

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:	Yuichi Kanai, et al.	Attorney Docket No.:18768-0217IP3
U.S. Patent No.:	7,421,188	
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Appl. Serial No.:	10/506,515	
Filing Date:	March 4, 2003	
Title:	INFORMATION EDITION DEVICE, INFORMATION EDITION METHOD, INFORMATION EDITION PROGRAM, AND INFORMATION RECORDING MEDIUM	

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PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES

PATENT NO. 7,421,188 PURSUANT TO 35 U.S.C. §§ 311–319,

37 C.F.R. § 42

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EXHIBITS

- LG-1001 U.S. Patent No. 7,421,188 to Yuichi Kanai, et al. (“the ‘188 Patent”)
- LG-1002 Excerpts from the Prosecution History of the ‘188 Patent (“the Prosecution History”)
- LG-1003 Declaration and Curriculum Vitae of Dr. Benjamin B. Bederson
- LG-1004 Complaint, *Maxell, Ltd. v. LG Electronics Inc. et al*, 5-23-cv-00152, E.D. Tex., filed December 29, 2023
- LG-1005 Certified English Translation of Japanese Patent Publication No. JP2001211421A to Masanori Yoshida (“Yoshida”)
- LG-1006 Certified English Translation of Japanese Patent Publication No. JP2000307994A to Yasuhiko Terashita et al. (“Terashita”)
- LG-1007 U.S. Patent No. 6,292,273 to James C. Dow et al. (“Dow”)
- LG-1008 Certified English Translation of Japanese Patent Publication No. JP2002033986A to Yuji Murakami et al. (“Murakami”)
- LG-1009 Certified English Translation of Japanese Patent Publication No. JPS61101850A to Hisao Tezuka (“Tezuka”)
- LG-1010 Certified English Translation of Japanese Patent Publication No. JP2001169231A to Junichi Miyasaka (“Miyasaka”)
- LG-1011 English Machine Translation of Japanese Patent Publication No. JPH11275512A to Masahiro Shioji (“Shioji”)
- LG-1012 English Machine Translation of Japanese Patent Publication No. JPH0983925A to Seishi Miyamoto (“Miyamoto”)
- LG-1013 English Machine Translation of Japanese Patent Publication No. JPH0993527A to Setsuyuki Hongo et al. (“Hongo”)
- LG-1014 U.S. Patent Publication No. 2002/0067923 A1 to Tadashi Fujimura (“Fujimura”)

- LG-1015 U.S. Patent Publication No. 2003/0011683 A1 to Yamasaki et al.
 (“Yamasaki”)
- LG-1016 WIPO Publication number WO 01/57683 A1 to Flamini et al.
 (“Flamini”)
- LG-1017 English Machine Translation of Japanese Patent Publication No.
 JPH08205014A to Oie Masahiro et al. (“Masahiro”)
- LG-1018 English Machine Translation of Japanese Patent Publication No.
 JPH114405A to Doutsubo Nobuhide et al. (“Nobuhide”)
- LG-1019 Federal Court Management Statistics–Profiles (June 30, 2024)
- LG-1020 English Machine Translation of Japanese family member JP2003-
 257161 of the ’188 patent (the ’161 family member)
- LG-1021 English Machine translation of the prosecution history of the Japanese
 family member JP2003-257161 (Application number 2002-107158)

LISTING OF CLAIMS

Claim 1	
[1.pre]	An information editing apparatus, comprising:
[1.1]	a deciding device for deciding whether a thumbnail image can be changed or not based on change permission information indicating whether the thumbnail image is changeable, the thumbnail image showing contents of recorded information which includes at least image information and is recorded on a recording medium, and
[1.2]	a change prohibiting device for prohibiting a change of the thumbnail image when the deciding device decides that a change is not permitted,
[1.3]	wherein editing is performed on a reproduced form of the recorded information recorded on the recording medium.
Claim 2	
[2]	The information editing apparatus according to claim 1, further comprising a generating circuit which generates a display signal for displaying a warning indicating that the thumbnail image cannot be changed when the deciding device decides that a change is not permitted.
Claim 3	
[3]	The information editing apparatus according to claim 1, further comprising a changing device for changing the thumbnail image when the deciding device decides that a change is permitted.
Claim 4	
[4.pre]	An information editing method, comprising:
[4.1]	a deciding process for deciding whether a thumbnail image can be changed or not based on change permission information indicating whether a change can be made on the thumbnail image showing contents of recorded information which includes at least image information and is recorded on a recording medium, and

[4.2]	a change prohibiting process for prohibiting a change of the thumbnail image when the deciding device decides that a change is not permitted,
[4.3]	wherein editing is performed on a reproduced form of the recorded information recorded on the recording medium.
Claim 5	
[5]	The information editing method according to claim 4, further comprising a generating process which generates a display signal for displaying a warning indicating that the thumbnail image cannot be changed when the deciding device decides that a change is not permitted.
Claim 6	
[6]	The information editing method according to claim 4, further comprising a changing process for changing the thumbnail image when the deciding device decides, instead of the change prohibiting device, that a change is permitted.
Claim 7	
[7.pre]	A computer-readable recording medium encoded with a computer program representing a sequence of instructions, which when executed by a computer included in an information editing apparatus for editing a reproduced form of recorded information which includes at least image information apparatus, the instructions cause the computer to function as:
[7.1]	a deciding device for deciding whether a thumbnail image can be changed or not based on change permission information indicating whether a change can be made on the thumbnail image showing contents of the recorded information recorded on the recording medium,
[7.2]	an information editing program for causing the computer serving as the deciding device to act as a change prohibiting device for prohibiting a change of the thumbnail image when the deciding device decides that a change is not permitted.
Claim 8	

[8]	The computer-readable recording medium encoded with the computer program according to claim 7, wherein the computer is caused to act as a generating device which generates a display signal for displaying a warning indicating that the thumbnail image cannot be changed when the deciding device decides that a change is not permitted.
Claim 9	
[9]	The computer-readable recording medium encoded with the computer program according to claim 7, wherein the computer is caused to act as a changing device for changing the thumbnail image when the deciding device decides that a change is permitted.

LG Electronics, Inc. and LG Electronics USA, Inc. (“Petitioner” or collectively “LG”) petitions for *Inter Partes* Review (“IPR”) of claims 1-9 (“the Challenged Claims”) of U.S. Patent No. 7,421,188 (“the ‘188 Patent”).

I. REQUIREMENTS FOR IPR

A. Grounds for Standing

Petitioner certifies the ‘188 Patent is available for IPR. This Petition is filed within one year of service of a complaint against LG. Petitioner is not barred or estopped from requesting review of the Challenged Claims on the below-identified grounds.

B. Challenge and Relief Requested

Petitioner requests IPR of the Challenged Claims on the grounds noted below. Dr. Benjamin B. Bederson provides supporting testimony in his Declaration. LG-1003, [0001]-[0240].

Ground	Claim(s)	Pre-AIA 35 U.S.C. § 103
1	1-9	Yoshida in view of Terashita
2A	1-9	Dow
2B	1-9	Dow in view of Murakami
2C	1-9	Dow in view of Tezuka
3	1-9	Miyasaka in view of Murakami
4	1-9	Miyasaka in view of Tezuka

Applied references are prior art on the bases below:

Reference	Filing Date	Publication Date	Basis
Yoshida	01/28/2000	08/03/2001	102(a)/(b)
Terashita	04/26/1999	11/02/2000	102(a)/(b)
Dow	08/07/1998	09/18/2001	102(a)/(b)
Murakami	07/14/2000	01/31/2001	102(a)/(b)
Tezuka	10/23/1984	05/20/1986	102(a)/(b)
Miyasaka	12/08/1999	06/22/2001	102(a)/(b)

The '188 Patent claims priority to a PCT application (PCT/JP03/02509) filed March 4, 2003, and claims priority to JP Patent Application No. 2002-1071158 filed March 5, 2002. LG-1001 code (30). Yoshida, Terashita, Dow, Murakami, Tezuka, and Miyasaka each published more than one year before the earliest claimed U.S. filing date of the '188 Patent, and therefore qualifies as prior art under pre-AIA 35 U.S.C. § 102(a) or 102(b).

C. Claim Construction

Petitioner submits the Challenged Claims do not require formal construction for the grounds in this Petition. *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011). Petitioner may respond to any constructions Patent Owner raises or the Board adopts. *Parkervision, Inc. v. Vidal*, 88 F.4th 969, 980 (Fed. Cir. 2023).

D. Level of Ordinary Skill in the Art

A person of ordinary skill in the art (“POSITA”) relating to the subject matter of the ‘188 Patent as of the time of the alleged invention would have had (1) at least a bachelor’s degree in computer science, electrical engineering, computer engineering, or a related field, and (2) at least 2-3 years of industry experience in digital video processing, digital file management, or a related field. LG-1003, [0022]-[0025]. Additional education, such as a graduate degree, could substitute for less work experience, and additional work experience could compensate for less formal education. *Id.*

II. THE ‘188 PATENT

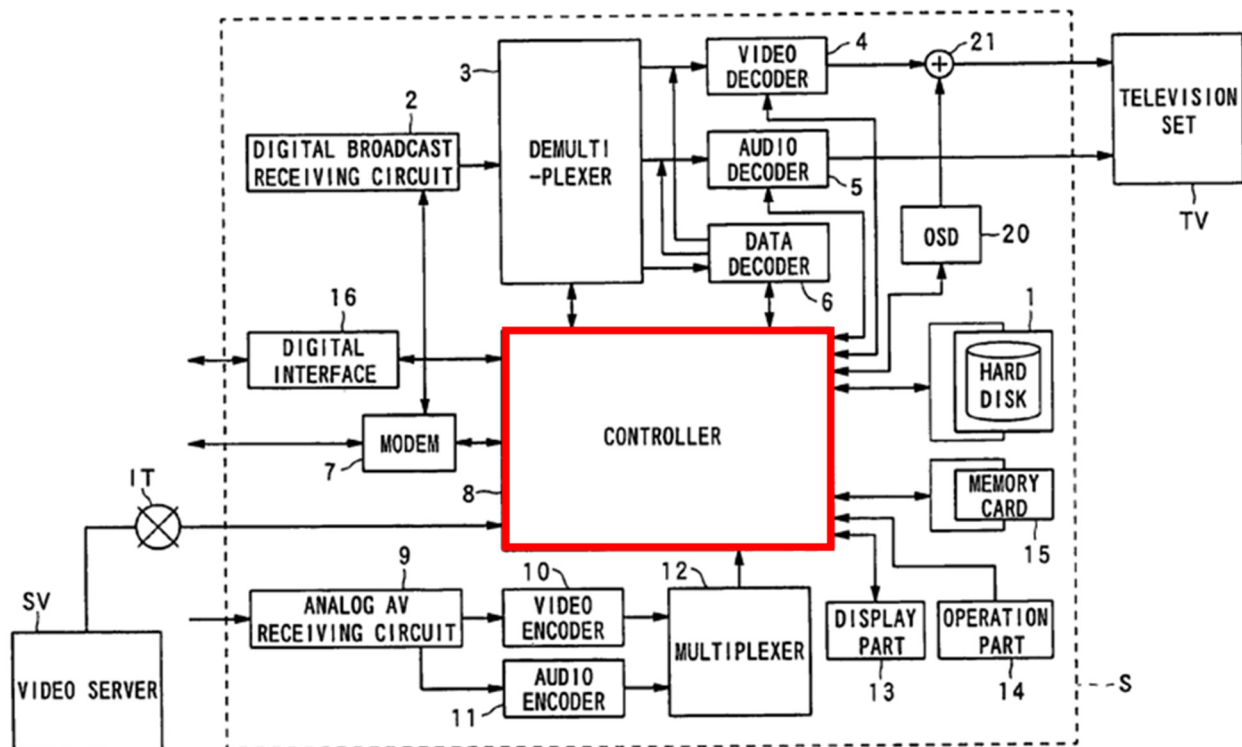
A. Brief Description

The ‘188 Patent describes an information editing apparatus that prevents accidental changes to thumbnail images representing recorded information on a medium. LG-1001, Abstract. The ‘188 Patent describes a deciding device that determines whether a thumbnail image can be changed based on change permission information associated with the thumbnail. LG-1001, 1:57-2:16, 2:56-61, 3:1-4:15. When the deciding device determines that change is not permitted, any attempts to modify the thumbnail image are prohibited. *Id.*, 1:55-57. *See also, id.*, 14:46-56, 18:38-58, 19:12-53, FIG. 8. LG-1003, [0049]-[0055].

In some embodiments, when a change is not permitted, the apparatus generates a display signal to “indicate that the thumbnail image cannot be changed.

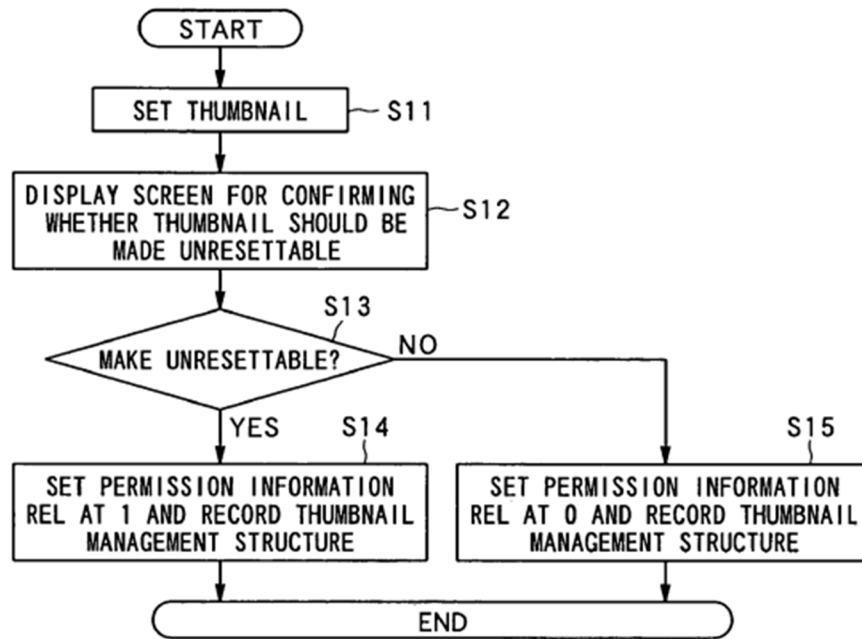
Thus, it is possible to enable the user to clearly recognize that the thumbnail image cannot be changed.” LG-1001, 2:19-22. *See also, id.*, 2:56-67, 3:42-47, 4:4-9, 15:2-16. Conversely, “when the deciding device decides that a change is permitted, the thumbnail image is changed. Thus, the user can select whether a thumbnail image should be protected or not, thereby facilitating the setting of the thumbnail image for the user.” LG-1001, 2:29-33. *See also, id.*, 16:6-19, 17:38-52, 18:10-14, 18:47-52, 19:1-6, 19:20-25, 19:42-53. LG-1003, [0052].

FIG. 8



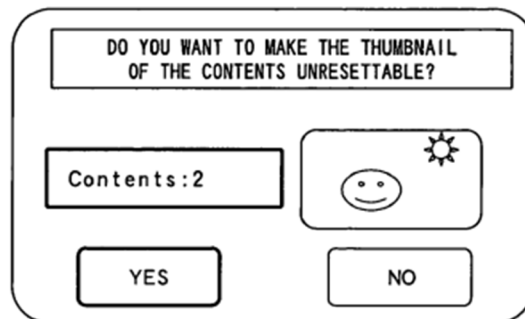
LG-1001, FIG. 8 (annotated). In FIG.8, the '188 patent illustrates “controller 8 serving as a deciding device and a changing device.” *Id.*, 14:50-51. LG-1003, [0052].

FIG.14



LG-1001, FIG. 14. *See also, id.*, 4:50-53, 17:53-18:47. LG-1003, [0052].

FIG.15



LG-1001, FIG. 15. *See also, id.*, 4:50-53, 17:53-18:47.

Thus, the '188 patent describes “protect[ing] thumbnail images and recorded information set by a contents holder and protect[ing] thumbnail images set by the

user.” LG-1001, 17:66-18:9. *See also, id.*, 2:1-10, 2:46-55, 3:62-4:3, 18:38-47; 18:59-67, 19:33-41. LG-1003, [0053].

B. Prosecution History

The '188 patent claims priority to PCT application (PCT/JP03/02509) filed March 4, 2003, and claims priority to JP Patent Application 2002-1071158 filed March 5, 2002. LG-1003, [0054].

In a January 28, 2008 office action, the Office rejected four claims under 35 U.S.C. 101, while allowing six claims. Applicant amended three claims to overcome the §101 rejection and cancelled one claim. LG-1002, March 25, 2008 Amendment. In the Notice of Allowance, the claims were issued as claims 1-9. LG-1002, Notice. LG-1003, [0055].

A Japanese family member of the '188 patent (JP Publication No. JP2003-257161) (the '161 family member), to which the '188 patent claims earliest priority, was rejected by the Japanese Patent Office in view of prior art references Miyasaka, Murakami, and Tezuka. LG-1020, Claim; LG-1021, 30-32, 52-53. The claims in the '188 patent and the '161 family member are substantially similar. LG-1003, [0056].

During prosecution of the '188 patent, applicant disclosed Miyasaka and Murakami to the Office. However, Tezuka was neither disclosed nor considered by the Office. The rejection of the '161 Japanese family member was based on

Miyasaka in view of Murakami and/or Tezuka, as cited in the first office action dated 04/17/2007, and in the final office action dated 07/10/2007. The petitioner hereby presents Miyasaka, Murakami, and Tezuka as grounds¹ for consideration in this petition, particularly considering the differing treatment of Tezuka during the prosecution of the U.S. family member. LG-1003, [0057].

III. THE CHALLENGED CLAIMS ARE UNPATENTABLE

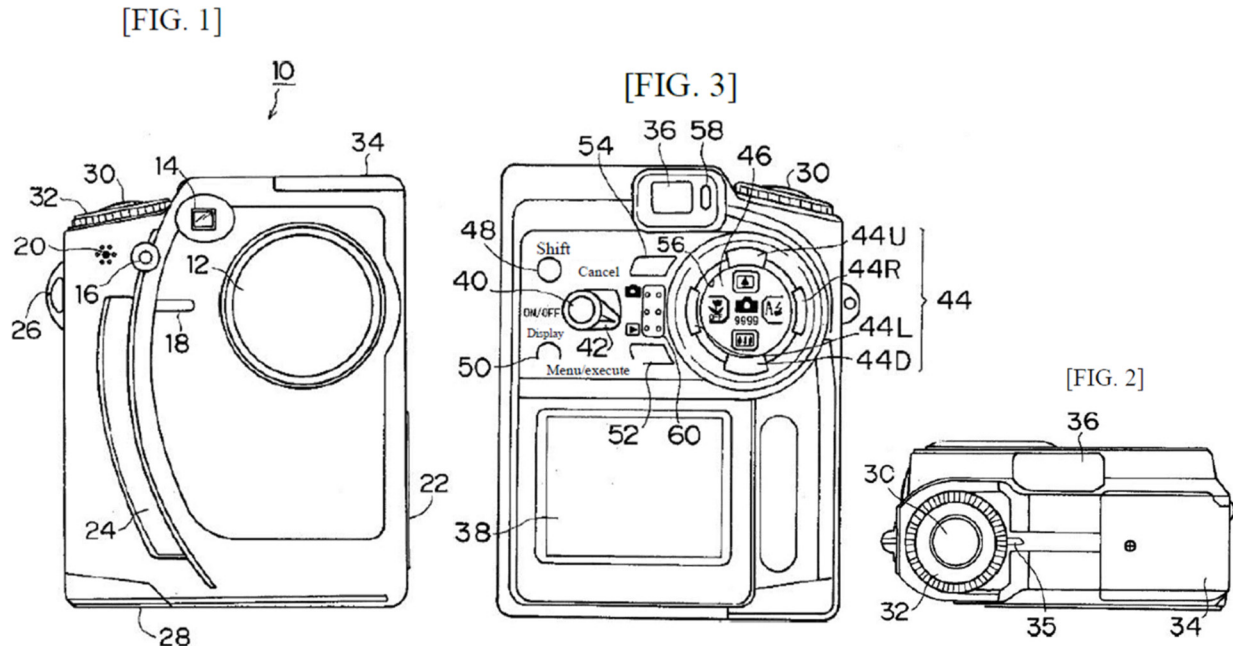
A. GROUND 1: Claims 1-9 are obvious over Yoshida in view of Terashita

1. Yoshida Overview

Yoshida discloses a multimedia device and method for managing and displaying images, including still images and video. LG-1005, [0001]-[0002], FIGs. 1-3, 5. Yoshida discloses use of a color liquid crystal monitor to display captured and playback images, along with various other information such as mode details and frame number. LG-1005, [0030]. Yoshida allows users to alter the display of video content, including selecting and changing thumbnail images representing

¹ Petitioner includes Miyasaka, Murakami, and Tezuka as Ground 3 and 4. These references were not relied upon by the Office, but were pivotal in rejecting the '161 family member. Given the rejection of the '161 family member, these references should now be considered as grounds for unpatentability, particularly in light of their dispositive role in the rejection of the '188 patent family.

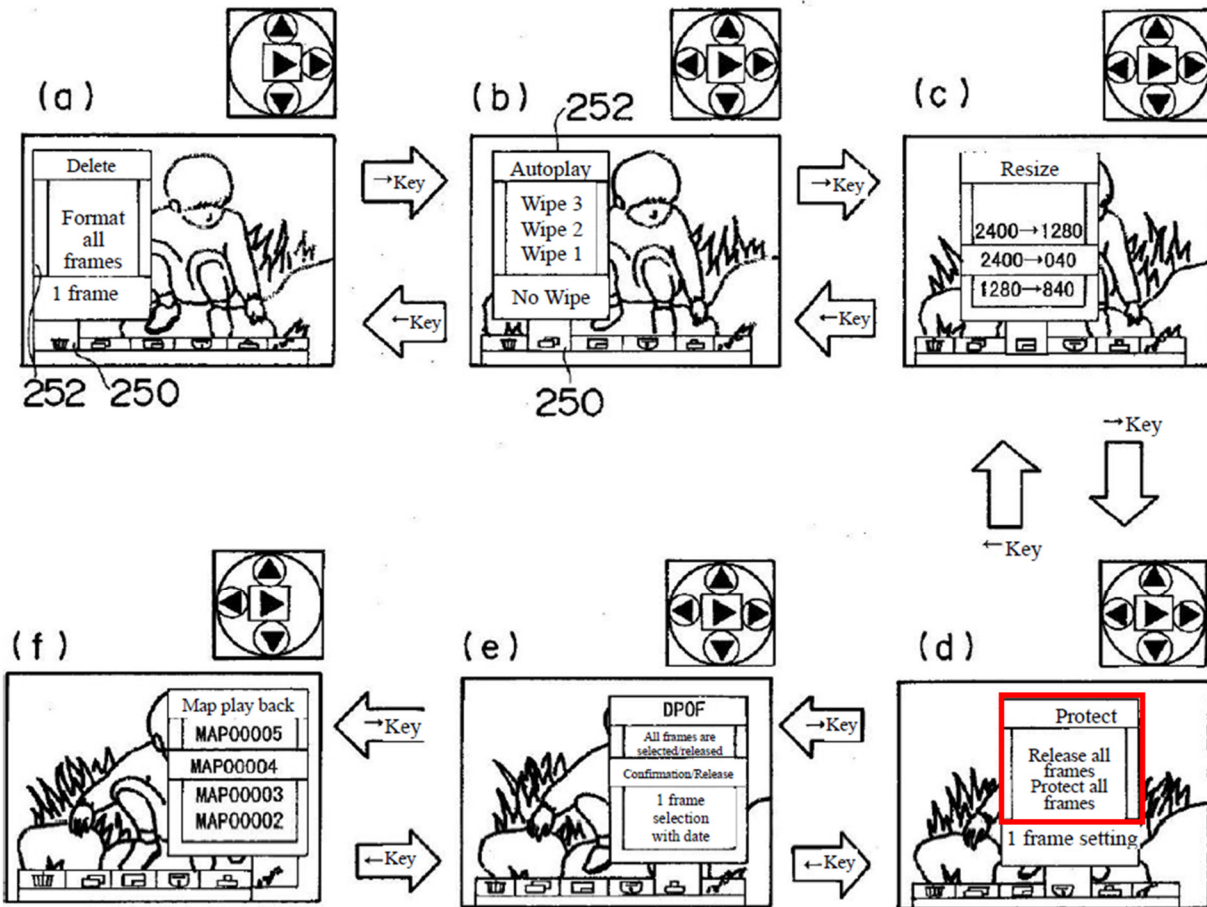
video files. LG-1005, [0215]-[0216]. This enables users to modify the image that is displayed as the representative thumbnail of a video, improving user's ability to identify and select content on the device. *Id.* LG-1003, [0058].



