UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC, SAMSUNG ELECTRONICS AMERICA, INC., AND SAMSUNG ELECTRONICS CO., LTD.,

Petitioners,

v.

TRUESIGHT COMMUNICATIONS LLC,

Patent Owner.

Case No. IPR2025-00024
U.S. Patent No. 9,595,300

PETITION FOR *INTER PARTES* REVIEW

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5. 15[d] [a chapter presentation module, configured to:] present, during continuous playback of a video, an on-screen display on the video screen, the on-screen display including a timeline having a demarcation for the beginning of each of the plurality of chapters of the video and having a marker corresponding to a current position in the video playback, the timeline assembled from the chapter titles, the chapter start times, and the location on the SD card of chapter preview images that correspond to the playable content stored as part of the metadata, and the on-screen display including one image for each of the plurality of chapters from the chapter preview images displayed in sequential order parallel to the timeline, wherein a focus identifier marks an image of a chapter corresponding to the current position within the continuous video playback;.....84

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LIST OF EXHIBITS

Exhibit	Description
EX1001	U.S. Patent No. 9,595,300 ("the '300 Patent")
EX1002	File History of U.S. Patent No. 9,595,300
EX1003	Expert Declaration of Henry Houh, Ph.D. ("Houh")
EX1004	Curriculum Vitae of Henry Houh, Ph.D.
EX1005	U.S. Patent Application Publication No. 2006/0080716 to Nishikawa et al. ("Nishikawa")
EX1006	U.S. Patent Application Publication No. 2008/0155617 to Angiolillo et al. ("Angiolillo")
EX1007	U.S. Patent Application Publication No. 2008/0141160 to Vahtola ("Vahtola")
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EX1011	First Amended Docket Control Order from *Truesight Communications LLC v. Samsung Electronics Co. et al.*, No. 2:23-cv-00643 (E.D. Tex. Jun. 28, 2024)
EX1012	U.S. Patent No. 5,579,055 to Hamilton et al.
EX1013	U.S. Patent Application Publication No. 2007/0098085 to Shih

Exhibit	Description
EX1014	Microsoft Press Computer Dictionary (3d. ed.) (1997) (excerpts)
EX1015	U.S. Patent No. 7,624,417 to Dua
EX1016	Annual Assessment of the Status of Competition in Markets for the Delivery in Video Programming, Federal Communications Commission, published in the Federal Register, Vol. 656, No. 158, 49804-48907 (Aug. 15, 2000)
EX1017	U.S. Patent No. 8,549,553 to Barton et al.
EX1018	U.S. Patent Application Publication No. 2009/0248981 to Okabayashi et al.
EX1019	SD Association Press Release, "SDXC SIGNALS NEW GENERATION OF REMOVABLE MEMORY WITH UP TO 2 TERABYTES OF STORAGE"
EX1020	SD Association Website, "Benefits of SD Memory Card" (retrieved via The Wayback Machine)
EX1021	U.S. Patent Application Publication No. 2009/0240955 to Chow et al.
EX1022	International Publication No. WO2008/021594 to Shen et al.
EX1023	U.S. Patent Application Publication No. 2006/0010500 to Elazar et al.

CLAIMS APPENDIX

Claim 1	
1[pre]	A method for navigating a plurality of chapters of video content within a video, the method comprising:
1[a]	reading from a metadata file stored with the video chapter titles, chapter start times, and location on a secure digital card (SD card) of chapter preview images that correspond to the playable content as initially configured and stored on the secure digital card, each chapter comprising a segment of content of the video;
1[b]	presenting, during continuous playback of a video, an on-screen display to a user, the on-screen display including a timeline having a demarcation for the beginning of each of the plurality of chapters of the video and having a marker corresponding to a current position in the video playback, the timeline assembled from the chapter titles, the chapter start times, and the location on the secure digital card of chapter preview images that correspond to the playable content stored as part of the metadata, and the on-screen display including one image for each of the plurality of chapters from the chapter preview images displayed in sequential order parallel to the timeline, wherein a focus identifier marks an image of a chapter corresponding to the current position within the continuous video playback;
1[c]	receiving a selection of one of the chapter preview images as chapter skip input during the continuous playback of the video;
1[d]	moving the at least one image from each chapter one position along the line with respect to the focus identifier, according to the chapter skip input, wherein the one image is moved to the left when the chapter skip input indicates a skip forward and wherein the one image is moved to the right when the chapter skip input indicates a skip backward; and
1[e]	skipping playback of the video to a chapter identified by the focus identifier such that the video playback continues from the position of the chapter identified by the focus identifier.
Claim 2	The method of claim 1, wherein the on-screen display includes a video preview from at least one of the plurality of chapters of the video that is displayed in order in the line with the rest of the at least one images from the rest of the plurality of chapters.

Claim 3	The method of claim 1, wherein the video comprises secured media content on a flash memory device.
Claim 4	The method of claim 3, further comprising: initiating playback of the video from the flash memory device; reading metadata from the flash memory device; matching the read metadata from the flash memory device with the video; and assembling the video and the metadata in a memory structure to retrieve for playback and display.
Claim 5	The method of claim 1, wherein the metadata comprises chapter titles, chapter start times and location on the flash memory device.
Claim 6	The method of claim 1 wherein the timeline and the one image from each of the plurality of chapters displayed in order in a line are displayed vertically.
Claim 7	The method of claim 1 wherein the timeline and the one image from each of the plurality of chapters displayed in order in a line are displayed as an overlay in the foreground during the continuous playback of the video.
Claim 8	
8[pre]	A non-transitory computer readable medium storing instructions thereon, the instructions when executed causing at least one processor to:
8[a]	read from a metadata file associated with and stored with a video chapter titles, chapter start times, and location on a secure digital card (SD card) of chapter preview images that correspond to the playable content as initially configured and stored on the secure digital card, each chapter comprising a segment of content of the video;
8[b]	present, during continuous playback of a video, an on-screen display to a user, the on-screen display including a timeline having a demarcation for the beginning of each of the plurality of chapter[s] of the video and having a marker corresponding to a current position in the video playback, the timeline assembled from the chapter titles, the chapter start times, and the location on the SD card of chapter preview images that correspond to the playable content stored as part of the metadata, and the on-screen display including one image for each of the plurality of chapters from the chapter preview images displayed in sequential order parallel to the timeline, wherein a focus identifier marks an image

	of a chapter corresponding to the current position within the continuous video playback;
8[c]	receive a selection of one of the chapter preview images as chapter skip input during the continuous playback of the video;
8[d]	move the at least one image from each chapter one position along the line with respect to the focus identifier, according to the chapter skip input, wherein the one image is moved to the left when the chapter skip input indicates a skip forward and wherein the one image is moved to the right when the chapter skip input indicates a skip backward; and
8[e]	skipping [*sic*] playback of the video to a chapter identified by the focus identifier such that the video playback continues from the position of the chapter identified by the focus identifier.
Claim 9	The computer readable computer medium of claim 8, wherein the on-screen display includes a video preview from at least one of the plurality of chapters of the video that is displayed in order in the line with the rest of the at least one images from the rest of the plurality of chapters.
Claim 10	The computer readable computer medium of claim 8, wherein the video comprises secured media content on a flash memory device.
Claim 11	The computer readable computer medium of claim 10, further comprising instructions that cause the at least one processor to: initiate playback of the video from the flash memory device; read metadata from the flash memory device; match the read metadata from the flash memory device with the video; and assemble the video and the metadata in a memory structure to retrieve for playback.
Claim 12	The computer readable computer medium of claim 8, wherein the metadata comprises chapter titles, chapter start times and location on the flash memory device.
Claim 13	The computer readable medium of claim 8 wherein the timeline and the at least one image from each of the plurality of chapters displayed in order in a line are displayed vertically.
Claim 14	The computer readable medium of claim 8 wherein the timeline and the at least one image from each of the plurality of chapters displayed in order in a line are displayed as an overlay in the foreground during the continuous playback of the video.

Claim 15	
15[pre]	An apparatus for navigating a plurality of chapters of video content within a video, the apparatus comprising:
15[a]	a video screen; and
15[b]	a processor, the processor configured to execute:
15[c]	a chapter presentation module, configured to: read from a metadata file associated with and stored with the video chapter titles, chapter start times, and location on a secure digital card (SD card) of chapter preview images that correspond to the playable content as initially configured and stored on the secure digital card, each chapter comprising a segment of content of the video; and
15[d]	present, during continuous playback of a video, an on-screen display on the video screen, the on-screen display including a timeline having a demarcation for the beginning of each of the plurality of chapters of the video and having a marker corresponding to a current position in the video playback, the timeline assembled from the chapter titles, the chapter start times, and the location on the SD card of chapter preview images that correspond to the playable content stored as part of the metadata, and the on-screen display including one image for each of the plurality of chapters from the chapter preview images displayed in sequential order parallel to the timeline, wherein a focus identifier marks an image of a chapter corresponding to the current position within the continuous video playback;
15[e]	a receive module configured to receive a selection of one of the chapter preview images as chapter skip input during the continuous playback of the video;
Claim 16	The apparatus of claim 15, wherein the on-screen display includes a video preview from at least one of the plurality of chapters of the video that is displayed in order in the line with the rest of the at least one images from the rest of the plurality of chapters.
Claim 17	The apparatus of claim 15, further comprising a secured digital memory device interface, the secured digital memory device interface for receiving a secured media memory device having the video.
Claim 18	The apparatus of claim 17, wherein the processor is further configured to execute: a playback module for initiating playback of the video from the secured digital memory device; a reading

	module for reading metadata from the secured digital memory device; a match module for matching the read metadata from the secured digital memory device with the video; and an assembly module for assembling the video and the metadata in a memory structure to retrieve for playback and display.
Claim 19	The apparatus of claim 15, wherein the metadata comprises chapter titles, chapter start times and location on the flash memory device.
Claim 20	The apparatus of claim 15 wherein the timeline and the one image from each of the plurality of chapters displayed in order in a line are displayed vertically on the video screen.

I. INTRODUCTION

The '300 patent describes an on-screen display for navigating chapters of video content. As Figure 3B illustrates, the display includes titles, start times, and preview images for chapters arranged along a timeline, and it enables the user to skip to a chapter by selecting the image for that chapter. The display is overlayed during playback of video content.

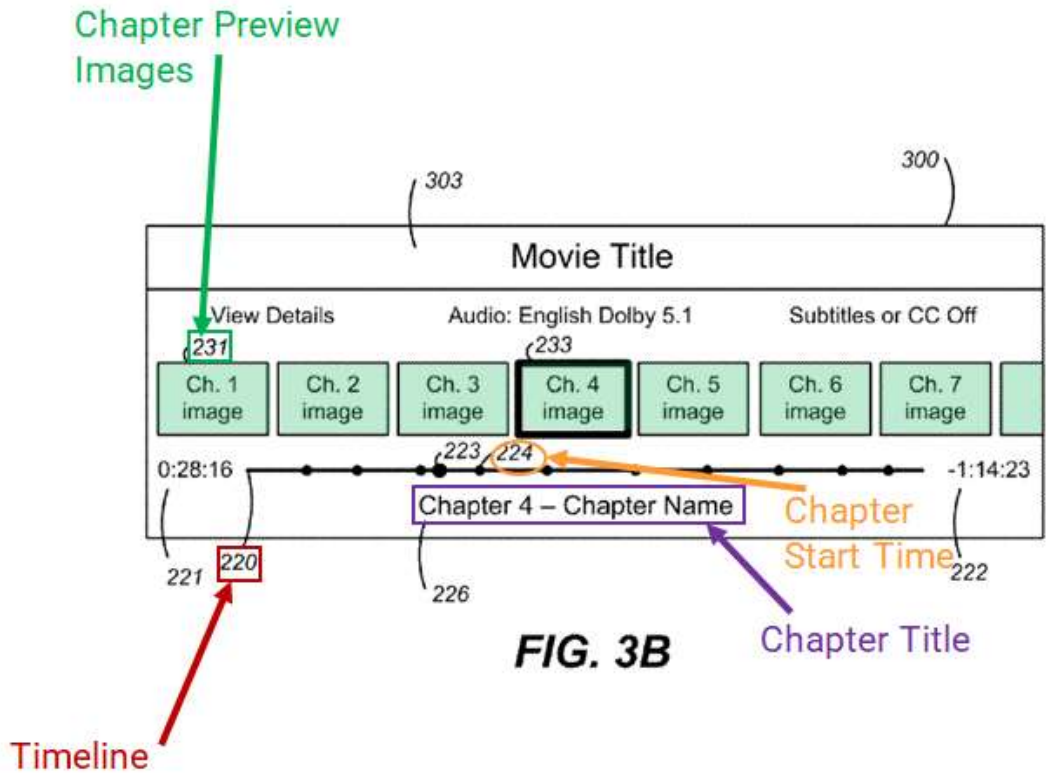
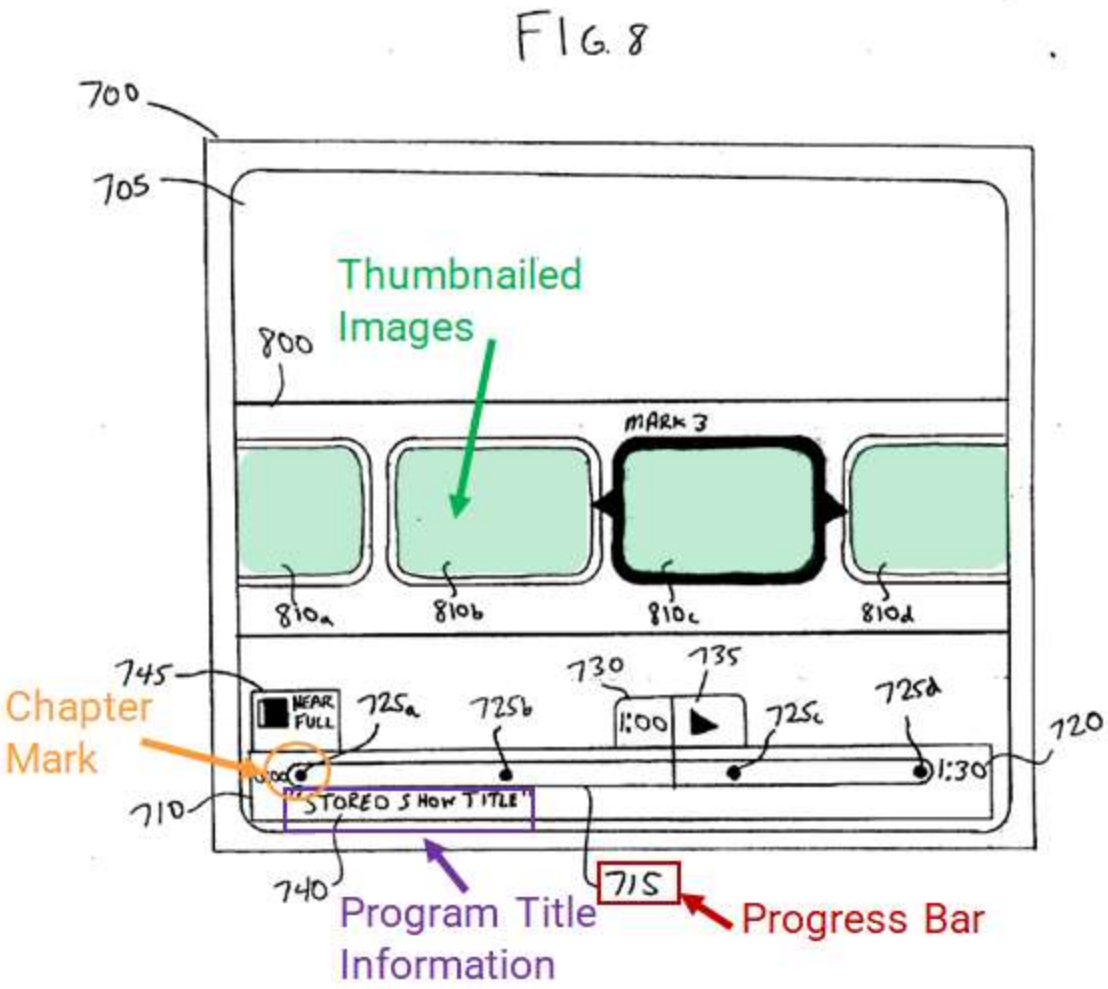


FIG. 3B

'300 Patent, Fig. 3B (annotated).

Nothing about the '300 patent's display was new. Nishikawa, the primary reference in this petition, discloses a display called a "status bar," illustrated in Figure 8. Like the '300 patent's display, Nishikawa's status bar includes program

title information, chapter marks, and thumbnailed images for chapters arranged along a progress bar, and it enables the user to skip to a chapter by selecting the image for that chapter. Nishikawa's status bar, like the display in the '300 patent, is overlayed onto video content being displayed.



Nishikawa, Fig. 8 (annotated).

During prosecution, the applicant argued the claims were allowable based on three features, all of which are disclosed in the prior art references relied on here.

See infra Section III.B. First, the applicant argued that the prior art did not disclose that the playable video content was "as initially configured and stored on [a] secure digital [SD] card" because the prior art allegedly reformulated the video by removing advertising from it. The references here, which do not remove advertising, disclose this feature. Second, the applicant argued that the prior art did not disclose presenting a user interface while continuously playing back the video, but the references here disclose this. Third, the applicant argued that the prior art did not disclose preview images that moved along the timeline in the user interface. This too is disclosed by the prior art here. Indeed, the references disclose each feature recited in the '300 patent claims. Petitioners therefore request that the Board institute review and find claims 1-20 unpatentable.

II. PRECISE RELIEF REQUESTED

Google LLC, Samsung Electronics America, Inc., and Samsung Electronics Co., Ltd. (collectively, "Petitioners"), request review under 35 U.S.C. § 311 of claims 1-20 ("challenged claims") of U.S. Patent No. 9,595,300 ("'300 patent") and cancellation of the challenged claims under pre-AIA 35 U.S.C. § 103 based on the following prior art references and unpatentability grounds:

Grounds	Claims	Basis	Prior Art
1	1-20	§ 103	Nishikawa, Angiolillo, and Vahtola
2	1-20	§ 103	Nishikawa, Angiolillo, Vahtola, and Ackley

III. BACKGROUND

A. The '300 Patent

The '300 patent describes "[a] system and a method" for "navigating the playback of digital content" using an "on-screen display." '300 Patent, Abstract, 1:14-15. The content is "delineat[ed]" into "chapters." *Id.*, 2:28-32. Using the on-screen display, a user can, "during playback … of content … access a chapter selection feature that presents a preview image from each chapter of a video along with a timeline representing the video, and an indication on the timeline of where the chapters fall along the timeline." *Id.*, 2:32-37.

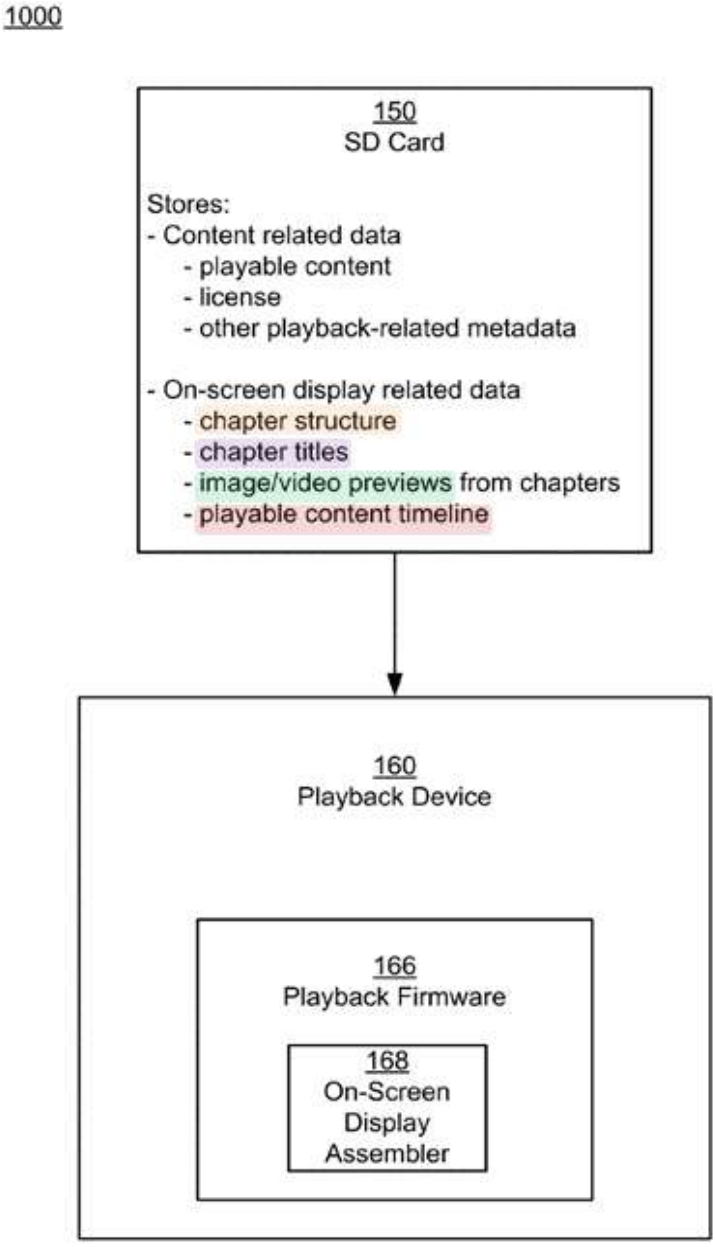


FIG. 1A

'300 Patent, Fig. 1A (annotated).

As Figure 1A shows, the content is stored on a secure digital ("SD") card along with "metadata." '300 Patent, 2:60-3:15, 4:63-64, 5:62-67. The metadata

includes "on-screen display related data," such as "chapter titles, chapter start times, and the location on the SD card of chapter preview images that correspond to the playable content," as well as a "timeline of the playable content," as shown. *Id.*, 3:7-15, 7:24-27. This metadata is used to "assemble[] the chapter structure, the chapter titles, the image/video previews, and the playable content timeline into an on-screen display," such as that illustrated in Figure 3B. *Id.*, 3:7-15.

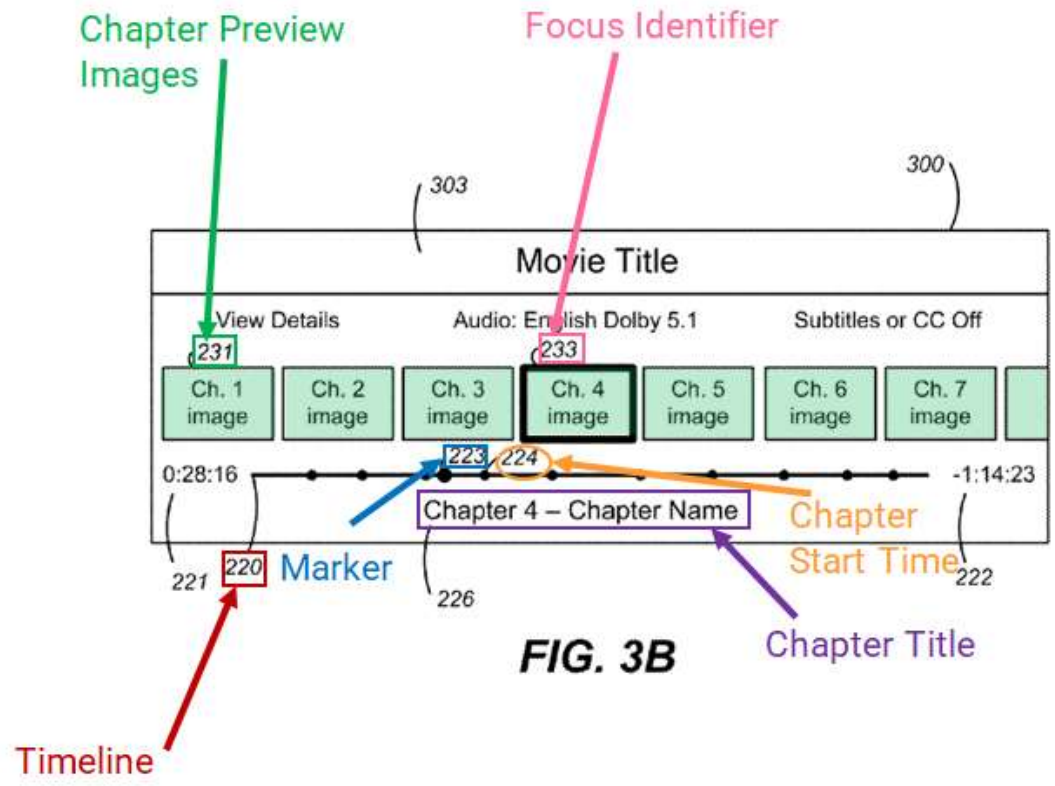


FIG. 3B

'300 Patent, Fig. 3B (annotated).

