

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.

IPR2024-00457
U.S. Patent No. 9,880,715

DECLARATION OF DR. HENRY HOUH
REGARDING U.S. PATENT NO. 9,880,715

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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. 9,880,715 (“the ’715 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 ’715 patent. Specifically, I have been asked to consider the validity of claims 1–20 of the ’715 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 ’715 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, and I have also used 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 '715 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 '715 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	Reference
1001	U.S. Patent No. 8,612,715 ("the '715 patent")

Exhibit	Reference
1002	File History of the '715 patent
1003	Declaration of Dr. Henry Houh in Support of Petition (“Houh Decl.”)
1004	Dr. Henry Houh CV
1005	U.S. 90/014,958 Ex Parte Reexamination File History
1006	German Patent Application Publication DE10331185A1 (“Pröll”) with certified translation
1007	U.S. Patent 6,137,468 (“Martinez”)
1008	Joan Preppernau & Joyce Cox, <i>Step By Step Windows Vista</i> , Microsoft Press (Jan. 3, 2007) (“Preppernau”)
1009	U.S. Patent 5,847,698 (“Reavey”)
1010	RESERVED
1011	U.S. Patent Application Publication 2006/0062141 A1 (“Chandhri”)
1012	RESERVED
1013	RESERVED
1014	RESERVED
1015	Declaration of June Munford
1016	Complaint, <i>LiTL LLC v. ASUSTeK Computer Inc.</i> , No. 23-cv-00122 (D. Del. Feb. 1, 2023)
1017	Complaint, <i>LiTL LLC v. Dell Techs. Inc.</i> , No. 23-cv-0121 (D. Del. Feb. 1, 2023)
1018	Complaint, <i>LiTL LLC v. HP Inc.</i> , No. 23-cv-00120 (D. Del. Feb. 1, 2023)
1019	Order Granting Microsoft Intervention, <i>LiTL LLC v. HP Inc.</i> , No. 23-cv-00120 (D. Del. Oct. 16, 2023)
1020	Scheduling Order, <i>LiTL LLC v. HP Inc.</i> , No. 23-120 (D. Del. Jan. 11, 2024), ECF No. 44
1021	Foley, James D., et al., <i>Computer Graphics Principles and Practice</i> , Second Edition in C (July 1997)

Exhibit	Reference
1022	Dino Esposito, <i>New Graphical Interface: Enhance Your Programs with New Windows XP Shell Features</i> , MSDN Magazine
1023	Maintenance & Service Guide, <i>HP Pavilion dv1600 Entertainment Notebook PC</i> (June 2006)
1024	Complaint, <i>LiTL LLC v. Lenovo (United States), Inc.</i> , No. 20-cv-00689 (D. Del. May 22, 2020)
1025	Stipulation of Dismissal, <i>LiTL LLC v. Lenovo (United States) Inc.</i> , No. 20-cv-00689 (D. Del. Feb. 3, 2023)
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	Microsoft Indemnity Request
1032	RESERVED
1033	RESERVED
1034	RESERVED
1035	Q&A Microsoft Unveils Details for Ultra-Mobile Personal Computers
1036	Australia Patent Application Publication AU2001100022A4
1037	RESERVED
1038	RESERVED

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 (Pröll, Martinez, Chandhri, Preppernau) qualify as prior art to the '715 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 ’715 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 ’715 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 1–20 of the ’715 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 convertibility 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

¹ See Ex. 1027.

² See Ex. 1028., <https://www.youtube.com/watch?v=nQ0-PaKkHE4>, Ex. 1029, <https://www.youtube.com/watch?v=yQguX29KDW0>.

³ See Ex. 1030.

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 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 '715 PATENT

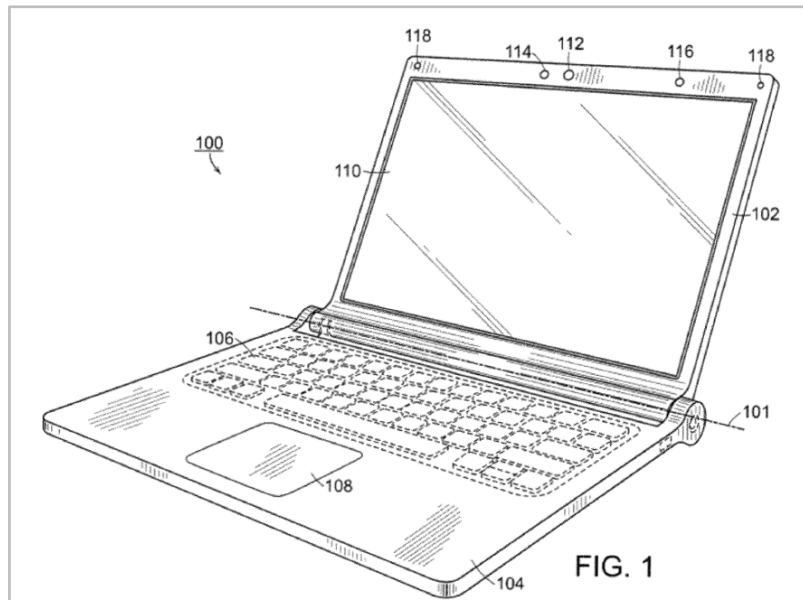
A. Subject Matter Overview of the '715 Patent

44. The '715 patent is titled "System and Method for Streamlining User Interaction with Electronic Content" and issued from U.S. Application No. 14/680,422, filed April 7, 2015, which claims priority to a series of continuation and continuation-in-part applications, the earliest of which was filed July 10, 2008, and to a provisional application filed April 1, 2008.

45. The '715 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

⁴ See https://web.archive.org/web/19970605134644/https://www.w3.org/MarkUp/HTMLPlus/htmlplus_7.html

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. *Id.*, 19:12-31.



In laptop mode, the keyboard is accessible to the user. Other computer system configurations include an easel mode (FIG. 4 below) and a frame mode (FIG. 26 below). *Id.*, 19:51-52, 24:37-41.

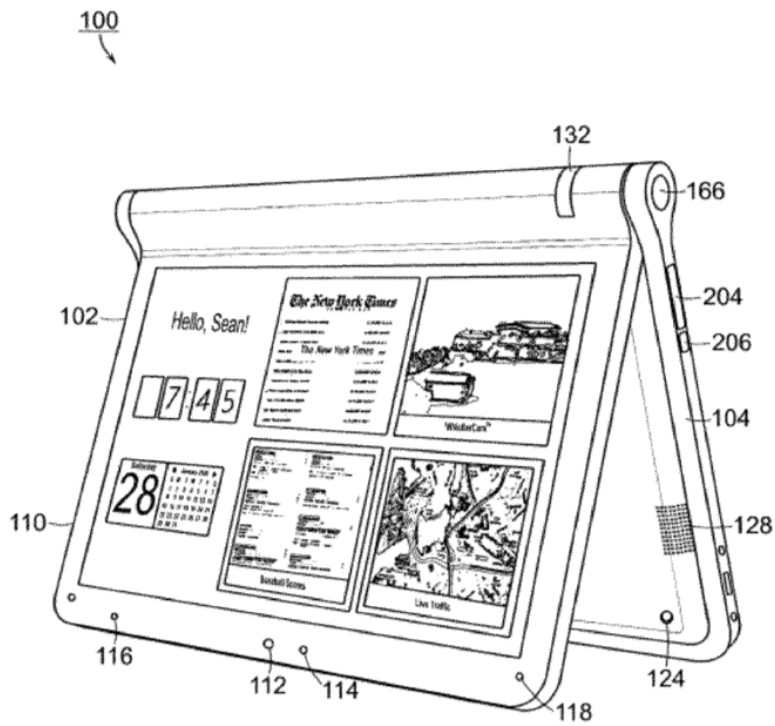


FIG. 4

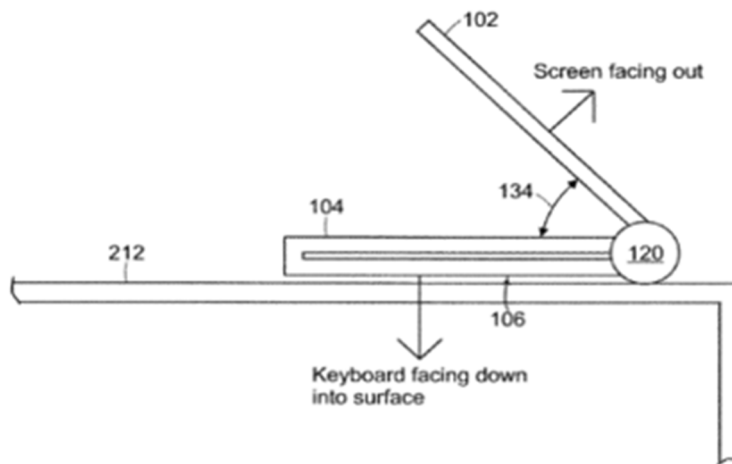


FIG. 26

In the easel and frame modes, the keyboard is “concealed and not easily accessible” to the user. *Id.*, 24:61-62.

46. The '715 patent discloses a GUI that “provides a clear overview of the entire computing environment and searching capability within the environment.” *Id.*, 20:62-66. The '715 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.*, 3:26-4:67.

B. Brief Summary of '715 Patent Prosecution History

47. The '715 patent was allowed after a single office action. EX-1002. In that Office Action, the Examiner rejected pending independent claim 1 as obvious over “Creating a Digital Home Entertainment System with Windows Media Center” (“Miller”) in view of U.S. Patent Publication No. 2008/0059888 (“Dunko”). I note that the Examiner found Miller taught a “plurality of views of a plurality of visual representations of computer content” because Windows Media Center has a start screen that displays all categories of content and an online spotlight that displays only online content. EX-1002, 342-43.

48. The applicant then amended claim 1 to add the underlined limitations: “detect a current computer system configuration from at least a first computer system configuration where the keyboard is operable to receive input from an operator of the computer system to control the computer system and a second computer system configuration where the keyboard is inoperable to receive input from the operator of the computer system to control the computer system.” *Id.*, 392. The applicant argued the prior art failed to teach these limitations because Dunko’s device identified whether it was in portrait or landscape mode

and not whether the keyboard was operable or inoperable. *Id.*, 399.

49. The Examiner then issued a Notice of Allowability. *Id.*, 417. In doing so, the Examiner maintained that Miller taught a plurality of views of content. *Id.*, 418. The Examiner also maintained that Dunko taught sensing a portrait or landscape orientation and determining the default mode of operation for that sensed orientation. *Id.*, 419. The Examiner, however, found this combination of references did not teach the limitations of the independent claims (which recited configurations with an operable or inoperable keyboard). *Id.*, 419-20.

C. Brief Summary of Prior Patent Office Proceedings Involving the '715 Patent

50. It is my understanding that PO sued Lenovo alleging infringement of the '715 patent in May 2020, and Lenovo subsequently filed an IPR petition challenging claims 1-20 of the '715 Patent. *Lenovo (United States) Inc. v. LiTL LLC*, IPR2021-00786 (“-786 IPR”), Paper 1 (May 4, 2021). I had no involvement in that IPR. I understand that during that IPR, for purposes of its decision denying institution, the Board construed “plurality of views” as “referring to a plurality of ways of organizing visual representations of computer content” and found that that limitation “is distinct from merely providing a plurality of ways of displaying content (by, for example, changing display orientation, color, resolution, etc.).” *Id.*, Paper 6, 13-16.

51. I understand that Lenovo subsequently filed a request for *ex parte* reexamination with the Patent Office, again challenging claims 1-20 of the '715 patent, based on four obviousness challenges. EPR Request 4. I understand the Office found

all of those challenges raised a substantial new question of patentability (SNQ), but the Examiner subsequently issued a non-final office action rejecting claims 1-20 based only one of the SNQs. In reviewing the file history for the reexamination, I noted that in its response to the office action, PO argued (1) “the keyboard being inoperable to receive input means the keyboard is disabled, which is different from the keyboard being oriented so it is inaccessible”; and (2) “a plurality of views of a plurality of visual representations” was not met by different content being displayed. I also noted that in issuing a notice of intent to issue a reexamination certificate, confirming claims 1-20, the Examiner agreed with (2) above, finding “the changing of content alone is not sufficient to meet the interpretation that has been established of a ‘plurality of views’ as ‘organizing visual representations of content differently.’” The reexamination certificate issued on January 19, 2023.

IX. CLAIM CONSTRUCTION

52. 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”

53. As discussed above, in the -786 IPR, for purposes of its institution decision, the Board construed a “plurality of views of a plurality of visual representations” 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 visual display’s orientation.” -786 IPR, Paper 6, 16. Because the Board denied institution, it is my understanding, it did not further consider that construction based on a full trial record. *See id.* During the EPR, the Examiner also clarified that the “plurality of views” limitation does not encompass merely changing to entirely different content. EX-1005.

54. In forming my opinions, I have applied the Board’s construction of “plurality of views,” as clarified during the EPR.

B. Means-Plus-Function (“MPF”)

55. 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
Claims 1, 17, 20: “ <u>display computer content</u> on a display component”	A display screen <i>See, e.g.,</i> ’715 Patent, Fig. 1 (item 102), 11:42-43, 19:12-50.

2. “execution component”

Limitation (Function Underlined)	Corresponding Structure
Claim 1: “an execution component, executing on the at least one processor, configured to: <u>detect a current computer system configuration from at least a first computer system configuration where the keyboard is</u>	a program (or programs) executing on a processor that can (i) receive data from sensors, (ii) use that received data to determine the current computer system configuration, and (iii) use that determination to change to the view

<u>operable to receive input from an operator of the computer system to control the computer system and a second computer system configuration where the keyboard is inoperable to receive input from the operator of the computer system to control the computer system; select one of the plurality of views for display on the computer system in response to the detected current computer system configuration; and transition the display component to the selected one of the plurality of views”</u> Claim 20: “an execution component, executing on the at least one processor, configured to: <u>detect a current computer system configuration from at least a first computer system configuration where the keyboard is positioned to receive input from an operator of the computer system and a second computer system configuration where the keyboard is not positioned to receive input from the operator of the computer system; select one of the plurality of views for display on the computer system in response to the detected current computer system configuration; and transition the display component to the selected one of the plurality of views.”</u>	corresponding to the current computer system configuration, and its equivalents. <i>See, e.g.</i>, ’715 Patent, Figs. 26, 51, 20:10–38, 24:61–25:20, 57:9–18, 68:9–69:36, 70:19–35.
Claim 8: “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 (i) detect execution of a navigation element, and (ii) based on that detection, change to the previous view, and its equivalents. <i>See, e.g.</i>, ’715 Patent, Fig. 51, 20:56–61, 21:8–11, 46:9–18, 68:9–34.

Claim 13: “the execution component is further configured to <u>execute a process for creating a visual representation in response to execution of the nascent card</u>”	a program (or programs) executing on a processor, that can (i) detect execution of a nascent card, (ii) transition the display to the quick access view in response, and (iii) map to, and display, online content in response to a request to display that content from the quick access view, and its equivalents. <i>See, e.g., '715 Patent, 30:2–4, 30:15–17, 35:6–21, 38:62–39:1, 40:55–65, 41:10–13, 68:9–69:36.</i>
Claim 16: “the execution component is further configured to <u>transition the computer system to the channel view in response to receiving user input via at least one input device integral to or operatively connected with the computer system</u>”	a program (or programs) executing on a processor that can (i) receive user input via an input device, and (ii) transition the display to the channel view in response. <i>See, e.g., '715 Patent, Figs. 9, 50, 20:62–21:29, 31:49–32:56, 68:9–69:36.</i>
Claim 17: “an execution component, executing on the at least one processor, configured to: <u>identify at least a first computer system configuration where the keyboard is operable to receive input from an operator of the computer system to control the computer system and a second computer system configuration where the keyboard is inoperable to receive input from the operator of the computer system to control the computer system based on sensor input indicating a position of the display component; select, responsive to the sensor input, a first content view from the plurality of views for the first computer system configuration; transition, automatically in response to the sensor input, the display component between at least the first content view of the plurality of views and a second content view of the plurality of views; receive user input via at least one input device integral to or operatively</u>	a program (or programs) executing on a processor that can (i) receive data from sensors, (ii) use that received data to determine the current computer system configuration, (iii) use that determination to change to the view corresponding to the current computer system configuration, (iv) receive user input via an input device, and (v) transition the display to the channel view in response. <i>See, e.g., '715 Patent, Figs. 9, 50, 20:62–21:29, 31:49–32:56, 68:9–69:36.</i>

connected with the computer system; and <u>transition, automatically in response to receiving the user input, the display component from one of the first content view and the second content view to a channel view including a channel selector that displays a sequence of visual representations</u> ”	
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3. “storage component”

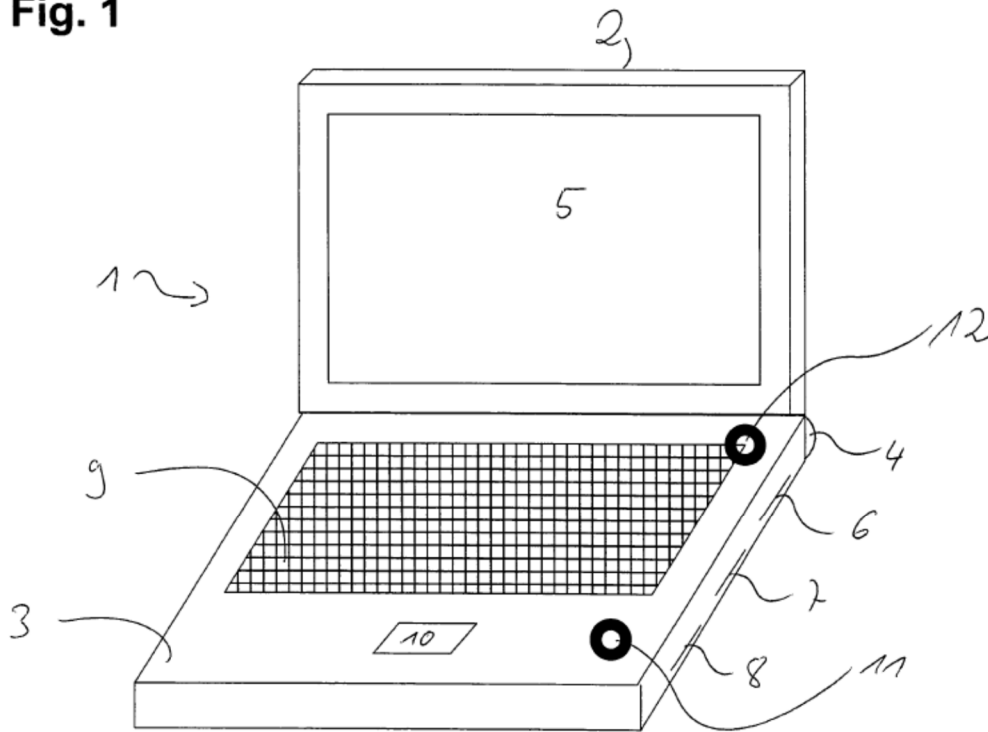
Limitation (Function Underlined)	Corresponding Structure
Claim 7: “storage component configured to <u>retain a previous view state</u> ”	A local or remote storage device. <i>See, e.g., ’715 Patent, 21:59-67, 22:6-9, 61:16-26, 68:46-55.</i>

X. OVERVIEW OF THE CITED REFERENCES

A. Pröll (Ex. 1006)

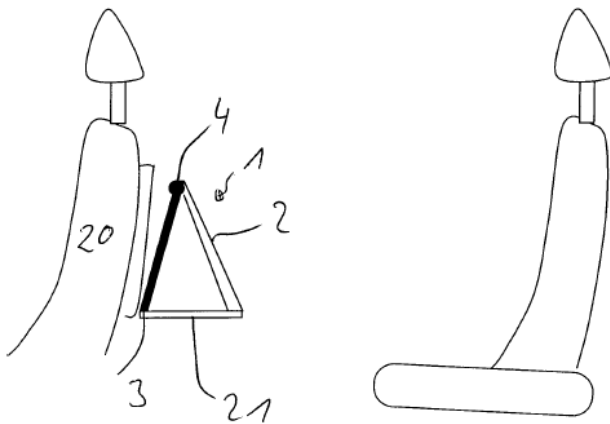
56. Pröll is directed to a “[m]obile data processing device,” such as a laptop, with two housing halves (one with a screen and one with an input unit such as a keyboard) connected by a hinge that can rotate 360 degrees. *See* Pröll, Title, Abstract, claims 1, 3, 5. Figure 1 of Pröll is reproduced below:

Fig. 1



57. 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. 6 (360°), Fig. 7 (270°), Fig. 8 (360 °). Pröll describes using its Figures 6-8 in mobile environments such as a moving vehicle. *Id.*, [0051]-[0057]. For example, Figure 7 is reproduced below:

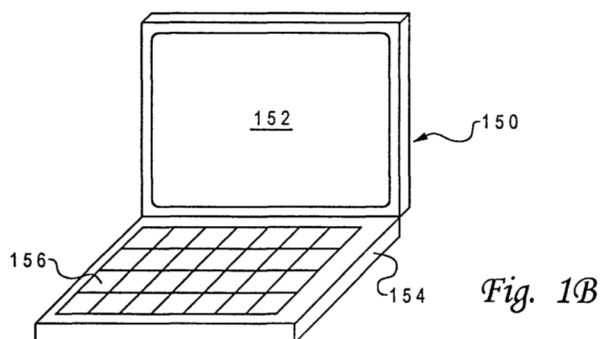
FIG. 7



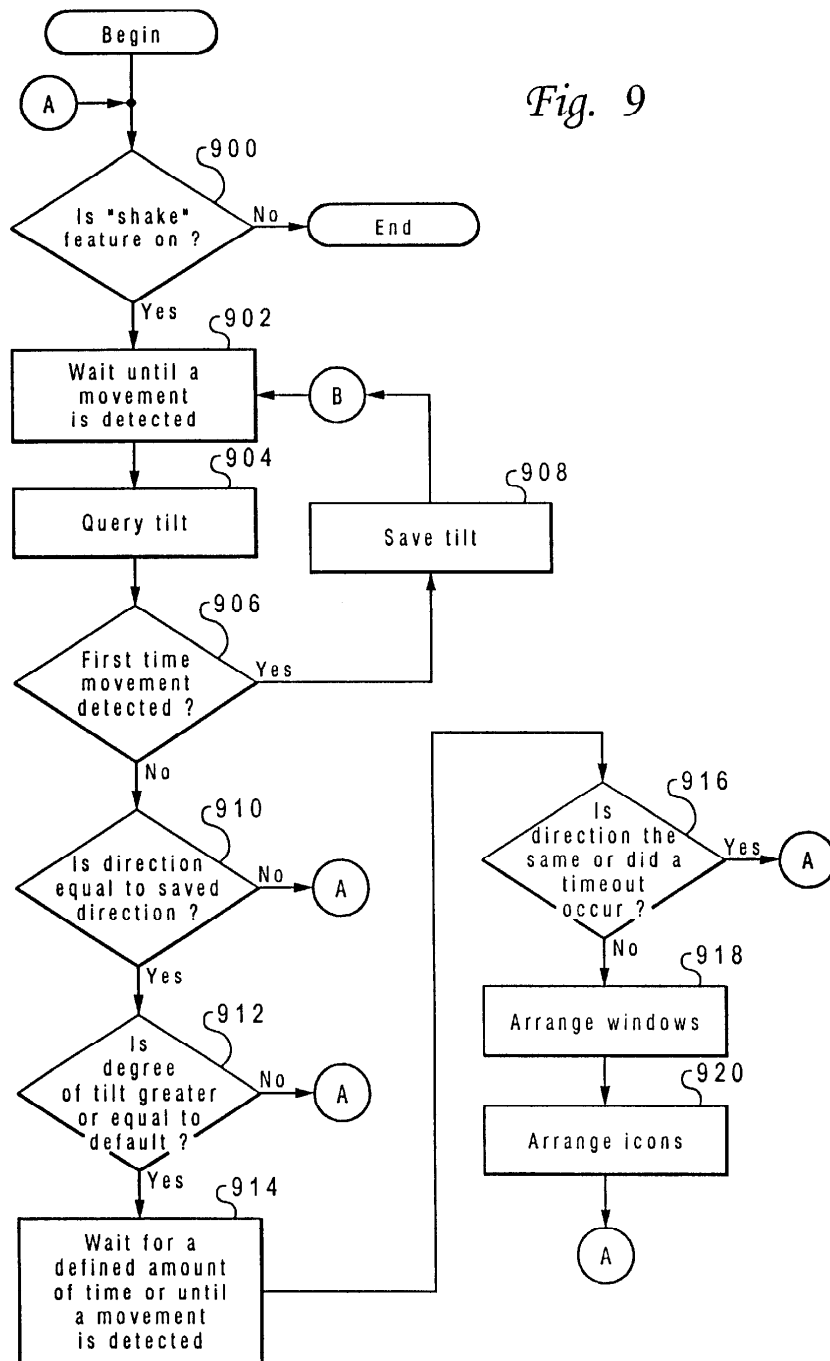
58. Pröll discloses it has a switch in pivoting device 4 to detect whether the housing half 2 has been pivoted towards housing half 3 by more than 180°; if so, the representation on the display device is rotated by 180° and the input devices, including keyboard 9, are automatically blocked. *Id.*, [0049]-[0050].