LG-1005, FIGs. 1-3 (illustrating digital camera).

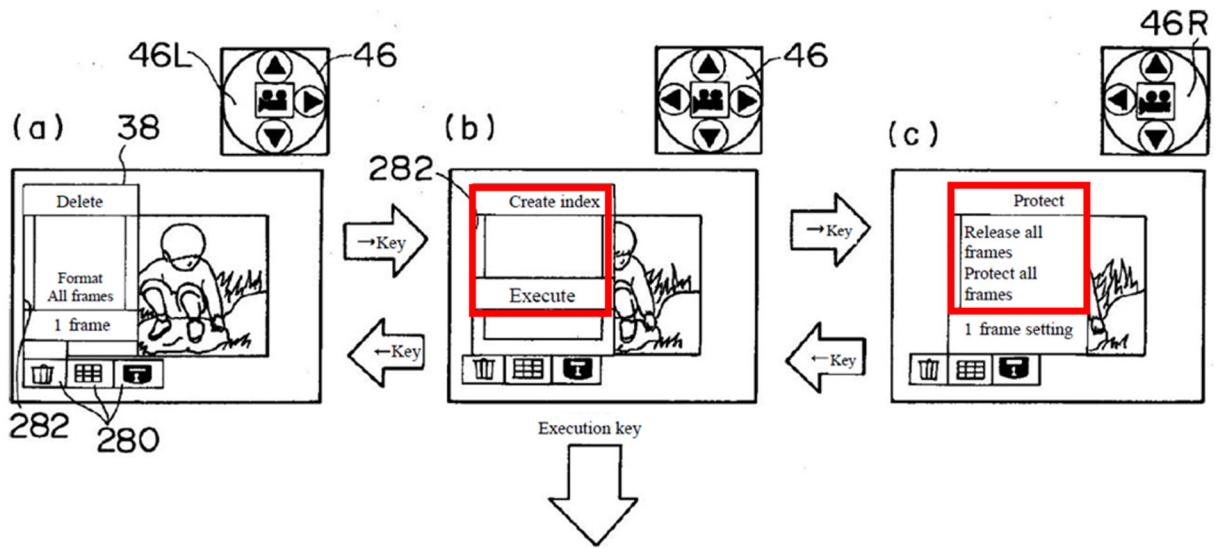
Yoshida addresses interaction of users with media files by enabling the protection of image data from deletion. LG-1005, [0157]-[0159]. It accomplishes this by allowing users to mark images as protected, which prevents them from being deleted (i.e., changed) even when delete commands are executed. LG-1005, [0157]. This feature ensures that content is safeguarded against accidental deletion. *Id. See also, id.*, [0040], [0146], [0153], [0157]-[0159], [0171]-[0174], [0181], FIGs. 19(d), 22(c), 23(a)-(b); LG-1003, [0059]-[0060].

[FIG. 19]



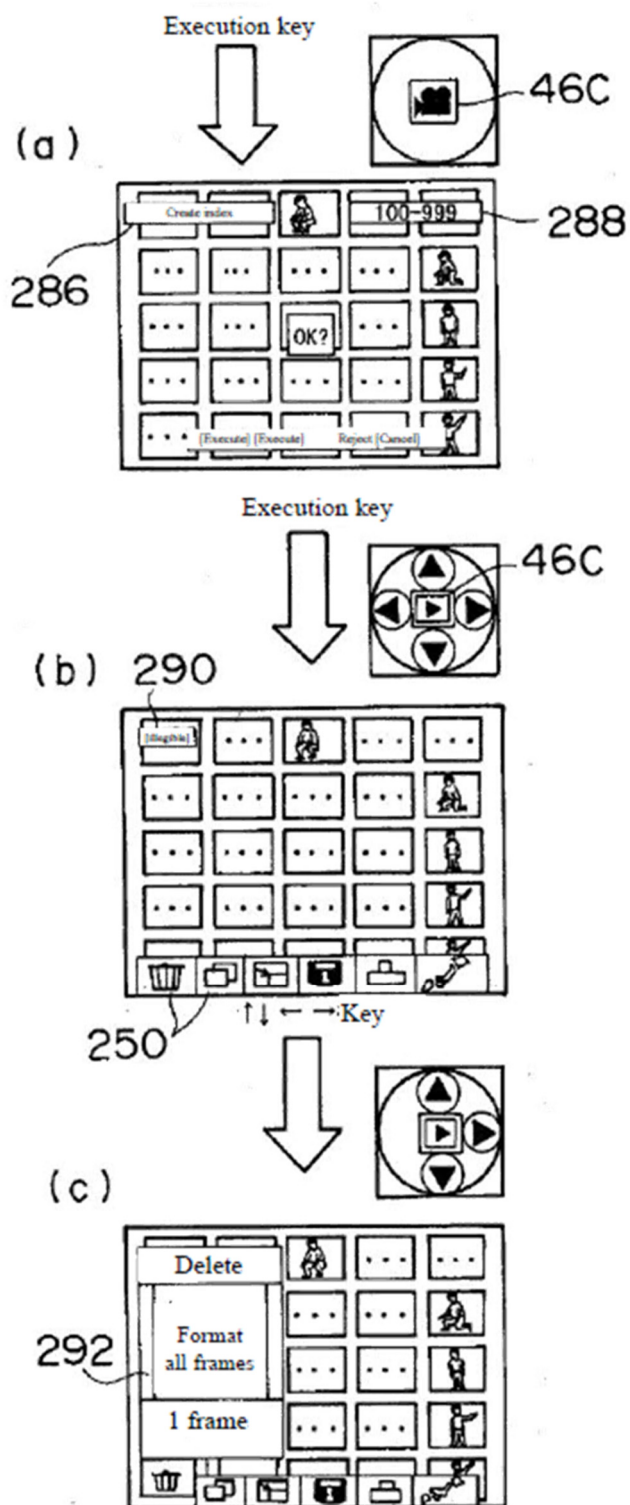
LG-1005, FIG. 19 (annotated). LG-1003, [0059].

[FIG. 22]



LG-1005, FIG. 22-23 (annotated). LG-1003, [0059].

[FIG. 23]

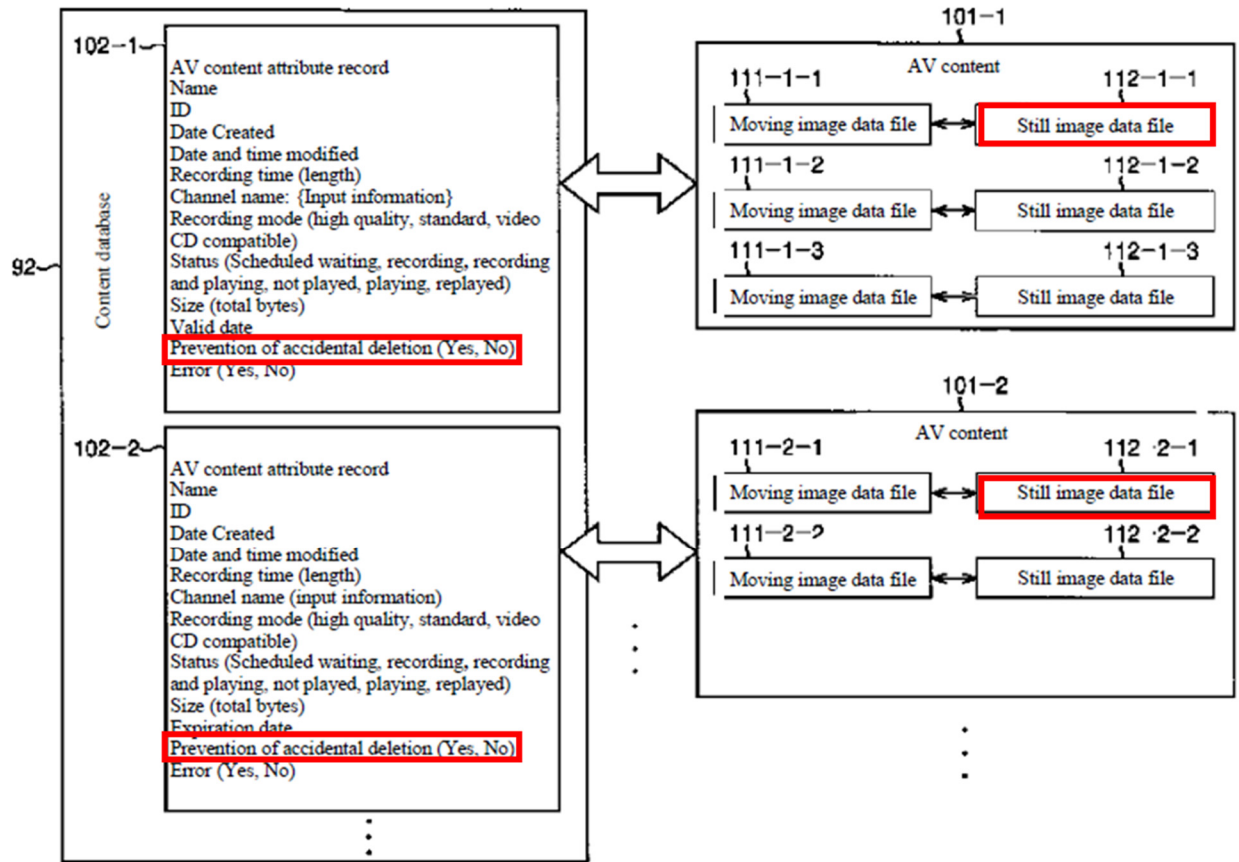


LG-1005, FIG. 23. LG-1003, [0059].

2. Terashita Overview

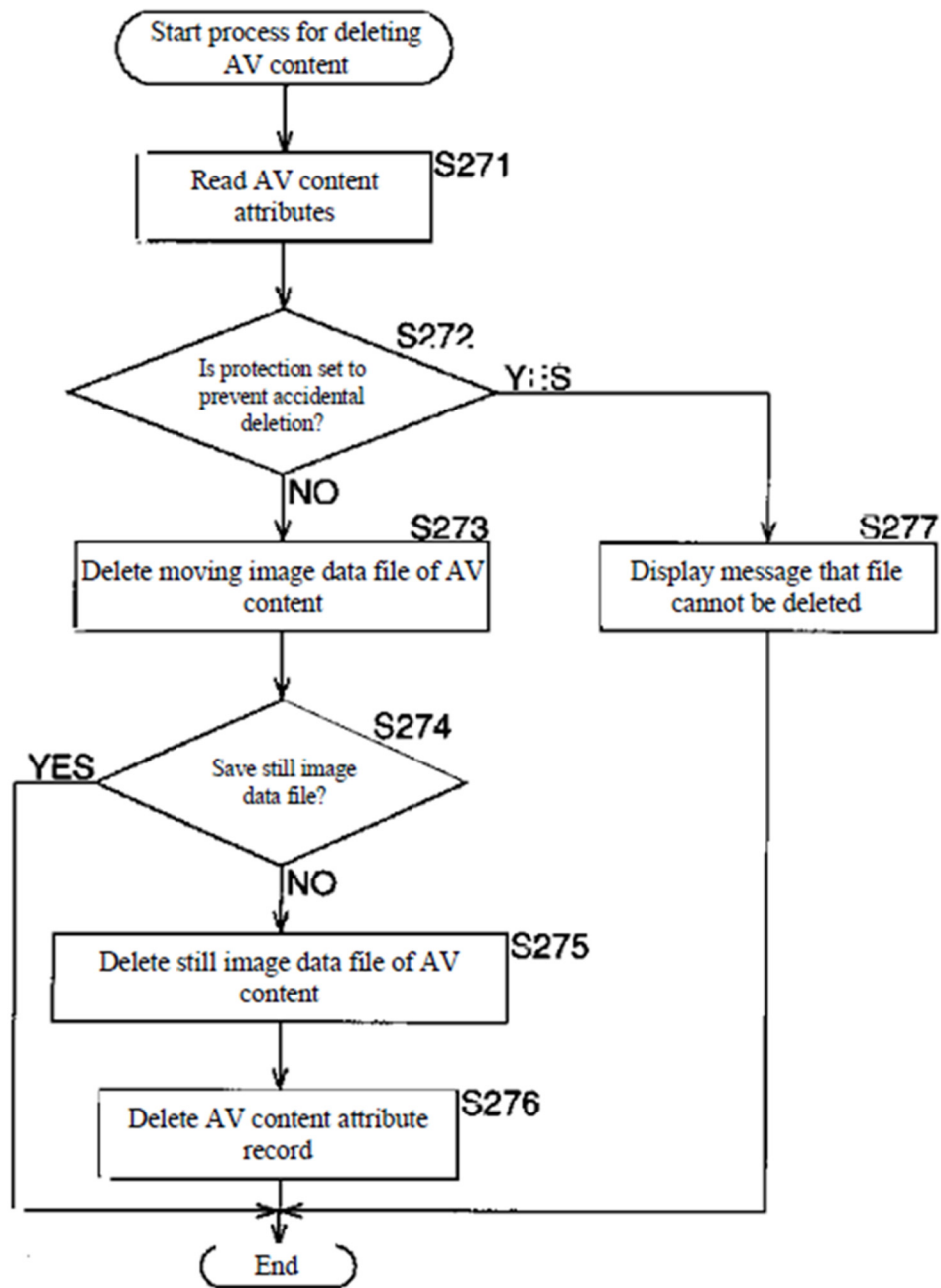
Terashita discloses a system for managing and retrieving audio-visual (AV) content, particularly with a focus on preventing accidental deletion of AV files. LG-1006, [0054]. The system utilizes an AV content management and retrieval program for managing retrieval and deletion of multimedia files. LG-1006, [0197]-[0198]. The program reads and processes metadata related to AV content, such as recording dates and file attributes, stored in a content database. LG-1006, [0195]. The program determines whether accidental deletion prevention is enabled for particular files and ensures that such files cannot be erased, thereby preventing unintentional loss of content. LG-1006, [0054]-[0055], FIGs. 6, 32. *See also, id.*, [0057], [0067], [0156]-[0160], [0187], [0194]-[0200]. LG-1003, [0061]-[0063].

[FIG. 6]



LG-1006, FIG. 6 (annotated).

[FIG. 32]



LG-1006, FIG. 32.

Terashita's system is directed to prevention of accidental deletion. LG-1006, [0054]-[0055], FIGs. 6, 32; LG-1003, [0062]. When deletion is attempted,

the system checks whether deletion protection is set for the file. LG-1006, [0196], [0199], FIG. 32 (figure element S272). If it is enabled, the program prevents deletion and displays a message to the user indicating that the content cannot be deleted. LG-1006, [0199], FIG. 32 (figure element S277). This protection mechanism ensures users cannot inadvertently delete important content, such as AV files, which might otherwise be lost due to user error. LG-1006, [0196]-[0199]; LG-1003, [0062].

Terashita also provides a robust content management system that permits the selective deletion of AV content, depending on user preferences and system settings. LG-1006, [0197]-[0199]; LG-1003, [0063]. For example, if accidental deletion prevention is not set, the AV content can be erased from the system. LG-1006, [0197]-[0199]. The program also provides a flexible way to handle AV content based on its attributes, and users can execute commands for content deletion or retrieval as needed. *Id.* In addition to managing content deletion, the system also addresses other aspects of content organization and retrieval, ensuring that users have full control over their multimedia library. LG-1006, [0038]-[0040], FIG. 27. Thus, “even if a deletion instruction is given, the AV content 101 for which accidental deletion protection is set will not be deleted ” LG-1006, [0200]; LG-1003, [0063].

3. Reasons to combine Yoshida and Terashita

A POSITA would have been motivated to combine the teachings of Yoshida and Terashita, as both teach selecting and modifying thumbnail images in multimedia devices based on user input, with safeguards to prevent accidental content change (e.g., deletion). LG-1005, [0196]-[0199]; LG-1006, [0038]-[0040], [0054]-[0055]; LG-1003, [0071]-[0074].

Yoshida teaches displaying multimedia content with a representative thumbnail image and allows users to change it based on a selected frame in a video file, enhancing control over content presentation. LG-1005, [0197], [0215]-[0216]; LG, 1003, [0072]. A POSITA would recognize that adding Terashita's safeguard mechanism to prevent accidental deletion would usefully and logically enhance Yoshida's system. LG-1003, [0072]. Given that Yoshida already teaches a system where users can change the thumbnail image, a POSITA would recognize that incorporating a safeguard mechanism to prevent accidental deletion, as taught by Terashita, would provide a useful and logical enhancement to Yoshida's system. LG-1003, [0072].

Terashita discloses a system to prevent accidental deletion of AV content, displaying a message when users attempt to delete protected content. LG-1006, [0057], [0197]-[0198], [0199]; *Supra* III.A.2. This safeguard ensures content integrity, especially for important or irreplaceable multimedia files. LG-1003,

[0073]. A POSITA would have been motivated to combine Terashita's teachings with Yoshida's to prevent unintended deletion when modifying multimedia files, enhancing Yoshida's system by protecting user-modified content, such as thumbnails. LG-1003, [0073]. A POSITA would have been motivated to combine the teachings of Terashita and Yoshida to address the potential risk of unintended deletion of content when users are interacting with or modifying multimedia files. LG-1003, [0073]. The addition of a safeguard mechanism would have been seen as a logical extension of Yoshida's teachings, enhancing its functionality by protecting the integrity of user-modified content, such as the thumbnail images. LG-1003, [0073].

Combining Yoshida's method for changing thumbnails with Terashita's accidental deletion prevention would have been an obvious solution for a POSITA seeking to improve multimedia device interfaces while ensuring content integrity. LG-1003, [0074]. The *KSR* rationale suggests that when an improvement can be made by combining known elements, a POSITA would be inclined to do so to enhance user experience or system functionality. *KSR*, 550 U.S. at 417. The inclusion of a safeguard to prevent accidental deletion would not only improve the robustness of Yoshida's system but also disclose known practices in multimedia content management, where preventing unintentional loss of content is a common and

desirable feature. LG-1003, [0074]; *see also*, LG-1011, [0034] (disclosing “protect” feature for reduced images), [0053] (describing “selectively erased”). Thus, a POSITA would have been motivated to combine Yoshida’s user-controlled thumbnail changes with Terashita’s safeguards to improve user interaction and data protection. LG-1003, [0074].

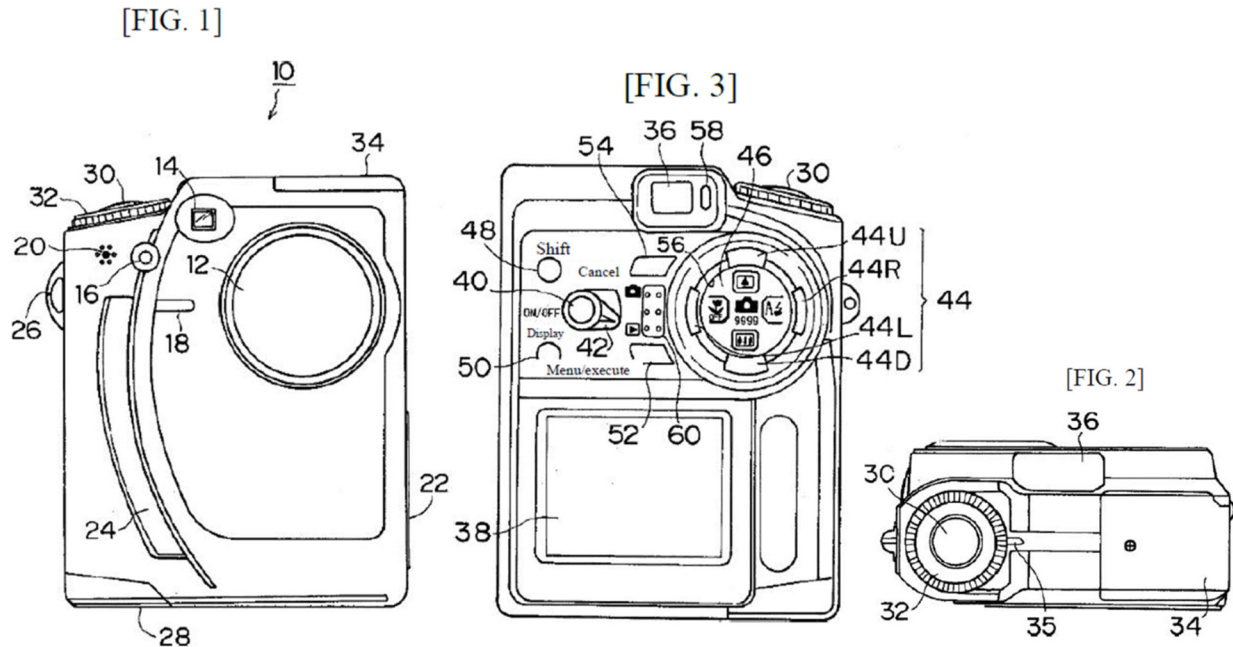
4. Analysis

Claim 1

[1.pre]

To the extent the preamble is limiting, Yoshida-Terashita renders its obvious. LG-1003, [0075]-[0080].

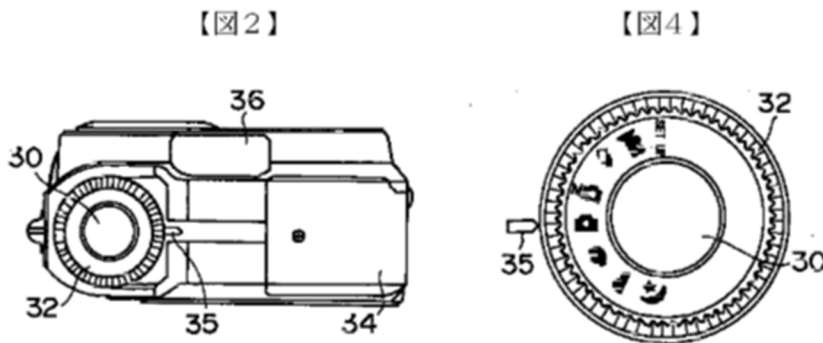
Yoshida discloses an information editing method/apparatus in the context of image management. LG-1003, [0076]. Yoshida discloses “a method and apparatus for managing image data, and more particularly to an image management method and apparatus suitable for a digital camera having a moving image shooting function, and an electronic camera.” LG-1005, [0001]; [0002]; LG-1003, [0076].



LG-1005, FIGs. 1,2 and 3. *See also, id.*, [0223] (describing creation and recording of images), [0225].

Yoshida's selectable modes are integral to the information editing process, as they provide users with the ability to perform editing operations directly on multimedia content. LG-1005, [0043],[0223]-[0225]. These modes, coupled with Yoshida's features such as thumbnail display and the ability to change representative images, facilitate various aspects of information editing, from initial capture to final manipulation of image data, thereby demonstrating a link between the selectable modes and the system's information editing capabilities. LG-1005, [0002]. *See also, id.*, [0215]-[0216], [0022], [0043]. LG-1003, [0077].