As shown, the on-screen display includes "demarcations of the beginnings of chapters 224," a "title of the current chapter 226," and "chapter images 231," as indicated by the chapter structure, chapter titles, and image previews in the

metadata. ’300 Patent, 5:36-53. Further, the on-screen display includes a “timeline 220”; a “marker 223 to indicate the current position within the video playback”; and “focus identifier,” shown as “[a]n outline frame 233” that “highlights the chapter image for the chapter corresponding to the current position within the video playback.” *Id*., 5:41-6:6. The ’300 patent explains that “[t]he on-screen display can be presented as an overlay on the playable content,” while “the content continues to play in the background.” *Id*., 3:8-11, 5:3-6, 6:20-22.

Once the on-screen display is displayed, a user may “navigate between chapters of the video playback.” ’300 Patent, 7:49-52. As the ’300 patent explains, if “the user presses a control key such as skip, fast forward, or rewind, the on-screen display updates to show the correct chapter highlighted, the position on the timeline, and the chapter title.” *Id*., 7:46-49. “[F]or example, when a user selects to skip forward by a chapter from the current position shown in FIG. 3B, the chapter images 231 each slide one position to the left,” such that the image corresponding to Chapter 4 is no longer in the focus identifier and the image corresponding to Chapter 5 now is. *Id*., 6:62-7:3; *see also id.*, 9:13-29.

B. Prosecution History

During prosecution, the independent claims were amended multiple times to achieve their current form, including by the applicant before allowance, EX1002 at 100-09, 145-56, 167-79, by the examiner at allowance, *id.* at 214-28, and again by

the applicant after allowance, *id.* at 264-71. The '300 patent is also subject to a certificate of correction. *Id.* at 290.

None of the references used in the petitioned grounds were before the examiner. '300 Patent, cover and page 2. Instead, the examiner relied on two prior art references, Ekstrand and Cha, to reject the claims. EX1002 at 85-91, 123-34, 193-95. The applicant made three primary arguments in response to the examiner's rejections. The prior art references in this petition teach each of the three features on which the applicant relied during prosecution.

First, the applicant repeatedly distinguished Ekstrand by arguing that "Ekstrand derives chapters of the video content by reformulating the video content to remove advertising which has been previously inserted at various intervals," while in the claims "the video as originally stored can be continuously played back while presenting the on-screen display for skipping chapters of video content." EX1002 at 106-07, 152-54, 175-77. Unlike Ekstrand, the references relied on in the petition do not reformulate the video content. Rather, like the claims, the references use the video as originally stored. *See infra* Section VII.C.2.b.

Second, the applicant distinguished Ekstrand by arguing that it does not disclose "presenting [its] user interface while continuously playing back the video," EX1002 at 108, or "that the video is continuously played back while the timeline is being navigated by the user," *id.* at 154, 177-78. The references relied

on in the petition, including at least Nishikawa and Ackley, disclose presenting and receiving input via the user interface during continuous playback of the video. *See infra* Section VII.C.3.

Third, the applicant argued that Ekstrand does not describe that its images are moved along the timeline in the user interface. EX1002 at 108, 155, 178. The references relied on in the petition teach moving the images along the timeline in the user interface based on the chapter skip input. *See infra* Section VII.C.5.

IV. OVERVIEW OF PRIOR ART

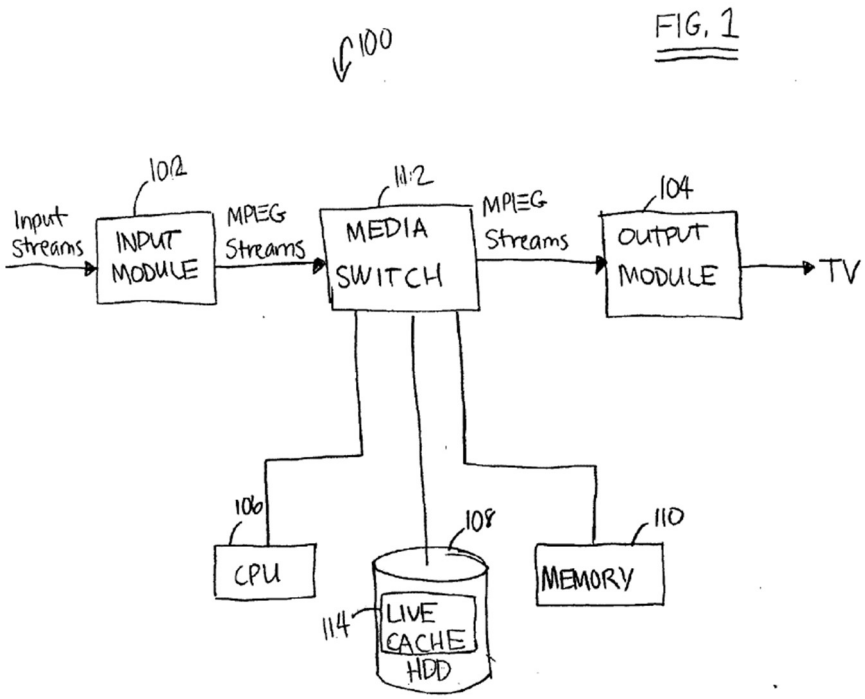
Nishikawa, Angiolillo, Vahtola, and Ackley are all analogous art to the '300 patent because each is "from the same field of endeavor," video playback, and is reasonably pertinent to "one of the particular problems dealt with by the inventor," such as improving navigation during video playback. *Compare* '300 Patent, Abstract *with* Nishikawa, Abstract; Angiolillo, [0038]; Vahtola, [0034]; Ackley, Abstract; Houh, ¶44; *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1000-01 (Fed. Cir. 2016).

A. Nishikawa

Nishikawa, filed March 15, 2005, and published April 13, 2006, is prior art to the '300 patent at least under pre-AIA 35 U.S.C. §§ 102(a), (b), (e).

Nishikawa describes "[m]ethods and apparatus for navigating video content" using "chapter marks" (which Nishikawa also calls "bookmarks"). Nishikawa,

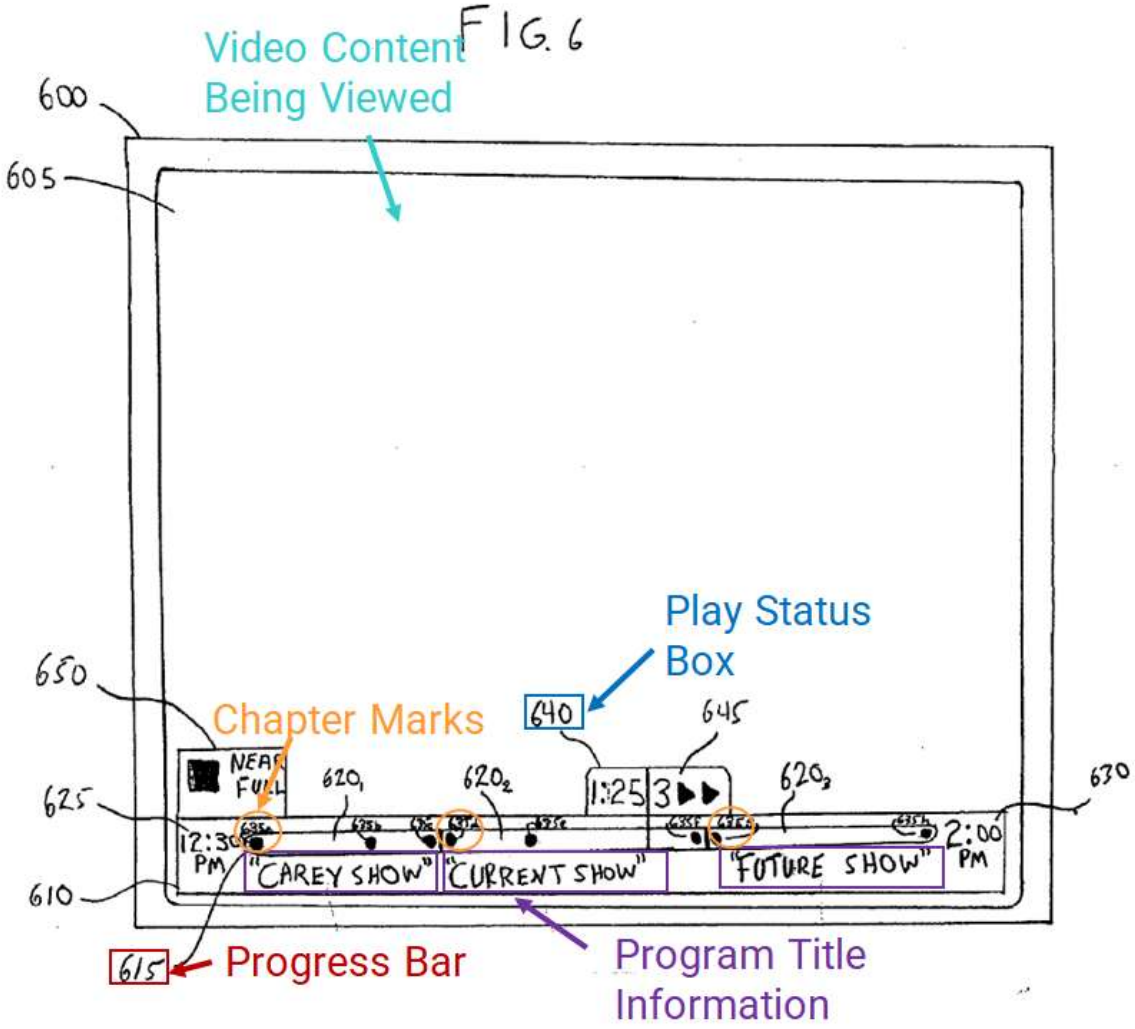
[0007], [0017]. Nishikawa's Figure 1 shows an example "DVR system" that includes a "hard disk or other storage device 108," onto which content (e.g., broadcast content received as an input stream) may be written. *Id*., [0022].



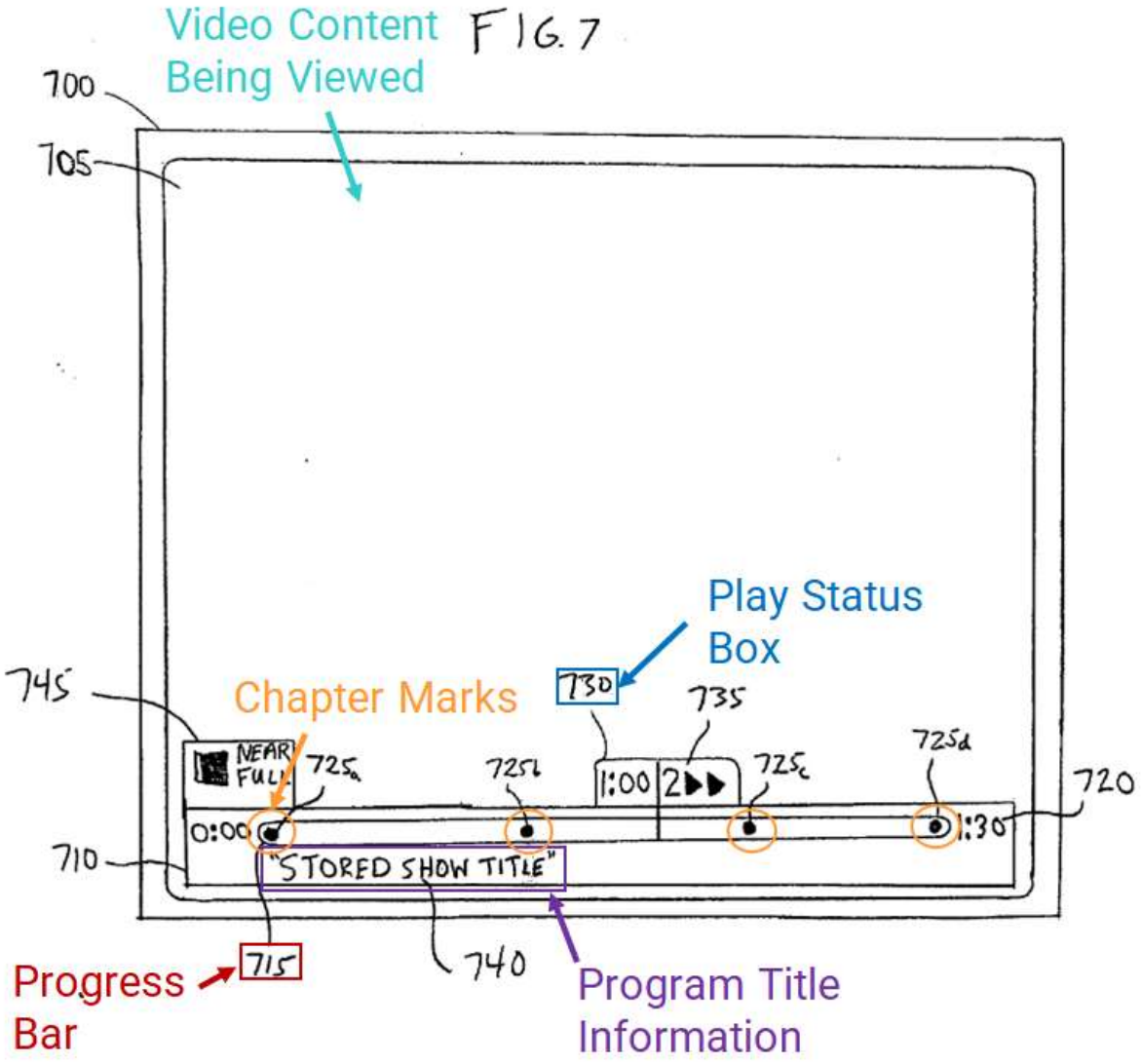
Nishikawa, Fig. 1.

Nishikawa explains that, while watching content, "a user may input a control instruction to display a DVR status bar," such as that illustrated in Figures 6-8. Nishikawa, [0027]. The status bar is overlaid on the video content being displayed. *Id*., [0023], [0031], [0035], [0041]. As shown, Nishikawa's status bar includes a "progress bar" (615, 715) that "is a graphical representation of the … video content." *Id*., [0036], [0042]. The status bar further includes "chapter marks"

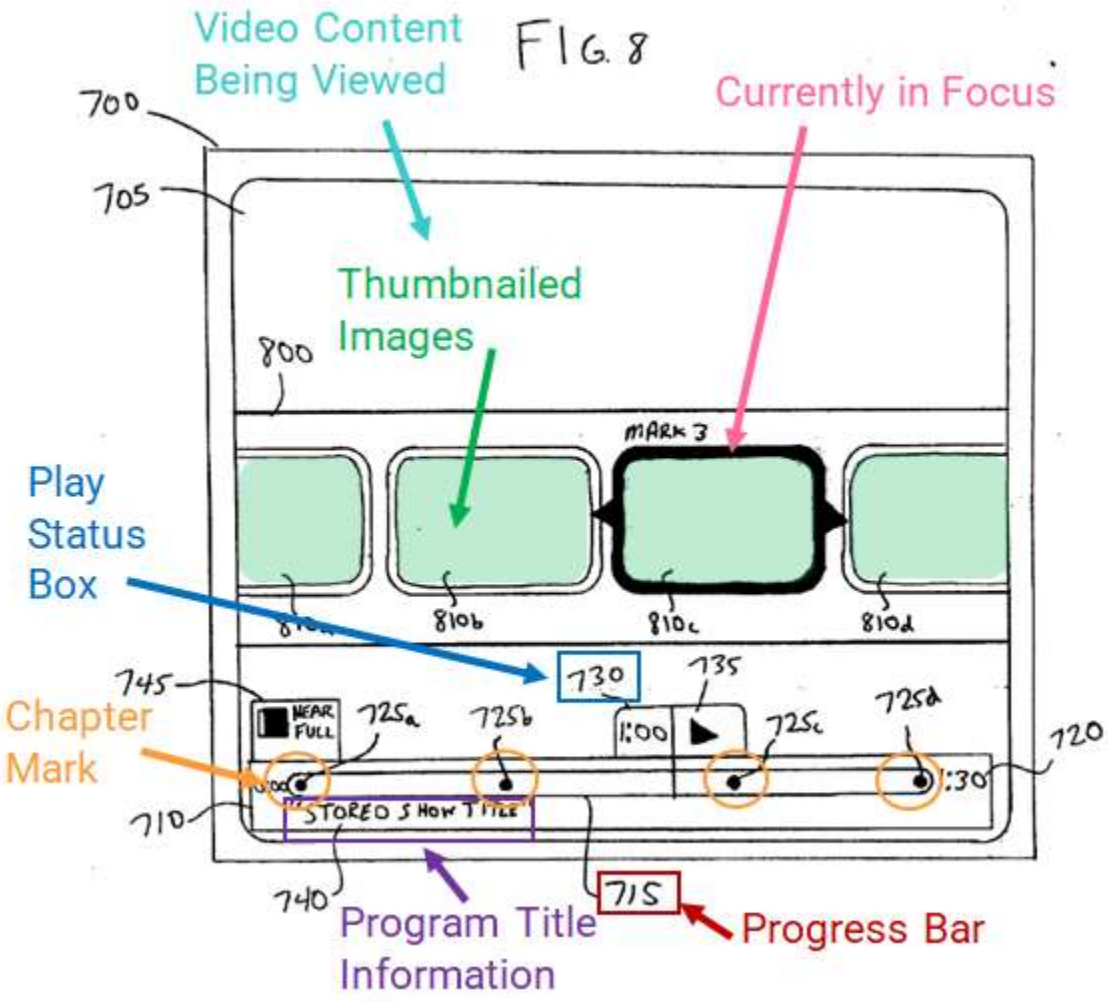
(635_a-635_h and 725_a-725_d) that "denote the beginning … of each segment/program" in the video content. *Id*., [0038], [0043]. A "play status box" (640, 730) is "used to show the current viewing position" in the video content, and "program title information" is shown "for the stored video content." *Id*., [0040], [0043]-[0044]. As Figure 8 shows, Nishikawa's status bar also displays "thumbnailed images which correspond to the chapter marks[.]" *Id*., [0045]. One thumbnailed image may be "currently in focus," as Figure 8 shows. *Id*., [0046]. Nishikawa also describes "a meta-data file," stored with the video content, that "contains the marker information" used in the status bar. *Id*., [0030].



Nishikawa, Fig. 6 (annotated).



Nishikawa, Fig. 7 (annotated).



Nishikawa, Fig. 8 (annotated).

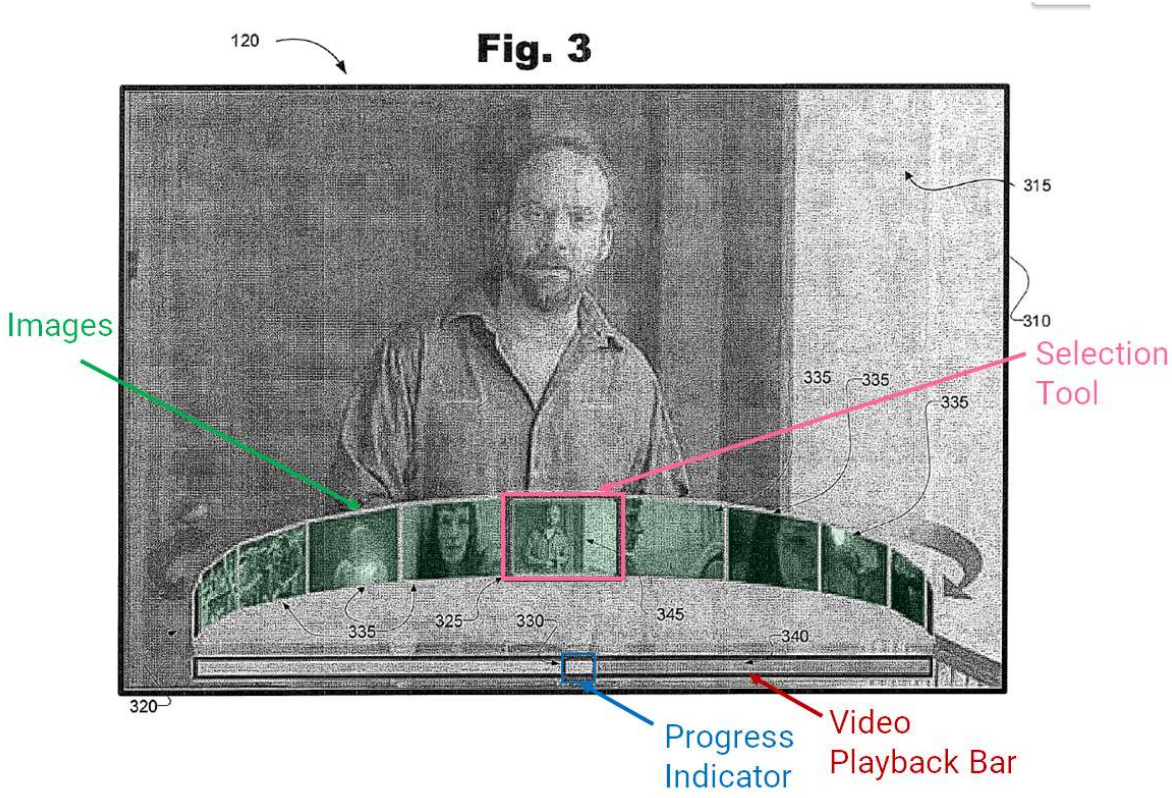
Nishikawa teaches that "the status bar is displayed as an overlay onto the video content being viewed" during playback. Nishikawa, [0031]; *see also id.*, [0023], [0035], [0041]. As shown, "the thumbnailed images may be displayed in a sequence organized from left to right" along the progress bar. *Id.*, [0033]; *see also id.*, [0046]. Nishikawa explains that the "user may … scroll through the thumbnails, and hence the bookmarks, and select to begin viewing the content

from which ever thumbnail is then chosen." *Id*., [0019]. In this manner, the "user will be able to decide, prior to jumping to the location, whether or not the image being shown corresponds to the desired content." *Id.*

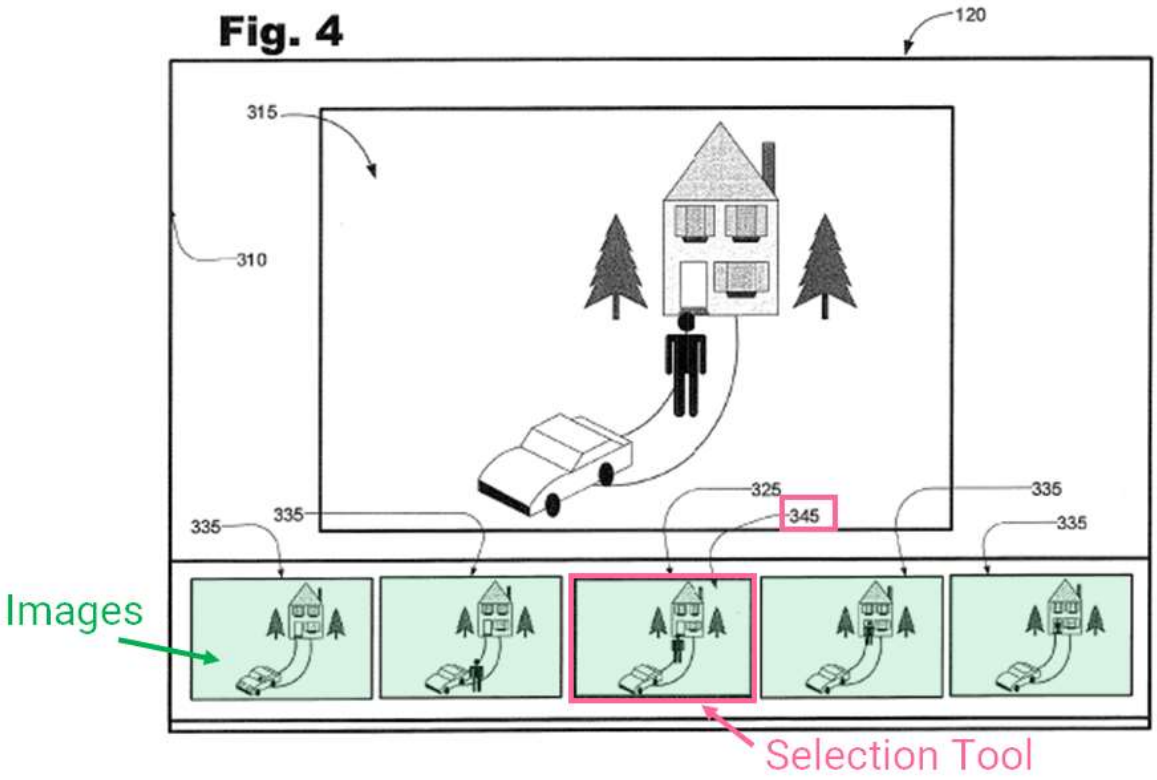
B. Angiolillo

Angiolillo, filed December 20, 2006, and published June 26, 2008, is prior art to the '300 patent at least under pre-AIA 35 U.S.C. §§ 102(a), (b), (e).

