

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Susumu Yoshida, et al. Attorney Docket No.:18768-0217IP7
U.S. Patent No.: 10,199,072
Issue Date: February 5, 2019
Appl. Serial No.: 15/808,175
Filing Date: November 9, 2017
Title: EDITING METHOD AND RECORDING AND
REPRODUCING DEVICE

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PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES
PATENT NO. 10,199,072 PURSUANT TO 35 U.S.C. §§ 311–319,
37 C.F.R. § 42

TABLE OF CONTENTS

I.	REQUIREMENTS FOR IPR	1
A.	Grounds for Standing	1
B.	Challenge and Relief Requested	2
C.	Claim Construction	3
1.	“recording unit” (claim 11)	4
2.	“output unit” (claims 1, 3, 4)	5
3.	“reproducer” (claims 1, 6, 16)	6
4.	“one video data”	7
5.	“one video data ... is deleted from the first group of video data”	8
D.	Level of Ordinary Skill	8
II.	THE ’072 PATENT	9
A.	Technology Background	9
B.	Brief Description	11
C.	Prosecution History	14
III.	THE CHALLENGED CLAIMS ARE UNPATENTABLE	14
A.	[GROUND 1] – Bryant Renders Claims 1-19 Obvious	14
1.	Bryant	14
2.	Claim 1	17
3.	Claim 2	35
4.	Claim 3	36
5.	Claim 4	38
6.	Claim 5	40
7.	Claim 6	40
8.	Claim 7	41
9.	Claim 8	41
10.	Claim 9	41
11.	Claim 10	41
12.	Claim 11	41
13.	Claim 12	42
14.	Claim 13	42
15.	Claim 14	42
16.	Claim 16	42
17.	Claim 17	43
18.	Claim 18	43
19.	Claim 19	43
B.	[GROUND 2A] – Kaplan Renders Claims 1, 6, 11, and 16-19 Obvious	43

1.	Kaplan.....	43
2.	Claim 1	45
3.	Claim 6	57
4.	Claim 11	57
5.	Claim 16	58
6.	Claim 17	59
7.	Claim 18	59
8.	Claim 19	59
C.	[GROUND 2B] – Kaplan-Sporer Renders Claims 2-5, 7-10, and 12-15	
	Obvious	59
1.	Sporer	59
2.	Kaplan-Sporer	62
3.	Claim 2	66
4.	Claim 3	67
5.	Claim 4	70
6.	Claim 5	72
7.	Claim 7	73
8.	Claim 8	73
9.	Claim 9	73
10.	Claim 10	73
11.	Claim 12	73
12.	Claim 13	73
13.	Claim 14	73
14.	Claim 15	73
D.	[GROUND 3, 4A, AND 4B] – Bryant in view of Kaplan Renders	
	Claims 1-19 Obvious (Ground 3); Kaplan in view of Bryant Renders	
	Claims 1, 6, 11, and 16-19 Obvious (Ground 4A); Kaplan in view of	
	Bryant and Sporer Renders Claims 2-5, 7-10, and 12-15 Obvious	
	(Ground 4B)	74
1.	Bryant in view of Kaplan (Ground 3)	74
2.	Kaplan or Kaplan-Sporer in view of Bryant (Grounds 4A and 4B)	
		76
E.	[GROUND 5A] – Horn Renders Claims 1-16 Obvious	79
1.	Horn	79
2.	Claim 1	81
3.	Claim 6	94
4.	Claim 11	94
5.	Claim 16	95
6.	Claim 17	96
7.	Claim 18	96

8.	Claim 19	96
F.	[GROUND 5B] – Horn-Sporer Renders Claims 2-5, 7-10, and 12-15	
	Obvious	96
1.	Horn-Sporer.....	96
2.	Claim 2	101
3.	Claim 3	102
4.	Claim 4	105
5.	Claim 5	107
6.	Claim 7	107
7.	Claim 8	107
8.	Claim 9	107
9.	Claim 10	107
10.	Claim 12	107
11.	Claim 13	108
12.	Claim 14	108
13.	Claim 15	108
IV.	DISCRETION SHOULD NOT PRECLUDE INSTITUTION	108
A.	§325(d).....	108
B.	§314(a)	109
V.	CONCLUSION AND FEES	111
VI.	MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(a)(1).....	111
A.	Real Party-In-Interest Under 37 C.F.R. § 42.8(b)(1).....	111
B.	Related Matters Under 37 C.F.R. § 42.8(b)(2).....	111
C.	Lead And Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3).....	112
D.	Service Information	112

EXHIBITS

- LG-1001 U.S. Patent No. 10,199,072 to Susumu Yoshida, et al. (“the ’072 Patent”)
- LG-1002 Excerpts from the Prosecution History of the ’072 Patent (“the Prosecution History”)
- LG-1003 Declaration and Curriculum Vitae of Dr. Andrew Cockburn
- LG-1004 U.S. Patent Application Publication No. 2001/0056434 to Kaplan et al. (“Kaplan”)
- LG-1005 U.S. Patent Application Publication No. 2004/0201691 to Bryant et al. (“Bryant”)
- LG-1006 U.S. Patent Application Publication No. 2006/0107289 to DeYonker et al. (“DeYonker”)
- LG-1007 U.S. Patent Application Publication No. 2004/0078383 to Mercer et al. (“Mercer”)
- LG-1008 U.S. Reissue Patent No. RE32,632 to Atkinson (“Atkinson”)
- LG-1009 U.S. Patent No. 6,493,006 to Gourdol et al. (“Gourdol”)
- LG-1010 Brent Ethington, *Introducing Microsoft Windows 95*, Microsoft Press (1995), with authenticating declaration of Carmen Debord
- LG-1011 George W. Furnas and Jeff Zacks, 1994, *Multitrees: Enriching and Reusing Hierarchical Structure*, In Proceedings of the SIGCHI Conference on Human Factors in Computer Systems (CHI 1994), Beth Adelson, Susan Dumais, and Judith Olson (Eds.), ACM, New York, NY, USA, 330-336. DOI <http://dx.doi.org/10.1145/191666.191778>, with authenticating declaration of Scott Delman
- LG-1012 Benjamin B. Bederson, 2001, *PhotoMesa: A Zoomable Image Browser Using Quantum Treemaps and Bubblemaps*, In Proceedings of the 14th annual ACM symposium on User Interface Software and Technology (UIST 2001), ACM, New York, NY, USA, 71-80. DOI <http://dx.doi.org/10.1145/502348.502359>

- LG-1013 U.S. Patent No. 6,609,253 to Swix et al. (“Swix”)
- LG-1014 U.S. Patent No. 5,442,744 to Piech et al. (“Piech”)
- LG-1015 U.S. Patent No. 5,884,056 to Steele (“Steele”)
- LG-1016 U.S. Patent No. 6,166,735 to Dom et al. (“Dom”)
- LG-1017 U.S. Patent Application Publication No. 2002/0082730 to Capps et al. (“Capps”)
- LG-1018 U.S. Patent Application Publication No. 2004/0064476 to Rounds (“Rounds”)
- LG-1019 Microsoft Computer Dictionary, 4th Ed., Microsoft Press (1999)
- LG-1020 James Cohoon & Jack Davidson, *C++ Program Design: An Introduction to Programming and Object-Oriented Design*, 3rd Ed., McGraw Hill (2002)
- LG-1021 U.S. Patent Application Publication No. 2004/0177319 to Horn (“Horn”)
- LG-1022 U.S. Patent No. 9,384,783 to Susumu Yoshida, et al. (“the ’783 Patent”)
- LG-1023 U.S. Patent No. 6,903,897 to Wang et al. (“Wang”)
- LG-1024 U.S. Patent No. 7,009,803 to Sharma et al. (“Sharma”)
- LG-1025 Jeppesen et al., “Hard Disk Controller: the Disk Drive’s Brain and Body,” 2001, IEEE.
- LG-1026 Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (USPTO June 21, 2022) (“Director’s Guidance”)
- LG-1027 Federal Court Management Statistics–Profiles (June 30, 2024)
- LG-1028 Complaint, *Maxell, Ltd. v. LG Electronics Inc. et al*, 5-23-cv-00152, E.D. Tex., filed December 29, 2023
- LG-1029 U.S. Patent No. 6,091,778 to Sporer et al. (“Sporer”)

- LG-1030 U.S. Patent No. 5,838,317 to Bolnick et al. (“Bolnick”)
- LG-1031 U.S. Patent Application Publication No. 2003/0235396 to Boston et al. (“Boston”)
- LG-1032 U.S. Patent No. 6,487,069 to Onodera (“Onodera”)
- LG-1033 U.S. Patent No. 6,654,050 to Karube et al. (“Karube”)
- LG-1034 MPEG-7 Requirements, INTERNATIONAL ORGANISATION FOR STANDARDISATION ORGANISATION INTERNATIONALE DE NORMALISATION ISO/IEC JTC1/SC29/WG11 CODING OF MOVING PICTURES AND AUDIO, October 1998, *available at* <https://sound.media.mit.edu/resources/mpeg4/audio/public/mpeg7/w2461.html>
- LG-1035 “Change BMP Icon to Thumbnail View,” *available at* <https://www.tiplord.com/customizing/bmpicons.html>, with Wayback capture
- LG-1036 Declaration of June Ann Munford
- LG-1037 Excerpts from the Prosecution History of U.S. Patent No. 9,818,449 (“the ’449 Prosecution History”)
- LG-1038 Patent Owner’s Infringement Contentions in *Maxell, Ltd. v. LG Electronics Inc. et al.*
- LG-1039 U.S. Patent No. 9,818,449 to Susumu Yoshida, et al. (“the ’449 Patent”)
- LG-1040 *Fandango Media, LLC v. Maxell, Ltd.*, IPR2018-01432, Paper 32 (PTAB February 10, 2020) (“IPR2018-01432”)

LISTING OF CLAIMS

Claim 1	
[1.pre]	An information processing apparatus comprising:
[1.a]	a recording medium to store a plurality of video data;
[1.b]	an output unit configured to output a menu display for a user to select one group of video data among a plurality of groups of video data by a specifying position of a character corresponding to the one group of video data;
[1.c]	a reproducer configured to reproduce the selected video data read out from the recording medium; and
[1.d]	a controller;
[1.e.i]	wherein, when a first group of video data is selected in the menu display by specifying a position of a character corresponding to the first group of video data, the controller controls so that a first group of thumbnails corresponding to the first group of video data is displayed
[1.e.ii]	in a state that an order of the first group of thumbnails is editable,
[1.f.i]	wherein, when a second group of video data is selected in the menu display by specifying a position of a character corresponding to the second group of video data, the controller controls so that a second group of thumbnails corresponding to the second group of video data is displayed
[1.f.ii]	in a state that an order of the second group of thumbnails is editable,
[1.g]	wherein, even if one video data stored on the recording medium included in both the first group of video data and the second group of video data is deleted from the first group of video data, the controller controls so that the one video data continues to be included in the second group of video data and a thumbnail corresponding to the one video data is displayed as one of the second group of thumbnails when the second group of thumbnails is displayed.

Claim 2	
[2]	The information processing apparatus according to claim 1, further comprising an encoder configured to encode inputted video data, wherein the recording medium stores the plurality of video data encoded by the encoder.
Claim 3	
[3.a]	The information processing apparatus according to claim 2, wherein the controller controls the output unit to display a first character corresponding to the first group of video data in a first area when the first group of thumbnails is displayed, and
[3.b]	wherein the controller controls the output unit to display a second character corresponding to the second group of video data in the first area when the second group of thumbnails is displayed.
Claim 4	
[4.a]	The information processing apparatus according to claim 3, wherein the controller controls the output unit to display the first group of thumbnails in a second area when the first group of thumbnails is displayed, the second area being different from the first area, and
[4.b]	wherein the controller controls the output unit to display the second group of thumbnails in the second area when the second group of thumbnails is displayed.
Claim 5	
[5]	The information processing apparatus according to claim 4, wherein, when the one video data is deleted from the first group of video data, the controller removes the one video data from the first group of video data without deleting the one video data recorded on the recording medium.
Claim 6	
[6.pre]	An information processing system comprising:
[6.a]	a recording medium to record a plurality of video data;

[6.b]	a reproducer configured to reproduce selected video data read out from the recording medium; and
[6.c]	a display unit configured to output a menu display for a user to select one group of video data among a plurality of groups of video data by specifying a position of a character corresponding to the one group of video data;
[6.d.i]	wherein, when a first group of video data is selected in the menu display by specifying a position of a character corresponding to the first group of video data, a first group of thumbnails corresponding to the first group of video data is displayed on the display unit
[6.d.ii]	in a state that the order of the first group of thumbnails is editable,
[6.e.i]	wherein, when a second group of video data is selected in the menu display by specifying a position of a character corresponding to the second group of video data, a second group of thumbnails corresponding to the second group of video data is displayed on the display
[6.e.ii]	in a state that the order of the second group of thumbnails is editable, and
[6.f]	wherein, when one video data recorded on the recording medium included in both the first group of video data and the second group of video data is deleted from the first group of video data, the one video data continues to be included in the second group of video data, and a thumbnail corresponding to the one video data is displayed as one of the thumbnails of the second group of thumbnails when the second group of thumbnails is displayed on the display.
Claim 7	
[7]	The information processing system according to claim 6, further comprising an encoder configured to encode inputted video data, wherein the recording medium stores the plurality of video data encoded by the encoder.

Claim 8	
[8.a]	The information processing system according to claim 7, wherein a first character corresponding to the first group of video data in a first area when the first group of thumbnails is displayed on the display, and
[8.b]	wherein a second character corresponding to the second group of video data is displayed in the first area when the second group of thumbnails is displayed on the display.
Claim 9	
[9.a]	The information processing system according to claim 8, wherein the first group of thumbnails is displayed in a second area when the first group of thumbnails is displayed on the display, the second area being different from the first area, and
[9.b]	wherein the second group of thumbnails is displayed in the second area when the second group of thumbnails is displayed on the display.
Claim 10	
[10]	The information processing system according to claim 9, further comprising: a controller, wherein, when the one video data is deleted from the first group of video data, the controller removes the one video data from the first group of video data without deleting the one video data recorded on the recording medium.
Claim 11	
[11.pre]	An information processing method comprising:
[11.a]	recording, by a recording unit, a plurality of video data on a recording medium;
[11.b]	outputting a menu display for a user to select one group of video data among a plurality of groups of video data by specifying a position of a character corresponding to the one group of video data;
[11.c]	reproducing selected video data read out from the recording medium;
[11.d.i]	controlling display, when a first group of video data is selected in the menu display by specifying a position of a character corresponding to

	the first group of video data, a first group of thumbnails corresponding to the first group of video data
[11.d.ii]	in a state that the order of the first group of thumbnails is editable,
[11.e.i]	controlling to display, when a second group of video data is selected in the menu display by specifying a position of a character corresponding to the second group of video data, a second group of thumbnails corresponding to the second group of video data
[11.e.ii]	in a state that the order of the second group of thumbnails is editable,
[11.f]	wherein, when one video data recorded on the recording medium that is included in both the first group of video data and the second group of video data is deleted from the first group of video data, the controller continues to include the one video data in the second group of video data, and a thumbnail corresponding to the one video data is displayed as one of the thumbnails of the second group of thumbnails when the controller controls to display the second group of thumbnails.
Claim 12	
[12]	The information processing method according to claim 11, further comprising encoding inputted video data with an encoder, and storing the plurality of video data encoded by the encoder on the recording medium.
Claim 13	
[13.a]	The information processing method according to claim 12, further comprising: controlling, by the controller, to display a first character corresponding to the first group of video data in a first area when the first group of thumbnails is displayed; and
[13.b]	controlling, by the controller, to display a second character corresponding to the second group of video data in the first area when the second group of thumbnails is displayed.
Claim 14	
[14.a]	The information processing method according to claim 13, further comprising: controlling, by the controller, to display the first group of

	thumbnails in a second area when the first group of thumbnails is displayed, the second area being different from the first area; and
[14.b]	controlling, by the controller, to display the second group of thumbnails in the second area when the second group of thumbnails is displayed.
Claim 15	
[15]	The information processing method according to claim 14, wherein, when the one video data is deleted from the first group of video data, the controller removes the one video data from the first group of video data without deleting the one video data recorded on the recording medium.
Claim 16	
[16.pre]	An information processing system comprising:
[16.a]	a recording medium configured to record a plurality of video data;
[16.b]	a reproducer configured to read video data from the recording medium;
[16.c]	a display; and
[16.d]	a controller, wherein the controller is configured to:
[16.e]	control the display to display a menu display that includes a plurality of selectable characters that respectively correspond to a plurality of groups of video data,
[16.f.i]	upon selection of a character corresponding to a first group of video data in the menu display by specifying a position of the character corresponding to the first group of video data, control the display to display a first group of thumbnails corresponding to the first group of video data
[16.f.ii]	in a state that the order of the first group of thumbnails is editable, and
[16.g.i]	upon selection of a character corresponding to the second group of video data in the menu display by specifying a position of the character corresponding to the second group of video data, control the display to

	display a second group of thumbnails corresponding to the second group of video data
[16.g.ii]	in a state that the order of the second group of thumbnails is editable,
[16.h]	wherein when one video data recorded on the recording medium is included in both the first group of video data and the second group of video data, and upon deletion of the one video data from the first group of video data, the one video data continues to be included in the second group of video data, and the controller controls the display to display a thumbnail corresponding to the one video data as one of the thumbnails of the second group of thumbnails.
Claim 17	
[17.a]	The information processing system according to claim 16, wherein upon display of the first group of thumbnails on the display, the controller controls to display a first character corresponding to the first group of video data in a first area, and
[17.b]	wherein upon display of the second group of thumbnails on the display, the controller controls to display a second character corresponding to the second group of video data in the first area.
Claim 18	
[18.a]	The information processing system according to claim 17, wherein upon display of the first group of thumbnails on the display, the controller controls to display the first group of thumbnails in a second area, the second area being different from the first area, and
[18.b]	wherein upon display of the second group of thumbnails on the display unit, the controller controls to display the second group of thumbnails in the second area.
Claim 19	
[19]	The information processing system according to claim 18, wherein, upon deletion of the one video data from the first group of video data, the controller removes the one video data from the first group of video

	data without instructing the deletion of the one video data recorded on the recording medium.
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LG Electronics Inc. and LG Electronics U.S.A., Inc. (“**Petitioners**”) petitions for *Inter Partes* Review (“**IPR**”) of claims 1-19 (“**the Challenged Claims**”) of U.S. Patent No. 10,199,072 (“**the ’072 Patent**”). Compelling evidence presented in this Petition demonstrates at least a reasonable likelihood that Petitioners will prevail with respect to at least one Challenged Claim.

The ’072 Patent shares a specification with U.S. Patent No. 9,384,783 (LG-1022), whose claims recite similar features as the Challenged Claims. Indeed, in an unappealed Final Written Decision, the PTAB found all challenged claims unpatentable. LG-1040, 48. Given the overlap in claimed subject matter and similarities between the combinations presented herein and in IPR2018-01432¹, the Challenged Claims are also unpatentable.

I. REQUIREMENTS FOR IPR

A. Grounds for Standing

Petitioners certify that the ’072 Patent is available for IPR. This petition is being filed within one year of service of a complaint against Petitioners. Petitioners are not barred or estopped from requesting review of the Challenged Claims on

¹ Petitioners find no reason to deviate from the Board’s reasoning here, even though it reached its conclusions under the broadest reasonable interpretation standard.

the below-identified grounds.

B. Challenge and Relief Requested

Petitioners request IPR of the Challenged Claims on the grounds below. Dr. Cockburn provides supporting testimony, discussion of background technology, and the state of the art before the '072 Patent. LG-1003, ¶¶25-411.

Ground	Claim(s)	§103
1	1-19	Bryant
2A	1, 6, 11, 16-19	Kaplan
2B	2-5, 7-10, 12-15	Kaplan-Sporer
3	1-19	Bryant-Kaplan
4A	1, 6, 11, 16-19	Kaplan-Bryant
4B	2-5, 7-10, 12-15	Kaplan-Sporer-Bryant
5A	1, 6, 11, 16-19	Horn
5B	2-5, 7-10, 12-15	Horn-Sporer

The '072 Patent claims priority to other applications, the earliest of which was filed December 2, 2004 (“Critical Date”). LG-1001, Cover. Each reference forming the Grounds of this Petition pre-dates the '072 Patent’s earliest proclaimed priority date (Critical Date), which Petitioners do not concede.

Reference	Filing	Publication	Status
Bryant	04/11/2003	10/14/2004	§§102(a),(e)
Kaplan	03/29/2001	12/27/2001	§§102(a),(b),(e)
Horn	07/17/2003	09/09/2004	§§102(a),(e)
Sporer	12/14/1998	07/18/2000	§§102(a),(b),(e)

C. Claim Construction

The Challenged Claims are interpreted using the same claim construction standard for construing claims in a civil action in federal district court. 37 C.F.R. § 42.100(b). Terms not addressed below should be construed according to their plain and ordinary meaning to a POSITA. LG-1003, ¶¶28-32.

Petitioners reserve the right to respond to constructions Patent Owner offers or the Board adopts. Petitioners are not conceding that the claims satisfy statutory requirements or waiving arguments concerning indefiniteness or claim scope that cannot be raised in an IPR. *Mylan Pharm. Inc. v. Horizon Pharma USA, Inc.*, IPR2018-00272, Paper 35, 6-8 (PTAB 2019).

During prosecution of a related patent (“the ’449 Patent,” LG-1039), the Notice of Allowance commented that “the claimed ‘recording unit’, ‘output unit’, ‘reproducing unit’ are limitations that invoke [§112(6)], and the corresponding structure are found in figure 3: ‘recording unit signal processing 303’, ‘reproducing unit

signal processing 306’ and TV 315, also see figures 4-7.” LG-1037, 217. Applicant did not disagree. *See, generally*, LG-1037. However, in IPR2018-01432, for a patent related to and sharing a specification with the ’449 and ’072 Patents (U.S. Patent No. 9,384,783), the Board did not determine that similar terms (“recording unit,” “display device”) are means-plus-function terms. LG-1040, 9-15; LG-1022, 8:58-59.

While the Challenged Claims do not recite a “reproducing unit,” they do recite a “reproducer.” Additionally, the ’072 Patent’s claims recite an “output unit” and a “recording unit.” If these terms are deemed to invoke §112(6), consistent with the requirements of 37 C.F.R. §42.104(b)(3), Petitioners identify the “specific portions of the specification” that purportedly describe structures corresponding to the recited function of each §112(6) element below. The analysis and prior art mapping presented herein applies regardless of whether §112(6) is deemed to apply. LG-1003, ¶31.

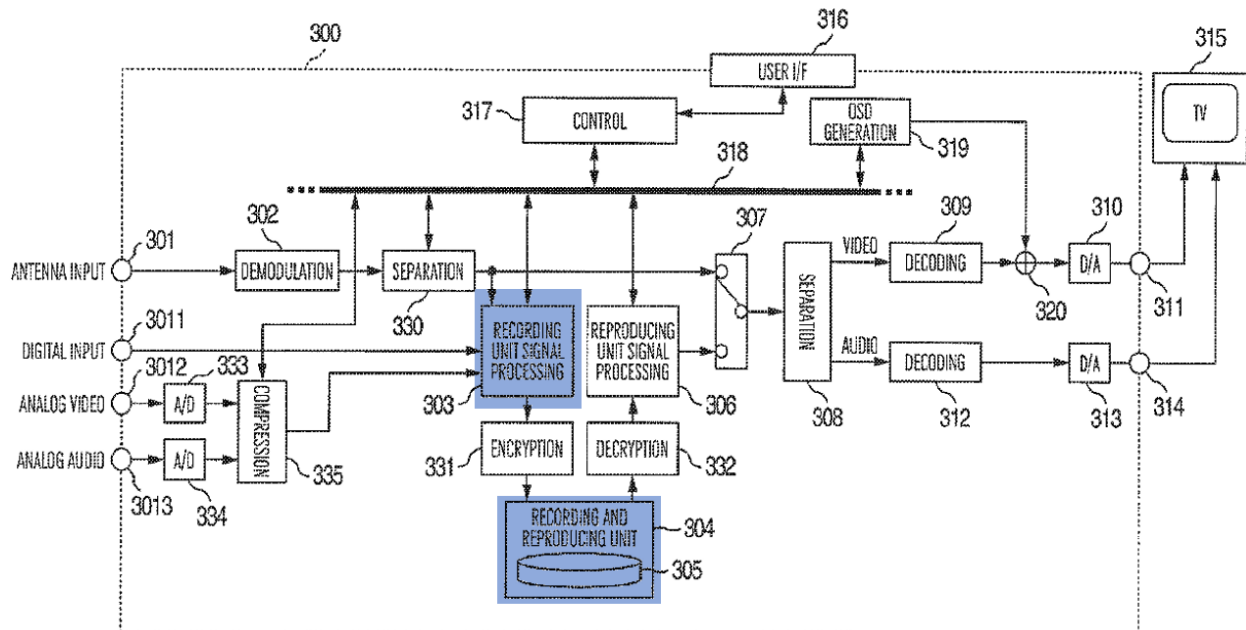
Additionally, the Board’s Final Written Decision in IPR2018-01432 construed other terms that implicate terms of the ’072 Patent, discussed below. LG-1040, 9-15.

1. “recording unit” (claim 11)

The “recording unit” performs the function of “record[ing] ... a plurality of video data on a recording medium.” LG-1001, 10:37-38. The corresponding

structure includes “recording unit signal processing circuit” and/or “recording and reproducing unit.” LG-1001, 4:54-5:33 (“digital signal ... necessary signal processing ... in the recording unit signal processing circuit 303,” “recorded on the recording medium 305 by the recording and reproducing unit 304”), FIG. 3; LG-1003, ¶33.

FIG.3



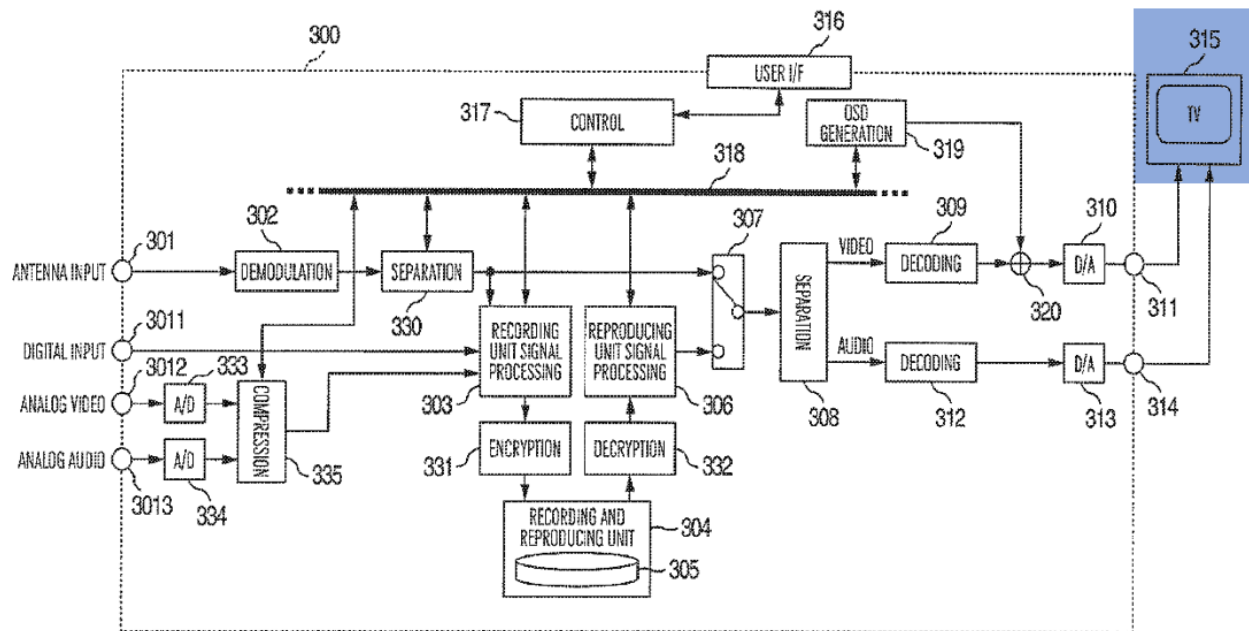
LG-1001, FIG. 3 (annotated)

2. “output unit” (claims 1, 3, 4)

The “output unit” performs the functions of “output[ing] a menu display for a user,” “display[ing] a [first/second] character corresponding to the [first/second] group of video data in a first area when the [first/second] group of thumbnails is displayed,” and “display[ing] the [first/second] group of thumbnails in a second

area when the [first/second] group of thumbnails is displayed.” LG-1001, 8:50-53, 9:19-26, 9:29-35. The corresponding structure is “TV set 315.” LG-1001, 5:2, 5:34-38, 5:49-54, FIG. 3-7, 12 and related text; LG-1003, ¶34.

FIG.3

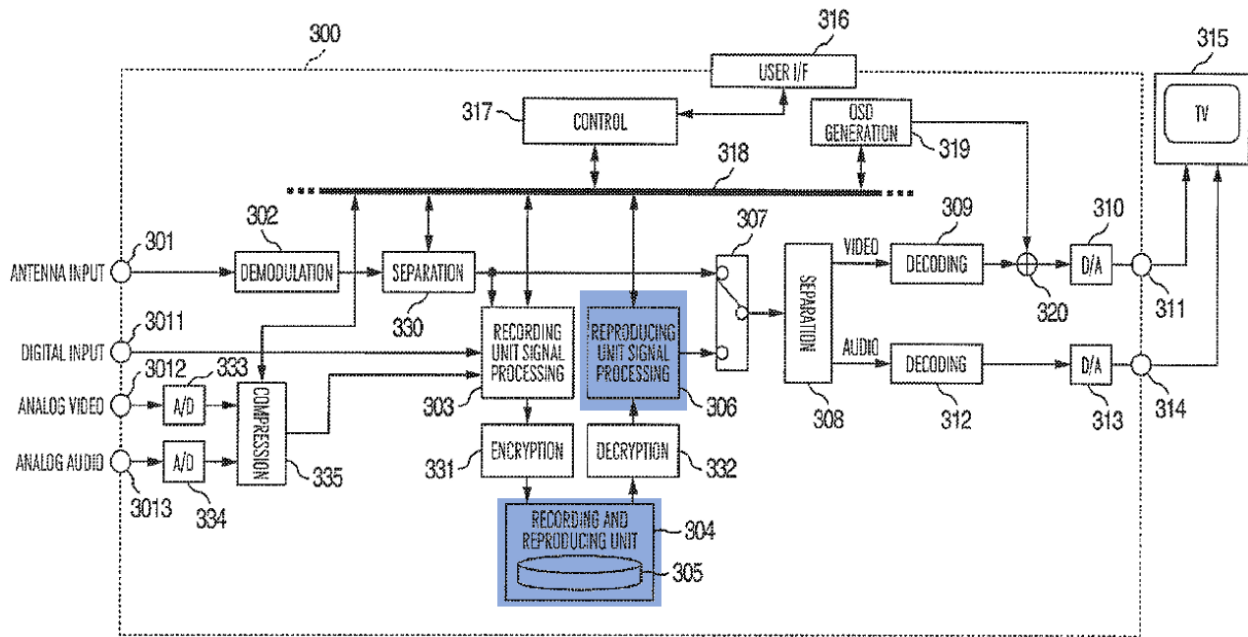


LG-1001, FIG. 3 (annotated)

3. “reproducer” (claims 1, 6, 16)

The “reproducer” performs the function of “reproduc[ing] the selected video data read out from the recording medium.” LG-1001, 8:54-55; *see id.*, 9:45-46, 11:35-36. The corresponding structure includes “reproducing unit signal processing circuit” and/or “recording and reproducing unit.” LG-1001, 4:46-5:4, 5:26-44, FIG. 3; LG-1003, ¶35.

FIG.3



LG-1001, FIG. 3 (annotated)

4. “one video data”

The Board determined that the “one video information” included in the first and second groups is the same “one video information,” not copies as Patent Owner argued. LG-1040, 13-15. This construction should be maintained as it applies to the similar term “one video data.” LG-1003, ¶36. The limitation uses the article “one” to refer to “one video data” and subsequent references to “the one video data,” so the plain usage implies that the same “one video data” is initially included in each group. *Id.*, 11. If different copies existed in each group, then the “one video data” deleted from the first group could not “continue[] to be included in the second group” because there would be different video data in the second

group. *Id.*, 11-12. The '072 Patent supports this construction, describing two users' groups referring to the same "one video data" (e.g., underlying AV data). *Id.*, 12-13; LG-1001, 2:59-67, 3:44-58, 6:17-38, FIG. 1; LG-1003, ¶¶36.

5. "one video data ... is deleted from the first group of video data"

The Board also previously construed the usage of "deleted" in "one video information ... is deleted from the first group of video information." LG-1040, 13-15. There, the Board determined that "delet[ing]" video information from the first group includes unregistering video information from the first group. *Id.*, 14-15. The Board further determined that "delet[ing]" video information from a group does not require deleting underlying AV data. *Id.*, 15.

There is no reason to deviate from the Board's reasoning here, even though the Board previously reached its conclusions under the broadest reasonable interpretation standard. The deletion "from the first group of video data" implies that deletion may relate to group membership, rather than to the underlying video data. *Id.*, 14; LG-1003, ¶¶37-38.

