

**IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF FLORIDA
TAMPA DIVISION**

**INTERACTIVE CONTENT
ENGINES, LLC,**

Plaintiff,

v.

**RUMBLE USA INC., AND
RUMBLE, INC.**

Defendants.

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Case No.

JURY TRIAL DEMANDED

ORIGINAL COMPLAINT AND JURY DEMAND

Plaintiff INTERACTIVE CONTENT ENGINES, LLC files this Complaint for patent infringement against Defendants RUMBLE USA, INC. and RUMBLE, INC., alleging as follows:

I. THE PARTIES

1. INTERACTIVE CONTENT ENGINES, LLC (“Plaintiff” or “ICE”) is a limited liability company organized and existing under the laws of the State of Hawaii, with a principal place of business at 1381 Kaeleku Street, Honolulu, Hawaii 96825. ICE is designated as a manager managed LLC and is managed by Hawaii Holdings, LLC, a limited liability company organized and existing under the laws of the State of Hawaii. Hawaii Holdings, LLC maintains a principal place of business at 9235 Wildcat Hill

Ct., Las Vegas, Nevada 89178. Hawaii Holdings, LLC is managed by CL Mgt Corp., which is a corporation organized and existing under the laws of the State of Nevada.

2. Defendant RUMBLE USA, INC. is a corporation organized under the laws of Delaware with a principal place of business at 444 Gulf of Mexico Drive, Longboat Key, Florida 34228. RUMBLE USA, INC. may be served with process by serving its registered agent, C T Corporation System at 1200 South Pine Island Road, Plantation, Florida 33324.

3. Defendant RUMBLE, INC. is a foreign corporation organized under the laws of Canada with a principal place of business at 218 Adelaide Street West, Toronto, Ontario, Canada. RUMBLE, INC. is a foreign entity and may be served with process at 444 Gulf Mexico Drive, Longboat Key, Florida 34228.

4. RUMBLE USA, INC. and RUMBLE, INC. are affiliated entities sharing common officers and directors. Hereinafter, they are referred to collectively as “Defendant” or “Rumble,” therefore.

II. JURISDICTION AND VENUE

5. This is an action for infringement of United States patents under 35 U.S.C. §§ 271, *et seq.* Federal question jurisdiction is conferred to

this Court over patent infringement actions under 28 U.S.C. §§ 1331 and 1338(a).

6. Defendant maintains a principal place of business for its U.S. based subsidiary within this District, which also serves as the U.S. headquarters for Rumble. Rumble develops and/or sells its products, including the Accused Products described herein, in this District.

7. Defendant has sufficient minimum contacts with the Middle District of Florida such that this venue is fair and reasonable. Defendant has committed such purposeful acts and/or transactions in this District that it reasonably should know and expect that they could be hailed into this Court as a consequence of such activity, including at least locating its U.S. headquarters in this District. Defendant has transacted and, at the time of the filing of this Complaint, continues to transact business within the Middle District of Florida.

8. Further, upon information and belief, Defendant makes or sells products that are and have been used, offered for sale, sold, and/or purchased in the Middle District of Florida. Defendant directly and/or through its distribution network, places infringing products or systems within the stream of commerce, which stream is directed at this district, with the knowledge

and/or understanding that those products will be sold and/or used in this District.

9. For example, Rumble acquired Locals Technology, Inc. (“Locals”) – a Florida-based online video platform which has its headquarters in Sarasota County, Florida – in October 2021.¹ Local’s Terms of Service state that “use of the Site is governed by and shall be construed in accordance with the laws of the State of Florida, U.S.”² Upon acquisition by Rumble, Locals’ network architecture and subscriber base were incorporated into those of Rumble, whereby Rumble offers its products and services, including the Accused Products, directly from this District and Division.

10. For these reasons, personal jurisdiction exists, and venue is proper in this Court under 28 U.S.C. §§ 1391(b) and (c) and 28 U.S.C. § 1400(b), respectively.

III. BACKGROUND AND FACTS

11. ICE is the owner of all rights and title in and to U.S. Patent No. 7,437,472 B2 (“the ‘472 Patent”), which issued on October 14, 2008,

¹ “Rumble Acquires Local to Help Build a Bigger Creator Economy,” available at URL: <https://www.prnewswire.com/news-releases/rumble-acquires-locals-to-help-build-a-bigger-creator-economy-301408700.html#:~:text=TORONTO%2C%20Oct.,for%20multimedia%20content%20and%20community>.

² Local Technology, Inc. “Terms of Service” available at URL: <https://locals.com/terms>, Section 13.4.

entitled “Interactive Broadband Server System;” and, U.S. Patent No. 7,644,136 B2 (“the ‘136 Patent”), which issued on January 5, 2010, entitled “Virtual File System.” The ‘472 Patent is attached hereto as Exhibit A. The ‘136 Patent is attached hereto as Exhibit B. Collectively the ‘472 and ‘136 Patents are referred to herein as the “ICE Patents” or the “Patents-in-Suit.”

12. The inventions disclosed and claimed in the ICE Patents were developed by the founders, entrepreneurs, and engineers of ICE, including Mr. Steven W. Rose, among others. Each of the ICE Patents was assigned from the inventors thereof, and recorded with the U.S. Patent and Trademark Office at reel/frame: 0013605/0835; 0014140/0830; 0016037/0769; and, 0016040/0057.³ These assignments were executed prior to issuance of the respective ICE Patents and are effective to convey to ICE all rights in and title to the ICE Patents, including the right to collect all damages available under law for infringement thereof.

13. ICE is a U.S.-based company that was founded in 2002 and still exists today. ICE was formed for the purpose of developing systems operable to efficiently store, retrieve, and rapidly transfer large volumes of data to devices over a network without the need for specialized equipment.

³ Each such assignment is available through the U.S. Patent and Trademark Office’s searchable online assignments database at URL: <https://assignment.uspto.gov/patent/index.html#/patent/search>.

These foundational systems were designed to accommodate highly fault tolerant transfers of media files – meaning the systems continue to operate without interruption even if process or component failures occur. Further, the systems accommodate low latency transfer. Both of these advantages are realized despite the ICE systems generally utilizing less costly, commodity components rather than specialized equipment.