B. Martinez (Ex. 1007)

59. Martinez is directed to “altering the display of an object on a display device in a data processing system.” Martinez, Abstract. Martinez depicts a similar laptop as Pröll, in Fig. 1B reproduced below:



60. Martinez describes numerous ways it adjusts its display based on sensor input, one of which is in response to a “shake.” This process is depicted in Martinez’s Figure 9:



61. In this process, Martinez detects a shake (i.e., shake the device containing the sensor to the left and right relative to the user) in steps 902-916. *Id.*, 6:5-31. If a shake is detected, “the process then arranges the windows (step 918). For example, the windows could be arranged in a tile or cascading fashion. Next, the icons are arranged (step 920). The icons can be arranged in any preselected manner the user or programmer desires.” *Id.*, 6:32-37.

C. Chandhri (Ex. 1011)

62. Chandri relates to a media player with image-based browsing and addresses “improved methods for browsing through content.” Chandri, Title, Abstract, [0004]. In particular, Chandri discloses several card-based as well as menu-driven GUIs. As one example, Figure 10 of Chandri is reproduced below.

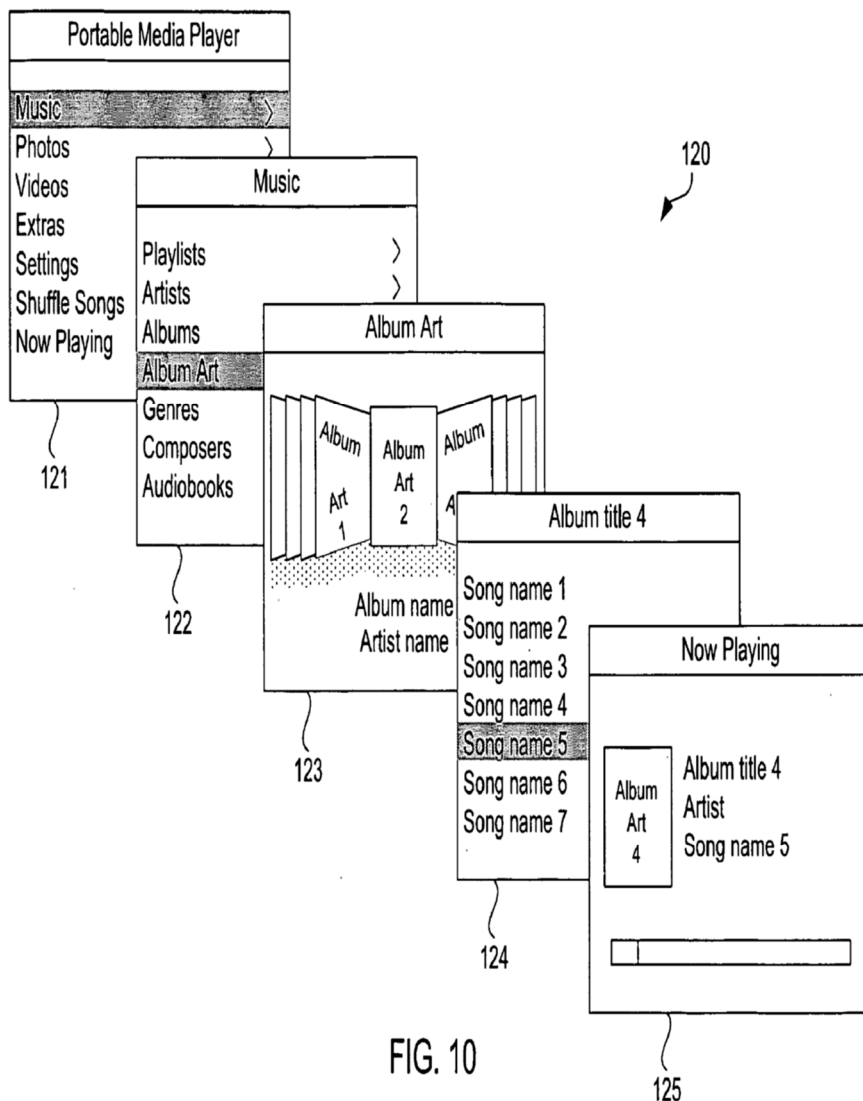
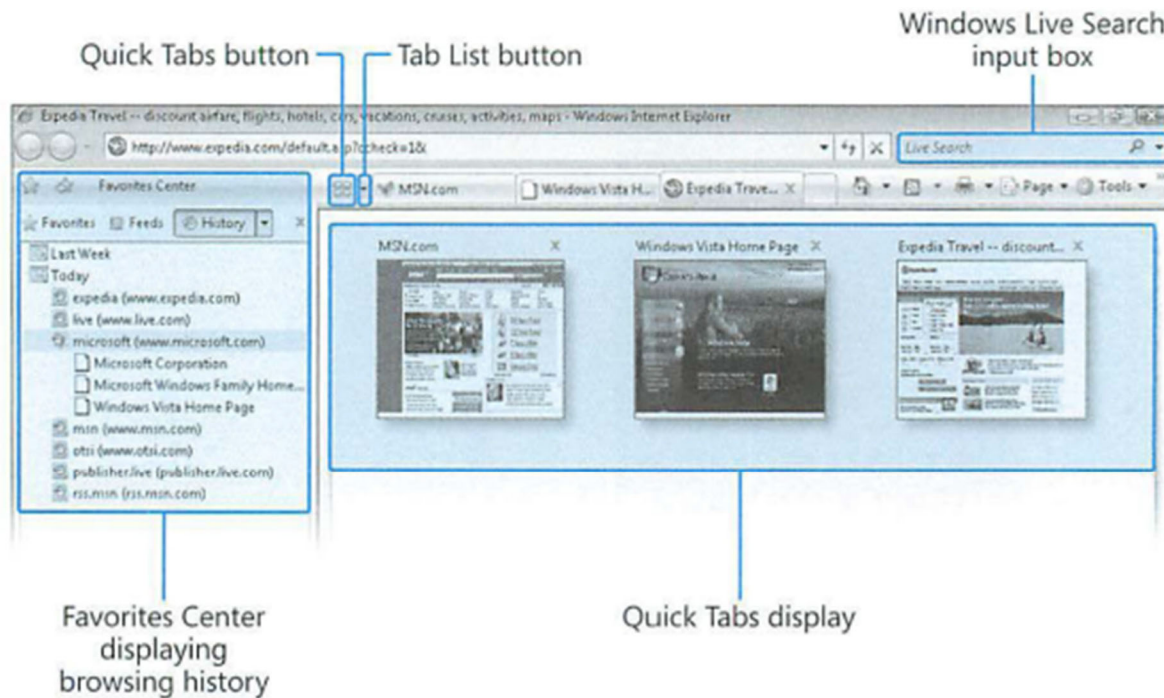


FIG. 10

D. Preppernau

63. Preppernau is a Microsoft January 2007 publication (*see* EX-1015) 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. As one example, a figure from Chapter 6 is reproduced below. *Id.*



XI. DETAILED EXPLANATION OF GROUNDS

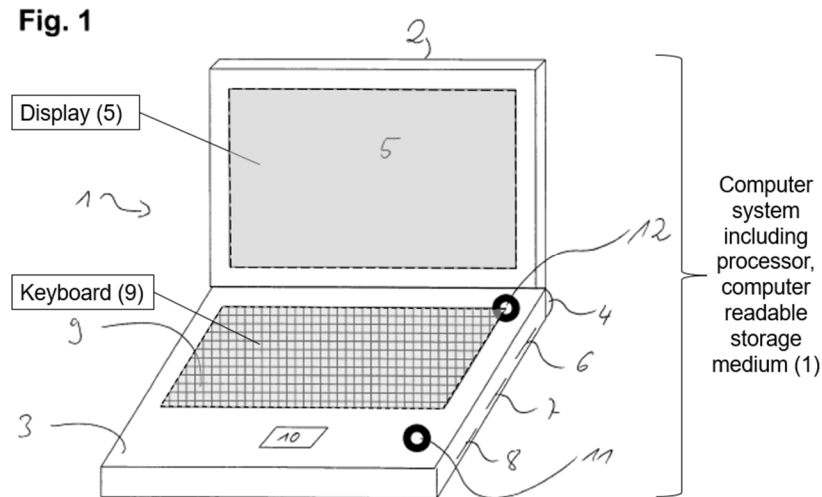
A. Ground 1: Obviousness over Pröll and Martinez (Claims 1, 19, 20)

1. Claim 1

- a. *1[pre]*: “A customized user interface to display computer content on a display component of a computer system including a keyboard, the user interface comprising:”

64. To the extent it is limiting, in my opinion, Pröll discloses or suggests the *1[pre]* under MPF or non-MPF. For MPF, it is my opinion that the corresponding structure is a display screen. *See, e.g.*, ’715 patent, Fig. 1 (item 102), 11:42-43, 19:12-50. Pröll discloses display device 5 (“a display component of a computer system” /

“display screen”) including keyboard 9 (“a keyboard”). Pröll, Title, Abstract, claim 1, [0014], [0023], [0033]-[0034]. I have provided an annotated version of Pröll’s Figure 1 below:



65. In addition, in my opinion, a POSITA would have understood that Pröll’s display 5 has a customized user interface to display computer content. Pröll discloses that the first housing half 2, which contains the display device 5, and the second housing half 3 are “an arrangement of a commercially known portable computer system or notebooks or laptops.” Pröll, [0033]. Customized user interfaces were known prior to the priority date of the ’715 patent and were commonly found in commercially available laptops. For example, Microsoft released Windows XP in 2001, and it contained a graphical user interface that supported “a number of styles . . . [and] customization of those styles.” EX-1022 (New XP GUI), 1-2. Many commercially available laptops ran, or supported, the Windows XP operating system. *See, e.g.*, EX-1023(HP Manual), 1-2 (supporting Windows XP Home Edition or Windows XP Professional, varying by

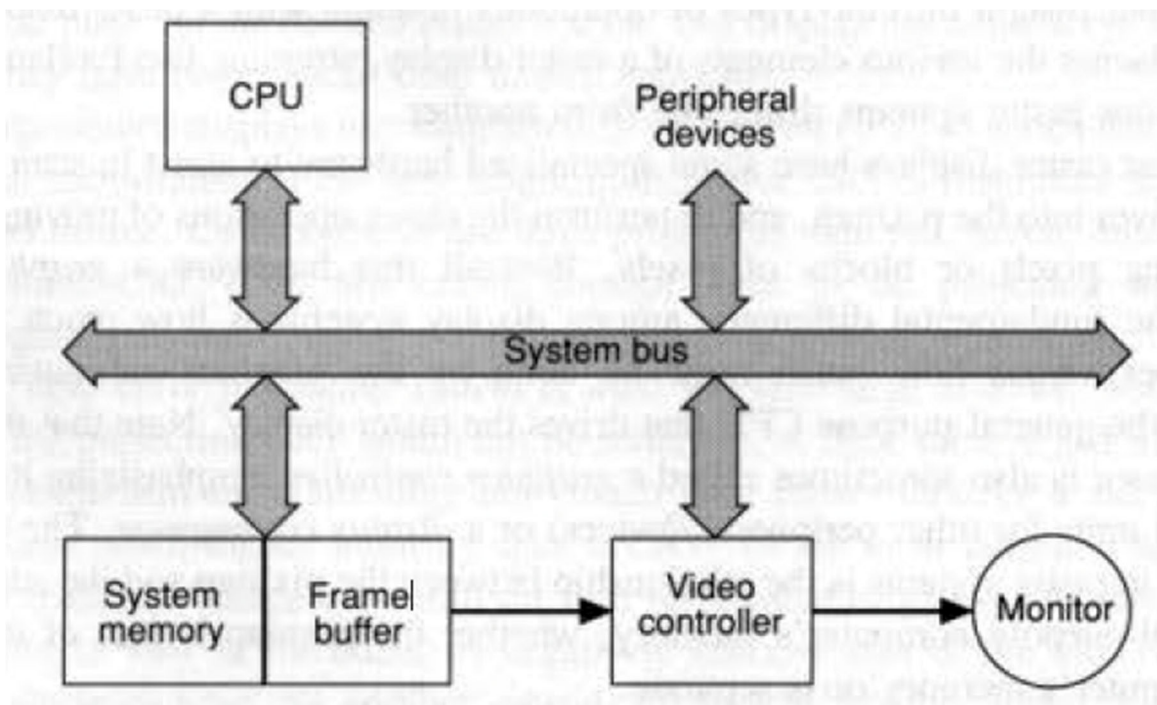
model). Thus, in my opinion, a POSITA would have understood that Pröll discloses a “customized user interface to display computer content.”

b. *1/a): “at least one processor operatively connected to a memory of the computer system”*

66. In my opinion, Pröll discloses “one processor operatively connected to a memory.” *See* Pröll, [0002] (“Mobile data processing devices are characterized in that they are portable data processing devices such as personal computers, in particular laptops”). Specifically, in my opinion, a POSITA would have understood that Pröll’s computer system has a processor connected to a memory. Pröll discloses that the second housing half 3 of the mobile data processing device 1 contains “[a] computing unit, a memory and various peripheral units and interfaces” Pröll, [0034]. In my opinion, a POSITA would have understood that the computing unit in Pröll is a processor. The computing unit is responsible for processing data and must execute instructions to do so, which is what a processor does. *See* ’715 patent, 68:29-45 (explaining that the processor executes programs and reads data from memory); Pröll, [0034], [0041].

67. In addition, Pröll teaches that the first and second housing halves are “an arrangement of a commercially known portable computer system...” *Id.*, [0034]. A POSITA would have understood that commercially available laptops and notebooks commonly included a processor connected to a memory. *See* EX-1023 (HP Manual) at 1-2 (listing the various processor models, hard drive capacities, and DRAM sizes associated with various laptop models). Having such a computer system with a

processor connected to a memory was well-known at the relevant time. *See, e.g.,* Martinez, Fig. 2 (item 202 (Pentium, i.e., processor), 206, 208, 210 (memory), connected through item 200 (system bus)). Further, 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* Ex. 1021 (Foley), 166-67, Fig. 4.18 (reproduced below).



- c. ***1[b]: “a graphical user interface, executing on the at least one processor, configured to display the computer content on the display component of the computer system, the graphical user interface configured to”***

68. In my opinion, Pröll discloses or suggests “a graphical user interface” (“GUI”). As discussed previously, Pröll teaches “an arrangement of a commercially known portable computer system or notebooks or laptop.” Pröll, [0034]. Many such commercially available laptops made use of the Windows XP operating system (“OS”),

as well as other OS's, that provide a graphical user interface. *See* EX-1022 (New XP GUI), 1-2 (discussing new graphical interface features in Windows XP); EX-1023 (HP manual), 1-2 (listing Windows XP Home and Windows XP Professional as OS's used in different laptop models). Accordingly, a POSITA would have understood that Pröll suggests a GUI that executes on the computing unit ("processor") to display content on Pröll's display device 5. *See* Pröll, [0035]; *see also* Foley, 166 ("The application program and *graphics subroutine package* share the system memory and *are executed by the CPU.*") (emphasis added). Further, Pröll teaches the display of "computer content" such as navigation data, map data, and other electronic data. Pröll, Claims 25-27.

d. ***1[c]: "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, selectable computer operations and passive digital content"***

69. In my opinion, the Pröll-Martinez combination teaches or suggests a GUI configured to "display a plurality of views of a plurality of visual representations of computer content." 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"; this limitation does not encompass "merely changing the display's orientation" or changing to wholly different content. *See* Section IX.A.

70. Pröll teaches a mobile processing device that displays different content views depending on how its housing halves, 2 and 3, are arranged relative to one another. Pröll, [0050]. Pröll teaches that housing half 2 may pivot toward housing half

3 by as much as 360°. *Id.*, [0050]–[0052]. Pröll also discloses adjusting the display on display device 5 based on the detected pivot rotation—e.g., rotating the display contents 180° when the pivot angle exceeds 270°. *Id.*, [0050]. Pröll’s mobile data processing device detects this pivot angle, or configuration of the two halves, “using a pure software solution, [or an] . . . realized in hardware.” *Id.* [0053]. Pröll also contemplates different organizations of content for different configurations of the two housing halves. *Id.*, [0061] (explaining that display device 5 may be “realized as a touch screen . . . when used in a vehicle” as depicted in Figs. 7 and 8).

71. Although Pröll discloses adjusting the text and graphics on its GUI in a plurality of ways, Pröll is not explicit about the organization of content on its GUI. In my opinion, a POSITA would have been motivated to combine Pröll with Martinez such that Pröll’s GUI displays a different organization of content when its housing halves are arranged in various configurations.

72. Martinez teaches using a sensor to detect movement (i.e., “the shake feature”) and arranging (i.e., organizing) windows and/or icons, based on that movement. Martinez, 6:1-37. For example, Martinez discloses a process that can arrange windows in “a tile or cascading fashion” and arrange icons “in any preselected manner the user or programmer desires.” Martinez, Fig. 9, 5:66-6:37; *see also id.*, 2:24-27. Both cascading and tiling are well-known graphical arrangements, which are discussed in computer graphics textbooks, and used to organize computer content in different ways. *See* Foley, 366 (discussing a “cascading hierarchy”), 426-27 (discussing

various icon layouts). Examples of cascading (top) and tile (bottom) arrangements are depicted below.

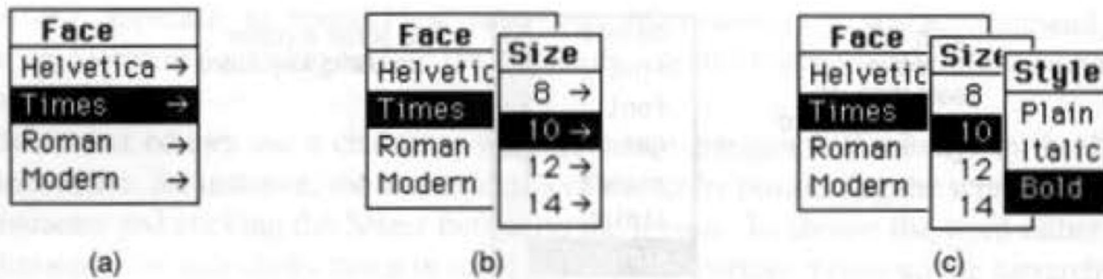


Fig. 8.10 A pop-up hierarchical menu. (a) The first menu appears where the cursor is, in response to a button-down action. The cursor can be moved up and down to select the desired typeface. (b) The cursor is then moved to the right to bring up the second menu. (c) The process is repeated for the third menu.

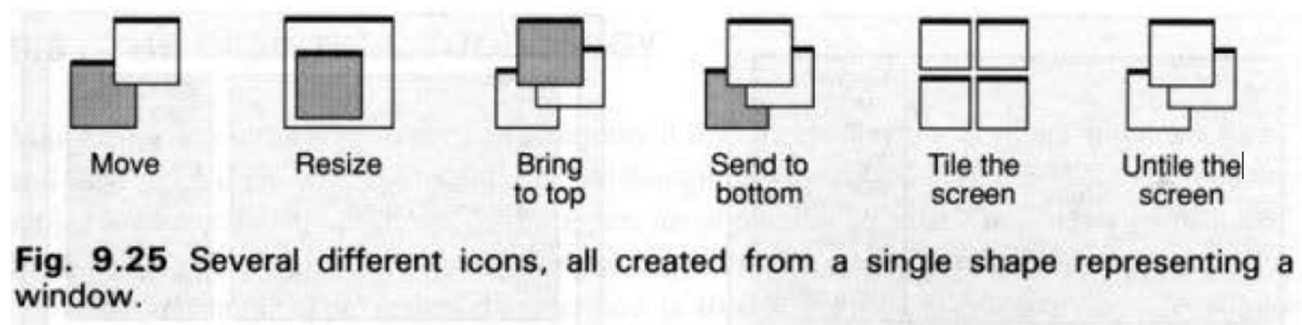


Fig. 9.25 Several different icons, all created from a single shape representing a window.

73. As evidenced by the above figures, in my opinion, a POSITA would have recognized tile and cascading as two different ways of organizing windows which would include “visual representations of computer content.” *See id.*, 366, 426-27. A window is typically thought of as a rectangular screen area that “act[s] as [a] virtual graphics terminal . . . running an application.” *Id.*, 2. Graphical interfaces have long made use of windows and “almost all interactive application programs, even those for manipulating text (e.g., word processors) or numerical data (e.g., spreadsheet programs), use graphics extensively in the user interface and for *visualizing and manipulating the application-specific objects.*” *Id.* (emphasis added). Thus, in my

opinion, a POSITA would have understood that the windows discussed in Martinez contain “selectable digital content,” “selectable computer operations,” and “passive digital content.” *See id.*; *see also* Martinez, 1:15-41 (explaining that GUIs include “icons, menus,” and “application programs”). Accordingly, in my opinion, Martinez organizes those visual representations into different arrangements when the windows are cascaded or tiled.

74. Similarly, Martinez discusses arranging icons “in any preselected manner.” Martinez, 6:35-37. In my opinion, a POSITA would have also understood that the computer content represented by Martinez’ icons is “selectable digital content.” *Id.*, 1:34-37 (“A GUI is an interface system . . . by which a user interacts with a data processing system, system components, and/or system applications via windows or via ports, icons, menus, pointing devices, etc.”).

75. In my opinion, a POSITA would have been motivated to combine the teachings of Martinez with Pröll because Martinez teaches that it would be “advantageous to have a method and apparatus to detect various changes in orientation of hardware associated with a data processing system in which the display is altered in response to various changes in orientation of the hardware.” Martinez, 1:62-67. As Martinez explains, GUIs are used “to provide an intuitive” interface to users and help simplify users’ interactions with complex data processing systems. *Id.*, 1:23-33. In my opinion, a POSITA would have understood that arranging the display to correspond to a new hardware configuration would ensure that the arrangement is best suited to the

user's needs. Indeed, it was well-known that "[t]he visual design of a user-computer interface affects both the user's initial impression . . . and the system's longer-term usefulness." Foley, 418. In my opinion, a POSITA would have understood that organizing content to account for the manner in which a user interacts with the computer would increase the computer's usefulness to the user. *Id.* ("Visual design comprises all graphic elements of an interface, including overall screen layout . . . [and] strives for clarity, consistency, and attractive appearance."). And, as discussed previously, Pröll already contemplates changing the organization of displayed content to simplify and improve the interface for a user. *See* Pröll, [0062] (implementing the display as a touchscreen interface when the pivot angle is 360°).