D. Level of Ordinary Skill

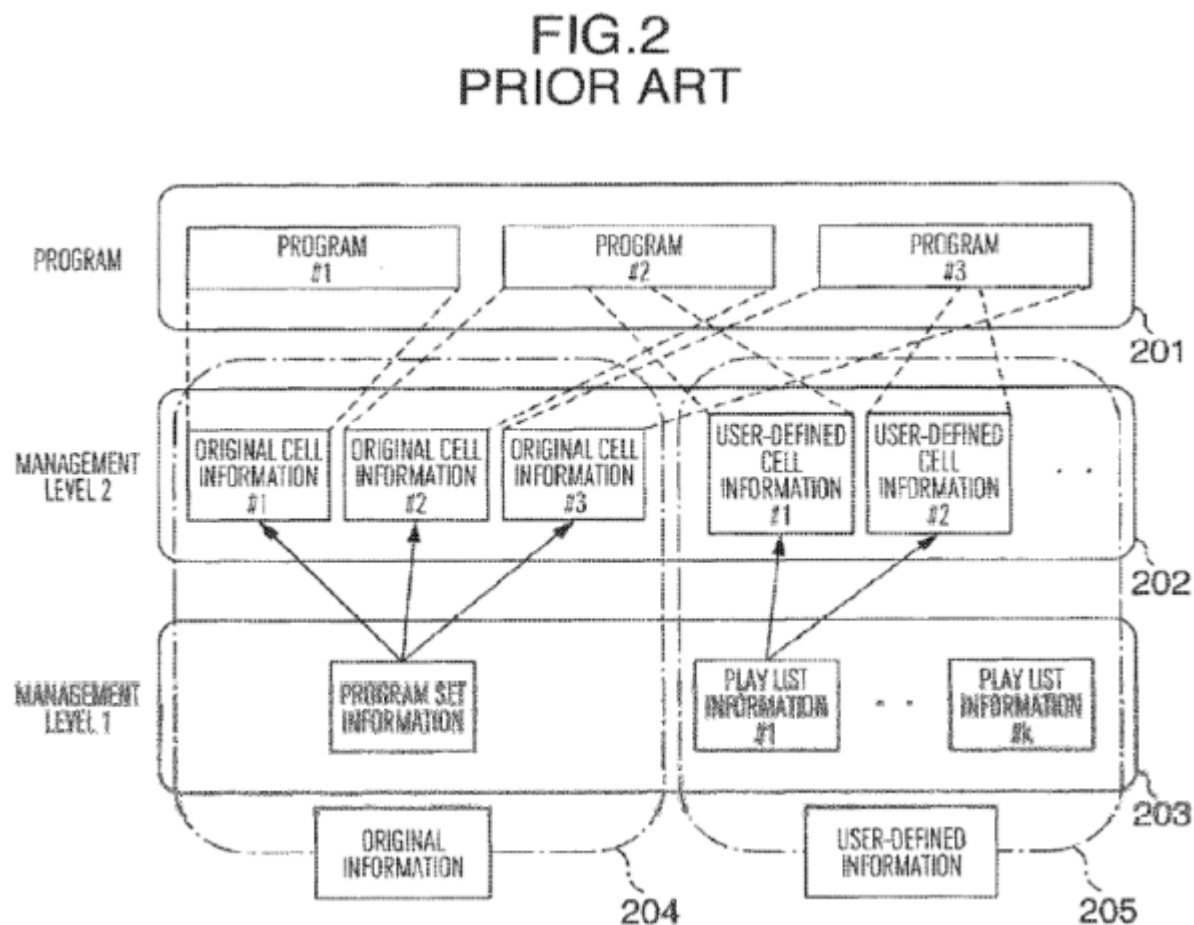
A person of ordinary skill in the art ("POSITA") relating to the subject matter of the '072 Patent as of December 2, 2004, would have had at least a bachelor's degree in computer science, electrical engineering, computer engineering, or a related field, and about 1-2 years of practical experience in the relevant industry.

LG-1003, ¶¶26-27. Additional graduate education could substitute for professional experience, and *vice versa*. *Id.*

II. THE '072 PATENT

A. Technology Background

The '072 Patent admits “conventional techniques” for managing “AV data on a recording medium” were known.² LG-1001, 1:58-2:23, FIG. 2:



² LG-1036 is provided in support of the prior art status of references discussed in LG-1003.

3:13-14, 1:36-54. Thus, “the patent admits that at least: (1) hierarchical management levels for AV data; (2) reproduction of AV data stored on a recording medium; and (3) user-defined playlists, were known.” LG-1003, ¶¶59-60.

Moreover, the data management techniques of the ’072 Patent, including its use of menus, thumbnails, and pointers, were well known in the field by 2004. *See* LG-1003, ¶¶39-58.

Before the ’072 Patent, GUIs presented information using menus, such as the well-known “desktop” metaphor employed since “Windows 95.” LG-1003, ¶¶40-43 (discussing existing menus). Further, it was well-known that media, including digital video content in a playlist, could be played back on a standard computer. LG-1003, ¶¶50-51. For example, it was known that a computer could be used to act as a DVR, with menus displaying thumbnails for recorded media. LG-1006, Abstract, [0002]-[0004], [0014]-[0017], [0020]-[0022], [0037], FIGS. 3-5; LG-1003, ¶52.

Importantly, a common computer programming concept used in the management and display of digital media was the “pointer.” LG-1003, ¶46. A “pointer” refers to storing an indicator of the *location* of data, and was used for data (files) that needed to be used in multiple places, without duplicating that data. *Id.* By using a pointer to the location of the data—rather than a copy of the data—a single stored file could be displayed in different menus (or other GUIs). With this type of

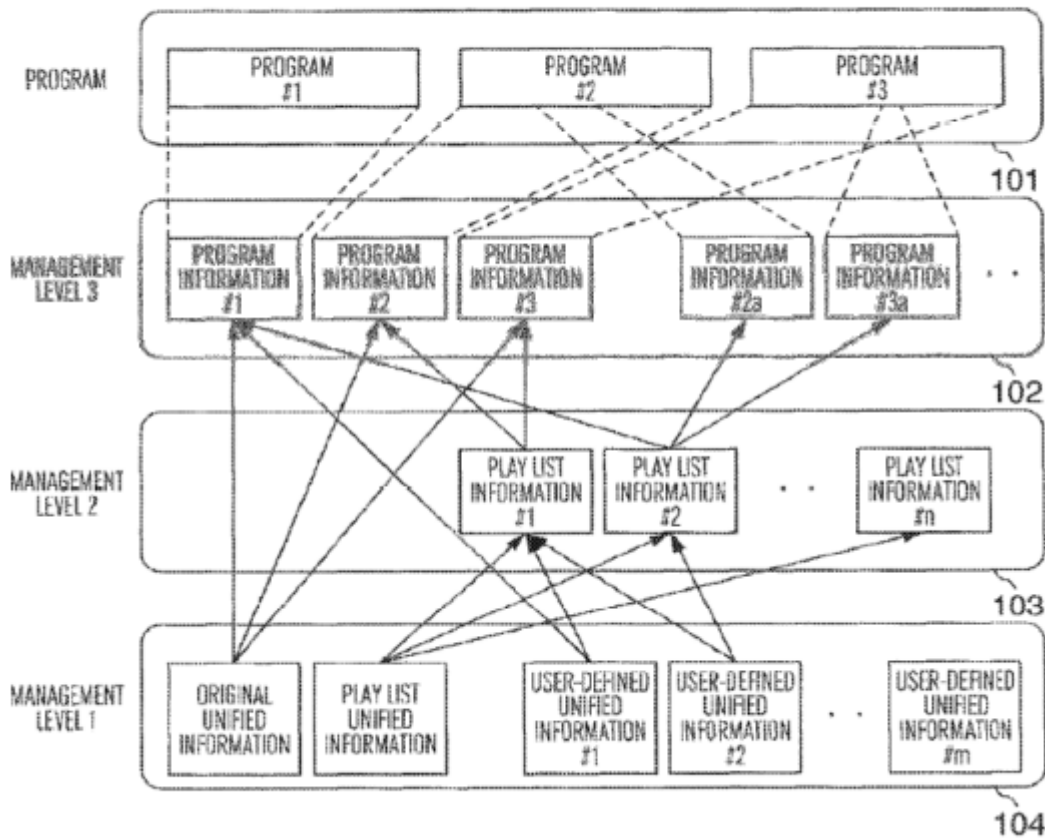
storage, “items may be removed from a collection” without “otherwise delet[ing] the item from the source (e.g. the file system) or any other collection.” LG-1021, [0165]. Also, pointers enable “data structures,” which in turn enable efficient access and modification of that data. LG-1003, ¶¶47-49 (example of the use of pointers with “multitrees”).³

B. Brief Description

The '072 Patent was filed November 9, 2017, claiming priority to several Japanese applications, the earliest of which was filed December 2, 2004. LG-1001, Cover. It is directed to managing data, such as multimedia digital data files (e.g., audio and video files) that a user may reproduce. *See, e.g., id.*, Abstract, 1:30-54; LG-1003, ¶¶62-63. The '072 Patent uses a “management” scheme with hierarchical levels, and provides the following summary of a “management state of AV data on a recording medium”:

³ The Declaration of June Ann Munford (LG-1036) is provided in support of the prior art status of certain exhibits discussed in Dr. Cockburn’s declaration (LG-1003).

FIG. 1

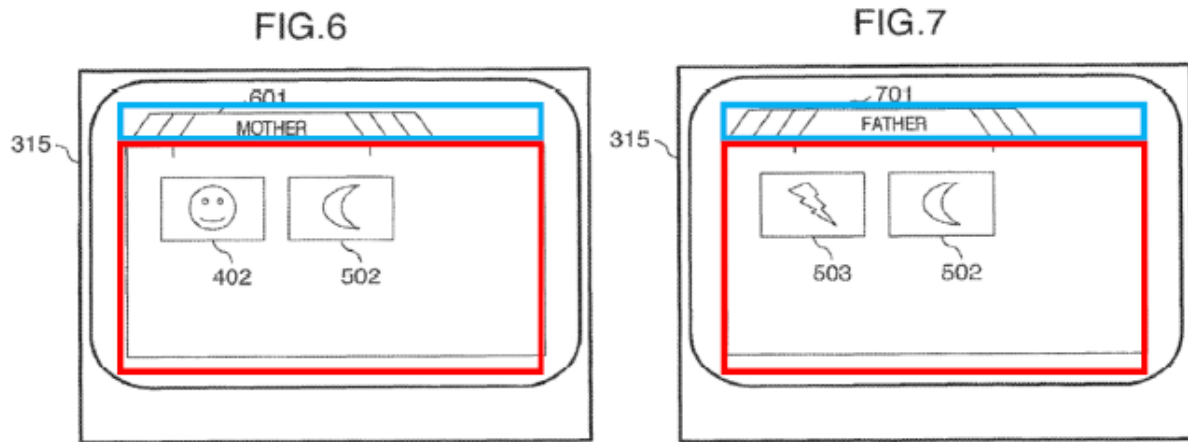


LG-1001, FIG. 1

Figure 1 depicts a management state of AV data on a recording medium in a recording and reproducing device. LG-1001, 3:46-49.

The '072 Patent purports to solve problems with “conventional technique[s]” by allowing users to have more control over manipulation and rearranging of their content. LG-1001, 2:24-3:6. The primary example used in the specification is with respect to “play lists.” See, e.g., *id.*, Abstract.

Specifically, the '072 Patent uses an example where there is a first playlist for a “mother” and a second playlist for a “father.” LG-1001, 6:17-38. As shown in FIGS. 6 and 7, two menu areas (“601” Mother and “701” Father) each display a list of thumbnails (402, 502) and (503, 502) corresponding to “play list information” #1 and #2, respectively:



LG-1001, FIGS. 6-7 (annotated).

As shown, each menu has a first area (circled blue) that indicates a group, classified as “Mother” or “Father” in this example, and a second area (circled red), which displays thumbnails of data corresponding to the group. LG-1001, FIGS. 6-7; LG-1003, ¶¶64-66. The '072 Patent explains that if the father and mother each have the same video on their respective lists (*e.g.*, 502), the father can delete the video from his list without that video being automatically deleted from the mother’s list. *See* LG-1001, 6:17-38.

C. Prosecution History

Within a year of filing, after issuing no rejections, the Office allowed all claims of the application that issued as the '072 Patent. LG-1002, 78-84. The Examiner offered, as “reasons for allowance,” that “[t]he prior arts do not disclose include[sic] deleted information of the first group in the second group when the deleted information recorded on the recording medium was included in both the first group and the second group.” *Id.*, 83.

III. THE CHALLENGED CLAIMS ARE UNPATENTABLE

A. [GROUND 1] – Bryant Renders Claims 1-19 Obvious

1. Bryant

Bryant discloses “grouping and classifying digital still images and digital motion images captured using a handheld digital camera.” LG-1005, [0029].

Grouping and classification data are stored in a database on a computer. *Id.* Classifications provide information relating to a user’s feelings toward images, such as whether the image is a “favorite.” *Id.*, [0030].

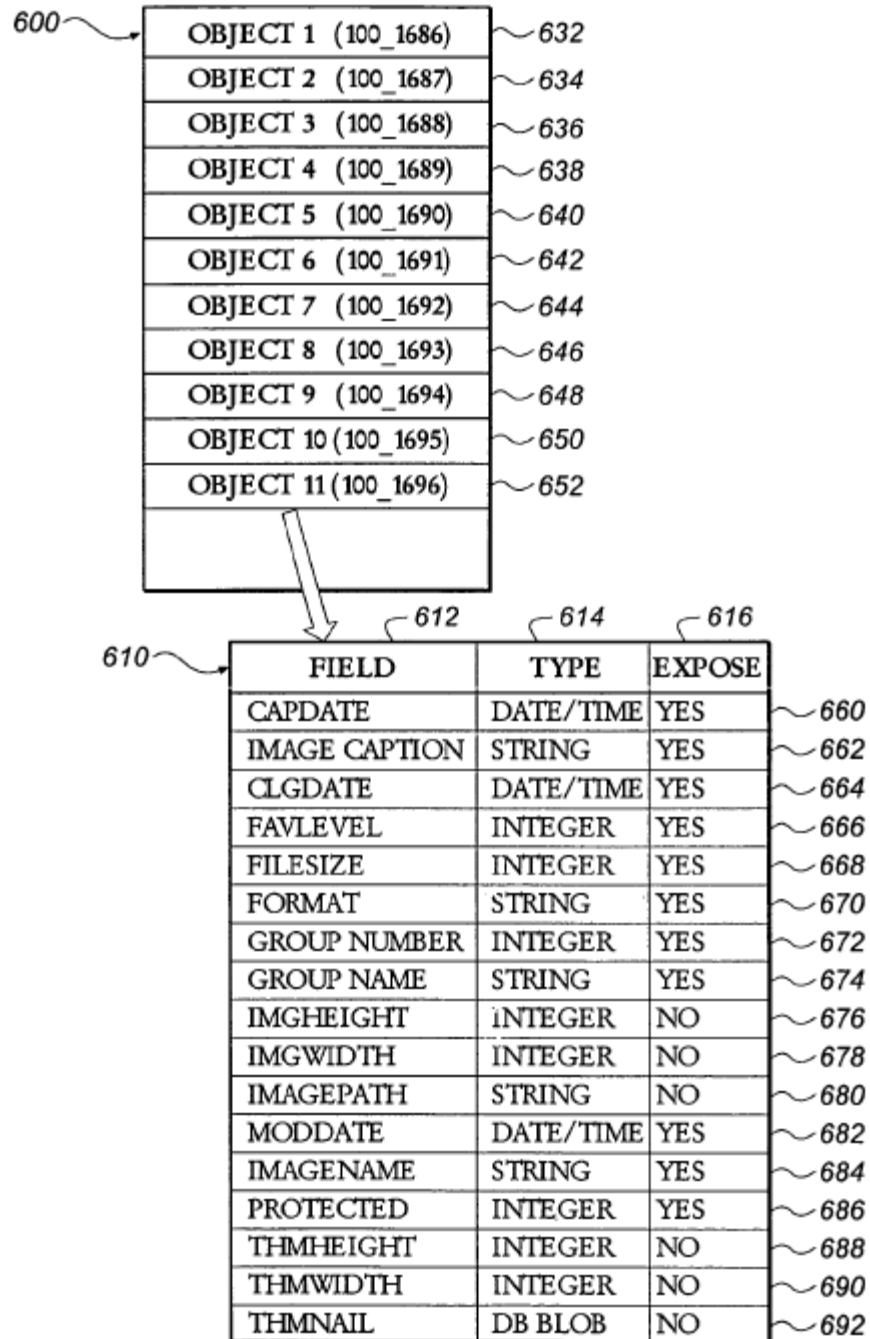


FIG. 8

LG-1005, FIG. 8

Figure 8 (above) depicts database information including general assets table 600 that includes image data objects corresponding to various transferred image files (e.g., “100_1686”). LG-1005, [0082]. For example, object 11 includes table of data fields 610, and each row of table 610 includes a type of metadata describing the image. “[F]avlevel” metadata in row 666 indicates whether the user has selected the image as a favorite; “group name” metadata in row 674 indicates a name for the group; “thmnl” metadata in row 692 holds a copy of the compressed thumbnail image as stored by the digital camera. *Id.*, [0084]-[0085], [0087].

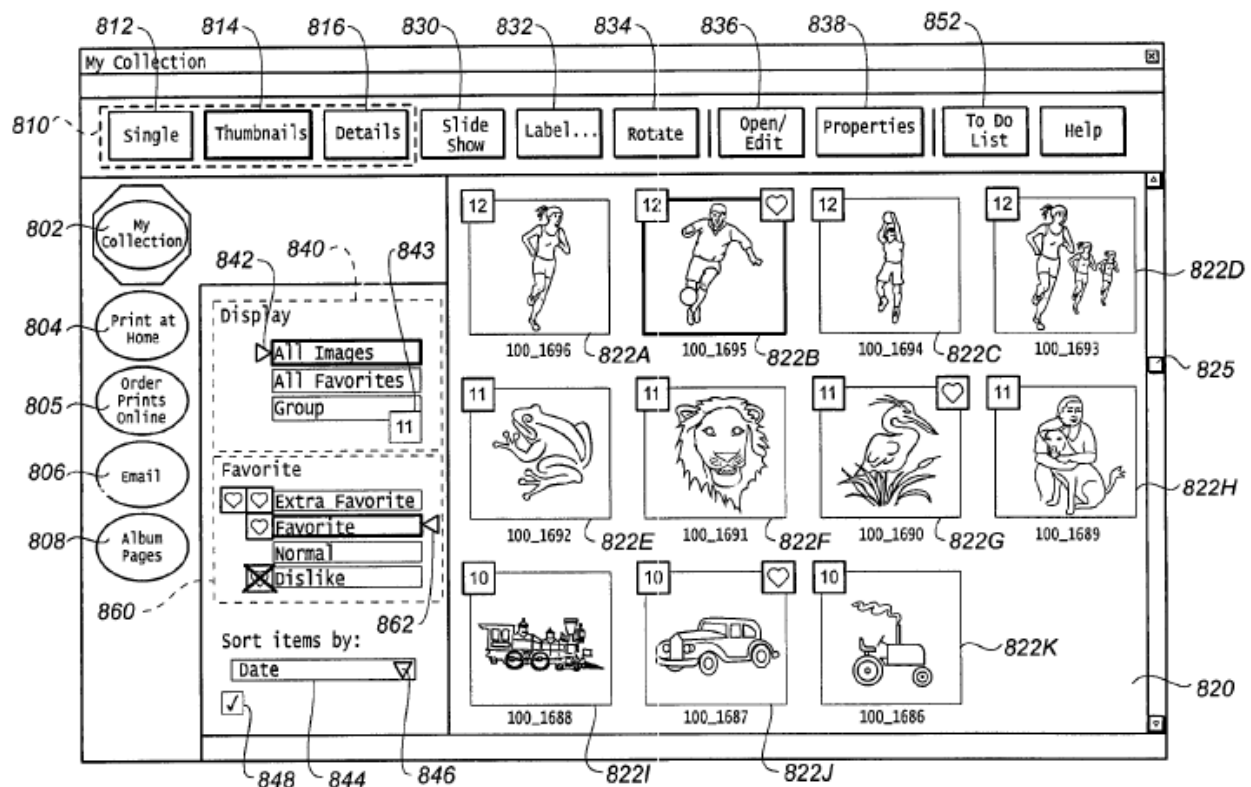


FIG. 9A

LG-1005, FIG. 9A

Figure 9A (above) depicts a computer user interface screen for displaying transferred images. LG-1005, [0089]. The user interface screen includes area 820 for displaying the thumbnail images provided using “thmnl” metadata 692 of each object from general assets table 600. *Id.* By moving selector 842 within display selection area 840, the user can select among the display of “All Images,” “All Favorites,” or “Group” based on group number/name box 843. *Id.* The user also can change the level of a selected image to be, for example, a “Favorite” image using selector 862. LG-1005, [0096].

2. Claim 1

[1.pre]

To the extent the preamble is limiting, Bryant discloses or renders obvious [1.pre]. LG-1005, Abstract, [0006]-[0007], [0011], [0014], [0029], [0037], [0089], claim 1, FIGS. 1, 3A-3B; LG-1003, ¶93. Specifically, Bryant discloses a “method for producing a plurality of electronic job pages using a digital camera and a computer,” including producing first and second electronic job pages that include first and second groups of digital images, respectively. LG-1005, Abstract. Thus, a POSITA would have understood that Bryant discloses an apparatus (e.g., computer) that processes information (e.g., digital image data). LG-1003, ¶93; LG-1005, FIGS. 1, 3A-3B.

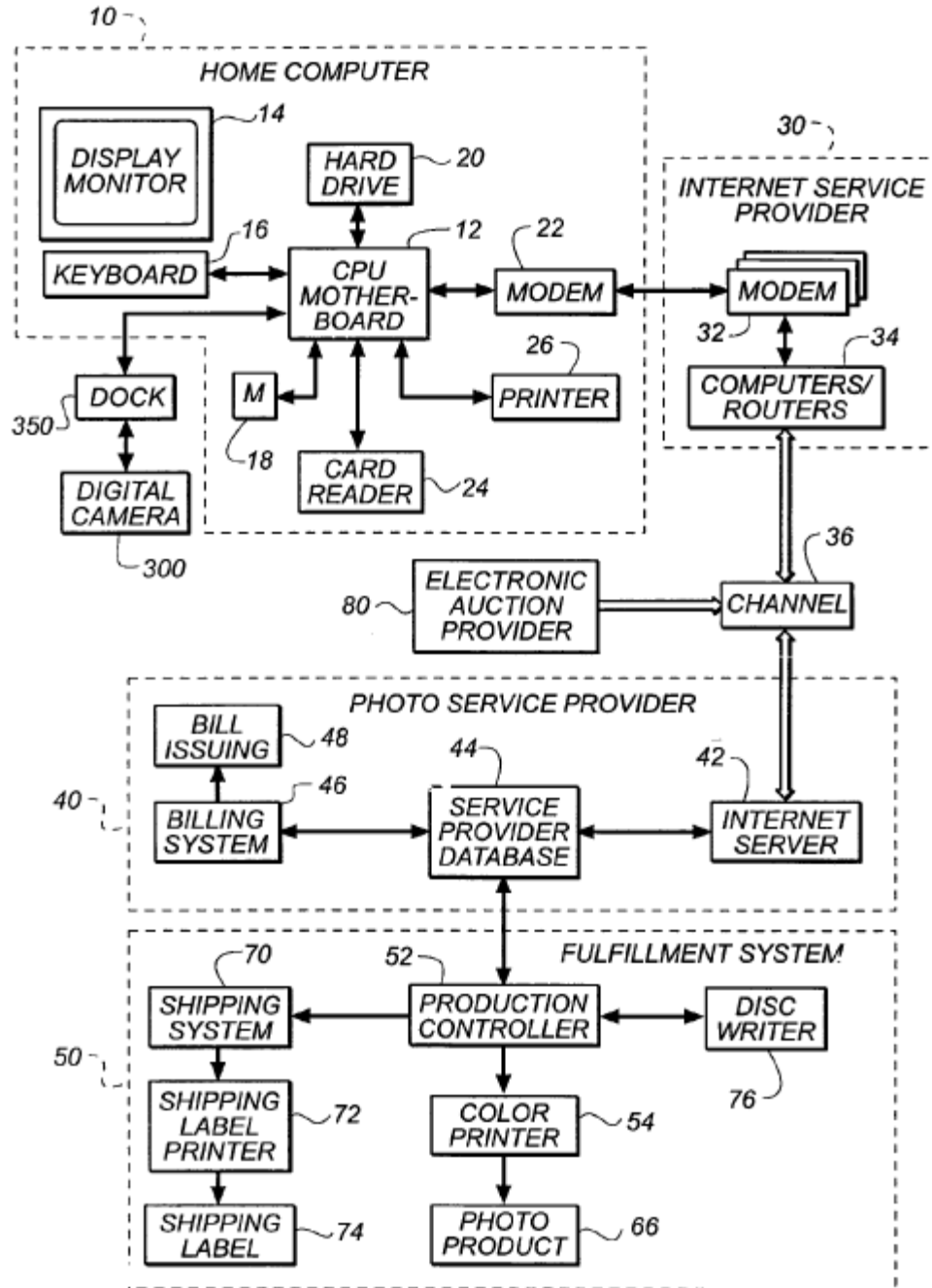


FIG. 1

LG-1005, FIG. 1

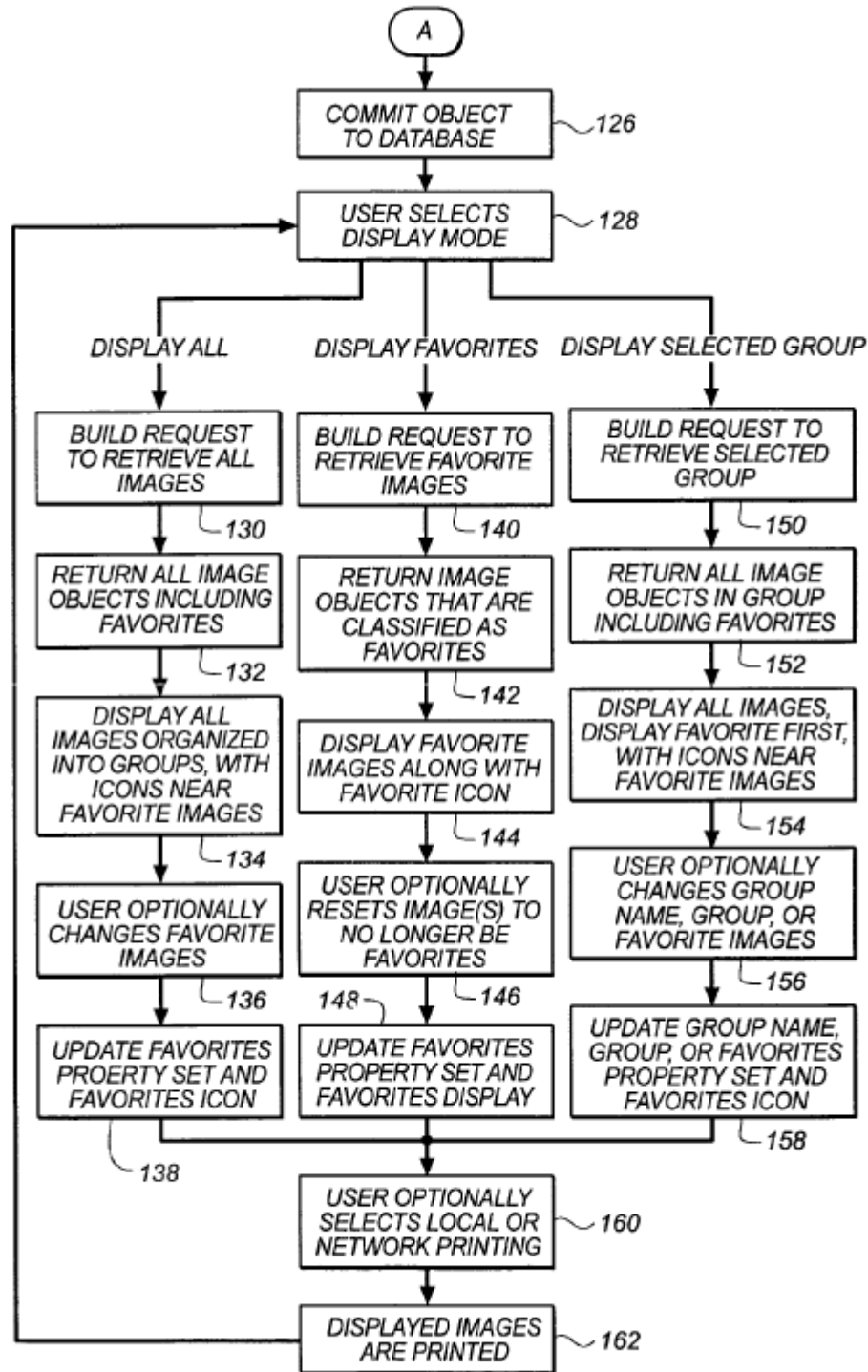


FIG. 3B

LG-1005, FIG. 3B

[1.a]

Bryant discloses or renders obvious [1.a]. LG-1005, [0007], [0032], [0036]-[0039], [0067], [0080]-[0081], FIG. 1; LG-1003, ¶¶94-97. Specifically, Bryant discloses a computer that receives files captured by and/or stored on a digital camera. LG-1005, [0007], [0032] (“images are transferred from the digital camera to a host computer”), [0038]-[0039], [0067], [0080]. The files from the digital camera include “still and motion video images.” LG-1005, [0036]. After the computer receives the transferred image files, the files are stored on the “hard drive 20 of the home computer 10” in “a default directory, such as in a ‘my collection’ directory.” LG-1005, [0081].

A POSITA would have understood that the “hard drive 20” of Bryant necessarily includes a circuitry (“recording unit,” per claim 11), e.g., a hard disk controller, that serves as an intermediary between the CPU and the physical storage platter of the hard drive for “the hard drive 20 ... to store images downloaded from the digital camera.” LG-1003, ¶¶95-97; LG-1005, [0037], FIG. 1. Such circuitry was well known long before the Critical Date to include in hard drives to provide buffering, error correction, servo control, etc. for writing data to the hard drive. LG-1023, 1:11-46, 2:64-4:18 (“the control system 202 sends to and receives signals from the head 114 during read and write operations performed on the disk 102”), FIGS. 1-2; LG-1024, 5:50-6:4 (“embedded disk controller Printed Circuit Board

(PCB))), FIG. 2; LG-1025, Abstract, 3 (“servo block refers to general logic used in aiding the spinning of the discs and in the positioning of the actuator on the disc”).

[1.b]

Bryant discloses or renders obvious an output unit (“display monitor,” “computer user interface screens”) that performs the function of outputting a menu display (“user interface”) for a user to select one group of video data (e.g., “All Images,” “All Favorites,” “Group”) among a plurality of groups of video data (circled blue in FIGS. 9A-9C) by specifying a position of a character corresponding to the one group of video data. LG-1005, [0037]-[0038], [0087], [0089], [0149], [0154], FIGS. 9A-9C; LG-1003, ¶¶98-101; *see* [1.e.i], [1.f.i].

Bryant teaches “computer user interface screens” that facilitate user selection of desired video data to be played back and a “display monitor 14” that is a display device on which “images and information” are displayed “as a computer user interface screen.” LG-1005, [0029], [0036]-[0038], [0088]-[0090], [0149], FIGS. 1, 9A-9C. Bryant explains that images are transferred from a digital camera and stored on the computer, and “[e]ach group of digital images is then organized as an electronic album, using the data in the local database, and is displayed on the display monitor 14.” LG-1005, [0154]. Referencing Figure 9A, Bryant describes a “GUI screen 800A [that] includes an area 820 for displaying the thumbnail images,” where, “[b]y moving a selector 842 within a display selection

area 840, the user can select a display of 'All Images', a display of 'All Favorites', or a display of a 'Group' of images selected using a group number/name box 843."

LG-1005, [0089].