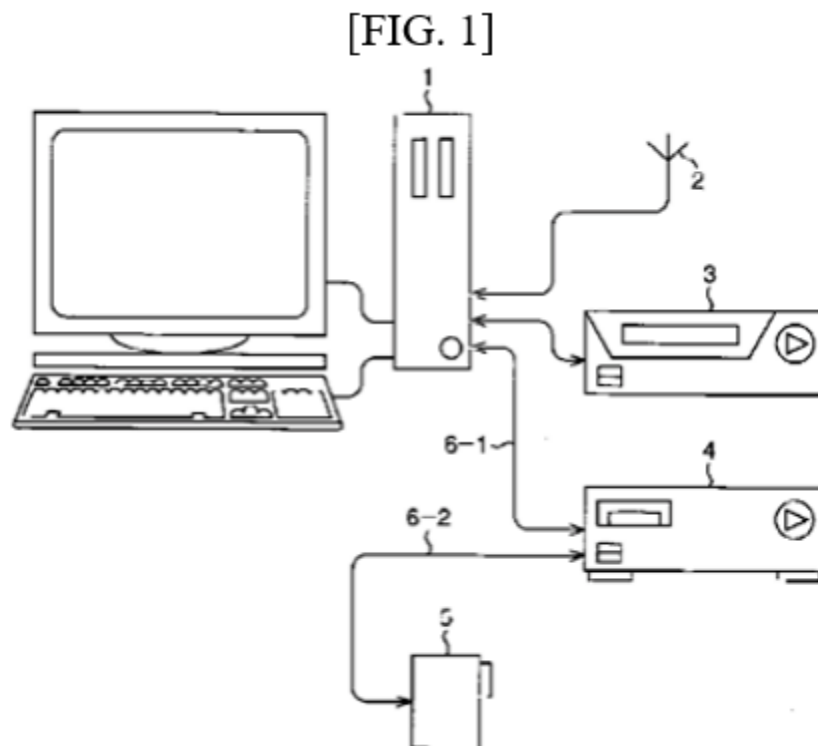
A POSITA would have recognized that Yoshida's digital camera facilitates the editing of captured images and/or videos (**information**) through use of multiple selectable modes, which can be conveniently chosen via mode dial 12. LG-1005, [0215]-[0216]. Yoshida's system supports the capability for information editing, leveraging the camera's versatility in mode selection for various editing operations. LG-1005, [0215]-[0216], [0022], [0043]. LG-1003, [0078].



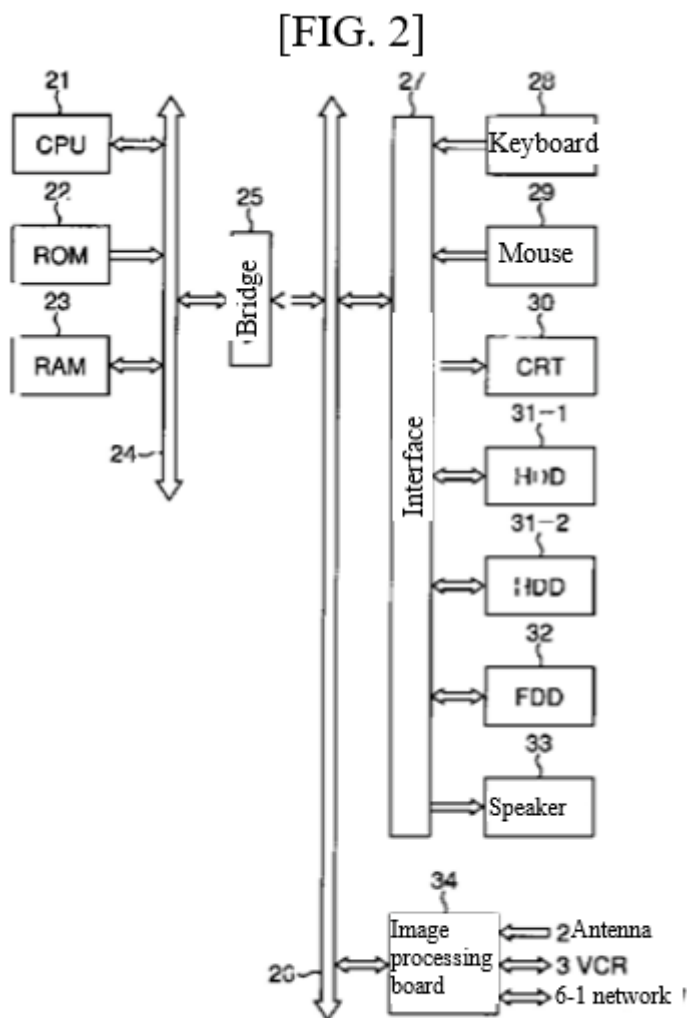
LG-1005, FIGs. 2 and 4. *See also, id.*, [0224], [0226].

Yoshida's system is broadly applicable to various image processing devices, including image reproduction, recording, and search devices. LG-1005, [0022]; LG-1003, [0079].

Terashita discloses an image management method and apparatus for recording and editing images, including deletion, using a personal computer. LG-1006, [0001], [0018], [0036], [0039]; LG-1003, [0080].

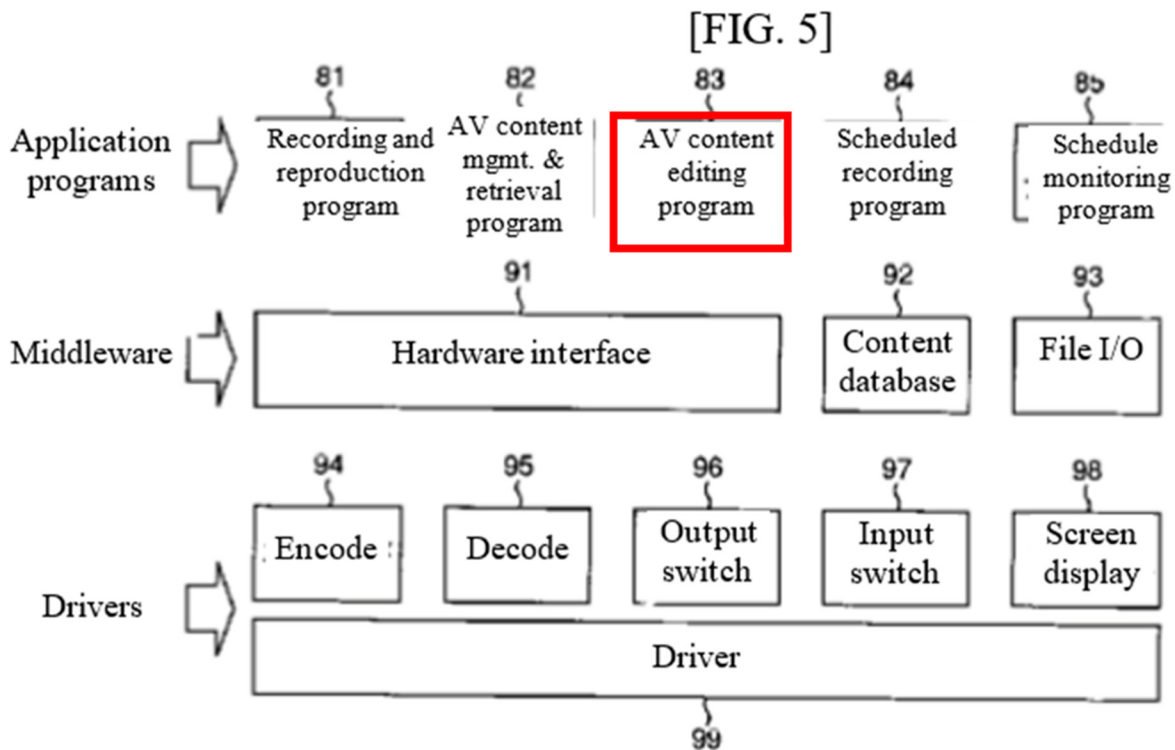


LG-1006, FIG. 1.



Personal computer 1

LG-1006, FIG. 2.



LG-1006, FIG. 5 (annotated).

[1.1]

Yoshida-Terashita renders obvious [1.1]. Yoshida discloses “still image files and video files are stored together on memory cards and other removable media” and that it is “known to have a function for displaying a list (index display) of *reduced images (thumbnails) of the files* arranged in a prescribed arrangement in order *to enable the user to check the image contents stored on the medium.*” LG-1005, [0002]; [0067] and [0217]. For example, Yoshida discloses that “in the initial setting, the first frame of a video file is automatically selected as the representative image, but when the image management method of the present invention is applied, the representative image can be changed by selecting the desired image

within the file . . . and the image related to the selection becomes the representative image.” *Id.*, [0013]. Yoshida states “[t]his makes it possible to more easily understand the content of the file in the display form in which the representative images are used, *such as thumbnail list display* and the one-frame playback.” *Id.* LG-1003, [0081]-[0089].

Yoshida discloses a CPU 132 that controls an electronic camera , similar to the controller 8 in the ’188 patent, which serves as both a deciding and changing device. LG-1005, [0072]-[0073]; LG-1001, 14:50-51. Yoshida describes an image management method, controlled by CPU 132, allows users to change a video file’s thumbnail by selecting a desired image, making the file’s content easier to understand. LG-1005, [0013], [0014]-[0018]; LG-1003, [0082].

Yoshida’s system describes the selection of a representative image from a sequence of images within a video file, a process that requires the user to choose a specific frame to serve as the representative image. LG-1005, [0175]-[0177]; LG-1003, [0083]. This process involves a decision-making step as to whether a change in the representative image is permissible. LG-1003, [0083]. Yoshida does not only teach the ability to change the representative image but also presents the option for users to modify this selection. LG-1005, [0216]. As such, the concept of deciding whether a thumbnail image can be altered, based on user selection,

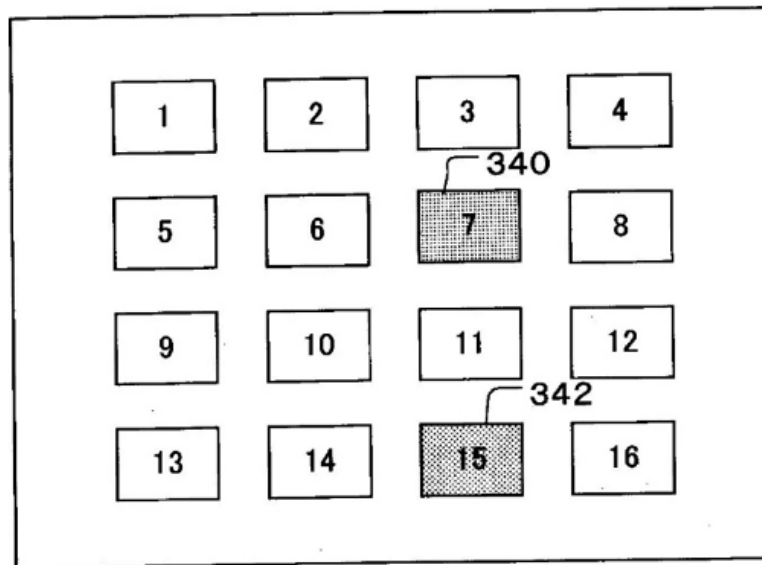
teaches a deciding process to determine if a change is permissible. LG-1003, [0083].

Yoshida further includes functionality to protect images, which involves a decision-making process to determine whether an image can be modified. LG-1005, [0157], [0159]; LG-1003, [0084]. For example, Yoshida's system checks whether an image has protection applied before allowing any changes, such as deletion of an image. LG-1005, [0157]. This demonstrates that Yoshida's system, including CPU core 150 and CPU 132, implements a method for deciding whether a change (in this case, deletion or modification) is allowed, based on permission information linked to the image. LG-1005, [0157]-[0159]; LG-1003, [0084]. Yoshida's decision-making process teaches a deciding process based on change permission information. *Id.*; LG-1003, [0084]. A POSITA would have understood that the protection status of an image in Yoshida's system serves as the "change permission information" that indicates whether the image (including its thumbnail) is changeable. LG-1003, [0084].

Yoshida also teaches that a user can select specific frames to act as a representative image in various contexts, including both still images and video files. LG-1005, [0215]-[0216]. This selection process, which is governed by user input, includes a decision-making process where the system determines whether the

change to the thumbnail image can occur. *Id.*; LG-1003, [0085]. For example, Yoshida notes that the representative image can either be set at the beginning of the video file or restored to this initial setting after modification, indicating that the system can decide whether the representative image can be changed or reverted back to the original thumbnail image. LG-1005, [0013]-[0015]. LG-1005, [0216]; LG-1003, [0085]. Yoshida discloses that “it is possible to fix the image of the first frame of the moving image file as the representative image, and it is also possible to return the once changed representative image of the first frame [and further], the *user may select either the mode in which the representative image is changed or the mode in which the representative image is not changed.*” *Id.* In this manner, if the user selects a mode in which the representative, thumbnail image cannot be changed, then the CPU core 150 and/or CPU 132 in Yoshida will not allow a change to the thumbnail image, and likewise, if the user selects a mode in which the thumbnail image can be changed, Yoshida’s system will permit the user to make a change to the thumbnail in the manner described above. *Id.*; LG-1003, [0085]. Thus, Yoshida teaches deciding whether a thumbnail image can be changed based on predefined criteria, or permission information, set, for example, by the user. LG-1003, [0085].

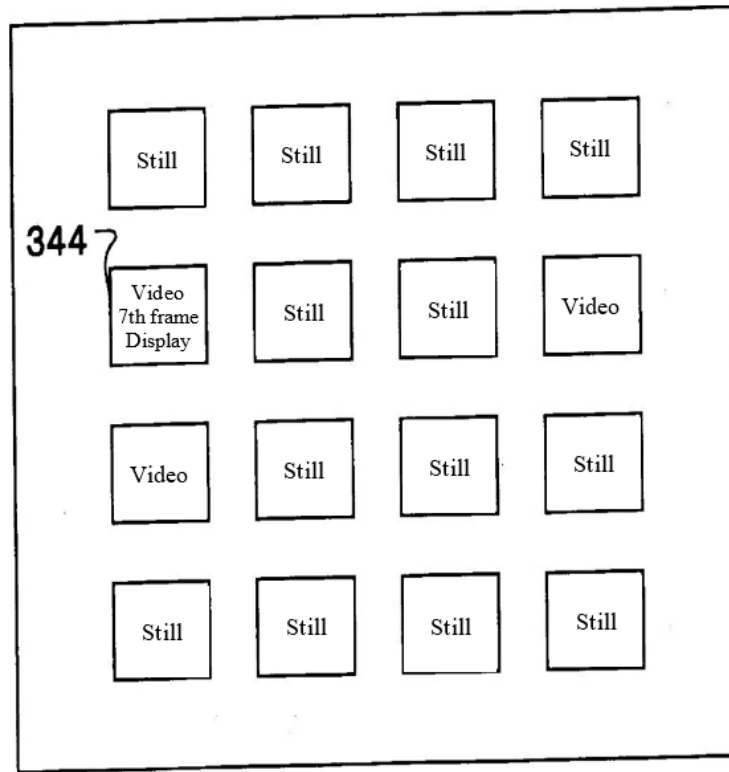
[FIG. 34]



LG-1005, FIG. 34.

As further examples, as illustrated above in FIG. 34, Yoshida illustrates a video index screen where 16 frames are displayed as reduced images, or thumbnails, from a video file. LG-1005, [0211], [0256], FIG. 34. Users can select a specific frame to designate as the starting point for playback, which is directly associated with the decision process of selecting a thumbnail image. LG-1005, [0212]; LG-1003, [0086].

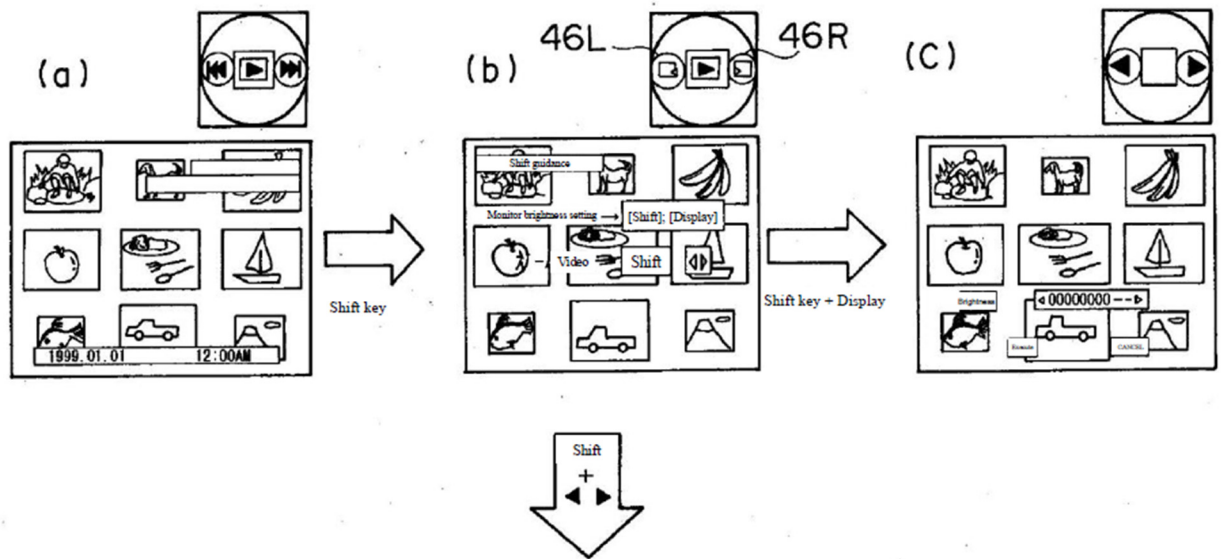
[FIG. 35]



LG-1005, FIG. 35.

Similarly, as shown above in Figure 35, Yoshida illustrates how the selected frame is displayed as the representative image of the video file on the thumbnail list display screen, confirming that the thumbnail image can be changed based on user input. LG-1005, [0215], [0257], FIG. 35. This process of designating a specific thumbnail image based on user selection teaches deciding whether a thumbnail image can be changed. *Id.*; LG-1003, [0087].

[FIG. 26]



LG-1005, FIG. 26.

Additionally, as shown above in Figure 26, Yoshida depicts a typical thumbnail list display screen, reinforcing the idea that a thumbnail image can be chosen from a sequence of images within a file, further supporting the obviousness of the claim limitation. LG-1003, [0088].

To the extent Patent Owner argues that Yoshida does not explicitly disclose a deciding device for deciding based on change permission information, Terashita discloses this feature. LG-1003, [0089]. Terashita teaches a system that includes functionality to prevent accidental deletion of AV content, which is effectively a change to the thumbnail image representing that content. LG-1006, [0197][0198][0199]. For example, Terashita's AV content management search

program 82 determines whether accidental deletion prevention is set as an attribute of the AV content. LG-1006, [0197]. This attribute serves as “change permission information” indicating whether the content (and by extension, its thumbnail) is changeable. LG-1003, [0089]. Terashita’s system then decides whether the content can be changed (deleted) based on this attribute. LG-1006, [0198]-[0199]. If accidental deletion prevention is set, the system decides that the content cannot be changed and prevents its deletion. LG-1006, [0199]. Thus, by incorporating Terashita’s teachings, a Yoshida-Terashita combined system would have a mechanism for deciding whether thumbnails can be changed based on specific permission information, enhancing the content protection capabilities of Yoshida’s system. LG-1003, [0089]. *Supra* III.A.3.

[1.2]

Yoshida-Terashita combination renders obvious [1.2]. *Supra* III.A.4.[1.1]. LG-1003, [0090]-[0096].

As discussed above, Yoshida discloses the concept of preventing changes to an image, including thumbnail images, in the context of image protection. LG-1005, [0157]; LG-1003, [0091]. *Supra* III.A.4.[1.2]. Specifically, Yoshida teaches that images marked with image protection cannot be erased, even if a delete command is issued. LG-1005, [0157]; *see also, id.*, [0191]. This functionality demonstrates a process executed by, for example, CPU 132, for prohibiting changes to

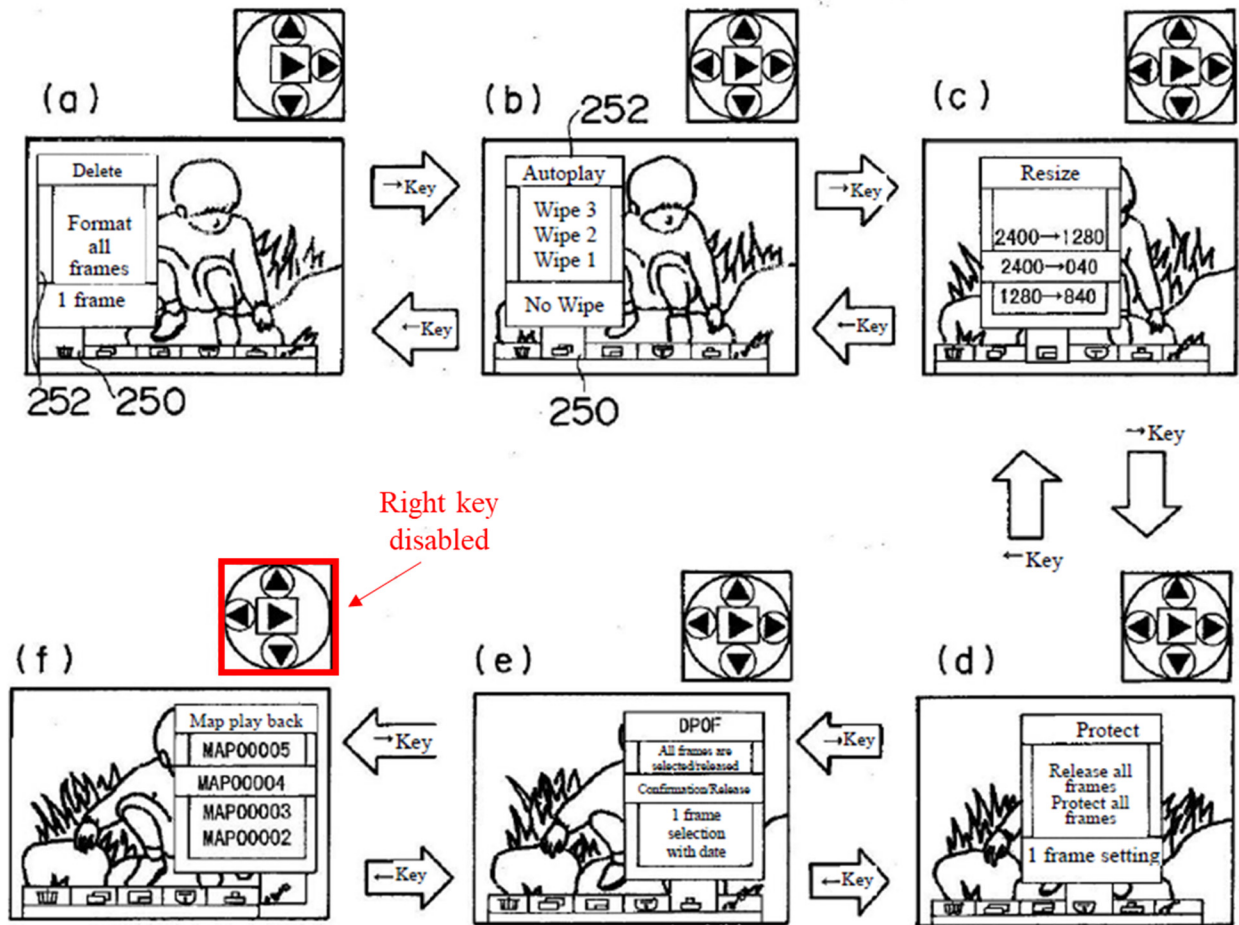
thumbnail images under certain conditions. LG-1003, [0091]. In this case, the protection feature acts as a mechanism that restricts changes (e.g., deletion) unless specific steps are taken to disable the protection. LG-1005, [0157]; LG-1003, [0091].

To the extent PO argues that image protection would not apply to thumbnail images, based on a comprehensive analysis of Yoshida's teachings a POSITA would have concluded that the protection mechanism extends to all image representations, including thumbnails. LG-1003, [0092]. Specifically, Yoshida discusses the use of thumbnails throughout the system, particularly for navigation and selection purposes. LG-1005, [0196]-[0197]. Yoshida describes thumbnails as representative images for both still and video content, indicating their integral role in the system's image management. LG-1005, [0191]; LG-1003, [0092]. Therefore, a POSITA would have concluded that Yoshida's protection mechanism applies to thumbnail representations, ensuring consistent safeguarding across all image formats in Yoshida's multimedia management system. LG-1003, [0092].

