UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LENOVO (UNITED STATES) INC.
Petitioner

v.

LITL LLC
Patent Owner

IPR Case No. IPR2021-00822
U.S. Patent No. 8,624,844

DECLARATION OF JEAN RENARD WARD IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW UNDER 35 U.S.C. § 311 *ET SEQ.* AND 37 C.F.R. § 42.100 *ET SEQ.* (CLAIMS 1-16 and 18-22 OF U.S. PATENT NO. 8,624,844)

I. INTRODUCTION

1. My name is Jean Renard Ward. I have been retained as a technical expert on behalf of Lenovo (United States) Inc. to provide assistance in the above-captioned matter. I understand that Lenovo (United States) Inc. is the Petitioner in this proceeding. I have no financial interest in or affiliation with the Petitioner or the Patent Owner, which I understand is LiTL LLC. My compensation does not depend upon the outcome of, or the specifics of my testimony in, this *inter partes* review proceeding or any litigation proceedings.

2. I have reviewed each of the following documents, regarding which I am informed that some are also identified in the Petition.

EXHIBIT	**DESCRIPTION**
1001	U.S. Pat. No. 8,624,844 ("the '844 Patent")
1002	Prosecution History of the '844 Patent
1003	JP 1994-242853 to Shimura
1004	Certified English translation of JP 1994-242853 ("Shimura")
1005	U.S. Pub. No. 2005/0062715 to Tsuji et al. ("Tsuji")
1006	Windows XP Home Edition: The Missing Manual, 2nd Edition ("Pogue")
1007	U.S. Pat. No. 6,724,365 to Escamilla et al. ("Escamilla")
1008	U.S. Pat. No. 6,396,419 to Yeh ("Yeh")
1009	U.S. Pub. No. 2007/0013682 to Lin et al. ("Lin")

1011	Curriculum Vitae of Jean Ward
1012	Claim Listing
1013	Family Diagram of Modified Shimura Computers
1014	U.S. Pub. No. US 2005/0122318 to Tonouchi ("Tonouchi")
1015	U.S. Pat. No. 7,061,472 ("'472 Schweizer")
1016	Panasonic-CF-19-laptop_manual (CF-19)
1017	Dell Latitude XT Tablet
1018	Hardy, Lenovo ThinkPad X61 Tablet PC Review (2007) ("Lenovo")
1019	Clifford & Gomez, Measuring Tilt with Low-g Accelerometers (2005) ("Freescale")
1020	U.S. Pub. No. 2006/0034042 to Hisano et al. ("Hisano")
1021	JP 2002-258982 to Kiyoyuki
1022	Certified English translation of JP 2002-258982 ("Kiyoyuki ")
1023	JP 1996-179851 to Shigeo
1024	Certified English translation of JP 1996-179851 ("Shigeo")
1025	DE 1031455A1 to Schweizer
1026	Certified English translation of DE 1031455A1 ("Schweizer")
1027	U.S. Pat. No. 6,493,216 to Lin ("Lin")
1028	U.S. Pat. No. 8,151,105 to Park et al. ("Park")
1029	Ride, MIT's $100 Laptop (2005) ("MIT")
1030	U.S. Pat. No. 5,559,670 to Flint et al. ("Flint")
1031	Panasonic CF-T8 Operating Instructions
1032	Motion Computing M1400 Tablet PC User Guide

1033	Motion Computing M1400 Tablet PC Addendum
1034	HP Compaq Tablet PC TC1100 QuickSpecs ("Compaq")
1035	Sony Vaio VGN-UX280P (UX Series MicroPC) Spec Sheet
1036	U.S. Pub. No. 2006/0082554 to Caine et al. ("Caine")
1037	U.S. Pat. No. 5,436,954 to Nishiyama et al. ("Nishiyama")
1038	U.S. Pub. No. 2007/0013674 to Woolley ("Woolley ")
1039	JP 2001-298514 to Toba
1040	USPTO English translation of JP 2001-298514 ("USPTO Toba")
1041	EPO English translation of JP 2001-298514 ("EPO Toba")
1042	Intentionally left blank
1043	Intentionally left blank
1044	Intentionally left blank
1045	Intentionally left blank
1046	Intentionally left blank
1047	ThinkPad X61 Tablet Service and Troubleshooting Guide ("Lenovo Service Guide")
1048	Microsoft Computer Dictionary Fifth Edition ("Microsoft Dictionary")
1049	Dell Latitude XT Quick Reference Guide ("Dell Quick Reference")
1050	Dell Latitude XT User's Guide ("Dell User's Guide")
1051	Declaration of Michael Hopkins
1052	Declaration of Liliana Nunez

3. I understand that the application leading to U.S. Patent No. 8,624,844 ("the '844 Patent") was filed as U.S. Application No. 12/170,951 on July 10, 2008. This application claims priority to U.S. Provisional Application No. 61/041,365, filed April 1, 2008, which I have been asked to treat as the effective filing or priority date of the '844 Patent (also referred hereafter as the "Critical Date").

II. QUALIFICATIONS AND PROFESSIONAL EXPERIENCE

4. EX-1011 is a copy of my current curriculum vitae ("CV").

5. I provide consulting services doing business as Rueters-Ward Services (http://ruetersward.com/). My place of business is located at 33 Forest Street, Watertown MA 02472.

6. I received an SBEE degree (combined program in Electrical Engineering and Computer Science) from the Massachusetts Institute of Technology as a member of the class of 1973.

7. I am a practicing engineer. For a number of years, I have primarily been doing consulting projects and contract development work under the business name of Rueters-Ward Services. I have worked professionally in the general field of software engineering and relevant hardware for approximately 45 years, primarily in pen/touch computing, applications of public-key cryptography, and web development. Many of my major projects have concerned pen/touch computing: also referred to simply as pen computing. Pen computing refers to computing that

makes use of a pen, stylus (including a finger), or other touch-sensitive tool, and a tablet or touchscreen. This is contrasted with computing that makes use of devices such as a physical keyboard or physical mouse.

8. During and immediately after my university studies, from 1973 to 1977, I worked at Data General Corporation on compilers and source-level emulation tools for a number of programming languages.

9. For the next approximately 17 years, I worked primarily on many aspects of pen computing, both software and hardware, at a number of development companies. From 1977 to 1987, I was heavily involved in the development of base technology (handwriting recognition algorithms, operating firmware, user-interface techniques and applications, physical display configurations, and hardware tablet sensors) and three generations of pen-computing products of Pencept Inc., a pioneering commercial company for pen-computing technology that I co-founded. Pencept filed for and was granted a number of patents for my work during that time. My contributions included developing novel techniques for gesture and handwriting recognition, new paradigms for pen- and stylus-based user interfaces, two generations of an applicative computer language for gesture and handwriting recognition, and engineering solutions to problems with touchscreens and digitizing tablets.

10. While at Pencept, I participated in the re-engineering of off-the-shelf commercial tablets that detected touch from an electronic stylus; the engineering evaluation of off-the-shelf tablet technologies, including at least one having transparent touchscreen sensors that responded both to finger touches and to touch by a specialized stylus; and the design of a custom electronic tablet responsive to an electromagnetic stylus.

11. During that time and in the years following, I authored or co-authored a number of peer-reviewed articles concerning pen-computing, generative models for handwriting variability, and digitizer/touchscreen technologies and error behaviors.

12. These articles are listed in my CV, EX-1011 to this declaration. I was an invited speaker at an international research conference on handwriting recognition in Montreal, Canada. I also made presentations concerning gesture input for Pencept and its competitors to the Graphical Kernel System (GKS) and Programmer's Hierarchical Interactive Graphics System (PHIGS) standardization committees for computer graphics systems, and organized and chaired a panel discussion concerning real-world problems of handwriting recognition technology at another academic conference. I was also invited to visit and speak to the research groups in pen computing at a number of major computer technology companies, including IBM in the United States and the AEG-Telefunken Research Center in Germany.

13. In 1989, I joined the Freestyle development group at Wang Laboratories as a Software Architect. Freestyle was a direct-manipulation pen-computing system that integrated stylus- and voice-input and annotations. During my tenure there, Wang filed for and later was granted U.S. and international patents for my work on simulating virtual keyboard and mouse input from stylus user input on a touch-sensitive tablet portable computer. In addition, I was the lead engineer for Wang on a joint hardware project for a low-power, touchscreen technology using a capacitive stylus for a line of highly-portable handheld computers.

14. In 1991, at the end of Freestyle development, I joined Slate Corporation, a company formed to develop pen-centric applications for both the new PenPoint (GO Corporation) and Pen Windows (Microsoft) operating systems. Both of these operating systems ran on pen/tablet computers, and "convertible" tablet computers that could be converted between laptop and tablet modes. In addition to supporting tablet and laptop modes, the operating systems and the applications supported rotation and inversion of the system display images to match the physical orientation of the display e.g. portrait/landscape/inverted This included changes to the user interface presented to the user according to the display mode.

15. During that time, I was Slate's representative and the co-chair of a number of meetings involving GO Corporation, Microsoft, and other companies concerning the JOT cross-platform storage-level standard for compressed electron-

ic ink data, and was the primary author of the first draft for that standard. I made presentations regarding the history of pen computing to technical groups interested in the topic. I also conducted tutorials on touchscreen/pen interfaces and hardware/software technology at two annual meetings of the Society for Information Display, the leading engineering society for display technologies.

16. From approximately 1993 onward, my professional work has been primarily as an independent developer and consultant in the areas of pen/touch computing, applications of public-key cryptography and computer security.

17. Since the late 1980s, I have maintained and updated an extensive library of references relating to pen-computing, touchscreens, and related technical subjects. I have continually published a working annotated bibliography of these references on the internet for more than 20 years. The annotated bibliography currently contains well over 9000 references I have read or studied in my fields of interest or encountered during my professional career. A number of the references cited in this declaration, I took from my files of the references in the bibliography. My annotated bibliography can be accessed here:
http://www.ruetersward.com/biblio.html

18. When the Internet became available, it was frequent that technical professionals in computer-related fields began publishing their technical materials on the Internet as a service to each other. As a service to those with an interest in

the field, I began posting my bibliography with its annotations online in about the early 1990s, along with some additional material. In more recent years, because of my professional work and because of the relation to many touchscreen applications, the bibliography also includes references related to computer security, cryptography, and DRM digital rights management.

19. The bibliography is available on my professional web site at www.ruetersward.com, and on a number of mirrors. It has been my usual practice to update the bibliography at irregular periods several times a year or more often, as is convenient. The bibliography has been cited in refereed technical papers by others, by the USPTO, and in academic degree theses such as at M.I.T.

20. I obtained copies of many of the publications and references in the course of the projects I have worked on throughout my career, others through my independent reading and study. I have read the references in my bibliography because of my professional work, my intellectual interest, to keep up to date with developments in the field, and/or to record the history of the field.

21. I also have a personal collection of touch screen and touch tablet devices that I have acquired over the years. These include equipment from past projects I have worked on, as well as other items I considered of note, including a very early model portable phone with an integrated touch screen and display, a very early calculator that used a mechanical touchpad for handwritten entry of arithmetic,

at least one model of a very early PDA with an integrated touch screen and display with handwriting recognition, and various models from the early 1990's of portable touchscreen computers running one or another complete touchscreen operating system, including "convertible" portable computers of various designs with tablet/laptop configurations and modes.

22. A copy of my curriculum vitae with descriptions of my education, professional achievements, and qualifications is attached to this declaration as EX-1011. It includes a listing of relevant industry experience, publications, and presentations.

III. LEGAL STANDARDS AND BACKGROUND

23. I am not an attorney. My knowledge of patent law is that of a lay person. Accordingly, I do not offer any legal opinions. I have been informed by counsel of several legal standards that govern my analysis, including those discussed below. For example, a proper validity analysis includes resolving the level of ordinary skill in the pertinent art, determining the scope and content of the prior art, and ascertaining the differences between the claimed invention and the prior art. I also understand that whether a reference was or was not among the body of references described as the prior art as of a patent's priority date is a legal question, so I have relied on Petitioner's attorneys to inform me as to whether or not a reference is in the prior art. I address all of these factors in my declaration below.

A. Person of Ordinary Skill in the Art

24. I have been advised that the claims of a patent are reviewed from the perspective of a hypothetical person of ordinary skill in the art as of the Critical Date of the '844 Patent ("POSITA"). The "art" is the field of technology to which a patent is related, which, in this case, is user interfaces for portable computing devices, including the user interface employed and displayed by the operating system and its organization of content and functionality. I understand that the purpose of using the viewpoint of the POSITA is for objectivity.

25. To determine the characteristics of the POSITA, I have considered the prior art and the various approaches in the prior art, the types of problems encountered, the solutions to those problems, the problems encountered by the inventor, and the rapidity with which innovations were made. I also considered the sophistication of the technology involved and the educational background and experience of those actively working in the relevant field at the Critical Date. I placed myself back at the Critical Date and considered the technology available at the Critical Date. Based on my experience, I have an understanding of the capabilities, sophistication, and ordinary creative abilities of a POSITA in the relevant field. I have supervised, directed, and provided guidance to a number of such persons over the course of my career.

26. Based on those considerations, the POSITA as of the Critical Date of the '844 Patent would have had at least a Bachelor's degree in Electrical Engineering, Computer Engineering, or Computer Science, plus two to three years of work experience in designing hardware and/or software aspects of user interfaces for portable computing devices; the POSITA would also be familiar with designs of the user interface employed and displayed by the operating system and its organization of content and functionality. Alternatively, the POSITA could have received a graduate degree such as a Master's degree in the same field with at least one year of work experience related to hardware and/or software design aspects of the user interfaces for portable computing devices; the POSITA would also be familiar with designs of the user interface employed and displayed by the operating system and its organization of content and functionality.

27. In view of my education and experience, as summarized above and in my curriculum vitae (EX-1011), I meet and exceed this definition of the POSITA, and I did so at the time of the Critical Date.

28. In arriving at my opinions and conclusions in this declaration, I have considered the issues from the point of view of a POSITA at the Critical Date, unless I explicitly state otherwise.

B. Claim Construction

29. Lenovo's Counsel has told me that terms should be given the meaning that the term would have to a POSITA in question at the Critical Date in an *inter partes* review proceeding.

30. I understand that the appropriate context in which to read a claim term includes both the specification and the claim language itself. I understand that a patent may include two types of claims, independent claims and dependent claims. I understand that an independent claim stands alone and includes only the limitations it recites. I understand that a dependent claim depends from an independent claim or another dependent claim. I understand that a dependent claim includes all the limitations that it recites in addition to the limitations recited in the claim (or claims) from which it depends.

31. In comparing the Challenged Claims to the prior art, I have carefully considered the patent and its prosecution history in light of the understanding of the POSITA at the Critical Date.

32. I understand that to determine how the POSITA would have understood a claim term, one should look to sources available at the Critical Date that show what the POSITA would have understood claim language to mean. It is my understanding that this may include what is called "intrinsic" evidence as well as "extrinsic" evidence.

33. I understand that, in construing a claim term, one should primarily rely on intrinsic patent evidence, which includes the words of the claims themselves, the remainder of the patent specification, and the prosecution history. I understand that extrinsic evidence, which is evidence external to the patent and the prosecution history, may also be useful in interpreting patent claims when the intrinsic evidence itself is insufficient. I understand that extrinsic evidence may include principles, concepts, terms, and other resources available to the POSITA at the Critical Date.

C. Validity

34. I understand that the Petitioner bears the burden of proving the instituted grounds of invalidity by a preponderance of the evidence. I understand that "preponderance" means "more likely than not." I understand that general and conclusory assertions, without underlying factual evidence, may not support a conclusion that something is "more likely than not."

35. Rather, the "preponderance of the evidence" standard requires that a reasonable finder of fact be convinced that the existence of a specific material fact is more probable than the non-existence of that fact. The preponderance of the evidence standard does not support speculation regarding specific facts and is instead focused on whether the evidence more likely than not demonstrates the existence or non-existence of specific material facts. Here, I understand that the Petitioner

has argued that the claims at issue (e.g., Challenged Claims) are rendered obvious by certain prior-art references.

36. I have been informed that a reference may qualify as prior art to a patent if the reference was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention by the patent holder. I have also been informed that a reference may qualify as prior art to a patent if the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year before the effective filing date of the patent. For a printed publication to qualify as prior art, I understand that the Petitioner must demonstrate that the publication was disseminated or otherwise sufficiently accessible to the public.

37. I have further been informed that a reference may qualify as prior art to a patent if the invention was described in a published application for a patent filed in the United States before the invention by the applicant of the challenged patent.

D. Obviousness

38. I understand that a patent claim may be found unpatentable as obvious if the Petitioner establishes by a preponderance of the evidence that, as of the priority date, the subject matter of the claim, considered as a whole, would have been

obvious to a person having ordinary skill in the field of the technology (the "art") to which the claimed subject matter belongs.

39. I understand that the analysis of whether a claim is obvious depends upon a number of factual inquiries, for example, (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of non-obviousness.

40. I have also been informed that the claimed invention must be considered as a whole in analyzing obviousness or non-obviousness. In determining the differences between the prior art and the Challenged Claims, the question under the obviousness inquiry is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious.

41. On this point, I understand that it might be appropriate to consider whether there is evidence of a "teaching, suggestion, or motivation" to combine the teachings in the prior art, the nature of the problem, or the knowledge of a POSITA. For example, I understand that the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.

42. I have been informed and understand that a prior-art reference inherently discloses a limitation if the reference must necessarily function in accordance with, or include, the limitation in the context of the patented technology.

43. I understand that one indicator of non-obviousness is when prior art "teaches away" from combining certain known elements. For example, a prior art reference teaches away from the patent's particular combination if it leads in a different direction or discourages that combination, recommends steps that would not likely lead to the patent's result, or otherwise indicates that a seemingly inoperative device would be produced.

44. I further understand that certain objective indicia can be important evidence regarding whether a patent is obvious or nonobvious, including the existence of a long-felt but unsolved need, unexpected results, commercial success, copying, and industry acceptance or praise.

E. Means-Plus-Function Limitation

45. I understand that the presence of the word "means" in a claim element creates a rebuttable presumption that the limitation should be construed as a means-plus-function limitation. I have been informed that the essential inquiry for a mean-plus function limitation is not the presence or absence of the word "means" but whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. I under-

stand that a means-plus-function limitation is construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

46. In the situation where means-plus-function claims are directed to computer-implemented functionality, the specification is required to disclose an algorithm corresponding to the claimed function. I have been informed by counsel that the specification can express the algorithm in any understandable terms such as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure.