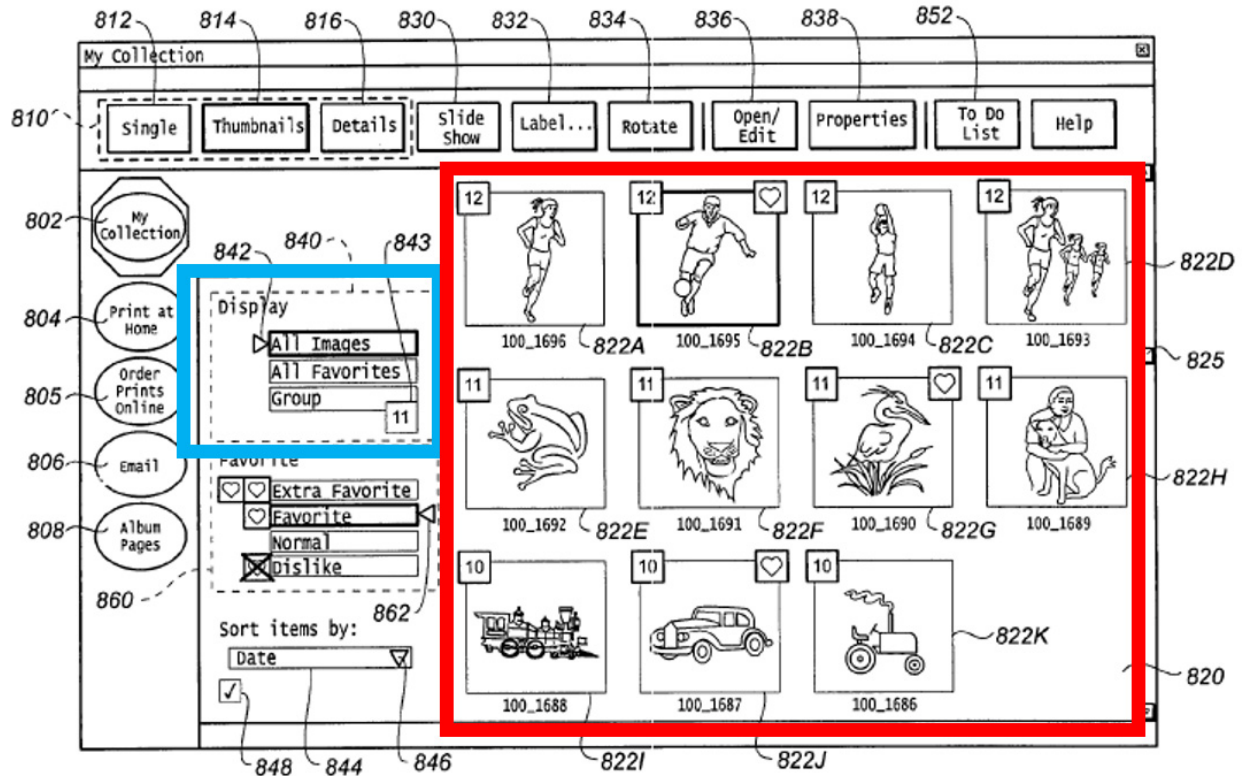


FIG. 9A

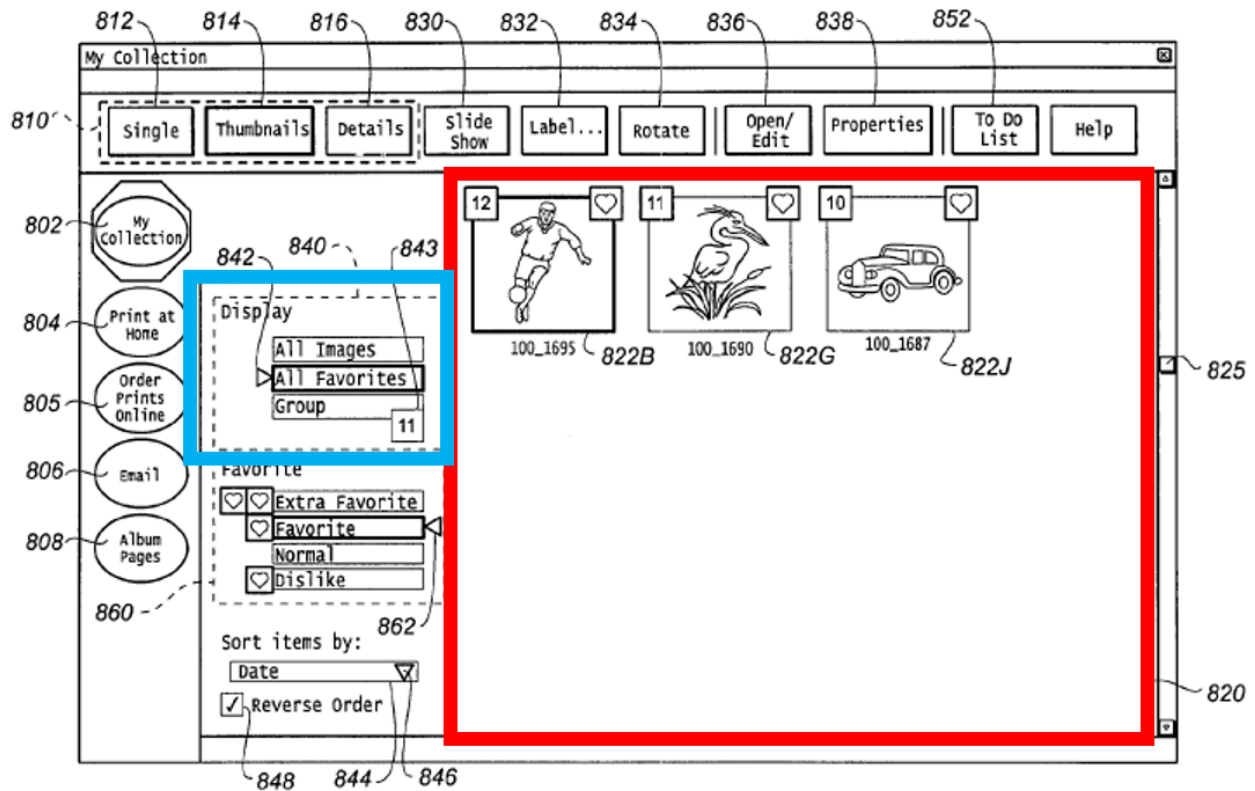


FIG. 9B

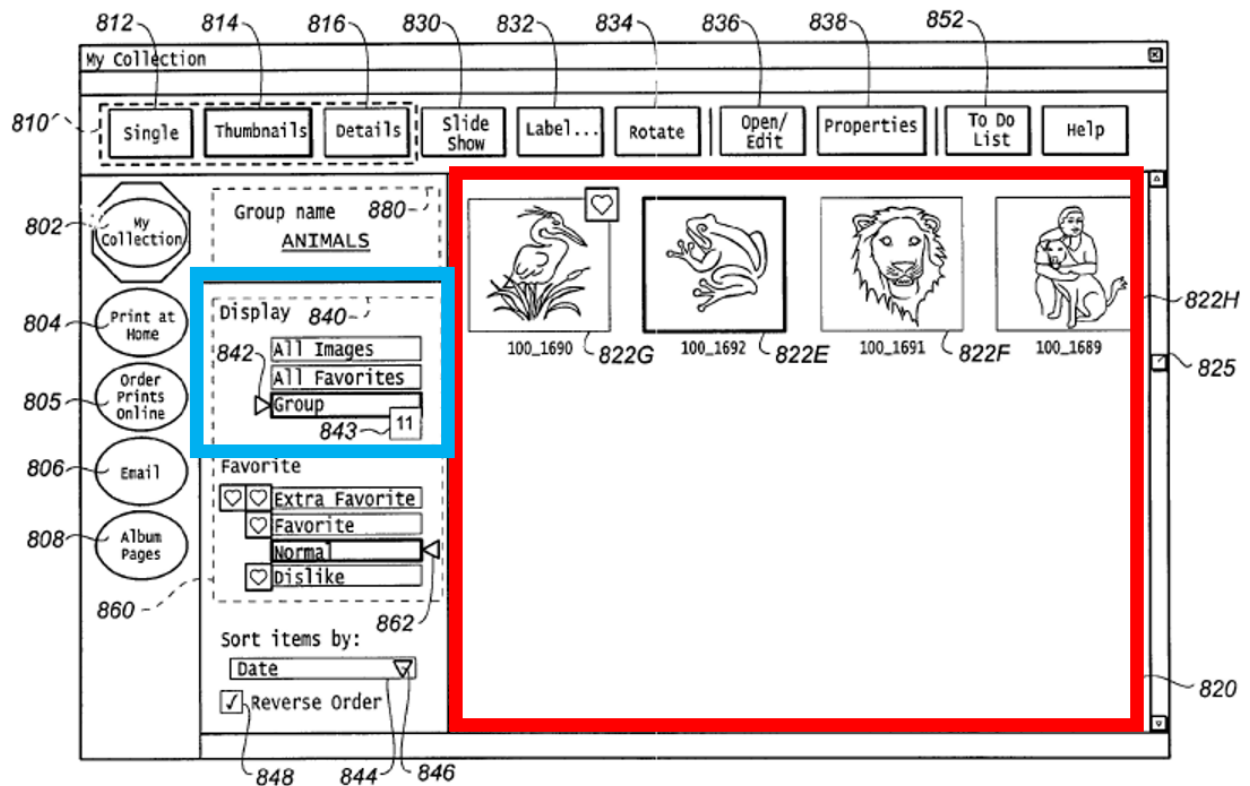


FIG. 9C

LG-1005, FIGS. 9A-9C (annotated)

In FIG. 9A, a user has selected “All Images” by specifying a position of a character (e.g., selecting and determining a position of a character) corresponding to the one group of video data, either by clicking on the position of one or more characters in the name of the group or moving the triangle selector character to the position next to the name of the group. *Id.*; LG-1003, ¶101; *see also* LG-1001, 6:3-16.

[1.c]

Bryant discloses or renders obvious [1.c]. LG-1005, [0029], [0036]-[0038], [0080]-[0081], FIGS. 1, 3B, 9A-9C; LG-1003, ¶¶102-101. A POSITA would have understood that Bryant teaches and/or suggests reproducing the selected video data from the recording medium (“hard drive”). *Id.* Bryant discloses capturing “motion video images” with a camera and transferring them onto a computer where images can be “**viewed**, stored, retrieved and printed.” LG-1005, [0003] (emphasis added), [0036]-[0038], [0080]-[0081]. A POSITA would have understood that a reason to transfer a video (“motion video image”) to a user’s computer is to reproduce for display and viewing (e.g., playback) the video from the recording medium when the user wants to view it. LG-1003, ¶104; LG-1005, [0036]. Moreover, a POSITA would have understood that “retrieving” an image, per Bryant, further teaches or suggests reproducing an image, especially in the case of retrieving those images for

“viewing.” *Id.* Thus, Bryant discloses or renders obvious reproduction from a recording medium with a reproducing unit for display. *Id.*; LG-1005, FIG. 1.

A POSITA would have understood that the purpose of Bryant’s multimedia platform is to organize, display, and **play back** digital content, such as video. LG-1003, ¶105. Moreover, reproducing the user selected video data (“motion video images”) from a plurality of video data recorded on a recording medium by a recording unit were well-known (*see* §II.A), and a POSITA would have understood that Bryant’s computer coupled to a display device “execut[ing] software stored on a hard drive 20, for example, the well-known Windows XP operating system software and the Internet Explorer web browser software” would have been capable of playing back video. *See* LG-1005, [0037]-[0038]; LG-1003, ¶107 (“[A] POSITA would have understood that Bryant’s system would play back the videos using the known programs that were commonly available at that time.”).

If [1.c] is not disclosed, a POSITA would have been motivated to incorporate video playback in Bryant’s system. LG-1003, ¶108. As Dr. Cockburn explains, “users in this time frame would have wanted to use the available functions on their computer to access all of the media produced by their digital cameras, and would have expected as much given the state of the art.” *Id.* (“well within the skill of a POSITA.”).

Moreover, a POSITA would have understood that the “hard drive 20” of Bryant necessarily includes a circuitry (“reproducer”), e.g., a hard disk controller, that serves as an intermediary between physical storage platter of the hard drive and the CPU in order to retrieve data from memory to display “images and information ... on the display monitor 14 as a computer user interface screen (GUI screen).” LG-1003, ¶¶109-111; LG-1005, [0149], FIGS. 7A-7B, 9A-9C, 15-16. Indeed, such circuitry was well known long before the Critical Date to include in hard drives to provide buffering, error correction, servo control, etc. for reading data from the hard drive. LG-1023, 1:11-46, 2:64-4:18, FIGS. 1-2; LG-1024, 5:50-6:4, FIG. 2; LG-1025, Abstract, 3. Specifically, the hard drive necessarily includes circuitry to send and receive signals from a transducer head in the hard drive “during read and write operations performed on the [hard] disk.” LG-1023, 3:16-18; LG-1003, ¶111.

[1.d]

Bryant discloses or renders obvious [1.d]. LG-1005, [0037]-[0039], [0088], [0098], FIG. 1; LG-1003, ¶112. A CPU motherboard is connected to the hard drive that stores the image/video files and the display monitor 14, and controls the display, by the display monitor, of thumbnails and images. LG-1005, [0038], [0088], [0098], FIG. 1. Thus, a POSITA would have understood that Bryant’s

CPU motherboard controls display of content by the display monitor. LG-1003,

¶112.

[1.e.i]

Bryant discloses or renders obvious that, when a first group of video data (e.g., “All Favorites”) is selected in the menu display by specifying a position of a character (e.g., selecting and determining a position of a character) corresponding to the first group of video data (e.g., the user has selected “All Favorites” “[b]y moving a selector 842 within [the] display selection area”), the controller controls so that a first group of thumbnails corresponding to the first group of video data is displayed (circled red in FIG. 9B). LG-1005, [0089]-[0103], FIGS. 9A-9C; LG-1003, ¶¶113-116; *see also* LG-1001, 6:3-16.

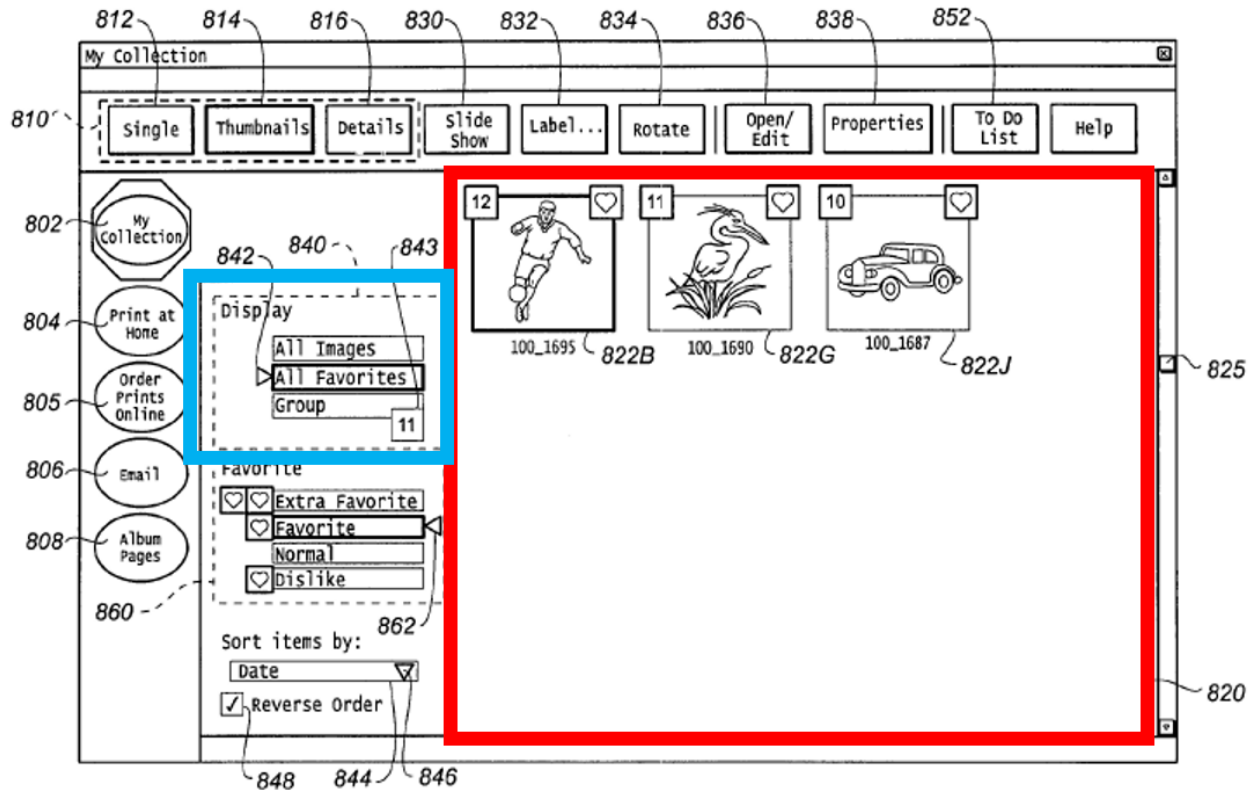


FIG. 9B

LG-1005, FIG. 9B (annotated)

[1.e.ii]

Bryant discloses or renders obvious [1.e.ii]. LG-1005, [0094]; LG-1003, ¶¶117-118. As shown in Figure 9B (below), Bryant explains that the user interface (GUI screen 800A) “includes sort options that are selected using a sort items text box 844 and a pull-down arrow icon 846 to select a desired sort option.” LG-1005, [0094], Fig 9B; *see id.*, [0088]-[0090]. “A reverse order checkbox 848 is used to reverse the display of the thumbnail images.” *Id.*

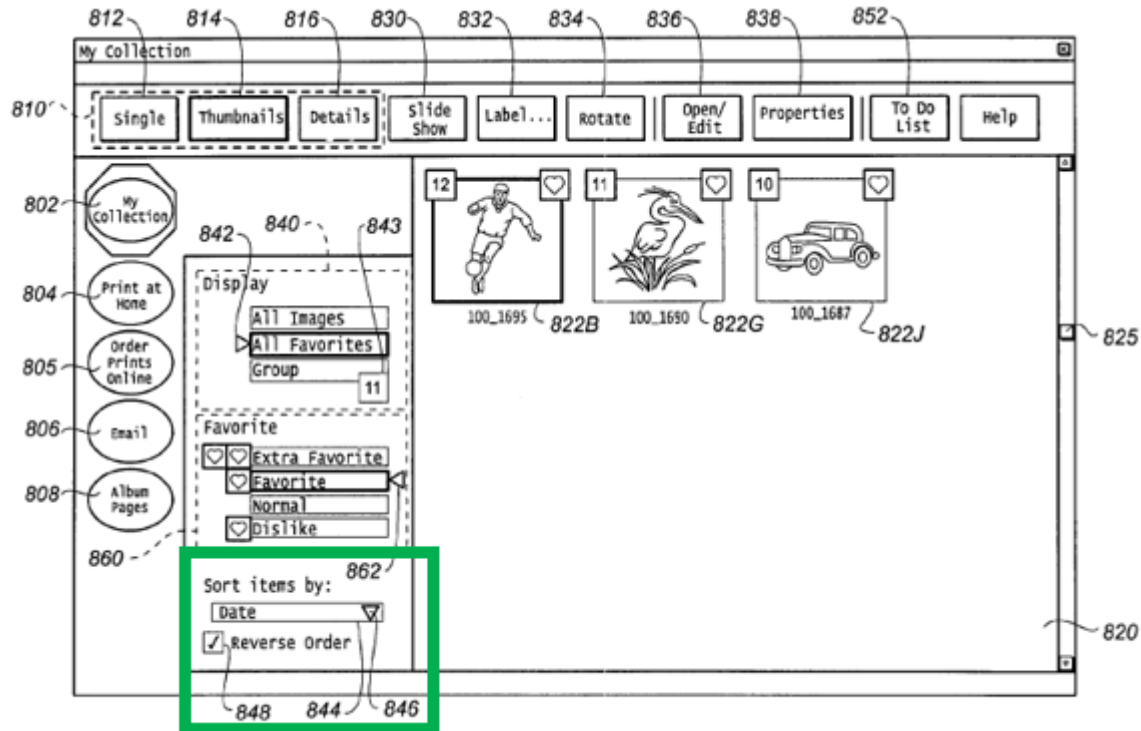


FIG. 9B

LG-1005, FIG. 9B (annotated)

[1.f.i]

Bryant discloses or renders obvious that, when a second group of video data (e.g., “All Images”) is selected in the menu display by specifying a position of a character (e.g., selecting and determining a position of a character) corresponding to the second group of video data (e.g., the user has selected “All Images”), the controller controls so that a second group of thumbnails corresponding to the second group of video data is displayed (circled red in FIGS. 9A for “All Images”).
LG-1005, [0089]-[0103], FIGS. 9A-9C; LG-1003, ¶¶119-120; *see also* LG-1001, 5:67-6:8; *see* [1.e.i].

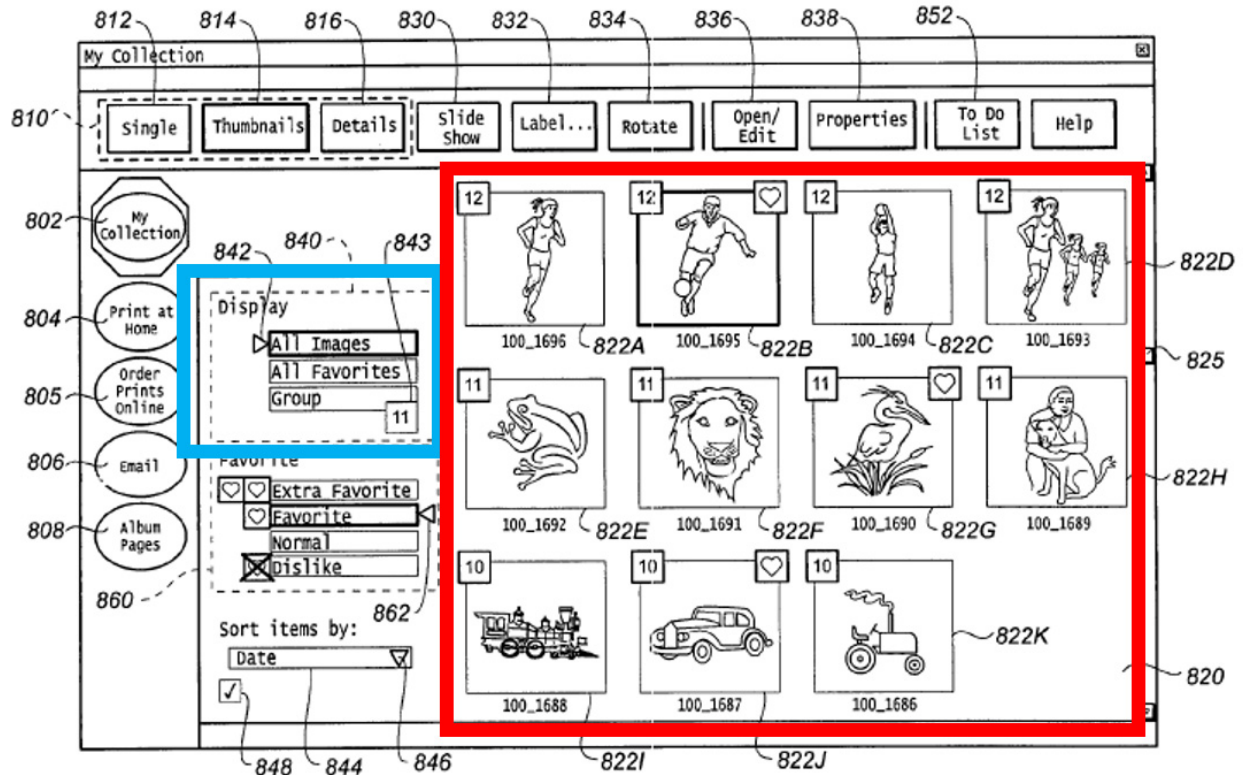


FIG. 9A

LG-1005, FIG. 9A (annotated)

[1.f.ii]

See [1.e.ii].

[1.g]

Bryant discloses or renders obvious [1.g]. LG-1005, [0081]-[0087], [0096]-[0101], FIGS. 8, 9A-9C; LG-1003, ¶¶122-129.

For example, Bryant discloses a local database with an assets table 600 and data fields 610 for a given media object:

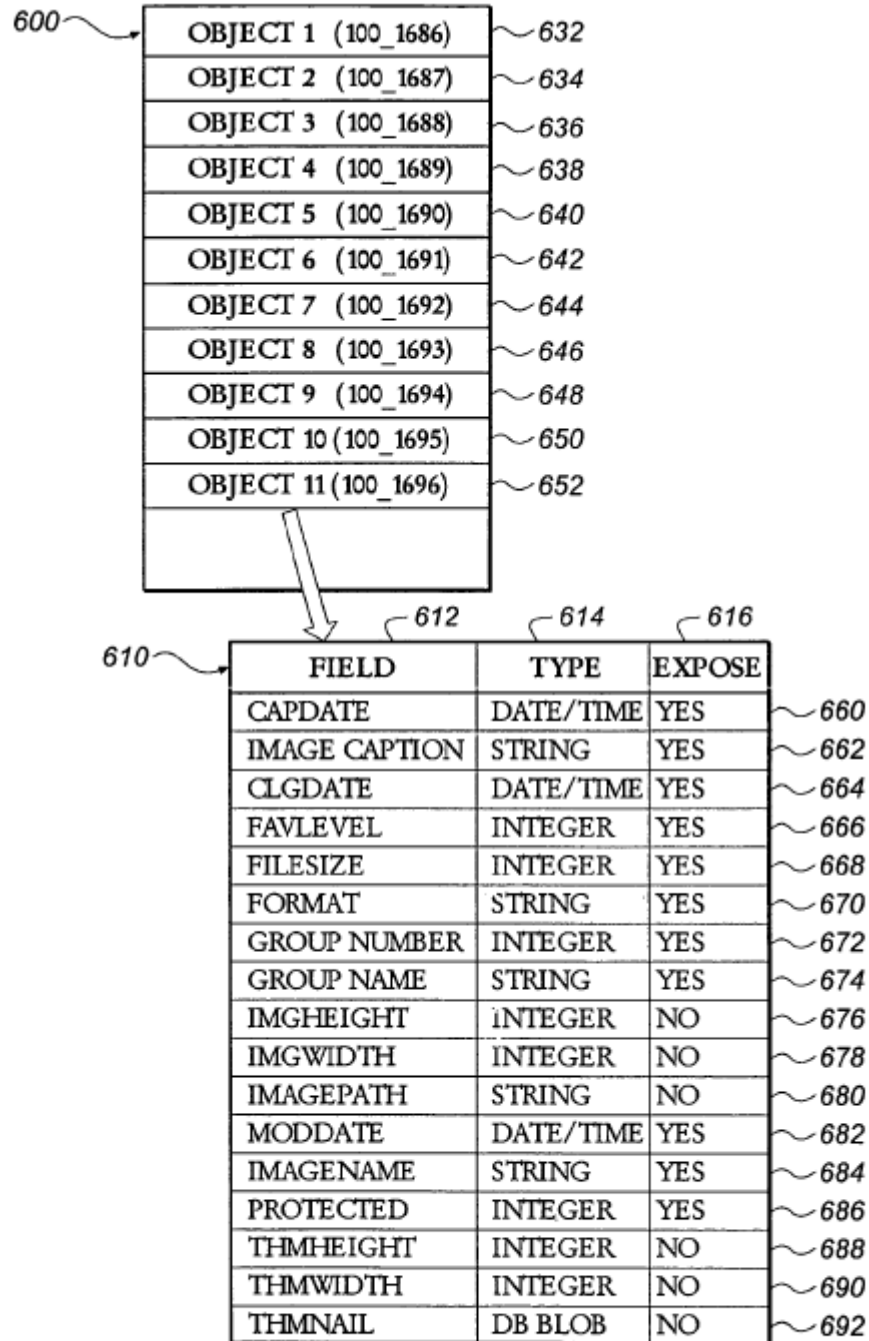


FIG. 8

LG-1005, FIG. 8

Given this structure—and the interfaces in FIGS. 9A-9C—a POSITA would have understood that Bryant teaches a media file can be simultaneously classified in multiple categories. LG-1003, ¶124. For example, the media file corresponding to the crane, 100_1690, is classified as a “Favorite,” as part of “Group/ 11,” and is included in “All Images.” LG-1005, FIGS. 9A-9C.

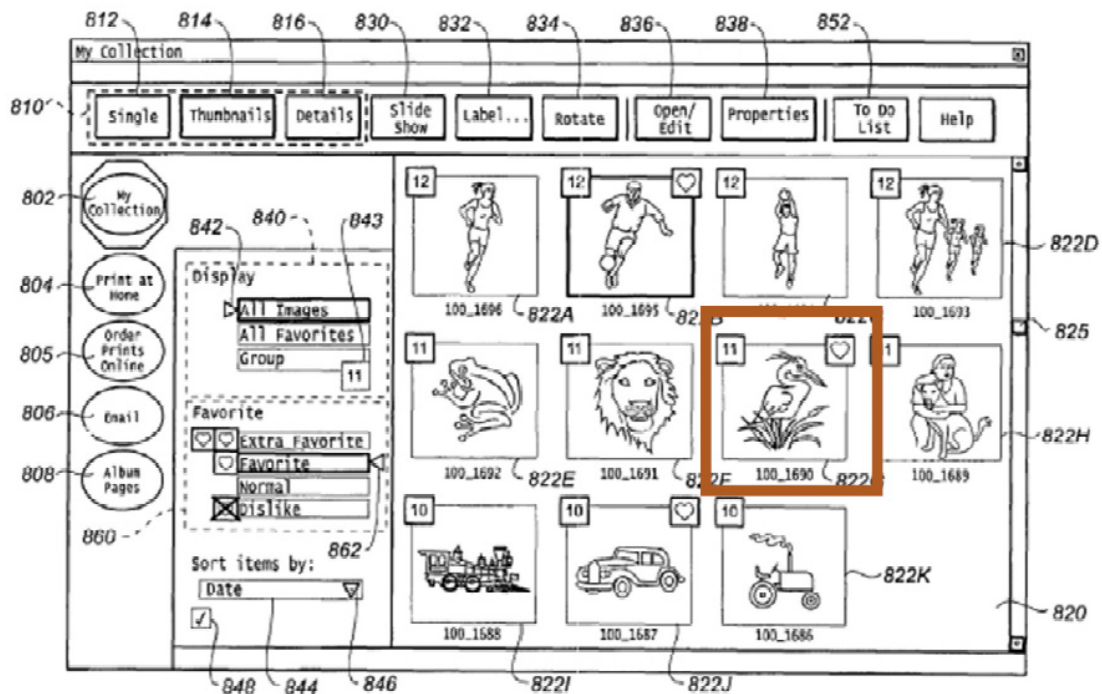


FIG. 9A

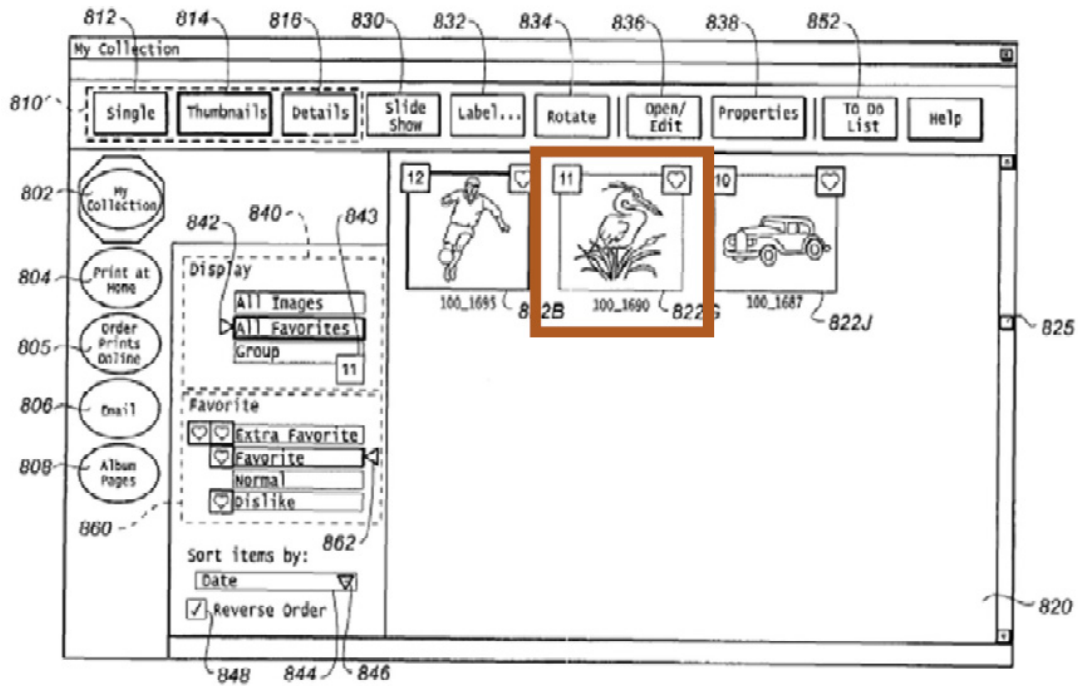


FIG. 9B

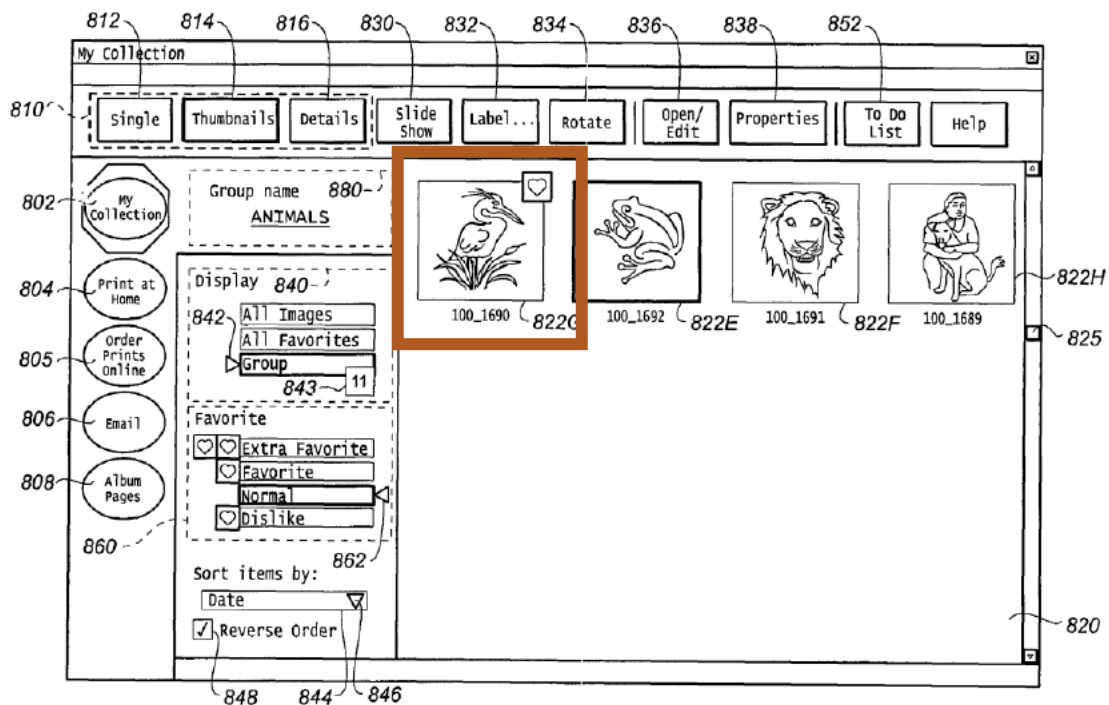


FIG. 9C

LG-1005, FIGS. 9A-9C (annotated)

A POSITA would have recognized from Bryant that, if the crane media object were removed as a favorite, the media object would continue to be included in the “All Images” and “Group/11” groups, with its thumbnail continuing to be displayed as one of the thumbnails in the All Images” and “Group/11” groups. LG-1005, [0100]; LG-1003, ¶125. Rather than being deleted from other groups, merely the favorite data is reset and the media object is retained in the, e.g., “All Images” group. LG-1005, [0100]; *see id.*, [0082]-[0087], [0096]-[0099], [0101] (“the favorites *metadata is updated* in the general assets table 600, and the icon displayed next to each thumbnail image is also updated, as was described earlier in relation to block 138”) (emphasis added).

