IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Christopher J. Desmond, et al.
U.S. Patent No.:   10,621,228   Attorney Docket No.: 39843-0117IP1
Issue Date: April 14, 2020
Appl. Serial No.:   16/578,238
Filing Date: September 20, 2019
Title: METHOD AND APPARATUS FOR MANAGING DIGITAL
                     FILES

DECLARATION OF DR. PHILIP GREENSPUN

Declaration

I declare that all statements made herein on my own knowledge are true and

that all statements made on information and belief are believed to be true, and

further, that these statements were made with the knowledge that willful false

statements and the like so made are punishable under Section 1001 of Title 18 of

the United States Code.

By: _Philip Greenspun_

Philip Greenspun, Ph.D.

December 3, 2021 in Jupiter, Florida

Contents

I.   QUALIFICATIONS AND BACKGROUND INFORMATION

1.   I have been retained on behalf of Samsung Electronics Co., Ltd. ("Petitioner") and asked to review and provide my opinion on the patentability of claims 1-19 of U.S. Patent No. 10,621,228 ("the '228 patent").

2.   I am a salaried employee of Fifth Chance Media LLC, which I understand is being compensated for my work in this matter. I am not an owner of Fifth Chance Media LLC and my compensation is not contingent on the outcome of this matter or the specifics of my testimony.

3.   A detailed description of my professional qualifications, including a listing of my specialties/expertise and professional activities, is contained in my curriculum vitae, a copy of which is provided as Exhibit 1004. In what follows, I provide a short summary of my professional qualifications.

4.   In terms of my background and experiences that qualify me as an expert in this case, I earned a Ph.D. in Electrical Engineering and Computer Science from Massachusetts Institute of Technology in 1999. I also obtained a Bachelor of Science Degree in Mathematics from Massachusetts Institute of Technology in 1982 and a Master of Science Degree in Electrical Engineering and Computer Science from Massachusetts Institute of Technology in 1993.

5. My Ph.D. thesis concerned the engineering of large online Internet communities with a Web browser front-end and a relational database management system (RDBMS) containing site content and user data.

6. I have authored five computer science textbooks in total, including Database Backed Web Sites (Macmillan), Software Engineering for Internet Applications (MIT Press), and a SQL language tutorial.

7. I have served as an independent member of various advisory and corporate boards, mostly for technology companies. For example, I joined the corporate board of an MIT materials science spin-off in late 2005 during a $550,000 seed capital phase. I stepped down when the company secured $10 million in venture capital in mid-2007.

8. I have previously served as an expert witness for Amazon.com, IBM, Microsoft, Xerox, and Google, among others, in patent cases.

9. I began working full-time as a computer programmer in 1978, developing a database management system for the Pioneer Venus Orbiter at the National Aeronautics and Space Administration's Goddard Space Flight Center.

10. I developed my first computer-supported mapping applications in the mid-1980s, starting with an anti-tank warfare simulator for the U.S. Department of Defense (as a subtractor to Textron). I also developed a computer system for supporting civil engineering, especially earthmoving, that included a digital three-

dimensional map. The latter system was the topic of my Master's thesis at MIT and also U.S. Patents 5,150,310 and 5,964,298 ("Integrated civil engineering and earthmoving system").

11.   I developed my first program using a relational database management system in 1994. It was a Web interface to the Children's Hospital Oracle RDBMS version 6. This enabled doctors at the hospital to view patient clinical data using any computer equipped with a Web browser.

12.   In 1995, I led an effort by Hearst Corporation to set up an infrastructure for Internet applications across all their newspaper, magazine, radio, and television properties. This infrastructure included software for managing users, shopping carts, electronic commerce, advertising, and user tracking.

13.   Between 1995 and 1997, I significantly expanded the photo.net online community that I had started, in 1993, in order to help people teach each other to become better photographers. I began distributing the source code behind photo.net to other programmers as a free open-source toolkit, called "ArsDigita Community System."

14.   The photo.net site enabled users to upload photos as attachments to discussion forum postings and also, beginning in 1999, included a complete photo-sharing system along the lines of Flickr.

15.   In May 1997, Macmillan published my first textbook on Internet Application development, "Database Backed Web Sites." This book advises readers that server-based programs should, to the extent possible, summarize information from the database and make previews of content available so that users don't have to navigate as much. See Chapter 13[1], for example: "One-line summaries of the newest [classified] ads should be displayed on the very first page of the system. Users shouldn't have to click to see ads."

16.   In 1997, I started a company, ArsDigita, to provide support and service for the free open-source toolkit. Between 1997 and the middle of 2000, I managed the growth of ArsDigita to 80 people, almost all programmers, and $20 million per year in annual revenue. This involved supervising dozens of software development projects, nearly all of which were Internet Applications with a Web front-end and an Oracle RDBMS back-end. As the founder, CEO, and chief technical employee of the company, I personally developed functional specifications, SQL data models (Structured Query Language, or "SQL," is the standard programming language for relational database management systems), and Web page flows that determined the user experience.

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[1] One-line summaries of the newest ads should be displayed on the very first page of the system. Users shouldn't have to click to see ads.

17.   Between 2000 and the present, I have done software development projects for philip.greenspun.com and photo.net, two online services that are implemented as relational database management applications. In addition, I developed postclipper.com, a database-backed Web application that works in conjunction with Facebook to allow parents to produce electronic baby books based on photographs previously included in Facebook posts.

18.   Separately from this commercial and public work, I have been involved, as a part-time teacher within the Department of Electrical Engineering and Computer Science, educating students at MIT in how to develop Internet Applications with an RDBMS back-end. In the Spring of 1999, I taught 6.916, Software Engineering of Innovative Web Services, with Professors Hal Abelson and Michael Dertouzos. In the Spring of 2002, this course was adopted into the standard MIT curriculum as 6.171. I wrote 15 chapters of a new textbook for this class, "Software Engineering for Internet Applications." This book was published on the Web at http://philip.greenspun.com/seia/ starting in 2002 and 2003 and also in hardcopy from MIT Press in 2006. I am the sole author of a supplementary textbook for the class, "SQL for Web Nerds," a succinct SQL programming language tutorial available only on the Web at http://philip.greenspun.com/sql/. I am also one of the creators and teachers of a three-day intensive course in developing database applications. We teach this class periodically at MIT.

19.   I periodically teach a database programming class at Harvard Medical

School. Students have access to a relational database of more than 5 billion

insurance claims and write SQL programs to try to identify correlations and trends.

I taught this course most recently in March 2021. I am currently teaching an

Information Security class at Florida Atlantic University.

II.   OVERVIEW OF CONCLUSIONS FORMED

20.   As part of my analysis, I have reviewed the '228 patent, relevant excerpts of

the prosecution history of the '228 patent. I have also reviewed at least the

following prior art references:

Prior Art Reference
U.S. Patent No. 10,621,228 to Desmond et al. ("Desmond") (Ex. 1001)
U.S. Patent App. Pub. No. 2011/0122153 A1 to Okamura et al. ("Okamura") (Ex. 1005)
U.S. Patent App. Pub. No. 2010/0058212 A1 to Belitz et al. ("Belitz") (Ex. 1006)
Tim Grey, Adobe Photoshop Lightroom Workflow: The Digital Photographer's Guide (2007) (Ex. 1020)
U.S. Patent App. Pub. No. 2011/0074811 A1 to Hanson et al. ("Hanson") (Ex. 1021)
Stephen Shankland, "What's the best Web site for geotagged photos?," CNET (Mar. 18, 2009), available at https://www.cnet.com/tech/computing/whats-the-best-web-site-for-geotagged-photos/ (Ex. 1022)
Panoramio, "Embedding a Panoramio map into your web page" (Archive.org: Mar. 28, 2010), available at https://web.archive.org/web/20100328215828/http://www.panoramio.com:80/help/embedding (Ex. 1023)

Shu-Wai Chow, PHP Web 2.0 Mashup Projects, Packt Publishing (2007) (Ex. 1024)
U.S. Patent App. Pub. No. 2009/0113350 A1 to Hibino et al. ("Hibino") (Ex. 1026)
U.S. Patent App. Pub. No. 2006/0165380 A1 to Tanaka et al. ("Tanaka") (Ex. 1027)
U.S. Patent No. 6,215,523 ("Anderson") (Ex. 1031)
U.S. Patent App. Pub. No. 2008/0133526 ("Haitani") (Ex. 1032)
U.S. Patent App. Pub. No. 2008/0306921 ("Rothmuller") (Ex. 1033)
U.S. Patent App. Pub. No. 2013/0198602 ("Kokemohr") (Ex. 1034)
U.S. Patent App. Pub. No. 2013/0326338 ("Secord") (Ex. 1035)
U.S. Patent App. Pub. No. 2007/0016575 ("Hurst-Hiller") (Ex. 1036)

21.   I have also reviewed various supporting references and other documentation in forming my opinions below.

22.   Counsel has informed me that I should consider these materials through the lens of one of ordinary skill in the art related to the '228 patent at the time of the earliest possible priority date of the '228 patent, and I have done so during my review of these materials. The application leading to the '228 patent was filed on September 20, 2019, and claims the benefit of priority to U.S. patent application No. 13/157,214 filed June 9, 2011 ("the Critical Date"). Counsel has informed me that the Critical Date represents the earliest possible priority date to which the

challenged claims of '228 patent are entitled, and I have therefore used that Critical Date in my analysis below.

23.   I have no financial interest in the party or in the outcome of this proceeding. I am being compensated for my work as an expert on an hourly basis. My compensation is not dependent on the outcome of these proceedings or the content of my opinions.

24.   In writing this declaration, I have considered the following: my own knowledge and experience, including my work experience in the fields of computer science and electrical engineering; my experience in teaching those subjects; and my experience in working with others involved in those fields.

25.   My opinions, as explained below, are based on my education, experience, and expertise in the fields relating to the '228 patent. Unless otherwise stated, my testimony below refers to the knowledge of one of ordinary skill in the fields as of the Critical Date, or before. Any figures that appear within this document have been prepared with the assistance of Counsel and reflect my understanding of the '228 patent and the prior art discussed below.

26.   This declaration explains the conclusions that I have formed based on my analysis. To summarize those conclusions, based upon my knowledge and experience and my review of the prior art publications listed above, I believe that:

- Claims 1-19 are rendered obvious by Okamura in view of Belitz (Ground 1)

III.   LEVEL OF ORDINARY SKILL IN THE ART

27.   In my opinion, one of ordinary skill in the art relating to, and at the time of,

the invention of the '228 patent would have been someone with at least a

Bachelor's degree in computer science, computer engineering, electrical

engineering, or a related field, and at least one year of experience designing

graphical user interfaces for applications such as photo organization systems.

Additional graduate education could substitute for professional experience, or

significant experience in the field could substitute for formal education.

28.   Based on my experiences, I have a good understanding of the capabilities of

one of ordinary skill. Indeed, I have taught, participated in organizations, and

worked closely with many such persons over the course of my career. Based on

my knowledge, skill, and experience, I have an understanding of the capabilities of

one of ordinary skill. For example, from my industry experience, I am familiar

with what an engineer would have known and found predictable in the art. From

teaching and supervising my post-graduate students, I also have an understanding

of the knowledge that a person with this academic experience possesses.

Furthermore, I possess those capabilities myself.

IV.   LEGAL STANDARDS

A.   Terminology

29.   I have been informed by Counsel and understand that the best indicator of

claim meaning is its usage in the context of the patent specification as understood

by one of ordinary skill. I further understand that the words of the claims should

be given their plain meaning unless that meaning is inconsistent with the patent

specification or the patent's history of examination before the Patent Office.

Counsel has also informed me, and I understand that, the words of the claims

should be interpreted as they would have been interpreted by one of ordinary skill

at the time of the invention was made (not today). Because I do not know at what

date the invention as claimed was made, I have used the earliest priority date of the

'228 patent as the point in time for claim interpretation purposes. That date was

June 9, 2011.

B.   Legal Standards for Anticipation

30.   I have been informed by Counsel and understand that documents and

materials that qualify as prior art can render a patent claim unpatentable as

anticipated. I am informed by Counsel and understand that all prior art references

are to be looked at from the viewpoint of a person of ordinary skill in the art.

31.   I am informed by Counsel and understand that a challenged claim is

unpatentable as "anticipated" under 35 U.S.C. § 102 if it is determined that all the

limitations of the claim are described in a single prior art reference. I am informed

by Counsel and understand that, to anticipate a claim, a prior art reference must disclose, either expressly or inherently, each and every limitation of that claim and enable one of ordinary skill in the art to make and use the invention.

32.   I have been informed by Counsel and understand that in an *inter partes* review, "the petitioner shall have the burden of proving a proposition of unpatentability," including a proposition of anticipation, "by a preponderance of the evidence." 35 U.S.C. §316(e).

C.   Legal Standards for Obviousness

33.   I have been informed by Counsel and understand that documents and materials that qualify as prior art can render a patent claim unpatentable as obvious. I am informed by Counsel and understand that all prior art references are to be looked at from the viewpoint of a person of ordinary skill in the art at the time of the invention, and that this viewpoint prevents one from using his or her own insight or hindsight in deciding whether a claim is obvious.

34.   I have been informed by Counsel and understand that a claim is unpatentable for obviousness under 35 U.S.C. § 103 "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." I am informed by Counsel and understand that obviousness may be based upon a

combination of references. I am informed by Counsel and understand that the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. However, I am informed by Counsel and understand that a patent claim composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.

35. I am informed by Counsel and understand that when a patented invention is a combination of known elements, a court must determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue by considering the teachings of prior art references, the effects of demands known to people working in the field or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art.

36. I am informed by Counsel and understand that a patent claim composed of several limitations is not proved obvious merely by demonstrating that each of its limitations was independently known in the prior art. I am informed by counsel for the Patent Owner and understand that identifying a reason those elements would be combined can be important because inventions in many instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known. I am informed by

Counsel and understand that it is improper to use hindsight in an obviousness analysis, and that a patent's claims should not be used as a "roadmap."

37.   I am informed by Counsel and understand that an obviousness inquiry requires consideration of the following factors: (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the pertinent art; and (4) any objective indicia of non-obviousness, such as commercial success, long-felt but unresolved need, failure of others, industry recognition, copying, and unexpected results. I understand that the foregoing factors are sometimes referred to as the "Graham factors."

38.   I have been informed by Counsel and understand that an obviousness evaluation can be based on a combination of multiple prior art references. I understand that the prior art references themselves may provide a suggestion, motivation, or reason to combine, but that the nexus linking two or more prior art references is sometimes simple common sense. I have been informed by Counsel and understand that obviousness analysis recognizes that market demand, rather than scientific literature, often drives innovation, and that a motivation to combine references may be supplied by the direction of the marketplace.

39.   I have been informed by Counsel and understand that if a technique has been used to improve one device, and a person of ordinary skill at the time of invention would have recognized that it would improve similar devices in the same way,

using the technique is obvious unless its actual application is beyond his or her skill.

40.   I have been informed by Counsel and understand that practical and common sense considerations should guide a proper obviousness analysis, because familiar items may have obvious uses beyond their primary purposes. I have been informed by Counsel and understand that a person of ordinary skill looking to overcome a problem will often be able to fit together the teachings of multiple prior art references. I have been informed by Counsel and understand that obviousness analysis therefore takes into account the inferences and creative steps that a person of ordinary skill would have employed at the time of invention.

41.   I have been informed by Counsel and understand that a proper obviousness analysis focuses on what was known or obvious to a person of ordinary skill at the time of invention, not just the patentee. Accordingly, I understand that any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.

42.   I have been informed by Counsel and understand that a claim can be obvious in light of a single reference, without the need to combine references, if the elements of the claim that are not found explicitly or inherently in the reference can be supplied by the common sense of one of skill in the art.

43.   I have been informed by Counsel and understand that secondary indicia of non-obviousness may include (1) a long felt but unmet need in the prior art that was satisfied by the invention of the patent; (2) commercial success of processes covered by the patent; (3) unexpected results achieved by the invention; (4) praise of the invention by others skilled in the art; (5) taking of licenses under the patent by others; (6) deliberate copying of the invention; (7) failure of others to find a solution to the long felt need; and (8) skepticism by experts. I understand that evidence of secondary indicia of non-obviousness, if available, should be considered as part of the obviousness analysis.

44.   I have been informed by Counsel and understand that there must be a relationship between any such secondary considerations and the invention, and that contemporaneous and independent invention by others is a secondary consideration supporting an obviousness determination.

45.   In sum, my understanding is that prior art teachings are properly combined where one of ordinary skill having the understanding and knowledge reflected in the prior art and motivated by the general problem facing the inventor, would have been led to make the combination of elements recited in the claims. Under this analysis, the prior art references themselves, or any need or problem known in the field of endeavor at the time of the invention, can provide a reason for combining the elements of multiple prior art references in the claimed manner.

46. I have been informed by Counsel and understand that in an *inter partes* review, "the petitioner shall have the burden of proving a proposition of unpatentability," including a proposition of obviousness, "by a preponderance of the evidence." 35 U.S.C. §316(e).

## V. The '228 Patent

A. Overview of the '228 Patent

47. The '228 patent and all of the prior art references discussed herein are from the field of managing digital image files. This is an old and well-established area of technology and displaying digital image files on the basis of location and/or people depicted, in particular, is not at all new. In fact, as indicated above and on my CV, I began working with computer-generated maps in the 1980s and with web-based systems for managing digital photographs in 1994, most notably for the photo.net service.

48. According to the inventors, the '228 patent is generally directed to managing digital files and displaying a representation of the digital files using a "map view" or a "people view." Ex. 1001, 22:59-23:11, 34:16-54, 29:41-64, FIGS. 32, 34, 41. Despite the "Field of the Invention" (Ex. 1001, 1:20-22) implying a relation to the management of any digital file, the '228 patent is related to managing digital *image* files (including videos) rather than describing a general-purpose file-management

tool, such as the Unix file system or Microsoft's NTFS, included with the Windows operating system.

49. The '228 patent describes a map view (as illustrated in FIG. 41 below) that displays an interactive map and location selectable thumbnail images at different locations on the map. The location selectable thumbnail images (e.g., indicators 0874 and 0875) allow the user "to select the thumbnail to see all the Digital Files with the same location." Ex. 1001, 29:51-52. Each pinned location on the interactive map includes "a thumbnail of the Digital File" and "the number of Digital Files for that location." Ex. 1001, 29:55-57. As shown in FIG. 41, the location associated with the indicator 0875 has four digital files, as represented by "4" in the right corner of the thumbnail image.

50. The map view of the '228 patent is shown below.
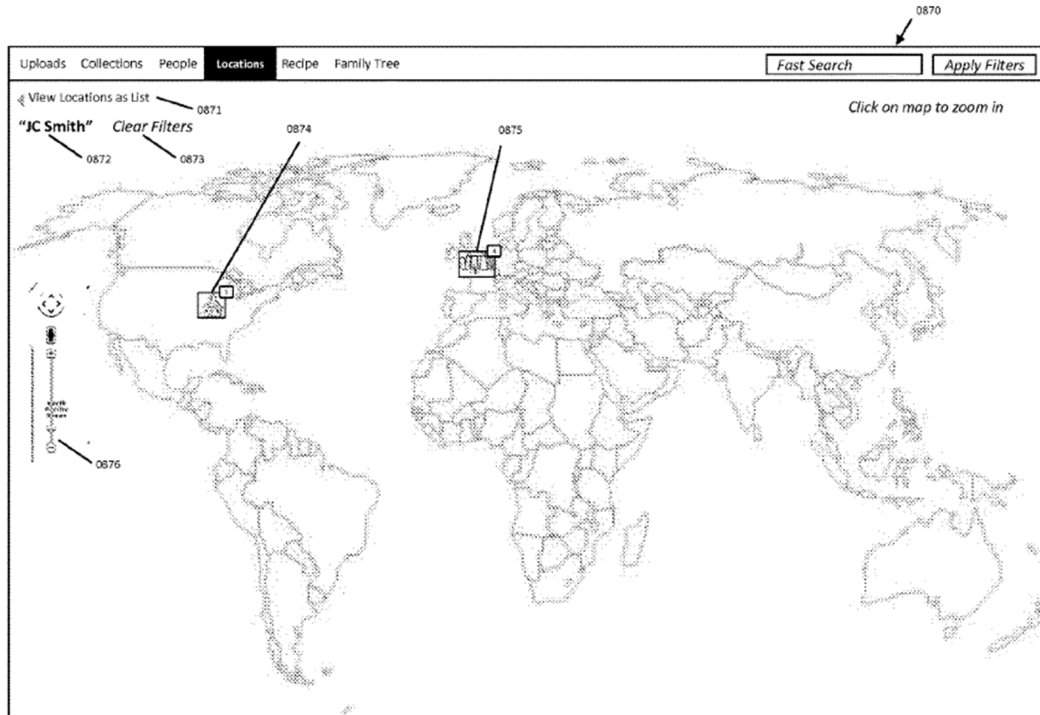
Ex. 1001, FIG. 41

51.   When the user selects one of the location selectable thumbnail images (e.g.,

indicator 0875), the user interface displays a location view (as illustrated in FIG.

34 below). The location view displays a first location name (e.g., "Wrigley Field")

associated with the selected location and a representation of at least a portion of

one digital file (e.g., photo 1633) among digital files associated with the selected

location. The digital files that "were taken or originated" at the selected location

are associated with said location. Ex. 1001, 6:20.

52.   The location view of the '228 patent is shown below.
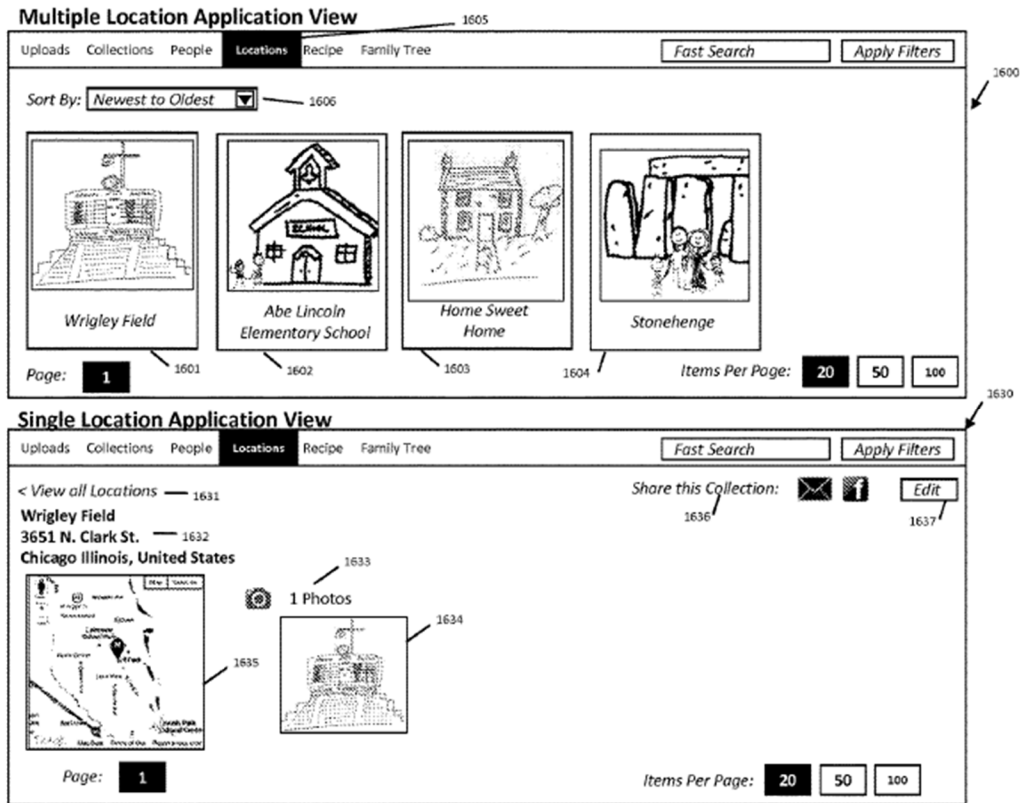
Ex. 1001, FIG. 34

53.   The '228 patent also describes providing a people view (as illustrated in FIG. 32 below as a "Multiple People Application View") that displays a "person selectable" thumbnail image and a name associated with the person. The person selectable thumbnail images (e.g., indicator 1403) include a representation of each person's face and each person's name (e.g., "Jon Smith"). Ex. 1001, 23:1-4.