IV. RELEVANT INFORMATION CONCERNING THE '844 PATENT

A. Overview of the '844 Patent

47. The '844 Patent is directed to a "portable computer that is configurable between a plurality of display modes including a laptop mode (in which the portable computer has a conventional laptop appearance) and an easel mode in which the base of the computer and its display component stand vertically forming an inverted 'V.'" EX-1001, Abstract. The portable computer 100 is configurable into the plurality of display modes (e.g., FIGs. 1, 4, and 26, below, corresponding to a laptop mode, an easel mode, and a frame mode) based on a hinge assembly (e.g., FIGs. 7B and 10 below) rotatably coupling the display component 102 to the base 104 of the computer 100. EX-1001, Abstract.

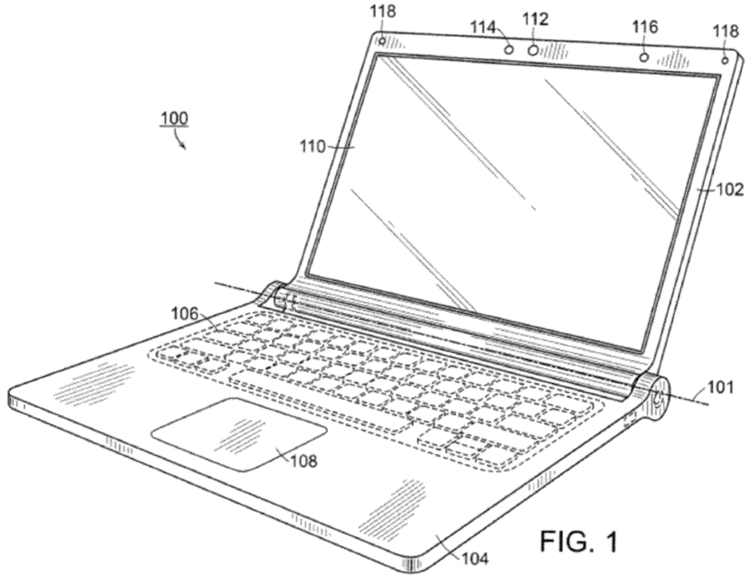


FIG. 1

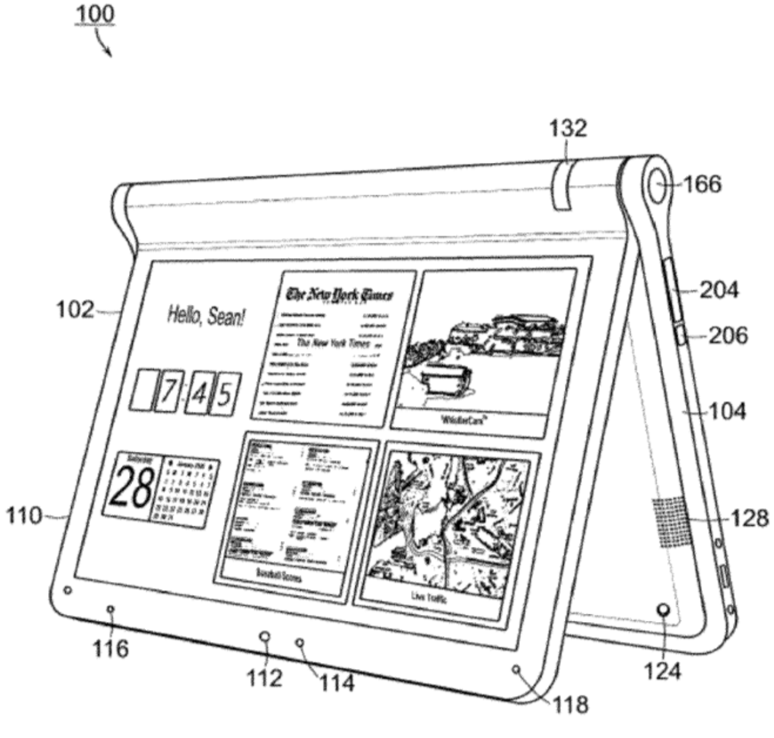

Hello, Sean!
7 4 5
The New York Times
WeatherCam
Baseball Scores
Live Traffic

FIG. 4

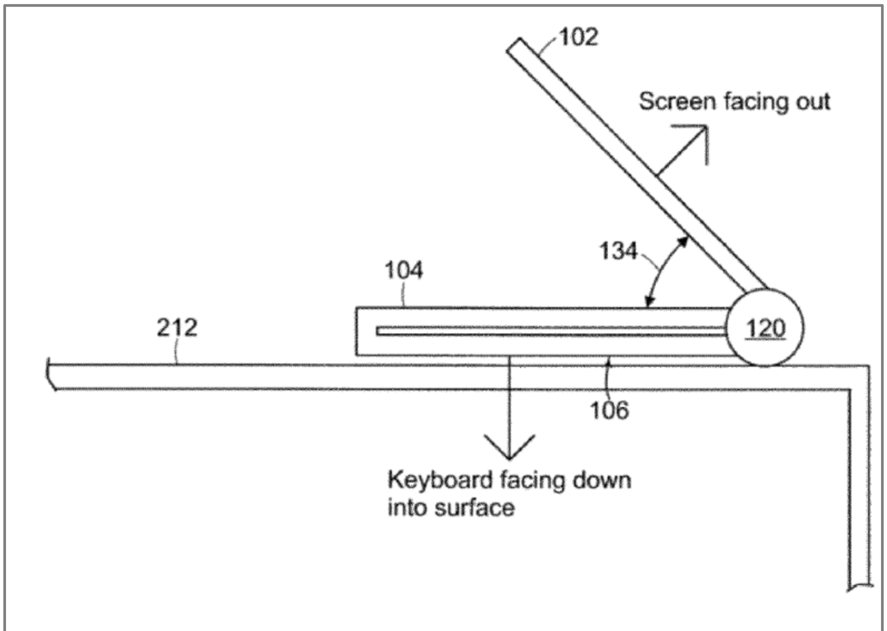

Screen facing out
Keyboard facing down into surface

FIG. 26

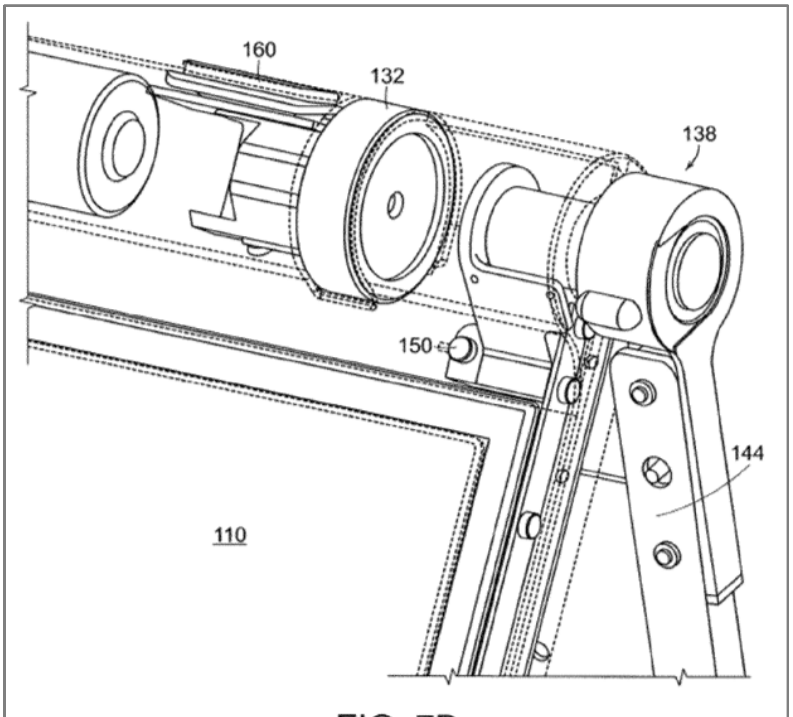


FIG. 7B

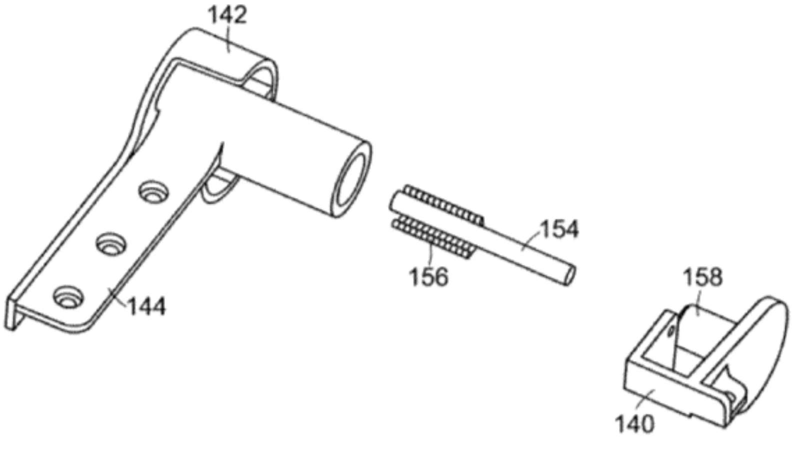


FIG. 10

48. The displayed content of the portable computer of the '844 Patent can be rotated by 180° so that the displayed content is oriented properly for an intended user. EX-1001, 8:7-16, 16:27-50. The 180° rotation of the displayed content may be manual or automated. EX-1001, 16:27-50. For example, in an embodiment where the rotation is automated, the portable computer uses an orientation (or mode) sensor that detects whether the portable computer is in a laptop mode or an easel mode and adjusts the display accordingly. EX-1001, 8:17-20. The orientation (or mode) sensor may be located in the hinge assembly 138 and "may be used to determine a precise relative orientation[, such as an angle,] of the base component 104 with respect to the display component 102 . . . to determine [a given display mode.]" EX-1001, 8:26-31, 58-61. In some embodiments, the orientation sensor may be located in a display component 102 or base 104 and may include an accelerometer "whose output is fed to the computer operating system (or to dedicated

logic circuitry) which then triggers a display inversion as appropriate between the two modes." EX-1001, 8:31-34.

49. The '844 Patent also discloses "software and/or hardware protection . . . provided for the keyboard to prevent keys from being pressed (or to prevent the portable computer from responding to pressed keys) when the portable computer is in the frame mode." EX-1001, 16:14-17.

50. Moreover, the '844 Patent discloses integrated navigation hardware that "allows a user to easily and comfortable [sic] control various features and functions of the portable computer, and to manipulate content displayed on the portable computer." EX-1001, 10:55-58. The navigation hardware may include a scroll wheel, navigation buttons 166, 168, or conventional tools (e.g., touchpad 108, track ball, mouse, or other peripherals) to "control, adjust and/or select various functionality of the portable computer." EX-1001, 10:60-61, 11:2-10, 15-19, 22-24, 40-44, 12:17-21. Navigation button 166 may be implemented on a side of the base, and navigation button 168 may be implemented as part of the keyboard 106, as illustrated in FIG. 17 of the '844 Patent below.

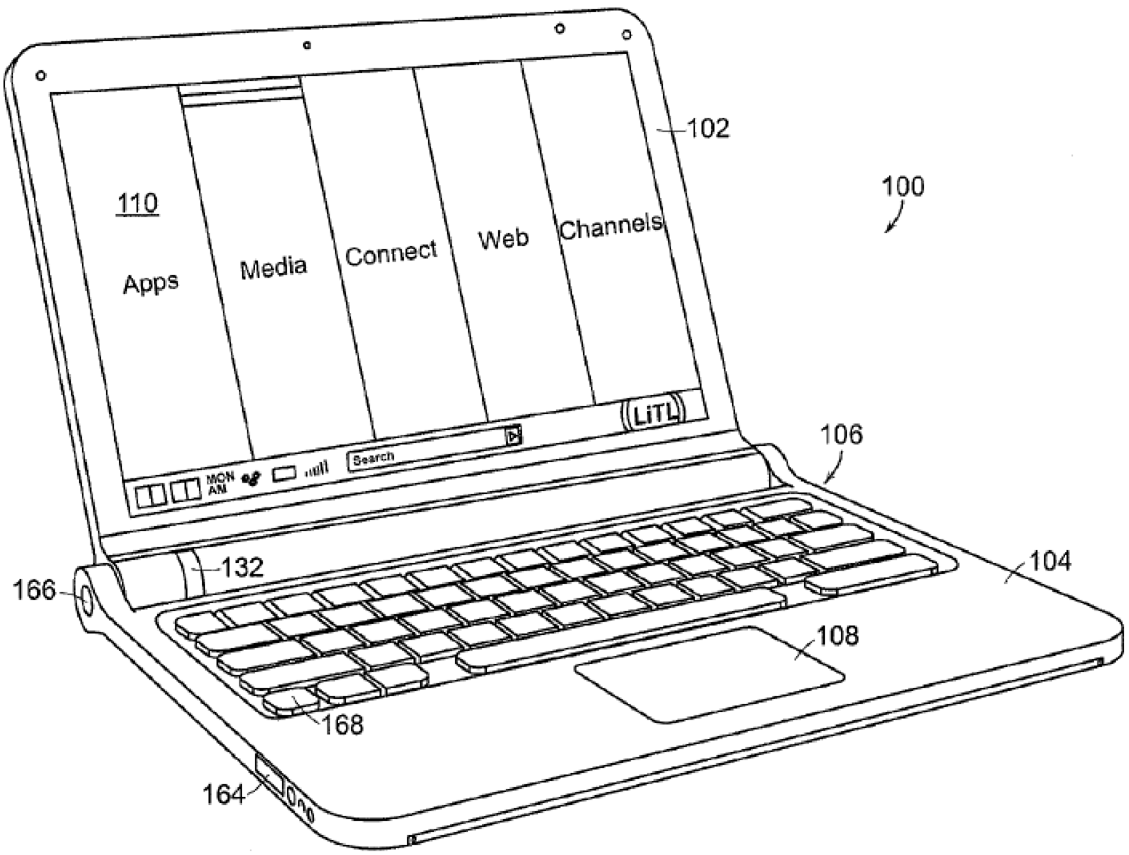

110
Apps
Media
Connect
Web
Channels
LiTL
Search
MON
AM
102
100
106
104
132
166
108
168
164

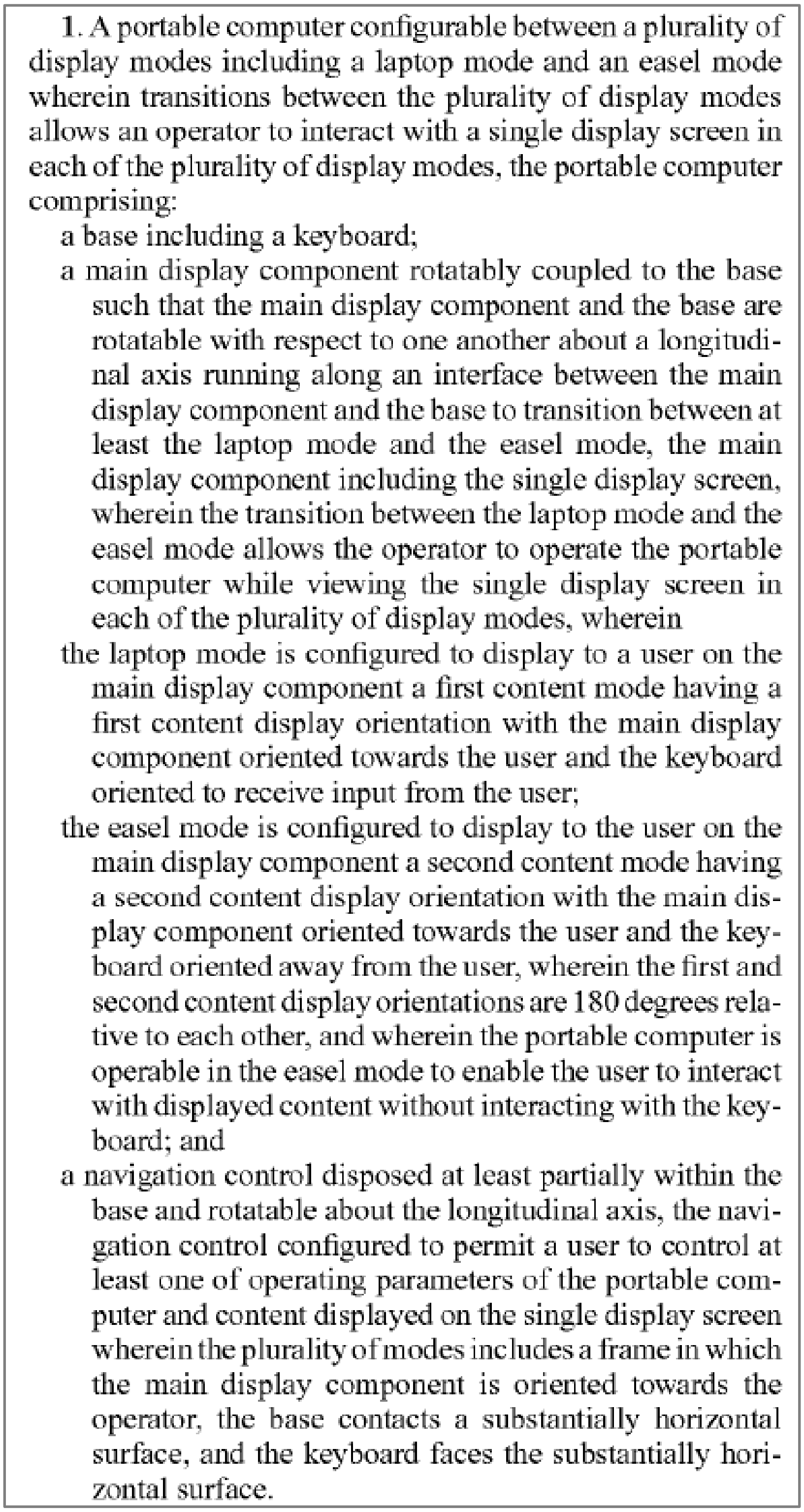
FIG. 17

51. In one example, navigation hardware is used to control operating parameters of the portable computer and content displayed on the display screen by "permit[ting] the user to adjust a volume of sound produced by the portable computer. In another example, the screen is configured to display at least one of a plurality of modes of content, and the scroll wheel is configured to permit the user to select a mode of content for display by the portable computer." EX-1001, 3:36-41.

52. The '844 Patent also describes content modes ("the modes of content") that include media 172a, connect 172b, web 172c, and applications 172d. EX-

1001, 11:35-38. "[T]he media mode 172a may provide access to a medial [sic] player to play, view, search and organize media, such as music, video, photos, etc." EX-1001, 44-46. "The connect mode 172b may provide access to features such as, for example, email, Voice-over-IP instant messaging, etc." EX-1001, 46-48. "[T]he web mode 172c may provide access to internet browsing and searching." EX-1001, 49-50. "The application mode 172d may provide access to, for example, computer applications or programs, such as word processor, spreadsheet, calculator, etc." EX-1001, 50-52.

