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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

WITHROW NETWORKS, INC., Plaintiff, vs. GOOGLE, LLC and YOUTUBE, LLC, Defendants.	Case No. 5:24-CV-3203 **COMPLAINT** **DEMAND FOR JURY TRIAL**

Plaintiff Withrow Networks, Inc. ("Withrow") alleges as follows for its patent infringement Complaint against Defendants Google, LLC ("Google") and YouTube, LLC ("YouTube"), (Google and YouTube collectively, "Defendants").

INTRODUCTION

1. Historically, video streaming to mobile devices has not been smooth.

2. One problem has been the susceptibility of mobile internet networks to changes in available data capacity (*e.g.*, bandwidth) due in part to congestion, connection quality, or infrastructure limitations.

3. Moreover, the many mobile device designs (for example, flip-phones, candy bar devices, and touch screens), each with its own technological needs and capabilities, such as different screen sizes, resolutions, and processor limitations, forced streamed video to target the least common denominator in terms of hardware and bandwidth.

4. A further issue was the software that made streaming possible, known as a protocol. In the early days of streaming, such protocols (like Real Time Messaging Protocol, "RTMP") were simply not:

> ***designed to 'adapt'*** the size of the encoded and streamed content ***based on the very specific conditions of a very specific client/player***. Instead, there was just 'one version' of the media . . . [yet], more and more types of devices were 'connected,' and more and more environments were being used for playback.

Christian Pillsbury, *Gone in a Flash: a brief history of HTTP Adaptive Streaming*, MUX (Oct. 10, 2022), https://www.mux.com/blog/http-adaptive-streaming-history. (emphases added) (last visited May 19, 2024).

5. Behind the scenes, at the server level, at least three other problems further complicated matters. First, the hardware was complex. These systems used expensive dedicated media servers to transmit video to mobile devices (known as "clients"). To transmit video, which is a data intensive task, these "stateful" servers kept track of each client session, maintaining information about client data requests and interactions. This architecture, however, made streaming unnecessarily complex, especially in terms of performance and scalability. Second,

these systems were server-focused, meaning that the media servers, instead of the clients, controlled the flow of data, thereby saddling these servers with additional functions. Third, these media servers provided a video stream at a single quality level (*supra* at ¶¶ 3-4) which could not fully account for changing network conditions at the client.

6. In summary, the result was sub-optimal playback. "[T]his time [that] predated today's world of modern smartphones" resulted in video "with less than stellar results" (Pilsbury, *supra*), especially on devices at each extreme: high-end devices failing to exercise their full streaming potential, and the oldest basic phones possibly receiving merely a black screen.

7. Plaintiff Withrow, through its prior entities,[1] solved at least these problems using technology it invented and claimed in U.S. Patent No. 10,771,849 (the "'849 Patent"), attached hereto as **Ex. 1**.[2]

8. Withrow's innovative technology provided smooth streaming video to mobile devices across the Internet using dynamic adaption of different media quality levels. That is, Withrow's technology, among other things, provided an improved picture even in the presence of fluctuating network conditions. Today, this technology is known as adaptive multi bitrate ("ABR") streaming.

9. More specifically, Withrow realized that to provide a fluid streaming experience, video should be encoded into a ladder of different quality levels with associated metadata to enable mobile devices with diverse capabilities to select the proper rung and efficiently decode a media stream.

10. These advances also required a different view of streaming hardware. Withrow took a contrarian position to industry orthodoxy by rejecting expensive stateful media servers.

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[1] Withrow was founded in 2020, but its origin traces to LogoVision Wireless Inc. and its technology commercialization subsidiary, Movidity Inc. Those two latter businesses are now dissolved.

[2] '849 Patent infringement charts (**Exs. 2 and 3**) are introduced in the counts of infringement, *infra* ¶¶ 75-82.

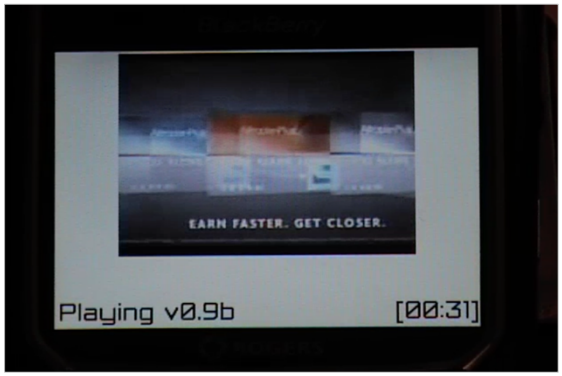
11. Instead of streaming basic data packets like stateful media servers, the '849 Patent transmitted multimedia objects. Sending data grouped as multimedia objects made possible the use of Hyper Text Transfer Protocol ("HTTP") which is a ***stateless*** means of communication. This advancement enabled scalable and efficient streaming through inexpensive web servers (which also made possible communications through firewalls), rather than the costly and technically-complex solutions employing dedicated (stateful) media servers.

12. In addition to the problems with stateful architecture, Withrow solved problems caused by diverse client hardware, such as varying processor, screen and resolution capabilities.

13. The '849 Patent solved these problems by, at a minimum, creating a streaming data structure that joined multimedia objects with metadata describing the video streams, allowing clients to account for their diverse capabilities. Moreover, with a client-based approach, the client (*i.e.*, mobile device) could tell the server how to send the data. The result was optimized playback of computationally intensive media even on modest mobile device hardware, which otherwise would have been solely possible on wired desktop computers.

14. The technology that resulted in the '849 Patent was immediately recognized as groundbreaking. For instance, on information and belief, in December 2005, ARM Ltd., the primary microprocessor manufacturer at the time for mobile phones, believed Withrow's technology provided a highly optimized, true MPEG4 (and for audio true AAC) decoder for mobile clients possessing a "***unique***" adaptive rate media object transmission model. As such, it is unsurprising that ARM Ltd. licensed the Withrow technology to demonstrate high-performance MPEG-4 Part 2 video streaming.

15. Below is an example of Withrow's ABR technology on a Blackberry device, which, on information and belief, comes from 2006:



16. By mid-2006, major platforms, such as those of Qualcomm and Sprint, were demonstrating the Withrow mobile ABR technology:

> ARM will be demonstrating the Movidity player upon a Qualcomm platform, with Sprint's mobile wireless network. This joint demonstration between ARM, Sprint, Qualcomm and Movidity underscores the significance of each organization in the realm of advanced mobile multimedia. The performance of Movidity's multimedia player will be matched with the capabilities of the ARM enabled Qualcomm mobile device platform and Sprint's advanced wireless network, allowing attendees to experience the next generation in mobile multimedia.