Yoshida further expands on the concept of restricting modifications by introducing a system that involves user-selected settings. LG-1003, [0093]. For example, users may opt to disable certain display elements when specific menu options are selected, such as in the case of the "erase" or "map display" menus. LG-1005,

[0156]. The system prevents the user from interacting with certain functions unless specific conditions are met, similarly to the prohibition of changes to the thumbnail image when the deciding device determines that a change is not permitted. *Id.*; LG-1003, [0093]. Similarly, in the “map display” menu, the right key is disabled (shown below), and the corresponding screen portion is hidden. Yoshida’s disabling of controls describes the claim’s “deciding device,” as the system evaluates the menu option selected by the user and applies restrictions on available actions, ensuring that changes are prohibited in certain modes unless specific conditions are satisfied. LG-1003, [0093].

[FIG. 19]

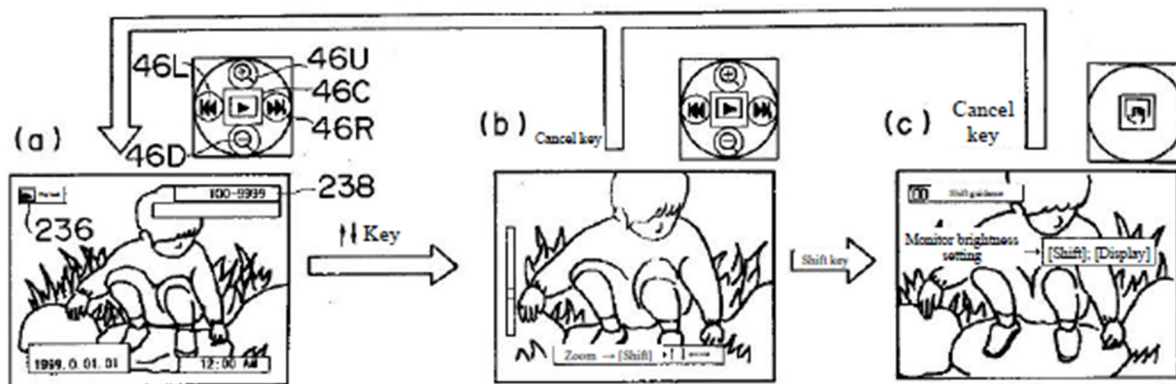


LG-1005, FIG. 19 (annotated).

Yoshida further elaborates on the functionality of prohibiting changes when the device is in a specific mode, such as image reproduction. When the camera is in reproduction mode, it automatically displays the last captured image, with specific information, such as protection settings, displayed on the screen. LG-1005, [0146]. This indicates that when the image is protected, the system ensures that it cannot be modified or deleted unless the protection setting is first deactivated. LG-

1003, [0094]. This decision process further reflects the claim's requirement for a system that evaluates whether a change to a thumbnail image is permitted, based on the protection setting. LG-1003, [0094].

[FIG. 17]



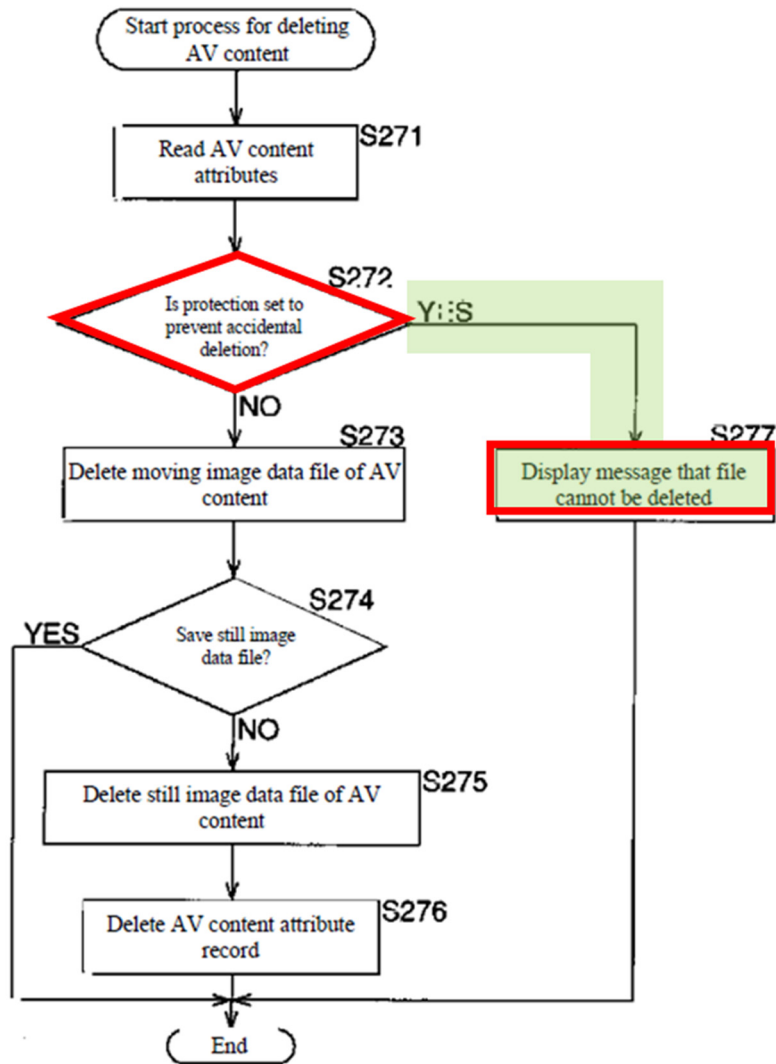
LG-1005, FIG. 17.

Yoshida's detailed disclosure of menu-based interactions highlights the user's ability to select and confirm changes to image settings, including protection. LG-1005, [0159]; LG-1003, [0095]. When a user selects one of these options, a confirmation screen is displayed, and the protection is applied accordingly. LG-1005, [0159]. Yoshida's system determines whether changes to the image can be made based on the selected protection setting, thereby prohibiting changes unless

the protection setting is removed. This process exemplifies the claimed “prohibiting a change,” where the system, including CPU 150, decides, based on the selected options, whether changes to a representative image are permissible. Thus, Yoshida’s use of protection settings to prevent erasure and other changes, along with the disabling of controls based on menu options, demonstrates Yoshida’s teachings of prohibiting changes and allowing the user to make selections accordingly. *See* LG-1005, [0146], [0153], [0159], [0171]-[0174]; LG-1003, [0095].

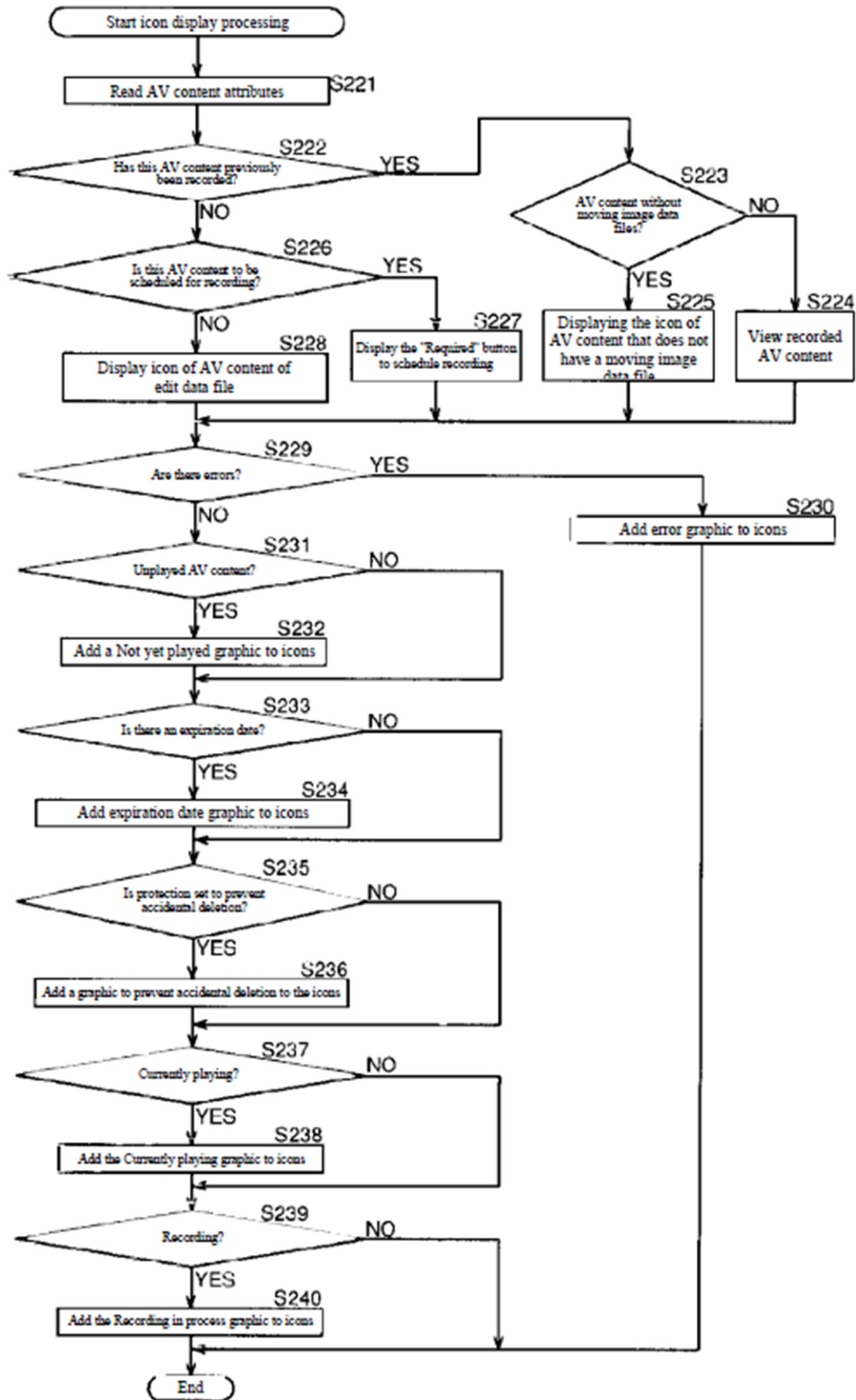
To the extent the Patent Owner argues that Yoshida lacks thumbnail protection feature, a POSITA would have been motivated to look to Terashita, which discloses a system preventing accidental deletion of content, including thumbnail images, through user-selected protection features. LG-1005, [0159]; LG-1003, [0096]. Specifically, Terashita teaches that when a moving image file is protected from prevent accidental deletion, the system ensures that the file cannot be deleted. LG-1006, [0195]-[0196], [0091], [0101], [0197]-[0200]; LG-1003, [0096]. Terashita discloses that “even if a deletion instruction [i.e., change instruction] is given, AV content 101 for which accidental deletion prevention has been set will not be deleted.” *Id.*, [0200]. Such accidental deletion prevention settings are similar to Yoshida’s user-selected mode for changing or not changing a representative image. LG-1005, [0216]; LG-1003, [0096]. *See also*, LG-1006, [0060]-[0061], [0091], [0101], [0195]-[0200].

[FIG. 32]



LG-1006, FIG. 32 (annotated).

[FIG. 30]



LG-1006, FIG. 30.

[1.3]

Yoshida-Terashita combination renders obvious [1.3]. Yoshida discloses “still image files and video files are stored together on memory cards and other removable media” and that it is “known to have a function for displaying a list (index display) of *reduced images (thumbnails) of the files* arranged in a prescribed arrangement in order *to enable the user to check the image contents stored on the medium.*” LG-1005, [0002]; [0067] and [0217] (describing external and internal recording mediums). Yoshida discloses a system where playback of video content is initiated from a specified range within the video file, effectively enabling the editing or manipulation of a reproduced form of the recorded information. LG-1003, [0097]. Specifically, Yoshida describes how users can specify a playback range, such as selecting the first frame and last frame of a video to be played back. LG-1005, [0212]. This process of specifying a playback range involves editing or selecting from a reproduced version of the video file. LG-1003, [0097]. LG-1005, [0213] (describing that the playback starts from the designated first frame and proceeds sequentially until the designated end frame is reached, thus allowing for editing or controlling the reproduction of the recorded video content.). LG-1003, [0097].

Further, Yoshida's system allows the user to change the displayed representative image of the video file during playback, facilitating the editing of a reproduced version of the recorded content. LG-1005, [0215]. This functionality enables the user to manipulate the playback range, as well as change the thumbnail or representative image displayed for the video, further exemplifying how editing is performed on a reproduced form of the recorded information. LG-1003, [0098]; *see also* III.A.4.[1.1] and III.A.4.[1.2].

Claim 2

[2]

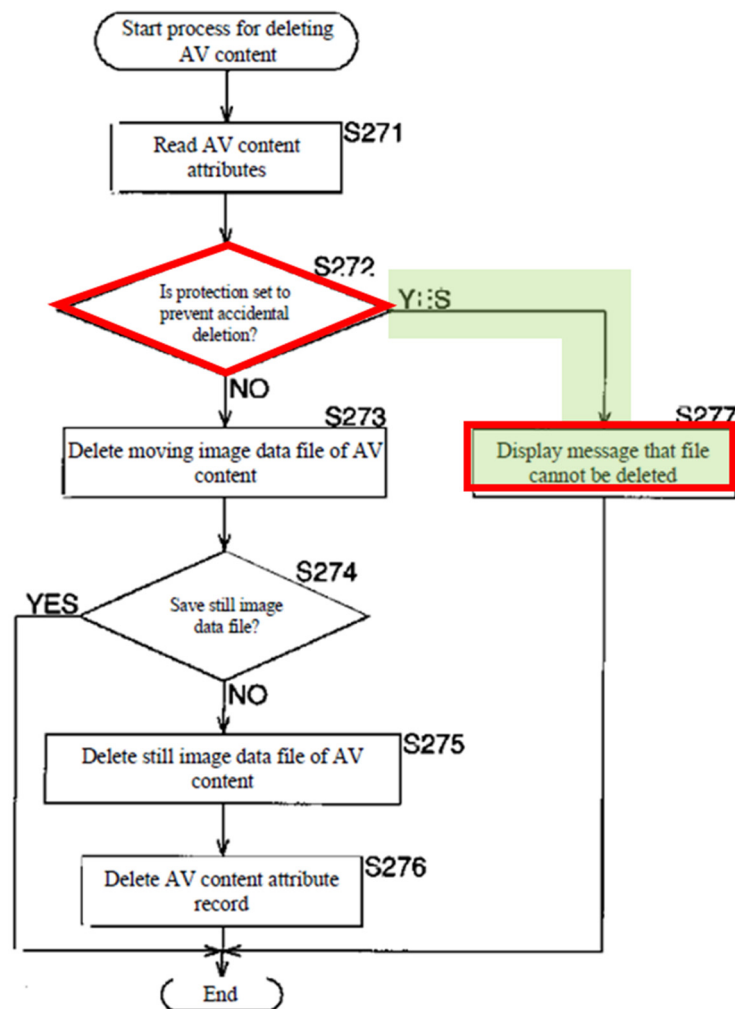
Yoshida-Terashita renders obvious [2]. Yoshida discloses that the system prevents the deletion of protected images, displaying **a confirmation screen** and requiring additional user interaction for images marked as protected, thus signaling that certain actions, such as deletion, cannot be performed. LG-1005, [0157]. This functionality of disabling changes when an image is protected teaches the concept of restricting modifications to the thumbnail image. LG-1003, [0099]-[0100].

To the extent Yoshida does not explicitly disclose a circuit that generates a display signal for a warning that a thumbnail image cannot be changed, a POSITA would have been motivated to look to Terashita, which specifically discloses such a circuit and signal. LG-1003, [0100]. Terashita discloses that when accidental deletion prevention is active, the system will display a message indicating that the

content cannot be deleted, even if a deletion instruction is given. LG-1006, [0199].

Thus, as Terashita discloses, “even if a deletion instruction is given, AV content 101 [which include thumbnail images] for which accidental deletion prevention has been set will not be deleted” and a corresponding message alerting the user of the same will be displayed. *Id.*; LG-1003, [0100]; *see also* §§III.A.4.[1.1] and III.A.2.

[FIG. 32]



LG-1006, FIG. 32 (annotated).

Claim 3

[3]

Yoshida-Terashita renders obvious [3]. Yoshida discloses CPU 132 that controls the operations of the electronic camera (LG-1005, [0072-0073]) in a similar fashion to controller 8 of the '188 patent, which the '188 describes “as a deciding device and a changing device.” LG-1001, 14:50-51. Yoshida describes an image management method, controlled by CPU 132, that allows the representative, thumbnail image of a video file on a thumbnail list display screen or a normal single-frame playback screen to be “changed by selecting the desired image within the file, and the image related to the selection becomes the representative image” enabling users “to more easily understand the content of the file in the display form in which the representative images are used, such as the thumbnail list display and the one-frame playback.” LG-1005, [0013]; *see also, id.*, [0014]-[0018]. LG-1003, [0101].

As discussed above, Yoshida discloses the ability to change the representative image or thumbnail image of a video file, wherein the system allows the user to select which image should serve as the representative image for display in the video file index or thumbnail list. *Supra* III.A.4.[1.2]. LG-1005, [0216]; LG-1003, [0102]. Furthermore, Yoshida provides a user-selectable option that permits

changing the image displayed as the representative image or thumbnail, thereby allowing the user to alter the display according to preference, provided that the system permits such a change. *Id.*; LG-1003, [0102]. This functionality demonstrates a system where the deciding device, e.g., CPU 132—based on user input—determines whether a change to the thumbnail image is permitted, and if so also acts as the changing device to permit changes the thumbnail image based on user input. LG-1005, [0071]-[0073], FIG. 5; LG-1003, [0102].

Moreover, Yoshida's system allows user intervention or operations that trigger changes to the thumbnail image or representative image, which teaches the claimed "changing the thumbnail image." LG-1003, [0103]. Specifically, Yoshida discloses that a user can select which frame in a video file should serve as the thumbnail or representative image and provides flexibility to alter this image as desired. LG-1005, [0215]. This capability reinforces the concept that a deciding device, influenced by user operations, is responsible for determining when changes are permissible, and a corresponding changing device that changes the thumbnail image based on user input. LG-1003, [0103]. In both cases CPU 132 serves as the deciding device and changing device, much like the '188 patent's controller 8 serves both functions. LG-1001, col. 14, lines 50-51; LG-1003, [0103].

To the extent the Patent Owner argues that Yoshida does not explicitly disclose a changing device for changing the thumbnail images, then a POSITA would have been motivated to look to Terashita given that Terashita discloses a similar concept wherein the system allows for deletion of content based user protection selected features for both moving and still, including thumbnail images. LG-1006, [0054]-[0055], [0197]-[0199]; LG-1003, [0103]-[0104]. *Supra* III.A.4.[1.2].

Claim 4

[4.pre]

Supra III.A.4.[1.pre]. LG-1003, [0105].

[4.1]

Supra III.A.4.[1.1]. LG-1003, [0106].

[4.2]

Supra III.A.4.[1.2]. LG-1003, [0107].

[4.3]

Supra III.A.4.[1.3]. LG-1003, [0108].

Claim 5

[5]

Supra III.A.4.[2]. LG-1003, [0109].

Claim 6

[6]

Supra III.A.4.[3]. LG-1003, [0110].

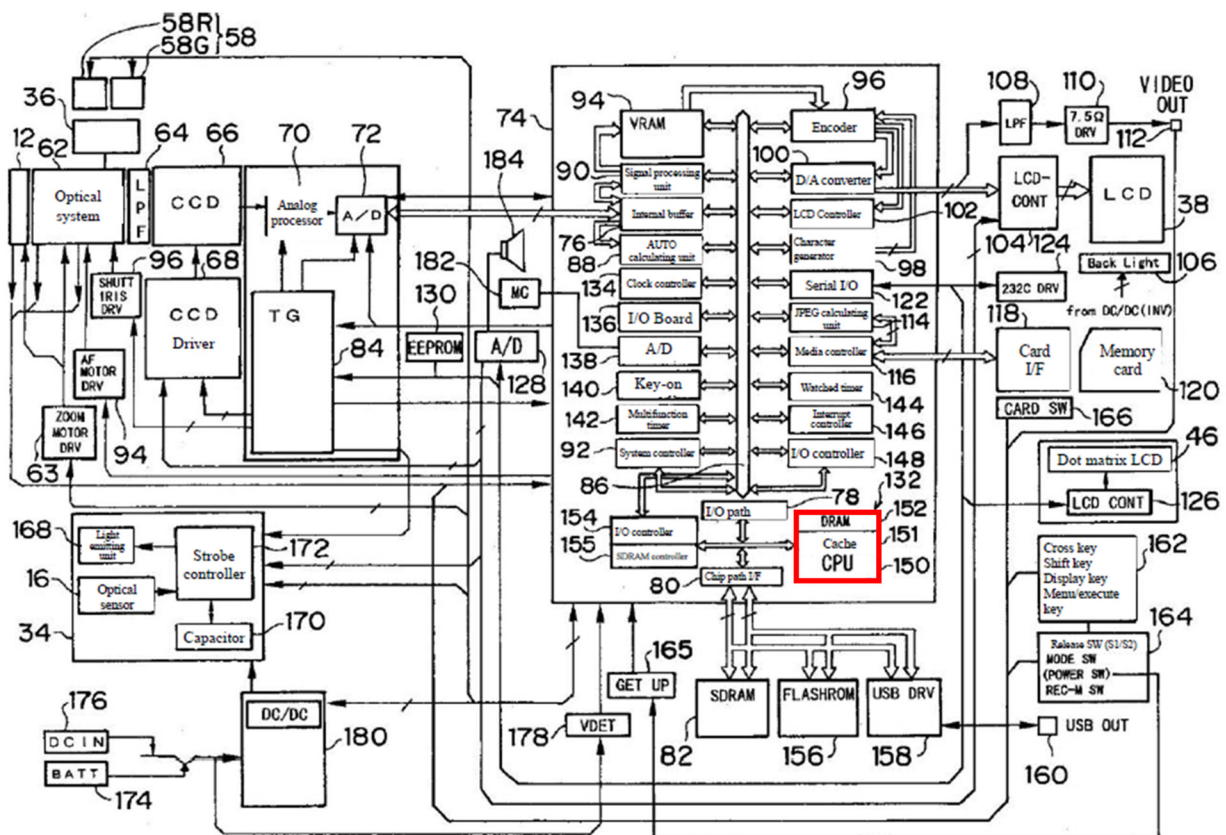
Claim 7

[7.pre]

Supra III.A.4.[1.pre]. LG-1003, [0111]. For example, Yoshida discloses a CPU core 150 including CPU 132 that executes various programs stored in a flash memory 152. LG-1005, [0070]-[0073]. The flash memory 152 serves as the computer-readable recording medium storing the instructions executed by the CPU.

Id.; LG-1003, [0111].