53. Challenged Claim 1 (reproduced below) is representative.



1. A portable computer configurable between a plurality of display modes including a laptop mode and an easel mode wherein transitions between the plurality of display modes allows an operator to interact with a single display screen in each of the plurality of display modes, the portable computer comprising:

a base including a keyboard;

a main display component rotatably coupled to the base such that the main display component and the base are rotatable with respect to one another about a longitudinal axis running along an interface between the main display component and the base to transition between at least the laptop mode and the easel mode, the main display component including the single display screen, wherein the transition between the laptop mode and the easel mode allows the operator to operate the portable computer while viewing the single display screen in each of the plurality of display modes, wherein

the laptop mode is configured to display to a user on the main display component a first content mode having a first content display orientation with the main display component oriented towards the user and the keyboard oriented to receive input from the user;

the easel mode is configured to display to the user on the main display component a second content mode having a second content display orientation with the main display component oriented towards the user and the keyboard oriented away from the user, wherein the first and second content display orientations are 180 degrees relative to each other, and wherein the portable computer is operable in the easel mode to enable the user to interact with displayed content without interacting with the keyboard; and

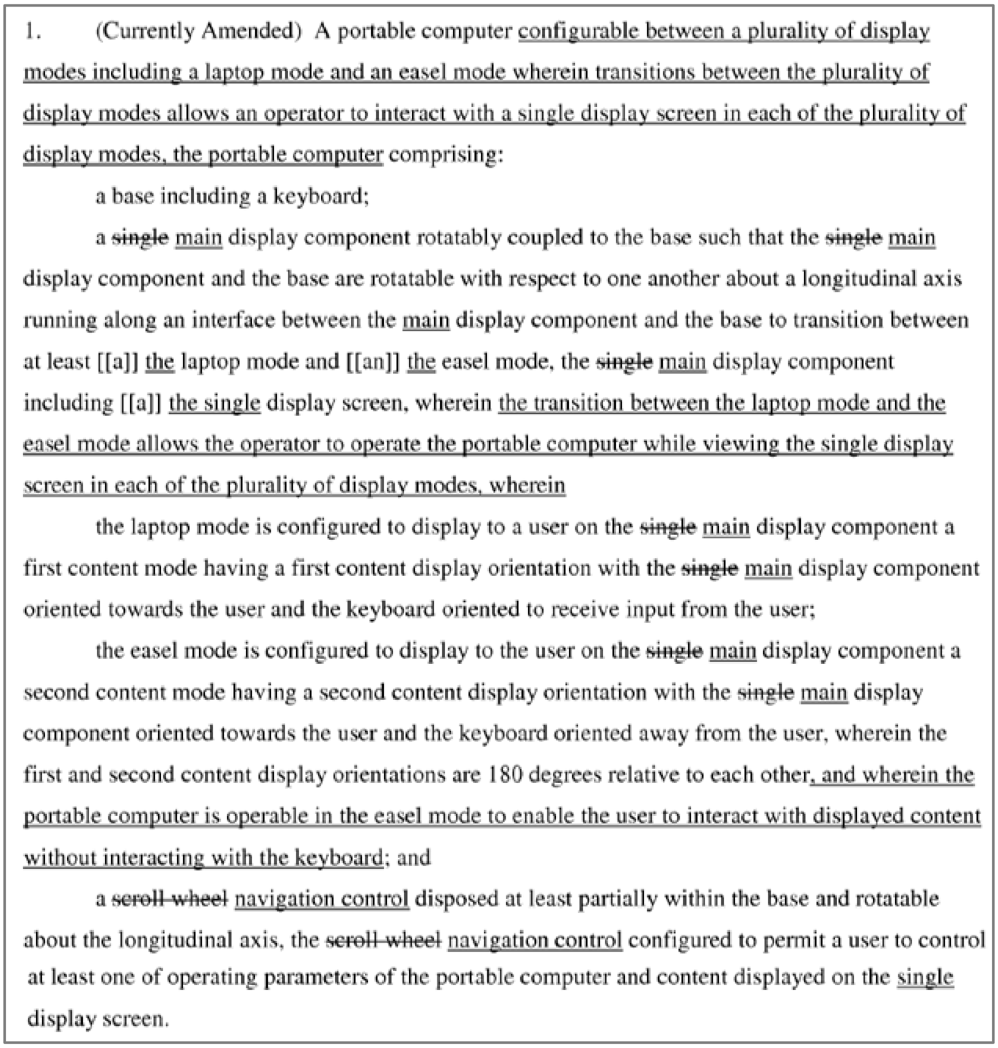
a navigation control disposed at least partially within the base and rotatable about the longitudinal axis, the navigation control configured to permit a user to control at least one of operating parameters of the portable computer and content displayed on the single display screen wherein the plurality of modes includes a frame in which the main display component is oriented towards the operator, the base contacts a substantially horizontal surface, and the keyboard faces the substantially horizontal surface.

EX-1001, 17:10-38.

54. As shown below, however, at the Critical Date, portable computers that used a navigation control and were configurable into a plurality of display modes, including the laptop, easel, and frame modes, were well-known in the art.

B. Prosecution History of the '844 Patent

55. The '844 Patent was allowed after several Office Actions and claim amendments. EX-1002, *throughout*. In the last Office Action before allowance, dated June 7, 2012, the Examiner rejected all pending independent claims as being unpatentable over U.S. Patent No. 7,061,472 to Schweizer in view of U.S. Pat. No. 5,436,954 to Nishiyama. EX-1002, 593-602. Relevant parts of independent claim 1 are shown below with amendments made by Applicant in response to the office action:



1. (Currently Amended) A portable computer configurable between a plurality of display modes including a laptop mode and an easel mode wherein transitions between the plurality of display modes allows an operator to interact with a single display screen in each of the plurality of display modes, the portable computer comprising:

a base including a keyboard;

a ~~single~~ main display component rotatably coupled to the base such that the ~~single~~ main display component and the base are rotatable with respect to one another about a longitudinal axis running along an interface between the main display component and the base to transition between at least [[a]] the laptop mode and [[an]] the easel mode, the ~~single~~ main display component including [[a]] the single display screen, wherein the transition between the laptop mode and the easel mode allows the operator to operate the portable computer while viewing the single display screen in each of the plurality of display modes, wherein

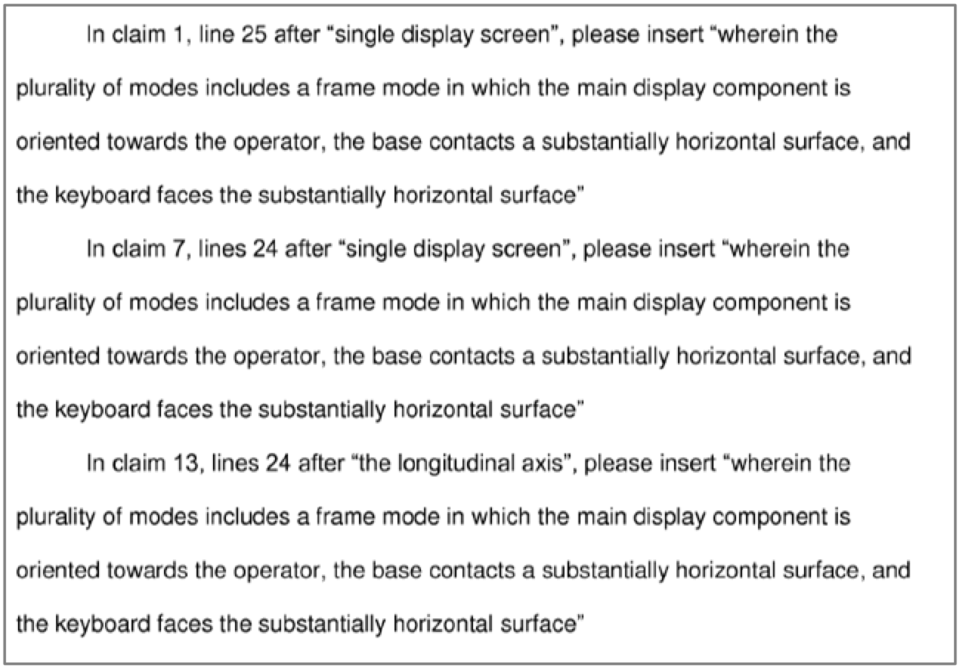
the laptop mode is configured to display to a user on the ~~single~~ main display component a first content mode having a first content display orientation with the ~~single~~ main display component oriented towards the user and the keyboard oriented to receive input from the user;

the easel mode is configured to display to the user on the ~~single~~ main display component a second content mode having a second content display orientation with the ~~single~~ main display component oriented towards the user and the keyboard oriented away from the user, wherein the first and second content display orientations are 180 degrees relative to each other, and wherein the portable computer is operable in the easel mode to enable the user to interact with displayed content without interacting with the keyboard; and

a ~~scroll wheel~~ navigation control disposed at least partially within the base and rotatable about the longitudinal axis, the ~~scroll wheel~~ navigation control configured to permit a user to control at least one of operating parameters of the portable computer and content displayed on the single display screen.

EX-1002, 72-3. Applicant also made amendments to other independent claims that led to allowance, and the amendments to the independent claims are generally related to the following claim features: (1) the laptop mode, (2) the easel mode, (3) interacting with the displayed content in the easel mode without interacting with the keyboard, (4) interacting with the single display screen, and (5) the navigation control. EX-1002, 73-76.

56. Additionally, the Examiner provided final amendments to the independent claims, as shown below:



In claim 1, line 25 after "single display screen", please insert "wherein the plurality of modes includes a frame mode in which the main display component is oriented towards the operator, the base contacts a substantially horizontal surface, and the keyboard faces the substantially horizontal surface"

In claim 7, lines 24 after "single display screen", please insert "wherein the plurality of modes includes a frame mode in which the main display component is oriented towards the operator, the base contacts a substantially horizontal surface, and the keyboard faces the substantially horizontal surface"

In claim 13, lines 24 after "the longitudinal axis", please insert "wherein the plurality of modes includes a frame mode in which the main display component is oriented towards the operator, the base contacts a substantially horizontal surface, and the keyboard faces the substantially horizontal surface"

EX-1002, 36. These amendments that led to allowance generally relate to the frame mode. EX-1002, 36.

57. However, as demonstrated below, all of these features (along with the rest of the features in the Challenged Claims) were squarely within the prior art, including the prior art relied upon in the Petition.

V. STATE OF THE ART OF RELEVANT CLAIM FEATURES

58. The '844 Patent describes and claims portable computers having one or more of the following features:

1. Portable computers that could be transitioned between multiple display modes using a hinge rotation i.e., "multi-display-mode portable computers");
2. Detecting display modes in multi-display-mode portable computers using sensor(s) and controlling orientation of the displayed content based on the detected display mode; and
3. A navigation control configured to permit a user to control operating parameter(s) of the portable computer and content displayed.

59. Portable computers having these features were well known in the art before the Critical Date, as amply demonstrated in the prior art discussed below.

A. Portable computers that could be transitioned between multiple display modes using a hinge rotation were well known.

60. Multi-display-mode computers capable of transitioning between multiple display modes were known in the art before the Critical Date, as demonstrated by the prior art discussed below.

1. Shimura[1]

61. Shimura discloses a multi-display-mode portable computer that can be transitioned between various display modes, including:

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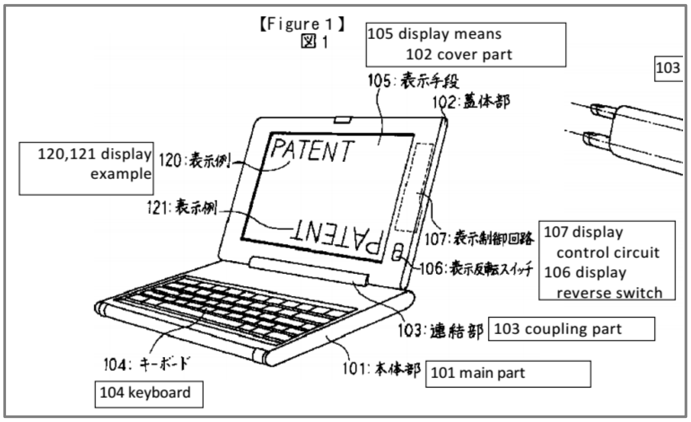
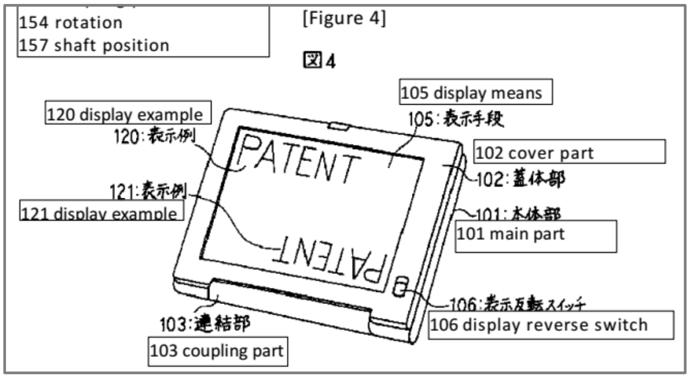
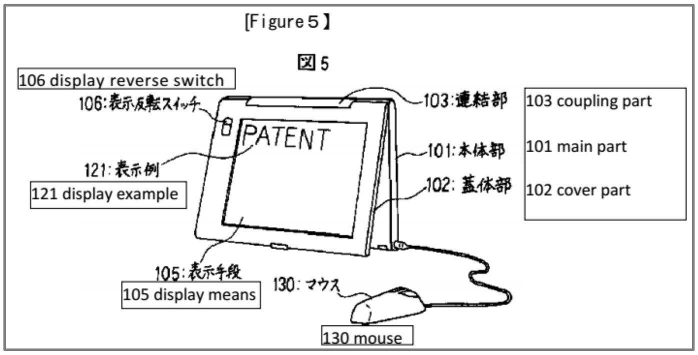
[1] The Shimura reference was published in Japanese (EX-1003), and a certified English translation is provided herein (EX-1004, reference hereinafter will be made to the certified English translation for simplicity).

1. A first display mode (Figure 1 below) corresponding to the laptop mode of the '844 Patent where the main display component is oriented towards the user and the keyboard is oriented to receive input from the user, EX-1004, ¶11;
2. A second mode (Figure 4 below) corresponding to the frame mode of the '844 Patent where the main display component is oriented towards the user, the base contacts a substantially horizontal surface, and the keyboard faces the substantially horizontal surface, EX-1004, ¶16;
3. A third display mode (Figure 5 below) corresponding to the easel mode of the '844 Patent where the main display component is oriented towards the user and the keyboard is oriented away from the user, EX-1004, ¶17; and
4. A fourth display mode corresponding to the closed mode of the '844 Patent where the display screen is disposed substantially against the base of the portable computer. EX-1004, ¶14 ("main part 101 and cover part 102 can **close so that keyboard 104 and display means 105 face each other**") (emphasis added), Configuration ("both the display device 105 and the **cover part 102 facing main part 101 and which can open and close both of these**") (emphasis added), Claim 7.


【Figure 1】
図1
105 display means
102 cover part
105：表示手段
102：蓋体部
103
120,121 display example
120：表示例
121：表示例
PATENT
PATENT
107：表示制御回路
106：表示反転スイッチ
107 display control circuit
106 display reverse switch
103：連結部
103 coupling part
104：キーボード
104 keyboard
101：本体部
101 main part


[Figure 4]
図4
154 rotation
157 shaft position
105 display means
105：表示手段
120 display example
120：表示例
PATENT
102 cover part
102：蓋体部
121：表示例
121 display example
101：本体部
101 main part
PATENT
106：表示反転スイッチ
106 display reverse switch
103：連結部
103 coupling part


[Figure5】
図5
106 display reverse switch
106：表示反転スイッチ
103：連結部
103 coupling part
PATENT
101：本体部
101 main part
121：表示例
121 display example
102：蓋体部
102 cover part
105：表示手段
105 display means
130：マウス
130 mouse

2. Hisano

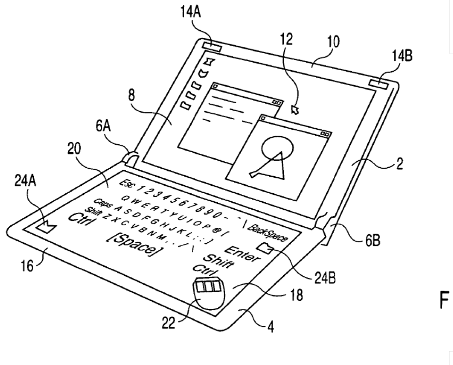
62. Hisano discloses a multi-display-mode portable computer that can be transitioned between various display modes, including:

1. A first display mode (FIG. 1 below) corresponding to the laptop mode of the '844 Patent where the main display component is oriented to-

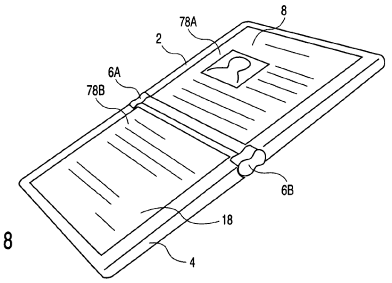
wards the user and the keyboard is oriented to receive input from the user, EX-1020, ¶¶53-54;

2. A second display mode (FIG. 9 below) corresponding to the easel mode of the '844 Patent where the main display component is oriented towards the user and the keyboard is oriented away from the user, EX-1020, ¶¶98-99; and

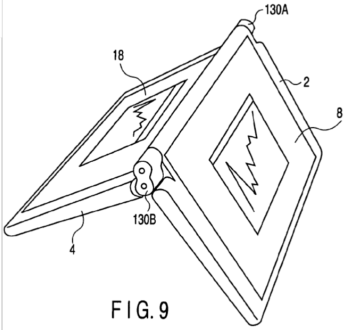
3. A third display mode corresponding to the closed mode of the '844 Patent where the display screen is disposed substantially against the base of the portable computer. EX-1020, ¶¶97-98.