14. More specifically, ICE invented systems and methods for content storage and delivery which are particularly useful for providing video-on-demand (“VOD”) services, live streaming of content, and the like. These applications require simultaneous fulfillment of many user requests for access to large media files. ICE met this challenge by implementing a hierarchical, distributed system for media file storage and retrieval using non-specialized hardware components. ICE’s innovations have since become widely used by providers of VOD, audio on demand, and live streaming services as well as operators of content hosting and content delivery networks.

15. The driving force behind development of the inventions disclosed and claimed in the ICE Patents was Mr. Steven Rose, ICE’s founder and Chief Technology Officer. Prior to forming ICE, Mr. Rose worked for Viaduct Corporation. While there, Mr. Rose focused his efforts

on the development of time delayed, satellite-based video streaming services for subscribers residing in Hawaii. This led to Mr. Rose consulting for Time Warner Cable in the mid-1990s to aid in the development of scalable content storage and delivery systems for VOD deployment.

16. Mr. Rose contributed to the development and implementation of Time Warner's Full-Service Network ("FSN") which utilized set top boxes accessing Time Warner's network to retrieve media content. The FSN attempted to provide, among other functionality, VOD service to subscribers in Orlando, Florida. The FSN project was quickly abandoned by Time Warner due to the high cost of the set top boxes, network bandwidth limitations, and difficulty ensuring interoperability with end user devices. Following FSN, Mr. Rose remained focused on development of improved server and network architecture capable of addressing the problems that doomed FSN. He founded or consulted for several startups in this space in the late 1990s and early 2000s, including Pangrac & Associates and ICE.

17. Mr. Rose's work at ICE culminated in the design and development of the virtual file systems, interactive broadband servers, and synchronized data transfer systems that are disclosed and claimed in the ICE Patents, respectively. These systems achieved scalable and highly fault-tolerant storage, retrieval, and delivery of large data files, including media

files. These advantages made ICE's innovations uniquely suited for VOD, live streaming, and other similar network functionality. The '136 Patent, for example, discloses systems and components operable to provide "storage and delivery of streaming media content" using virtual file systems in which content is "distributed across an array of storage devices." The specification states:

1. Field of the Invention

The present invention relates to interactive broadband server systems, and more particularly, to virtual file system that manages and maintains information of data distributed across an array of storage devices.

2. Description of the Related Art

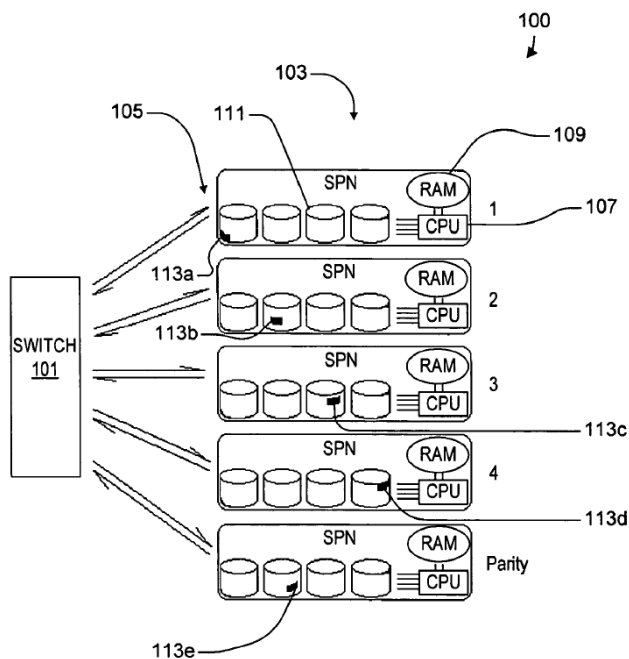
It is desired to provide a solution for the storage and delivery of streaming media content. An initial goal for scalability

Ex. B at 1:18-25 (annotations added)

18. The ICE Patents highlight certain problems faced in this field relating to cost, bandwidth constraints, scalability, and fault tolerance. Ex. B at 1:41-44, 52-61. They note that the architecture and operation of then-existing systems were ineffective for delivering media content to many end users simultaneously. Such systems utilized one-to-one connections between a network processor gathering and transmitting media content and each end user receiving the media content. They were not scalable or fault tolerant.

19. Conversely, the systems and methods disclosed in the ICE Patents use a distributed array of processors and storage locations which are

communicatively coupled and operate in concert to effect content storage and delivery. The workload for transferring content to an end user is shared among several processors accessing their respective storage locations. Content storage, accessing, and transfer is therefore scalable in ICE's systems. Accordingly, limitations caused by bandwidth constraints were minimized. An exemplary storage architecture disclosed in the ICE Patents is shown below:



Ex. B at Figure 1

The architecture described herein accommodates individual components of varying capability to avoid an installation being limited to the point in time when the initial system purchase was made. The use of commodity components guarantees recent well proven technology, avoidance of sole sources, and the lowest cost per stream. Individual component failures are tolerated. In many cases, there is no notice-

Ex. B at 2:54-60 (annotations added)

20. Prior art systems were subject to bandwidth and mechanical limitations on content delivery volume and speed by virtue of the component architecture implemented thereby. Using ICE's exemplary architecture, however, the interactive content engine disclosed stores content in a distributed manner to achieve benefits particularly suitable for the delivery of VOD and live-streaming media content. Ex. B at 3:22-42. The exemplary architecture is implemented for storage of media content as many discrete "chunks" and "sub-chunks." Ex. B at 3:59-65. These "chunks" are shown as storage locations in an exemplary embodiment of Fig. 1, *supra*. Ex. B at 4:1-11. This storage methodology "achieve[s] the speed benefits of interleaved access":

Each title (e.g., video, movie or other media content) is not wholly stored on any single disk drive **111**. Instead, the data for each title is divided and stored among several disk drives within the ICE **100** to achieve the speed benefits of interleaved access. The content of a single title is spread across multiple disk drives of multiple SPNs **103**. Short "time frames" of title content are gathered in a round robin fashion from each drive in each SPN **103**. In this manner, the physical load is spread escaping the drive count limits of SCSI and IDE, a form of fail-safe operation is gained, and a large set of titles are organized and managed.

Ex. B at 3:47-58 (annotations added)

21. In operation, when a title is requested from the interactive content engine by an end user, "user processes" are concurrently executed on a plurality of processors, each accessing their associated storage

locations. “The goal of a user process (UP) running on each ‘user’ SPN 103 is to gather the sub-chunks from its own disk plus the corresponding four sub-chunks from other user SPNs to assemble a chunk of video content for delivery.” Ex. B at 4:45-48. These user processes are done under the direction of one or more “management” SPNs coordinating the larger task of delivery of requested media to end users. Ex. B at 4:48-51; 5:1-6.