Moreover, a POSITA would have known that a user would expect to be able to modify groups independently by deleting a video from one group (such as its inclusion in All Favorites), without removing its membership in a second group (such as All Images or Group/11). LG-1003, ¶126 (“that would have limited the utility of the system and caused confusion for the user”). Thus, if Bryant does not disclose [1.g], it would have been obvious. LG-1003, ¶127. In practice, this is accomplished using references to data stored in memory called “pointers,” and the use of pointers to data objects, such as video files, was well-known and commonplace; Bryant expressly indicates the use of pointers. LG-1005, [0081]-[0083], [0086]; LG-1003, ¶¶127-128 (citing LG-1021); *see* §II.A, §III.D.1-2.

Additionally, a POSITA would have understood that, because the video remained in the second group, its thumbnail would also remain when the second group of thumbnails is displayed, given the way that Bryant displays thumbnails associated with a group when that group is selected. LG-1003, ¶129; LG-1005, FIG. 3B (explaining the flow of steps 146-148-162-128-130-132-134).

3. Claim 2

Bryant discloses or renders obvious [2]. LG-1005, [0049]; LG-1003, ¶¶130-132. Bryant discloses a “processor 320 [that] performs color interpolation followed by color and tone correction, in order to produce rendered sRGB image data” and “also provide[s] various image sizes selected by the user.” LG-1005, [0049]. “The rendered sRGB image data is then JPEG compressed and stored as a JPEG image file on the removable memory card 330.” *Id.* Since the files transferred from the digital camera to the computer include “still and motion video images,” a POSITA would have found obvious that Bryant’s processor is an encoder that performs the above-described processing and compression (e.g., encoding) on both still and motion video images. LG-1005, [0005] (referencing the “MPEG-7 Requirements Document”), [0036]; LG-1003, ¶131. Indeed, the use of video encoding and decoding standards, i.e., codecs, was well known by the Critical Date. LG-1003, ¶131 (citing LG-1029).

Bryant's processor is part of the digital camera, connected to the computer, which a POSITA would have understood as disclosing a collective apparatus. LG-1003, ¶132. If the camera-computer combination is not an "apparatus" per claims 1 and 2, a POSITA would have found it obvious to include such a processor in a computer, especially in well-known scenarios where the computer included an integrated camera, as was well known by the Critical Date. *Id.*; *see, e.g.*, LG-1032, 1:6-10, 1:13-46, FIGS. 1-2; LG-1033, 1:44-64, FIGS. 2, 9, 22.

4. Claim 3

[3.a]

Bryant discloses [3.a]. LG-1005, [0098]-[0102], FIGS. 3B, 9A-9C ; LG-1003, ¶¶133-134.

As shown in FIG. 9B (below) a first character (one or more letters of "All Favorites") corresponding to the first group of video data ("All Favorites" folder) is displayed in a first area (circled blue) when the first group of thumbnails is displayed (circled red). LG-1005, [0099]-[0102], FIG. 9B. Bryant explains that, if "the user selects the 'Display Favorites' option, for example, by selecting the 'All Favorites' option using selection window 840 in FIG. 9A," then, in FIG. 9B, "GUI screen 800B displays in area 820 the thumbnail images 822B, 822G, and 822J that correspond to favorite images." *Id.*, [0098]-[0099]; FIGS. 9A-9B.

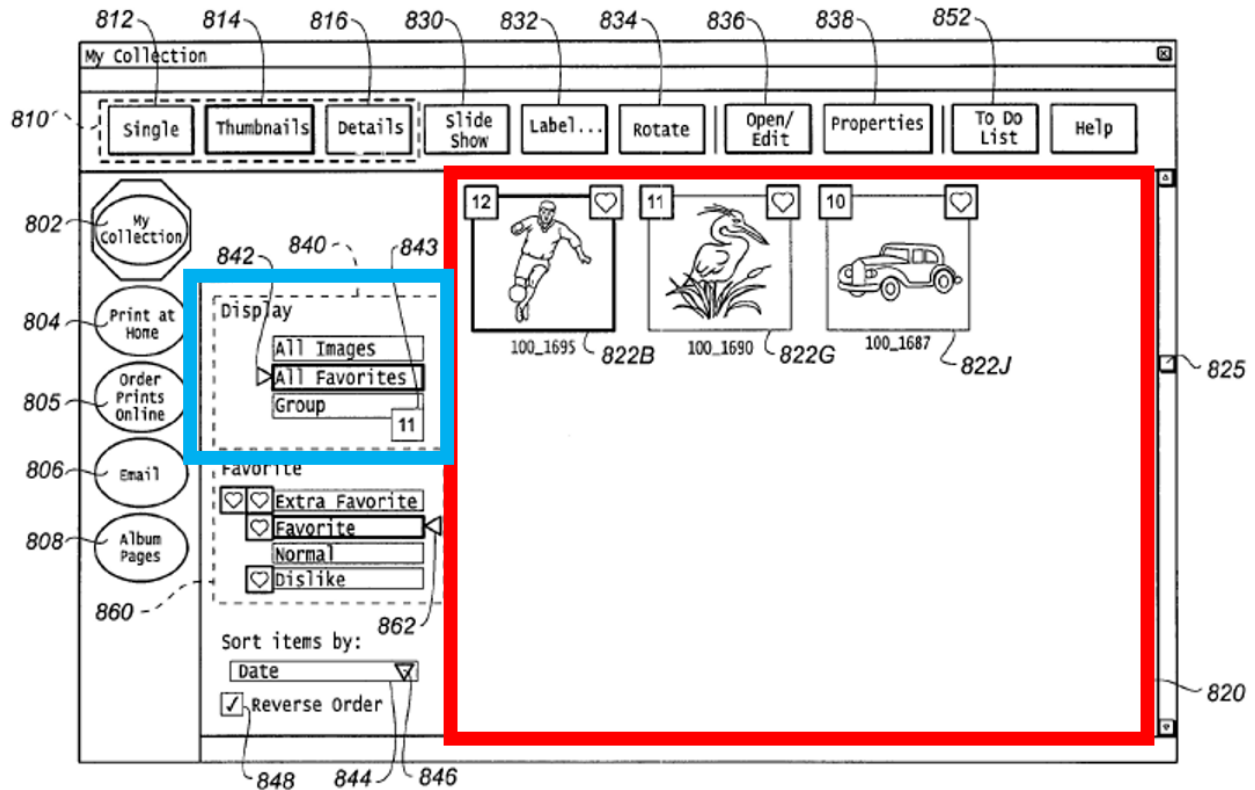


FIG. 9B

LG-1005, FIG. 9B (annotated)

[3.b]

Bryant discloses [3.b]. LG-1005, [0089]-[0098], FIGS. 3B, 9A-9C; LG-1003, ¶¶135-136; *see* [3.a].

As shown in FIG. 9A, below, a second character (one or more letters of “All Images”) corresponding to the second group of video data (“All Images” folder) is displayed in the first area (circled blue) when the second group of thumbnails is displayed (circled red). LG-1005, [0089]-[0098], FIG. 9A. Referencing FIG. 9A, Bryant explains that, “[b]y moving a selector 842 within a display selection area

840, the user can select a display of ‘All Images,’” and the thumbnails in the “All Images” folder are displayed. LG-1005, [0089], FIG. 9A.

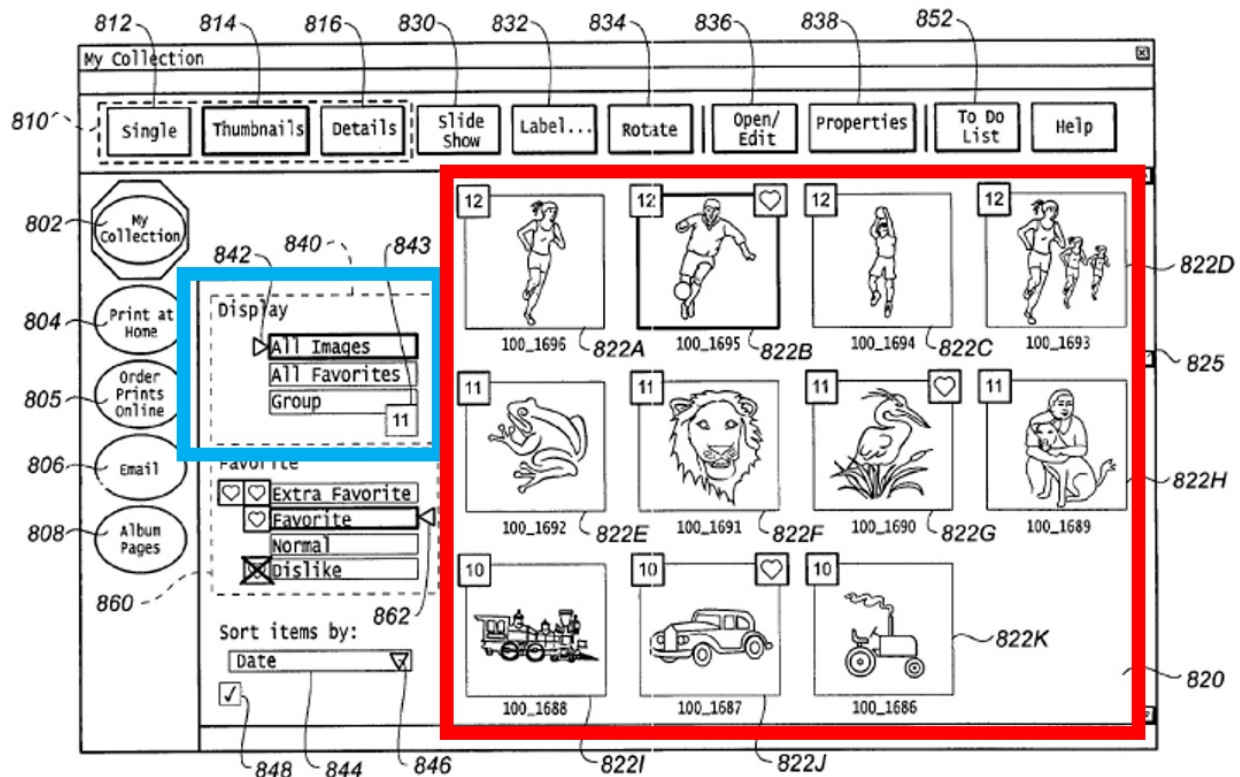


FIG. 9A

LG-1005, FIG. 9A (annotated)

5. Claim 4

[4.a]

Bryant discloses [4.a]. LG-1005, FIG. 9B; LG-1003, ¶¶137-138. As shown in FIG. 9B, below, the first group of thumbnails (thumbnails in the “All Favorites” folder) is displayed in a second area (circled red) different from the first area (circled blue). LG-1005, FIG. 9B; *see* [3.a]-[3.b].

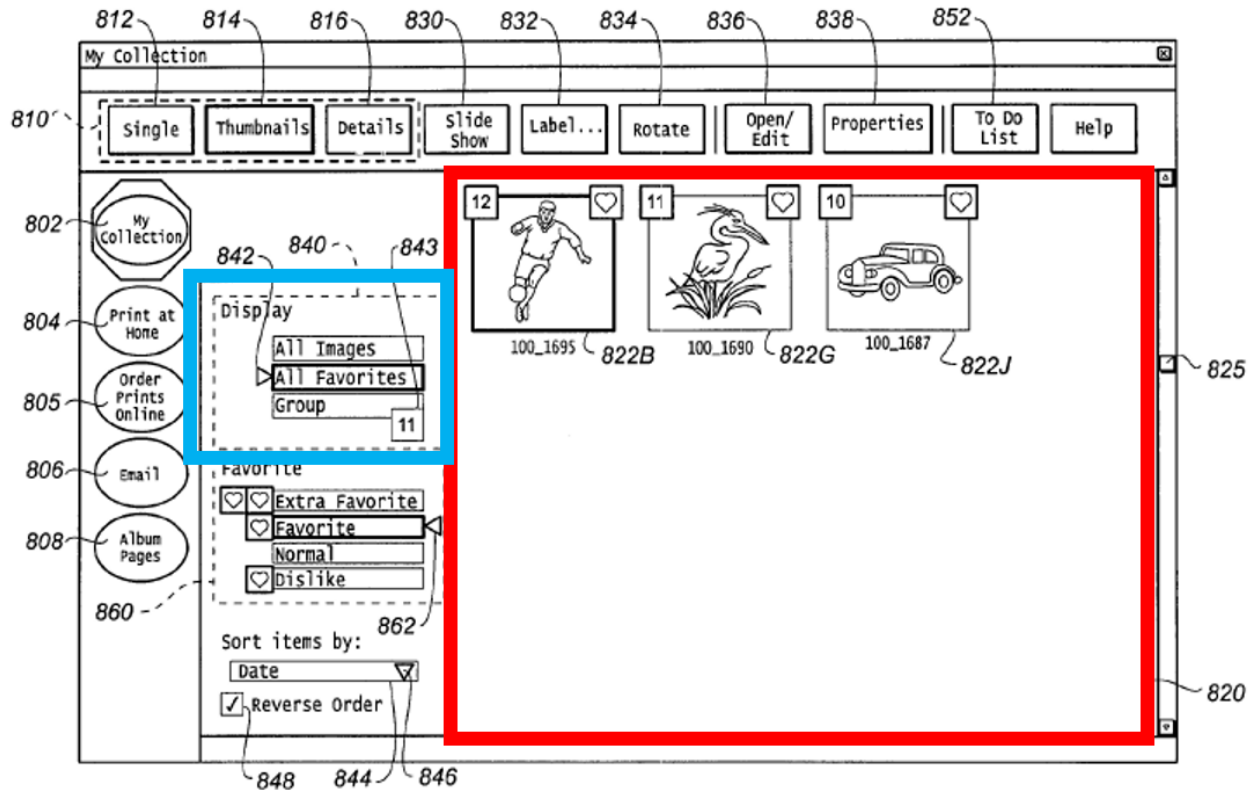


FIG. 9B

LG-1005, FIG. 9B (annotated)

[4.b]

Bryant discloses [4.b]. LG-1005, [0088]-[0090], FIGS. 3B, 9A-9C; LG-1003, ¶¶139-140; *see* [4.a]. As shown in the examples of FIG. 9A (below), the second group of thumbnails (thumbnails in the “All Images” folder) is displayed in a second area (circled red). LG-1005, FIG. 9A; *see id.*, FIG. 9C.

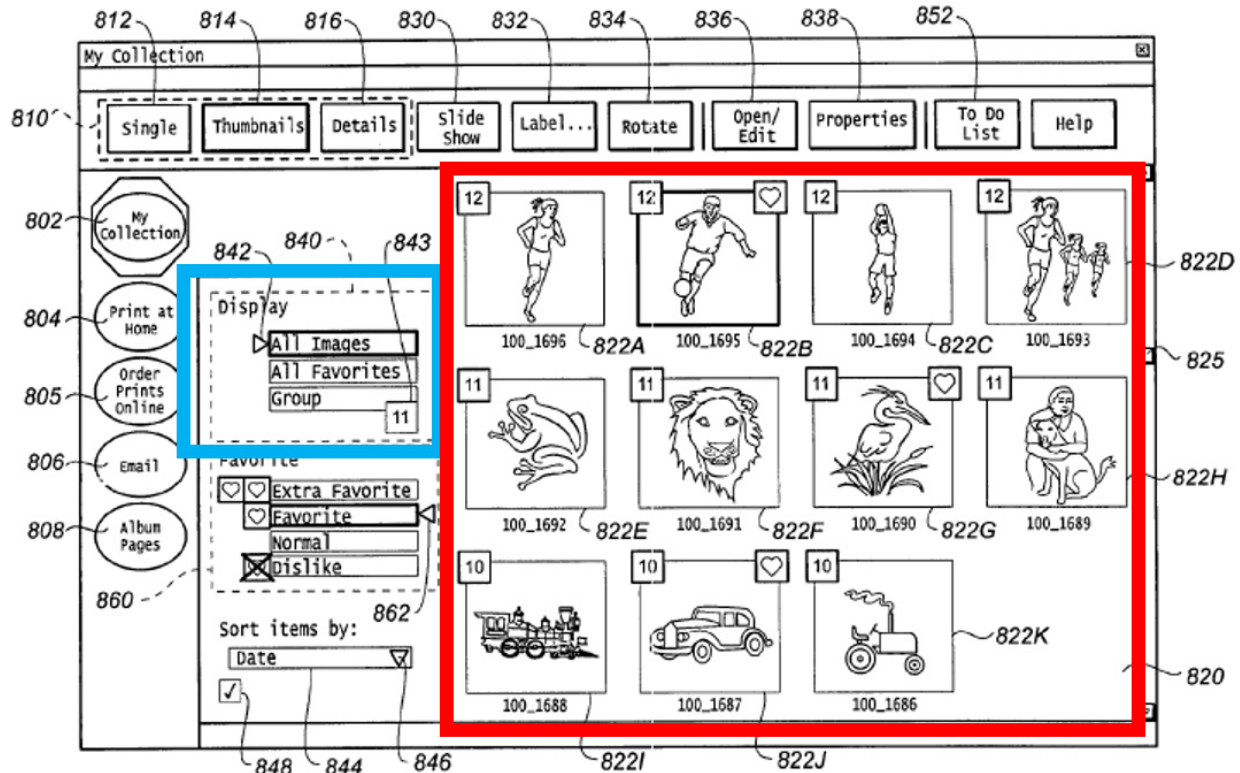


FIG. 9A

LG-1005, FIG. 9A (annotated)

6. Claim 5

A POSITA would have understood that, if deleting the one video data from the first group does not delete the one video data from the second group of video data (*see* [1.g]), then it would have been obvious in Bryant for the one video data to remain on the recording medium so that it continues to be available in the second group. LG-1003, ¶¶141-142.

7. Claim 6

[6.pre]-[6.a]

See [1.pre]-[1.a].

[6.b]

See [1.c].

[6.c]

See [1.b].

[6.d.i]-[6.d.ii]

See [1.e.i]-[1.e.ii].

[6.e.i]-[6.e.ii]

See [1.f.i]-[1.f.ii].

[6.f]

See [1.g].

8. Claim 7

See [2].

9. Claim 8

See [3.a]-[3.b].

10. Claim 9

See [4.a]-[4.b].

11. Claim 10

See [5].

12. Claim 11

[11.pre]-[11.c]

See [1.pre]-[1.c].

[11.d.i]

See [1.d]-[1.e.i].

[11.d.ii]

See [1.e.ii].

[11.e.i]

See [1.d], [1.f.i].

[11.e.ii]

See [1.f.ii].

[11.f]

See [1.g].

13. Claim 12

See [2].

14. Claim 13

See [3.a]-[3.b].

15. Claim 14

See [5].

16. Claim 16

[16.pre]-[16.d]

See [1.pre]-[1.d].

[16.e]

See [1.b].

[16.f.i]-[16.f.ii]

See [1.e.i]-[1.e.ii].

[16.g.i]-[16.g.ii]

See [1.f.i]-[1.f.ii].

[13.h]

See [1.g].

17. Claim 17

See [3.a]-[3.b].

18. Claim 18

See [4.a]-[4.b].

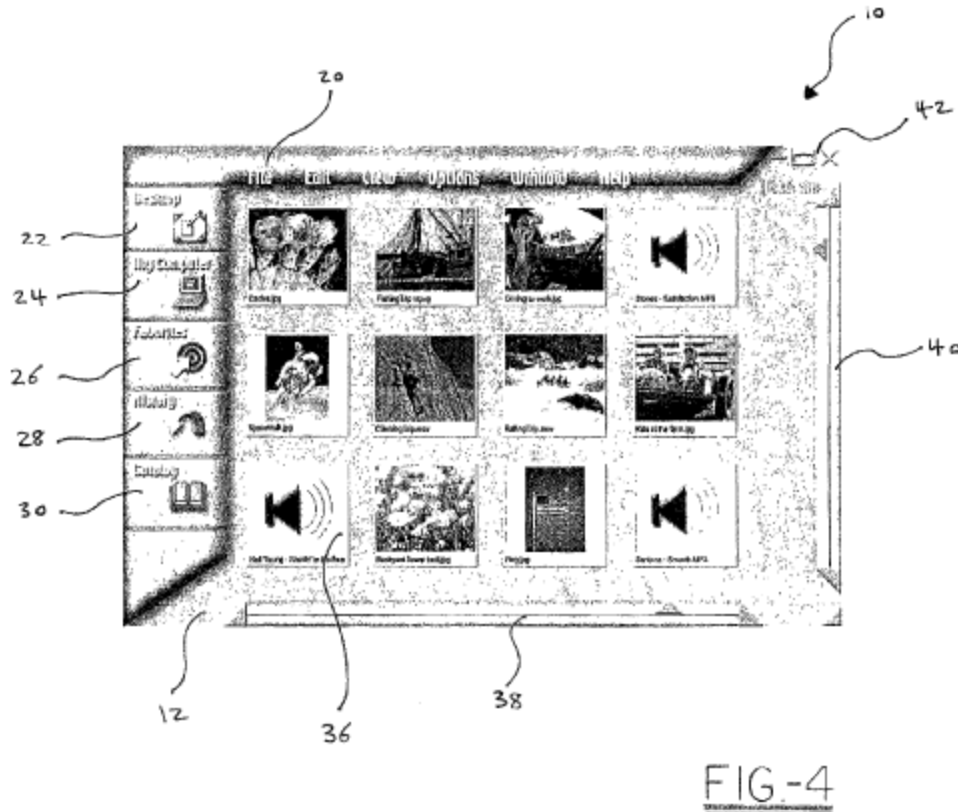
19. Claim 19

See [5].

B. [GROUND 2A] – Kaplan Renders Claims 1, 6, 11, and 16-19 Obvious

1. Kaplan

Kaplan is directed to a “system for storing, manipulating, and displaying multimedia content,” which includes a user interface to uniquely index multimedia files and create an index database file. LG-1004, [0004], [0044]. The indexed file stores a pointer in a database to a physical file location, while providing a thumbnail image that can be used to represent the file in the user interface. *Id.* Multiple pointers in the database may be related to a single physical file stored on computer media, eliminating the need to store multiple physical files of the same data. *Id.*



LG-1004, FIG. 4.

Figure 4 (above) shows control options available to a user via interface 12 displayed on a “monitor or TV.” LG-1004, [0014], [0039]. Functions associated with user interface 12 may be carried out via control buttons for primary options in user interface 12, including Favorites 26, History 28, and Catalog 30. *Id.*, [0039]-[0040]. For example, users may store their favorite multimedia content by way of the Favorites 26 primary option. *Id.*, [0042]. Multimedia content is displayed through thumbnails 36. *Id.*, [0040]. A user may click on thumbnails to view/playback multimedia content. *Id.*, [0050], [0051].

2. Claim 1

[1.pre]

To the extent the preamble is limiting, Kaplan discloses or renders obvious [1.pre]. LG-1004, [0004], [0037]-[0038], [0068]-[0069]; LG-1003, ¶¶189-190. Kaplan discloses a “system for storing, manipulating, and displaying multimedia content” selected by a user, and can be implemented on various devices, including a computer. *Id.* The computer (apparatus) may include a computer-readable storage medium for storing multimedia content, such as video data. LG-1004, [0034], claim 7.

[1.a]

Kaplan discloses or renders obvious [1.a]. LG-1004, Abstract, [0004], [0034], [0037]-[0038], [0043]-[0044], [0068]-[0071], claim 7; LG-1003, ¶¶191-194. Kaplan’s “system provides users with a simple and intuitive method and computer program for reviewing multimedia content, which can include digital video,” and is “for storing, manipulating, and displaying multimedia content,” including “digital video.” LG-1004, Abstract, [0004]; *see id.*, [0038]. “Any suitable computer readable medium may be utilized including hard disks.” LG-1004, [0034].

For the same reasons discussed for Bryant, a POSITA would have understood the “hard disk” of Kaplan necessarily includes a circuitry (“recording unit,” per claim 11), e.g., a hard disk controller, that serves as an intermediary between

the CPU and the physical storage platter of the hard drive to store data to the disk drive. LG-1003, ¶¶192-194; §III.A.2([1.a]).

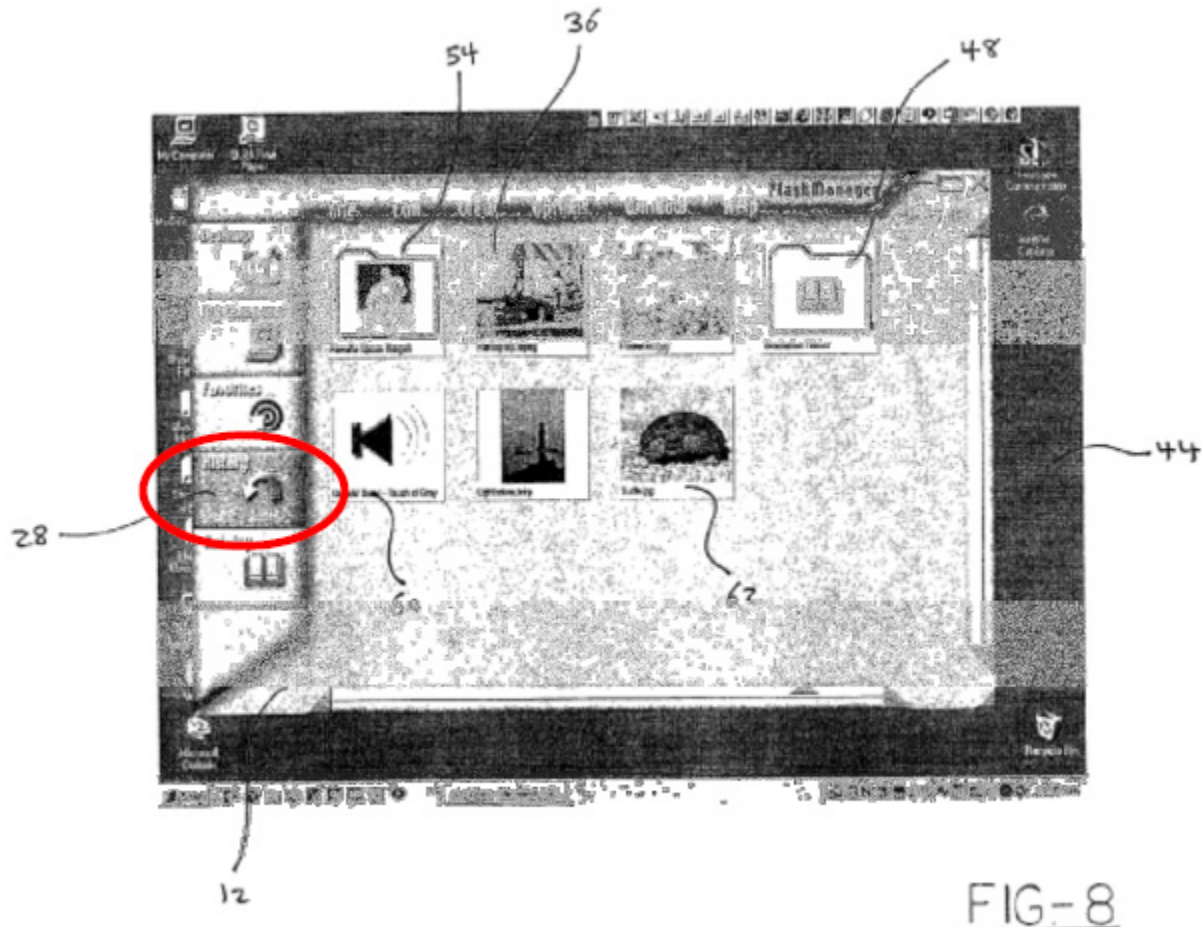
[1.b]

Kaplan discloses or renders obvious [1.b]. LG-1004, [0039]-[0040], [0050]-[0051], [0056]-[0057], FIGS. 1 (“user interface”), 3-12, 14, 16, claim 16; LG-1003, ¶¶195-198; *see* [1.e.i], [1.f.i].

Specifically, Kaplan explains that the “system 10 may include a user interface 12” that has “control buttons 15 for controlling viewing and other options associated with the multimedia management system 10, as well as organizing and handling media and media presentation.” LG-1004, [0039], FIG. 2. FIG. 3 shows the functions associated with the user interface, which can be carried out view interfaces, shown, for example, in FIGS. 2 and 4. *Id.*, [0040].

Figure 8 (below) shows an example menu display, where a user has selected “History” (annotated below). LG-1004, FIG. 8; *see id.*, FIGS. 7 (“Favorites”), 11 (“Catalog”). A POSITA would have understood that Kaplan’s menu (interface 12) displays, for user selection, a group of video data (e.g., displayed categories, such as “Favorites”) among a plurality of groups of video data (e.g., “Favorites,” “History,” “Catalog”). LG-1004, ¶197. Kaplan explains, “[t]o select one of the primary options, the user typically will move and click a mouse pointer over the de-

sired button,” thereby specifying a position of a character (e.g., selecting determining a position of a character) that corresponds to the one group of video data (e.g., by clicking the mouse pointer on one or more characters of “Favorites”). LG-1004, [0040]; LG-1003, ¶¶197-198; *see also* LG-1001, 6:3-16.



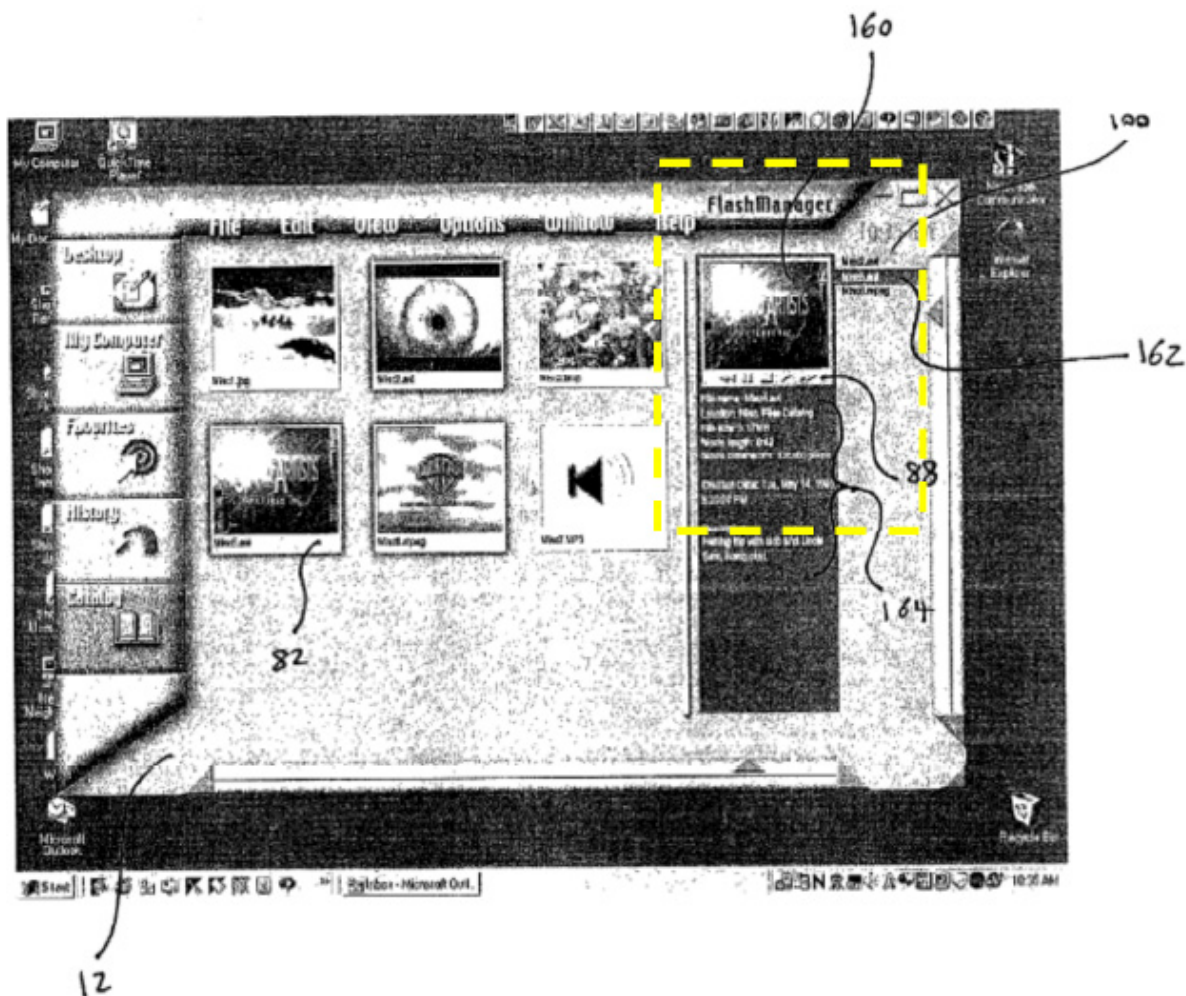
LG-1004, FIG. 8 (annotated)

[1.c]

Kaplan discloses or renders obvious [1.c]. LG-1004, [0004], [0006], [0034], [0037]-[0038], [0044], [0050]-[0057], [0068]-[0069]; LG-1003, ¶¶199-204.