Angiolillo describes a "digital video recording (DVR) application" through which "a user may select an option to navigate through media content," such as a "video." Angiolillo, [0015], [0028], [0029]. The media content may be stored in a storage device 140, which may include any type of storage medium, including flash memory. *Id*., [0026], [0027], [0032], [0074]. Angiolillo explains that, "as is known, [its] digital media files[, e.g., the 'media content,'] generally include metadata including information such as a title, … specific images 335 to be displayed in [the] control pane 320, intervals according to which images 335 should be displayed, etc." *Id*., [0074]; *see also id.*, [0068]. This metadata is "retrieved" to be "included in [a] location control pane 320," such as those in Figures 3 and 4. *Id*., [0076]; *see also id.*, claims 1, 9, 16, 17, 19, 20.



Angiolillo, Fig. 3 (annotated).



Angiolillo, Fig. 4 (annotated).

Angiolillo's "location control pane 320" is "overlaid on a portion of the media content" and "used to display a series of individual images 335" from the video, as shown. Angiolillo, [0033], [0036]. The location control pane may further include "a video playback bar 340" and a "progress indicator" that "represent[s] … the location of an image currently displayed in the media content," as shown. *Id.*, [0034]. Angiolillo teaches that a "selection tool 325," shown as a border, "is operative to magnify [a] selected image 345 relative to the other images 335 included in [the] control pane[.]" *Id.*, [0038]. Then, "[a]s a user navigates from one

image 335 to another using selection tool 325, the image 335 which is currently a selected image 345 may be magnified slightly," but "[w]hen the user navigates away from a given image 335, the previous selected image 345 may return to a 'pre-magnified' size." *Id.*

C. Vahtola

Vahtola, filed December 7, 2006, and published June 12, 2008, is prior art to the '300 patent at least under pre-AIA 35 U.S.C. §§ 102(a), (b), (e).

Vahtola describes "creating chapters in … media data while recording" so that "during playback" a user can "jump[] directly to the beginning of [a] desired video sequence." Vahtola, [0001]-[0002]. Vahtola describes storing certain "chapter information" for the media, such as "a chapter indicator for indicating the starting point or ending point of a particular portion of the continuous media data" and "a chapter title." *Id*., [0008]-[0009].

Vahtola envisions recording media using a "processing element 14" that may be a DVR system. Vahtola, [0028], [0030]. The DVR system may receive media data from a "continuous media data source 12," such as a "television network[.]" *Id*., [0029]. Vahtola's DVR system includes a "memory 22" used to "store[] content, data, or the like," including the "continuous media data" and "chapter information." *Id*., [0034], [0037]. Vahtola's memory may be, among

others, "a hard drive, … a memory card such as a Flash memory card, a Memory stick, a Secure Digital (SD) card and the like[.]" *Id.*, [0034].

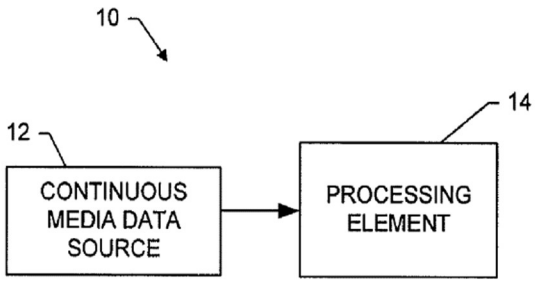


FIG. 1

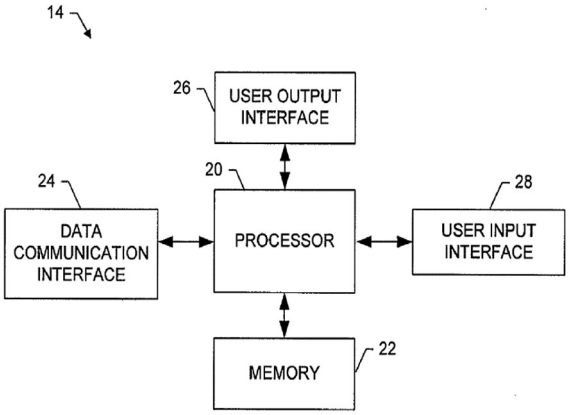


FIG. 2

Vahtola, Figs. 1, 2.

As Vahtola explains, when the continuous media data is received, the DVR system stores the content in the memory, "then record[s] chapter information into a separate file in the memory[.]" Vahtola, [0040]. "Generally," Vahtola teaches, "the chapter information file will include a chapter title or other ID and a chapter location, such as a particular frame or time in the continuous media data recording." *Id.*, [0041]; *see also id.*, [0042]-[0046]. In one example, Vahtola explains, "the chapter location may comprise a particular time that marks the beginning of a new chapter, the time being relative to the beginning of the recording or relative to some other reference time." *Id.*, [0049]. Vahtola also

envisions that the chapter information may include "thumbnail images from the chapter[.]" *Id*., [0061].

Vahtola's DVR system "can use the location information to automatically jump to the stated location in the continuous media data." Vahtola, [0049]. Vahtola envisions "a table of contents or other menu-type display of the chapters in the recorded continuous media data" in which the "thumbnail images from the chapter[s] … are displayed." *Id*., [0061].

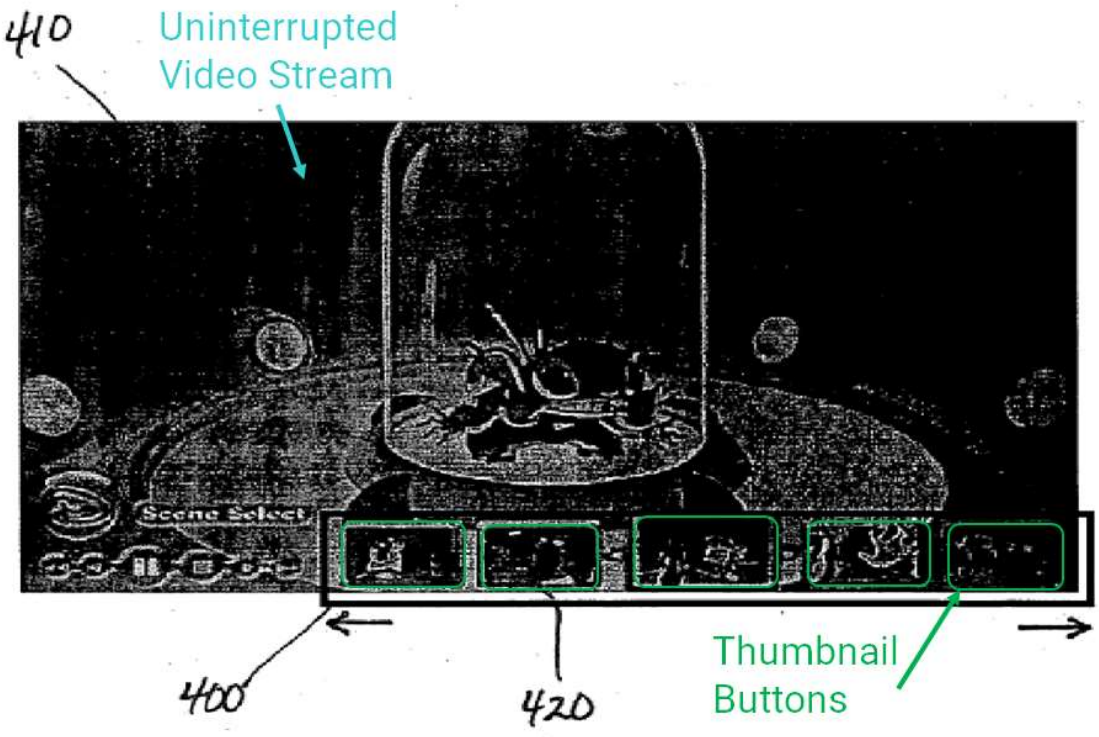
D. Ackley

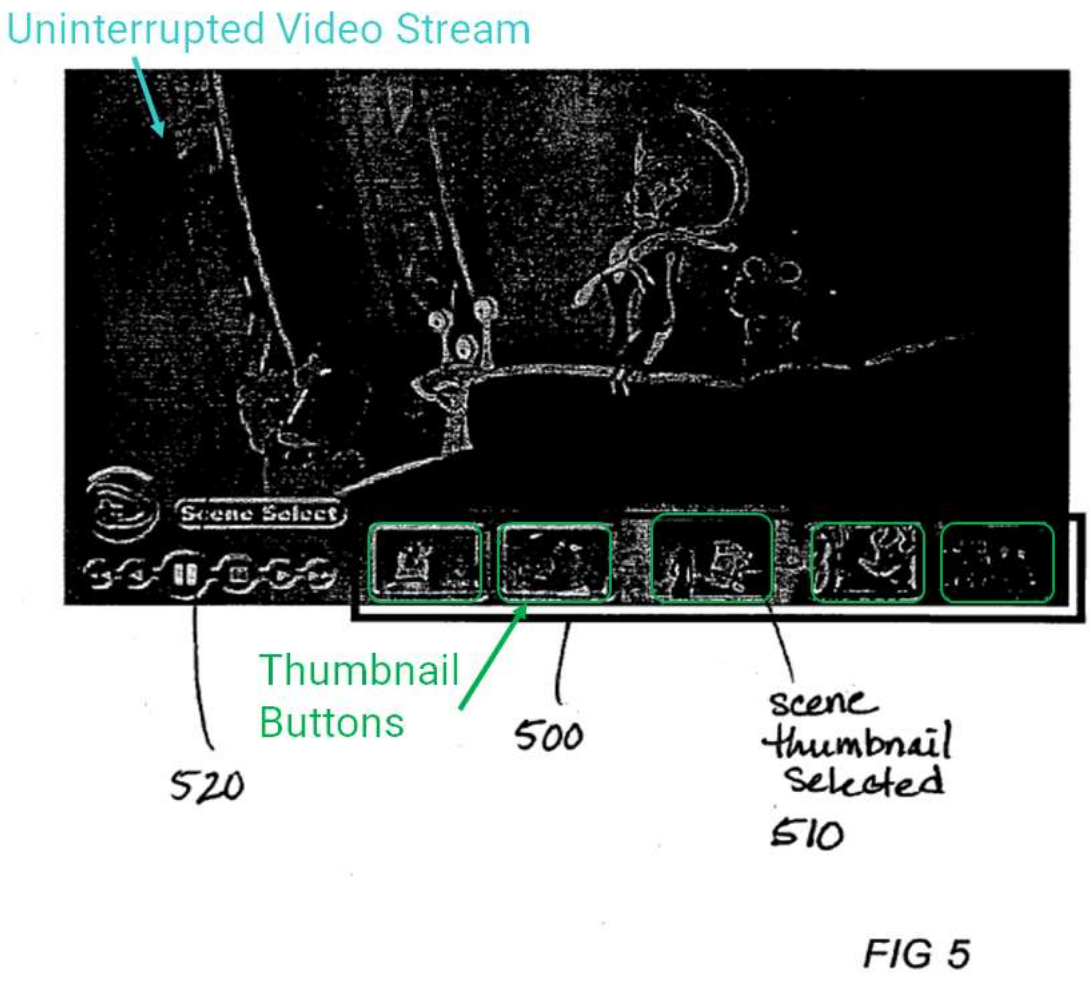
Ackley, filed October 4, 2004, and published April 28, 2005, is prior art to the '300 patent at least under pre-AIA 35 U.S.C. § 102(a), (b), and (e).

Ackley describes "a user interface to control playback and features that may be associated with prerecorded media," and is overlayed on the media being played. Ackley, Abstract. Ackley's systems and methods are applicable to any media player known in the art. *Id*., [0008], [0030].

Ackley discloses multiple screenshots of the user interface, including examples of a "Controls" submenu that allows a user to navigate through the media being played. Ackley, [0043]-[0049], Figs. 3-5. Figures 4 and 5 show a foreground submenu that allows a user to select different scenes in the media playing in the background. *Id*., [0046]-[0047]. The menu (400/500) "is displayed across the bottom portion of the screen and includes thumbnail buttons showing the starting

frame of each available scene. The user can scroll through the thumbnails without the video stream 410 being interrupted." *Id.*, [0046]; *see also id.*, [0048]. When the user selects one of the thumbnails (e.g., thumbnail 510 in Figure 5), video of the scene portrayed in the thumbnail starts playing within the thumbnail 510. *Id.*, [0048], Fig. 5. Ackley explains that the menu is displayed, and the user can interact with the menu, while the video in the background continues to play uninterrupted. *Id.*, [0009], [0029], [0043], [0044].





Ackley, Figs. 4, 5 (annotated).

V. LEVEL OF ORDINARY SKILL IN THE ART

Based on the relevant factors, *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995), a person of ordinary skill in the art ("POSITA") would have had a Bachelor's degree or equivalent in electrical engineering, computer science, or a related field, in addition to three years in research, design, or development in video playback systems, user interfaces, or other comparable experience. Houh, ¶20.

VI. CLAIM CONSTRUCTION

No terms need to be construed under 37 C.F.R. § 42.100(b) to resolve unpatentability. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) ("[O]nly those [claim] terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy"). The plain meaning of each term should apply for the purpose of this IPR.[1]

VII. THE CHALLENGED CLAIMS ARE UNPATENTABLE.

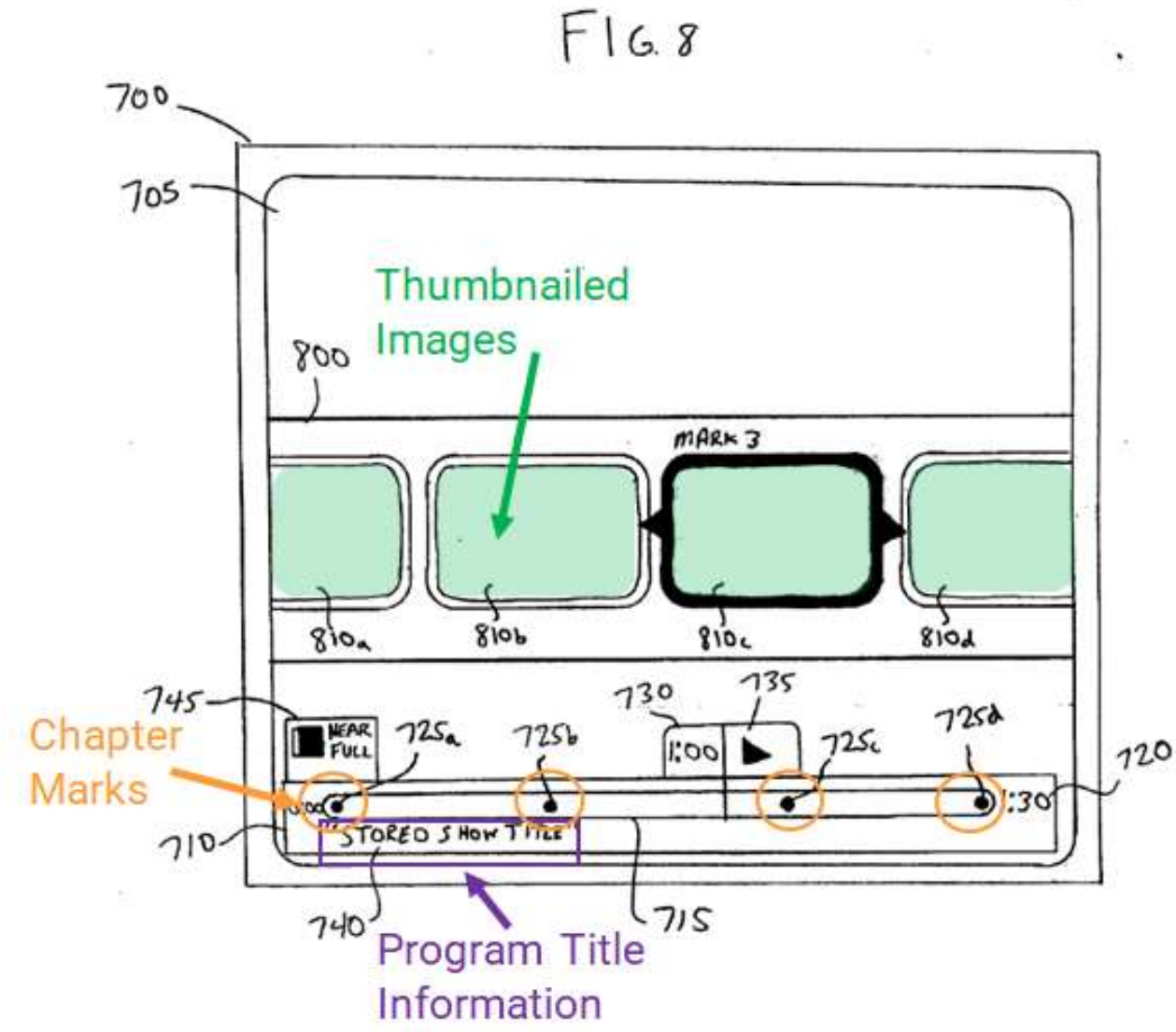
The combination of Nishikawa, Angiolillo, and Vahtola (Ground 1) teaches every aspect of the claims. To the extent it is argued that this combination does not teach an on-screen display that is "present[ed] during continuous playback of a video," this is taught by the combination of Nishikawa, Angiolillo, Vahtola, and Ackley (Ground 2).

A. The Combination of Nishikawa, Angiolillo, and Vahtola (Ground 1)

Nishikawa describes a DVR system that generates a "status bar" to be "overla[id] onto the video content being viewed" by a user. Nishikawa, [0031]. As shown in, e.g., Figure 8, Nishikawa's status bar includes "chapter marks," such as

[1] Petitioners reserve the right to argue that certain limitations in the challenged claims are indefinite and/or require construction to resolve other controversies in other forums.

chapter mark 725a that "denote[s] the beginning … of [a] segment/program" in the video content. *Id.*, [0038], [0043]. Nishikawa teaches that such chapter marks are stored in a "meta-data file" that "may be stored separate from the video content itself." *Id.*, [0030].



Nishikawa, Fig. 8 (annotated).

As shown, Nishikawa's status bar also includes "program title information"

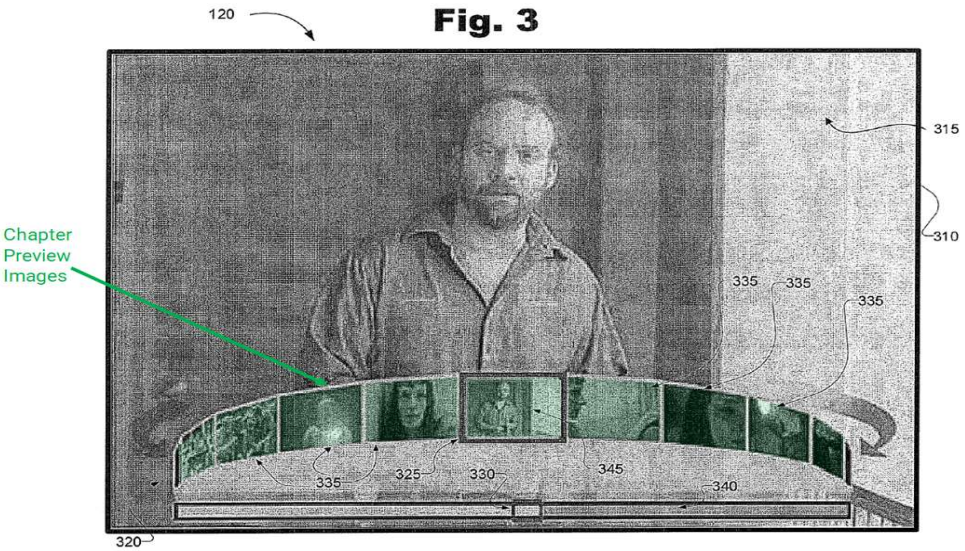
and "thumbnailed images which correspond to the chapter marks[.]" *Id.*, [0044]-[0045]. The program title information, Nishikawa explains, may be among certain "programming information" that is "retrieved from [an] electronic programming guide" received with the video content and "collected." *Id.*, [0028]; Houh, ¶62 (*citing, e.g.*, EX1012, 1:56-59; Ex. 1016, 49807; Ex. 1017, 20:18-45, Fig. 14). Nishikawa's thumbnailed images are "generat[ed]" using "instructions" stored in the DVR system's memory. Nishikawa, [0024]. When the DVR system generates the status bar, it will "determine[] if there are any thumbnails to view" and "available thumbnailed images … will be displayed." *Id.*, [0032]-[0033].

1. From Angiolillo, a POSITA would have been motivated and found it obvious to implement Nishikawa's DVR system to store the program title information, chapter marks, and information concerning the thumbnailed images in Nishikawa's meta-data file.

While Nishikawa thus teaches that the chapter marks used in generating the status bar are stored in the "meta-data file," Nishikawa, [0030], Nishikawa does not provide detailed disclosure regarding how or where the DVR system stores the program title information and thumbnailed images that are displayed in the status bar along with the chapter marks. Houh, ¶¶64-69.

Angiolillo's DVR system generates a "location control pane" that, like the status bar generated by Nishikawa's DVR system, allows a user to navigate within content. *See, e.g.*, Angiolillo, [0038]. And like the thumbnailed images used to

navigate in Nishikawa's status bar, Angiolillo's location control pane includes "images" through which "a user navigates," as Figure 3 shows. *Id.* Finally, just as Nishikawa describes storing the chapter marks in the meta-data file for the video content, Angiolillo teaches storing the "intervals according to which [the] images … should be displayed" as "metadata" for the content. *Id.*, [0033]-[0035], [0074]. Angiolillo further teaches that this metadata includes "a title" for the content and "information concerning [the] images" and/or "the images themselves." *Id.*, [0074]. Angiolillo explains that "such metadata is … retrieved" to generate the location control pane. *Id.* And Angiolillo explains that the metadata is stored with the video being played, because it discloses that the "digital media files" that include the video "include [this] metadata" and that they are retrieved together by the system. *Id.*



Angiolillo, Fig. 3 (annotated).