22. According to certain embodiments disclosed in the ICE Patents, a management processor and several “user” processors may communicate over a backbone switch to identify, access, and compile chunks and sub-chunks comprising a media file. *See, generally*, Ex. B at 6:15-9:45. Title maps are consulted to obtain lists of storage locations for the chunks and sub-chunks to be transferred. Ex. B at 5:29-44; 8:33-49; 10:1-20. Distinct processes are initiated in a coordinated manner via a series of separate requests. Ex. B at 6:4-14. The appropriate directory entries identifying storage locations for sub-chunks are returned, which are then accessed and compiled for delivery by each of the several user processors acting in concert with one another. Ex. B at 6:51-7:10.

23. The ICE Patents disclose that several advantages are realized from use of the innovations disclosed therein, including improved system scalability and reliability, among others:

By distributing content in this fashion, at least two goals are achieved. First, the number of users that can view a single title is not limited to the number which can be served by a single set of SPNs, but by the bandwidth of all the sets of SPNs taken together. Therefore, only one copy of each content title is required. The tradeoff is the limitation in the number of new viewers for a given title that can be launched each second, which is far less of a constraint than the wasted space and management overhead of redundant storage. A second goal is the increase in overall reliability of the ICE 100. The failure of

Ex. B at 4:19-28 (annotations added)

24. The disclosure of the ‘136 Patent (Ex. B) overlaps with that of the ‘472 Patent (Ex. A), to which it is a continuation within the same patent family. The systems and methods disclosed in the ‘472 Patent likewise implement server architecture comprising processors connected by a switch and accessing storage locations to store, gather, and deliver media content. Ex. A at Abstract. An embodiment of an exemplary “interactive broadband server” disclosed is shown in Figure 2A below:

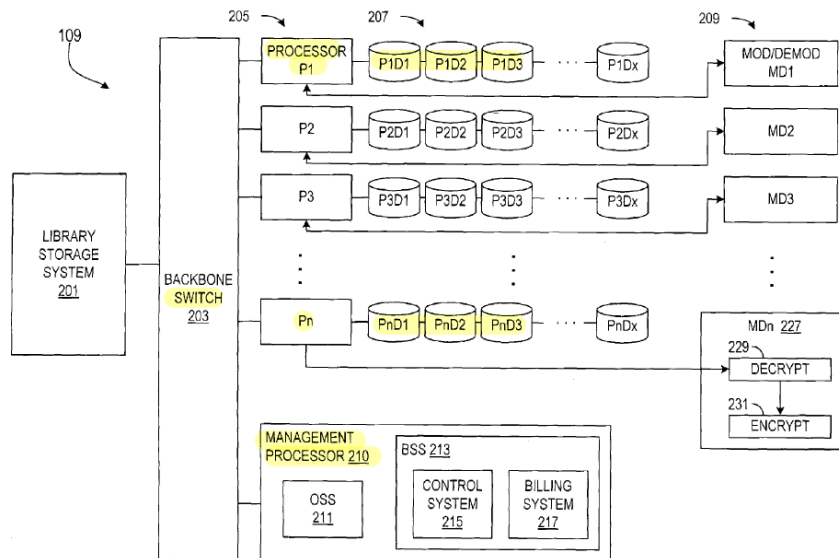


FIG. 2A

Ex. A at Figure 2A (annotations added)

25. The storage, processing, and delivery systems and methods disclosed in the ICE Patents have become widely used, especially in connection with VOD, live streaming, and similar media delivery applications. In fact, such services would not be possible on the scale that they are now provided by OVPs, like Rumble, but for use of the innovations claimed in the ICE Patents. Today, Rumble's server network processes user video upload and view requests using the "chunk" and "sub-chunk" storage, retrieval, and delivery innovations developed by ICE to allow it to accommodate a user base of 44 million average monthly users and uploads of nearly 9,000 video hours per day.⁴

IV. The Accused Products

26. Rumble operates an online video platform (OVP) to which its users and subscribers can upload video content for VOD or live streaming distribution. The user generated content uploaded to Rumble is stored on its servers and accessible to its users and subscribers through Rumble's video player. The Rumble player is hosted on Rumble's website and may be embedded within other websites in accordance with instructions provided by

⁴ See article at URL: <https://www.prnewswire.com/news-releases/rumble-sets-new-record-for-monthly-active-users-301605472.html>.

Rumble to its subscribers. Additionally, the Rumble player is downloadable as a mobile application on smartphones and tablets.

27. Each of these interfaces for accessing user generated content uploaded to Rumble rely on Rumble’s backend content delivery network. Rumble’s backend server network stores, retrieves, and delivers video content to users as VOD or livestreamed content in response to user requests for content.

28. Rumble markets itself as “provid[ing] a synchronized platform that includes a video player, a CDN, and video encoding/storage.” Use of Rumble’s platform to store, retrieve, and deliver video content infringes claims of the ICE Patents, as detailed herein.

The image shows three promotional cards for Rumble's services:

- VIDEO PLAYER** (Blue background):
 - Create a custom video player
 - DFP & Ad Server integration
 - Customizable HTML5 video player
 - Competitive bandwidth tiers from \$0.01 per GB
 - Free storage and encoding
 - Hourly updated stats and analytics
 - JavaScript & IFrame implementations
 - API access for data analytics
 - fastest video player
- VIDEO EXCHANGE** (Green background):
 - Friction-less licensing
 - 50% revenue share, no license fees
 - Simple embed codes
 - Over 130,000 channels
 - Over 400,000 video assets
 - Enterprise & Wordpress plugins
 - Full transparency and analytics
 - learn more about video exchange
- VIDEO HOSTING** (Red background):
 - Manage & monetize your videos
 - Easy syndication & distribution
 - Full transparency
 - DRM control: whitelisting & blacklisting
 - Mobile applications
 - Industry high CPMs
 - register

