)	"receiving at the server system a continuous digitally encoded stream for the audio or video program, via a data connection from a live source, in real time, the server system comprising at least one computer;" (claim 1[a])	55
(b)	"upon receipt of the stream by the server system," (claim 1[b])	59
(c)	"supplying, at the server system, media data elements representing the program, each media data element comprising a digitally encoded portion of the program and having a playback rate," (claim 1[b(i)])	60
(d)	"serially identifying the media data elements, said serial identification indicating a time sequence of the media data elements, and" (claim 1[b(ii)])	65
(e)	"storing the media data elements in a data structure under the control of the server system;" (claim 1[b(iii)])	68
(f)	"receiving requests at the server system via one or more data connections over the Internet, for one or more of the media data elements stored in the data structure," (claim 1[c])	69
(g)	"each received request specifying one or more serial identifiers of the requested one or more media data elements," (claim 1[c(i)])	71
(h)	"each received request originating from a requesting user system of a plurality of user systems;" (claim 1[c(ii)])	74
(i)	"responsive to the requests, sending, by the server system, the one or more media data elements having the one or more specified serial identifiers, to the requesting user systems corresponding to the requests; wherein" (claim 1[d])	78



## TABLE OF CONTENTS

(continued)

Page

(j)	"the data connection between the server system and each requesting user system has a data rate more rapid than the playback rate of the one or more media data elements sent via that connection;" (claim 1[d(i)])	80		
(k)	"each sending is at a transmission rate as fast as the data connection between the server system and each requesting user system allows;" (claim 1[d(ii)])	90		
(1)	"the one or more media data elements sent are selected without depending on the server system maintaining a record of the last media data element sent to the requesting user systems;" (claim 1[d(iii)])	94		
(m)	"all of the media data elements that are sent by the server system to the plurality of user systems are sent in response to the requests; and" (claim 1[d(iv)])	98		
(n)	"all of the media data elements that are sent by the server system to the requesting user systems are sent from the data structure under the control of the server system as the media data elements were first stored therein." (claim $1[d(v)]$ )	99		
	nim 2: "The method of claim 1 wherein the serial ntifiers are sequential."	103		
	aim 3: "The method of claim 1, wherein the sending is a reliable transmission protocol."	104		
	nim 4: "The method of claim 3, wherein the reliable insmission protocol is TCP."	105		
Cla	nim 5 (Independent)	105		
Dependent Claims 6-8				
Cla	Claim 9 (Independent)			



2.

3.

4.

5.

6.

7.

## TABLE OF CONTENTS

(continued)

			Page
		8. Dependent claims 10-12	117
	C.	Ground 2: Claims 1-12 Are Obvious Over Carmel in view of Narayan.	119
	D.	Ground 3: Claims 1-12 Are Obvious Over Carmel in view of Ravi	124
	E.	Ground 4: Claims 1-12 Are Obvious Over Carmel in view of Narayan and Ravi.	129
VII.	NO S	SECONDARY CONSIDERATIONS OF NONOBVIOUSNESS.	131
( <i>)</i>	CON	CLUCION	122

# DOCKET

# Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

# **Real-Time Litigation Alerts**



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

# **Advanced Docket Research**



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

# **Analytics At Your Fingertips**



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

### API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

### **LAW FIRMS**

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

### **FINANCIAL INSTITUTIONS**

Litigation and bankruptcy checks for companies and debtors.

### **E-DISCOVERY AND LEGAL VENDORS**

Sync your system to PACER to automate legal marketing.