54.   Responsive to selection of one of the person selectable thumbnail images (e.g., indicator 1403), the user interface displays a single person view (as illustrated in FIG. 32 below as a "Single People Profile Application View"). The single person view displays thumbnails (e.g., 1446) of digital files associated with the selected person. Ex. 1001, 23:12-24.

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55.   The people view of the '228 patent is shown below.
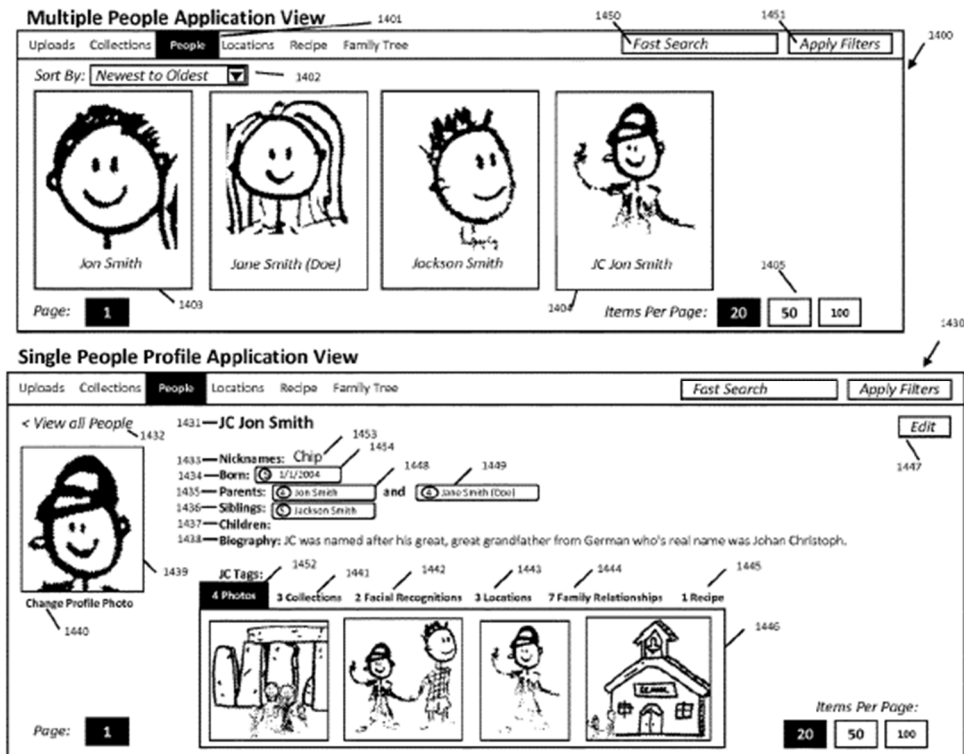
Ex. 1001, FIG. 32

B.   File History of the '228 Patent

56.   The underlying application to the '228 patent, U.S. Application No. 16/578,238, was allowed without a rejection on the merits. The Examiner provided only a cursory discussion of how the allowed claims were patentable in that the Examiner summarized the interview that led to allowance as "Allowable Subject Matter was discussed. … Examiner's amendment was authorized to advance the case" and only stated that "people view" features in claim 1 were missing from two considered references: Hibino (Ex. 1026) and Tanaka (Ex. 1027). See Ex. 1002, 42-44. Okamura and Belitz were not considered by the

Examiner in granting the '228 patent. Prior art references cited below demonstrate that the "people view" features of claim 1 were well-known at the time of the '228 patent, and, had the Examiner been aware of this prior art, the application would not have been allowed.

VI. TECHNOLOGY BACKGROUND

57. The earliest widely used computer-managed databases for digital images were 1980s medical systems, e.g., for radiology. A general-purpose system was described in an October 21, 1986 New York Times "Company Briefs" article[2]:

> Eastman Kodak Co., Rochester, said its Edicon subsidiary had introduced its first product line, a photo image management system that integrates photographic images with text and graphics in a computerized database.

58. The seeds of modern location-based photo management tools for consumers may be seen in U.S. Patent 5,262,867 (1990), describing a Sony system in which location data are recorded with each image capture (the then-new Global Positioning System is referenced Col 4, ll. 4-4-13). A similar idea may be seen in U.S. Patent 5,666,578 (1993), describing a Nikon system in which GPS location data are recorded in a magnetic layer with film images (FIG. 40; 13:45-67).

59. The 1992 Kodak PhotoCD system enabled the bulk conversion of images on film to high-resolution digital files. I myself was a user of the PhotoCD system

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[2] https://www.nytimes.com/1986/10/21/business/company-briefs-550586.html

starting in late 1993 and used the Unix file system with custom-format index files as an image management tool.

60.   An extension of 1970s relational database management system technology to handle digital images was released commercially in 1994. "Illustra Charts Its Own Path—Positions hybrid relational database to handle multimedia" (Information Week, October 24, 1994): "Illustra currently offers text, spatial, and image DataBlades. … the image blade allows users to store and manipulate images; and the spatial blade provides lines, points, polygons, and their spatial relationships for users in earth sciences and global positioning." Oracle was offering similar capabilities no later than 2000 in its Intermedia and Oracle Spatial subsystems of the Oracle 8i RDBMS.

61.   A 2003 Nikon system described in U.S. Patent Application Publication 2003/0214670 describes searching for images by "shooting location" (paragraphs 130-131).

62.   A 2003 academic paper describes a Microsoft system for associating subject names with images: "Automated Annotation of Human Faces in Family Albums" (MULTIMEDIA '03 conference). The paper also references the availability of location data:

> The most commonly used entries for indexing family photographs are related to *when, where, who* and *what*. With the advance in digital camera technology, date and time as well as location data is or will be readily available in cameras. In this paper, we focus on how to automatically extract "*who*" in family photographs.

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63.   See also Microsoft's U.S. Patent 8,189,880, filed 2007, regarding a facial

similarity-based system for organizing photos.

64.   Photo-organizing systems for consumers were well-established by 2002,

when Picasa was released. The desktop photo-organizing system was acquired by

Google in 2004 and is described in Ex. 1022. Picasa offered a simple "mark as

favorite" capability with a single star, by contrast to earlier photo organizers in

which 4-6 levels were offered ("no star" through as many as 5 stars). In all of these

organizers, once stars had been applied to certain photos, it was possible to then

filter the display to show only photos with at least a minimum number of stars.

This capability may be seen in Ex. 1022 with the "My Favorites" button:

65.   See Also "Picasa 2.0" by Cade Metz (PCMag UK, October 4, 2005): "As

you organize your pictures, Picasa also lets you change filenames, key in captions,

and add ratings to your favorites. Then, as time goes on, you can easily track down

old photos with the app's improved search tool, which lets you locate files by keywords, ratings, and dates." That is, organizing digital image files by using a rating criterion was well-known by 2010.

66.   Adobe Photoshop Lightroom also had a similar filtering capability ("based on the star rating"): "to view all images rated with four or more stars, click the four star rating and then select 'and higher' from the dropdown." Ex. 1020, 64.

At the far right of the filmstrip are controls that allow you to further filter your images (Figure 3.33) based on several criteria, which I'll show you how to assign to your images in the next section. The first three "flag" buttons allow you to filter the images based on flag status: Picks, Unflagged, and Rejected. Each is a toggle, meaning you can have multiple selected (for example, so you can see images that are flagged as Pick as well as those that are not flagged). To the right of the flag buttons you'll find the option to filter images based on the star rating. Simply select a star rating value and then choose an appropriate option from the dropdown. For example, to view all images rated with four or more stars, click the four star rating and then select "and higher" from the dropdown. The colored buttons to the right of the rating filter allows you to filter images based on the colored label assigned to them. Again, these buttons provide a toggle. When you click on one or more of these buttons, only images labeled with those colors will be shown.
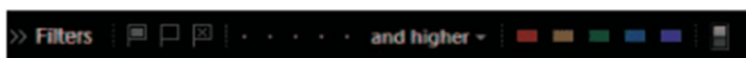

Figure 3.33 The controls at the far right of the filmstrip allow you to filter the images.

67.   Picasa was capable of exporting digital image files to other formats and systems. The "Export as HTML Pages" and "Send to flickr!" are described in Shankar Ganesh's "10 Tips to Manage Photos Better using Google Picasa" (March 5, 2008; available at https://www.makeuseof.com/tag/google-picasa-2-tips-tools/).
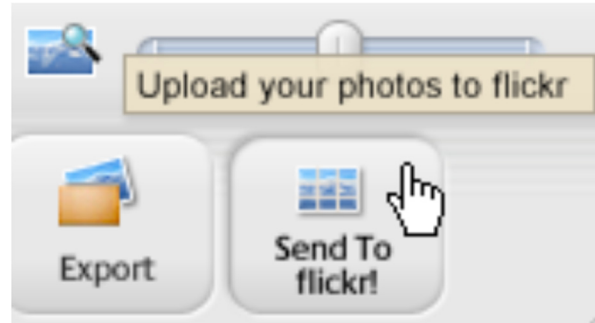
68.   "Using Picasa 2 to Organize, Edit, and Share Pictures" by Ben Stafford
(Digital Camera Review, March 15, 2005; available at
http://www.digitalcamerareview.com/news/using-picasa-2-to-organize-edit-and-share-pictures/) lists "Export (allows you to resize and edit image quality to
optimize for the web or email)" as one of the capabilities of Picasa's Picture Tray.
The same article mentions a database filtering capability: "One of my favorite
advanced search features is a slider that lets you specify how recent the pictures
can be in the Lightbox. It defaults to 'All' images, but can be moved down the
most recent set of pics (for instance, I could view pictures as recent as 2 days old,
since that was the last date of the pictures I had taken)."

69.   The capabilities of digital image management systems targeted at
professionals were more substantial. Ex. 1020 (Adobe Photoshop Lightroom
Workflow by Tim Grey (2007, Wiley; "Grey")) describes options to export images
in JPEG, PSD, and TIFF formats (Ex. 1020, pp. 73-74) and options associated with
each format, e.g., for image quality, color space, resolution, and whether to add a

copyright watermark. The same book notes that it is possible to filter the display of

images from the Lightroom database. Ex. 1020, p. 83:

then choose an appropriate option from the dropdown. For example, to view all images rated with four or more stars, click the four star rating and then select "and higher" from the dropdown. The colored buttons to the right of the rating filter allows you to filter images based on the colored label assigned to them. Again, these buttons provide a toggle. When you click on one or more of these buttons, only images labeled with those colors will be shown.
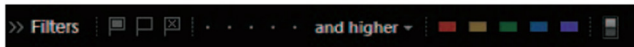
Figure 3.33 The controls at the far right of the filmstrip allow you to filter the images.

The "switch" at the far right of the Filters section on the filmstrip serves as a master control for the filtering of your images. When this switch is on (up) the filters you have selected will limit the images being displayed. When it is off (down), images will not be filtered based on this criteria. Simply click on this button to toggle it on or off.

70.	Also see Lightroom's capability of exporting digital image files including

publishing them on the website: "publish directly to your website by using the

settings you established in the Output setting of the right panel." Ex. 1020, 192-

193.

Export

Usually the idea of a web gallery is to post the files to a website so anyone with an Internet connection can view the images. However, at times you'll want to save the files to your local computer instead. This may be for the purpose of sharing the gallery on a computer serving as a kiosk in your gallery, or so you can send the files on a CD or other media to share with clients, or for a variety of other purposes.

If you want to save the web gallery files to your computer, you can click the Export button at the bottom of the right panel. This brings up the Save Web Gallery dialog box (Figure 7.13), where you can specify a location for saving the files. While you're specifying a location where you want to save the files, think of this as a typical Save As dialog box, where you're specifying both a location and filename for the file to be saved. In this case, that filename translates into the folder name that will contain the many files that make up your gallery.
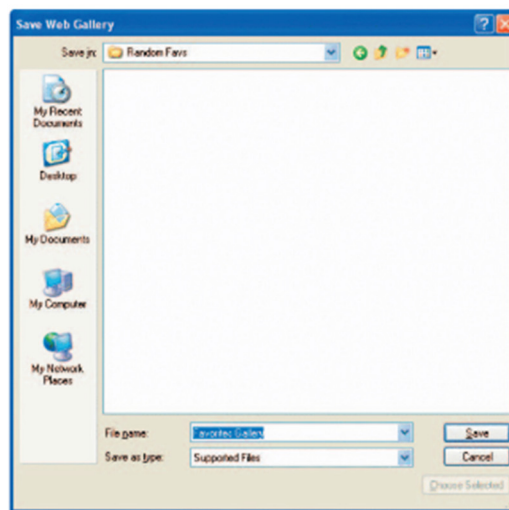

Figure 7.13 The Save Web Gallery dialog box allows you to specify the folder and filename for the gallery, which will determine where the main folder for the gallery will be created and what it will be called.

71.   Displaying information on a computer-generated map is an old practice, going back at least to the early geographic information systems ("GIS") of the 1960 (today's market leader, ESRI's ArcGIS, was first offered for sale in 1981). These systems offered the same kind of flexible filtering and display that are familiar to today's computer mapping tool users. For example, ArcGIS 9: ArcMap Tutorial (Copyright 2000-2006; available from

http://webhelp.esri.com/arcgisdesktop/9.2/pdf/ArcMap_Tutorial.pdf) describes how to turn on and off data layers (page 4):

Displaying a layer

The table of contents lets you turn layers on and off in the display. To display a layer, check the box next to its name. To turn it off, uncheck it. Display the schools and runways by checking their boxes in the table of contents.
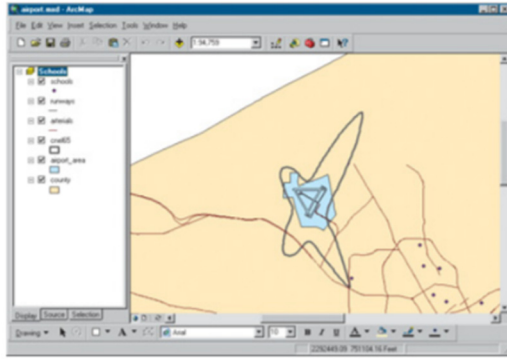
72.   Computer-controlled mapping was democratized in the mid-2000s with the availability of Web-based mapping services such as Yahoo! Maps and Google Maps. These tools incorporated ideas from prior art GIS systems, including the idea of user-controlled display of layers. For example, Google Maps offered a traffic layer, selectable via a button, in 2009[3]: "Google Maps will now show you live traffic conditions on arterial roads in selected cities. Just zoom-in on the city you're interested in, and click the 'Traffic' button in the upper-right corner of the map. As you zoom in closer to an area of interest, we'll color the arterial roads, in addition to the highways, to show current traffic conditions."

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[3] https://www.searchenginewatch.com/2009/08/25/google-maps-adds-arterial-roads-to-traffic-layer-with-data-from-your-phone/

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73.   As with prior art GIS systems, Web-based mapping tools could be adapted

and extended. See "A Journey to a Thousand Maps Begins With an Open Code"

(New York Times, October 20, 2005), for example:

> You can still search Google Maps to figure out how to get from here to there, but why would you, when you can use it to pinpoint kosher restaurants in Cincinnati, traffic cameras in Dublin, or hot spring spas anywhere in the United States? How about finding coffee shops in Seattle that provide free wireless Internet access? Or would you prefer to locate the McMansion your boss just bought and find how out exactly how much he paid for it?

> An army of programmers, most of them doing it just for fun, has grabbed the software code that generates the distinctive maps with their drop-shadowed virtual pushpins, and combined it with other data like the locations of potholes, taco trucks and U.F.O. sightings, and even the sites of murders and muggings.

> The result is Google map mash-ups, the latest form of Internet information repackaged for entertainment and, perhaps, profit. For instance, type the official airline flight abbreviation and flight number into the Google search engine and FBOweb .com should come up at the top of the results page. Click on that and you will see a pushpin marking the spot where the plane is. The service also provides a data box listing the speed, altitude and estimated time of arrival of the flight. …

> Why are people doing this? The flippant answer is also the honest one: because they can. Google has revealed the map-generating software, called an A.P.I., or application programming interface. (You can find it at www.google.com/apis/maps/.) And with that A.P.I., a programmer can create a mash-up by combining it with other data -- like apartment listings on Craigslist, or demographic data from the United States census. The programming technique, itself a mash-up of programs, is also known as Ajax, for Asynchronous JavaScript and XML. …

> Yahoo has opened the A.P.I.'s behind several of its Web services, including Flickr, its photo-storing site; Yahoo Shopping; and Yahoo Maps. Even Microsoft, which has been guarded about sharing its code, has released the A.P.I. for its mapping feature. But Google Maps caught on fastest and now seems to have the greatest number of developers writing for it. (Exactly how many, Google said, is a closely guarded secret.)

74. In my research for this matter, I found multiple tutorial books that used examples of placing photos on maps. These books included Ruby on Rails Web Mashup Projects (April 2008; Flickr+Google Maps on pages 7 and 168), Yahoo! Maps Mashups (2007; Flickr+Yahoo! Maps on pages 64, 65, and 71), PHP Web 2.0 Mashup Projects Practical PHP (2007; Flickr+Google Maps on page 277).

75. I also found examples of organizing photo by the identity of the subject, e.g., in Building Flickr Applications with PHP (2006, page 15):

Tagging Photos

Tagging is one of the most useful features that Flickr has to offer. Tagging photos is a way of categorizing photos using descriptive words. To tag a photo, click on the "Add a tag" link on the photo's page, then write the tag or tags that describe the photo. Say you want to take all the images you have of your friends, and you want to be able to look at the photos of each friend individually. You could go through each of your photos and tag them as *friend* but also tag them with the name of each individual friend in the photo. So you would have photos tagged as *dan, bill, susan*, and so on. You can also batch-tag photos as you upload them with Uploadr. Simply set the tags that you want to apply to all the photos, and every photo you upload will be tagged appropriately.
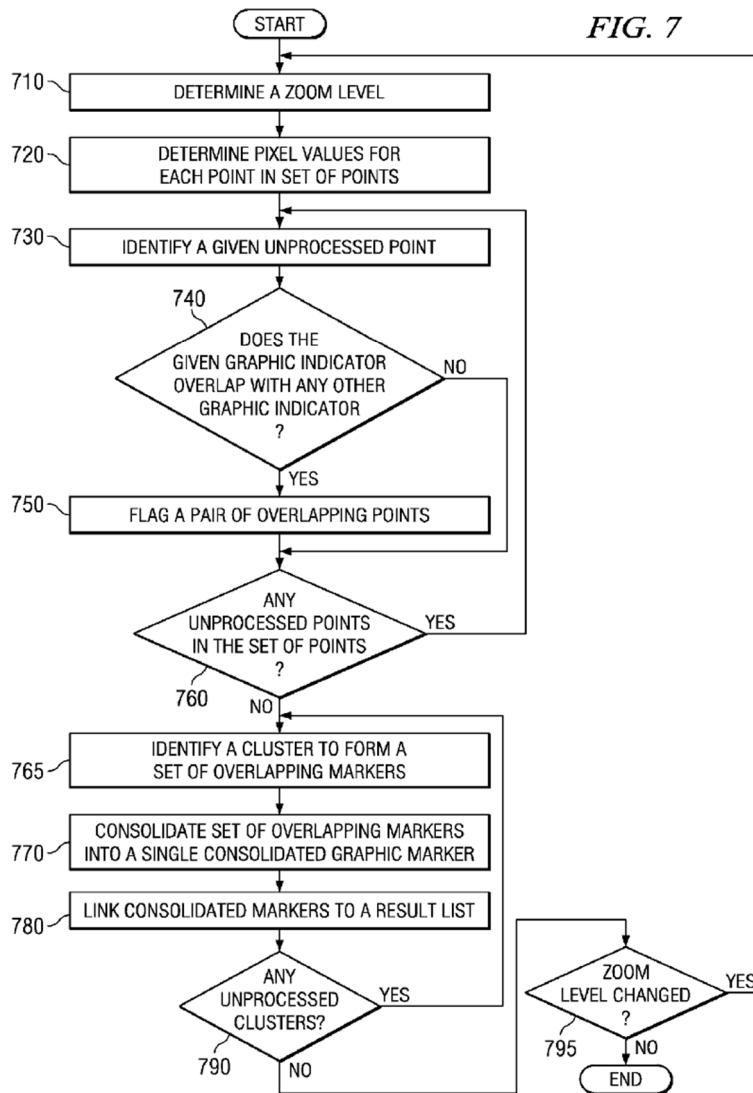
76. To sum up, persons of ordinary skill knew, by 2010, how to organize photos in a database and how to present those photos either on a map or in a browse-by-person presentation.

77. Some of the earliest widely used interactive computer applications were organized by screens, e.g., for IBM 3270 terminals connected to mainframe computers in the 1970s. The screen-by-screen interaction idea was carried over to some extent in the client/server systems of the 1980s, in which custom software on personal computers connected to a central RDBMS. Screen-by-screen interaction become dominant for consumers using the World Wide Web in the 1990s,

especially prior to the popularity of sites relying heavily on JavaScript, in which a certain amount of computation may be done locally within the browser. Any time that screen-by-screen interaction was the interface, persons of ordinary skill sought to summarize what the user would find by navigating to a subsequent screen. POSITAs had to consider the computing power available and also the screen resolution, but generally it was considered better to show users a preview of content available in subsequent screens. Internet search engine users have been familiar with this interface convention for decades, i.e., with the search results page containing a summary of the content available within each result. This is illustrated in FIG. 11 of U.S. Patent 7,231,405 ("Method and Apparatus of Indexing Web Pages of a Web Site for Geographical Searchin[g] Based on User Location"; filed in January 2005). For example, Okamura teaches mouse hovering ("when the mouse is placed over a thumbnail image") results in "pieces of information" a user might otherwise have to click to get. Ex. 1005, [0245]. In any kind of system for image management, the conventional method of showing a content preview was (and is) to use thumbnail images.

78.   Persons of ordinary skill were familiar with the need to declutter computer-generated maps at least going back to the early years of geographic information systems. It was conventional to organize data into layers within a GIS so that the user could choose which categories of data to display on screens with limited

resolution (see above excerpt from the ArcGIS 9.2 tutorial). This can be considered

a form of filtering results from a database. Even within a layer, zooming out

slightly could result in far too much information than could fit on the screen, a

problem that was apparent to map-makers even before the age of digital computers.

A wall-size map of the United States, for example, is still not large enough to

accommodate the name of every town in the U.S., but a fold-out paper map of a

single metropolitan area might indeed contain that information. An explicit tutorial

on decluttering via consolidation is provided in an IBM patent application, U.S.

2007/0268310 (used by the USPTO as a basis for rejecting Belitz (Ex. 1006)). See

steps 765 and 770 below:

FIG. 7

710 — DETERMINE A ZOOM LEVEL

720 — DETERMINE PIXEL VALUES FOR EACH POINT IN SET OF POINTS

730 — IDENTIFY A GIVEN UNPROCESSED POINT

740 — DOES THE GIVEN GRAPHIC INDICATOR OVERLAP WITH ANY OTHER GRAPHIC INDICATOR ? — NO

750 — FLAG A PAIR OF OVERLAPPING POINTS — YES

760 — ANY UNPROCESSED POINTS IN THE SET OF POINTS ? — YES / NO

765 — IDENTIFY A CLUSTER TO FORM A SET OF OVERLAPPING MARKERS

770 — CONSOLIDATE SET OF OVERLAPPING MARKERS INTO A SINGLE CONSOLIDATED GRAPHIC MARKER

780 — LINK CONSOLIDATED MARKERS TO A RESULT LIST

790 — ANY UNPROCESSED CLUSTERS? — YES / NO

795 — ZOOM LEVEL CHANGED ? — YES / NO — END

VII. SUMMARY OF THE PRIOR ART

A. Overview of Okamura

79. Okamura is generally directed to a user interface for "managing contents such as image files recorded by an image capturing apparatus such as a digital still camera" based on locations and people associated with the content. Ex. 1005, Abstract, [0091], [0110], [0313], FIG. 21, FIG. 41.