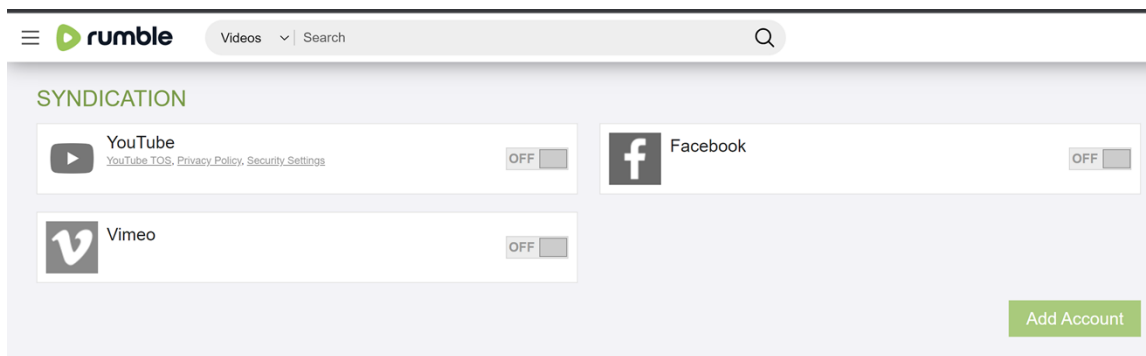
29. Rumble solicits upload of user generated content to its OVP on subscriber “channels.” “PRO Packages” (shown below) are offered at a premium for greater storage space and for use of advanced video editing and

advertising embedding features. Rumble splits ad revenue generated from video views on a subscriber’s channel with the subscriber.

PRO PACKAGES
AVAILABLE PUBLISHER PACKAGES:

<p>Rumble Ads + Video Player</p> <p>Free</p> <p>Supported by Rumble Advertisements No Ad Tag integrations Unlimited Usage</p> <p>Upgrade to this plan</p>	<p>Basic Package</p> <p>\$10 / month</p> <p><u>Creator features</u> Ad-free viewing experience Unlimited live streaming NEW</p> <p><u>Publisher features</u> 100 GB Storage 250 GB Bandwidth</p> <p>Upgrade to this plan</p>	<p>Starter Package</p> <p>\$25 / month</p> <p><u>Creator features</u> Ad-free viewing experience Unlimited live streaming NEW</p> <p><u>Publisher features</u> 250 GB Storage 1 TB Bandwidth</p> <p>Upgrade to this plan</p>
<p>Team Package</p> <p>\$100 / month</p> <p><u>Creator features</u> Ad-free viewing experience Unlimited live streaming NEW</p> <p><u>Publisher features</u> 1 TB Storage 4 TB Bandwidth Ad Tag Integrations</p> <p>Upgrade to this plan</p>	<p>Small Business Package</p> <p>\$500 / month</p> <p><u>Creator features</u> Ad-free viewing experience Unlimited live streaming NEW</p> <p><u>Publisher features</u> 5 TB Storage 20 TB Bandwidth Ad Tag Integrations</p> <p>Upgrade to this plan</p>	<p>Large Business Package</p> <p>\$1,000 / month</p> <p><u>Creator features</u> Ad-free viewing experience Unlimited live streaming NEW</p> <p><u>Publisher features</u> 15 TB Storage 50 TB Bandwidth Ad Tag Integrations API Access Video Upload Endpoint</p> <p>Upgrade to this plan</p>

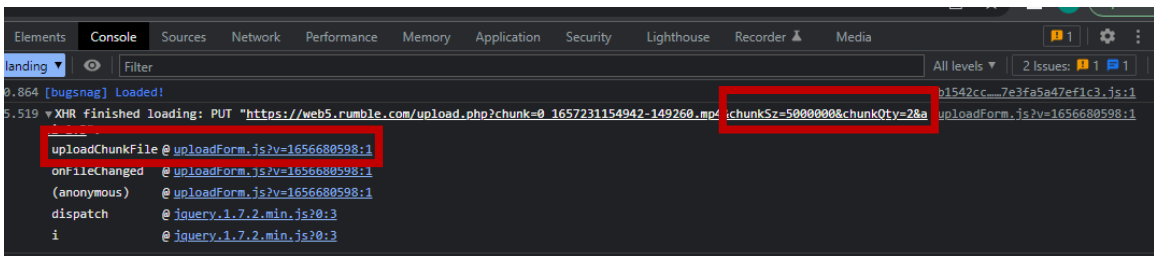
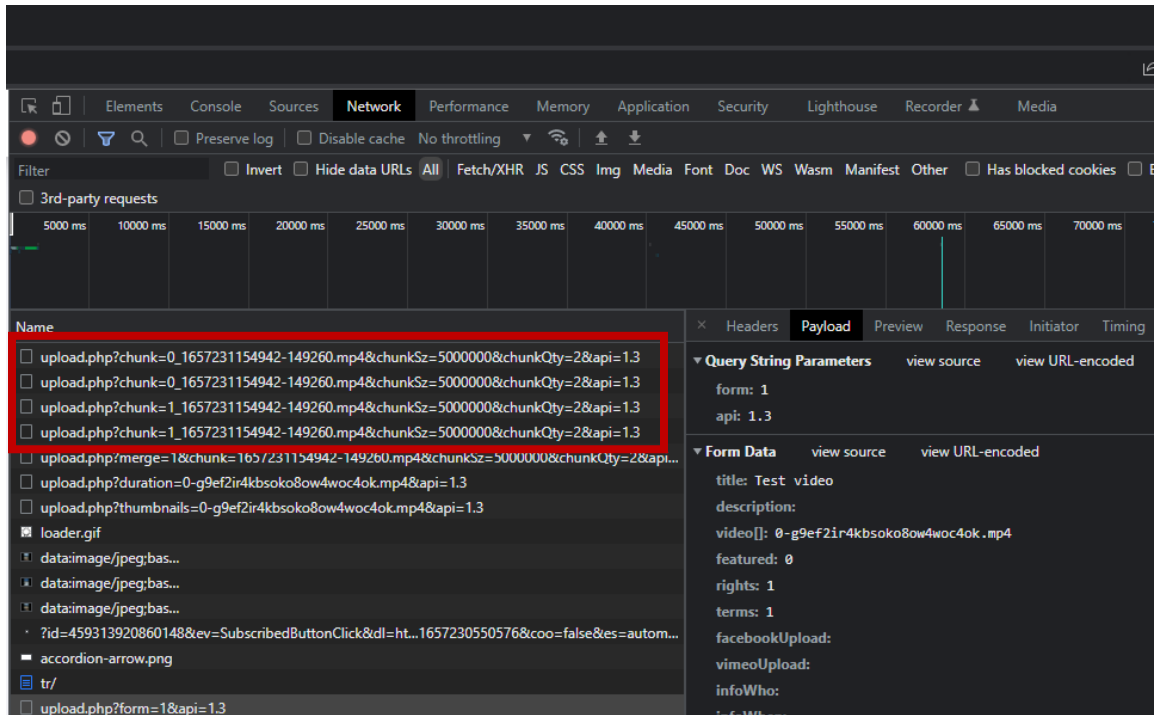
30. Additional ad revenue may be generated through “syndication” by Rumble of videos hosted on its OVP to other OVPs, like YouTube and Vimeo.