14A
12
10
14B
8
6A
20
2
24A
Ctrl
[Space]
Shift
Enter
Back Space
6B
16
24B
18
22
4

F I G. 1


8
78A
2
6A
78B
6B
18
4

F I G. 8


130A
18
2
8
130B
4

F I G. 9

3. Tsuji

63. Tsuji discloses a multi-display-mode portable computer that can be transitioned between various display modes, including:

1. A first display mode ("PC style") (FIG. 1 below) corresponding to the laptop mode of the '844 Patent where the main display component is oriented towards the user and the keyboard is oriented to receive input from the user, EX-1005, ¶34;
2. A second display mode (FIG. 4 below) corresponding to the closed mode of the '844 Patent where the display screen is disposed substantially against the base of the portable computer, EX-1005, ¶37; and
3. A third display mode ("PDA style") in four orientations (FIGs. 5-8 below), corresponding to a "reverse" frame mode where the main display component is oriented towards the user, the base contacts a substantially horizontal surface, and the keyboard is oriented away from the substantially horizontal surface. EX-1005, ¶¶50-54.

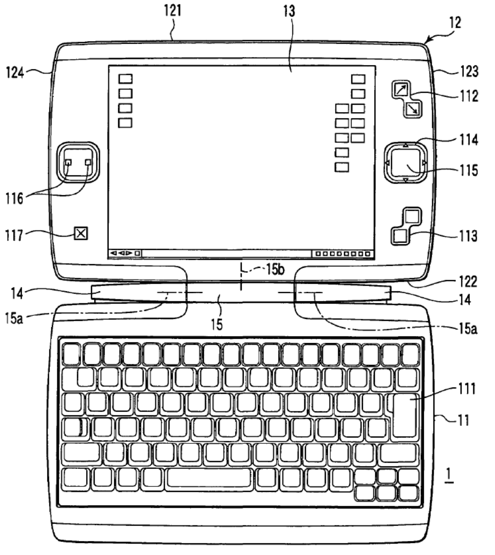

121
13
12
124
123
112
114
115
116
117
113
15b
122
14
14
15a
15
15a
111
11
1

FIG.1

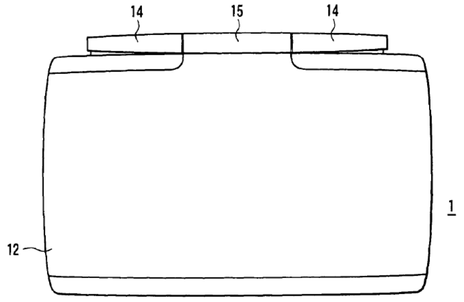


FIG.3

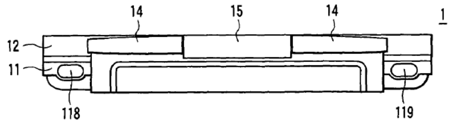

14
15
14
1
12
11
118
119

FIG.4

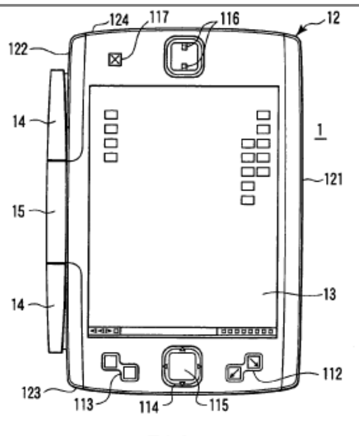

124
117
116
12
122
14
1
121
15
14
13
123
113
114
115
112

FIG.5

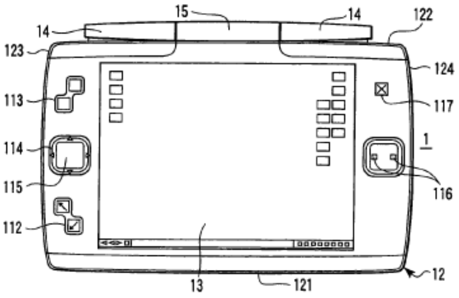

15
14
122
14
123
124
113
117
1
114
116
115
112
13
121
12

FIG.6

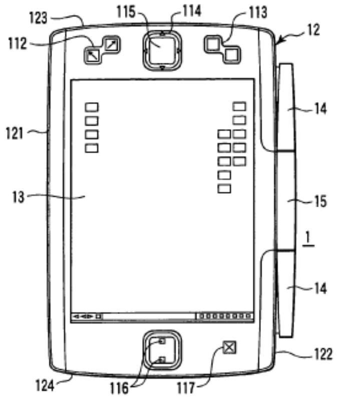

123
115
114
113
112
12
121
14
13
15
1
14
122
124
116
117

FIG.7

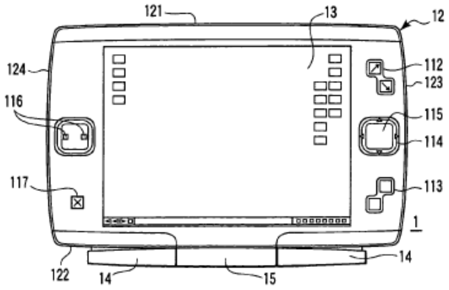

121
13
12
124
112
123
116
115
114
117
113
1
122
14
15
14

FIG.8

4. **Tonouchi**

64. Tonouchi discloses a multi-display-mode portable computer that can be transitioned between various display modes, including:

1. A first display mode (FIG. 4A below) corresponding to the closed mode of the '844 Patent where the display screen is disposed substantially against the base of the portable computer, EX-1014, ¶30;
2. A second display mode ("notebook mode") (FIG. 4B below) corresponding to the laptop mode where the main display component is oriented towards the user and the keyboard is oriented to receive input from the user, EX-1014, ¶30; and

3. A third display mode ("tablet mode") (FIG. 4D below) corresponding to a "reverse" frame mode where the main display component is oriented towards the user, the base contacts a substantially horizontal surface, and the keyboard is oriented away from the substantially horizontal surface. EX-1014, ¶30.

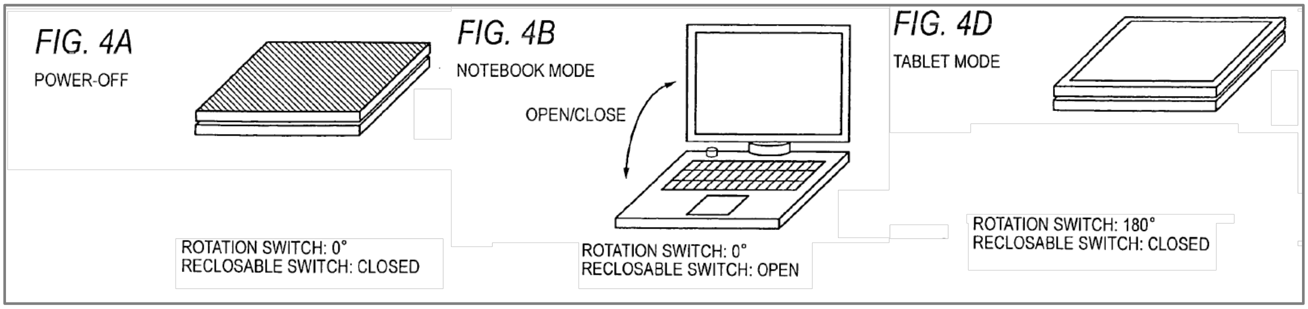


FIG. 4A
POWER-OFF
ROTATION SWITCH: 0°
RECLOSABLE SWITCH: CLOSED
FIG. 4B
NOTEBOOK MODE
OPEN/CLOSE
ROTATION SWITCH: 0°
RECLOSABLE SWITCH: OPEN
FIG. 4D
TABLET MODE
ROTATION SWITCH: 180°
RECLOSABLE SWITCH: CLOSED

5. Kiyoyuki[2]

65. Kiyoyuki discloses a multi-display-mode portable computer that can be transitioned between various display modes, including:

1. A first display mode (Figure 1) corresponding to the laptop mode of the '844 Patent where the main display component is oriented towards the user and the keyboard is oriented to receive input from the user, EX-1022, ¶¶3, 15-16;

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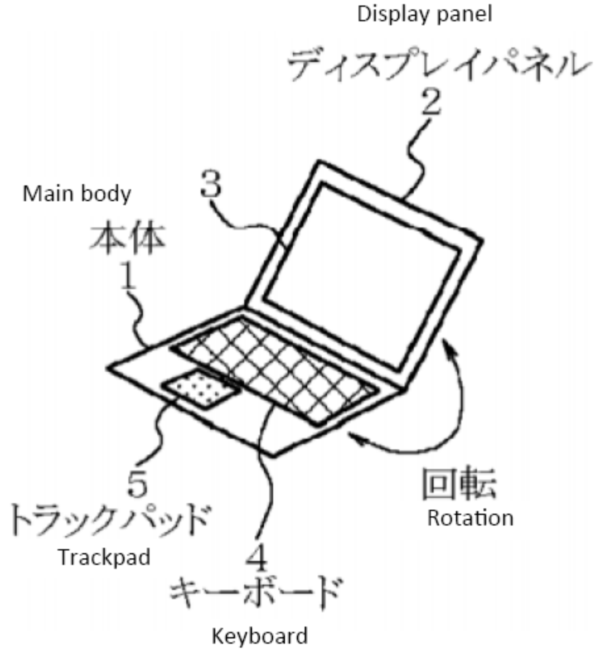
[2] The Kiyoyuki reference was published in Japanese (EX-1021), and a certified English translation is provided herein (EX-1022, reference hereinafter will be made to the certified English translation for simplicity).

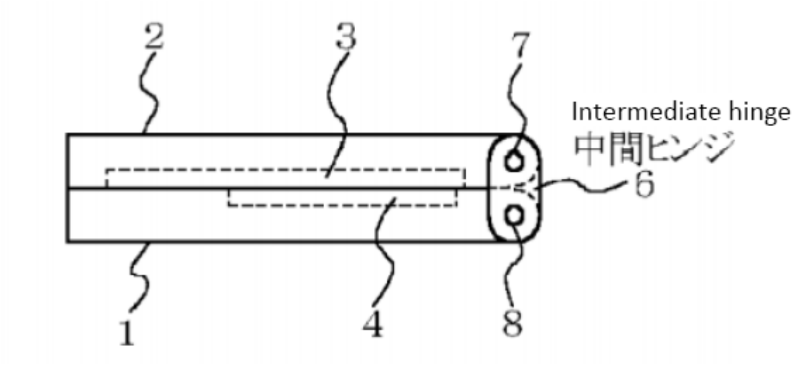
2. A second display mode (Figure 7) corresponding to the closed mode of the ‘844 patent where the display screen is disposed substantially against the base of the portable computer, EX-1022, ¶¶16, 24, 27, 29, Claims 1-2; and

3. A third display mode (Figures 2, 3, 8) corresponding to the frame mode of the ’844 Patent where the main display component is oriented towards the user, the base contacts a substantially horizontal surface, and the keyboard faces the substantially horizontal surface. EX-1022, Means for Resolution, ¶¶5, 25-26, 29, Claims 1-2.

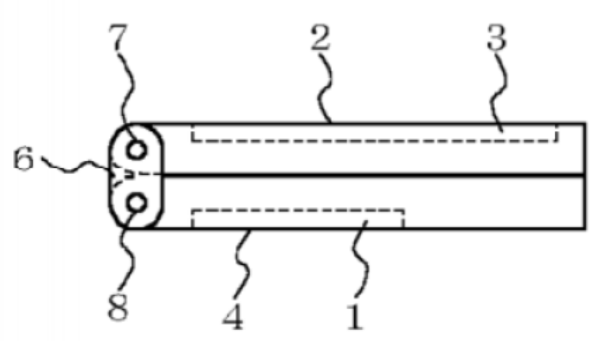
[Figure1]


Display panel
ディスプレイパネル
2
Main body
本体
1
3
5
トラックパッド
Trackpad
4
キーボード
Keyboard
回転
Rotation

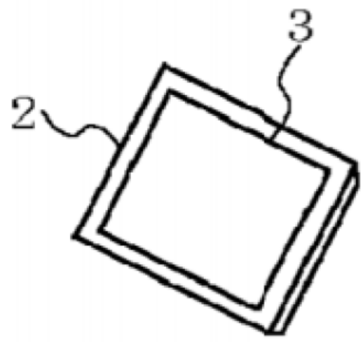
[Figure7]


2
3
7
Intermediate hinge
中間ヒンジ
6
1
4
8

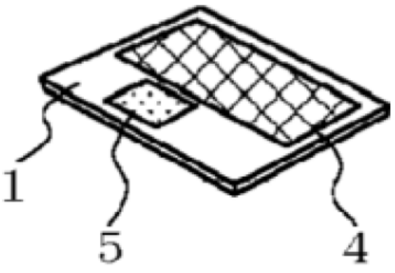
[Figure8]



[Figure2]



[Figure3]



6. Shigeo[3]

66. Shigeo discloses a multi-display-mode portable computer that can be transitioned between various display modes, including:

1. A first display mode (Figures 1 and 4a below) corresponding to the laptop mode of the '844 Patent where the main display component is oriented towards the user and the keyboard is oriented to receive input from the user, EX-1024, ¶13;
2. A second display mode (Figures 2 and 4b below) corresponding to the easel mode of the '844 Patent where the main display component is oriented towards the user and the keyboard is oriented away from the user, EX-1024, ¶14; and
3. A third display mode corresponding to the closed mode of the '844 patent where the display screen is disposed substantially against the base of the portable computer. EX-1024, ¶5 ("This invention claims a **freely openable/closable portable computer** that comprises a display attached to the lid side, and a keyboard attached to the main-body side") (emphasis added), Constituent Elements, Claim 1.

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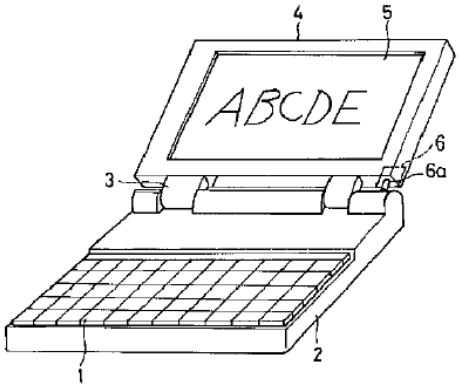
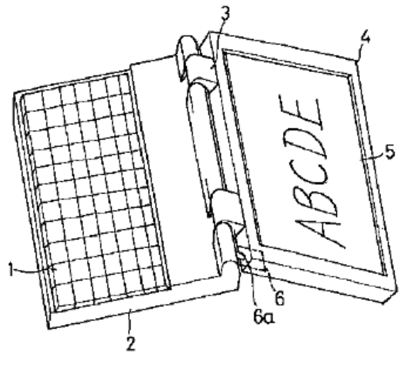
[3] The Shigeo reference was published in Japanese (EX-1023), and a certified English translation is provided herein (EX-1024, reference hereinafter will be made to the certified English translation for simplicity).

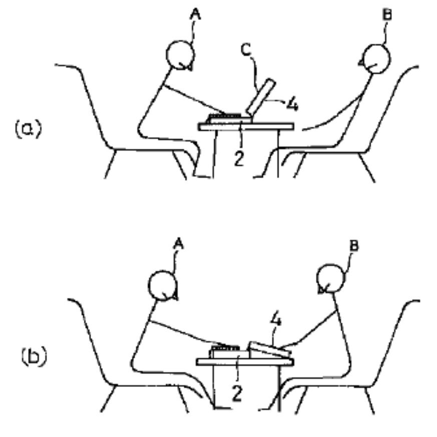
【図１】



【図２】



【図４】



7. Schweizer[4]

67. Schweizer discloses a multi-display-mode portable computer that can be transitioned between various display modes, including:

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[4] The Schweizer reference was published in German (EX-1025), and a certified English translation is provided herein (EX-1026, reference hereinafter will be made to the certified English translation for simplicity).

1. A first display mode (FIG. 1 below) corresponding to the laptop mode of the '844 Patent where the main display component is oriented towards the user and the keyboard is oriented to receive input from the user, EX-1026, ¶¶16, 20;
2. A second display mode (FIG. 2 below) corresponding to the easel mode of the '844 Patent where the main display component is oriented towards the user and the keyboard is oriented away from the user, EX-1026, ¶¶17, 21;
3. A third display mode (FIG. 3 below) corresponding to the a "reverse" frame mode where the main display component is oriented towards the user, the base contacts a substantially horizontal surface, and the keyboard is oriented away from the substantially horizontal surface, EX-1026, ¶¶18, 22; and
4. A fourth display mode corresponding to the closed mode of the '844 patent where the display screen is disposed substantially against the base of the portable computer EX-1026, Abstract ("multifunctional notebook with a basic body 4 having a detachable keyboard 1 and a hinged main screen 2, which is **used to cover the basic body 4 with the keyboard 1**") (emphasis added).