Ex. 4, Press Release, Movidity (May 12, 2006).[3]

17. In addition to its work with hardware manufacturers, by 2007 Movidity developed Movy.tv—a client-facing mobile ABR media sharing system that provided live and on-demand video streaming.

Welcome to movy.tv!

movy.tv is the worlds first fully user interactive mobile multimedia enabling system, designed for Internet and global mobile use. It allows corporations, consumers, content creators and broadcasters to instantly upload and stream multimedia content through the Internet to mobile devices such as cell phones, Blackberry and PDA's. Individuals can join movy.tv for free!

Please bear with us as we activate mobile & web based features and work to improve the system. We also need your help to test and improve movy.tv! If you have experiences or constructive suggestions, please email us at contact@movy.tv

System Status

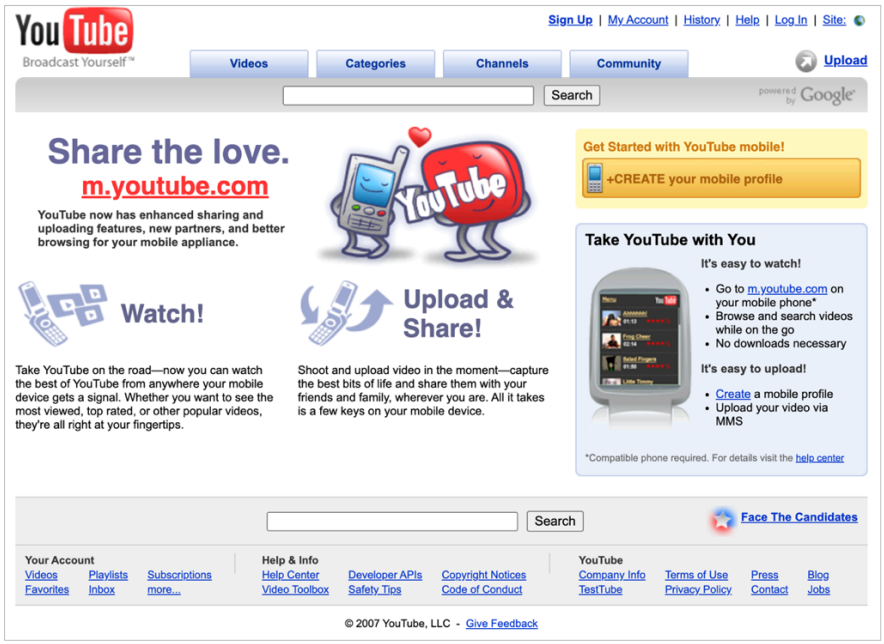
- Movy.tv now supports Embedded Hardware 3gp players for cell phones: initially Sony Ericcson, Blackberry 8800 & Curve and Nokia, soon to be followed by LG, other Korean phones and certain Motorola handsets. See HOW-TO
- New release for Movy.tv cell phone client for gsm and cdma handsets 06/05/2007 - See HOW-TO
- New version of the client for Blackberries 8100, 8700 and 8800 on June 5, 07. See HOW-TO
- 28/09/07 movy.tv is enabled on Samsung handsets

- **Why is movy.tv so drastically different? See INFO**
- **How do you use movy.tv? See HOW-TO**

Movy.tv, www.movy.tv (as of Oct. 17, 2007 on Wayback Machine).

[3] Page citations within this Complaint refer to the page of the exhibit, *i.e.*, the PDF, and not the internal pagination, if any, unless otherwise noted.

18. That same year, YouTube launched its own mobile site:

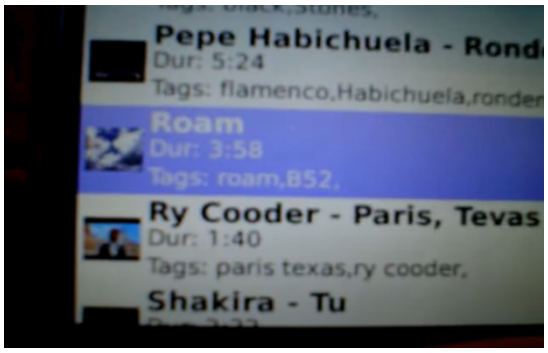


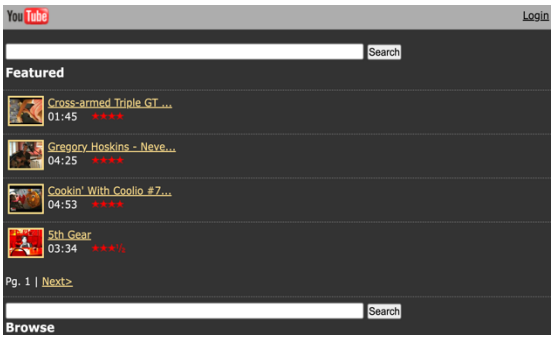
See, e.g., YouTube, http://youtube.com/mobile (as of Aug. 28, 2007 on Wayback Machine).

19. On information and belief, YouTube's site at the time streamed to mobile devices using solely the Real Time Streaming Protocol ("RTSP")—a server-driven stateful technology.

20. Moreover, although both mobile streaming platforms were launched in 2007, Movy.tv used ABR, while YouTube ***did not***.

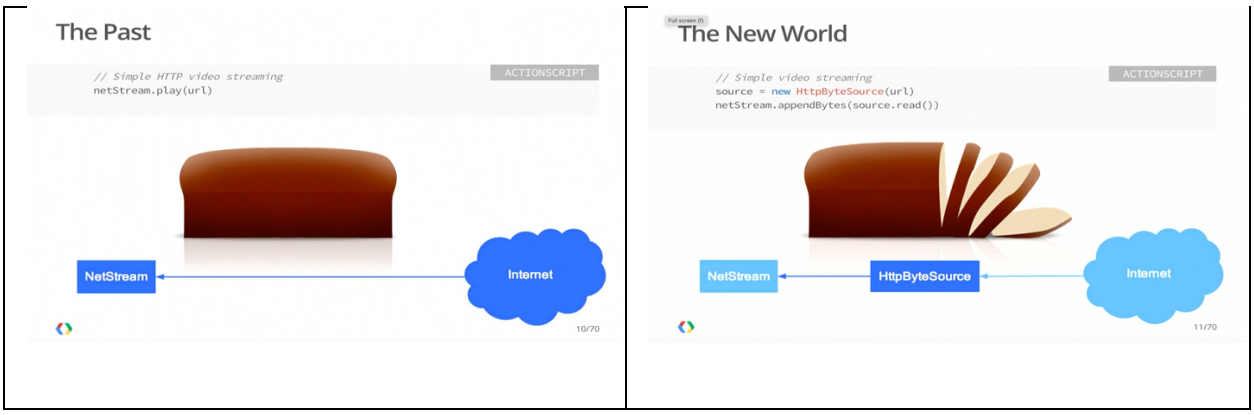
21. Exemplary screen captures from 2008 of Movy.tv and mobile YouTube (as of Apr. 14, 2008 on Wayback Machine) are shown below:





