

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION,
HP INC., DELL INC., DELL TECHNOLOGIES INC.,
ASUSTEK COMPUTER INC., ASUS GLOBAL PTE. LTD.,
Petitioners

v.

LITL LLC,
Patent Owner.

IPR2024-00454, IPR2024-00455

U.S. Patent No. 9,003,315

DECLARATION OF DR. HENRY HOUH
REGARDING U.S. PATENT NO. 9,003,315

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I, Dr. Henry Houh, hereby declare as follows:

I. INTRODUCTION

1. I have been retained on behalf of Microsoft Corp. (“Microsoft” or “Petitioner”) to offer technical opinions related to U.S. Patent No. 9,003,315 (“the ’315 patent”) (EX-1001). I understand that Microsoft is requesting that the Patent Trial and Appeal Board (“PTAB” or “Board”) institute an *inter partes* review (“IPR”) proceeding of the ’315 patent. Specifically, I have been asked to consider the validity of claims 1–5, 7–13, 16, 18, 23–24, 27–33, 36–42, and 52–57 of the ’315 patent (the “Challenged Claims”) in view of prior art and obviousness considerations from the perspective of a person of ordinary skill in the art at the time of the invention (“POSITA”) as it relates to the ’315 patent.

2. I am being compensated for my time at my standard consulting rate. I am also being reimbursed for expenses that I incur during the course of this work. My compensation is not contingent upon the results of my study, the substance of my opinions, or the outcome of any proceeding involving the Challenged Claims. I have no financial interest in the outcome of this matter or on the pending litigation between Petitioner and Patent Owner.

3. My analysis here is based on my years of education, research and experience, as well as my investigation and study of relevant materials, including those cited herein.

4. I may rely upon these materials, my knowledge and experience, and/or

additional materials to rebut arguments raised by the Patent Owner. Further, I may also consider additional documents and information in forming any necessary opinions, including documents that may not yet have been provided to me.

5. My analysis of the materials in this proceeding is ongoing and I will continue to review any new material as it is provided. This declaration represents only those opinions I have formed to date. I reserve the right to revise, supplement, and/or amend my opinions stated herein based on new information and on my continuing analysis of the materials already provided.

II. BACKGROUND AND QUALIFICATIONS

6. I am over the age of 18 and am competent to write this declaration. I have personal knowledge, or have developed knowledge of these technologies based upon education, training, or experience, of the matters set forth herein.

7. My qualifications are set forth in my curriculum vitae, a copy of which is attached as Appendix A to this Declaration. The following is a brief summary of my relevant qualifications and professional experience.

8. I received a Ph.D. in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology (“MIT”) in 1998. Beforehand, I received a Master of Science degree in Electrical Engineering and Computer Science in 1991, a Bachelor of Science degree in Electrical Engineering and Computer Science in 1989, and a Bachelor of Science degree in Physics in 1990, all from MIT.

9. I am currently self-employed as an independent technical consultant. Until

late 2022, I was also president of a company that provides supplemental science, technology, engineering, and mathematics (“STEM”) education to children of all ages.

10. I first entered telecommunications in 1987 when I worked as a summer intern at AT&T Bell Laboratories as part of a five-year dual degree program at MIT. During my first summer, I worked designing digital hardware including using programmable logic devices. I continued to work at AT&T Bell Laboratories as part of this MIT program. While at MIT, I was a teaching assistant (“TA”) in the Electrical Engineering and Computer Science Department’s core Computer Architectures course. I first was a TA as a senior for a role typically reserved for graduate students. I later became head TA. The course covered various topics in computer architectures, including programmable logic arrays, multiprocessor systems and parallel processing. As a TA, I helped write homework assignments, lab assignments, and exams. I also taught in the recitation sections.

11. Later, as part of my doctoral research at MIT from 1991-1998, I was a research assistant in the Telemedia Network Systems (“TNS”) group at the Laboratory for Computer Science. The TNS group built a high-speed gigabit network and created applications that ran over the network. Example applications included ones for remote video capture, processing, and display of video on computer terminals. In addition to working on the design of core network components, designing and building the high-speed links, and designing and writing the device drivers for the interface cards, I also helped design the switch, which was composed of an array of FPGAs at the core.

12. I also set up the group's web server and helped to build the web pages that initiated the above-mentioned video sessions via a web interface. Vice President Al Gore visited our group in 1996 and received a demonstration of—and remotely drove—a radio-controlled toy car with a wireless video camera mounted on it that was built by our group. This toy car device received commands transmitted over a network from a remote computer, and video data from the toy car was transmitted wirelessly then over a computer network back to the user controller. On occasion, we allowed users visiting our web site to drive the toy car from their remote computer while they watched the video on their computer. The video stream was encoded by TNS-designed hardware, streamed over the TNS-designed network, and displayed using TNS-designed software.

13. I defended and submitted my Ph.D. thesis, titled “Designing Networks for Tomorrow’s Traffic,” in January 1998. As part of my thesis research, I analyzed local area and wide area flows to show a more efficient method for routing packets in a network, based on traffic patterns at the time.

14. From 1997 to 1999, I was a Senior Scientist and Engineer at NBX Corporation, a start-up that made business telephone systems for streaming packetized audio over data networks instead of using traditional telephone lines. NBX was later acquired by 3Com Corporation and the phone system is still used today by numerous businesses.

15. As part of my work at NBX, I designed the core audio reconstruction algorithms for the telephones, as well as the packet transmission algorithms. I also

designed and validated the core packet transport protocol used by the phone system. The protocol was used for all signaling in the phone system, including for the setup of conference calls. The NBX system also featured a computer interface for initiating phone calls, which could also initiate conference calls. The NBX system also supported the Telephony Application Programming Interface (“TAPI”) that allowed other computer programs to integrate with our system telephony features. We obtained U.S. Patent No. 6,697,963, entitled “Telecommunication method for ensuring on-time delivery of packets containing time-sensitive data,” as part of this work.

16. From 1999-2004, I was employed by Empirix or its predecessor company, Teradyne. Empirix was a leader in test tools for telecommunications protocols and systems, providing functional testing tools as well as load testing tools. From 2000-2001, I conceived and built a test platform for testing Voiceover-IP (VoIP) based on highly parallel network processors. The first application on this new test platform was a cloud emulator for simulating the effects of transmitting VoIP over a busy network. The platform was based on a multi-core high performance network processor chip.

17. In 2006, as part of my role at BBN Technologies, I helped found PodZinger Inc., now known as RAMP Inc. PodZinger utilized BBN’s speech recognition algorithms to search through the spoken words in audio and video segments. While I was Vice President of Operations and Technology, PodZinger followed its initial prototype with a full streaming audio and video search solution. I also created a social networking web site, which BBN sold to a venture-funded startup company. In the

process of creating the web site, I designed and specified the authentication and authorization protocols.

18. Since I set up one of the web's first hundred or so servers around late 1993, I have continued to create web servers and their interfaces for various organizations and companies. I have coded the web user interface from scratch, as well as using various content management systems to create user interfaces

19. I have been awarded several United States patents, and I have several patent publications including the following examples:

- U.S. Patent No. 7,975,296, "Automated security threat testing of web pages";
- U.S. Patent No. 7,877,736, "Computer language interpretation and optimization for server testing";
- U.S. Patent No. 7,801,910, "Method and apparatus for timed tagging of media content";
- U.S. Patent 7,590,542, "Method of Generating Test Scripts Using a Voice-Capable Markup Language";
- U.S. Patent No. 6,967,963, "Telecommunication method for ensuring on-time delivery of packets containing time-sensitive data."

III. LEVEL OF ORDINARY SKILL IN THE ART

20. In rendering the opinions set forth in this declaration, I was asked to consider the patent claims and the prior art through the eyes of a POSITA at the time of the alleged invention, which I understand is asserted to be April 1, 2008—the earliest

possible priority date of the '315 Patent. I understand that the factors considered in determining the ordinary level of skill in a field of art include the level of education and experience of persons working in the field; the types of problems encountered in the field; the teachings of the prior art, and the sophistication of the technology at the time of the alleged invention. I understand that a POSITA is not a specific real individual, but rather is a hypothetical individual having the qualities reflected by the factors above. I understand that a POSITA would also have knowledge from the teachings of the prior art, including the art cited below.

21. Taking these factors into consideration, in my opinion, at the relevant time, a POSITA relating to the technology of the '315 Patent would have had a Bachelor's degree in Electrical Engineering, Computer Engineering, Computer Science, or a similar field, plus two years of work experience in designing GUIs for computing devices. In my opinion, more education could substitute for experience and vice versa.

22. Before April 1, 2008, my level of skill in the art was at least that of a POSITA. I am qualified to provide opinions concerning what a POSITA would have known and understood at that time, and my analysis and conclusions herein are from the perspective of a POSITA as of that date.

IV. MATERIALS CONSIDERED AND RELIED UPON

23. In forming my opinions expressed herein, in addition to relying on my education and experience, I considered the totality of the following materials:

Exhibit	Description
Ex. 1001	U.S. Patent No. 9,003,315 (“the ’315 patent”)
Ex. 1002	File History of the ’315 patent
Ex. 1003	Declaration of Dr. Henry Houh in Support of Petition
Ex. 1004	Dr. Henry Houh CV
Ex. 1005	U.S. 90/014,958 Ex Parte Reexamination File History
Ex. 1006	German Patent Application Publication DE10331185A1 (“Pröll”) with certified translation
Ex. 1007	RESERVED
Ex. 1008	Joan Preppernau & Joyce Cox, <i>Step By Step Windows Vista</i> , Microsoft Press (Jan. 3, 2007) (“Preppernau”)
Ex. 1009	U.S. Patent 5,847,698 (“Reavey”)
Ex. 1010	RESERVED
Ex. 1011	U.S. Patent Application Publication 2008/0062141 A1 (“Chandhri”)
Ex. 1012	RESERVED
Ex. 1013	RESERVED
Ex. 1014	PCT WO 95/24007 (“Lane”)
Ex. 1015	RESERVED
Ex. 1016	RESERVED
Ex. 1017	RESERVED
Ex. 1018	RESERVED
Ex. 1019	RESERVED
Ex. 1020	RESERVED
Ex. 1021	Foley, James D., et al., <i>Computer Graphics Principles and Practice</i> , Second Edition in C (July 1997)
Ex. 1022	RESERVED
Ex. 1023	RESERVED
1024	RESERVED
1025	RESERVED
1026	RESERVED
1027	Fujitsu LifeBook T3000 Tablet PC review: Fujitsu LifeBook T3000 Tablet PC, available at https://www.cnet.com/reviews/fujitsu-lifebook-t3000-tablet-pc-review/
1028	HP Compaq Tablet PC TC1100 review: HP Compaq Tablet PC TC1100, available at https://www.cnet.com/reviews/hp-compaq-tablet-pc-tc1100-review/
1029	Acer TravelMate C110 review: Acer TravelMate C110, available at https://www.cnet.com/reviews/acer-travelmate-c110-review/
1030	OLPC XO-1 (One Laptop Per Child) review: OLPC XO-1 (One Laptop Per Child), available at https://www.cnet.com/reviews/olpc-

	xo-1-one-laptop-per-child-review/
1031	RESERVED
1032	U.S. Patent 8,624,844 (“the ’844 Patent”)
1033	U.S. Patent 8,289,688 (“the ’688 Patent”)
1034	RESERVED
1035	RESERVED
1036	RESERVED
1037	RESERVED
1038	RESERVED
1039	RESERVED
1040	RESERVED
1040	RESERVED
1041	An Overview of HTML+

I have also considered any materials cited in this declaration even if not included in the list above.

V. LEGAL STANDARDS

24. I am not a lawyer and do not provide any legal opinions, but I have been advised that certain legal standards are to be applied by technical experts in forming opinions regarding meaning and validity of patent claims. I have applied the legal standards described below.

25. It is my understanding that assessing the validity of a U.S. patent based on a prior art analysis involves two steps. First, one must assess what meaning a POSITA would have given the terms. Second, after assessing the meaning of the claim terms, one may then assess validity by comparing a patent claim to the “prior art.” I understand that the teaching of the prior art is viewed through the eyes of a POSITA at the time the invention was made. My analysis as to what constitutes a relevant POSITA is set forth above.

A. Legal Standards for Prior Art

26. I understand that a patent or other publication must first qualify as prior art before it can be used to invalidate a patent claim. For purposes of this declaration, counsel for Petitioner has instructed me to assume that each prior art reference cited in the combinations described below (Reavey, Pröll, Chandhri, Preppernau, Lane) qualify as prior art to the '315 Patent.

B. Legal Standards for Priority Date

27. I understand that the “priority date” (or “earliest effective filing date” or “Critical Date”) of a patent is the date on which it is filed, or the date on which an earlier application was filed if the patentee properly claims the benefit of the earlier application’s filing date. For purposes of my analysis in this declaration, I have assumed that the '315 Patent is entitled to a priority date of April 1, 2008.

C. Legal Standards for Obviousness

28. My understanding is that a patent claim is invalid as obvious only if the subject matter of the claimed invention “as a whole” would have been obvious to a POSITA at the time the invention was made. To determine the differences between a prior art reference (or a proposed combination of prior art references) and the claims, the question of obviousness is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. Also, obviousness grounds cannot be sustained by mere conclusory statements. Rather, it is necessary to provide some articulated reasoning with rational underpinning to support

the legal conclusion of obviousness.

29. I understand that a patent claim that comprises several elements is not proved obvious by simply showing that each of its elements was independently known in the prior art. In my evaluation of whether any claim of the '315 Patent would have been obvious, I considered whether the Petition, or any evidence submitted in this proceeding, presented an articulated reason with a rational basis that would have motivated a POSITA to combine the elements or concepts from the prior art in the same way as in the claimed invention.

30. It is my understanding that there is no single way to define the line between true inventiveness on one hand—which is patentable—and the application of common sense and ordinary skill to solve a problem on the other hand—which is not patentable. For instance, factors such as market forces or other design incentives may be the source of what produced a change, rather than true inventiveness.

31. I understand that the decision-maker may consider whether the change was merely the predictable result of using prior art elements according to their known functions, or whether it was the result of true inventiveness. And, the decision-maker may also consider whether there is some teaching or suggestion in the prior art to make the modification or combination of elements recited in the claim at issue. Also, the decision-maker may consider whether the innovation applies a known technique that had been used to improve a similar device or method in a similar way. The decision-maker may also consider whether the claimed invention would have been obvious to

try, meaning that the claimed innovation was one of a relatively small number of possible approaches to the problem with a reasonable expectation of success, by those skilled in the art.

32. I have been instructed by counsel that if any of these considerations are relied upon to reach a conclusion of obviousness, the law requires that the analysis of such a consideration must be made explicit. I understand that the decision-maker must be careful not to determine obviousness using the benefit of hindsight and that many true inventions might seem obvious after the fact. I understand that the decision-maker should consider obviousness from the perspective of a POSITA at the time the claimed invention was made, and that the decisionmaker should not consider what is known today or what is learned from the teaching of the patent.

33. I understand that in order to determine whether a patent claim is obvious, one must make certain factual findings regarding the claimed invention and the prior art. Specifically, I understand that the following factors must be evaluated to determine whether a claim is obvious: the scope and content of the prior art; the difference or differences, if any, between the claim of the patent and the prior art; the level of ordinary skill in the art at the time the claimed invention was made; and, if available, the objective indicia of non-obviousness, also known as “secondary considerations.”

34. I understand that the secondary considerations include: commercial success of a product due to the merits of the claimed invention; a long felt need for the solution provided by the claimed invention; unsuccessful attempts by others to find the

solution provided by the claimed invention; copying of the claimed invention by others; unexpected and superior results from the claimed invention; acceptance by others of the claimed invention as shown by praise from others in the field or from the licensing of the claimed invention; teaching away from the conventional wisdom in the art at the time of the invention; independent invention of the claimed invention by others before or at about the same time as the named inventor thought of it; and other evidence tending to show obviousness.

35. I understand that, to establish a secondary consideration, the evidence must demonstrate a nexus between that secondary consideration and the claimed invention.

36. I understand that a petition must identify, for any terms with means-plus-function limitations, the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function. I also understand a rebuttable presumption exists that without use of the term, “means,” a claim term is not interpreted as means-plus-function, but that other nonce words like “component” have been found to satisfy the rebuttable presumption and invoke a means-plus-function claim construction of such a claim term.

37. I also understand that a petitioner seeking to demonstrate that the prior art discloses a means-plus-function limitation must prove that the corresponding structure—or an equivalent—was present in the prior art and performing the same claimed function.

38. I understand that the standard for determining whether the prior art

discloses the corresponding structure or an equivalent is whether there are insubstantial differences, which means that if the assertedly equivalent structure performs the claimed function in substantially the same way to achieve substantially the same result as the corresponding structure described in the specification, it is equivalent.

39. I understand that proving structural equivalence does not require a component-by-component analysis, but rather that it is sufficient to show structure, materials, or acts that perform the claimed function in substantially the same way to achieve substantially the same result because the claim limitation is the overall structure corresponding to the claimed function and not individual components.

VI. SUMMARY OF OPINIONS

40. For the reasons I discuss below, it is my opinion that claims 1–5, 7–13, 16, 18, 23–24, 27–33, 36–42, and 52–57 of the '315 patent are disclosed in the prior art, and are rendered obvious by the prior art.

VII. BRIEF DESCRIPTION OF THE TECHNOLOGY

41. Convertible notebook computers appeared in the early 2000's. For example, the Fujitsu Lifebook T3000 was introduced in 2003. The T3000 was able to convert from a notebook to a tablet by swiveling the screen, so that when it folded back down, the screen was on the outside and covered the keyboard. In particular, when converted to table mode, the screen automatically switched from landscape to portrait

mode.¹ The T3000 ran Windows XP Tablet PC Edition. Other tablet PCs available in 2003 included the Acer TravelMate C110 Tablet, and the HP Compaq Tablet PC TC1100, and they also ran Windows XP Tablet PC Edition. Both the C110 and the TC1100 also featured a swivel screen that could fold down.² This convertability feature was also included in the low-cost “One Laptop Per Child” effort with its first release, the OLPC XO-1, in late 2007.³

42. Early handheld computing devices included the Apple Newton, introduced in 1993. Handheld devices began more widespread adoption with the introduction of the PalmPilot in 1996. Microsoft introduced its Pocket PC in 2000. The iPhone was introduced in 2007, and the iPhone included the Safari web browser. With a diversity of screen sizes accessing web sites, the designers of web sites worked to adapt the presentation to the size of the screens. This was recognized by the W3C (the web’s standard-setting consortium) in the early days of the web in 1993 that the rendering of

¹ See Dan Littman, *Fujitsu LifeBook T3000 Tablet PC review: Fujitsu LifeBook T3000 Tablet PC*, CNET (Oct. 12, 2003, 10:12 PM), <https://www.cnet.com/reviews/fujitsu-lifebook-t3000-tablet-pc-review/>.

² See Stephanie Bruzzese, *HP Compaq Tablet PC TC1100 review: HP Compaq Tablet PC TC1100* (Oct. 12, 2003 10:00 PM), <https://www.cnet.com/reviews/hp-compaq-tablet-pc-tc1100-review/>; BASIC Thinking, *HP TC1100 Tablet PC - Why Apple Can't Sue HP*, YouTube (Oct. 25, 2011), <https://www.youtube.com/watch?v=nQ0-PaKkHE4>; Brian Nadel, *Acer TravelMate C110 review: Acer TravelMate C110* (July 9, 2003 10:52 PM), <https://www.cnet.com/reviews/acer-travelmate-c110-review/>; Niko Kourouklis, *Scrutinized Tech Episode 26 | Acer Travelmate c110 (c111Ti)* (Dec. 5, 2020), <https://www.youtube.com/watch?v=yQguX29KDW0>.

³ See Mark Harris, *OLPC XO-1 (One Laptop Per Child) review: OLPC XO-1 (One Laptop Per Child)* (Jan. 7, 2008), <https://www.cnet.com/reviews/olpc-xo-1-one-laptop-per-child-review/>.

web pages should be guided by user preferences.⁴

43. Thus, by 2008, it was recognized and known that user interfaces would be customized based on the configuration of the computing devices.

VIII. OVERVIEW OF THE '315 PATENT

A. Subject Matter Overview of the '315 Patent

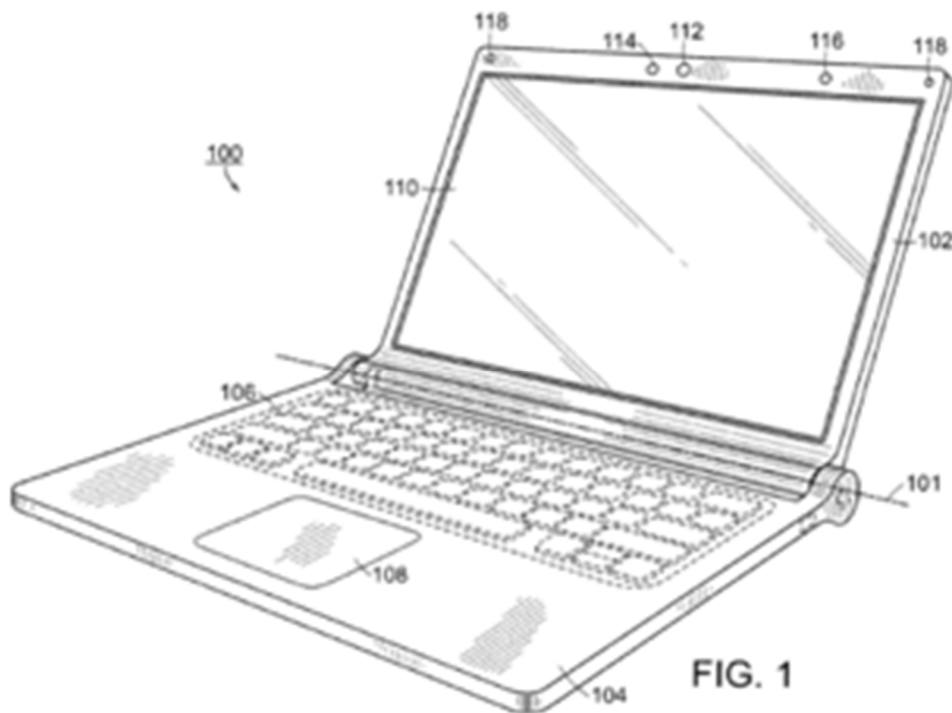
44. The '315 patent is titled "System and Method for Streamlining User Interaction with Electronic Content" and issued from U.S. Application No. 12/416,496, filed April 1, 2009. EX-1001, [21], [22], [54]. That application is a continuation-in-part of each of the applications that led to U.S. Patent No. 8,624,844 and 8,289,688, both filed on July 10, 2008, and claims priority to a provisional application filed on April 1, 2008.⁵ *Id.*, [60], [63].

45. The '315 patent is directed to a computer that "permit[s] the user to transition the device from one configuration to another during its use" and includes "a graphical user interface [(‘GUI’)] that organizes interface elements into views of computer content for presentation to [the] user." EX-1001, Abstract. The plurality of computer system configurations includes a laptop mode (e.g., FIG 1 below) where a display component 102 is pivotably coupled to a base 104 that includes a keyboard 106.

⁴ See 2 – *An Overview of HTML+* (Nov. 8, 1993), https://www.w3.org/MarkUp/HTMLPlus/htmlplus_7.html, [https://web.archive.org/web/19970605134644/https://www.w3.org/MarkUp/HTMLPlus/htmlplus_7.html].

⁵ The references in this Petition are all prior art assuming the April 1, 2008 priority date. Petitioner may further address priority if PO attempts to swear behind any reference in this Petition.

Id., 6:25–42.



46. In laptop mode, the keyboard is accessible to the user. Other computer system configurations include an easel mode (Figure 4 below) and a frame mode (Figure 26 below). *Id.*, 11:20-23, 18:25-34, 23:41-67, 24:1-17.

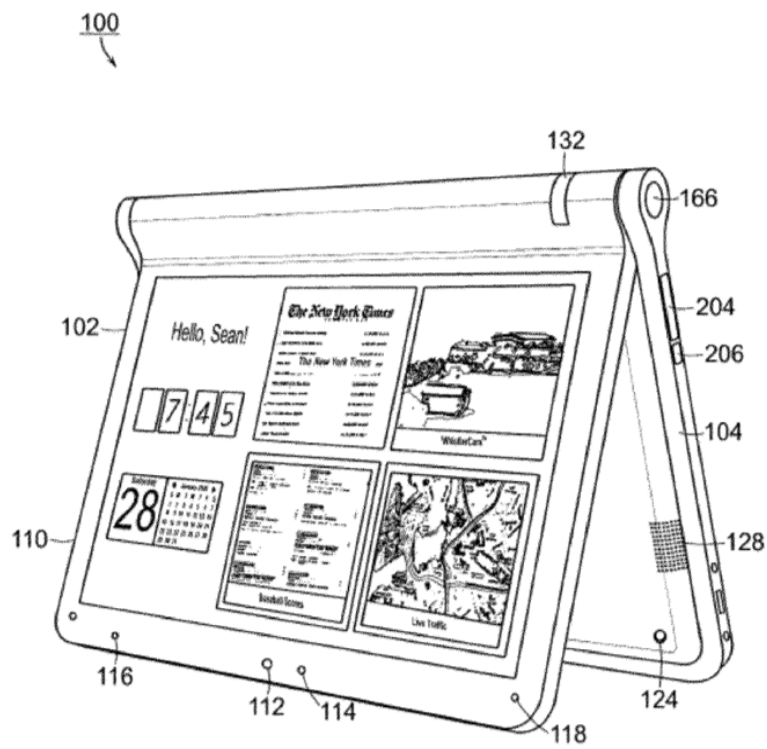


FIG. 4

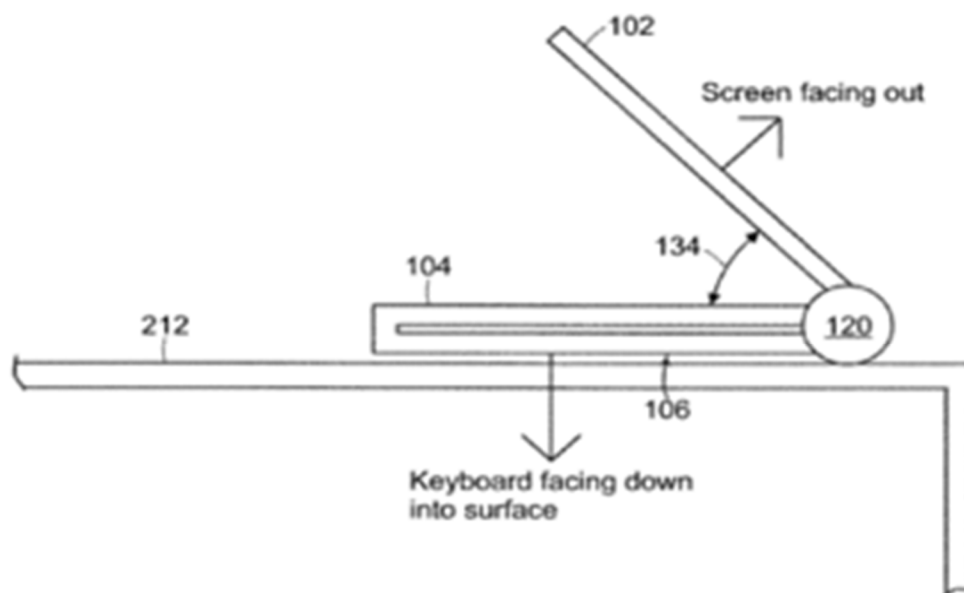


FIG. 26

In the easel and frame modes, the keyboard is “concealed and not easily accessible” to the user. *Id.*, 24:25-32.

47. The ’315 patent discloses a GUI that “provides a clear overview of the entire computing environment and searching capability within the environment.” *Id.*, 20:33-39. The ’315 patent describes various views including a “home view” and a “channel view,” as well as various content modes such as “media content mode” and “web content mode.” *Id.*, 3:23-4:55.

B. Brief Summary of ’315 Patent Prosecution History

48. Throughout prosecution, the pending claims recited “a plurality of views.” EX-1002, 141-150, 454-465, 553-564, 662-675, 775-789, 831-845.

49. The Examiner consistently found that prior art reference “Miller,” a how-to guide for Windows Media Center, taught the “plurality of views.” EX-1002, 366-376, 489-493, 604-608, 712-716, and the applicant never argued otherwise, EX-1002, 466-471, 565-569, 676-680, 790-791, 847-848.

50. After repeated claim amendments to add new features, EX-1002, 454-465, 553-554, 662-663, 775-776, 831-832, the Examiner eventually allowed the claims based on the combination of effectively all of the recited features, EX-1002, 863-876.

C. Brief Summary of Prior Patent Office Proceedings Involving the ’688 and ’844 Patents

51. It is my understanding that the ’315 patent has not been subject to any prior post-grant proceedings (IPR or ex parte reexamination (“EPR”)), and PO did not assert the ’315 patent in any district court litigation until February 2023.

52. As I discussed above, the application that led to the '315 patent was a continuation-in-part of the applications that led to each of the '688 patent and '844 patent. PO sued Lenovo alleging infringement of the '688 and '844 patents in May 2020 (EX-1024), and Lenovo subsequently filed IPR petitions challenging claims of both. *Lenovo (United States) Inc. v. LiTL LLC*, IPR2021-00681 (“-681 IPR”), Paper 1 (March 18, 2021); *Lenovo (United States) Inc. v. LiTL LLC*, IPR2021-00822 (“-822 IPR”), Paper 1 (May 4, 2021). Both petitions named only Lenovo entities as real parties-in-interest, and asserted obviousness challenges based on references not relied upon in this Petition. -681 IPR, Paper 1, 3; -822 IPR, Paper 1, 3-4.

53. I understand that the Board denied institution for both IPRs. In the -681 IPR, the Board found Lenovo had failed to allege its grounds with sufficient particularity, and denied institution without reaching the merits of the unpatentability grounds. -681 IPR, Paper 8. In the -822 IPR, the Board construed the term “frame mode,” and denied institution because Lenovo’s references did not teach a “frame mode” under the Board’s construction. -822 IPR, Paper 6.⁶

IX. CLAIM CONSTRUCTION

54. I have given all the claim terms of the Challenged Claims their plain and ordinary meaning, as would have been understood by a POSITA, at the time of the alleged invention, unless otherwise discussed below.

A. “plurality of views of a plurality of visual representations of computer

⁶ I note that the '315 Challenged Claims do not recite a “frame mode.”

content”

55. This term is recited in independent claims 1, 27, and 28, and has not been previously construed as to the '315 patent or the related '688 or '844 patents. Construction of a similar term was addressed in prior patent office proceedings involving U.S. Patent No. 9,880,715 (“the '715 patent”) and U.S. Patent No. 8,612,888 (“the '888 patent”). Although the '315 patent does not claim priority to either of those patents, the '315 patent claims priority to the same provisional application to which each of those patents also claims priority. EX-1033 ('688 patent), Cover (60); EX-1032 ('844 patent), Cover (60). In those prior proceedings, I understand that the Board construed a “plurality of views of digital media content” as “referring to a plurality of ways of organizing visual representations of computer content,” and the Board noted that this limitation does not encompass “merely changing the display’s orientation.” *Lenovo (United States) Inc. v. LiTL LLC*, IPR2021-00786, Paper 6 at 13–16 (May 4, 2021); *Lenovo (United States) Inc. v. LiTL LLC*, IPR2021-00821, Paper 6 at 4–9 (May 4, 2021). Because the Board denied institution, it did not further consider that construction based on a full trial record. *See id.* During the '715 EPR, the Examiner also clarified that the “plurality of views” limitation does not encompass merely changing to entirely different content. EX-1005, 1679–81.

56. In forming my opinions, I have applied the Board’s construction of “plurality of views of a plurality of visual representations of computer content,” as clarified during the EPR.

B. Means-Plus-Function (“MPF”)

57. Additionally, I have noted that several claim limitations appear to be expressed in means-plus-function form. I have identified means-plus-function constructions of several terms and have considered the function and corresponding disclosed structure in forming my opinions where applicable. The terms, function achieved, and corresponding structure of each function that I considered are as follows:

1. “display component”

Limitation (Function Underlined)	Corresponding Structure
Claim 1: “A <u>customized user interface for a computer system with a plurality selectable I/O profiles configured to present computer operations to a user in a format configured to a selected I/O profile on a display component</u> of the computer system”	A display screen. <i>See, e.g.</i> , ’315 Patent, Fig. 1, 6:28–30, 18:49–63, 19:4–5, Cl. 29 (“a display component including a display screen”).
Claim 27: “ <u>displaying a map based graphical user interface on a display component</u> ”	
Claim 28: “ <u>identify at least a first and a second computer system configuration based on sensor input indicating a position of the display component relative to a base component;</u> ”	

2. “execution component”

Limitation (Function Underlined)	Corresponding Structure
Claim 1: “an execution component , executing on the at least one processor, configured to: <u>identify at least a first and a second computer system configuration based on sensor input indicating a</u>	a program (or programs) executing on a processor that can (i) identify a first and second configuration of the computer based on a sensor indicating relative position of display/base, (ii) select a home view for a first configuration, (iii)

position of the display component relative to a base component;

select, responsive to the sensor input, a first home view from the plurality of views for the first computer system configuration, wherein the first home view is configured to organize a first set of the plurality of visual representations;

filter the first set of visual representations to present content that is optimized for viewing in the second system configuration at least in part by identifying content to filter, removing the identified content from the first set of visual representations, and generating a second set of visual representations based on the filtered first set of visual representations, wherein the second set of visual representations includes at least one different member than the first set of visual representations; and
transition, automatically in response to the sensor input, the display component between at least the first home view of the plurality of views and a second default content view of the plurality of views, wherein the second default content view is configured to organize the second set of visual representations, wherein the second default content view is a second organizational view of at least one application and computer content, and wherein the sensor input indicates a transition to the second computer system configuration.”

Claim 28: “an **execution component** configured to:

identify at least a first and a second computer system configuration

filter a set of visual representations optimized for viewing in the second configuration to create a second set of visual representations, and (iv) transition, based on the sensor to a second default content view that organize the second set of visual representations. *See, e.g., '315 Patent, 3:8-13, 6:5-9, 6:20-24, 9:20-29, 64:46-65:5*

<u>based on sensor input indicating a position of the display component relative to a base component;</u> <u>select, responsive to sensor input, a first home view from the plurality of views for the first computer system configuration, wherein the first home view is configured to organize a first set of the plurality of visual representations;</u> <u>filter the first set of visual representations to present content that is optimized for viewing in the second system configuration at least in part by identifying content to filter, removing the identified content from the first set of visual representations, and generating a second set of visual representations based on the filtered first set of visual representations, wherein the second set of visual representations includes at least one different member than the first set of visual representations;</u> <u>execute, automatically, in response to sensor input, a transition in the computer system display between at least the first home view of the plurality of views and a second default content view of the plurality of views, wherein the second default content view is a second organizational view of at least one application and computer content, wherein the second default content view is configured to organize the second set of visual representations, wherein the sensor input indicates a transition to the second computer system configuration.”</u>	
Claim 2: “The user interface of claim 1, wherein the execution component is	a program (or programs) executing on a processor that can transition between the

further configured to <u>transition between the plurality of views in response to execution of at least one of a computer system operation, a visual representation, a computer system configuration, and a change in computer system configuration.</u> ”	plurality of views in response to execution of a computer system operation, a visual representation, a computer system configuration, and a change in computer system configuration. <i>See, e.g.,</i> ’315 Patent, 3:8-13, 9:20-29, 11:6-19
Claim 12: “The user interface of claim 11, wherein the execution component is further configured to <u>cause the computer system to transition to a previous view in response to execution of a navigation element by a user.</u> ”	a program (or programs) executing on a processor, that can perform the steps in claim 1 and further can transition to a previous view based on the user executing a navigation element. <i>See, e.g.,</i> ’315 Patent, 4:58-62, 10:20-24.
Claim 24: “The user interface of claim 23, wherein the execution component is further configured to <u>transition the display component between the plurality of views, responsive to at least one of the current computer system configuration state and the current view state.</u> ”	a program (or programs) executing on a processor that can perform the steps from claim 1 and transition between a plurality of views responsive to the system configuration and current view state. <i>See, e.g.,</i> ’315 Patent, 6:5-9, 8:48-54, 11:6-19.
Claim 26: “The user interface of claim 24, wherein the execution component is further configured to <u>transition from the first view and a home view to a channel view in response to a change in computer system configuration state from a laptop to an easel configuration.</u> ”	a program (or programs) executing on a processor that can perform the limitations from claim 24 and transition from a first view and a home view to a channel view based on a change in computer system configuration from laptop to easel. <i>See, e.g.,</i> ’315 Patent, 6:20-24, 8:48-62, 11:11-19.

3. “storage component”

Limitation (Function Underlined)	Corresponding Structure
Claim 11: “The user interface of claim 1, further comprising a storage component configured to <u>retain a previous view state.</u> ”	A local or remote storage device configured to retain previous view states. <i>See, e.g.,</i> ’315 Patent, 4:56-58, 5:66-6:5, 10:18-20, 11:3-6, 16:26-35, 16:59-62, 21:27-28.
Claim 23: “The user interface of claim 1, further comprising a storage component configured to <u>retain a</u>	

<u>current computer system configuration state and a current view state.”</u>	
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4. “first user interface component” / “second user interface component”

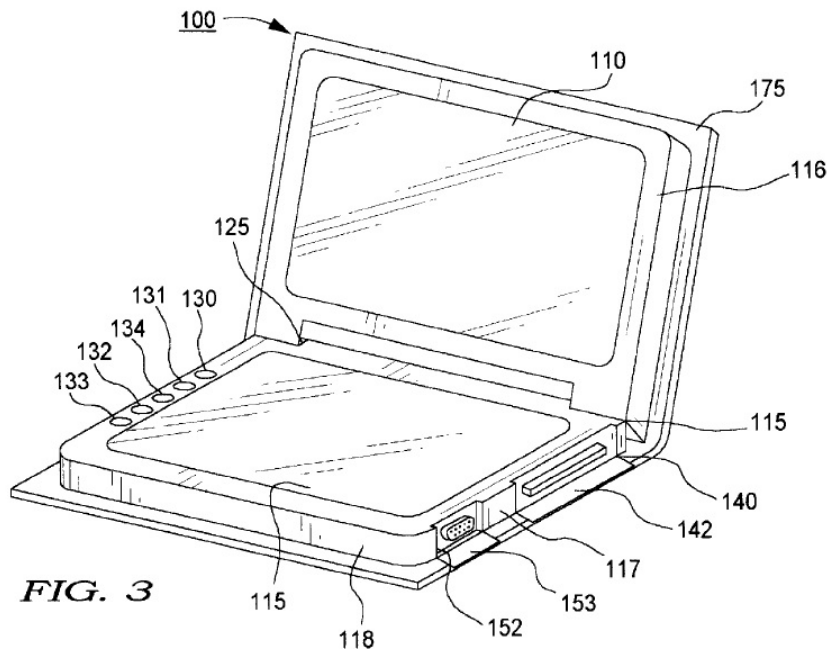
Limitation (Function Underlined)	Corresponding Structure
Claim 28: “a first user interface component configured to <u>display a plurality of views of a plurality of visual representations of computer content, wherein the computer content includes at least one of selectable digital content, executable computer applications, configurable computer settings, selectable computer operations and passive digital content;</u> ” / “a second user interface component configured to <u>display the plurality of visual representations of computer content on a computer display, wherein the plurality of visual representations of computer content include an association to a first home view of the plurality of views, the first home view including the computer content, and wherein the each of the plurality of visual representations is responsive to focus and execution, wherein execution includes selecting the visual representation, and wherein the first home view is a first organizational view of at least one application and computer content displayed responsive to activation of the system;</u> ”	A software interface component configured to display a plurality of visual representations of computer content that have an association with a home view based on selecting a visual representation. <i>See, e.g.,</i> ’315 Patent, 9:5-24, 9:53-10:2, 10:24-41, 10:50-11:6.

X. OVERVIEW OF THE CITED REFERENCES

A. Reavey (Ex. 1009)

58. Reavey discloses an electronic book device 100 that can be used in

multiple physical configurations. Reavey, 1:11-15. The device 100 includes two screens, first panel screen 110 and second panel screen 115, connected by a hinge 125. *Id.*, 5:32-35. Either screen can be provided as a touchscreen. *Id.*, 5:46-48. The device 100 includes other user input/output devices, including navigation keys 130-133 and an “assistant key 134.” *Id.*, 5:39-42. I have reproduced Fig. 3 of Reavey below.



59. Reavey discloses that device 100 can be used in three modes. In Mode 1, the device 100 is held with the screens 110/115 arranged vertically and held side-by-side, like a book. Reavey, 7:35-39. Mode 1 is not illustrated in Reavey.

60. In Mode 2, the screens 110/115 are arranged horizontally and in an over-under fashion, lying flat on a surface. Reavey, 7:42-44, 7:51-53, 7:61-62, Fig. 2. In this configuration, the screens 110/115 “act as one screen, with the text and graphics scrolling downward from one to the other.” *Id.*, 7:42-44. I have provided an annotated Figure 2 below, which shows Mode 2.