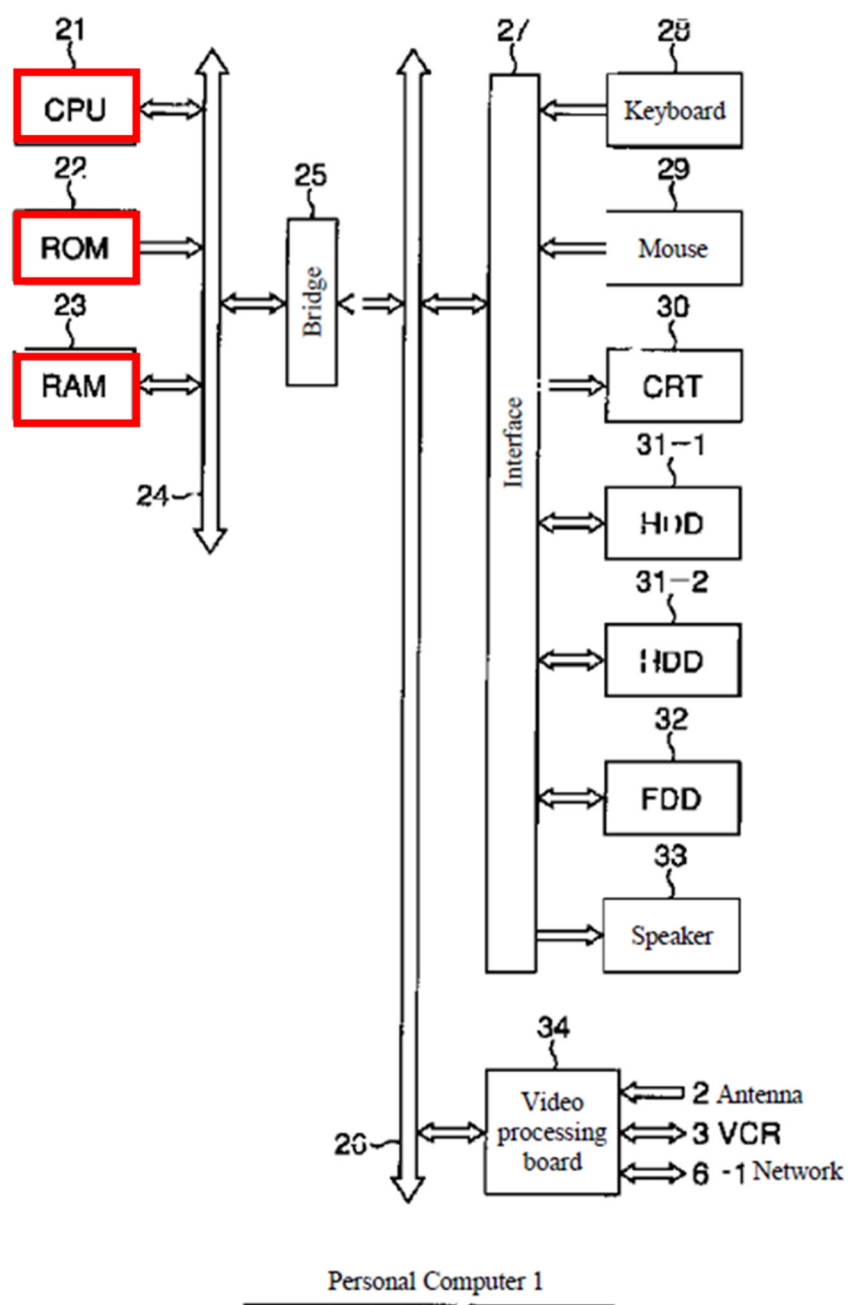
[FIG. 5]



LG-1005, FIG. 5 (annotated).

Further, Terashita discloses CPU 21 that executes programs stored in ROM 22 or loaded into RAM 23. LG-1006, [0019]. These programs include AV content management and retrieval program 82 and AV content editing program 83, which perform functions related to editing and managing image information. LG-1006, [0038]-[0039]. RAM 23, ROM 22 and storage devices like HDD 31 serve as computer-readable recording media storing the instructions executed by the CPU. *Id.*, [0019]; LG-1003, [0112].

[FIG. 2]



LG-1006, FIG. 2 (annotated).

[7.1]

Supra III.A.4.[1.1]. LG-1003, [0113].

[7.2]

Supra III.A.4.[1.2]. LG-1003, [0114].

Claim 8

[8]

Supra III.A.4.[2]. LG-1003, [0115].

Claim 9

[9]

Supra III.A.4.[3]. LG-1003, [0116].

B. GROUND 2A: Claims 1-9 are obvious over Dow

1. Dow Overview

Dow discloses a portable, hand-held image capture and communication device that allows users to capture, store, and manipulate images within its internal memory. LG-1007, Abstract. Dow's system includes software modules for functions such as viewing, zooming, rotating, and deleting images. LG-1007, 6:14-20; 4:57-63. Dow's processor displays and manipulates images on a built-in screen, enabling user interaction, such as zooming, rotating images, and deleting them LG-1007, 7:1-5, FIG. 1A (element 24); 6:38-40 (zoom view module); 6:40-42 (page rotation module); 6:46-48 (delete page module). These features support the editing and modification of images stored in the Dow's memory. LG-1003, [0064].

Dow outlines a decision-making process to control when changes to images stored in its memory, such as deletions, can or cannot be performed. LG-1007, 9:55-57; 9:13-15, 10:30-33, FIGs. 9B-9C. If an invalid operation is attempted, such as pressing an inactive delete button, the system triggers an error notification. LG-1007, 8:23-27. When the system determines that change are allowed, a confirmation prompt to the user, giving the user a chance to approve or abort the operation. LG-1007, 9:4-7. This combination of decision-making, error notification, and user confirmation ensures controlled and deliberate image changes , thereby safeguarding against inadvertent deletions and other unauthorized changes. LG-1003, [0065].

2. Analysis

Claim 1

[1.pre]

To the extent the preamble is limiting, Dow renders it obvious. For example, Dow discloses an information editing apparatus in the form of a portable, hand-held image capture and communication appliance. LG-1007, Abstract, 4:42-46. This device allows users to capture, manipulate, and manage images stored in its internal memory. LG-1007, 2:60-67, 6:12-20; LG-1003, [0117]. The appliance includes a processor that executes program code stored in the internal memory, which enables various image manipulation functions, such as deleting, rotating,

and zooming images. LG-1007, 2:60-3:2, 6:12-20. Specifically, Dow discloses that the appliance's software includes a delete page module responsible for purging images when they are no longer needed. LG-1007, 8:14-10:49, 6:12-22; FIGs. 2, 6, 9A. Dow also discloses a confirmation prompt, where the user is informed about the number of images to be deleted and the memory that will be freed, providing an irreversible delete operation with an animation effect that metaphorically represents the permanence of the delete operation. *Id.*, 9:13-20; *see also, id.*, 3:3-11; 9:66-7. LG-1007, Abstract; LG-1003, [0117]-[0119].

Dow's system includes internal hardware and software architecture. LG-1007, 4:39-6:64, 4:1-3, FIGs. 2, 3. Dow's system includes a display screen, user operation buttons, and navigation buttons, which allow the user to interact with the device. LG-1007, 4:42-49; Navigation buttons – 5:13-17, 6:60-64, .8:64-9:12, 9:49-57; User operation button – 4:57-63; FIGs. 1A-C, 3. The software modules within the appliance include an initialization module, a capture page module, a thumbnail view module, a zoom view module, a page rotation module, and a delete page module, among others. LG-1007, 6:12-21; FIG.2. These software modules collectively enable the editing and manipulation of images, providing the user with various functions to adjust and organize captured content. *Id.*; LG-1003, [0118]. Dow describes that the system's software enables functionalities such as rotating

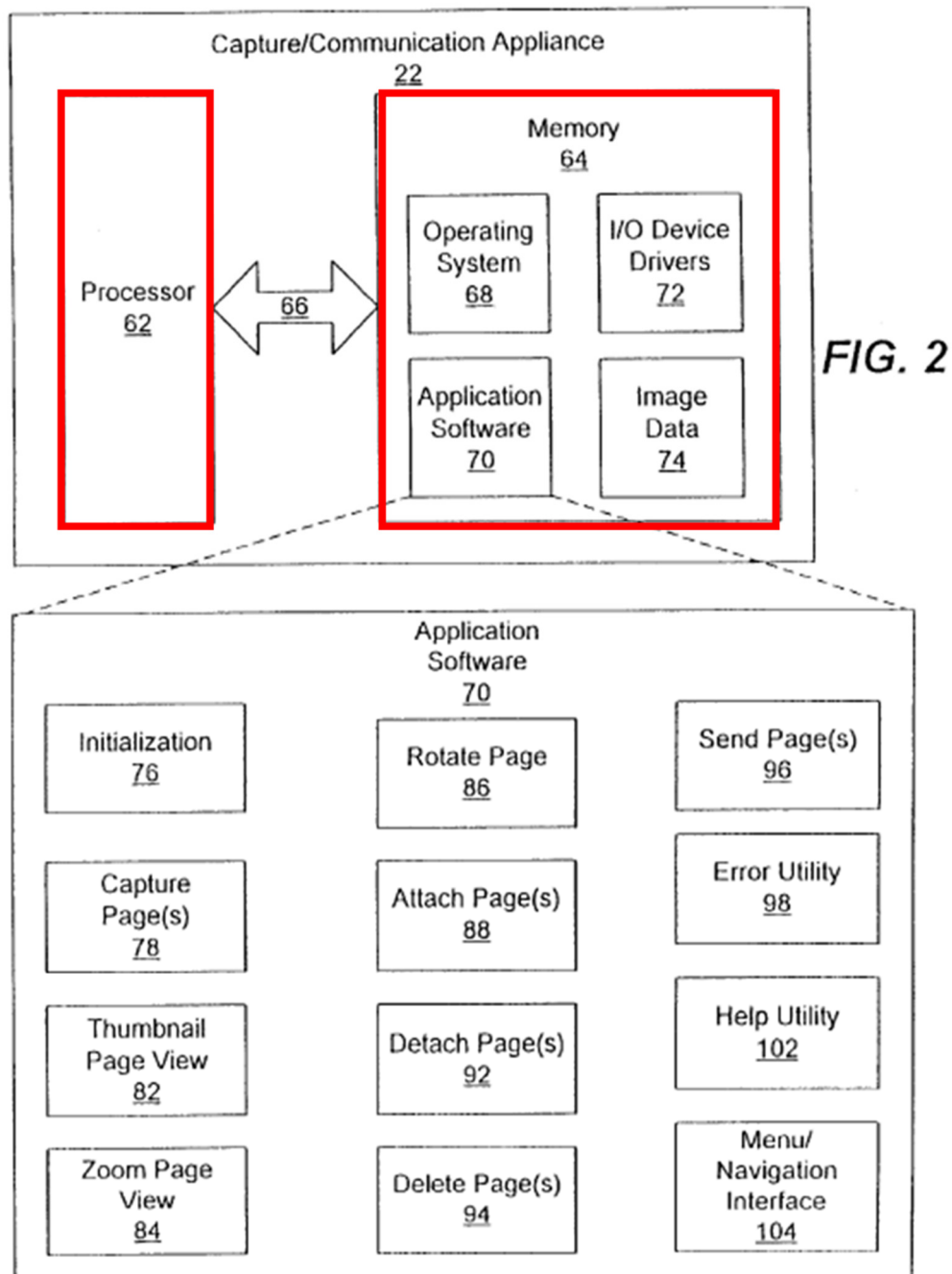
images, sending pages, and attaching or detaching pages, all facilitated by the processor's execution of these software modules. LG-1007, 6:12-20. LG-1003, [0118]. *See also*, LG-1007, 4:57-5:17; 63-66. LG-1003, [0118].

Lastly, Dow addresses error handling and user feedback through the integration of an error utility module. LG-1007, 7:64-8:1. For example, if the delete button is not active or the operation is invalid, the error utility module notifies the user of the issue. *Id.*, 8:22-28, FIGs. 6, 9A. This error handling system ensures that users are informed about the status of operations, contributing to the robustness and reliability of the editing apparatus. *Id.*, 6:52-54. LG-1003, [0119]. The appliance allows users to manipulate images in a variety of ways, including rotating them in 90° increments, zooming, and deleting. LG-1007, 6:37-48. LG-1003, [0119].

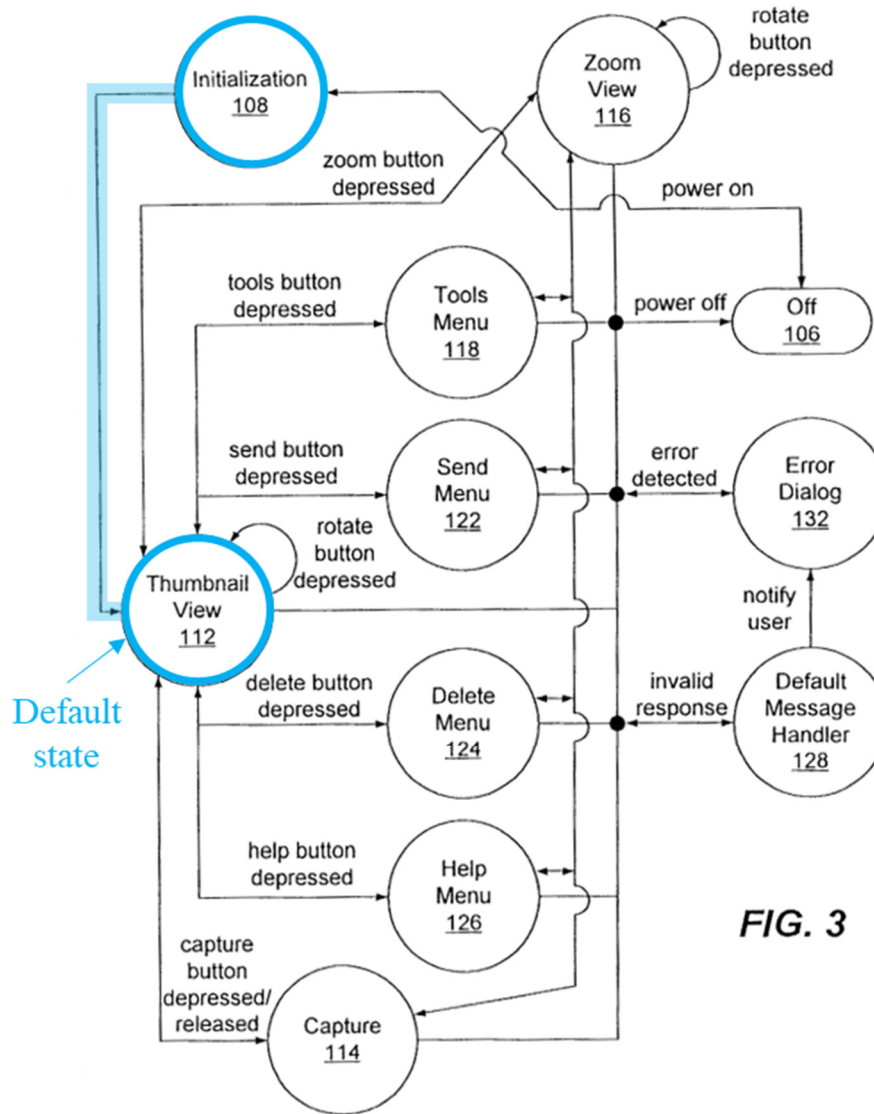
[1.1]

Dow renders obvious [1.1]. Dow discloses a processor 62 that manipulates and displays images, with application software 70 including a delete page module to purge capture images. LG-1007, 2:64-3:2; 5:31-6:21; FIG. 2. The software features a thumbnail view module and delete page module. *Id.*, 6:12-21; FIG. 2. As will be shown in more detail below, processor 62, similar to the controller 8 in the '188 patent, functions as a “deciding device” and “changing device” in conjunction with the application software 70. LG-1001, 14:50-51; LG-1003, [0120]- [0126].

Dow describes the processor 62 configured to determine whether changes, which include deletions, can be made to images, such as thumbnail images, which Dow describes, and shows in FIG. 2 (reproduced below), is the default state for viewing any captured images. LG-1007, 7:13-15; FIG. 2; LG-1003, [0121]. This establishes that the system uses thumbnail images as the default for user interaction, ensuring that any operations—such as changes to the image—are related to the thumbnails. LG-1007, 6:31-32; LG-1003, [0121].

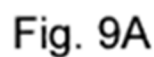


LG-1007, FIG. 2 (annotated).



LG-1007, FIG. 3 (annotated).

In a first instance, Dow explains that changes, such as deleting thumbnail images, are dependent on the current system state. LG-1007, 8:15-17. Dow discloses, “[d]epending on the current state of application software 70, this response



54

Dow discloses that the processor 62 (i.e., the “deciding device”) determines, in conjunction with the application software 70, whether the user requested change to the image (i.e., deletion of the thumbnail image and its associated image) can proceed based, in part, on whether or not the delete button 34 is active or live based on the state of the application software 70 (i.e., “change permission information”). LG-1007, 8:22-27; LG-1003, [0123]. Thus, as Dow describes, if the processor 62 decides that based on the status of the application software that the user requested delete functionality is not available, then the processor 62 may invoke utility software module 98 to notify the user that delete button is presently inactive, thereby indicating that the thumbnail is not changeable at that time. *Id.*

Dow describes the error dialog state 132, in conjunction with Fig. 3 (reproduced below) as “notify[ing] the user of their error via a message or graphic (e.g., a blinking icon) on display 24. LG-1007, 7:66-8:1; Fig. 3. LG-1003, [0123].

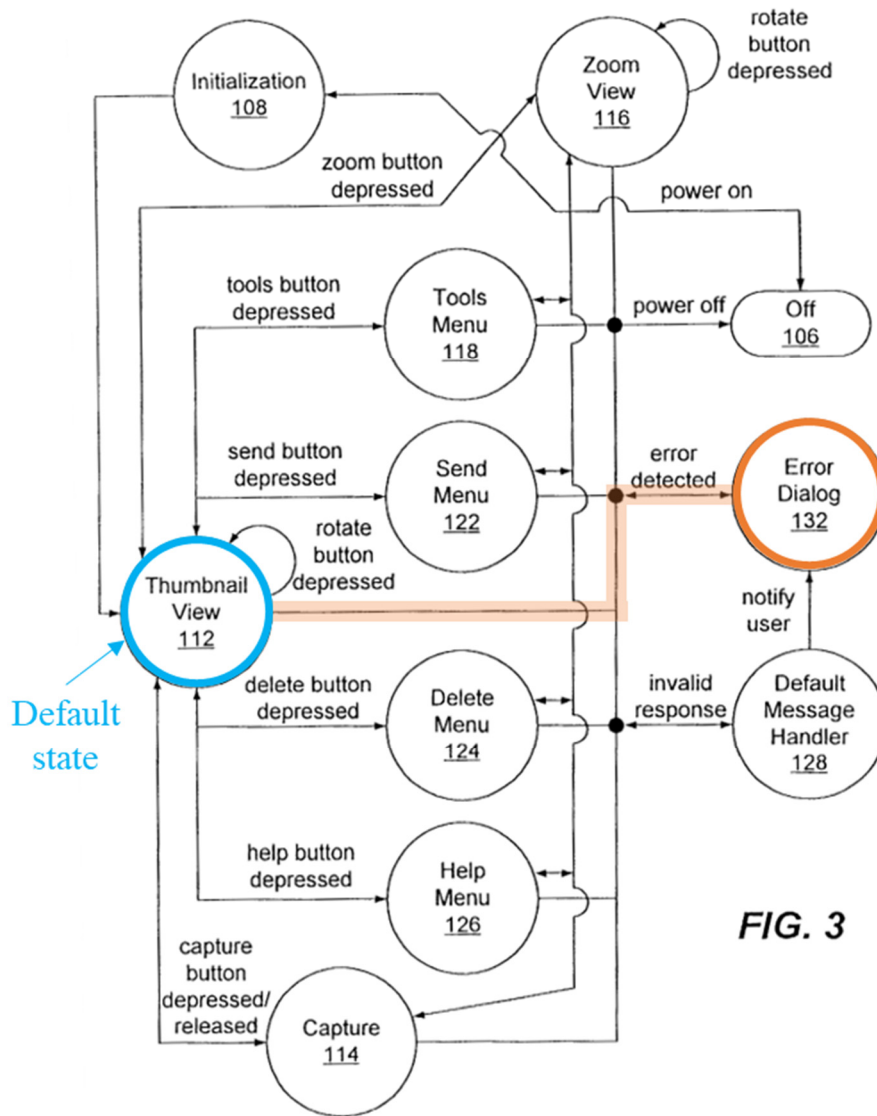


FIG. 3

LG-1007, FIG. 3 (annotated).

In a second instance, Dow describes a user confirmation step that also plays a role in the deciding step for allowing changes, such as deletions to thumbnail images. LG-1003, [0124]. LG-1007, 9:4-7 (“Delete page module 94 in step 162 displays a **delete confirmation prompt** on display 24 as shown in FIG. 10, which

provides the user with a second opportunity to abort the delete operation.”) (emphasis added). This step reflects an additional layer of decision-making initiated by the processor 62 that determines whether a change can occur, allowing the user to affirm or reject the deletion of a thumbnail, which teaches the claimed “change permission information” used by the processor in deciding whether to ultimately allow the change to the selected thumbnail image. LG-1003, [0124]. This confirmation step performed by the processor 62 is the deciding device that evaluates whether a change (i.e. deletion) should proceed, in alignment with the claim language describing a process for deciding whether a thumbnail can be changed. LG-1003, [0124].

Recorded Information on a Medium:

Dow discloses thumbnail images showing contents of recorded information which includes at least image information recorded on a recording medium. LG-1003, [0125]. For example, in Dow’s system “[t]he digital representations of the images captured by appliance 22 is denoted by image data 74.” LG-1007, 5:58-59. Dow explains that this information is stored in memory – “images may be captured via capturing means and saved in an internal memory.” LG-1007, 2:60-64. Dow further explains that “[m]emory 64 is representative of the overall hierarchy of memory devices containing the software and data used to implement the functionality of appliance 22.” LG-1007, 5:36-39. A POSITA would have understood that

Dow's stored image data (including the representative thumbnail images) are stored on a recording medium. LG-1003, [0125].

Thus, a POSITA would have understood that Dow's teachings of thumbnail manipulation, error handling, user confirmation processes, and the management of recorded information collectively satisfy the "deciding device" and its associated functionality described in claim limitation [1.1]. LG-1003, [0126].

[1.2]

Dow renders obvious [1.2]. As discuss above in §III.B.1, Dow discloses a processor [62] that manipulates and displays images, with application software [70] including a delete page module to purge capture images. LG-1007, 2:64-3:2; 5:31-6:21; FIG. 2. As discussed above, The processor, similar to the controller 8 in the '188 patent, functions as a "deciding device" and "changing device" in conjunction with the software. LG-1001,14:50-51; LG-1003, [0127]-[0133].

Dow describes a process where the processor 62, working in conjunction with the application software 70, prohibits a change to a thumbnail image based on a decision as to whether delete button 34 is currently active or live. LG-1007, 8:15-32. In particular, Dow describes that "[d]epending on the current state of application software 70" delete button 34 may not be currently active or live, and if so, "error utility software module 98 may optionally be invoked to notify the user

that delete button 34 is presently inactive in step 138.” *Id.* In relation to this functionality, Dow discloses that “a transition is sometimes made to the error dialog state 132 to notify the user of their error via a message or graphic (e.g., a blinking icon) on display 24.” LG-1007, 7:63-8:1; LG-1003, [0128].

In this case, the system (i.e., processor 62 in combination with application software 70) prohibits the deletion of a thumbnail image by keeping the delete button inactive when the change is not permitted. LG-1007, 8:15-31; LG-1003, [0129]. These actions correspond to the claimed change prohibiting process, where the system restricts the change (in this case, the deletion of an image) by rendering the relevant action inactive and notifying the user of the restriction. LG-1003, [0129].

Additional Layers of Change Prohibition:

Even in instances where the delete button functionality is available and live, and the deciding device determines that a change (i.e., deletion of the thumbnail image) is permitted, Dow describes additional layers of protection to prevent changes from being made inadvertently. LG-1003, [0130]. For example, Dow explains that the system provides the user with a confirmation prompt before a change is executed, adding an additional safeguard: “Delete page module 94 in step 162 displays a delete confirmation prompt on display 24 as shown in FIG. 10,

which provides the user with a second opportunity to abort the delete operation.”

LG-1007, 9:4-7. This second confirmation opportunity represents an additional layer of prohibiting a change, where the user is prompted again before a change (i.e., deletion) is finally carried out. LG-1003, [0130]. Dow also mentions that “[a]lternative designs can be implemented by the skilled programmer, however, that provide additional protection from an inadvertent page deletion.” LG-1007, 9:26-28, 3:11-18, 3:34-37, 8:7-12, 9:13-23, 9:49-55, 11:35-37. A POSITA would have understood that Dow’s system includes mechanisms for preventing changes even after the user has initially requested them. The confirmation prompt serves as an effective change prohibiting process, which prevents changes from occurring unless explicitly confirmed by the user. LG-1007, Abstract; LG-1003, [0130].

Permanent Nature of Changes Emphasizes Change Prohibition:

Dow reinforces the significance of the change prohibiting process by describing the irreversible nature of certain changes once they are made. Specifically, Dow states: “[t]o preserve memory resources in appliance 22, once an image or page has been deleted it is permanently erased from memory and cannot be retrieved later.” LG-1007, 9:10-13. The permanent deletion of data emphasizes the importance of ensuring that changes are only permitted when appropriate, as once

an image is deleted, it cannot be restored. LG-1003, [0131]. This irreversible aspect of the deletion process underscores the necessity of a change prohibiting process, where the system must effectively prevent changes (such as deletions) from occurring unless explicitly allowed by the system or the user, which mirrors the claimed limitation of prohibiting changes when a decision has been made that a change is not allowed. *Id.*

Dow's Consistency in Prohibiting Invalid Changes:

Dow consistently describes processes that prohibit changes when invalid inputs are detected or when certain conditions are not met. These processes include error notifications, inactivity of certain buttons, and additional confirmation steps, all of which collectively teaches the claimed change prohibiting process. Dow's clear teaching of blocking changes under specific conditions and notifying the user of such restrictions teaches the claim limitation. Dow's disclosure of these processes would have been obvious to a POSITA, as they reflect standard approaches for implementing change prohibiting mechanisms based on the system's decision-making process. LG-1003, [0132].