22. In short, Withrow's HTTP-based mobile streaming technology solved the aforementioned mobile streaming challenges years before its nearest competitor. Indeed, other than Withrow's patented technology, it is well documented that "there was nothing that even remotely resembled a 'stream' in HTTP in 2008, let alone anything that was designed specifically to help with streaming media." Pillsbury, *supra*.

23. It was not until 2009 that Defendants realized a better and more efficient manner of transmitting videos was necessary. That was the start of Defendants' aptly named, "Sliced Bread" project with Adobe Inc. ("Adobe"). Google explained that before acquiring ABR technology from Adobe, it was "delivering video in giant loaves of bread" to the end user. After incorporating sliced video into their streaming services, Defendants pronounced this technology as "The New World":



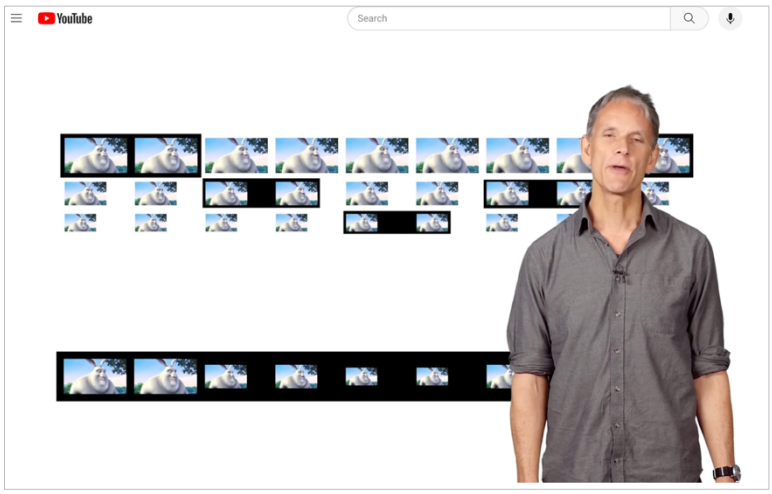
Google I/O 2013 - Adaptive Streaming for You and YouTube, at 2:52 and 3:12, https://www.youtube.com/watch?v=UklDSMG9ffU (last visited May 15, 2024).

24. While this concept may sound easy, it was not. According to YouTube, "One of the core axioms of engineering work at YouTube . . . is [that] playing videos is hard, surprisingly hard." *Id.*, at 17:30-17:42. To develop a fully functional ABR system (with Adobe's help), Defendants stated that it "took us . . . 4 years [for this project] from start to finish more or less – we spent months finding bugs and . . . launching experiments and trying to figure out where all the problems" were. *Id.* at 11:54-12:10.

25. Moreover, while slicing data may have addressed bandwidth issues, Defendants also had to address the "hardware . . . limitations that prevented the mobile experience from

keeping up with YouTube on desktop." **Ex. 5**, Andrey Doronichev, *YouTube Mobile gets a kick start*, YouTube Official Blog (Jul 7, 2010).

26. A comprehensive solution was needed. Eventually, industry developed standards that coopted the '849 Patent's technology, including HTTP Live Streaming ("HLS") (published in 2009) and Dynamic Adaptive Streaming over HTTP ("MPEG-DASH") (published in 2012)—the streaming standards at issue in this case. As used by Defendants, these standards provide solutions to the problem of fluid video playback on mobile devices—the same problem that Withrow's technology solved years earlier:



> [C]onnectivity can be flaky and changeable, and bandwidth is often limited. To cope with real world connectivity . . . you deliver video in segments over a normal HTTP connection. Each segment is made available at a variety of bit rates, resolutions, and formats. **Depending on the bandwidth and device capabilities, the client chooses the best possible version . . . with all the advantages of HTTP, without the disadvantages of a traditional streaming server.**

Shaka Player: High Performance Video for the Web (Google Developers), at 0:39-1:21 (discussing MPEG-DASH, but equally applicable to HLS), https://www.youtube.com/watch?v=Fm3Bagcf9Oo (last visited May 15, 2024) (emphasis added).

27. On information and belief, Defendants place great value on their mobile streaming products and services. Nearly fourteen years ago, they predicted this market to be "huge and growing fast." **Ex. 5**, Doronichev, *supra*.

28. In fact, Defendants found the growth in mobile streaming to be "surprising," noting that YouTube mobile received "roughly the number of daily playbacks that YouTube.com was streaming when we joined forces with Google in 2006." *Id.*

29. Unfortunately for Defendants, that great value is attributable to their infringement of the '849 Patent, and the Defendants must compensate Withrow for their unauthorized use.

NATURE OF THE ACTION

30. This is a civil action for patent infringement arising under 35 U.S.C. § 100, *et seq.*, and in particular, § 271 pertaining to: Google and YouTube's implementations of the streaming standards MPEG-DASH and HLS on mobile devices.

PARTIES

31. Plaintiff Withrow is a Canadian company with a principal place of business in Toronto, Ontario, Canada M4K 1W6.

32. Defendant Google is a Delaware limited liability company with a principal place of business located at 1600 Amphitheatre Parkway, Mountain View, California. Google maintains a regular and established place of business in this District.

33. Defendant YouTube is a Delaware limited liability company with a principal place of business located at 901 Cherry Avenue, San Bruno, California. YouTube maintains a regular and established place of business in this District.

34. YouTube is wholly owned by Google, and, at all times relevant to the allegations herein, has acted in concert with and/or at the direction of Google.

35. YouTube's Terms of Service under the "Your Service Provider" section state, with respect to YouTube's services, that "[t]he entity providing the Service is Google LLC." **Ex. 6**, Terms of Service, YouTube, at 3, https://www.youtube.com/static?template=terms (last visited Mar. 13, 2024). Thus, Google exercises direction and control over YouTube's streaming services.