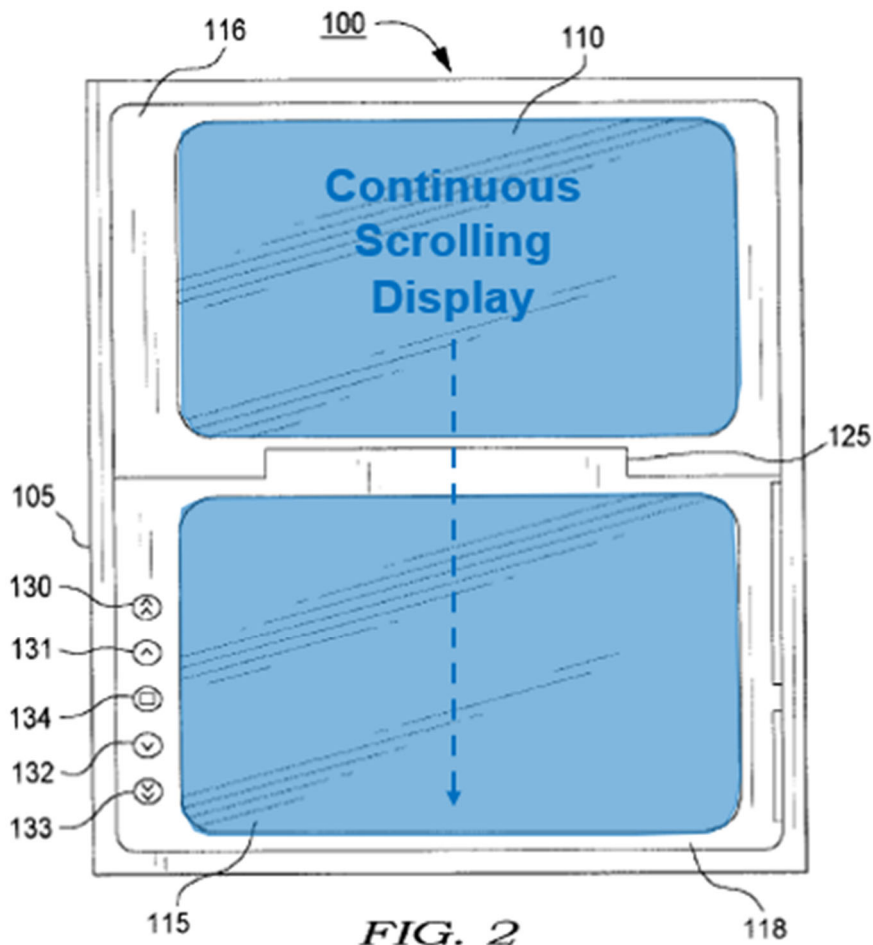
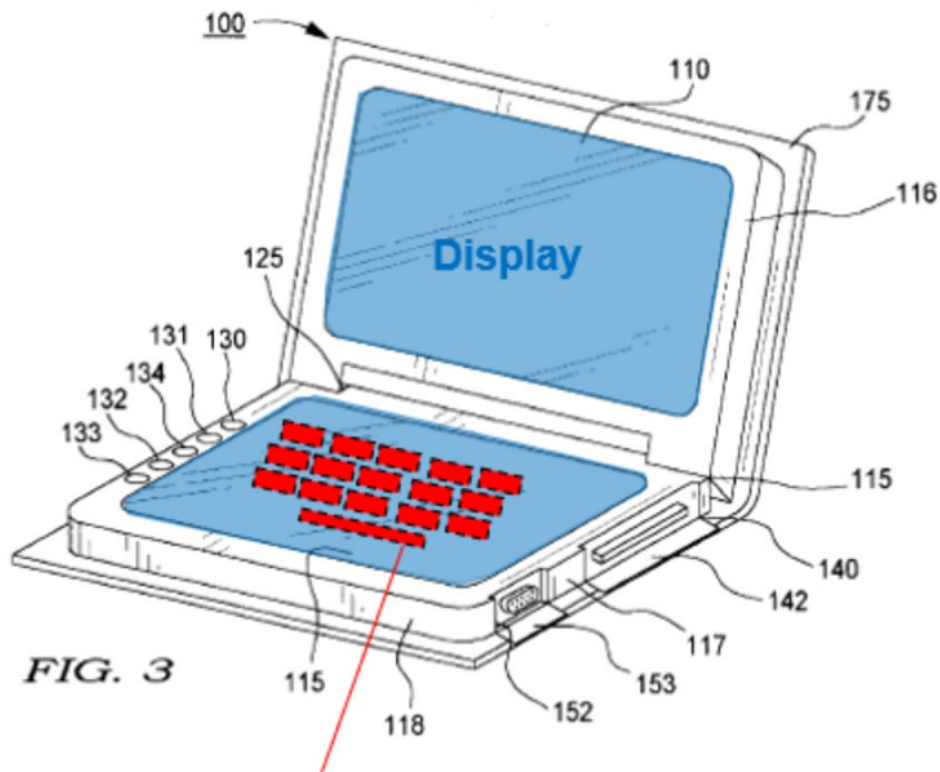


FIG. 2

61. In Mode 3, the screens 110/115 are arranged horizontally and in an over-under fashion, with the screens only partially open with respect to one another, such as at 120°. Reavey, 7:39-42, 7:53-58, Fig. 3. In this configuration, the “top horizontal screen [110] behave[s] as a normal display screen and the bottom horizontal screen [115] behave[s] as a touchscreen keyboard.” *Id.*, 7:39-42. I have provided an annotated Figure 3 below, which shows Mode 3.



Disappearing Keyboard

62. The device 100 changes between these modes “automatically when electronic book device 100 is opened.” Reavey, 7:45-46. When opened, Reavey’s device determines a proper mode of operation in the process of Figure 9, reproduced below:

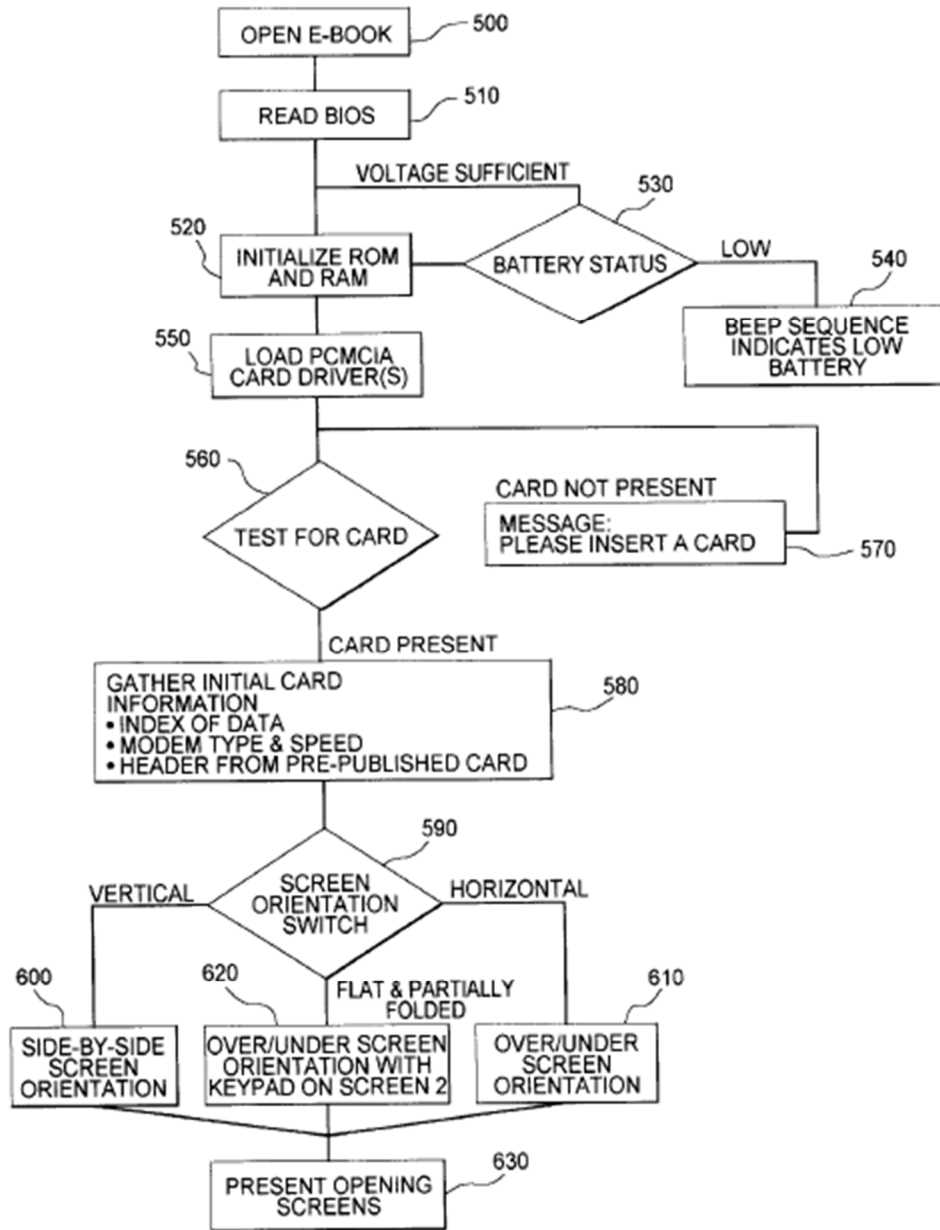


FIG. 9

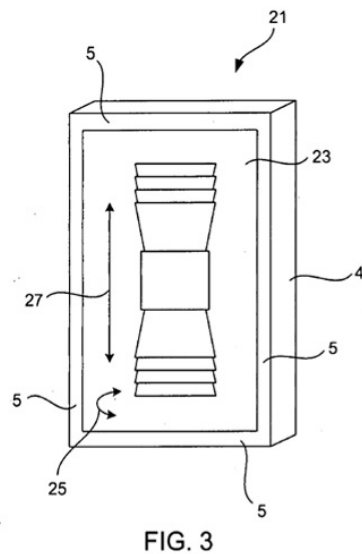
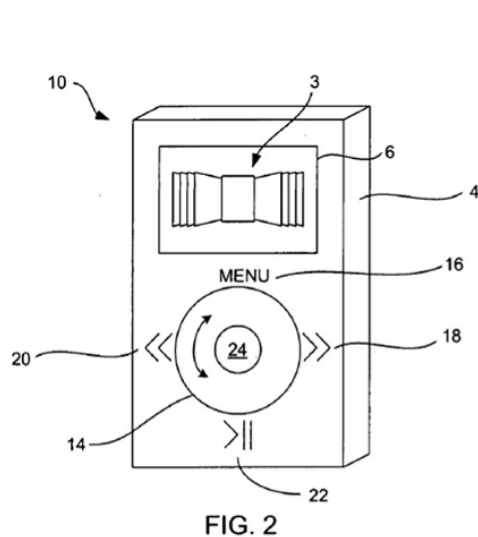
Id., Fig. 9. This “[s]creen orientation processing” determines whether Reavey’s device should be operated in “mode 1...mode 2... or mode 3” then displays the appropriate, respectively-associated screens to a user. *Id.*, 8:42–9:6.

B. Chandhri (Ex. 1011)

63. Chandri (EX1011) relates to an electronic device with image-based

browsing and addresses “improved methods for browsing through content.” Chandhri, Abstract, ¶¶0004, ¶¶0052. The “image based browser function provides a graphical user interface that allows a user to navigate through and/or select images rather than textual menu items contained in a conventional menu list (e.g., vertical menu).” *Id.*, ¶¶0053. While Chandhri’s disclosure uses various examples of browsing through media like music and photos, Chandhri discloses that the GUI interface is applicable more generally to “media files, address files, data book files, document files, applications, modes, etc.” *Id.*, ¶¶0054. Similarly, while the GUI interface may be applied to a media player, it can also be applied to other types of electronic devices, such as “a computer (e.g., personal computer).” *Id.*, ¶¶0057.

64. In addition to other GUI features, Chandhri discloses a tile-based browser that the user navigates with a “scrolling type action.” Chandhri, ¶¶0059-0060. In a configuration where the screen is horizontally-oriented, the user scrolls through the tiles side-to-side (*id.*, Fig. 2), and where the screen is vertically-oriented, the user scrolls through the tiles up-and-down (*id.*, Fig. 3). I have reproduced Figures 2 and 3 below.



65. As shown in Figures 5-8 below, Chandhri also discloses that the tiles can be arranged in various manners, including spatially separated (Chandhri, Fig. 5), layered (*id.*, Fig. 6), layered with the subsequent tiles in full view (*id.*, Fig. 7), and virtual rolodex (*id.*, Fig. 8).

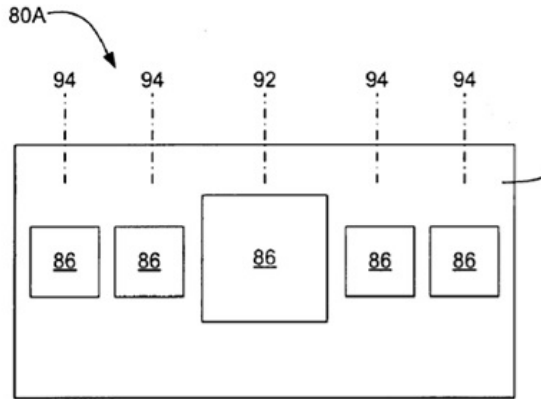


FIG. 5

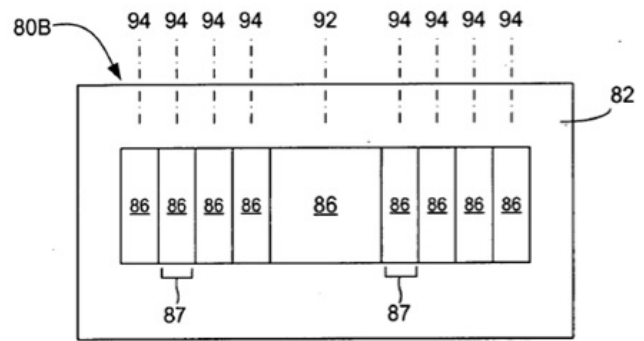


FIG. 6

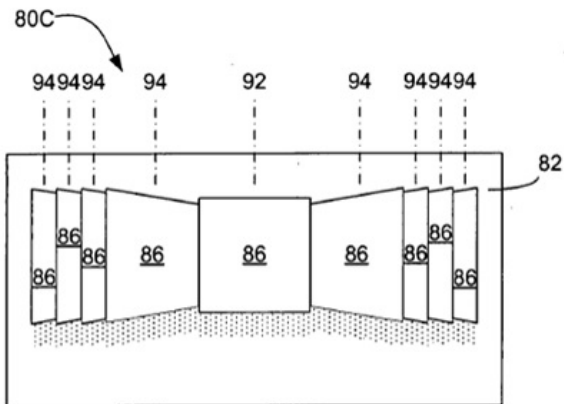


FIG. 7

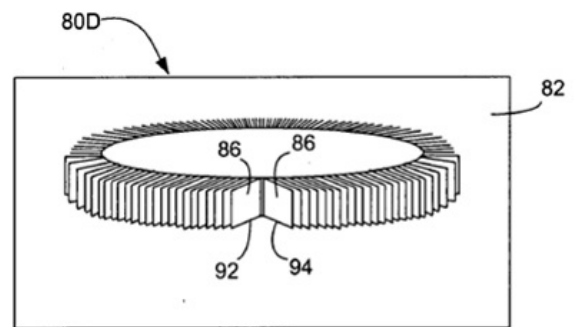


FIG. 8

66. Chandhri further discloses, in Figures 13, 15, and 16, that the tiles can be used to scroll through different types of content, including photos (Chandhri, Fig. 15), applications (*id.*, Fig. 13), and modes of the device (*id.*, Fig. 16).

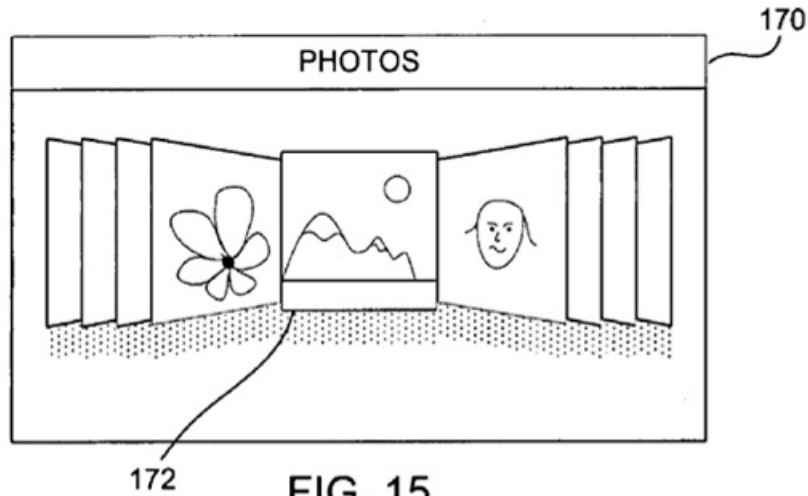


FIG. 15

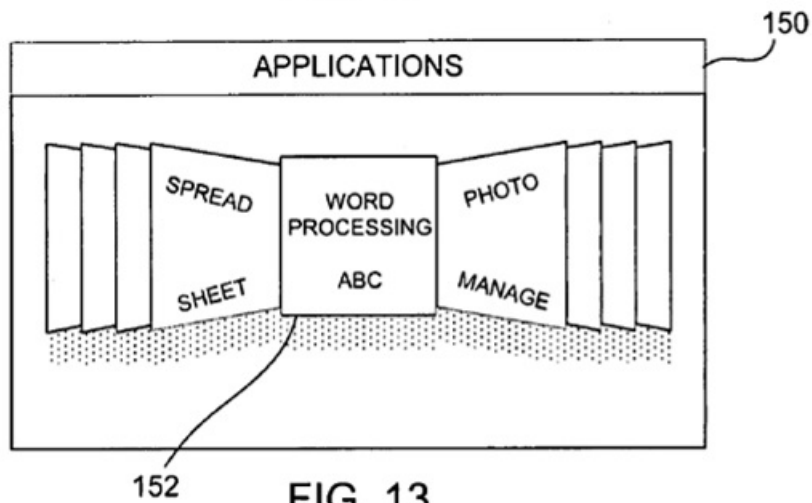


FIG. 13

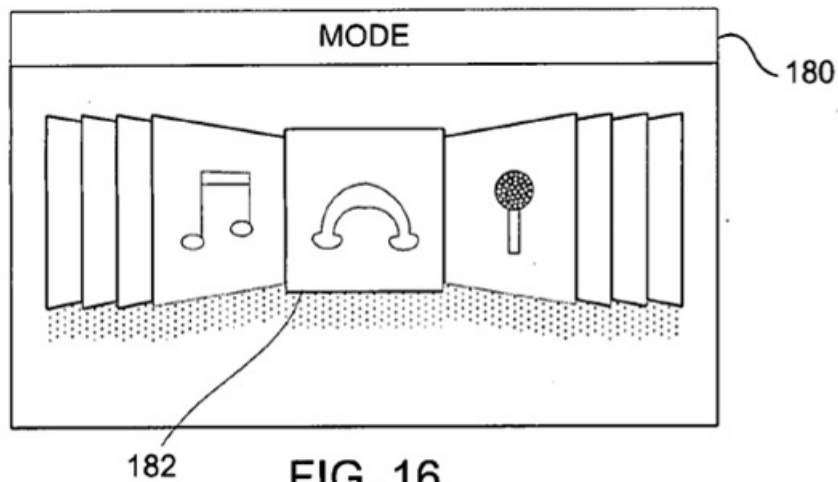


FIG. 16

67. In addition, as seen in Figure 10, Chandhri discloses that the image-based browser can use a menu hierarchy. Chandhri, ¶0134, Fig. 10.

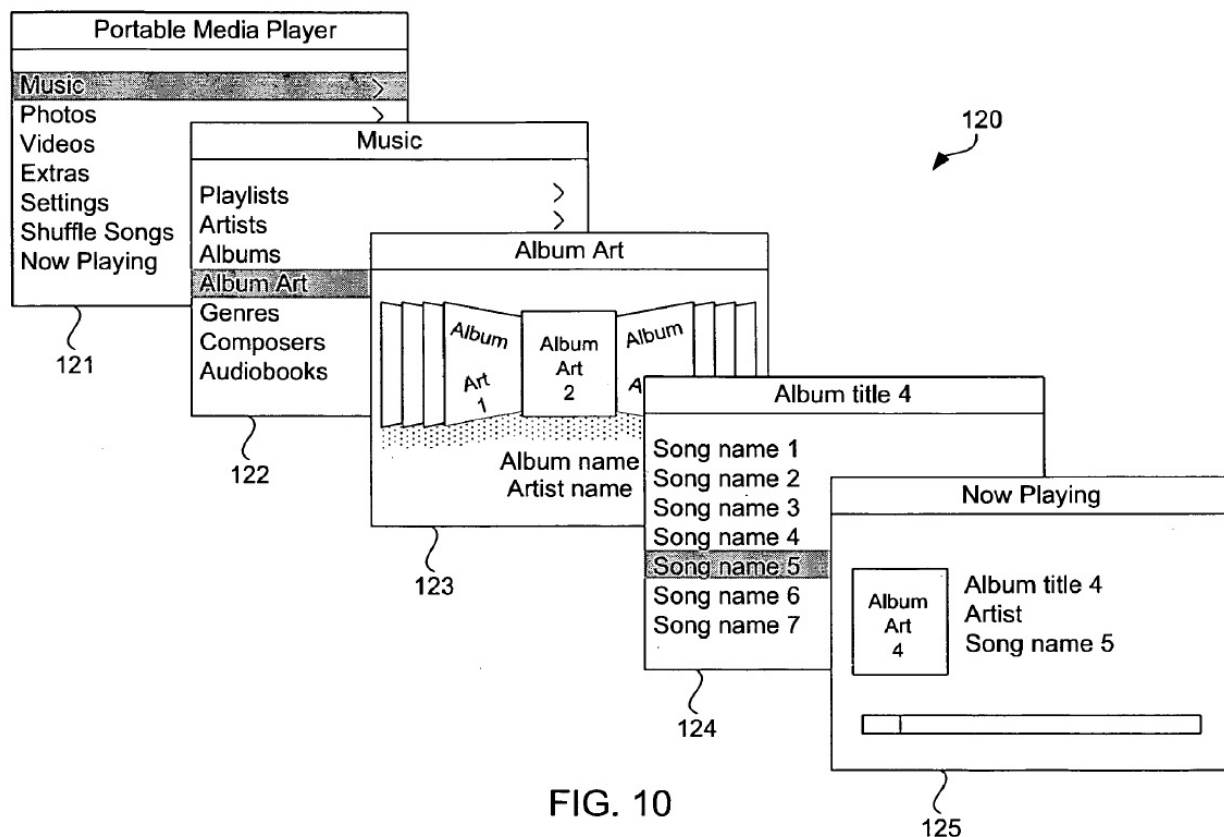


FIG. 10

68. Chandhri also discloses that the device can switch between a traditional menu GUI and the image-based browser GUI based in physical positioning of the device, such as a change from vertical to horizontal orientation. Chandhri, ¶0059, ¶0224-0225, ¶0229, Fig. 34. I have reproduced Figure 34 below, which shows the switch.

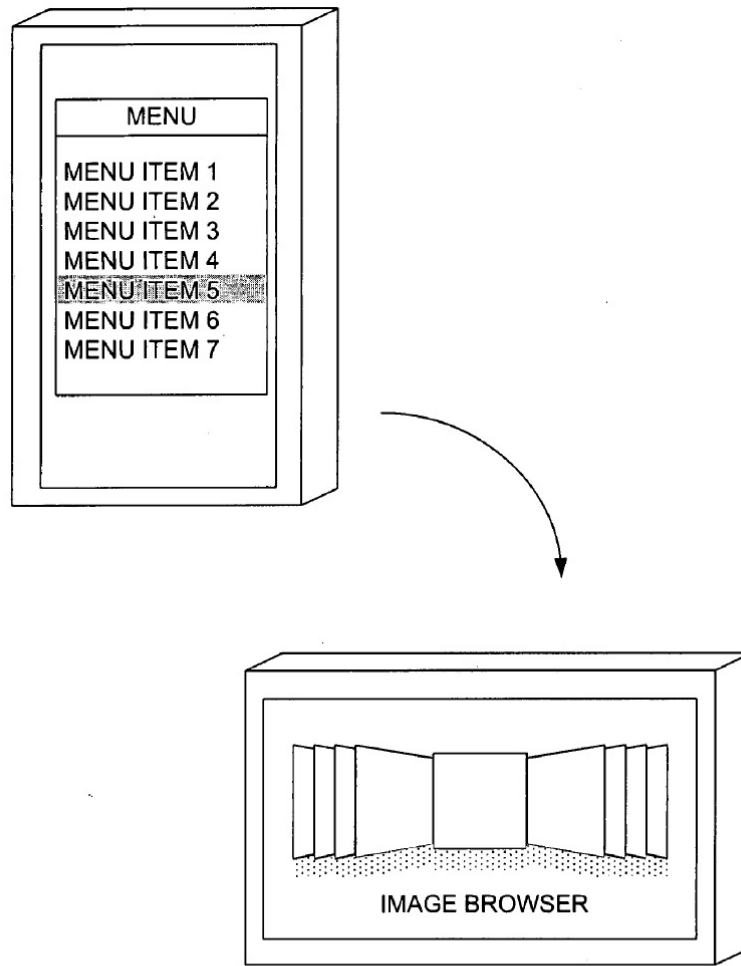
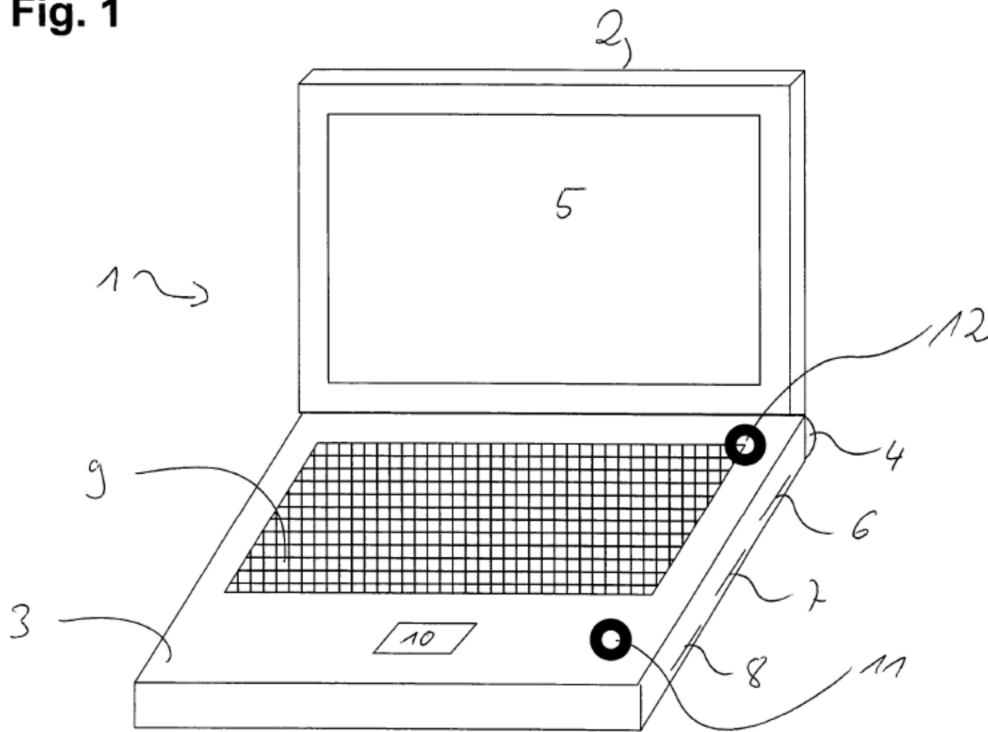


FIG. 34

C. Pröll (Ex. 1006)

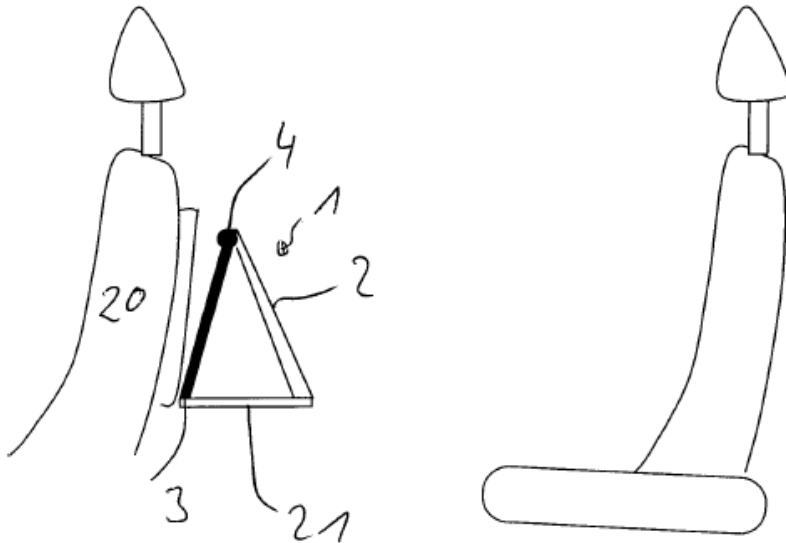
69. Pröll is directed to a “[m]obile data processing device,” such as a laptop, with two housing halves (one with a screen and one with an input unit such as a keyboard) connected by a hinge that can rotate 360 degrees. *See* Pröll, Title, Abstract, claims 1, 3, 5. I have reproduced Figure 1 of Pröll below:

Fig. 1



70. Figure 1 shows Pröll's device in a laptop configuration where housing halves 2, 3 can rotate "almost 360°" relative to one another using pivoting device 4. *Id.*, [0033]. Housing half 2 contains display device 5, and housing half 3 contains keyboard 9. *Id.* Other figures in Pröll show its device in other configurations. *E.g., id.*, Fig. 3 (180°), Fig. 4 (360°), Fig. 6 (360°), Fig. 7 (270°). I reproduced Figure 7 below:

FIG. 7



71. Pröll discloses it has a switch in pivoting device 4 to detect whether the housing half 2 has been pivoted towards housing half 3 by more than 180°; if so, the representation on the display device is rotated by 180° and the input devices, including keyboard 9, are automatically blocked. *Id.*, [0049]–[0050].

D. Lane (Ex. 1014)

72. Lane discloses a “reconfigurable portable computer[.]” having a first module 14 and a second module 18 that are rotatable relative to one another by up to 360° to transition the computer into various modes using a hinge with two axles 86, 102 enabling two rotational axes 58, 62. Lane, 1:3–6, 2:27, 3:5–14, 5:4–6, 6:7–24. I reproduced Figs. 1 and 3 below.

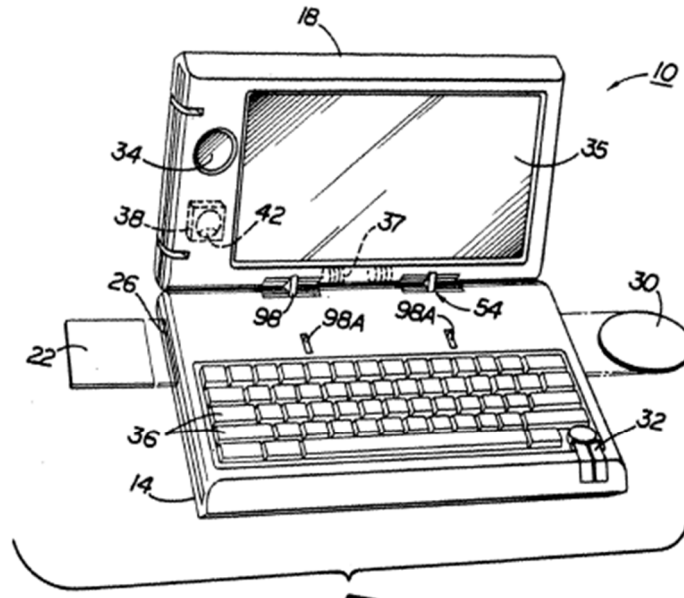


FIG 1

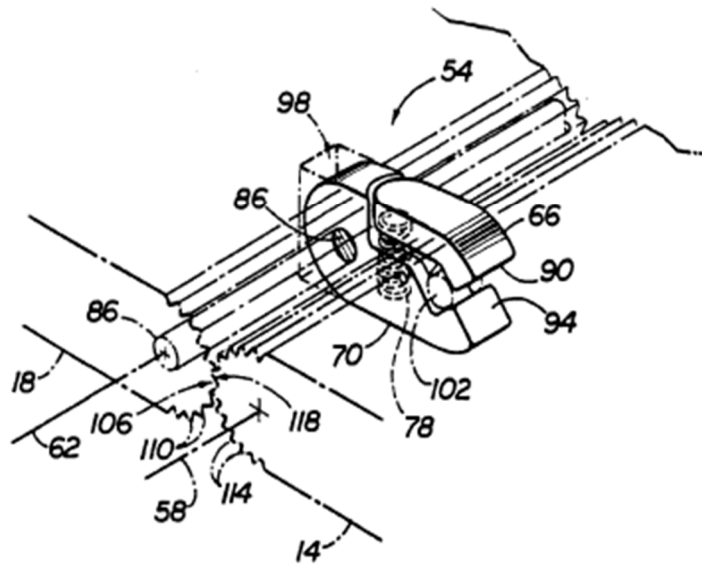


FIG 3

73. Lane's computer is configurable in many physical configurations including a closed, laptop, flat, and easel mode. *Id.*, 1:12-17 (closed mode), 10:24-31 (laptop, flat, and easel modes). Lane depicts these modes in Figs. 19, 20, 21, 28, which I reproduce below:



FIG 19

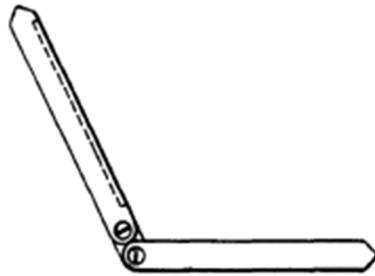


FIG 20



FIG 21



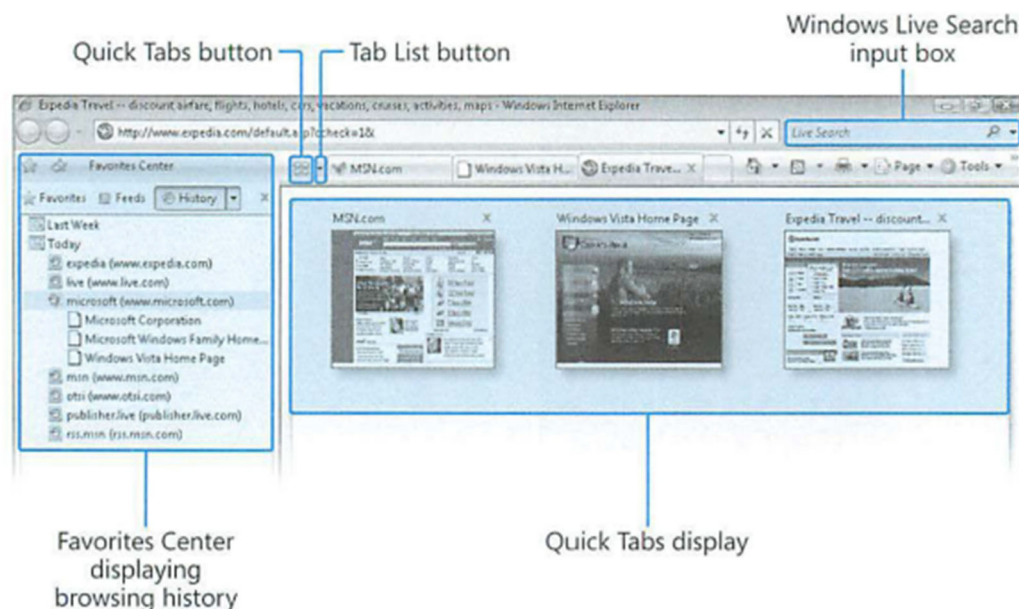
FIG 28

74. Lane also teaches that the computer includes software for automatically reorienting displayed content based on an indication of the spatial orientation of the first and/or second modules 14, 18 provided by a position-indicating mechanism 38. *Id.*, 5:23–6:6.

E. Preppernau (Ex. 1008)

75. Preppernau is a publication printed in 2007 detailing step-by-step instructions for operating the Windows Vista operating system by Microsoft. Preppernau, Title, xi. In particular, Preppernau discloses tab-based internet browsing organized in multiple ways. *Id.*, 182. I reproduced an exemplary figure from Chapter 6

below.⁷ *Id.*



XI. DETAILED EXPLANATION OF GROUNDS

A. Ground 1: Obviousness over Reavey and Chandhri (Claims 1-5, 8-9, 23-24, 27-28, 53-55, 57)

1. Motivation to Combine

76. In my opinion, a POSITA would have been motivated to combine the teachings of Chandhri with Reavey. As I discussed above, Reavey teaches a device configurable into three different physical configurations, which accommodate user convenient form factors and includes a laptop configuration (Mode 3) and a flat configuration (Mode 2). Reavey, 1:11-15, 7:24-62, Figs. 2-3. The flat configuration has two screens 110/115 available for the display of content. Reavey, 7:42-44, 7:51-

⁷I noted that the blue annotations in the Preppernau figures are original; I made annotations are made in different colors (e.g., black, red, green, and purple).

53, 7:61-62, Fig. 2. The laptop configuration, by contrast, has only one screen 110 that displays content while the other screen 115 displays a touch-sensitive keyboard. *Id.*, 7:39-42, 7:53-58, Fig. 3.

77. Because the flat and laptop configurations contain a different amount of display area, in my opinion, a POSITA would have understood that the organization of the GUI would need to change when the configurations changed. Having a second screen available for display gives the flat configuration double the amount of screen area available in the laptop configuration. *See id.*, Figs. 2, 5 (flat configuration), Figs. 3-4 (laptop configuration). The two configurations also have different input mechanisms available since the bottom display screen 115 is used as a touch-sensitive keyboard in the laptop configuration. *Id.*, 7:39-42, 7:53-58. Thus, in my opinion, a POSITA would have understood that GUI changes are required when switching configurations because of the change in available display space and change in the input/output devices available for manipulating the GUI. Indeed, a POSITA would have understood that “screen space [is] one of the user-interface designer’s most valuable commodities.” Foley, 368.

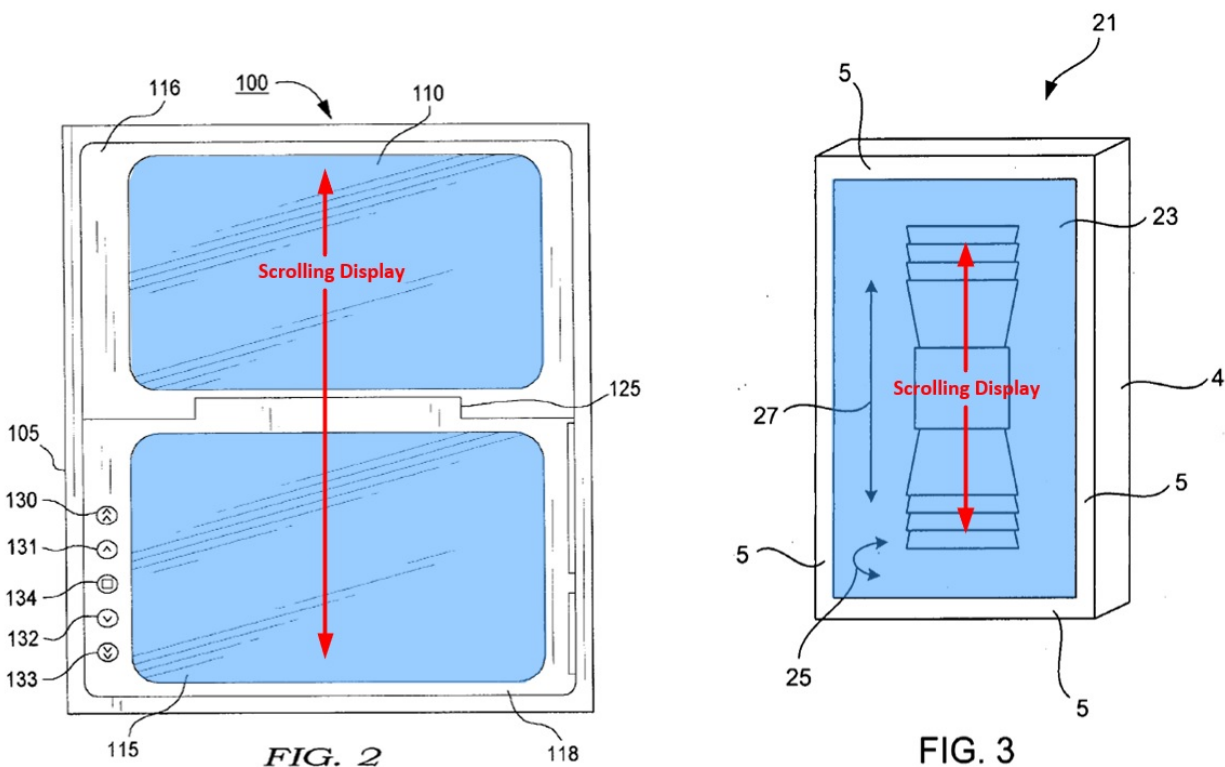
78. Although a POSITA would have recognized that a switch between the laptop and flat configurations would require a change in the organization of the GUI, Reavey is not explicit about how the GUI should be organized. In my opinion, a POSITA would have been motivated to combine Reavey with the teachings of Chandhri such that Reavey’s GUI displays different organizations of content when configured in

the different modes. Chandhri aims to improve the way a user interacts with an electronic device by “improv[ing] methods for browsing through content.” Chandhri, ¶¶0003-0004. Further, in my opinion, a POSITA would have understood that “key goals in user-interface design are increase in speed of learning, . . . reduction of error rate, encouragement of rapid recall of how to use the interface, and increase in attractiveness” and, thus, would have been motivated to include teachings from Chandhri that further improved the way a user interacts with Reavey combination. *See* Foley, 391-92. There are also three additional reasons that a POSITA would have combined the teachings of Chandhri with Reavey.

79. First, in my opinion, Chandhri discloses a GUI organization that would work with Reavey’s interface used in the flat configuration (Mode 2). Based on Reavey’s teachings, in my opinion, a POSITA would have understood that a GUI used with Reavey’s flat configuration would need to 1) allow manipulation via a touchscreen and/or buttons (Reavey, 7:10-23), 2) work without a keyboard (*id.*, 7:35-42), and 3) support vertical scrolling (*id.*, 7:42-44). The tile-based interface disclosed in Chandhri meets all three requirements. Chandhri teaches that a user may manipulate the interface via “touch sensing devices[,] includ[ing] touch pads [and] touch screens” and/or mechanically via “such mechanisms as buttons, keys, switches, dials, navigation pads, . . . and/or the like.” Chandhri, ¶0067, ¶0086 (“[T]he touch screen allows the display area to be enlarged as other input means are typically not necessary.”). Given the breadth of input means and devices, in my opinion, a POSITA would understand that

Chandhri's interface would function without a keyboard—i.e., a user could interact with and manipulate Chandhri's interface without a keyboard. *See id.*

80. Further, Chandhri discloses an image based browser that a user may vertically scroll through. *Id.*, ¶¶0059-0060 (“The images may for example move from one position to the next position along a path that is contained or spread across the viewing area. The path can be an open ended lined fixed along an axis such as . . . [a] vertical axis.”). In addition, as the two annotated figure below show, both Reavey's flat configuration (left) and Chandhri's interface (right) teach that vertical scrolling may be advantageously used with a “full or near full screen display.” Reavey, Fig. 2; Chandhri, Fig. 3; *see also* Foley, 368 (“screen space [is] one of the user-interface designer's most valuable commodities”).



81. Second, Chandhri teaches that its image based browser, which supports

vertical and horizontal scrolling, can work with “menu driven lists” and that the device “may be configured to operate in either configuration depending on the needs of the device” and “may even operate both menu driven lists and image based browsers at the same time.” Chandhri, ¶0059; *see also* Foley, 396 (“[S]uccessful interfaces often meld elements of several styles to meet design objectives not readily met by one style alone.”). As Chandhri explains, “textual menu items” are “contained in a conventional menu list” and such menus were often used with a laptop device containing a keyboard—like Reavey’s device in the laptop configuration (Mode 3). Chandhri, ¶0059; *see also* Foley, 402 (“*Menus* are widely used in both graphical and nongraphical applications.”). In my opinion, a POSITA would have understood that Reavey’s laptop configuration could use a more common GUI organization that took advantage of text-based menus because “menus conserve precious screen space” and limiting the display to one screen rather than two halves the display area. *See* Foley, 368.

82. Third, Chandhri teaches that GUI organization may change based on the configuration of the device. Figures 33 and 34, which I have reproduced below, show the steps Chandhri teaches for determining which GUI to use and an example of how the GUI changes, respectively.