76. In addition, instead of Martinez's shake feature, in my opinion, a POSITA would have been motivated to trigger views based on Pröll's switch indicating rotation of Pröll's two halves by more or less than 180°. *See* Pröll, [0049]-[0050]. Pröll and Martinez disclose similar systems with a laptop configuration of a computing device with display, keyboard, and processing components containing a hardware-based trigger that detects physical changes to the device and responds to such changes with a different GUI display. The switch in Pröll is a sensor that detects the degree of rotation and Martinez teaches rearranging a GUI based on a sensor "attached to the hardware of interest" that "provides numeric values to a register." Martinez, 5:24-28. It would have been within the skills of a POSITA to program Pröll's switch to rearrange windows as Martinez teaches because it was well known at the time of the invention to use

mechanical multi-functional gravity and ball-detent hinge mechanisms like Pröll's switch to interface with screen orientation processing software to automatically alter text and graphics on a screen, according to a desired layout. *See* Reavey (Ex. 1009) Fig. 7, 5:66–6:10, 6:33–36, 7:24–31; Pröll, ¶[0049] (switching a displayed view 180 degrees when that displayed view would otherwise be upside down). Indeed, such “interrupt-driven interaction,” which allows applications to respond to hardware events or input (e.g., sensor data) was commonly taught in graphics textbooks. *See* Foley, 42-43. Through interrupts, an “application enables one or more devices for input and then continues normal execution until interrupted by some input *event* (a change in a device's state caused by user action); control then passes asynchronously to an interrupt procedure, which responds to the event.” *Id.* An event trigger may be defined for “each input device” and “the event trigger is the user action that causes an event to occur.” 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 Pröll. Further, in my opinion, a POSITA would have recognized that doing so would have allowed Pröll's system to be more effectively used in different mobile environments, such as switching between cascading and tiled views (Martinez, 6:32-37) depending on the available precision of a user input from a keyboard at a stable, permanent work station or touching a screen while riding in a moving car (Pröll, Figs. 6-8, [0048]-[0051], [0057]). 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, via the processor executing instructions, to make changes to the display.

77. In my opinion, a POSITA would have found the combination of Martinez's views in Pröll's system to be a predictable improvement upon Pröll's system. Martinez's teachings would have allowed users to optimize one of the views rendered by Pröll's physical reconfigurations according to the rearrangement of windows and icons that Martinez teaches, and particularly to accommodate Pröll's configurations, as shown in Figures 6-8, designed to be used with a touchscreen in a mobile environment (and where use of a keyboard would be impractical or even dangerous). And as I discussed immediately above, such modifications are within the skill of a POSITA. For example, when a user rotates the two halves of Pröll's computing device to the point where the keyboard is blocked (i.e., when Pröll's two halves are rotated by more than 180° relative to each other), switching views as Martinez teaches would have allowed a user to predictably reorganize the interface to display larger, tile-sized icons on a touchscreen for a user to tap while the keyboard is inaccessible (e.g., when the user is riding in a car). It is well-known that touch optimized interfaces "use[] large buttons and icons to make it easy to find and open your favorite applications." *See, e.g.,* Ex. 1035 at 3; Ex. 1036 at 6:15-20 ("Some applications are designed specifically for touch screen technology, often having larger icons and links . . ."). Conversely, when Pröll's device is rotated to a more conventional laptop configuration, the user could reorganize the view to smaller, cascading windows on the screen as Martinez teaches, allowing the

user to use the keyboard to transition between, and interact with, the smaller views using more precise inputs. *See, e.g.,* Martinez, 6:32–37 (disclosing window and icon arrangement by user preference); Pröll, ¶[0061] (disclosing the display screen may be “realized as a touch screen”). A smaller screen would make precision inputs difficult with a touch-only input. *See* Foley, 359 (explaining that accuracy of touch input depends on screen size, screen resolution, and finger width).

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

78. In my opinion, the Pröll-Martinez combination teaches “an execution component.” As discussed previously in Section XI.A.1.b for 1[a], a POSITA would have understood that the computing unit in Pröll is a processor and is responsible for executing instructions. The computing unit also processes any data transmitted by peripheral units (e.g., a sensor). *See* Pröll, [0042]. As I discuss in Sections XI.A.1.f [1e] and XI.A.1.g [1f] below, the processor in the Pröll-Martinez combination is “configured to” “detect a current computer system configuration” and “select one of the plurality of views” by executing instructions. To the extent a specific component is required to be explicitly identified, in my opinion, a POSITA would understand that it was well-known to use a “graphics subroutine package executing on the general-purpose CPU . . .” to execute functions that change the display. Foley, 165.

- f. ***1[e]: “detect a current computer system configuration from at least a first computer system configuration where the keyboard is operable to receive input from an operator of the computer system to control the computer system and a second computer system configuration where the keyboard is inoperable to receive input from the operator of the computer system to control the computer system”***

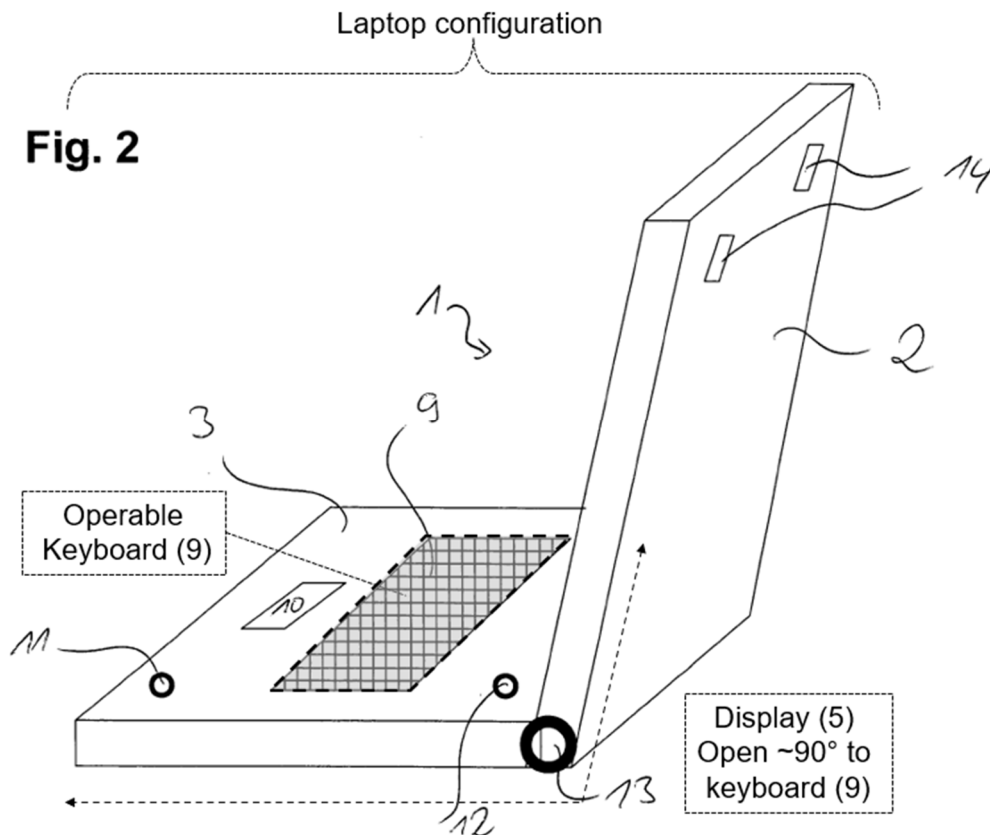
79. In my opinion, Pröll discloses or suggests “detect[ing] a current computer system configuration” under MPF and non-MPF. Based on the disclosures of the ’715 patent, the MPF limitation requires that the processor is configured to (i) receive data from sensors, (ii) use that received data to determine the current computer system configuration, and (iii) use that determination to change to the view corresponding to the current computer system configuration, and its equivalents. *See, e.g.*, ’715 patent, Figs. 26, 51, 20:10-38, 24:61-25:20, 57:9-18, 68:9-69:36, 70:19-35. In my opinion, Pröll discloses these requirements.

80. Pröll’s mobile data processing device includes a switch in pivoting device 4 that detects whether housing half 2 has been pivoted towards housing half 3 by more than 270°. Pröll, [0049]-[0050]. When that occurs, keyboard 9 is “automatically blocked.” *Id.*, [0049]-[0050]. Thus, Pröll discloses detecting a first and second “computer system configuration.” In my opinion, a POSITA would understand that the switch device acts as a sensor because it senses when the mobile data processing device is in a specific configuration. *See also* 1[c]. In the first configuration, the halves are rotated less than 180° (e.g., the laptop configuration of Fig. 2) and the keyboard 9 is not blocked (“a first computer system configuration where the keyboard is operable to receive input from an operator of the computer system to control the computer system”).

Pröll, [0037] (“Fig. 2 shows a lateral plan view of a . . . device 1 folded open by 90° degrees, wherein the first housing half 2 and the second housing half 3 . . . assume an angle of approx. [] 90° in reference to each other.”).

81. In the second configuration, the halves are rotated more than 180° (e.g., the configurations in Figs. 6-8) and the keyboard 9 is “automatically blocked” (“a second computer system configuration where the keyboard is inoperable to receive input from the operator of the computer system to control the computer system”). *See* Pröll, [0045] (“When swiveling both the housing halves . . . [360°], the keyboard 9 . . . and the input units 10, 11 thus come to rest on the exterior. The display device 5 is then located on the opposite side.”), [0051]. Pröll’s mobile data processing device contains “a switch [] arranged in the pivoting device 4, which . . . detect[s] that the first housing half 2 has been pivoted toward the second housing 3 by more than 270°” and detects whether the degree of rotation goes below 180°. Pröll, [0050]. Further, as I discussed for 1[a], Pröll teaches a processor that processes data from various peripheral units, including the switch in the pivoting device. Thus, in my opinion, a POSITA would understand that when Pröll adjusts the display on display device 5 based on the detected pivot rotation—e.g., rotating the display contents 180° when the pivot angle exceeds 270°—its processor receives data from the switch in pivoting device 4 and uses that data to determine the new configuration and display the appropriate view. *See id.*, [0050].

82. Figure 2, which I have reproduced below, shows Pröll’s laptop configuration (i.e., housing halves rotated less than 180°):



83. Figures 6-8, which I have reproduced below, show configurations where the first housing half is rotated more than 180°. When this rotation “is detected [i.e., via the switch in the pivoting device], the input over the input units 9, 10, 11 is automatically blocked.” Pröll, [0050].

FIG. 6

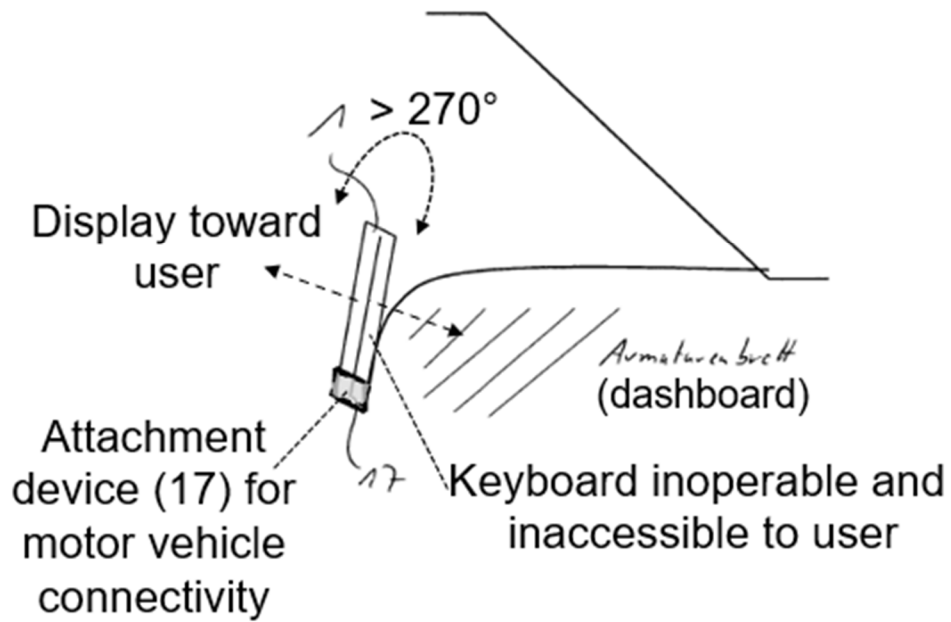


FIG. 7

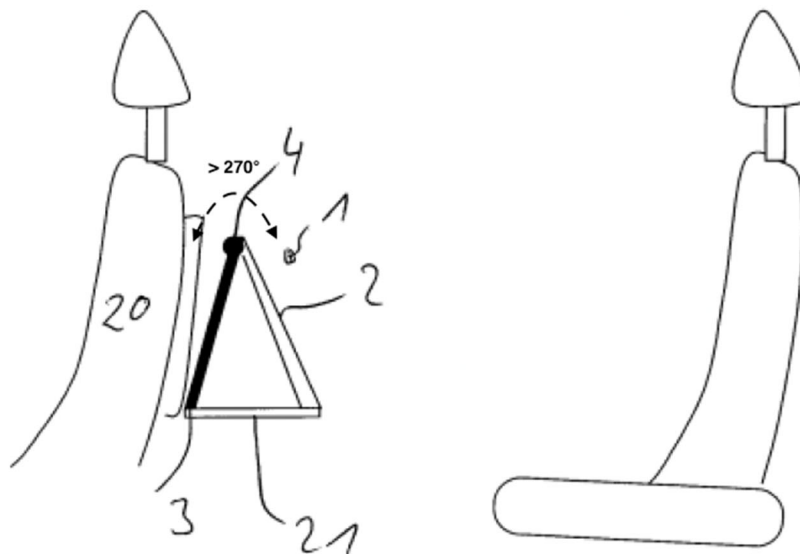


Diagram illustrating a workstation setup. A swivel chair is positioned in front of a desk. The desk has a keyboard and a monitor. The keyboard is labeled "Keyboard facing away from user". The monitor is labeled "Display (5) toward user". The monitor is mounted on a swivel base, and the angle of rotation is indicated as $> 270^\circ$. The monitor is also labeled with "2" and "5".

84. In my opinion, the Pröll-Martinez combination teaches or suggests “select[ing] one of the plurality of views.” As discussed above in Section XI.A.1.d for [1c], Pröll teaches changing the orientation of the display in response to the detected computer system configuration, and Martinez teaches changing to one of a plurality of views (e.g., organization of windows and/or icons) based on detected motion of the computer system. Specifically, Martinez teaches a process that arranges windows or icons in a “preselected manner” after detecting tilt from sensor data. Martinez, 5:24-30, 6:32-37. In other words, Martinez “select[s] one of the plurality of views” and “transition[s] the display component to the selected one of the plurality of views” in response to sensor data. Pröll, as discussed above in 1[e], discloses a switch in pivoting device 4 that detects whether housing half 2 has been rotated towards housing half 3 by more than 270° (i.e. “detect[s] a current computer system configuration”). Pröll, [0050]. Pröll also teaches automatically blocking keyboard 9 if the rotation is more than 270°,

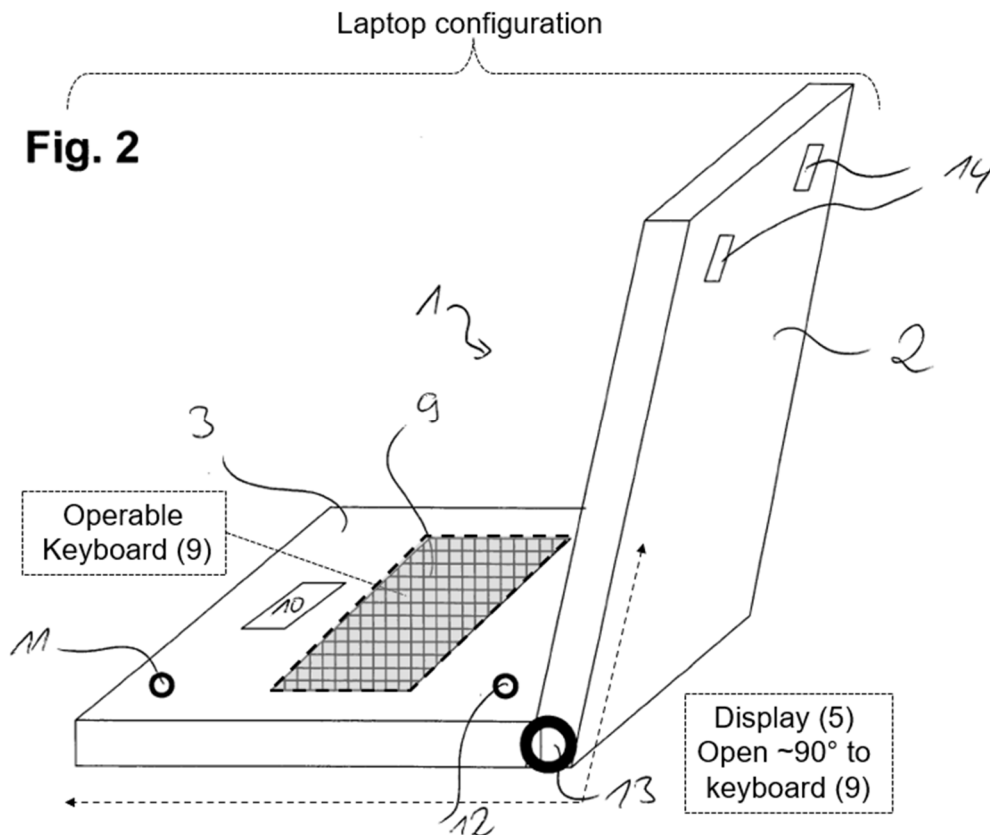
and then rotates the display 180°, “since otherwise the display would be upside down.” Pröll, [0048]-[0049].

85. In my opinion, a POSITA would have found it obvious to combine Pröll with the teachings in Martinez regarding the selection and transition to one of a plurality of views (e.g., cascading or tiled windows, or a custom arrangement of icons). *See* Section XI.A.1.d (1[c]). As discussed above for 1[c], in my opinion, a POSITA would have been motivated to apply Martinez’s views to be triggered based on Pröll’s switch indicating rotation of Pröll’s two halves by more or less than 270° to predictably improve usability of Pröll’s system. It would have been within the skills of a POSITA to program Pröll’s switch to rearrange windows as Martinez teaches because it was well known at the time of the invention to use mechanical multi-functional gravity and ball-detent hinge mechanisms like Pröll’s switch to interface with screen orientation processing software to automatically alter text and graphics on a screen, according to a desired layout. *See* Reavey (Ex. 1009) Fig. 7, 5:66–6:10, 6:33–36, 7:24–31; Pröll, ¶[0049] (switching a displayed view 180 degrees when that displayed view would otherwise be upside down). Indeed, such “interrupt-driven interaction,” which allows applications to respond to hardware events or input (e.g., sensor data) was commonly taught in graphics textbooks. *See* Foley, 42-43. Through interrupts, an “application enables one or more devices for input and then continues normal execution until interrupted by some input *event* (a change in a device’s state caused by user action); control then passes asynchronously to an interrupt procedure, which responds to the

event.” *Id.* An event trigger may be defined for “each input device” and “the event trigger is the user action that causes an event to occur.” Thus, in my opinion, the Pröll-Martinez combination discloses selecting and transitioning to cascading windows, tiled windows, or “any preselected” arrangement of icons (“select one of the plurality of views for display on the computer system”) in response to detecting that the first housing half is rotated by more than 270° (“in response to the detected current computer system configuration”).

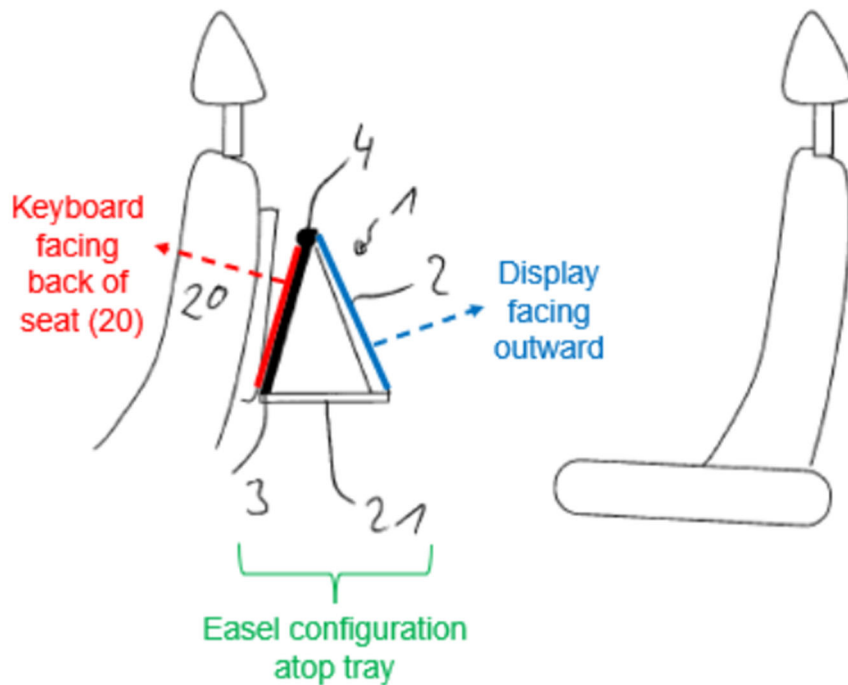
2. **Claim 19: The user interface of claim 1, wherein the first mode is a laptop mode where the keyboard is oriented to be accessible to the operator and wherein the second mode is an easel mode or a frame mode where the keyboard is oriented to be inaccessible to the operator.**

86. In my opinion, the Pröll-Martinez combination teaches claim 19. As I discuss above in Section XI.A.1.f for [1e], Pröll teaches a laptop configuration (housing halves rotated less than 180°) and several configurations where the housing halves are rotated more than 270°. Figure 2 of Pröll, reproduced below, depicts “a laptop mode where the keyboard is oriented to be accessible to the operator.”



87. Figure 7 of Pröll, which I have reproduced below, depicts “an easel mode . . . where the keyboard is oriented to be inaccessible to the operator.” See Pröll [0048]-[0049], [0052] (“Fig. 7 shows a device according to the invention in a folded position, wherein which the two housing halves 2, 3 are at an angle in reference to one another of approx. 270° degrees in the folding direction.”).

FIG. 7



3. Claim 20

- a. ***20[pre]: A customized user interface to display computer content on a display component of a computer system including a keyboard, the user interface comprising:***

88. 20[pre] recites a similar limitation to 1[pre], which I discuss in Section XI.A.1.a. In my opinion, 20[pre] is taught in the prior art for the same reasons discussed in that Section.

- b. ***20[a]: at least one processor operatively connected to a memory of the computer system***

89. 20[a] recites a similar limitation to 1[a], which I discuss in Section XI.A.1.b. In my opinion, 20[a] is taught in the prior art for the same reasons discussed in that Section.

- c. ***20[b]: a graphical user interface, executing on the at least one processor, configured to display the computer content on the display component of the computer system, the graphical user interface configured to:***

90. 20[b] recites a similar limitation to 1[b], which I discuss in Section XI.A.1.c. In my opinion, 20[b] is taught in the prior art for the same reasons discussed in that Section.

- d. ***20[c]: 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, selectable computer operations and passive digital content;***

91. 20[c] recites a similar limitation to 1[c], which I discuss in Section XI.A.1.d. In my opinion, 20[c] is taught in the prior art for the same reasons discussed in that Section.

- e. ***20[d]: an execution component, executing on the at least one processor, configured to:***

92. 20[d] recites a similar limitation to 1[d], which I discuss in Section XI.A.1.e. In my opinion, 20[d] is taught in the prior art for the same reasons discussed in that Section.

- f. ***20[e]: detect a current computer system configuration from at least a first computer system configuration where the keyboard is positioned to receive input from an operator of the computer system and a second computer system configuration where the keyboard is not positioned to receive input from the operator of the computer system;***

93. 20[e] recites similar limitations to 1[e] and claim 19, which I discuss in Sections XI.A.1.f. In my opinion, 20[e] is taught in the prior art for the same reasons discussed in those Sections.

- g. *20[f]: select one of the plurality of views for display on the computer system in response to the detected current computer system configuration; and transition the display component to the selected one of the plurality of views.***

94. 20[f] recites a similar limitation to 1[f], which I discuss in Section XI.A.1.g. In my opinion, 20[f] is taught in the prior art for the same reasons discussed in that Section.