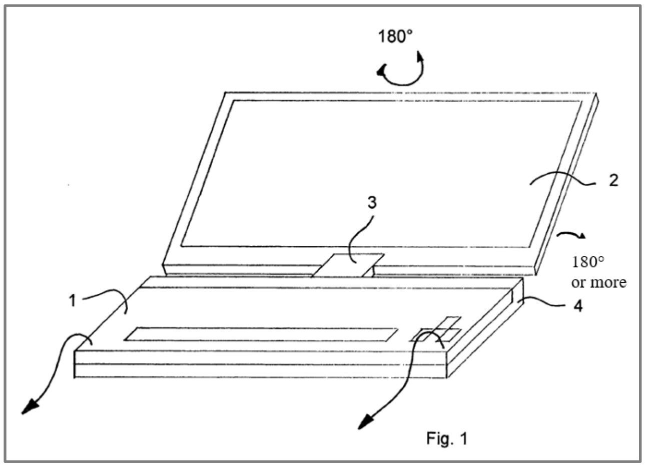


Fig. 1

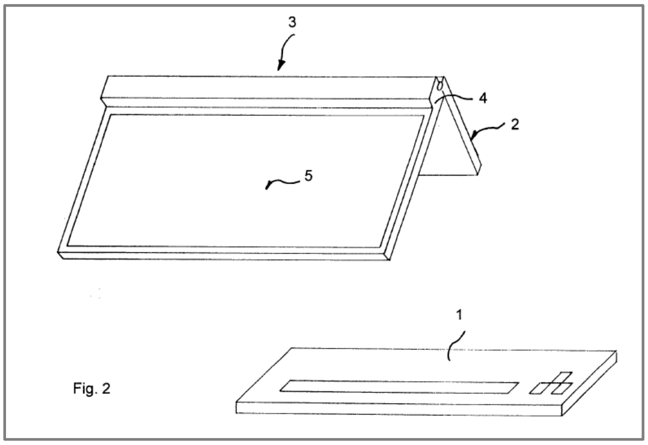


Fig. 2

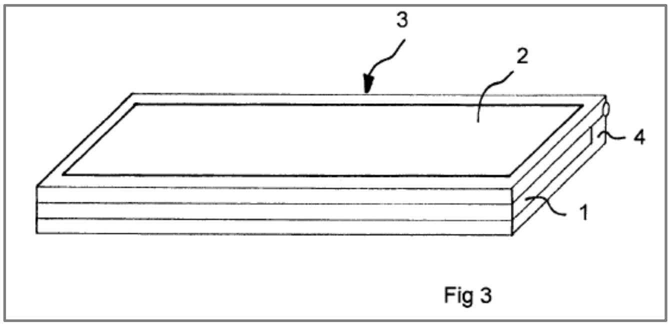


Fig 3

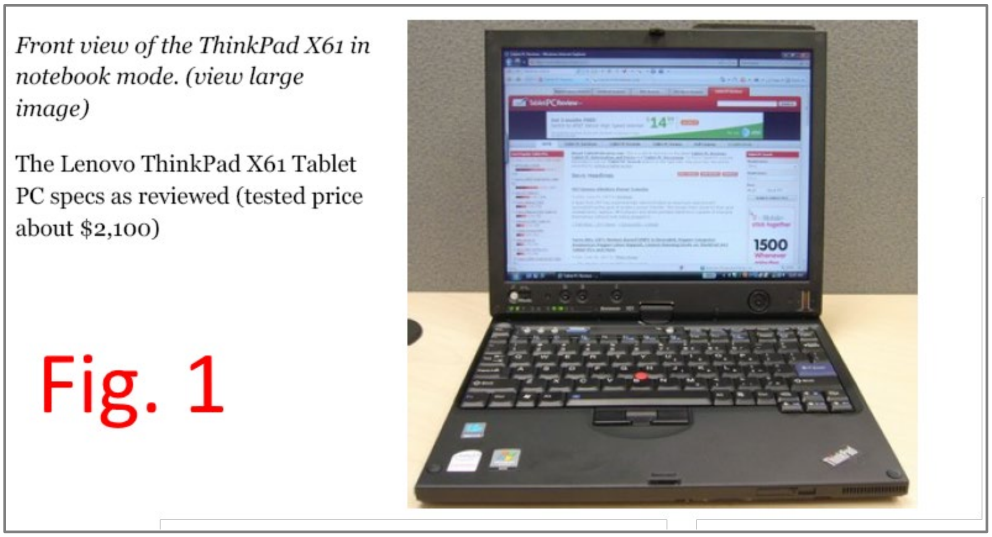
8. Lenovo ThinkPad X61 ("Lenovo")

68. Lenovo discloses a multi-display-mode portable computer that can be transitioned between various display modes, including:

1. A first display mode ("notebook mode") (FIG. 1 below) corresponding to the laptop mode of the '844 Patent where the main display com-

ponent is oriented towards the user and the keyboard is oriented to receive input from the user, EX-1018, 1;

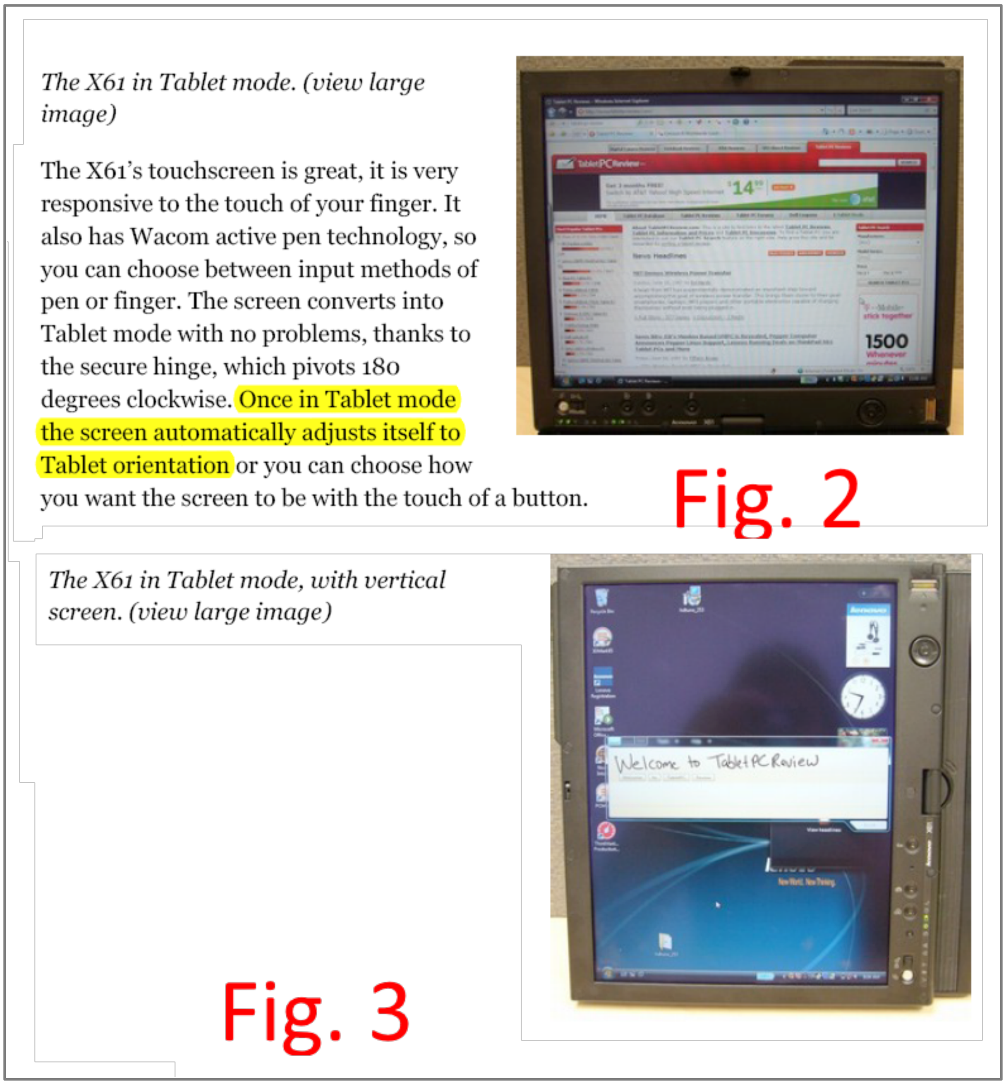
2. A second display mode (FIGs. 2 & 3 below: "tablet mode")) corresponding to a "reverse" frame mode where the main display component is oriented towards the user, the base contacts a substantially horizontal surface, and the keyboard is oriented away from the substantially horizontal surface, EX-1018, 3-4; and
3. A third display mode (FIG. 4 below) corresponding to the closed mode of the '844 Patent where the display screen is disposed substantially against the base of the portable computer. EX-1018, 1, FIG. 4 below.



Front view of the ThinkPad X61 in notebook mode. (view large image)

The Lenovo ThinkPad X61 Tablet PC specs as reviewed (tested price about $2,100)

Fig. 1



The X61 in Tablet mode. (view large image)

The X61's touchscreen is great, it is very responsive to the touch of your finger. It also has Wacom active pen technology, so you can choose between input methods of pen or finger. The screen converts into Tablet mode with no problems, thanks to the secure hinge, which pivots 180 degrees clockwise. Once in Tablet mode the screen automatically adjusts itself to Tablet orientation or you can choose how you want the screen to be with the touch of a button.

Fig. 2

The X61 in Tablet mode, with vertical screen. (view large image)

Fig. 3

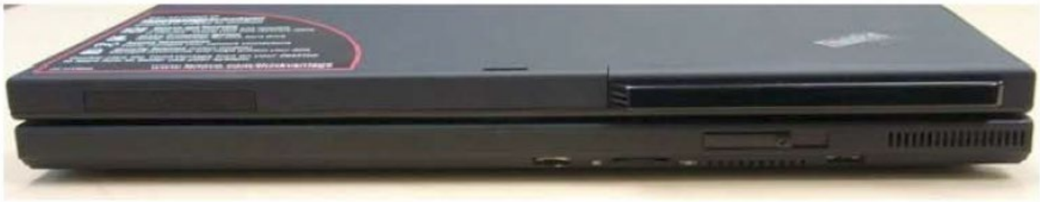


Fig. 4

9. Lin

69. Lin discloses a multi-display-mode portable computer that can be transitioned between various display modes, including:

1. A first display mode (FIG. 6 below) to the closed mode of the '844 Patent where the display screen is disposed substantially against the base of the portable computer, EX-1027, 2:26-40; and
2. A second display mode (FIGs. 7 and 8 below) corresponding to the easel mode of the '844 Patent where the main display component is oriented towards the user and the keyboard is oriented away from the user, EX-1027, 2:14-15, 2:41-42.

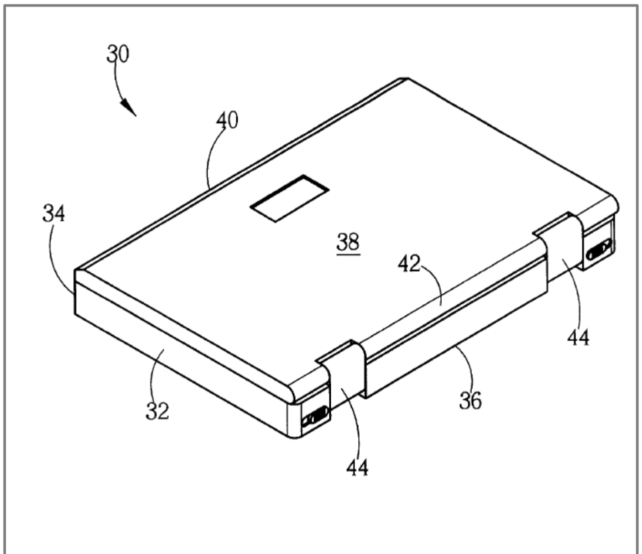


Fig. 6

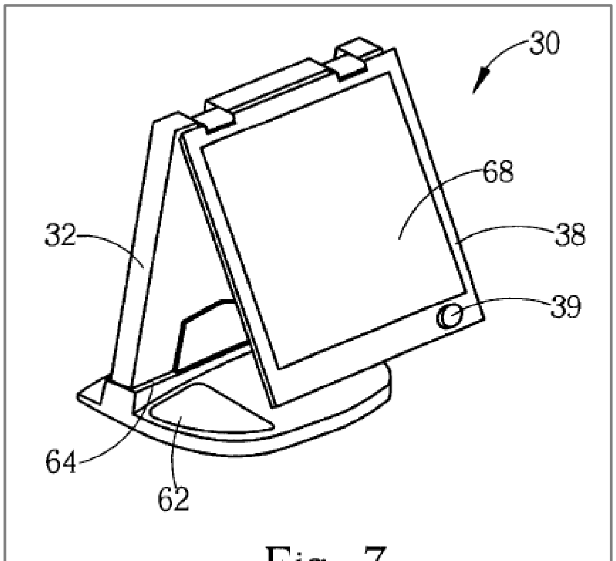


Fig. 7

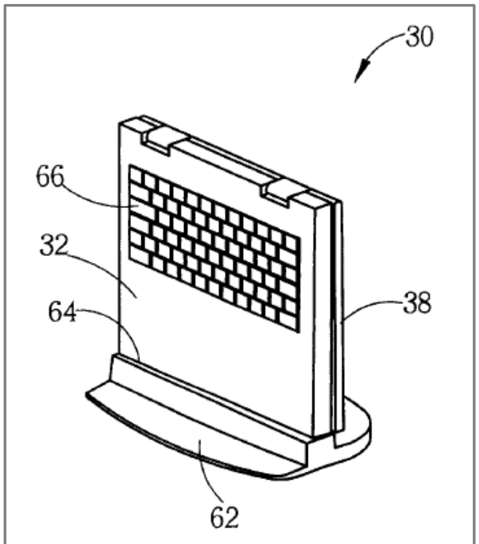


Fig. 8

10. Park

70. Park discloses a multi-display-mode portable computer that can be transitioned between various display modes, including:

1. A first display mode ("notebook computer mode") (FIG. 1 below) corresponding to the laptop mode of the '844 Patent where the main display component is oriented towards the user and the keyboard is oriented to receive input from the user, EX-1028, 2:53-57;
2. A second display mode (FIG. 2 below) corresponding to a "reverse" frame mode where the main display component is oriented towards the user, the base contacts a substantially horizontal surface, and the keyboard is oriented away from the substantially horizontal surface, EX-1028, 2:57-65; and

3. A third display mode corresponding to the closed mode of the '844 Patent where the display screen is disposed substantially against the base of the portable computer. EX-1028, 2:16-19 ("The keyboard of the notebook computer based upon the above-described components does not depend upon a system use state and an operating state in which the display module is **open or closed**."), 2:33-36 ("FIG. 10 is a circuit diagram illustrating a circuit for switching an operating mode of the system to a suspend mode using a switch **when the LCD is closed in the prior art notebook compute**r.").

FIG. 1
(Prior Art)

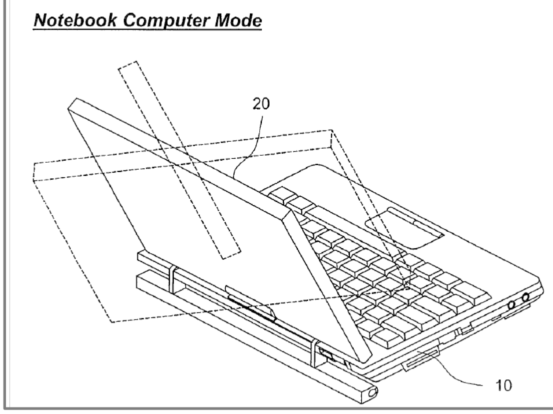
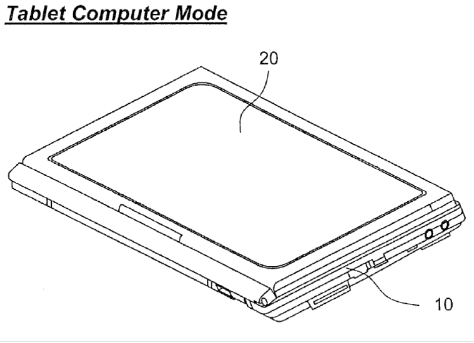


FIG. 2
(Prior Art)



11. MIT

71. MIT discloses a multi-display-mode portable computer that can be transitioned between various display modes, including:

1. A first display mode ("laptop") corresponding to the laptop of the '844 Patent where the main display component is oriented towards the user and the keyboard is oriented to receive input from the user, EX-1029, 1, FIG. 4 below;
2. A second display mode ("theater) corresponding to the frame mode of the '844 Patent where the main display component is oriented towards the user and the keyboard faces a substantially horizontal surface, EX-1029, 1, FIG. 7 below;
3. A third display mode ("tablet", "handheld") also corresponding to a frame mode where the main display component is oriented towards the user, the base contacts a substantially horizontal surface, and the keyboard faces substantially horizontal surface, EX-1029, 1, FIGs 2, 8 below; and
4. A fourth display mode corresponding to the closed mode of the '844 Patent where the display screen is disposed substantially against the base of the portable computer. EX-1029, FIGs. 1, 5 below.

Fig. 1

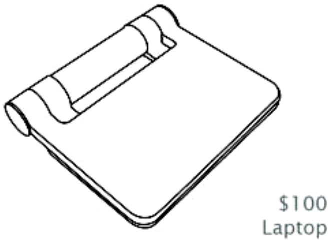


Fig. 2

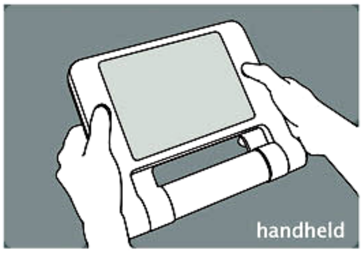


Fig. 3

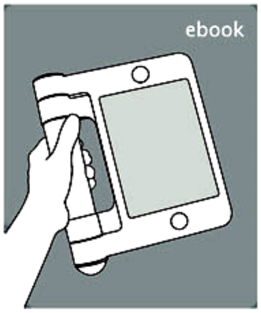


Fig. 4

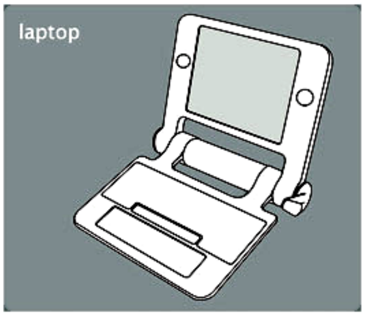


Fig. 5

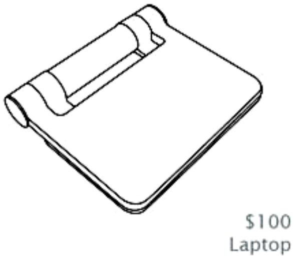


Fig. 6

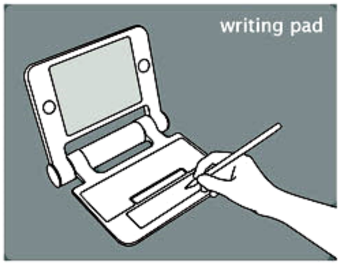

writing pad

Fig. 7

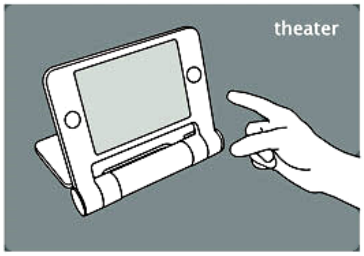
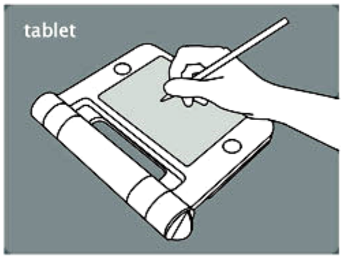


Fig. 8



12. Flint

72. Flint discloses a multi-display-mode portable computer that can be transitioned between various display modes, including:

1. A first display mode ("display position") corresponding to the laptop of the '844 Patent where the main display component is oriented towards the user and the keyboard is oriented to receive input from the user, EX-1030, 2:44-50, FIG. 1 below; and
2. A second display mode ("graphical input position") corresponding to a "reverse" frame mode where the main display component is oriented towards the user, the base contacts a substantially horizontal surface, and the keyboard is oriented away from the substantially horizontal surface, EX-1030, 2:44-50, FIG. 3 below.