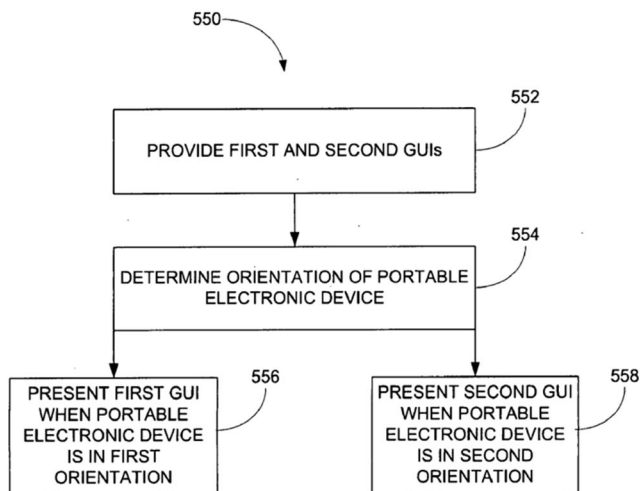


FIG. 33

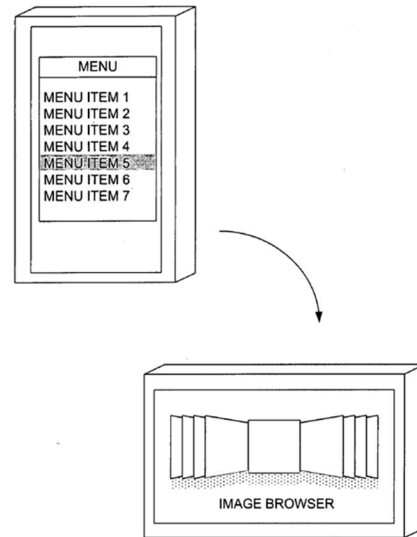


FIG. 34

83. And, as I discussed above, a POSITA would have recognized that Reavey’s device would need to re-organize the GUI in response to a configuration change because of the change in available display space and change in the input/output devices available for manipulating the GUI. Specifically, a POSITA would have recognized that a conventional text-based menu GUI would be used with Reavey’s laptop configuration (Mode 3) to accommodate reduced screen size, while the image/tile scrolling-based GUI would be used with Reavey’s flat configuration (Mode 2) to take advantage of greater display size.

84. In my opinion, a POSITA would have had a reasonable expectation of success combining Reavey’s multi-configuration device with Chandhri’s GUI disclosures because Chandhri and Reavey disclose configurable devices that aim to solve the same problem of improving user interaction with electronic devices. The multi-function gravity switches in Reavey act as sensors that determine “one of three available operational modes” and Chandhri teaches reorganizing the GUI based on “tilt

sensors or accelerometers” that determine device orientation. Reavey, 3:24-27, 7:24-31; Chandhri, ¶¶0224–0229;. Thus, in my opinion, a POSITA would have been motivated to simply apply the known technique of rearranging the display in response to sensor data to improve the usability of Reavey. In my opinion, such a modification would have been well within the programming skills of a POSITA because the combination would require only reading a value from sensor data and using that value to make changes to the display.

2. Claim 1

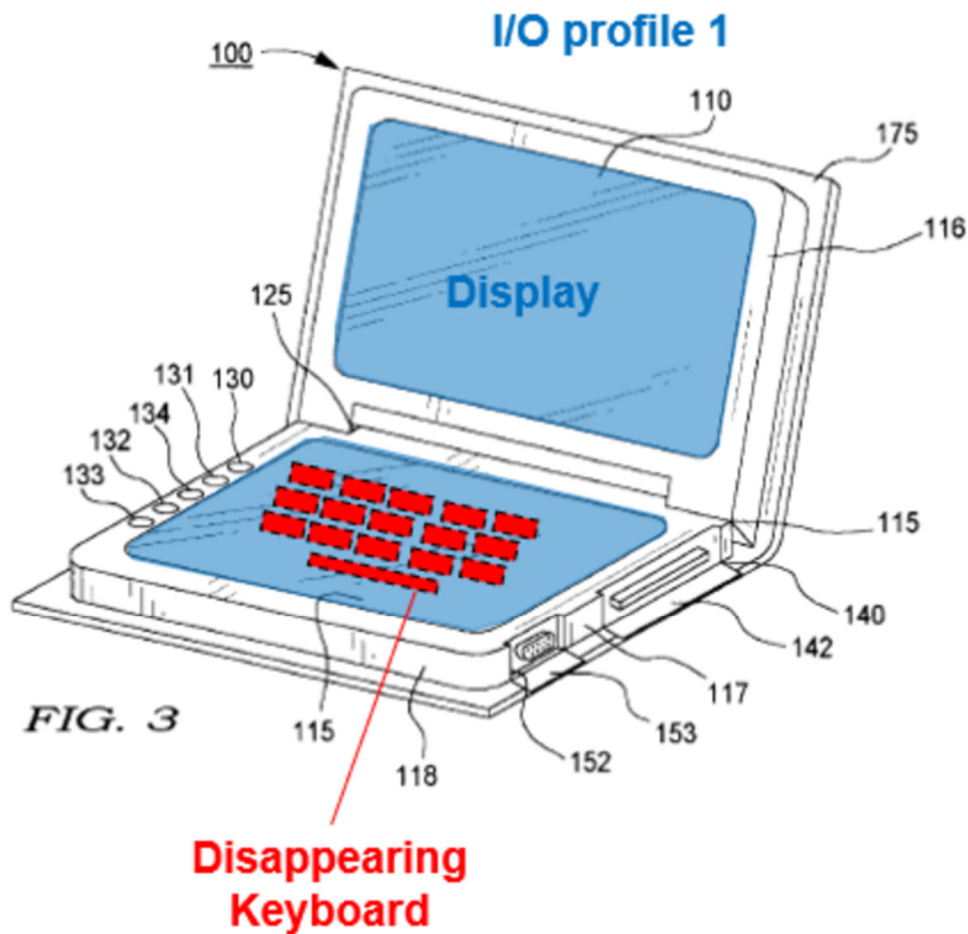
- a. ***1[pre]: “A customized user interface for a computer system with a plurality selectable I/O profiles configured to present computer operations to a user in a format configured to a selected I/O profile on a display component of the computer system, the user interface comprising:”***

85. To the extent it is limiting, in my opinion, Reavey discloses or suggests the preamble under MPF or non-MPF. Based on the disclosures in the '315 patent, the corresponding structure for an MPF construction is merely a display screen. *See, e.g.*, 315 patent, Fig. 1, 6:28–30, 18:49–63, 19:4–5, Cl. 29 (“a display component including a display screen”). Reavey discloses an “electronic book device” (a “computer system”) that a user interacts with through a user interface that includes a “first panel screen 210 (a “display screen”), a “second panel screen 215 (also a “display screen”), navigation keys 230-233, and an assistant key 234, among other user interface devices. Reavey, Abstract, 5:52–65. Reavey’s device includes a “display component” in the form of first panel screen 110 alone or in combination with second panel screen 115. *Id.*, Abstract,

5:33–34.

86. In addition, Reavey discloses a plurality of selectable I/O profiles configured to present computer operations to a user in a format configured to a selected I/O profile. The '315 patent describes a “first I/O profile” that includes “a scroll wheel and a button interface” when the device is in “easel mode,” and a “second I/O profile, including a keyboard.” '315 patent, 17:55-63. These I/O profiles are “available for user selection by manipulation of the device itself.” *Id.*, 17:58-60. For example, the user may start with the device in easel mode with a first I/O profile, and the user may “select a second I/O profile” by “rotating the computer device about a longitudinal axis.” *Id.*, 17:60-63. In other words, the '315 patent shows that “a plurality of selectable I/O profiles” encompasses the available user input platforms that are selected when a user manipulates the device into different physical configurations. *Id.*, 69:40.

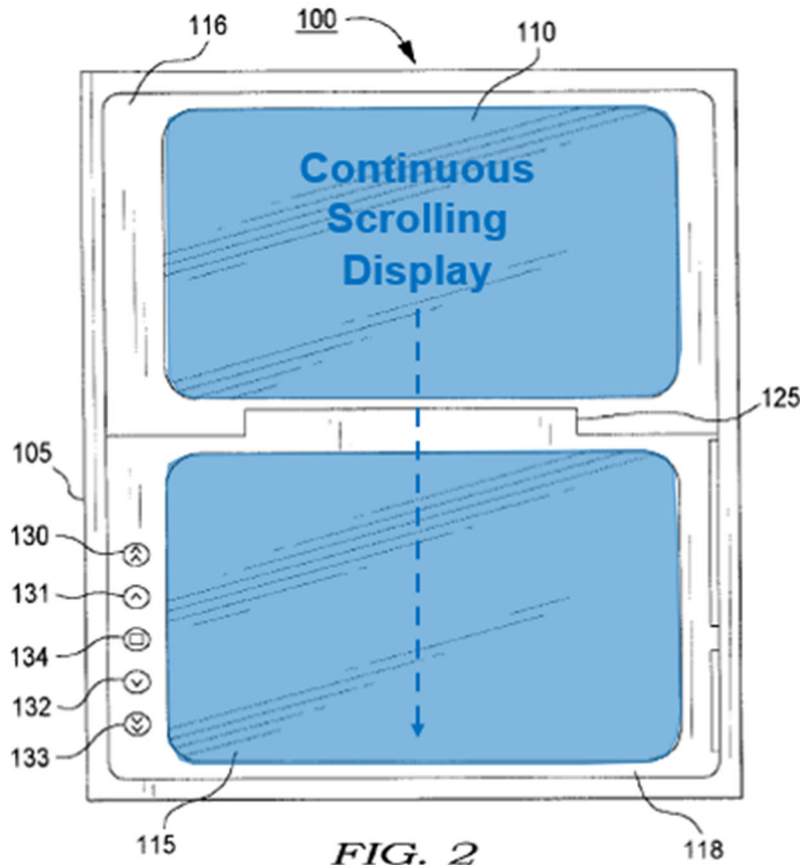
87. In my opinion, Reavey discloses two or more such I/O profiles. Reavey, 3:12-28, 7:24-62. In one selectable I/O profile, for example, Reavey teaches a “third mode” or “mode 3” which it also calls an “over-under with touchscreen keyboard” mode for its device. *Id.*, 3:21-24, 7:26-44, 7:53-55. I have reproduced an annotated version of Reavey’s Figure 3 below showing this mode. Reavey, Fig. 3.



88. In this I/O profile, a top screen displays content (i.e., output) and a bottom touch screen displays a keyboard for manipulation (i.e., input) when the device’s two halves are rotated to a laptop-type configuration. *Id.*, Fig. 3, 7:24-62.

89. In my opinion, Reavey further teaches another selectable I/O profile, its “second [mode]” which it also calls “over-under” mode. *Id.*, 3:18-21, 7:42-44, 7:50-53. I have reproduced an annotated version of Reavey’s Figure 2 below showing this mode. *Id.*, Fig. 2.

I/O profile 2



90. In this I/O profile, the device's two screen-holding panels are rotated to a flat position in which the two screens act as one, larger touch screen (i.e., input) that displays information scrolled from the top of the first screen to the bottom of the second screen (i.e., output). *Id.*, Fig. 2, 7:24–62. Thus, in my opinion, Reavey teaches or suggests the preamble. Further, to the extent Patent Owner contends a “plurality of I/O profiles” is synonymous with a “plurality of views,” as recited in 1[c], the combination of Reavey and Chandhri teaches that limitation as I discuss in ¶¶97–99 below.

b. 1[a]: “at least one processor”

91. In my opinion, Reavey discloses “at least one processor.” Reavey's device

includes a processor, at least in the form of “a central processing unit (CPU) 300.”

Reavey, 6:5-10, Fig. 7.

- c. ***1[b]: “a map based graphical user interface, executing on the at least one processor operatively connected to a memory of the computer system, the map based graphical user interface, when executing, is configured to display information on the display component of the computer system, wherein the map based user interface is further configured to”***

92. In my opinion, the Reavey-Chandhri combination teaches or suggests 1[b].

As I discussed in ¶¶76–84, a POSITA would have been motivated to use the GUI disclosure of Chandhri in the device of Reavey.

93. The ’315 patent describes that a “map mode of navigation is a hierarchical mode that reduces the number of items to select amongst at any stage of navigation, thereby facilitating user access with the scroll wheel 132 and, optionally, the navigation button(s) 166, 168.” EX-1001, 20:39-44. Further, according to the ’315 patent, the map mode “provides a clear overview of the entire computing environment and searching capability within the environment[.]” *Id.*, 20:33-35. “Using the map user interface, information, programs, features and applications may be grouped into the various modes of content 172.” *Id.*, 20:58-60. The ’315 patent also explains that Figure 11, which I have annotated and reproduced below, is a “block diagram of one example of an architecture of the portable computer including a map user interface,” with groupings of content in red. *Id.*, 20:47-49, Fig. 11.

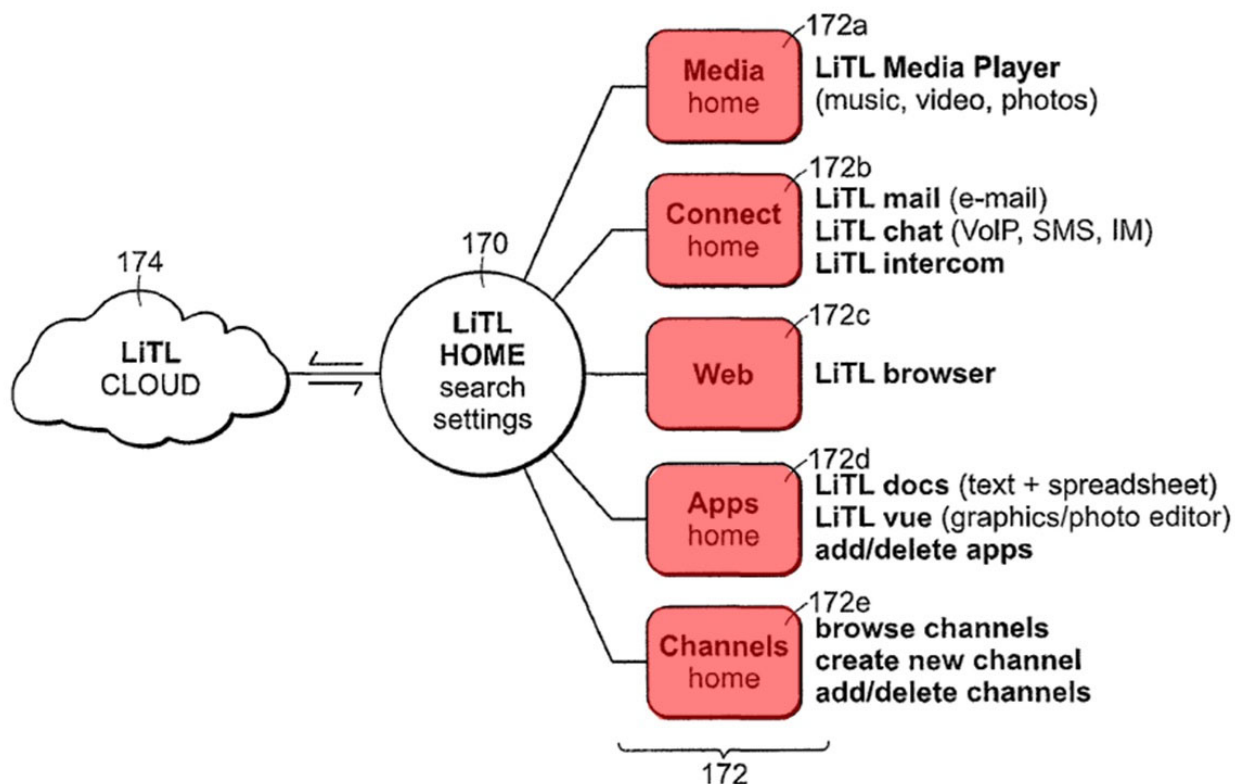


FIG. 11

94. The '315 patent refers to these groupings of content as “modes,” stating that: “Modes of content may include for example, media, channel, connection, application, and web, among other options.” *Id.*, 27:6-8. In my opinion, the Reavey-Chandhri combination includes a map based graphical user interface configured to display information on display 110 (“the display component”) of Reavey’s device 100 (“the computer system”). Specifically, Chandhri discloses that its tile-based scrolling GUI organization includes tiles “associated with modes of the portable electronic device.” Chandhri, ¶0142, Fig. 16. I have reproduced an annotated Figure 16 below, which shows the different modes in red.

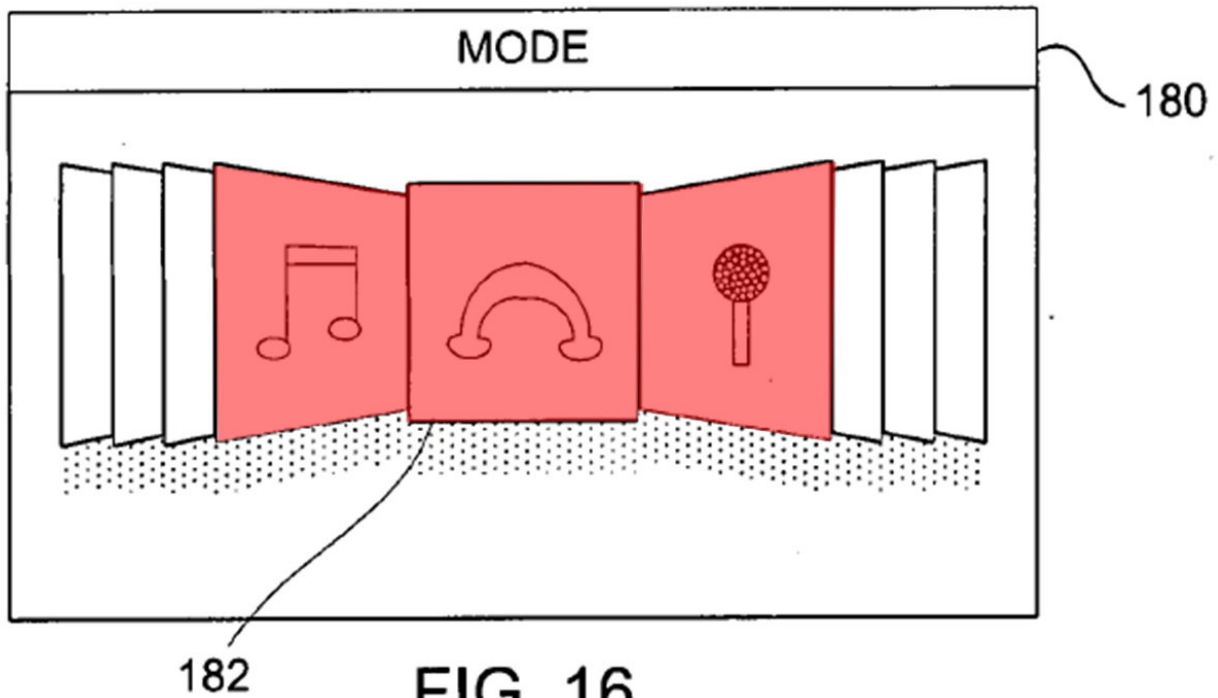
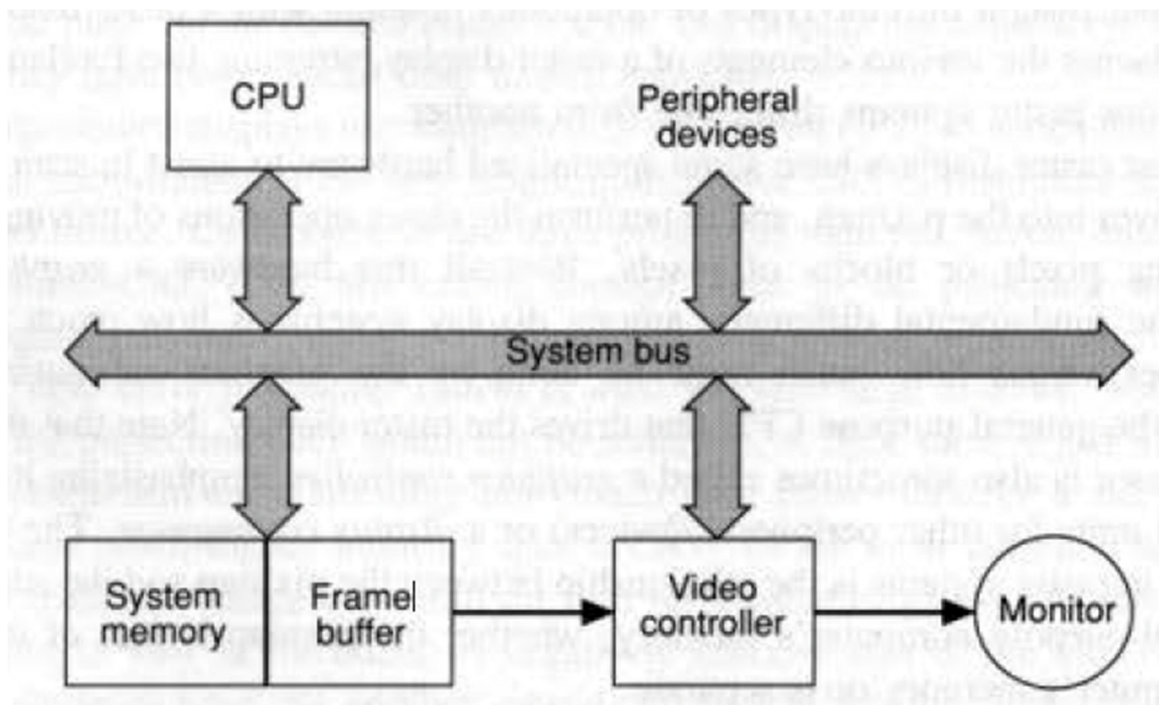


FIG. 16

95. Chandhri teaches that a user may use the interface in Figure 16 to “change modes of the device.” *Id.*, [0142]. Chandhri also gives examples of potential modes of operation, including “email, video player, music player, game, phone, microphone, camera, game player and/or the like.” *Id.* Chandhri further discloses that the tile-based browser of Figure 16 “may be hierarchical with other browsers”, such as launching the browser of Figure 10 when the media player mode is selected, or the browser of Figures 12A and 12B when the phone mode is selected. *Id.*, Figs. 10, 12A-12B, 16.

96. It is also my opinion that the Reavey-Chandhri combination teaches or suggests that the map-based GUI executes on the CPU 300 (“at least one processor”) operatively connected to a memory of Reavey’s device (“the computer system”). Reavey teaches that its device includes various memories, including “read only memory (ROM) 310,” “random access memory (RAM),” “static RAM with battery 320,” “cache

RAM 340,” and “PC cards 346.” Reavey, 5:66-6:32, Fig. 7. While Reavey does not explicitly disclose the specific interaction between CPU 300 and these memories or that the GUI software executes on the CPU 300, a POSITA would have understood that the CPU was used for executing software operating on the device 100, and that the CPU 300 was connected to the memories in order to allow retrieving of program instructions and data needed to execute that software. *Id.* It was well known that the processor, or CPU, made use of memory to execute instructions and was connected to the memory via a system bus. *See* Foley, 166-67, Fig. 4.18 (reproduced below).



- d. ***1[c]: “display a plurality of views of a plurality of visual representations of computer content on the computer system, wherein the computer content includes at least one of selectable digital content, executable computer applications, configurable computer settings, selectable computer operations and passive digital content”***

97. In my opinion, the Reavey-Chandhri combination discloses or suggests 1[c]. As I explained in ¶¶76–84, a POSITA would have been motivated to use the GUI

disclosure of Chandhri in the device of Reavey. I understand that the Board previously construed a “plurality of views” as “referring to a plurality of ways of organizing visual representations of computer content,” and the Board noted that this limitation does not encompass “merely changing the display’s orientation.” *See* ¶¶55–56. In addition, the ’315 patent discloses that “visual representations” can include cards (’315 patent, 15:34-58), and preview images, such as thumbnails (*id.*, 20:7-9, 35:58-62, 41:1-7, Fig. 2).

98. As I discussed in Section ¶¶85–90 (1[pre]), in my opinion, Reavey teaches a device with a plurality of I/O profiles, which automatically adjusts the display to a desired mode. Reavey, 3:12-28 (“The ability to have multiple operational modes is facilitated by having a screen orientation feature which automatically adjusts the text and graphics to the desired mode.”), 7:24-62, Figs. 2-3. To the extent Reavey’s teachings alone are insufficient, in my opinion, the Reavey-Chandhri combination discloses this limitation for the reasons I discussed in ¶¶76–84 (MTC). Chandhri discloses a “first GUI” and a “second GUI” (“plurality of views of a plurality of visual representations of computer content”) and explains that “[t]he first and second GUIs are based on the same data but use different formatting schemes to show the data.” Chandhri, ¶0225.

99. Further, in my opinion, the Reavey-Chandhri combination teaches that “the computer content includes at least one of selectable digital content, executable computer applications, configurable computer settings, selectable computer operations

and passive digital content.” For example, Chandhri teaches that the visual representations correspond to computer content that includes selectable digital content, such as music, photos, and videos. Chandhri, ¶¶0134-0137, [0141], Figs. 10-11, 15. In addition, Chandhri teaches that the visual representations correspond to computer content that includes executable computer applications. *Id.*, [0139] (“[T]he images 152 are icons that represent applications that can be launched on the electronic device.”), Fig. 13 (reproduced below).

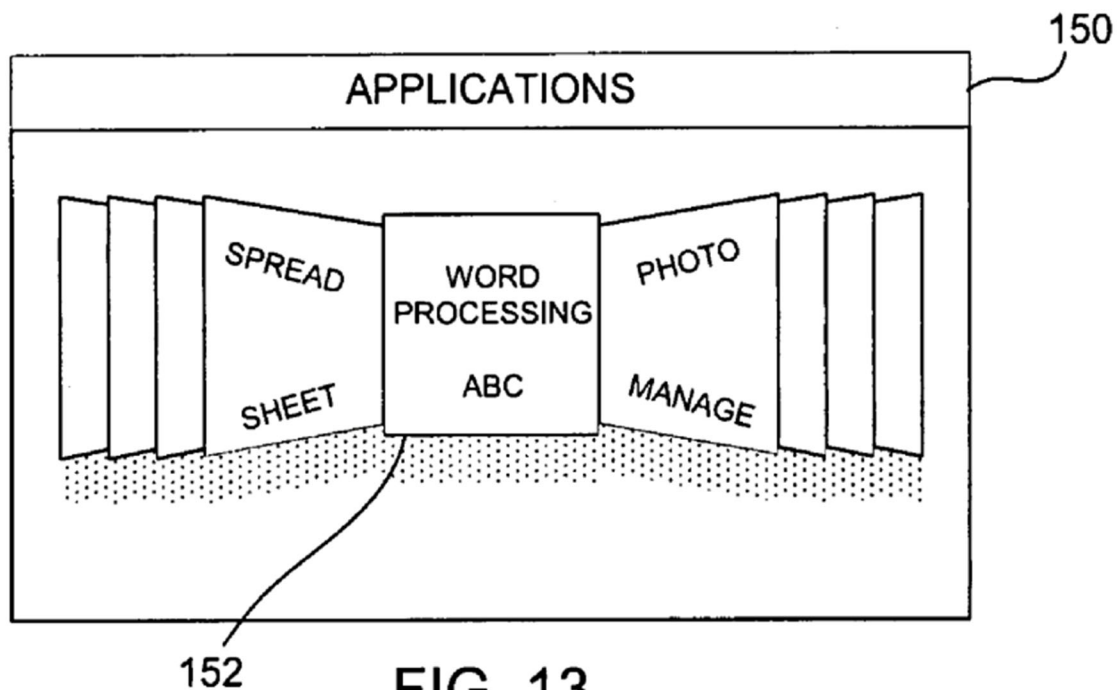


FIG. 13

It is my opinion that a POSITA would have also understood the computer content represented by Chandhri’s user-selectable content and computer applications embodies a spectrum of data ubiquitous to conventional personal user computing (e.g., computer applications and modes for managing user media and document files)_ that includes “selectable digital content,” “selectable computer operations,” and “passive digital

content” because they are all integral to Chandhri’s computer and subject to its “graphical user interface that allows a user to navigate through and/or select” from that data. Chandhri, ¶¶0052–0054.

- e. ***1[d]: “display the plurality of visual representations of computer content rendered on the display component, wherein the plurality of visual representations of computer content include an association to a first home view of the plurality of views, the first home view including a display of the computer content, and wherein the each of the plurality of visual representations is responsive to focus and execution, wherein execution includes selecting the visual representation, and wherein the first home view is a first organizational view of at least one application and computer content displayed responsive to activation of the system; and”***

100. In my opinion, the Reavey-Chandhri combination discloses or suggests 1[d]. The ’315 patent teaches that a “home view” displays a plurality of modes of content (e.g., five modes). ’315 patent, 30:32-45. Figure 11, which I have reproduced below, shows these modes. *Id.*, Fig. 11.

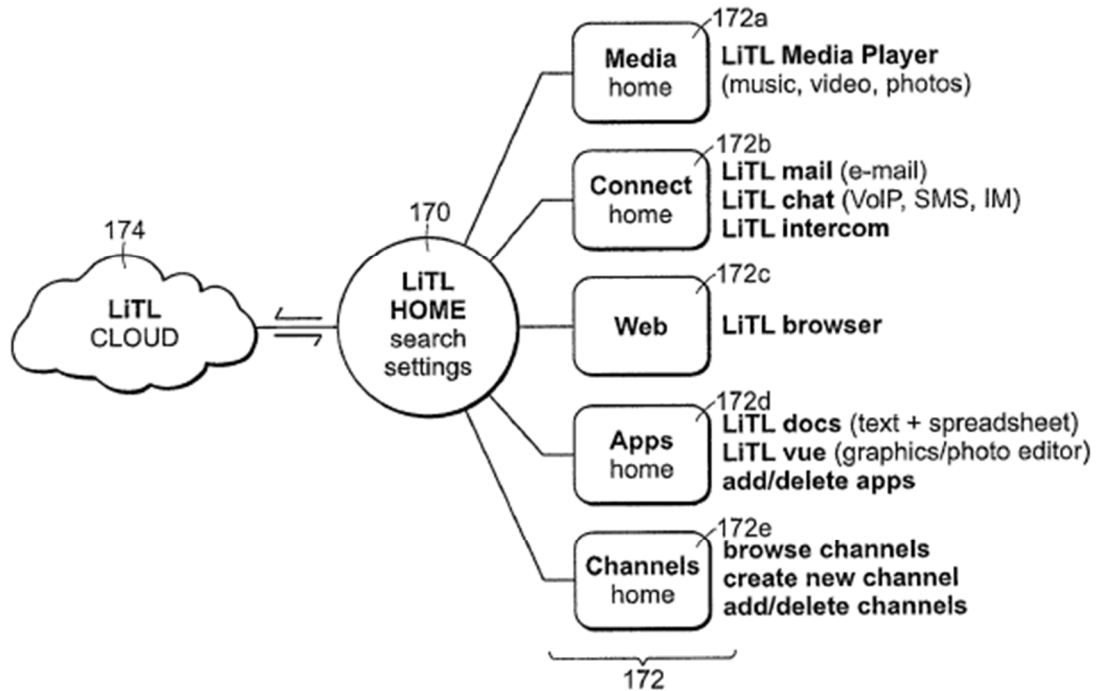


FIG. 11

101. The '315 patent also describes “focus” as identification using tabbing, hotkeys, and hovering over a screen element with a cursor. *Id.*, 34:60–35:13. In addition, '315 patent describes “execution” as “initiating an operation associated with a visual object” such as by clicking on it. *Id.*, 35:18–22.

102. As I explained above in Sections ¶¶76–84, it is my opinion that a POSITA would have found it obvious to modify Reavey based on the teachings of Chandhri to switch from a menu-based GUI organization to a tile-based scrolling GUI organization when changing from the laptop configuration (Mode 3) to the flat configuration (Mode 2).

103. In both the menu-based view and in the tile-based scrolling view, Reavey’s GUI as modified by Chandhri displays the plurality of visual representations of

computer content rendered on the display component, at least in the form of displaying the menu items (menu-based view) and at least in the form of displaying the cards (tile-based scrolling view) on the display 110 and/or display 115. Chandri, ¶¶0224–0229, Figs. 10-11, 13, 16, 34. This is shown in Chandhri's Fig. 34, which I reproduce below:

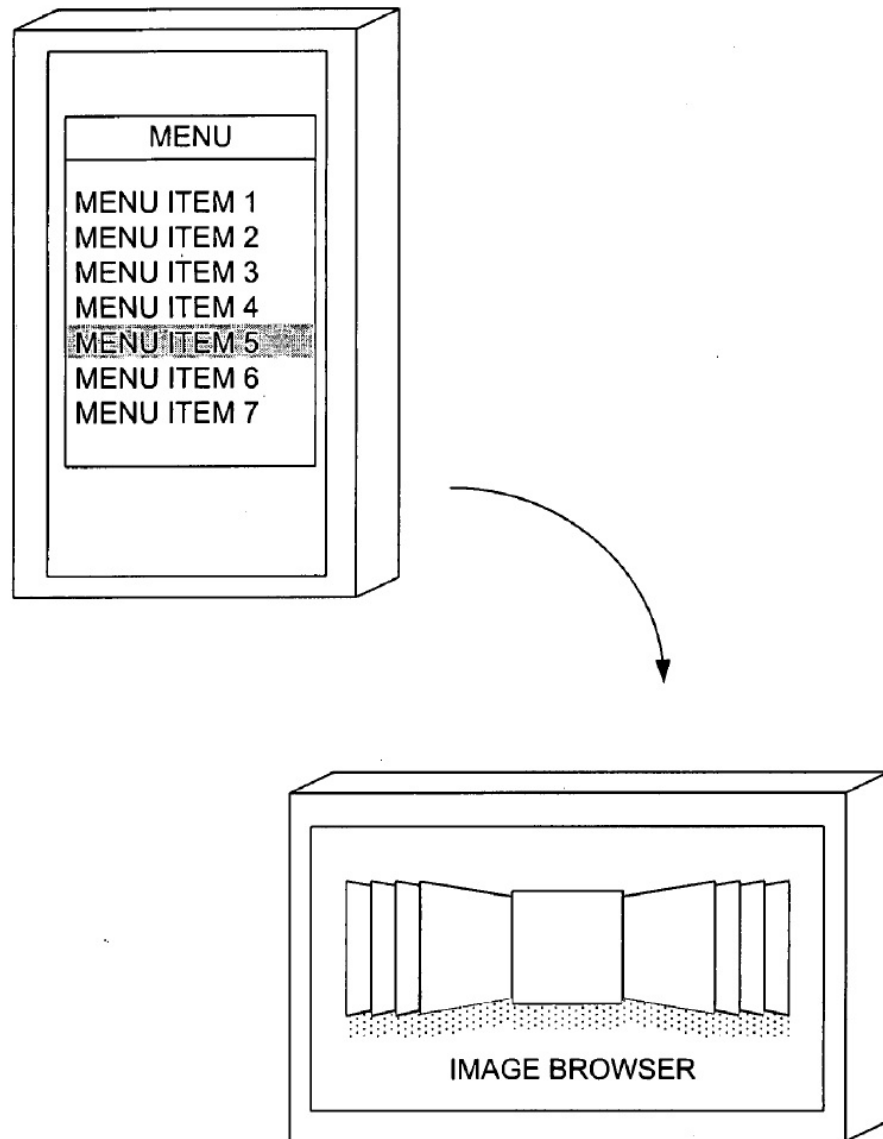


FIG. 34

104. In the Reavey-Chandhri combination, it is my opinion that the plurality of

visual representations of computer content includes an association to a first home view of the plurality of views. A POSITA would have understood that the menu-based view disclosed in Chandhri would have been a first home view such that in the Reavey-Chandhri combination, the electronic device would default to the menu-based view when used in the laptop configuration (Mode 3) as I discussed in ¶¶76–84. I note that the electronic device of Reavey sets the mode of the device “automatically when electronic book device 100 is opened.” Reavey, 7:45-46. Once Reavey’s electronic device is opened, it first enters the laptop configuration (e.g., 120° open) before it reaches the flat configuration (e.g., 180° open). Reavey, 7:45-62. Therefore, it is my opinion that, a POSITA would have understood the default view (menu-based view) for the first physical configuration reached after opening the device to be a first home view.

105. As shown in Chandhri’s Fig. 34 (above), the plurality of visual representations include an association to the menu-based view, at least because the menu-based view is configured to display those visual representations (e.g., displaying “Menu Item 4,” “Menu Item 5,” etc.). Further, the menu-based view includes a display of the computer content, for example, by displaying computer content associated with each menu item. Chandhri, ¶¶0134–0136, 0229, Figs. 10, 11, 34.

106. Each of the plurality of visual representations is responsive to focus and execution. As I indicate using red arrows in Figure 10 and Figure 34 of Chandhri below, Chandhri discloses using at least highlighting to indicate the current user focus. Figs. 10, 11, 34. Further, each of the visual representations in Chandhri is responsive to

execution, such as by, in response to the user selecting a menu item, opening a new menu, playing a selected song, playing a video, etc. Chandhri, ¶¶0134–0136, Fig. 10, 11. I show the consistency between Chandhri’s Fig. 10 and Fig. 24 using red arrows, below.

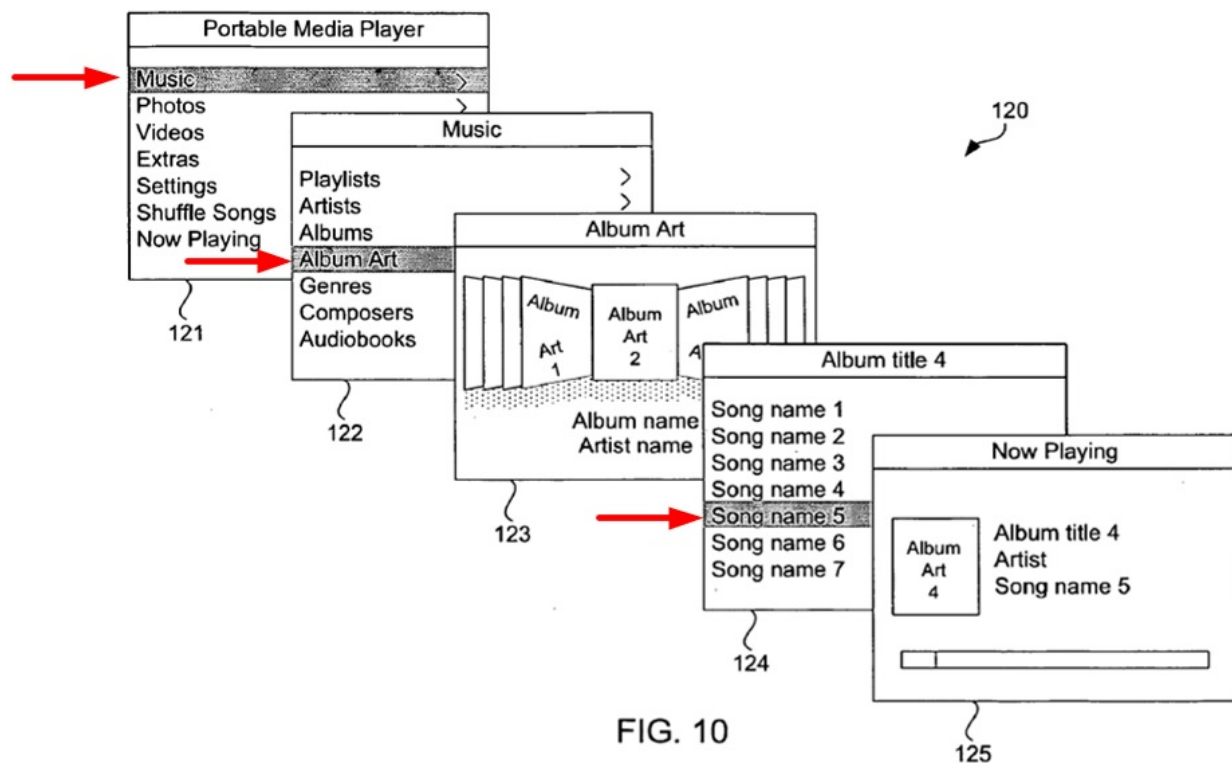


FIG. 10

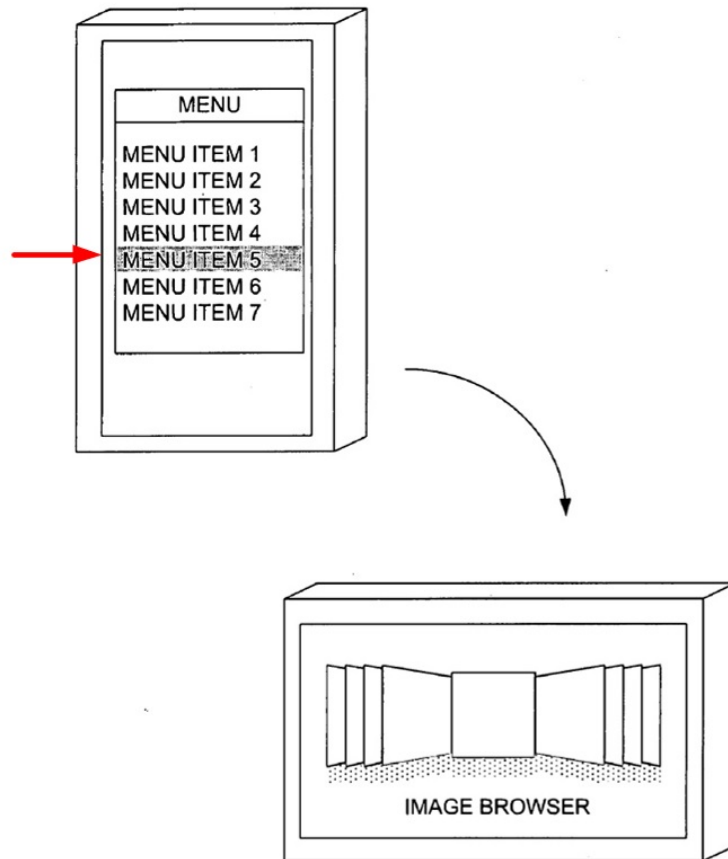
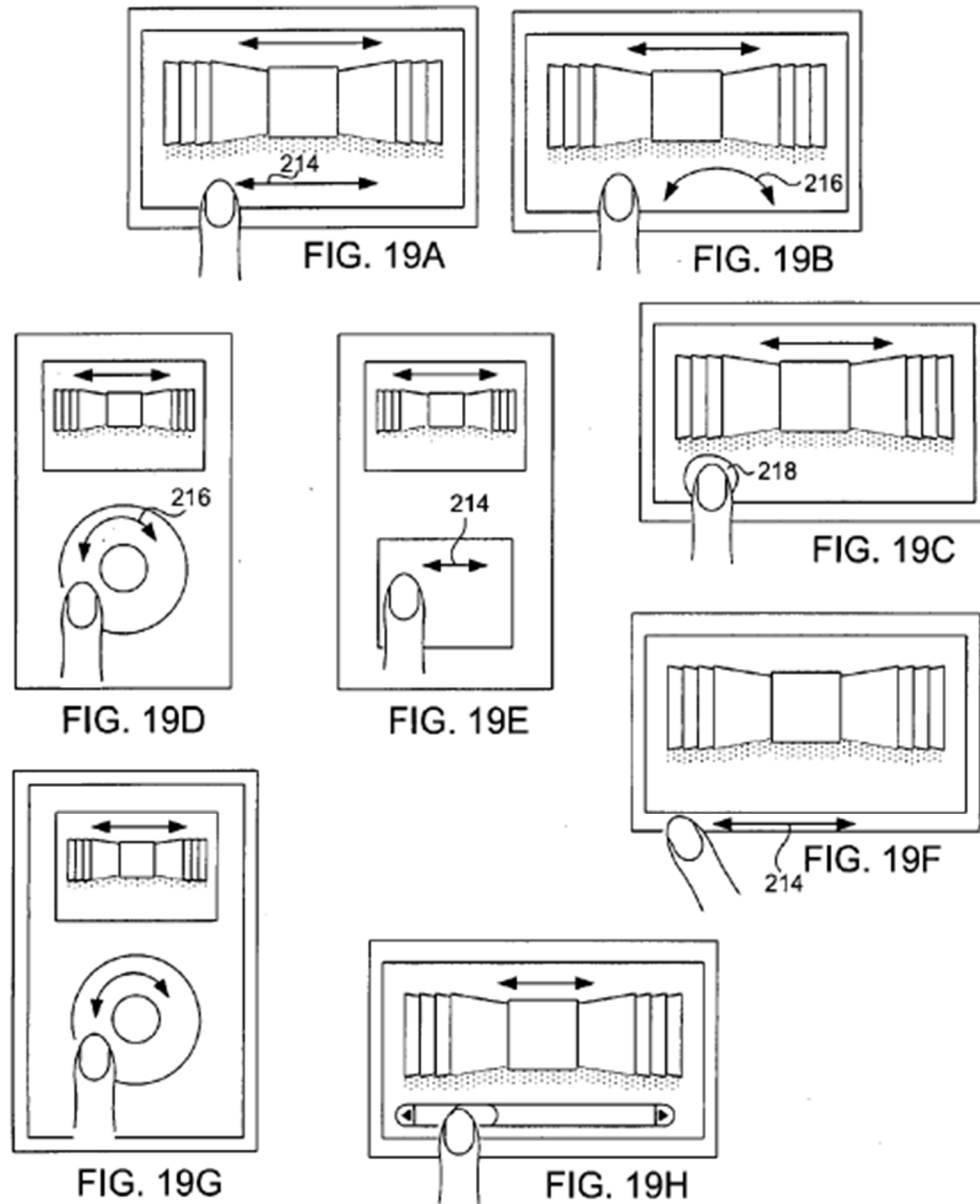


FIG. 34

107. Additional to Chandhri’s disclosure that visual representations in the tile-based scrolling view are responsive to focus and execution, and a POSITA would have found it obvious to apply these teachings in the menu-based view of Chandhri. For example, when configured as an application “finder,” the image-based browser depicted in Chandhri’s Figures 13 and 16 allows users to navigate computer applications and modes using “[s]election commands” detected from “rotational and/or linear user inputs.” Chandhri, ¶0069, ¶0094. Images are selected from these inputs (“visual representations...responsive to focus and execution”) as shown in Figs. 19A–H, below, and user may even “hover” over the device to provide an input. Chandhri, ¶0088.