A POSITA seeking to implement Nishikawa would have been motivated and found it obvious to implement Nishikawa's DVR system to store the program title information and information concerning the thumbnailed images in Nishikawa's meta-data file, alongside the chapter marks and with the video content, just as Angiolillo teaches storing the title, information concerning the images, and the intervals in Angiolillo's metadata that is stored with the digital media files. Houh, ¶66. In this implementation, Nishikawa's DVR system would retrieve the program title information, chapter marks, and information concerning the thumbnailed images from Nishikawa's meta-data file to generate the status bar, just as Angiolillo's DVR system retrieves its metadata to generate the location control pane. Houh, ¶67. Nishikawa's lack of detailed disclosure on how or where the DVR system stores the program title information and information concerning the thumbnailed images would have motivated a POSITA seeking to implement Nishikawa to look to other references, like Angiolillo, that teach these additional implementation details for storing such data and generating displays for navigating content in DVR systems. *Id.*

Moreover, a POSITA would have recognized that including Nishikawa's program title information and information concerning the thumbnailed images in a meta-data file for the content along with the chapter marks/intervals, as taught by Angiolillo, would have improved the overall system by storing the metadata used

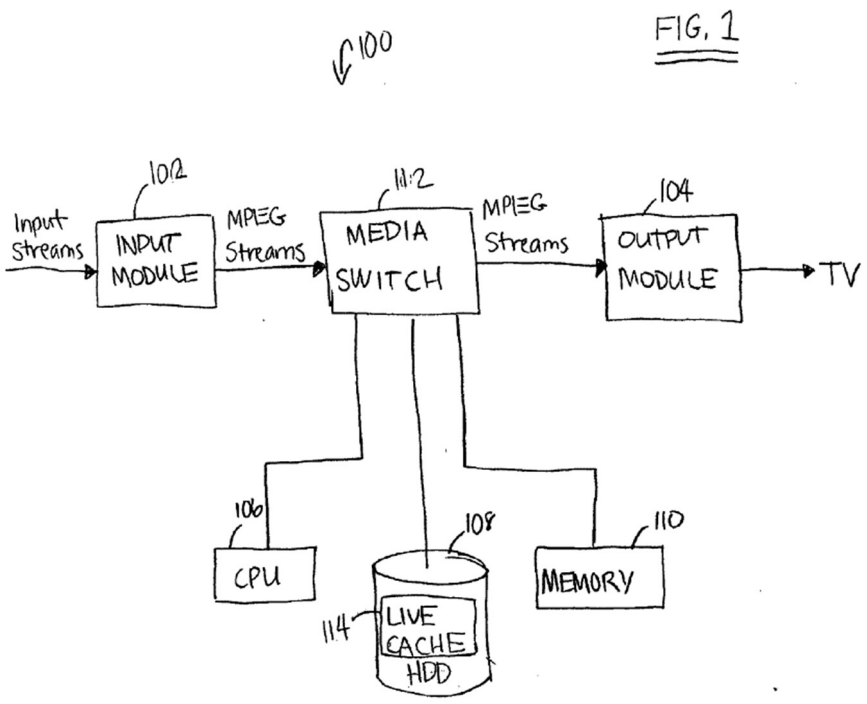
for generating such displays and the video content in a single location. Houh, ¶67. A POSITA would have recognized that such consolidated storage would have facilitated the system's ability to more efficiently retrieve such information to generate the display. This implementation of Nishikawa would have been nothing more than using a known technique (Angiolillo's storing of video along with a metadata file having the intervals, a title, and information concerning the images for a DVR system to generate a display) to improve similar devices (Nishikawa's DVR system, which uses chapter marks, a title, and images to generate a display) in the same way (by storing Nishikawa's chapter marks, a title, and images in Nishikawa's meta-data file along with the video content) to produce the predictable result of a display that allows a user to navigate between chapters using this information. Houh, ¶68. For the same reason, this combination would have been nothing more than applying a known technique (Angiolillo's storing of video along with a metadata file having the intervals, a title, and information concerning the images for a DVR system to generate a display) to a known device (Nishikawa's DVR system) to improve the device's ability to efficiently retrieve this information and generate the display. *Id.*

A POSITA would also have had a reasonable expectation of success in implementing Nishikawa's DVR system to store the program title information and information concerning the thumbnailed images in Nishikawa's meta-data file

along with the chapter marks, as Angiolillo's DVR system does. Houh, ¶69. Nishikawa and Angiolillo describe similar DVR systems that generate similar displays (Nishikawa's status bar and Angiolillo's location control pane) for a user to navigate through video content. *See supra* Sections IV.A, IV.B. Moreover, a POSITA would have recognized that Angiolillo's additional implementation details regarding storage of the information used to generate a display are compatible with Nishikawa's DVR system, which already uses a meta-data file to store information used to generate its display. Houh, ¶69. Incorporating these additional implementation details into Nishikawa's DVR system would have been well within the knowledge and skill of a POSITA. *Id.*

2. From Vahtola, a POSITA would have been motivated and found it obvious to implement Nishikawa's/Angiolillo's system using an SD card

Nishikawa teaches that its DVR system includes a "hard disk or other storage device 108," shown in Figure 1, onto which content (e.g., broadcast content received as an input stream) may be written. Nishikawa, [0022]; Houh, ¶[0070]. Nishikawa does not provide additional examples of its "storage device 108." *Id.*



Nishikawa, Fig. 1.

Similarly, Angiolillo teaches that its DVR system includes a "storage device 140," shown in Figure 1, onto which content (e.g., television content received from media content provider 110) may be stored. Angiolillo, [0021]-[0022], [0026]. Angiolillo provides as examples of its "storage device," a "hard drive, network drive, flash drive, magnetic disc, optical disc, or other non-volatile storage unit." *Id.*, [0026]. A POSITA would have understood Angiolillo's disclosure of a "flash drive" to teach, or at least render obvious, an SD card because an SD card is, like a flash drive, a flash memory. Houh, ¶71.

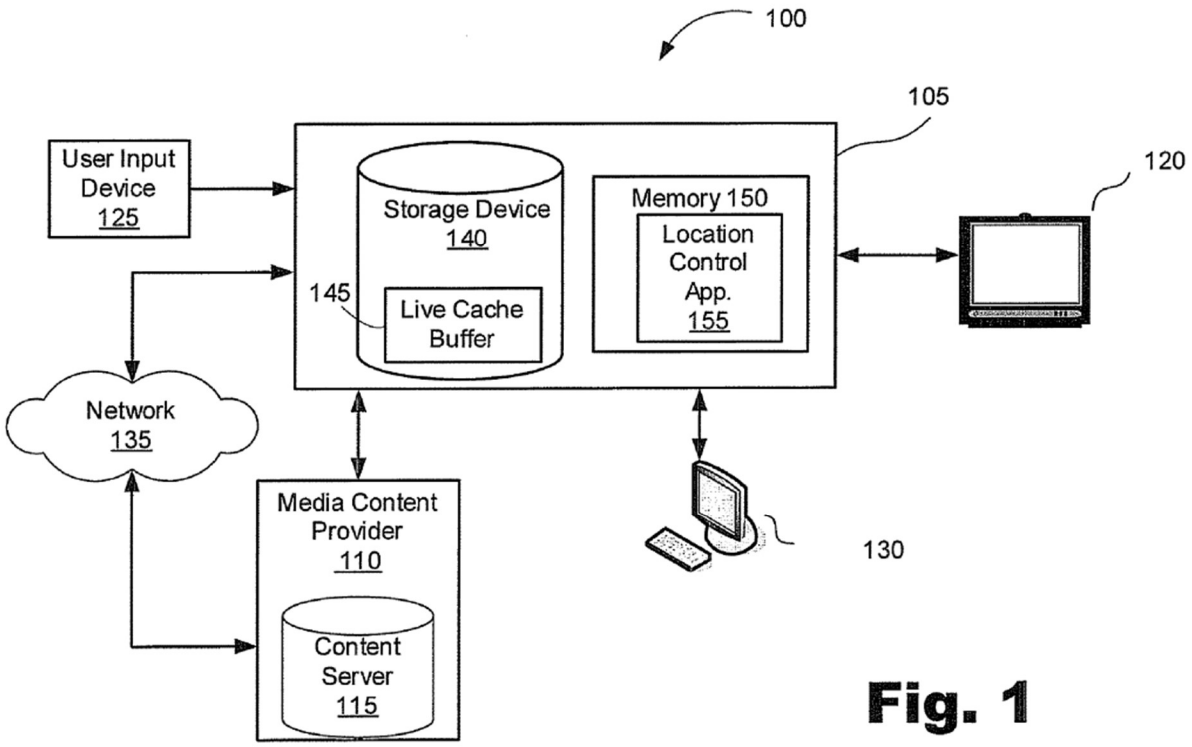


Fig. 1

Angiolillo, Fig. 1.

To the extent it is argued that Nishikawa and Angiolillo do not expressly teach using an SD card as a storage device in a DVR system, a POSITA would have been motivated and found it obvious to do so from Vahtola. Houh, ¶72. Vahtola describes a DVR system that, like Nishikawa's and Angiolillo's DVR systems, uses chapters to facilitate a user's navigation through content. Vahtola, [0001]-[0002]. As Figure 2 shows, Vahtola's DVR system includes a "memory 22" that, like Nishikawa's and Angiolillo's storage devices, is used to store both content and data related to that content, including "chapter information." *Id*., [0034]. Vahtola teaches that the memory of the DVR system may be, among

others, "a hard drive, … a memory card such as a Flash memory card, a Memory stick, a Secure Digital (SD) card and the like[.]" *Id.*, [0034].

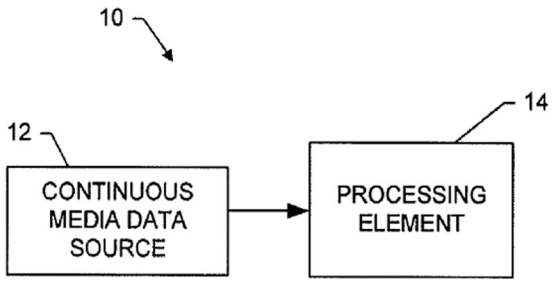


FIG. 1

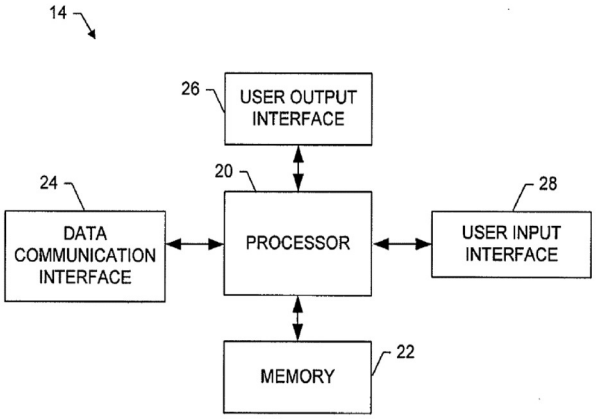


FIG. 2

Vahtola, Figs. 1, 2.

A POSITA would have been motivated and found it obvious to implement Nishikawa's DVR system (as modified by Angiolillo) using an SD card as the storage device, as taught by Vahtola, for several reasons. Houh, ¶73. First, a POSITA would have recognized from Vahtola that this would merely involve the simple substitution of one known element (Vahtola's SD card) for another (Nishikawa's generic "storage device") to obtain predictable results (reading the content and the metadata from the SD card, just as it is read from the generic storage device in Nishikawa). *Id.* Indeed, Vahtola teaches that an SD card was a known alternative to a "hard disk," an example Nishikawa provides for its storage device. Nishikawa, [0022]; Vahtola, [0034]. Second, a POSITA would have

recognized that this would merely have involved using a known technique (Vahtola's SD card) to improve similar devices (Nishikawa's and Vahtola's DVR systems) in the same way. Houh, ¶73. Finally, a POSITA would have been aware of the benefits SD cards provide, including large storage capacity, small physical size, stability, security, high data transfer rates, endurance, and power management. Houh, ¶74 (*citing* EX1019; EX1020).

A POSITA would also have had a reasonable expectation of success implementing Nishikawa's system using an SD card, as Vahtola suggests. Houh, ¶75. Indeed, both Vahtola and Angiolillo teach that various storage devices may be implemented with a DVR system like Nishikawa's. Vahtola, [0034]; Angiolillo, [0026]. The '300 patent likewise describes the SD card as just one "example of a media storage device[.]" '300 Patent, 2:62-64. Further, Vahtola's SD card is compatible with Nishikawa's recorded television content, as Nishikawa contemplates its DVR system recording and playing television content stored in an MPEG format, and Vahtola teaches recording and playing television content in an MPEG format using an SD card. *Compare* Nishikawa, [0020]-[0021] *with* Vahtola, [0030], [0032]. Moreover, the use of SD cards to record and play content was well known. The '300 patent recognizes this, stating "the structural characteristics of the SD card (e.g., form factor, pin connections) [were] defined through the SD Card Association" and providing little detail on how the content and metadata are read

from the SD card. '300 Patent, 2:41-43, 3:16-35, 4:27-34, 7:16-27; Houh, ¶75 (citing EX1013, [0008]-[009], [0028], [0037]; EX1020).

B. The Combination of Nishikawa, Angiolillo, and Vahtola with Ackley (Ground 2)

Like Nishikawa and Angiolillo, Ackley describes various user interfaces for allowing a user to control playback and navigate between chapters of prerecorded video content. Ackley, Abstract. And like Nishikawa, Ackley describes embodiments in Figures 4 and 5 that show a menu in the foreground overlaid on the video content that continuously plays in the background. *E.g.*, *id*., [0008], [0043]-[0048]. To the extent it is argued that Nishikawa does not disclose presenting and allowing a user to interact with its user interface during continuous playback of the background video content (Nishikawa does), Ackley discloses this feature repeatedly. *Id*., Abstract, [0009], [0029], [0034], [0035], [0042]-[0046], [0048], claim 17. Indeed, Ackley criticizes prior art devices where "playback is interrupted" and/or "the user is returned to the main menu to make the selection," and describes its system that operates "without interrupting playback of the media," as an advantage over these systems. *Id*., [0007], [0009].

A POSITA would have found it obvious to combine Ackley with Nishikawa to include a user interface that continuously plays the video content in the background while the user interface is displayed and the user interacts with it.

Houh, ¶¶76-80. Doing so would have been simply using a known technique (Ackley's continued playing of video content during display and interaction with the user interface) to improve a similar device (Nishikawa's user interface) in the same way to produce the predictable and desired result of allowing the user to continue watching the video content while making selections from the user interface. *Id.*, ¶80. A POSITA would have recognized that this would have improved usability of the overall system and led to increased user satisfaction by enabling the user to continue watching the video while deciding whether to navigate to a different chapter within that video. *Id.*, ¶79. Ackley provides this express motivation when criticizing other systems where "playback is interrupted." Ackley, [0007], [0009].

A POSITA would have had a reasonable expectation of success implementing Nishikawa's status bar (implemented according to Angiolillo) to be presented while the video content continuously plays in the background, as Ackley teaches. Houh, ¶80. Nishikawa's, Angiolillo's, and Ackley's systems are similar: all are configured to read and present stored video content, and all are configured to generate a user interface that is overlaid on the video content and allows a user to navigate through the video content by selecting "thumbnail" images in the user interface. *Compare* Nishikawa, [0023], [0041], [0045]-[0046], Fig. 8 and Angiolillo, [0043], Figs. 3-6 *with* Ackley, [0029]-[0031], [0040], [0046]-[0049],

Figs. 4-5. In light of these similarities, implementation of Ackley's continuous video play into Nishikawa would have been straightforward and within the skill of a POSITA. Houh, ¶80.

C. Claim 1

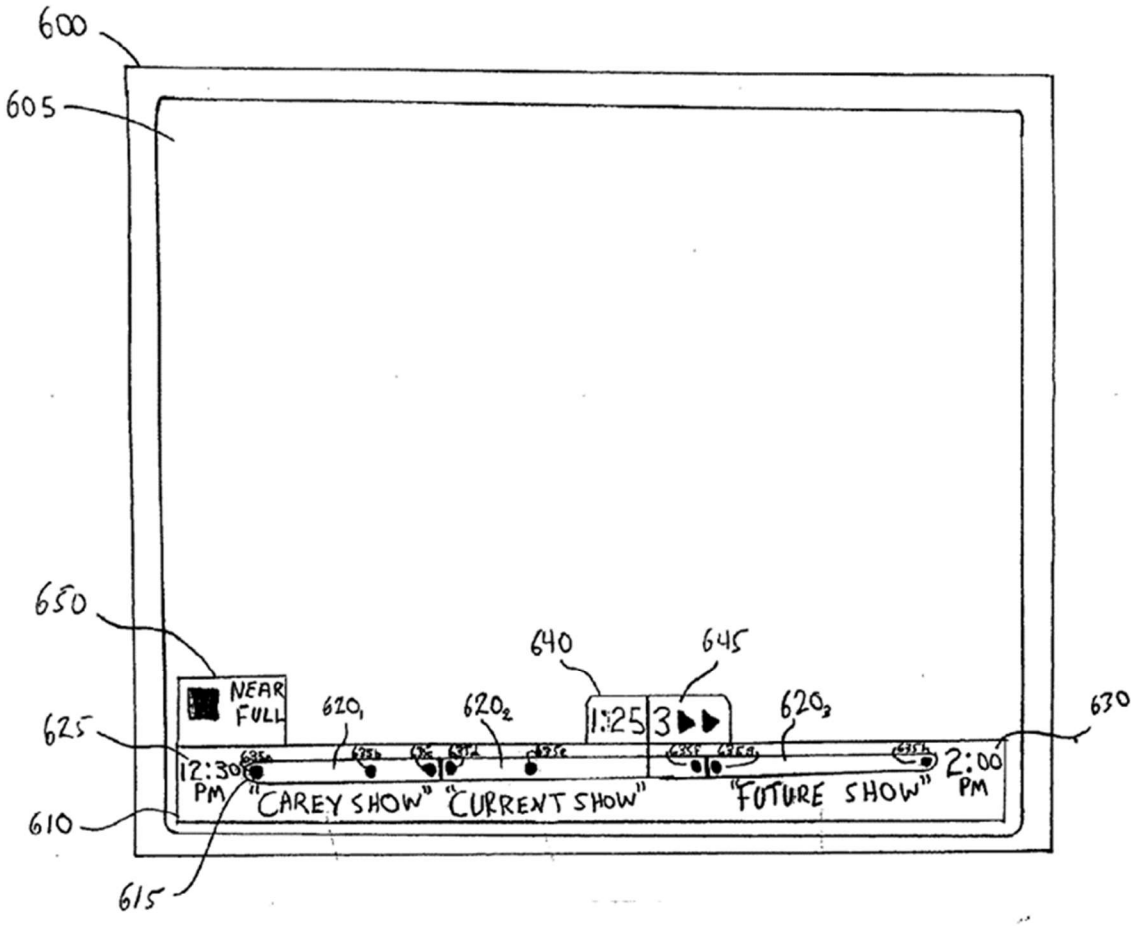
1. 1[p] A method for navigating a plurality of chapters of video content within a video, the method comprising:

Nishikawa teaches "[a] method for navigating a plurality of chapters of video content within a video" because Nishikawa teaches a method for navigating a plurality of marked "chapters" of video content within a video presentation. Houh, ¶¶81-82.

Nishikawa describes "[m]ethods … for navigating video content" using "markers"—which Nishikawa states "may also be referred to" as "chapter marks"—"within a video presentation." Nishikawa, Abstract, [0017]. Nishikawa explains that these chapter marks "may be used to instantly jump to a particular scene or location within [the] video[.]" *Id.* Each chapter may "denote[an] individual … program" or other portion of the video content. *Id.*, [0036]-[0038]. Nishikawa's Figure 6 shows video content stored at the DVR system that is "divided into one or more segments 620_1-620_3." *Id.*, [0035]-[0036]. As shown, "chapter marks 635_a-635_h may be used to denote the beginning and ending of each segment/program" (e.g., chapter marks 635_a, 635_c, 635_d, 635_f, 635_g, 635_h) as well

as "points other than" these (e.g., chapter marks 635_b, 635_e). *Id.*, [0038]; *see also id.*, Figs. 7, 8 (showing "chapter marks 725_a-725_d"). Nishikawa explains that these chapter marks can be "used to quickly jump to a particular point" in the video content. *Id.*, [0038]; *see also id.*, claim 1 ("A method for navigating video content…"), [0002], [0005], [0007].

FIG. 6



Nishikawa, Fig. 6.

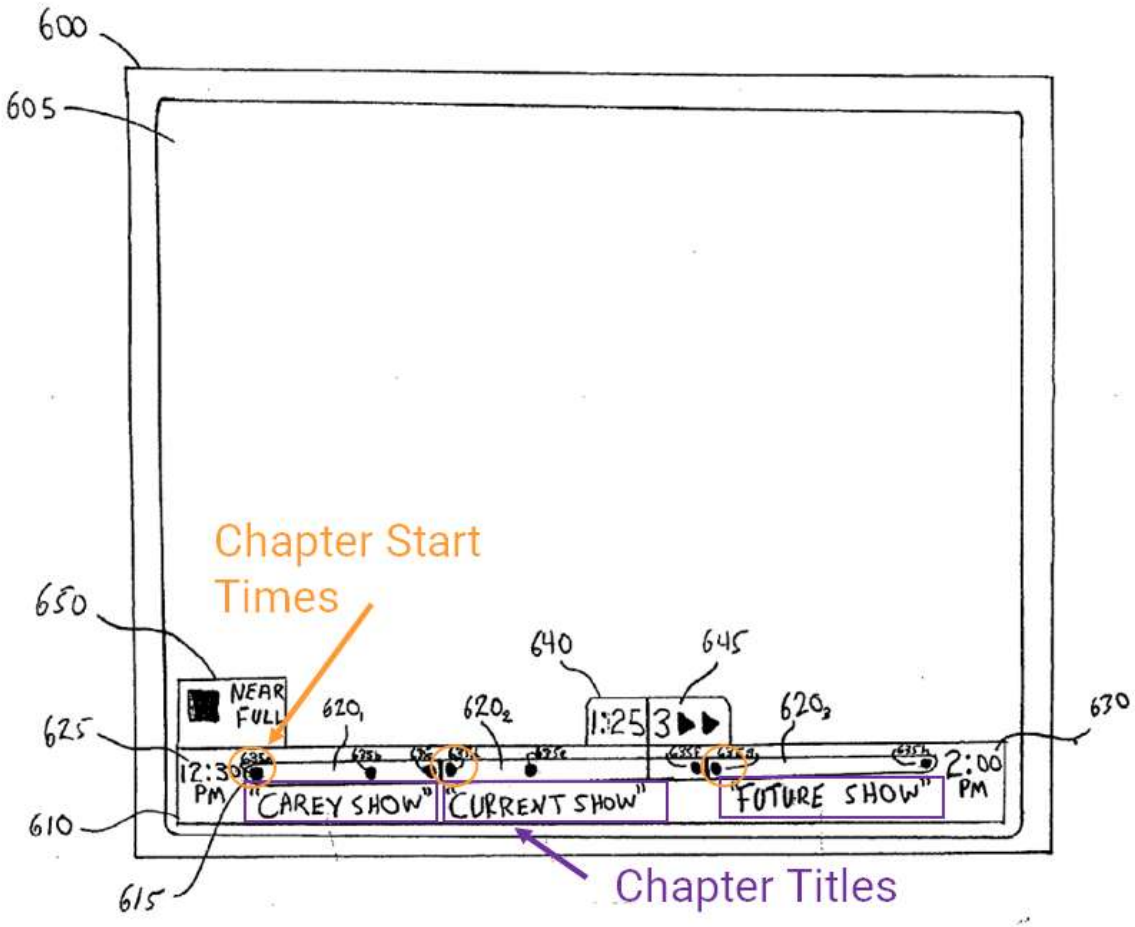
2. 1[a] reading from a metadata file stored with the video chapter titles, chapter start times, and location on a secure digital card (SD card) of chapter preview images that correspond to the playable content as initially configured and stored on the secure digital card, each chapter comprising a segment of content of the video;

Nishikawa, Angiolillo, and Vahtola teach this. Houh, ¶¶83-91.

a. 1[a](1) *reading from a metadata file stored with the video chapter titles, chapter start times, and location … of chapter preview images that correspond to the playable content …, each chapter comprising a segment of content of the video*

Nishikawa teaches "each chapter comprising a segment of content of the video" because each chapter in Nishikawa is a segment of the video content recorded by the DVR system. Houh, ¶¶84-87. As Nishikawa's Figure 6 shows, chapter marks 635_a-635_h are used to indicate segments of the content in the "stored … video content" at the DVR system. Nishikawa, [0036].

FIG. 6



Nishikawa, Fig. 6 (annotated).

Nishikawa teaches "reading … chapter titles [and] chapter start times" because Nishikawa teaches displaying each of title information (i.e., "chapter titles") and chapter marks (i.e., "chapter start times") that "denote the beginning … of each segment[],"as Figure 6 shows. For one segment of the video, the title information "CAREY SHOW" is displayed, and chapter mark 635_a denotes the time at which it begins. While Nishikawa describes title information corresponding

to the name of a program, as shown, a POSITA would have recognized that titles could be given any name. Houh, ¶85. Vahtola, for instance, describes "chapter titles" ranging from "user defined titles" to "standard or otherwise computer-generated titles" like "'Chapter [n]' where n initially is equal to one and increases by a value of one each time a new chapter is generated." Vahtola, [0056].) A POSITA would have recognized that, in order for Nishikawa's DVR system to display the title information and chapter marks, this information would necessarily be "read[]" from the memory storing it. Nishikawa, [0024], [0030]; Houh, ¶85.