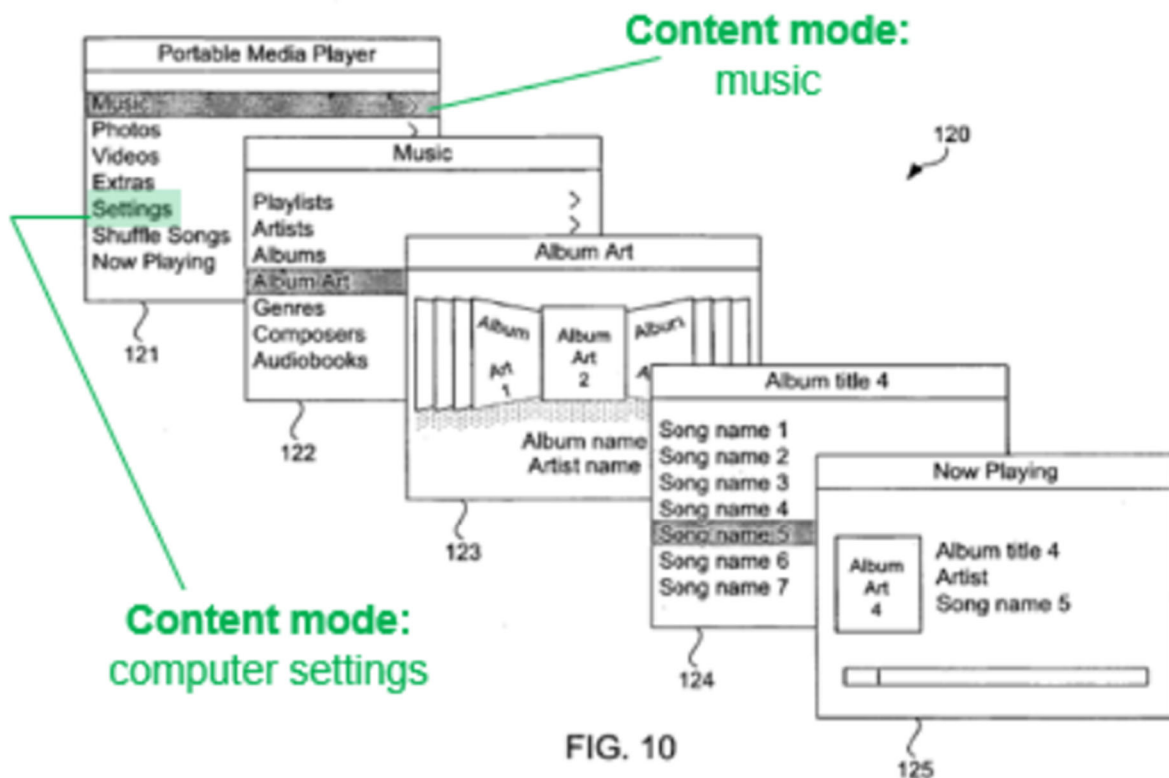
B. Ground 2: Obviousness over Pröll, Martinez, and Chandhri (Claims 2, 15-18)

- 1. Claim 2: The user interface of claim 1, wherein in the plurality of views includes a home view configured to organize a plurality of content modes and a channel view configured to organize at least one of a single content mode and two content modes.**

95. As I discuss above in Section XI.A.1, the Pröll-Martinez combination teaches “[t]he user interface of claim 1.” Claim 2 requires the recited “home view” and “channel view” to be among the “plurality of views” in 1[c], but I note that claim 2 does not require either of those specific views to be selected in response to the detected current computer system configuration, as recited in 1[f]. In addition, the ’715 patent uses the term “content mode” to refer to displaying a certain type of content for viewing by a user. *E.g.*, EX-1001, 3:35-36 (“web content mode is configured to display web based content for proximal viewing by a user”), 3:43-45 (“the media content mode is configured to display media based content for non-proximal viewing”), 3:63-65 (“connect content mode, wherein the connect content mode is configured to display computer configuration operations for viewing by a user”). In my opinion, Pröll and

Martinez in combination with Chandhri teaches the additional limitations of claim 2.

96. Main menu 121 in Chandhri's Figure 10 teaches a "home view configured to organize a plurality of content modes" because it includes a "settings" option (corresponding to the '715 patent's connect content mode configured to display computer configuration operations for viewing by a user) and a "music" option (corresponding to the '715 patent's media content mode configured to display media based content). Chandhri, [0134]. I identify the two content modes in the annotated Figure 10 reproduced below.



97. 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].

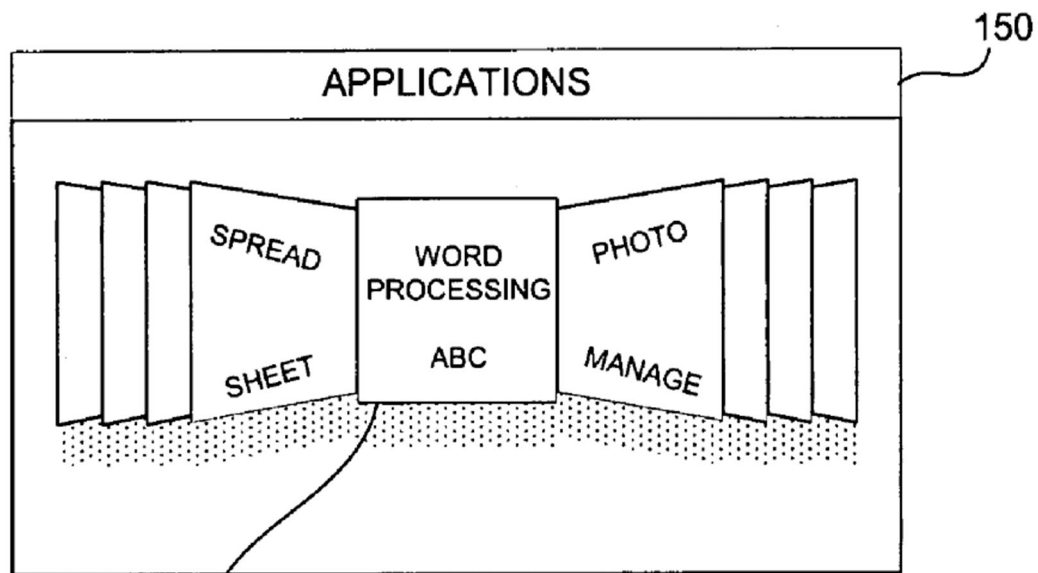


FIG. 13

98. In my opinion, a POSITA would have been motivated to combine the teachings of Chandhri with the Pröll-Martinez combination. Like Pröll and Martinez,

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]; *see also* my discussion of 1[c] in Section XI.A.1.d. 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 Pröll-Martinez 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].

2. Claim 15: The user interface of claim 1, wherein the plurality of views includes a channel view including a channel selector that displays a sequence of visual representations.

99. In my opinion, the Pröll-Martinez-Chandhri combination teaches claim 15. Similar to claim 2, claim 15 requires the recited “channel view” to be among the “plurality of views” in 1[c], but does not require that specific view to be selected in response to the detected current computer system configuration, as recited in 1[f]. As I

discuss above for claim 2, Chandhri teaches a “channel view” in, for example, its image-based browsers in Figures 10, 13, and 15. Those views include a “channel selector” (i.e., the ability to select the middle image or middle application) “that displays a sequence of visual representations” (i.e., the sequence of the images in the image-based browser or applications in the application browser). Chandhri, Figures 10, 15 (annotated versions reproduced below), [0134], [0141], [0145].

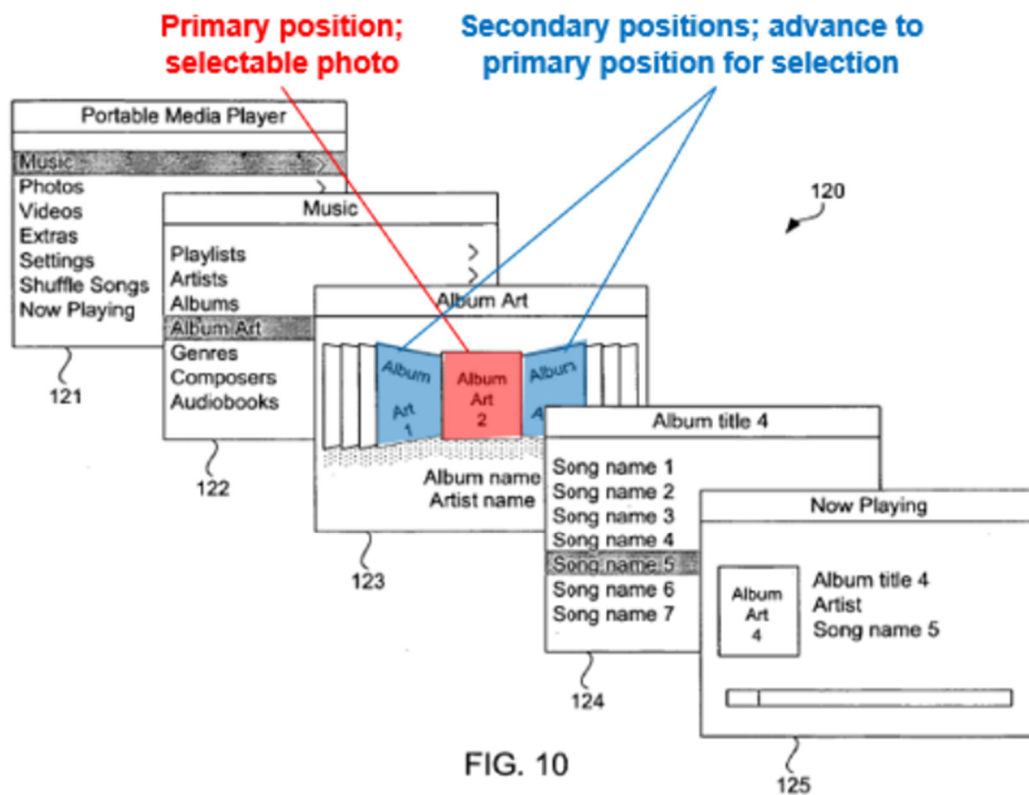


FIG. 10

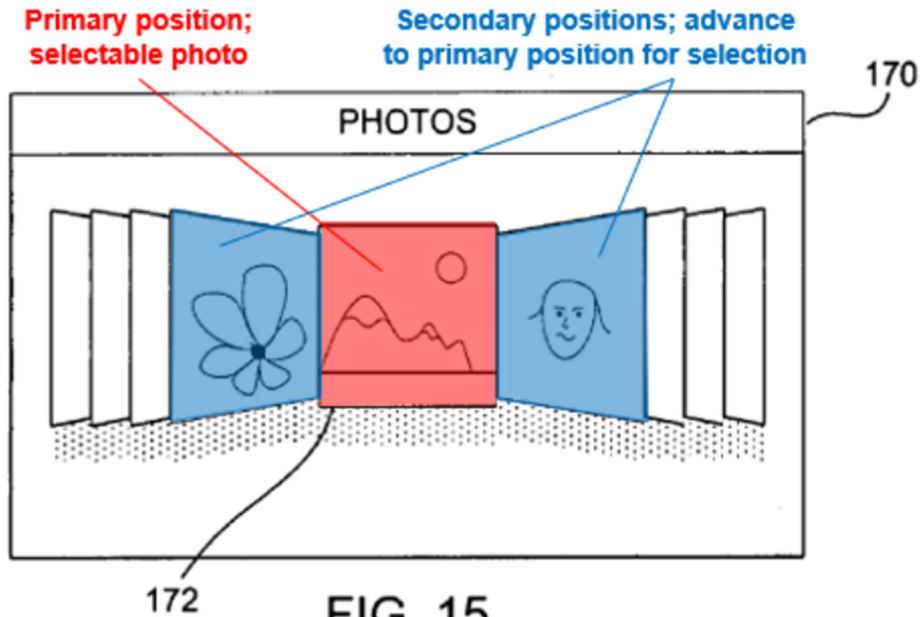


FIG. 15

100. As I discuss in Section XI.B.1 for claim 2, a POSITA would have found it obvious to combine the teachings of Chandhri with the Pröll-Martinez combination.

3. **Claim 16: The user interface of claim 15, wherein the execution component is further configured to transition the computer system to the channel view in response to receiving user input via at least one input device integral to or operatively connected with the computer system.**

101. In my opinion, the Pröll-Martinez-Chandhri combination teaches claim 16 under MPF and non-MPF. Based on the disclosures in the '715 patent, the MPF limitation requires the execution component to be a program (or programs) executing on a processor that can (i) receive user input via an input device, and (ii) transition the display to the channel view in response. *See, e.g., '715 Patent, Figs. 9, 50, 20:62–21:29, 31:49–32:56, 68:9–69:36.*

102. Chandhri's Figure 10 depicts transitioning to image-based browser window 123 ("channel view") in response to a user selecting the album art item in sub

menu 122. Chandhri, [0134] (“[A]n Album art item is selected in a sub menu 122, which launches an image based browser window 123 . . .”). In my opinion, a POSITA would have understood that a user makes such a selection using an “input device integral to or operatively connected with the computer system.” Indeed, Chandhri teaches that its “user interface generally includes a display device and one or more input devices” that “may be widely varied” and “include at least a proximity or touch sensing device . . .” *Id.* [0144]. Pröll similarly teaches a variety of user input devices including a touch screen, keyboard, control pad, and input unit. Pröll, [0035], [0062]. Further, both Chandhri and Pröll teach a processor that executes instructions and processes inputs from peripheral devices. *See* Chandhri, [0231] (“[T]he media player 700 includes a display 710 (screen display) that can be controlled by the processor 702 to display information to the user.”); *see also* Section XI.A.1.b (discussing Pröll’s use of a processor to receive sensor data and transition the display in response). Further, in my opinion, a POSITA would have found it obvious to implement this teaching from Chandhri in the Pröll-Martinez combination for the same reasons I discuss above for claim 2 in Section XI.B.1.

4. Claim 17

- a. ***17[pre]: “A customized user interface to display computer content on a display component of a computer system including a keyboard, the user interface comprising:”***

103. 17[pre] recites a similar limitation to 1[pre], which I discuss in Section XI.A.1.a. In my opinion, 17[pre] is taught in the prior art for the same reasons discussed

in that Section.

- b. ***17[a]: “at least one processor operatively coupled to a memory of the computer system”***

104. 17[a] recites a similar limitation to 1[a], which I discuss in Section XI.A.1.b. In my opinion, 17[a] is taught in the prior art for the same reasons discussed in that Section.

- c. ***17[b]: “a graphical user interface, executing on at least one processor, configured to display a plurality of views of a plurality of visual representations of the computer content”***

105. 17[b] recites similar limitations to those in 1[b] and 1[c], which I discuss in Sections XI.A.1.c and XI.A.1.d. In my opinion, 17[b] is taught in the prior art for the same reasons discussed in that Section.

- d. ***17[c]: “an execution component, executing on the at least one processor, configured to:”***

106. 17[c] recites a similar limitation to 1[d], which I discuss in Section XI.A.1.e. In my opinion, 17[c] is taught in the prior art, under MPF and non-MPF, for the same reasons discussed in that Section.

- e. ***17[d]: “identify at least a first computer system configuration where the keyboard is operable to receive input from an operator of the computer system to control the computer system and a second computer system configuration where the keyboard is inoperable to receive input from the operator of the computer system to control the computer system based on sensor input indicating a position of the display component”***

107. 17[d] recites a similar limitation to 1[e], which I discuss in Section XI.A.1.f. In my opinion, 17[d] is taught in the prior art for the same reasons discussed in that Section. Specifically, as I discuss for 1[e], Pröll identifies a configuration by

using the switch in the pivot device to determine whether housing halves 2 and 3 are rotated more or less than 270 ° relative to one another (i.e., “based on sensor input indicating a position of the display component”).

108. In addition, in my opinion, a POSITA would have understood and found it obvious that for Pröll’s switch to detect the rotation of the device and adjust the display, the system would use a program executing on a processor that can receive data from Pröll’s switch (receive data from sensors), use that data to determine the rotation of the device (and therefore the device’s current computer system configuration), and use that determination to adapt Pröll’s display (change to the view corresponding to the current system configuration. *See* Section XI.A.1.f (1[e])).

- f. ***17[e]: “select, responsive to the sensor input, a first content view from the plurality of views for the first computer system configuration; transition, automatically in response to the sensor input, the display component between at least the first content view of the plurality of views and a second content view of the plurality of views”***

109. 17[e] recites similar limitations to those in 1[f] and 17[d] above for sensor input, which I discuss in Sections XI.A.1.g and XI.B.4.e. In my opinion, 17[e] is taught in the prior art for the same reasons discussed in those Sections. In addition, as I discussed for 1[e], a POSITA would have understood that Pröll’s switch, which automatically detects rotation of the device and adjusts the display, would be implemented by using a program executing on a processor that receives sensor input and selects and transitions to the display to the channel view in response.

- g. ***17[f]: “receive user input via at least one input device integral to or operatively connected with the computer system”***

110. 17[f] recites a similar limitation to a limitation of claim 16, which I discuss in Section XI.B.3. In my opinion, 17[f] is taught in the prior art for the same reasons discussed in that Section.

- h. ***17[g]: “transition, automatically in response to receiving the user input, the display component from one of the first content view and the second content view to a channel view including a channel selector that displays a sequence of visual representations”***

111. 17[g] recites a similar limitation to a limitation of claim 16, which I discuss in Section XI.B.3. In my opinion, 17[g] is taught in the prior art for the same reasons discussed in that Section.

5. Claim 18 The user interface of claim 17, wherein the at least one input device includes at least one of a scroll wheel, a touchpad, and a mouse

112. As I discuss above in Section XI.B.4, the Pröll-Martinez-Chandhri combination teaches “the user interface of claim 17.” In addition, Chandhri teaches a scroll wheel (Chandhri, [0159]), a touch surface (i.e., “touchpad”) (*id.*, [0081], [0129], [0144], [0146]), and a mouse (*id.*, [0081], [0129]). In my opinion, a POSITA would have found it obvious to implement these teachings from Chandhri in the Pröll-Martinez combination for the same reasons as I discuss above for claim 2 in Section XI.B.1. Further, Pröll itself contemplates use of a mouse with its device: “[p]eripheral devices such as a . . . mouse . . . can be connected to the mobile data processing device 1.” Pröll, [0041].

C. Ground 3: Obviousness over Pröll, Martinez, and Preppernau (Claims 3-14)

- 1. Claim 3: The user interface of claim 1, wherein the plurality of views includes a screen saver view configured to organize selected content modes for passive viewing.**

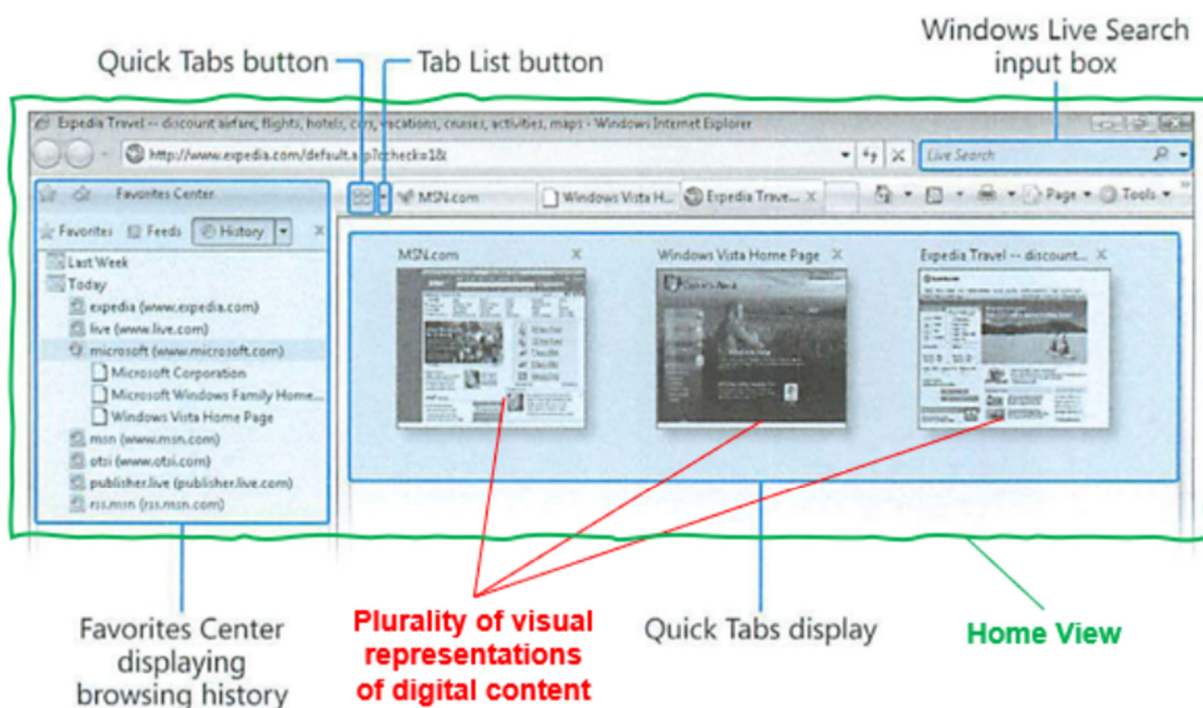
113. In Section XI.A.1 above, I explain that the Pröll-Martinez combination teaches “the user interface of claim 1.” In my opinion, a POSITA would have found the additional limitations of claim 3 obvious based on Preppernau’s teachings. Specifically, screen saver views were well known at the relevant time as shown in Preppernau. Preppernau, 112–15, 121. In Preppernau, that view can include a slide show of specific images as the screen saver view. *Id.*, 113.

114. 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 Pröll-Martinez combination because, for example, it would have amounted only to applying a known technique (e.g., passive viewing of content) to one of the views in the Pröll-Martinez combination to yield predictable results (e.g., a screen saver that displays selected content for passive viewing).

- 2. Claim 4: The user interface of claim 1, wherein the plurality of views includes a home view organizing a plurality of visual representations of digital content, wherein the home view comprises a header display and a body display, and wherein the header display comprises a lateral frame extending from the left of the display component to the right of the display component, wherein the body display is rendered below the header display in the display component of the computer system.**

115. In my opinion, Pröll-Martinez in combination with Preppernau teaches

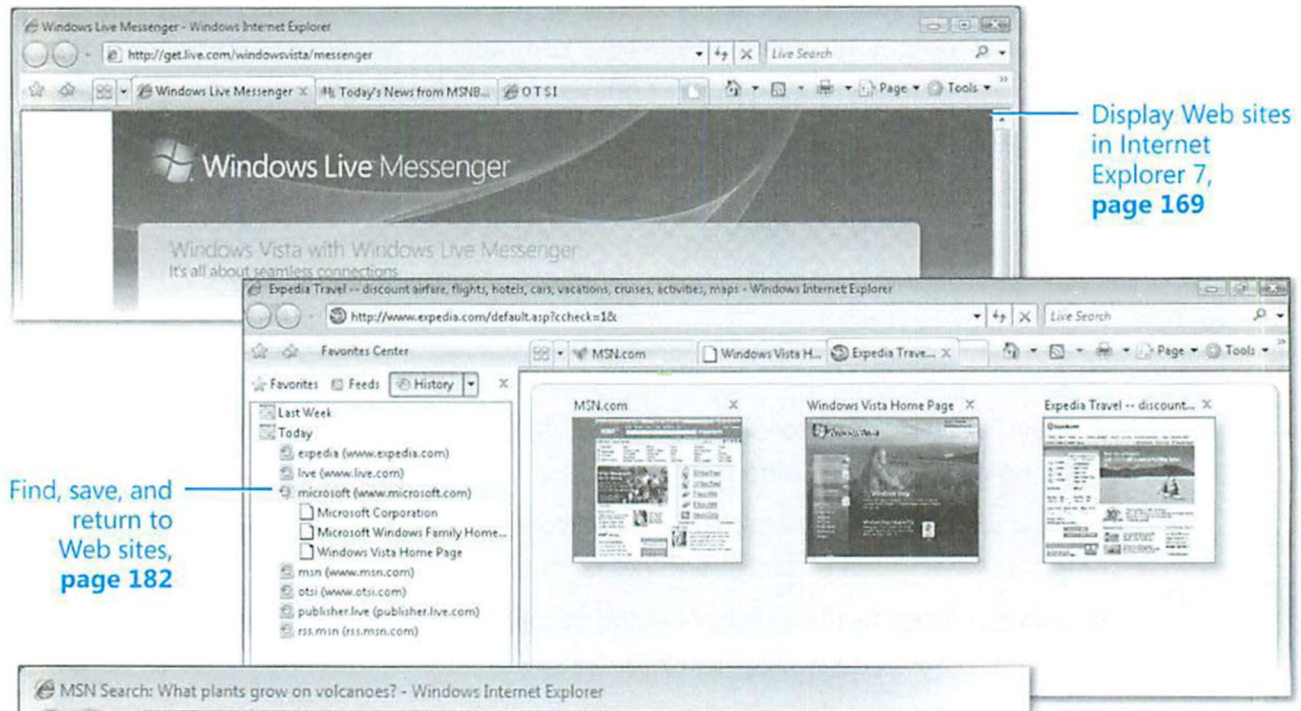
claim 4. I note that claim 4 requires a “home view” to be among the “plurality of views” in 1[c], but does not require this specific view to be selected in response to the detected current computer system configuration, as recited in 1[f]. Preppernau discusses the Windows Vista user interface, which includes a **“Quick Tabs display” below tool bars and tools** (“home view”) that arranges current, open web page-linked **thumbnail screenshots** into a grid-type layout (“organizing a plurality of visual representations of digital content”) on a user’s computer screen (“display component”). Preppernau, 182. This is shown in the annotated figure I have reproduced below.