108. In my opinion, A POSITA would have found it obvious to apply these teachings of focus (e.g., hover, selection) and execution (e.g., further selection) in the menu-based view because a POSITA would have recognized that it would have been desirable to allow a user to select menu items for focus and select menu items for execution regardless of the GUI organization, in order to allow the user to navigate the menu system and access the computer content (e.g., play a song, play a video).

Chandhri, ¶¶0134–36, Fig. 10, 11.

109. The menu-based view is a first organizational view of at least one application and computer content displayed responsive to activation of the system. For example, Chandhri discloses that applications “can be launched on the electronic device.” Chandhri, ¶0139. These can include a “photo management program,” a “music management program,” a “video management program,” and others. *Id.* Chandhri discloses that the menu-based view is an organizational view of at least one of these applications and computer content in response to user activation of the system, for example, by showing organization of a music management program and associated content responsive to user interaction with the system (Chandhri, ¶¶0134–0135, Fig. 10) and showing organization of a video management program and associated content responsive to user interaction with the system (Chandhri, 0136, Figs. 10–11.

f. ***1[e]: “an execution component, executing on the at least one processor, configured to”***

110. In my opinion, the Reavey-Chandhri combination teaches or suggests 1[e] under MPF or non-MPF. As I explained in ¶¶76–84, a POSITA would have been motivated to use the GUI disclosure of Chandhri in the device of Reavey. Based on the ’315 patent disclosures, the MPF limitation requires a program (or programs) executing on a processor that can (i) identify a first and second configuration of the computer based on a sensor indicating relative position of display/base, (ii) select a home view for a first configuration, (iii) filter a set of visual representations optimized for viewing in the second configuration to create a second set of visual representations,

and (iv) transition, based on the sensor to a second default content view that organize the second set of visual representations. *See, e.g.*, '315 Patent, 3:8–13, 6:5–9, 6:20–24, 9:20–29, 64:46–65:5. As I discuss below, and with respect to 1[f], 1[g], 1[h], and 1[i], the Reavey-Chandhri combination discloses this execution component.

111. In my opinion, a POSITA would have recognized that, in order to perform the GUI functionality (e.g., virtual keyboard) and configuration switching functionality (e.g., changing screen 115 functionality in switch from Mode 3 to Mode 2) disclosed in Reavey, and the GUI functionality disclosed in Chandhri (e.g., tile-based scrolling GUI and menu-based GUI), Reavey's device would execute hardware and/or software instructions on a processor. It was well known that the processor, or CPU, executes instructions. *See* Foley, 166-67. Thus, in my opinion, Reavey and Chandhri teach or at least suggest executing instructions. *See, e.g.*, Reavey, 7:24-62, 8:61-9:6, Fig. 9; Chandhri, ¶¶0224–0229, Figs. 33–34.

- g. ***1[f]: “identify at least a first and a second computer system configuration based on sensor input indicating a position of the display component relative to a base component”***

112. In my opinion, the Reavey-Chandhri combination discloses or suggests 1[f] under MPF or non-MPF. As I explained in ¶¶76–84, a POSITA would have been motivated to use the GUI disclosure of Chandhri in the device of Reavey.

113. Reavey's device 100 identifies a first computer system configuration (laptop configuration, Mode 3) and a second computer system configuration (flat configuration, Mode 2). Reavey, 7:24-62, Figs. 2-3.

114. Reavey also identifies these configurations based on “multi-function gravity switches and hinge 125” (“sensor input”) that indicates the position of the top horizontal screen relative to the bottom horizontal screen (“indicating a position of the display component relative to a base component”). Reavey, 5:33-35 (“Dual screen display 105 has a first panel screen 110 which is electrically connected to a second panel screen 115 through a hinge 125.”), 7:27-29 (“[M]ulti-function gravity switches and hinge 125 permit electronic book device 100 to be used in one of three available operational modes.”). For example, Reavey differentiates between the laptop configuration and the flat configuration based on the position of the display 110 and its housing 116 relative to the base housing 118 including the display 115 (which displays the keyboard when in laptop mode). *Id.*, 5:32-45, 7:24,62, Figs. 2-3. Specifically, Reavey differentiates between the display 110 and its housing 116 being “approximately at 120° open” to the base housing 118 including the display 115 (laptop configuration, Mode 3) versus “fully opened all the way” (flat configuration, Mode 2). *Id.*, 7:24,62, Figs. 2-3.

- h. ***1[g]: “select, responsive to the sensor input, a first home view from the plurality of views for the first computer system configuration, wherein the first home view is configured to organize a first set of the plurality of visual representations”***

115. In my opinion, the Reavey-Chandhri combination discloses or suggests 1[g], under MPF or non-MPF. As I explained in ¶¶76–84, a POSITA would have been motivated to use the GUI disclosure of Chandhri in the device of Reavey.

116. As I explained for 1[f], Reavey teaches or suggests that device 100 uses

sensor input to determine a physical configuration. See ¶¶112–114.

117. Further, as I explained for 1[c], the Reavey-Chandhri combination uses a different view depending on whether the device 100 is in the laptop configuration or the flat configuration. See ¶¶97–99. For example, Reavey’s device would use a menu-based GUI organization in the laptop configuration, and a tile-based scrolling GUI organization in the flat configuration. *Id.* Thus, the device 100 selects a menu in the menu-based GUI organization (“first home view”), for the laptop configuration (“the first computer system configuration”). *Id.*

118. In addition, in the Reavey-Chandhri combination, the first home view is configured to organize a first set of the plurality of visual representations. For example, the menu-based GUI organizes all text-based menu items (“plurality of visual representations”) that will fit within the menu on the screen. Chandhri, ¶¶0025–0029, Figs. 33–34; *see supra* ¶¶97–99 (1[c]).

- i. ***1[h]: “filter the first set of visual representations to present content that is optimized for viewing in the second system configuration at least in part by identifying content to filter, removing the identified content from the first set of visual representations, and generating a second set of visual representations based on the filtered first set of visual representations, wherein the second set of visual representations includes at least one different member than the first set of visual representations; and”***

119. In my opinion, the Reavey-Chandhri combination discloses or suggests claim 1[h], under MPF or not. As I explained in ¶¶76–84, a POSITA would have been motivated to use the GUI disclosure of Chandhri in the device of Reavey. When modified with Chandhri’s GUI disclosure, it is my opinion that Reavey’s system

includes all aspects of 1[h].

120. I note that the '315 patent provides an example of filtering by removing identified content as moving cards from a home view and allowing the remaining cards to be reordered by the device. '315 Patent , 44:11–31. As I explained for claim 1[c], “visual representations” can include cards ('315 patent, 15:34-58), and preview images, such as thumbnails (*id.*, 20:7–9, 35:58–62, 41:1–7, Fig. 2). Also as I explained for 1[c], a POSITA would have found it obvious to modify Reavey based on the teachings of Chandhri to switch from a menu-based GUI organization scheme of data to a tile-based scrolling GUI organization scheme of the same data when changing from the laptop configuration (Mode 3) to the flat configuration (Mode 2). *See* Section X. Further as explained in 1[c], the Reavey-Chandhri combination displays a plurality of views of the same content organized differently, as shown in the following figure:

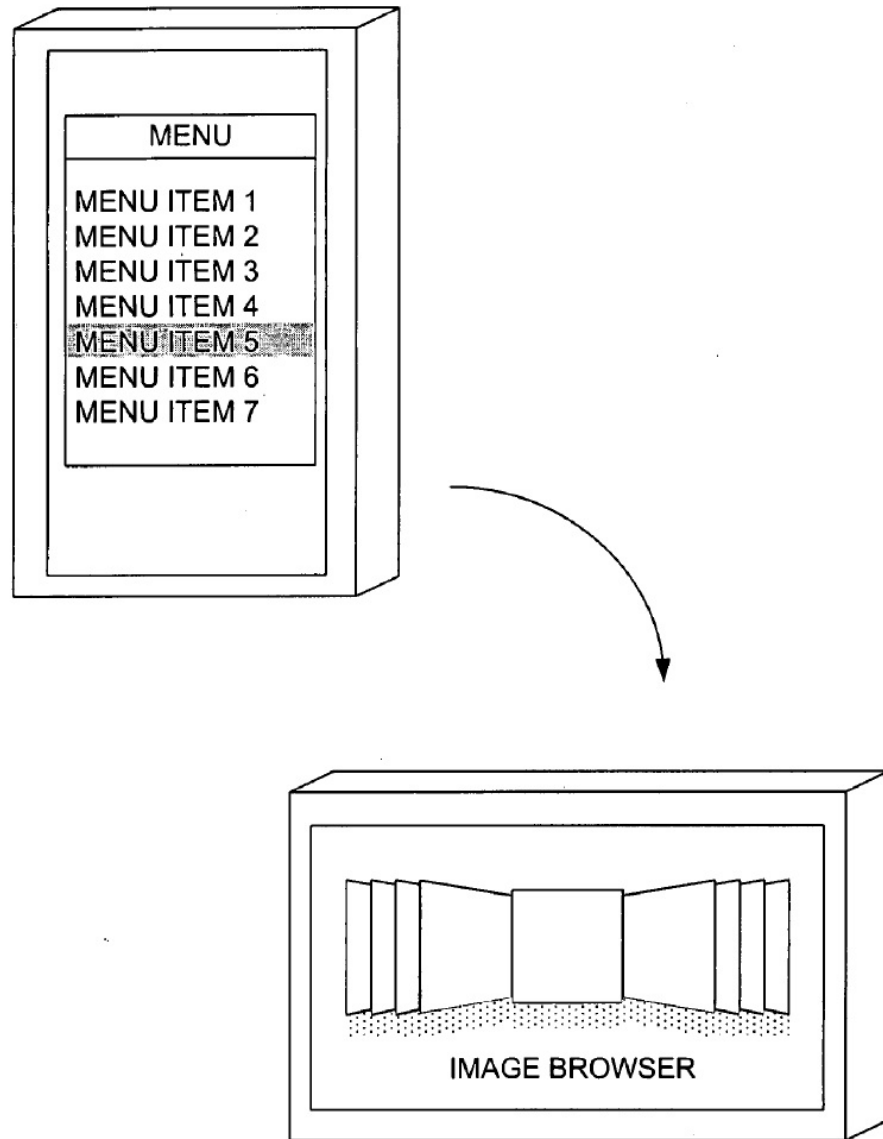
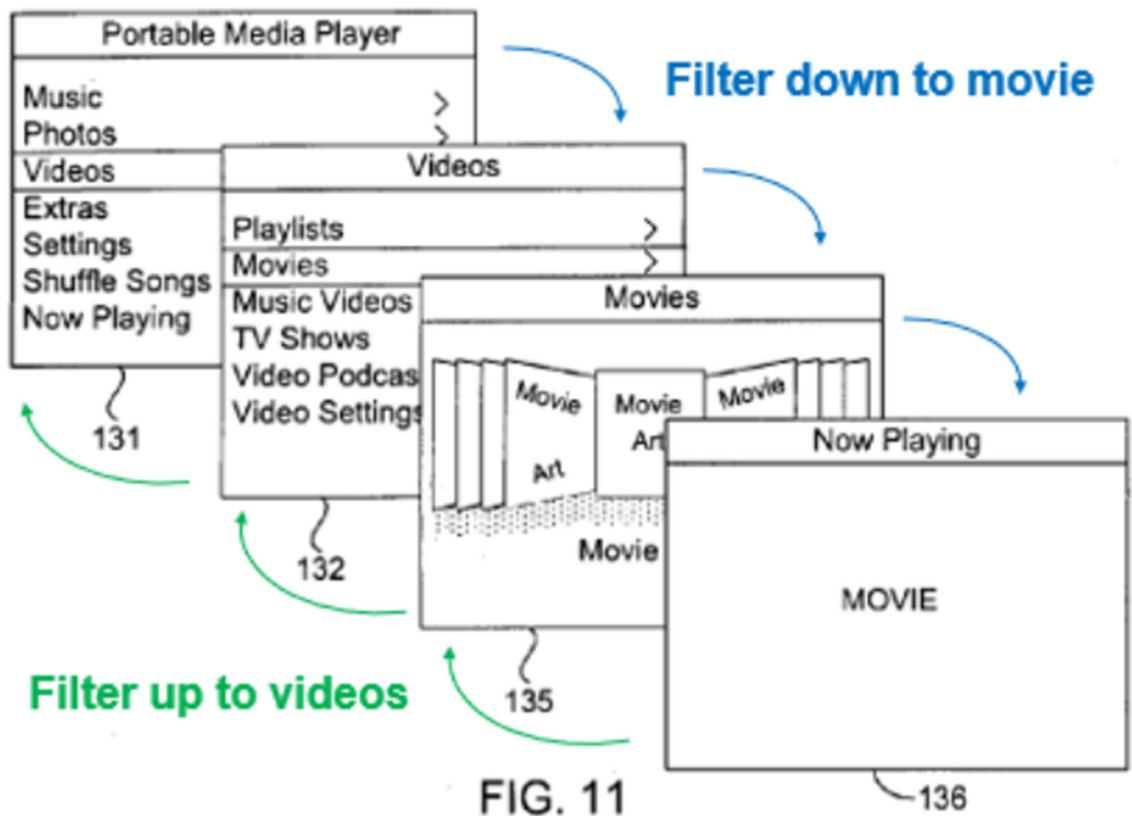
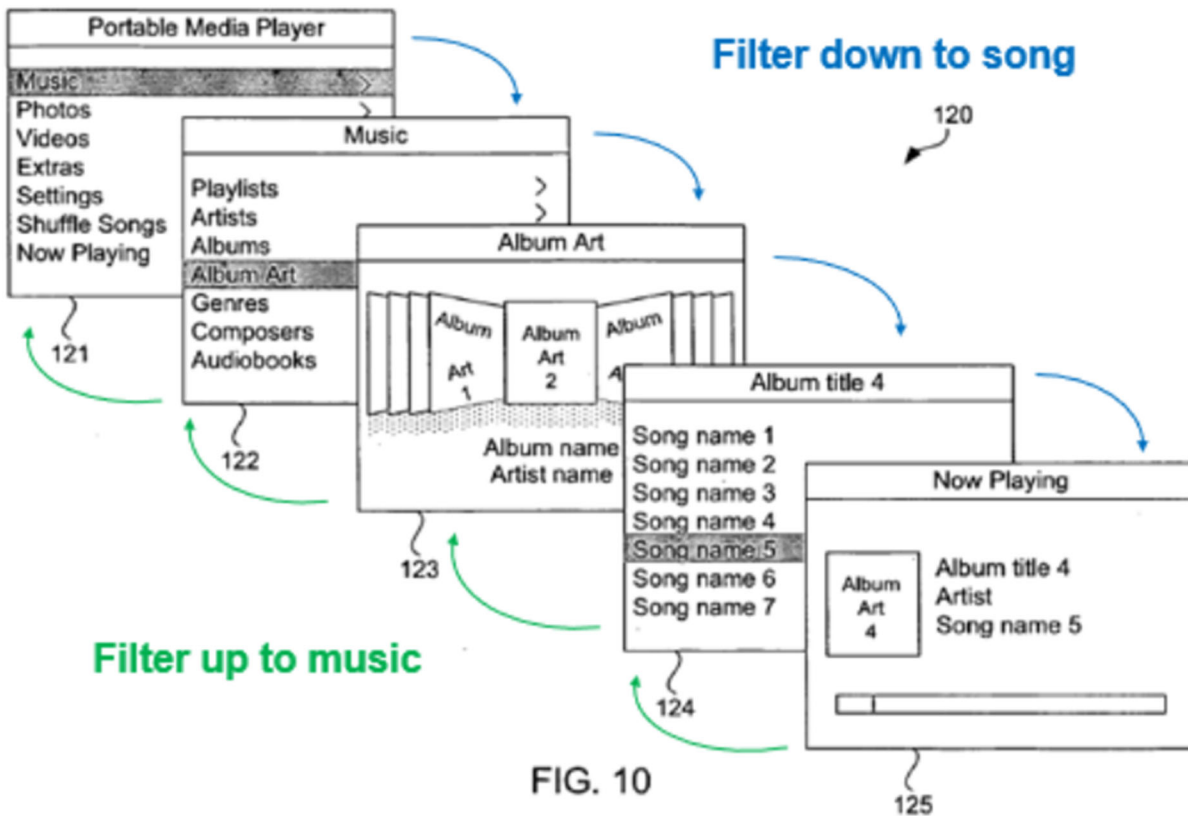


FIG. 34

Chandhri, ¶0225, Fig. 34. Chandhri makes clear these view changes enable users to navigate up and down a menu hierarchy to narrow or broaden results to a desired content (“filter”), such as by selecting a song to play (Chandhri, Fig. 10) or movie to watch (*id.*, Fig. 11). I provide annotated versions to explain this hierarchical navigation below. Chandhri, Figs. 10, 11.



Id., ¶¶0134–0136, Figs. 10, 11 (annotated). Importantly, a user may set which windows of the hierarchy display content in a first layout of column-bound row items in a vertical menu (first “member[s]”) or as a second layout comprising a rolodex-type browser of images (second “member[s]”). *Id.*, ¶0135 (describing user-set menu and browser displays), ¶0111 (describing the image-based browser as a “rolodex”), Figs. 7–8. Therefore, a POSITA would have recognized that any step of the hierarchy in Figs. 10 and 11 may be adjusted to look differently based on user’s setting selection, e.g., the “song name” window 124 may instead appear as an image-based browser rather than a vertical menu.

121. Further, Chandhri’s image based browser permits scrolling through albums and flipping an album to find songs on the reverse of that album image to mimic the feel of flipping an album cover over to reveal the listing of songs on the back as depicted in the figures (annotated) reproduced below. Chandhri, ¶¶ 0182, 0186, 0204–0205, Figs. 23A, 26B, 23E. This means that a user can decide when an image browser is used to best simulate the real, physical experience of flipping through albums both between different albums, as in a box of albums, and flipping a selected album “over” to see the songs on the back) all while taking advantage of the digital convenience of music play. I show how an example of how a user would flip though albums of songs while navigating a playlist using Chandhri’s Figs. 23A, 26B, and 23E, below.

**Transition
to album
browsing,**

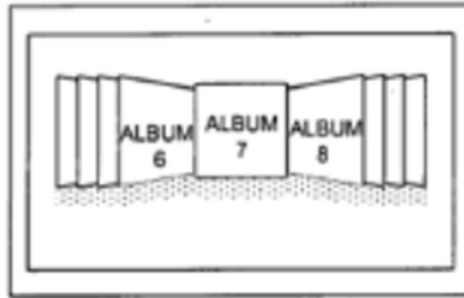


FIG. 23A

**flip
album,**

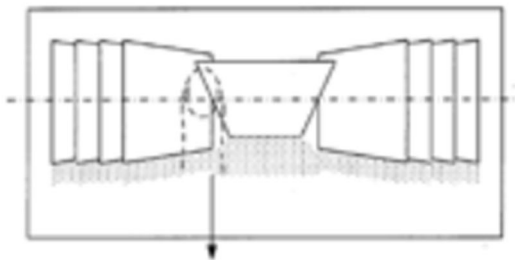


FIG. 26B

**select
album
song,**

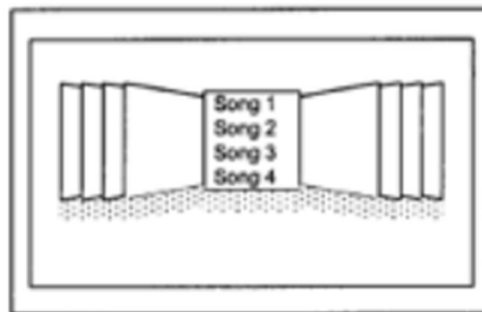


FIG. 23E

122. Chandhri also discloses a vertical display of the image based browser depicted below.

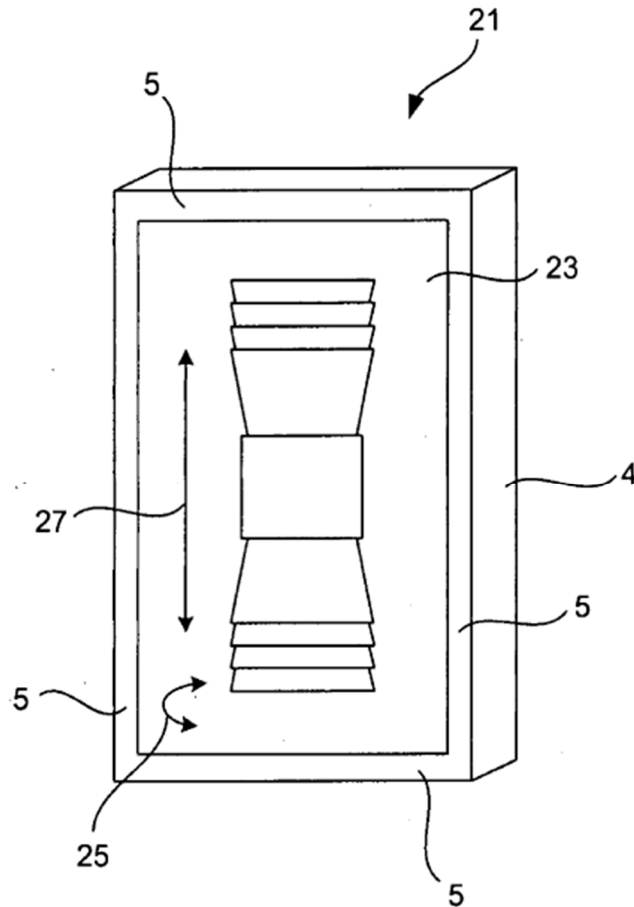


FIG. 3

Chandhri, ¶¶0082–0083, Fig. 3. Whether horizontal or vertical, Chandhri makes clear that images are scrolled such that a new image appears on one side and disappears on the opposite side respective the direction of scrolling e.g., scrolling right to left introduces a new left image and causes the right-most image to disappear from sight (“removing the identified content”). Chandhri, ¶0106, Fig. 5.

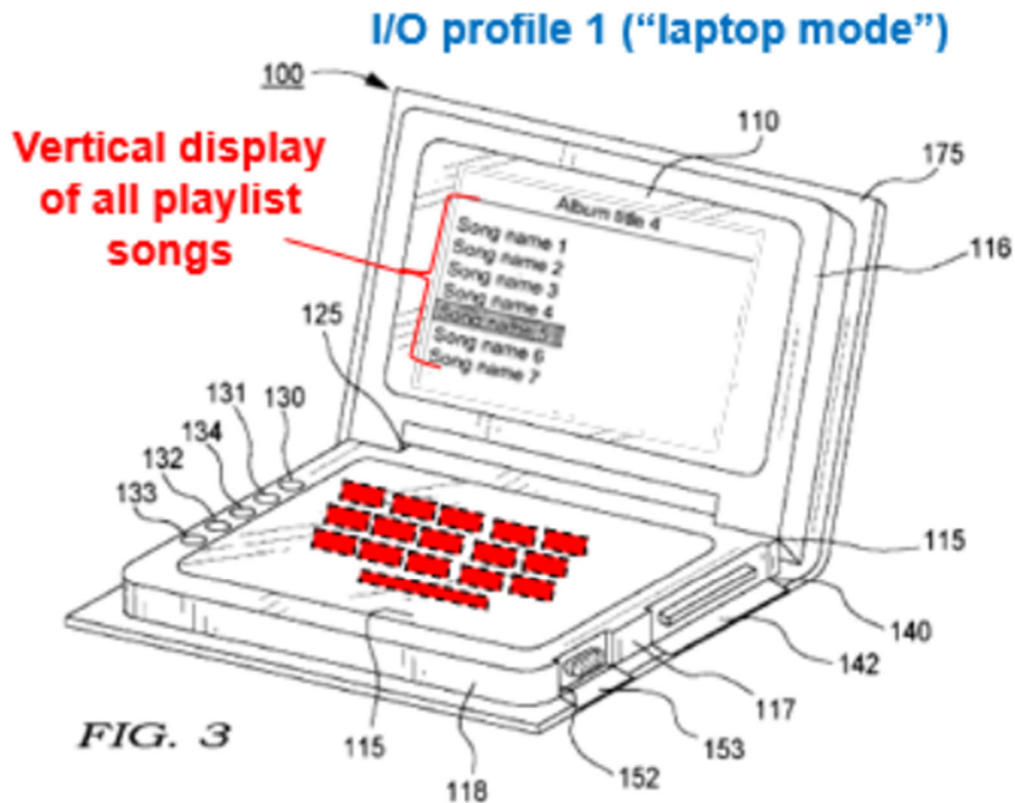
123. In my opinion, a POSITA would have selected a combination of the above, user-configurable and settings-selectable user interfaces to generate an intuitive, vertically-scrollable menu of album images that may be flipped to any respective list of songs displayed on the back to create an embodiment wherein a user experiences the

true feel of efficiently and easily (i) flipping through albums as in a store in a rolodex-type arrangement and (ii) flipping an album cover over (laterally) to view the respective songs on its back. *See, e.g.*, Chandhri, ¶¶0100, 0111, 0134 (describing flipping an album over to view songs on the back), 0183–0184 (“flipping through a bin of albums”).

124. In my opinion, a POSITA would have also understood Chandhri’s user-customizable hierarchy (Chandhri, Figs. 10, 11, ¶¶ [0134]–[0137]) enables a user to set a preferred view with respect to one of Reavey’s physical computer configurations, which creates increasingly intuitive views of voluminous computer content as a function of available screen real estate (Reavey, Figs. 2, 3, 4:39–42, 7:42–43, 7:61–62) to provide users an increasingly controllable, configurable, and tunable user interface that makes navigating large amounts of content (e.g., a playlist of curated songs from different artists) in an increasingly easy and intuitive way.

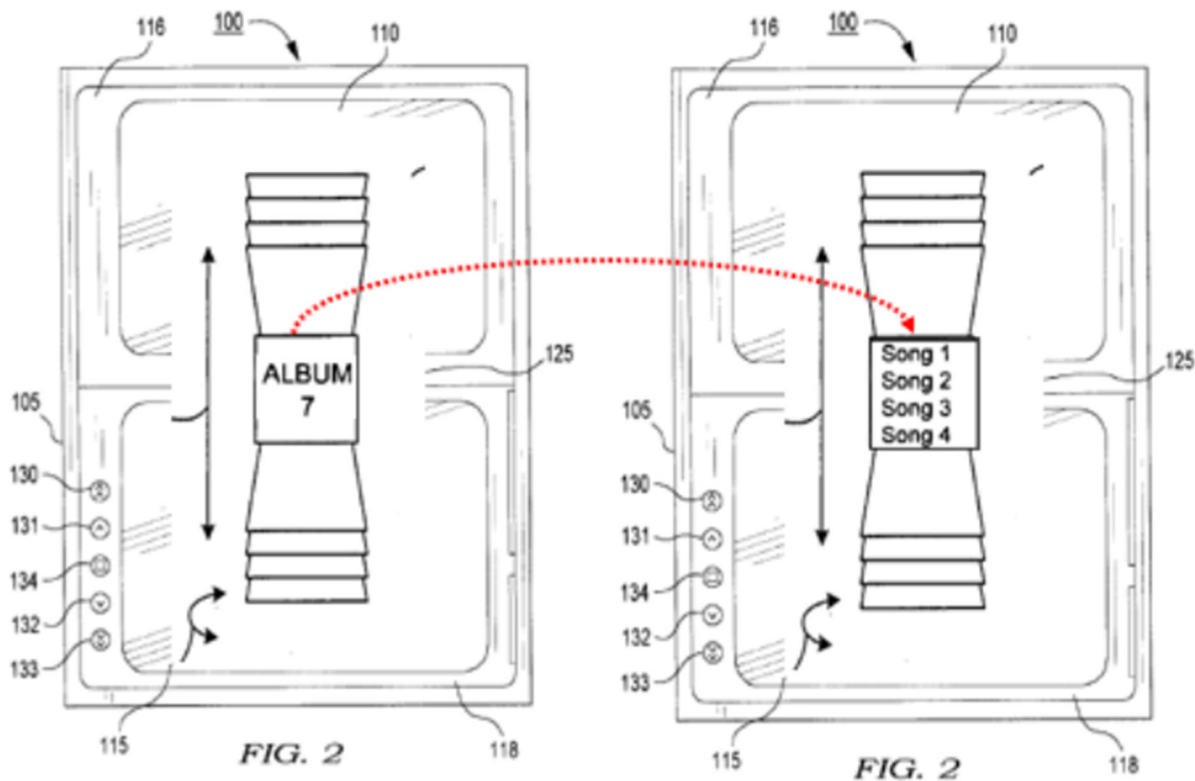
125. Further, it is my opinion that a POSITA would have been motivated to set the display of a long, vertical menu of playlist songs (“first set of visual representations”) while in laptop mode (first “first system configuration”) to view the total set of song titles more quickly in row form more easily displayed with restricted one-screen real estate (Reavey, Fig. 3; Chandhri Fig. 10), but would have transitioned to Chandhri’s vertical, image-based scrolling view of albums (“second set of visual representations”) as described above in a flat mode of Reavey’s device (“second system configuration”) to enable a user to categorically view a smaller (“filter...[by] removing”) album-grouped (“different member[s]”) display of the playlist songs, then

flip that album to reveal the available songs on the back, and therefore permitting a user to more quickly locate a desired playlist song by referencing the artist then song rather than scrolling through an entire playlist of songs as I depict in the image I annotated below.



See Reavey, Fig. 3; Chandhri, Fig. 10 excerpt (combined and annotated to show vertical menu display of playlist songs).

I/O profile 2 ("flat mode")



Vertical-flipping and side-flipping navigation of album art

See Reavey, Fig. 2; Chandhri, Figs. 3, 23A, 23E (which I combined and annotated to show vertical and side-flip navigation of playlist-type music).

126. A POSITA would have found such an organization of the Reavey-Chandhri user interface would have had a reasonable expectation of success because it is intuitive. Specifically, the interface I annotated above achieves the optimal layout of the user interface features available from the Reavey-Chandhri combination because this design is *intuitive* and *aesthetically pleasing* to a user; it minimizes the eye movements and hand movements needed to navigate a large volume of data by allocating the user interface principles of balance, gridding, and proportion according

to logic (i.e., mimicking the real “look and feel” of flipping through song albums). *See* Foley, 421, 426–427.

- j. ***1[i]: “transition, automatically in response to the sensor input, the display component between at least the first home view of the plurality of views and a second default content view of the plurality of views, wherein the second default content view is configured to organize the second set of visual representations, wherein the second default content view is a second organizational view of at least one application and computer content, and wherein the sensor input indicates a transition to the second computer system configuration.”***

127. In my opinion, the Reavey-Chandhri combination discloses or suggests 1[i] under MPF or non-MPF. As I explained in ¶¶76–84, a POSITA would have been motivated to use the GUI disclosure of Chandhri in the device of Reavey.

128. As I explained for 1[f], Reavey as modified by Chandhri receives sensor input that indicates a transition to the second computer system configuration. *See* ¶¶112–114. Namely, Reavey’s device 100 uses multi-function gravity switches and a hinge to detect whether the device is in the laptop configuration or the flat configuration, and thus detects transition between the two. *Id.*

129. In my opinion, the Reavey-Chandhri combination also transitions “automatically in response to the sensor input.” As I explained for 1[g], the Reavey-Chandhri combination uses the menu-based GUI organization as the default when Reavey’s device 100 is in the laptop configuration. *See* ¶¶115–118. And, as explained for 1[h], the Reavey-Chandhri combination uses the tile-based scrolling GUI organization as the default when Reavey’s device 100 is in the flat configuration (“second default content view”). *See* ¶¶119–125. Similarly, as I explained for 1[pre],

the Reavey-Chandhri combination transitions from using screen 110 as a display screen and screen 115 as a touchscreen keyboard (while in laptop configuration), to using both screens 110 and 115 as display screens (while in flat configuration). *See* Section ¶¶85–90. Reavey’s device 100 “can automatically rotate text and graphics on the display panel”, based on the “multi-function gravity switches and hinge 125” sensor input. Reavey, 6:43-46, 7:45-62, Figs. 2-3

130. Further, the tile-based scrolling GUI (“second default content view”) re-organizes menu items from the menu-based GUI and displays them as images (“configured to organize the second set of visual representations”). *See* Chandhri, ¶0225 (“The first and second GUIs are based on the same data but use different formatting schemes to show the data.”). Because the two GUIs are based on the same data, the tile-based scrolling GUI is a “second organizational view of at least one application and computer content.” *See id.*; *see also id.*, ¶0094 (“[A] user may select a button that opens, closes, minimizes, or maximizes a window, or an icon that launches a particular application or functionality.”).

3. Claim 2: “The user interface of claim 1, wherein the execution component is further configured to transition between the plurality of views in response to execution of at least one of a computer system operation, a visual representation, a computer system configuration, and a change in computer system configuration.”

131. In my opinion, the Reavey-Chandhri combination teaches “the user interface of claim 1.” *See* ¶¶85–130. In my opinion, it also teaches the additional limitations of claim 2, under MPF or non-MPF, for the same reasons I discussed in

¶¶127–130 regarding claim 1[i]. Specifically, the Reavey-Chandhri combination teaches the use of sensor input from hinge and multi-function gravity sensors to detect a transition from a first (e.g., laptop) computer system configuration to a second (e.g., flat) computer system configuration and transitions the computing device from a single screen display (with virtual keyboard) to a two-display screen display (“transition between the plurality of views in response to execution of at least one of...a change in computer system configuration”). A POSITA would have also understood that transitioning to a *second* computer system configuration requires establishing a *first* computer system configuration, established upon activation of the device and with the launch of computer applications upon startup as I explained in ¶109 (“execution of at least one of...a computer system configuration”). Additionally, Chandhri’s Figure 10 depicts transitioning to image-based browser window 123 in response to a user selecting the album art item in sub menu 122 (“transition...in response to execution” of a “visual representation” and “computer system operation”). Chandhri, ¶0134, Fig. 10. In my opinion, a POSITA would have recognized Chandhri’s GUI transitions between views of hierarchical menus as a result of users inputting linear/rotational selection and movement commands with input devices (e.g., buttons, a mouse, “navigation pads”), which is a routine input computer operation requiring selection of a visual representation, which renders a “user...capable of easily manipulating the input devices [] while viewing the display device.” Chandhri, ¶¶0067–0070.

4. **Claim 3: “The user interface of claim 1, further comprising a plurality of modes of content for the computer content rendered on the computer display, wherein the plurality of modes of content comprise at least one of a web content mode, a channel content mode, a media content mode, an application content mode, a communication content mode, and a passive content mode.”**

132. In my opinion, the Reavey-Chandhri combination teaches “the user interface of claim 1.” *See* Section ¶¶85–130. I note that claim 3 does not require the recited “modes of content...rendered on the computer display” to be selected in response to the detected current computer system configuration, as recited in 1[i]. In addition, the ’315 patent uses the term “content mode” to refer to displaying a certain type of content for viewing by a user. *E.g.*, EX-1001, 3:33-35 (“the media content mode is configured to display media based content for non-proximal viewing”), 3:58–60 (“application content mode is configured to display computer applications for use by a user”).

133. In my opinion, Chandhri teaches the additional limitations of claim 3. In particular, Chandhri teaches a main menu 121 that displays a “music” option (“media content mode”). Chandhri, ¶0134. I have reproduced an annotated Figure 10 below, which shows the “music” option. *Id.*, Fig. 10.

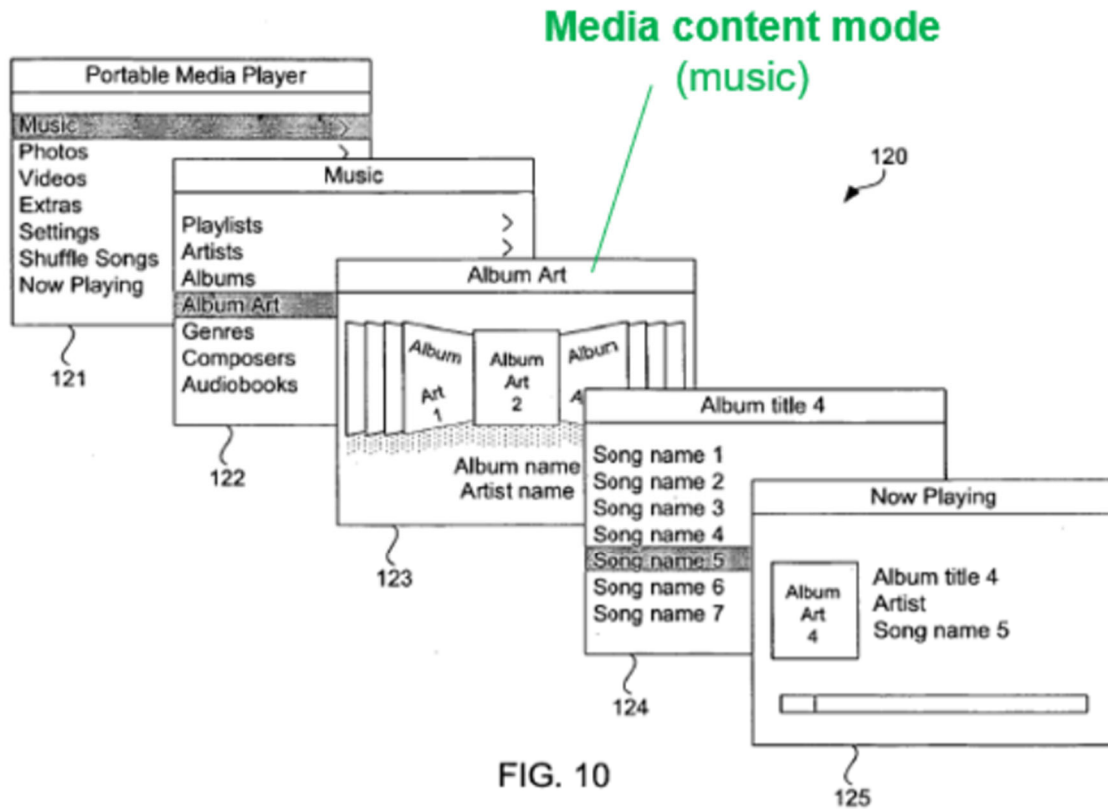
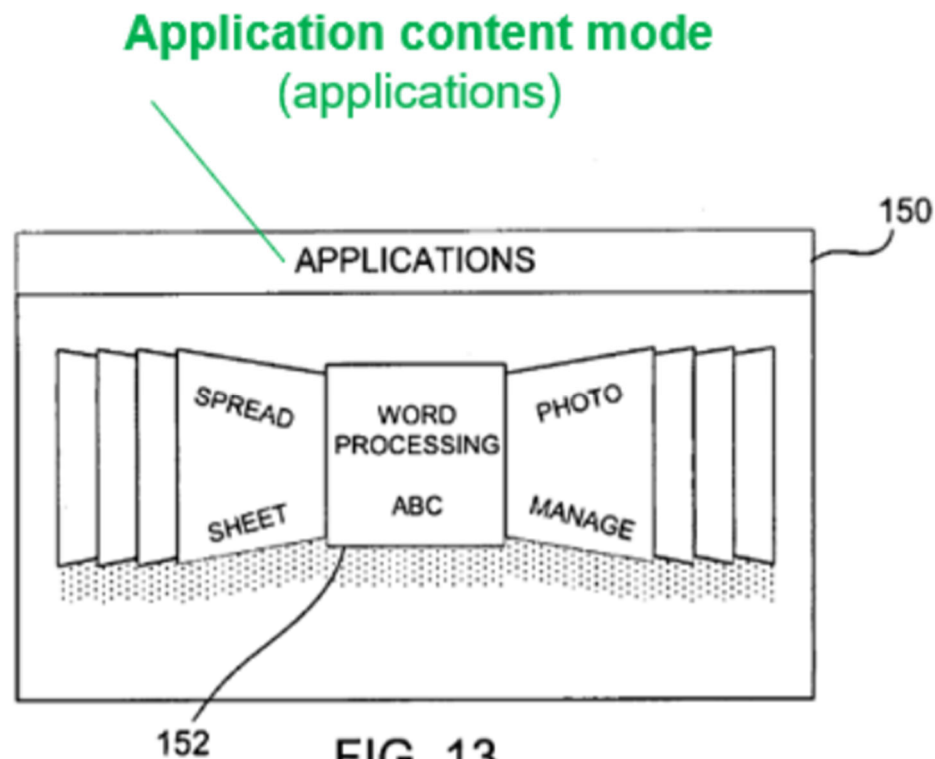


FIG. 10

134. In addition, in my opinion, Chandhri teaches an “application content mode” because it displays visual representations of spreadsheet, word processing, and photo management applications available to a user. *Id.*, ¶0139 (“FIG. 13 shows an image based browser 150 associated with applications.”). I have reproduced an annotated Figure 13 below, which shows this.