80.   As shown in FIG. 41, Okamura discloses "a map view screen." The map view screen displays location-based clusters in an overlaid manner on an interactive map, where the user can select a cluster to view thumbnail images belonging to the cluster (as well as the number of digital files associated with the cluster), change the scale of the map (e.g., by adjusting the scale changing bar 781), and switch to a different screen (including a face-based index screen as described below). Ex. 1005, [0215], [0354]-[0359], [0430-0431], FIG. 41. As illustrated in FIG. 50, selecting a location-based cluster causes the user interface to display "contents belonging to the corresponding cluster" that are not overlaid on the interactive map. Ex. 1005, [0439]-[0444].
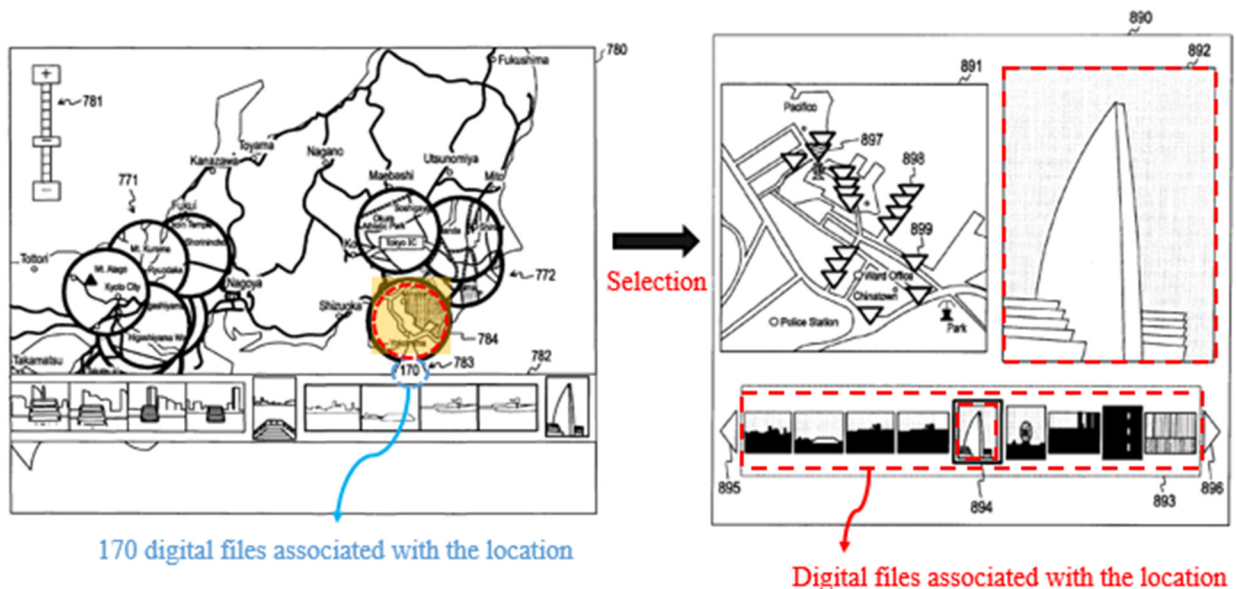
Ex. 1005, FIG. 41 (left; annotated), FIG. 50 (right; annotated)

81.   In addition to its map view, Okamura discloses a people view for content that includes an index screen displaying "index images generated on the basis of

face information." The index screen includes an "image representing a face cluster, for example, a thumbnail image of each of [the] faces included in contents belonging to the face cluster" and "the pieces of information 433 related to the thumbnail image 432 []." Ex. 1005, [0099], [0110], [0139], [0234], [0246]-[0260], [0267], FIG. 21. As illustrated FIGS. 21 and 24, selecting a face-based thumbnail image causes the user interface to display "contents included in the face cluster []." Ex. 1005, [0261].
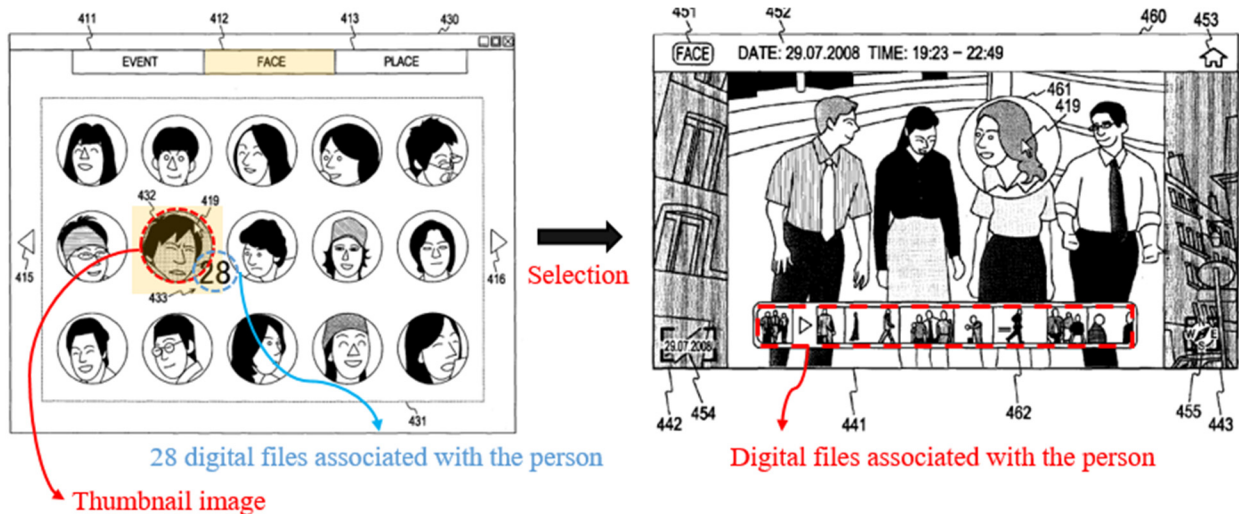
Ex. 1005, FIG. 21 (left; annotated), FIG. 24 (right; annotated)

B.   Overview of Belitz

82.   Belitz is generally directed to a "user interface comprising a controller configured to display a map and to display at least one marked location on said map." Ex. 1006, Abstract, [0001]-[0003], [0006], [0039], [0050]-[0052]. Belitz's device has a user interface that displays a map 409 (as illustrated in FIG. 4 below) with thumbnail images displayed at various locations. *Id.* The map 409

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"display[s] all or a selected number of photographs stored in a device." Ex. 1006, [0016]. Belitz teaches that the map 409 is interactive including features of "zooming in" the map and user operations, such as "placing a cursor above [a graphical object] and clicking it." Ex. 1006, [0054]-[0056], [0060].
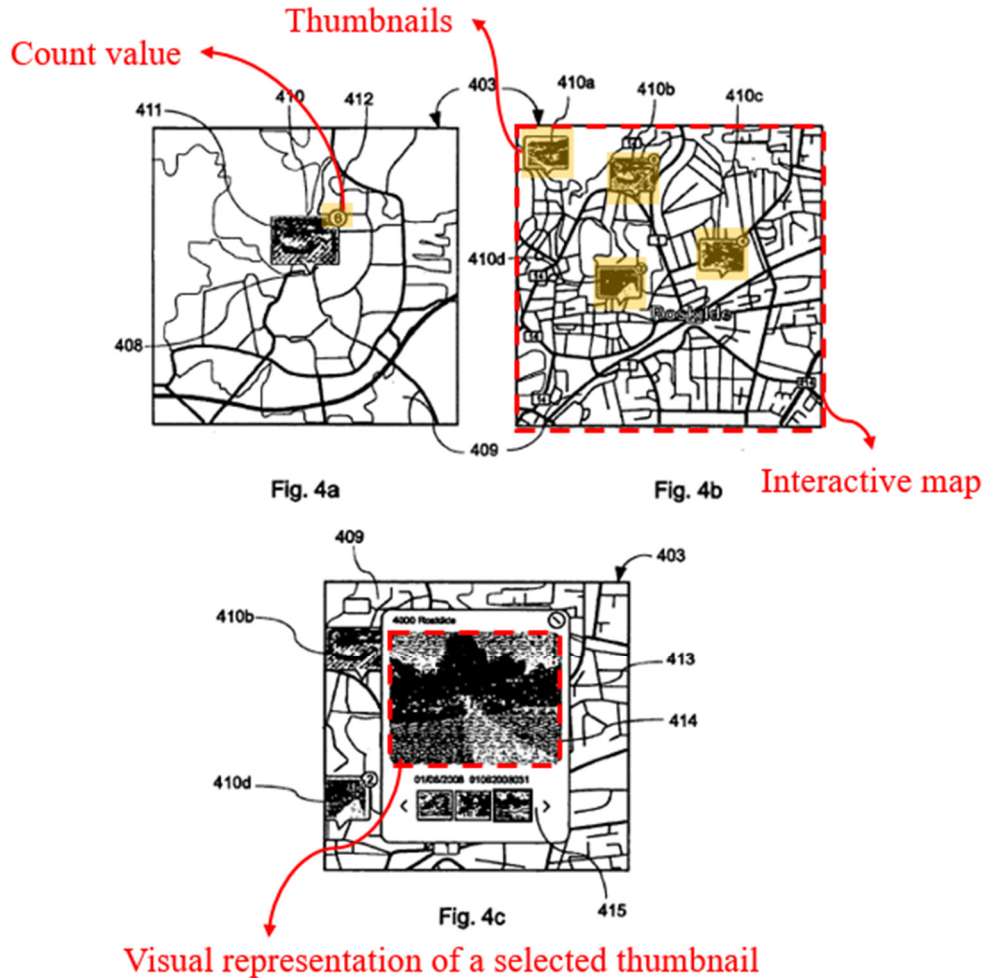
Ex. 1006, FIG. 4a-c (annotated)

83.   Belitz's user interface displays, on the interactive map, thumbnails of graphical objects (e.g., thumbnails 410a-d in FIG. 4b below). Ex. 1006, [0062]. Each graphical object is associated with a location. For instance, "examples of

associations are photographs that have been taken at those coordinates." Ex. 1006, [0052].

84.   Belitz's user interface also displays a count value indicating a number of graphical objects associated with a given location. For example, each thumbnail on the map has the respective count value partially overlapping the right corner of the thumbnail image (e.g., "6" at the right corner of the thumbnail 410 in FIG. 4a).

85.   Responsive to the user's selection ("possibly by tapping on it") of one of the selectable thumbnail images (e.g., thumbnail 410c), the user interface displays the visual representations on a pop-up window 413 (illustrated in the above FIG. 4c). Ex. 1006, [0057], [0060], [0062]. The popup window "shows at least some of the visual representations 411 of the graphical object 410c." *Id*. The user "can easily scroll back and forth among these associated images and preview them in the popup window 413." *Id*.

C.   Combination of Okamura and Belitz

86.   A POSITA would have found it obvious to combine Okamura and Belitz ("Okamura-Belitz"). Both references (and the '228 patent) come from the same field of endeavor: "managing and using digital files such as photographs." Ex. 1001, 1:21-24; Ex. 1005, [0002], [0091]; Ex. 1006, [0001], [0062]. Okamura and Belitz address the same problems (also purportedly solved by the '228 patent): allowing "people to organize, view, preserve and share" their digital photographs.

Ex. 1001, 1:61-67; Ex. 1005, [0007]-[0013]; Ex. 1006, [0002]-[0005]. Okamura

and Belitz also describe analogous techniques—both describe use of an interactive

map with user-selectable markers (clusters or thumbnail images) specifying the

locations of photos and/or videos, and use of those markers to retrieve the digital

photos and/or videos linked to those locations. Ex. 1005, Abstract, [0091], [0110],

[0313], FIGS. 18-21, FIG. 41; Ex. 1006, [0039], [0050]-[0055], [0062]. With this

background, a POSITA would have readily turned to Belitz when reviewing

Okamura and would have found it obvious to incorporate features of Belitz in

Okamura.

87.   A POSITA would have viewed the combination of Okamura and Belitz in

two, alternative ways. First, a POSITA would have found it obvious to replace the

location-based clusters used in Okamura's map view (shown in FIG. 41) with the

thumbnail images used in Belitz's map view. With this replacement, Okamura's

map view would function as described in Okamura, except that it would display,

on the map view, thumbnail images as described by Belitz, instead of Okamura's

location-based clusters. Second, as an alternative way of viewing the combination

of Okamura and Belitz, a POSITA would have found it obvious to replace

Okamura's map-related views (e.g., cluster map view shown in FIG. 18 or map

view shown in FIG. 41) with Belitz's map view. In this alternative, when a user

provides input to display a map-related view in Okamura, the combined system

would display Belitz's map view, instead of Okamura's. As discussed below, each of these alternatives for combining Okamura and Belitz would have been obvious to a POSITA and independently render the Challenged Claims obvious.

88.   As to the first way of combining Okamura and Belitz, as discussed in Section III.A.1, Okamura discloses a map view (shown in FIG. 41) that displays location-based clusters over an interactive map. Although Okamura describes its clusters as "thumbnail" images of a portion of a map (Ex. 1005, [0135], [0221]-[0223], [0229]-[0231]), to the extent that the location-based clusters in Okamura's map view are not "thumbnail image[s]" as claimed, a POSITA would have been motivated to combine Okamura and Belitz such that Okamura's map view displays selectable thumbnail images as disclosed in Belitz to obtain additional benefits as outlined below. Below, Okamura's FIG. 41 has been modified to provide an example of how a POSITA would have replaced Okamura's location-based clusters with Belitz's thumbnail images:
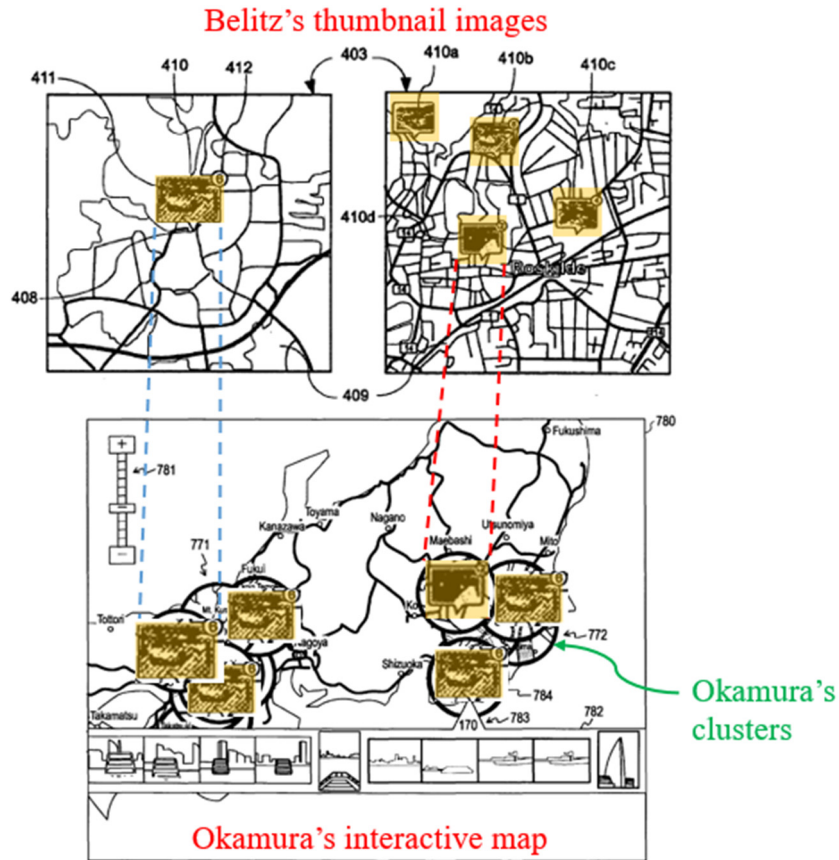
Ex. 1006, FIG. 4a-b (top; annotated); Okamura's FIG. 41 modified to include

Belitz's thumbnails (bottom; annotated)

89.   A POSITA would have found it obvious that the above-described way of

organizing digital files using location selectable thumbnails would achieve

Okamura's objective of "managing contents." Ex. 1005, [0091]. Specifically, as

discussed in Belitz, the combination enhances a user experience of "discern[ing]

between the various objects" by providing "a good view of what location is

associated with what." Ex. 1006, [0002]. The teachings by Belitz are consistent

with Okamura's objective to improve the user experience: "each of contents

belonging to each cluster can be also easily grasped by the user." Ex. 1005, [0215].

Okamura and Belitz also describe analogous methods of displaying an interactive

map with user-selectable elements (e.g., Belitz's thumbnail images and Okamura's

clusters) and retrieving digital files (e.g., photos and videos) associated with a

given location.

90.   A POSITA would have understood that Belitz's thumbnail images displayed

on the interactive map are functionally equivalent to Okamura's location-based

clusters (at least because (1) both Belitz's thumbnail images and Okamura's

clusters are associated with a given location, (2) both are displayed on the

interactive map, and (3) both are dynamically generated/modified based on user

interaction including zooming in/out on the map) and could be used as an

alternative to the clusters on Okamura's map view screen.   It would have been

obvious to a POSITA to incorporate Belitz's thumbnail images (including a count

indicator) to provide added functionality that allows a user to preview pictures

associated with a given location as taught by Belitz. Ex. 1006, [0004];

91.   A POSITA would have been motivated to make this modification because

Belitz teaches that "it would be useful to be able to present a user with an overview

of associated images to special locations which enables [the] user to clearly see the

associations." Ex. 1006, [0004], [0015]. A POSITA also would have considered

Belitz's thumbnail technique to be a known and predictable alternative to

Okamura's clusters, and that using thumbnails could appeal to certain users, thereby improving usability for such users. For example, a POSITA would have known, before 2010, that certain users preferred interactive maps that used thumbnails to identify the locations of photos, as described by "Where Picasa has the edge over Flickr and SmugMug is in showing thumbnails of each image on the map". Ex. 1022, 4.

92. Indeed, contemporaneous evidence shows that a POSITA would have understood that selectable graphical clusters would have been obvious to replace with "smaller versions of the captured images (e.g., thumbnail images)." Ex. 1021, [0030]; The well-known nature of using location selectable thumbnails and a POSITA's understanding of location selectable thumbnails as an obvious option for presenting digital files is further demonstrated by multiple applications (e.g., Picasa, Panoramio; shown below) that displayed thumbnail images on a map. Ex. 1022; Ex. 1023; Ex. 1024, 239, 243;
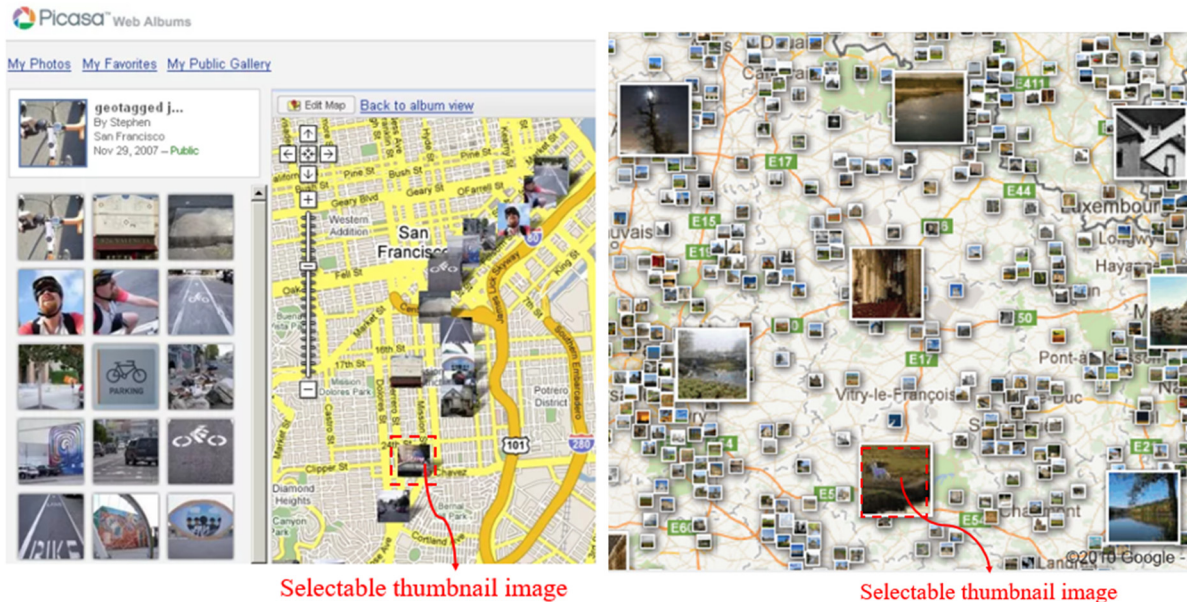
Ex. 1022 (left; annotated); Ex. 1023 (right; annotated)

93.   Alternatively, in the second way of combining Okamura and Belitz

discussed above, a POSITA would have found it obvious to substitute Okamura's

map-related views (including the interactive map and selectable location-based

clusters) with Belitz's interactive map (including selectable thumbnail images), for

at least the same reasons described above including the user's increased awareness

of the digital files associated with the various locations. Ex. 1005, [0354]-[0356],

[0430], FIG. 49; Ex. 1006, [0051]-[0053], [0055], [0062], FIG. 4. For example, a

POSITA would have been motivated to combine Okamura and Belitz such that,

when a user selects the "PLACE" tab 413 shown in Okamura's FIG. 18,

Okamura's cluster map display area 414 would be replaced with Belitz's

geographic map view, where digital content is indicated at various locations on

Belitz's interactive map by Belitz's thumbnail images. A POSITA would have

been motivated to combine Okamura and Belitz in this manner because the combination enhances how Okamura displays content associated with various locations by using Belitz's scalable geographic map with thumbnail images, which improves user experience and content awareness by providing the user with a preview (e.g., thumbnail) of the digital photographs and/or videos associated with the corresponding location. Belitz's interface for displaying thumbnails where content has been captured on a scalable map allows a user to more quickly view the content captured at specific locations, thereby providing a user with improved awareness of content available at relevant locations because the user is able to perceive a thumbnail of the available content without having to click on a cluster, as described by Okamura. Below, an example of the second way of combining Okamura and Belitz is shown with a combination of Okamura's FIG. 18 and Belitz's FIG. 4b:
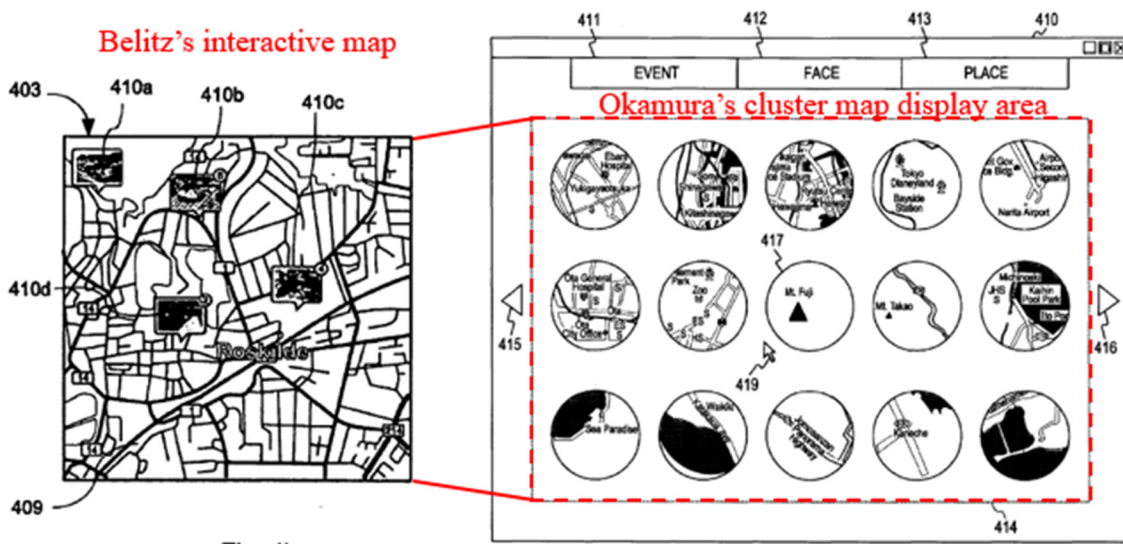
Fig. 4b

Ex. 1006, FIG. 4b (left; annotated), Ex. 1005, FIG. 18 (right; annotated)

94. A POSITA also would have found it obvious to replace Okamura's map view screen shown in FIG. 41 with Belitz's geographic map view for the same reasons discussed above. Below, another example of the second way of combining Okamura and Belitz is shown with a combination of Okamura's FIG. 41 and Belitz's FIG. 4b:
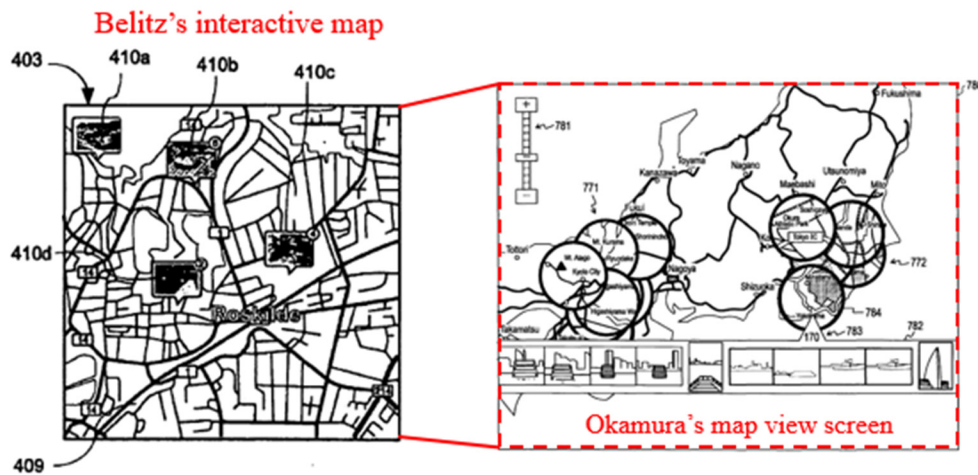
Fig. 4b

Ex. 1006, FIG. 4b (left; annotated), Ex. 1005, FIG. 41 (right; annotated)

95. Relevant to both ways of combining Okamura and Belitz, the above-described modifications (either (1) displaying Belitz's thumbnails on Okamura's map or (2) substituting Okamura's map with Belitz's map) would require only routine knowledge of software technologies (e.g., application programming interfaces and/or substituting one known graphical element or interface for another), which were well within the skill of a POSITA prior to the Critical Date. A POSITA would have viewed implementation of (1) Okamura's map view screen

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in a manner that applied Belitz's selectable thumbnail images and (2) substituting Okamura's map views with Belitz's map view as merely the predictable result (e.g., using Belitz's thumbnail images 410a-410d to display Okamura's content on the interactive map) of combining known prior art elements according to known methods. The resulting Okamura-Belitz combination does not change the hallmark aspects of any of these references because the resulting combination provides a photo/video management system designed to enable a user to efficiently find photos/videos of interest, for example, based on location. Indeed, the combination retains an interactive map with user-selectable markers specifying the locations of photos and/or videos, and use of those markers to retrieve the digital photos and/or videos linked to those locations. Ex. 1005, Abstract, [0091], [0110], [0313], FIGS. 18-21, FIG. 41; Ex. 1006, [0039], [0050]-[0055], [0062].