Kaplan discloses a computer-readable storage medium for storing multimedia content, such as video data. LG-1004, [0034], claim 7.

Kaplan discloses an interface 12 for reproducing for display user-selected video data from among a plurality of video data recorded on a recording medium by the recording unit. LG-1004, [0038]; LG-1003, ¶200. For example, video files can be played back directly from a user-selected thumbnail in the interface, per FIG. 16. LG-1004, [0057], [0051] (“allows users to play multimedia”), FIGS. 12, 13A-13B, 14, 16.



LG-1004, FIG. 16 (annotated)

If Kaplan does not disclose [1.c], it would have been obvious. LG-1003,

¶201. The '072 Patent admits that reproduction of video from a recording medium was “conventional.” *See* §II.A.

Moreover, for the same reasons discussed for Bryant, a POSITA would have understood the “hard drive 20” of Kaplan necessarily includes a circuitry (“reproducer”), e.g., a hard disk controller, that serves as an intermediary between physical storage platter of the hard drive and the CPU in order to retrieve data from memory to “display[] multimedia content.” LG-1003, ¶¶202-204; LG-1004, [0004], [0051]; §III.A.2([1.c]).

[1.d]

Kaplan discloses or renders obvious [1.d]. LG-1004, [0037]; LG-1003, ¶205. Specifically, Kaplan explains that “various computers and/or processors may be used to carry out the present invention.” LG-1004, [0037].

[1.e.i]

Kaplan discloses or renders obvious that, when a first group of video data (e.g., “Favorites,” “History”) is selected in the menu display (circled green) by specifying a position of a character (e.g., selecting and determining a position of a character) corresponding to the first group of video data (e.g., selecting “Favorites” or “History” by “mov[ing] and click[ing] a mouse pointer over the desired [Favorites or History] button”), the controller controls the output unit to display a first

group of thumbnails corresponding to the first group of video data (circled red).

LG-1004, [0040], [0042]-[0047] (discussing button displays, such as “Favorites,” “History”), [0048]-[0050], FIGS. 7-12, 14, 16; LG-1003, ¶¶206-211; *see also* LG-1001, 6:3-16.

Kaplan’s user interface 12 includes a first area (circled blue) and a second area (circled red) displayed within a menu display (circled green). LG-1004, 2, 4-12, 14, 16-17; LG-1003, ¶¶207-208.

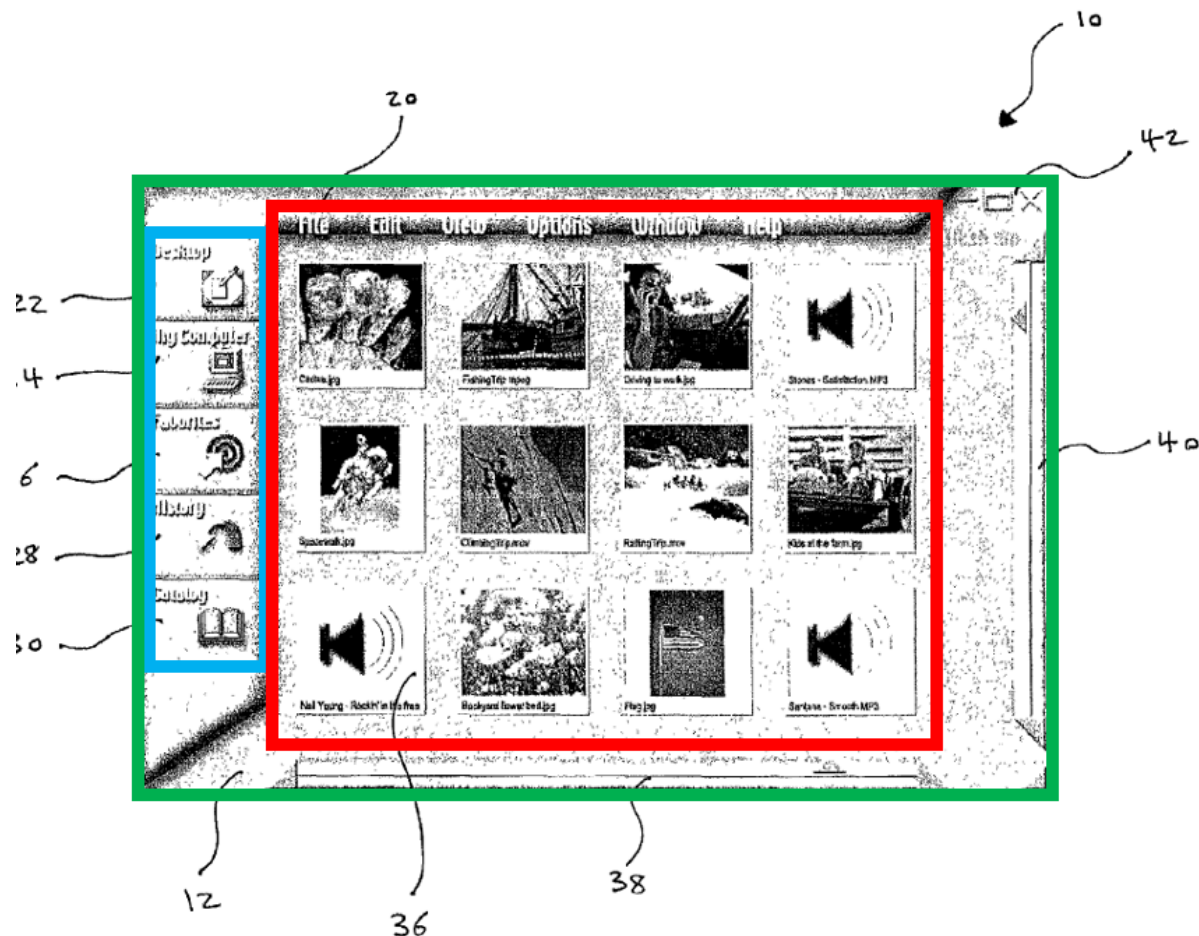
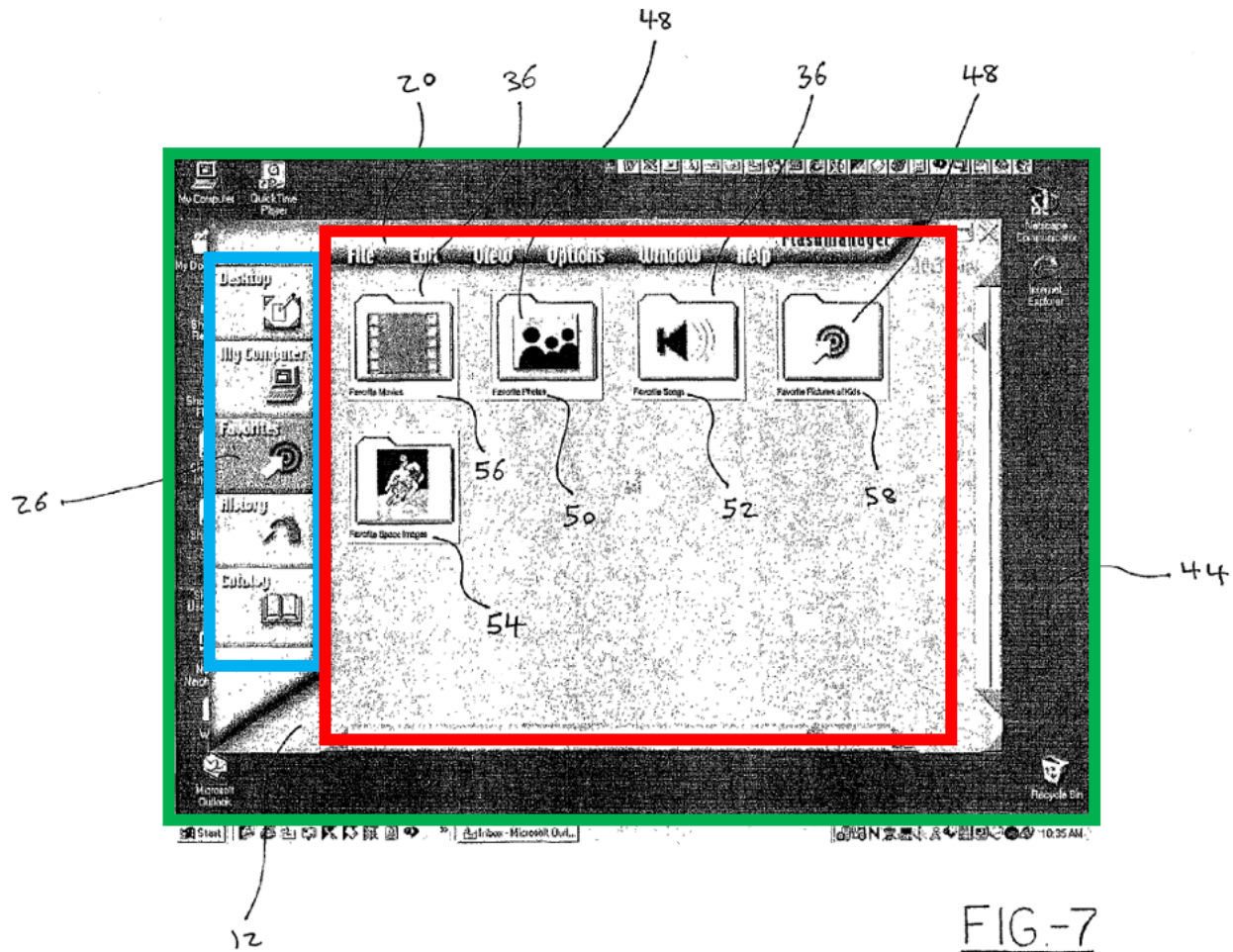


FIG.-4

LG-1004, FIG. 4 (annotated)

The first area (blue) is configured to display at least a first group of video data. LG-1004, FIGS. 2, 4-12, 14, 16-17; LG-1003, ¶209. The second area is configured to display thumbnails corresponding to video data recorded on the recording medium by the recording unit for a given, selected group of video data. LG-1004, [0044]-[0050], FIGS. 2, 4-12, 14, 16-17; LG-1003, ¶209. For instance, when a user selects “Favorites,” as shown in FIG. 7, the thumbnails corresponding to a user’s favorites are displayed on the interface by the display monitor. LG-1004, [0040]-[0042], FIG. 7; *see id.*, FIG. 8 (“History”), FIG. 11 (“Catalog”); LG-1003, ¶209.



LG-1004, FIG. 7 (annotated)

If Kaplan does not disclose this feature, the claimed menu features would have been obvious. LG-1003, ¶¶210-211. Each of the menu requirements was an obvious design choice given the state of the art and knowledge of a POSITA by the Critical Date. *See* §II.A; LG-1003, ¶210. The inclusion of standard menu features and media management techniques would have been well within the skill of a POSITA; Kaplan uses conventional components and programming. *See* LG-1003, ¶¶211; LG-1004, [0037]-[0038], [0040], FIG. 3.

[1.e.ii]

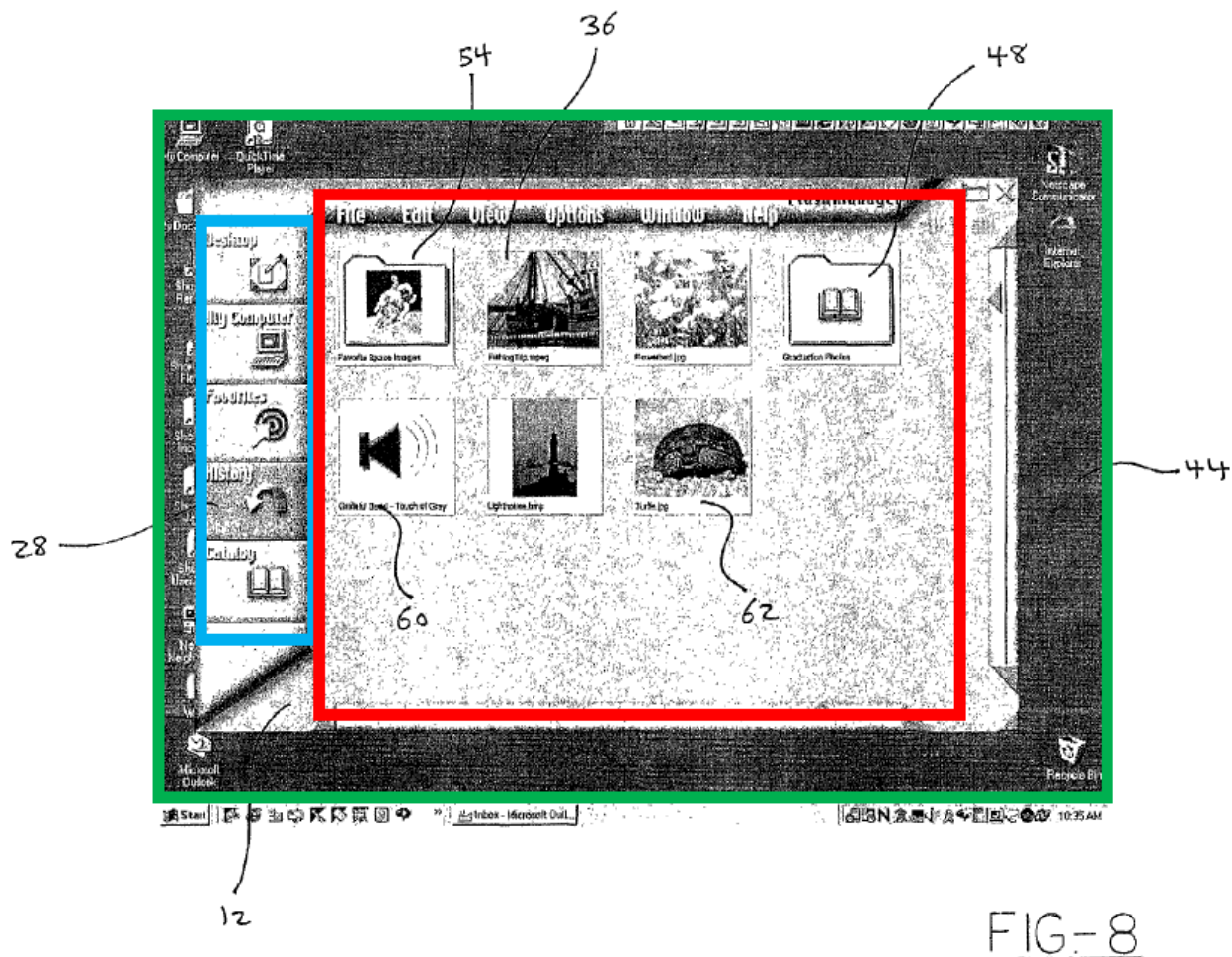
Kaplan discloses or renders obvious [1.e.ii]. LG-1004, [0040], [0048]-[0049]; LG-1003, ¶¶212-215. Kaplan explains that a user can add thumbnails to folders (containers) and change the appearance of the thumbnails, so the content is user-editable, including through “drag and drop” manipulation. LG-1004, [0048]-[0049]. Kaplan further describes its interface as including “operational options that correspond to common features of the Windows operating system.” *Id.*, [0040]. Indeed, a feature available in Windows by the Critical Date was the ability to sort and edit the order of displayed thumbnails. LG-1010, 32. For example, pre-Critical Date Windows 95 displayed “[f]older contents [that] can easily be sorted.” *Id.* Thus, allowing for editing the order of thumbnails was obvious and well-known by the Critical Date. LG-1003, ¶¶214-215; *see, e.g.*, LG-1010, 32; LG-1004, [0094]; LG-1021, [0235]; LG-1030, 9:61-67, 10:14-20.

[1.f.i]

Kaplan discloses or renders obvious that, when a second group of video data (e.g., “History”) is selected in the menu display (circled green) by specifying a position of a character (e.g., selecting and determining a position of a character) corresponding to the second group of video data (e.g., the user has selected “History” by “mov[ing] and click[ing] a mouse pointer over the desired button”), the controller controls the output unit to display a second group of thumbnails corresponding

to the second group of video data (circled red). LG-1004, [0040], [0042]-[0047] (discussing button displays), [0048]-[0050], FIGS. 7-12, 14, 16; LG-1003, ¶¶216-218; *see also* LG-1001, 6:3-16; *see* [1.e.i].

For instance, when a user selects “History” (in first area circled blue) shown in FIG. 8, “thumbnails that the user has recently accessed” are displayed on the interface by the display monitor (in second area circled red). LG-1004, [0045], FIG. 8; *see id.*, FIGS. 7 (“Favorites”), FIG. 8 (“History”); LG-1003, ¶¶217.



LG-1004, FIG. 8 (annotated)

If Kaplan does not disclose this feature, the claimed menu features would have been obvious. *See* [1.e.i]; LG-1003, ¶218.

[1.f.ii]

See [1.e.ii].

[1.g]

Through its use of an indexed database file and pointers, Kaplan discloses [1.g]. LG-1004, [0042], [0044] (describing Kaplan’s “visual inventory of all multimedia content ... to facilitate retrieval of desired content”), FIGS. 7-12, 14, 16, claim 20; LG-1003, ¶¶220-226; *see* [5] (Ground 2B). Kaplan teaches that “[t]he indexed file stores a pointer in the management system database to the physical file location, while providing a thumbnail image that can be used to represent the file in the management system user interface.” LG-1004, [0044]. With indexed database file and pointers, the groups of video data in the different categories are “independently editable”—a single data file is represented by multiple representations in the user interface, when a representation in one group (*e.g.*, “Favorites”) is deleted, the representation of that file in other groups (*e.g.*, “History,” “Catalog”) remain. *See* LG-1003, ¶¶221-222. In fact, Kaplan included a claim to this very concept. LG-1004, claim 20 (“pointer to a single data file stored on computer readable memory”).

In Kaplan, content is indexed by the system for easy retrieval by reference to a relevant index file. LG-1004, [0044]. A POSITA would have understood from Kaplan's description of its indexing and use of multiple pointers that, even if one video data recorded on the recording medium included in both the first group of video data and the second group of video data is deleted from the first group of video data, the one video data continues to be included in the second group of video data. LG-1003, ¶¶223-224. Additionally, a POSITA would have recognized that the way video data is included in a particular group is by including pointers to an indexed video. *Id.*; LG-1004, [0042]. A POSITA would further have understood that, because the video remained in the second group, its thumbnail would also remain when the second group of thumbnails is displayed. *Id.*

If Kaplan does not disclose [1.g], it would have been obvious—the use of pointers to data objects, such as video files, was well-known and commonplace. LG-1003, ¶225; §II.A. It would have been an obvious design choice to include independently editable groups in Kaplan, and the inclusion of such a standard feature would have been well within the skill of a POSITA given the well-known and ubiquitous use of pointers in the field. As Dr. Cockburn states, “given the state of the art at the time, a user would have found the *absence* of such a feature surprising.” LG-1003, ¶225. Bryant corroborates the well-known use of pointers with

teachings on this topic consistent with those of Kaplan and Horn. *Id.*; *see* §II.A, §III.D.1-2.

3. Claim 6

[6.pre]-[6.a]

See [1.pre]-[1.a].

[6.b]

See [1.c].

[6.c]

See [1.b].

[6.d.i]-[6.d.ii]

See [1.e.i]-[1.e.ii].

[6.e.i]-[6.e.ii]

See [1.f.i]-[1.f.ii].

[6.f]

See [1.g].

4. Claim 11

[11.pre]-[11.c]

See [1.pre]-[1.c].

[11.d.i]

See [1.d]-[1.e.i].

[11.d.ii]

See [1.e.ii].

[11.e.i]

See [1.d], [1.f.i].

[11.e.ii]

See [1.f.ii].

[11.f]

See [1.g].

5. Claim 16

[16.pre]-[16.a]

See [1.pre]-[1.a].

[16.b]

See [1.c].

[16.c]

See [1.b].

[16.d]

See [1.d].

[16.e]

See [1.b].

[16.f.i]-[16.f.ii]

See [1.e.i]-[1.e.ii].

[16.g.i]-[16.g.ii]

See [1.f.i]-[1.f.ii].

[13.h]

See [1.g].

6. Claim 17

See [3.a]-[3.b] (Ground 2B).

7. Claim 18

See [4.a]-[4.b] (Ground 2B).

8. Claim 19

See [5] (Ground 2B).

C. [GROUND 2B] – Kaplan-Sporer Renders Claims 2-5, 7-10, and 12-15 Obvious

1. Sporer

Sporer relates to a “digital motion video processing circuit [that] can capture, playback and manipulate digital motion video information using the system memory of a computer as a data buffer for holding compressed video data from the circuit.” LG-1029, Abstract. Sporer explains that “digitized data is often compressed, using common compression standards such as” MPEG and Motion-JPEG compression. LG-1029, 1:17-23. However, sometimes “motion video information [is] stored in a different form of computer data file, requiring conversion, for example, from Motion-JPEG to MPEG.” LG-1029, 1:24-44. Additionally, if one wishes to edit a video, “[m]otion video information may also need to be processed,” which “may require the steps of decompression of the video information, addition of the effect and compression of the resulting video information.” LG-1029, 1:45-52.

To address these concerns, Sporer discloses a video processing circuit with other components in Figure 1 (below). LG-1029, FIG. 1. The digital motion video processing circuit that can be implemented in a computer system, such as the example computer system shown in Figure 2 (below). LG-1029, 4:12-65.

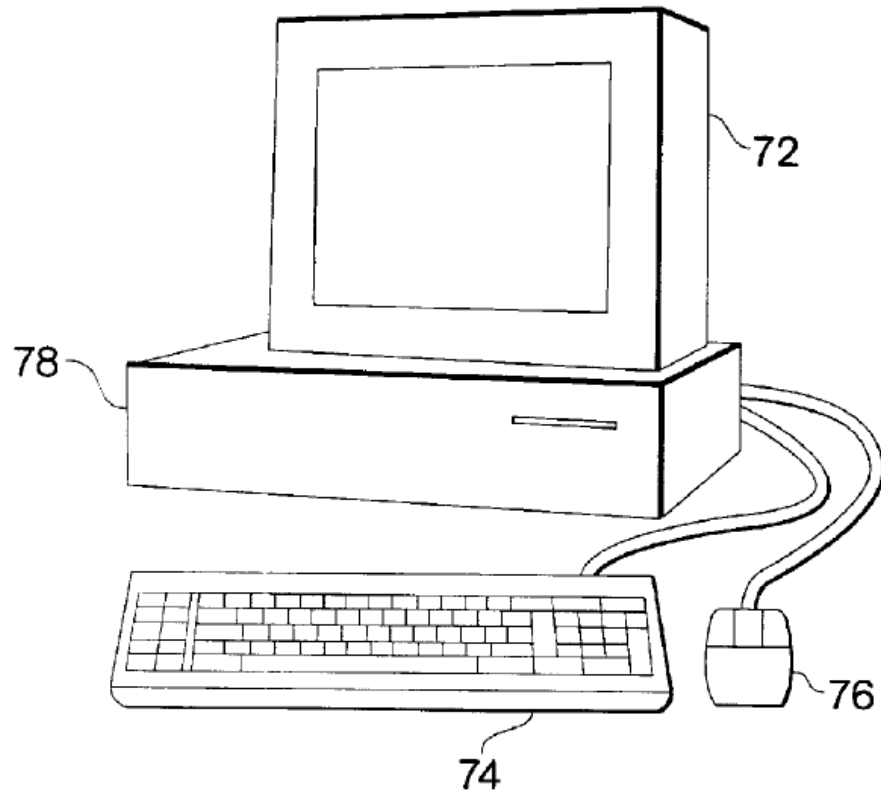


Fig. 2

LG-1029, FIG. 2

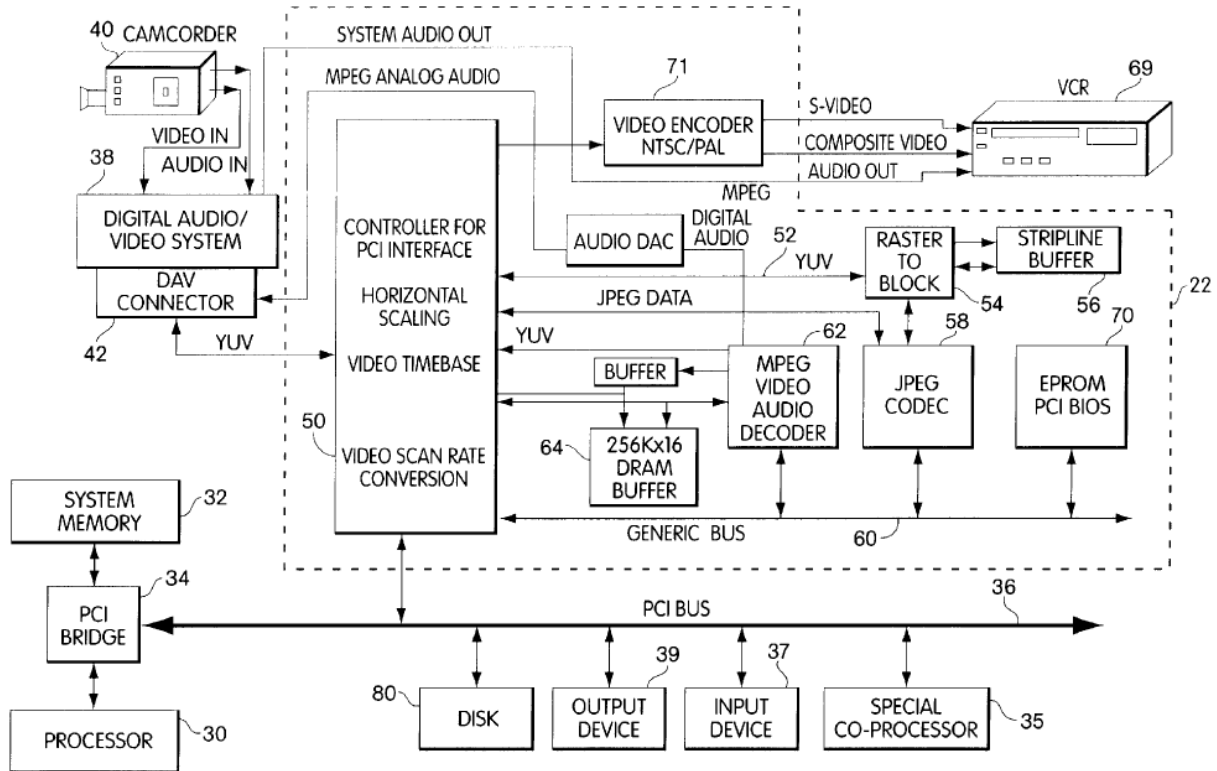


Fig. 1

LG-1029, FIG. 1

Referencing Figure 1, Sporer explains that its video processing circuit 22 can be used with a computer system, which includes “an audio/video input/output system 38” that “can be connected to receive audio and video information input, for example, from a camcorder 40.” LG-1029, 3:56-4:11. The “video processing circuit 22 includes a controller 50 which handles operations for interfacing to the PCI bus” and controlling other components such as “JPEG compression/decompression circuit including a raster to block converter 54, which uses buffer 56, and a JPEG codec 58” and “a video and audio encoder/decoder (codec) 62 for encoding and decoding MPEG format video and audio.” LG-1029, 5:49-6:17.

2. Kaplan-Sporer

Kaplan describes a “system for storing, manipulating, and displaying multimedia content” that allows users to “review[] multimedia content, which can include digital video.” LG-1004, [0004]. Kaplan’s system “is particularly well suited for use with digital cameras” or other “interface devices that allow video tape images to be digitized and downloaded to computers.” *Id.*, [0058]; *see id.*, [0037]. Kaplan does not, however, provide implementation details regarding how this multimedia can be input from external video devices to a computer. LG-1003, ¶260. As such, a POSITA would have naturally looked to other references available well before the Critical Date, such as Sporer, that describe such functionality and related components. *Id.*

Like Kaplan, Sporer teaches a computer system that stores, processes, and plays back multimedia files and works with external video devices. LG-1029, Abstract, 4:4-10, FIG. 1. As shown in Figure 1 (below), for example, Sporer describes its “video processing circuit 22 ... in combination with an example computer system.” LG-1029, 3:56-59. The computer system “includes an audio/video input/output system 38 through which analog audio and digital video information are provided,” which “can be connected to receive audio and video information input, for example, from a camcorder 40.” *Id.*, 4:4-10.

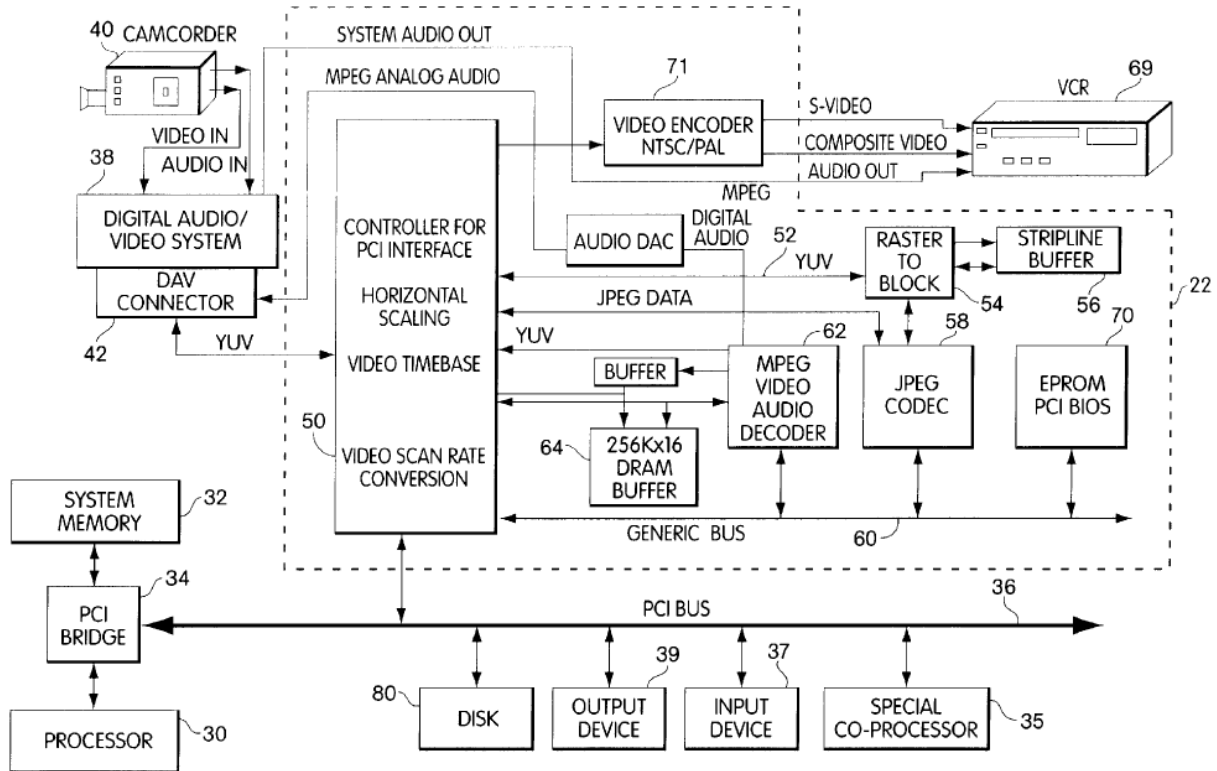


Fig. 1

LG-1029, FIG. 1

Sporer further recognizes that “computer systems ... for capturing motion video information as a computer data file including data representative of a sequence of several digital still images,” where such “digitized data is often compressed, using common compression standards” like MPEG and motion-JPEG. LG-1029, 1:17-23. In describing its “video processing circuit 22,” Sporer describes storing and processing MPEG format data using, among other components, “a video and audio encoder/decoder (codec) 62 for encoding and decoding MPEG format video and audio.” LG-1029, 5:59-6:8.

A POSITA would have found obvious integration of video processing circuit, per Sporer, in Kaplan to enhance Kaplan's system "for use with digital cameras" or other "interface devices that allow video tape images to be digitized and downloaded to computers." LG-1003, ¶¶261-263; LG-1004, [0037], [0058]. Including video processing circuitry in Kaplan's system, per Sporer, would enable the combination system to "capture full-rate motion video information" and "play-back full-rate motion video" by "using the system memory of a computer as a data buffer for holding compressed video data from the circuit." LG-1029, 3:66-4:5. A POSITA would have been motivated, for example, to include in Kaplan's system, "a video and audio encoder/decoder (codec) 62 for encoding and decoding MPEG format video and audio," per Sporer, where Kaplan already describes such files as being stored and played on its computer. LG-1029, 6:6-8; LG-1004, [0050]; *see* LG-1029, 5:59-6:17; LG-1003, ¶263.