In my opinion, a POSITA would have understood Chandhri's hierarchical menus and image-based browser navigation is available to any type of content ("web...channel...communication...passive") ubiquitous to conventional internet-based personal computer utilities expected by a personal or business user to achieve conventional and predictable computing results because the '315 distinguishes between the content on the basis of its general "proximal" or "non-proximal" and type attributes (e.g., "web content mode is configured to display web based content") and the Reavey-Chandhri device would have hosted and interfaced with a non-limiting number of data types running upon that internet-connected computer. EX-1001, 7:10–35; 9:30–52; Reavey, 8:35–37; Chandhri, ¶0054, ¶0127. I note that the '315 patent does not define "proximal" or "non-proximal" beyond the use of the term itself. *See, e.g.*, '315 patent,

3:25–4:9, 7:10–35; 9:39–52.

135. Further, in my opinion, a POSITA would have found it obvious to combine the teachings of Chandhri with Reavey for the reasons I discussed in ¶¶76–84.

5. Claim 4: “The user interface of claim 3, wherein the plurality of views are configured to organize modes of content into different views.”

136. In my opinion, the Reavey-Chandhri combination teaches “the user interface of claim 3.” See Section ¶¶132–135. In addition, as I explained in ¶¶97–99 (1[i]), Chandhri teaches a menu-based and a tile-based scrolling GUI (“plurality of views”) that organize content differently. Thus, in my opinion, Chandhri also teaches “organiz[ing] modes of content into different views.” Specifically, Chandhri organizes music (“media content mode”) into both types of views. Below I have produced annotated versions of Figures 10 and 23E, which show the two views. Compare Chandhri, Fig. 10 (menu-based GUI organization of songs), with Figs. 23E (scrolling-based GUI organization).

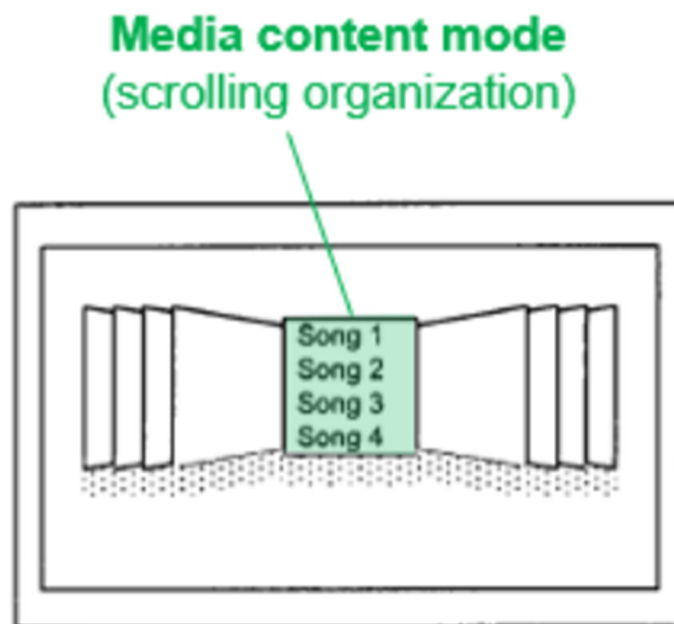
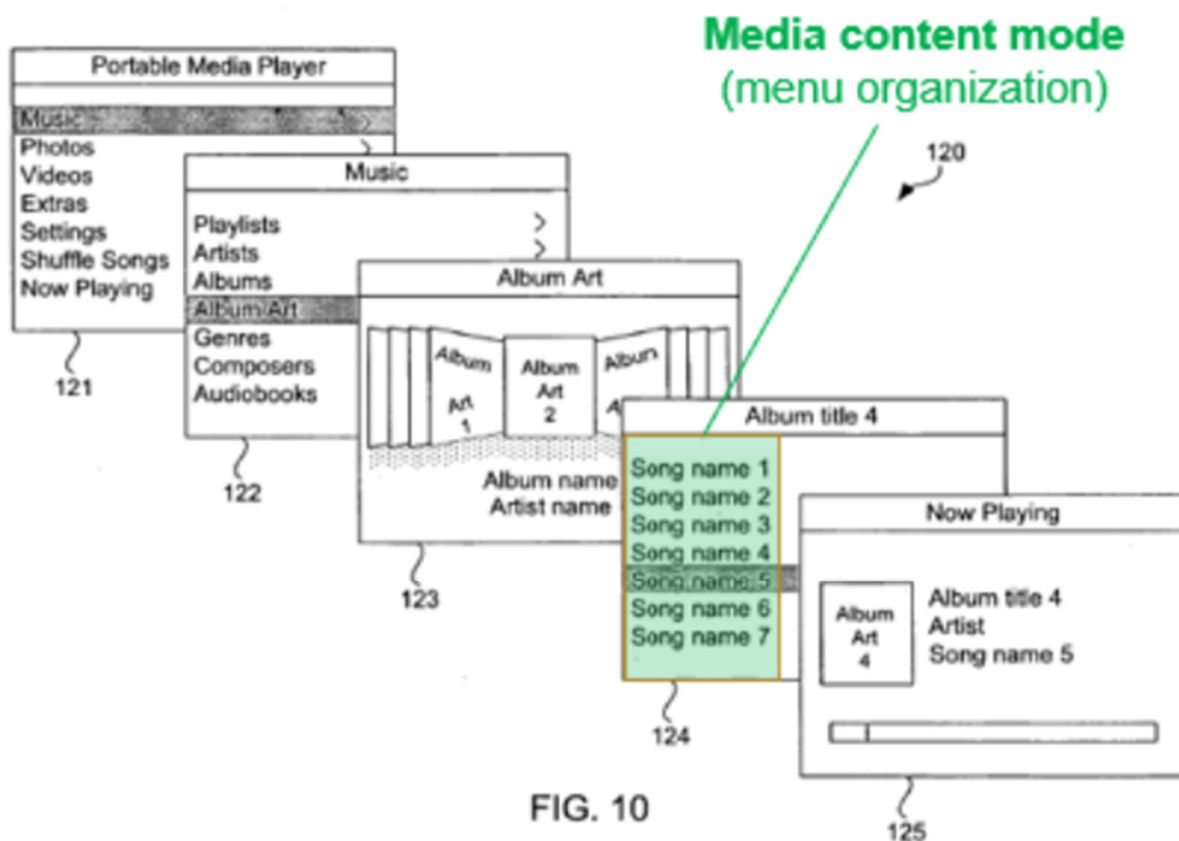


FIG. 23E

6. **Claim 5: “The user interface of claim 3, wherein the web content mode is configured to display web based content for proximal viewing by a user on the display component of the computer system, wherein the channel content mode is configured to display web based content for non-proximal viewing by a user on the display component, wherein the media content mode is configured to display media based content for non-proximal viewing by a user on the display component, wherein the application content mode is configured to display computer applications for use by a user on the display component, wherein the communication content mode is configured to display computer configuration operations for viewing by a user on the display component, and wherein the passive content mode is configured to display web based content for non-proximal viewing without user interaction on the display component.”**

137. In my opinion, the Reavey-Chandhri combination teaches “the user interface of claim 3.” *See* ¶¶132–135. I note that although claim 5 recites details of several content modes recited in claim 3, when those claims are read in conjunction they appear to require that only one of the plurality of content modes be one that is specified in claim 3. *See* ’315 patent, cl. 3 (“wherein the plurality of modes of content comprise *at least one of* . . .”). As I discussed in ¶¶132–135 (claim 3), Chandhri teaches at least two of the specified modes (“media content mode” and “application content mode”).

138. Chandhri also, in my opinion, teaches that those modes meet the additional limitations of claim 5, namely, “wherein the media content mode is configured to display media based content for non-proximal viewing by a user on the display component” and “wherein the application content mode is configured to display computer applications for use by a user on the display component.” As I mentioned above, the ’315 patent does not define “proximal” or “non-proximal” beyond the use of

the term itself. *See, e.g.*, EX-1001, 3:25–4:9, 7:10–35; 9:39–52. Consistent with the interpretation of the Examiner, Chandhri’s display of music for play by a user and applications available for use by a user render the claim obvious. Ex. 1002, 370; *See* ¶¶132–135 (claim 3).

7. **Claim 8: “The user interface of claim 1, wherein the plurality of views includes the home view organizing a plurality of visual representations of digital content, wherein the first home view is displayed responsive to system activation, and wherein the first home view is displayed responsive to a computer system configuration.”**

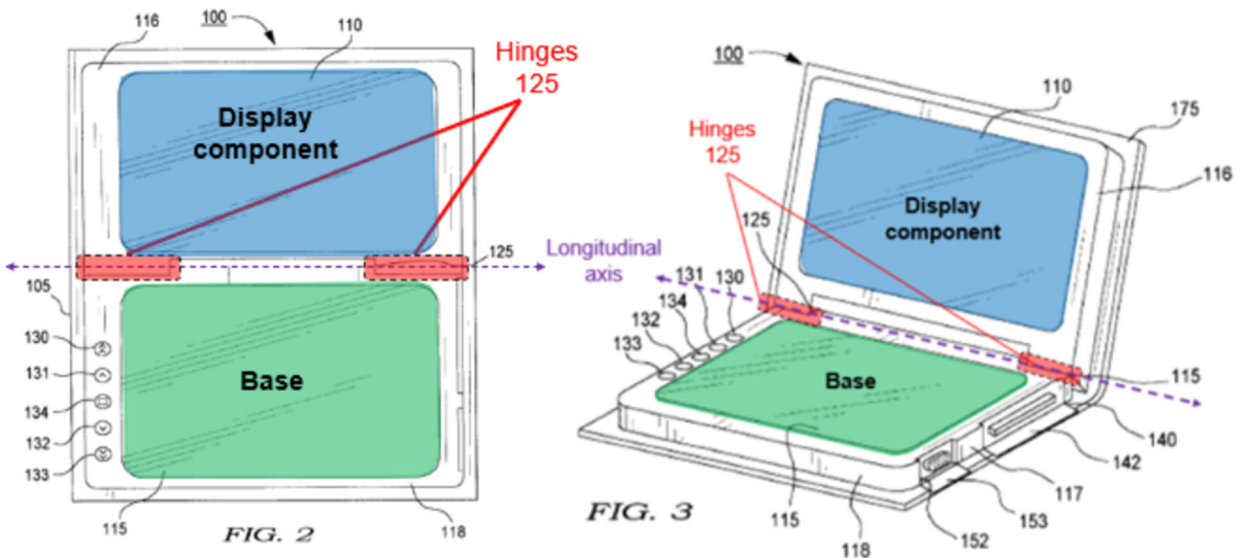
139. Claim 8 recites a similar limitation to 1[d], which I discuss in ¶¶100–109.

In my opinion, claim 8 is taught in the prior art for the same reasons discussed in those paragraphs.

8. **Claim 9: “The user interface of claim 8, wherein the computer system configuration comprises a physical positioning of the display component relative to a base of the computer system about a longitudinal axis of rotation.”**

140. In my opinion, the Reavey-Chandhri combinations discloses “the user interface of claim 8.” *See* ¶139. In addition, as I discussed in ¶¶112–114 (1[f]), Reavey teaches a first and a second computer system configuration based on sensor input indicating a position of the display component relative to a base component. The two components in Reavey (first panel screen 110 and second panel screen 115) are connected through a hinge (“about a longitudinal axis of rotation”). Reavey, 5:33-35 (“Dual screen display 105 has a first panel screen 110 which is electrically connected to a second panel screen 115 through a hinge 125.”). For example, Reavey differentiates

between the laptop configuration and the flat configuration based on the position of the display 110 and its housing 116 relative to the base housing 118 including the display 115. *Id.*, 5:32-45, 7:24,62, Figs. 2-3. Specifically, Reavey differentiates between the display 110 and its housing 116 being “approximately at 120° open” to the base housing 118 including the display 115. Below I have produced annotated Figures 2 and 3 which show the base component (green) and the display component (blue).



A POSITA would have understood Reavey’s housing 118 teaches a “base” of the computer system because Reavey’s device is “weighted such that it is balanced on a hard surface...to permit typing on the keyboard”, which would have required keeping the base stationary to permit accurate finger movements and the display portion light for easy opening and user manipulations about its axis. Reavey, 7:59–62.

9. Claim 23: “The user interface of claim 1, further comprising a storage component configured to retain a current computer system configuration state and a current view state.”

141. In my opinion, the Reavey-Chandhri combination teaches “the user

interface of claim 1.” See ¶¶85–130. Reavey’s device further includes static RAM for storage, which discloses the “storage component” according to this limitation, under MPF or non-MPF. Reavey, 5:66–6:1, Fig. 7 (310), 6:6–22. A POSITA would have understood and found it obvious that Reavey’s static RAM retains a computer system configuration state, user preferences, and respective view state to allow the computer system to correctly initialize the appropriate display in the appropriate configuration when it is restarted, upgraded, and while the user actively changes their configuration preferences, etc. *Id.*, Fig. 9 (step 520), 6:19–22 (“[S]tatic RAM with battery 320 is provided to save various user specific parameters, Such as communications parameters, user preferences, electronic bookmarks, passwords, parameters for power management.”)

10. Claim 24: “The user interface of claim 23, wherein the execution component is further configured to transition the display component between the plurality of views, responsive to at least one of the current computer system configuration state and the current view state.”

142. In my opinion, the Reavey-Chandhri combination teaches “the user interface of claim 23.” See ¶141. I also explained in ¶¶100–109, 112–114, and 119–125 that the Reavey-Chandhri combination teaches claim 1’s execution component (1[d]) that transitions from a first home view (1[f]) to a second default content view responsive to a sensor detecting a second computer system configuration (1[h]). A POSITA would have understood and found it obvious to transition the current computer system configuration state and/or the current view state stored in Reavey’s static RAM to allow

the computer system to correctly initialize the appropriate display in the appropriate configuration when it is restarted, upgraded, and while the user actively changes their configuration preferences, etc. Reavey, Fig. 9 (step 520), 6:17–18. Reavey teaches that upon startup its device 100 determines the appropriate operation mode (“current computer system configuration”) and presents the appropriate screen in response (“transition the display component”). Thus, in my opinion, Reavey-Chandhri teaches this limitation, under MPF or non-MPF.

11. Claim 27

- a. ***27[pre]: “A method for presenting a customized user interface for a computer system with a plurality⁸ selectable I/O profiles to a user, the method comprising:”***

143. 27[pre] recites a similar limitation to 1[pre], which I discuss in ¶¶85–90.

In my opinion, 27[pre] is taught in the prior art for the same reasons discussed in those paragraphs.

- b. ***27[a]: “displaying a map based graphical user interface on a display component of the computer system, the act of displaying the map based user interface includes acts of:”***

144. 27[a] recites a similar limitation to 1[b] and 1[pre], which I discuss in ¶¶85–90, 92–96. In my opinion, 27[a] is taught in the prior art for the same reasons discussed in those Sections.

⁸ Petitioner understands this limitation should recite “plurality of.”

- c. ***27[b]: “displaying a plurality of views of a plurality of visual representations of computer content on the display component, wherein the computer content includes at least one of selectable digital content, executable computer applications, configurable computer settings, selectable computer operations and passive digital content; and”***

145. 27[b] recites a similar limitation to 1[c], which I discuss in ¶¶97–99. In my opinion, 27[b] is taught in the prior art for the same reasons discussed in those paragraphs.

- d. ***27[c]: “displaying the plurality of visual representations of computer content rendered on the display component, wherein the plurality of visual representations of computer content include an association to a first home view of the plurality of views, the first home view including the computer content, and wherein the each of the plurality of visual representations is responsive to focus and execution, wherein execution includes selecting the visual representation, and wherein the first home view is a first organizational view of at least one application and computer content displayed responsive to activation of the system; identifying, by a processor, at least a first and a second computer system configuration based on sensor input indicating a position of the display component relative to a base component;”***

146. 27[c] recites a similar limitations to 1[d] and 1[f], which I discuss in ¶¶100–109, 112–114. In my opinion, 27[c] is taught in the prior art for the same reasons discussed in those Sections.

- e. ***27[d]: “selecting, by the processor, responsive to the sensor input, the first home view from the plurality of views for the first computer system configuration, wherein the first home view is configured to organize a first set of the plurality of visual representations;”***

147. 27[d] recites a similar limitation to 1[g], which I discuss in ¶¶115–118. In my opinion, 27[d] is taught in the prior art for the same reasons discussed in those paragraphs.

- f. ***27[e]: “filtering, by the processor, the first set of visual representations to present content that is optimized for viewing in the second system configuration at least in part by identifying content to filter, removing the identified content from the first set of visual representations, and generating a second set of visual representations based on the filtered first set of visual representations, wherein the second set of visual representations includes at least one different member than the first set of visual representations; and”***

148. 27[e] recites similar limitations to 1[h], which I discuss in ¶¶119–125. In my opinion, 27[e] is taught in the prior art for the same reasons discussed in those paragraphs.

- g. ***27[f]: “executing, automatically by the processor, in response to sensor input a transition in the display component between at least the first home view of the plurality of views and a second default content view of the plurality of views, wherein the second default content view is configured to organize the second set of visual representations, wherein the second default content view is a second organizational view of at least one application and computer content, wherein the sensor input indicates a transition to the second computer system configuration.”***

149. 27[f] recites a similar limitation to 1[i], which I discuss in ¶¶127–130. In my opinion, 27[f] is taught in the prior art for the same reasons discussed in those paragraphs.

12. Claim 28

- h. ***28[pre]: “A system for presenting a customized user interface for a portable computer with a plurality⁹ selectable I/O profiles, the system comprising:”***

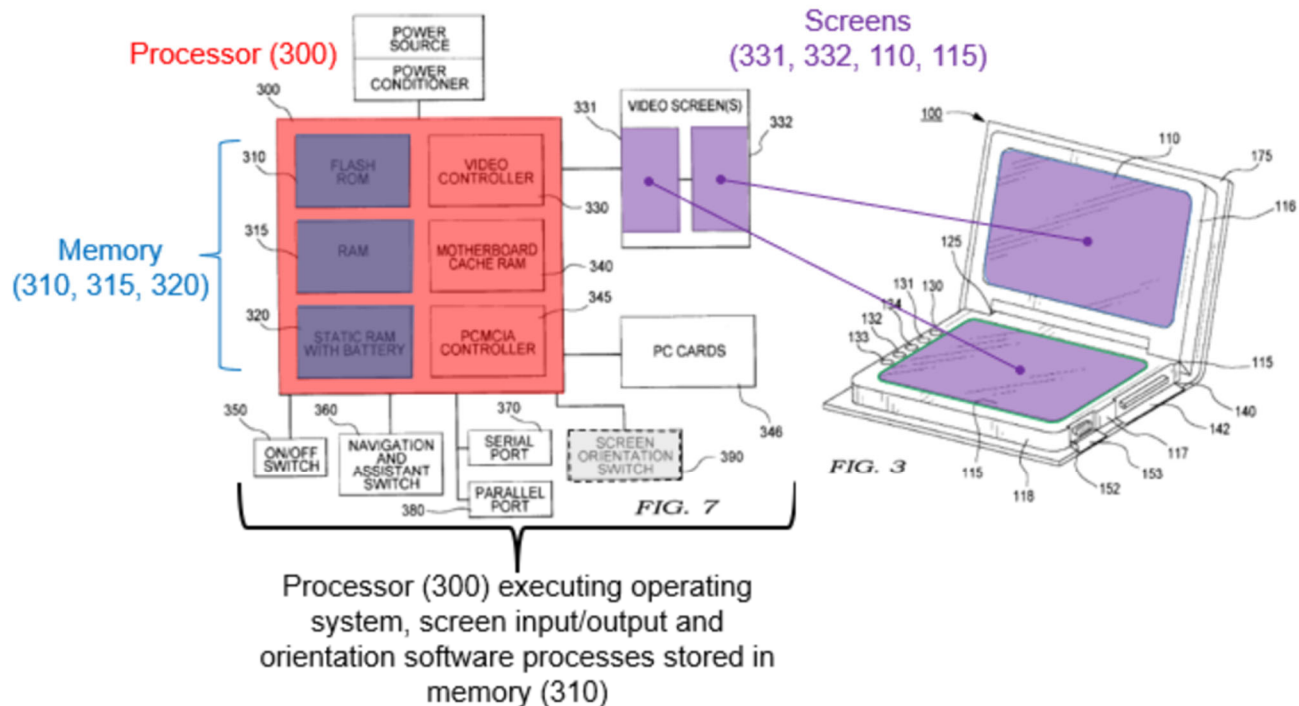
150. 28[pre] recites a similar limitation to 1[pre], which I discuss in Section ¶¶85–90. In my opinion, 28[pre] is taught in the prior art for the same reasons discussed in those paragraphs. In addition, Reavey teaches that the device 100 is “portable”

⁹ Petitioner understands this limitation should recite “plurality of.”

because it can be carried like a “conventional book” and it can be “balanced on a hard surface” or “placed on a flat surface.” Reavey, 7:45-60.

- i. ***28[a]: “at least one processor operatively connected to a memory, the processor configured to execute a plurality of system components, the plurality of system components comprising:”***

151. 28[a] recites a similar limitation to 1[b] (“one processor operatively connected to a memory”) and 1[e] (“an execution component”), which I discuss in ¶¶92–96. In my opinion, 28[a] is taught in the prior art for the same reasons discussed in those Sections. In addition, I have produced annotated versions of Figures 3 and 7 below, which show the “plurality of system components” executed on Reavey’s processor.



- j. ***28[b]: “a first user interface component configured to display a plurality of views of a plurality of visual representations of computer content, wherein the computer content includes at least one of selectable digital content, executable computer applications, configurable computer settings, selectable computer operations and passive digital content;”***

152. In ¶¶97–99 (1[c]), I explained that the Reavey-Chandhri combination teaches “display a plurality of views of a plurality of visual representations of computer content, wherein the computer content includes at least one of selectable digital content, executable computer applications, configurable computer settings, selectable computer operations and passive digital content.” And as I explained in ¶151 (28[a]), the Reavey-Chandhri combination teaches a processor that executes instructions. A POSITA would understand that it was well-known to use a graphics subroutine package executing on a general-purpose CPU to execute functions that change the display. Foley, 166. Thus, in my opinion, a POSITA would have understood that the Reavey-Chandhri combination teaches a “first user interface component” configured to display specific graphic content.

- k. ***28[c]: “a second user interface component configured to display the plurality of visual representations of computer content on a computer display, wherein the plurality of visual representations of computer content include an association to a first home view of the plurality of views, the first home view including the computer content, and wherein the each of the plurality of visual representations is responsive to focus and execution, wherein execution includes selecting the visual representation, and wherein the first home view is a first organizational view of at least one application and computer content displayed responsive to activation of the system; and”***

153. In ¶¶100–109 (1[d]), I explained that the Reavey-Chandhri combination teaches “display the plurality of visual representations of computer content on a

computer display, wherein the plurality of visual representations of computer content include an association to a first home view of the plurality of views, the first home view including the computer content, and wherein the each of the plurality of visual representations is responsive to focus and execution, wherein execution includes selecting the visual representation, and wherein the first home view is a first organizational view of at least one application and computer content displayed responsive to activation of the system.” And as I explained in ¶151 (28[a]), the Reavey-Chandhri combination teaches a processor that executes instructions. A POSITA would understand that it was well-known to use one or more graphics subroutine packages executing a the general-purpose CPU to execute functions that change the display. Foley, 166. Thus, in my opinion, a POSITA would have understood that the Reavey-Chandhri combination teaches a “second user interface component” configured to display specific graphic content.

l. 28[d]: “an execution component configured to:”

154. 28[d] recites a similar limitation to 1[e], which I discuss in ¶¶110–111. In my opinion, 28[d] is taught in the prior art for the same reasons discussed in those paragraphs.

m. 28[e]: “identify at least a first and a second computer system configuration based on sensor input indicating a position of the display component relative to a base component”

155. 28[e] recites similar limitations to 1[f], which I discuss in ¶¶112–114. In my opinion, 28[e] is taught in the prior art for the same reasons discussed in those

paragraphs.

- n. ***28[f]: “select, responsive to sensor input, a first home view from the plurality of views for the first computer system configuration, wherein the first home view is configured to organize a first set of the plurality of visual representations.”***

156. 28[f] recites a similar limitation to 1[g], which I discuss in ¶¶115–118. In my opinion, 28[f] is taught in the prior art for the same reasons discussed in those paragraphs.

- o. ***28[g]: “filter the first set of visual representations to present content that is optimized for viewing in the second system configuration at least in part by identifying content to filter, removing the identified content from the first set of visual representations, and generating a second set of visual representations based on the filtered first set of visual representations, wherein the second set of visual representations includes at least one different member than the first set of visual representations”***

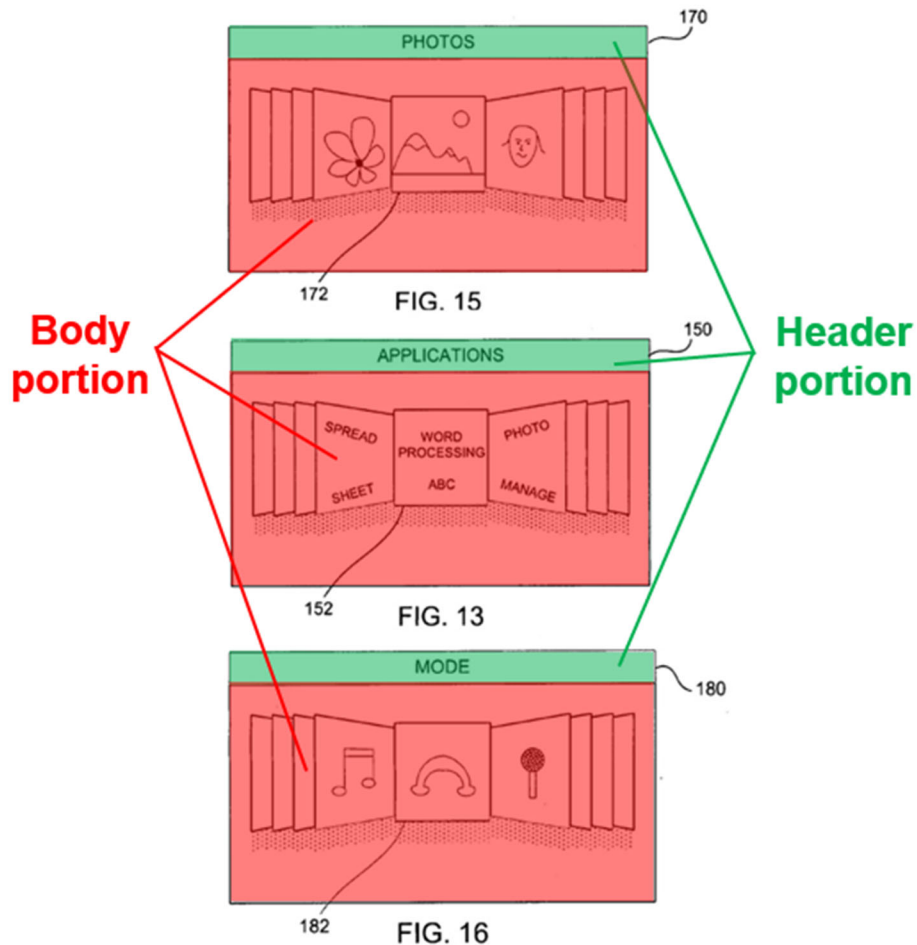
157. 28[g] recites similar limitations to 1[h], which I discuss in ¶¶119–125. In my opinion, 28[g] is taught in the prior art for the same reasons discussed in those paragraphs.

- p. ***28[h]: “execute, automatically, in response to sensor input, a transition in the computer system display between at least the first home view of the plurality of views and a second default content view of the plurality of views, wherein the second default content view is a second organizational view of at least one application and computer content, wherein the second default content view is configured to organize the second set of visual representations, wherein the sensor input indicates a transition to the second computer system configuration.”***

158. 28[h] recites a similar limitation to 1[i], which I discuss in ¶¶127-130. In my opinion, 28[h] is taught in the prior art for the same reasons discussed in those paragraphs.

13. **Claim 53: “The user interface of claim 1, wherein the map based graphical user interface is further configured to organize computer operations and computer content into the plurality of visual representations having consistent appearance, the consistent appearance of the plurality of visual representations including a header portion and a body portion of a display.”**

159. I explained in ¶¶85-90, 92-99 that the Reavey-Chandhri combination teaches “the user interface of claim 1” including a “map based graphical user interface” including a “plurality of visual representations of computer content” as in claims 1[pre], 1[b], and 1[c]. Further, Chandhri’s image based browser displays many types of content using the same layout arrangement that includes images in a bottom portion of the screen (“body portion”) and a title in a boxed, top portion of the screen (“header”). *See, e.g.,* Chandhri, ¶¶0026, 0028, 0029, 0139, 0141–42. I have produced annotated versions of Figures 13, 15, and 16 below, which show the body and head portions. *Id.* Figs. 13, 15, 16.

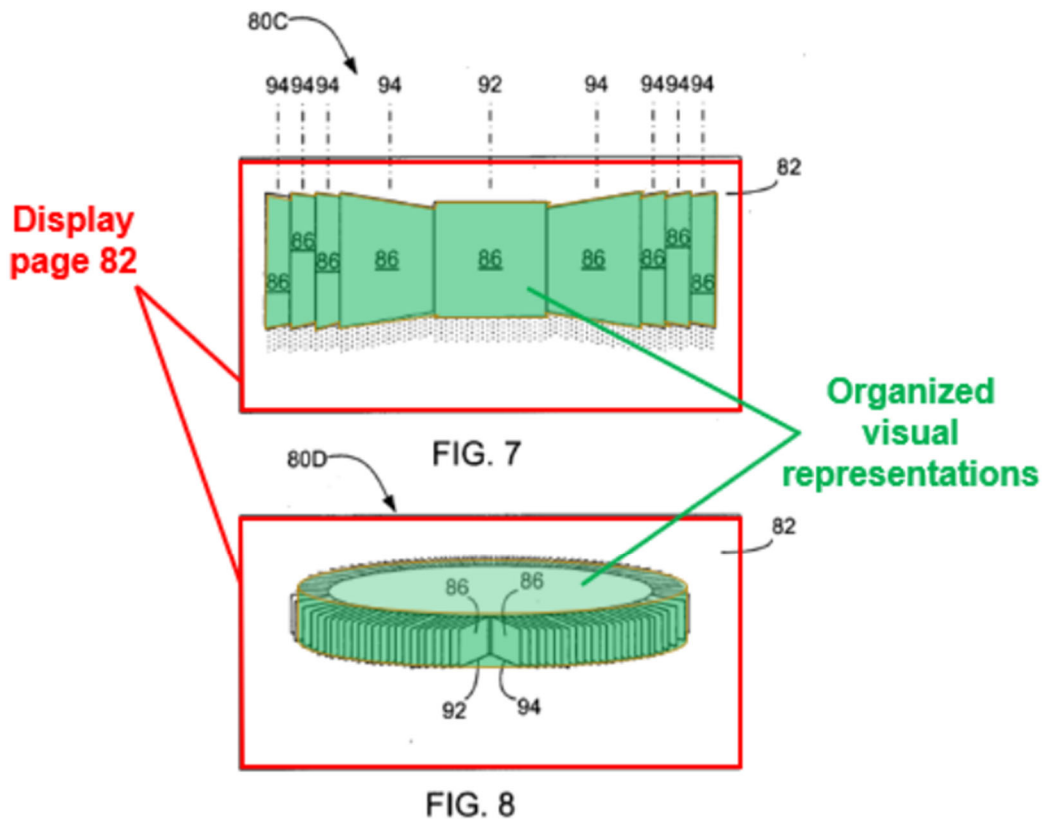


160. Thus, in my opinion, Chandhri teaches items like applications or modes (“computer operations”) in Figures 13 and 16 and photos (“computer content”) in Figure 15 with cards in each view (“consistent appearance”).

14. **Claim 54:** “The user interface of claim 53, wherein the map based graphical user interface is further configured to organize at least some of the plurality of visual representations into displayed pages of at least one of the plurality of views of the map based user interface, wherein each display page is associated with a display limit for the visual representations.”

161. In my opinion, the Reavey-Chandhri combination teaches the “user interface of claim 53.” See ¶¶159–160. In addition, Chandhri’s image browser organizes images representing data files (“visual representations”) in a consistent,

rolodex-type viewing area 82 (“display page”). Chandhri, ¶¶0100, 0111. I have produced an annotated versions of Figures 7 and 8 below, which show the “visual representations.” *Id.*, Figs. 7, 8.



162. Chandhri further teaches that the number of images displayed may be “limited” to a viewing area to allow a user to “visually scan” the images for easier browsing. Chandhri, ¶0103. To navigate all available (but not displayed) images, a user scrolls through them; scrolling left displays a new image on the right and makes an image on the left disappear. Chandhri, ¶0106. I have produced an annotated version of Figure below, which shows this.

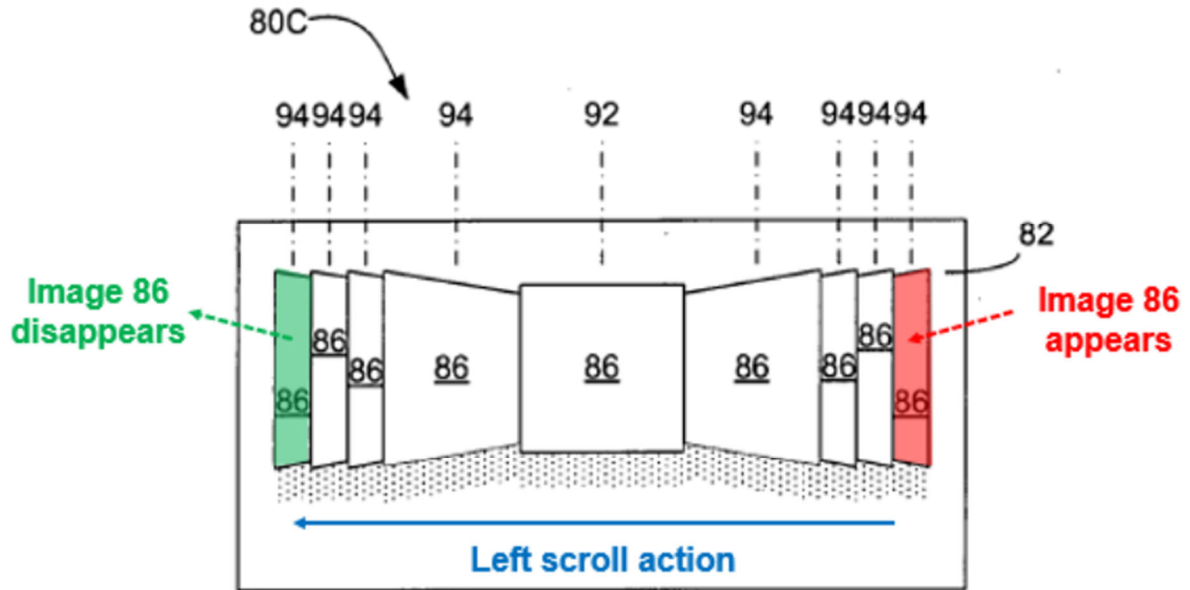


FIG. 7

Therefore, it is my opinion that a POSITA would have recognized Chandhri teaches limiting the number of visual representations displayed on a display page because Chandhri's GUI limits the number of images displayed in the image-based browser, and would further have been motivated to implement this feature into Reavey's device to enable users to navigate more content more easily by scanning it.

15. Claim 55: "The user interface of claim 1, wherein a display of at least some of the visual representations is configured to increase in display size responsive to focus, relative to an unfocused display."

163. In my opinion, the Reavey-Chandhri combination teaches or suggests "the user interface of claim 1," which includes a "plurality of visual representations...responsive to focus" (1[d]). See ¶¶100–109. I note that the '315 patent discloses "focus" as identification using tabbing, hotkeys, and hovering over a screen element with a cursor. EX-1001, 34:60–35:13. Chandhri's image-based browser

allows users to navigate computer applications and modes using “[s]election commands” detected from “rotational and/or linear user inputs” and “hovering.” Chandhri, ¶¶0069, 0088 (“Additionally or alternatively, the electronic device may include a proximity sensing device that senses objects hovering over rather than touching the front surface of the electronic device”), 0094 (“[A] user may select a button that opens, closes, minimizes, or maximizes a window, or an icon that launches a particular application or functionality.”), , Figs. 19A-H; *see also* ¶¶100–109 (1[d]).

164. In addition Chandhri discloses several instances of enlarging content responsive to specific user interaction (“focus”). For example, when the image based browser displays thumbnails of photos from an album, “selecting a particular thumbnail picture can enlarge the picture for viewing.” Chandhri, ¶0122. Chandhri applies the same capability to song and personal contact information selection, in which a specific image of a respective song or a person’s contact information is “enlarged as compared to the original image size to make viewing and selections easier.” *Id.*, ¶¶0186, 0196. Subsequent to viewing the enlarged image, a user further act upon it by, e.g., playing the song selected. *Id.*, ¶0101. Thus, in my opinion, the Reavey-Chandhri teaches claim 55.

- 16. Claim 57: “The user interface of claim 8, wherein the plurality of views includes the second default content view organizing a plurality of visual representations of digital content, wherein the second default content view is displayed responsive to system activation and responsive to the computer system configuration.”**

165. In my opinion, the Reavey-Chandhri combination teaches or suggests “the

user interface of claim 8,” which includes a step of transitioning to a “second default content view” that is an “organizational view of...content” including “digital content” (e.g., a photo application comprising photos) following both a change to the physical configuration of the computing device and activation of that device. *See* ¶139. Specifically, I described in ¶¶100–109 that a POSITA would have understood Chandhri’s organization of computer applications and modes using an image-based browser as a “finder” would have occurred subsequent startup and initialization of Reavey’s electronic device (“activation”). *See, e.g.,* Reavey, 3:28–31, 8:42–46.

B. Ground 2: Obviousness over Reavey, Chandhri, and Pröll (Claims 26, 29–33, 36–41, 52)

1. Motivation to Combine

166. In my opinion, a POSITA would have been motivated to combine the Reavey-Chandhri combination with Pröll. As I discussed above in ¶¶76–84, a user manipulates Reavey’s device into different physical configurations, which include a laptop configuration (which Reavey labels “Mode 3”) and a flat configuration (which Reavey labels, “Mode 2”). Reavey, 1:11–15, 7:24–62, Figs. 2–3. I explained in those paragraphs why it would have been obvious to combine the GUI teachings of Chandhri with Reavey’s device.

167. A POSITA would have recognized the physical configuration of Pröll’s device in Figure 7 as “easel mode” because it replicates the same as that disclosed by the ’315 patent. ’315 patent, Fig. 4, 12:36–37. A POSITA would have found it further obvious to add Pröll’s easel mode to the set of modes already present in the Reavey-

Chandhri computing device because Reavey already teaches a first and second display screen on two separate halves that are electrically and mechanically coupled to each other with a hinge for rotation, and the easel mode would have been obvious to try as one more physical configuration achieved amongst those achievable due to the rotational limits of the device. Reavey, Figs. 2-4, 5:32-39; Pröll, Fig. 1, [0033]. Stated differently, a POSITA would have recognized the same hinged rotational configurations (e.g., devices positions at a given degree of folding) allows the Reavey-Chandhri device to be operated in three different operational modes (closed, laptop, and flat) with respect to the angles at which the device is rotated, so it would have been obvious to try rotating the same electrically- and mechanically-connected halves of the existing Reavey-Chandhri device *further* about the hinge into Pröll's easel mode to accommodate additional user ergonomic preferences and form factors. *See Reavey*, 6:56-57 (closed configuration), Fig. 2, 3:21-24 (laptop configuration), Fig. 5, 3:18-20 (flat configuration);; Pröll, [0039] (closed configuration), Fig. 2, [0036] (laptop configuration), Fig. 3, [0038] (flat configuration). A POSITA would have been further motivated to add Pröll's easel mode to the Reavey-Chandhri device because this expands the utility of the Reavey-Chandhri to additional, depth-restricted and confined-space applications (e.g., traveling in a vehicle like a car or airplane) that permit some degree of tray or other support for a computing device. In such travel scenarios, the tray-like support may often be present, but not deep enough to stabilize an entire, smooth-bottomed laptop base for a user to type upon without the device tipping toward the user.

Therefore, it would be advantageous to use Pröll's easel mode with its smaller folded footprint to fit upon such a limited-depth tray, further stabilized by the device's built-in anti-slip feet or hook and loop tape fastener. Pröll, [0052].

168. A POSITA would have had a reasonable expectation of success combining the Reavey-Chandhri device and its existing modes with Pröll's additional easel mode, at least because (1) Reavey already teaches that its devices can be configured to operate in three positions rotated about the horizontal axis, making a fourth position a straightforward addition; (2) Reavey already teaches automatically changing the display orientation of the GUI 90° in response to a change in the physical configuration of the device, making a change to the orientation of the GUI an additional 90° a straightforward modification; and (3) Reavey and Chandhri both taught highly configurable devices and GUIs that could be changed with changes to the physical positioning of the device, making an additional such change (for easel mode) a straightforward modification.. Pröll, Fig. 7, [0049]; Reavey, 6:43–46, 7:24–31, 7:53–62.

2. Claim 26: “The user interface of claim 24, wherein the execution component is further configured to transition from the first view and a home view to a channel view in response to a change in computer system configuration state from a laptop to an easel configuration.”

169. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 26. As I explained in ¶142 above, the Reavey-Chandhri combination teaches the “user interface of claim 24.” It is my understanding that Claim 24 depends indirectly from

claim 1, and in ¶¶110–118, 127–130 I explained the Reavey-Chandhri combination teaches or suggests an execution component (claim 1[e]) that identifies a first home view (claim 1[g]) and selects it responsive to a first system configuration (laptop configuration, Mode 3) (claim 1[f]), then transitions to a second view responsive to a detect second computer system configuration (claim 1[i]) (flat configuration, Mode 2). Reavey, 7:24-62, Figs. 2-3. In my opinion, Chandhri also teaches a “channel view configured to organize . . . a single content mode.” As shown in Figure 10 above, image-based browser window 123 displays a linear sequence of visual representations of one content type selected from a broader, categorical menu of content. *Compare* EX-1001, Figs. 12, 14, 21:12–29 (access channel content by selecting “channel” 172e in Fig. 12), 22:10–26 (Fig. 12 shows selectable channel mode of content), 35:32–44 (Fig. 14 displays left-to-right row of channel cards following user selection), *with* Chandhri, Fig. 10 (122, 123), [0134] (“Album art item is selected in a sub menu 122, which launches an image based browser window 123” with “images related to album art” arranged from left to right). In addition, Chandhri Fig. 13 (shown below) teaches “an image-based browser 150 associated with applications . . . [T]he images 152 are icons that represent applications that can be launched on the electronic device” (second “content mode”). EX-1011, [139].