96.   Moreover, Okamura's map view screen already provides location-based selectable clusters (e.g., cluster map 784) that can be readily replaced with Belitz's thumbnail images (or entire map). Ex. 1005, FIGS. 18 and 41; In short, the respective teachings of Okamura and Belitz would work together in combination to achieve enhanced functionality, with Belitz's suggestions merely improving/adding to Okamura. For example, in the first way of combining Okamura and Belitz, Okamura's clusters are replaced by Belitz's thumbnail images. *Id.* This change involves the simple substitution of one known user

interface element (Okamura's clusters) with another known user interface element (Belitz's thumbnails), which would have been routine for a POSITA. *Id.* In the second way of combining Okamura and Belitz, Okamura's map views are replaced by Belitz's map view where Belitz's map view operates as described by Belitz in the context of Okamura's application framework. *Id.* This change involves the simple substitution of one known user interface (Okamura's map view) with another known user interface (Belitz's map view), which would have been routine for a POSITA. *Id.* A POSITA would have combined Okamura and Belitz using known programming techniques, adjusting the software of Okamura (1) to implement Belitz's thumbnails in place of Okamura's clusters or (2) to implement Belitz's map view in place of Okamura's map views. *Id.*

97.   In summary, to achieve Okamura's and Belitz's shared goal of conveniently presenting and managing digital files, a POSITA would have been motivated to modify Okamura's user interface to include additional features as discussed in Belitz with a high expectation of success. Because both references relate to organizing content according to location associated with the content, a POSITA would have seen the combination as predictable and involve relatively simple software modifications to implement. Specifically, a POSITA would have considered (1) the use of the Belitz thumbnails in the Okamura interactive map or (2) the use of Belitz's map view in place of Okamura's map views to be nothing

more than the predictable substitution of known and equivalent interface elements. Such implementations would have been the product of ordinary skill and common sense—as explained above, the use of maps with photo thumbnails was conventional by early 2010—and would have been obvious to try because a POSITA would have had good reason to pursue the known options within his or her technical grasp. Ex. 1022; Ex. 1023.

98.   Finally, Okamura describes two different embodiments for displaying clusters of files (e.g., images and videos) based on location. Ex. 1005, [0088]-[0089]. In the first embodiment, Okamura displays cluster maps as an index screen where files are clustered together based on location and presented as an index or listing of cluster maps. Ex. 1005, [0234]-[0241], FIGS. 18-19. For the second embodiment, Okamura displays clusters on a map to provide users with a visual representation of the geographic relationship between the different clusters. Ex. 1005, [0354]-[0359], FIG. 41. Okamura explains that some users may prefer a location view where clusters are displayed on a map, instead of viewing them as an index or listing. Ex. 1005, [0312].

99.   In describing the second embodiment, Okamura focuses its discussion on aspects of the second embodiment that are different than the first embodiment; namely, the aspects of the location view. With this focus, Okamura does not repeat details described with respect to the first embodiment that are unrelated to the

changes made in the second embodiment. For example, Okamura explains that,

"since the content storing section 210, the map information storing section 220,

and the cluster information storing section 240 are substantially the same as those

described above in the first embodiment of the present invention, these

components are denoted by the same reference numerals, and their description is

omitted." Ex. 1005, [0313]. Okamura also explains that, in the second

embodiment, "cluster information generated by the cluster information generating

section 170 shown in FIG. 1 is stored in the cluster information st[o]ring

section 240." *Id.*

100.   Based on this description, a POSITA would have understood or found

obvious that details from Okamura's first embodiment that are not described as

being changed in Okamura's second embodiment were included in the second

embodiment by reference without repetition. This includes details related to

presentation of Okamura's face and event clusters. For instance, as described in

the first embodiment, Okamura's cluster information generating section 170

"records information related to clusters outputted from the ***event*** cluster generating

section 130 and the ***face*** cluster generating section 140, to the cluster information

storing section 240 as cluster information." Ex. 1005, [0102], [0098], [0099]

("outputs information related to the generated face clusters to the cluster

information generating section 170"), [0246] ("face clusters…stored in the cluster

information storing section 240"). Because Okamura confirms that the second

embodiment stores cluster information generated by the cluster information

generating section 170 and the cluster information storing section 240 is

substantially the same in both embodiments, a POSITA would have understood or

found obvious that Okamura contemplates display of event and face clusters in the

second embodiment.

101. A POSITA would have understood or found obvious that Okamura's second

embodiment merely presents Okamura's place view with a map interface (as

shown in FIG. 41) instead of an index view (as shown in FIGS. 18-19). Because

the modifications in Okamura's second embodiment are related to how location-

based clusters are displayed, a POSITA would have understood or found obvious

that the location-related display elements generated in Okamura's second

embodiment (e.g., map view in FIG. 41) merely replace the location-related

display elements in Okamura's second embodiment (e.g., index views in FIGS. 18-

19). Indeed, a POSITA would have found the benefits of Okamura's face and

event views equally applicable to Okamura's second embodiment and would have

found it obvious to include these benefits in Okamura's second embodiment,

particularly since Okamura references applicability of components used to store

face and event clusters in the second embodiment, as discussed above. For these

reasons, a POSITA would have found understood or found obvious that Okamura's

map view (as shown in FIG. 41) would be displayed in response to selection of the

PLACE tab 413 shown in FIGS. 18-21 and a user would have been able to select

between EVENT 411, FACE 412, and PLACE 413 views as described with respect

to FIGS. 18-21, just with Okamura's map view (as shown in FIG. 41) being

displayed as the PLACE view. Thus, the use of Okamura's map view from FIG.

41 in conjunction with Okamura's face view from FIG. 21 in the below analysis is

appropriate and obvious.

VIII. GROUND 1 – Claims 1-19 are rendered obvious by Okamura in view of Belitz

102. All claims of the '228 patent are disclosed by Okamura, Belitz, or Okamura-

Belitz, either through explicit disclosure or in conjunction with the common sense

of a POSITA.

A. Claim 1

[1pre]: "A method comprising:"

[1a]: "responsive to a first input, causing a map view to be displayed on an interface, the map view including:"

103. Okamura describes a "***method*** of generating a map associated with each [of

the] clusters generated []." Ex. 1005, [0098], [0102], [0135], [0213]-[0215],

[0232]-[0248], FIG. 41, FIG. 50.

104. Okamura discloses a map view that is displayed responsive to a first input:

"when an ***operational input*** for activating a content playback application is

accepted by the operation accepting section 690 in the information processing

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apparatus 600, the display control section 670 displays a *map view screen 811* on the display section 680." Ex. 1005, [0429]-[0438], [0447]-[0451].
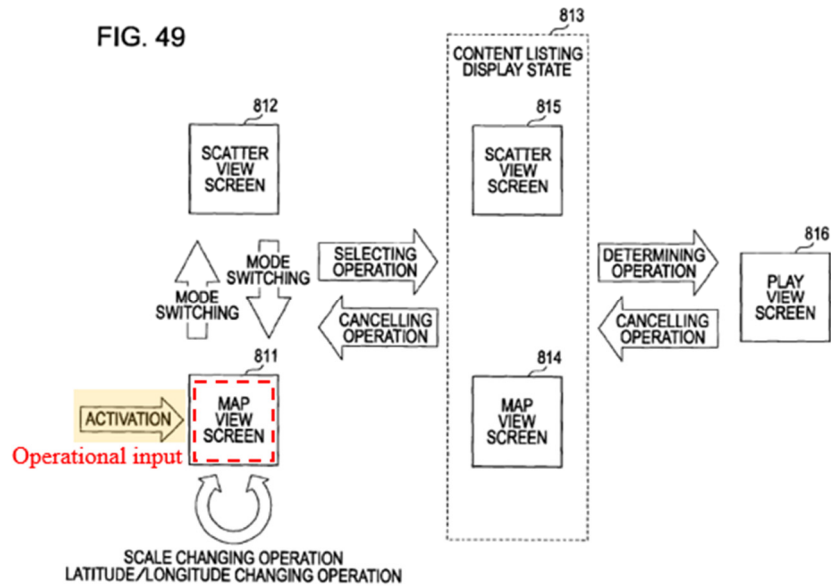
Ex. 1005, FIG. 49 (annotated)

105. Okamura describes that the map view screen can be, for instance, "a display screen that displays cluster maps in an overlaid manner on a map, and corresponds to the map view screen 780 shown in FIG. 41." Ex. 1005, [0431].
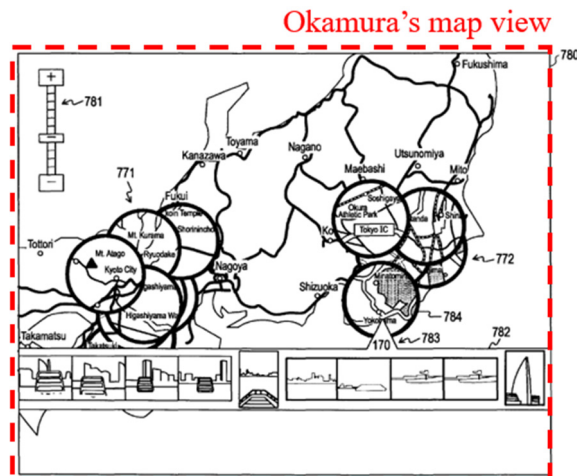
Ex. 1005, FIG. 41 (annotated)

106.   In the first way of combining Okamura and Belitz discussed above in Section VII.C, Okamura's map view shown in FIG. 41 (above) is the claimed map view.

107.   Belitz also describes a map view that is displayed responsive to a first input because Belitz describes "a device configured to render graphical objects associated with a geographical location on a map []." Ex. 1006, [0005], [0051]-[0062], FIG. 4. In the second way of combining Okamura and Belitz discussed above in Section VII.C, Belitz's map view shown in FIG. 4 (below) replaces Okamura's map view and represents the claimed map view in the combination.

108.   To the extent that the first input is not expressly taught in Belitz, a POSITA would have found it obvious that starting the user interface would serve as the first input, because Belitz's application is operating on "a mobile phone" or "navigation devices such as hand held GPS" that present displays responsive to user input. Ex. 1006, [0050]. As noted above, a common goal of a POSITA is to reduce the number of clicks required for a user to get the information sought. Therefore, particularly when running Okamura on a device with a higher resolution screen, substituting Okamura's map view with Belitz's map view would have been straightforward and obvious to a POSITA for the user's benefit of viewing digital files associated with the location without need of clicking each cluster as in Okamura. Also, in the combination of Okamura and Belitz, Okamura's inputs that

display map views (e.g., selection of the "PLACE" tab 413 in Okamura's FIG. 18 or Okamura's operational input) would cause display of Belitz's map view.
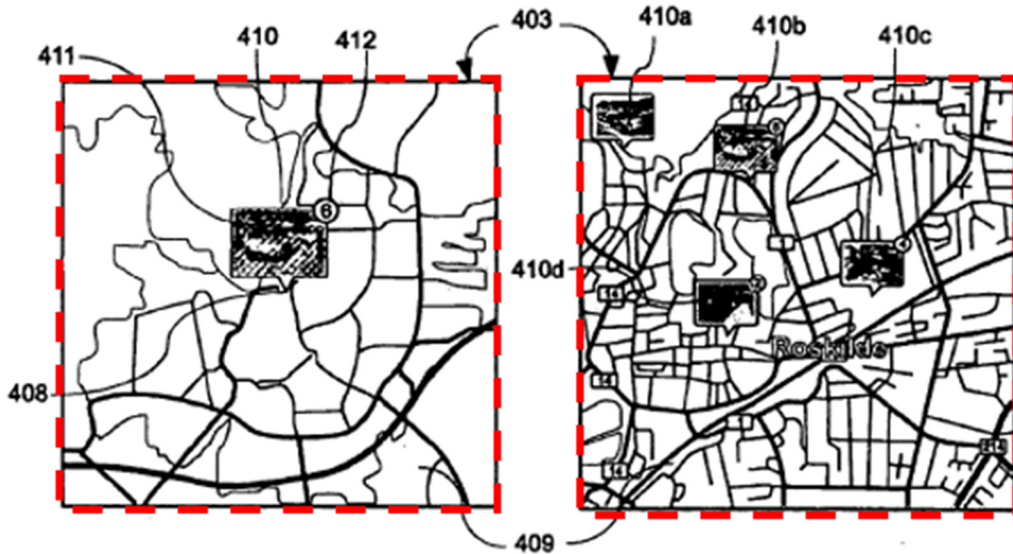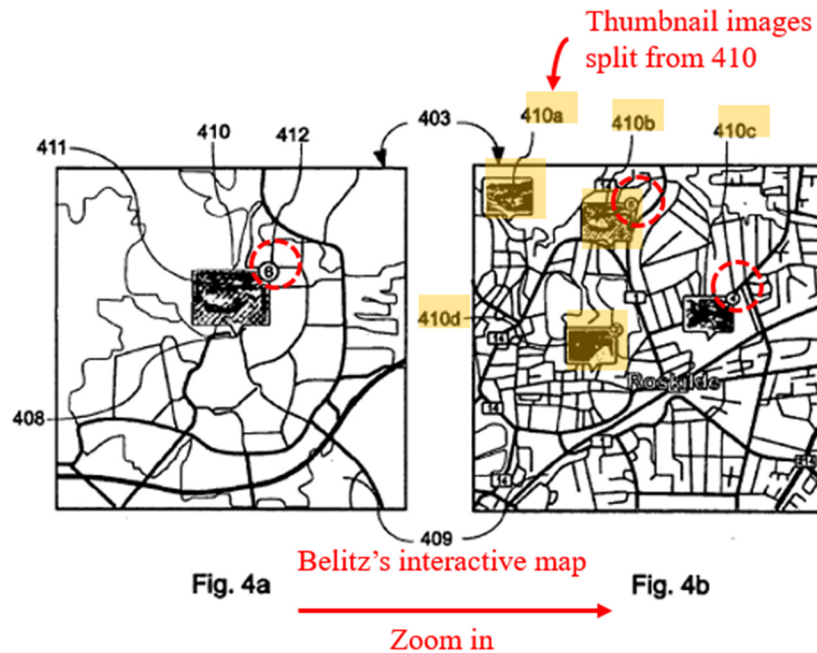

Ex. 1006, FIG. 4a-4b (annotated)

109. In both ways of combining Okamura and Belitz, the map view is displayed on an interface, as discussed above. The '228 patent describes "various 'User Interfaces' including Personal Computers (e.g., Macs, Windows, etc.), Personal Digital Assistants (PDA) (e.g., iPhones) and Tablets (e.g., iPad)." Ex. 1001, 12:39-42, 13:36-40 ("User Interface such as a phone, tablet, computer or other internet based user device"). Okamura and Belitz both display content on these same types of interfaces, which are used to display all of the screens referenced throughout this petition. Ex. 1005, [0502]; Ex. 1006, [0002], [0030], [0039], [0070], [0074].

[1b]: "an interactive map;"

110.   As I described above for [1a], Okamura discloses an interactive map in the form of *map view screen* 780. Ex. 1005, [0431], FIG. 41.

111.   The map view screen 780 is *interactive*. For example, "the user can change the scale of a map displayed on the map view screen 780" by adjusting "a scale-changing bar 781." Ex. 1005, [0355]. Additionally, the map view screen 780 accepts "a user operation" such as selecting a desired cluster map. Ex. 1005, [0356].
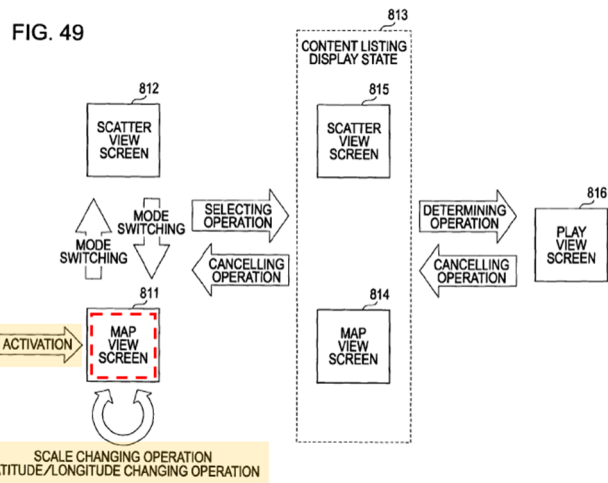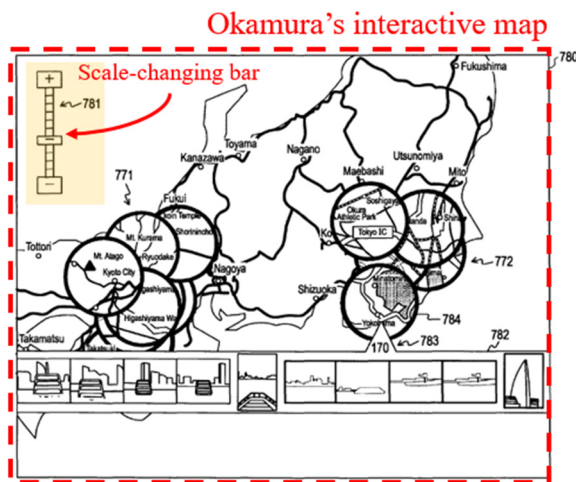
Ex. 1005, FIG. 41 (left; annotated), FIG. 49 (right; annotated)

112.   In the first way of combining Okamura and Belitz discussed above in Section VII.C, Okamura's map view provides the claimed interactive map. As I discussed above for [1a] and Section VII.B, Belitz also discloses an interactive map, e.g., a map 409. Ex. 1006, [0055], [0060], FIG. 4. The map 409 is interactive, because the user can zoom in/out of the map ("the map 408 has been

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zoomed in") and select the thumbnail images ("a graphical object 410c has been selected by a user"). *Id*. In the second way of combining Okamura and Belitz discussed above in Section VII.C, Belitz's map view provides the claimed interactive map.

Ex. 1006, FIG. 4a-4b (annotated)

[1c]: "a first location selectable thumbnail image at a first location on the interactive map; and"

113. The breadth of the claim term "thumbnail image" has been disputed in related proceedings. Ex. 1025, 168-169. Although Okamura describes its clusters as "thumbnail" images of a portion of a map (Ex. 1005, [0135], [0221]-[0223], [0229]-[0231]), to the extent that the location-based clusters in Okamura's map view are not "thumbnail image[s]" as claimed, Belitz discloses displaying location

selectable thumbnail images (e.g., thumbnails 410a-d) at different locations of an interactive map as shown in FIGS. 4a and 4b (reproduced below):
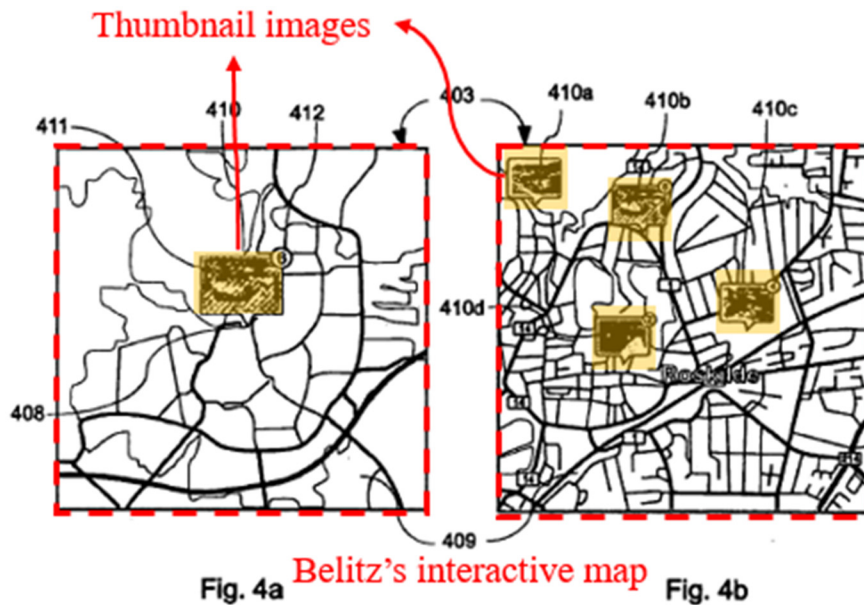
Ex. 1006, FIG. 4a-b (annotated)

114.   Indeed, Belitz discloses a thumbnail image that is associated with the location: "The *graphical object 410* has a visual representation 411 which in this embodiment is a photograph that is *associated with the location* … Examples of associations are photographs that have been taken at those coordinates." Ex. 1006, [0052].

115.   Further, Belitz describes its thumbnail image as being location selectable: "… a graphical object 410c has been *selected by a user*, possibly by tapping on it with a stylus if the display 403 is a touch screen or by placing a cursor above it and clicking it." Ex. 1006, [0060]. That is, a thumbnail image (e.g., the graphical object 410) is selectable.