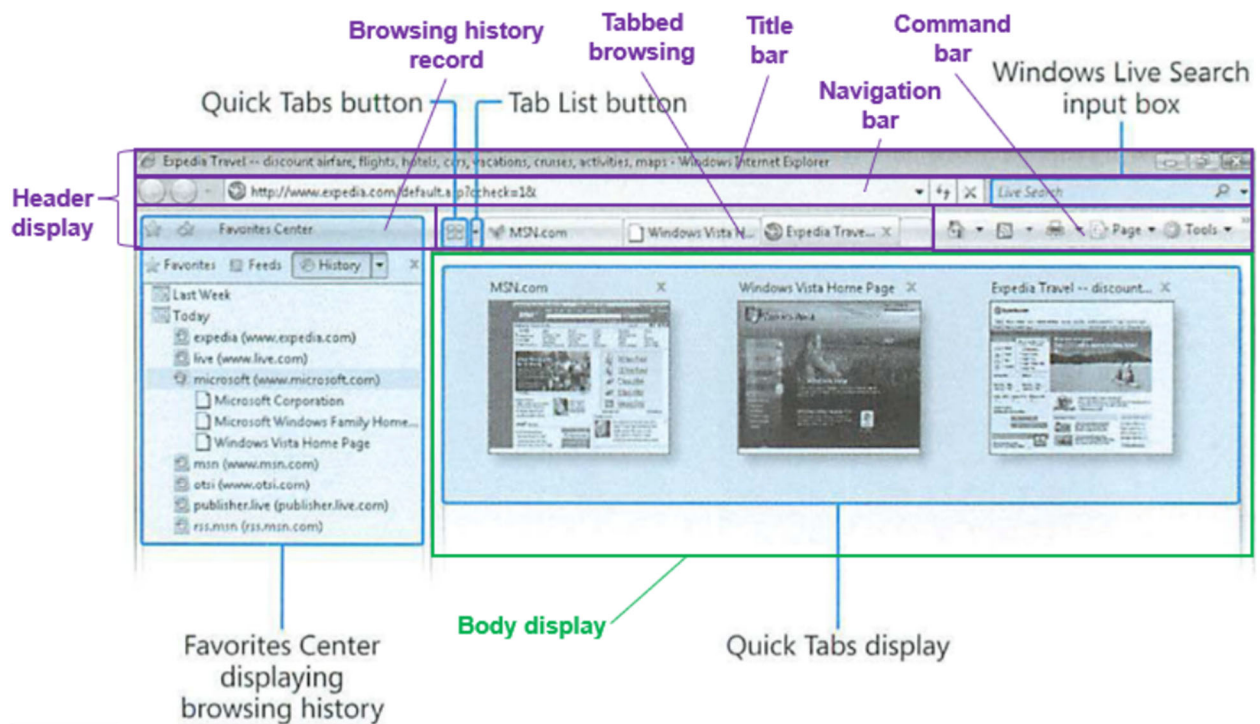
116. Preppernau also discloses a “header display” and a “body display.” In the ’715 patent, its web page view teaches an example of a header display, which includes at least navigation, tool, and title components, and a body display, which is a tabbed view of multiple webpages. ’715 patent at Figs. 3C, 18A-D, 49:1-50:54. In Preppernau,

tools and **tool bars** spanning an Internet Explorer instance include a title bar, navigation bar, command bar, “Favorites Center,” and browsing tabs (collectively, “header display comprises a lateral frame”) which appear at the top of the Quick Tabs display window (“home view”). Preppernau, xxiii, lv, 170–71, 364.

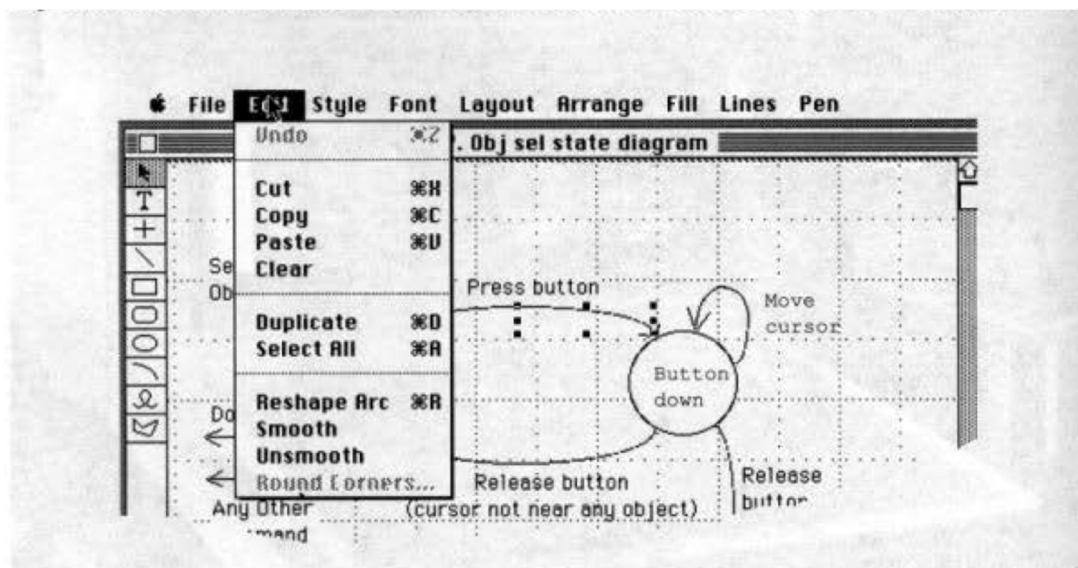
117. Preppernau further teaches that a user may optionally display the “Favorites Center” as a part of the browser window when the user “pin[s] it as a pane in the browser window” or display it “as a multi-page window” that stands on its own. *Id.*, 182, 185 (“click the **Pin the Favorites Center** button to convert the temporary window to a pane”). Thus, in my opinion, a POSITA would have understood that the Favorites Center could form part of a header display when pinned in the browser window or comprise an entire header display when taking up a dedicated window. *See id.* Indeed, Preppernau teaches that windows contain toolbars (“header display”) that “[p]resent[] menus and buttons specific to the content of the current window.” *Id.*, 365. A POSITA would have also understood that when the Favorites Center is in its own window, the Internet Explorer instance would still have a header display because the **tools** and **tool bars** would expand to cover the entire window. Below I have reproduced a Figure from Preppernau that shows the header display without Favorites Center pinned (top) and the header display with Favorites Center pinned. Preppernau, 164.



118. In addition, when a user selects the Quick Tabs view, multiple web pages are displayed in tabbed format below the navigation bar (“body display is rendered below the header display”). *Id.*, 171. I reproduce below an annotated figure showing the Quick Tabs view in Preppernau.



119. In my opinion, a POSITA would have understood that Preppernau's **tools** and **tool bars** are a "header display," consistent with the '715 patent specification because it has the same components. Further, the **tools** and **tool bars** extend across the display and such header displays comprising various tools and navigation options were well-known prior to the '715 patent, as the picture I have reproduced below shows. *See* Foley, 368.



120. In my opinion, a POSITA also would have been motivated to combine the teachings of Preppernau with the Pröll-Martinez combination. Like Pröll and Martinez, Preppernau aims to improve the way a user interacts with an electronic device that contains large collections of data by "increase[ing] the efficiency with which [users] can move among sites [they] are currently viewing or have viewed in the past, and to make it easier to find . . . the information [they] need" Preppernau, 182; *see also* Section XI.A.1.d (1[c]). Further, in my opinion, a POSITA would have understood that "key goals in user-interface design are increase in speed of learning, . . . reduction of

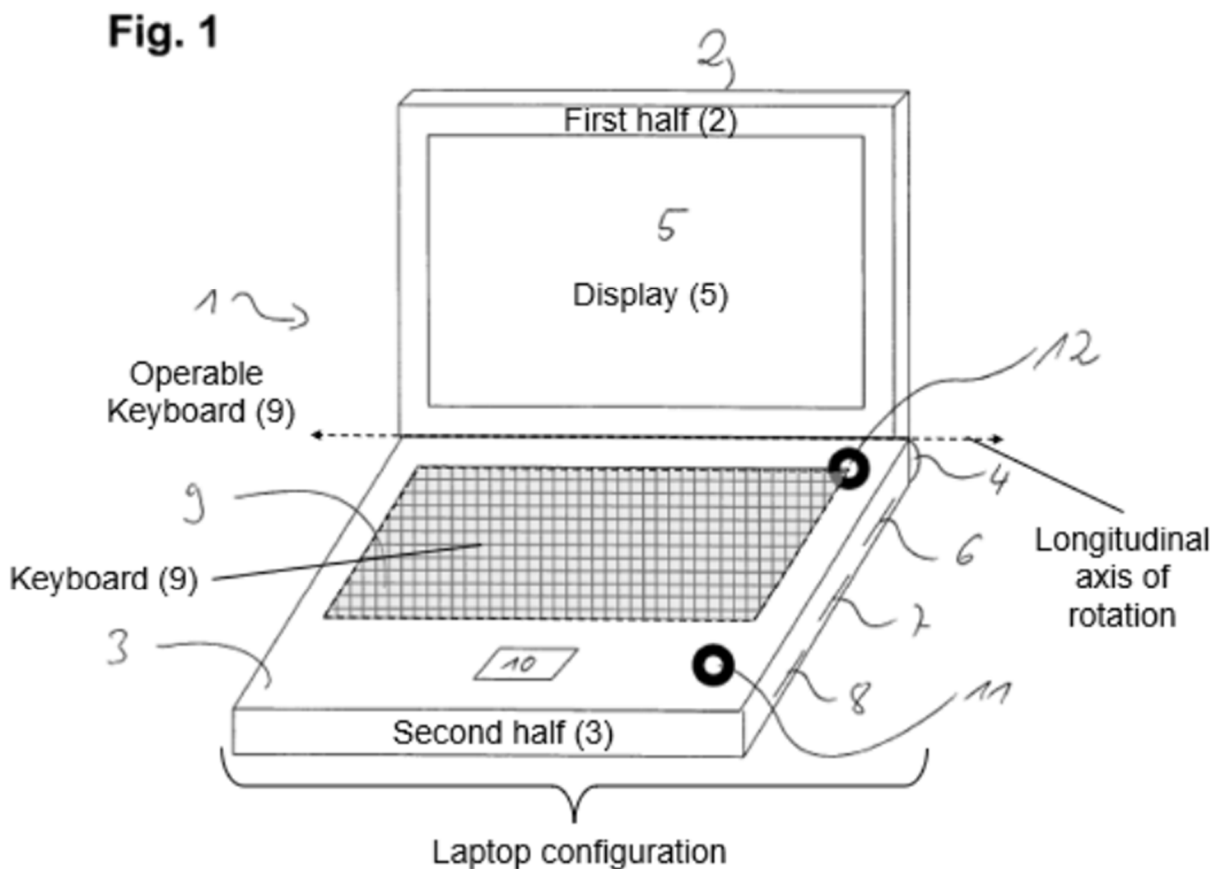
error rate, encouragement of rapid recall of how to use the interface, and increase in attractiveness” and, thus, would have been motivated to include teachings from Preppernau that further improved the way a user interacts with the Pröll-Martinez combination. *See* Foley, 391-92.

121. In addition, in my opinion, a POSITA would have understood that making such changes to the GUI elements merely applied known techniques (e.g., arranging the layout of icons and applications on a desktop or application objects within an application window) to yield predictable results (e.g., increased usability). *See* Foley, 426 (“Individual elements of a screen not only must be carefully designed, but also, to work together, must all be well placed in an overall context.”). Preppernau’s **tools** and **tool bars**, for example, aggregate useful tools for interacting with the application and, thus, advantageously “*minimize the eye movements* necessary as the user acquires the various units of information required for a task, and [] *minimize the hand movements* required” to access information. *Id.*, 421 (emphasis in original).

3. Claim 5: The user interface of claim 4, wherein the computer system configuration comprises a physical positioning of a computer system display relative to a base of the computer system that includes the keyboard about a longitudinal axis of rotation.

122. As I discussed in Sections XI.A.1.a, XI.A.1.f, and XI.C.2, the Pröll-Martinez combination teaches a “computer system” with “display” and “keyboard” in a “computer system configuration,” and the Pröll-Martinez-Preppernau combination teaches the “user interface of claim 4.” In my opinion, Pröll also teaches the additional

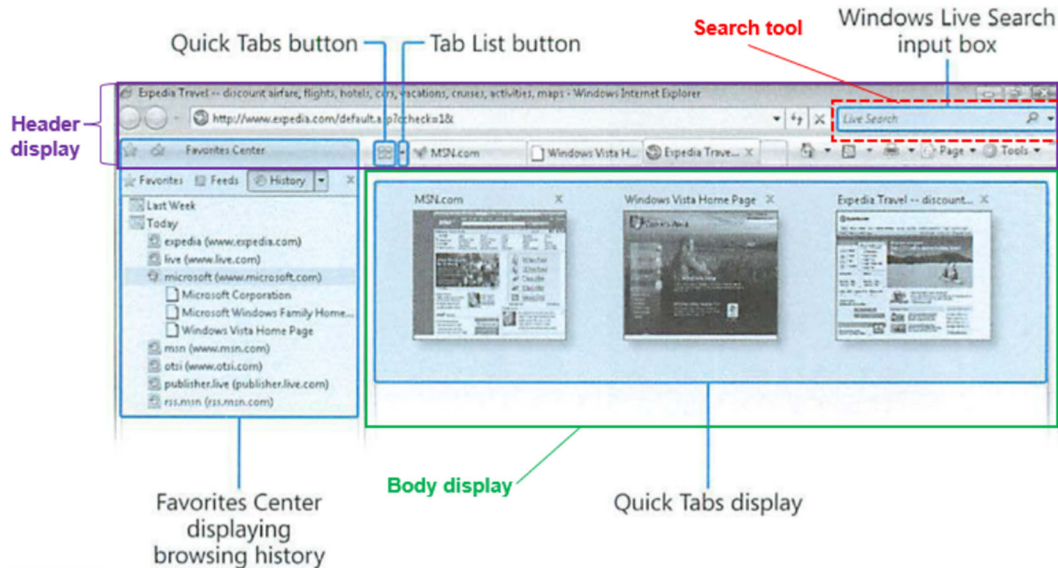
limitations of claim 5. Specifically, Pröll teaches a computing unit that can pivot (“physical[ly] position[.]”) first half 2 with display 5 (“computer system display”) and second half 3 with keyboard 9 (“base of the computer system that includes the keyboard”) relative to one another using a hinge connection along the joint of those two halves (“longitudinal axis of rotation”). Pröll, Abstract, [0033]–[0034]. The annotated figure I have reproduced below illustrates the keyboard, base, display, and rotational axis of the two halves relative to each other.



4. Claim 6

- a. ***6/a): The user interface of claim 4, wherein the graphical user interface is further configured to display a search tool displayed in the header display, wherein the search tool is configured to accept search terms entered by a user and***

123. As I discuss in Section XI.C.2, the Pröll-Martinez-Preppernau combination teaches “the user interface of claim 4.” Preppernau also teaches claim 6[a]. Specifically, Preppernau discloses a “Windows Live Search input box” (“search tool”) configured to allow users to search the internet for web pages associated with textual entries entered by a user (“configured to accept search terms entered by a user”). Preppernau, lv, 182–83. The annotated figure I have reproduced below depicts an example of the search box, and shows the “search tool” in the “header display.”

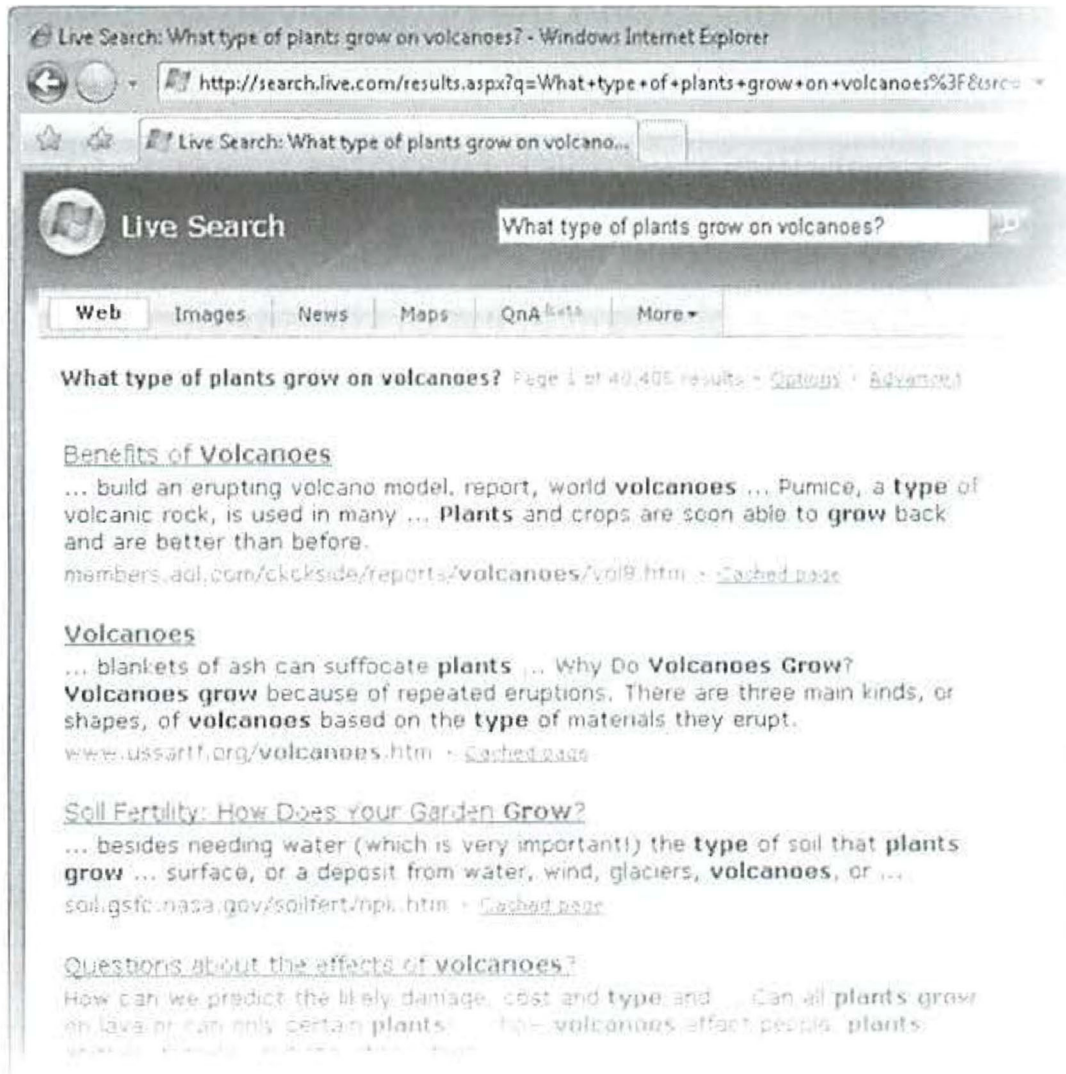


124. In my opinion, a POSITA would have been motivated to combine Preppernau’s teachings with the Pröll-Martinez combination for the same reasons I describe in claim 4 above in Section XI.C.2.

- b. ***6[b]: 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.***

125. In my opinion, the Pröll-Martinez-Preppernau combination teaches claim 6[b]. Preppernau discloses that users “click the Search button” (“execution”) to search web pages (“digital content”) according to text a user enters into a Windows Live Search input box (“search engine”) that returns and displays hyperlinked web content (“results”) in the browser window (“navigate to a view of a first visual representation of digital content”). Preppernau, 183. Besides Live Search, the user interface presents users with “two dozen” other search providers (“search engines”) for use. *Id.* The search button and the browser window showing the web content are depicted in the figures I have reproduced below. *Id.* When a user clicks the search button (“in response to execution), the system returns and displays web content in its Live Search window (“navigate to a view of a first visual representation of digital content”), which includes the search results returned from the search engine (“wherein the digital content includes a search engine, and the search engine presents results for the search terms”).





126. In my opinion, a POSITA would have been motivated to combine Preppernau's teachings with the Pröll-Martinez combination for the same reasons described in claim 4 above in Section XI.C.2.

5. Claim 7: The user interface of claim 1, further comprising a storage component configured to retain a previous view state.

127. As discussed in Sections XI.A.1, the Pröll-Martinez combination teaches “the user interface of claim 1” and a memory, which is a “storage component.” Based on the disclosures in the '715 patent, the MPF limitation requires a “local or remote storage device.” *See, e.g.,* '715 patent, 16:53-64, 61:6-15, Fig. 51. Pröll's mobile data

processing device includes a memory (“storage component”), which is a “local or remote storage device.” Pröll, [0034]. Preppernau teaches the additional limitations of claim 7.

128. In particular, Preppernau discloses that the Windows Vista Quick Tabs display includes thumbnails and tabs of previously-opened web pages (“previous view state”). Preppernau, 182. Previous user internet browsing search results are “retain[ed]” in a record “History” lasting 0 to 999 days and can be categorized by at least “Today” and “Last Week.” *Id.*, 182–85. The “Today” results, as depicted in the annotated figure below, appear as thumbnails in the Quick Tabs display (e.g., “msn,” “Windows Vista Home Page,” “Expedia”). *Id.*

129. In my opinion, a POSITA would have understood that memory (“storage component”) is required to retain the OS software, the state of computer applications, and any application specific objects or data such as browsing history. *See id.*, 183 (“Windows Vista saves any open files, records their state and the state of any running programs in memory and on your hard disk . . .”), 319 (“When you visit a Web page, the page and its graphics are stored, or cached, in the Temporary Internet Files folder on your hard disk.”), 357 (Windows Vista supports caching which is “[t]he process of storing information in a computer’s memory, or storing a Web page on a computer’s hard disk, for rapid retrieval at a later time.”). Thus, in my opinion, the Pröll-Martinez-Preppernau combination teaches “a storage component configured to retain a previous view state.”

130. In addition, a POSITA would have been motivated to combine the teachings of Preppernau with the Pröll-Martinez combination for the same reasons I discussed in claim 4 in Section XI.C.2.

6. Claim 8: The user interface of claim 7, 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.

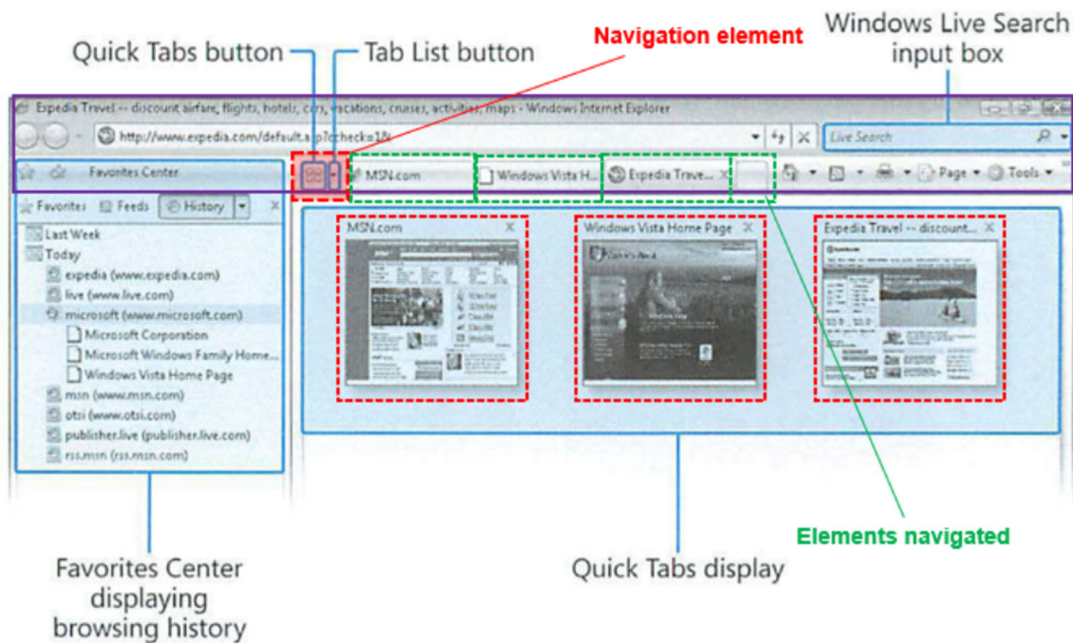
131. As discussed in Sections XI.A.1 and XI.C.5, the Pröll-Martinez-Preppernau combination teaches an “execution component” and “the user interface of claim 7,” which “retain[s] a previous views state.” Preppernau also teaches the additional limitations claim 8, under MPF or non-MPF. Based on the disclosures in the ’715 patent, the MPF limitation requires the execution component to be a program executing on a processor that can (i) detect execution of a navigation element, and (ii) based on that detection, change to the previous view, and its equivalents. *See, e.g.*, ’715 Patent, Fig. 51, 20:56–61, 21:8–11, 46:9–18, 68:9–34.