Finally, Nishikawa teaches "reading from [the] metadata file stored with the video … [a] location … of chapter preview images that correspond to the playable content" because—like the chapter marks and titles—Nishikawa teaches displaying "thumbnailed images" (i.e., "chapter preview images") "that are representative of the video content." Nishikawa, Abstract. Nishikawa explains that "thumbnailed images representative of the content at the previously-placed chapter marks" may be displayed along with the title information and chapter marks, as Figure 8 shows. While Nishikawa does not expressly state that "a location … of" these thumbnailed images is "read[] from a metadata file," a POSITA would have been motivated and found it obvious to implement Nishikawa in this way, at least because Nishikawa teaches that the "[m]emory 110" of the DVR system includes "instructions for generating [these] thumbnailed images," and the DVR system is

able to "determine[] if there are any thumbnails to view" and, if so, display them. Houh, ¶86; Nishikawa, [0024], [0032]-[0033]. From this, a POSITA would have understood Nishikawa to teach that the DVR system stores "a location … of" the thumbnailed images that is "read[]," for at least three reasons. Houh, ¶86. First, a POSITA would have recognized that, once the thumbnailed images are "generat[ed]" by the DVR system, the generated thumbnailed images would be stored in "a location" of the DVR system so as to be available for future retrieval and display. *Id.* Second, a POSITA would have recognized that this "location" where the generated thumbnailed images are stored would itself need to be stored so that the DVR system could later identify that location and retrieve the thumbnailed images for display. *Id.* Third, a POSITA would have understood that, in order to display the thumbnailed images, the DVR system would necessarily "read[]" the stored location of the thumbnailed images to retrieve them from that location. *Id.* Thus, a POSITA would have understood Nishikawa to teach that the DVR system stores "a location … of" the thumbnailed images that is "read[]." *Id.*

Finally, while Nishikawa does not expressly teach that the program title information and the "location … of" the thumbnailed images are "read[] from [the] metadata file stored with the video," a POSITA would have been motivated and found it obvious to implement Nishikawa's DVR system to store the program title information, chapter marks, and location of the thumbnailed images in

Nishikawa's meta-data file with the video based on Angiolillo, for at least the reasons explained in Section VII.A.1. Vahtola provides additional rationale for doing so because it explains that its memory 22 stores both content and data related to that content, including "chapter information." Vahtola, [0034]. As explained, in such an implementation, Nishikawa's DVR system would retrieve the program title information, chapter marks, and location of the thumbnailed images from Nishikawa's meta-data file stored with the video to generate the status bar, just as Angiolillo's DVR system retrieves its metadata to generate the location control pane. Houh, ¶87. Thus, Nishikawa and Angiolillo teach "reading from a metadata file stored with the video chapter titles, chapter start times, and location … of chapter preview images that correspond to the playable content."

b. 1[a](2) *reading from [the] metadata file stored with the video … location on a secure digital card (SD card) of [the] chapter preview images that correspond to the playable content as initially configured and stored on the secure digital card;*

From Vahtola, a POSITA would have been motivated and found it obvious to implement Nishikawa's/Angiolillo's system using an SD card as Nishikawa's storage device for at least the reasons explained in Section VII.A.2. In such an implementation, Nishikawa's "hard disk or other storage device 108" would take the form of an SD card. Houh, ¶88; Nishikawa, [0017], [0030].

Moreover, in this implementation, a POSITA would have been motivated and found it obvious to store Nishikawa's thumbnail images in a location on the SD card. Houh, ¶89. As explained for 1[a](1), a POSITA would have recognized that, once Nishikawa's thumbnailed images are "generat[ed]" by the DVR system, the generated thumbnailed images would be stored in "a location" of the DVR system so as to be available for future retrieval and display. Houh, ¶89. A POSITA would have been motivated and found it obvious to store the generated thumbnailed images on an SD card for at least two reasons. First, in such an implementation, Nishikawa's meta-data file would be stored on the SD card (as it is on Nishikawa's "storage device"), and Angiolillo envisions storing the images themselves alongside the metadata. Houh, ¶89; Angiolillo, [0074]. Second, a POSITA would have recognized that storing the thumbnailed images on the SD card would have improved the overall system by storing the thumbnailed images and the metadata used for generating Nishikawa's status bar in a single location. Houh, ¶89. A POSITA would have recognized that such consolidated storage would have facilitated the system's ability to more efficiently retrieve such information to generate the display. Houh, ¶89. In such an implementation, Nishikawa's thumbnail images would be stored "in a location on a secure digital card (SD card)." Houh, ¶89.

Thus, because Nishikawa and Angiolillo teach "reading from a metadata file stored with the video … location" on Nishikawa's storage device "of chapter preview images that correspond to the playable content" stored on Nishikawa's storage device, and a POSITA would have been motivated and found it obvious from Angiolillo and Vahtola to implement Nishikawa's storage device as an SD card and store Nishikawa's thumbnail images there, Nishikawa, Angiolillo, and Vahtola teach "reading from [the] metadata file stored with the video … location on a secure digital card (SD card) of [the] chapter preview images that correspond to the playable content … stored on the secure digital card." Houh, ¶90.

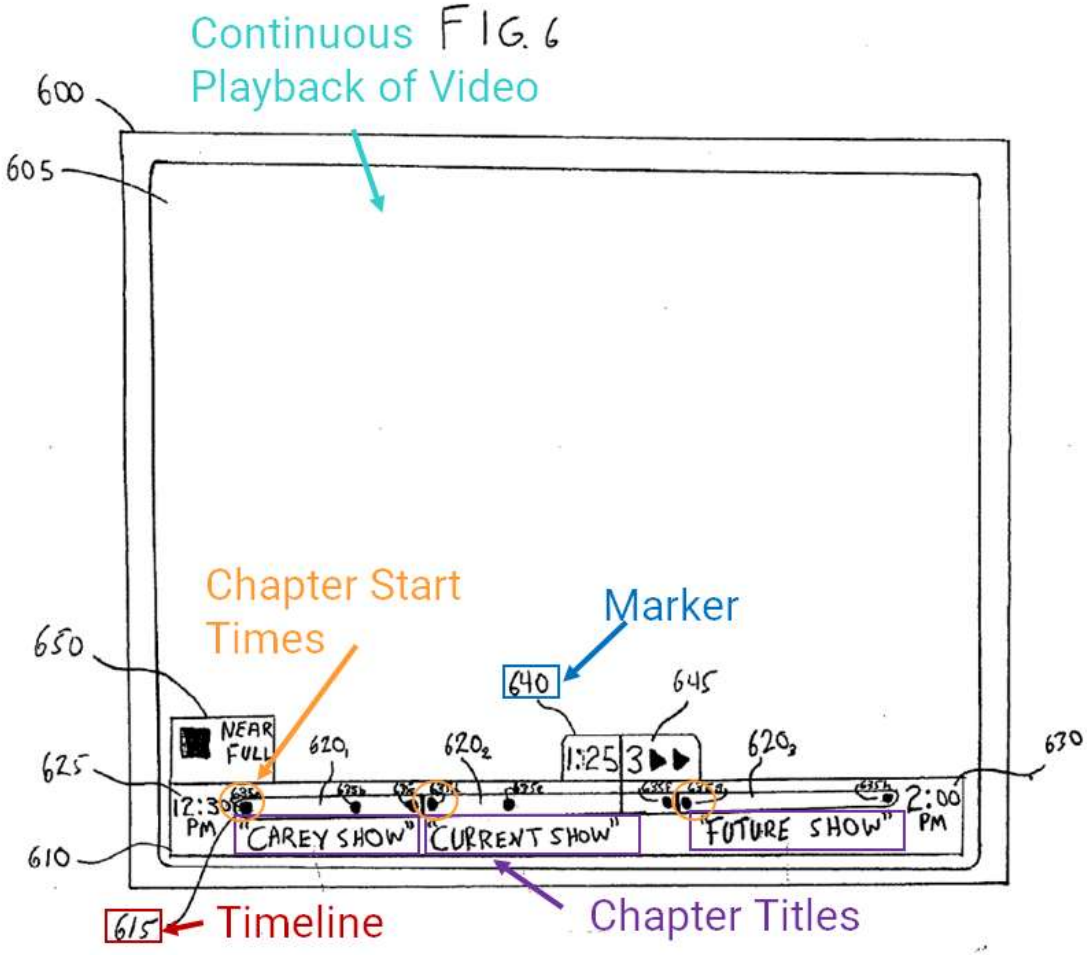
In such an implementation, Nishikawa's thumbnailed images would also correspond to the playable content "as initially configured and stored on the secure digital card," at least because Nishikawa's thumbnailed images would correspond to programs as they are initially configured and stored on the SD card. Houh, ¶91. Indeed, Vahtola specifically envisions chapter information being added as the video content is stored on the SD card. As Vahtola explains, with the SD card "a user [can] record continuous media data (e.g., video and/or audio data) and, at the same time, create chapters for the recorded continuous media data." Vahtola, [0004]. This is in contrast to "add[ing] chapters to already-recorded video files." *Id*., [0003]. Once the chapters and video content are stored on the SD card, Vahtola's SD card is, like a DVD, "removable" for use with any playback device.

Id., [0034]; *see also* EX1002 at 176 ("Applicant's claims recite the ability to read a chapter index that is stored with the video from the onset.… [O]ne of ordinary skill in the art would recognize the SD and DVD technology operate in this manner[.]"). Thus, when implemented according to Vahtola, Nishikawa's playable content is stored on the SD card and, "at the same time," the chapters are created. *Id*., [0004]; Houh, ¶91. This SD card is then "removable" for use with any playback device. Vahtola, [0034]; Houh, ¶91. In such an implementation, Nishikawa's thumbnailed images would correspond to the playable content "as initially configured and stored on the secure digital card." Houh, ¶91; *see also supra* Section III.B.

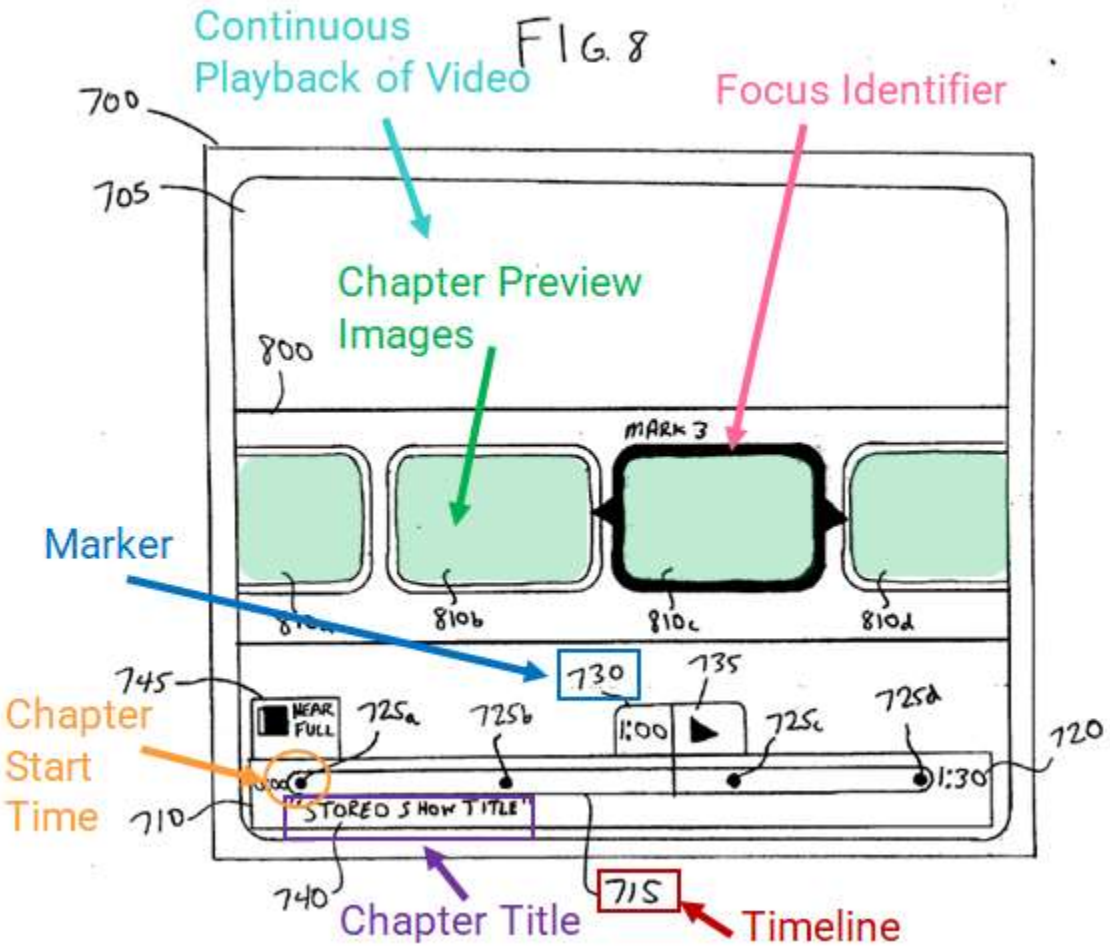
3. **1[b] presenting, during continuous playback of a video, an on-screen display to a user, the on-screen display including a timeline having a demarcation for the beginning of each of the plurality of chapters of the video and having a marker corresponding to a current position in the video playback, the timeline assembled from the chapter titles, the chapter start times, and the location on the secure digital card of chapter preview images that correspond to the playable content stored as part of the metadata, and the on-screen display including one image for each of the plurality of chapters from the chapter preview images displayed in sequential order parallel to the timeline, wherein a focus identifier marks an image of a chapter corresponding to the current position within the continuous video playback;**

Nishikawa teaches "presenting, during continuous playback of a video, an on-screen display to a user." Houh, ¶¶92-98. Nishikawa describes an on-screen display called a "status bar" that is "overlaid on the screen … of the video

content," as illustrated in Figures 6-8. Nishikawa, [0035]; *see also id.*, [0025], [0031], [0041], [0045], Figs. 6-8; Angiolillo, [0034], Fig. 3. A POSITA would have understood from Nishikawa that the status bar is "present[ed] during continuous playback of a video" because Nishikawa envisions the "status bar is displayed as an overlay onto the video content being viewed," which indicates the video content continues to play. Nishikawa, [0031]; *see also id.*, [0023], [0035], [0041], claims 7, 19, 31; Houh, ¶92.



Nishikawa, Fig. 6 (annotated).



Nishikawa, Fig. 8 (annotated).

To the extent it is argued that Nishikawa does not disclose presenting its on-screen display "during continuous playback of a video," Ackley (Ground 2) expressly discloses this feature for the reasons discussed in Section VII.B. *See* Ackley, Abstract, [0009], [0029], [0034], [0035], [0042]-[0046], [0048], claim 17, Figs. 4-5. Moreover, it would have been obvious to incorporate this teaching from Ackley into Nishikawa's user interface for the reasons discussed in Section VII.B.

Nishikawa also teaches "the on-screen display including a timeline having a

demarcation for the beginning of each of the plurality of chapters of the video and having a marker corresponding to a current position in the video playback." Houh, 94. As shown, Nishikawa's status bar includes a "progress bar" (615 or 715) (i.e., "timeline") having a demarcation for the beginning of each of the segments in the video content. Nishikawa, [0036], [0042]. As Nishikawa explains with reference to Figure 6, "the progress bar 615 may be divided into one or more segments 620_1-620_3." *Id.*, [0036]. Each segment 620_1-620_3 is demarcated with "a beginning mark," shown as 635_a, 635_d, and 635_g, respectively. *Id.*, [0038]. Nishikawa's progress bar also includes a "marker" called a "play status box" (labeled 640 or 730) (i.e., "marker") that "correspond[s] to a current position in the video playback." *Id.*, [0043]. As Nishikawa explains, "play status box 730 may be used to show the current viewing position in the stored program." *Id.*

Nishikawa, Angiolillo, and Vahtola teach that "the timeline [is] assembled from the chapter titles, the chapter start times, and the location on the secure digital card of chapter preview images that correspond to the playable content stored as part of the metadata." Houh, ¶95. As explained for 1[a], a POSITA would have been motivated and found it obvious from Angiolillo and Vahtola to implement Nishikawa such that the location of the thumbnailed images is a location on a secured digital card, and the title information, the beginning marks (also called "chapter marks"), and the location of the thumbnailed images that correspond to

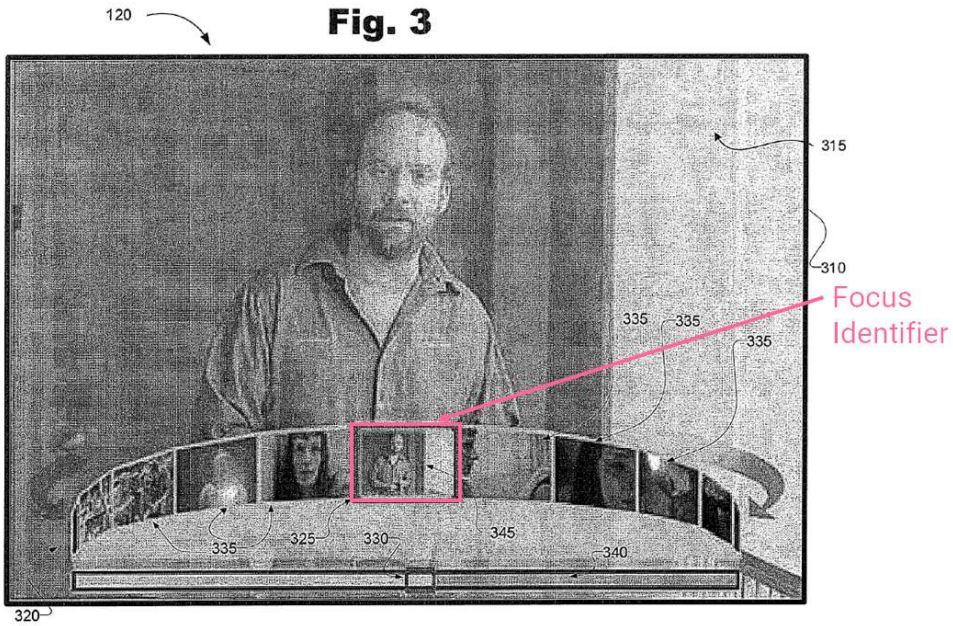
the playable content are stored as part of the metadata that is stored with the video. *See* Sections VII.A, VII.C.2. As Figures 6 and 8 show, Nishikawa's progress bar is assembled from the title information, the chapter marks, and the location of the thumbnailed images. Houh, ¶95. As shown, the progress bar includes each of the title information (labeled 740), the chapter marks (labeled 635_a, 635_d, and 635_g), and the thumbnailed images, which Nishikawa's DVR system retrieves for display using the location of the thumbnailed images. Houh, ¶95.

Nishikawa also teaches "the on-screen display including one image for each of the plurality of chapters from the chapter preview images displayed in sequential order parallel to the timeline." Houh, ¶96. In Nishikawa, each of the "one or more thumbnailed images [is] representative of the content at the … chapter marks." Nishikawa, [0024]. As Figure 8 shows, Nishikawa's status bar includes one of the thumbnailed images (labeled 810_a-810_d) for each of the segments displayed parallel to the progress bar. Nishikawa's thumbnailed images are "displayed in sequential order" because Nishikawa explains that "the thumbnailed images may be displayed in a sequence organized from left to right, with the left-most thumbnail corresponding to the first [chapter] mark … and the right-most thumbnail corresponding to the last [chapter] mark[.]" *Id.*, [0017], [0033].

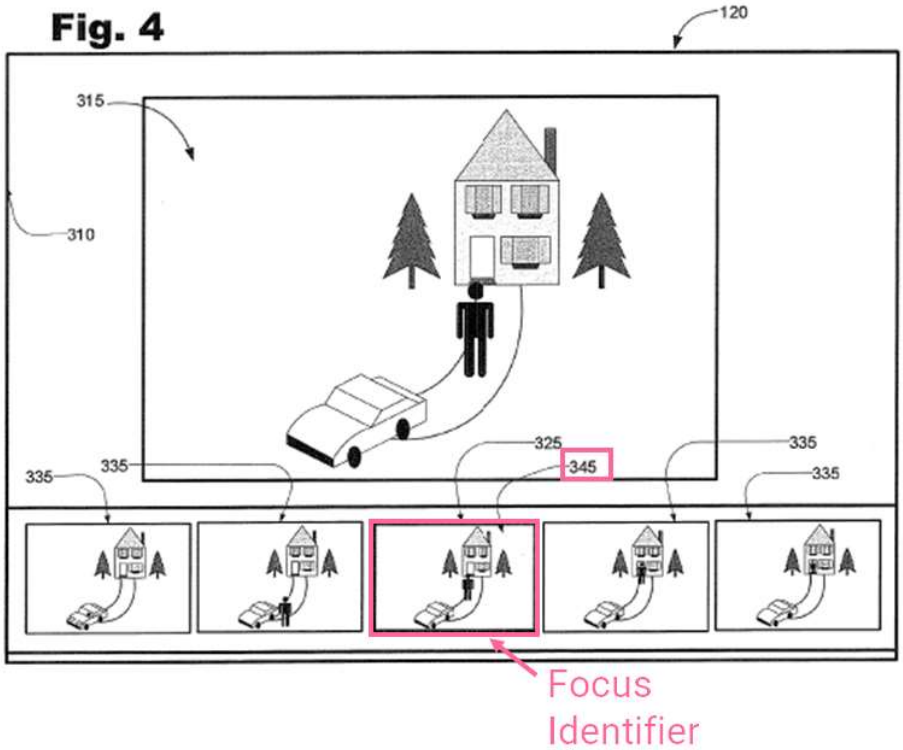
Finally, Nishikawa teaches that "a focus identifier marks an image of a

chapter corresponding to the current position within the continuous video playback." Houh, ¶97. As Figure 8 shows, Nishikawa's status bar includes a border (i.e., "focus identifier") that marks the thumbnail image of a chapter, here the chapter labeled "Mark 3." Nishikawa, [0046]. The thumbnail with the border, Nishikawa explains, is "the thumbnail currently in focus" in the playback of the video content. *Id.*

To the extent it is argued Nishikawa does not teach this, it would have been obvious based on Angiolillo. Angiolillo teaches a "selection tool 325," shown as a border in Figures 3 and 4, that "is operative to magnify [a] selected image 345 relative to the other images 335 included in [the] control pane[.]" Angiolillo, [0038], Figs. 3-6. As shown, Angiolillo's selection tool (i.e., "focus identifier") "marks an image of a chapter corresponding to the current position within the continuous video playback." Houh, ¶98; *see also* Angiolillo, Figs. 3-6.



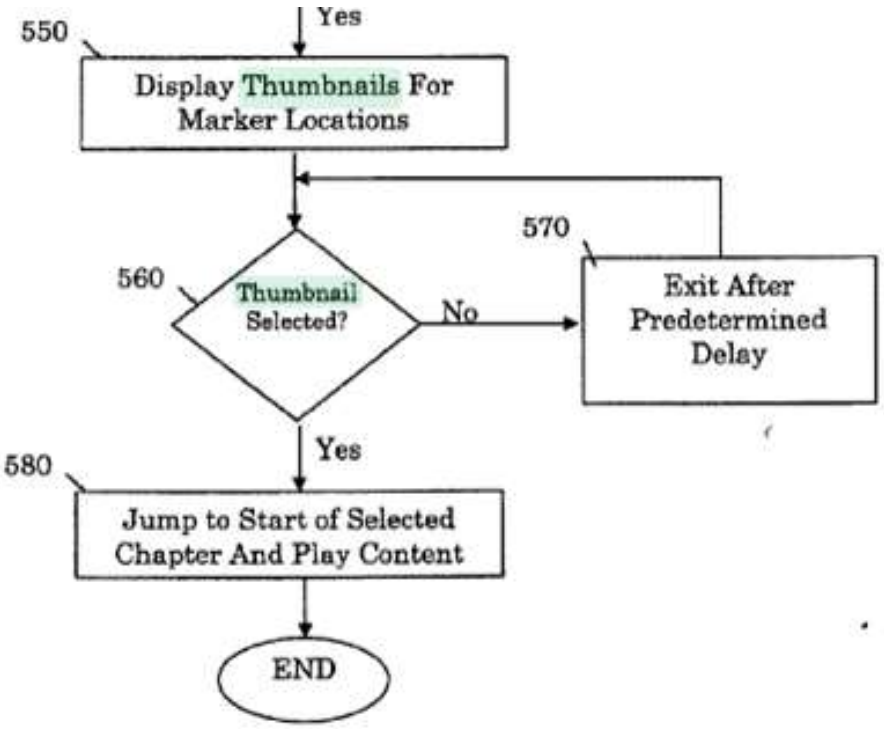
Angiolillo, Fig. 3 (annotated).