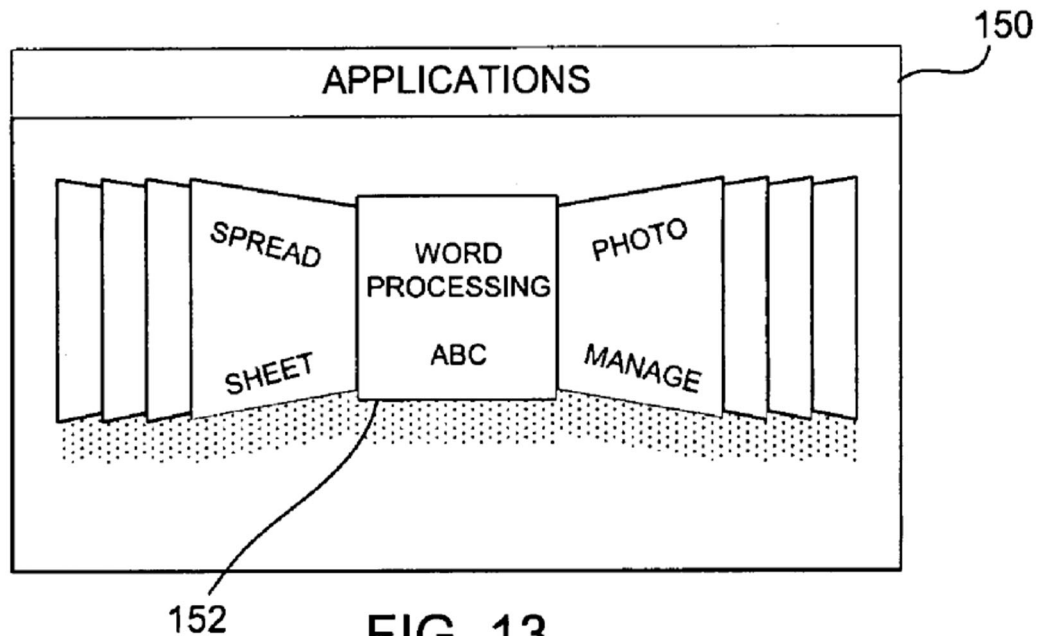


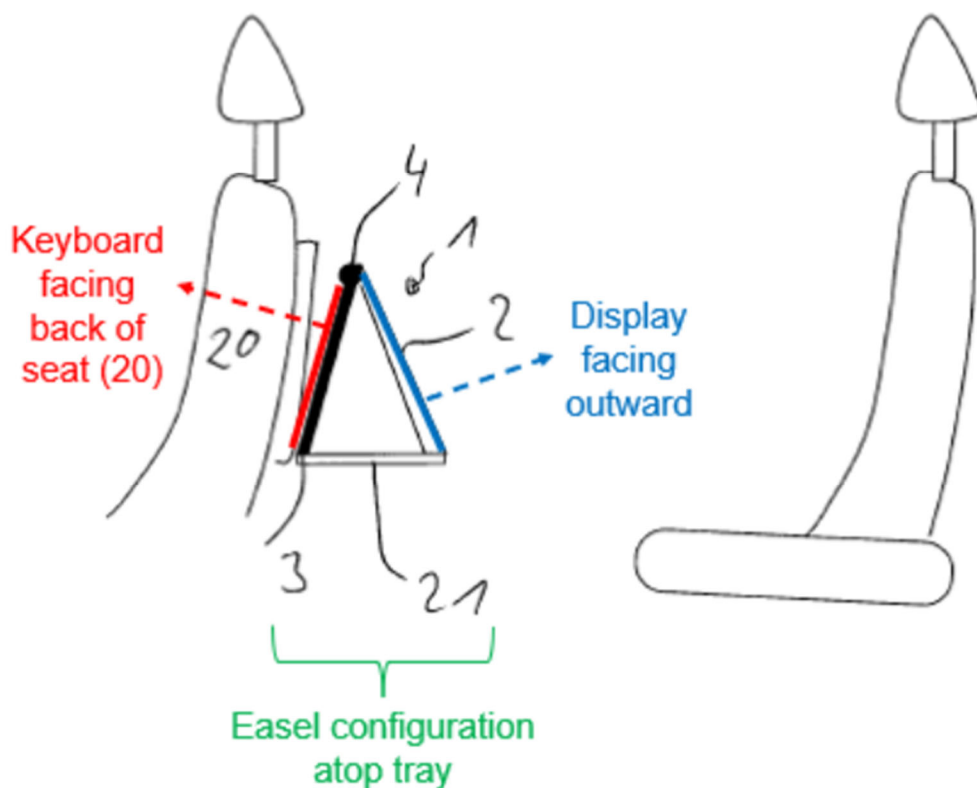
FIG. 13

In my opinion, a POSITA would have been motivated to combine the teachings of Chandhri with the Reavey-Chandhri-Pröll combination. Like Reavey and Pröll, Chandhri aims to improve the way a user interacts with an electronic device that contains large collections of data by “improv[ing] methods for browsing through content . . .” Chandhri, [0003]-[0004]. Further, in my opinion, a POSITA would have understood that “key goals in user-interface design are increase in speed of learning, . . . reduction of error rate, encouragement of rapid recall of how to use the interface, and increase in attractiveness” and, thus, would have been motivated to include teachings from Chandhri that further improved the way a user interacts with the Reavey-Chandhri-Pröll combination. *See* Foley, 391-92. For example, main menu 121 in Figure 10 of Chandhri (“home view”) makes use of a menu hierarchy that improves usability by giving the user a “sense of position within the hierarchy.” *See id.*, 365-66. In

addition, Figure 13 of Chandhri (“channel view”) improves usability by allowing a user to scan through visual depictions of applications rather than reading through “textual menu items. . . .” Chandhri, [0053] (“Image based browsing can provide efficient, graphical browsing (e.g., scrolling) through a group of digital items . . .”), [0139].

170. Where the Reavey-Chandhri combination does not expressly teach an easel configuration, Pröll does in Figure 7, which I annotated below. Pröll’s device includes two “housing halves” 2 and 3 that are folded in relation to each at approximately 270° (“easel configuration”). Pröll, [0052].

FIG. 7



As I explained in ¶¶166–168, a POSITA would have found it obvious to modify the

Reavey-Chandhri device to include the easel mode based on the teachings of Pröll, which would be further improved by implementing Chandhri's user-friendly, image-based browser to browse content while in the easel mode. A POSITA would have been motivated to use Chandhri's image-based browser to browse content while in the easel mode, at least because both in Pröll and in the Reavey device as modified by Chandhri and Pröll, the keyboard is not available to the user while in easel mode, making Chandhri's scrolling image-based browser ideally suited for that physical configuration. further improved by implementing Chandhri's user-friendly, image-based browser to browse content. Therefore, it is my opinion that the Reavey-Chandhri-Pröll combination discloses this limitation under MPF or non-MPF.

3. Claim 29

- a. ***29[a]: “The system of claim 28, wherein the system further comprises a portable computer configurable between a plurality of display modes including a closed mode, a laptop mode and an easel mode, wherein the portable computer comprises:”***

171. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 29[a]. As I discussed in ¶¶150–158 above, it is my opinion that the Reavey-Chandhri combination teaches the “system of claim 28.” As I explained in Section YY, Reavey teaches a plurality of display modes corresponding to physical configurations (e.g., laptop and flat) as in claims 1[f] and 26. These display modes correspond to different positions of a display and base relative to one another as a user rotates them about a longitudinal axis as in claim 26. Reavey, 7:45–62 (“the modes are set automatically when electronic book device 100 is opened”). As I explained in ¶¶169–0, the Reavey-

Chandhri is also foldable into an operable easel mode as taught by Pröll.

172. Reavey also teaches a closed mode. *Id.*, 6:56–57 (“electronic book device 100 is snapped closed”). In operation, Reavey’s device is opened (from a “closed mode”) to another mode (e.g., laptop mode). Reavey clearly shows a transition from a “closed mode” to any open mode it discloses as illustrate in the annotated figure below.

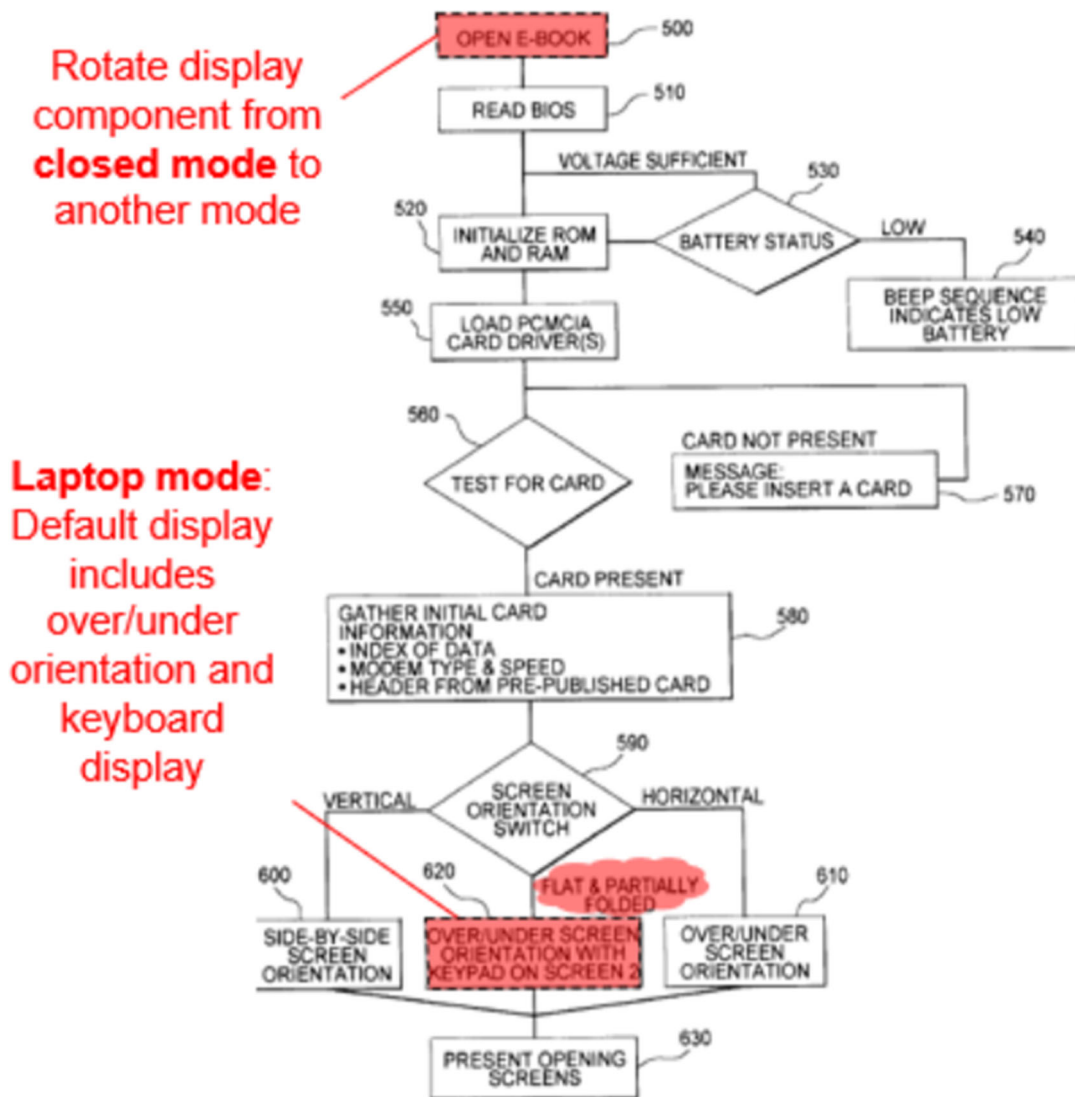


FIG. 9

173. Further, a user may return Reavey’s device to a closed mode as depicted in the figure (annotated) reproduced below. *Id.*, Fig. 8.

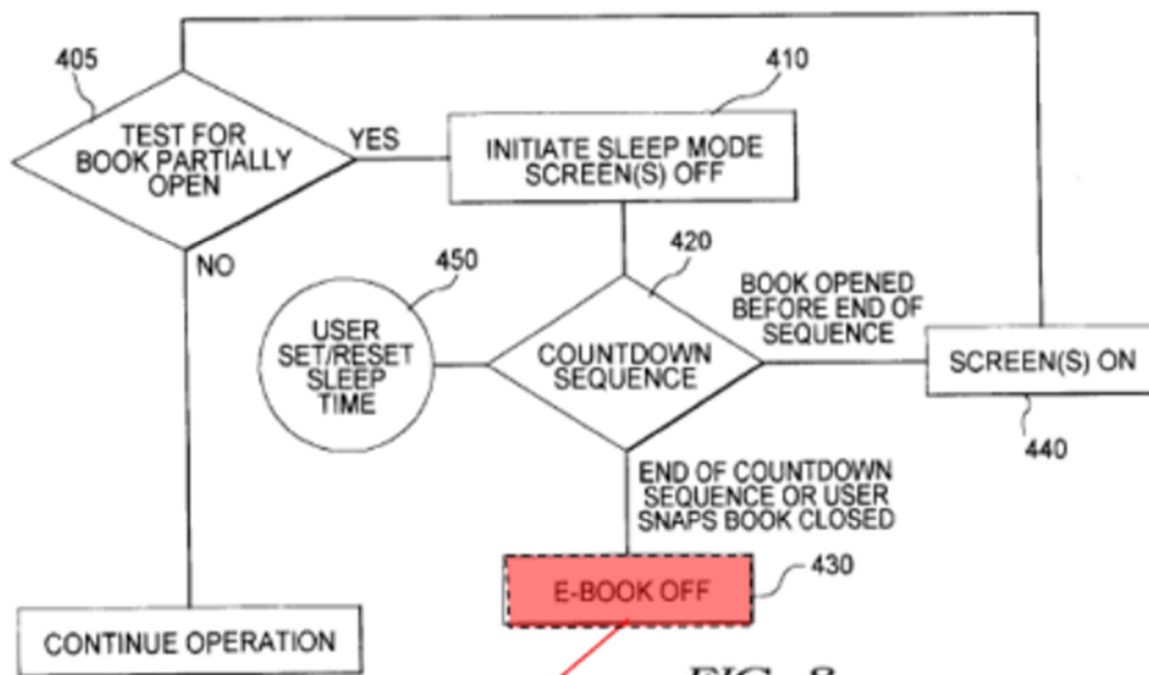


FIG. 8

Closed mode

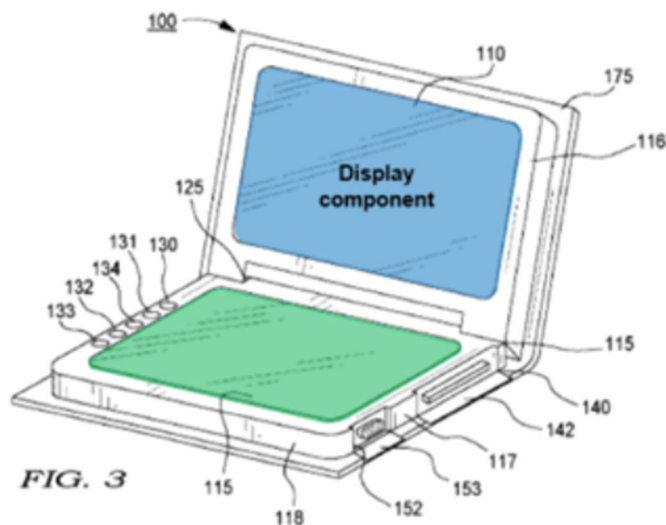
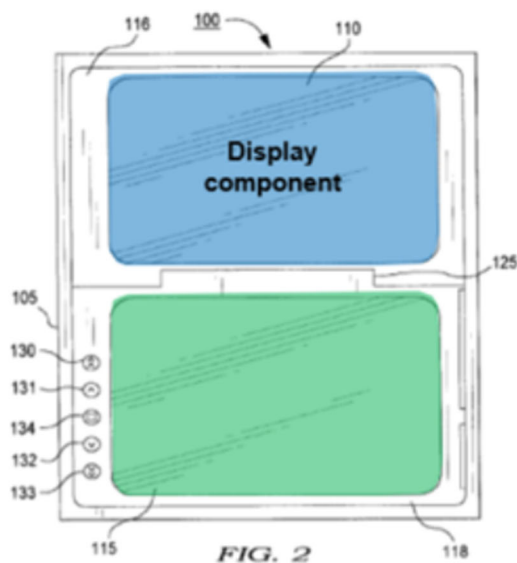
174. It is also my opinion that a POSITA would have understood Reavey does not intend for the steps to “Open E-Book” and “E-Book Off” to intend only that the device’s software processes are launched, powered on, or otherwise, but also that the e-book hardware device is physically rotated from a physically closed position (i.e., two halves folded together along the entirety of the half) into an open position (two halves no longer sharing any axes except the one along the hinge interface they share) because Reavey links the physical, rotational positions of the e-book to the activation and deactivation of its software processes. See Reavey, 6:37–43 (“Electronic book device 100, in the same manner as a book, is activated and deactivated by simply opening and closing electronic book device 100.”).

175. I note that Reavey also discloses the electronic book device “integrates the

look and feel familiarity of a book with advanced computer technology to create an easy to use, multi-functional and versatile tool for viewing information in the form of text and graphics” that further contains a rechargeable battery. Reavey, 4:39–55. A POSITA would have recognized Reavey’s electronic book device is portable because it is intended to be carried “in the same manner as a book” and like a “conventional book” but with “state of the art electronic technology” used to provide an “easy to read and use electronic device for reviewing various types of information” in a spectrum of places and with a variety of people, all powered using a limited battery charge to facilitate its mobility. Reavey, 2:66–3:12, 6:11, 6:40–43.

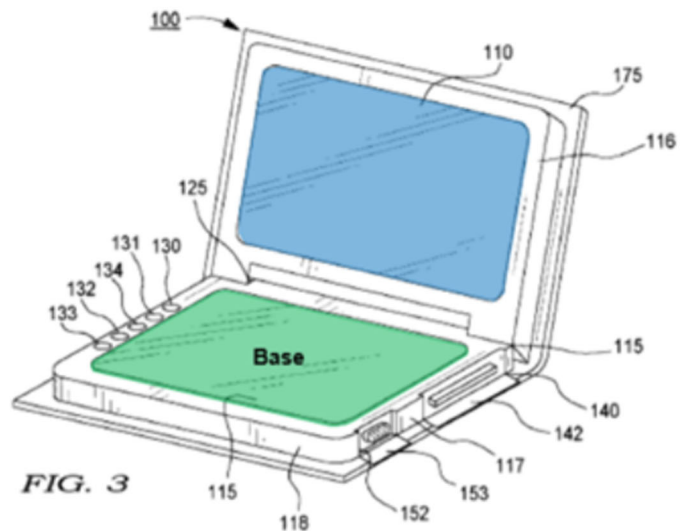
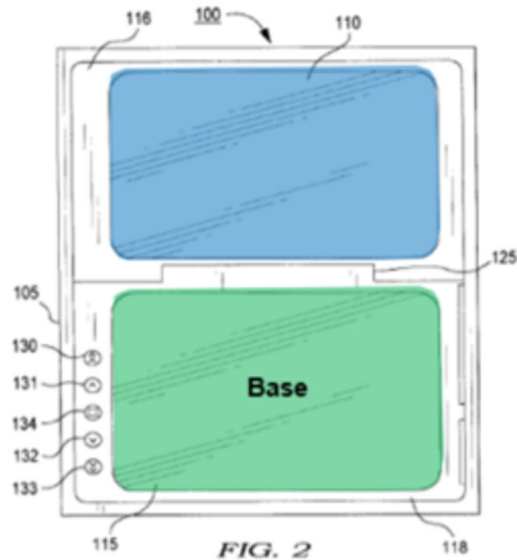
b. 29[b]: “a display component including a display screen;”

176. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 29[b] whether MPF or non-MPF. Reavey’s computing device includes a “dual screen display” with a first and second panel screen 110, 115 contained in housings 116 and 118 mechanically and electrically connected via hinge 125. Reavey, 5:32–45. I highlight Reavey’s panel screen positions within a housing in Figs. 2 and 3, below:



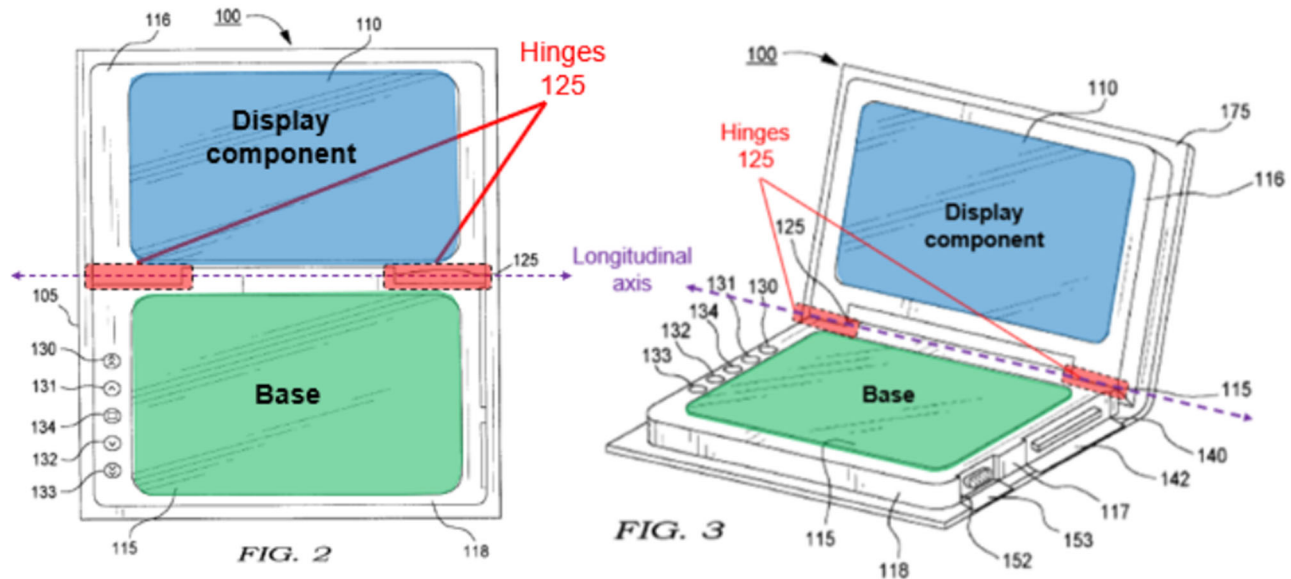
c. 29[c]: “a base;”

177. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 29[c]. As I explained in ¶176 when addressing claim 29[b], Reavey’s computing device comprises a dual-screen display. When the device assumes Mode 3 (laptop configuration), the “bottom panel” (which Reavey also refers to as a “bottom screen”) is used for data and text entry via a touchscreen keypad or keyboard. Reavey, 3:21–27; 7:53–62. It is my opinion that a POSITA would have understood the bottom panel or screen (which I annotate below) is a “base” upon which the laptop rests because Reavey discloses the device is “weighted such that it is balanced on a hard surface...to permit typing on the keyboard” by a user operating Reavey’s device in a conventional laptop configuration. Reavey, 7:59–62.



- d. ***29[d]: “a hinge assembly at least partially housed within the base and configured to pivotably couple the display component to the base;”***

178. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 29[d]. In my opinion, Reavey teaches a dual screen display device that electrically and mechanically connects two display screens placed within housings 116 and 118 that are further rotated via a hinge 125 placed at the joining, interfacing axis between the bottom (“base”) and top (“display component”) screens, the coupling of which enables Reavey’s device to be used in different operational modes according to different physical configurations. Reavey, 5:32-35, 7:24–31, Figs. 2–3 (annotated and combined versions reproduced below). As I annotated in the following figures, Reavey’s hinge 125 is partially contained within the base, as can be seen from the portions of the hinges that extend into the base component.



- e. ***29[e]: “wherein the display component is rotatable about a longitudinal axis running along an interface between the display component and the base”***

179. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 29[e] for the same reasons I described in ¶178 with respect to claim 29[d], above.

- f. ***29[f]: “wherein, in the closed mode, the display screen is disposed substantially against the base;”***

180. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 29[f]. As I explained in ¶¶171–175 when I addressed claim 29[a], Reavey teaches a closed mode because Reavey discloses physically shutting the electronic book. Reavey, Fig. 8 (430), 6:37–7:9 (“Off occurs when electronic book device 100 is snapped close”). Further, a POSITA would have understood Reavey teaches the computing device upper display screen is disposed substantially against the base display screen in a closed mode because this was a conventional position in both the laptop and paper book arts for a closed device or book, and a POSITA would have understood Reavey’s device closes like a book because Reavey compares its device to a standard book. 2:66–3:12, 6:11,

6:40–43.

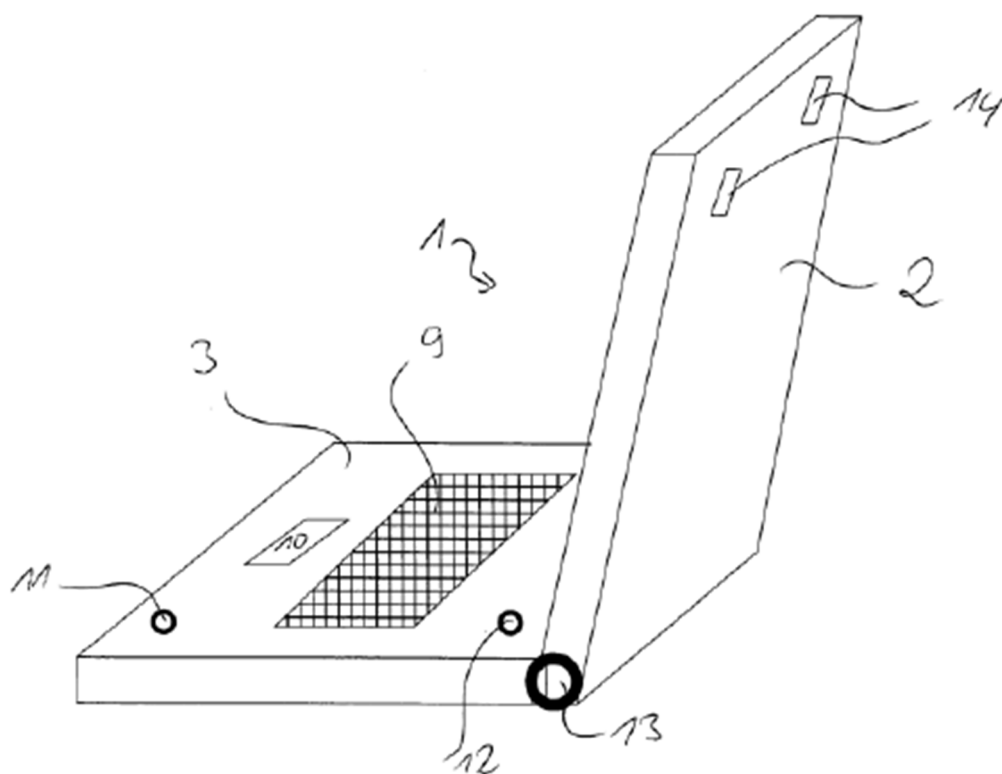
- g. ***29[g]: “wherein rotating the display component about the longitudinal axis up to approximately 180 degrees from the closed mode configures the portable computer into the laptop mode; and”***

181. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 29[g]. As I explained in ¶¶171–175 when addressing claim 29[a], I explained the Reavey-Chandhri device includes a closed mode that opens into a laptop mode. I also explained in ¶¶176–179 when I addressed claims 29[b]–[e] that the Reavey-Chandhri device rotates between a closed and laptop mode and back due to the hinge placed between its base and display components. I note that Reavey also discloses that a screen orientation switch detects whether the device is “flat & partially folded,” which configures the device into a “laptop configuration” described as an “over/under screen orientation with keypad on screen 2.” Reavey, 3:21–24, 7:45–53, 8:61–65, Fig. 9. The spring detent mechanism in the hinge of the device detects a degree of opening, such as “approximately at 120° open” when the device is in a laptop mode to “activate a touchscreen keypad on the bottom screen.” *Id.*, 7:53–58.

182. In my opinion, a POSITA would have easily understood Reavey’s disclosure of a “Mode 3” laptop mode that is “set on a flat surface and is partially opened” to an example angle of “approximately 120°” teaches a device configured into laptop mode when opened to an angle of “up to approximately 180 degrees” because “approximately” implies a range of degrees referring to a range of rotation spanning 0° (the initial closed position) to “approximately 180” (open position), and 120° falls

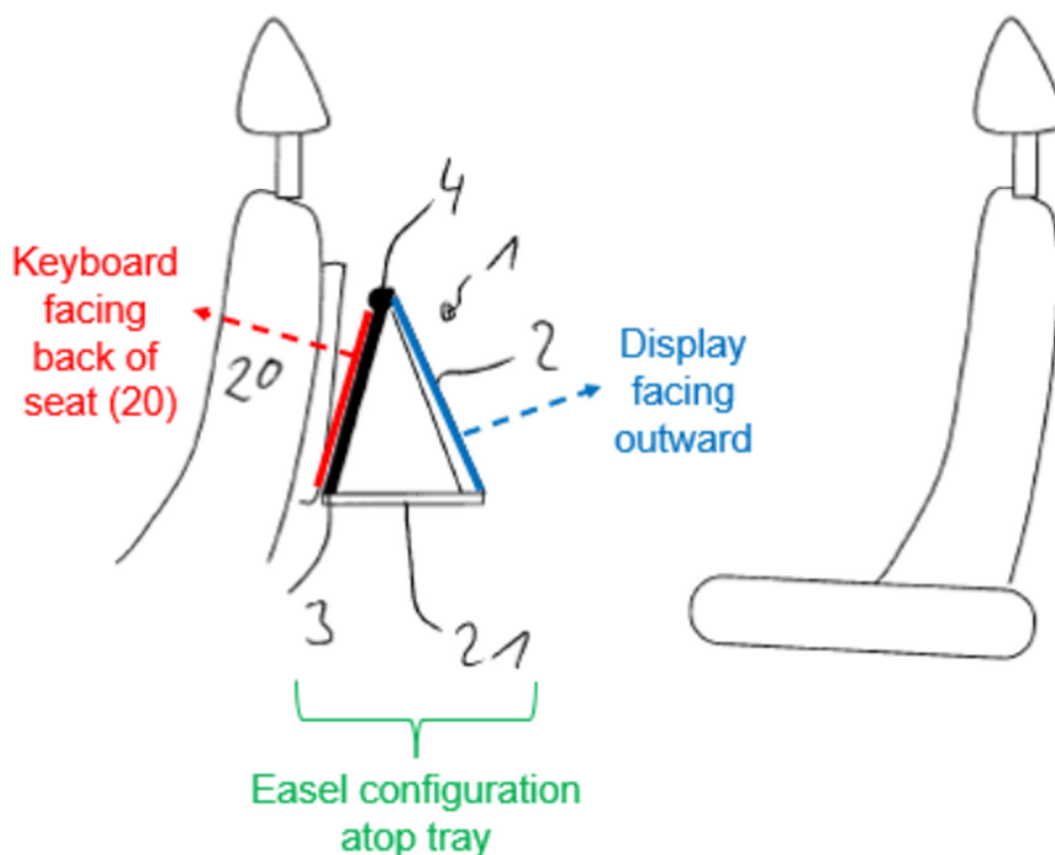
within that range. In fact, with no ascertainable bounds on “approximately” other than a reference point of 180° and approximate bounding of it, it is my opinion that a POSITA would have understood Reavey’s disclosure of “flat & partially folded” teaches “approximately 180 degrees” because “partially folded” falls within the broad range of “approximately 180 degrees” and still renders Reavey’s device operable as a “laptop” as the claim requires because it is configured into an “over/under screen orientation with keypad on screen 2.” Reavey, Fig. 9 (590, 620), 7:53–58.

183. However, should Patent Owner argue that Reavey’s disclosure is insufficient, it is my further opinion that Pröll discloses this claim limitation even more expressly. Pröll’s mobile data processing device is “folded open to 90 degrees wherein the first housing half 2 and the second housing half 3 of the mobile data processing device 1 assume an angle of approx. 90° in reference to each other.” Pröll, [0036]. Pröll’s device is configured into what a POSITA would have recognized as the ubiquitous form of a laptop computer in this orientation shown in Pröll’s Fig. 2, which I reproduced below.



184. Additionally, Pröll's laptop configuration is limited in its range in the same way as that of the claimed device because Pröll discloses that its portable computer operates in a different mode if the angle of its opening exceeds 180 degrees: "in the form of use as a portable computer with an angle between the first and second housing halves 2, 3 of more than 180° degrees, it is assumed that the display unit 5 is to be inserted into the device for holding the mobile data processing device 1, in this case the display on the display device must be rotated by 180° degrees since otherwise the display would be upside down." Pröll, [0049]. It is my opinion that this disclosure describes the easel configuration Pröll depicts in Fig. 7, which I annotated and reproduced below.

FIG. 7



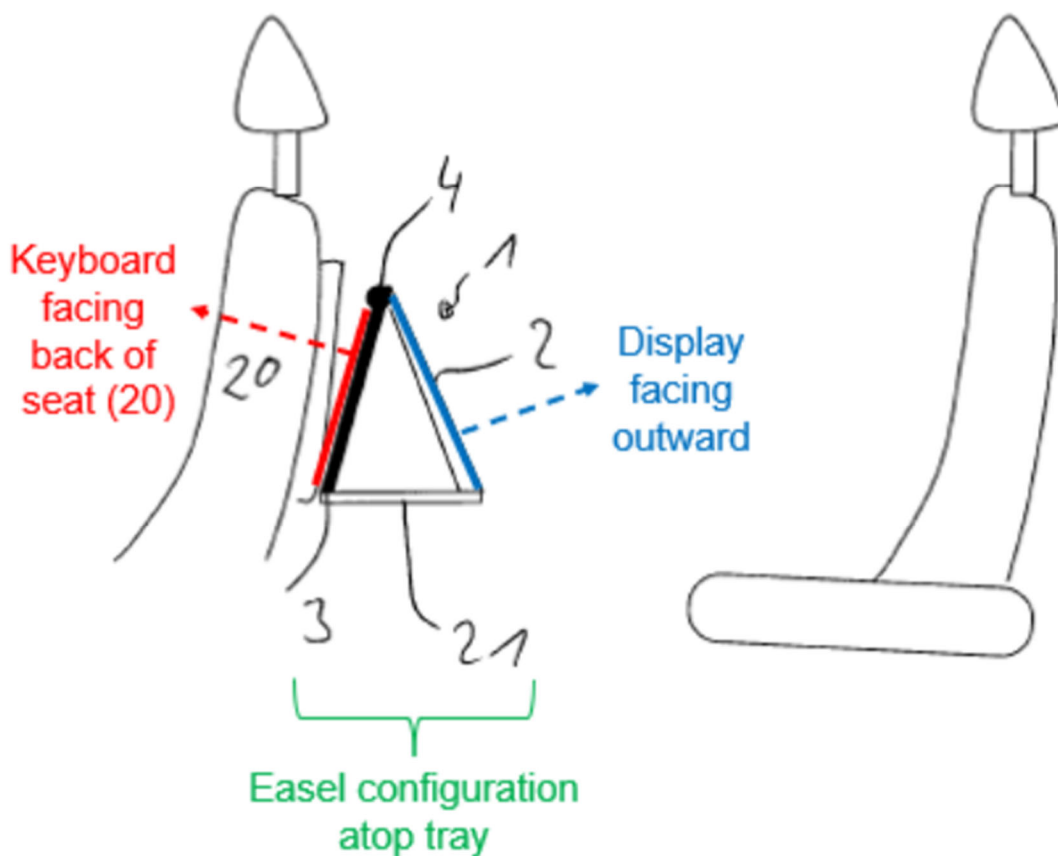
185. Thus, it is my opinion that a POSITA would have understood that Pröll's device operates in a laptop mode when it is rotated from a closed position to one "up to approximately 180 degrees" because Pröll's device cannot operate as a laptop beyond that range of opening.

- h. ***29[h]: "wherein rotating the display component about the longitudinal axis beyond approximately 180 degrees from the closed mode configures the portable computer into the easel mode."***

186. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 29[h]. As I explained in ¶¶171–175, 181–185 when I addressed claims 29[a] and [g], it is my opinion that Reavey discloses both a laptop mode and closed mode, and it would

have been obvious to implement Pröll's easel mode upon the Reavey-Chandhri device because Pröll further discloses rotating the display component beyond approximately 180 degrees into an easel mode as depicted in the figure (annotated) reproduced below. Pröll, Fig. 7.

FIG. 7

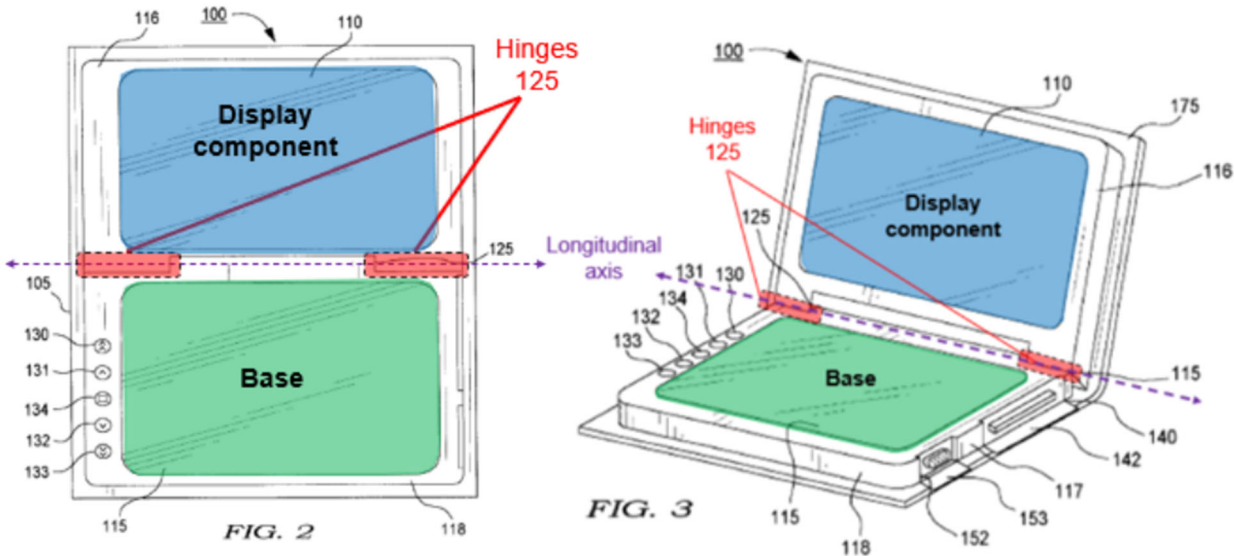


4. **Claim 30: “The portable computer of claim 29, wherein the single axis is a longitudinal axis running along an interface between the display component and the base; and wherein the display component is rotatable about the longitudinal axis.”**

187. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 30.

As I explained in Paragraph 179 discussing Claim 29[e], Pröll's computing device

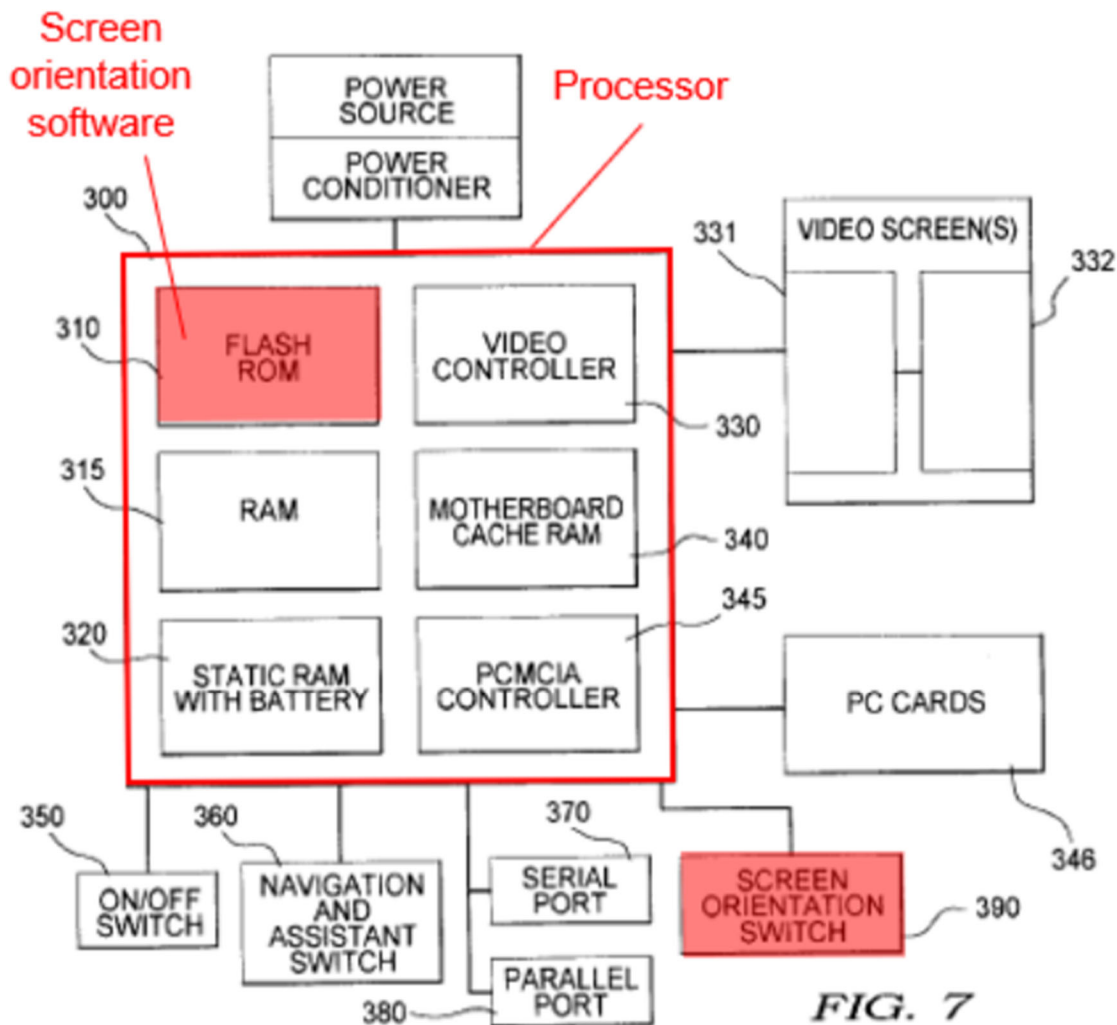
includes a hinge enabling rotation between a first and second half (the claimed “base” and “display”) as I annotated in Pröll’s figures 2–3 below.