Thus, Dow's teachings of direct change prohibition, error notifications, multiple layers of safeguards, and the permanent nature of changes collectively

demonstrate that Dow renders obvious a change prohibiting device for prohibiting changes to thumbnail images. LG-1003, [0133].

[1.3]

Dow renders obvious [1.3]. As discussed above, Dow discloses a system where images captured by a portable hand-held device are saved in internal memory and subsequently reproduced for editing. LG-1007, 2:60-65. A POSITA would have understood that Dow's system stores the recorded images and then reproduces the images on the display for further manipulation. *Id.*; LG-1003, [0134]. Dow also discloses that the appliance includes several software modules for editing the reproduced images, including modules for zooming, rotating, and deleting images. LG-1007, 6:12-14. The "zoom view module" allows for magnifying a portion of a reproduced page, LG-1007, 6:38-40, while the "page rotation module" enables rotating the reproduced page in 90° increments, LG-1007, 6:40-42. Additionally, the "delete page module" allows for the deletion of reproduced pages from memory, LG-1007, 6:46-48. A POSITA would have understood that these modules are used for editing a reproduced form of the recorded information, as the appliance reproduces images from memory and allows for various editing operations, including zooming, rotating, and deleting. LG-1003, [0134].

Claim 2

[2]

Dow renders obvious [2]. For example, Dow discloses a system for generating warning signals to inform users when a change is not permitted. Dow explains that “[i]f delete button 34 is not currently active or live, error utility software module 98 may optionally be invoked [by processor 62] to notify the user that delete button 34 is presently inactive in step 138.” LG-1007, 8:23-27. A POSITA would have understood that this shows that when the system determines that a change to the image (in this case, a deletion) is not allowed, the system generates a warning to notify the user. LG-1003, [0135]. Dow further clarifies that when an invalid user action occurs (e.g., pressing an inactive button), the system transitions to an error dialog state, where the user is notified of their error through a message or graphic on the display, such as a blinking icon. LG-1007, 7:59-8:7. A POSITA would have understood this is indicative of a display signal being generated to warn the user that the desired change is not permitted. LG-1003, [0135].

Dow’s system further includes mechanisms for error prevention and user notification, demonstrating that the system not only generates warnings but also ensures the user is informed about the status of changes. LG-1003, [0136]. For example, Dow discloses that, in the case of an attempted page deletion, the system may display a delete confirmation prompt, providing a second opportunity to the

user to abort the operation. LG-1007, 9:4-7. This confirmation prompt acts as an additional layer of protection, further emphasizing the role of the system in generating display signals to prevent unintended changes. LG-1003, [0136]. Thus, Dow's disclosure of error handling, user notifications, and confirmation prompts establishes that a warning display is generated when the system determines that a change is not permitted. LG-1003, [0136].

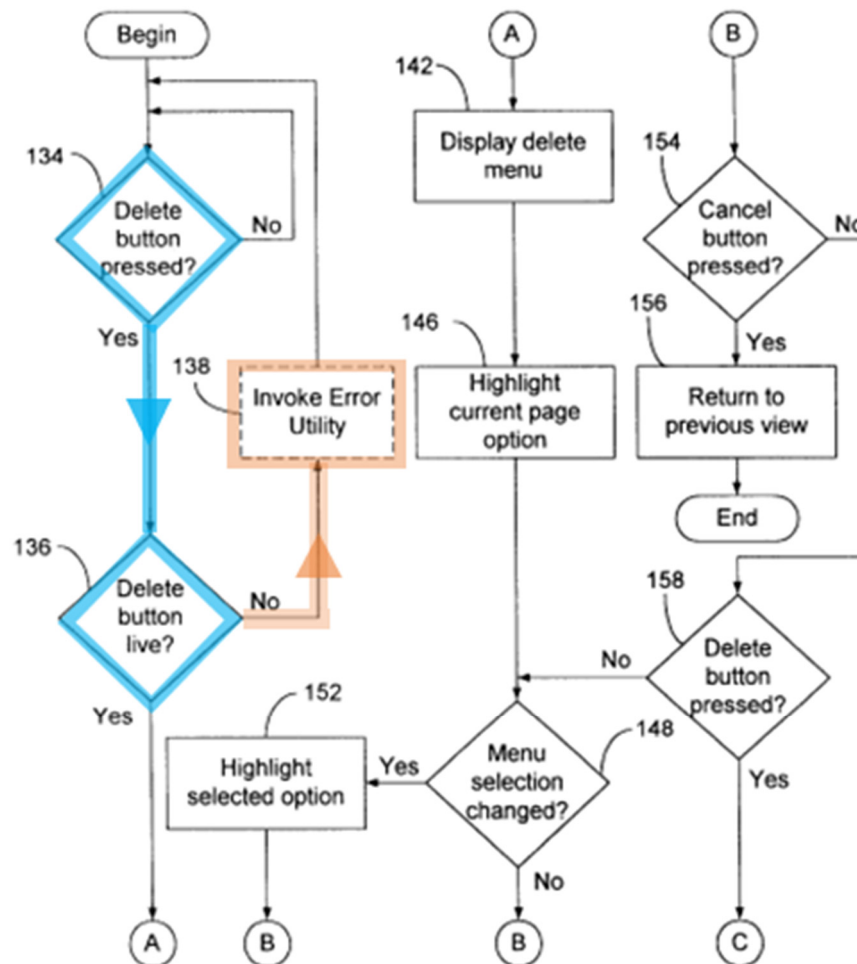


Fig. 9A

LG-1007, FIG. 9A (annotated).

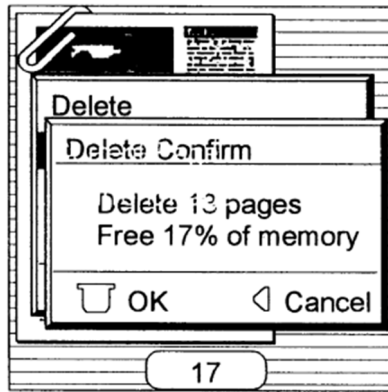


FIG. 10

LG-1007, FIG. 10.

Claim 3

[3]

Dow renders obvious [3]. For example, as discussed above, Dow discloses a system where changes to thumbnail images are allowed when certain conditions are met. *Supra* III.B.2.[1.2]. Specifically, Dow details a system where the user can perform changes, such as image deletion, when the relevant conditions are satisfied. For example, Dow describes the “delete page module” that allows for image deletion when the system determines the operation can be performed. LG-1007, 6:46-48. Furthermore, Dow explains that when the system determines that a change is permitted (i.e., the delete button is active), it permits the change to be made, thus satisfying the claim limitation of allowing changes when the deciding device deems it appropriate. LG-1003, [0137]. Moreover, Dow states, “delete

page module 94 in step 162 displays a delete confirmation prompt on display 24 as shown in FIG. 10, which provides the user with a second opportunity to abort the delete operation.” LG-1007, 9:4-7. This disclosure indicates that when the system determines that a change (deletion) is permitted, it triggers a process for modifying the image, in this case, by presenting a prompt for user confirmation to allow the change to proceed. LG-1003, [0137]. The decision to allow the change (deletion) is determined by the processor 62 in conjunction with application software 70, which teaches the deciding and changing device of the claims. LG-1003, [0137].

Claim 4

[4.pre]

Supra III.B.2.[1.pre]. LG-1003, [0138].

[4.1]

Supra III.B.2.[1.1]. LG-1003, [0139].

[4.2]

Supra III.B.2.[1.2]. LG-1003, [0140].

[4.3]

Supra III.B.2.[1.3]. LG-1003, [0141].

Claim 5

[5]

Supra III.B.2.[2]. LG-1003, [0142].

Claim 6

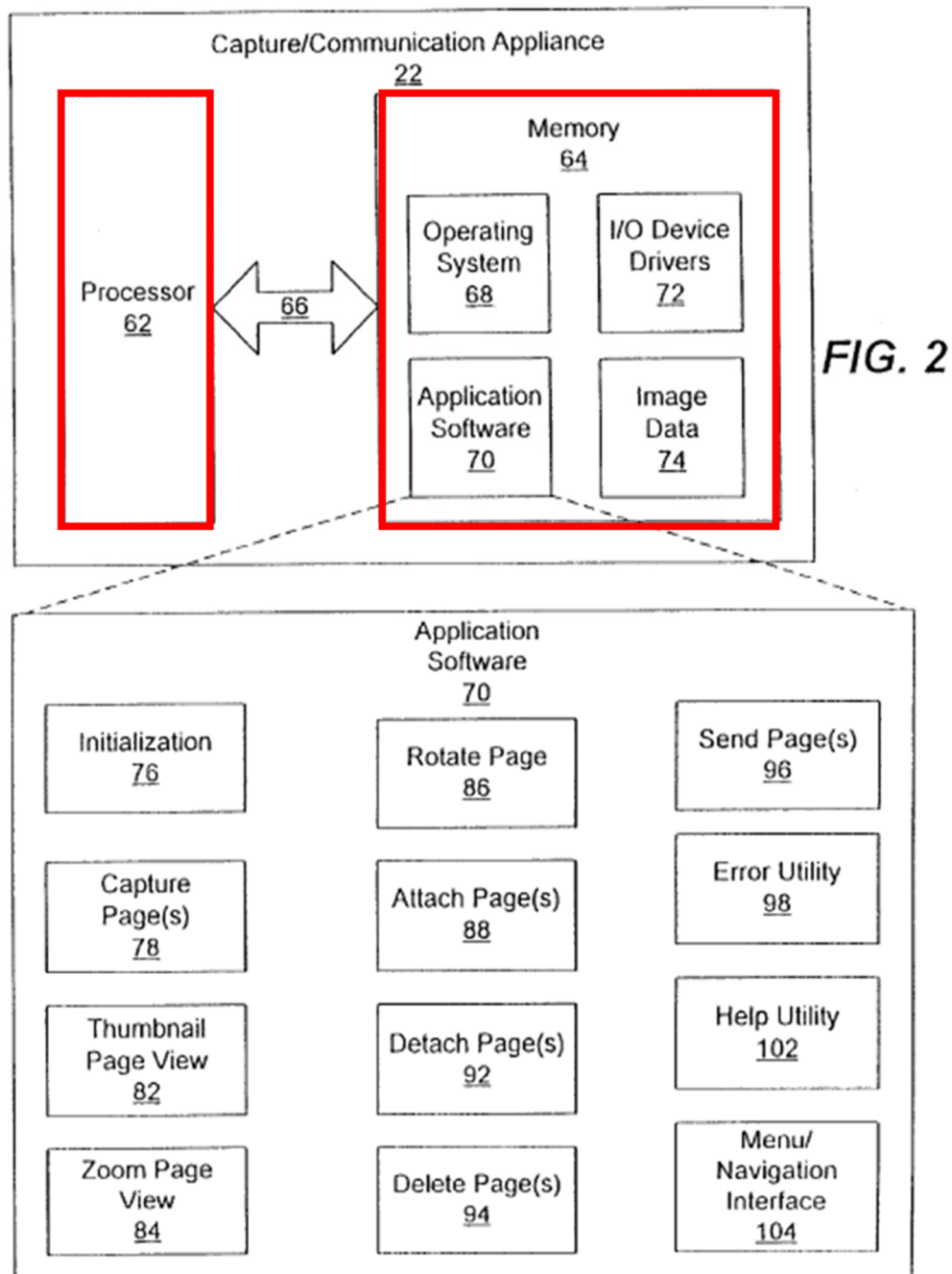
[6]

Supra III.B.2.[3]. LG-1003, [0143].

Claim 7

[7.pre]

Supra III.B.2.[1.pre]. LG-1003, [0144]. Dow discloses a processor 62 that communicates with memory 64 via an address/data bus 66. LG-1007, 5:31-39. Dow discloses memory 64 that stores software and data, including operating system 68, application software 70, IO device drivers 72, and image data 74. LG-1007, 5:39-45. A POSITA would have understood that the processor executes instructions stored in memory to perform various functions. *Id.*, 5:31-6:36; LG-1003, [0144].



LG-1007, FIG. 2 (annotated).

[7.1]

Supra III.B.2.[1.1]. LG-1003, [0145].

[7.2]

Supra III.B.2.[1.2]. LG-1003, [0146].

Claim 8

[8]

Supra III.B.2.[2]. LG-1003, [0147].

Claim 9

[9]

Supra III.B.2.[3]. LG-1003, [0148].

C. GROUND 2B: Claims 1-9 are obvious over Dow in view of Murakami

1. Murakami Overview

Murakami discloses a system for managing recorded programs, including a process for protecting programs from erasure. LG-1008, [0055]. Specifically, if a recorded program is protected from erasure, the system ensures that it is not deleted during update recordings, even if it is being reproduced. *Id.* Murakami's system controller, responsible for overall operation, determines whether certain actions, such as erasure, are permissible based on the program's current status. LG-1008, [0019]. Additionally, Murakami teaches generating GUI and OSD elements to provide status information to the user, which could include feedback about whether a program can be erased or modified. LG-1008, [0039]-[0040]; LG-1003, [0066].

2. Reasons to combine Dow and Murakami

A POSITA would have been motivated to combine the teachings of Dow and Murakami. LG-1003, [0149]-[0150]. Both references are in the field of digital image management and focus on protecting stored images from unwanted deletion or modification. LG-1007, 1:36-43, 3:34-37; LG-1008, [0001], [0055], Abstract. Dow teaches a handheld image capture device with functionality to delete images, while Murakami provides a more sophisticated system for managing recorded video content with erasure protection features. LG-1007, 2:55-3:33; LG-1008, [0055].

One motivation to combine these references would be to enhance Dow's delete functionality with Murakami's more nuanced approach to protecting content from deletion. LG-1003, [0150]. This combination would result in a more flexible and user-friendly system that can better protect important images while still allowing for efficient memory management. LG-1003, [0150]. Specifically, incorporating Murakami's erasure protection features into Dow's system would allow users to protect certain images from accidental deletion, addressing a key concern in digital image management. LG-1003, [0150].

3. Analysis

Claim 1

[1.pre]

To the extent the preamble is limiting, Dow-Murakami combination renders obvious [1.pre]. *Supra* III.B.2.[1.pre]. LG-1003, [0151].

[1.1]

Dow-Murakami combination renders obvious [1.1]. *Supra* III.B.2.[1.1]. LG-1003, [0152].

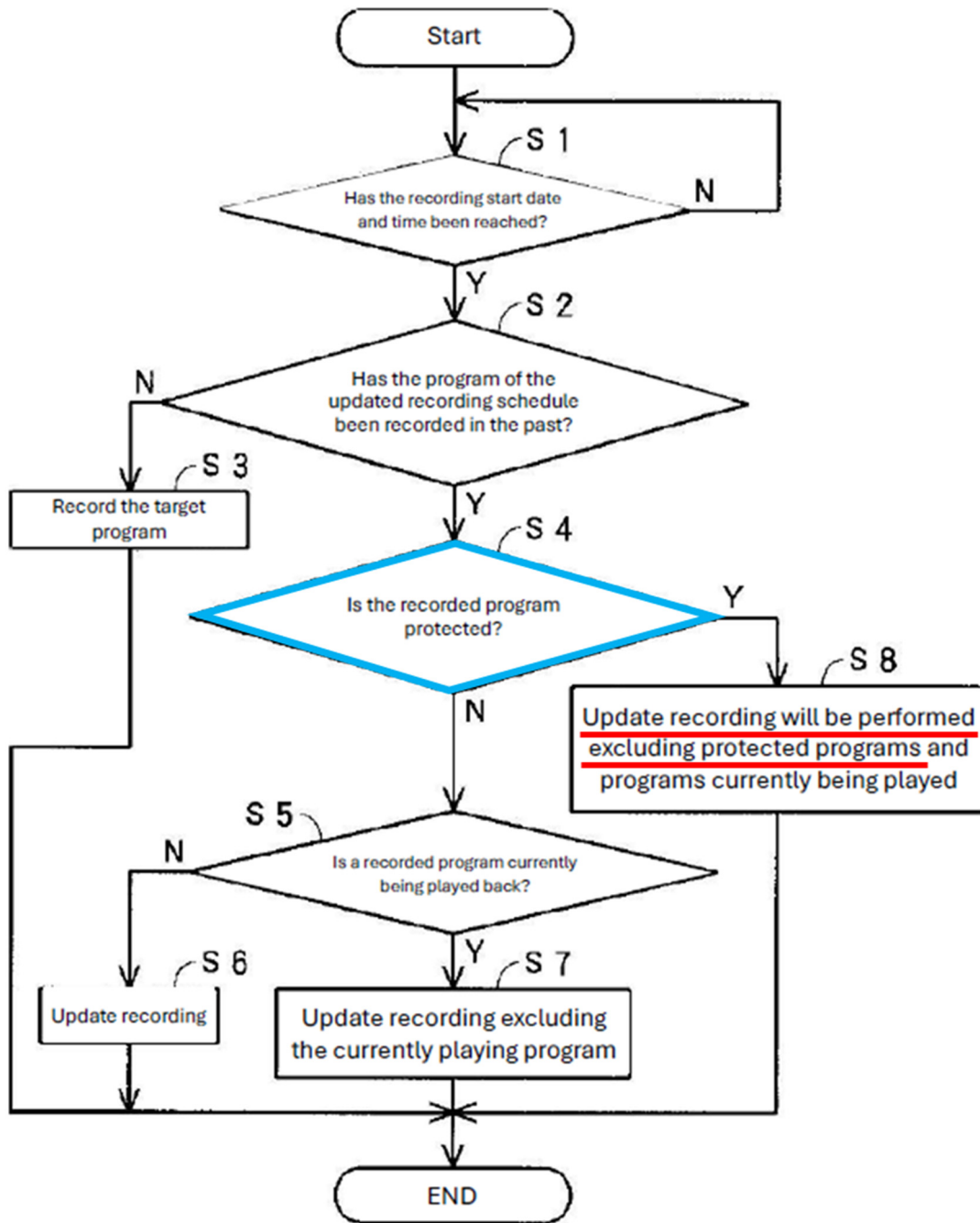
[1.2]

Dow-Murakami combination renders obvious [1.2]. *Supra* III.B.2.[1.2]. As discussed above, Dow teaches a version of these limitations through its delete menu and user confirmation prompt. *Id.*; LG-1003, [0153]. Murakami enhances these features with its erasure protection system. Specifically, Murakami discloses that “when the program recording reservation setting information is a program recording reservation setting indicating that scheduled recording is to be carried out regularly, erasure is prohibited prior to recording of the program.” LG-1008, [0011], [0013]. This teaches a “deciding process” that uses the program recording reservation setting information (that discloses the claimed change permission information) to decide whether deletion of the program image data is permitted, and if not, to prevent the deletion process from occurring, which teaches the claimed

change prohibiting process. LG-1003, [0153]. Indeed, a POSITA would have been motivated to include this additional change permission information in Dow's system to further enhance Dow's deciding process and change prohibiting process when a user selects the deletion functionality. LG-1003, [0153].

Furthermore, Murakami teaches that "[i]f it is determined in step S5 that the recorded and stored program is currently being reproduced, the system controller 80 proceeds from step S5 to step S7 and updates the recording except the program being reproduced." LG-1008, [0056]; *see also id.*, [0055], [0057]-[0058]. A POSITA would have recognized that this demonstrates a sophisticated decision-making process about whether content can be changed and therefore would have been motivated to add such a process to Dow's deletion deciding process to further enhance the ability of Dow's processor and application software to determine if the user-selected deletion functionality with available and applicable to certain of the indicated images. LG-1003, [0154].

FIG. 31
Recording Processing Update Routine



LG-1008, FIG. 3 (annotated).

Thus, a POSITA would have found it straightforward to incorporate Murakami's teachings into Dow's system, wherein the combined Dow-Murakami system would provide a robust mechanism for deciding whether thumbnail images can be changed and prohibiting changes when not permitted. LG-1003, [0155].

[1.3]

Dow-Murakami combination renders obvious [1.3]. *Supra* III.B.2.[1.2]. LG-1003, [0156].

Claim 2

[2]

Dow-Murakami combination renders obvious [2]. *Supra* III.B.2.[2]. LG-1003, [0157].

Claim 3

[3]

Dow-Murakami combination renders obvious [3]. *Supra* III.C.3.[1.2]. LG-1003, [0158].

Claim 4

[4.pre]

Supra III.C.3.[1.pre]. LG-1003, [0159].

[4.1]

Supra III.C.3.[1.1]. LG-1003, [[0160]].

[4.2]

Supra III.C.3.[1.2]. LG-1003, [0161].

[4.3]

Supra III.C.3.[1.3]. LG-1003, [0162].

Claim 5

[5]

Supra III.C.3.[2]. LG-1003, [0163].

Claim 6

[6]

Supra III.C.3.[3]. LG-1003, [0164].

Claim 7

[7.pre]

Supra III.C.3.[1.pre]. LG-1003, [0165].

[7.1]

Supra III.C.3.[1.1]. LG-1003, [0166].

[7.2]

Supra III.C.3.[1.2]. LG-1003, [0167].

Claim 8

[8]

Supra III.C.3.[2]. LG-1003, [0168].

Claim 9

[9]

Supra III.C.3.[3]. LG-1003, [0169].

D. GROUND 2C: Claims 1-9 are obvious over Dow in view of Tezuka

1. Tezuka Overview

Tezuka discloses an image filing system with a flag-based mechanism to restrict specific areas of an image, allowing selective masking during display. LG-1009, 282-283; LG-1003, [0067]. Flags like “Flag 1” prevent copying and editing of designated areas, while “Flag 3” offers even stricter restrictions, protecting sensitive content like signatures or seals from tampering. LG-1009, Abstract, 283. Tezuka’s system integrates flags with a search control device and mask generator to enforce these restrictions. LG-1009, 284-285. LG-1003, [0067]-[0068].

2. Reasons to combine Dow and Tezuka

A POSITA would have found it obvious to combine the teachings of Dow and Tezuka, as both address digital image management and protection. LG-1003, [0170]. Dow focuses on handheld image capture and management, while Tezuka

provides granular, area-specific protection within images. *Id.* Combining Dow with Tezuka would enhance Dow's image protection by allowing users to safeguard specific image areas from unauthorized viewing, copying, or editing, rather than protecting entire images. *Id.* This combination would have resulted in a more versatile and secure image management system, offering precise control over digital content. *Id.* A POSITA would have been motivated to integrate Tezuka's flag-based system with Dow's decision-making process to ensure secure handling of sensitive information while maintaining efficient image retrieval and modification. LG-1009, 282, 285; LG-1003, [0170]-[0171].

3. Analysis

Claim 1

[1.pre]: "An information editing apparatus, comprising:"

To the extent the preamble is limiting, Dow-Tezuka combination renders obvious [1.pre]. *Supra* III.B.2.[1.pre]. LG-1003, [0172].

[1.1]

Dow-Tezuka combination renders obvious [1.1]. *Supra* III.B.2.[1.1]. LG-1003, [0173].

[1.2]

Dow-Tezuka combination renders obvious [1.2]. *Supra* III.B.2.[1.2]. As discussed above, Dow provides a structure with its delete menu and confirmation

prompts that enable a user to make decisions regarding image deletion and modification. LG-1007, 9:4-7; LG-1003, [0174]. However, Tezuka improves upon these capabilities by introducing a flag-based protection system. LG-1009, 283, 282; LG-1003, [0174]. Tezuka teaches “registering a flag on which the area of restricted use and the extent of use are set in picture information to be filed” LG-1009, Abstract. A POSITA would have understood that this flag system allows the system to identify areas that can or cannot be changed, thereby facilitating a more refined process of change permission based on specific criteria. LG-1003, [0174].