116. In the first way of combining Okamura and Belitz as I discussed above in Section VII.C and illustrated below, a POSITA would have found it obvious to modify Okamura's user interface, such as the map view screen 780, to display selectable thumbnail images (e.g., thumbnails 410a-d) taught by Belitz.
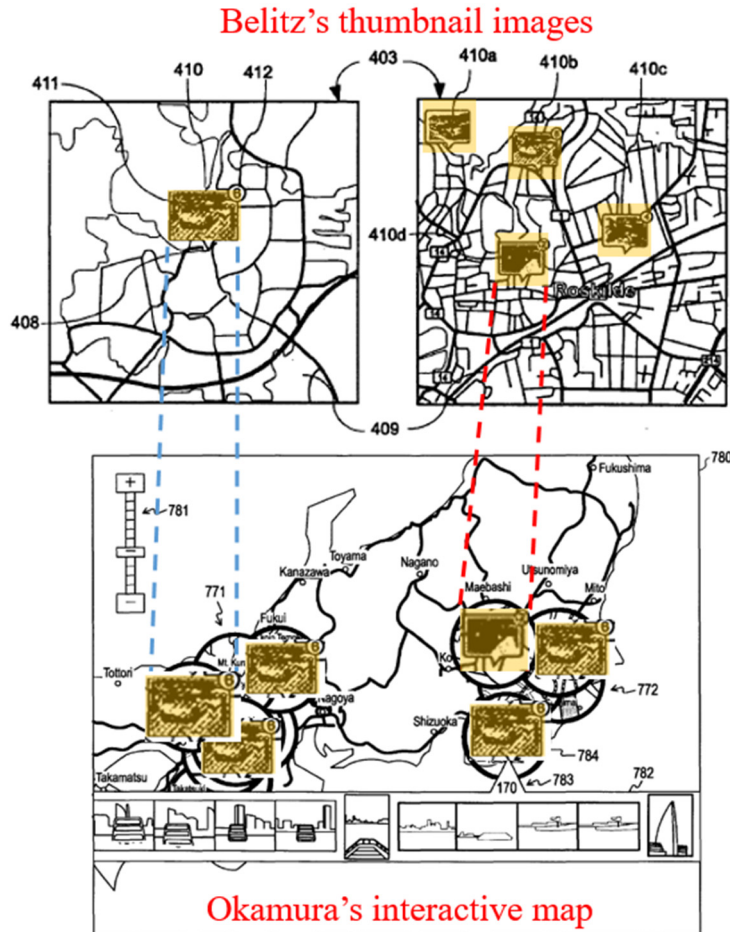
Ex. 1006, FIG. 4a-b (top; annotated); Okamura's FIG. 41 modified to include Belitz's thumbnails (bottom; annotated)

117. Adopting the location selectable thumbnail images of Belitz in Okamura's interactive map would have resulted in an interactive map that includes selectable thumbnail images instead of selectable cluster groups (e.g., cluster map group 771)

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on the map. As I noted in Section VII.C, a POSITA would have been motivated

and found it obvious to introduce the selectable thumbnails taught by Belitz in

Okamura's user interface (e.g., the map view screen 780).

118.　Additionally and alternatively, in the second way of combining Okamura

and Belitz noted in Section VII.C, a POSITA would have been motivated and

found it obvious to use Belitz's interactive map in place of Okamura's interactive

map. Accordingly, with this modification of Okamura, when a user activates the

"Map View Screen" in Okamura, the Okamura-Belitz system would display

Belitz's interactive map with location selectable thumbnail images (e.g.,

thumbnails 410a-d) at different locations of an interactive map.   Ex. 1005, [0354]-

[0356], [0430], FIG. 49; Ex. 1006, [0051]-[0062]. As I noted in Section VII.C

above, a POSITA would have been motivated to use Belitz's interactive map in

place of Okamura's interactive map to gain the benefits of Belitz's interactive map

and would have found it obvious as a simple substitution of one known map view

for displaying digital content (Okamura's map view) for another known map view

for displaying digital content (Belitz's map view).

119.　To the extent that the claim requires "thumbnail images" be reduced-size

versions of the entire original image (i.e., un-cropped), Belitz's thumbnails meet

such requirement. For example, Belitz's thumbnails maintain the landscape aspect

ratio of the displayed photos. Ex. 1006, [0051]-[0062], FIGS. 4a-4c. Given

Belitz's disclosure of "the image[s] can be opened in full size by clicking or double clicking or tapping on it," Belitz suggests that the thumbnail images are indeed reduced uncropped versions of the "full size" image. Ex. 1006, [0060].

120.   To the extent that Belitz does not expressly teach "thumbnail images" are reduced-size versions of the entire original image, this distinction would have been obvious to a POSITA by 2010. Anderson describes that "thumbnails … may be cropped or uncropped to resemble images laid out on a conventional wet film negative." Ex. 1031, 11:58-61. Creating a reduced-size version of an image that maintains its aspect ratio without cropping the photo was well known by 2010. Choosing whether thumbnail images to maintain aspect ratios would have been a routine design decision and thus obvious to a POSITA.

[1d]: "a second location selectable thumbnail image at a second location on the interactive map;"

121.   As I discussed above for [1c], the Okamura-Belitz combination renders obvious multiple selectable thumbnail images, where each thumbnail image is associated with a corresponding location on the interactive map. Ex. 1005, [0354]-[0356], [0431]; Ex. 1006, [0051]-[0056], [0059]-[0060]. For example, because Belitz's thumbnails are displayed at different locations on the interactive map, any one of Belitz's selectable thumbnail images 410a-d displayed on the interactive map (Ex. 1006, FIG. 4d) is a second location selectable thumbnail image (e.g.,

410b), as long as it is different from a first location selectable thumbnail image (e.g., 410c).
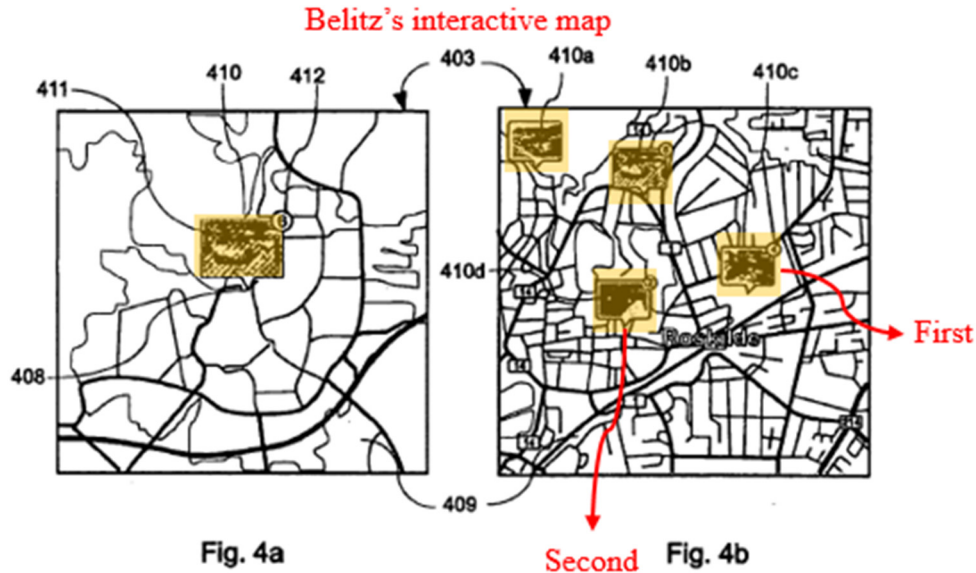
Ex. 1005, FIG. 4c (annotated)

[1e]: "responsive to an input that is indicative of a selection of the first location selectable thumbnail image, causing a first location view to be displayed on the interface, the first location view including (i) a first location name associated with the first location and (ii) a representation of at least a portion of one digital file in a first set of digital files, each of the digital files in the first set of digital files being produced from outputs of one or more digital imaging devices, the first set of digital files including digital files associated with the first location;"

122. Okamura discloses displaying "a play view screen 890" (a first location view) in response to a user selection of one of the cluster groups on the map view screen (e.g., "when a *left click operation* is performed in the state with one of cluster maps selected on the map view screen"). Ex. 1005, [0440], FIG. 41, FIG. 50. Okamura describes that, "[i]n the magnified *image display area 892*, an image

corresponding to the content (the content with the selection box 894 attached) being selected in the content listing display area 893 is displayed in magnified form." Ex. 1005, [0443]. That is, each digital file in the content listing display area 893 ("a listing of *contents belonging to the corresponding cluster*") is a digital file associated with the selected cluster and thus associated with a selected location. Ex. 1005, [0444].
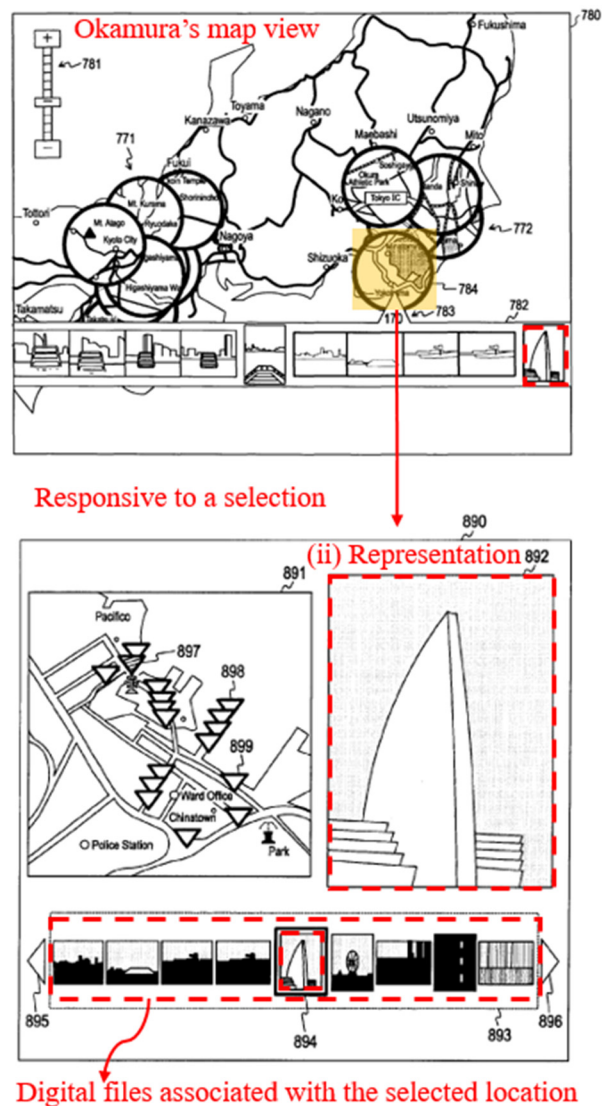

Ex. 1006, FIG. 41 (top; annotated), FIG. 50 (bottom; annotated)

123. The above-described displaying of a first location view would have occurred in an Okamura-Belitz combination based on the clicking on the first thumbnail image as I described for [1c]. Indeed, as I described in Section VII.C for the first way of combining Okamura and Belitz, a POSITA would have been motivated and found it obvious to replace, in Okamura's user interface (e.g., the map view screen 780), the cluster groups taught by Okamura with the selectable thumbnails taught by Belitz. With this substitution, Okamura's play view screen 890 would be displayed responsive to an input that is indicative of a selection of one of the location selectable thumbnail images from Belitz, as would have occurred responsive to selection of one of Okamura's cluster groups that Belitz's location selectable thumbnail images replace.

124. To the extent that Okamura's play view screen 890 does not display a first location name associated with the first location, Okamura describes displaying "pieces of information 418 related to the cluster map 417" including "the cluster title 'Mt. Fuji' of the cluster". Ex. 1005, [0240], FIGS. 19-21. A POSITA would have found it obvious to display the first location name on the play view screen 890, as analogous to Okamura's teaching of displaying such information on the index screen 410. By 2011, it was common to display a page title or collection name for presented image/video files to provide the user with additional information to aid in review and management of the image/video files. Ex. 1033,

FIG. 6 (*see* "Cologne, Germany '00"); Ex. 1034, [0085], FIG. 8. For these reasons, a POSITA would have found it obvious to display Okamura's cluster title (location name) as one of the pieces of information on play view screen 890.

125. Additionally or alternatively, Belitz discloses displaying a location name associated with a selected location, and a POSITA would have found it obvious to use Belitz's location name on Okamura's play view screen 890:
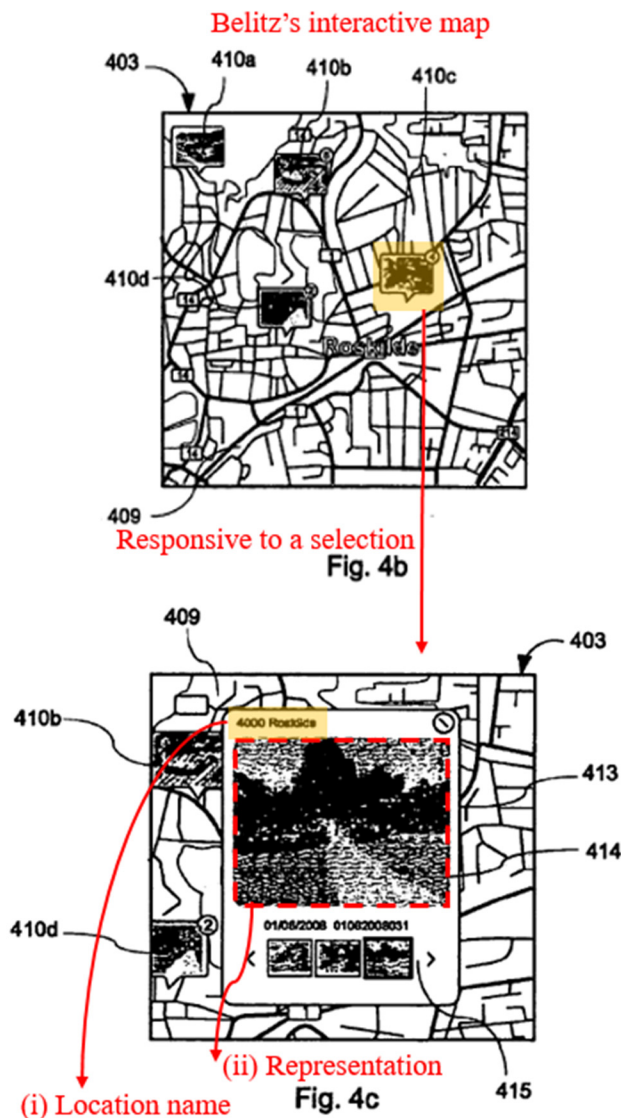

Ex. 1006, FIG. 4b-c (annotated)

126.   Specifically, Belitz describes an input that is indicative of a selection of the first location selectable thumbnail image: "… a graphical object 410c has been *selected by a user*, possibly by tapping on it with a stylus if the display 403 is a touch screen or by placing a cursor above it and clicking it." Ex. 1006, [0060].

127.   Belitz also describes displaying a location view responsive to the input: "In this embodiment a popup window 413 is displayed over or instead of the graphical object 410c. The popup window shows at least some of the *visual representations 411* of the graphical object 410c. One 414 of the visual representations 411 or images as they are in this embodiment is shown in a larger size than others which are shown in a list 415. … In one embodiment the image can be opened in full size by clicking or double clicking or tapping on it which launches an image browsing or editing application." Ex. 1006, [0060].

128.   Belitz further describes that the first location name is associated with the first location (e.g., "4000 Roskilde" as annotated above). As shown below, a POSITA would have found it obvious to display a location name, as described in Belitz, on Okamura's play view screen 890.

Okamura's play view screen

(i) Belitz's location name

(ii) Scaled replicas of each of digital files
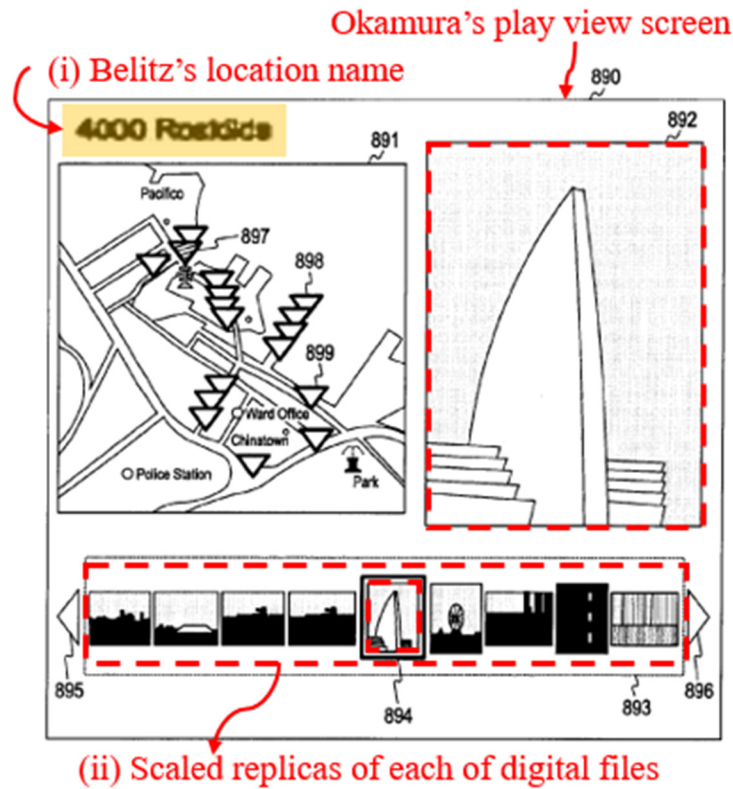
Okamura's FIG. 50 modified to include Belitz's location name (annotated)

129.   Furthermore, adopting the first location name from Belitz in Okamura's play view screen 890 would have been obvious to a POSITA.   Such a combination would have further provided improvements in a user's navigation through the user interface, allowing the user to identify the location name associated with the digital image files on the play view screen.

130.   Moreover, each of the digital files in the first set of digital files is produced from outputs of one or more digital imaging devices, because Okamura describes the digital files (including "image files" and "moving image content" files) "recorded by an image capturing apparatus such as a digital still camera" and devices capturing "moving image content". Ex. 1005, [0002], [0022], [0091]-

[0092], [0107]-[0110], [0139], [0149], [0501]. Furthermore, Okamura describes each of the digital files is associated with the location, because the image information (e.g., through the "Exif … a standard for adding image data and camera information into an image file") includes "GPS information, date and time of shooting … positional information such as latitude and longitude []." *Id.*

131.   Additionally and alternatively, as noted in Section VII.C and [1c] for the second way of combining Okamura and Belitz, a POSITA would have been motivated and found it obvious to use Belitz's interactive map in place of Okamura's interactive map; in this case, such replacement would further extend to the location view (as shown in above annotated FIG. 4). Ex. 1006, [0051]-[0056], FIG. 4. As I explained above, Belitz's location view is displayed on the interface responsive to selection of a thumbnail and includes (1) a location name and (2) a representation of images/videos associated with the location of the selected thumbnail. Ex. 1006, [0060]-[0062]. Belitz also describes "a mobile phone … personal digital assistants, computers, laptop computers … photographic and videographic cameras" as example devices, demonstrating each of the digital files being produced from digital imaging devices. Ex. 1006, [0050]-[0052]. Belitz further describes that each of the digital files are associated with a corresponding location (e.g., "examples of associations are photographs that have been taken at those coordinates"). *Id.*

[1f]: "responsive to an input that is indicative of a selection of the second location selectable thumbnail image, causing a second location view to be displayed on the interface, the second location view including (i) a second location name associated with the second location and (ii) a representation of at least a portion of one digital file in a second set of digital files, each of the digital files in the second set of digital files being produced from outputs of the one or more digital imaging devices, the second set of digital files including digital files associated with the second location; and"

132.   As I explained above for [1c] and [1d], the Okamura-Belitz combination renders obvious multiple selectable thumbnail images, where each thumbnail image is associated with a corresponding location on the interactive map. Ex. 1005; Ex. 1005, [0354]-[0356], [0431]; Ex. 1006, [0051]-[0056], [0059]-[0060]. For example, because Belitz's thumbnails are displayed at different locations on the interactive map, any one of Belitz's selectable thumbnail images 410a-d displayed on the interactive map (Ex. 1006, FIG. 4d) is a second location selectable thumbnail image (e.g., 410b), as long as it is different from a first location selectable thumbnail image (e.g., 410c).   Analogous to the discussion in [1e], in both ways of combining Okamura and Belitz, the Okamura-Belitz combination renders obvious selecting the second location selectable thumbnail image to to cause the display of a second location name associated with the second location and a representation of at least a portion of a second set of digital files. *Id*.

[1g]: "responsive to a second input that is subsequent to the first input, causing a people view to be displayed on the interface, the people view including:"

133. As I described in Section VII.A (incorporated here), Okamura discloses displaying a people view ("index images generated on the basis of face information") in response to a *user operation* ("when the 'FACE' tab 412 is depressed using the cursor 419"). Ex. 1005, [0234], [0236], FIG. 21.
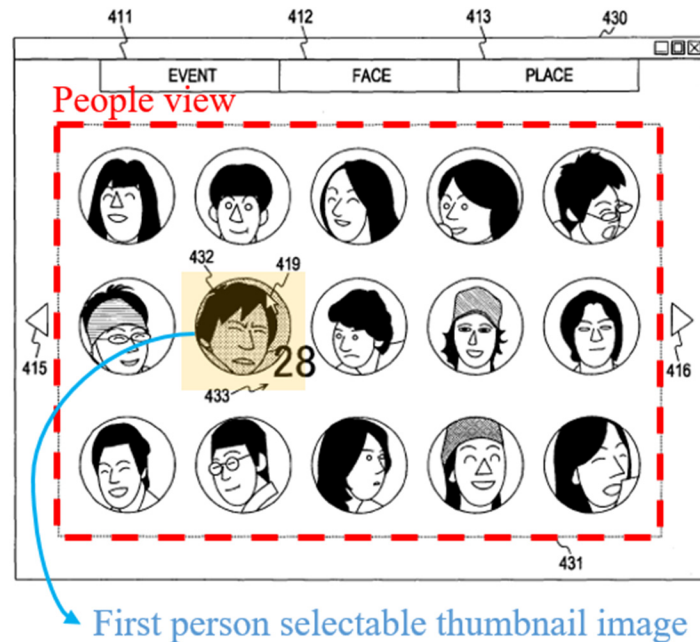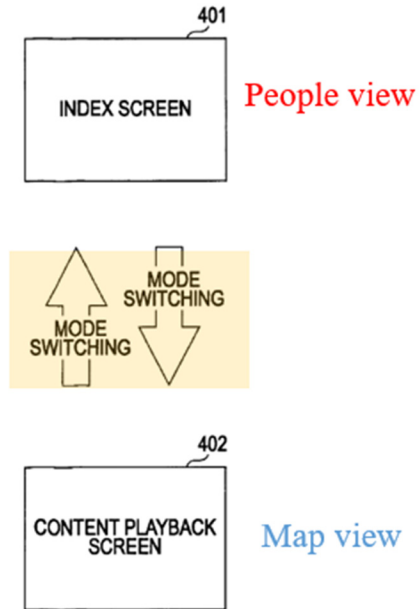

Ex. 1005, FIG. 21 (annotated)

134. The face-based index screen (displayed on the display area 431) is a *people view* that includes "image representing a face cluster, for example, a thumbnail image of each of [the] faces included in contents belonging to the face cluster." Ex. 1005, [0246].

Okamura discloses or renders obvious that the *second input* of displaying the face-based index screen is *subsequent* to the first input of displaying a map view screen. For example, Okamura describes a mode switch that allows the user to switch back

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and forth (thus subsequently) between the index screen (e.g., as shown in above FIG. 21) and a content playback screen (that includes a map view "when an operational input for activating a content playback application is accepted … displays a map view screen 811 []"; FIG. 41). Ex. 1005, [0233], [0430], FIG. 17, FIG. 21, FIG. 41. From this description and because the '228 patent places no significance on the order of displaying a map view relative to a people view, a POSITA would have found it obvious that the second input to display Okamura's people view comes subsequent to the first input to display the map view (whether it is Okamura's map view in the first combination of Okamura-Belitz or Belitz's map view in the second combination of Okamura-Belitz).

135. In addition, the sequence of a user's selection of map and people views is driven by the user's preference and thus arbitrary; for example, the user can select to view the map view (FIG. 41) first then prompt the mode switching to view the face-based index screen (FIG. 21). *Id*. Because there exists only a finite number of predictable potential solutions to display the people view from the map view (or vice versa), an ordinary end-user would have selected the FACE tab 412 on the index screen 401 after (or subsequent to) the selection of the content playback screen 402 that displays the map view. *Id*. In fact, choosing to view a map view and then from there choosing to view a people view would have been an obvious user experience, would merely use Okamura's capabilities as stated, and is one of a

limited number of obvious combinations for transitioning between different modes

in Okamura. *Id.*

Ex. 1005, FIG. 17 (annotated)

136. A POSITA also would have understood Okamura discloses or renders

obvious selection of FACE tab 412 (second input) subsequent to selection of the

PLACE tab 413 (first input or input leading to the first input that displays

Okamura's map view in FIG. 41). Ex. 1005, [0232]-[0247], [0297]-[0302], FIGS.