31. Rumble boasts of an average of nearly 32 million monthly users accessing its website and content as of Q1 2021.⁵ Rumble also boasts supporting an average of 4.5 billion minutes of video content viewed *per month* through Q1 2021.

To accommodate this magnitude of widespread video content distribution to its users, Rumble's server network utilizes chunked storage of media files. This storage methodology accommodates meeting such high demand for concurrent, overlapping, or simultaneous access to video content Rumble stores. For example, at upload, video files are directed to an endpoint on Rumble's backend (at URL <https://rumble.com/api/simple-upload.php>). The video file is broken out into fixed size chunks at upload for storage on Rumble's servers. Each chunk is given a unique storage location identifier which are indexed to create .m3u8 files for subsequent use for retrieving the video chunks.

⁵ See article available at URL <https://www.foxbusiness.com/technology/youtube-rival-rumble-growth-ceo>, attached hereto as Exhibit C.



32. Use of Rumble’s OVP to watch a video causes the player to communicate with Rumble’s backend servers to obtain an indexed “chunklist” (as an .m3u8 file) corresponding to the video file and to make individual GET requests to access each chunk. Chunks are delivered as a sequence of .ts files comprising a portion of the video file being played. For example, the background network communications shown below were executed by the Google Chrome browser to live stream The Pete Santilli Show on June 21, 2022:

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15:52:44.528 DevTools failed to load source map: Could not load content for https://rumble.com/3/n/hls.min.js.map: HTTP error: status code 404, net::ERR_HTTP_RESPONSE_CODE_FAILURE
15:53:22.188 XHR finished loading: GET "<URL>".
15:52:49.460 XHR finished loading: GET "https://live-m794n2d7.rbl.ws/slot-43/ngpr:beci-xm61 all/chunklist_b2481072.m3u8".
15:52:49.515 XHR finished loading: GET "https://rumble.com/service.php?vvideo=1618h&viewer_id=MRP0149&name=video_w_or%2Cfacebook_events%2Clocal_st_v198&sp--the_pete-sa-d-6om-est.html:1129
orange%2Cui_header%2Cui%2Cads_worth".
15:52:49.579 XHR finished loading: GET "https://live-m794n2d7.rbl.ws/slot-43/ngpr:beci-xm61 all/media-ug1wh0gef_b981072_7568.ts".
15:52:49.710 XHR finished loading: GET "https://live-m794n2d7.rbl.ws/slot-43/ngpr:beci-xm61 all/chunklist_b2481072.m3u8".
15:52:49.990 XHR finished loading: GET "https://live-m794n2d7.rbl.ws/slot-43/ngpr:beci-xm61 all/media-u0awc78iu_b2481072_7571.ts".
15:52:52.764 XHR finished loading: GET "https://live-m794n2d7.rbl.ws/slot-43/ngpr:beci-xm61 all/chunklist_b2481072.m3u8".
15:52:53.123 XHR finished loading: GET "https://live-m794n2d7.rbl.ws/slot-43/ngpr:beci-xm61 all/chunklist_b2481072.m3u8".
15:52:53.792 XHR finished loading: GET "https://live-m794n2d7.rbl.ws/slot-43/ngpr:beci-xm61 all/chunklist_b2481072.m3u8".
15:52:54.850 XHR finished loading: GET "https://live-m794n2d7.rbl.ws/slot-43/ngpr:beci-xm61 all/chunklist_b2481072.m3u8".
15:52:55.126 XHR finished loading: GET "https://live-m794n2d7.rbl.ws/slot-43/ngpr:beci-xm61 all/media-u0awc78iu_b2481072_7572.ts".
  
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These communications show that the Rumble Player receives a continuously updated directory listing file (the m3u8 file) identifying URL locations for accessing the individual .ts files (i.e., chunks of video) comprising the video stream. The .m3u8 and .ts files are both received from Rumble’s backend (.rbl.ws/ URL locations).

33. Exemplary M3U8 index files are shown, which list storage locations for all chunks comprising the video file being viewed on Rumble’s OVP. The storage locations shown are maintained by processors connected to Rumble’s CDN servers storing the chunk files.