A POSITA would have found it obvious to include in the combination ("Kaplan-Sporer combination") a video processing circuit, per Sporer, where such circuitry would include, among other components, an encoder that receives video data input from external devices (e.g., Kaplan's camcorder) and processes that data for storage. LG-1003, ¶264; LG-1029, 4:66-5:10, 5:59-6:37, 11:50-12:7. Kaplan teaches transferring videos and images from external devices (e.g., digital cameras), where files are "downloaded to computers." LG-1004, [0058]. A POSITA

would have understood that, in the combination device, input video data from the external devices would be processed (e.g., encoded) using video processing circuitry, per Sporer, and stored in Kaplan's recording medium, as both Sporer and Kaplan teach. LG-1003, ¶264; LG-1004, [0034]; LG-1029, 4:66-5:10, 5:59-6:37, 11:50-12:7.

Combining the teachings of Kaplan and Sporer would have merely involved combining prior art elements—for example, a multimedia management system per Kaplan and components (e.g., codecs) for processing input multimedia data per Sporer—according to known methods to yield predictable results. LG-1003, ¶265. A POSITA would have been motivated to combine the teachings of Kaplan and Sporer to realize the implementation details (of Sporer) for receiving and processing video data from external devices, as Kaplan describes. For example, a POSITA would have been motivated to include video codecs, such as an MPEG codec, for encoding video data received from external devices into a format playable on Kaplan's computer. *Id.*; LG-1004, [0050]; *see* LG-1031, [0077].

A POSITA would have had a reasonable expectation of success implementing the combination since Kaplan explicitly teaches displaying “MPEG multimedia file formats,” and video processing circuitry, including an encoder, as taught by Sporer would merely offer a means for encoding and decoding such “MPEG multimedia file[s].” LG-1003, ¶266.

The combination would have been predictable and foreseeable because 1) both disclose computing systems that store, process, and play back multimedia files from external video devices (LG-1004, [0004], [0037], [0058]; LG-1029, Abstract, 4:4-10, FIG. 1) and both describe the use of MPEG files (LG-1004, [0050]; LG-1029, 5:59-6:17), and 2) the combination merely involves incorporating known features that are explicitly disclosed by Sporer and would have been understood by a POSITA as likely present, but not explicitly disclosed by Kaplan. LG-1003, ¶267. The combination is predictable, at least, because elements of the combined system would each perform similar functions they had been known to perform prior to the combination. *Id.* The computer of Kaplan would still perform the same functions, including storing, manipulating, and displaying multimedia content and receiving such content from external devices, as it did prior to the combination with Sporer. *Id.*

3. Claim 2

Kaplan-Sporer renders obvious [2]. LG-1004, [0034], [0050], [0058]; LG-1029, 6:6-8, FIG. 1; LG-1003, ¶¶268-270; §III.C.1-2. Kaplan explains that its interface displays, for example, “thumbnails,” which “display images representing movies saved in the AVI and MPEG multimedia file formats.” LG-1004, [0050]. Sporer describes a system that includes “a video processing circuit” with “a video

and audio encoder/decoder (codec) 62 for encoding and decoding MPEG format video and audio.” LG-1029, 6:6-8, FIG. 1.

As discussed in §III.C.2, a POSITA would have found it obvious to include a video processing circuit, per Sporer, which includes an encoder that receives video data from external devices, such as Kaplan’s camcorder. LG-1003, ¶270; §III.C.2. Kaplan further teaches transferring videos/images from external devices (e.g., digital cameras), where files are “downloaded to computers.” LG-1004, [0058]. A POSITA would have understood that, in the combination, input video data from the external devices would be processed (e.g., encoded) using video processing circuitry, per Sporer, and then stored in Kaplan’s recording medium. LG-1003, ¶270; LG-1004, [0034].

4. Claim 3

[3.a]

Kaplan discloses [3.a]. LG-1004, [0040], [0042]-[0047], FIGS. 4, 7-12, 14, 16; LG-1003, ¶¶271-273.

For example, as shown in FIG. 4 (below) Kaplan’s user interface 12 includes a first area (circled blue) and a second area (circled red) that are displayed within a menu display (circled green). LG-1004, FIG. 4.

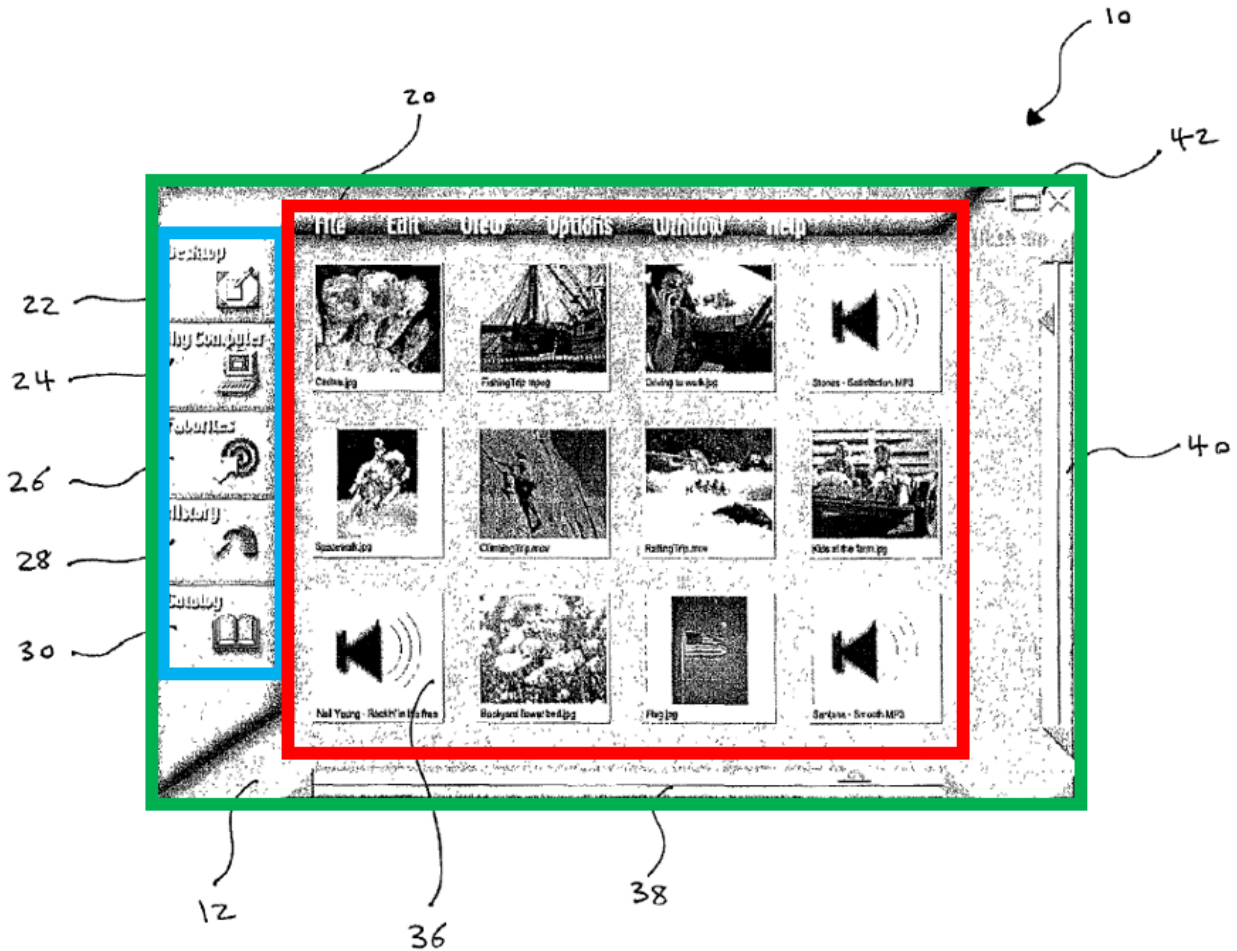
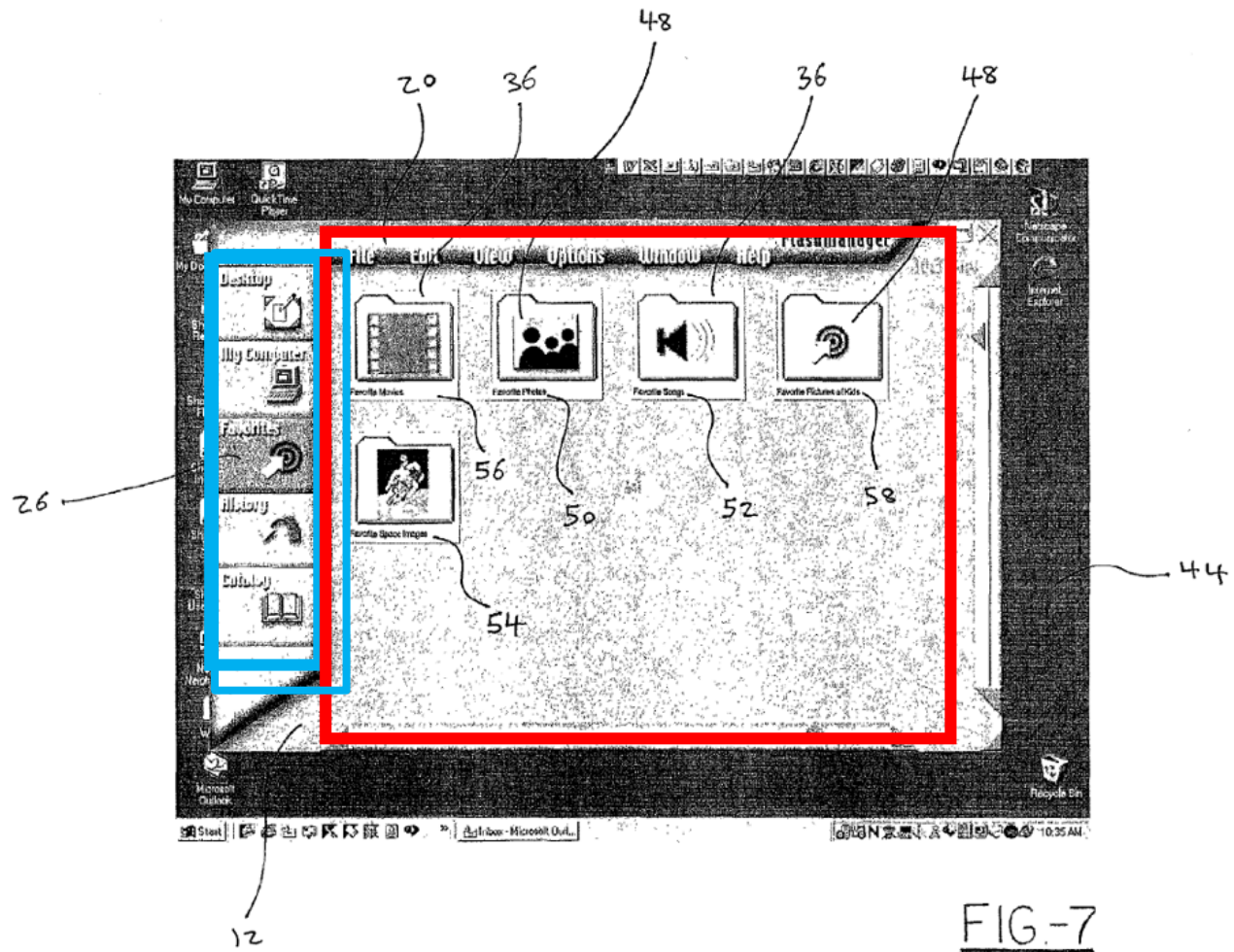


FIG.-4

LG-1004, FIG. 4 (annotated)

As shown in FIG. 7 (below) a first character (one or more letters of “Favorites”) corresponding to the first group of video data (“Favorites” folder) is displayed in a first area (circled blue) when the first group of thumbnails is displayed (circled red). LG-1004, FIG. 7; LG-1003, ¶273.

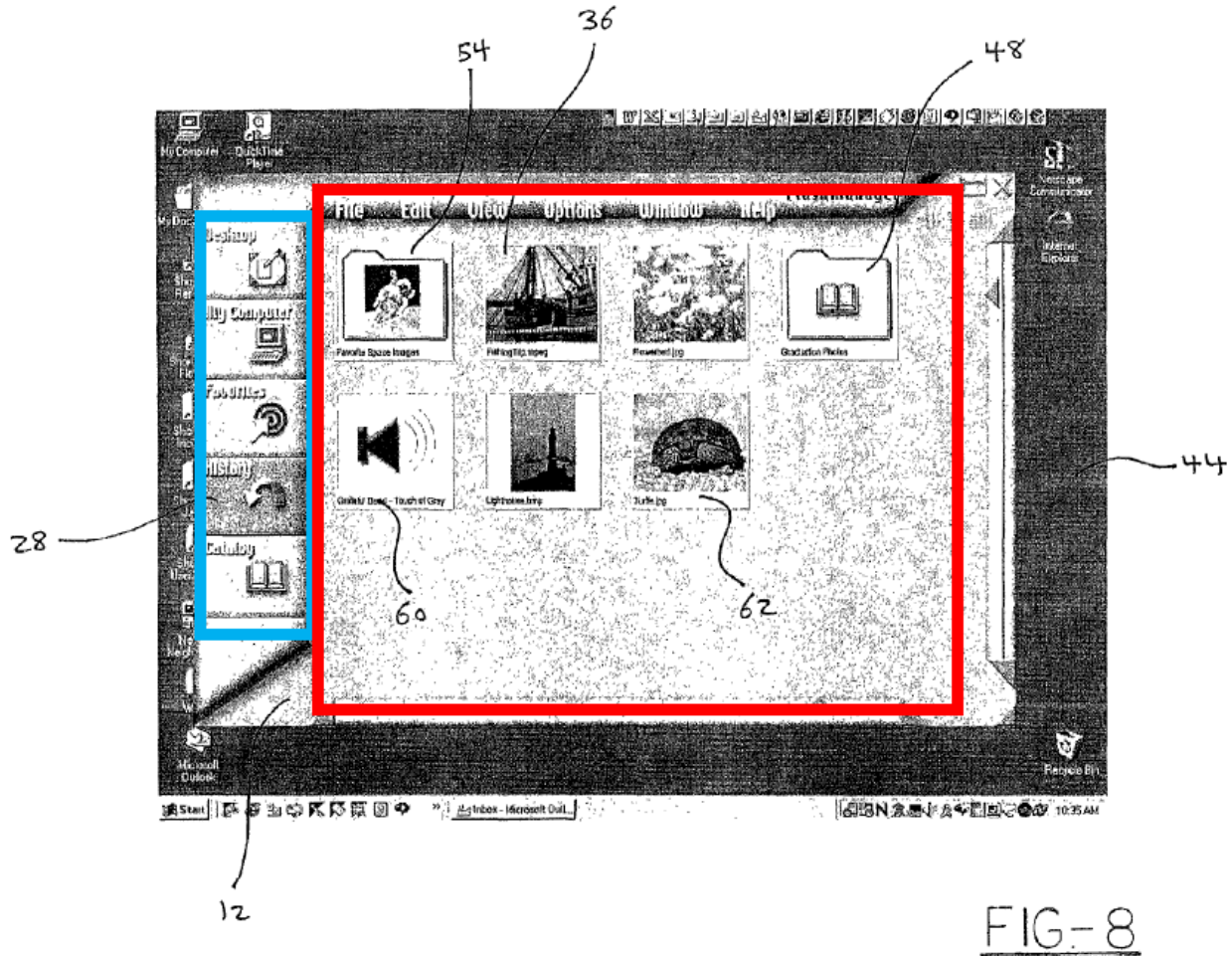


LG-1004, FIG. 7 (annotated)

[3.b]

Kaplan discloses [3.b]. LG-1004, [0040], [0042]-[0047], FIGS. 7-12, 14, 16; LG-1003, ¶¶274-275; *see* [3.a].

As shown in FIG. 8, below, a second character (“History”) corresponding to the second group of video data (“History” folder) is displayed in a first area (circled blue) when the second group of thumbnails is displayed (circled red). LG-1004, FIG. 8; LG-1003, ¶275.



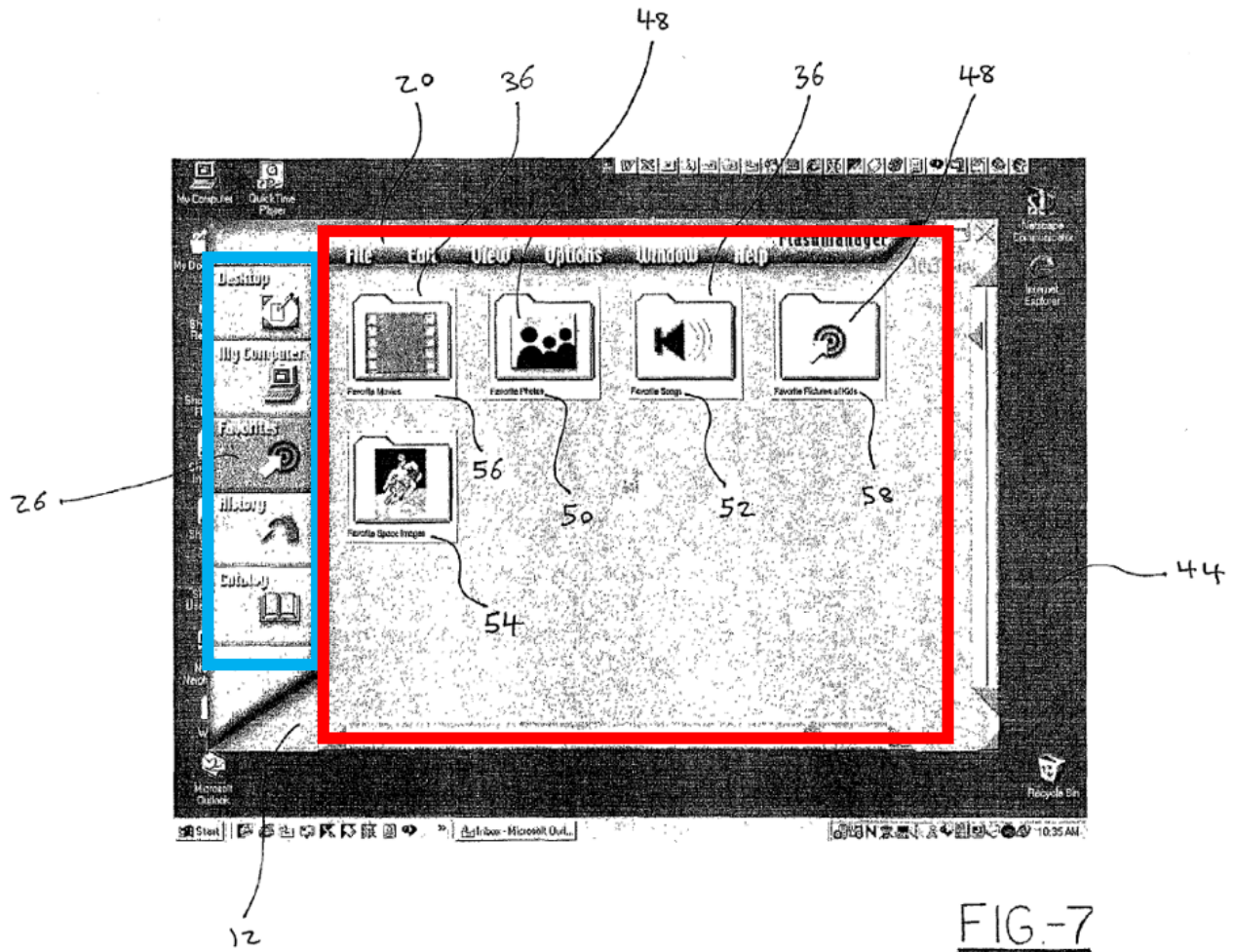
LG-1004, FIG. 8 (annotated)

5. Claim 4

[4.a]

Kaplan discloses [4.a]. LG-1004, FIGS. 7-12, 14, 16; LG-1003, ¶¶276-277; *see* [3.a]-[3.b].

As shown in FIG. 7, below, the first group of thumbnails is displayed in a second area (circled red) different from the first area (circled blue). LG-1004, FIG. 7; LG-1003, ¶277.



LG-1004, FIG. 7 (annotated)

[4.b]

Kaplan discloses [4.b]. LG-1004, FIGS. 7-12, 14, 16; LG-1003, ¶¶278-279; *see* [4.a].

As shown in FIG. 8, below, the second group of thumbnails is displayed in a second area (circled red). LG-1004, FIG. 8; LG-1003, ¶279.

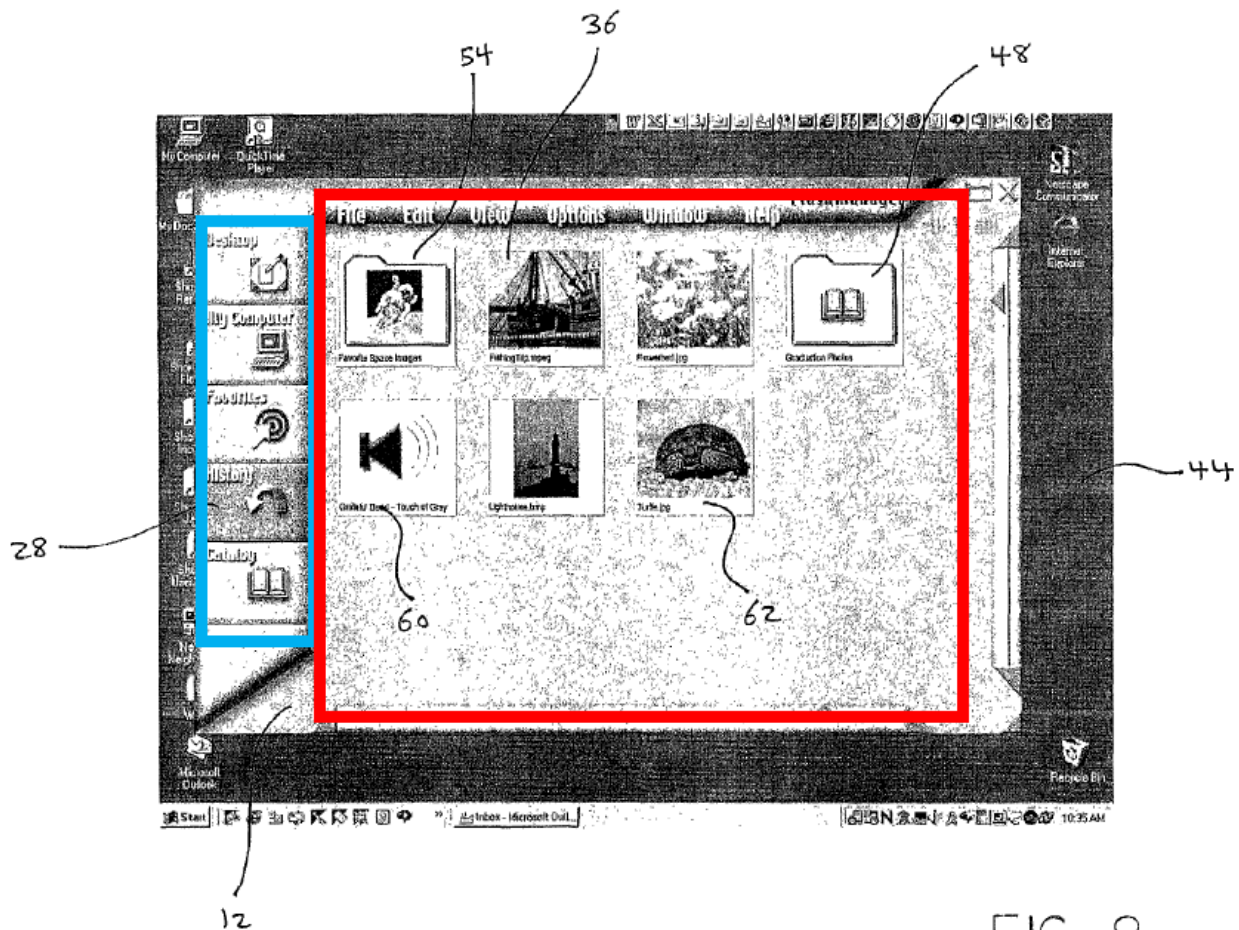


FIG-8

LG-1004, FIG. 8 (annotated)

6. Claim 5

See [1.g] (Ground 2A); LG-1003, ¶¶280-285.

Kaplan's "media management database" stores pointers for multimedia content such that "there is no need to store multiple physical files of the multimedia data, thereby saving storage space." LG-1004, [0042], [0044]; LG-1003, ¶281. Thus, a POSITA would have understood that deleting the one video data from the first group merely removes the pointer for the one video data that references the

first group and does not delete the one video data from the recording medium. *Id.*, ¶¶282-284.

Additionally, a POSITA would have understood that, if deleting the one video data from the first group does not delete the one video data from the second group, then it would have been obvious for the one video data to remain on the recording medium so that it continues to be available in the second group. LG-1003, ¶¶282-285.

7. Claim 7

See [2].

8. Claim 8

See [3.a]-[3.b].

9. Claim 9

See [4.a]-[4.b].

10. Claim 10

See [5].

11. Claim 12

See [2].

12. Claim 13

See [3.a]-[3.b].

13. Claim 14

See [4.a]-[4.b].

14. Claim 15

See [5].

D. [GROUNDS 3, 4A, AND 4B] – Bryant in view of Kaplan Renders Claims 1-19 Obvious (Ground 3); Kaplan in view of Bryant Renders Claims 1, 6, 11, and 16-19 Obvious (Ground 4A); Kaplan in view of Bryant and Sporer Renders Claims 2-5, 7-10, and 12-15 Obvious (Ground 4B)

The combination of Bryant and Kaplan renders obvious all features of claims 1-16 (Ground 3). Similarly, the combination of Kaplan and Bryant renders obvious all features of claims 1, 6, 11, and 16-19 (Ground 4A). Additionally, the combination of Kaplan, Sporer, and Bryant renders obvious all features of claims 2-5, 7-10, and 12-15 (Ground 4B). An identification of where each limitation of the claim is disclosed in each reference is set forth above with respect to Ground 1 and Grounds 2A/2B. *See* discussion §§III.A, III.B, and III.C.

1. Bryant in view of Kaplan (Ground 3)

A POSITA would have been motivated to update Bryant by adding Kaplan's specific reproduction (e.g., playback) features into the user interface of Bryant (*see, e.g.*, LG-1005, FIGS. 9A-9C). LG-1003, ¶¶301, This would include one or more of Kaplan's in-window thumbnail playback mechanism, or the specific full/partial screen playback mechanisms. *Id.*; LG-1004, [0051], FIG. 12, FIG. 16 (annotated below), [0057] ("Referring to FIG. 16 ... [f]or the convenience of the user, Player Controls 88 are included within the thumbnail 160, thereby allowing

the user to preview the video/audio thumbnail selected while reviewing the detailed information. Another feature of user interface 12 is the ability to preview any selected video computer file in full screen mode.”); LG-1003, ¶¶298-303.

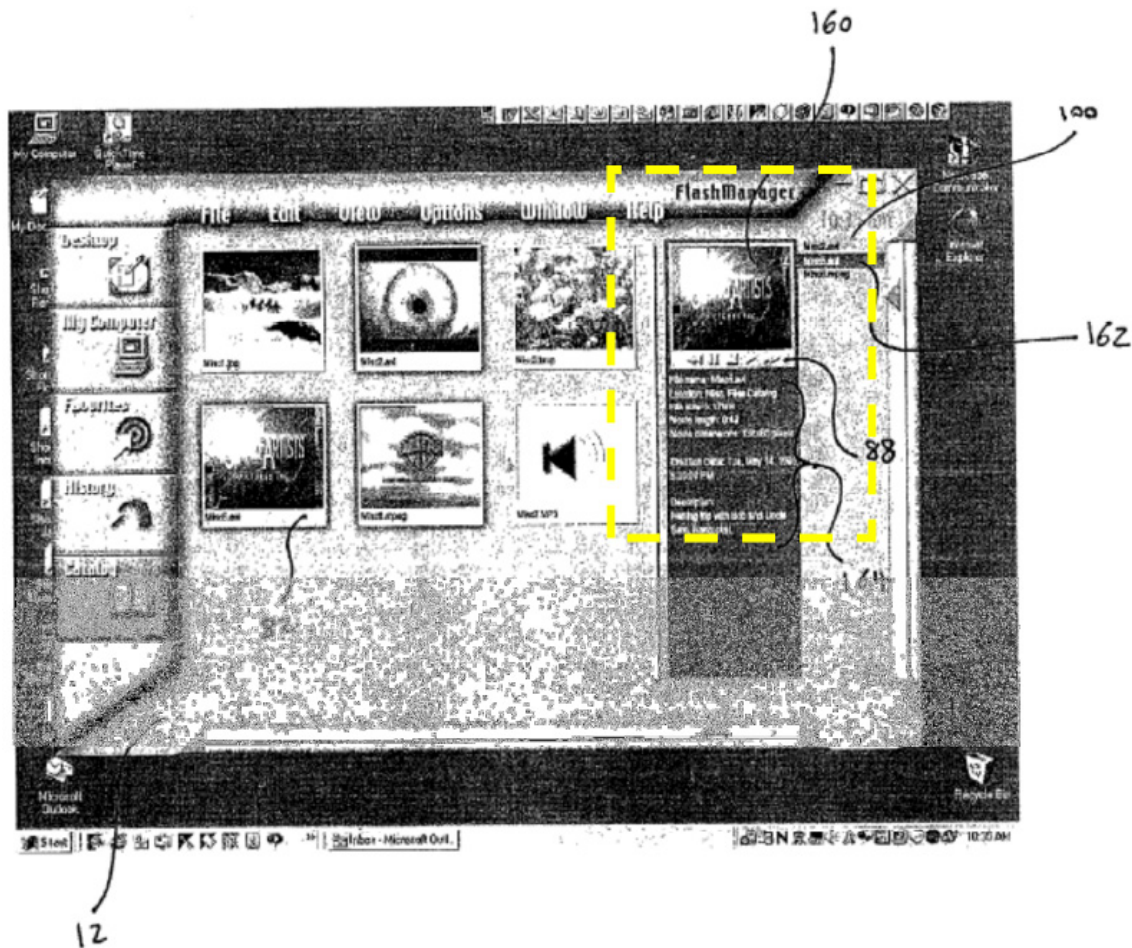


FIG.-16

LG-1004, FIG. 16

The combination would provide an improved playback mechanism for the user. LG-1003, ¶¶301-302. For instance, in-window playback would allow a user to continue to see their other media or adjust their categorization settings. Including this feature would be “[f]or the convenience of the user.” See LG-1004, [0057].

As explained below, combining Kaplan and Bryant would have been straightforward, had a reasonable expectation of success, and yielded predictable results. *See* discussion below, §III.D.2. Additionally, a POSITA would have understood that providing in-window viewing, per Kaplan, would improve Bryant’s system, and doing so would have been nothing more than using a known technique to improve similar devices in the same way. LG-1003, ¶¶301-303. As Dr. Cockburn notes, “the ability to playback video was already supported by the standard Windows operating systems of both Bryant and Kaplan.” *Id.* (“Thus, incorporating playback of video within Bryant would have been a straightforward use of technology that was already integrated into the operating system and would have been well within the skill of a POSITA.”).

2. Kaplan or Kaplan-Sporer in view of Bryant (Grounds 4A and 4B)

A POSITA would have been motivated to combine Kaplan or Kaplan-Sporer (*see* §III.C) and Bryant for at least two reasons: (1) to supplement the teachings of Kaplan or Kaplan-Sporer by using Bryant’s methods regarding image capture and “affectation information”; and (2) to use Bryant’s robust disclosure of user-customizable metadata, such as editable “groups” (e.g., Animals, Sports) with corresponding areas of the interface menu. *See* LG-1003, ¶¶304-309.