36. YouTube's Terms of Service also state that many of YouTube's services can only be used if the customer has a Google account:

> Google Accounts and YouTube Channels
>
> You can use parts of the Service, such as browsing and searching for Content, without having a Google account. **However, you do need a Google account to use some features**. With a Google account, you may be able to like videos, subscribe to channels, create your own YouTube channel, and more. You can follow these instructions to create a Google account.

Id. at 4-5 (emphasis added). Thus, YouTube is an agent of Google as an account with the latter is required to access the services of the former.

37. YouTube encourages content providers to upload videos to its website for which YouTube will provide royalty payments. YouTube's Terms of Service makes clear that Google, not YouTube, will withhold taxes for such payments by YouTube to its content providers:

> Right to Monetize
>
> You grant to YouTube the right to monetize your Content on the Service (and such monetization may include displaying ads on or within Content or charging users a fee for access). . . . [A]ny payments you may be entitled to receive from YouTube . . . will be treated as royalties . . . [and] . . . [i]f required by law, **Google will withhold taxes from such payments**.

Id. at 9 (emphasis added). Again, YouTube is an agent of Google as the latter takes tax responsibility on behalf of YouTube.

38. As the YouTube video service is controlled by Google, the parent company is a real party in interest in terms of enforcing YouTube Community Guidelines ("Guidelines"). For example, if a user's access to YouTube is restricted due to a violation of the Guidelines, "Google reserves the right to terminate [the user's] Google account or [the user's] access to all or part of the Service." *Id*. at 10.

39. Google and YouTube are also financially intertwined. YouTube generates the majority of its revenue through advertisements displayed on its streaming service:

> How does YouTube make money?
>
> **YouTube's main source of revenue is advertising**. Additionally, we earn money from our monthly subscription businesses such as YouTube Premium. We've also developed tools to help eligible Creators earn

> money in a variety of other ways such as Super Chat, channel memberships, and merchandise. In most cases, Creators and YouTube share revenue generated from these channels.

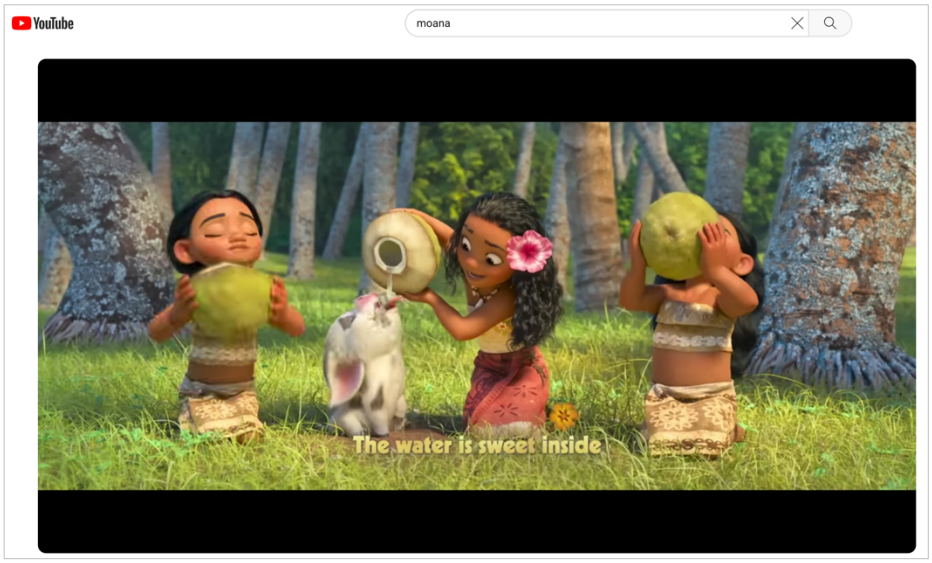
Ex. 7, Revenue Sharing, YouTube, at 1, https://www.youtube.com/howyoutubeworks/our-commitments/sharing-revenue/) (last visited Apr. 29, 2024) (emphasis added).

40. To generate this majority of its revenue, YouTube must access Google Ads. Indeed, YouTube explicitly states that a content provider must have a Google Ads account:

> Do I need a Google Ads account to advertise on YouTube?
>
> **Yes**. Google Ads helps businesses run ads across the entire Google advertising platform, which includes YouTube. That means you'll set up, run, and manage your YouTube Ads campaign with a Google Ads account. If you don't have an account yet, you can sign up here.

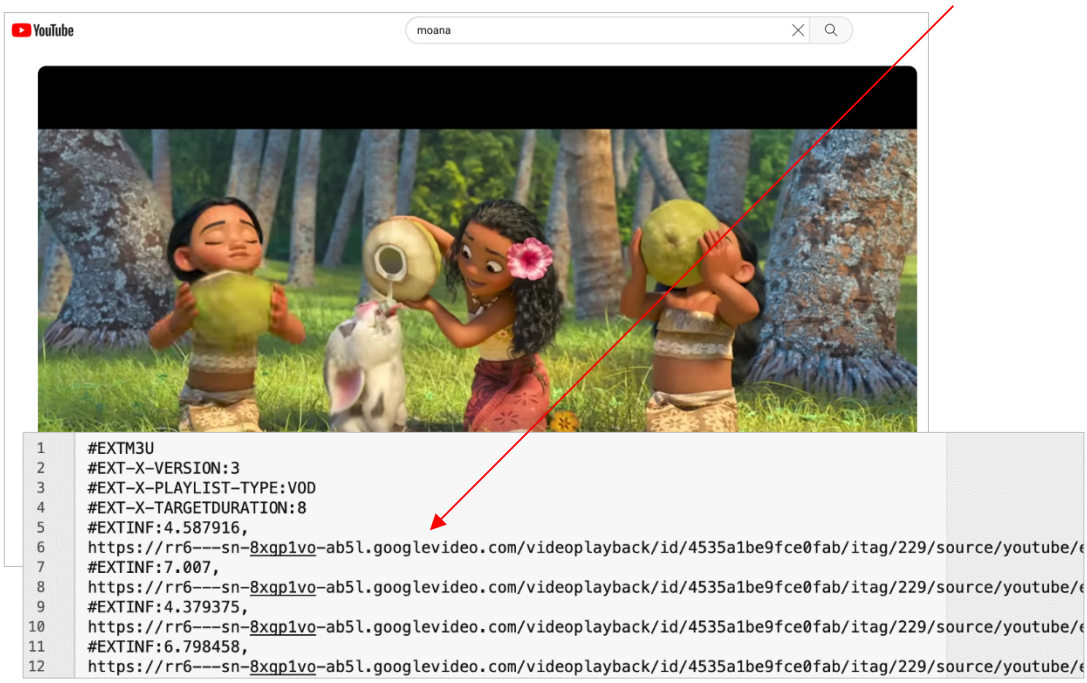
Ex. 8, Frequently asked questions, YouTube Advertising, www.youtube.com/intl/en_us/ads/faqs/, (last visited Apr. 29, 2024) (emphasis added).