Angiolillo, Fig. 4 (annotated).

4. 1[c] receiving a selection of one of the chapter preview images as chapter skip input during the continuous playback of the video;

Nishikawa teaches "receiving a selection of one of the chapter preview images as chapter skip input during the continuous playback of the video" because Nishikawa teaches receiving a selection of one of the thumbnailed images as an input to jump to another chapter. Houh, ¶¶99-101. As Nishikawa explains with reference to Figure 5, "[o]nce the … thumbnailed images are displayed, … a user may decide to select one of the thumbnails." Nishikawa, [0034]. When "a user selection is detected at block 560 … the current viewing location will jump to the selected bookmark and the video content will begin playing from that point." *Id.*; *see also id.*, [0019], [0029], [0043] (further describing using thumbnailed images to jump to a chapter). A POSITA would have understood from Nishikawa that the thumbnailed images are displayed, and the user's selection to jump to another chapter is received, during the continuous playback of the video because Nishikawa envisions that the status bar—which includes the thumbnailed images for selection by the user— is "displayed as an overlay onto the video content being viewed." Houh, ¶99; Nishikawa, [0031]; *see also id.*, [0025], [0035], [0041] (similar).



Nishikawa, Fig. 5 (annotated). *See also* '300 Patent, 1:19-32 (acknowledging that "[a]n interface of most DVD players" known in the art "allows a user to navigate to a selected chapter … by selecting a preview image or a chapter title from a DVD menu, in order to begin viewing the DVD content from that chapter.")

To the extent it is argued that Nishikawa does not disclose receiving user input through its user interface "during the continuous playback of the video," Ackley expressly discloses this feature for the reasons discussed in Section VII.B. *See* Ackley, [0029], [0042]; *see also id.*, Abstract, [0009], [0034], [0035], [0043]-[0046], [0048], claim 17, Figs. 4-5. Moreover, it would have been obvious to incorporate this teaching from Ackley into Nishikawa's user interface for the

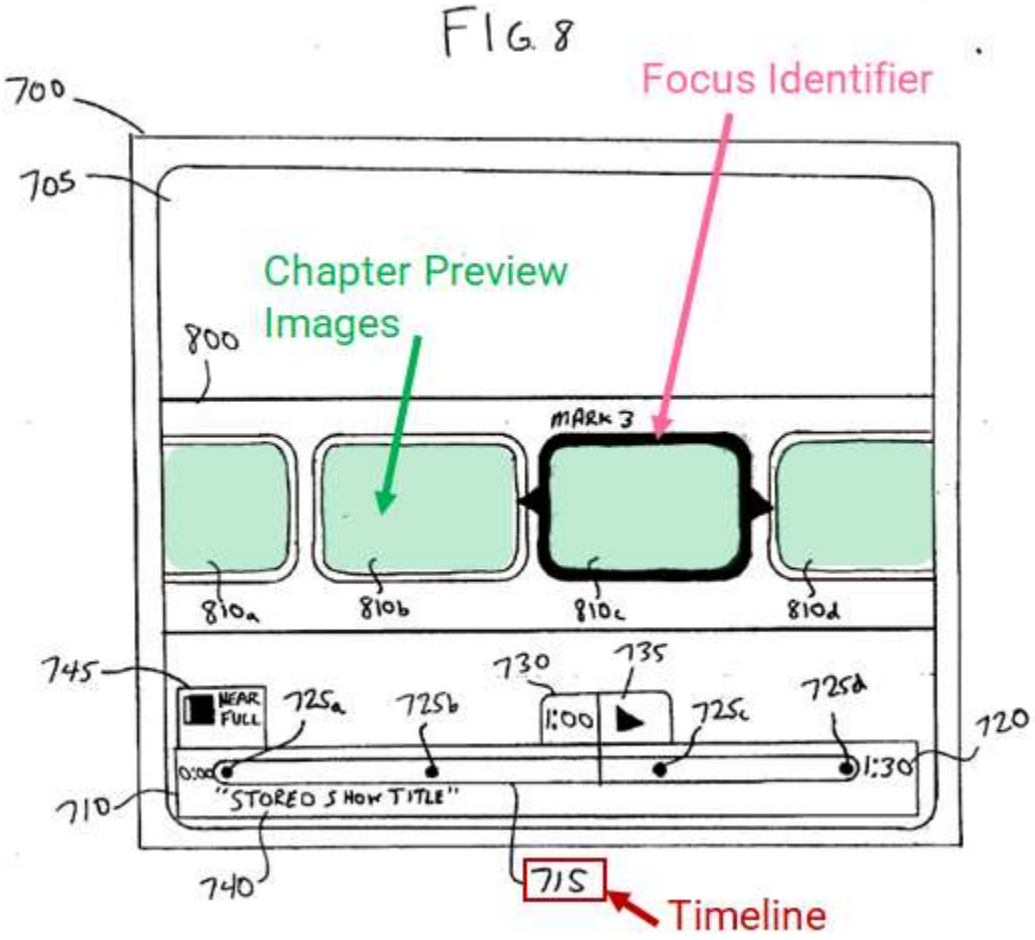
reasons discussed in Section VII.B.

5. 1[d] moving the at least one image from each chapter one position along the line with respect to the focus identifier, according to the chapter skip input, wherein the one image is moved to the left when the chapter skip input indicates a skip forward and wherein the one image is moved to the right when the chapter skip input indicates a skip backward; and

Nishikawa and Angiolillo teach this. Houh, ¶¶102-06. As Nishikawa explains with reference to Figure 8, "the thumbnailed images [i.e., 'at least one image'] may be displayed in a sequence" along the progress bar (i.e., "line") that is "organized from left to right, with the left-most thumbnail corresponding to the first [chapter] mark … and the right-most thumbnail corresponding to the last [chapter] mark," and the border marks "the thumbnail currently in focus" in the playback of the video content. Nishikawa, [0017], [0033], [0036]. When a user "decide[s] to select one of the thumbnails" corresponding to a chapter mark, and the "user selection is detected," then "the current viewing location will jump to the selected [chapter] mark and the video content will begin playing from that point." *Id.*, [0034]. Nishikawa explains that "a user may scroll through the available thumbnails … using a left and right navigation," with a particular "thumbnail currently in focus" as the user scrolls. *Id.*, [0046].

Because the "current viewing location" is marked by the border in Nishikawa, a POSITA would have understood that, when the user selects to jump

from the current chapter mark to the next chapter mark along the progress bar (that is, the chapter mark immediately to the right along the progress bar), the thumbnail images along the progress bar will move one position to the left along the progress bar with respect to the border so that the thumbnail image corresponding to the next chapter mark (to which the user selected to jump as the new viewing location) is now in the border. Houh, ¶103. Moreover, because Nishikawa envisions using "left and right navigation" to change the "thumbnail currently in focus," Nishikawa, [0046], a POSITA would have understood that the thumbnail image currently in focus is moved to the left of the border when the user's selected chapter mark is a jump forward and is moved to the right of the border when the user's selected chapter mark is a jump backward. Houh, ¶103.



Nishikawa, Fig. 8 (annotated).

To the extent it is argued Nishikawa does not expressly teach this, a POSITA would have been motivated and found it obvious to implement Nishikawa in this manner based on Angiolillo. Houh, ¶104. As shown, Angiolillo's control pane, like Nishikawa's status bar, allows a user to navigate through content using "displayed images 335" (i.e., "at least one image") from the content. Angiolillo, [0041]. As Angiolillo explains with reference to Figures 2 and 3, when "user input has been received indicating that the user has selected to navigate the displayed

images 335," the "image selection tool 325" (i.e., "focus identifier") "may remain substantially still while the displayed images 335 move relative thereto" along a timeline called a "video playback bar 340," as shown. *Id.*, [0054]. "For example," Angiolillo explains, "if the user pressed the right arrow 215, the displayed images 335 may shift to the left by one image 335." *Id.* "Consequently, an image 345 which was initially selected by the image selection tool 325 will shift and subsequently be located to the left of the image selection tool 325, while the image selection tool 325 remains in place on the location control pane 320." *Id.*

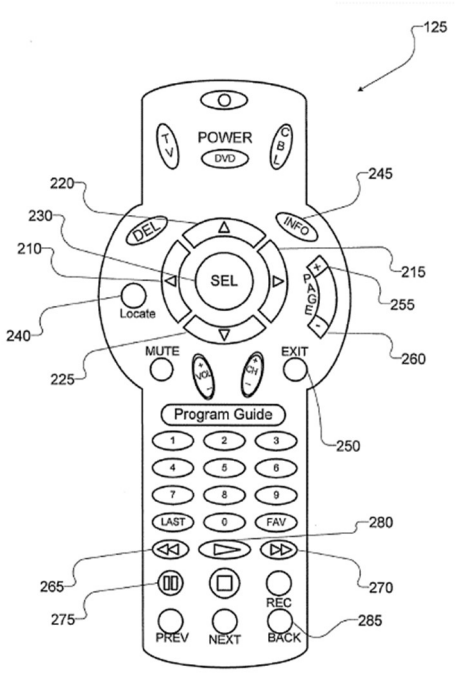
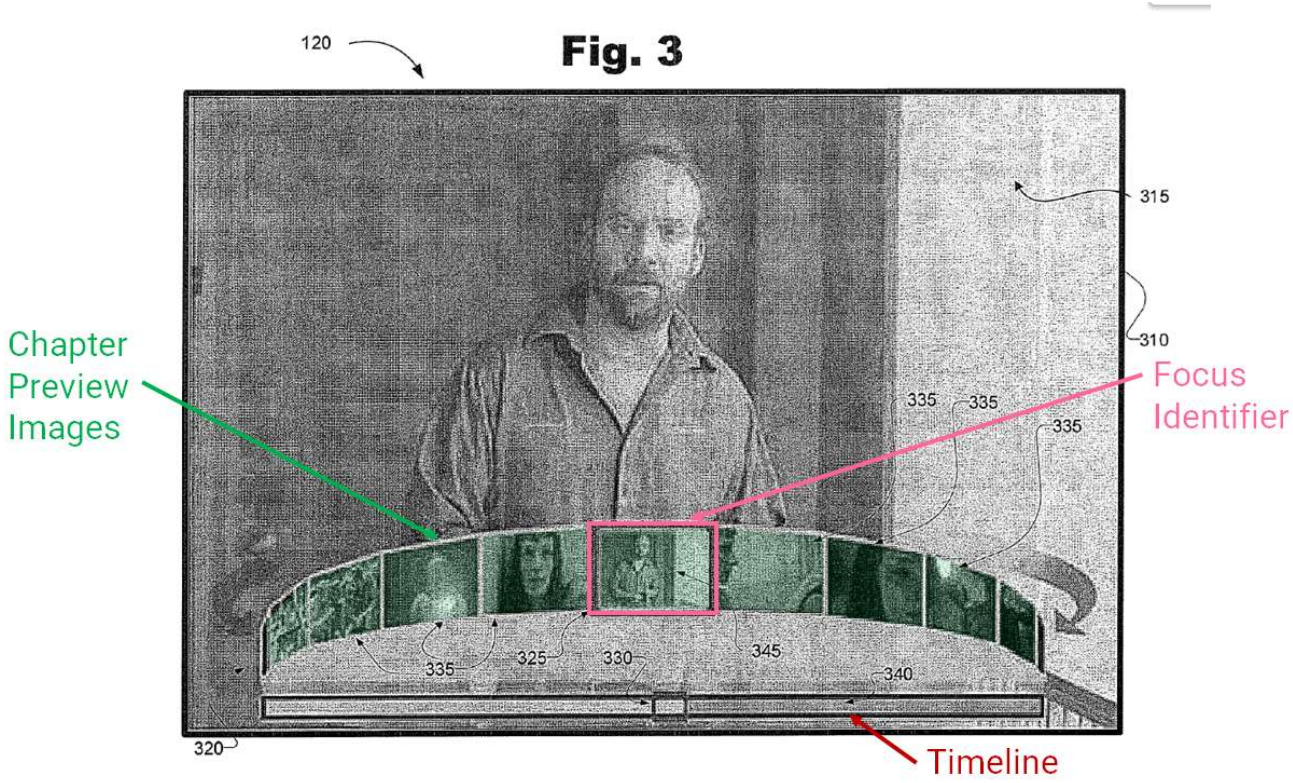


Fig. 2

Angiolillo, Fig. 2.



Angiolillo, Fig. 3 (annotated).

From Angiolillo, a POSITA would have been motivated and found it obvious to implement Nishikawa's status bar so that the border, like Angiolillo's selection tool, remains "substantially still," and the thumbnailed images move relative to the border, just as Angiolillo's images move relative to the selection tool. Houh, ¶105 A POSITA would have been motivated by the intuitive nature of Angiolillo's selection tool, which allows a user to focus in a single location on the screen by remaining "substantially still." *Id.* In such an implementation, Nishikawa and Angiolillo would teach "moving the at least one image from each chapter one position along the line with respect to the focus identifier, according to the chapter

skip input" because Nishikawa's thumbnailed image for the current chapter would be moved "left by one image," as Angiolillo teaches ([0054]), along Nishikawa's progress bar with respect to the border, according to the user's selection to jump to the next chapter. Houh, ¶105.

Moreover, in such an implementation, Nishikawa and Angiolillo would teach that "the one image is moved to the left when the chapter skip input indicates a skip forward and wherein the one image is moved to the right when the chapter skip input indicates a skip backward" because Nishikawa's thumbnailed image for the current chapter would be moved to the left when the user pressed the right arrow 215 to jump forward a chapter and would be moved to the right when the user pressed the left arrow 210 to jump backward a chapter. Houh, ¶106; *see also* '300 Patent, 1:19-32.

6. 1[e] skipping playback of the video to a chapter identified by the focus identifier such that the video playback continues from the position of the chapter identified by the focus identifier.

Nishikawa and Angiolillo teach "skipping playback of the video to a chapter identified by the focus identifier such that the video playback continues from the position of the chapter identified by the focus identifier." *See supra* Section VII.C.5; Houh, ¶¶107-08. As Nishikawa explains, the user may "scroll through the thumbnails, and hence the [chapter] marks, and select to begin viewing

the content from [whichever] thumbnail is then chosen." Nishikawa, [0019]. When "a user selection" of a thumbnail image for a chapter is received, "the current viewing location," indicated by the border around the thumbnail image, "will jump to the selected [chapter] mark and the video content will begin playing from that point." *Id.*, [0034]; *see also id.*, [0019], [0043], [0046]; Angiolillo, [0042], [0058]; '300 Patent, 1:19-32 (acknowledging that "[a]n interface of most DVD players" known in the art "allows a user to navigate to a selected chapter … in order to begin viewing the DVD content from that chapter.")

D. Claim 2: The method of claim 1, wherein the on-screen display includes a video preview from at least one of the plurality of chapters of the video that is displayed in order in the line with the rest of the at least one images from the rest of the plurality of chapters.

Nishikawa and Vahtola teach this. Houh, ¶¶109-113. As discussed for 1[a]-1[b], Nishikawa discloses that the on-screen display (Nishikawa's "status bar") includes chapter preview images (i.e., Nishikawa's "thumbnailed images") for each of the plurality of chapters that are displayed parallel to the timeline (i.e., Nishikawa's "progress bar") on the display. *See supra* Sections VII.C.2-3; Nishikawa, [0019], [0032]-[0034], [0045]-[0046]. Nishikawa explains that these thumbnail images are representative of the content at their respective chapter marks and may be captured from that content. Nishikawa, [0024], [0033]. Nishikawa also explains that displaying the thumbnailed images with the DVR

status bar may be advantageous because the user can view the image to decide whether it corresponds to the desired content. *E.g.*, *id.*, [0019].

Vahtola similarly discloses a "menu-type display … in which thumbnail images [i.e., 'the at least one images'] from the chapter or even portions of the continuous media data from each chapter are displayed in such a menu." Vahtola, [0061]. Vahtola explains that the first frame may be used as the thumbnail image, while the first several seconds of each chapter may be used as the continuous media portion. *Id*., [0061]. A POSITA would have recognized that Vahtola's "portion[] of the continuous media data" is a "video preview from at least one of the plurality of chapters," as claimed. Houh, ¶110.

A POSITA would have been motivated and found it obvious to incorporate Vahtola's video previews into Nishikawa's menu of thumbnail images. Houh, ¶111. While Nishikawa discloses using thumbnail images for each chapter, Vahtola further discloses using the first several seconds of each chapter as a video preview. Vahtola, [0061]. A POSITA would have recognized that both the thumbnail and video previews would have allowed the user to determine whether a particular chapter corresponds to the desired content that the user wanted to view, as Nishikawa expressly discloses regarding thumbnail images. Houh, ¶111. Moreover, a POSITA would have recognized that Vahtola's video preview, being several seconds instead of a still image, would provide the user with even more

information for determining whether the chapter corresponds to the desired content. *Id.*

A POSITA thus would have been motivated and found it obvious to modify Nishikawa's status bar to give the user the option to view the video preview for one or more chapters. In such a modification, if a user selected a thumbnail image along Nishikawa's progress bar (*see, e.g.*, Nishikawa, [0019]), the video preview of the chapter corresponding to that thumbnail would play. Houh, ¶112. This would enable the user to confirm that the content in the video preview was the desired content and then select the video preview to begin viewing the content in Nishikawa's screen. A POSITA would have been motivated to make this modification because it would have furthered Nishikawa's goal of allowing the user to ensure the desired content was being selected. This modification also would have been nothing more than using a known technique (Vahtola's disclosure of using video as well as thumbnail previews) to improve a similar device (Nishikawa's disclosure of using thumbnail previews) in the same way and to achieve the predictable result of better enabling a user to select and view desired content via Nishikawa's menu. *Id.* A POSITA would have had a reasonable expectation of success implementing Nishikawa's thumbnail images as video previews, as Vahtola teaches. *Id.* Nishikawa and Vahtola both envision using thumbnail images to aid a user in navigating video content. *Compare* Nishikawa,

[0045]-[0046], Fig. 8 *with* Vahtola, [0061]. Vahtola teaches that augmenting "thumbnail images from the chapter" with "portions of the continuous media data from each chapter" in a "menu-type display" was known, showing that implementation of Vahtola's continuous video play into Nishikawa would have been straightforward and within the skill of a POSITA. Houh, ¶112.

Moreover, this modification to Nishikawa is expressly disclosed in Ackley, and to the extent is it argued that Vahtola does not teach a video preview, it would have been obvious to include Ackley's video preview disclosures for the same reasons discussed in this section, e.g., to allow the user to ensure the desired content was being selected. Houh, ¶113. Ackley describes a scene selection menu that is similar to those described in Nishikawa and Vahtola. As Figure 5 shows, Ackley's menu includes thumbnailed images (i.e., "the at least one images") displayed in a line, as shown, that correspond to chapters in the video. Ackley, [0009], [0046]-[0049], Figs. 4, 5. In an embodiment, thumbnails corresponding to video chapters are displayed in the foreground menu 400/500 while the video stream 410/520 continues playing in the background, allowing the user to scroll through the thumbnails without the video being interrupted. *Id*., [0046]. When the user selects one of the thumbnails (e.g., thumbnail 510 in Figure 5), video of the scene portrayed in the thumbnail starts playing within the thumbnail 510. *Id*., [0048]. Thus, the video preview from a chapter is displayed in the line with the

remaining thumbnails from the rest of the chapters. *Id*., [0048], Fig. 5. If the user selects that thumbnail again, the main video stream 520 then switches to the selection. *Id*., [0048].

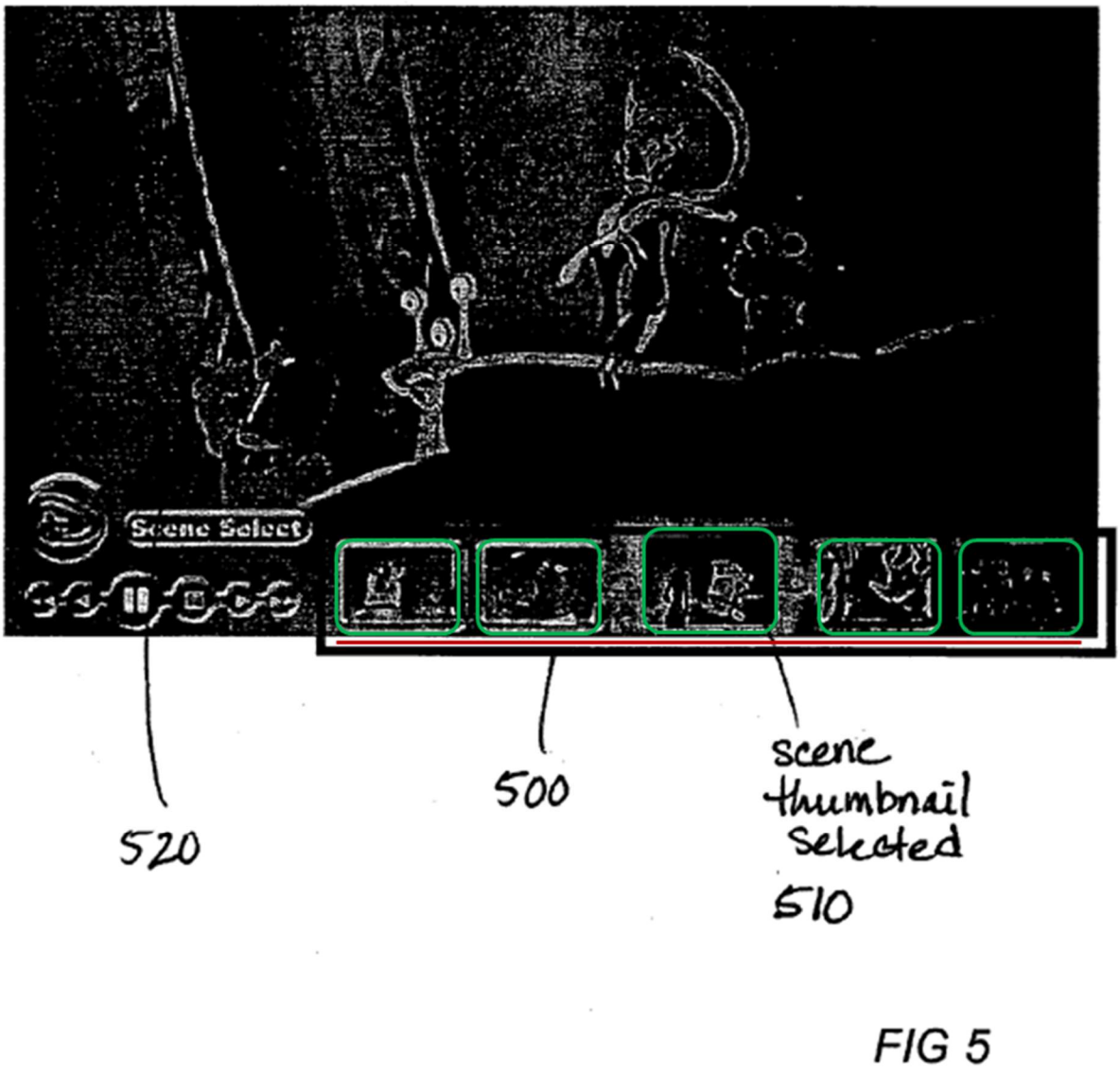


FIG 5

Ackley, Fig. 5 (annotated).