Kaplan “provides users with a simple and intuitive method and computer program for reviewing their multimedia content, which can include digital video”

(LG-1004, [0038]), and the camera and upload system of Bryant provides “digital still images and digital motion images” (LG-1005, [0029], [0036]), which can provide the content to Kaplan’s system. Specifically, a benefit of using a digital camera, in the manner disclosed in Bryant, is that it can include user controls for categorizing the images, including metadata that enables subsequent organization. *See, e.g.*, LG-1005, [0003]-[0005], [0029]; LG-1003, ¶306. Bryant explains that, by using multimedia according to its systems and methods, a particular user’s “affective information” can be captured, which can be stored with video images. LG-1005, [0029]-[0034]. “A POSITA would have recognized that inclusion of the richer metadata in Bryant would have improved the Kaplan system, allowing for more effective (e.g., more detailed or more personalized) organization and retrieval of multimedia information.” LG-1003, ¶306. The teachings of Bryant itself motivate the combination. *Id.*

With Bryant’s robust disclosure of user-customizable metadata, such as “groups” (e.g., Animals, Sports), the corresponding areas of the interface menu in Kaplan could be updated. *See* discussion regarding Claim Elements [1.b] and [1.e.i]-[1.g] in §III.A; *see* LG-1005, FIGS. 8, 9A-9C. For instance, a POSITA would have used the display arrangement and controls set forth in Bryant’s FIGS. 9A-9C, which would allow for more effective (e.g., more detailed or more personalized) organization and retrieval of multimedia information. LG-1003, ¶307; LG-

1005, [0100] (“[T]he user optionally resets images that are no longer considered favorites. This is accomplished using the favorites level selection area 860.”). For instance, the metadata of Bryant would be useful with respect to the search functions in Kaplan. *See* LG-1004, [0065]-[0066]. Additionally, Bryant explicitly teaches other user-customizable features, such as, for example, options for sorting thumbnails. LG-1005, [0094]. Specifically, Bryant teaches a GUI screen that “includes sort options that are selected using a sort items text box 844 and a pull-down arrow icon 846 to select a desired sort option from a list, including sort by date, caption, or keyword” in addition to a “reverse order checkbox ... to reverse the display of the thumbnail images.” *Id.* A POSITA would have included such sort options as one of the “functions associated with the user interface” in Kaplan. LG-1003, ¶307; LG-1004, [0040]. Kaplan describes its interface with reference to the “most popular operating system available today,” “Microsoft Windows,” and explains that its “interface for controlling functions of the multimedia management system [] include[s] operational options that correspond to common features of the Windows operating system.” LG-1004, [0040]. With its emphasis on user-customization and control, Bryant itself further motivates the combination. LG-1003, ¶307

Moreover, a POSITA would have had a reasonable expectation of success implementing the combination of Kaplan and Bryant. LG-1003, ¶308. Both

Kaplan and Bryant use conventional components and programming, and this combination would have been straightforward and yielded predictable results. *Id.* (“A POSITA would have recognized that this combination was one of familiar elements, performing their typical functions, and according to known methods.”). For instance, both use standard hardware, including Windows-based programming. *See* LG-1004, [0037]-[0038]; LG-1005, [0037]-[0040]. Additionally, since Kaplan already includes metadata, adding additional metadata fields, per Bryant would have been a straightforward application of known programming techniques that would have been well within the skill of a POSITA. LG-1003, ¶308.

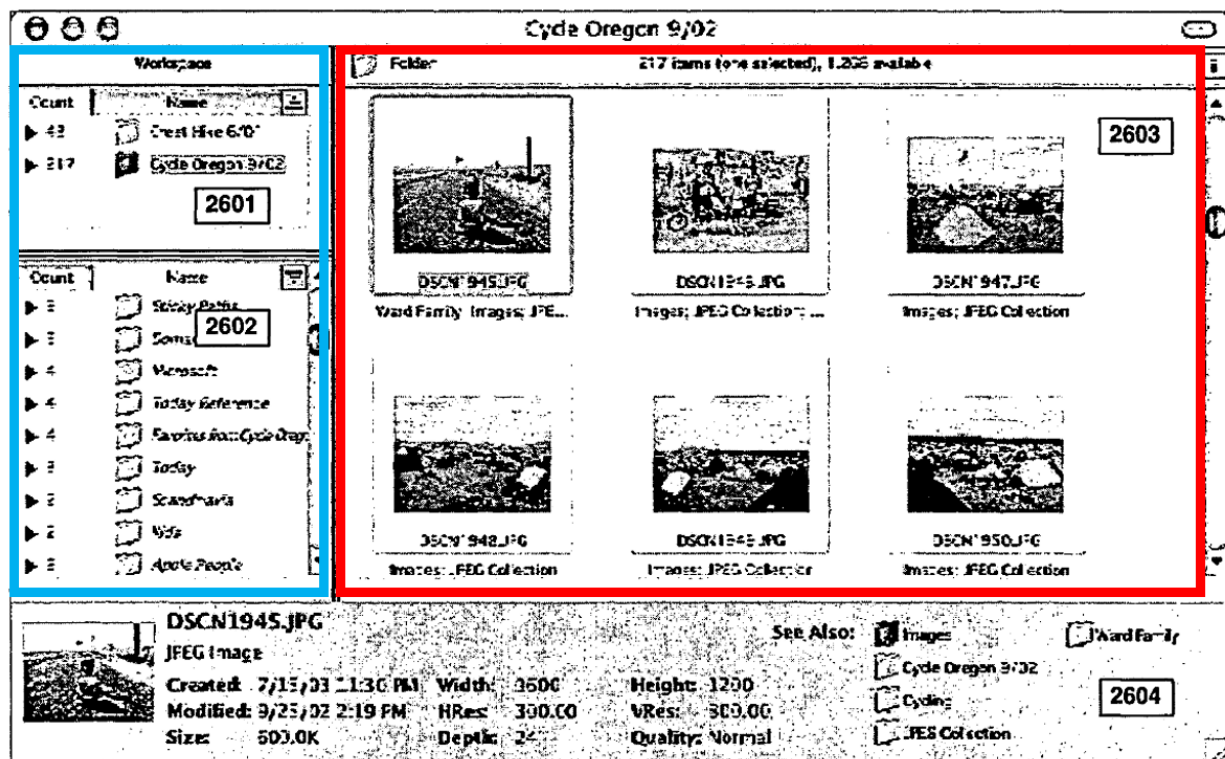
Thus, adding the metadata of Bryant to Kaplan (Kaplan-Sporer) would have been no more than the use of a known technique to improve similar a device in the same way. LG-1003, ¶309.

E. [GROUND 5A] – Horn Renders Claims 1-16 Obvious

1. Horn

Horn is directed to “management of data objects including dynamic and automatic organization, linking, finding, cross-referencing, viewing and retrieval of multiple objects,” including multimedia such as movies and images. LG-1021, Abstract, [0103]. The architecture “stor[es] only one instance of each object while linking the object to multiple collections and domains by unique metadata links for the grouping into and retrieval from any of the collections.” *Id.*

Referencing Figure 26 (below), Horn shows a “Workspace view” of its MFS, including information in separate panes. LG-1021, [0016], [0153]-[0158]. The “Workspace view” includes “original folders from which the images were examined” 2601 and “a list of all collections defined by MFS and the user” 2602—collectively circled blue, and “a content pane,” circled red, “which dynamically displays the contents of whatever item is selected in the first two views (2603).” LG-1021, [0154]-[0156], FIG. 26.



LG-1021, FIG. 26 (annotated)

Users “view images from any of the source folders, and by dragging their icon representations to either the collection window or the icon representation in

the Workspace, add those images to the collection,” which “does not move the images, nor modify them in any way.” LG-1021, [0165]. Rather, “it simply updates the links in the catalog indicating that they belong to the collection.” *Id.* “[I]tems may be removed from a collection by choosing the Remove command, which removes the items from the collection but does not otherwise delete the item from the source (e.g. the file system) or any other collections.” *Id.*, [0167].

2. Claim 1

[1.pre]

To the extent the preamble is limiting, Horn discloses or renders obvious [1.pre]. LG-1021, Abstract, [0016], [0038]-[0041], [0045] (“structure and methodology for information management”), [0046]-[0047], [0101], [0141], [0144], FIGS. 1, 26, claims 11 (“[m]ethod of management of informational objects”), 12; LG-1003, ¶310. Horn discloses a “computer data processing system including a central processing unit configured with a novel integrated computer control software system for the management of data objects.” LG-1021, Abstract. Horn’s MFS is a “software system for the management of informational objects on a computer system ... for recognizing, organizing, creating and viewing relationships between such objects.” LG-1021, [0016]. Horn explains that the “computer(s) of the invention can be configured in a system architecture, for example, as one or more client or server computer(s) ... that together implement the system.” LG-1021,

[0041]. Thus, a POSITA would have understood that Horn discloses an apparatus (e.g., computer) that processes information (e.g., informational objects). LG-1003, ¶310.

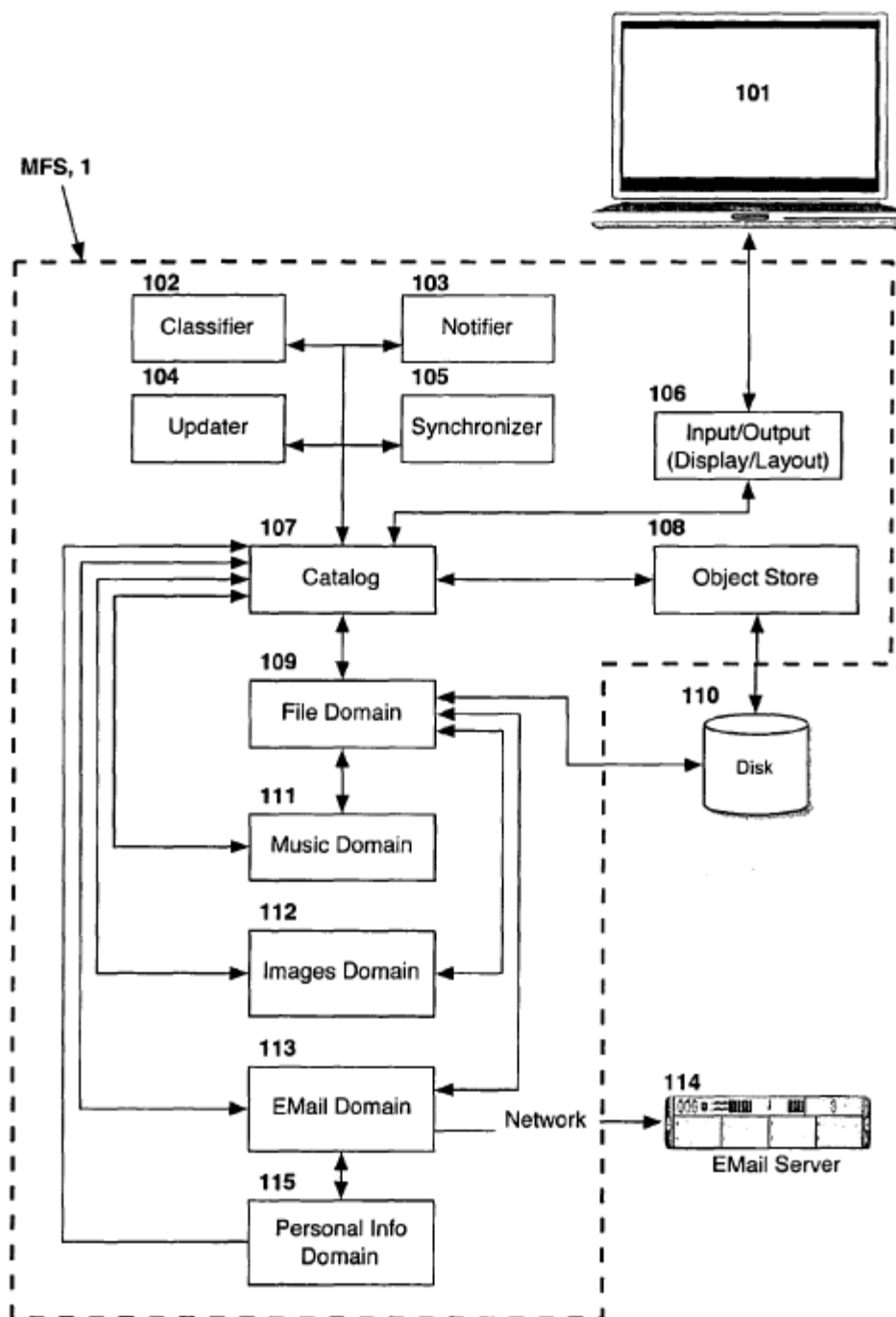


Figure 1

LG-1021, FIG. 1

[1.a]

Horn discloses or renders obvious [1.a]. LG-1021, Abstract, [0003] (“storage of information of a variety of types”), [0016], [0018] (“stored efficiently on disk”), [0019] (“storage location in memory or on disk”), [0020], [0028]-[0029], [0038]-[0039], [0045]-[0046], [0052], [0102]-[0103], [0107]; LG-1003, ¶¶311-316. Horn’s “MFS maintains for each kind of object the conventional, ordinary types of properties that common operating systems support—name and modification date, and the folder in which the file is stored—as well as links and annotations.” LG-1021, [0107]. The system “comprises one or more application(s) for organizing all types of text and image information,” including “movies.” LG-1021, [0103]; LG-1003, ¶¶311-312.

Horn’s system includes “an object store data structure in which data,” including “movies,” and “is stored persistently on a device such as a disk drive.” LG-1021, [0180]-[0188], [0041] (describing memory).

For the same reasons discussed for Bryant, a POSITA would have understood the “disk drive” or “hard disk” of Horn necessarily includes a circuitry (“recording unit, per claim 11”), e.g., a hard disk controller, that serves as an intermediary between the CPU and the physical storage platter of the hard drive for the disk drive to persistently store data. LG-1003, ¶¶314-316; LG-1005, [0180]-[0188], [0041]; §III.A.2([1.a]).

[1.b]

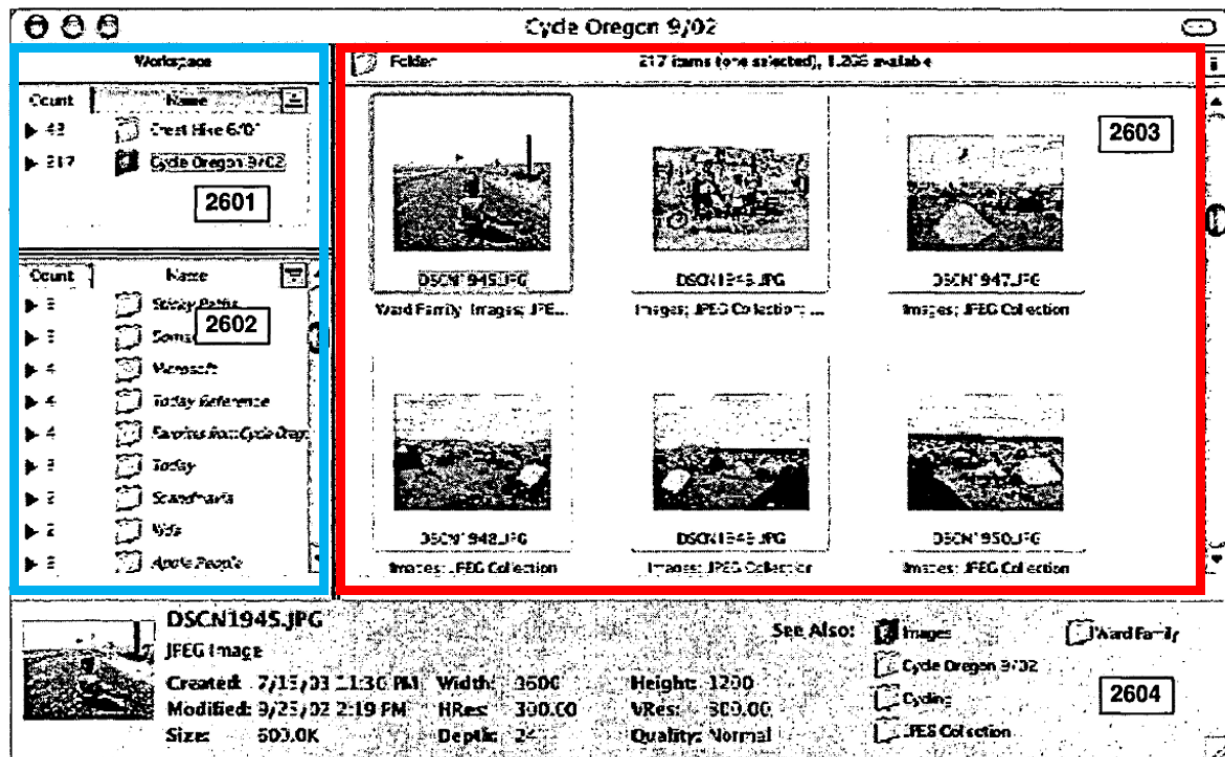
Horn discloses or renders obvious [1.b]. LG-1021, [0016], [0038] (“rendering of these objects to a display viewable by a user”), [0039], [0040] (“computer display connected to said memory means for displaying said objects”), [0050], [0103] (“movies”), [0121]-[0123], [0153]-[0157], [0159], [0165]-[0166], [0197]-[0198], [0203]-[0211], [0294]-[0295], [0299]-[0304], FIGS. 1 (101), 5, 7A-C, 11A, 12A-B, 14, 26, 30-31, claim 1; LG-1003, ¶¶317-319; *see also* LG-1001, 6:3-16; *see* [1.e.i], [1.f.i].

Referencing Figure 1, Horn teaches “a computer system comprising a computer 101 with an output display screen” (output unit). LG-1021, [0102]. Figure 26 (below) “shows the workspace view” of the MFS (menu display) where “the original folders from which the images were examined” and “a content pane, which dynamically displays the contents of whatever item is selected” are shown on the display. LG-1021, [0085], [0153]-[0157], FIG. 26.

In FIG. 26, a user has selected “Cycle Oregon 9/02” by specifying a position of a character (e.g., selecting and determining a position of a character) corresponding to the one group of data (by selecting “Cycle Oregon 9/02”), including movies. LG-1021, [0103], [0153]-[0158], FIG. 26. A “content pane ... dynamically displays the contents of whatever item is selected in the first two views

(2603).” LG-1021, [0156]. The “plurality of groups of video data” includes folders shown at 2601 and/or collections shown at 2602 in the areas circled in FIG. 26.

LG-1021, [0049], [0153]-[0156], FIG. 26; LG-1001, 6:3-16; LG-1003, ¶319.



LG-1021, FIG. 26

[1.c]

Horn discloses or renders obvious [1.c]. LG-1021, Abstract, [0038] (“rendering of these objects to a display viewable”), [0050], [0110], [0112], [0114] (“objects may also be viewed”), [0121]-[0122], [0153]-[0157], [0159]-[0161], [0163], [0165]-[0166], [0205], [0211], [0294]-[0295], [0299]-[0301], [0304], FIGS. 5, 7A-C, 11A, 12A-B, 14, 26-27, 30-31, claim 1; LG-1003, ¶¶320-325.

Horn's system provides "management of data objects including ... viewing and retrieval of multiple objects regardless of nature or source." LG-1021, Abstract.

Referencing FIG. 14, Horn explains that "a collection of all JPEG files may be created by the user selecting ... all objects in the system that have ... a file type of JPEG," and "[t]he objects are immediately retrieved and displayed in the collection window." LG-1021, [0121], FIG. 14.

Referencing FIG. 26, Horn explains that a "content pane ... dynamically displays the contents of whatever item is selected in the first two views," and "in the case of an individual item, the item itself is shown in detail." LG-1021, [0156], FIG. 26. A POSITA would have understood that, when the individual item is a "movie," which Horn teaches ([0103]), the system reproduces the movie (e.g., plays the movie) from memory (e.g., hard drive). *Id.*; LG-1003, ¶322; *see* LG-1021, [0160], [0336].

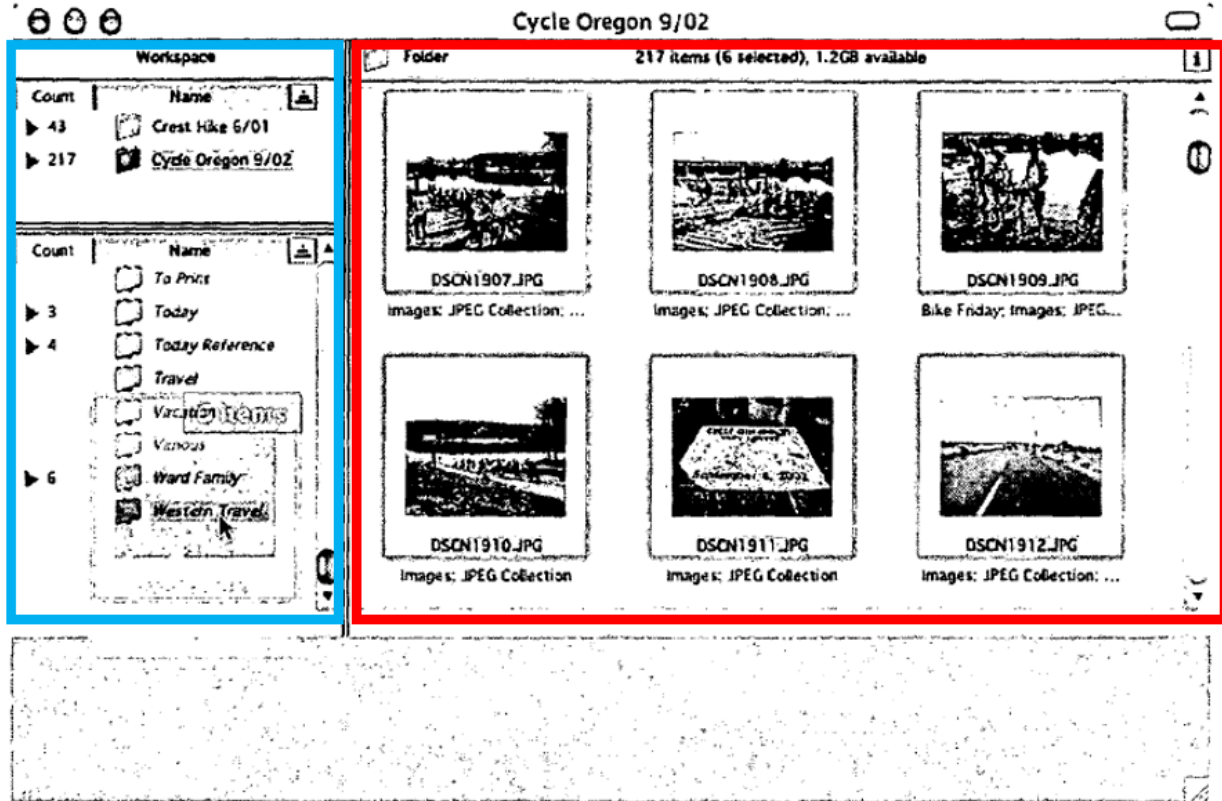
For the same reasons discussed for Bryant, a POSITA would have understood the "hard drive 110" of Horn necessarily includes a circuitry ("reproducer"), e.g., a hard disk controller, that serves as an intermediary between physical storage platter of the hard drive and the CPU to retrieve data from memory to "dynamically display[] the contents of whatever item is selected." LG-1003, ¶¶323-325; LG-1021, [0156]; §III.A.2([1.c]).

[1.d]

Horn discloses or renders obvious [1.d]. LG-1021, [0039], [0043]-[0046], [0049], [0101]; LG-1003, ¶¶326-327. Horn explains that its “MFS computer data processing system” includes “at least one central processing unit configured with client operating system and applications software,” to perform various functions and processes. LG-1021, [0039], [0101] (“CPU to provide(s) the functionalities”).

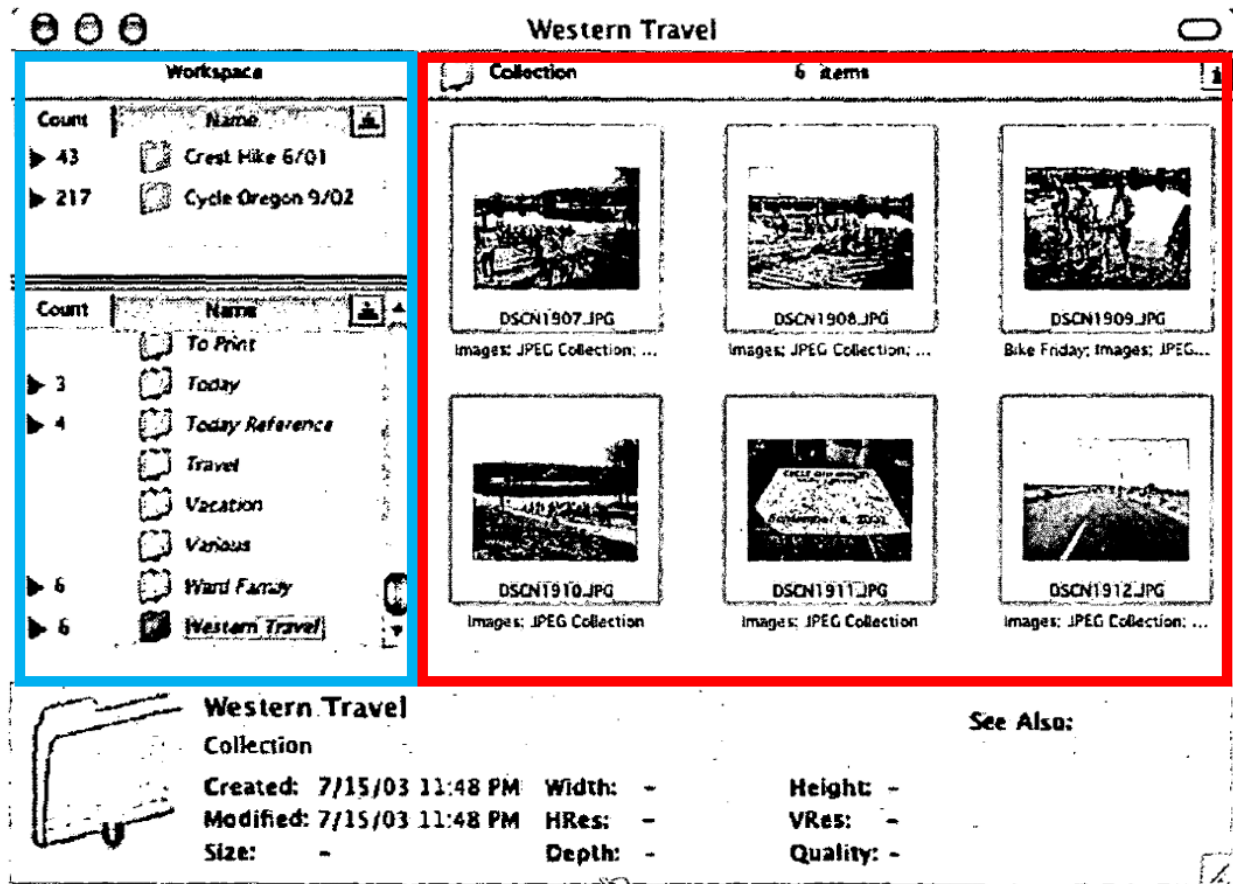
[1.e.i]

Horn discloses or renders obvious [1.e.i]. LG-1021, [0152] (“(thumbnail) of the image”), [0153]-[0158], FIGS. 26, 30; LG-1003, ¶¶328-329; *see* [1.f.ii]. Horn explains that the “content pane” (circled red in FIG. 30) “dynamically displays the contents of whatever item is selected in the first two views.” LG-1021, [0156], FIGS. 26, 30. Thus, when the first group, “Western Travel,” is selected, for example, by selecting the name “Western Travel,” the thumbnails corresponding to the first group are displayed (circled red). *Id.*; LG-1003, ¶329.



LG-1021, FIG. 30 (annotated) (excerpted)

A POSITA would have understood that, after a user manually added objects from the source folder, as illustrated in Horn's Figure 30, those objects would be displayed when the user selected "Western Travel" because those objects now "belong to the ["Western Travel"] collection." LG-1021, [0162]-[0165], FIGS. 29-30; LG-1003, ¶329. A modified image based on Figures 29-30 illustrates this scenario. *Id.*



See LG-1021, FIGS. 29-30

[1.e.ii]

Horn discloses or renders obvious [1.e.ii]. LG-1021, [0152], [0235]; LG-1003, ¶¶330-336. Horn explains that a user can “navigate [the] folder using the standard and traditional methods of disk navigation in graphical user interfaces.” LG-1021, [0152]. Horn provides extensive disclosure of drag-and-drop operations to determine the location of icons. *Id.*, [0050]. Horn explicitly discloses *spatial* arrangements – “Window and icon sizes and locations are maintained persistently, to preserve the user’s spatial arrangements.” *Id.*, [0108]; LG-1003, ¶332. So, if

the user drags an icon to a particular spatial location (changing its order), Horn discloses that that spatial location will be preserved. *Id.* Thus, Horn discloses the order of the thumbnails is editable. *Id.*

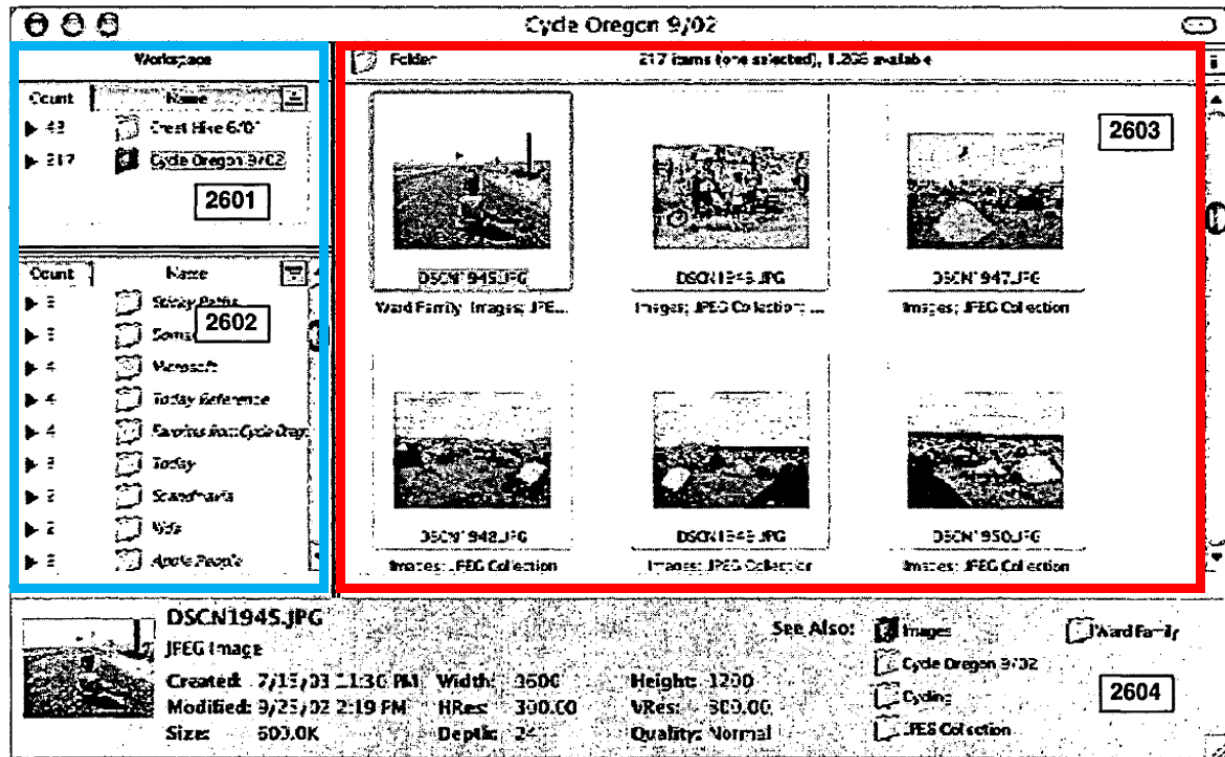
Horn also “provides additional features for viewing the images,” including “basic editing features.” LG-1021, [0152]. Horn teaches that objects “may be sorted ascending or descending,” and that “the control (606) determines this, while clicking on the column headers determine the property on which to sort.” *Id.*, [0111], [0113] (“Views may also be sorted”), [0235]. Thus, if Horn does not teach [1.e.ii], it would have been obvious. LG-1003, ¶¶333-334.

Moreover, editing the order of thumbnails was well-known by the Critical Date. LG-1003, ¶¶335; *see, e.g.*, LG-1010, 32; LG-1005, [0094]; LG-1021, [0235]; LG-1030, 9:61-67, 10:14-20. Since Horn describes providing “features for viewing the images,” including “basic editing features,” a POSITA would have found it obvious for Horn to include the well-known ability to edit the order of items in a display of thumbnails. LG-1003, ¶¶335-336.

[1.f.i]

Horn discloses or renders obvious [1.f.i]. LG-1021, [0152] (), [0153]-[0158], FIG. 26; LG-1003, ¶¶337-338; *see* [1.e.i]. The “content pane” (circled red in FIG. 26) “dynamically displays the contents of whatever item is selected in the first two views (2603).” LG-1021, [0156], FIG. 26. Thus, when the second group,

“Cycle Oregon 9/02” is selected (evidenced by the box around the group name within area 2601 of FIG. 26 and the window title changing), the thumbnails corresponding to the second group are displayed. *Id.*; LG-1003, ¶338.



LG-1021, FIG. 26 (annotated)

[1.f.ii]

See [1.e.ii].

[1.g]

Horn discloses or renders obvious [1.g]. LG-1021, [0049], [0124], [0130], [0132], [0142], [0165] (“This does not move the images, nor modify them in any way; it simply updates the links in the catalog”), [0167] (“items may be removed from a collection”), [0196], [0198]-[0199], [0230], [0233], [0244], FIG. 13, claim

10; LG-1003, ¶¶340-342. Specifically, Horn explains that “items may be removed from a collection by choosing the Remove command, which removes the items from the collection but does not otherwise delete the item from the source (e.g. the file system) or any other collections.” LG-1021, [0167]; *see id.*, [0124] (explaining that a single object can be classified into several collections at a time), [0130]. Thus, in Horn, if a video was included in both a first group and a second group and then deleted from the first group, it would continue to be included in the second group—including having its thumbnail continue to be displayed with the second group. *Id.*; LG-1003, ¶341.