132. Preppernau discloses that Windows Internet Explorer includes a tabbed browsing interface that enables a user to open multiple web pages as tabs, and to select (“execut[e]”) and switch (“transition”) between previously opened (i.e., viewed) sites more easily. Preppernau, 170–71, 174, 198, 364. In my opinion, a POSITA would have understood that an OS like Windows Vista runs on a processor. *See id.*, xxxii (minimum system requirements include “800 megahertz (MHz) processor” and “DirectX 9—capable graphics processor”). Accordingly, Preppernau’s interface and corresponding navigation elements use a processor. Specifically, the processor executes instructions

that detect selection of a navigation element (e.g., a user clicking on the Quick Tabs button or previously opened tabs) and the corresponding change in view. *See id.*, 101 (explaining that processors may optimize visual effects). I have reproduced below an example figure showing tab-based switching. *Id.*, 170.



133. In addition, Preppernau teaches 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. The annotated figure I have reproduced below shows user-selected (“execut[ed]”) tabs with corresponding thumbnails of previously viewed web sites (“previous view[s]”) created with the Quick Tabs button (“navigation element”). *Id.*, 182.



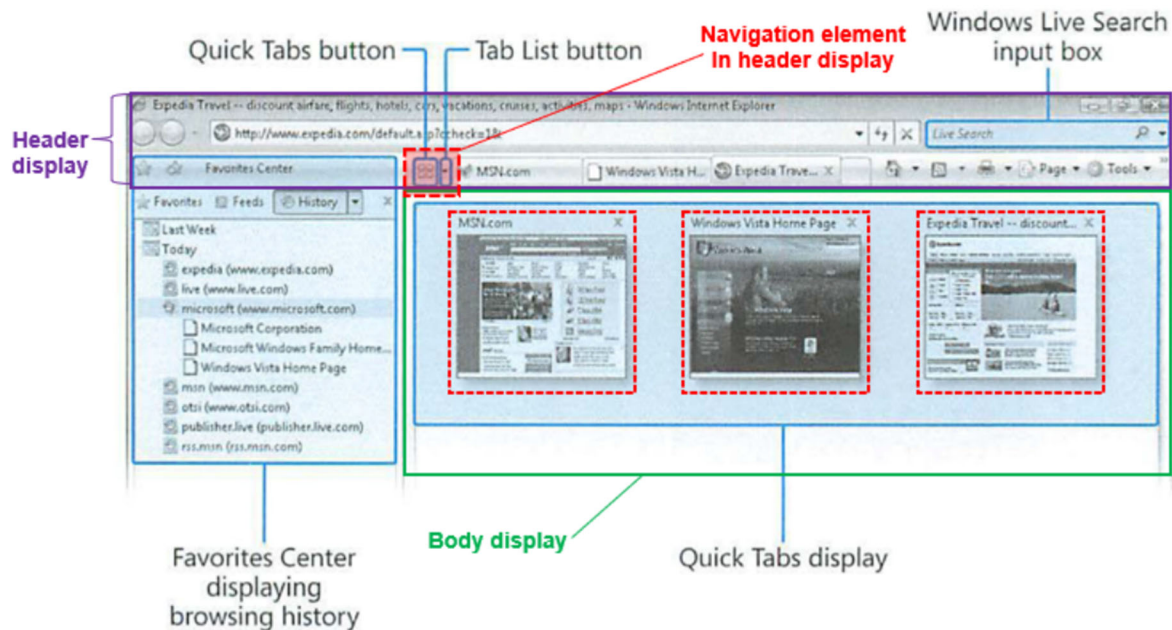
134. In my opinion, a POSITA would have been motivated to implement Preppernau’s tab-based internet browsing in the Pröll-Martinez combination for the same reasons as claim 4 in Section XI.C.2.

7. Claim 9: The user interface of claim 7, further comprising the navigation element⁵ displayed in a header display.

135. As I describe in Sections XI.C.2, XI.C.5, and XI.C.6 (claims 4, 7, 8), Preppernau teaches a “header display”, “the user interface of claim 7”, and a “navigation element.” Preppernau also teaches the remaining additional limitations of claim 9. Preppernau discloses that the Quick Tabs button (“navigation element”) is located in a header of the Quick Tabs display. Preppernau, 182. The annotated figure below shows

⁵ I note that “the navigation element” lacks antecedent basis because claim 9 depends from claim 7 (which depends from claim 1), and neither claim 1 nor 7 recites “a navigation element.” Instead, that term appears in claim 8. For purposes of my opinion, I have assumed that “the navigation element” should be “a navigation element” in claim 9.

the Quick Tabs button in the header (“displayed in a header display”).



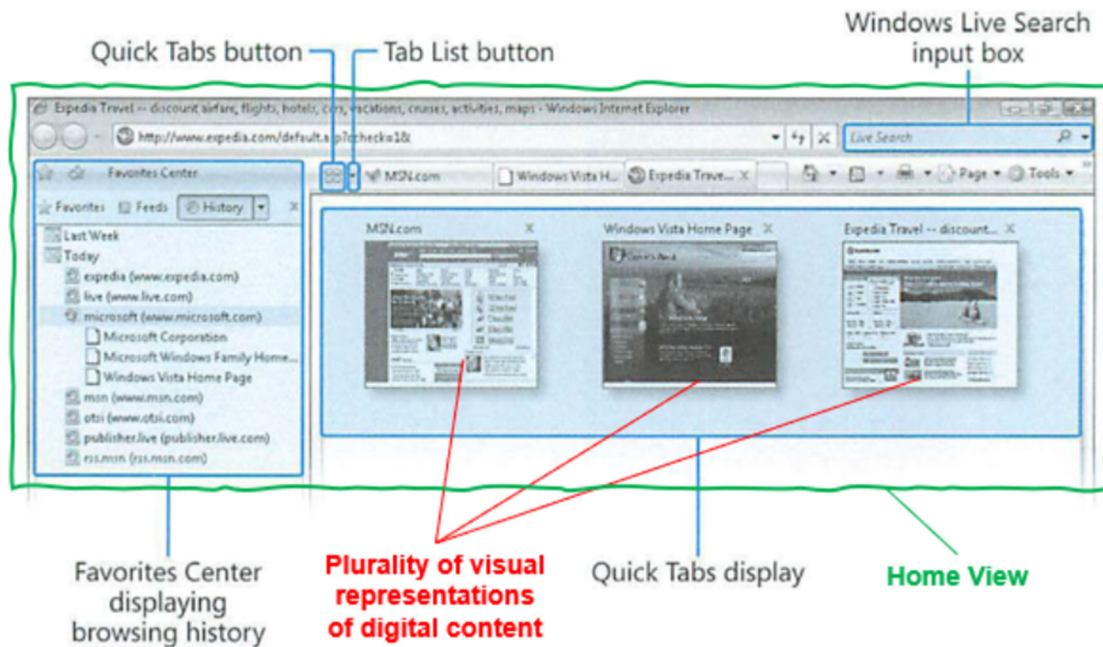
136. In my opinion, a POSITA would have been motivated to implement Preppernau’s tab-based internet browsing in the Pröll-Martinez combination for the same reasons as claim 4 in Section XI.C.2.

8. Claim 10

- a. **10[a]: The user interface of claim 4, wherein the body display comprises an organization of the plurality of visual representations of computer content rendered on the computer display, and**

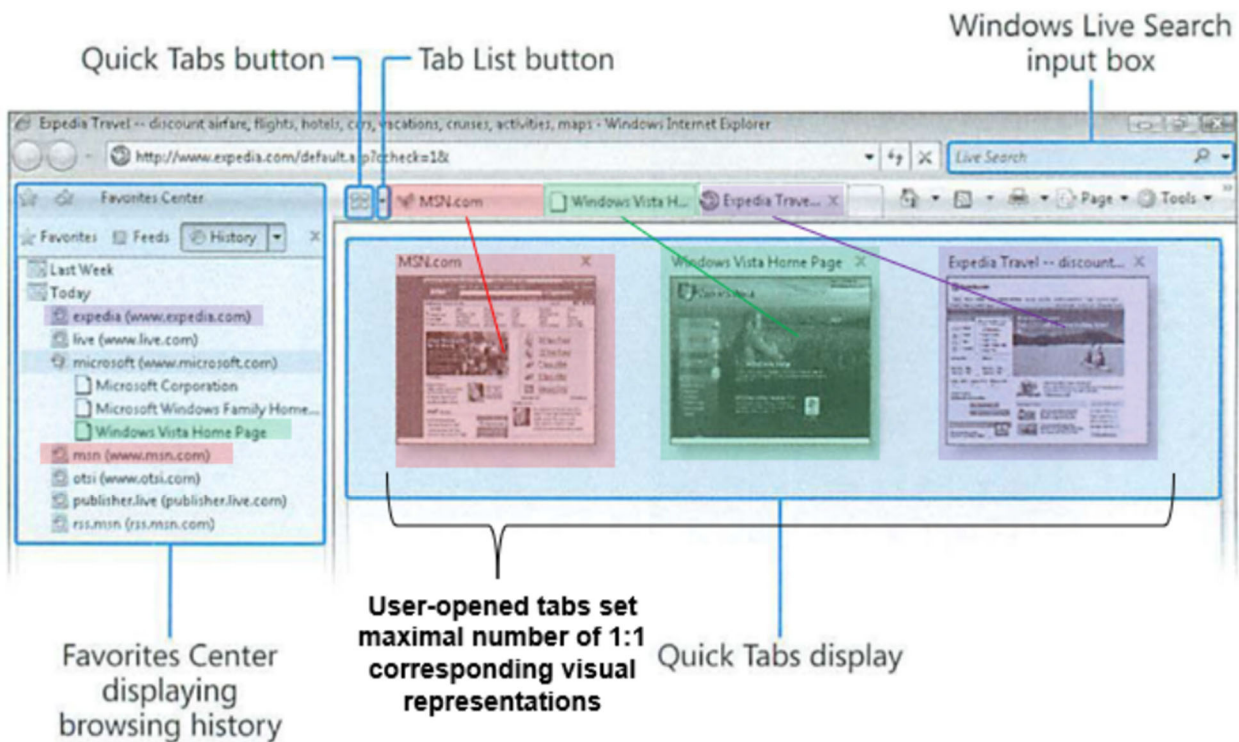
137. As I discuss in Section XI.C.2, the Pröll-Martinez-Preppernau combination teaches “the user interface of claim 4.” Further, Preppernau teaches the additional limitations of 10[a]. Preppernau’s **“Quick Tabs display” below tool bars and tools** (“home view”) arranges current, open web page-linked **thumbnail screenshots** in a grid-type layout (“organizing a plurality of visual representations of digital content”) on a user’s computer screen (“display component”). Preppernau, 182; see Section XI.C.2. The annotated figure I have reproduced below shows that the

organization of a plurality of visual representations is in the body portion of the home view (i.e., below the header made up of tool bars and tools).



- b. *10[b]: the home view further comprises display pages in response to a display threshold establishing a maximal number of visual representations displayed per display page.*

138. Preppernau also teaches 10[b]. Preppernau discloses quick tabs that contain screenshot thumbnails (“visual representations”) of user-opened internet browsing tabs (“display page”), where the body display further shows that one regular, top-listed tab corresponds to each screenshot thumbnail below it—as illustrated in the annotated figure I have reproduced below. Preppernau, 182.



139. In my opinion, a POSITA would have understood that Preppernau teaches a maximal number of screenshot thumbnails (“maximal number of visual representations displayed per display page”) because the amount of thumbnails displayed is necessarily limited by the size of the display. Preppernau teaches that “[w]hen a window is not big enough to show all its contents, vertical and/or horizontal scroll bars appear so that you can move the contents within the window.” Preppernau, xxiii. Thus, in my opinion, a POSITA would understand that the display threshold is determined by the size of the window. The number of thumbnails that can be seen without scrolling is the “maximal number.”

140. In my opinion, a POSITA would have been motivated to implement Preppernau’s tab-based internet browsing with Quick Tabs display in the Pröll-Martinez combination for the same reasons as claim 4 in Section XI.C.2.

9. **Claim 11: The user interface of claim 10, wherein the home view further comprises an indication of visual representations displayed on adjacent display pages of the home view, wherein the indication is displayed within the body of the home view.**

141. In Section XI.C.8, I explain that the Pröll-Martinez-Preppernau combination teaches “the user interface of claim 10.” In my opinion, Preppernau teaches the additional limitations of claim 11.

142. First, I note that the ’715 Patent explains that a “home view” may include multiple pages that may further include a “hint” of “adjacent displays” that are located on the top or bottom of the display screen. EX-1001, 33:6-26. As an example of an “indication of visual representations,” the ’715 patent discusses reference number 256 of Figure 2, which I have reproduced below. *See id.*, 33:40-44, Fig. 2.

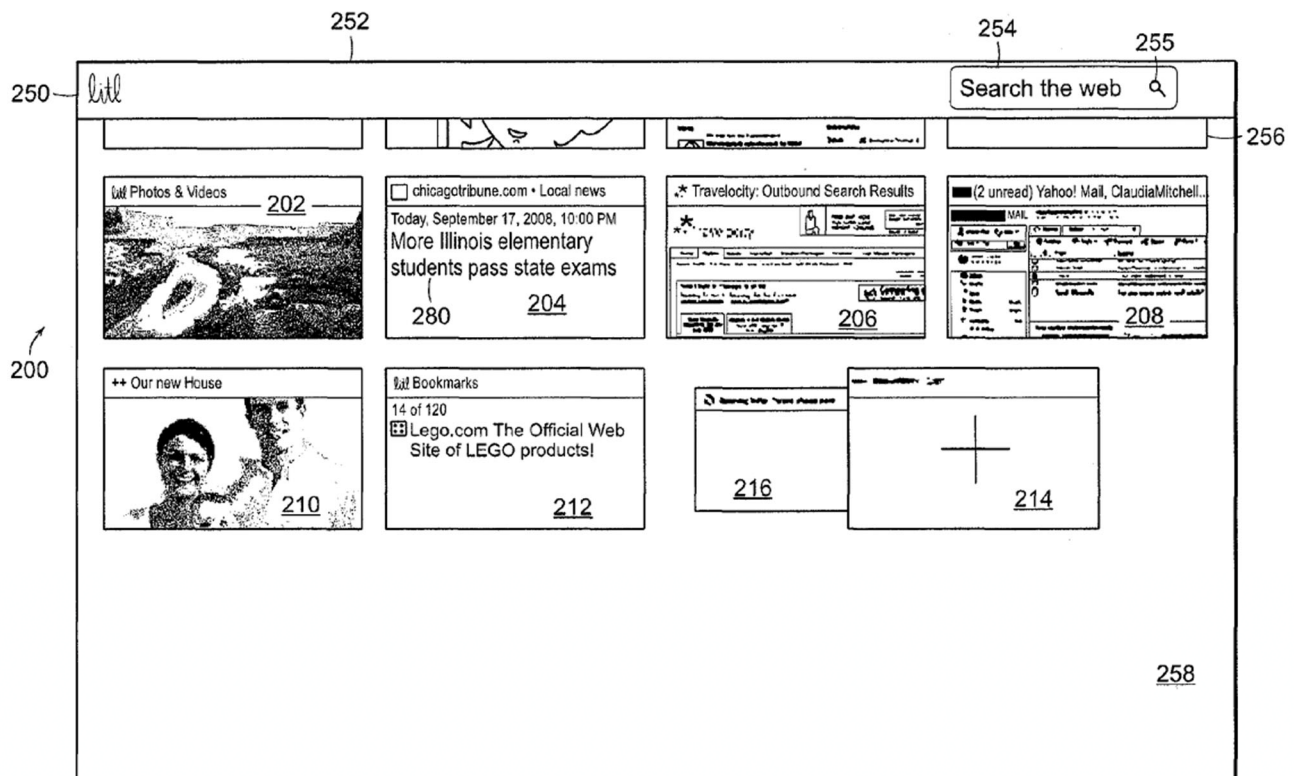


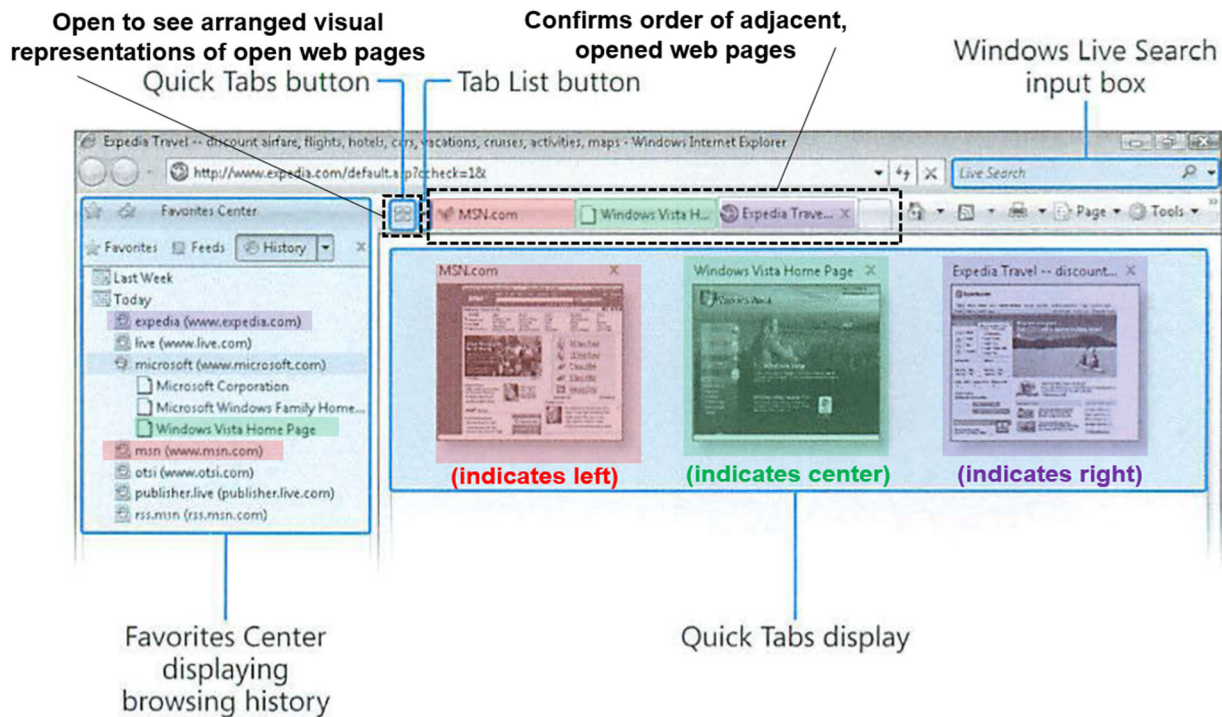
FIG. 2

143. As the above figure shows, the indication 256 depicts a portion of a “visual

representation of customized content.” *Id.*, 29:29-31. A POSITA would have understood that a similar indication is displayed as a user scrolls through the contents of the Quick Tabs display in Preppernau. *See id.*, xxiii. As I explained in 10[b], Preppernau teaches that the maximal number of visual representations displayed is determined by the size of the window. Preppernau further teaches that “the vertical scroll bar [] move[s] the contents up and down” Thus, in my opinion, a POSITA would have understood that when a user scrolls up, portions of the screenshot thumbnails furthest down on the screen begin to disappear as portions of a new row of thumbnails at the top of the screen begin to appear. In reverse, when a user scrolls down, portions of the topmost thumbnails begin to disappear as portions of a new row of thumbnails at the bottom of the screen begin to appear. Therefore, in my opinion, Preppernau teaches a home view that “comprises an indication of visual representations.”

144. In addition, the Quick Tabs display (“home view”) implements the same Windows Vista operating system with Internet Explorer 7 tabbed internet browsing. *Id.*, 182. In my opinion, a POSITA would have understood that each thumbnail shown in the Quick Tabs display is a screenshot of an active, open web page in one instance of Internet Explorer 7 because Quick Tabs “displays screenshots of all Web pages currently open.” *Id.*, 182. Because Internet Explorer 7 uses tabbed browsing, in my opinion, a POSITA would have further understood that each screenshot is therefore an open web page arranged adjacent to the others displayed in Quick Tabs according to an

arrangement of 1:1 corresponding browser tabs. Thus, in my opinion, a POSITA would have understood that whenever a user selects the Quick Tabs display (“home view”), an arrangement of screenshots appear (“visual representations displayed”) in an arrangement reflecting that of the actual, open web pages a user opened in a sequence of browser tabs (“adjacent display pages”) in an instance of Internet Explorer 7 browsing. I have reproduced below a figure showing this user selection (annotated). Preppernau, 182.



Therefore, in my opinion, a POSITA would have understood the arranged row of thumbnails shown in the Quick Tabs display teaches indications of adjacent web pages open in adjacent tabs summarized within a home view display.

10. Claim 12

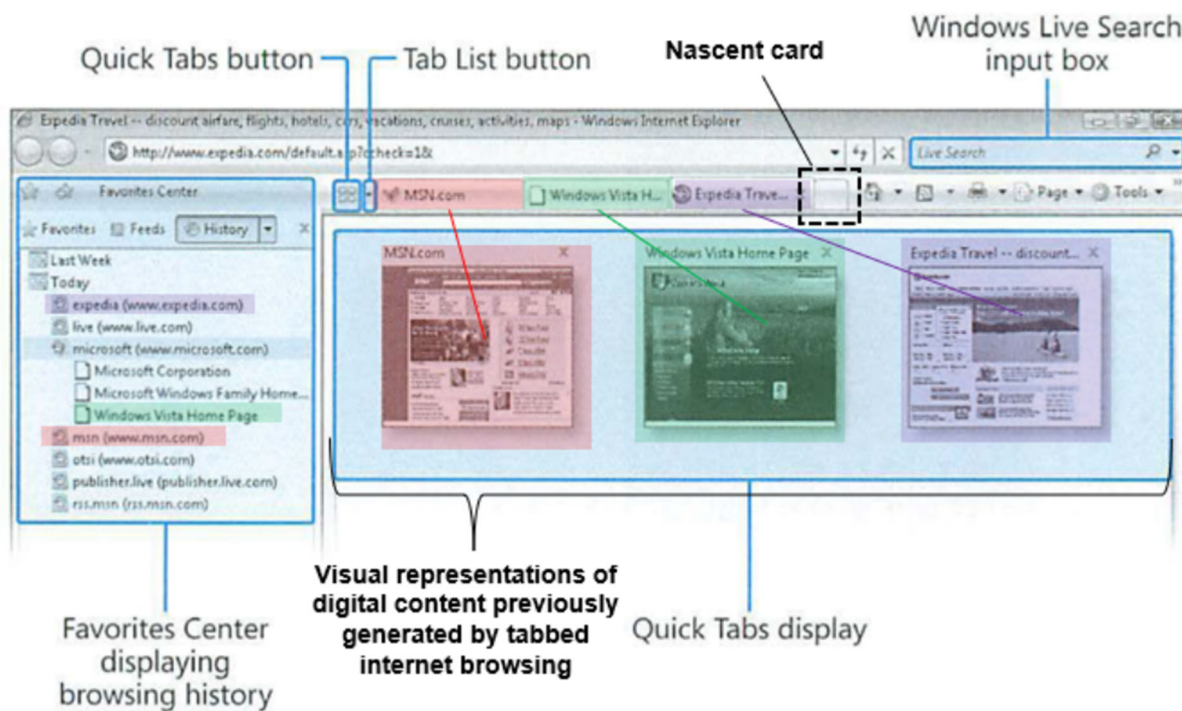
- a. ***12[a]: The user interface of claim 4, wherein the graphical user interface is further configured to display a nascent card in the home view,***

145. In Section XI.C.2, I explain the Pröll-Martinez-Preppernau combination teaches the “user interface of claim 4” with a “home view.” Initially, I note the ’715 patent discloses a “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, 5:29–33. A nascent card is “always...available to a user,” i.e., a user cannot remove it or change its displayed position. *Id.*, 40:30–47. It also has a similar format to other cards but lacks its own page view. *Id.*, 53:36–42.