41. Content providers stream their media through the Google and YouTube infringing video services:



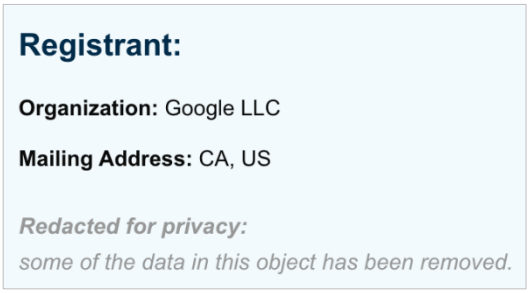
www.youtube.com/watch?v=RTWhvp_OD6s (last visited Mar. 13, 2024).

42. Such YouTube video streams are served by YouTube's parent company, Google:



Id. (YouTube HLS streaming data).

43. The source domain, googlevideo.com, is owned by Google, LLC:



Ex. 9, ICANN Lookup, at 2, https://lookup.icann.org/en/lookup (last visited May 15, 2024).

JURISDICTION AND VENUE

44. The Court has subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338(a) because it arises under the patent laws of the United States.

45. The Court has personal jurisdiction over Google. Google maintains a regular and established place of business at 1 Market Street, San Francisco, CA 94105. Google has purposefully availed itself of the rights and benefits of the laws of this State and this District. On

information and belief, with respect to the allegations outlined in this Complaint, Google also has committed acts of infringement in this District.

46. The Court has personal jurisdiction over YouTube. On information and belief, YouTube maintains a regular and established place of business at 901 Cherry Avenue, San Bruno, CA 94066. YouTube has purposefully availed itself of the rights and benefits of the laws of this State and this District. On information and belief, with respect to the allegations outlined in this Complaint, YouTube also has committed acts of infringement in this District.

47. On information and belief, Google operates infringing video streaming infrastructure in this District through at least itself, YouTube, or both.

48. On information and belief, YouTube operates infringing video streaming infrastructure in this District through at least itself, Google, or both. In fact, YouTube's headquarters are identified as owned by Google, "You can contact YouTube at the address below. Google LLC, D/B/A YouTube, 901 Cherry Ave., San Bruno, CA 94066." https://www.youtube.com/t/contact_us?hl=en_GB (last visited May 15, 2024).

49. Venue is proper in this District under 28 U.S.C. §§ 1391 and 1400(b) because, among other things, Google and YouTube have regular and established places of business in this District, engaged in a substantial number of events giving rise to Withrow's claims in this District, and have committed acts of infringement in this District.

FACTUAL BACKGROUND

The '849 Patent

50. On September 8, 2020, the United States Patent and Trademark Office issued the '849 Patent, entitled, "MULTIMEDIA SYSTEM FOR MOBILE CLIENT PLATFORMS."

51. Withrow is the assignee and owner of all rights, title, and interest in and to the '849 Patent, including the right to assert all causes of action arising under the '849 Patent, and the right to all remedies for its infringement.

52. Prior to the inventions of the '849 Patent, the delivery of audio and video to mobile devices faced numerous technical problems that negatively affected video quality. Unlike desktop computers, which were generally limited to a few standardized configurations that had ample

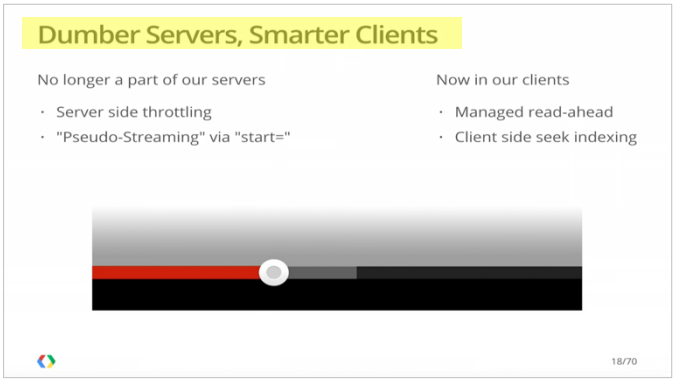
processing power to effectively stream video, mobile device streaming at the time of the invention suffered from a plethora of device design choices, such as variations in screen sizes, and fragmented technologies coupled with "limited resources" (*e.g.*, processor capabilities), which were viewed as "bottle necks" to streaming performance. **Ex. 10**, Krešimir Fertalj & Marko Horvat, *Comparing Architectures of Mobile Applications*, at 1 (2007).

53. The '849 Patent addressed these problems. For example, the invention provides for object parameters in the video stream to account for the hardware limitations of mobile devices. *Supra* at ¶¶ 11,13.

54. A different problem around the time of the '849 Patent invention was the system architecture. Mobile device streaming centered on a server monitoring and controlling the streaming process. This model, where the server pushed data to the client, required server management of the selected data stream and, by nature, resulted in a more complex architecture as the server must store the state of each stream. Pillsbury, *supra* ("[E]xisting standards . . . relied on highly specialized server . . . and highly specialized clients . . . [and] RTMP and protocols like it were inherently and deeply session based and stateful between client and server.").

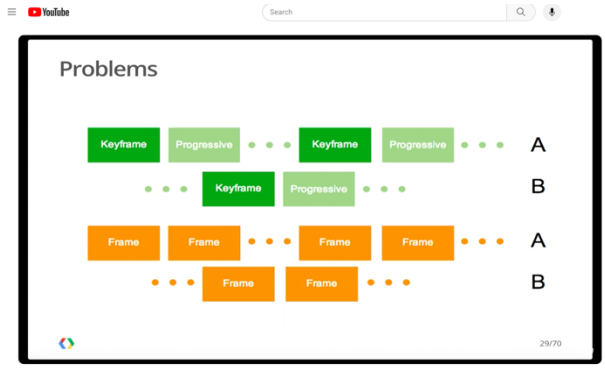
55. The '849 Patent's client-centric streaming approach (disclosed in its 2005 patent filing) was an improvement over the stateful, dedicated server model.