E. Claim 3: The method of claim 1, wherein the video comprises secured media content on a flash memory device.

Nishikawa, Angiolillo, and Vahtola teach this for the reasons discussed for 1[a]. The combination teaches storing the video content in a memory, including in an SD card and/or flash drive. *See supra* Section VII.A.2; *see also* Nishikawa, [0017], [0022], [0030]; Angiolillo, [0026]-[0027], [0030], [0034]; Vahtola, [0030], [0034]. A POSITA would have known that an SD card is a type of flash memory device. Houh, ¶114; '300 Patent ("In one embodiment, the SD card 150 is a flash memory device.…"). Moreover, a POSITA would have found it obvious to store Nishikawa's video content as "secured media content" on the SD card. Houh, ¶114. A POSITA would have been motivated to do so to prevent the well-known risks of piracy, tampering, and other unauthorized uses of video content. Houh, ¶114 (*citing, e.g.,* EX1022, EX1021, EX1023). A POSITA would have recognized that video content stored securely on a Secure Digital card, i.e., SD card, would have been "secured media content" within the meaning of the '300 patent. Houh, ¶114. The '300 patent does not provide any narrower understanding of "secured media content" than content securely stored on an SD card. *See* '300 Patent, Fig. 4 (step 401), 7:11-19.

F. Claim 4: The method of claim 3, further comprising: initiating playback of the video from the flash memory device; reading metadata from the flash memory device; matching the read metadata from the flash memory device with the video; and

assembling the video and the metadata in a memory structure to retrieve for playback and display.

Nishikawa, Angiolillo, and Vahtola teach "initiating playback of the video from the flash memory device" and "reading metadata from the flash memory device" for at least the reasons they teach that the "video" and the "metadata file stored with the video" that is used in "presenting … [the] on-screen display," are stored on a flash memory device, such as an SD card; and "reading from [the] metadata file stored with the video" on the flash memory device and enabling "playback of [the] video" (and "playing video") from the flash memory device, as recited in claims 1 and 3. *See* Sections VII.A.1, VII.A.2, VII.C.2-3, VII.E.

Nishikawa, alone or with Angiolillo and/or Ackley, also teaches claim 4 for the additional reasons below. Houh, ¶¶116-129.

Nishikawa and Angiolillo teach "initiating playback of the video from the flash memory device." Houh, ¶¶117-119. As Figure 9 of Angiolillo shows, in step 905, "processing subsystem 105 receives a selection for a media content instance[.]" Angiolillo, [0072]. "Next, in step 910, processing subsystem 105 retrieves the requested media content instance 315, e.g., from storage 140." *Id.*, [0074]. Because Angiolillo teaches that "storage 140" may be a flash drive, *id.*, [0026], Angiolillo teaches initiating playback of the media content instance from the flash drive. A POSITA implementing Nishikawa according to Angiolillo and

Vahtola, *see* Section VII.A, would have been motivated by Angiolillo to implement Nishikawa's DVR system to initiate playback of the video content from the SD card ("flash memory device"), as Angiolillo teaches. Houh, ¶119.

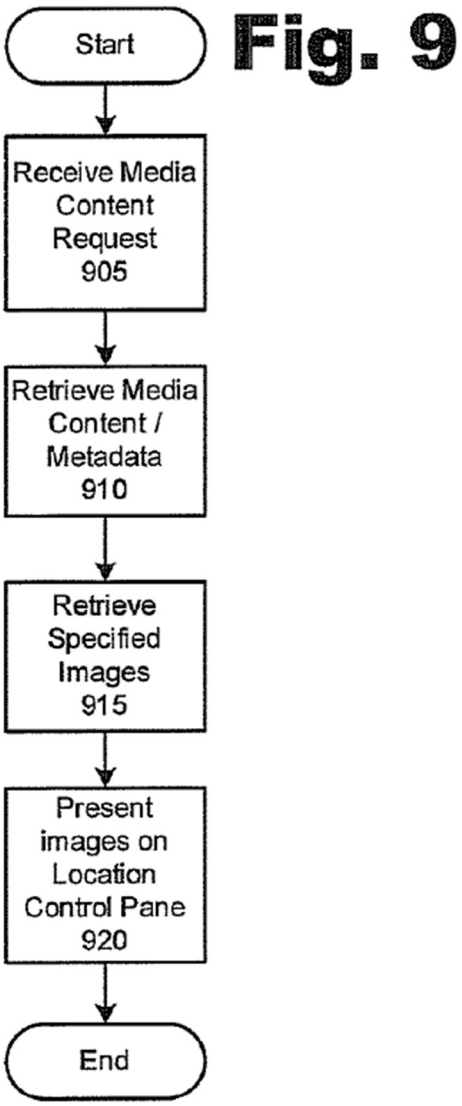


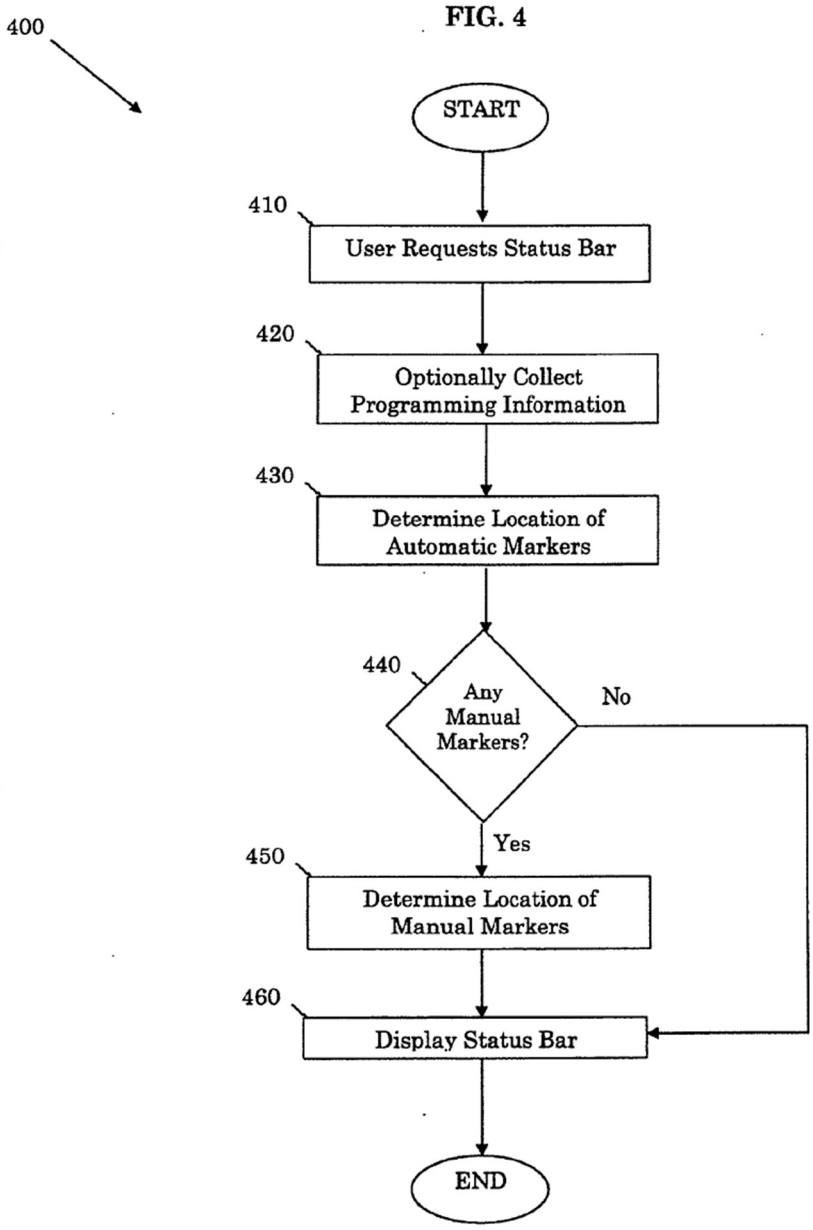
Fig. 9

Angiolillo, Fig. 9.

Nishikawa and Angiolillo also teach "reading metadata from the flash

memory device." Houh, ¶¶120-21. As Figure 9 shows, at "step 910, processing subsystem 105 retrieves the requested media content instance 315" and its "metadata" from "storage 140." *Id.*, [0026], [0074]. Because Angiolillo teaches that "storage 140" may be a flash drive, *id.*, [0026], Angiolillo teaches reading the metadata from the flash drive. A POSITA implementing Nishikawa according to Angiolillo and Vahtola, *see* Section VII.A, would have been motivated by Angiolillo to implement Nishikawa's DVR system to read Nishikawa's meta-data file from the SD card ("flash memory device"), as Angiolillo teaches. Houh, ¶121.

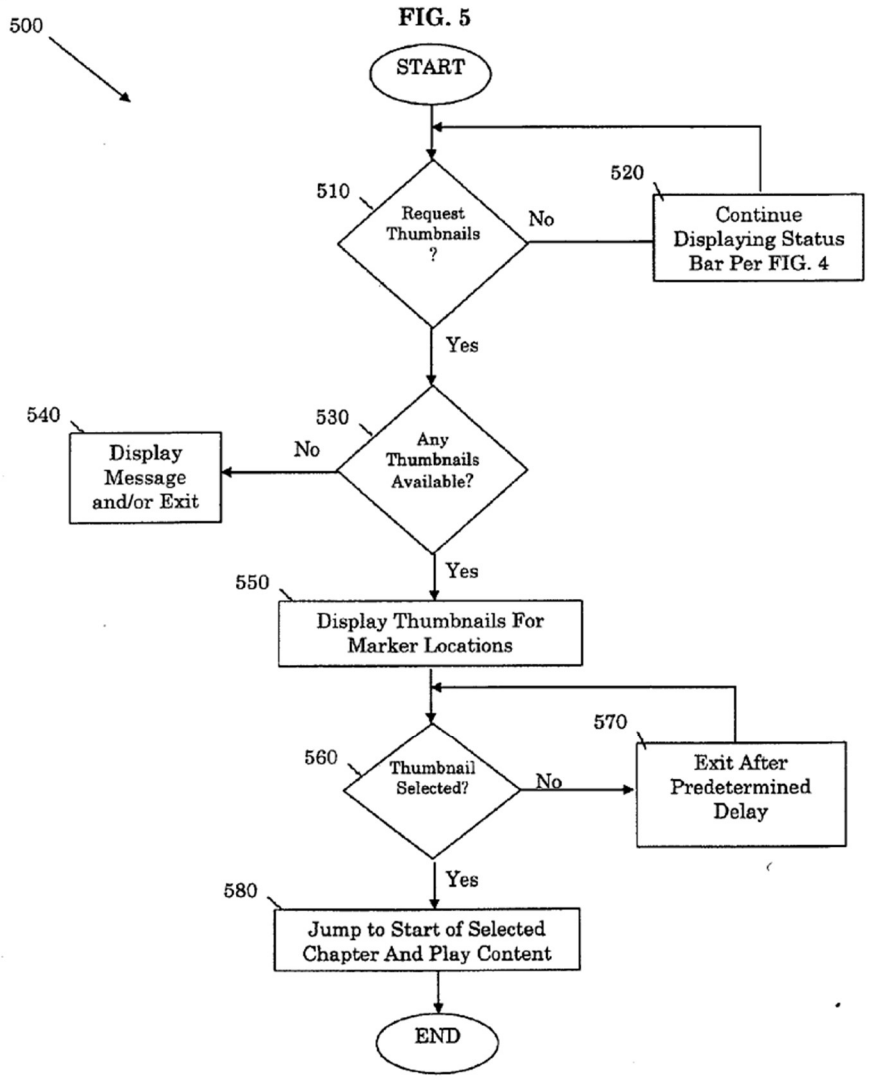
Nishikawa and Angiolillo further teach "matching the read metadata from the flash memory device with the video." Houh, ¶¶122-26. Nishikawa describes matching metadata with the video content in a process relating to its "thumbnailed images." Houh, ¶122. As Figure 4 shows, when a user requests to view the status bar, Nishikawa's system determines "the locations of any … markers" in the video content at steps 430 and 440. Nishikawa, [0029]-[0030]. "[O]nce all the markers have been located, … the status bar, along with the identified bookmarks, may then be presented on-screen to the user" at step 460.



Nishikawa, Fig. 4.

As explained for 1[b], Nishikawa's status bar includes thumbnailed images corresponding to each of its bookmarks. Figure 5 illustrates Nishikawa's process "for displaying [the] one or more thumbnailed images which correspond to the

bookmarks." Nishikawa, [0032]. As shown, if a user "request[s] to view any available thumbnailed images" at block 520, then at block 530, Nishikawa's system "determines if there are any thumbnails to view." *Id.* If so, at block 550, "any available thumbnailed images … will be displayed" according to their corresponding bookmarks (e.g., "the left-most thumbnail corresponding to the first bookmark … the right-most thumbnail corresponding to the last bookmark.…"). *Id.*, [0033]. A POSITA would have recognized that, in order to display the thumbnails at the corresponding bookmarks in the video content, Nishikawa's system would necessarily "match[] the read metadata"—the bookmarks—"with the video"—the video content. Houh, ¶123.



Nishikawa, Fig. 5.

A POSITA would have recognized that Nishikawa's DVR system, when implemented according to Angiolillo and Vahtola, *see* Section VII.A, would "match[] the read metadata from the flash memory device with the video." Houh, ¶B. Like Nishikawa's process for its thumbnailed images, Angiolillo's process for its "images" "match[es] the read metadata … with the video." In step 910,

Angiolillo teaches retrieving both the "media content instance" and the corresponding "metadata" for the media content instance from "storage 140," which may be a flash memory. Angiolillo, [0026], [0074]. Then, in step 915, Angiolillo teaches "retrieving from [the] media content instance 315 [the] images 355 specified in the metadata retrieved in 910" so that, at step 920, "the images 335" can be "included in [the] location access control pane 320[.]" *Id.*, [0075], [0076]; *see also id.*, [0068] (the metadata "accompan[ies] the media content"), [0074] ("digital media files generally include metadata"). From this, a POSITA would have understood Angiolillo to teach "matching the read metadata … with the video." Houh, ¶125. Because Angiolillo teaches that "storage 140" may be a flash drive, Angiolillo, [0026], Angiolillo teaches "matching the read metadata from the flash memory device with the video." A POSITA implementing Nishikawa according to Angiolillo and Vahtola, *see* Section VII.A, would have been motivated by Angiolillo to implement Nishikawa's DVR system to matching the read metadata from the SD card ("flash memory device") with the video, as Angiolillo teaches. Houh, ¶126.

To the extent it is argued that Angiolillo and/or Nishikawa do not teach such "matching," a POSITA would have found it obvious from Ackley. Ackley explains that "[o]nce the menu items and graphics necessary to control and navigate the media are loaded in memory 170, the CPU 115 would then map the contents of the

media to the menu items and build an appropriate menu to navigate the contents of the media." Ackley, [0033]. Ackley's "menu items" include "thumbnail images" akin to Nishikawa's. *Id.*, [0009], Figs. 4, 5. A POSITA would have understood Ackley's disclosure of "map[ping] the contents of the media to the menu items" to teach "matching the read metadata"—including the thumbnail images—"with the video"—that is, the media content. *Id*., [0033]; Houh, ¶127. Because Nishikawa discloses a similar process for displaying its thumbnail images in the status bar, a POSITA would have found it obvious to implement Nishikawa with a process like Ackley's for "matching the read metadata from the flash memory device with the video." *See also* Sections IV.A, VII.C.3.

Finally, Nishikawa and Angiolillo teach "assembling the video and the metadata in a memory structure to retrieve for playback and display." Houh, ¶128. As explained in Section VII.A.1, from Angiolillo, a POSITA would have been motivated and found it obvious to implement Nishikawa's DVR system to store the program title information, chapter marks, and information concerning the thumbnailed images in Nishikawa's meta-data file. Also from Angiolillo, a POSITA would have been motivated and found it obvious to assemble Nishikawa's meta-data file and video content in a "digital file," as Angiolillo describes, which a POSITA would have understood to be a "memory structure." Houh, ¶128; Angiolillo, [0074]. A POSITA would have understood that

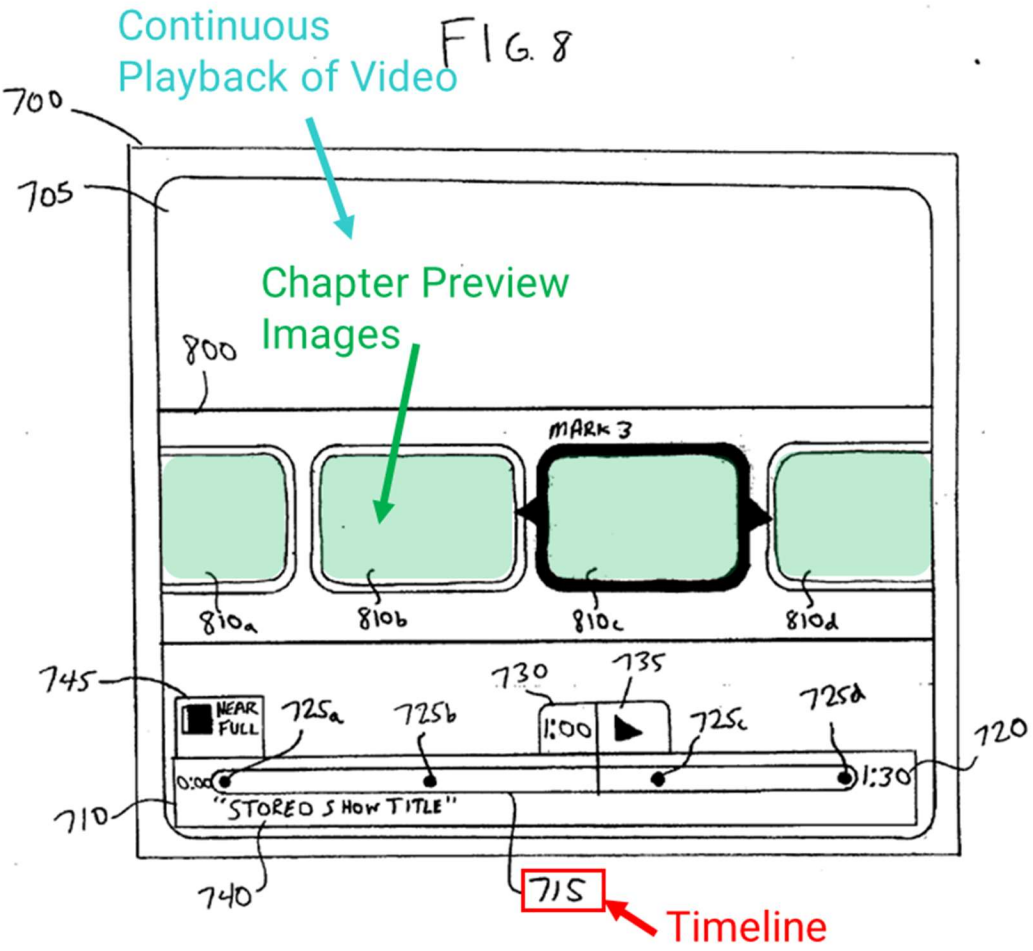
Nishikawa's meta-data and video content, assembled into such a digital file, is "retrieve[d] for playback and display," because Nishikawa teaches retrieving the video content and metadata to play back the video content and present the status bar (*see, e.g.*, Sections VII.C.2-3) and Angiolillo teaches that the digital file is "retrieve[d]" to play back the media content instance and present the location control panel (*see, e.g.*, Angiolillo, [0074]). Houh, ¶128.

G. Claim 5: The method of claim 1, wherein the metadata comprises chapter titles, chapter start times and location on the flash memory device.

Nishikawa, Angiolillo, and Vahtola teach this for the reasons discussed for 1[a]. *See supra* Section VII.C.2; *see also* Nishikawa, [0017], [0030]; Angiolillo, [0026]-[0027]; Vahtola, [0030], [0034]. A POSITA would have known that an SD card is a type of flash memory device. Houh, ¶129; '300 Patent ("In one embodiment, the SD card 150 is a flash memory device.…").

H. Claim 6: The method of claim 1 wherein the timeline and the one image from each of the plurality of chapters displayed in order in a line are displayed vertically.

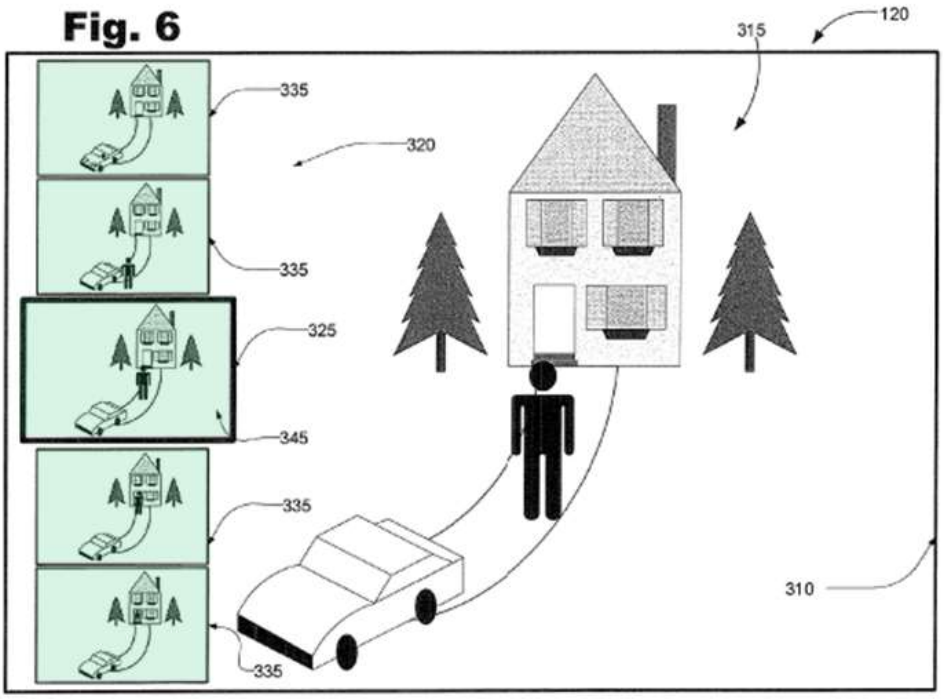
Nishikawa and Angiolillo teach this. As discussed for 1[b], Nishikawa discloses displaying the timeline and the one image from each of the plurality of chapters displayed in order in a line, but they are displayed horizontally instead of vertically, as recited in claim 6:



Nishikawa, Fig. 8 (annotated).

Nishikawa also discloses, however, that "numerous other configurations may similarly be used for presenting the status bar to the user." *Id.*, [0031].

From Angiolillo, a POSITA would have been motivated and found it obvious to display Nishikawa's timeline and images vertically, as an "other configuration[]." Houh, ¶132. Angiolillo envisions displaying the timeline and images horizontally (Figs. 3, 4) or vertically (Figs. 5, 6):



Angiolillo, Fig. 6 (annotated); *see also id.*, Fig. 5, [0038]-[0039].

In Angiolillo, this is a "[c]onfigurable parameter[]" that allows a user to "configure control pane 320 in a manner that will minimize the interference that location control pane 320 may have on the viewing habits and preferences of the user." Angiolillo, [0044].