146. In my opinion, Preppernau teaches the additional limitations of 12[a]. Specifically, 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 shown in the figure I have reproduced below. *Id.*, 170.



147. The browser tabs include an additional button 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. A figure (annotated) showing the new tab in the Quick Tabs display is reproduced below. *Id.*, 182.



148. 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 no corresponding web page and is not removable by a user. Further, in my opinion, a POSITA would have understood the new browser tab has the same look, feel, and functionality as the “nascent card” the ’715 patent describes, and a POSITA would have viewed any differences between the specific embodiments of the ’715 patent and Preppernau’s teachings as aesthetic and not related to their operation. The new tab feature is always available to the user, as shown in the figure above, and permits the user to load additional web content, which may be displayed in the Quick Tabs display (i.e., permit generation of additional visual representations of digital content).

149. In my opinion, a POSITA would have been motivated to implement Preppernau’s tab-based internet browsing with Quick Tabs display in the Pröll-Martinez combination for the same reasons I discuss for claim 4 above in Section XI.C.2.

b. *12[b]: wherein the nascent card is configured to permit generation of additional visual representations of digital content.*

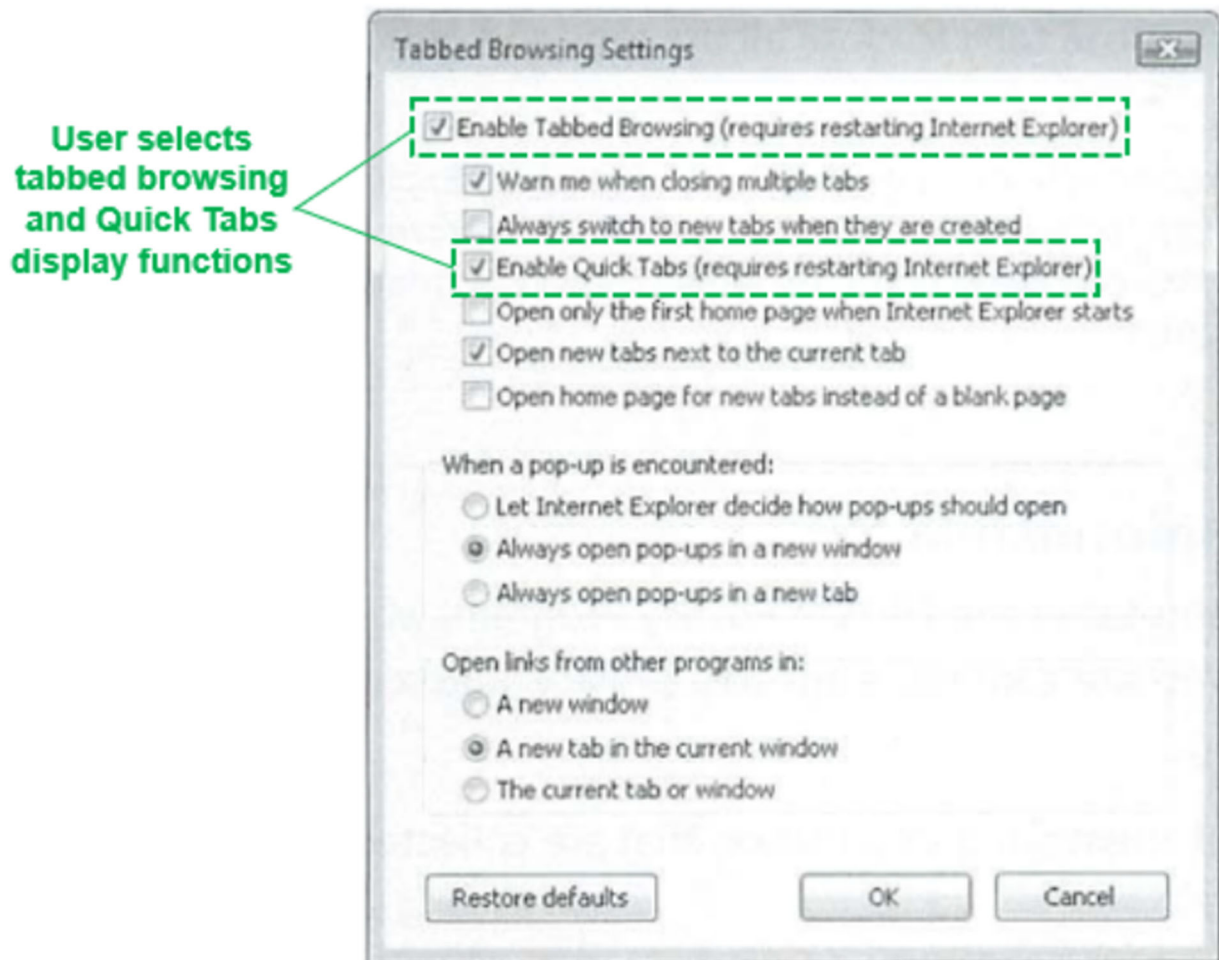
150. As I discuss above in Section XI.C.10, the Pröll-Martinez-Preppernau combination teaches the “nascent card.” Preppernau also teaches the right-most tab displayed in the header of the Quick Tabs display includes “the nascent card [] configured to permit generation of additional visual representation of digital content.” Specifically, the functionality to create a new tab linked to internet content. Preppernau,

169–170. I have reproduced below a figure (annotated) showing the creation of a new



tab in Preppernau. *Id.*

151. In my opinion, 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 ("configured") in the Quick Tabs display. *Id.*, 174–175. I have reproduced below an annotated figure showing this user selection. *Id.*, 175.



152. Therefore, in my opinion, 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”). Further, in my opinion, a POSITA would have been motivated to implement Preppernau’s tab-based internet browsing with Quick Tabs display in the Pröll-Martinez combination for the same reasons as claim 4 above in Section XI.C.2.

11. Claim 13

- a. ***13/a): The user interface of claim 12, wherein the execution component is further configured to execute a process for creating a visual representation in response to execution of the nascent card, wherein the process for creating a visual representation includes acts of:***

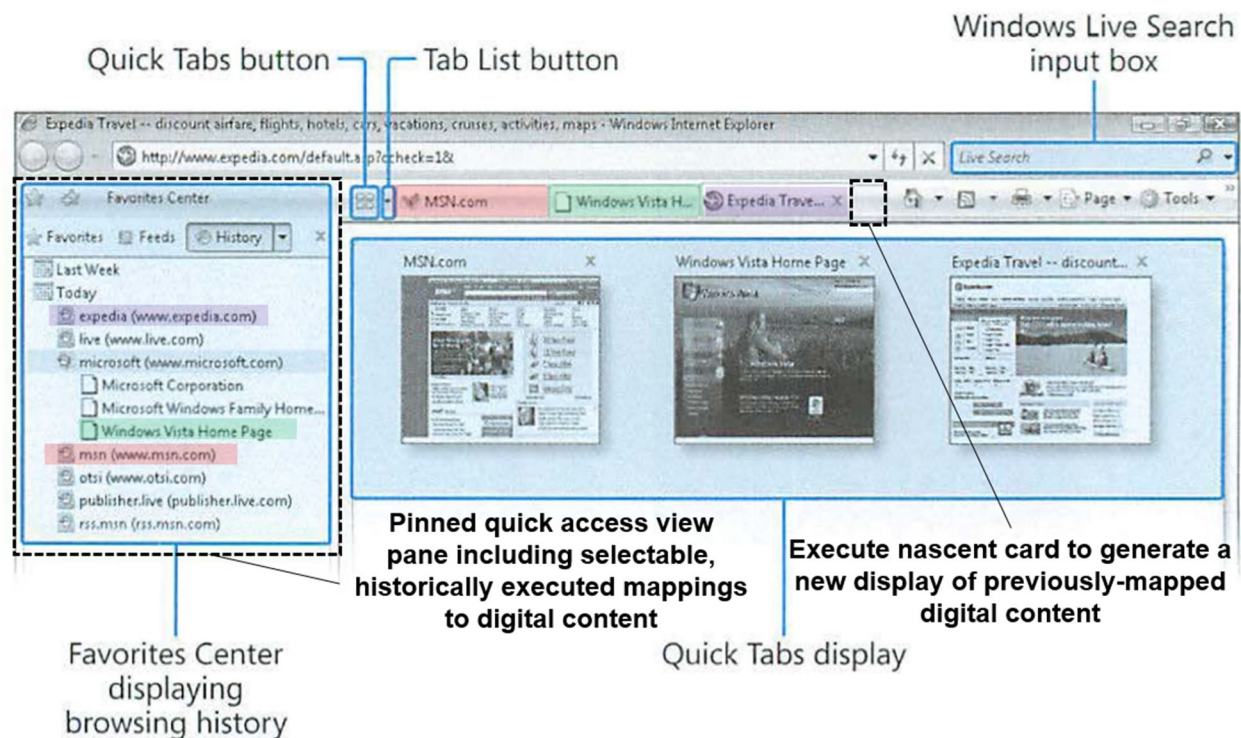
153. In Section XI.C.10, I explain the Pröll-Martinez-Preppernau combination teaches “the user interface of claim 12” including a “nascent card [that] is configured to permit generation of additional visual representations of digital content.” In addition, in Section XI.A.1.e, I explain the Pröll-Martinez combination teaches a processor-based “execution component” as recited in claim 1 (from which claim 13 indirectly depends). Based on the disclosures in the ’715 patent, the MPF limitation requires a program executing on a processor that can (i) detect execution of a nascent card, (ii) transition the display to the quick access view in response, and (iii) map to, and display, online content in response to a request to display that content from the quick access view, and its equivalents. See, e.g., ’715 Patent, 30:2–4, 30:15–17, 35:6–21, 38:62–39:1, 40:55–65, 41:10–13, 68:9–69:36. Pröll-Martinez-Preppernau teaches this limitation, under MPF or non-MPF.

154. In my opinion, a POSITA would have understood the processor of the Pröll-Martinez-Preppernau combination executes software instructions that implement the tabbed internet browsing user interface functionality of the Windows Vista operating system. Preppernau, xxxii; *see also* Section XI.C.6 (Claim 8). To permit generation of additional visual representations of digital content, a POSITA would have understood that the combination’s system uses a program executing on a processor that

can “detect execution of a nascent card.” *See id.* And as I discuss in further detail below, the combined Pröll-Martinez-Preppernau system uses a program executing on a processor to “transition the display to the quick access view in response” to that detection and “map to, and display, online content in response to a request to display that content from the quick access view.” *See id.* Further, in my opinion, a POSITA would have found it obvious to use the Windows Vista operating system in the Pröll-Martinez computer using its processor for the same reasons I describe for claim 4 above in Section XI.C.2.

b. 13[b]: *transitioning to a quick access view*;

155. Preppernau teaches the additional limitations of 13[b]. I note that the ’715 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, 30:15–24. Specifically, Preppernau 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 as depicted in the annotated figure I have reproduced below. Preppernau, 182. The Favorites Center can be pinned as a pane in the browser window. *Id.*



156. In my opinion, a POSITA would have understood that Preppernau's Favorites Center is available to users responsive to opening a new internet browser tab ("response to execution of the nascent card") because it is pinned as a pane in a browsing window. This allows users 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 to allow users to easily and efficiently reinstate a web page recently visited ("execute 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). In my opinion, a POSITA would have been motivated to implement Preppernau's tab-based internet browsing with the Favorites Center for the same reasons as the Quick Tabs display in the Pröll-Martinez combination as I

discuss in claim 4 above in Section XI.C.2.

c. *13[c]: generating a mapping to online digital content; executing the mapping; and displaying a first view of the mapped digital content.*

157. In Section XI.C.10, I explain that Preppernau teaches a “nascent card...configured to permit generation of additional visual representations of digital content” as recited in Claim 12. In Section XI.C.11.b (13[b]), I explain that a POSITA would have understood that by pinning the “Favorites Center” pane to an instance of Internet Explorer 7, a user can create a new tabbed browsing instance of a previously-visited web page. In my opinion, Preppernau also teaches 13[c].

158. Preppernau teaches the “History” of the Favorites Center is a preserved “record of [a user’s] Internet browsing history.” Preppernau, 182. In my opinion, a POSITA would have understood this record is created when a user navigates to web pages (“generating a mapping to online digital content” and “executing the mapping”) and that as a user navigates to the web page, it is also displayed (“displaying a first view of the mapped digital content”). The entries in the Favorite Center pane represent the mappings to online digital content that were generated. *See* Preppernau, 182.

159. In my opinion, a POSITA would have been motivated to implement Preppernau’s tab-based internet browsing with the Favorites Center for the same reasons as the Quick Tabs display in the Pröll-Martinez combination as I discuss in claim 4 above in Section XI.C.2.

12. Claim 14: The user interface of claim 1, wherein the plurality of views includes a quick access view configured to permit user generation of a mapping between digital content and a visual representation.

160. In Section XI.A.1 above, I explain that the Pröll-Martinez combination teaches the “user interface” and “plurality of views” of claim 1. In my opinion, Preppernau teaches the additional limitations of claim 14 for the same reasons I provide in Section XI.C.11.b for 13[b] above.

161. In my opinion, a POSITA would have been motivated to implement Preppernau’s tab-based internet browsing with Quick Tabs display in the Pröll-Martinez combination for the same reasons as claim 4 above in Section XI.C.2.

D. Ground 4: Obviousness over Pröll and Preppernau (Claims 1, 3-14, 19, 20)

1. Motivation to Combine

162. In my opinion, a POSITA also would have been motivated to combine the teachings of Preppernau with the Pröll. Like Pröll, Preppernau aims to improve the way a user interacts with an electronic device that contains large collections of data by “increas[ing] the efficiency with which [users] can move among sites [they] are currently viewing or have viewed in the past, and to make it easier to find . . . the information [they] need” Preppernau, 182; *see also* Sections X.A and XI.A.1.d (discussing Pröll). 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 Preppernau that further improved the way a user interacts with the Pröll combination. *See* Foley, 391-92.

163. In addition, in my opinion, a POSITA would have understood that making changes to the GUI elements, as taught by Preppernau, merely applied known techniques (e.g., arranging the layout of icons and applications on a desktop or application objects within an application window) to yield predictable results (e.g., increased usability). *See* Preppernau, 46-47, 50-51; Foley, 426 (“Individual elements of a screen not only must be carefully designed, but also, to work together, must all be well placed in an overall context.”). Preppernau’s tools and tool bars, for example, aggregate useful tools for interacting with the application and, thus, advantageously “*minimize the eye movements* necessary as the user acquires the various units of information required for a task, and [] *minimize the hand movement* required” to access information. *Id.*, 421 (emphasis in original); Preppernau, 182 .

164. Further, in my opinion, a POSITA would have been motivated to use the Windows Vista OS, which Preppernau discusses, with Pröll. As I discussed in Section XI.A.1.b, Pröll teaches that the first and second housing halves are “an arrangement of a commercially available, known portable computer system...” Pröll, [0034]. A POSITA would have understood that commercially available laptops and notebooks commonly ran, or supported, Windows operating systems. *See, e.g.*, EX-1023 (HP Manual) at 1-2 (supporting Windows XP Home Edition or Windows XP Professional,

varying by model). In addition, Preppernau teaches that Windows Vista could be operated on tablet computers, including devices with displays that could receive input via a user's touch or pen. Preppernau, xiv, xxxiii, 142–47 (instructing how to configure Tablet PC options). Specifically, Preppernau teaches that “[a] variety of new and improved features for working with a Tablet PC are built in to Windows Vista” *Id.*, 142. Pröll discloses a tablet configuration (i.e., housing halves rotated 360°) and a POSITA, in my opinion, would have been motivated to use Windows Vista with Pröll to take advantage of the improved Tablet features that it offered (e.g., when Pröll's device is used in mobile environments). *See id.*; *see also* Pröll, [0060], [0061] (“[T]he display device 5 of the mobile data processing device 1 is implemented as a touch screen. Thus, . . . the display device 5 can be used as an input medium.”).

2. Claim 1

- a. ***1/pre*: “A customized user interface to display computer content on a display component of a computer system including a keyboard, the user interface comprising:”**

165. To the extent it is limiting, in my opinion, Pröll discloses or suggests the preamble under MPF or non-MPF. *See supra*, Section XI.A.1.a.

- b. ***1/a*: “at least one processor operatively connected to a memory of the computer system”**

166. In my opinion, Pröll discloses or suggests 1[a]. *See supra*, Section XI.A.1.b.

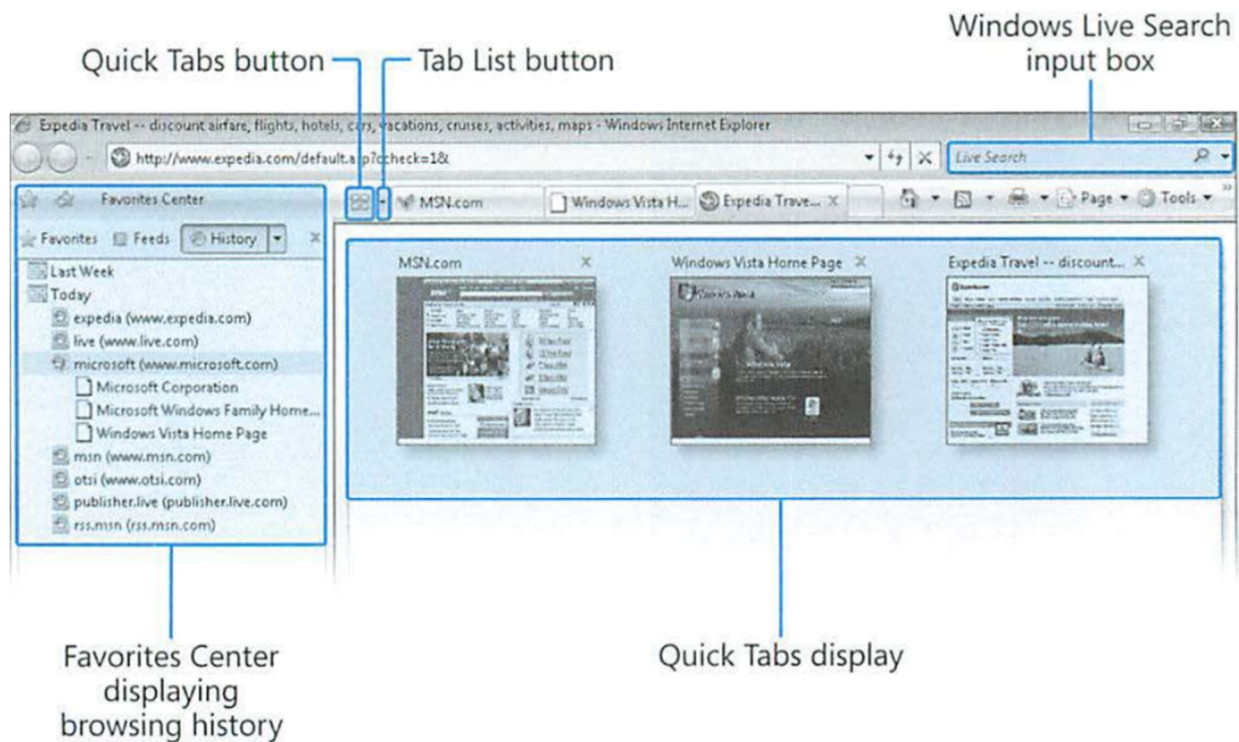
- c. ***1[b]: “a graphical user interface, executing on the at least one processor, configured to display the computer content on the display component of the computer system, the graphical user interface configured to”***

167. In my opinion, Pröll discloses or suggests 1[b]. See *supra*, Section XI.A.1.c.

- d. ***1[c]: “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, selectable computer operations and passive digital content”***

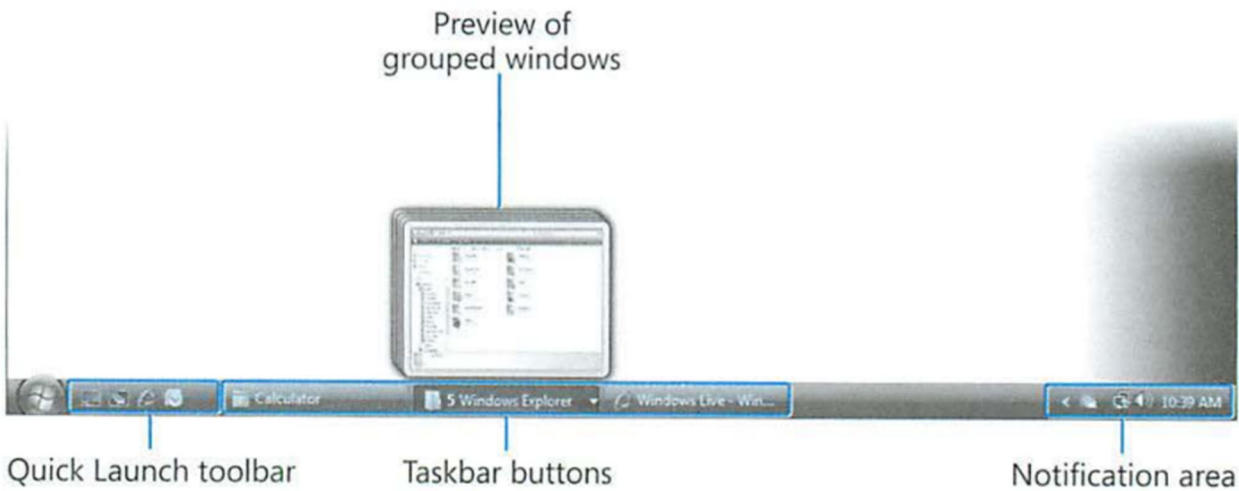
168. In my opinion, the Pröll-Preppernau combination teaches 1[c]. As I discuss in Section XI.A.1.d, Pröll’s device displays a first view when operated as a “laptop” and a second view when rotated more than 180°, but Pröll does not explicitly discuss the organization of content on its GUI. A POSITA would have been motivated, in my opinion, to look to Preppernau for ways to display different organizations of content, including to augment Pröll’s device when its keyboard is disabled.

169. Preppernau teaches multiple ways to navigate and organize content (“visual representations of computer content”) on a user’s computer. For example, Preppernau documents Windows Internet Explorer at that time, as shown below. Preppernau, 182.