18-21, 31, 41. This is because Okamura's EVENT tab 411, FACE tab 412, and

PLACE tab 413 are each selectable by a user from any of the index screens 410,

420, and 430, and tabs can be selected and display areas switched to in any order,

including the selection of FACE tab 412 subsequent to the selection of PLACE tab

413. Ex. 1005, [0297]-[0302], FIG. 31 (describing switching between index

screens showing display areas). In fact, by presentation of map view screens in

FIGS. 18 and 19 prior to the people view screen in FIG. 21, Okamura contemplates

user input to display the people view (FIG. 21) coming subsequent to user input to

display map views (FIGS. 18-19).

137.   Moreover, a POSITA would have found it obvious to try selecting input to

view the people view (e.g., the FACE tab 412) subsequent to selecting input to

view the map view (e.g., the PLACE tab 413 or other operational input in

Okamura). Ex. 1005, [0232]-[0247], [0297]-[0302], FIGS. 18-21, 31. In view of

Okamura, a POSITA would have understood there was a need in the art to provide

displayed views (e.g., cluster map display area 414, event cluster image display

area 421, and face cluster display area 431) showing content organized by PLACE,

EVENT, and FACE, and allowing switching from the view showing content

organized by PLACE to another view. Ex. 1005, [0091], [0232]-[0248], FIGS. 18-

21. Displaying tabs 411 and 412 regardless of the display area 414, 421, or 431 as

shown in FIGS. 18-21 allows a user to switch between views showing how content

is organized regardless of the view currently displayed. *Id.* A POSITA would

have understood this need existed because users would have wanted the option of

switching views to find the content they desire—certain content may be more

easily found using a face view (e.g., when looking for content having a particular

person) and other content may be more easily found using a location view (e.g., when looking for content from a particular location). *Id.*

138. Further, in view of Okamura, a POSITA would have understood there were only a finite number (two) of identified, predictable potential solutions for an order of displaying map views and people views. Because there were such few solutions (only two), a POSITA would have pursued the predictable solution of displaying a people view subsequent to a map view with a high expectation of success. Ex. 1005, [0091], [0232]-[0248], FIGS. 18-21.

[1h]: "a first person selectable thumbnail image including a representation of a face of a first person, the first person being associated with a third set of digital files including digital photographs and videos;"

139. As I described in Section VII.A (incorporated here), Okamura describes that thumbnail images on the index screen (e.g., element 432) are selectable: "when a desired cluster is determined by a ***user operation on the index screen*** shown in each of FIGS. 18 to 21, the display control section 180 displays a content play-back screen on the display screen 181." Ex. 1005, [0234], [0246]-[0260], [0267], FIG. 21.

140. As illustrated below, each person selectable thumbnail includes a representation of a face of a person, such as "a ***thumbnail image of a face***, faces included in the contents belonging to the face cluster." *Id*.

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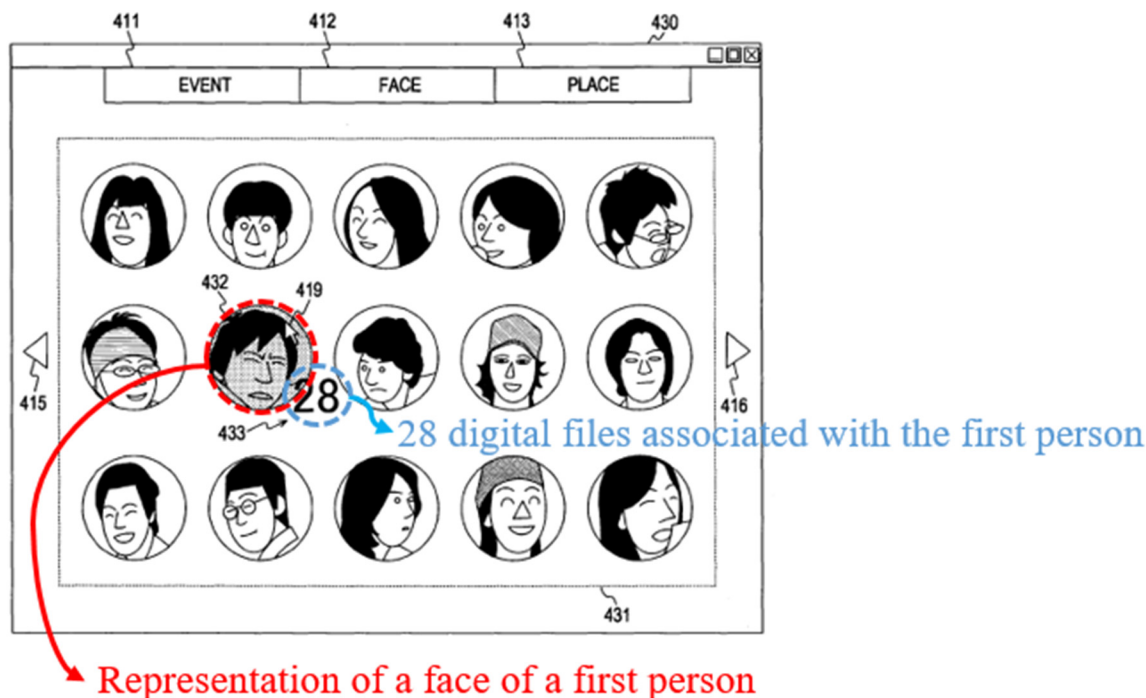
Ex. 1005, FIG. 21 (annotated)

141. Okamura discloses that the first person by the thumbnail image 432 is associated with a ***third set of digital files***: "the number of contents '28' belonging to a cluster corresponding to the thumbnail image 432 []." Ex. 1005, [0099], [0110], [0139], [0232]-[0248], [0267]. The third set of digital files (that depend on the person's face) is different from the first and second sets of content that depend on location. *Id*.

142. In addition, Okamura's digital files include ***both digital photographs and videos***: "image files recorded by an imaging capturing apparatus such as a digital still camera" and "moving image contents." Ex. 1005, [0002], [0022], [0091]-[0092], [0107]-[0110], [0139], [0149], [0501], FIGS. 2A-2B.

[1i]: "a first name associated with the first person, the first name being displayed adjacent to the first person selectable thumbnail image;"

143.   Okamura describes that "when the mouse is placed over a thumbnail image 432 by a user operation on the index screen 430 shown in FIG. 21, the color of the thumbnail image 432 changes, and pieces of information 433 related to the thumbnail image 432 are displayed." Ex. 1005, [0247]. Okamura explains that, "as the ***pieces of information 433*** related to the thumbnail image 432, for example, other pieces of information such as the ***name of the person*** corresponding to the face may be displayed as well." Ex. 1005, [0247]. For example, Okamura describes displaying date information "02.03 -01.04.2004" adjacent to a thumbnail image. Ex. 1005, FIG. 20. As a second example, Okamura also describes displaying the number of digital files associated with an index "28" adjacent to a thumbnail image. SASMUNG-1005, [0099], [0110], [0139], [0232]-[0248], [0267], FIG. 21. Analogously, Okamura's user interface can display the name ***adjacent*** to the first person selectable thumbnail image, because information 433 is displayed adjacent to the first person selectable thumbnail image 432. Displaying the name adjacent to the thumbnail image would have been obvious, and a POSITA would have been motivated to do so for allowing the user to avoid confusion on which face index belongs to whom. *Id*.
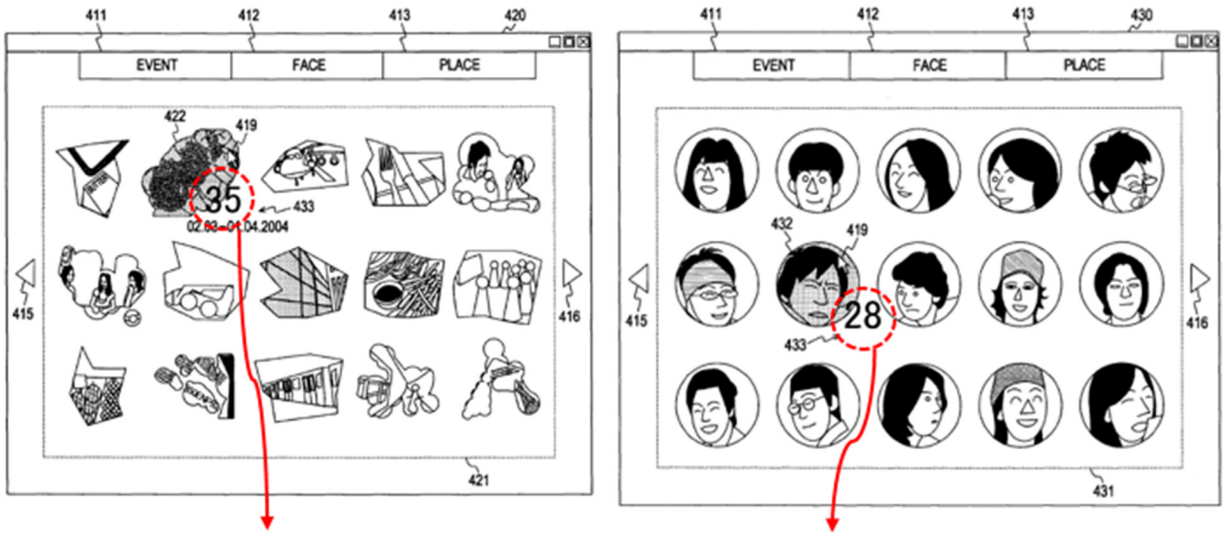
Pieces of information displayed adjacent to a thumbnail image

Ex. 1005, FIG. 20 (left; annotated), FIG. 21 (right; annotated)

[1j]: "a second person selectable thumbnail image including a representation of a face of a second person, the second person being associated with a fourth set of digital files including digital photographs and videos; and"

144.   *See* [1h] (the analysis is incorporated here); Okamura discloses multiple

person selectable thumbnail images. Ex. 1005, [0234], [0246]-[0260], [0267],

FIG. 21. For example, because Okamura's multiple face-based thumbnails are

displayed on the index screen (FIG. 21), any one of the person selectable

thumbnail images (e.g., as annotated below) displayed on the index screen is a

second person selectable thumbnail image, as long as it is different from a first

person selectable thumbnail image (e.g., thumbnail 432). Ex. 1005, [0234],

[0246]-[0250], FIG. 21. Further, operations that can be applied to a first person

selectable thumbnail image are equally applicable to a second person selectable

thumbnail image, including the selectable thumbnail image including a

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representation of a face of a second person and the second person being associated with a fourth set of digital files including digital photographs and videos. *Id.*
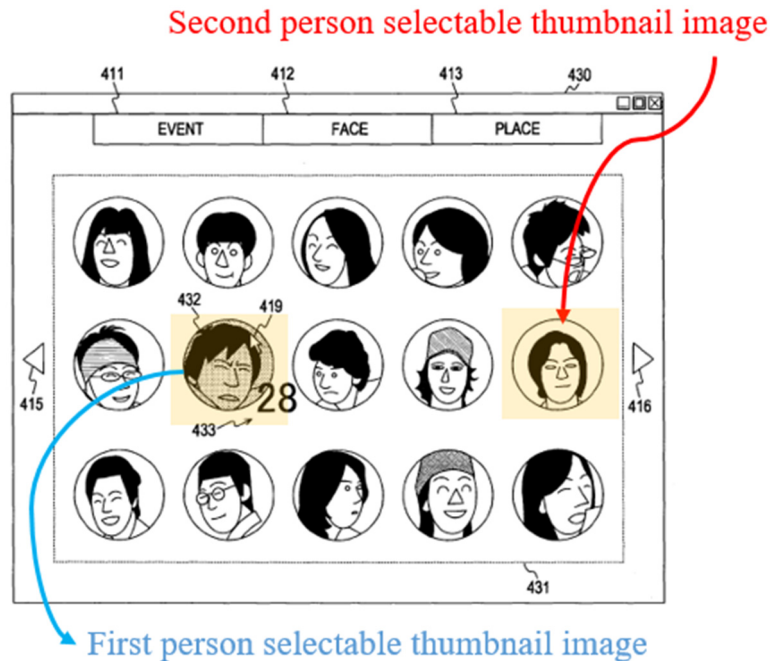
Ex. 1005, FIG. 21 (annotated)

[1k]: "a second name associated with the second person, the second name being displayed adjacent to the second person selectable thumbnail image."

145. *See* [1i] (incorporated here). For example, because Okamura's multiple face-based thumbnails are displayed on the index screen (FIG. 21), any one of the person selectable thumbnail images (e.g., as annotated above) displayed on the index screen is a second person selectable thumbnail image, as long as it is different from a first person selectable thumbnail image (e.g., thumbnail 432). Ex. 1005, [0234], [0246]-[0250], FIG. 21. Further, operations that can be applied to a first person selectable thumbnail image are equally applicable to a second person

selectable thumbnail image, including displaying a second name adjacent to the

second person selectable thumbnail image. *Id.*

B. CLAIM 2

[2]: "The method of claim 1, wherein the map view further includes a first indication feature associated with the first location selectable thumbnail image, the first indication feature being based on a number of digital files in the first set of digital files."

146. As I described in Section VII.A, Okamura's map view displays a first

indicator feature corresponding to the number of contents associated with a cluster.

For example, "170" is "the ***number of contents***" belonging to the selected cluster

784 (and thus a given location). Ex. 1005, [0356], FIG. 41. As I described for

[1e], the cluster 784 and each thumbnail image displayed in the content listing

display area 782 are associated with a location and selectable by the user.
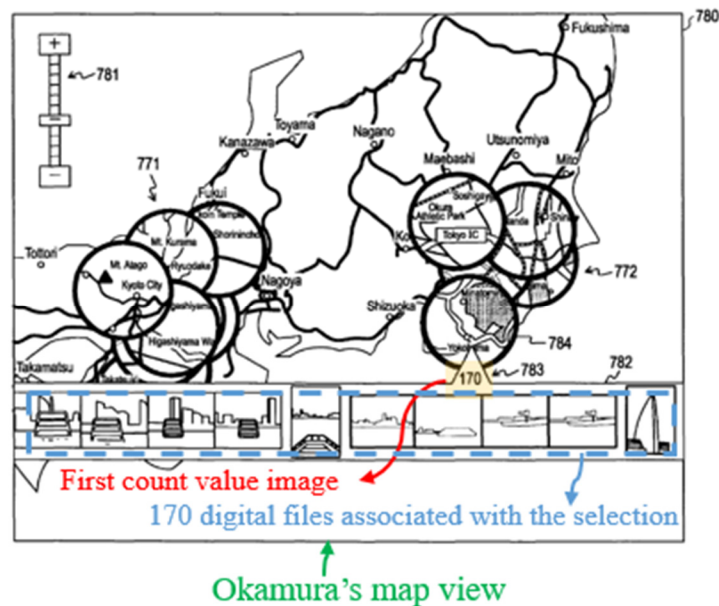
Ex. 1005, FIG. 41.

147.   As I discussed for [1c], Okamura-Belitz would have resulted in selectable thumbnail images instead of clusters on the map view screen 780. Belitz also discloses an indication feature corresponding to the number of contents associated with a location ("a *number indicator* 412 which presents a viewer with a number. The number indicates how many graphical objects 410 are *associated with that location* and are stacked into one graphical object 410"). Ex. 1006, [0054].
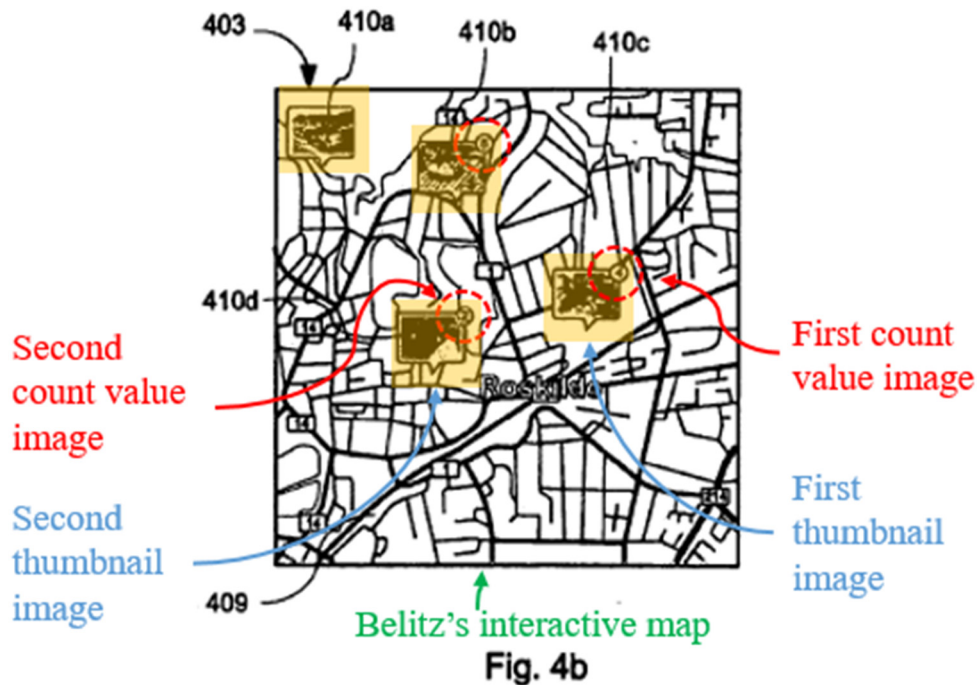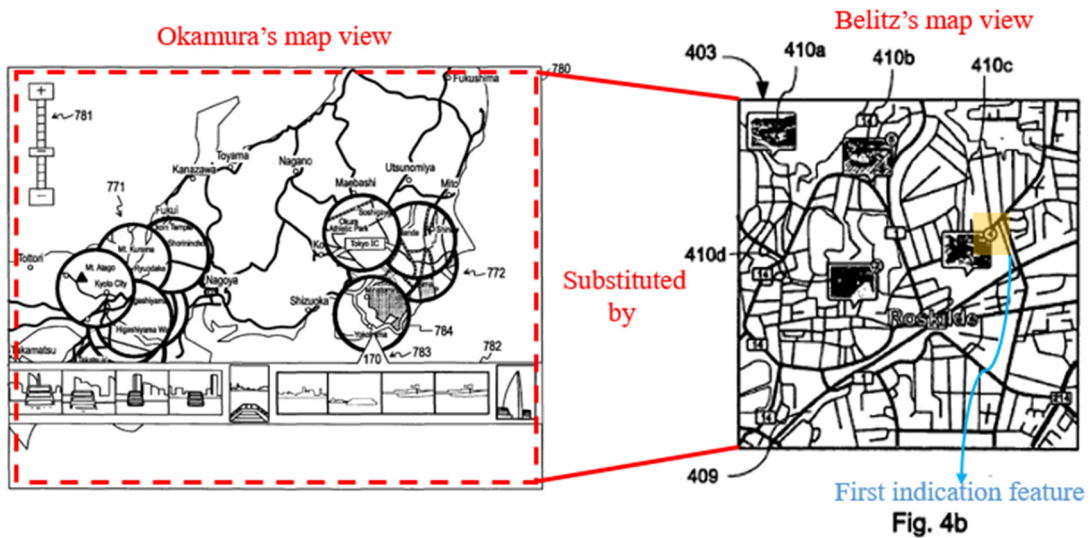

Ex. 1006, FIG. 4b (annotated)

148.   Combining Okamura with Belitz's teaching of displaying thumbnail images on the map and displaying the number indicator associated with thumbnail images would have resulted in Okamura's map view screen 780 displaying the number of contents displayed along with selectable thumbnail images (e.g., as shown below).
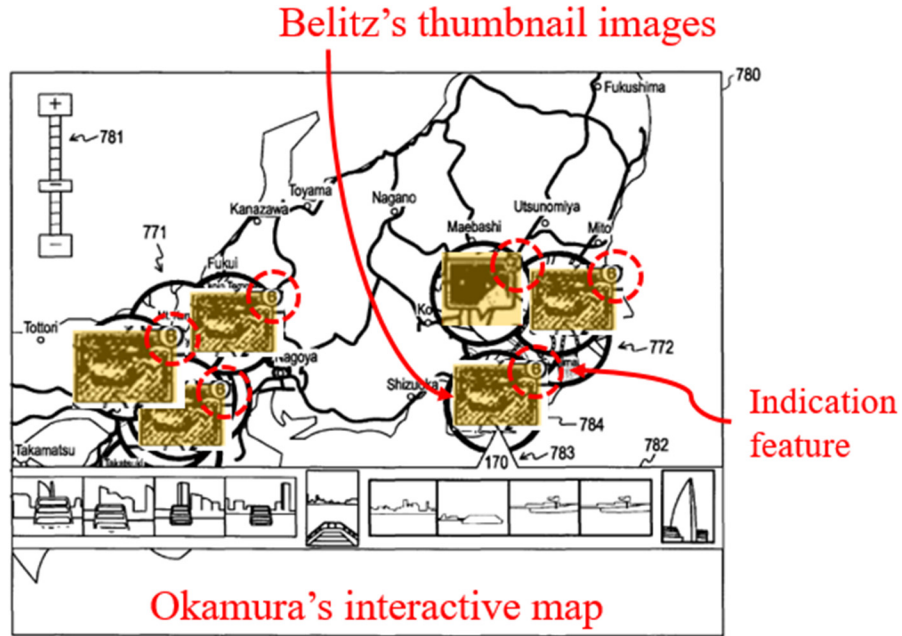
Okamura-Belitz (annotated from FIG. 41).

149. Alternatively or in addition, a POSITA would have found it obvious to substitute Okamura's map view with Belitz's interactive map; in this case, the map view would include a first indication feature:

Ex. 1005, FIG. 41 (left; annotated); Ex. 1006, FIG. 4b (right; annotated)

C.   CLAIM 3

[3]: "The method of claim 2, wherein the first indication feature is connected to the first location selectable thumbnail image."

150.   *See* [2] (incorporated here). The Okamura-Belitz combination provides that the first indication feature is connected to the first location selectable thumbnail image. For example, in the case that Okamura's clusters are substituted by Belitz's thumbnails, Belitz discloses that the first indication feature is connected to the first location thumbnail image ("a graphical object containing a number indicating the number of associated graphical objects"). Ex. 1006, [0015]-[0016], [0054], FIG. 4. In the case that Okamura's map view is substituted by Belitz's map, the first indication feature is associated to the first thumbnail image (e.g., shown at the right corner of connected thumbnail image). *Id.*

D.   CLAIM 4

[4]: "The method of claim 2, wherein the first indication feature includes a first number indicative of the number of digital files in the first set of digital files."

151.   As I discussed for [2] and [3], the analysis for which is incorporated here, Okamura-Belitz discloses this feature. Ex. 1006, [0015]. The Okamura-Belitz combination shows the number of digital files in the first set of digital files at the location associated with the first indication feature. *Id.*

E.   CLAIM 5

[5]: "The method of claim 2, wherein the map view further includes a second indication feature associated with the second location selectable thumbnail image, the second indication feature being based on a number of digital files in the second set of digital files."

152.   As I discussed above for [1c] and [2], the Okamura-Belitz combination renders obvious multiple selectable thumbnail images, where each thumbnail image is associated with a corresponding location on the interactive map. Ex. 1005, [0354]-[0356], [0431]; Ex. 1006, [0051]-[0056], [0059]-[0060]. For example, any one of Belitz's selectable thumbnail images 410a-d displayed on the interactive map is a second location selectable thumbnail image, as long as it is different from a first location selectable thumbnail image (e.g., 410c). Belitz discloses a respective indication feature for corresponding thumbnail images:

Okamura-Belitz (annotated from FIG. 41).