FIG.1

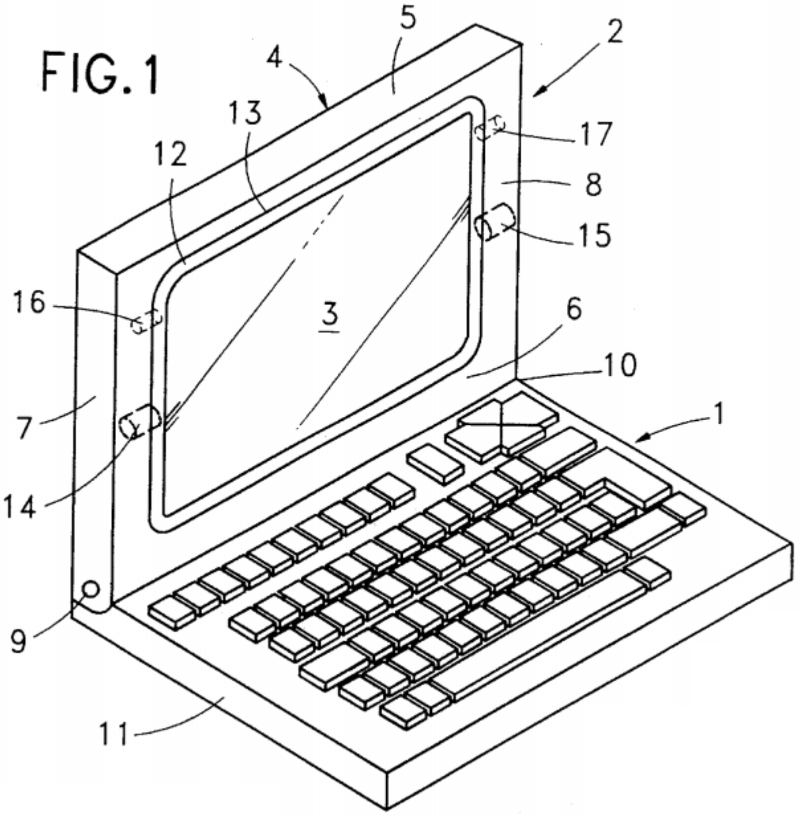
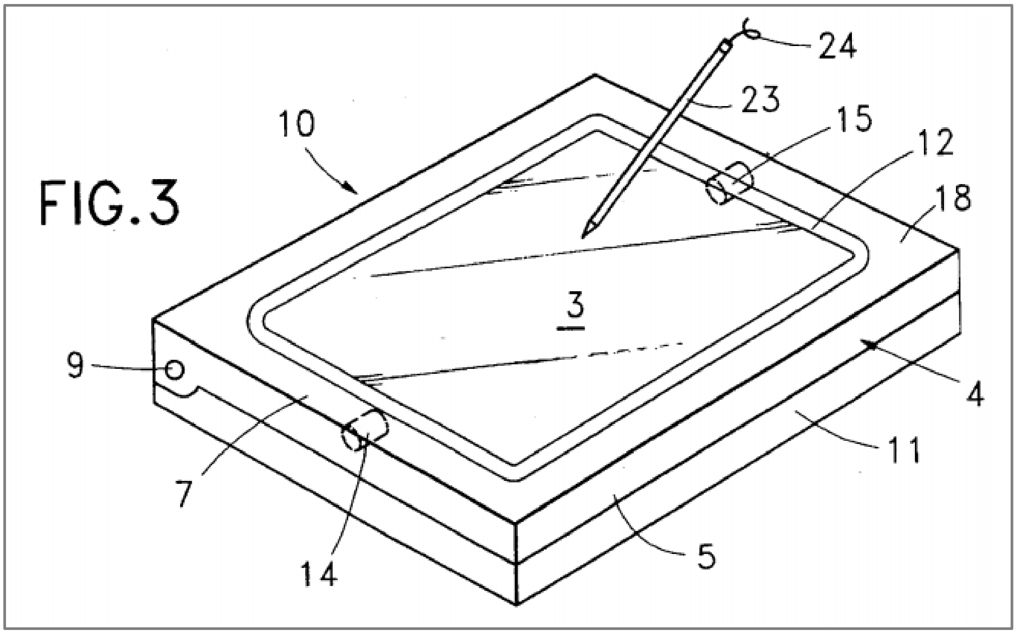


FIG.3



73. Disclosures of various display modes in the above-discussed references are summarized in the table below.

Prior Art	**Laptop mode**	**Easel mode**	**Frame mode**	**Closed mode**	**Reverse frame mode**[5]
Shimura	X	X	X	X	
Hisano	X	X		X	
Tsuji	X			X	X
Tonouchi	X			X	X
Kiyoyuki	X		X	X	
Shigeo	X	X		X	
Schweizer	X	X		X	X
Lenovo	X			X	X
Lin		X		X	
Park	X			X	X

---

[5] The reverse frame mode of this column is analogous to the frame mode of the '844 Patent except that the keyboard is not oriented **towards** a substantially horizontal surface, but rather away from the substantially horizontal surface.

Prior Art	**Laptop mode**	**Easel mode**	**Frame mode**	**Closed mode**	**Reverse frame mode**[5]
MIT	X		X	X	
Flint	X				X

Table 1

B. Detecting display modes in multi-display-mode portable computers using sensor(s) and controlling orientation of the displayed content based on the detected display mode was well known.

74. Detecting various display modes in multi-display-mode portable computers using one or more sensors and controlling orientation of the displayed content based on the detected display mode was well known before the Critical Date, as demonstrated by the prior art discussed below. A POSITA would have understood that the one or more sensors could be used to determine a physical orientation of the portable computer in order to select a display model.

1. Hisano

75. Hisano discloses detecting different display modes using one or more sensors and controlling orientation of the displayed content based on the detected display mode.

76. Specifically, the portable computer of Hisano uses the rotating angle of the hinges to switch between different orientations or views of the displayed content. EX-1020, ¶99 ("[T]he rotating angle of the hinges 130A and 130B may be used to switch between [a normal view and an inverted view]."). A POSITA would have understood that this means the portable computer of Hisano includes a sensor

that can detect the rotation angle of the hinges. The portable computer of Hisano also includes a "sensor that senses the direction of gravity so as to automatically switch the top and bottom of the display screen." EX-1020, ¶99.

2. Tsuji

77. Tsuji discloses detecting different display modes using one or more sensors and controlling orientation of the displayed content based on the detected display mode.

78. Specifically, the portable computer of Tsuji includes a display driver 303 that "performs an operation for rotating a screen image displayed on the LCD 13 and a scaling operation for varying the aspect ratio in response to an instruction from the BIOS 301." EX-1005, ¶70. The BIOS 301 relies on a gravity sensor 203 and/or a rotation angle sensor 202, illustrated in FIG. 10 below, to orient the display unit 12 (i.e., rotate the screen image). EX-1005, ¶¶48, 50-52, 74, 77.

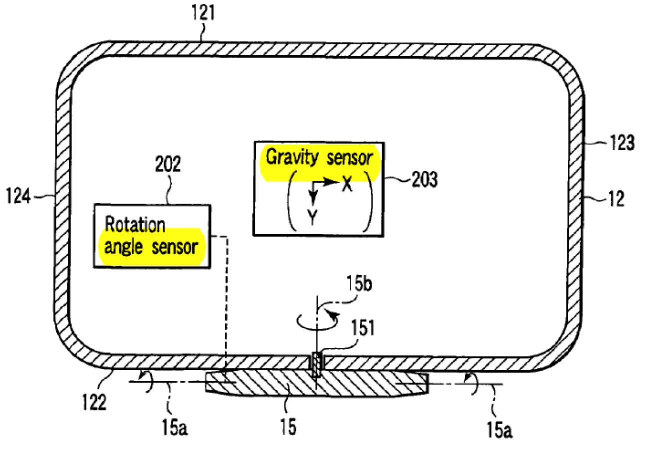
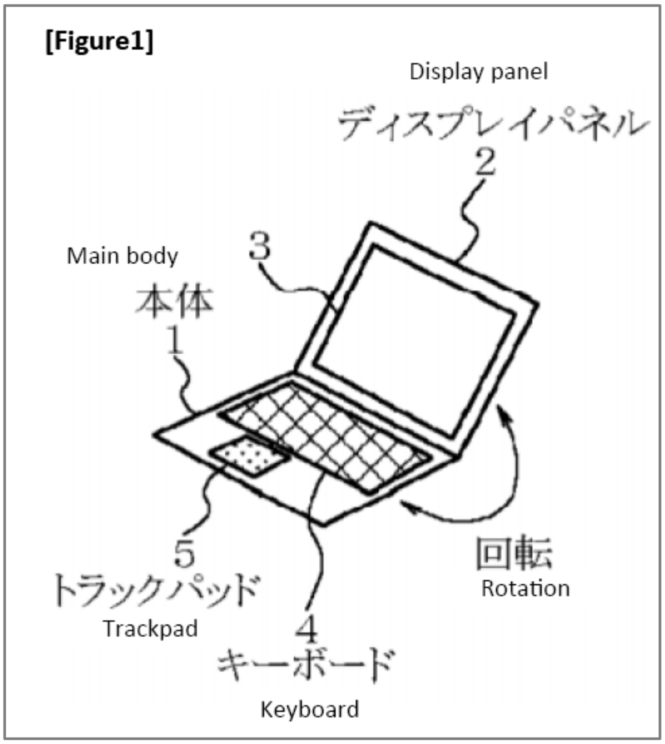


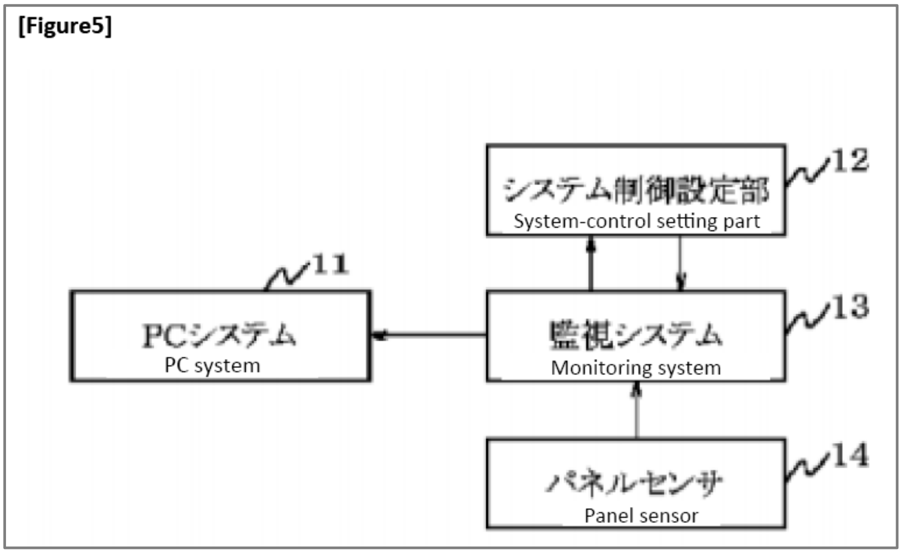
FIG.10

3. Kiyoyuki

79. Kiyoyuki discloses detecting different display modes using one or more sensors and controlling orientation of the displayed content based on the detected display mode. The display modes include a closed mode and a frame mode.

80. Specifically, the foldable notebook-type portable computer of Kiyoyuki includes a panel sensor 14 that detects the angle of rotation of the display panel 2 relative to the operation surface of the main body. EX-1022, ¶20, Figures 1 and 5. When the user opens the display panel until the rotation angle reaches 180 degrees (the display panel is held flat on the same plane as the body), the monitoring system 13 instructs the PC system to invert the screen. EX-1022, ¶¶23-24.


[Figure1]
Display panel
ディスプレイパネル
2
3
Main body
本体
1
5
トラックパッド
Trackpad
4
キーボード
Keyboard
回転
Rotation


[Figure5]
システム制御設定部
System-control setting part
12
PCシステム
PC system
11
監視システム
Monitoring system
13
パネルセンサ
Panel sensor
14

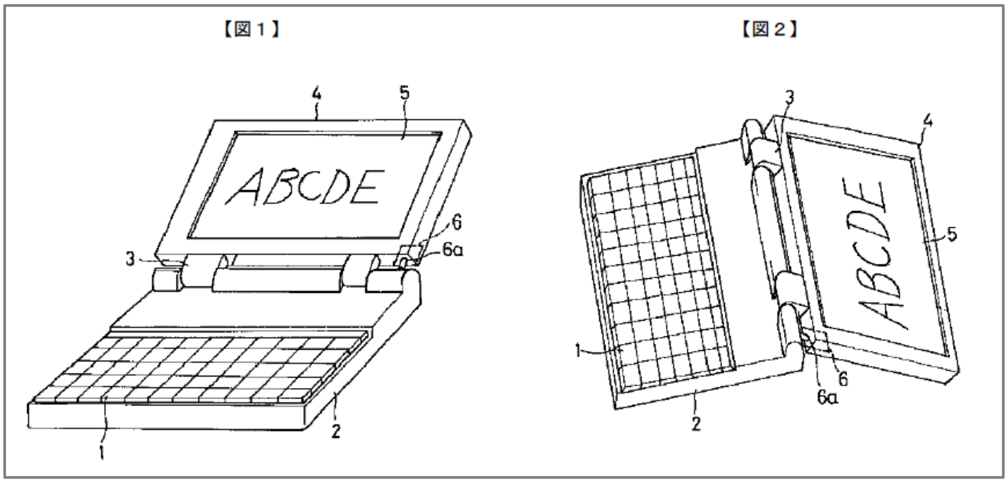
81. Kiyoyuki also teaches that preset rotation angles and the corresponding types of system control (e.g. inverting the display) are registered in the system-control setting part in advance EX-1022, ¶20: a POSITA would have immediately appreciated that this teaches thresholds that are stored.

4. Shigeo

82. Shigeo discloses detecting different display modes using one or more sensors and controlling orientation of the displayed content based on the detected display mode.

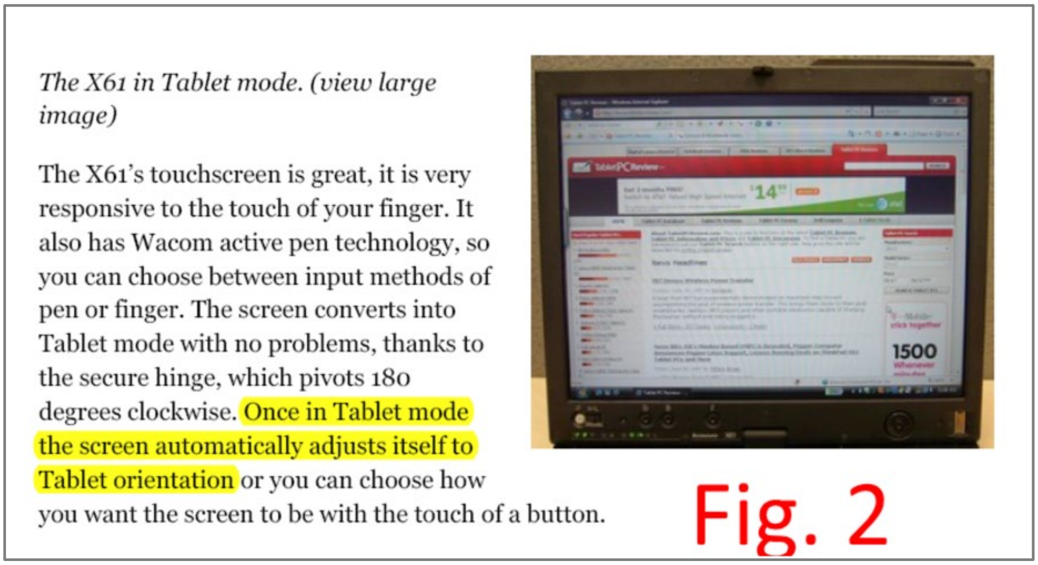
83. Specifically, as shown in Figures 1 and 2 below, the portable computer of Shigeo includes an opening-angle sensor 6 in the hinge 3 for detecting a rotating ("opening") angle between the main body 2 and the lid 4. EX-1024, Abstract, ¶8. When the output of the opening angle sensor 6 indicates an opening angle greater than 180 degrees, the displayed content is rotated by 180 degrees. EX-

1024, Abstract, ¶¶10-12. Shigeo also teaches rotating the displayed content when the opening angle sensor detects that the opening angle becomes a predetermined value or goes beyond the predetermined value. EX-1024, ¶5.



5. Lenovo

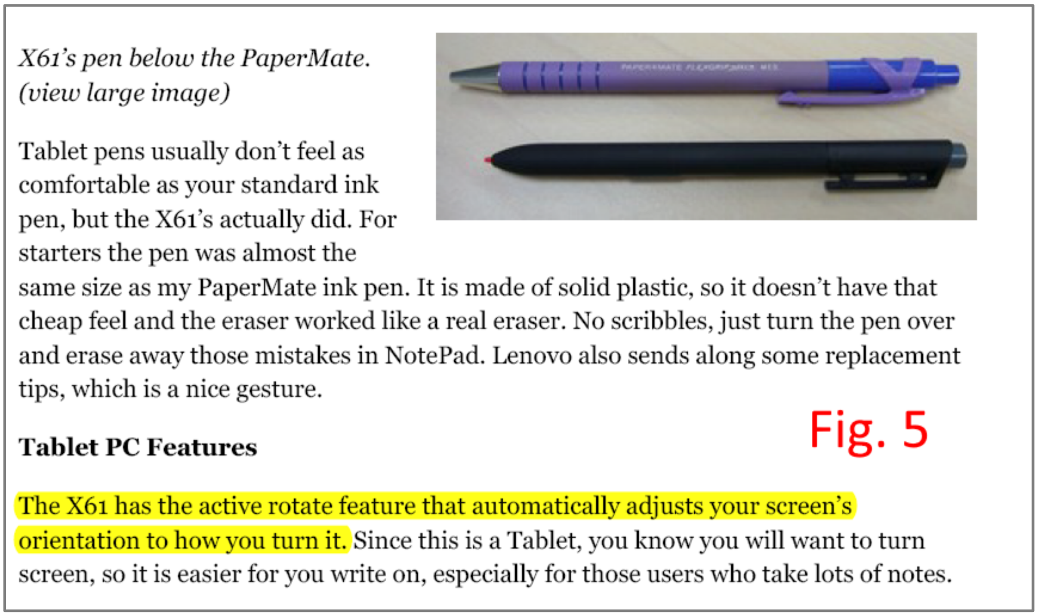
84. Lenovo discloses detecting different display modes and controlling orientation of displayed content automatically: the active rotate feature automatically adjusts the screen's orientation to how it is turned (FIG. 1, p. 3, bottom; FIG. 5, p. 7, bottom). A POSITA would have understood that would involve using one or more sensors and controlling orientation of the displayed content based on the detected display mode.