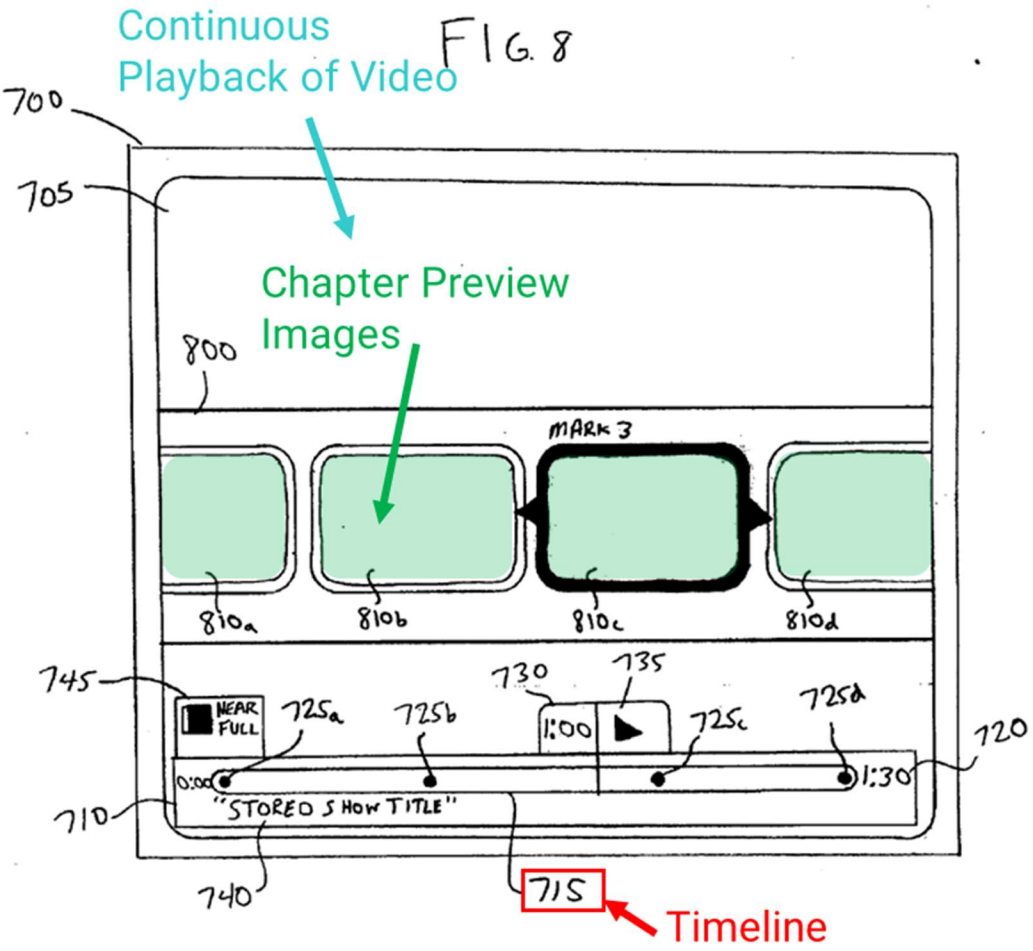
From Angiolillo, a POSITA would have been motivated to allow a user to display Nishikawa's timeline and images vertically to minimize interference with the user's viewing and thereby improve user experience. Houh, ¶134. A POSITA would have had a reasonable expectation of success in doing so because Nishikawa

already contemplates "other configurations," and a vertical display would have been well within the skill level of a POSITA. Houh, ¶135.

I. Claim 7: The method of claim 1 wherein the timeline and the one image from each of the plurality of chapters displayed in order in a line are displayed as an overlay in the foreground during the continuous playback of the video.

Nishikawa discloses this. Houh, ¶¶136-38. For the reasons discussed for 1[b], Nishikawa discloses displaying, during continuous playback of the video, a status bar that includes the timeline and the one image from each of the plurality of chapters in sequential order parallel to the timeline. *See supra* Section VII.C.3.

Moreover, for the reasons discussed for 1[b], Nishikawa's status bar of Figures 6-8 (which includes the timeline and images) is displayed as an overlay in the foreground over the continuously played video. Nishikawa explains that in Figures 6 and 7 "the status bar is displayed as an *overlay* onto the video content being viewed." Nishikawa, [0031]; *see also id.*, [0035] ("status bar 610 is being overlaid on the screen 605 of the video content"), [0041] ("status bar 710 is being overlaid on the screen 705 of the video content"), [0045] ("FIG. 8 depicts another embodiment of the screen 705 of FIG. 7.").



Nishikawa, Fig. 8 (annotated).

To the extent it is argued that Nishikawa does not disclose that its user interface with these features is "overlay[ed] in the foreground during the continuous playback of the video," Ackley discloses this for the reasons in Sections VII.B and VII.C.3-4. *See* Ackley, Abstract, [0008], [0009], [0029], [0034], [0035], [0042]-[0046], [0048], claim 17, Figs. 4-5. Moreover, it would have been obvious to incorporate this teaching from Ackley into Nishikawa's user interface for the reasons discussed in those Sections.

J. Claim 8

1. 8[p] A non-transitory computer readable medium storing instructions thereon, the instructions when executed causing at least one processor to:

To the extent the preamble is limiting, Nishikawa and Angiolillo disclose it. Houh, ¶139. Nishikawa's system includes a "storage device 108," "volatile memory 110" that contains "instructions," and "CPU 106" that performs the functions of Nishikawa that disclose 8[a]-8[e]. Nishikawa, [0022], [0024], Fig. 1, claims 13-22. Angiolillo is similar. Angiolillo, [0030]-[0032]. A POSITA would have understood Nishikawa and Angiolillo to disclose this well-known configuration. Houh, ¶¶140-41.

2. 8[a] read from a metadata file associated with and stored with a video chapter titles, chapter start times, and location on a secure digital card (SD card) of chapter preview images that correspond to the playable content as initially configured and stored on the secure digital card, each chapter comprising a segment of content of the video;

See 1[a]. Nishikawa, Angiolillo, and Vahtola further teach that the "metadata file" is "associated with" the video. Angiolillo, for instance, teaches that the metadata "accompan[ies] the media content." Angiolillo, [0068]. Moreover, associating metadata with content was well known. Houh, ¶142 (citing EX1014, 305).

3. 8[b]-8[e]

See 1[b]-1[e].

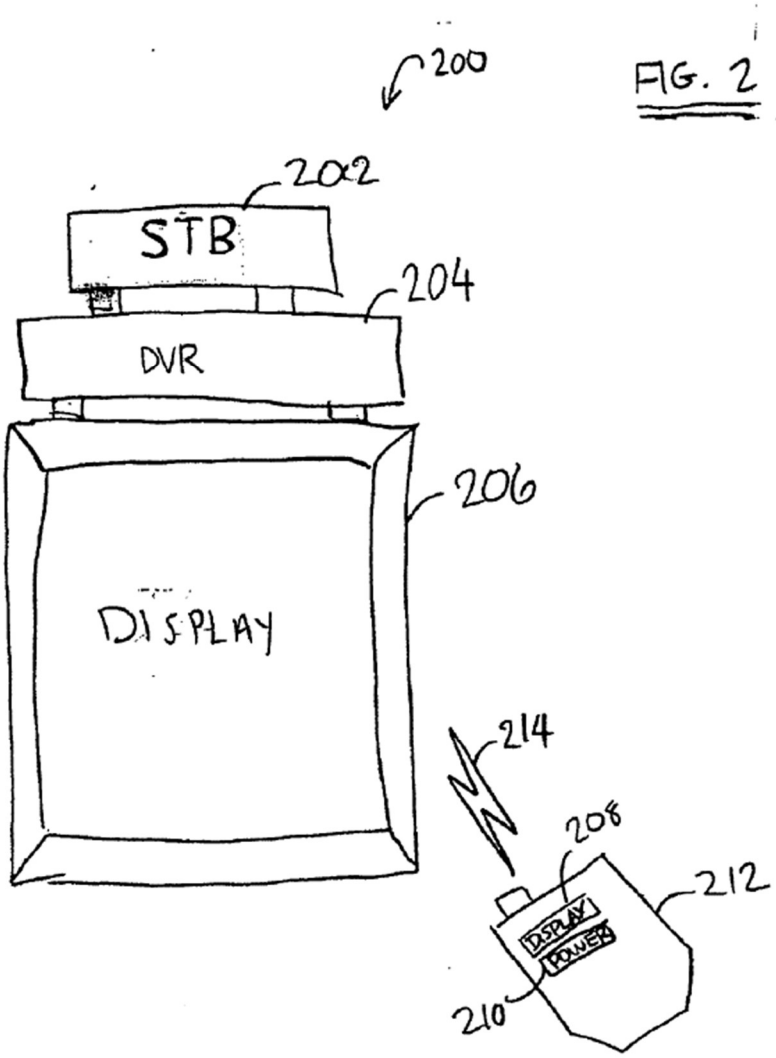
K. Claims 9-14

See claims 2-7.

L. Claim 15

1. 15[p] An apparatus for navigating a plurality of chapters of video content within a video, the apparatus comprising:

Nishikawa teaches this. Houh, ¶153. Nishikawa teaches "navigating a plurality of chapters of video content within a video." *See* 1[p]. Nishikawa teaches "an apparatus for [such] navigating" because Nishikawa describes a "system 200" that includes a "DVR 204" and a "display device 206," as Figure 2 shows. Nishikawa, [0025]; Houh, ¶153.



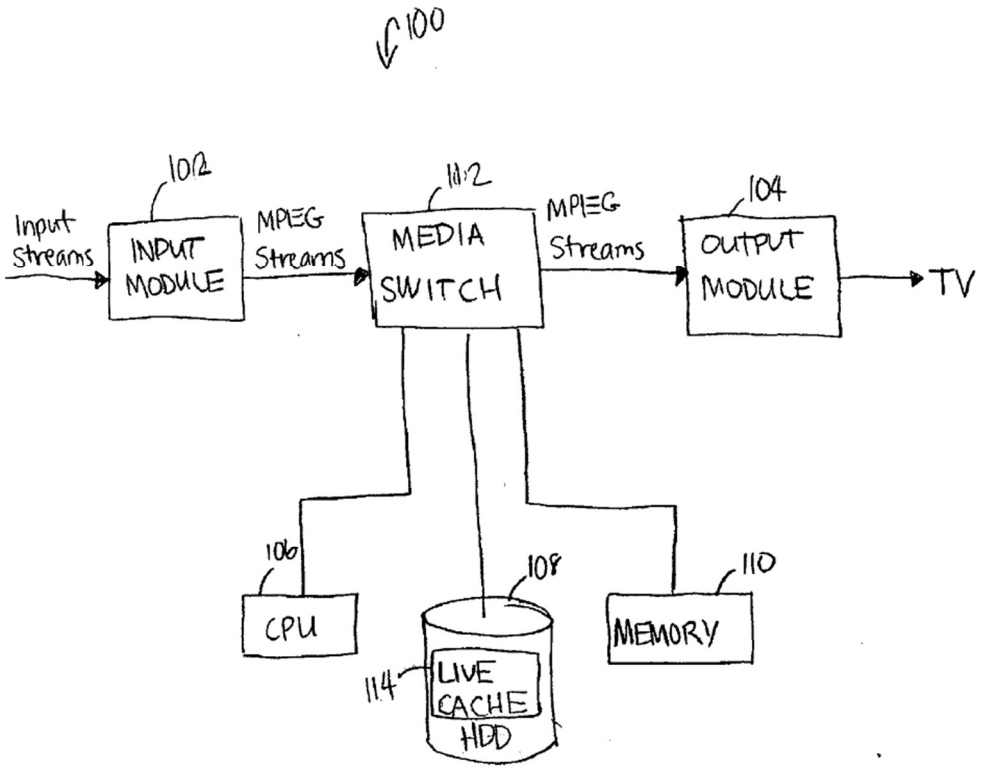
Nishikawa, Fig. 2.

2. 15[a] a video screen; and

Nishikawa discloses "a video screen" because Nishikawa teaches that the "display device 206" of its system has a "screen." Nishikawa, [0025]; Houh, ¶154.

3. 15[b] a processor, the processor configured to execute:

Nishikawa discloses "a processor" because Nishikawa's DVR system includes a "microprocessor CPU 106" and "instructions for causing the CPU 106 to perform … DVR-related operations[.]" Nishikawa, [0022], [0024]; Houh, ¶155. As shown:



Nishikawa, Fig. 1.

4. 15[c] a chapter presentation module, configured to: read from a metadata file associated with and stored with the video chapter titles, chapter start times, and location on a secure digital card (SD card) of chapter preview images that correspond to the playable content as initially configured and stored on the secure digital card, each chapter comprising a segment of content of the video; and

As explained for 1[a], Nishikawa, Angiolillo, and Vahtola teach this "read[ing]" step. It would have been obvious to implement this "read[ing]" step as a "chapter presentation module" that forms part of the "instructions" that cause Nishikawa's "CPU" to control the DVR system. Nishikawa, [0024]; Houh, ¶156. A POSITA would have been motivated and found it obvious to do so at least because Vahtola teaches that "instructions" for a "processing element" like Nishikawa's CPU "may comprise software," which commonly included "modules." Vahtola, [0035]; Houh, ¶156. Incorporating this "read[ing]" step into Nishikawa's instructions as a "chapter presentation module" would have been a combination of familiar elements according to known methods to yield predictable results. Houh, ¶156.

5. **15[d] [a chapter presentation module, configured to:] present, during continuous playback of a video, an on-screen display on the video screen, the on-screen display including a timeline having a demarcation for the beginning of each of the plurality of chapters of the video and having a marker corresponding to a current position in the video playback, the timeline assembled from the chapter titles, the chapter start times, and the location on the SD card of chapter preview images that correspond to the playable content stored as part of the metadata, and the on-screen display including one image for each of the plurality of chapters from the chapter preview images displayed in sequential order parallel to the timeline, wherein a focus identifier marks an image of a chapter corresponding to the current position within the continuous video playback;**

As explained for 1[b], Nishikawa, Angiolillo, and Vahtola teach this "present[ing]" step. Nishikawa also teaches that its status bar (the "on-screen display") is presented "on the video screen," because Nishikawa teaches "displaying information in a status bar at the bottom of the screen" of its display device. Nishikawa, [0025]. It would have been obvious to incorporate this "present[ing]" step into Nishikawa's instructions as a "chapter presentation module" for at least the reasons explained for 15[c]. Houh, ¶157.

6. **15[e] a receive module configured to receive a selection of one of the chapter preview images as chapter skip input during the continuous playback of the video;**

As explained for 1[c], Nishikawa teaches this "receiv[ing]" step. It would have been obvious to incorporate this "receiv[ing]" step into Nishikawa's

instructions as a "receive module" for at least the reasons explained in connection with the "chapter presentation module" in 15[c]. Houh, ¶158.

7. 15[f] a move module configured to move the at least one image from each chapter one position along the line with respect to the focus identifier, according to the chapter skip input, wherein the one image is moved to the left when the chapter skip input indicates a skip forward and wherein the one image is moved to the right when the chapter skip input indicates a skip backward; and

As explained for 1[d], Nishikawa and Angiolillo teach this "mov[ing]" step. It would have been obvious to incorporate this "mov[ing]" step into Nishikawa's instructions as a "move module" for at least the reasons explained in connection with the "chapter presentation module" in 15[c]. Houh, ¶159.

8. 15[g] a resume module for skipping playback of the video to a chapter identified by the focus identifier such that the video playback continues from the position of the chapter identified by the focus identifier.

As explained for 1[e], Nishikawa and Angiolillo this "skipping" step. It would have been obvious to incorporate this "skipping" step into Nishikawa's instructions as a "resume module" for at least the reasons explained in connection with the "chapter presentation module" in 15[c]. Houh, ¶160.

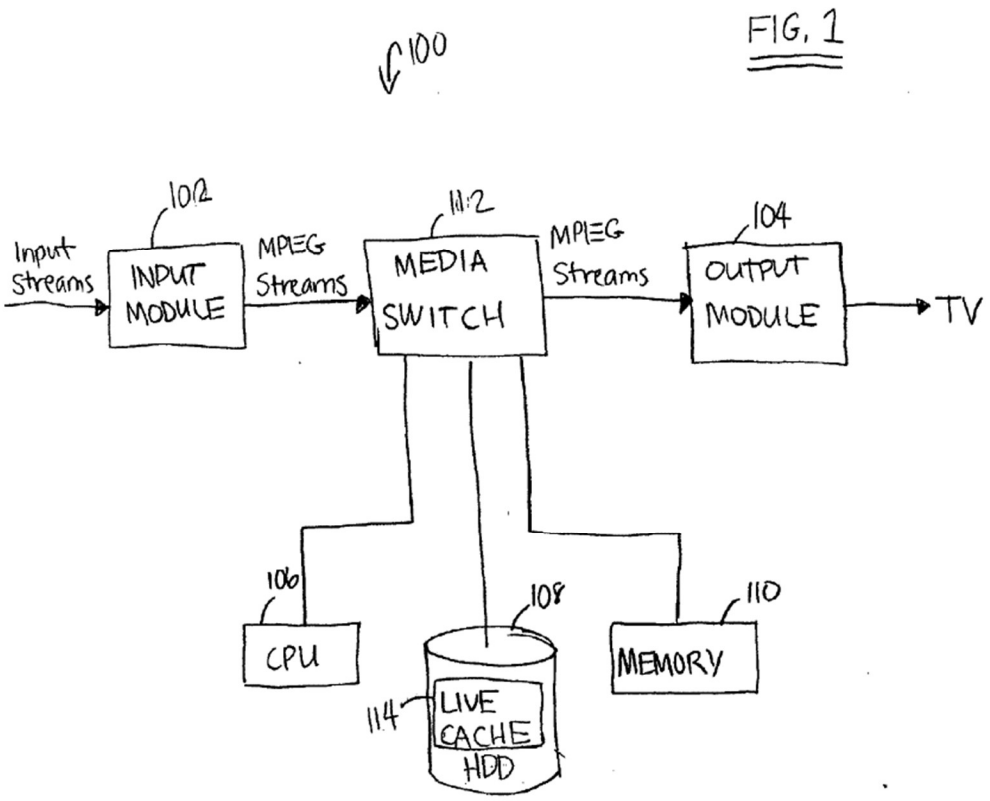
M. Claim 16

See claim 2.

N. Claim 17: The apparatus of claim 15, further comprising a secured digital memory device interface, the secured digital

memory device interface for receiving a secured media memory device having the video.

Nishikawa and Vahtola teach this. Houh, ¶162. As Figure 1 shows, Nishikawa's DVR system includes a "hard disk or storage device 108." Nishikawa, [0022].



Nishikawa, Fig. 1.

As explained in Section VII.A.2, a POSITA would have been motivated and found it obvious to implement Nishikawa's DVR system (as modified by Angiolillo) using an SD card as the storage device 108, as taught by Vahtola. Vahtola teaches that its DVR system may employ "a Secure Digital (SD) card)"

that "stores content" and is "removable." Vahtola, [0034]. From this, a POSITA would have understood Vahtola to teach that the DVR system has an "interface" that "receiv[es]" the SD card storing the content. Houh, ¶163. Such interfaces for SD cards were well known. *Id.* (citing EX1015, 3:1-3, 5:22-33).

O. Claim 18: The apparatus of claim 17, wherein the processor is further configured to execute: a playback module for initiating playback of the video from the secured digital memory device; a reading module for reading metadata from the secured digital memory device; a match module for matching the read metadata from the secured digital memory device with the video; and an assembly module for assembling the video and the metadata in a memory structure to retrieve for playback and display.

As explained for claim 4, Nishikawa, Angiolillo, and Vahtola teach the "initiating playback," "reading metadata," "matching," and "assembling" steps. It would have been obvious to incorporate these steps into Nishikawa's instructions as a "playback module," "reading module," "match module," and "assembly module," respectively, for at least the reasons explained in connection with the "chapter presentation module" in 15[c]. Houh, ¶164.

P. Claim 19

See claim 5.

Q. Claim 20: The apparatus of claim 15 wherein the timeline and the one image from each of the plurality of chapters displayed in order in a line are displayed vertically on the video screen.

See claim 6. Nishikawa and Angiolillo also teaches that when "the timeline and the one image … are displayed vertically," it is "on the video screen," because

Nishikawa teaches that its status bar (which includes the progress bar and thumbnail images) is presented on "the screen" of its display device. Nishikawa, [0025].

VIII. DISCRETIONARY DENIAL UNDER 35 U.S.C. § 314(a) WOULD BE IMPROPER

Truesight asserted the '300 patent against Samsung Electronics Co., Ltd and Samsung Electronics America, Inc. (collectively, "Samsung") in the Eastern District of Texas. EX1009. Under the factors set forth in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (Mar. 20, 2020) (precedential), and the Office's interim guidelines dated June 21, 2022 ("Guidance Memo"), discretionary denial is not warranted.

Factor 6 requires institution because this petition "presents a compelling unpatentability challenge." Guidance Memo at 4-5. Factor 3 favors institution because Petitioners acted diligently and almost no parallel investment has occurred. Petitioners filed this petition (and one challenging another asserted patent) roughly six months after service of infringement contentions. EX1010; *see, e.g.*, *Fintiv* at 11 ("[I]t is often reasonable for a petitioner to wait to file its petition until it learns which claims are being asserted against it in the parallel proceeding."); *CoolIT Sys., Inc. v. Asetek Danmark A/S*, IPR2021-01195, Paper 10 at 11-14 (PTAB Dec. 28, 2021) (finding diligence where petition was filed five

months after infringement contentions were served). The case is in early stages: claim construction has not begun and will only be completed after the Board's institution decision, and discovery and dispositive motions will conclude even later. EX1011; *Protect Animals with Satellites v. OnPoint Sys., LLC*, IPR2021-01483, Paper 11 at 14-15 (PTAB Mar. 4, 2022).

Factor 1 is neutral because a stay has been neither requested nor granted.

Factors 2, 4, and 5 do not warrant denial. While trial is scheduled to begin October 6, 2025 (EX1011) and Samsung is a defendant in the district court litigation, these factors are not determinative under *Fintiv* and must be weighed against Factors 3 and 6. *See, e.g.*, *NetNut Ltd. v. Bright Data Ltd.*, IPR2021-01492, Paper 12 at 9-16 (PTAB Mar. 21, 2022) (instituting review where trial date was six months before final written decisions deadline and no stipulation had been filed). On balance, the *Fintiv* factors favor institution.

IX. MANDATORY NOTICES

A. Real Parties-in-Interest Under 37 C.F.R. § 42.8(b)(1)

Google LLC,[2] Samsung Electronics America, Inc., and Samsung Electronics, Co., Ltd. are the real parties-in-interest for this Petition.

B. Related Matters Under 37 C.F.R. § 42.8(b)(2)

To the best knowledge of Petitioners, the '300 patent is or has been involved in the following district court litigations:

Name	Number	Court	Filed
Truesight Communications LLC v. Samsung Electronics Co., Ltd. et al.	2:23-cv-00643	E.D. Tex.	December 29, 2023
Truesight Communications LLC v. Lenovo Group Limited	2:24-cv-00031	E.D. Tex.	January 22, 2024
Truesight Communications LLC v. TCL Technology Group Corporation	2:24-cv-00032	E.D. Tex.	January 22, 2024

C. Lead and Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

Lead Counsel	**Back-Up Counsel**

[2] Google LLC is a subsidiary of XXVI Holdings Inc., which is a subsidiary of Alphabet Inc. XXVI Holdings Inc. and Alphabet Inc. are not real parties-in-interest to this proceeding.

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In concurrently filed Powers of Attorney, Google LLC has granted Power of Attorney to Practitioners at Finnegan, Henderson, Farabow, Garrett & Dunner LLP, and Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. have granted Power of Attorney to Practitioners at Arnold & Porter Kaye Scholer LLP.

D. Service Information Under 37 C.F.R. § 42.8(b)(4)

Please address all correspondence to lead and back-up counsel at the addresses shown above and Google-Truesight-IPRs@finnegan.com. Petitioners also consent to electronic service by e-mail.

X. GROUNDS FOR STANDING

Petitioners certify that the ’300 patent is available for IPR and Petitioners are not barred or estopped from requesting IPR to challenge the claims on the grounds above. Petitioners filed this Petition within one year of service of the original complaint against Petitioners Samsung Electronics America, Inc., and Samsung Electronics Co., Ltd. in the district court litigation.

XI. CONCLUSION

Petitioners request the Board institute IPR and cancel each challenged claim as unpatentable.

Date: December 17, 2024

Respectfully submitted,

/Erika H. Arner/
Erika H. Arner, Lead Counsel
Reg. No. 57,540

CERTIFICATE OF COMPLIANCE

The undersigned hereby certifies that the foregoing **Petition for *Inter Partes* Review** contains 13,997 words, excluding those portions identified in 37 C.F.R. § 42.24(a), as measured by the word-processing system used to prepare this paper.

/Erika H. Arner/
Erika H. Arner, Lead Counsel
Reg. No. 57,540

CERTIFICATE OF SERVICE

The undersigned certifies that, in accordance with 37 C.F.R. §§ 42.6(e) and 42.105, the **Petition for *Inter Partes* Review of U.S. Patent No. 9,595,300, the associated Power of Attorney, and Exhibits 1001-1023** were served via FedEx Priority Overnight on the correspondence address of record with the USPTO as follows:

Peter Lambrianakos
Fabricant LLP
411 Theodore Fremd Road
Suite 206 South
Rye, NY 10580

A courtesy copy has also been mailed to litigation counsel for Patent Owner at:

Vincent Rubino
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Dated: December 17, 2024 By: /Daniel E. Doku/
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