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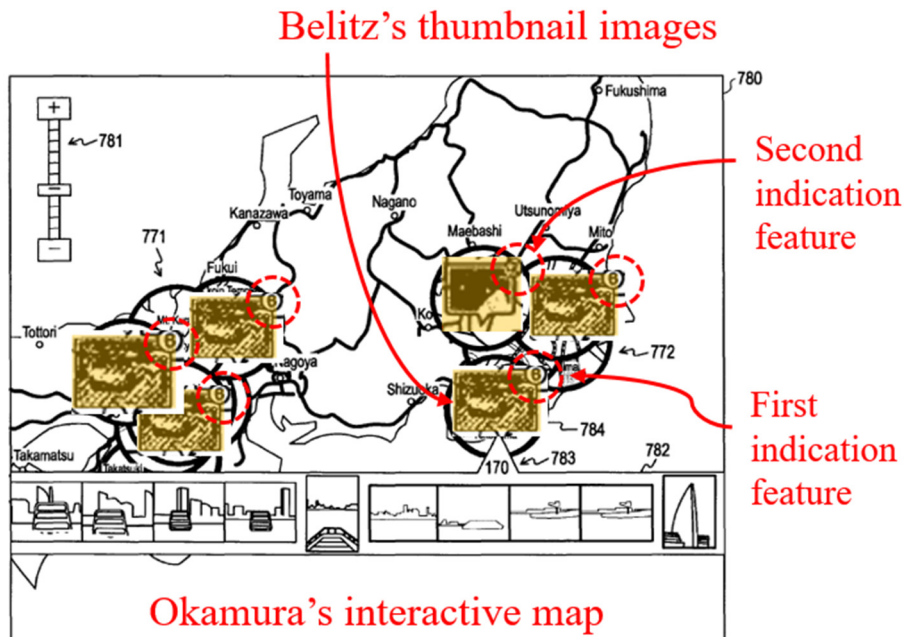
F.   CLAIM 6

[6]: "The method of claim 5, wherein the second indication feature is connected to the second location selectable thumbnail image."

153.   *See* [3], [5] (incorporated here). Ex. 1006, [0051]-[0056], [0059]-[0060].

The Okamura-Belitz combination renders obvious multiple (e.g., first and second) selectable thumbnail images, because Belitz discloses multiple thumbnail images, each with a connected indication (count) feature that indicates the number of files associated with the thumbnail. *Id*.

G.   CLAIM 7

[7]: "The method of claim 5, wherein the second indication feature includes a second number indicative of the number of digital files in the second set of digital files."

154.   *See* [4], [5] (incorporated here). Ex. 1006, [0051]-[0056], [0059]-[0060].

The Okamura-Belitz combination renders obvious multiple (e.g., first and second) selectable thumbnail images, because Belitz discloses multiple thumbnail images, each having corresponding indication (count) feature indicative of the number of digital files in the respective set of digital files. *Id*.

H.   CLAIM 8

[8]: "The method of claim 2, further comprising, subsequent to the map view being displayed on the interface, responsive to an input that is indicative of zooming in on the interactive map, modifying the first indication feature."

155.   As I described in IV.A (incorporated here), Okamura discloses zooming in on the interactive map. For example, "the user can *change the scale of a map*

displayed on the map view screen 780" by adjusting "a scale-changing bar 781."

Ex. 1005, [0355]. Okamura describes that, "when the scale of a map is changed in

this way, every time the scale of a map is changed, the above-described non-linear

zoom process is performed, and placement of map clusters is changed." *Id*.

156. As I discussed for [1c] and [2] (incorporated here), a POSITA would have

found it obvious to modify Okamura's map view 780 to display Belitz's thumbnail

images with the indication feature (instead of Okamura's clusters). A POSITA

would have found it obvious to modify Okamura in this manner to improve the

user's understanding of which contents belong to which clusters and enhance a

user experience of "discern[ing] between the various objects" by providing "a good

view of what location is associated with what." Ex. 1006, [0002].

157. Belitz also describes that "FIG. 4b is another screenshot of a display 403 of a

device or a user interface according to the teachings herein. In this screenshot the

map 408 has been ***zoomed in*** showing the area in greater detail." Ex. 1006, [0055].

As shown in FIG. 4b, the first indication feature (e.g., "6" which the specification

appears to refer to as "13 other graphical objects") representing the number of

associated digital files is modified based on the zoom level (e.g., "4" in 410c

because one of the thumbnail images was split from the thumbnail image 410 after

the zoom of the map has been modified). Ex. 1006, [0051], [0055]. Should the

user zoom out, the thumbnail images are again combined with an updated

indication feature (from FIG. 4b to FIG. 4a). *Id*. Thus, for both cases where

Belitz's thumbnail images are displayed in Okamura's map view screen and where

Belitz's map substitutes Okamura's map view screen, the Okamura-Belitz

combination would change the indication feature displayed for each thumbnail

image in response to zooming in/out.
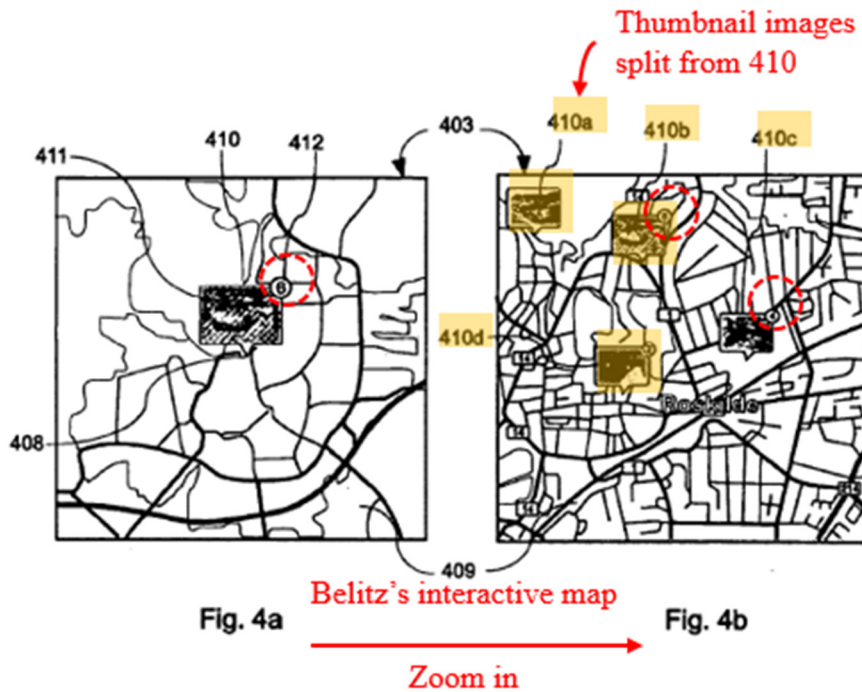
Ex. 1006, FIG. 4a-b (annotated)

I.   CLAIM 9

[9]: "The method of claim 2, further comprising, subsequent to the map view being displayed on the interface, responsive to an input that is indicative of zooming out on the interactive map, modifying the first indication feature."

158.   *See* [8] (incorporated here). Belitz describes that "[s]hould a user ***zoom out***

from FIG. 4b the display would return to the screenshot sown in FIG. 4a." Ex.

1006, [0056]. As shown in the above FIG. 4a, the first indication feature

representing the number of associated digital files is modified based on the zoom level.

159.   Okamura describes zooming out on the interactive map, where "the user can change the scale of a map displayed on the map view screen 780" by adjusting "a scale-changing bar 781." Ex. 1005, [0355].

J.   CLAIM 10

[10]: "The method of claim 2, further comprising, subsequent to the map view being displayed on the interface, responsive to an input that is indicative of a filter selection, modifying the first indication feature."

160.   The '228 patent describes setting a filter selection (as annotated below) and displaying a map view with the modified first indication feature (referring to the count indicator for the thumbnail image on the interactive map). Ex. 1001; 7: 19-30, 28: 63-67, FIG. 43. As I discussed in Section VI, by 2011, enabling the user to set a filter was well-known for map-oriented software.
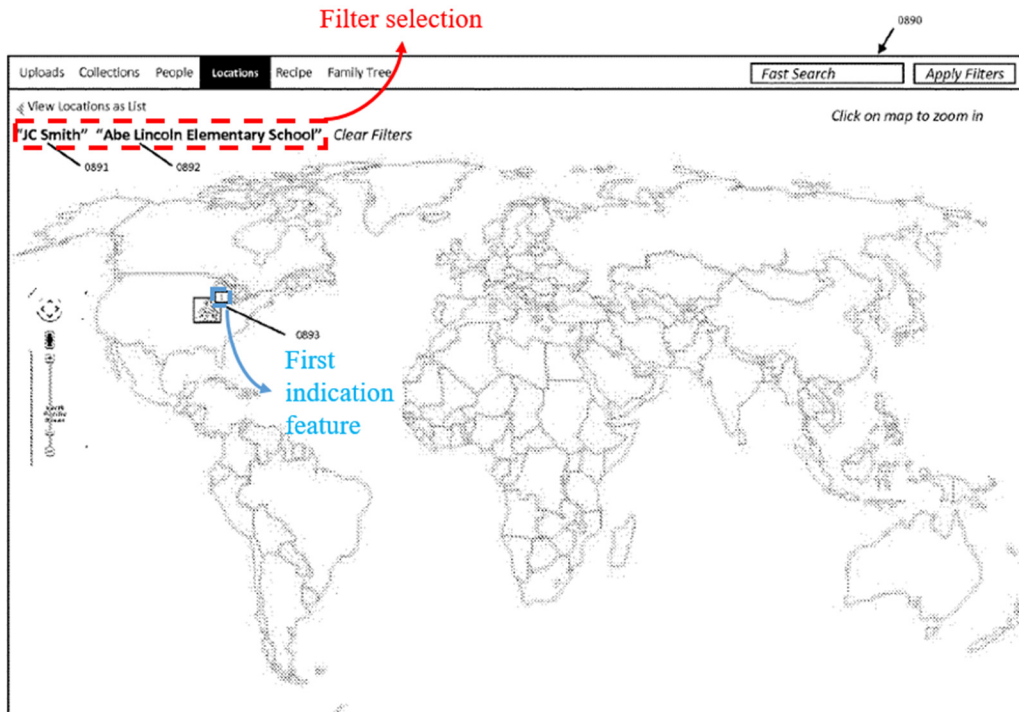
Ex. 1001, FIG. 43 (annotated)

161.   Okamura teaches setting a filter using a condition setting section 190 to generate the event, face, and place clusters that "are generated on the basis of ***various kinds of condition*** corresponding to a user operation outputted from the condition setting section 190." Ex. 1005, [0098]-[0099], [0101], [0204], FIG. 1. Okamura describes that the condition setting section prompts re-generating clusters (in the tree restructuring section 160) and then displaying such regenerated clusters including re-computed indication feature in the display section 181. *Id.* In addition, a POSITA would have found it obvious to allow a user to apply the filter selection for improving flexibility of navigating many digital image files displayed on the user interface. Ex. 1032, Abstract, [0016], [0071]-[0080], FIGS. 5-9.

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162.   To the extent that Okamura does not expressly describe modifying the first indication feature responsive to a filter selection, a POSITA would have found it obvious to modify said indication feature based on the condition setting action (e.g., if 4/10 pictures pass the filter selection, the system would re-generate cluster information using the cluster information generating section 170 then displaying updated indication feature to "4" on the display section 181). *Id.*
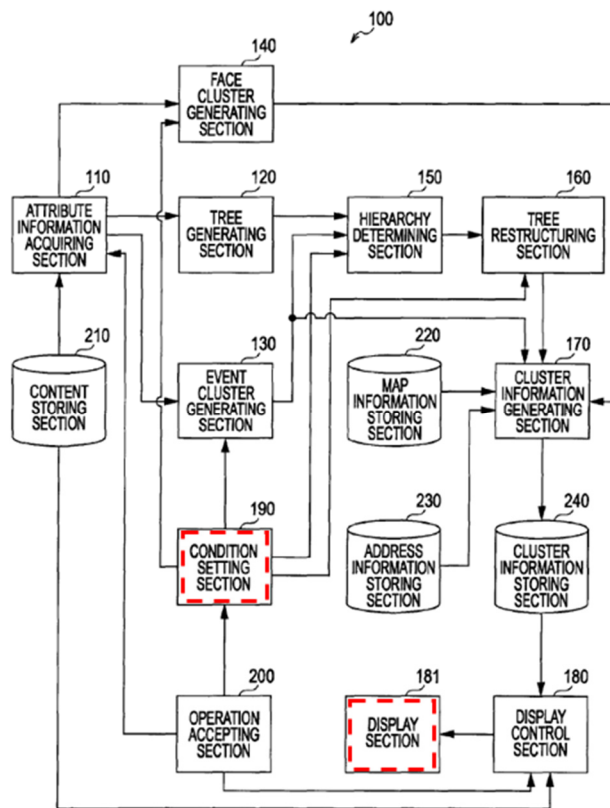
Ex. 1005, FIG. 1.

163.   For the case that Belitz's thumbnails are displayed in Okamura's map view, Okamura's condition setting would be applied to Belitz's thumbnails and update the indication feature in respond to the user's condition setting using Okamura's

condition setting section 190. Ex. 1005, [0098]-[0099], [0101], [0204], FIG. 1.

Similarly, for the case that Belitz's map substitutes Okamura's map view,

Okamura's condition setting would be also applicable. *Id*.

K.   CLAIM 11

[11]: "The method of claim 1, wherein the first location selectable thumbnail image is a first collection cover image and wherein the second location selectable thumbnail image is a second collection cover image that is different than the first collection cover image."

164.   The '228 patent uses the term "collection" with its ordinary meaning, e.g., a

set of digital files (such as a set of photographs). Ex. 1001, 14:67-15:2, 18:4-7,

18:43-47, 21:19-28. In addition, the '228 patent describes that the user *can* set the

cover photo for a collection, but does not require a user to do so. Ex. 1001, 24:1-

15.

165.   As I discussed for [2] and incorporated here, the Okamura-Belitz

combination renders obvious multiple collection cover images (Belitz's thumbnail

images) overlaid on Okamura's map view screen 780, where the collection

indicates a group of digital files.   In one embodiment, Belitz's graphical objects

are photographs (images), and each graphical object is included in a *set* of

photographs associated with a given location. Ex. 1006, [0059], [0062].   Thus,

Belitz's thumbnail images may be regarded as collection cover images (clicking on

one opens a virtual book of images), and a POSITA would have found it obvious

to display these thumbnail images in Okamura's map view (alternatively replacing the map view by Belitz's map). *Id*.
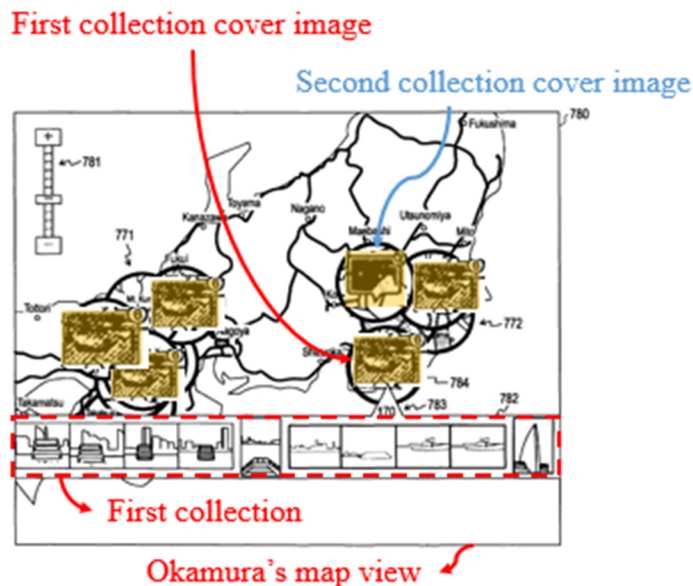
Okamura-Belitz (annotated from FIG. 41).

166. To the extent that the claims require a collection cover image to be selected by a user, a POSITA would have found it obvious to modify the cover image based on the user's selection of a desired image as a cover (e.g., adding star ratings to digital image files[4] and have the top-rated one become the cover image) Ex. 1006, [0060]. As I discussed in Section VII.C above, a POSITA would have been motivated to make such modifications and would have had a high expectation of success in doing so. *Id.*

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[4] A standard feature for consumer-targeted image management tools, such as Google's Picasa or Adobe's Lightroom, with which a POSITA would have been familiar.

L. CLAIM 12

[12]: "The method of claim 1, wherein the first location selectable thumbnail image includes a representation of at least one of the digital files in the first set of digital files, and wherein the second location selectable thumbnail image includes a representation of at least one of the digital files in the second set of digital files."

167.   As I discussed for [2] (incorporated here), the Okamura-Belitz combination renders obvious multiple location selectable thumbnail images overlaid on Okamura's map view screen 780, where the collection indicates a group of digital files. Ex. 1005, [0354]-[0356], [0431]; Ex. 1006, [0051]-[0056], [0059]-[0060]. Belitz describes that each thumbnail image is a representation of the photos accessible from a given location. Belitz also discloses multiple sets of digital files, where each set is associated with a corresponding location. *Id*. When adapted as Belitz teaches, Okamura's map view screen would include the first and the second location selectable thumbnail images and include a corresponding representation of at least one digital file belonging to each corresponding set. *Id*.

M. CLAIM 13

[13]: "The method of claim 12 wherein the representation of the at least a portion of the one digital file in the first set of digital files is not overlaid on the interactive map, and wherein the representation of the at least a portion of the one digital file in the second set of digital files is not overlaid on the interactive map."

168.   Okamura describes that selecting one of the clusters on the map view screen causes display of the representation of the digital files belonging to the clusters

below the interactive map in a content listing display area 782. Ex. 1005, [0356], FIG. 41.
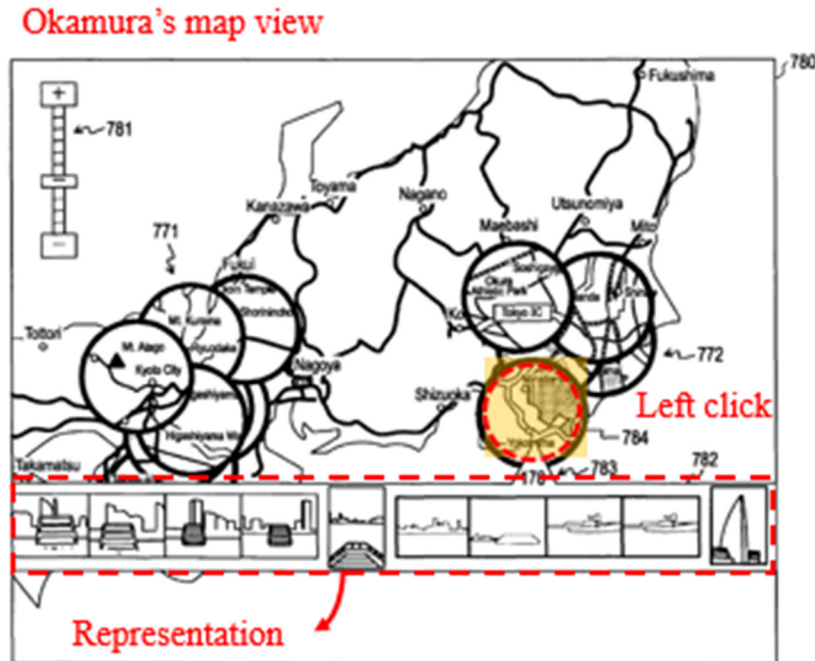
Ex. 1005, FIG. 41 (annotated)

169.   To the extent that the content listing display area 782 partially overlaps the interactive map, a POSITA would have found it obvious to display the content listing display area 782 not overlaid on the map. Indeed, Okamura discloses displaying content representations outside of the map: a play view screen 890 (analogous to the first location view) that displays a content listing display area 892 separate from the map. *Id*.

170.   Okamura also describes displaying digital files from a first and a second set of digital files, because representations of different sets of photos are displayed in response to the user's selection of different clusters. Ex. 1005, [0356].
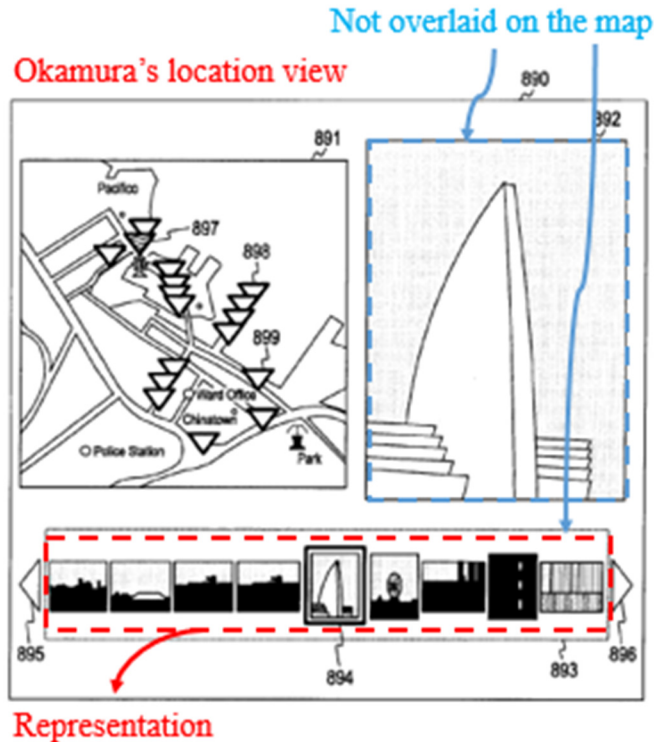
Ex. 1005, FIG. 50 (annotated)

N. CLAIM 14

[14]: "The method of claim 1, wherein the first location view includes a representation of at least a portion of all of the digital files in the first set of digital files and the second location view includes a representation of at least a portion of all of the digital files in the second set of digital files."

171. Okamura describes a play view screen 890 that displays a representation of at least a portion of all of the digital files belonging to a selected cluster (e.g., in the content listing display area 893). Ex. 1005, [0439]-[0444]. Responsive to a user selection of a second cluster, the play view screen 890 gets modified to include a representation of at least a portion of all of the digital files belonging to a second cluster (also *see* [15b] below). *Id.* For example, Okamura shows that

selecting the cluster 784 displays all of the images associated with the selected

cluster (and thus selected location) in the content listing display area 893 as shown

below. *Id.*
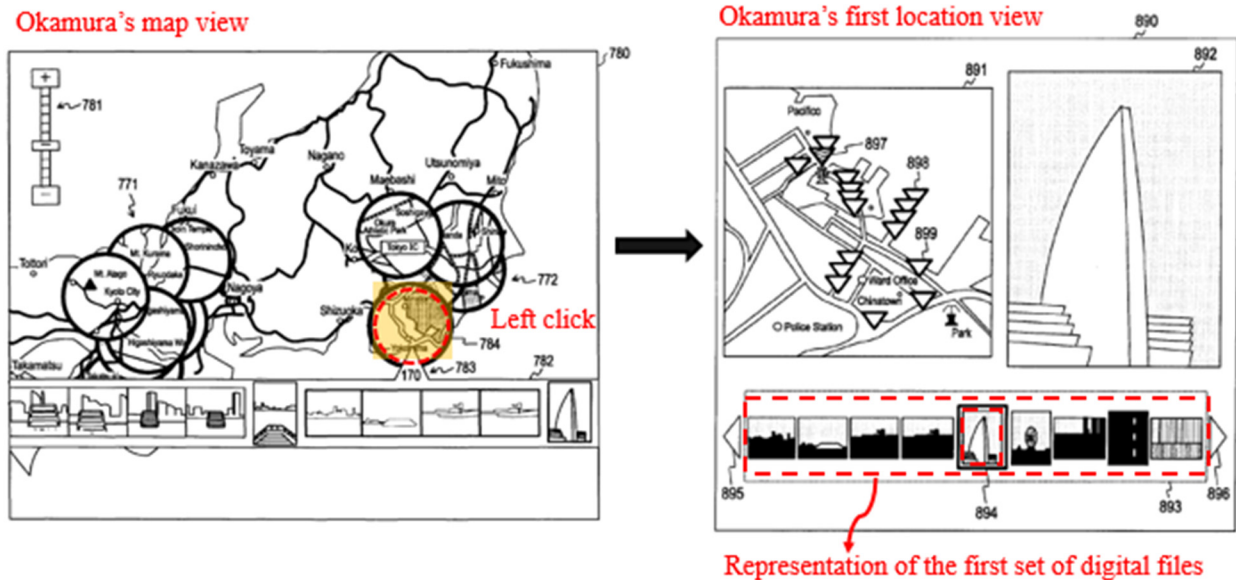
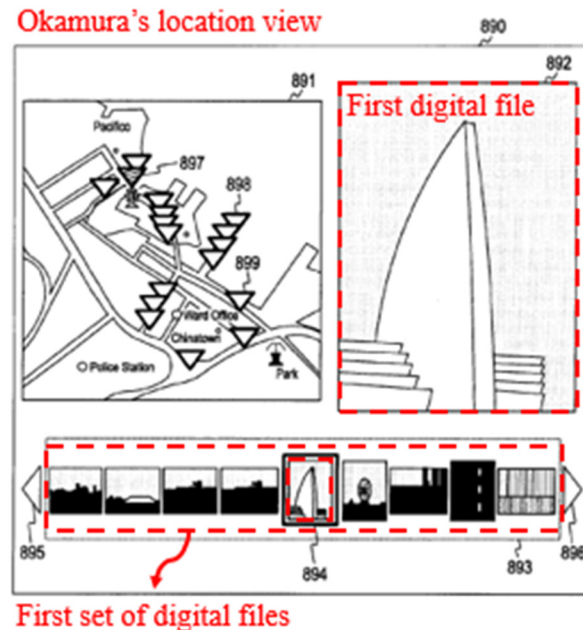Ex. 1005, FIG. 41 (left; annotated), FIG. 50 (right; annotated)

O.   CLAIM 15

[15pre]: "The method of claim 1, further comprising"

172. *See* [1pre] (incorporated here).