Tezuka further enhances this approach by integrating a “deciding process” and “change prohibiting process” using flags. For instance, “flag 1 in FIG. (a) allows display of the area but prohibits all copying and prohibits all use in edit mode.” LG-1009, 283. This demonstrates a decision-making process where the system determines whether or not changes are permitted based on the flag status, and implements a change prohibiting process to prevent modifications. LG-1003, [0175]. By combining Dow’s deletion deciding and change prohibiting functionality with Tezuka’s advanced flag-based protection system, a POSITA would have recognized that such a combination would have provided a more robust and precise mechanisms for deciding whether specific areas of thumbnail images can be changed and prohibiting changes when not permitted. *Id.* Thus, the Dow-Tezuka combination would have offered better granular control. *Id.*

[1.3]

Dow-Tezuka combination renders obvious [1.3]. *Supra* III.B.2.[1.3]. LG-1003, [0176].

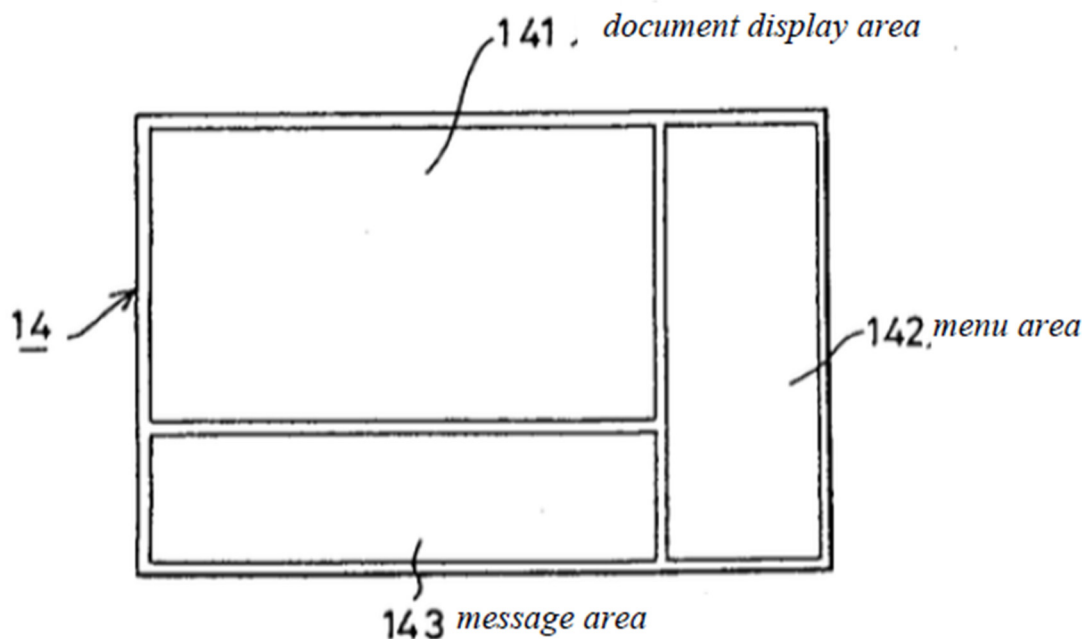
Claim 2

[2]

Dow-Tezuka combination renders obvious [2]. *Supra* III.B.2.[2]. In addition to Dow's disclosure, Tezuka discloses "an inquiry of the area and the flag is displayed in the message area 143." As discussed above, Tezuka's system employs a flag used to control the extent to which an image or document can be modified, including preventing editing in certain areas. LG-1003, [0177]. Specifically, Tezuka teaches that "[i]n such an edit mode, if the flag 3 shown in FIG. 4(c) is set in a restricted use area, writing to the image storage device 15 for that area is prohibited and falsifying this portion is prevented." LG-1009, 285. This flag system not only prevents changes but also triggers appropriate actions, such as masking or blocking access to restricted areas. LG-1009, 284, 284; LG-1003, [0177]. A POSITA would have recognized that combining Dow's basic functionality, such as its confirmation prompts, with Tezuka's flag-based mechanism would naturally result in a system where a display signal is generated to warn the user when an image is restricted from modification. LG-1003, [0177]. Tezuka's teachings of restricted

areas being flagged and the associated masking actions, combined with Dow's decision-making framework, would make the generation of such a warning message an obvious implementation. *Id.* Therefore, Dow-Tezuka combination renders the generating process of displaying a warning when changes are prohibited obvious to one of skill in the art. *Id.*

FIG. 2



LG-1009, FIG. 2.

Claim 3

[3]

Dow-Tezuka combination renders obvious [3]. *Supra* III.B.2.[3]. LG-1003, [0178].

Claim 4

[4.pre]

Supra III.D.3.[1.pre]. LG-1003, [0179].

[4.1]

Supra III.D.3.[1.1]. LG-1003, [0180].

[4.2]

Supra III.D.3.[1.2]. LG-1003, [0181].

[4.3]

Supra III.D.3.[1.3]. LG-1003, [0182].

Claim 5

[5]

Supra III.D.3.[2]. LG-1003, [0183].

Claim 6

[6]

Supra III.D.3.[3]. LG-1003, [0184].

Claim 7

[7.pre]

Supra III.D.3.[1.pre]. LG-1003, [0185].

[7.1]

Supra III.D.3.[1.1]. LG-1003, [0186].

[7.2]

Supra III.D.3.[1.2]. LG-1003, [0187].

Claim 8

[8]

Supra III.D.3.[2]. LG-1003, [0188].

Claim 9

[9]

Supra III.D.3.[3]. LG-1003, [0189].

E. GROUND 3: Claims 1-9 are obvious over Miyasaka in view of Murakami

1. Miyasaka Overview

Miyasaka discloses an image editing device and method for setting a pre-view image (or thumbnail) for moving picture data. LG-1010, [0002]. Miyasaka's system includes storage for moving and still image data, a selection means for choosing still images from the moving data, and a setting means to designate the selected still image as the preview image. LG-1010, [0006]. This allows users to set a preview image that best represents the moving data, rather than using the first

frame automatically. LG-1010, [0007]. Miyasaka also offers flexibility by allowing selection from continuous still images within the moving data or separately stored still images, such as a title frame. LG-1010, [0008], [0010]. This functionality simplifies selecting the most suitable preview image, aiding in efficient searching of moving image data. LG-1010, [0046]-[0047]; LG-1003, [0069]-[0070].

2. Murakami Overview

Supra, III.C.1. LG-1003, [0066].

3. Reasons to combine Miyasaka and Murakami

A POSITA would have been motivated to combine Miyasaka's thumbnail selection system with Murakami's update recording functionality for several reasons. First, Murakami's process would enable Miyasaka's system to automatically manage content, reducing redundant storage and keeping only the most relevant items, thus enhancing content management. LG-1003, [0190]. Second, the combination would have also allowed users to protect certain content from automatic updates, providing greater control over stored media. *Id.* Third, by implementing Murakami's update recording process in Miyasaka's system, a POSITA could optimize storage space by automatically removing outdated content unless protected. *Id.*

A POSITA would have readily predicted that Murakami's teachings would transform Miyasaka's system from one that allows unrestricted thumbnail changes to one that selectively allows or prohibits changes based on predefined rules or user preferences, making it more suitable for environments where content protection is necessary. LG-1003, [0191].

Considering the earliest priority date of March 5, 2002, a POSITA would have been familiar with the concept of protected content in media management systems and would have considered Murakami's update recording with protection features as a beneficial addition to Miyasaka's thumbnail management system. LG-1003, [0192]; LG-1011, [0034]; LG-1017, [0043]-[0054], FIGs. 10 (erase protect flag), 12, 14 (protected image), 15 (erase protect process).

Further, a POSITA would have anticipated that with many real-world applications, like news programs or serial dramas, the ability to protect certain content while automatically updating others is crucial, alongside custom thumbnail selection LG-1003, [0193]. Thus, combining Murakami's features with Miyasaka's system would create a more robust and versatile solution. This integration would be technically straightforward, as both systems address digital media management and storage, resulting in a more sophisticated system capable of managing both updates and content protection. *Id.*, [0193]-[0194].

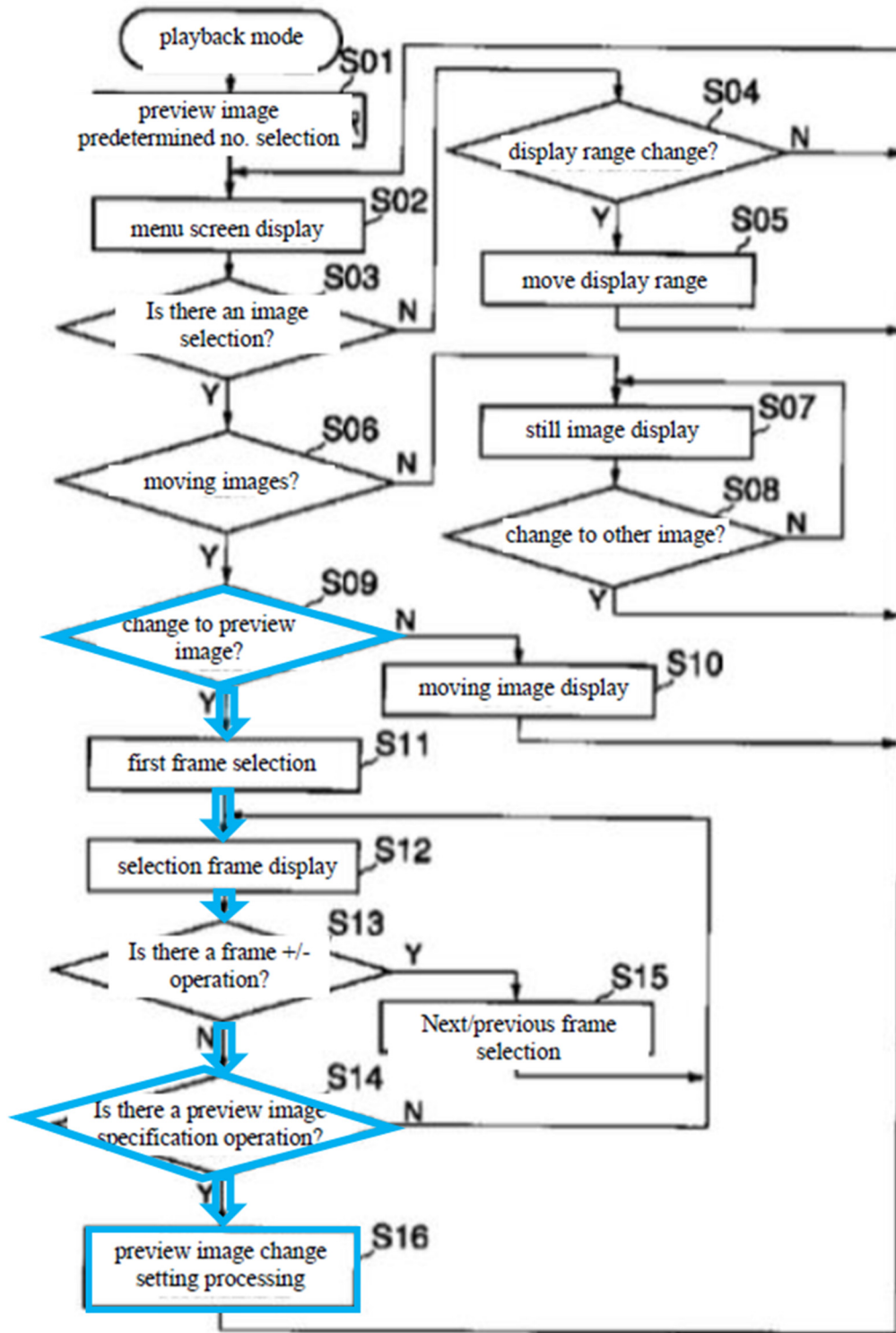
4. Analysis

Claim 1

[1.pre]

To the extent the preamble is limiting, the Miyasaka-Murakami combination renders obvious [1.pre]. For example, Miyasaka discloses a digital camera system that allows for the selection of a preview image from moving picture data, addressing the problem of the first frame not always being the most suitable for representing the video content. LG-1010, [0005]; LG-1003, [0195]. Specifically, the system uses a CPU to select a still image from moving picture data and set it as the preview image, enabling users to choose the most suitable image from within the video. LG-1010, Abstract, [0004]-[0005]. Therefore, Miyasaka provides an apparatus and method for allowing a user to select an optimal preview image for the moving picture data that highlights the ability to edit and manipulate multimedia data by selecting a frame from a sequence to best represent the content. LG-1010, [0001], [0004]. LG-1003, [1095].

[FIG. 2]



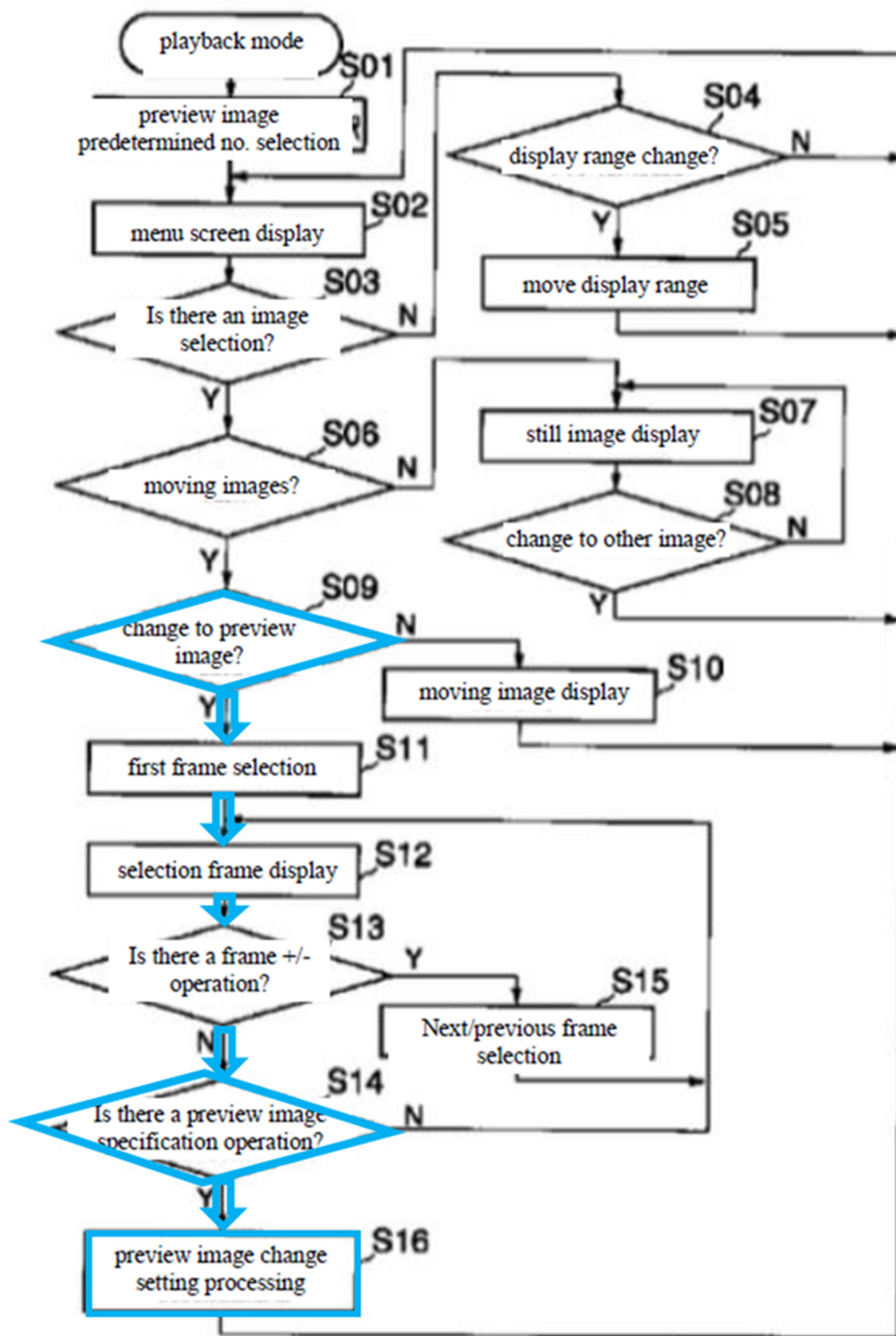
LG-1010, FIG. 2 (annotated).

[1.1]

Miyasaka-Murakami combination renders obvious [1.1]. Miyasaka discloses a system wherein the user can arbitrarily select and set a preview image from still images derived from moving image data stored in a mixed manner within a storage unit, with the CPU initially controlling the selection and setting of the preview image. LG-1010, [0006]; *see also*, id., [0009], [0045], FIG. 3.

Miyasaka's apparatus enables the user to perform a key operation to change the preview image to a still picture deemed most suitable for representing the moving image data, based on an arbitrary selection from the temporally continuous still image data, such as image data (1) to (15) shown in Fig. 3. LG-1010, [0040], [0045]; Fig. 3. In this manner, Miyasaka allows a user to change the particular still image picture that the user would like to represent the moving image data stored on the memory. LG-1003, [0196].

[FIG. 2]



LG-1010, FIG. 2 (annotated).

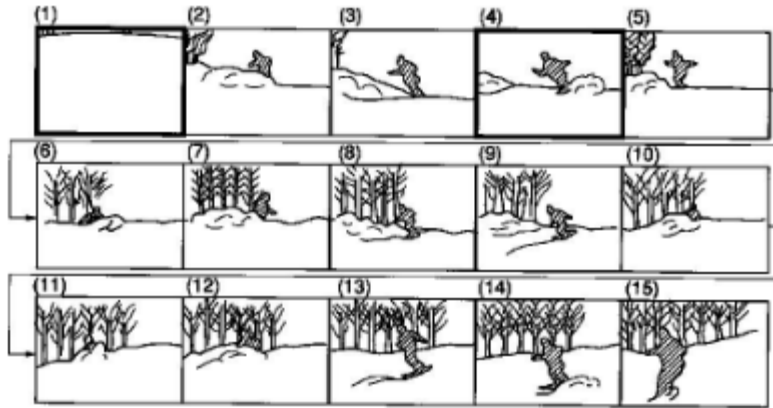


figure 3

LG-1010, FIG. 3.

As such, A POSITA would have recognized that this functionality carried out by the CPU in conjunction with the still and moving image data stored in the memory allows for dynamic alteration of the preview image by the user, reflecting a decision-making process about whether to change the preview image based on predefined permissions. LG-1003, [0197].

To the extent Miyasaka does not explicitly disclose a deciding device for deciding whether a thumbnail image cannot be changed (for the reasons noted above, it does disclose the instance of a deciding device that decides a thumbnail image can be changed), Murakami discloses various methods of controlling access to and

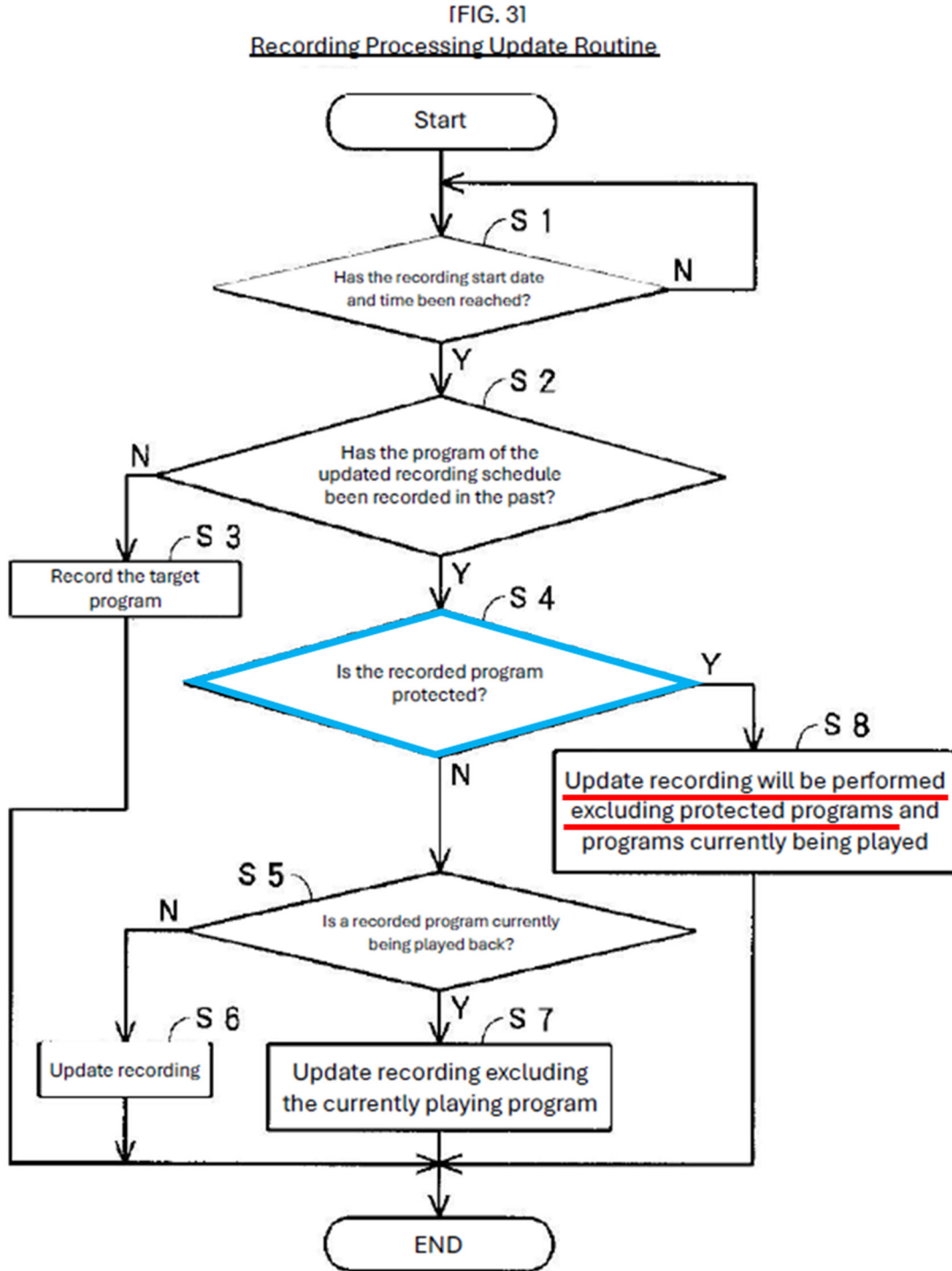
editing digital data based on user input or permission, and a POSITA would have been motivated to combine the teachings of Miyasaka with Murakami's system for controlling permission-based changes to data. LG-1003, [0197]. Murakami enhances these features with its erasure protection system. Specifically, Murakami discloses that "when the program recording reservation setting information is a program recording reservation setting indicating that scheduled recording is to be carried out regularly, erasure is prohibited prior to recording of the program." LG-1008, [0011], [0013]. This teaches a "deciding process" that uses the program recording reservation setting information to decide whether deletion of the program image data is permitted, and if not, to prevent the deletion process from occurring, which teaches the claimed change prohibiting process. LG-1003, [0197]. Indeed, a POSITA would have been motivated to include this additional change permission information in Miyasaka's system to further enhance Miyasaka's deciding process when, for example, a user wants to change the selected thumbnail or delete the thumbnails and their associated movie picture image files. LG-1003, [0197]. Further, a POSITA would have understood Murakami's approach could be used to incorporate a change permission mechanism that determines whether the preview image can be modified, based on stored permission data. LG-1008, [0004]-[0005], [0055]-[0058], FIG. 3.

[1.2]

Miyasaka-Murakami combination renders obvious [1.2]. Miyasaka discloses a system for selecting and setting a preview image from moving image data by allowing the user to select a still image from a series of temporally continuous still images and set it as the preview image for the moving image data. LG-1010, [0005]-[0006]. To the extent Miyasaka does not explicitly teach a mechanism for prohibiting changes to the thumbnail image when such a change is not permitted, this limitation is addressed by Murakami. LG-1003, [0198].