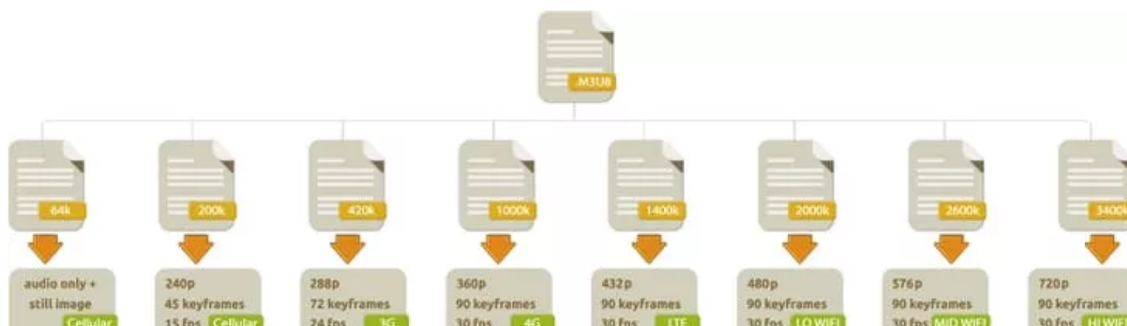
```

#EXTM3U
#EXT-X-VERSION:3
#EXT-X-TARGETDURATION:5
#EXT-X-MEDIA-SEQUENCE:8914
#EXT-X-DISCONTINUITY-SEQUENCE:0
#EXTINF:2.0,
media-u0awc78iu_b2481072_8914.ts
#EXTM3U-A.0
media-u0awc78iu_b2481072_8915.ts
#EXTINF:2.0,
media-u0awc78iu_b2481072_8916.ts
#EXTINF:4.0,
media-u0awc78iu_b2481072_8917.ts
#EXTINF:2.0,
media-u0awc78iu_b2481072_8918.ts
#EXTINF:4.0,
media-u0awc78iu_b2481072_8919.ts
#EXTINF:2.0,
media-u0awc78iu_b2481072_8920.ts
#EXTINF:4.0,
media-u0awc78iu_b2481072_8921.ts
#EXTINF:2.0,
media-u0awc78iu_b2481072_8922.ts
#EXTINF:4.0,
media-u0awc78iu_b2481072_8923.ts
#EXTM3U-A.0
#EXTM3U
#EXT-X-VERSION:3
#EXT-X-ALLOW-CACHE:YES
#EXT-X-TARGETDURATION:6
#EXT-X-MEDIA-SEQUENCE:0
#EXTM3U-A.0
https://locals-ftmc.cdn.rumble.cloud/dinesh_trailer/1122072_16516155916271a76732036_720p_00001.ts
#EXTM3U-A.0
https://locals-ftmc.cdn.rumble.cloud/dinesh_trailer/1122072_16516155916271a76732036_720p_00002.ts
#EXTINF:6.00,
https://locals-ftmc.cdn.rumble.cloud/dinesh_trailer/1122072_16516155916271a76732036_720p_00003.ts
#EXTINF:6.00,
https://locals-ftmc.cdn.rumble.cloud/dinesh_trailer/1122072_16516155916271a76732036_720p_00004.ts
#EXTINF:6.00,
https://locals-ftmc.cdn.rumble.cloud/dinesh_trailer/1122072_16516155916271a76732036_720p_00005.ts
#EXTINF:6.00,
https://locals-ftmc.cdn.rumble.cloud/dinesh_trailer/1122072_16516155916271a76732036_720p_00006.ts
#EXTINF:6.00,
https://locals-ftmc.cdn.rumble.cloud/dinesh_trailer/1122072_16516155916271a76732036_720p_00007.ts
#EXTINF:6.00,
https://locals-ftmc.cdn.rumble.cloud/dinesh_trailer/1122072_16516155916271a76732036_720p_00008.ts
#EXTINF:6.00,
https://locals-ftmc.cdn.rumble.cloud/dinesh_trailer/1122072_16516155916271a76732036_720p_00009.ts
#EXTINF:6.00,
https://locals-ftmc.cdn.rumble.cloud/dinesh_trailer/1122072_16516155916271a76732036_720p_00010.ts
#EXTM3U-A.0
  
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34. Rumble’s content delivery network is configured to gather and deliver video files via HTTPS Live Streaming (“HLS”) protocol to viewers.⁶ HLS requires storage of video files in discrete chunks for each of several distinct bandwidths supported. Processors maintain an index file (the .m3u8 file) that catalogues the storage locations for each chunk comprising a video file. The Rumble Player communicates a file request to a management processor, which first GETS the index file before initiating successive GET requests to access each chunk. Chunks are delivered as .ts files that are locally cached and played.

How HLS works

HLS works by splitting live streams into smaller HTTP-based files. The manifest file (file with a .m3u8 extension) contains multimedia playlists and references to the actual video fragments called TS files. **Multiple playlists** are created for the various devices and differing bandwidth connections that access the stream.



“HTTP Live Streaming”⁷ article

⁶ See Rumble website at URL <https://rumblefaq.groovehq.com/help/livestream-settings>.

⁷ See “HTTP Live Streaming” article published by KeyCDN on October 4, 2018, at URL <https://www.keycdn.com/support/http-live-streaming>. This article is attached hereto as Exhibit D. See, also, “The Complete Guide to Live Streaming” article published by

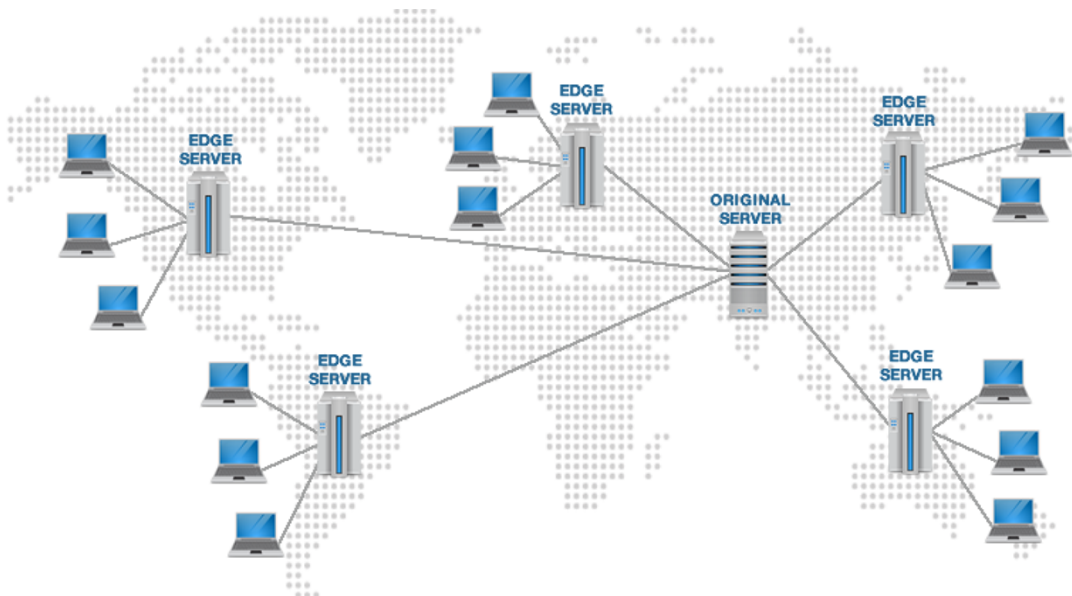
35. Rumble's use of HLS demonstrates that it stores video files as chunks on its server network which may be accessed for isochronous delivery (and viewing) by users through its Rumble Player.

36. Additionally, at a minimum and as an example only, Rumble advertises its affiliation with Verizon's Edgecast CDN for video storage at its inception.⁸ Edgecast provides cloud-based content storage and analytics which is based on the Hadoop Apache framework.⁹ CDNs provide content through replication of media content (i.e., duplicate storage) across its network to provide for low latency delivery to users at different locations. CDNs typically implement a Hadoop-type storage architecture for handling large files.

KeyCDN on April 4, 2022, at URL <https://www.keycdn.com/support/live-streaming>, attached hereto as Exhibit E.

⁸ See article available at URL <https://edgecast.medium.com/rumble-and-verizon-digital-media-services-from-2m-to-250m-streams-in-3-years-f9158f7d537f>, attached hereto as Exhibit F.

⁹ See article available at URL <https://www.verizon.com/about/news/verizon-adds-cloudera%E2%80%99s-cloud-based-big-data-analytics-solution-verizon-cloud-ecosystem>, attached hereto as Exhibit G.

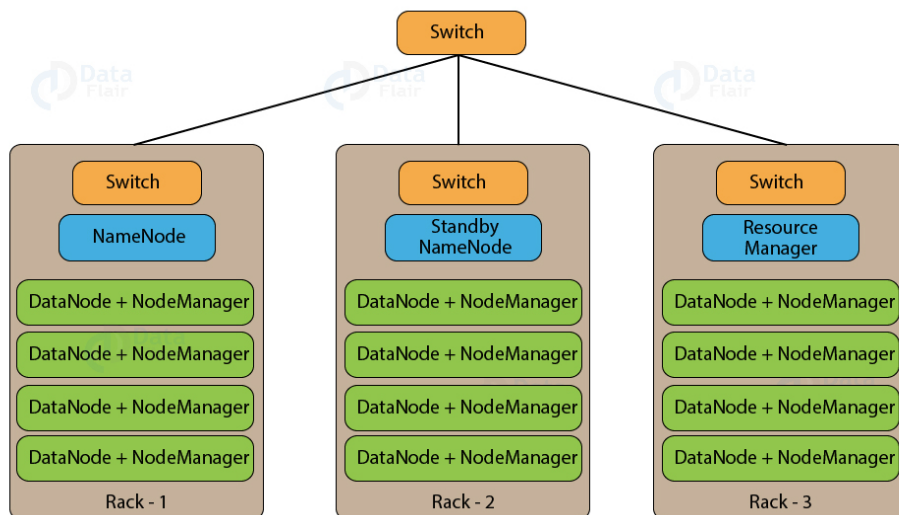


CDN in a nutshell (CDN Reviews/cdnreviews.com)

37. The Hadoop framework, used by Edgecast, stores files as blocks on many nodes to accommodate faster processing, the ability to service many simultaneous requests for the same file, fault tolerance, and low latency delivery of content.^{10, 11}

¹⁰ See article at URL <https://www.alluxio.io/learn/hdfs/>, attached hereto as Exhibit H.

¹¹ See article at URL <https://www.analyticsvidhya.com/blog/2020/10/hadoop-distributed-file-system-hdfs-architecture-a-guide-to-hdfs-for-every-data-engineer/>, attached hereto as Exhibit I.



Exemplary Hadoop Server Architecture¹²

38. This storage and delivery architecture comprises several racks of storage locations (DataNodes) managed by a NameNode processor within a Rack. Racks are connected to one another by a switch, to which a Resource Manager (not shown) connects for coordinating processing among the Racks.

39. This architecture is well-suited for OVPs, like Rumble, to store and retrieve large video files in chunks for simultaneous VOD and livestreaming delivery to many subscribers. It is implemented by Edgecast and other prominent CDNs. Upon information and belief, therefore, Rumble's backend server network comprises the architecture and