The X61 in Tablet mode. (view large image)

The X61's touchscreen is great, it is very responsive to the touch of your finger. It also has Wacom active pen technology, so you can choose between input methods of pen or finger. The screen converts into Tablet mode with no problems, thanks to the secure hinge, which pivots 180 degrees clockwise. Once in Tablet mode the screen automatically adjusts itself to Tablet orientation or you can choose how you want the screen to be with the touch of a button.

Fig. 2



X61's pen below the PaperMate. (view large image)

Tablet pens usually don't feel as comfortable as your standard ink pen, but the X61's actually did. For starters the pen was almost the same size as my PaperMate ink pen. It is made of solid plastic, so it doesn't have that cheap feel and the eraser worked like a real eraser. No scribbles, just turn the pen over and erase away those mistakes in NotePad. Lenovo also sends along some replacement tips, which is a nice gesture.

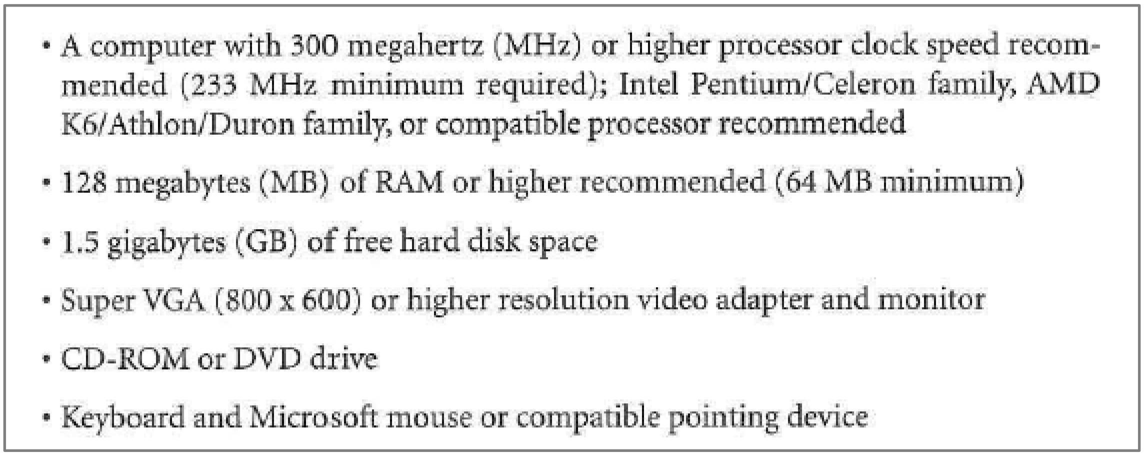
Fig. 5

Tablet PC Features

The X61 has the active rotate feature that automatically adjusts your screen's orientation to how you turn it. Since this is a Tablet, you know you will want to turn screen, so it is easier for you write on, especially for those users who take lots of notes.

C. Portable computers that would have used an operating system to provide a user interface and would have met the hardware requirements necessary to run the Windows XP operating system were well known.

85. Prior to the Critical Date, there were a number of commercially available computers that met or exceeded the requirements above: the requirements are taken from "Checking Hardware Requirements." EX-1006, 558.



- A computer with 300 megahertz (MHz) or higher processor clock speed recommended (233 MHz minimum required); Intel Pentium/Celeron family, AMD K6/Athlon/Duron family, or compatible processor recommended
- 128 megabytes (MB) of RAM or higher recommended (64 MB minimum)
- 1.5 gigabytes (GB) of free hard disk space
- Super VGA (800 x 600) or higher resolution video adapter and monitor
- CD-ROM or DVD drive
- Keyboard and Microsoft mouse or compatible pointing device

EX-1006, 558. For simplicity, these will be referred to as "Requirements." The hardware of the particular computer will be referred to as "Specifications."

1. CF-19

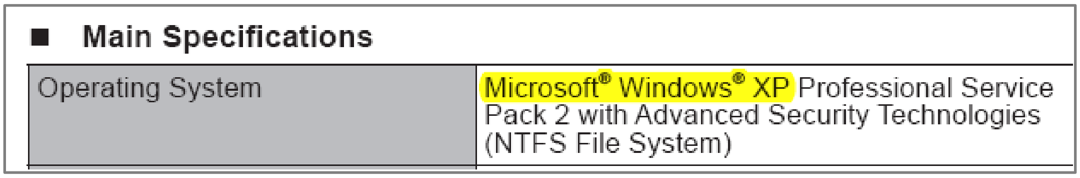
86. CF-19 meets all of the Requirements, as shown in the following table (emphasis added):

Requirement	Specification EX-1016, 34-35
Processor with at least 233MHz clock speed (300MHz recommended)	CPU: Intel® Core™ Duo Processor U2400 (**1.06 GHz,** 2 MB*1 L2 cache, 533 MHz FSB) This is well above even the 300 MHz recommended.
64MB RAM (128MB recommended)	Memory: **512 MB** (4096 MB Max.) This is well above even the 128MB recommended.
1.5GB hard disk space	Hard Disk Drive: **80 GB** This is well above the 1.5GB required.
Super VGA (800x600) or higher resolution video adapter and monitor	Display Method: 10.4 XGA type (TFT) Internal LCD: 65,536/16,777,216 colors

Requirement	Specification EX-1016, 34-35
	(**800×600** dots/**1024×768** dots) External Display: 5,536/16,777,216 colors (**800×600** dots/1024×768 dots/1280×768 dots/**1280×1024** dots) The XGA (Extended Graphics Array) display adapter, and the internal and the external displays, exceed the required resolution.
CD-ROM or DVD drive	Panasonic USB CD/DVD drive (optional) The Panasonic CF-19 thus has the option to include a DVD drive. Note that the Panasonic CF-19 also includes a Product Recovery DVD-ROM, for which the optional CD/DVD drive would be required to use.
Keyboard and mouse or compatible pointing device	Keyboard/pointing device: **82 keys/Touch Pad/Touchscreen** (Anti-Reflection, Stylus (included) touch capable) Thus the Panasonic CF-19 includes a keyboard and compatible pointing devices that can be used to navigate and use the Windows XP operating system with its graphical user interface displayed on the monitor.

87. Thus, CF-19 meets or exceeds all the hardware requirements for the Windows XP operating system and is capable of running Windows XP.

88. Further, CF-19 explicitly specifies the use of a version of the Windows XP operating system, EX-1016, 35 (emphasis added):



■ **Main Specifications**

Operating System	Microsoft® Windows® XP Professional Service Pack 2 with Advanced Security Technologies (NTFS File System)

2. Panasonic CF-T8 Series

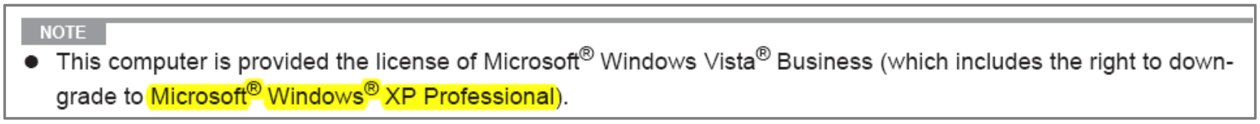
89. The Panasonic CF-T8 series meets all of the Requirements, as shown in the following table (emphasis added):

Requirement	Specification EX-1031, 35, unless otherwise noted
Processor with at least 233MHz clock speed (300MHz recommended)	CPU: Intel CoreT 2 Duo Processor Ultra Low Voltage SU9300 (**1.20 GHz**, 3 MB*1 L2 cache, 800 MHz FSB) This is well above even the 300 MHz recommended
64MB RAM (128MB recommended)	**3 GB**, DDR2 SDRAM This is well above even the 128MB recommended.
1.5GB hard disk space	Hard Disk Drive: **120 GB** This is well above the 1.5GB required.
Super VGA (800 x 600) or higher resolution video adapter and monitor	Display Method: 12.1 XGA type (TFT) (**1024x768** dots) Internal LCD: 65,536/16,777,216 colors (**1024x768** dots) External Display: 65,536/16,777,216 colors (**800 × 600** dots/1024 × 768 dots/1280 × 768 dots/1280 × 1024 dots/1400 × 1050 dots/1440 × 900 dots/1680 × 1050 dots/1600 × 1200 dots/ 1920 × 1080 dots/1920 × 1200 dots) The XGA (Extended Graphics Array) display adapter, and the internal and external displays, exceed the required resolution.
CD-ROM or DVD drive	Panasonic USB CD/DVD drive (optional) EX-

Requirement	Specification EX-1031, 35, unless otherwise noted
	1031, 32 The Panasonic CF-T8 thus has the option to include a DVD drive. Note that the Panasonic CF-T8 also includes a Product Recovery DVD-ROM, for which the optional CD/DVD drive would be required to use.
Keyboard and mouse or compatible pointing device	84 keys/Touch Pad/Touchscreen (stylus (included) touch capable) Thus, the Panasonic CF-T8 includes a keyboard and compatible pointing devices that can be used to navigate and use the Windows XP operating system with its graphical user interface displayed on the monitor.

90. Thus, the Panasonic CF-T8 meets or exceeds all the hardware requirements for the Windows XP operating system and is capable of running Windows XP.

91. Further, Panasonic CF-T8 explicitly specifies the use of a version of the Windows XP operating system, EX-1031, 32 (highlighting added):



NOTE

- This computer is provided the license of Microsoft® Windows Vista® Business (which includes the right to downgrade to Microsoft® Windows® XP Professional).

3. Lenovo

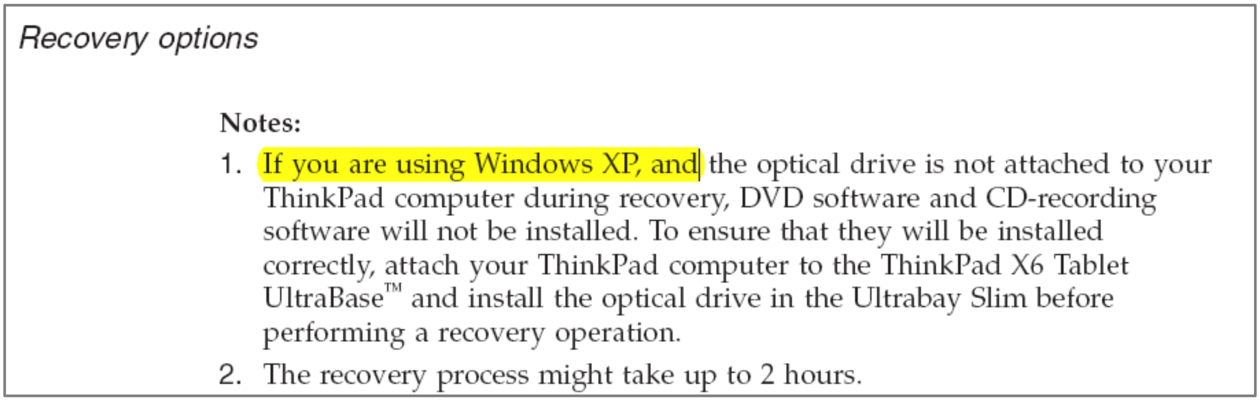
92. The Lenovo Thinkpad X61 meets all of the Requirements, as shown in the following table (emphasis added):

Requirement	Specification EX-1018, 1, unless otherwise noted.
Processor with at least 233MHz clock speed (300MHz recommended)	CPU: Intel Core 2 Duo L7500 **1.6GHz** This is well above even the 300 MHz recommended
64MB RAM (128MB recommended)	RAM: **2GB DDR2** This is well above even the 128MB recommended.
1.5GB hard disk space	Hard Drive: **100 GB** (7200 rpm) This is well above the 1.5GB required.
Super VGA (800 x 600) or higher resolution video adapter and monitor	Display: 112.1″ MultiView/MultiTouch XGA (**1024×768**) TFT The XGA (Extended Graphics Array) display adapter and the TFT display exceeds the required resolution.
CD-ROM or DVD drive	Optical Drive: None However, the Lenovo ThinkPad included 3 USB ports. EX-1018, 2. The Lenovo ThinkPad X61 would thus have the option to include a USB DVD drive. Further, the manufacturer provided a DVD-ROM Combo or Multi-Burner drive in the optional ThinkPad X61 Tablet UltraBase. EX-1047, p. 30
Keyboard and mouse or compatible pointing device	Keyboard / pointing device: **82 keys / Touch Pad / Touchscreen** (Anti-Reflection, Stylus (included) touch capable) Thus, the Lenovo ThinkPad X61 includes a

Requirement	Specification EX-1018, 1, unless otherwise noted.
	keyboard and compatible pointing devices that can be used to navigate and use the Windows XP operating system with its graphical user interface displayed on the monitor.

93. Thus, the Lenovo ThinkPad X61 meets or exceeds all the hardware requirements for the Windows XP operating system and is capable of running Windows XP.

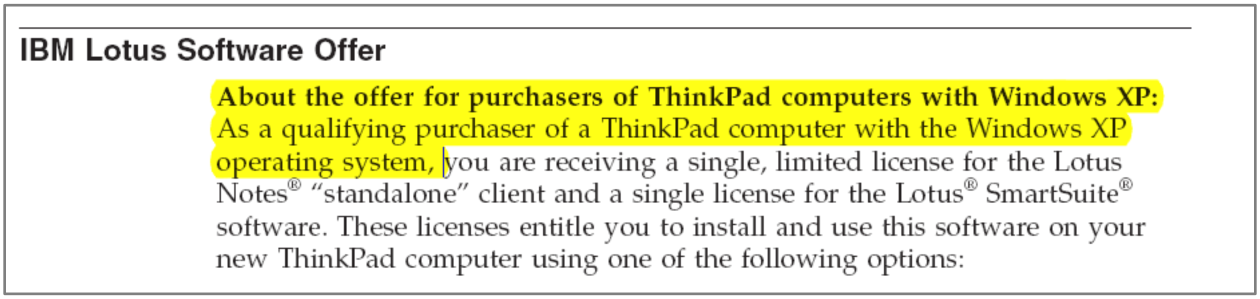
94. Further, Lenovo ThinkPad X61 explicitly discloses the use of a version of the Windows XP operating system, (EX-1047, 23, 30, 55) (highlighting added):



Recovery options

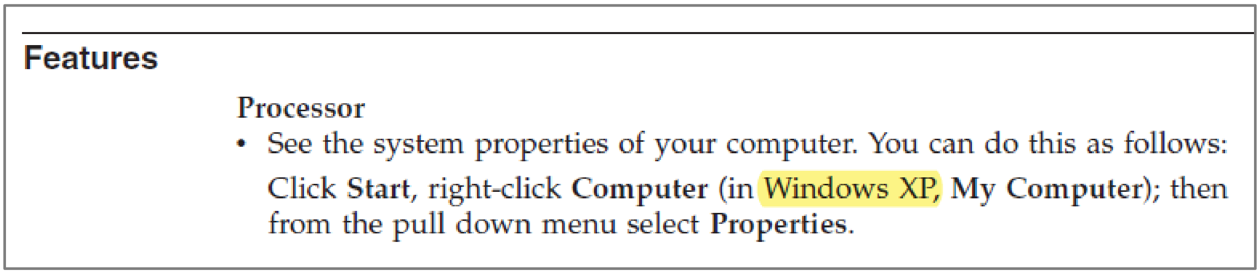
Notes:

1. If you are using Windows XP, and the optical drive is not attached to your ThinkPad computer during recovery, DVD software and CD-recording software will not be installed. To ensure that they will be installed correctly, attach your ThinkPad computer to the ThinkPad X6 Tablet UltraBase™ and install the optical drive in the Ultrabay Slim before performing a recovery operation.
2. The recovery process might take up to 2 hours.



IBM Lotus Software Offer

About the offer for purchasers of ThinkPad computers with Windows XP: As a qualifying purchaser of a ThinkPad computer with the Windows XP operating system, you are receiving a single, limited license for the Lotus Notes® "standalone" client and a single license for the Lotus® SmartSuite® software. These licenses entitle you to install and use this software on your new ThinkPad computer using one of the following options:



Features

Processor

- See the system properties of your computer. You can do this as follows: Click **Start**, right-click **Computer** (in Windows XP, **My Computer**); then from the pull down menu select **Properties**.

4. Dell Latitude XT

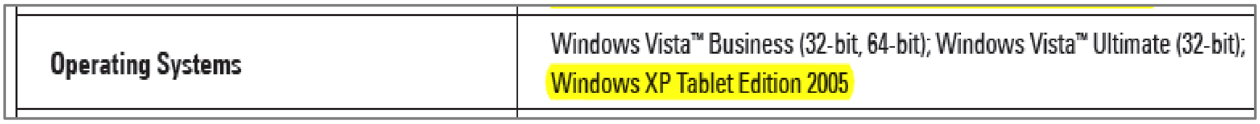
95. The Dell Latitude XT meets all of the Requirements, as shown in the following table (emphasis added):

Requirement	Specification (EX-1017, 2), unless otherwise noted
Processor with at least 233MHz clock speed (300MHz recommended)	Processor Performance: Single Core: **533 MHz** FSB with 2.0 MB of level 2 Smart Cache • Intel® Core™ 2 Solo ULV processor U2100 (1.06GHz) Dual Core: **533 MHz** FSB with 2.0 MB of level 2 Smart Cache • Intel® Core™ 2 Duo ULV processor U7600 (1.20GHz) This is well above even the 300 MHz recommended
64MB RAM (128MB recommended)	Memory: **1 GB** on board, 533MHz This is well above even the 128MB recommended.
1.5GB hard disk space	Hard Drives: **40GB/80GB** 1.8" 4200 RPM HDD This is well above the 1.5GB required.

Requirement	Specification (EX-1017, 2), unless otherwise noted
Super VGA (800 x 600) or higher resolution video adapter and monitor	Display: 12.1-inch WXGA (**1280 x 800** resolution), LED-back-lit display The XGA (Extended Graphics Array) display exceeds the required resolution.
CD-ROM or DVD drive	(None specified) However, the Dell Latitude XT included 3 USB ports. (EX-1017, p. 11). The Dell Latitude XT would thus have the option to include a USB DVD drive.
Keyboard and mouse or compatible pointing device	Input devices: Full-size keyboard/full Latitude localization Finger Touch–Capacitive Touch Screen Pen–EM Digitizer Thus, the Dell Latitude XT includes a keyboard and compatible pointing devices that can be used to navigate and use the Windows XP operating system with its graphical user interface displayed on the monitor

96. Thus, the Dell Latitude XT meets or exceeds all the hardware requirements for the Windows XP operating system and is capable of running Windows XP.