Murakami describes a system wherein certain recorded content, once marked as “protected” from deletion or modification, is excluded from further alterations, including updates or erasure. LG-1008, [0011]; *see also, id.*, [0055]-[0058]). A POSITA would have recognized that Murakami’s teaching of protecting content from erasure teaches the claimed “change prohibiting information,” as it ensures that once content is protected, it cannot be modified. A POSITA would have understood that Murakami’s teachings required a system to prohibit changes to the thumbnail image when the deciding device determines that a change is not permitted. LG-1003, [0199]. Indeed, a POSITA would have been motivated to include this additional change permission information in Miyasaka’s system to further enhance Miyasaka’s deciding process when, for example, a user wants to change the selected thumbnail or delete the thumbnails and their associated movie

picture image files. LG-1003, [0199]. Further, a POSITA would have understood Murakami's approach could be used to incorporate a change permission mechanism that determines whether the preview image can be modified, based on stored permission data. LG-1008, [0004]-[0005], [0055]-[0058], FIG. 3.



LG-1008, FIG. 3 (annotated).

[1.3]

The Miyasaka-Murakami combination renders obvious [1.3]. Miyasaka discloses a system for selecting and setting a preview image from a moving image by allowing a user to choose a still image from a sequence of temporally continuous still images, which are stored together with the moving image data. LG-1010, [0006], [0009]. A POSITA would have recognized that this process involves selecting an arbitrary still image data from the moving image and designating it as a preview image, with the preview image being set in the storage medium. LG-1010, [0006], [0045]; LG-1003, [0200]. Miyasaka's disclosure of the ability of a user to arbitrarily select and display the still image for use as a preview discloses editing actions that are applied to the reproduced data. LG-1010, [0040], [0045]; LG-1003, [0200].

Further, a POSITA would have been motivated to implement Murakami's teachings on content management, which involve interacting with recorded data into Miyasaka's system. LG-1008, [0055]-[0057]. A POSITA would have been motivated to perform the editing on the reproduced form of the recorded information, as this method involves selecting and displaying data already stored on a medium. LG-1003, [0201].

Claim 2

[2]

Miyasaka-Murakami combination renders obvious [2]. As discussed above, Miyasaka discloses a process wherein the user can arbitrarily select and set a preview image from a sequence of still image data constituting a moving image, with the selection process being carried out by a selection means and the chosen still image being set as a preview image. LG-1010, [0006], [0045]. However, Miyasaka does not explicitly disclose a circuit and process for indicating when a change is not permitted. Murakami, on the other hand, teaches a system where certain recorded content is protected from changes, such as when it is marked as “protected” to prevent erasure or modification. LG-1008, [0055]-[0057]. Specifically, Murakami discloses a scenario in which scheduled recordings are controlled to prevent the erasure or alteration of specific content that has been marked for protection, thereby prohibiting changes to certain data. LG-1008, [0011], [0055]. A POSITA would have been motivated to combine these teachings and a POSITA would have had the requisite skills to incorporate a warning mechanism into Miyasaka's system, whereby, if the deciding device determines that the thumbnail image cannot be changed—such as when the content is protected from modification as per Murakami—a display signal would be generated to notify the user that the change is not permitted. LG-1003, [0202]-[0204].

Claim 3

[3]

Miyasaka-Murakami combination renders obvious [3]. *Supra*, III.E.4.[1.1].

Miyasaka discloses an image editing device equipped with a CPU 21 that allows a user to select and change preview images associated with moving image data. Specifically, Miyasaka describes functionality where the CPU enables the user to select any still image from stored moving image data and set it as the preview image. A POSITA would have understood that Miyasaka's system includes a "changing device" that changes the thumbnail image based on user input. LG-1010, [0034]; LG-1003, [0206]. Further, Miyasaka discloses that when a user specifies a new preview image, the CPU updates the memory to reflect this change, effectively rewriting the content of the flash memory to set the new preview image. LG-1010, [0045]; LG-1003, [0206]. Therefore, it would have been obvious to use the deciding device to allow or deny changes to the thumbnail image based on conditions, and if the change is permitted, proceed with changing the thumbnail image. LG-1003, [0206].

Claim 4

[4.pre]

Supra III.E.4.[1.pre]; LG-1003, [0207].

[4.1]

Supra III.E.4.[1.1]; LG-1003, [0208].

[4.2]

Supra III.E.4.[1.2]; LG-1003, [0209].

[4.3]

Supra III.E.4.[1.3]; LG-1003, [0210].

Claim 5

[5]

Supra III.E.4.[2]; LG-1003, [0211].

Claim 6

[6]

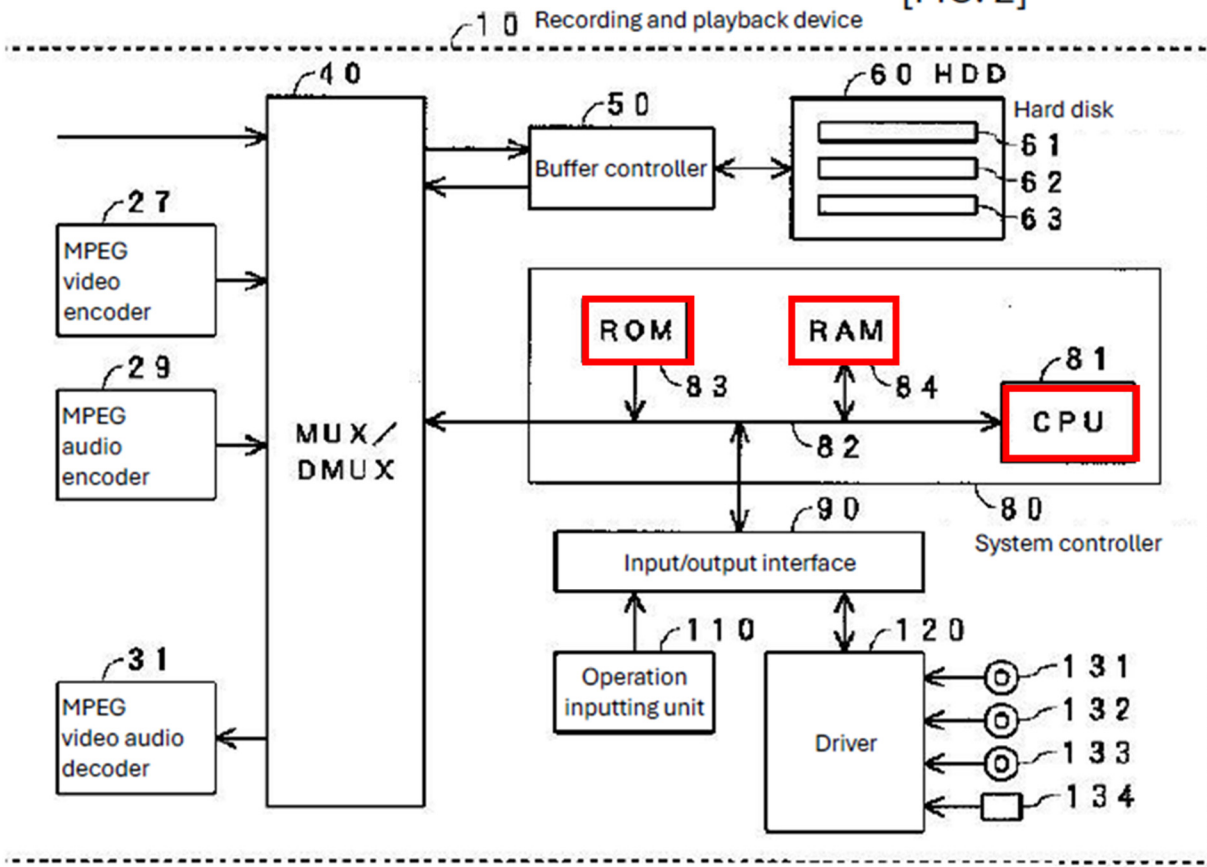
Supra III.E.4.[3]; LG-1003, [0212].

Claim 7

[7.pre]

Supra III.E.4.[1.pre]. Murakami describes a CPU 81 executing programs stored in ROM or RAM to control recording/playback devices, demonstrating encoded instructions on storage media causing specific operations. LG-1008, [0059]-[0060]. Murakami's system demonstrates encoding of instructions on storage media (e.g., ROM, flash memory) that are executed by CPUs to achieve similar functionalities. *Id.*, [0021], [0031]. LG-1003, [0213].

[FIG. 2]



LG-1008, FIG. 2 (annotated).

[7.1]

Supra III.E.4.[1.1]; LG-1003, [0214].

[7.2]

Supra III.E.4.[1.2]; LG-1003, [0215].

Claim 8

[8]

Supra III.E.4.[2]; LG-1003, [0216].

Claim 9

[9]

Supra III.E.4.[3]; LG-1003, [0217].

F. GROUND 4: Claims 1-9 are obvious over Miyasaka in view of Tezuka

1. Miyasaka Overview

Supra, III.E.1. LG-1003, [0069]-[0070].

2. Tezuka Overview

Supra, III.D.1. LG-1003, [0067]-[0068].

3. Reasons to combine Miyasaka and Tezuka

A POSITA would have been motivated to combine Miyasaka's thumbnail selection system with Tezuka's usage restriction flags for several reasons. First, Tezuka's flags would add security to Miyasaka's system, preventing unauthorized modifications to sensitive parts of images or thumbnails. LG-1003, [0218]. Second, the combination would have offer granular control over which parts of images or thumbnails can be modified, viewed, or used in different contexts. *Id.* Third, by preventing unauthorized changes, the combination would help maintain the integrity of important image data, which is crucial in many professional and legal contexts. *Id.* Fourth, the system would have allowed for implementation of different levels of access for different users, enhancing its utility in organizational settings. *Id.* In addition, Miyasaka's system deals with preview images that represent video

content. *Id.* These could be considered sensitive if they reveal private or confidential information. *Id.* Thus, a POSITA would have understood that the Miyasaka-Tezuka combination would have transformed Miyasaka's system from one that allows unrestricted thumbnail changes to one that can selectively allow or prohibit changes based on predefined rules. *Id.* This would have made the system more suitable for environments where certain images or parts of images need to be protected from modification. *Id.*

A POSITA would have also readily recognized that while Miyasaka's system offers flexibility in thumbnail selection, it lacks explicit security features to prevent unauthorized changes. LG-1003, [0219]. A POSITA would have been familiar with the concept of access control in digital systems and would have seen Tezuka's usage restriction flags as a natural and beneficial addition to Miyasaka's thumbnail management system. *Id.*

A POSITA would have also anticipated that in many real-world applications, especially those involving sensitive or legal documents, the ability to prevent unauthorized changes is as important as the ability to make changes. LG-1003, [0220]. Therefore, combining Tezuka's change prohibition feature with Miyasaka's thumbnail selection system would create a more robust and versatile image management solution. *Id.*

Further, the Miyasaka-Tezuka combination would have been technically straightforward, as both systems deal with digital image manipulation and storage. LG-1003, [0221]. The POSITA would have expected that integrating Tezuka's flag-based restrictions into Miyasaka's selection process would yielded predictable results, enhancing the system's functionality without requiring fundamental changes to either component. *Id.* Thus, the combination resulting in a more secure and flexible thumbnail management system that can both allow changes when appropriate and prohibit them when necessary. *Id.*

4. Analysis

Claim 1

[1.pre]

To the extent the preamble is limiting, Miyasaka-Tezuka combination renders obvious [1.pre]. *Supra* III.E.4.[1.pre]; LG-1003, [0222].

[1.1]

Miyasaka-Tezuka combination renders obvious [1.1]. Miyasaka discloses a system for selecting and setting a thumbnail image to represent moving image data, wherein a user can select a still image from the moving image data and designate it as the preview image. LG-1010, [0006], [0045]. To the extent Miyasaka does not explicitly disclose a mechanism for deciding whether the thumbnail image can be changed or not based on specific conditions such as whether changes are permitted

to the recorded content, Tezuka discloses this feature. LG-1003, [0223]. For example, Tezuka teaches a system where access to or modification of specific areas of recorded content is controlled using a flag that indicates whether changes are allowed (LG-1009, Claim 1, 283 (referring to flags 1-4)). Specifically, Tezuka discloses that the flag can prohibit changes to certain areas, allowing additions or revisions to other parts, thus establishing a mechanism for deciding whether a change can be made based on the status of the flagged content. LG-1009, Claim 1. Combining Miyasaka's method of selecting a thumbnail with Tezuka's change-prohibiting process, a POSITA would have been motivated to implement a deciding process and associated mechanism (e.g., controller) that evaluates whether changes to the thumbnail image can be made, based on whether the content associated with the thumbnail is subject to any restrictions, as indicated by Tezuka's flags. LG-1003, [0223].

[1.2]

Miyasaka-Tezuka combination renders obvious [1.2]. Miyasaka teaches a system where a user can select and set a thumbnail image to represent moving image data, allowing the thumbnail image to be updated based on user preferences (LG-1010, [0006]; LG-1010, [0045]). To the extent Miyasaka does not explicitly disclose a mechanism for preventing the change of the thumbnail image when such a change is not allowed, Tezuka explicitly teaches a change prohibiting process in

which a flag is used to control whether a specific area of recorded data can be modified. Specifically, Tezuka describes a flag that prohibits changes to a particular area in an editing mode, ensuring that the flagged content cannot be altered (LG-1009, Claim 1, 283 (referring to flags 1-4)). In the context of thumbnail image editing, this change prohibiting process would prevent alterations to the thumbnail image if the associated content is flagged as non-editable. LG-1003, [0224]. A POSITA would have been motivated to combine Miyasaka's ability to select a thumbnail image with Tezuka's teaching of a flag-based mechanism for prohibiting changes to incorporate a change prohibiting process to prevent altering the thumbnail image when it is determined that such a change is not permitted. LG-1003, [0224].

[1.3]

Miyasaka-Tezuka combination renders obvious [1.3]. Miyasaka discloses a system for selecting and setting a preview image from a moving image by allowing a user to choose a still image from a sequence of temporally continuous still images, which are stored together with the moving image data. LG-1010, [0006], [0009]. A POSITA would have recognized that this process involves selecting arbitrary still image data from the moving image and designating it as a preview image, with the preview image being set in the storage medium. LG-1010, [0006],

[0045]; LG-1003, [0225]. Miyasaka further discloses the ability to arbitrarily select and display the still image for use as a preview directly, which implies editing actions that are applied to the reproduced data. LG-1010, [0040], [0045].

Claim 2

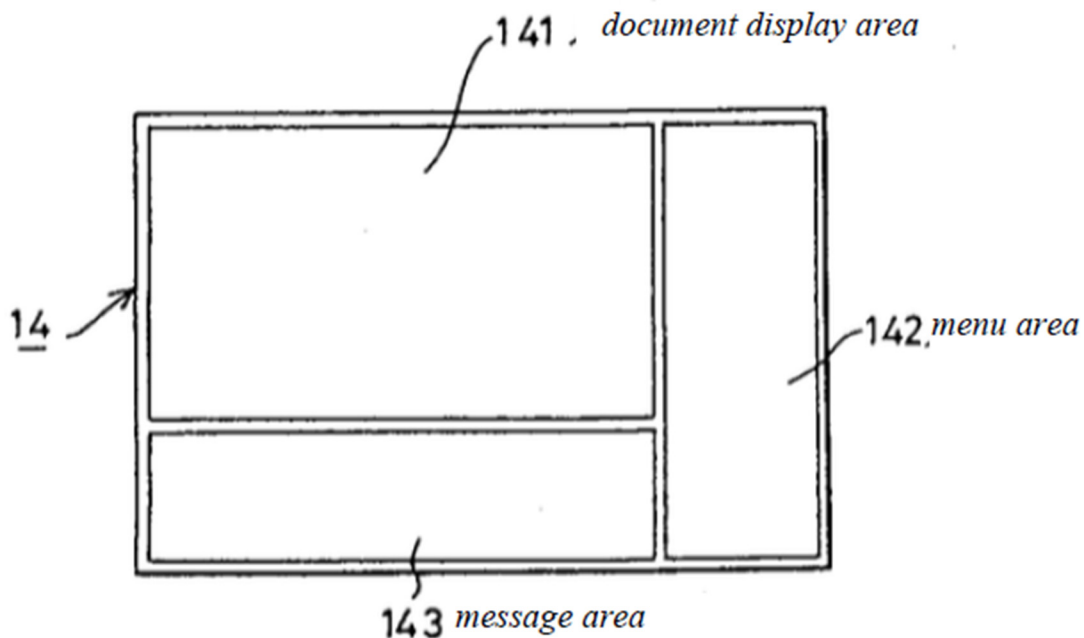
[2]

Miyasaka-Tezuka combination renders obvious [2]. Tezuka teachings introduce a flag-based protection system. Specifically, Tezuka teaches “registering a flag on which the area of restricted use and the extent of use are set in picture information to be filed” LG-1009, Abstract. A POSITA would have understood that this flag system allows the system to identify areas that can or cannot be changed, thereby facilitating a more refined process of change permission based on specific criteria. LG-1003, [0226].

Tezuka further enhances this approach by integrating a “deciding process” and “change prohibiting process” using flags. For instance, Tezuka discloses “flag 1 in FIG. (a) allows display of the area but prohibits all copying and prohibits all use in edit mode.” LG-1009, 283. This demonstrates a decision-making process where the system determines whether or not changes are permitted based on the flag status, and implements a change prohibiting process to prevent modifications. LG-1003, [0227]. By combining Miyasaka’s basic functionality with Tezuka’s advanced flag-based protection system, a POSITA would have recognized that such a

combination would have provided a mechanism for deciding whether specific areas of thumbnail images can be changed and prohibiting changes when not permitted. LG-1003, [0227]. Thus, Miyasaka-Tezuka combination would have offered better granular control than is explicitly required by the claim limitation. *Id.*

FIG. 2



LG-1009, FIG. 2.

Claim 3

[3]

Miyasaka-Tezuka combination renders obvious [3]. *Supra*, III.E.4.[1.1].

Tezuka further teaches a system wherein a flag is used to control whether modifications can be made to specific data areas, further enhancing Miyasaka's system by allowing or prohibiting changes based on the flag's state. LG-1009, Claim 1, 283 (referring to flags 1-4). Combining Miyasaka's system and method for selecting and changing a thumbnail image with Tezuka's flag-based mechanism for controlling edits would have been obvious to POSITA. LG-1003, [0228]-[0229].

Claim 4

[4.pre]

Supra III.F.4.[1.pre]. LG-1003, [0230].

[4.1]

Supra III.F.4.[1.1]. LG-1003, [0231].

[4.2]

Supra III.F.4.[1.2]. LG-1003, [0232].

[4.3]

Supra III.F.4.[1.3]. LG-1003, [0233].

Claim 5

[5]

Supra III.F.4.[2]. LG-1003, [0234].

Claim 6

[6]

Supra III.F.4.[3]. LG-1003, [0235].

Claim 7

[7.pre]

Supra III.F.4.[1.pre]; III.E.4.[7.pre]. LG-1003, [0236].

[7.1]

Supra III.F.4.[1.1]. LG-1003, [0237].

[7.2]

Supra III.F.4.[1.2]. LG-1003, [0238].

Claim 8

[8]

Supra III.F.4.[2]. LG-1003, [0239].

Claim 9

[9]

Supra III.F.4.[3]. LG-1003, [0240].

IV. PTAB DISCRETION SHOULD NOT PRECLUDE INSTITUTION

A. Discretionary Denial - *Fintiv*

The facts do not favor denial under *Apple v. Fintiv*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential). The merits of Petitioner’s arguments are compelling, and the supporting evidence is substantial. That “alone demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*.” LG-1013, 4-5.

Factor 1 is neutral; neither party has requested a stay in co-pending litigation.

Factor 2 favors institution; the Court has not set a trial date. The Board will issue its FWD around August 2026, approximately **1.5 years** before the projected trial date (1/25/2028). LG-1019, 66.

Factor 3 favors institution; Petitioner has filed this Petition ahead of the one-year time bar, while litigation is in its early stages with claim construction not yet underway and initial invalidity contentions not yet served. Significant resources have not been expended.

Factor 4 favors institution; Patent Owner only alleges infringement of claims 4-6, while this Petition challenges more than the asserted claims. Accordingly, a material number of Challenged Claims will likely be unaddressed in the litigation. *See Apple, Inc. v. SEVEN Networks, LLC*, IPR2020-00156, Paper 10,

21-22 (June 15, 2020).

Factor 5: The parties in the parallel NDCA litigation are the same.

Factor 6 favors institution; the merits of this Petition are compelling. The references forming the grounds demonstrate, in a straightforward manner, the obviousness of the claims. *See supra* §III.

B. Discretionary Denial - *General Plastic*

Given no previous challenges to the claims of the '188 patent, the factors in *General Plastic Industries Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 (PTAB Sept. 6, 2017) (precedential) are not applicable here.

C. Discretionary Denial - *Advanced Bionics* Test Favors Institution - 35 U.S.C. §325(d)

The grounds advanced in this Petition are based on six prior art references: Yoshida; Terashita; Dow; Murakami; Tezuka; and Miyasaka. None of these references were substantively considered by the Office during prosecution (although Miyasaka and Murakami were cited) and none have been previously asserted before the Board. Discretionary denial is improper under *Advanced Bionics. Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6, 8-9 (PTAB Feb. 13, 2020) (precedential).

Using the Board's two-part framework and evaluation of "the *Becton* factors," such evaluation favors institution. *Id.*, 8-10 (citing *Becton, Dickinson & Co.*

v. B. Braun Melsungen AG, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to §III.C.5, first paragraph) (“*Becton*”).

Becton factors (a)-(c) and (d) support institution because this Petition does not present substantially the same prior art combinations or arguments that were previously before the Office. Only Miyasaka and Murkami were before the Office, but despite this, the Office never substantively considered either reference, and certainly did not consider the references in the combinations presented herein (*Becton*, factor (d)). Thus, the combinations as set forth in this Petition are not cumulative of those previously before the Board or Office.

Although part 1 of the *Advanced Bionics* framework is not satisfied for the reasons above, part 2 is also not satisfied. *Becton* factors (e) and (f) favor Petitioner because the Office erred in evaluating the references and because evidence presented above warrants reconsideration of said evaluation. For example, while the Office previously had Miyasaka and Murakami before it, the Office never substantively considered either reference and did not make factual findings as to the teachings of either reference (*Becton*, factors (e) and (f)). See *Advanced Bionics*, Paper 6 at 26 (petitioner may show error “if the record of the Office’s previous consideration of the art is silent or not well-developed.”); see also *Samsung Electronics Co., Ltd., et al. v. Evolved Wireless LLC*, IPR2021-00943, Paper 9 at 10-12

(PTAB Dec. 1, 2021) (declining to exercise discretion when the prosecution history provides little insight into the examiner's evaluation of the prior art and the petitioner demonstrates with a reasonable likelihood that the previously presented art discloses the allegedly patentable features).

For the reasons above, the Board should decline to exercise its discretion to deny institution.

V. CONCLUSION AND FEES

The Challenged Claims are unpatentable. Petitioner authorizes charge of fees to Deposit Account 06-1050.

VI. MANDATORY NOTICES UNDER 37 C.F.R § 42.8(a)(1)

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

LG Electronics, Inc. and LG Electronics USA, Inc. are the real parties-in-interest.

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

The '188 Patent is the subject of a civil action, *Maxell, Ltd. v. LG Electronics Inc. et al.*, 5-23-cv-00152 E.D. Tex. filed December 29, 2023 (transferred) and *Maxell, Ltd. v. LG Electronics Inc. et al.*, 5-24-cv-04972 N.D. Cal. filed August 9, 2024 (pending).

Petitioner is not aware of any other disclaimers, reexamination certificates, or IPR petitions addressing the '188 Patent.

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

Petitioner provides the following designation of counsel.

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D. Service Information

Please address all correspondence and service to the address listed above.

Petitioner consents to electronic service by email at IPR18768-0217IP3@fr.com

(referencing No. 18768-0217IP3 and cc'ing PTABInbound@fr.com).

Respectfully submitted,

Dated: January 21, 2025

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CERTIFICATION UNDER 37 CFR § 42.24

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petition for *Inter Partes* Review totals 13,991 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Dated: January 21, 2025

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4)(i) *et seq.* and 42.105(b), the undersigned certifies that on January 21, 2025, a complete and entire copy of this Petition for *Inter Partes* Review and all supporting exhibits were provided by Federal Express, to the Patent Owner, by serving the correspondence address of record as follows:

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