56. Six years after the filing of the application that resulted in the '849 Patent, industry groups arrived at the same conclusion as Withrow: "[A] client-centric approach [has] no session state in network," which improves scalability, and importantly, is more effective because the "client has the best view of network conditions." **Ex. 11**, Mark Watson, HTTP Adaptive Streaming in Practice, ACM MMSys 2011, at 8. Industry further realized that by using HTTP to provide stateless data transmission, a client could benefit from operational metrics because, during the course of streaming, "only the client knows what really happened anyway." *Id*. It took, however, several more years for Defendants to appreciate these benefits:



Google I/O 2013 - Adaptive Streaming for You and YouTube (last visited May 15, 2024) (emphasis added).

57. The ’849 Patent provided other solutions in the computational arts. For instance, in 2013, Defendants announced that their new streaming system, which, on information and belief, was not entirely available on mobile devices, solved another key streaming issue. Specifically, YouTube’s ABR quality level switching had suffered from a time alignment issue:

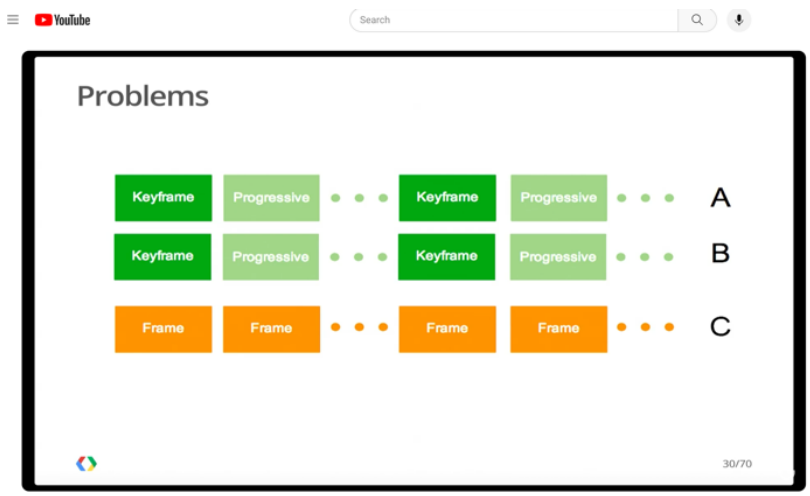


Defendants’ Prior ABR Encoding

Id.

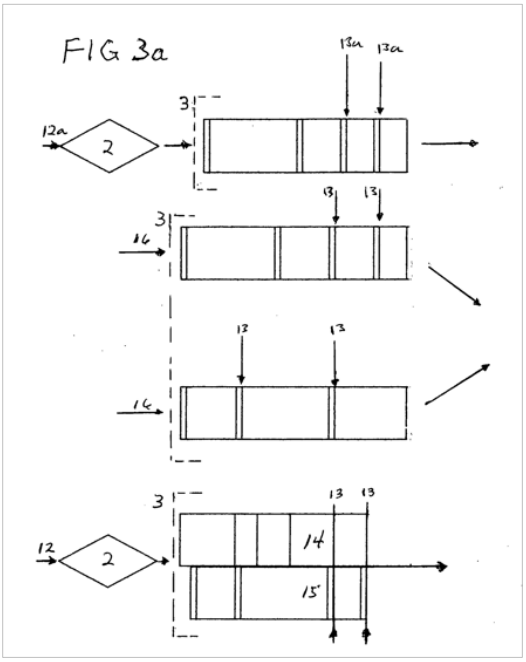
58. The problem was that upshifts or downshifts in quality levels would result in video artifacts (“[Y]ou’d either get black flashes or you’d go back in time.” *Id.* at 12:41-45) and audio degradation (“[Y]ou’re making pops and glitches in people’s ears. This is bad.” *Id.* at 12:58-13:05). This happened because a quality level shift meant the client was required to wait until the next frame of the desired quality was ready for playback, during which time the stream exhibited the aforementioned negative characteristics.

59. At the 2013 I/O conference, Defendants announced their solution to the world: first encode all the data to make it time aligned, and then jump the stream at key locations, thereby providing a fluid video broadcast, "to really improve the experience." *Id*. at 13:29-40.



Defendants' Improved ABR Encoding

60. While this technique was new to Defendants, Withrow had invented that technology at least as of 2005 – nearly eight years earlier:



Ex. 1., '849 Patent.

The HLS Standard

61. The provision of mobile players and systems utilizing the HLS standard to deliver multimedia violates Withrow's rights under the '849 Patent.

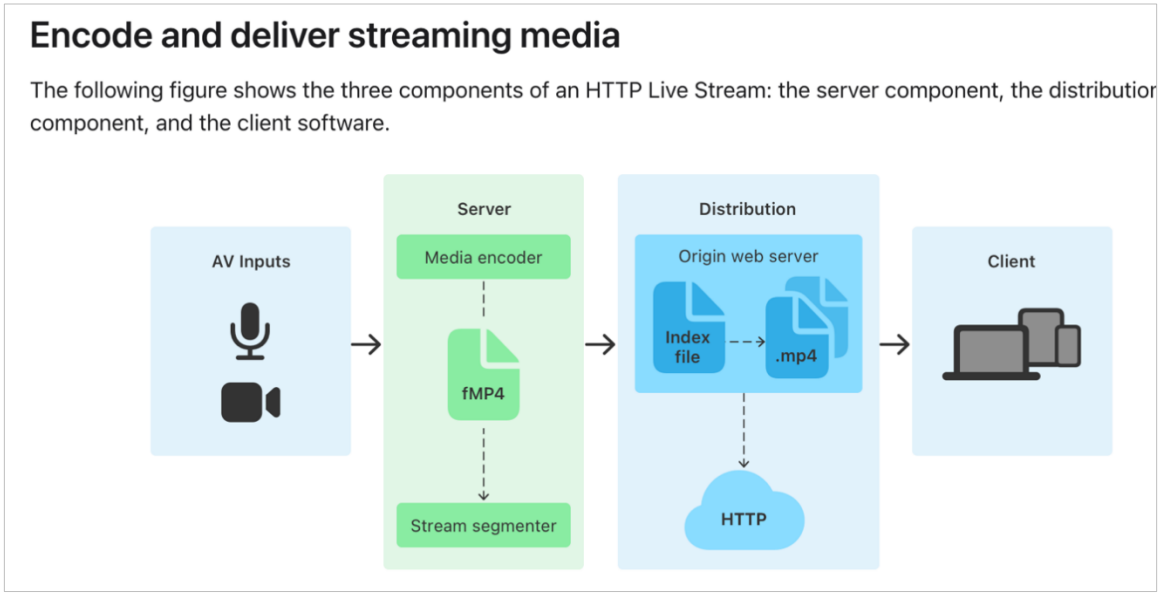
62. Apple Inc., the developer of HLS, describes that standard as follows:

> HTTP Live Streaming provides a reliable, cost-effective means of delivering continuous and long-form video over the Internet. It allows a receiver to adapt the bit rate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.