Moreover, Horn explains that its “MFS-configured CPU control program simultaneously classifies objects into multiple containers using link metadata rather than duplication.” LG-1021, [0049]; *see id.*, [0130], [0132], [0142], [0165], [0167], [0196], [0198]-[0199], [0230], [0233], [0244], FIG. 13, claim 10. “Objects are attached to the object store to allow them to be stored persistently within the object store, and are detached from the object store when they are no longer persistent.” LG-1021, [0196]. Using this method of storage, “[a]ll storable objects maintain a reference count for memory management” and are “removed from memory when their reference counts reach one (e.g. are only referenced by the object store).” LG-1021, [0198]. Thus, a POSITA would have understood that deletion of an object from one group would bring the object’s reference count down by

one but would not affect the object's storage from memory or from other groups, nor would it remove the object's thumbnail from being displayed when the groups with which it is associated are displayed. LG-1003, ¶342.

3. Claim 6

[6.pre]-[6.a]

See [1.pre]-[1.a].

[6.b]

See [1.c].

[6.c]

See [1.b].

[6.d.i]-[6.d.ii]

See [1.e.i]-[1.e.ii].

[6.e.i]-[6.e.ii]

See [1.f.i]-[1.f.ii].

[6.f]

See [1.g].

4. Claim 11

[11.pre]-[11.c]

See [1.pre]-[1.c].

[11.d.i]

See [1.d]-[1.e.i].

[11.d.ii]

See [1.e.ii].

[11.e.i]

See [1.d], [1.f.i].

[11.e.ii]

See [1.f.ii].

[11.f]

See [1.g].

5. Claim 16

[16.pre]-[16.a]

See [1.pre]-[1.a].

[16.b]

See [1.c].

[16.c]

See [1.b].

[16.d]

See [1.d].

[16.e]

See [1.b].

[16.f.i]-[16.f.ii]

See [1.e.i]-[1.e.ii].

[16.g.i]-[16.g.ii]

See [1.f.i]-[1.f.ii].

[13.h]

See [1.g].

6. Claim 17

See [3.a]-[3.b] (Ground 5B).

7. Claim 18

See [4.a]-[4.b] (Ground 5B).

8. Claim 19

See [5] (Ground 5B).

F. [GROUND 5B] – Horn-Sporer Renders Claims 2-5, 7-10, and 12-15 Obvious

1. Horn-Sporer

Horn describes “management of data objects including dynamic and automatic organization, linking, finding, cross-referencing, viewing and retrieval of multiple objects.” LG-1021, Abstract. Horn’s system allows for “organizing and retrieving images created with a digital camera and stored on the computer in individual image files” and generally discloses using its system for organizing all types of files, including “movies.” *Id.*, [0103], [0145], [0148], [0212]. Horn does not, however, provide implementation details regarding how this multimedia—including movies—can be input from a digital camera to a computer with Horn’s metadata filing system. LG-1003, ¶377. Thus, a POSITA would have naturally looked to other references available before the Critical Date, such as Sporer, that describe such functionality and the components providing that functionality. *Id.*

Like Horn, Sporer teaches a computer system that stores, processes, and plays back multimedia files and can work with external video devices (e.g., camera). LG-1029, Abstract, 4:4-10, FIG. 1. As shown in Figure 1 (below), for example, Sporer describes its “video processing circuit 22 ... in combination with an example computer system with which it may be used.” LG-1029, 3:56-59. The computer system “includes an audio/video input/output system 38 through which analog audio and digital video information are provided,” which “can be connected to receive audio and video information input, for example, from a camcorder 40.” *Id.*, 4:4-10.

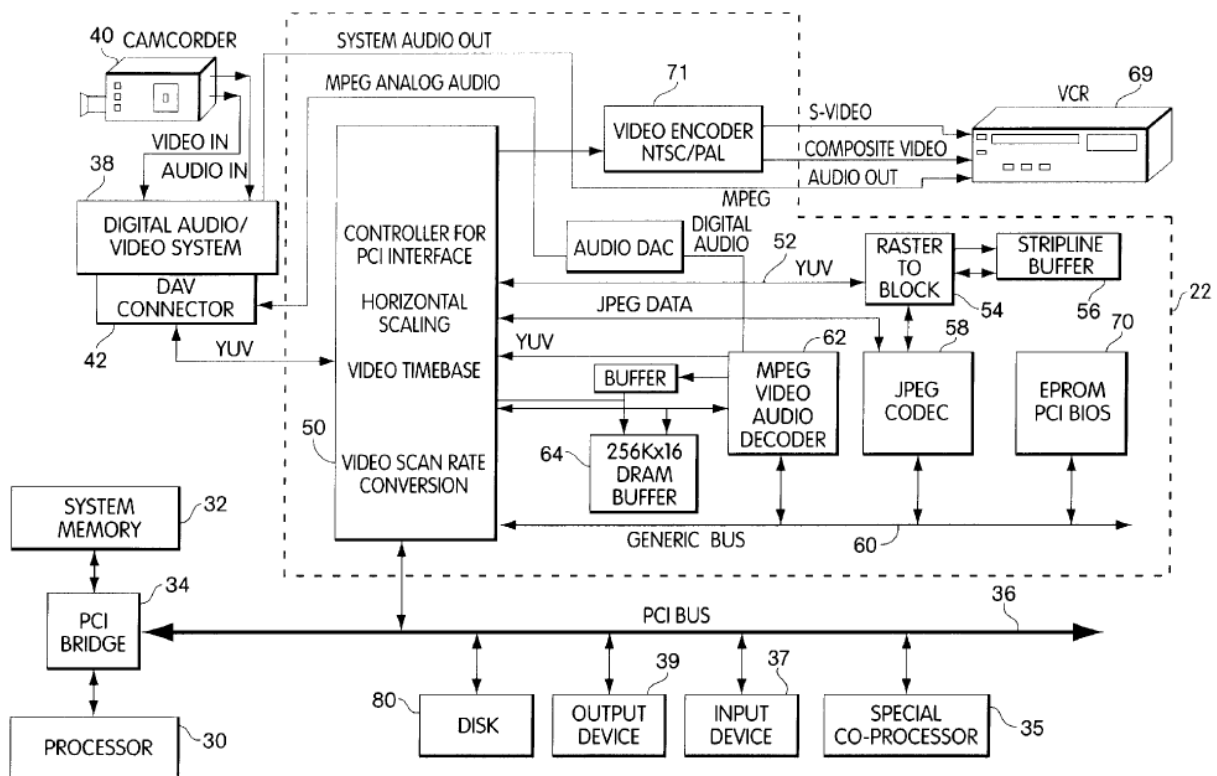


Fig. 1

LG-1029, FIG. 1

Sporer further recognizes that “computer systems ... for capturing motion video information as a computer data file including data representative of a sequence of several digital still images,” where such “digitized data is often compressed, using common compression standards such as” MPEG and Motion-JPEG compression. LG-1029, 1:17-23. Specifically, Sporer describes storing and processing MPEG format data by using, among other components, “a video and audio encoder/decoder (codec) 62 for encoding and decoding MPEG format video and audio.” LG-1029, 5:59-6:8.

If Horn does not disclose these components, a POSITA would have found obvious integration of video processing circuit, such as Sporer’s video processing circuit, in Horn to improve “organizing and retrieving images created with a digital camera.” LG-1003, ¶¶378-380; LG-1021, [0145]. Specifically, including video processing circuitry in Horn’s computer, per Sporer, would enable the combination system to “capture full-rate motion video information” and “playback full-rate motion video” “using the system memory of a computer as a data buffer for holding compressed video data from the circuit.” LG-1029, 3:66-4:5. A POSITA would have been motivated to include in Horn’s system, “a video and audio encoder/decoder (codec) 62 for encoding and decoding MPEG format video and audio,” per Sporer, where Horn already describes “movies” as being stored and played on its

computer. LG-1003, ¶380; LG-1029, 6:6-8; LG-1021, [0103]; *see* LG-1029, 5:59-6:17; §III.E.2 ([1.c]).

A POSITA would have found it obvious to include a video processing circuit, as Sporer teaches, including, among other components, an encoder that receives video data input from external devices (e.g., Horn’s digital camera) and processes that data for storage. LG-1003, ¶381; LG-1021, [0102]; LG-1029, 4:66-5:10, 5:59-6:37, 11:50-12:7. Horn teaches using its system for “organizing and retrieving images created with a digital camera and stored on the computer in individual image files.” LG-1021, [0145]. A POSITA would have understood that, given Horn’s disclosure of using its system for various multimedia files, including “movies,” its system could similarly be used for “organizing and retrieving” movies (i.e., video data) created with a digital camera. *Id.*; LG-1003, ¶381. A POSITA would have understood that, in the combination device (“Horn-Sporer”), input video data from an external device (e.g., digital camera) would be processed (e.g., encoded) using video processing circuitry, as Sporer teaches, and then stored in Horn’s recording medium (hard drive 110), as both Sporer and Horn teach. LG-1003, ¶381; LG-1021, Abstract, [0003], [0016], [0018]-[0020], [0028], [0029], [0038]-[0039], [0045]-[0046], [0052], [0102]-[0103], [0107]; LG-1029, 4:66-5:10, 5:59-6:37, 11:50-12:7.

Combining the teachings of Horn and Sporer would have merely involved combining prior art elements—for example, a multimedia management system per Horn and components (e.g., codecs) for processing certain types of input multimedia data per Sporer—according to known methods to yield predictable results. LG-1003, ¶382. A POSITA would have been motivated to combine the teachings of Horn and Sporer to realize the implementation details (of Sporer) for receiving and processing video data an external device, as Horn describes. *Id.* For example, a POSITA would have been motivated to include video codecs, such as an MPEG codec, for encoding video data (e.g., movies) received from external devices (e.g., digital camera) into a format that can be played back on Horn’s computer. *Id.*; LG-1021, [0050]; *see* LG-1031, [0077].

A POSITA would have had a reasonable expectation of success implementing the combination since Horn explicitly teaches organizing and retrieving movies, and video processing circuitry, including an encoder, as taught by Sporer would merely offer a means for encoding and decoding such movie files. LG-1003, ¶383.

The combination of Horn and Sporer would have been predictable and foreseeable because 1) Horn and Sporer disclose computing systems that can store, process, and play back multimedia files from external video devices (LG-1021, [0103], [0145], [0156], FIG. 26; LG-1029, Abstract, 4:4-10, FIG. 1), and 2) the

combination merely involves incorporating known features that are explicitly disclosed by Sporer and would have been understood by a POSITA as likely present, but not explicitly disclosed by Horn. LG-1003, ¶384. The combination is predictable, at least in part, because elements of the combined system would each perform similar functions they had been known to perform prior to the combination. *Id.* For example, the computer of Horn would still perform the same functions, including storing and displaying multimedia content and receiving such content from external devices, as it did prior to the combination with Sporer. *Id.*

2. Claim 2

The Horn-Sporer combination renders obvious [2]. LG-1021, [0103], [0145]; LG-1029, 6:6-8, FIG. 1; LG-1003, ¶¶385-387. Horn's system organizes files including "movie[s]." LG-1021, [0103]. Sporer describes a system that includes "a video processing circuit" with "a video and audio encoder/decoder (codec) 62 for encoding and decoding MPEG format video and audio." LG-1029, 6:6-8, FIG. 1.

As discussed above, a POSITA would have found it obvious to include a video processing circuit, per Sporer, which includes an encoder that receives video data input from external devices, such as Horn's digital camera or the like. LG-1003, ¶387; §III.F.1. Horn further teaches "organizing and retrieving images created with a digital camera and stored on the computer" and organizing multimedia

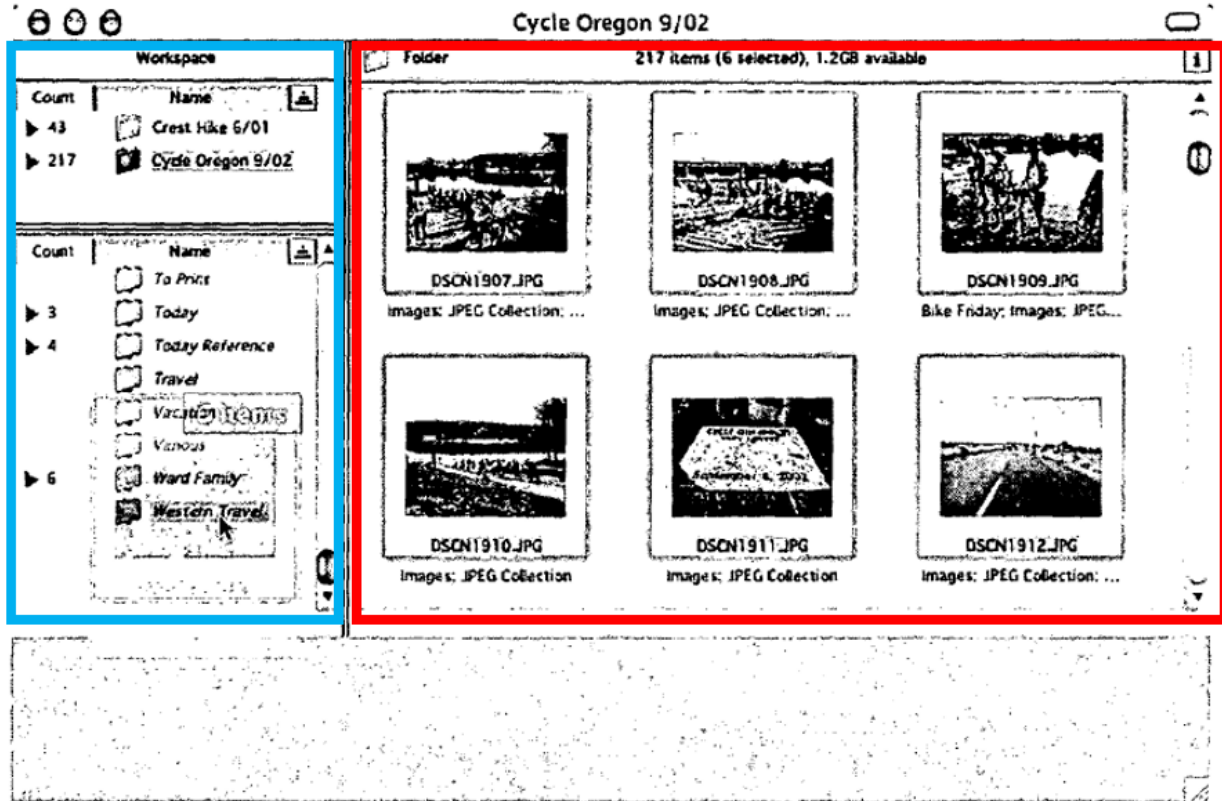
content that includes “movies,” so a POSITA would have found it obvious for Horn to further provide for “organizing and retrieving” movies from a digital camera and stored on the computer. LG-1021, [0103], [0145]; LG-1003, ¶387. A POSITA would have understood that, in the combination, input movies from the external devices would be processed (e.g., encoded) using video processing circuitry, per Sporer, and then stored in Horn’s recording medium (hard drive). LG-1003, ¶387.

3. Claim 3

[3.a]

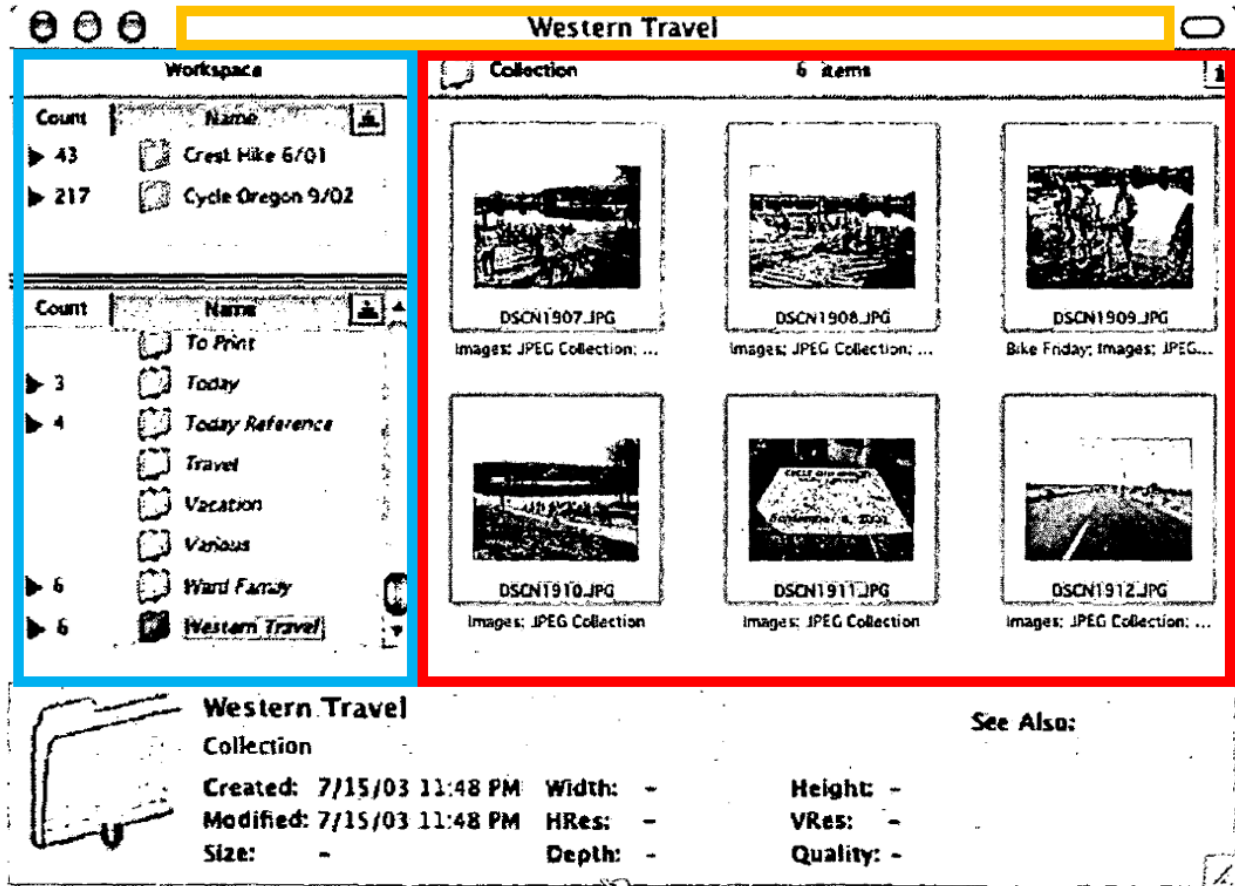
Horn discloses [3.a]. LG-1021, [0153]-[0158], FIGS. 26, 30; LG-1003, ¶¶388-389.

As shown in FIG. 30, below, a first character (one or more letters of “Western Travel”) corresponding to the first group of video data (“Western Travel” collection) is displayed in a first area (circled blue) when the first group of thumbnails is displayed (circled red). LG-1021, [0153]-[0158], FIGS. 26, 30. Horn explains that the “content pane ... dynamically displays the contents of whatever item is selected in the first two views (2603),” where, “[i]n the case of a folder or collection, the contents of the folder or collection is shown in an icon or list view.” LG-1021, [0156].



LG-1021, FIG. 30 (annotated) (excerpted)

Modified image of Horn's FIGS. 29 and 30 similarly shows this. LG-1003, ¶389. Additionally or alternatively, the modified image shows a first character (one or more letters of "Western Travel") corresponding to the first group is displayed in another first area (circled orange) when the first group of thumbnails is displayed (circled red). *See, e.g., id.*; LG-1021, FIG. 26.

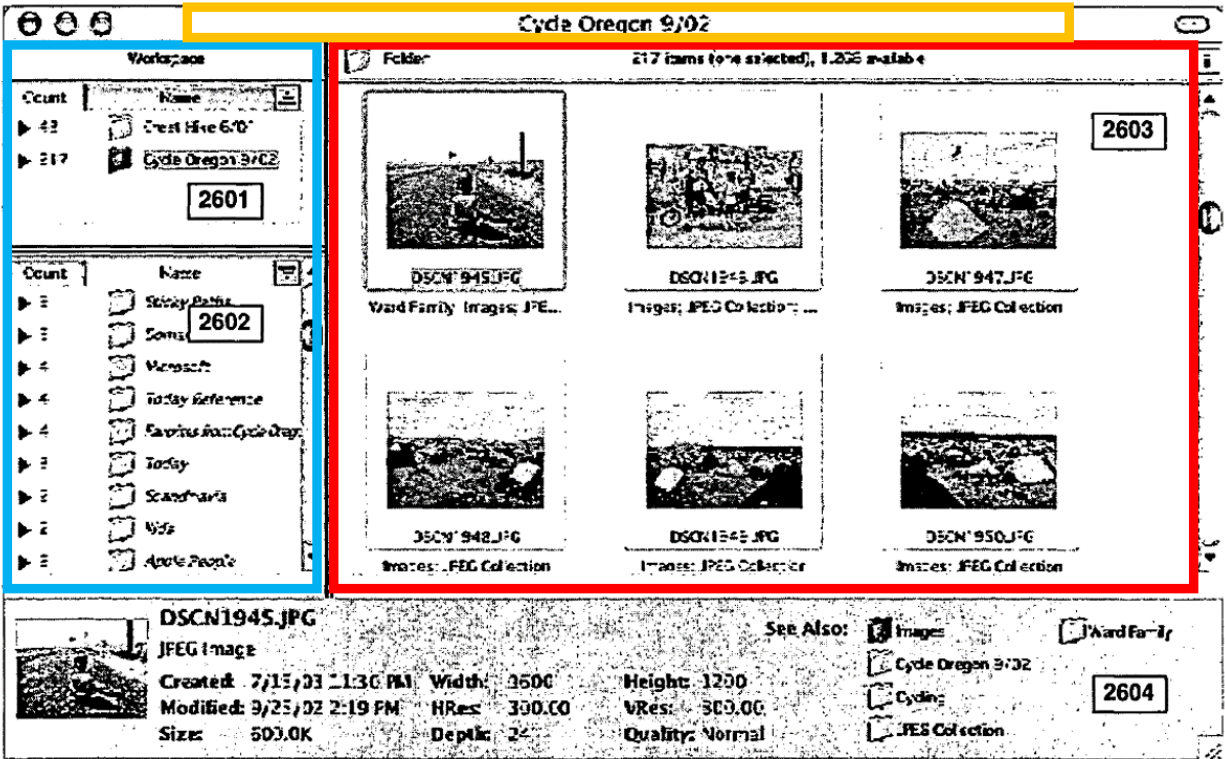


Modified image based on LG-1021, FIGS. 29-30

[3.b]

Horn discloses [3.b]. LG-1021, [0153]-[0158], FIG. 26; LG-1003, ¶¶390-391; *see* [3.a].

As shown in FIG. 26, below, a second character (one or more letters of “Cycle Oregon 9/02”) corresponding to the second group of video data (“Cycle Oregon 9/02” folder) is displayed in a first area (circled blue) when the second group of thumbnails is displayed (circled red). LG-1021, [0153]-[0158], FIG. 26.

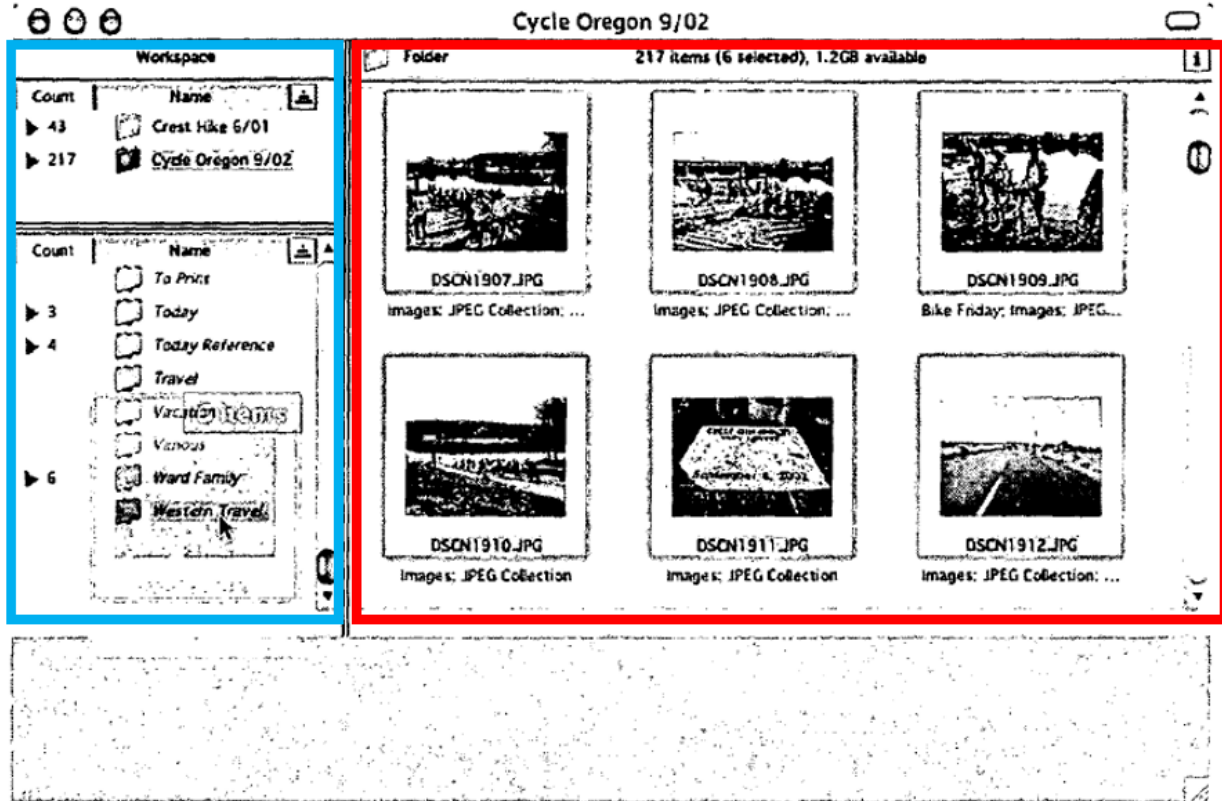


LG-1021, FIG. 26 (annotated)

4. Claim 4

[4.a]

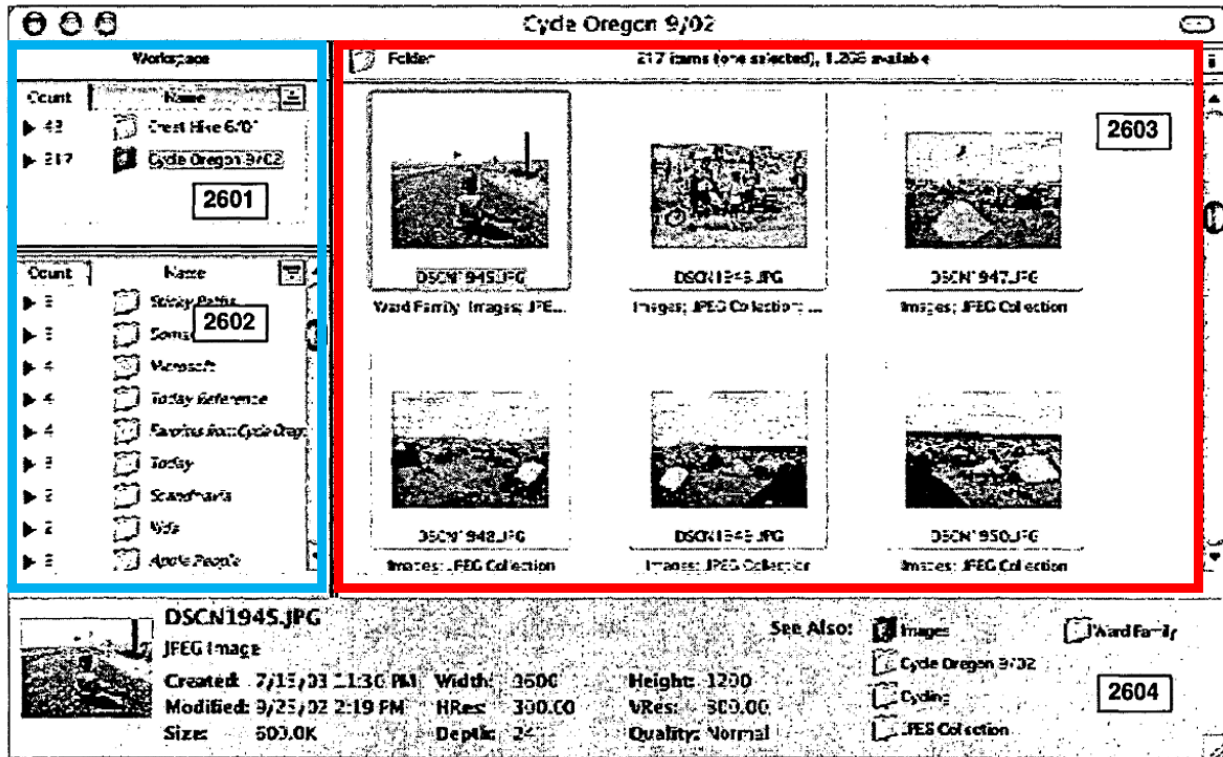
Horn discloses [4.a]. LG-1021, FIGS. 26, 30; LG-1003, ¶¶392-393; *see* [3.a]-[3.b]. As shown in FIG. 30, below, the first group of thumbnails (thumbnails in “Western Travel”) is displayed in a second area (circled red) different from the first area (circled blue). LG-1021, FIGS. 26, 30; LG-1003, ¶393.



LG-1021, FIG. 30 (annotated) (excerpted)

[4.b]

Horn discloses [4.b]. LG-1021, FIG. 26; LG-1003, ¶¶394-395; *see* [4.a]. As shown in FIG. 26, the second group of thumbnails (thumbnails in “Cycle Oregon 9/02”) is displayed in a second area (circled red). LG-1021, FIG. 26; LG-1003, ¶395.



LG-1021, FIG. 26 (annotated)

5. Claim 5

See [1.g] (Ground 5A).

6. Claim 7

See [2].

7. Claim 8

See [3.a]-[3.b].

8. Claim 9

See [4.a]-[4.b].

9. Claim 10

See [5].

10. Claim 12

See [2].

11. Claim 13

See [3.a]-[3.b].

12. Claim 14

See [4.a]-[4.b].

13. Claim 15

See [5].

IV. DISCRETION SHOULD NOT PRECLUDE INSTITUTION

A. §325(d)

Discretionary denial under §325(d) is not warranted. *See Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6, 8-9 (PTAB Feb. 13, 2020) (precedential). Preliminarily, Grounds 5A-5B are based on references that the Office has not considered in connection with the '072 Patent.

Kaplan and a relative of Bryant (U.S. Patent No. 7,443,418 (“Bryant-2”)) were cited on the face of the '072 Patent, but the Examiner made a clear material error when allowing the claims after no rejections. The Examiner referenced the substance of [1.g] as not being in the prior art. LG-1002, 83. However, after the Examiner made this determination, the Board found nearly identical subject matter rendered obvious by the combination of Bryant and Kaplan, highlighting the material error. LG-1040, 31-36.

The Board in IPR2024-00735 confirmed the material error in nearly identical circumstances for a continuation of the '072 Patent, and did not discretionarily deny institution under §325(d). *Samsung Elecs. Co., Ltd. v. Maxell, Ltd.*, IPR2024-00735, Paper 11, 7-8 (PTAB November 7, 2024). There, the Board acknowledged that “Kaplan and Bryant were included on an Information Disclosure Statement and thus were presented, but without a substantive discussion during prosecution, we cannot understand how the Office considered the references.” *Id.*

As highlighted in Grounds 1, 2A, 3, and 4A, the Examiner did not appreciate Kaplan’s or Bryant-2’s disclosures or how combinations not previously before the Office render the Challenged Claims obvious. Moreover, Petitioners have shown a reasonable likelihood that it would prevail that at least one of the Challenged Claims is unpatentable over the applied art based on the current record, including Grounds 5A-5B. *Supra* §III.A-F; *see Tokyo Ohka Kogyo Co., Ltd. v. Fujifilm Elec. Materials U.S.A., Inc.*, PGR2022-00010, Paper 9, 8-9 (PTAB June 6, 2022).

B. §314(a)

The merits of Petitioners’ arguments are compelling. The supporting evidence is substantial. That “alone demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*.” LG-1026, 4-5. Moreover, the *Fintiv* factors do not favor denial.

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-1027, 66.

Factor 3 favors institution; Petitioners have filed this Petition ahead of the one-year time bar, while litigation is in its early stages. Significant resources have not been expended. LG-1038.

Factor 4 favors institution; Patent Owner only alleges infringement of claims 11-15, while this Petition challenges all claims of the '072 patent. LG-1028; LG-1038. Accordingly, many 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. Grounds 1 and 3 rely entirely on references and combinations that are the same or similar to grounds that the PTAB relied upon in finding similar claims unpatentable. LG-1040, 48. The other grounds offer similarly strong arguments.

While the Office issued no prior art rejections, Bryant, Kaplan, and Sporer, either alone or with other prior art, renders obvious the Challenged Claims. *See*

§III, *supra*.

V. CONCLUSION AND FEES

The Challenged Claims are unpatentable. Please charge 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 U.S.A., Inc. are the real parties-in-interest.

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

The '072 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).

Petitioners are not aware of any other disclaimers, reexamination certificates, or IPR petitions addressing the '072 Patent.

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

Petitioners provide the following designation of counsel.

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D. Service Information

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

Petitioners consent to electronic service by email at IPR18768-0217IP7@fr.com

(referencing No. 18768-0217IP7 and cc'ing PTABInbound@fr.com).

Respectfully submitted,

Dated December 30, 2024

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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 13,997 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Dated December 30, 2024

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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 December 30, 2024, 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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