5. Claim 31

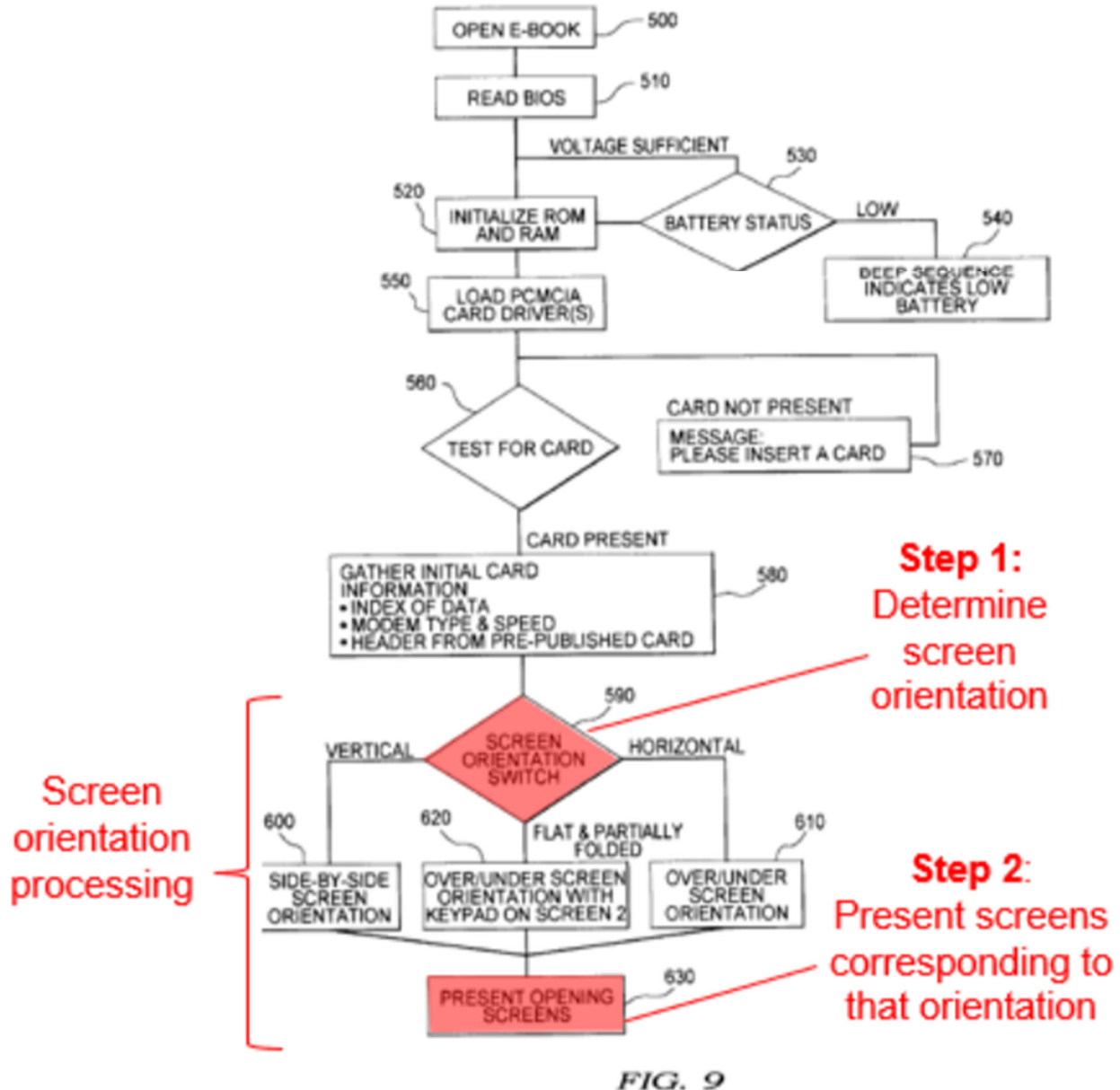
- a. ***31[a]: “The portable computer of claim 30, further comprising a display orientation module configured to control an orientation of the content displayed on the display screen;”***

188. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 31[a]. As I explained in ¶187, it is my opinion that the Reavey-Chandhri-Pröll combination teaches the “portable computer of claim 30.” Reavey teaches a “screen orientation switch” in communication with a CPU processor including a Flash ROM storing screen orientation software instructions for executing “screen orientation processing 390.” Reavey, 3:24–27, 6:11–18. I annotated and reproduced Reavey’s Fig. 7 to highlight these components below.



189. Reavey teaches the combination of screen orientation processing and multi-function gravity switches and hinge with embedded spring detent mechanism enables “[e]lectronic book device 100 [to] automatically rotate text and graphics on the display panel to change the screen orientation.” Reavey, 6:43–46, 7:24–31, 7:53–62. It is my opinion that automatic text and graphic rotation requires a preceding step of first detecting a screen orientation, then a subsequent step of presenting a user with opening screen corresponding to that orientation (e.g., whether or not the bottom screen has a keyboard displayed). See Reavey, 7:53–62 (describing keyboard appearance or

disappearance on bottom screen pending laptop or flat configuration, respectively), 8:61–66 (step that “determines what is the proper mode of electronic book device” and then which mode the device “should” be in). See also Reavey’s Fig. 9, which I annotated and reproduced below to show these two discrete steps.

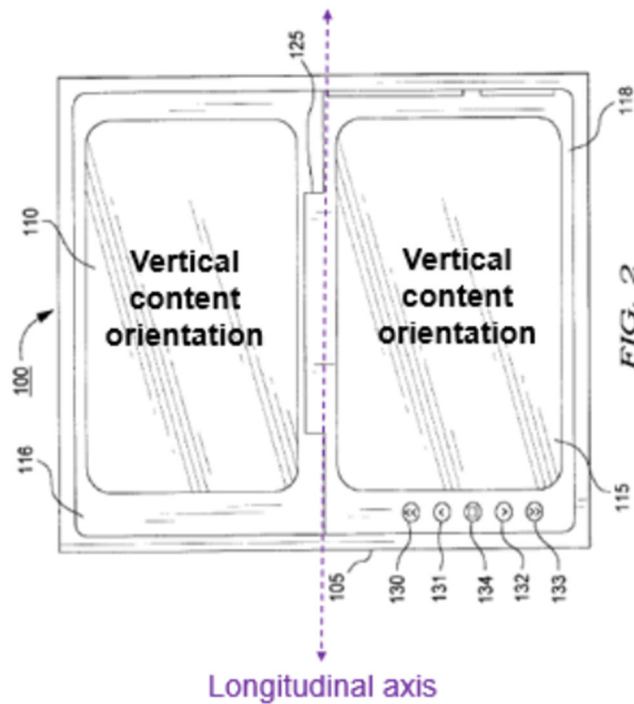
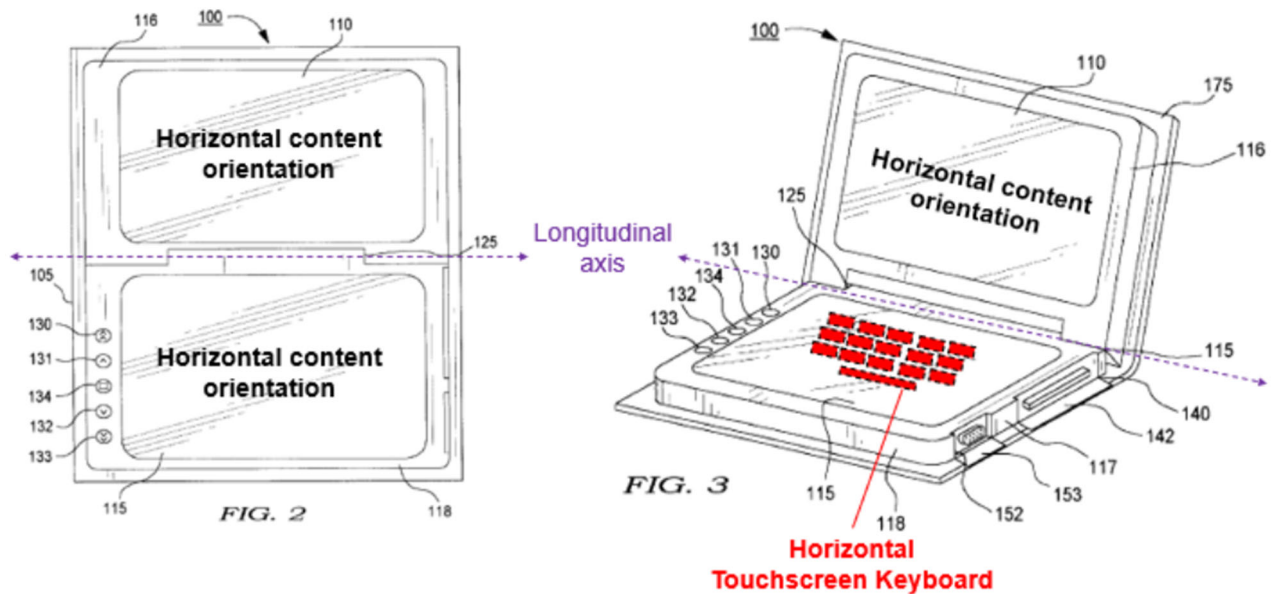


- b. *31[b]: “wherein the orientation of the content displayed on the display screen is configurable among a plurality of orientations relative to the longitudinal axis”*

190. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim

31[b]. As I explained in ¶¶178–179, 188–189 when addressing claims 29[d]–[e] and 31[a], Reavey controls the orientation of content displays on two screens responsive to a physical configuration of Reavey’s computing device with a hinge (the claimed, “longitudinal axis”). As I previously explained, Reavey also discloses the device “can automatically rotate text and graphics on the display panel to change the screen orientation” relative to three different modes. Reavey, 7:24–31. Reavey teaches two different orientations of text and graphics on the hinged device’s screens corresponding to two categorical modes. The first (which Reavey label mode 1) is a “side-by-side mode...having the display screen in a vertical position” and the second (which includes modes 2 and 3 omitting and including a keyboard, respectively) “over-under mode” with “horizontal positioning.” *Id.*, 1:11–15, 7:36–44.

191. Notably, each orientation of the content occurs on a display screen that runs parallel to the hinge of the device (the “longitudinal axis” required by the claim). As the physical configuration and orientation of the *device* changes, so does the axis of that device (e.g., vertical hinge in the side-by-side mode and horizontal hinge in over/under mode), and so does the orientation of the *content* corresponding go that device display following the orientation of that content (vertical axis = vertical (i.e., portrait) display of content, and horizontal axis = horizontal (i.e., landscape) display of content). I annotated in Reavey’s Figs. 2–3 and reproduced below to show the orientation of the *content* displays on Reavey’s device screens respective the orientation of the *device* (i.e., in side-by-side or over/under mode).



192. Should Patent Owner argue Reavey's disclosure does not teach the claim, it is my opinion that Pröll also teaches it. Pröll teaches that a horizontal content orientation is rotated 180° relative to the hinge when a switch detects the computing device transitions from, e.g., a laptop configuration into an easel configuration to avoid presenting content to a user upside-down. See Pröll, [0044] (describing using the

“mobile data processing device” as a “laptop”), [0049] (describing using the same “mobile data processing device” “in the form of...a portable computer” but rotated “more than 270°” into an easel configuration).

193. In my opinion, a POSITA would have found it obvious to implement Pröll's 180° (upside- down to right-side up), switch-triggered reorientation of content displayed upon the screen of the Reavey-Chandhri device because Pröll's device adds an easel mode to a device with existing modes and the existing ability to rotate text and graphics automatically in response to opening a screen to those modes, and therefore the Reavey-Chandhri computing device has a ripe configuration of hardware modes and software screen orientation processing components receptive to adding Pröll's easel mode using slight programming for the great benefit to users of using the Pröll device in a vehicle and righting otherwise and otherwise upside-down display of information while doing so.

6. Claim 32

- a. ***32[a]: “The portable computer of claim 31, wherein the plurality of orientations comprises a first orientation relative to the longitudinal axis and a second orientation relative to the longitudinal axis;”***

194. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 32[a]. As I explained in ¶¶190–193 addressing claim 31[b], it is my opinion that the Reavey-Chandhri-Pröll combination teaches the computing device has two categorical physical configurations including a “side-by-side” mode that uses a vertical screen orientation (the claimed, “first orientation”) and “over-under” mode that uses a

horizontal screen orientation (the claimed, “second orientation”).

- b. ***32[b]: “wherein when display orientation module is configured to automatically display the content in the first orientation when the portable computer is configured into the laptop mode and in the second orientation when the portable computer is configured into the easel mode.”***

195. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 32[b]. As I explained in ¶¶190–193 addressing claim 31[b], the Reavey-Chandhri-Pröll combination teaches a first, horizontal orientation of displayed content in an “over-under” type mode including when the computing device is configured as a laptop, and a second, vertical orientation of displayed content when the device is in a “side-by-side” type mode. I also explained in ¶¶169–0 addressing claim 26 that Pröll teaches an easel mode, which a POSITA would have found obvious to implement upon the Reavey-Chandhri device for the reasons I discussed there. Pröll further describes rotating a display of content 180° from a first view to a second view so that content is not display “upside down” when the computing device is placed into the easel mode. Pröll, [0049]. Therefore, it is my opinion that when the Reavey-Chandhri-Pröll device transitions from a laptop mode to an easel mode, it also reconfigures the orientation of the displayed content from one horizontal orientation (i.e., a horizontal orientation of content that is right-side up with respect to the hinge *under* the display, and a horizontal orientation of content that is right-side up with respect to the hinge *above* the display). I annotated this transition in the physical *device* and *content* orientations in Pröll’s Figs. 1 and 7, below.

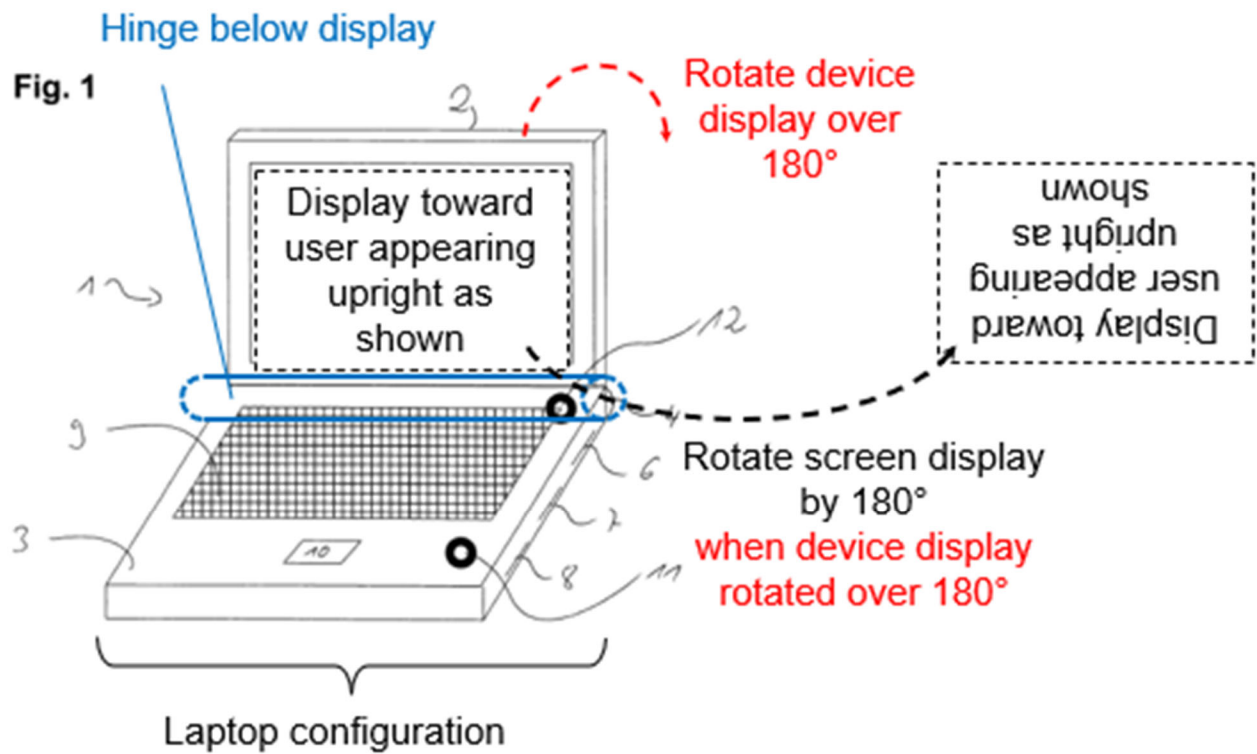
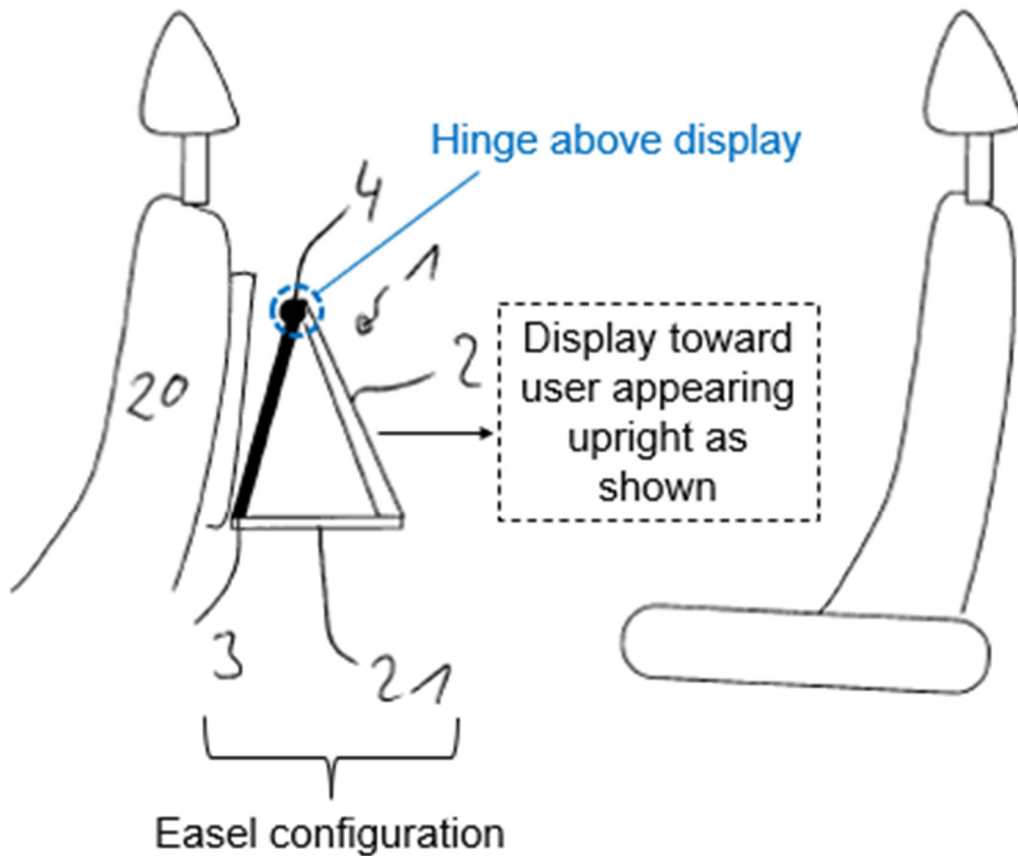


FIG. 7



196. As I explained in ¶¶166–0 above, a POSITA would have found it obvious to implement Pröll's 180°, (upside- down to right-side up) switch-triggered reorientation of content displayed upon the screen of the Reavey-Chandhri device because Pröll's device adds an easel mode to a device with existing modes predictably predisposed to add another using the existing screen orientation processing of the Reavey-Chandhri device existing to enable a user to read an otherwise upside-down screen as I depicted above.

7. **Claim 33: “The portable computer of claim 31, wherein the plurality of display modes further comprises a flat mode in which the display component is disposed at an angle of approximately 180 degrees, measured about the longitudinal axis, relative to the base.”**

197. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 33. As I explained in ¶¶166–168, a POSITA would have found it obvious to try integrating Pröll’s easel mode into those already taught by the Reavey-Chandhri device and using its existing screen orientation processing ensure a correct display of content.

8. **Claim 36**

- a. ***36[a]: “The portable computer of claim 31, further comprising a mode sensor configured to detect a degree of rotation of the display component relative to the base and to provide information representative of the degree of rotation; and”***

198. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 36[a]. As I explained in ¶¶169–0, 171–179 addressing claims 26, 29[a]–[e], the Reavey-Chandhri-Pröll combination teaches the “portable computer of claim 31” that opens two halves from a closed physical configuration into any one of a laptop, flat, and easel physical configuration due to their connect by a mechanically- and electrically-connecting hinge (the claimed, “longitudinal axis”). I also explained in ¶¶188–193 addressing claim 31[a]–[b] that the Reavey-Chandhri-Pröll combination uses a combination of computer-executable screen orientation software processing and mechanical sensor components (e.g., compressible spring and ball detent mechanism, multi-function gravity switches) to detect the amount of opening of the device (“degree of rotation of the display component relative to the base”) and provide a rotational

reading of, e.g., 120° (“information representative of the degree of rotation”).

- b. ***36[b]: “wherein the display orientation module is configured to automatically adjust the orientation of the content displayed on the display screen responsive to the information from the mode sensor.”***

199. In my opinion, the Reavey-Chandhri- Pröll combination teaches claim 36[b]. As I explained in ¶¶188–189 when addressing claim 31[a], the Reavey-Chandhri-Pröll device automatically adjusts the orientation of content displayed on a screen responsive a degree of the device’s opening.

9. Claim 37

- a. ***37[a]: “The portable computer of claim 36, wherein the display orientation module is configured to: automatically display the content in a first orientation relative to the longitudinal axis responsive to the information indicating that the degree of rotation of the display component is less than approximately 180 degrees relative to the base; and”***

200. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 37. As I explained in ¶¶181–185 addressing claim 29[g], the Reavey-Chandhri-Pröll combination teaches a portable computer with a laptop configuration when the device is opened to approximately 180 degrees. Further, as I explained in ¶¶188–189 addressing claim 31[a], the Reavey-Chandhri-Pröll combination teaches a display orientation module that automatically displays content in an orientation relative to any (including a laptop) physical configuration of the device.

- b. ***37[b]: “automatically display the content in a second orientation relative to the longitudinal axis responsive to the information indicating that the degree of rotation of the display component is greater than approximately 180 degrees relative to the base;”***

201. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim

37[b]. As I explained in ¶¶169–0 addressing claim 26, the Reavey-Chandhri-Pröll combination teaches an easel configuration when the device is opened beyond 180 degrees to approximately 270 degrees as in claim 26. Further, I explained in ¶¶188–193 addressing claims 31[a]–[b] that the Reavey-Chandhri-Pröll combination teaches a display orientation module that automatically changes the display of content in response to a change in physical configuration of the device (i.e., a change in mode).

c. 37[c]: “wherein the second orientation is at approximately 180 degrees relative to the first orientation.”

202. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 37[c]. As I explained in ¶¶190–193 addressing claim 31[b], the Reavey-Chandhri-Pröll device rotates the orientation of content displayed on a screen by 180° when the device is rotated into an easel mode to ensure that content is not upside down relative to a user’s view.

203. As I explained in ¶¶166–168, a POSITA would have found it obvious to implement Pröll’s 180° (upside- down to right-side up), switch-triggered reorientation of content displayed upon the screen of the Reavey-Chandhri device because Pröll’s device adds an easel mode to a device ripe for adding another mode using the existing screen orientation processing of the Reavey-Chandhri device existing to enable a user to read an otherwise upside-down screen.

10. Claim 38

- a. ***38[a]: “The portable computer of claim 31, further comprising a mode sensor configured to detect a current display mode of the portable computer; and”***

204. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 38[a]. As I explained in ¶¶188–189, 198–199 when addressing claims 31[a] and 36, the Reavey-Chandhri-Pröll combination teaches a configuration combining screen orientation processing, multi-function gravity switches, and a hinge with embedded spring detent mechanism (“mode sensor”) to determine the current physical configuration of the computing device (“current...mode”), each of which has specific display attributes as determined by Reavey’s screen orientation processing hardware and process.

205. Should Patent Owner argue the Reavey-Chandhri-Pröll combination detects a current mode but not a current *display* mode (i.e., detection of the physical configuration, but not how information is displayed), it is my opinion that Reavey teaches both. The evidence arises from the purpose for reconfiguring the device. A POSITA would have understood the Reavey-Chandhri-Pröll device includes a hinge spring detent mechanism embedded in the hinge and multi-functional gravitational switches (“sensors”) to detect both the current physical configuration of the computing device and its associated display of content because each mode has a symbiotic and exclusive relationship with each way it displays content to achieve the best viewability given a corresponding configuration (e.g., reserving keyboard display for a laptop configuration in which a user may actually access and use that keyboard, which is

extremely difficult in the easel configuration). Reavey, 7:53–62

206. Following, a POSITA would have understood the Reavey-Chandhri-Pröll device’s hinged, portable computing device is intended to be reconfigured into any of a number of different physical configurations at any given time by a user employing the device in any of a number of environments to view information in any of a number of ways. Stated in different terms, more device modes creates more opportunities for more use of the same device in more situations. *See, e.g.*, Reavey, 3:10–12 (describing the purpose of providing a user “an aesthetically pleasing, easy to read and use electronic device for reviewing various types of information”), 3:13 (“The device can be used in multiple configurations.”), 3:28–29 (“Activation and deactivation is accomplished by the opening and closing of the device, respectively.”). As one example, a POSITA would have understood the multiple orientations of the Reavey-Chandhri-Pröll device would have helped a real estate agent fold a laptop closed for portability between client visits, display large images of a property for sale in flat, vertical scrolling mode, write up a real estate contract with a word processing application and keyboard in laptop mode, and share that contract with a client property purchaser in easel mode.

- b. ***38[b]: “wherein the display orientation module selects the orientation of the content displayed on the display screen from one of the plurality of orientations relative to the longitudinal axis responsive to the current display mode detected by the mode sensor.”***

207. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 38[b]. As I explained in ¶¶188–189 addressing claim 31[a], the Reavey-Chandhri-Pröll portable computing device detects a physical configuration mode and selects a

corresponding display orientation. I also explained in ¶¶190–193 addressing claim 31[b] that the device displays content in different orientations relative to the hinged axis of the device responsive to the physical configuration of the device. Further, as I explained in ¶¶204–206 addressing claim 38[a], the Reavey-Chandhri-Pröll combination teaches a configuration combining screen orientation processing, multi-function gravity switches, and a hinge with embedded spring detent mechanism (“mode sensor”) to determine the current physical configuration of the computing device.

208. In my opinion, a POSITA would have found it obvious to try integrating Pröll’s easel mode into those already taught by the Reavey-Chandhri device and using its existing screen orientation processing ensure a correct display of content as I explained in ¶¶ 166–168, above.

11. Claim 39: “The portable computer of claim 30, wherein plurality of display modes further comprises a closed mode; and wherein, in the closed mode, the display screen is disposed substantially against the base.”

209. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 39. Claim 39 recites limitations that are similar limitations to 29[a] and 29[f], which I discussed in ¶¶171–175, 180. In my opinion, claim 39 is taught in the prior art for the same reasons discussed in those Sections.

12. Claim 40

- a. ***40[a]: “The portable computer of claim 39, wherein rotating the display component about the longitudinal axis up to approximately 180 degrees from the closed mode configures the portable computer into the laptop mode; and”***

210. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 40[a]. Claim 40[a] recites a similar limitation to 29[g], which I discuss in ¶¶181–185. In my opinion, 40[a] is taught in the prior art for the same reasons discussed in those paragraphs.

- b. ***40[b]: “wherein rotating the display component about the longitudinal axis beyond approximately 180 degrees from the closed mode configures the portable computer into the easel mode.”***

211. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 40[b]. Claim 40[b] recites a similar limitation to 29[h], which I discuss in ¶¶186. In my opinion, 40[b] is taught in the prior art for the same reasons discussed in those paragraphs.

13. Claim 41: “The portable computer of claim 40, wherein the display component is rotatable about the longitudinal axis up to approximately 320 degrees from the closed mode.”

212. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 41. As I explained in ¶¶212–213, the Reavey-Chandhri-Pröll device has two halves rotatable about a hinge from a closed position to a position of “more than 270° degrees” to each other to assume an easel-type configuration as in claims 26 and 29[a]. Pröll further discloses that the first and second housing halves can be swiveled in reference to each other about a hinge by “by “almost 360°,” “approximately 360° degrees,” and

by “**nearly** 360 degrees.” Pröll, Abstract, [0026], [0033], [0037], [0039], [0051], claim 1, claim 11 (emphases added).

213. A POSITA would have readily understood that rotation of Pröll’s display component 5 in housing half 2 from a closed position to a degree of opening beyond 270° but almost, approximately, or nearly 360° establishes a range of opening angles spanning roughly 270° – 360°, of which “approximately 320 degrees” falls within. *Id.*, 7:53–58.

14. Claim 52: “The portable computer of claim 29, further comprising: a foot disposed along at least a portion of the base and configured to support the portable computer when in the easel mode.”

214. In my opinion, the Reavey-Chandhri-Pröll combination teaches claim 52. As I explained in ¶¶169–186 when I addressed claims 26 and 29, the Reavey-Chandhri-Pröll combination teaches a portable computer and easel mode. Additionally, when describing the easel configuration embodiment Pröll teaches or suggests the use of “at least one foot...arranged on the corresponding setup edges” of the “mobile data processing device 1” when it is placed upon a tray folded down from the back of a seat to provide “secure stability and support” for the device and further provide “anti-slip protection” when in the easel configuration of Fig. 7. Pröll, Fig. 7, [0054] (emphasis added).

215. A POSITA would have found it obvious to try integrating Pröll’s easel mode into those modes already taught by the Reavey-Chandhri device and using its existing screen orientation processing to ensure a correct and convenient display of

content in a space-constrained, vehicle-based scenario as I explained in ¶¶166–168, above.

C. Ground 3: Obviousness over Reavey, Chandhri, Pröll, and Lane (Claim 42)

1. Motivation to Combine

216. In my opinion, a POSITA would have been motivated to modify the single-axis hinge of the Reavey-Chandhri-Pröll portable computing device with the double-axle, double-axis hinge of the Lane computer. Specifically, Lane teaches the same “display modes” as the Reavey-Chandhri Pröll combination (closed, laptop, flat, easel), and thus implementing Lane’s type of electrical- and mechanically-coupled hinge would predictably allow the device to be uncoupled and reconfigured into even more modes obvious to a user to try. Reavey, Figs. 2–3 3:62–64; Pröll, Fig. 7, [0033]–[0034], [0041]; Lane, 10:32–11:16, Figs. 22–24, 26.

217. Further, a POSITA would have had a reasonable expectation of success combining the Reavey-Chandhri-Pröll device and its detected modes and screen orientations with Lane’s additional modes and detected screen orientations as known improvements to like devices to achieve a predictable, increasingly ergonomic and adaptive user computing device usable in more environments. Specifically, the Reavey-Chandhri-Pröll device is predisposed to changing orientations of content displayed upon a screen responsive to a detected change in physical configurations of the device (modes), the same components and process of which provide a user more configurations of the computing device using Reavey’s existing screen orientation processing

software, Pröll's switch-based 180° displayed screen rotations, and Lane's "position-indicating mechanism" for determining whether information should be displayed in portrait or landscape position. Reavey, 6:43–46, 7:24–31, 7:53–62; Pröll, Fig. 7, [0049]; Lane, 5:23–6:6.

218. Further, a user would have been motivated to substitute Lane's two-axle, two-axis hinge for that in the Reavey-Chandhri-Pröll combination because it is designed to mechanically and electrically **couple** the two halves of the computing system to more easily facilitate a 0-360° rotation half with respect to each other and attain more configurable modes of operation, but also preserve the ability to cleanly and easily **decouple** the halves using a "snap" and "clamp" type attachment, which (i) reduces the cost of replacing either half should one fail to operate, (ii) allows a user to upgrade only the respective half with technological improvements available for its respective components, and (iii) allow a user to "mix and match" the two components making up the two halves of the portable computer because each half may be decoupled from the other half and replaced, upgraded, or used with a different half on a modular basis. Lane, 2:26–3:4, 6:25–7:2.

219. Finally, a POSITA would have recognized that implementing Lane's two-axle, two-axis hinge would have a significant advantage of conventional decoupling techniques. For example, conventional decoupling or disassembly techniques would require a series of steps involving unscrewing several screws and unplugging interconnected cables in various parts of the computing device. EX-1023, 5.11. Thus, a

POSITA would have recognized that adopting Lane's two-axle, two axis hinge instead would have allowed the user to mix and match displays faster and more efficiently depending on the user's preferred personal or business application. In my opinion, a POSITA also would have recognized that Lane's mechanism would have mitigated the risk of user error in decoupling the display (*e.g.*, losing or stripping screws, breaking components during disassembly, etc.)

2. Claim 42

a. *42[a]: "The portable computer of claim 30, wherein the longitudinal axis comprises multiple parallel axes; and"*

220. As I discussed above in ¶187, the Reavey-Chandhri-Pröll combination teaches the "portable computer of claim 30" where "the display component is rotatable about the longitudinal axis." In my opinion, Lane further teaches or suggests a computer system with a display component that rotates about "multiple parallel axes," as recited in 42[a].

221. Lane teaches a first axis of rotation 58 and second, parallel and adjacent axis of rotation 62 contained within connector 54 that mechanically and electrically couples two separate modules of a computer together. Lane, 3:5–6, 6:7–36, Fig. 3 (annotated version reproduced below).

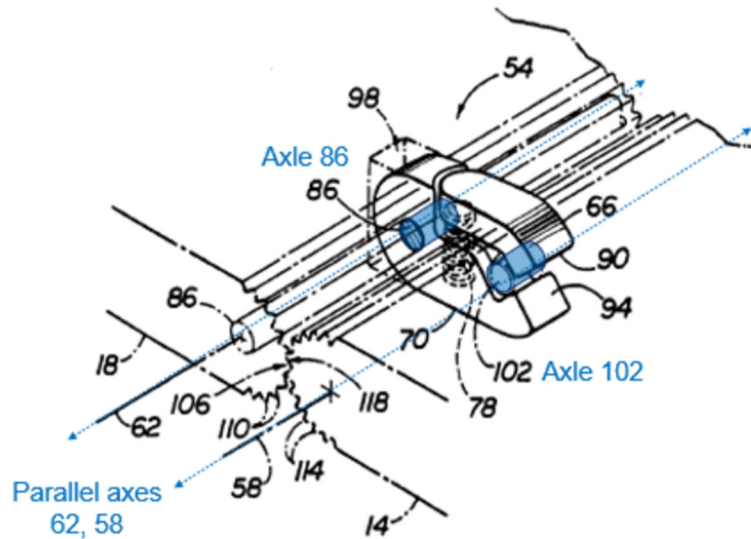


FIG 3

222. In my opinion, it would have been obvious to a POSITA to modify the single-axis hinge of the Reavey-Chandhri-Pröll portable computing device with the double-axle, double-axis hinge of the Lane computer for the reasons I discussed in ¶¶216–219 above.

- b. ***42[b]: “wherein the hinge assembly is configured to permit rotation of the display component about any of the multiple parallel axes to configure the portable computer between the plurality of display modes.”***

223. In my opinion, the Reavey-Chandhri-Pröll-Lane combination further teaches claim 42[b]. Lane discloses the same “display modes” as the Reavey-Chandhri-Pröll combination (closed, laptop, flat, easel), and Lane further teaches configuring its portable device into those display modes by permitting rotation of the display component about the multiple parallel axes discussed in 42[a] above. Lane, 7:30–8:24, 10:10–31 Figs. 5–9, 19, 20, 21, 28 (annotated versions reproduced below).

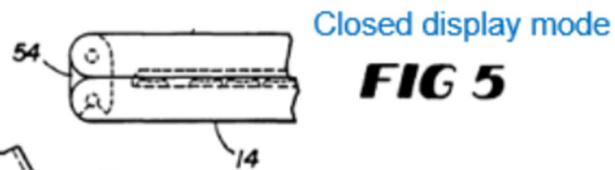


FIG 5

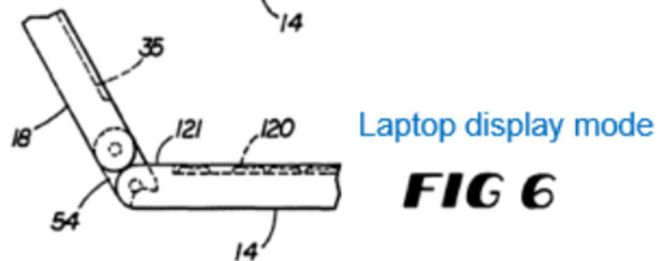


FIG 6



FIG 7

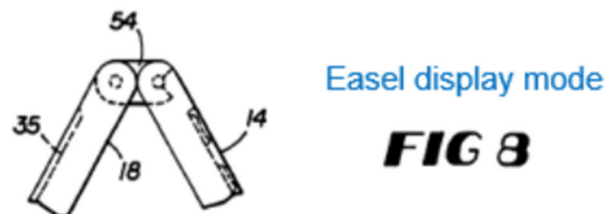


FIG 8



FIG 19

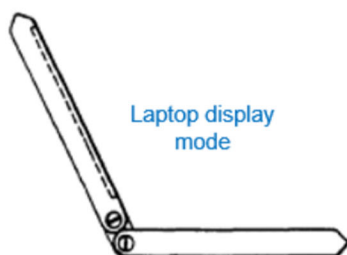


FIG 20

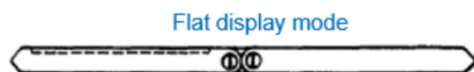


FIG 21

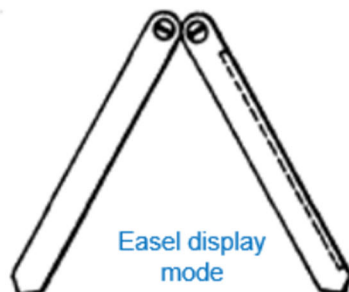


FIG 28

224. In my opinion, it would have been obvious to a POSITA to modify the Reavey-Chandhri-Pröll portable with Lane’s teachings for the reasons I discussed in ¶¶216–219 above (motivation to combine). Additionally, a POSITA would have found the combination obvious to try because Lane discloses the same physical configurations (closed, laptop, flat easel) but with a connector, and a POSITA would have recognized that Lane’s connector would improve the user’s speed and ease in altering the device configuration.

D. Ground 4: Obviousness over Reavey, Chandhri, and Preppernau (Claims 7, 10–13, 16, 18, 56)

1. Motivation to Combine

225. In my opinion, a POSITA would have been motivated to implement various user interface elements that Preppernau taught existed in the Windows Vista operating system into the Reavey-Chandhri device. Specifically, a POSITA would have recognized that Windows Vista was a well-known operating system available in five editions to personal and business laptop computer users before 2008 that was commonly installed on laptops as a default operating system, and widely used by business and consumer users. Preppernau, xi (“Windows Vista is the latest and greatest in the illustrious line of Windows operating systems from Microsoft ... [that] is specifically designed to fill the needs of both business and personal users.”), xii. Because Windows Vista was one of the most widely used operating systems in the years preceding the date of invention, a POSITA would have understood that a typical end user would have been familiar with the user interface elements described in Preppernau and would have

expected to have access to those user interface elements in a consumer electronic device. A POSITA would have recognized that providing familiar interface elements, including those described in Preppernau, would have improved user familiarity with the user interface because they were known elements arranged in known ways to satisfy common GUI objectives (e.g., minimizing hand and eye movement by reinforcing logical relationships with visual clarity), thereby making the device easier to use by the user and thereby increasing user satisfaction because a user would have found these elements. *See* Foley, 421. This would have furthered the purposes of Reavey and Chandhri to provide a user-friendly device with a variety of physical configurations and visual organizations. At least for these reasons, a POSITA would have been motivated to modify the Reavey-Chandhri device to include various interface features taught by Preppernau, as discussed further below.

2. Claim 7: “The user interface of claim 3, wherein the plurality of views includes a screen saver view configured to organize selected content modes for passive viewing.”

226. As I discussed in ¶¶132–135, in my opinion the Reavey-Chandhri combination teaches “the user interface of claim 3” and a “plurality of views” displaying “modes of content” as recited in claims 1 and 3. In my opinion, a POSITA would have found the additional limitations of claim 7 obvious based on Preppernau’s teachings.

227. Screen saver views were well known at the relevant time. Preppernau, 112–15 (describing selecting and managing a screen saver view), 121 (“You can choose from a number of screen savers that come with Windows Vista, download others from

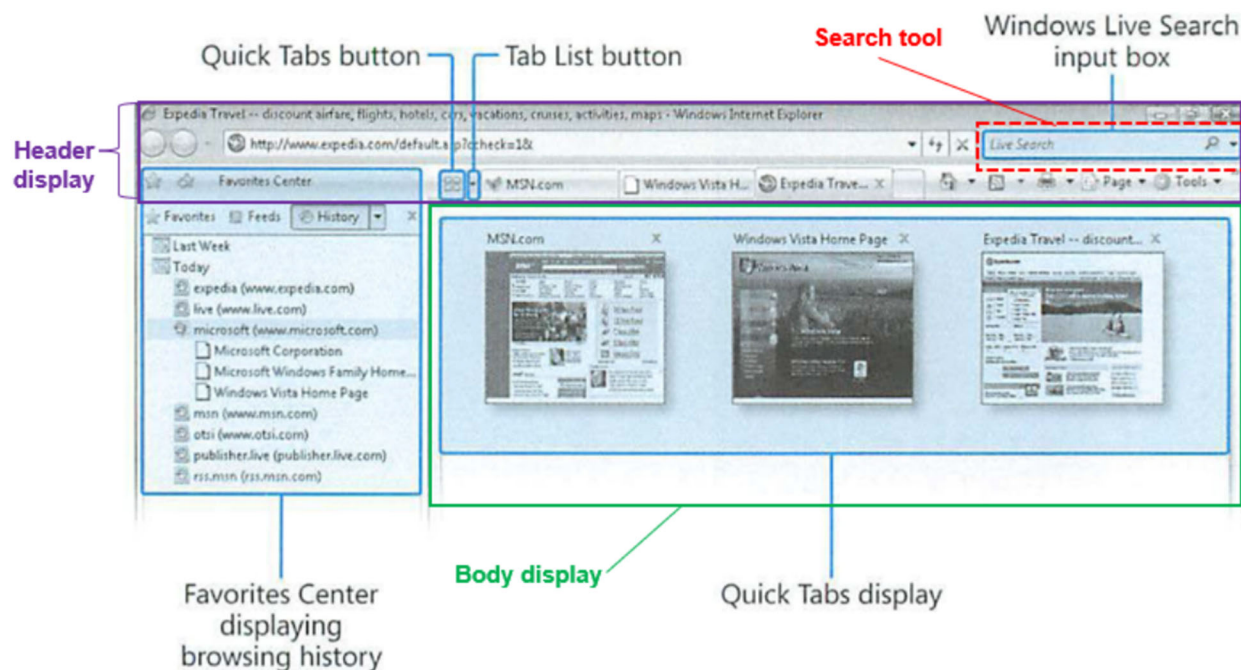
the Web, and display your own pictures as a screen saver.”). For example, Preppernau teaches that a user can display a slide show of specific images as the screen saver view. *Id.*, 113. In my opinion, a POSITA would have been motivated to apply a passive viewing mode, such as a well-known screen saver to the plurality of views in the Reavey-Chandhri combination because, for example, it would have amounted only to applying a known technique (e.g., passive viewing of content) to yield predictable results (e.g., a screen saver that displays selected content for passive viewing).