Ex. 12, Roger Pantos & William May, Jr., *HTTP Live Streaming*, RFC 8216, at 4, https://datatracker.ietf.org/doc/rfc8216/.

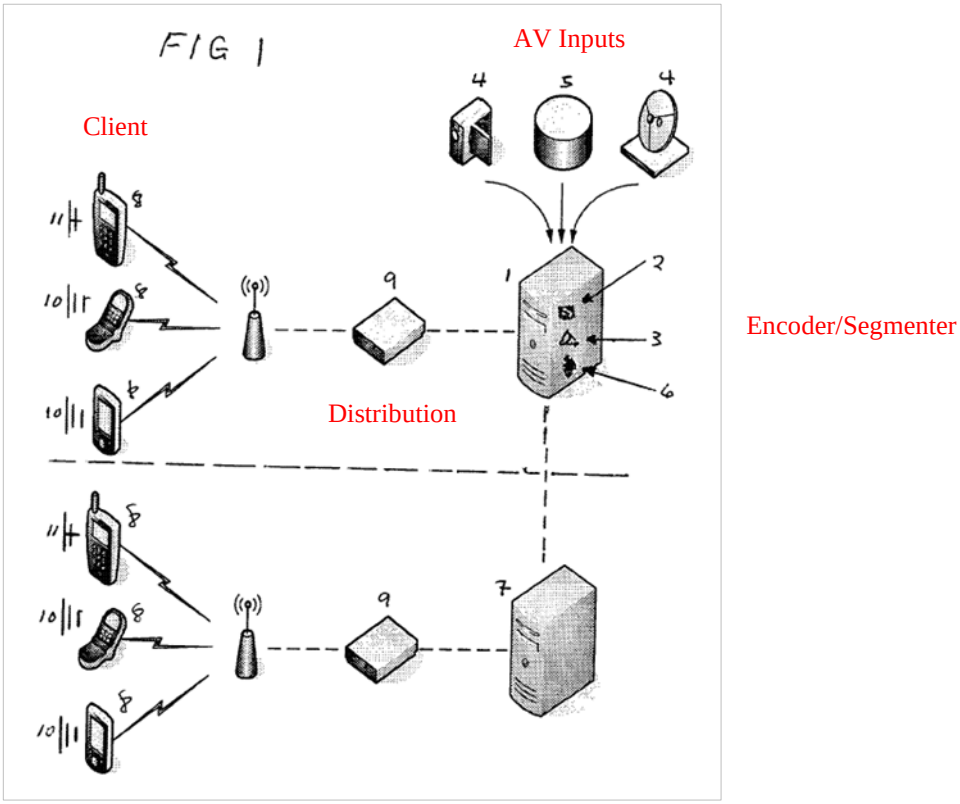
63. As shown below, the '849 Patent and the HLS standard share many structural similarities.

Apple HLS Standard:



Ex. 13 (*HTTP Live Streaming – Overview*, https://developer.apple.com/documentation/http-live-streaming, at 1-2 (last visited Mar. 16, 2024).

The ’849 Patent:



Ex. 1, the ’849 Patent at Fig. 1 (annotated in red).

64. Specifically, infringing streaming systems have at least three parts: encoded data with object parameters, multimedia objects with location identifiers, and fluid decoding and playback of media based on bandwidth conditions. These three streaming elements of the ’849 Patent are present in all implementations of HLS.

65. Implementations of the HLS streaming protocol in systems, software, and methods infringe the ’849 Patent.

66. For example, HLS processes include: *encoding* data (“a hardware encoder takes audio-video input, encodes it . . . and breaks the stream into a series of short files” (**Ex. 13** at 2 (*HTTP Live Streaming – Overview*)) with *object parameters* (“#EXT-X-STREAM-INF: BANDWIDTH = 640000, RESOLUTION = 640x360, CODECS = “avc1.42e00a,mp4a.40.2” (**Ex. 13** at 10 (*HTTP Live Streaming – Creating a Multivariant Playlist*)), *host path identifiers* (“http://example.com/movie1/fileSequenceA .ts” (**Ex. 13** at 6 (*HTTP Live Streaming – Video on Demand playlist construction*), and *decoding and sequential playback* (“The URL of the index file

is published on the web server . . . then requests the listed media files in order and displays them without any pauses or gaps between segments" (**Ex. 13** at 2 (*HTTP Live Streaming – Overview*)) such that it is *fluid* ("minimize stalling of playback, to give the user the best possible streaming experience" (**Ex. 13** at 9 (*HTTP Live Streaming – Creating a Multivariant Playlist*)).

The MPEG-DASH Standard

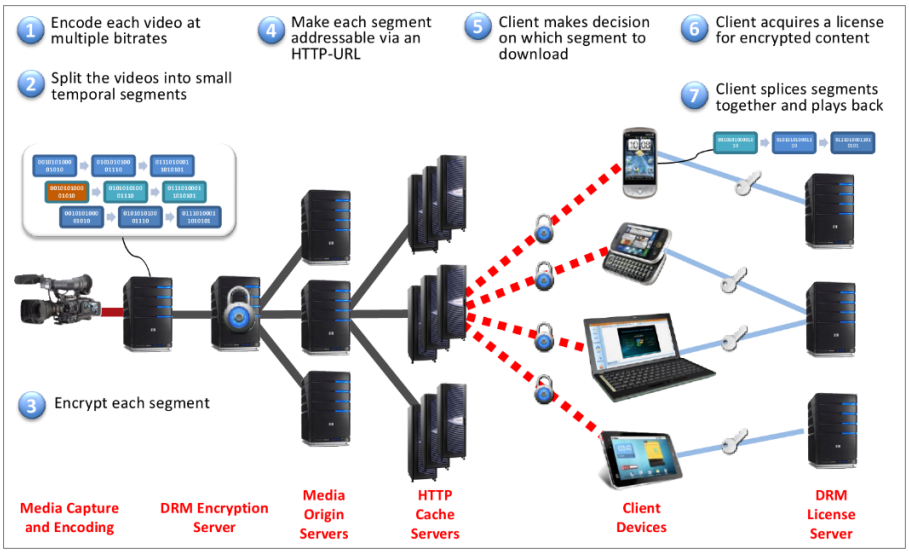
67. The provision of mobile players and systems that utilize the MPEG-DASH standard to deliver multimedia violates Withrow's rights under the '849 Patent.