[15a]: "responsive to an input that is indicative of a selection, in the first location view, of the representation of the at least a portion of the one digital file in the first set of digital files, causing a first digital file to be displayed on the interface; and"

173. Okamura describes that selecting a thumbnail image (e.g., "by using a

cursor") in the first set of digital files (those displayed in the content listing display

area 893) causes "[a]n image corresponding to the ***content attached with the***

selection box 894 in the content listing display area 893 [] displayed in magnified

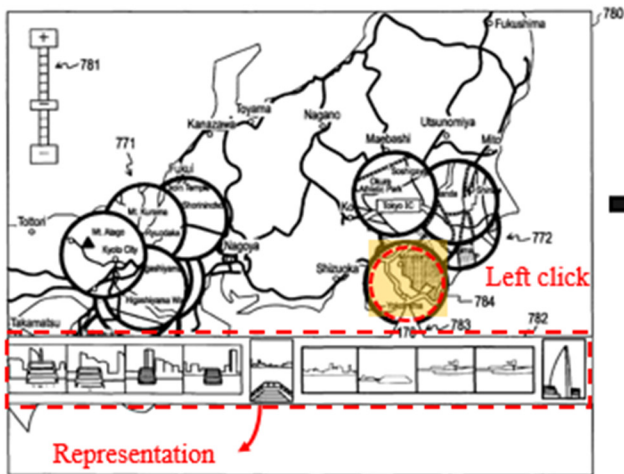form in the magnified image display area 892." Ex. 1005, [0443-0444], FIG. 50.
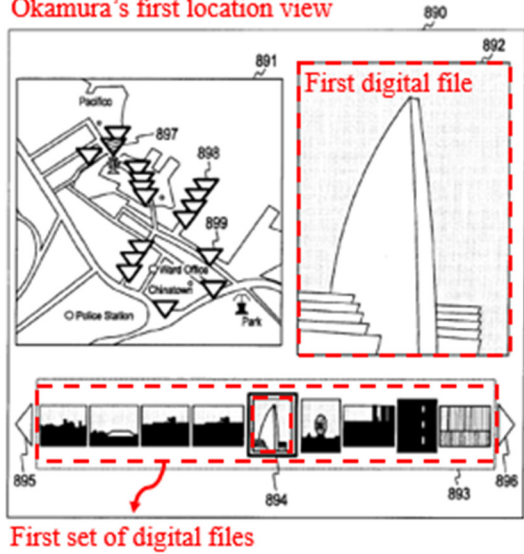

Ex. 1006, FIG. 50 (annotated)

[15b]: "responsive to an input that is indicative of a selection, in the second location view, of the representation of the at least a portion of the one digital file in the second set of digital filed, causing a second digital file to be displayed on the interface."

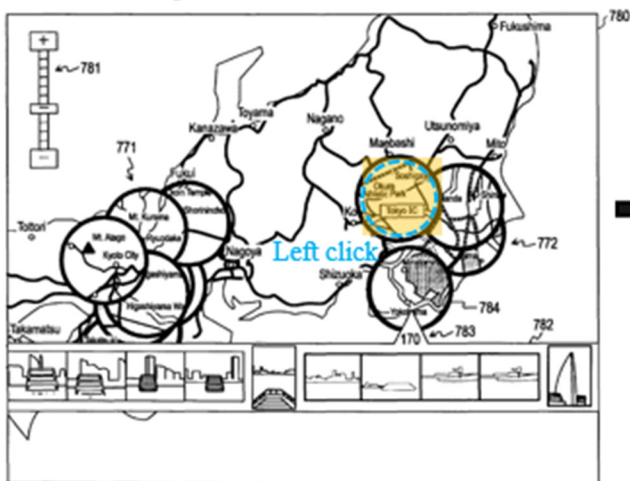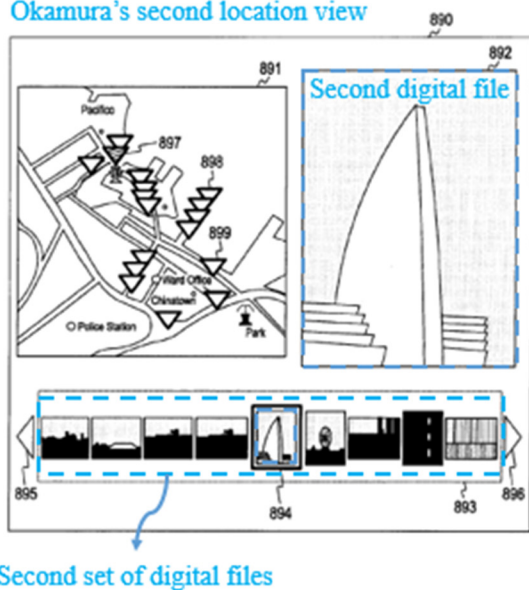174. *See* [15a] (incorporated here); Okamura describes the second location view.

Ex. 1006, FIG. 41 (left; annotated), FIG. 50 (right; annotated)

P. CLAIM 16

[16pre]: "The method of claim 1, further comprising:"

175. *See* [1pre] (incorporated here).

[16a]: "receiving alphanumeric text as a tag;"

176.   Okamura describes "a title assigned to each cluster" where the title includes

an *alphanumeric text* (e.g., "an address "Tokyo-prefecture Shinagawa-ward Osaki

1-chome" *determined by the cluster information generating section 170*").   Ex.

1005, [0136].   That is, Okamura's user interface receives the alphanumeric text as a

tag from the cluster information generating section 170.   *Id*.   Alternatively, a

POSITA would have found it obvious to have the user to input the alphanumeric

text as a tag for each digital file, because such tag can improve managing contents.

Ex. 1005, FIG. 5 (annotated)

[16b]: "associating the tag with a first digital file in the first set of digital files;"

177.   *See* [16a] (incorporated here).   Okamura describes association between a

first digital file and the tag as shown in FIG. 5 above.   Ex. 1005, [0128] ("pieces of

information are stored in association with each other"), [0136], [0229]-[0230],

100

[0277]-[0281]. Specifically, by including the tag (cluster title 248) as a column in the table with files listed in the content list 244, Okamura associates the tag with a first digital file in the first set of digital files.

178.   Okamura also describes that "…cluster information may include, in addition to the data shown in FIG. 5, the metadata of contents belonging to a cluster themselves." Ex. 1005, [0137]. Okamura further teaches that, "although the suitable method is to embed the cluster ID in the content itself by using a file area such as Exif, it is also possible to separately manage only the metadata of the content." *Id*. Through this description of managing metadata for files, a POSITA would have found it obvious to associate the tag with a first digital file in the first set of digital files by including the tag (e.g., cluster title) in the metadata (e.g., attribute information) for the first digital file. *Id.*

[16c]: "receiving a request to export the first digital file; and"

179.   Although Okamura does not expressly disclose exporting the digital file, receiving a request to export was well-understood and thus would have been obvious to a POSITA. Ex. 1033, [0038]; Ex. 1034, [0135]-[0136], [0183], FIG. 14; Ex. 1035, [0027]; Ex. 1036, [0004]-[0005], [0011], [0052]-[0053], [0079]-[0086]. By 2011, export functionality was well-known for digital image file management systems, such as Okamura's, especially for converting image files to different formats (e.g., JPEG, TIFF, GIF) and for creating a collection of images

meeting a minimum star rating criterion. As I discussed in Section VI, Picasa and Adobe Photoshop Lightroom had such feature by 2011. In fact, a POSITA would have understood that, to export one or more digital image files, prior art digital image file management systems typically allowed users to request the one or more digital image files to export by receiving user input that selects the one or more files for export. Upon selection and user input to perform an export operation, prior art digital file management systems would export files using various types of electronic transmissions (e.g., electronic messages). *Id.* With this background being part of a POSITA's knowledge and understanding of the state of the art at the time of the '228 patent, a POSITA would have found export functionality to be an obvious extension of Okamura's disclosure and would have found it obvious to add export functionality to Okamura's system based on Okamura's disclosure of file (e.g., photo) management and a POSITA's general knowledge that export functionality was well-known and common for systems like Okamura's.

180. With this background being part of a POSITA's knowledge and understanding of the state of the art at the time of the '228 patent, a POSITA would have found export functionality to be an obvious extension of Okamura's disclosure. In fact, a POSITA would have found it obvious to add export functionality to Okamura's system based on Okamura's disclosure of file (e.g.,

photo) management and a POSITA's general knowledge that export functionality was well-known and common for systems like Okamura's.

181.　From a POSITA's general knowledge, a POSITA would have seen benefits to adding export functionality to Okamura to enable users to share digital files (e.g., digital photographs) with other users and/or send digital files (e.g., digital photographs) to other computer systems with additional (or larger) storage (e.g., for archiving).　Indeed, by 2011, a POSITA would have seen export functionality as an implementation detail for systems like Okamura's and would have viewed export functionality like other well-known and obvious implementation details that the author of Okamura simply did not write down because they were trivial at the time and would have been well within the grasp of a POSITA to implement.　In fact, the background section of the '228 patent confirms that export functionality was part of a POSITA's general knowledge.　Ex. 1001, 1:48-60 (confirming that "Facebook , Flickr , Shutterfly and countless other social media and specialty digital files sites" allow "export" of files, just not with "new digital tags").　That is, social media and digital file sites provided export functionality for digital image files by 2011.　For these reasons, based on Okamura's description and the general knowledge of a POSITA, a POSITA would have found it obvious to receive a request to export a digital file in Okamura.

182.   Additionally, Belitz describes export-related functionality. For example, Belitz describes a system that provides "still image transmissions, video transmissions," and "electronic message transmissions." Ex. 1006, [0040].   Belitz describes "sending and receiving Short Message Service (SMS) messages, Multimedia Message Service (MMS) messages or email" where the user can send messages including multimedia content including digital files (e.g., photographs) displayed on the user interface. Ex. 1006, [0040], [0046]. To implement these types of "image" and "video transmissions," a POSITA would have found it obvious for the system to receive a request that indicates the image or video files to transmit (e.g., export). *Id.* In fact, the request to export is related to a file conversation (e.g., to a smaller size file) to meet transmit requirements (e.g., 300KB image for MMS standard). Through this disclosure, Belitz confirms the general knowledge of a POSITA discussed above and a POSITA would have found it obvious to include, in Okamura, export functionality to implement the image and video transmission (e.g., export) described by Belitz.

[16d]: "responsive to receiving the request to export, exporting the first digital file by causing the first digital file to be communicated along with the tag."

183.   As I discussed above for [16c], a POSITA would have found it obvious to implement export functionality in Okamura. Ex. 1006, [0040], [0046]. A POSITA would have found it obvious to export Okamura's files with the metadata (e.g., tags) associated with the exported digital files. Ex. 1020, pp. 90-94 (pages 71-75

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in original); Ex. 1033, [0025], [0038]; Ex. 1034, [0135]-[0136], [0183], FIG. 14; Ex. 1035, [0027]; Ex. 1036, [0004]-[0005], [0011], [0052]-[0053], [0079]-[0086]. As shown below, Adobe Lightroom allowed users to export files with embedded metadata and choose whether to "Minimize Embedded Metadata." Ex. 1020, p. 92 (page 73 in original). With this background, a POSITA would have considered it conventional to include EXIF metadata when exporting image or video files.
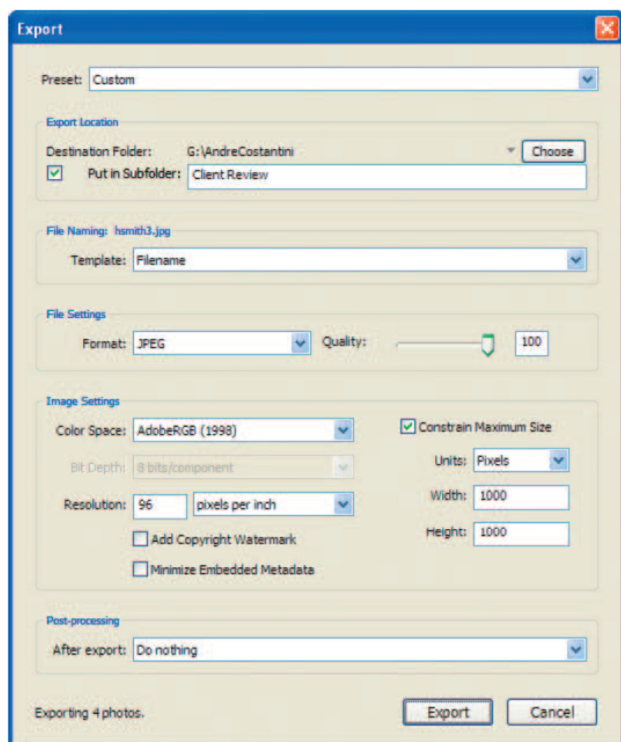

Figure 3.42 The Export dialog box allows you to specify the settings you want to use when exporting images from Lightroom.

184. A POSITA would have found it obvious to export Okamura's digital file by embedding the meta data (including the alphanumeric text tag) using "a file area such as Exif". Ex. 1005, [0137]. As Okamura explains, "Exif is a standard for adding image data and camera information into an image file, and defines a format

(file format) for recording an image file." Ex. 1005, [0107]. Given Okamura's description of Exif, a POSITA would have found it obvious to export files in Okamura using this well-known format and, in doing so, would have found it obvious to include Okamura's tag within metadata fields available in the Exif format. Regardless of whether the Exif format is used, a POSITA would have found it obvious to include Okamura's tags with exported files because a POSITA would have found it useful to retain the tag information with the file upon export. *Id.* Indeed, in implementing export functionality, a POSITA would have had a finite number of options (e.g., export with the tag or export without the tag) and would have found exporting files with tags as a useful option that would have been obvious to try as a matter of simple design choice. *Id.*

185. In addition, Belitz describes "image" and "video transmissions" with applications including "sending and receiving Short Message Service (SMS) messages, Multimedia Message Service (MMS) messages or email." Ex. 1006, [0040], [0046]. A POSITA would have found it obvious to use Belitz's messaging techniques to export the digital file with the meta data, including the tag, embedded with the digital files (e.g., as an Exif header in the exported file).

Q. CLAIM 17

[17]: "The method of claim 1, further comprising, prior to receiving the first input, causing the interface to display a plurality of selectable elements, the plurality of selectable elements including a location selectable element and a people selectable element, wherein the first input is indicative of a selection of

the location selectable element, and wherein the second input is indicative of a selection of the people selectable element."

186.   Okamura describes displaying a plurality of selectable elements (shown in the below FIG. 18): "The 'Event' tab 411, the 'FACE' tab 412, and the 'PLACE' tab 413 are tabs for displaying another index screen." Ex. 1005, [0236], FIGS. 18-21. Selecting the 'FACE' tab 412 causes the user interface to display the people view. *Id.* Selecting the 'PLACE' tab 413 causes the user interface to display the map view. It would have been obvious from Okamura's disclosure that the tabs are displayed prior to receiving the first input and followed by selection of the "PLACE" tab 413 (first input) and then the "FACE" tab 412.
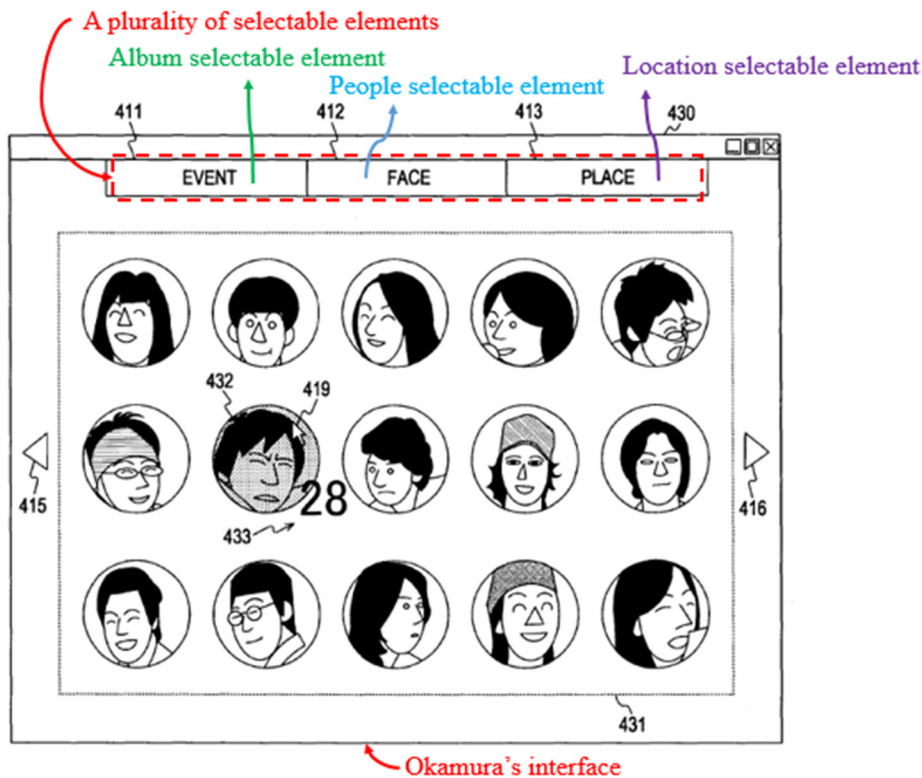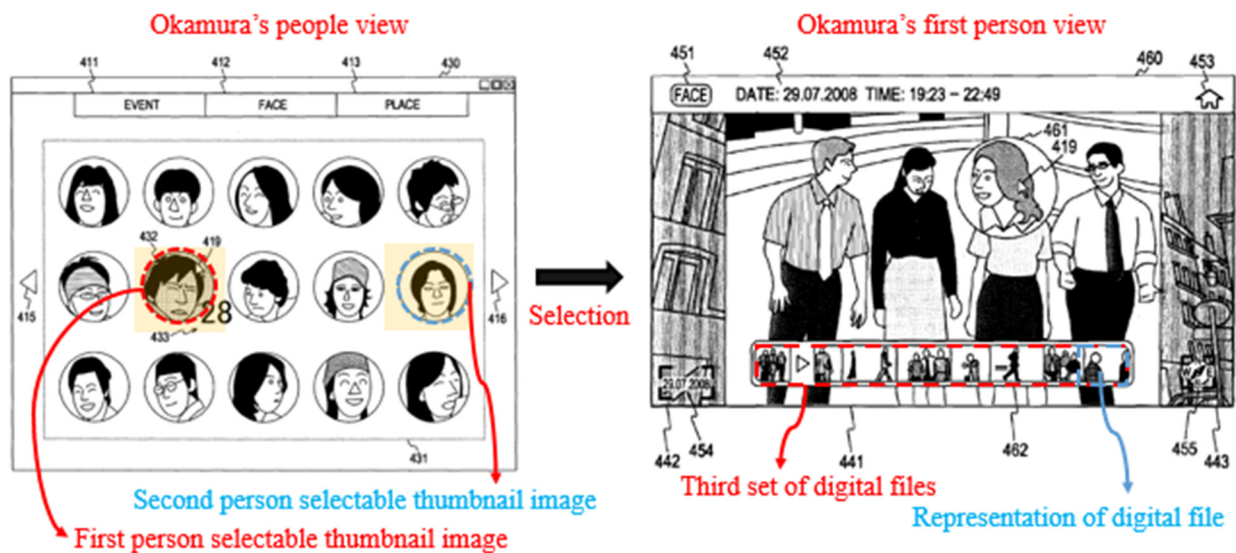

Ex. 1005, FIG. 21 (annotated)

R. CLAIM 18

[18]: "The method of claim 1, further comprising responsive to an input that is indicative of a selection of the first person selectable thumbnail image, causing a first person view to be displayed on the interface, the first person view including (i) the first name and (ii) a representation of each digital file in the third set of digital files."

187. As I discussed in Section VII.A above (incorporated here), Okamura describes that selecting a face-based thumbnail image ("when a desired cluster is determined *by a user operation*") causes the user interface to display "contents included in the face cluster []." Ex. 1005, [0261], FIG. 21, FIG. 24.

Ex. 1005, FIG. 21 (left; annotated), FIG. 24 (right; annotated)

188. The content playback screen 460 (analogous to the first person view from the '228 patent) includes a content listing display area 462, "an area where a listing of ***contents included in the face cluster*** to which the content displayed in the content display area 441 belongs is displayed." Ex. 1005, [0261]. That is, the

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content display area 441 includes a representation of each digital file in the third

set of digital files. *Id*.

189.   To the extent that Okamura does not expressly teach displaying the first

name in the first person view, a POSITA would have found it obvious to display

the ***first name*** (e.g., next to the image 461 adjacent to the face) to improve

recognition of the first person (as similarly done in the people view where "pieces

of information 433 related to the thumbnail image 432 are displayed" including

"the name of the person corresponding to the face"; *see* [1i]). Ex. 1005, [0247].

S.   CLAIM 19

[19]: "The method of claim 18, further comprising responsive to an input that is indicative of a selection of the second person selectable thumbnail image, causing a second person view to be displayed on the interface, the second person view including (i) the second name and (ii) a representation of each digital file in the fourth set of digital files."

190.   *See* [18] (incorporated here); Okamura describes the second person view

responsive to a selection of the second person selectable thumbnail image (e.g., as

annotated below).
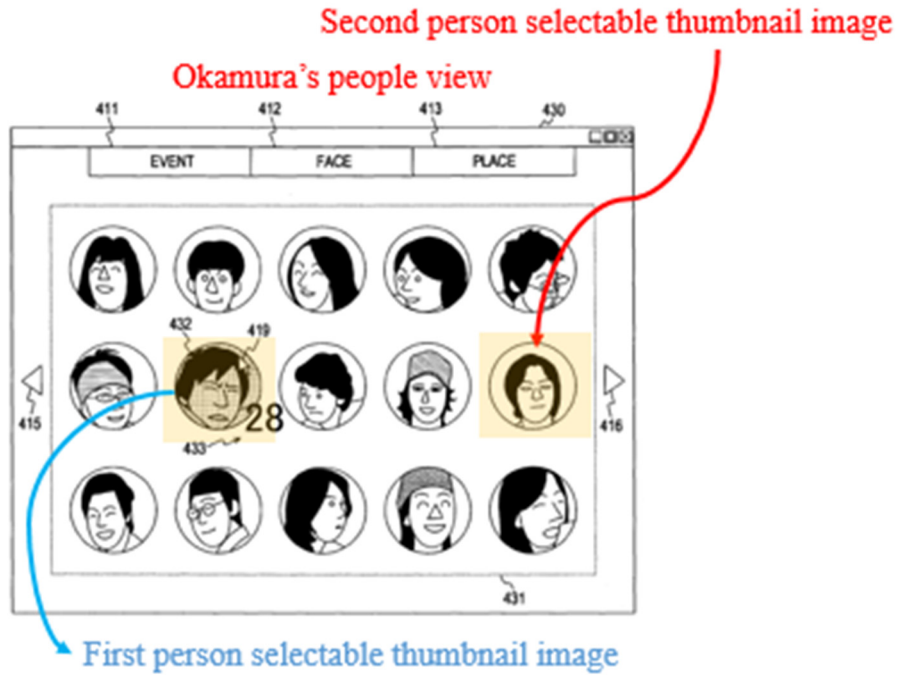
Ex. 1005, FIG. 21 (annotated)

IX. CONCLUSION

191. I reserve the right to supplement my opinions to address any information obtained, or positions taken, based on any new information introduced throughout this proceeding.

192. I declare under penalty of perjury that the foregoing is true and accurate to the best of my ability.