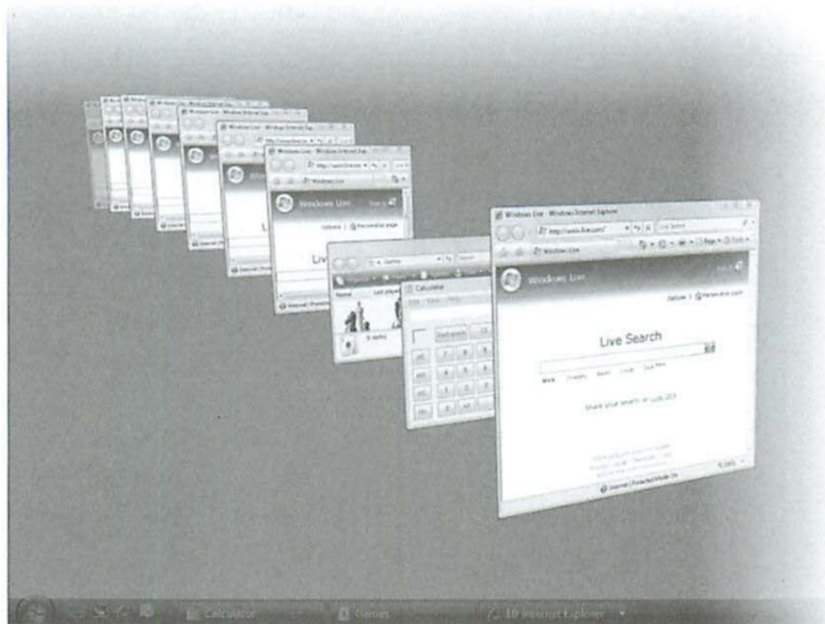


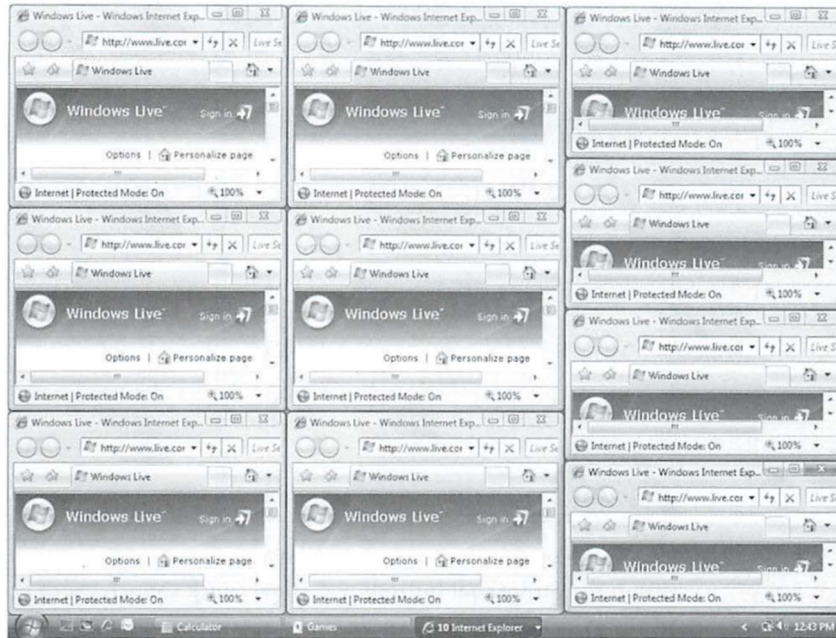
170. Preppernau’s “Quick Tabs” feature displays a thumbnail of all web pages the user is currently viewing, allowing them to easily select a particular page they may have misplaced. Preppernau, 182. Preppernau’s “Favorites Center” includes three ways—“Favorites,” “Feeds,” and “History” tabs—to organize websites a user frequents or follows. Preppernau, 182. As the above image shows, digital content is represented in several ways, including by listing URLs, titles of webpages, and thumbnails (“visual representations of computer content”). *Id.* The aforementioned digital content is viewed through a web browser and acts as a link to web content (i.e., webpages). In other words, when a user clicks a thumbnail or URL (“selectable digital content”) they are taken to the corresponding webpage. Thus, in my opinion, a POSITA would have understood the above image from Preppernau to show “visual representations of computer content.” And Preppernau’s taskbar permits a user to organize groups of

windows in various ways, with one example shown below. Preppernau, 46.



171. Preppernau's taskbar allows a user to display all windows in a group of applications, cascade displays of windows, arrange windows in a grid, and/or arrange windows side-by-side. *Id.*, 46–47. As another example, Preppernau teaches the use of a “Quick Launch toolbar” that can display a user’s active windows in various configurations, as shown below. *Id.*, 50-51.





172. In my opinion, a POSITA would have been motivated to combine the teachings of Pröll and Preppernau for the reasons I discussed in Section XI.D.1 above. In addition, in my opinion, a POSITA would have found the combination of Preppernau's GUI elements in Pröll's system to be a predictable improvement upon Pröll's system. Preppernau's teachings would have allowed users to optimize one of the GUIs rendered by Pröll's physical reconfigurations according to the rearrangement of windows and icons that Preppernau teaches (Preppernau, 46-47, 50-51), and particularly to accommodate Pröll's configurations (as shown in Figures 6-8), designed to be used with a touchscreen in a mobile environment (and where use of a keyboard would be impractical or even dangerous). For example, when a user rotates the two halves of Pröll's computing device to the point where the keyboard is blocked (i.e., when Pröll's two halves are rotated by more than 180° relative to each other), switching to a Quick Tabs view as Preppernau teaches would have allowed a user to predictably

reorganize the interface to display larger, tile-sized icons on a touchscreen for a user to tap while the keyboard is inaccessible (e.g., when the user is riding in a car). Preppernau, 142 (“A variety of new and improved features for working with a Tablet PC are built in to Windows Vista . . .”). It is well-known that touch optimized interfaces “use[] large buttons and icons to make it easy to find and open your favorite applications.” *See, e.g.*, Ex. 1035 at 3; Ex. 1036 at 6:15-20 (“Some applications are designed specifically for touch screen technology, often having larger icons and links . . .”). Conversely, when Pröll’s device is rotated to a more conventional laptop configuration, the user could reorganize the view to the grid arrangement as Preppernau teaches, allowing the user to use the keyboard to transition between, and interact with, the smaller views using more precise inputs. *See*, Preppernau 46-47; Pröll, ¶[0061] (disclosing the display screen may be “realized as a touch screen”). A smaller screen would make precision inputs difficult with a touch-only input. *See* Foley, 359 (explaining that accuracy of touch input depends on screen size, screen resolution, and finger width).

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

173. In my opinion, the Pröll-Preppernau combination teaches “an execution component” under MPF or non-MPF. As I discussed previously in Section XI.D.2.b 1[a], a POSITA would have understood that the computing unit in Pröll is a processor and is responsible for executing instructions. The computing unit also processes any data transmitted by peripheral units (e.g., a sensor). *See* Pröll, [0042]. As I discuss in

[1e] and [1f] below, the processor in the Pröll-Preppernau combination is “configured to” “detect a current computer system configuration” and “select one of the plurality of views” by executing instructions. To the extent a specific component is required to be explicitly identified, in my opinion, a POSITA would understand that it was well-known to use a “graphics subroutine package executing on the general-purpose CPU . . . ” to execute functions that change the display. Foley, 165.

- f. ***1[e]: “detect a current computer system configuration from at least a first computer system configuration where the keyboard is operable to receive input from an operator of the computer system to control the computer system and a second computer system configuration where the keyboard is inoperable to receive input from the operator of the computer system to control the computer system”***

174. In my opinion, Pröll teaches 1[e] under MPF and non-MPF. *See supra*, Section XI.A.1.f.

- g. ***1[f]: “select one of the plurality of views for display on the computer system in response to the detected current computer system configuration; and transition the display component to the selected one of the plurality of views.”***

175. In my opinion, the Pröll-Preppernau combination teaches 1[f]. As I discuss in Section XI.A.1.g, Pröll teaches adjusting the display on display device 5 based on the detected pivot rotation—e.g., rotating the display contents 180° when the pivot angle exceeds 270° (selecting a view “in response to the detected current computer system configuration”). *Id.*, [0049]. Pröll’s mobile data processing device detects this pivot angle, or configuration of the two halves, “with a pure software solution, [or an] . . . implement[ation] in hardware.” *Id.* [0053]. Pröll also contemplates different

organizations of content for different configurations of the two housing halves. *Id.*, [0061] (explaining that display device 5 may be implemented “as a touch screen . . . when used in a vehicle” as depicted in Figs. 7 and 8).

176. Pröll is not, however, explicit about the organization of content on its GUI. In my opinion, a POSITA would have been motivated to combine Pröll with Preppernau such that Pröll’s GUI displays a different organization of content when its housing halves are arranged in various configurations. *See* Section XI.D.1. Preppernau, for example, teaches that its taskbar can organize windows into multiple configurations, which is itself a “view” that is selected, as shown below. Preppernau, 46.

177. Preppernau also teaches that a user can select to “[d]isplay all the windows in the group,” “[c]ascade displays the windows on top of each other,” “display[] the content of all the windows arranged in a grid, with more windows stacked vertically than horizontally” or “display[] the content of all the windows arranged in a grid, with more windows stacked horizontally than vertically.” Preppernau, 47. In my opinion, a POSITA would have been motivated to combine Pröll and Preppernau to predictably improve the usability of Pröll’s system for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

3. Claim 3: The user interface of claim 1, wherein the plurality of views includes a screen saver view configured to organize selected content modes for passive viewing.

178. In my opinion, Section XI.D.2 above shows that the Pröll-Preppernau combination teaches “the user interface of claim 1.” It is also my opinion that

Preppernau teaches the additional limitations of claim 3. *See supra*, Section XI.C.1. A POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

4. **Claim 4: The user interface of claim 1, wherein the plurality of views includes a home view organizing a plurality of visual representations of digital content, wherein the home view comprises a header display and a body display, and wherein the header display comprises a lateral frame extending from the left of the display component to the right of the display component, wherein the body display is rendered below the header display in the display component of the computer system.**

179. In my opinion, Section XI.D.2 above shows that the Pröll-Preppernau combination teaches “the user interface of claim 1.” It is also my opinion that Preppernau teaches the additional limitations of claim 4. *See supra*, Section XI.C.2. A POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

5. **Claim 5: The user interface of claim 4, wherein the computer system configuration comprises a physical positioning of a computer system display relative to a base of the computer system that includes the keyboard about a longitudinal axis of rotation.**

180. In my opinion, Section XI.D.2 above shows that the Pröll-Preppernau combination teaches a “computer system” with “display” and “keyboard” in a “computer system configuration.” In addition, in my opinion, Section XI.D.4 shows that Pröll-Preppernau teaches the “user interface of claim 4.” It is also my opinion that Pröll teaches the additional limitations of claim 5. *See supra*, Section XI.C.3. A

POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

6. Claim 6

- a. ***6[a]: “The user interface of claim 4, wherein the graphical user interface is further configured to display a search tool displayed in the header display, wherein the search tool is configured to accept search terms entered by a user and”***

181. In my opinion, Section XI.D.4 above shows that the Pröll-Preppernau combination teaches the “user interface of claim 4.” It is also my opinion that Preppernau teaches the additional limitations of 6[a]. *See supra*, Section XI.C.4.a. A POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

- b. ***6[b]: “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.”***

182. In my opinion, Section XI.C.4.b above shows that Preppernau teaches the additional limitations of 6[b]. A POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

7. Claim 7: The user interface of claim 1, further comprising a storage component configured to retain a previous view state.

183. In my opinion, Section XI.D.2 above shows that the Pröll-Preppernau combination teaches the “user interface of claim 1.” Based on the disclosures in the ’715 patent, the MPF limitation requires a “local or remote storage device.” *See, e.g.,*

'715 Patent, 16:53-64, 61:6-15, Fig. 51. Pröll's computing unit further includes a memory ("storage component"), which teaches a "local or remote storage device." Pröll, [0034]. It is also my opinion that Preppernau teaches the additional limitations of claim 7, under MPF or non-MPF. *See supra*, Section XI.C.5. A POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

8. Claim 8: The user interface of claim 7, 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.

184. In my opinion, Section XI.D.2 above shows that the Pröll-Preppernau combination teaches the "execution component" of claim 1. In addition, as I described in Section XI.D.7 for claim 7, Preppernau teaches "the user interface of claim 7" and "retain a previous views state." It is also my opinion that Preppernau teaches the additional limitations of claim 8, under MPF or non-MPF. *See supra*, Section XI.C.6. A POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

9. Claim 9: The user interface of claim 7, further comprising the navigation element⁶ displayed in a header display.

185. In my opinion, as I described in Section XI.D.4 for claim 4, Preppernau teaches a "header display." In addition, as I described in Section XI.D.7 for claim 7,

⁶ I note that "the navigation element" lacks antecedent basis because claim 9 depends from claim 7 (which depends from claim 1), and neither claim 1 nor 7 recites "a navigation element." Instead, that term appears in claim 8.

Preppernau teaches “the user interface of claim 7.” And, as I described in Section XI.D.8 for claim 8, Preppernau teaches a “navigation element.” Further, Section XI.C.7 explains that “navigation element [is] displayed in a header display.” A POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

10. Claim 10

- a. ***10[a]: “The user interface of claim 4, wherein the body display comprises an organization of the plurality of visual representations of computer content rendered on the computer display, and”***

186. In my opinion, Section XI.D.4 above shows that the Pröll-Preppernau combination teaches the “user interface of claim 4.” It is also my opinion that Preppernau teaches the additional limitations of 10[a]. *See supra*, Section XI.C.8.a. A POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

- b. ***10[b]: “the home view further comprises display pages in response to a display threshold establishing a maximal number of visual representations displayed per display page.”***

187. In my opinion, Section XI.C.8.b above shows that Preppernau teaches the additional limitations of 10[b]. A POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

- 11. Claim 11: The user interface of claim 10, wherein the home view further comprises an indication of visual representations displayed on adjacent display pages of the home view, wherein the indication is displayed within the body of the home view.**

188. In my opinion, Section XI.D.10 above shows that the Pröll-Preppernau combination teaches the “user interface of claim 10.” It is also my opinion that Preppernau teaches the additional limitations of claim 11. *See supra*, Section XI.C.9.

12. Claim 12

- a. *12[a]: “The user interface of claim 4, wherein the graphical user interface is further configured to display a nascent card in the home view”***

189. In my opinion, Section XI.D.4 above shows that the Pröll-Preppernau combination teaches the “user interface of claim 4” with a home view. It is also my opinion that Preppernau teaches the additional limitations of 12[a]. *See supra*, Section XI.C.10.a.

- b. *12[b]: “wherein the nascent card is configured to permit generation of additional visual representations of digital content.”***

190. In my opinion, Section XI.C.10.b above shows that Preppernau teaches the additional limitations of 12[b].

13. Claim 13

- a. *13[a]: “The user interface of claim 12, wherein the execution component is further configured to execute a process for creating a visual representation in response to execution of the nascent card, wherein the process for creating a visual representation includes acts of”***

191. In my opinion, Section XI.D.12 shows that the Pröll-Preppernau combination teaches “the user interface of claim 12” including a “nascent card [that] is configured to permit generation of additional visual representations of digital content.”

In addition, as I discussed in Section XI.D.2.e, Pröll-Preppernau teaches a processor-based “execution component” as recited in claim 1. I note that claim 13 indirectly depends from claim 1. Based on the disclosures in the ’715 patent, the MPF limitation requires a program executing on a processor that can (i) detect execution of a nascent card, (ii) transition the display to the quick access view in response, and (iii) map to, and display, online content in response to a request to display that content from the quick access view, and its equivalents. *See, e.g.*, ’715 Patent, 30:2–4, 30:15–17, 35:6–21, 38:62–39:1, 40:55–65, 41:10–13, 68:9–69:36. In my opinion, Pröll-Preppernau discloses this limitation, under MPF or non-MPF.

192. In addition, in my opinion, a POSITA would have understood the processor of the Pröll-Preppernau combination executes software instructions that implement the tabbed internet browsing user interface functionality of the Windows Vista operating system. Preppernau, xxxii; *see also* Section XI.D.8 (Claim 8). To permit generation of additional visual representations of digital content, a POSITA would have understood that the combination’s system uses a program executing on a processor that can “detect execution of a nascent card.” *See id.* And as I discuss in further detail below, the combined Pröll-Martinez-Preppernau system uses a program executing on a processor to “transition the display to the quick access view in response” to that detection and “map to, and display, online content in response to a request to display that content from the quick access view.” *See id.* Further, in my opinion, a POSITA would have found it obvious to use the Windows Vista operating system in

the Pröll-Preppernau computer using its processor for the same reasons I describe for claim 4 above in Section XI.D.4.

b. 13[b]: “transitioning to a quick access view;”

193. In my opinion, Section XI.C.11.b above shows that Preppernau teaches the additional limitations of 13[b]. A POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

c. 13[c]: “generating a mapping to online digital content; executing the mapping; and displaying a first view of the mapped digital content.”

194. In my opinion, Section XI.C.11.c above shows that Preppernau teaches the additional limitations of 13[c]. A POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

14. Claim 14: The user interface of claim 1, wherein the plurality of views includes a quick access view configured to permit user generation of a mapping between digital content and a visual representation.

195. In my opinion, Section XI.D.2 shows that the Pröll-Preppernau combination teaches the “user interface” and “plurality of views” of claim 1. It is also my opinion that Preppernau teaches the additional limitations of claim 14. *See supra*, Section XI.C.12. A POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

- 15. Claim 19: The user interface of claim 1, wherein the first mode is a laptop mode where the keyboard is oriented to be accessible to the operator and wherein the second mode is an easel mode or a frame mode where the keyboard is oriented to be inaccessible to the operator.**

196. In my opinion, the Pröll-Preppernau combination teaches claim 19. Section XI.D.2 shows that the Pröll-Preppernau combination teaches “the user interface of claim 1.” Pröll’s teachings for the additional limitations of claim 19 merely reflect the configurations already discussed above for claim 1, and a POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

16. Claim 20

- a. *20[pre]: A customized user interface to display computer content on a display component of a computer system including a keyboard, the user interface comprising:***

197. 20[pre] recites a similar limitation to 1[pre], which I discuss in Section XI.D.2.a. In my opinion, 20[pre] is taught in the prior art for the same reasons discussed in that Section.

- b. *20[a]: at least one processor operatively connected to a memory of the computer system***

198. 20[a] recites a similar limitation to 1[a], which I discuss in Section XI.D.2.b. In my opinion, 20[a] is taught in the prior art for the same reasons discussed in that Section.

- c. *20[b]: a graphical user interface, executing on the at least one processor, configured to display the computer content on the display component of the computer system, the graphical user interface configured to:***

199. 20[b] recites a similar limitation to 1[b], which I discuss in Section

XI.D.2.c. In my opinion, 20[b] is taught in the prior art for the same reasons discussed in that Section.

- d. ***20[c]: 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, selectable computer operations and passive digital content;***

200. 20[c] recites a similar limitation to 1[c], which I discuss in Section XI.D.2.d. In my opinion, 20[c] is taught in the prior art for the same reasons discussed in that Section.

- e. ***20[d]: an execution component, executing on the at least one processor, configured to:***

201. 20[d] recites a similar limitation to 1[d], which I discuss in Section XI.D.2.e. In my opinion, 20[d] is taught in the prior art for the same reasons discussed in that Section.

- f. ***20[e]: detect a current computer system configuration from at least a first computer system configuration where the keyboard is positioned to receive input from an operator of the computer system and a second computer system configuration where the keyboard is not positioned to receive input from the operator of the computer system;***

202. 20[e] recites similar limitations to 1[e] and claim 19, which I discuss in Sections XI.D.2.f and XI.D.15. In my opinion, 20[e] is taught in the prior art for the same reasons discussed in those Sections.

- g. ***20[f]: select one of the plurality of views for display on the computer system in response to the detected current computer system configuration; and transition the display component to the selected one of the plurality of views.***

203. 20[f] recites a similar limitation to 1[f], which I discuss in Section

XI.D.2.g. In my opinion, 20[f] is taught in the prior art for the same reasons discussed in that Section. A POSITA would have been motivated to combine the teachings of Preppernau with Pröll for the reasons I discussed in Sections XI.D.1 and XI.D.2.d.

E. Ground 5: Obviousness over Pröll, Preppernau, and Chandhri (Claims 2, 15-18)

1. Claim 2: “The user interface of claim 1, wherein in the plurality of views includes a home view configured to organize a plurality of content modes and a channel view configured to organize at least one of a single content mode and two content modes.”

204. In my opinion, as I discussed above, the Pröll-Preppernau combination teaches “[t]he user interface of claim 1.” In addition, Section XI.B.1 explains that Chandhri teaches the additional limitations of claim 2.

205. In my opinion, a POSITA would have been motivated to combine the teachings of Chandhri with the Pröll-Preppernau combination. Like Pröll and Preppernau, 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]; *see also* Section XI.D.1. 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 Pröll-Preppernau 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].

2. Claim 15: “The user interface of claim 1, wherein the plurality of views includes a channel view including a channel selector that displays a sequence of visual representations.”

206. In my opinion, as I discussed above in Section XI.D.2, the Pröll-Preppernau combination teaches “[t]he user interface of claim 1.” In addition, Section XI.B.2 explains that Chandhri teaches the additional limitations of claim 15. In my opinion, a POSITA would have been motivated to implement Chandhri’s teachings in the Pröll-Preppernau combination for the same reasons discussed in Section XI.E.1.

3. Claim 16: “The user interface of claim 15, wherein the execution component is further configured to transition the computer system to the channel view in response to receiving user input via at least one input device integral to or operatively connected with the computer system.”

207. In my opinion, as I discussed above in Section XI.E.2, the Pröll-Preppernau-Chandhri combination teaches “[t]he user interface of claim 15.” In addition, Section XI.B.3 explains that Chandhri teaches the additional limitations of claim 16, under MPF and non-MPF. In my opinion, a POSITA would have been motivated to implement Chandhri’s teachings in the Pröll-Preppernau combination for

the same reasons I discussed in Section XI.E.1.

4. Claim 17

- a. 17[pre]: “A customized user interface to display computer content on a display component of a computer system including a keyboard, the user interface comprising:”**

208. 17[pre] recites a similar limitation to 1[pre], which I discuss in Section XI.D.2.a. In my opinion, 17[pre] is taught in the prior art for the same reasons discussed in that Section.

- b. 17[a]: “at least one processor operatively coupled to a memory of the computer system”**

209. 17[a] recites a similar limitation to 1[a], which I discuss in Section XI.D.2.b. In my opinion, 17[a] is taught in the prior art for the same reasons discussed in that Section.

- c. 17[b]: “a graphical user interface, executing on at least one processor, configured to display a plurality of views of a plurality of visual representations of the computer content”**

210. 17[b] recites similar limitations to those in 1[b] and 1[c], which I discuss in Sections XI.D.2.c and XI.D.2.d. In my opinion, 17[b] is taught in the prior art for the same reasons discussed in that Section.

- d. 17[c]: “an execution component, executing on the at least one processor, configured to:”**

211. 17[c] recites a similar limitation to 1[d], which I discuss in Section XI.D.2.e. In my opinion, 17[c] is taught in the prior art, under MPF and non-MPF, for the same reasons discussed in that Section.

- e. ***17[d]: “identify at least a first computer system configuration where the keyboard is operable to receive input from an operator of the computer system to control the computer system and a second computer system configuration where the keyboard is inoperable to receive input from the operator of the computer system to control the computer system based on sensor input indicating a position of the display component”***

212. 17[d] recites a similar limitation to 1[e], which I discuss in Section XI.D.2.f. In my opinion, 17[d] is taught in the prior art for the same reasons discussed in that Section.

- f. ***17[e]: “select, responsive to the sensor input, a first content view from the plurality of views for the first computer system configuration; transition, automatically in response to the sensor input, the display component between at least the first content view of the plurality of views and a second content view of the plurality of views”***

213. 17[e] recites similar limitations to those in 1[f] and 17[d], which I discuss in Sections XI.D.2.g and XI.E.4.e. In my opinion, 17[e] is taught in the prior art for the same reasons discussed in those Sections.

- g. ***17[f]: “receive user input via at least one input device integral to or operatively connected with the computer system”***

214. 17[f] recites a similar limitation to a limitation of claim 16, which I discuss in Section XI.E.3. In my opinion, 17[f] is taught in the prior art for the same reasons discussed in that Section.

- h. ***17[g]: “transition, automatically in response to receiving the user input, the display component from one of the first content view and the second content view to a channel view including a channel selector that displays a sequence of visual representations”***

215. 17[g] recites a similar limitation to the limitations of claims 15 and 16, which I discuss in Sections XI.E.2 and XI.E.3. In my opinion, 17[g] is taught in the

prior art for the same reasons discussed in those Sections.

5. Claim 18: “The user interface of claim 17, wherein the at least one input device includes at least one of a scroll wheel, a touchpad, and a mouse.”

216. In my opinion, as I discussed above in Section XI.E.4, the Pröll-Preppernau-Chandhri combination teaches “[t]he user interface of claim 17.” In addition, Section XI.E.3 explains that Chandhri teaches the additional limitations of claim 18. In my opinion, a POSITA would have been motivated to implement Chandhri’s teachings in the Pröll-Preppernau combination for the same reasons I discussed in Section XI.E.1.

XII. CONCLUSION

217. 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.

218. 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:



Dr. Henry Houh