¹² See article available at URL <https://data-flair.training/blogs/hadoop-architecture/>, attached hereto as Exhibit J.

functionality shown, which is compatible with the upload/download network processes observed during use of the Rumble Player.

40. Rumble has had actual knowledge of the existence of the Asserted Patents and of ICE's claims of infringement presented herein since at least September 24, 2021. On that date, ICE sent a letter to Rumble's headquarters, addressed to its CEO, directly apprising Rumble of ICE's infringement allegations consistent with those presented in this Complaint. A copy of each of the ICE Patents was included with that correspondence as well as specific discussion of Rumble's infringing conduct. Rumble did not respond to that letter. A second letter was sent to Rumble on November 1, 2021, that was also ignored. Rumble chose not to respond to ICE nor to address ICE's allegations of infringement. Instead, Rumble continued to willfully infringe ICE's patent rights, as it still does today.

COUNT I
PATENT INFRINGEMENT
U.S. Patent No. 7,437,472 B2

41. ICE repeats and re-alleges paragraphs 1-40 of this Complaint, as though fully set forth herein.

42. On October 14, 2008, U. S. Patent No. 7,437,472 B2 ("the '472 Patent") entitled "Interactive Broadband Server System" was duly and legally issued. As of the filing of this Complaint, the '472 Patent remains in

full effect. A true and correct copy of the '472 Patent is attached hereto as Exhibit A and made a part hereof.

43. ICE is the owner of all right and title in the '472 Patent, including all rights to enforce and prosecute action for infringement of the '472 Patent and to collect damages for all relevant times against infringers of the '472 Patent. Accordingly, ICE possesses the exclusive right and standing to prosecute the present action for infringement of the '472 Patent by Rumble.

44. Independent Claim 1 of the '472 Patent, and each dependent claim depending therefrom, are directed to an “interactive broadband server system.” The interactive broadband servers comprise a plurality of processors communicatively coupled to one another via a switch. The processors are configured to interface with a plurality of storage devices for storing titles as a collection of chunks distributed across the storage devices. The processors are operable to retrieve and assemble chunks of a title from the storage locations for delivery to a requesting subscriber.

45. Rumble, without authority, consent, right, or license, and in direct infringement of the '472 Patent, makes, has made, uses, and sells the Accused Products which infringe at least claim 1 of the '472 Patent, among others, as shown above.

46. More specifically, Rumble operates a backend server system comprising a plurality of processors interfacing with one another over a switch. The respective processors are communicatively coupled to interface with storage locations on which “chunks” comprising portions of user uploaded video files (or “titles”) are stored. Rumble’s network includes additional processors and servers that coordinate the upload of hosted user content to its network as a series of file chunks stored at distinct, independently accessible storage locations. These processors generate and maintain index files identifying the storage locations (by URL address, for example) for “chunks” comprising a video. For example, URL addresses of “chunk” locations are maintained in .m3u8 files by one or more processors on Rumble’s server network for HLS streaming.

47. When an end user selects media content for viewing through the Rumble Player, the Player communicates with Rumble’s backend server network over the Internet. Communications may be directed through an intermediary server, which may be an NGINX server, providing a reverse proxy connection between Rumble Player clients with Rumble’s backend server network. The intermediary server may also perform load balancing functionality to assign content delivery tasks to selected processors on Rumble’s backend network.

48. Directory files are communicated back to the Rumble Player. The Rumble Player then initiates a series of “GET” requests to access storage locations for each “chunk” listed in one or more of the directory files. Processors on Rumble’s backend gather and transmit a chunk (which may be a .ts file) in response to each GET request. The Rumble Player retrieves and plays (or locally caches) the chunk files in the appropriate sequence, based on information transmitted to it in responses to GET requests sent.

49. ICE expressly reserves the right to assert additional claims of the ‘472 Patent against Rumble’s products and services.

50. ICE has been damaged by Rumble’s infringing conduct. ICE is entitled to an award of damages in an amount that adequately compensates for such infringement, which, by law, cannot be less than a reasonable royalty plus interest and costs under 35 U.S.C. § 284.

51. Rumble has had actual knowledge of the existence of the ‘472 Patent since at least September 24, 2021, when it received correspondence from ICE detailing the infringement allegations made herein and enclosing a copy of the ‘472 Patent. Rumble’s infringement of the ‘472 Patent has been willful since at least that time. ICE is therefore additionally entitled to enhanced damages under 35 U.S.C. § 284.

COUNT II
PATENT INFRINGEMENT
U.S. Patent No. 7,644,136 B2

52. ICE repeats and re-alleges paragraphs 1-40 of this Complaint, as though fully set forth herein.

53. On January 5, 2010, U. S. Patent No. 7,644,136 B2 (“the ‘136 Patent”) entitled “Virtual File System” was duly and legally issued. As of the filing of this Complaint, the ‘136 Patent remains in full effect. A true and correct copy of the ‘136 Patent is attached hereto as Exhibit B and made a part hereof.