228. Additionally, a POSITA would have understood that choosing to display a slideshow of a user’s stored photos as a screen saver teaches a “media content mode” as in claim 3, which a user “select[s]...for passive viewing” as in claim 7. As Preppernau discusses, a user would have the option to curate and select which content is displayed as a screen saver Preppernau, 113–115, 121 (disclosing steps and choice for a user to create a screen saver slideshow from stored user photos).

229. Thus, a POSITA would have been motivated to implement a screen saver view from Preppernau in the Reavey-Chandhri combination because it was a predictable and well-known GUI element that a POSITA would have understood as user-friendly to browse content on the Reavey-Chandhri device in a more efficient and user-friendly manner. Preppernau, 182.

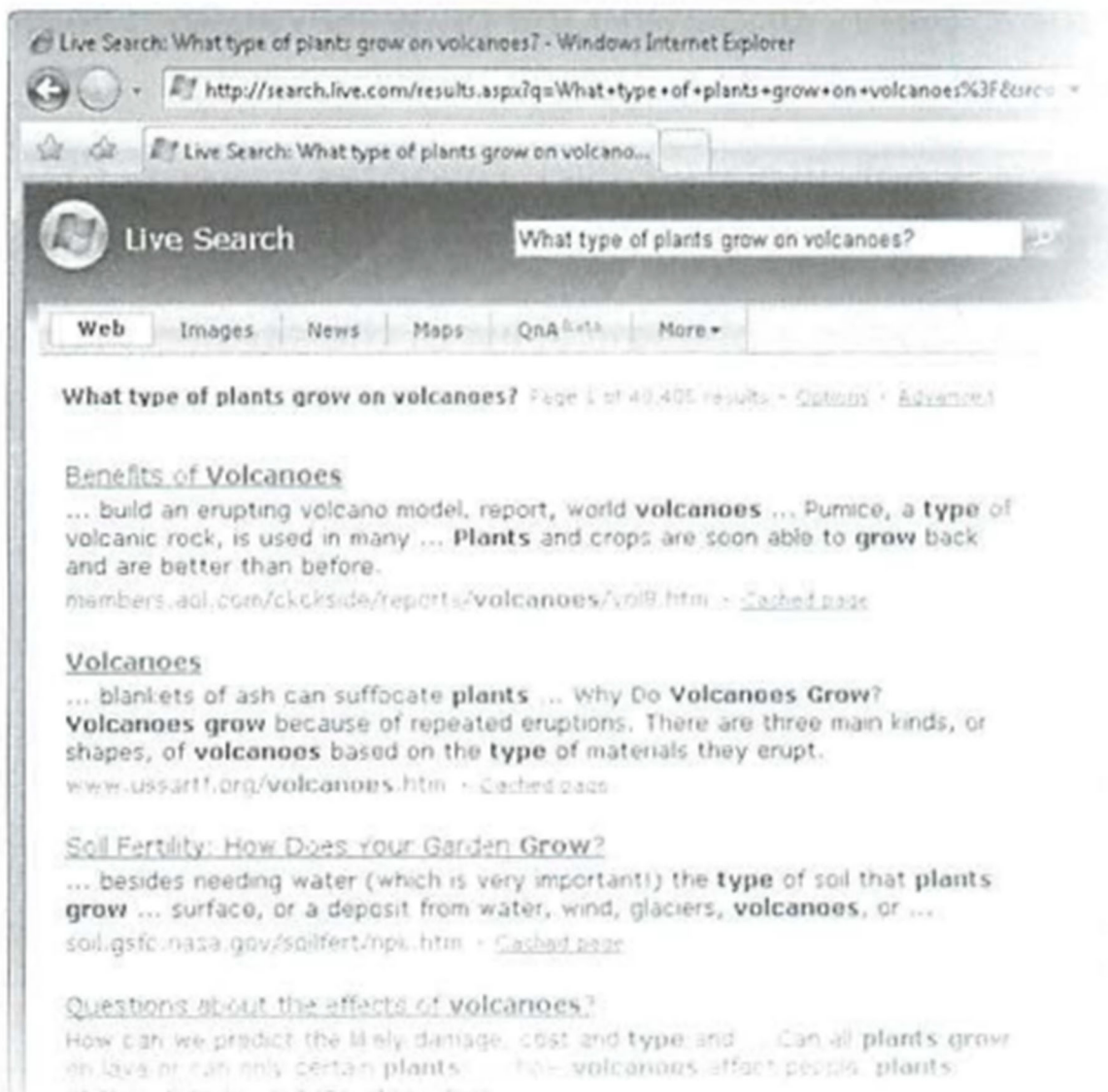
3. **Claim 10: “The user interface of claim 8, further comprising a search tool displayed in the header display, wherein the search tool is configured to accept search terms entered by a user and in response to execution, causes the computer system to navigate to a view of a first visual representation of digital content, wherein the digital content includes a search engine, and the search engine presents results for the search terms.”**

230. As I discussed above in ¶139, in my opinion the Chandhri-Reavey combination teaches “the user interface of claim 8.” In my opinion, Preppernau teaches the additional limitations of claim 10. As shown in the annotated figure below, Preppernau describes a “Windows Live Search input box” that allows users to search the internet for web pages based on a plain-text query entered by a user. Preppernau, pp. lv, 182–83.



231. To search for web pages (“digital content”), a user will first type a plain-text query into the Windows Live Search input box (“search engine”) shown above. *Id.*, 183. After the user clicks the Search button (“execution”), web pages containing content

related to the user's question ("results") is then displayed in the browser window ("navigate to a view of a first visual representation of digital content."). *Id.* I reproduced an example of the buttons used to search and generate search results below. *Id.*, 182.

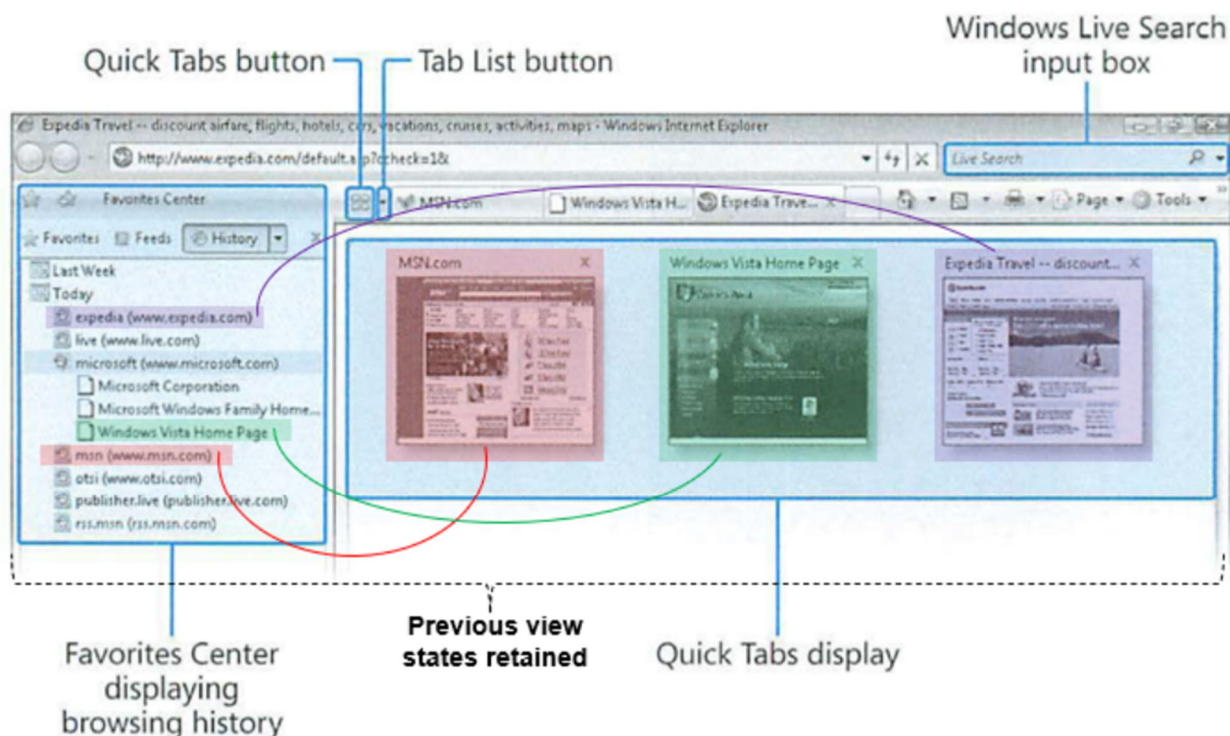


232. Preppernau teaches that in addition to Live Search, the user interface presents users with “two dozen” other search providers (“search engines”) to search for

and display digital content. *Id.* Therefore, in my opinion, a POSITA would have been motivated to implement Preppernau’s search functionality in the Reavey-Chandhri combination for the same reasons I discussed for claim 7 above.

4. Claim 11: “The user interface of claim 1, further comprising a storage component configured to retain a previous view state.”

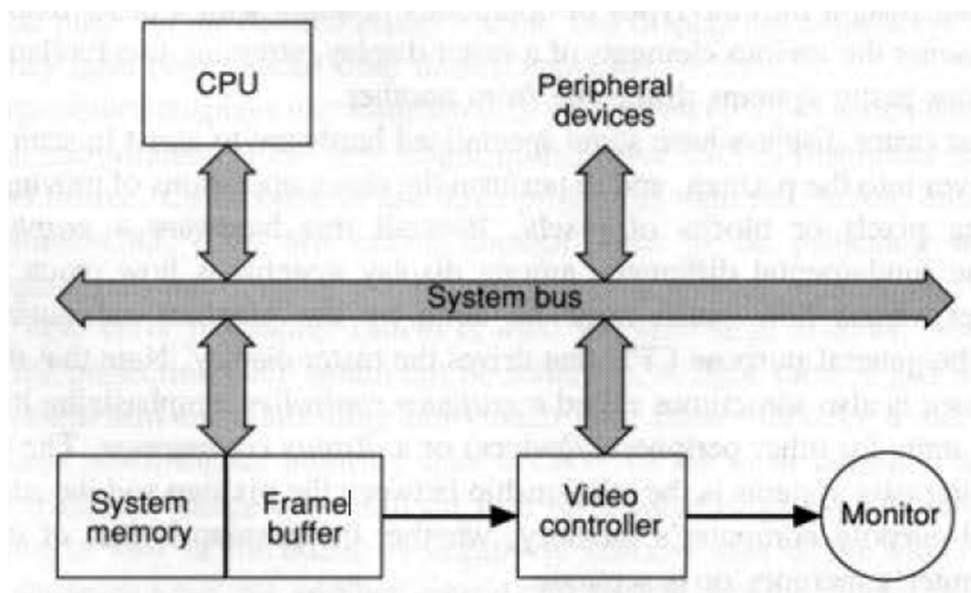
233. As I discussed above in ¶¶85–130, in my opinion the Reavey-Chandhri combination teaches “the user interface of claim 1.” As I explained in ¶¶92–96, Reavey further includes a memory (“storage component”) as in claim 1[b]. In my opinion, Preppernau teaches the additional limitations of claim 11 under MPF or non-MPF. As shown in the figure I annotated and reproduced below, Preppernau teaches that the Windows Vista Quick Tabs display includes thumbnails and tabs of previously-opened web pages (“previous view state”). Preppernau, 182.



234. A user’s past search results are “retain[ed]” and displayed on a “History

page” to the user. *Id.*, 184. The “History page” displays an alphabetical list of sites that a user has visited in the past 20 days, and the user can customize the number of days their browsing history is stored (from 0 to 999 days). *Id.* As shown above, a user’s past search results are temporally categorized by ‘Last Week’ and “Today.” *Id.*, 182. A user’s browsing history that is categorized under “Today” appear as thumbnails in the Quick Tabs display (e.g., “msn,” “Windows Vista Home Page,” “Expedia”). *Id.*

235. In my opinion, it was well known that computing systems required memory to store instructions that were then executed by the CPU. *See* Foley, 166 (“[t]he application program and graphics subroutine package share the system memory and are executed by the CPU”), Fig. 4.18 (reproduced below).



236. Thus, a POSITA would have understood computing systems, like the Reavey-Chandhri-Preppernau combination, required memory to retain operating system instructions for all functions included in a particular operating system (e.g., Windows Vista), including browsing history and Quick Tabs display functions,

Additionally, a POSITA would have been motivated to implement Preppernau's search history functionality in the Reavey-Chandhri combination for the same reasons I discussed in claim 7 above.

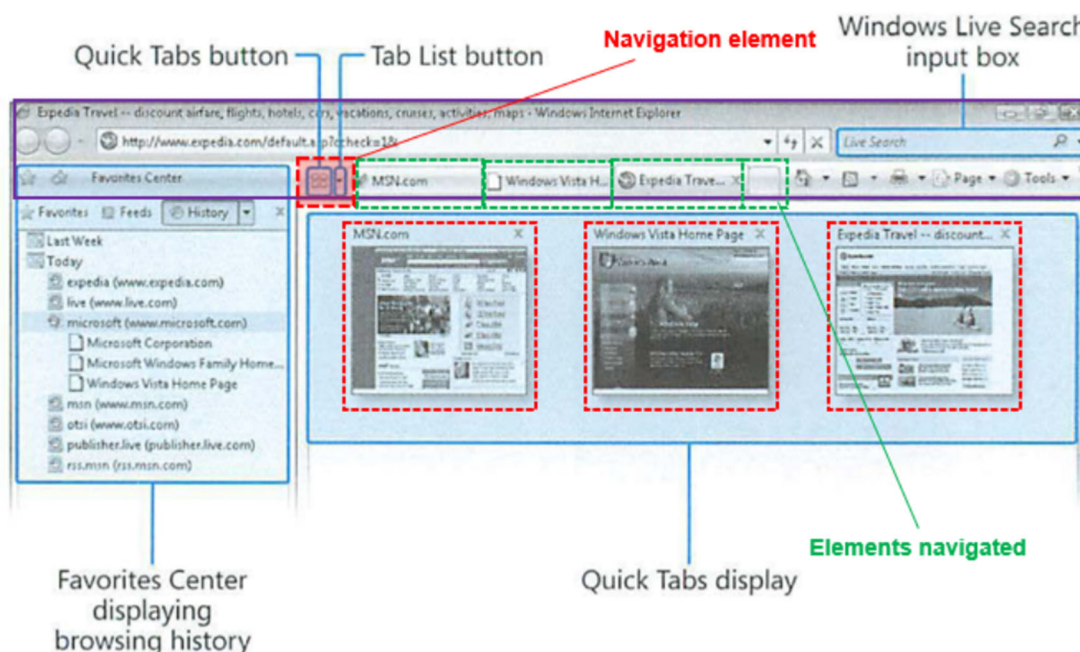
5. Claim 12: "The user interface of claim 11, wherein the execution component is further configured to cause the computer system to transition to a previous view in response to execution of a navigation element by a user."

237. In ¶¶110–111 above I explain that the Reavey-Chandhri combination teaches the "execution component" of claim 1, and I explained in ¶¶233–236 that the Reavey-Chandhri-Preppernau combination teaches "the user interface of claim 11" and "retain a previous views state." In my opinion, Preppernau teaches the additional limitations of Claim 12 under MPF or non-MPF.

238. As shown in the figure I reproduced below, the Windows Internet Explorer 7 interface allows the user to open multiple web pages linked to internet sites as "tabs." Preppernau., 170. Preppernau teaches that tabbed browsing allows the user to display multiple web pages through a single instance of Internet Explorer, making it convenient for the user to move between open sites by selecting from the tabs at the top of the browser window. *Id.* The interface will transition between previously opened tabs (past viewed digital content) as the user moves "backward and forward between those pages." *Id.* To use Preppernau's interface and corresponding navigation elements, a POSITA would have understood, and found it obvious, that a processor detects execution of a navigation element (e.g., a user clicking on a previously-viewed tab or the Quick Tabs button) and, based on the detection, change its view accordingly.



239. Preppernau also describes a Quick Tabs button that launches a Quick Tabs display of representative thumbnails of tabbed websites while maintaining those tabs above the thumbnails displayed. *Id.*, 175, 182. I have provided an annotated figure below showing user-selected (“execut[ed]”) tabs with corresponding thumbnails of previously viewed web sites (“previous view[s]”) created by selection of the Quick Tabs button (“navigation element”). *Id.*, 182.

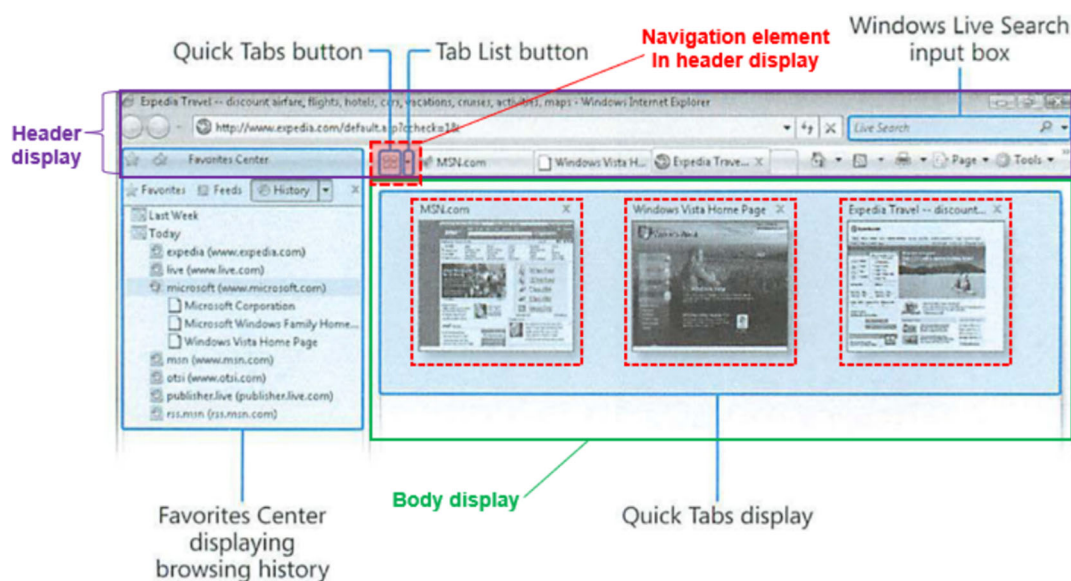


240. Thus, in my opinion, a POSITA would have been motivated to implement Preppernau’s tab-based internet browsing in the Reavey-Chandhri combination for the

same reasons I discussed in claim 7 above.

6. Claim 13: “The user interface of claim 11, further comprising the navigation element¹⁰ displayed in the header display.”

241. As described in ¶¶230–232 for claim 10 above, Preppernau teaches a “header display.” As described in ¶¶233–236, the Reavey-Chandhri-Preppernau combination teaches “the user interface of claim 11.” As described in claim 12, Preppernau teaches a “navigation element.” In my opinion, Preppernau also teaches the Quick Tabs button (“navigation element”) is located in a header of the Quick Tabs display as shown in the figure I annotated and reproduced below. Preppernau, 182.



242. Thus, in my opinion, a POSITA would have been motivated to implement Preppernau’s tab-based internet browsing in the Reavey-Chandhri combination for the same reasons I discussed for claim 7 above.

¹⁰ Petitioner notes “the navigation element” lacks antecedent basis because claim 13 depends from claim 11 (which depends from claim 1), and neither claim 1 nor 11 recites “a navigation element.” Instead, that term appears in claim 12.

7. Claim 16: “The user interface of claim 8, further comprising a nascent card displayed in the body of the first home view, wherein the nascent card is configured to permit generation of additional visual representations of digital content.”

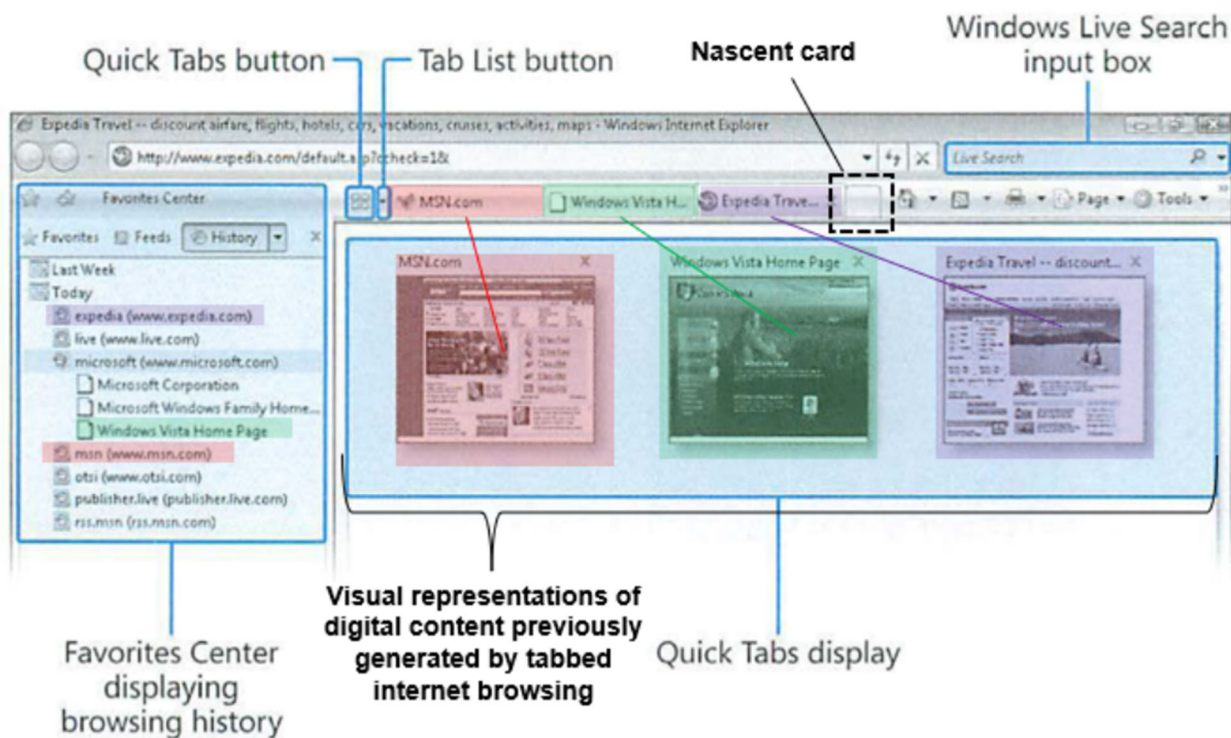
243. As discussed above in ¶139, in my opinion, the Reavey-Chandhri combination teaches the “user interface of claim 8” with a “home view.” In my opinion, Preppernau teaches the additional limitations of claim 16.

244. The ’315 patent describes that its “nascent card” is “configured to permit generation of additional visual representations of digital content” and is “displayed in the body of the home view.” EX-1001, Fig. 2, 5:16–20. A nascent card is “always...available to a user,” i.e., a user cannot remove it or change its displayed position. *Id.*, 39:51–56. It also has a similar format to other cards but lacks its own page view. *Id.*, 52:39–42.

245. Preppernau’s Quick Tabs display includes a row of internet browser tabs arranged above thumbnail screenshots corresponding (1:1) to each internet browser tab content previously opened by a user. Preppernau, 182. These tabs are arranged and operate according to tabbed browsing as shown in the figure I reproduced below. *Id.*, 172.



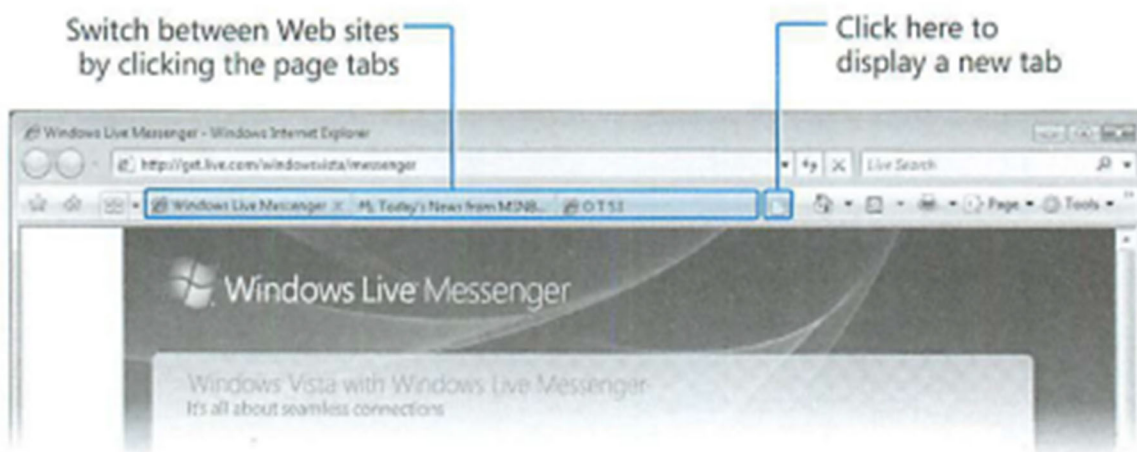
246. The browser tabs include an additional tab at the right-most side (“nascent card”) that does not yet correspond to a generated tab or corresponding thumbnail screenshot of internet content but is used to generate an internet web page-linked browser tab. *Id.*, 169–170. I annotated this in the figure I reproduced below.



247. In my opinion, a POSITA would have understood Preppernau’s Internet Explorer 7 “new tab” teaches a nascent card because it is a rectangular-shaped,

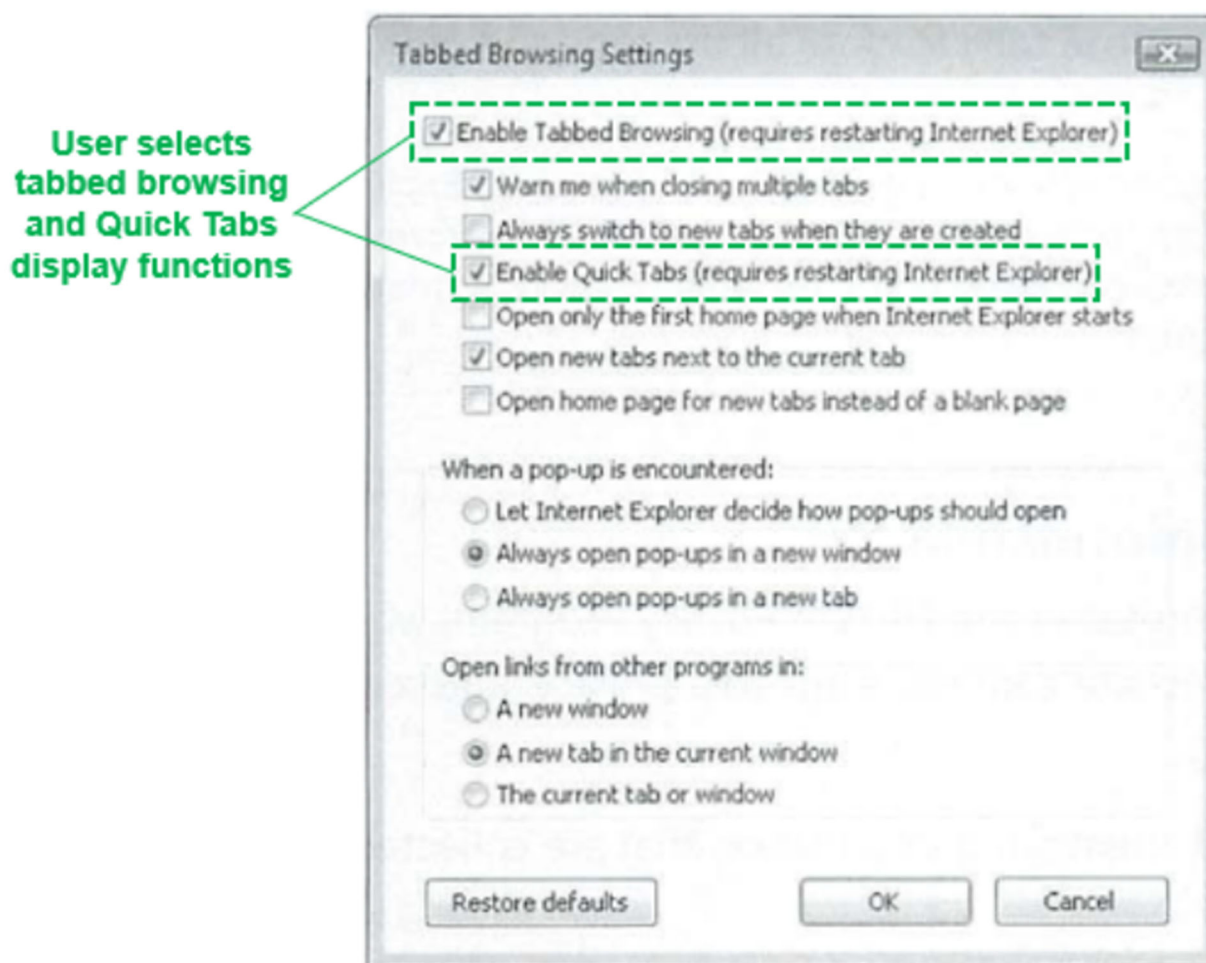
selectable tab, which can create a web page association after selection, displayed in a fixed, last position in a Quick Tabs display but it has not corresponding web page and is not removable by a user. A POSITA would have understood the new browser tab has the same look, feel, and functionality as the “nascent card” the ’315 patent describes.

248. As to the limitation “wherein the nascent card is configured to permit generation of additional visual representations of digital content,” Preppernau also teaches the right-most tab displayed of the Quick Tabs display includes the functionality to create a new tab linked to internet content. Preppernau, 169–170. I reproduced the following figure to show the creation of a new tab is reproduced below. *Id.*, 170.



249. A POSITA would have understood the right-most tab in Preppernau’s Quick Tabs display header is the same as that Preppernau teaches is used for general Internet Explorer tabbed browsing (immediately above) (both use tabbed internet browsing GUI elements). *Id.*, 170. Furthermore, a specific implementation of this functionality is user-enabled in the Quick Tabs display. *Id.*, 174–175. I annotated and

reproduced a figure showing this user selection, below. *Id.*, 175.



250. Therefore, a POSITA would have understood the right-most tab (“nascent card”) of those tabs displayed in the Quick Tabs display allows users to create (“generate”) additional internet browsing tabs linked to internet web pages (“digital content”) viewable as thumbnail screenshots in the Quick Tabs display (“visual representations”).

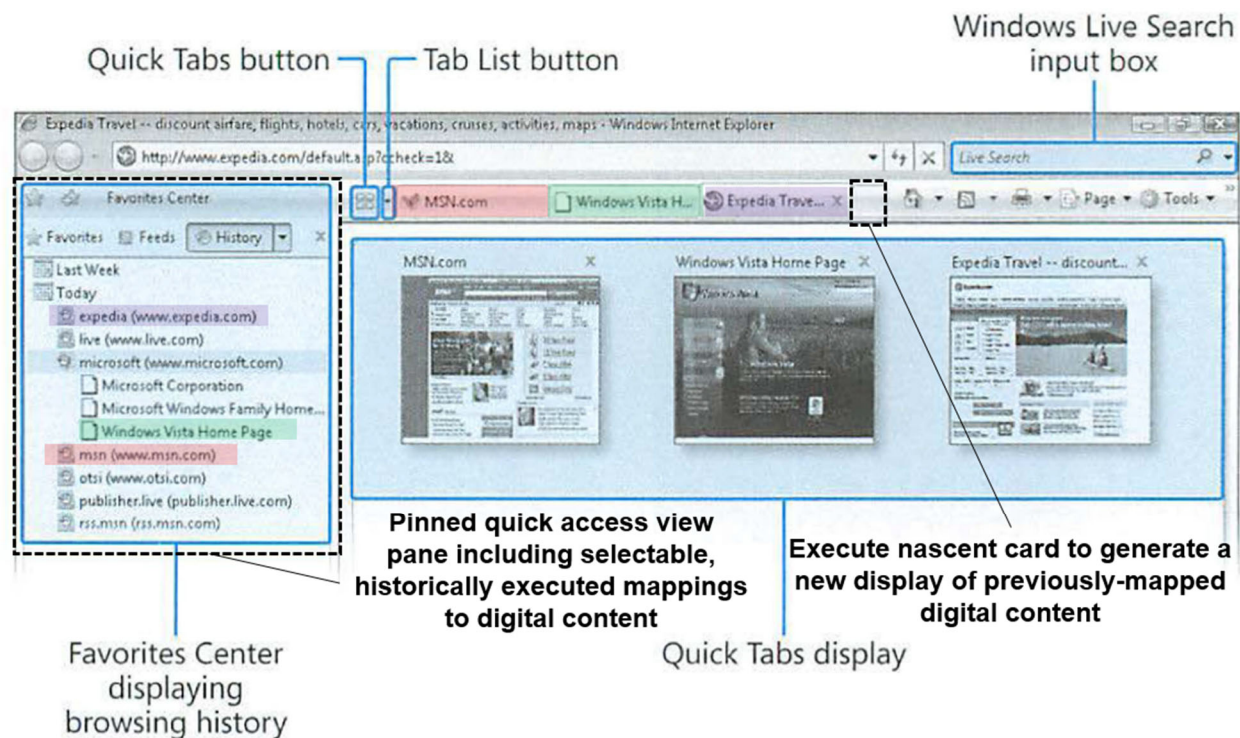
251. Therefore, in my opinion, a POSITA would have been motivated to implement Preppernau’s tab-based internet browsing with Quick Tabs display in the

Chandhri-Reavey combination for the same reasons I discussed in claim 7 above.

8. Claim 18: “The user interface of claim 1, further comprising a quick access view, wherein the quick access view is configured to permit user generation of a mapping between digital content and a visual representation.”

252. As I discussed above in ¶¶85–130 , in my opinion the Reavey-Chandhri combination teaches the “user interface” and “plurality of views” of claim 1. In my opinion, Preppernau teaches the additional limitations of claim 18.

253. The ’315 patent discloses a quick access view in Fig. 5 (500) that includes “content options in order to generating a mapping” that “may be based on frequency of access” including “most frequently visited content.” EX-1001, Fig. 5, 29:41–53. As shown in the annotated figure below, Preppernau similarly teaches a user may access a Favorites Center (“quick access view”) from a navigable tool bar in an instance of Internet Explorer 7 containing recently-viewed web pages. Preppernau, 182. A user can choose to display the Favorites Center as a multi-page window or pin it as a pane in the browser window. *Id.*



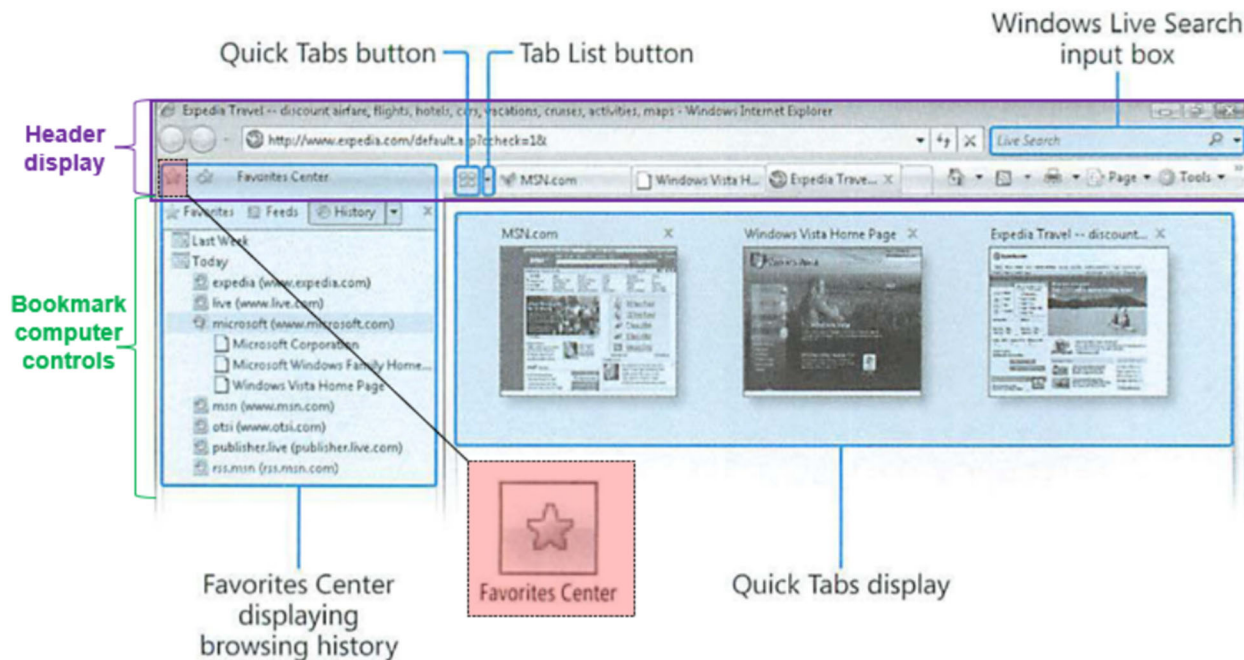
254. If a user chooses to display the Favorites Center as a pane in the (as shown above), the Favorites Center will preserve and display a list (“visual representation[s]”) of previously-accessed websites (“digital content”) to the user. *Id.*, 184 (“The History Page displays an alphabetical list of the sites you have visited in the last 20 days.”). In my opinion, A POSITA would understand that a user can then click on one of the sites in the list to switch to a different, recent web page from an existing one or open a new instance of a recent web page in a new tab altogether. *See, e.g., id.*, 182, 184 (You can click on any site in the History list to open it in Internet Explorer.). Thus, the Favorites Center allow users to easily and efficiently reinstate a web page recently visited (user generation of a mapping) for updated information at that “favorite” page (e.g., “msn.com” to view updated news published at the same web page, or “expedia.com” to review updated travel prices using the same travel-price provider). *Id.*

255. Therefore, in my opinion, a POSITA would have been motivated to implement Preppernau’s tab-based internet browsing with Quick Tabs display in the Reavey-Chandhri combination for the same reasons I discussed for claim 7 above.

9. Claim 56: “The user interface of claim 55, wherein the display is further configured to render computer controls in a header portion in response to focus upon the header portion of the display.”

256. As I discussed above in ¶¶163–164, in my opinion, the Reavey-Chandhri combination teaches or suggests the “user interface of claim 55” including a “display” with “header.” Notably, claim 56 requires “computer controls” to be “render[ed]...in response to focus upon the header portion.” In my opinion, Preppernau teaches the additional limitations of claim 56.

257. The ’315 patent discloses an example of a computer control in a header portion as a “bookmarks control” 504 in the header of a “quick access view.” EX-1001, Fig. 5, 29:41–53. Similarly, Preppernau discloses an instance of Internet Explorer 7 that includes a “Favorites Center” in a top portion of the browser window (“header portion”). Preppernau, 182. When a user clicks (“focus upon”) the “Favorites Center” button, a “Favorites” pane expands to display a Feeds, Favorites, and History button to browse previously-viewed content (“computer controls”). *Id.*, 182-184. I have provided an annotated figure depicting the Favorites Center button and resulting pane comprising navigation elements below. *Id.*, 182, 184.



258. In my opinion, a POSITA would have recognized favorites, feeds, and history controls in Preppernau teach this limitation in the same way as the bookmark control in the '315 patent. As shown below, the bookmarks control displays web content saved by the user for future navigation. '315 patent, Figs. 5, 6. Thus, a POSITA would have recognized that the bookmarks control and the favorites, feeds, and history controls in Preppernau achieve the same function (display web content saved by the user for future navigation) and differ only in the labeling of that function. *Id.*

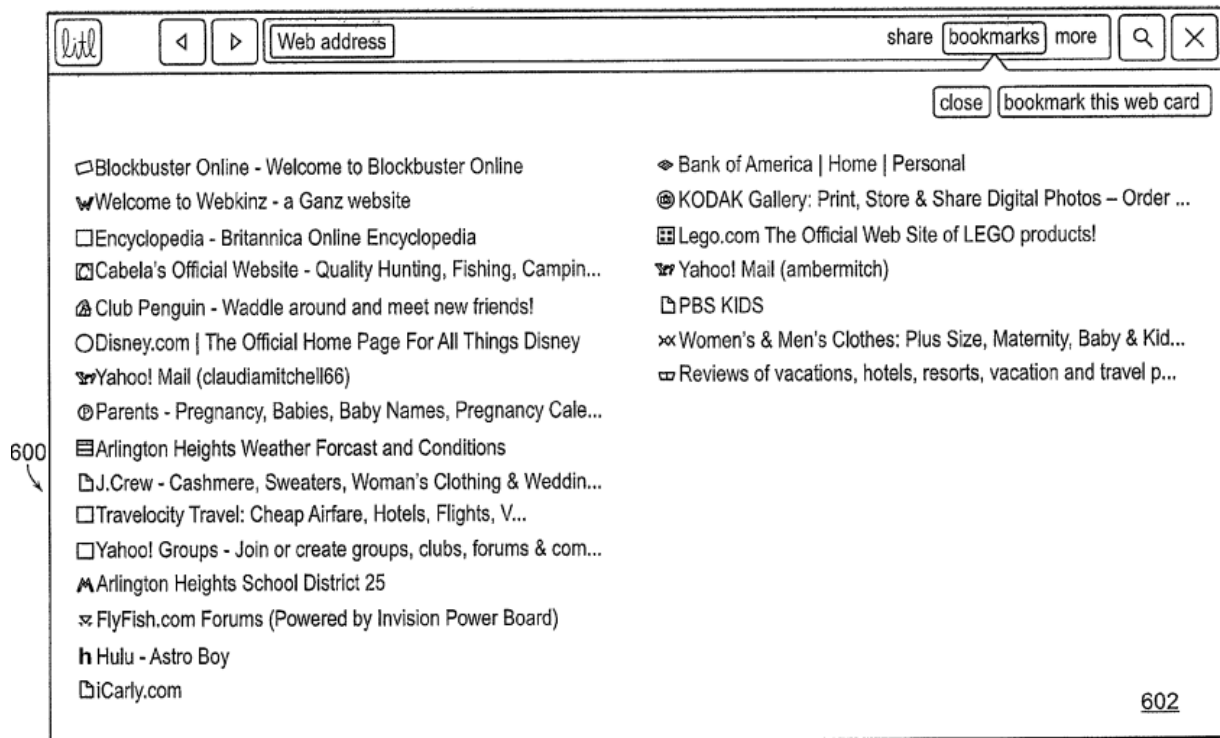


FIG. 6

259. Thus, in my opinion, a POSITA would have been motivated to implement Preppernau's tab-based internet browsing with Quick Tabs display in the Reavey-Chandhri combination for the same reasons I discussed in claim 7 above.

XII. CONCLUSION

260. I currently hold the opinions set expressed in this declaration. But my analysis may continue, and I may acquire additional information and/or attain supplemental insights that may result in added observations.

261. I hereby declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge. I understand that willful false statements are punishable by fine or imprisonment or both. See 18 U.S.C. § 1001.

Date: January 30, 2024

By:

Henry H. Houh.

Dr. Henry Houh

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