68. The MPEG-DASH standard is described as follows:

> [MPEG-DASH] specifies . . . formats that enable delivery of media content from standard HTTP servers to HTTP clients . . . .
>
> [This format] provides sufficient information for a client to provide a streaming service to the user by accessing the Segments through the protocol specified in the scheme of the defined resources. . . .
>
> [This format] provides sufficient information for the DASH Client to provide a streaming service to the user by requesting Segments from an HTTP server and demultiplexing, decoding and rendering the included media streams.

Ex. 14 *Information technology — Dynamic adaptive streaming over HTTP (DASH)*, ISO/IEC 23009-1, at § 4.1 "System Description," internal p. 8-9 (3d Ed. 2019).

69. As shown below, the '849 Patent and MPEG-DASH standard share many structural similarities:



Ex. 15, Thomas Stockhammer, *Dynamic Adaptive Streaming over HTTP – Design Principles and Standards*, Qualcomm, at 6.

70. Specifically, and as discussed above in reference to the HLS standard, infringing streaming systems have at least three parts: encoded data with object parameters, multimedia objects with location identifiers, and fluid decoding and playback of media based on bandwidth conditions. These three streaming elements of the '849 Patent are present in all implementations of MPEG-DASH.

71. Implementations of the MPEG-DASH streaming protocol in systems, software, and methods infringe the '849 Patent.

72. For example, MPEG-DASH processes include: *encoding* data (**Ex. 15**, Stockhammer, at 6) with *object parameters* (*e.g.*, @width and @frameRate (**Ex. 14**, ISO/IEC 23009-1, at Table 13, internal p. 54-57)); *host path identifiers* (*e.g.*, BaseURL (*id.* at § 5.6, internal p. 85)); and *decoding and sequential playback* ("the sequential decoding and presentation of Media Segments . . . results in a correct presentation of all contained media streams" (*id.* at § 4.5.3, internal p. 15)) such that it is *fluid* ("The formats defined in this document are designed for providing good user experience even in case the access bandwidth . . . varies" (*id.* at § 4.5.1, internal p. 14)).

YouTube's Infringement of the '849 Patent

73. On information and belief, YouTube has infringed the '849 Patent at least by providing its streaming services to mobile devices that use YouTube player applications and web-based applets (such as on www.youtube.com and m.youtube.com) through implementations utilizing MPEG-DASH, HLS, or both (the "YouTube Infringing Solutions") (*see*, **Ex. 2** Infringement Chart with respect to the HLS Standard; and **Ex. 3**, Infringement Chart with respect to the DASH standard).

Google's Infringement of the '849 Patent

74. On information and belief, Google has infringed the '849 Patent (including by at least its control and direction over YouTube) at least by providing its streaming services to mobile devices that use YouTube player applications and web-based applets (such as on www.youtube.com and m.youtube.com) through implementations utilizing MPEG-DASH, HLS, or both (the "Google Infringing Solutions") (*see*, **Ex. 2** Infringement Chart with respect to the HLS Standard; and **Ex. 3**, Infringement Chart with respect to the DASH standard).

COUNT ONE

Patent Infringement By Google

75. Withrow incorporates by reference each of the preceding paragraphs of this Complaint.

76. Google has directly infringed at least claim 1 of the '849 Patent, pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, through its making, using, selling and/or offering for sale of the Google Infringing Solutions. For example, Google's infringement of the '849 Patent is shown in the attached charts hereto. **Ex. 2**, HLS Infringement Chart; **Ex. 3**, MPEG-DASH Infringement Chart.

77. On information and belief, Google, YouTube, and/or third parties provide the Google Infringing Solutions with streaming content, but, regardless of the content provider, Google controls or practices each and every element of at least independent claim 1 of the '849 Patent. Moreover, while particular deployments of each of the Google Infringing Solutions may

vary, Google infringes for every deployment that implements HLS, MPEG-DASH or both standards for streaming.

78. Google's infringement of the '849 Patent has violated Withrow's intellectual property rights in an amount to be determined at trial.

COUNT TWO

Patent Infringement By YouTube

79. Withrow incorporates by reference each of the preceding paragraphs of this Complaint.

80. YouTube has directly infringed at least claim 1 of the '849 Patent, pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, through its making, using, selling and/or offering for sale of the YouTube Infringing Solutions. For example, YouTube's infringement of the '849 Patent is shown in the attached charts hereto. **Ex. 2**, HLS Infringement Chart; **Ex. 3**, MPEG-DASH Infringement Chart.

81. On information and belief, Google, YouTube and/or third parties provide the YouTube Infringing Solutions with streaming content, but, regardless of the content provider, YouTube controls or practices each and every element of at least independent claim 1 of the '849 Patent. Moreover, while particular deployments of each of the YouTube Infringing Solutions may vary, YouTube infringes for every deployment that implements HLS, MPEG-DASH or both standards for streaming.

82. Accordingly, YouTube's infringement of the '849 Patent has violated Withrow's intellectual property rights in an amount to be determined at trial.

PRAYER FOR RELIEF

WHEREFORE, Withrow respectfully prays for relief as follows:

A. Judgment that Defendants have infringed one or more claims of the '849 Patent;

B. An award of damages pursuant to 35 U.S.C. § 284 in an amount sufficient to compensate Withrow for the harm caused by Defendants' infringement, not less than a reasonable royalty for the use made of the invention, along with pre- and post-judgment interest;

C. An order for an accounting of damages from the Defendants' infringement(s);

D. Declare this case exceptional and award Withrow its costs, expenses, and attorneys' fees pursuant to 35 U.S.C. § 285; and

E. An order awarding to Withrow such other and further relief, whether at law or in equity, that this Court deems just, equitable, and proper.

JURY DEMAND

Pursuant to Federal Rule of Civil Procedure 38(b) and Civil Local Rule 3-6(a), WITHROW hereby demands a trial by jury on all issues so triable.

Dated: May 28, 2024

By: /s/ John V. Picone III

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