54. ICE is the owner of all right and title in the ‘136 Patent, including all rights to enforce and prosecute action for infringement of the ‘136 Patent and to collect damages for all relevant times against infringers of the ‘136 Patent. Accordingly, ICE possesses the exclusive right and standing to prosecute the present action for infringement of the ‘136 Patent by Rumble.

55. Independent Claim 1 of the ‘136 Patent and each dependent claim depending therefrom are directed to a virtual file system comprising a plurality of storage processor nodes, each comprising a processor and a plurality of disk drives coupled thereto. The storage processor nodes are communicatively coupled to one another via a switch. Titles are stored as a

series of sub-chunks distributed across the disk drive array made up of the plurality of disk drives. Storage processor nodes are managed by a management node coupled to the switch. The management node maintains directory entries comprising lists of sub-chunk locations within the disk drive array.

56. Rumble, without authority, consent, right, or license, and in direct infringement of the '136 Patent, makes, has made, uses, and sells the Accused Products which infringe at least claim 1 of the '136 Patent, among others, as described in the preceding paragraphs of this Complaint.

57. Specifically, Rumble operates its backend server network for storing user uploaded video content for on-demand and live streaming delivery to Rumble's end users via the Rumble Player. Uploaded video content is stored as distinct chunks (or sub-chunks) at unique storage locations in a manner compliant with HLS protocols for subsequent delivery to end users. Processors on Rumble's server network are operable store and retrieve chunks (or sub-chunks) at locations within an array of memory locations to which they are communicatively coupled.

58. The Rumble Player is operable by end users to access the Rumble backend server network over the Internet. To play a video thereon, the Rumble Player communicates through intermediary servers interfacing it

with Rumble's backend network. One or more directory lists are communicated from Rumble's backend network to the Rumble Player. The directory lists comprise identifications of storage locations for individual chunks and sub-chunks comprising a portion of the selected video.

59. Chunks and sub-chunks are created during video upload (or ingest) to Rumble's server network. Video files are encoded and segmented during upload in a manner permitting dynamic HLS streaming of it by end users. Chunks and sub-chunks are then distributed for duplicate storage at additional storage arrays within the Rumble network to allow for greater availability for concurrent viewing by end users. Directory lists of URL addresses corresponding to the respective storage locations at which chunks and sub-chunks are stored are generated and maintained by processors on Rumble's backend network.

60. ICE expressly reserves the right to assert additional claims of the '136 Patent against Rumble's products and services.

61. ICE has been damaged by Rumble's infringing conduct. ICE is entitled to an award of damages in an amount that adequately compensates for such infringement, which, by law, cannot be less than a reasonable royalty plus interest and costs under 35 U.S.C. § 284.

62. Rumble has had actual knowledge of the existence of the ‘136 Patent since at least September 24, 2021, when it received correspondence from ICE detailing the infringement allegations made herein and enclosing a copy of the ‘136 Patent. Rumble’s infringement of the ‘136 Patent has been willful since at least that time. As such, ICE is additionally entitled to enhanced damages under 35 U.S.C. § 284.

VI. JURY DEMAND

63. Plaintiff hereby requests a trial by jury pursuant to Rule 38 of the Federal Rules of Civil Procedure.

VII. PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that the Court find in its favor and against Defendants, and that the Court grant Plaintiff the following relief:

- a. Judgment that one or more claims of the Asserted Patents have been directly infringed, either literally or under the doctrine of equivalents, by Defendants;
- b. Judgment that Defendants account for and pay to Plaintiff all damages to and costs incurred by Plaintiff because of Defendants’ infringing activities and other conduct complained

of herein, including enhanced damages as permitted by 35 U.S.C. § 284;

- c. Judgement that Defendants' infringement has been willful from the time Defendants were made aware of the infringing nature of their products and services and that the Court award treble damages for the period of such willful infringement pursuant to 35 U.S.C. § 284;
- d. That Plaintiff be granted pre-judgment and post-judgment interest on the damages caused by Defendants' infringing activities and other conduct complained of herein;
- d. That the Court declare this an exceptional case and award Plaintiff its reasonable attorney's fees and costs in accordance with 35 U.S.C. § 285; and
- e. That Defendants, its officers, agents, servants and employees, and those persons in active concert and participation with any of them, be permanently enjoined from infringement of one or more claims of the Asserted Patents or, in the alternative, if the Court finds that an injunction is not warranted, Plaintiff requests an award of post judgment royalty to compensate for future infringement;

- g. That Plaintiff be granted such other and further relief as the Court may deem just and proper under the circumstances.

Dated: August 24, 2022

Respectfully submitted,

s/ Joel B. Rothman

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