97. Further, the Dell Latitude XT explicitly discloses the use of a version of the Windows XP operating system, EX-1017, 2 (highlighting added):



Operating Systems	Windows Vista™ Business (32-bit, 64-bit); Windows Vista™ Ultimate (32-bit); Windows XP Tablet Edition 2005

5. Motion Computing

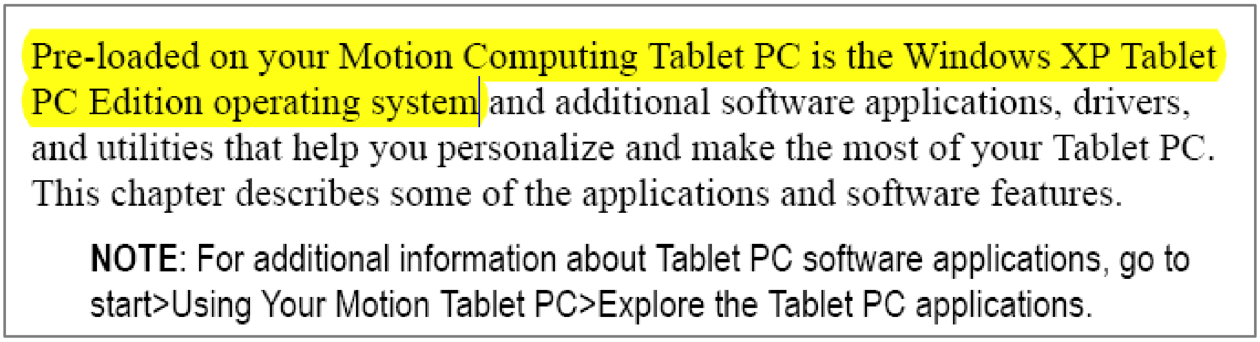
98. The Motion Computing M1400 Tablet PC meets all of the Requirements, as shown in the following table (emphasis added):

Requirement	Specification (EX-1032, Appx B), unless otherwise noted
Processor with at least 233MHz clock speed (300MHz recommended)	CPU: Intel Pentium Processor, Ultra Low Voltage (ULV), Further, this is a 1.1GHz processor, which exceeds even the recommended clock speed. (EX-1033, 2)
64MB RAM (128MB recommended)	System Memory: **256MB** base RAM (maximum 2GB); This is well above even the 128MB recommended.
1.5GB hard disk space	Hard Disk Drive: **20 GB** (standard), upgradeable This is well above the 1.5GB required.
Super VGA (800 x 600) or higher resolution video adapter and monitor	Displays: 12.1" XGA TFT LCD **(1024x768)** The XGA (Extended Graphics Array) adapter and the monitor exceed the required resolution.
CD-ROM or DVD drive	(None specified) However, Motion Computing included an IEEE 1394 port, for connecting optical disc drive (EX-1033, 11) Motion Computing would thus have the option to include a DVD drive.
Keyboard and mouse or compat-	Input device:

Requirement	Specification (EX-1032, Appx B), unless otherwise noted
ible pointing device	Active digitizer pen (no battery required) with function button. USB Keyboard and mouse support (EX-1033, 2) Mobile keyboard with touch pad (EX-1033, 3) Thus, the Motion Computing M1400 Tablet PC includes a keyboard and compatible pointing devices that can be used to navigate and use the Windows XP operating system with its graphical user interface displayed on the monitor.

99. Thus, Motion Computing meets or exceeds all the hardware requirements for the Windows XP operating system and is capable of running Windows XP.

100. Further, Motion Computing explicitly discloses that a version of the Windows XP operating system is Pre-loaded (EX-1033, 21) (highlighting added):



Pre-loaded on your Motion Computing Tablet PC is the Windows XP Tablet PC Edition operating system and additional software applications, drivers, and utilities that help you personalize and make the most of your Tablet PC. This chapter describes some of the applications and software features.

NOTE: For additional information about Tablet PC software applications, go to start>Using Your Motion Tablet PC>Explore the Tablet PC applications.

6. HP Compaq Tablet PC TC1100 ("Compaq")

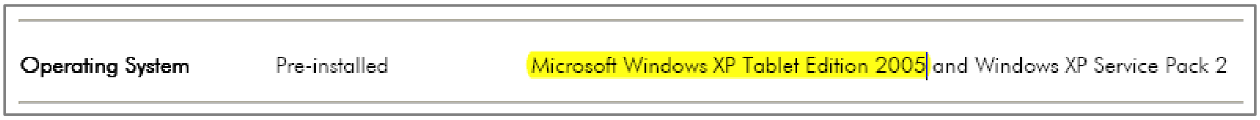
101. Compaq meets all of the Requirements, as shown in the table following the figure (emphasis added):

Requirement	Specification (EX-1034, 3-5 "Standard Features")
Processor with at least 233MHz clock speed (300MHz recommended)	Processor and Chipset : Intel Pentium M 753* (Ultra Low Voltage **1.2-GHz** processor) This processor exceeds the speed requirements for Windows XP.
64MB RAM (128MB recommended)	Memory: Standard **512-MB** (333-MHz) SDRAM This is well above even the 128MB recommended.
1.5GB hard disk space	Internal Hard Drive: **30-GB, 40-GB** (4200 rpm) or 40-GB, 60-GB, 80-GB (5400 rpm) SMART Hard Drives This is well above the 1.5GB required.
Super VGA (800 x 600) or higher resolution video adapter and monitor	Display: 10.4-inch color TFT XGA with **1024 x 768** resolution The XGA (Extended Graphics Array) display adapter and the display exceeds the required resolution.
CD-ROM or DVD drive	Multimedia: DVD movie playback software available with: DVD-ROM Drive with DVD movie playback **DVD/CD-RW** Combo Drive DVD+RW Drive

Requirement	Specification (EX-1034, 3-5 "Standard Features")
Keyboard and mouse or compatible pointing device	Keyboard: 95% of full-sized 101-key compatible keyboard Pointing Device: Battery-free digital pen with tether Detachable keyboard with pointstick Thus, the HP Compaq Tablet PC TC1100C includes a keyboard and compatible pointing devices that can be used to navigate and use the Windows XP operating system with.

102. Thus, Compaq meets or exceeds all the hardware requirements for the Windows XP operating system and is capable of running Windows XP.

103. Further, Compaq explicitly discloses that a version of the Windows XP operating system is pre-installed (EX-1034, 3) (highlighting added):



Operating System	Pre-installed	Microsoft Windows XP Tablet Edition 2005 and Windows XP Service Pack 2

7. Sony Vaio UX Series Micro PC

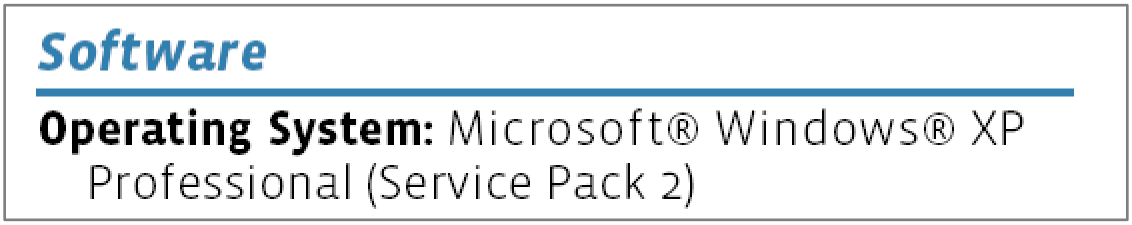
104. The Sony Vaio UX Series Micro PC meets all of the Requirements, as shown in the table following the figure (emphasis added):

Requirement	Specification (EX-1035 ,2), unless otherwise noted
Processor with at least 233MHz clock speed (300MHz recommended)	Processor: Type: Intel Core Solo Processor U1400 Ultra Low Voltage Speed: **1.20GHz**

Requirement	Specification (EX-1035 ,2), unless otherwise noted
	This processor exceeds the speed requirements for Windows XP.
64MB RAM (128MB recommended)	Memory: Installed: **1GB** (1GBx1) PC2-3200 This is well above even the 128MB recommended.
1.5GB hard disk space	Hard Drive: Capacity: **40GB** This is well above the 1.5GB required.
Super VGA (800 x 600) or higher resolution video adapter and monitor	Display: Screen or Display Technology: Wide SVGA LCD, Touch Screen Screen Size: 4.5" Resolution: **1024x600** The SVGA controller and display exceed the required resolution.
CD-ROM or DVD drive	Optional Accessories: **DVD R DL/DVD±RW Drive** (VGP-DDRW4)
Keyboard and mouse or compatible pointing device	Keyboard: 64 keys with 0.15mm stroke and 8.6mm pitch Pointing Device: Pointer Thus, the Sony Vaio UX Series Micro PC includes a keyboard and compatible pointing devices that can be used to navigate and use the Windows XP operating system with

105. Thus, the Sony Vaio UX Series Micro PC meets or exceeds all the hardware requirements for the Windows XP operating system and is capable of running Windows XP.

106. Further, the Sony Vaio UX Series Micro PC explicitly discloses that a version of the Windows XP operating system is included (EX-1035, 2):



Software

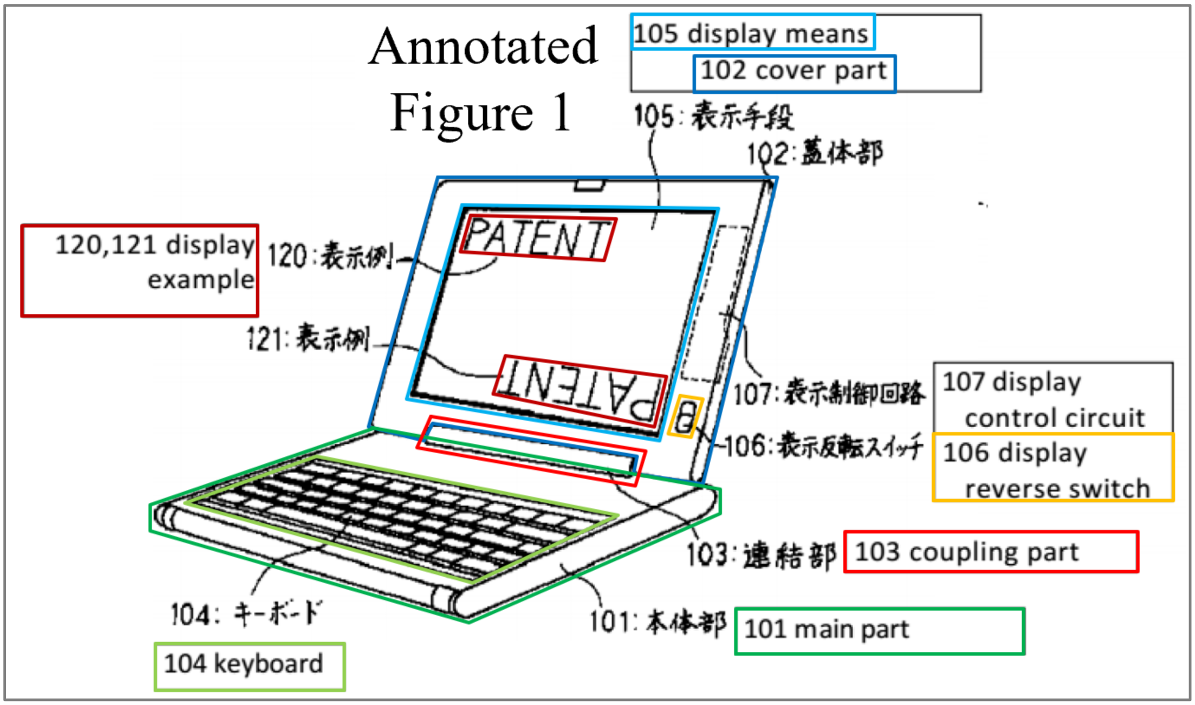
Operating System: Microsoft® Windows® XP Professional (Service Pack 2)

D. Navigation controls configured to permit a user to control operating parameter(s) of the portable computer and content displayed were well known.

107. Navigation controls configured to permit a user to control operating parameter(s) of the portable computer and content displayed were known in the art before the Critical Date, as demonstrated by the prior art discussed below.

1. Shimura

108. Shimura discloses a display reverse switch 106 inputted to display control circuit 107 inside the cover part 102, as shown in Annotated Figure 1 of Shimura (below). EX-1004, ¶12.


Annotated
Figure 1
105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
121: 表示例
PATENT
PATENT
B
107: 表示制御回路
107 display control circuit
106: 表示反転スイッチ
106 display reverse switch
103: 連結部
103 coupling part
104: キーボード
104 keyboard
101: 本体部
101 main part

109. Specifically, if the user sets the state of the display reverse switch 106 to normal view, the display control circuit 107 causes the display screen 105 to display the content in normal view; on the other hand, if the user sets the state of the display reverse switch 106 to reverse mode, the display control circuit 107 causes the display screen 105 to display the content in an inverted view. EX-1004, ¶12. The normal and inverted views are an operating parameter of the portable computer and the content displayed on the display screen: this also controls the navigation, for example. it changes the effect of navigation keys that control cursor movement, e.g. page up/down and scroll up/down navigation keys. EX-1048, 358 (discussing navigation keys).

2. Tsuji

110. Tsuji teaches navigation controls configured to permit a user to control operating parameter(s) of a portable computer and content displayed.

111. Tsuji discloses key switches 118 and 119 referred to as an R (right) button and L (left) button illustrated in FIG. 4 (below). EX-1005, ¶38 ("Any given function can programmably be assigned to each of the R and L button switches 118 and 119."). Tsuji teaches the specific example that the R and L buttons can be assigned to arrow keys (e.g., up arrow, down arrow, right arrow, and left arrow) and an enter key. EX-1005, ¶¶43, 45. The R and L buttons "are exposed regardless of whether the computer 1 is used in a PC style or a PDA style." EX-1005, ¶39. The functionality of arrow keys manipulates an operating parameter of the portable computer (e.g. the position of the cursor) and the content displayed on the screen.

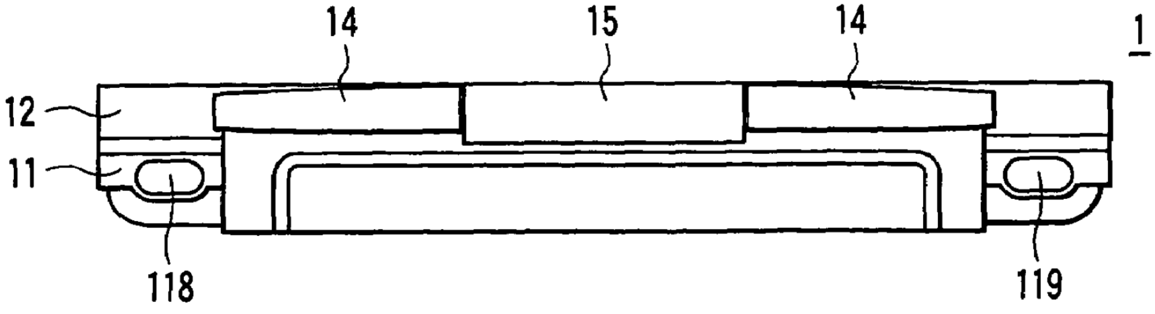


FIG. 4

3. Caine

112. Caine teaches navigation controls configured to permit a user to control operating parameter(s) of a portable computer and content displayed.

113. Caine teaches a roller mounted in the hinge of a clam shaped electronic device which may be a laptop or personal digital assistant. The roller combines the advantages of a rotary mass vibrator with a force-feedback scroll wheel. EX-1036, ¶¶3-5.

114. Caine teaches that the roller, mounted in the hinge, allows access in both the open or closed positions of the device. EX-1036, ¶16. Caine teaches that the roller may be used to scroll through list of data, or through a menu, or through names in a phonebook. EX-1036, ¶¶15, 19. Caine thus teaches that the roller is a navigation control configured to permit a user to control operating parameters and content display. Caine's roller 16 is shown in Fig. 1 and Fig. 2 below.

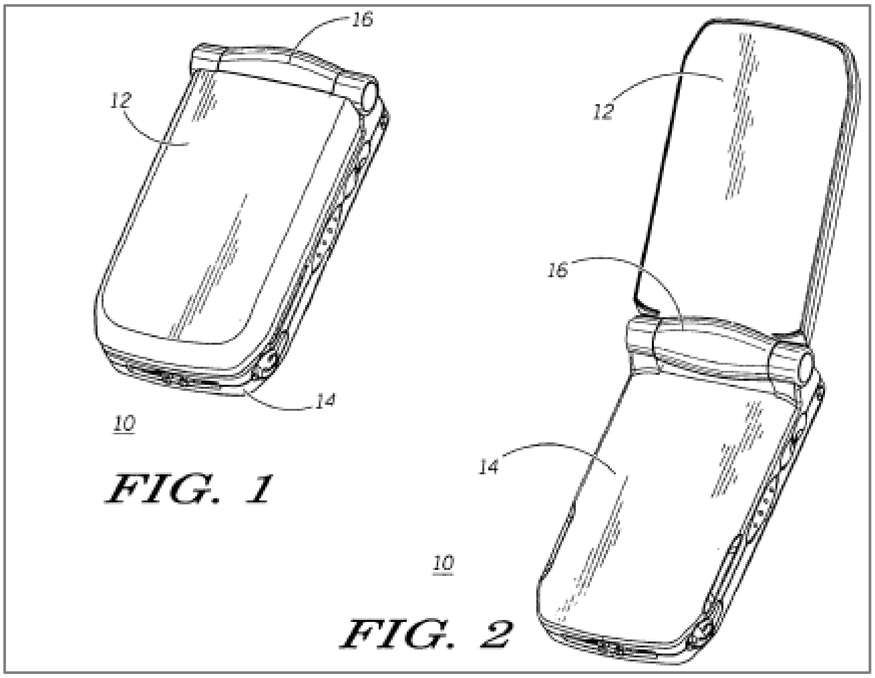


FIG. 1

FIG. 2

4. **Nishiyama**

115. Nishiyama teaches navigation controls configured to permit a user to control operating parameter(s) of a portable computer and content displayed.

116. Nishiyama teaches a rotary selector integral with a foldable hinge element in a portable device, a portable radio terminal having a folding and housing control mechanism. The rotary selector can be used to select a menu, or to adjust sound volume. EX-1037, Title, Abstract, 1:8-14, Claim 1.

117. Nishiyama teaches further that the rotary selector is operable from both the front side and rear said of the device for selecting telephone functions from a menu, and for adjusting sound volume. EX-1037, Abstract, Claim 1 . Nishiyama thus teaches that the rotary selector is a navigation control configured to permit a user to control operating parameters and content display. Nishiyama's rotary selector 8 is shown in Fig. 2 and Fig. 3 below.

FIG. 2

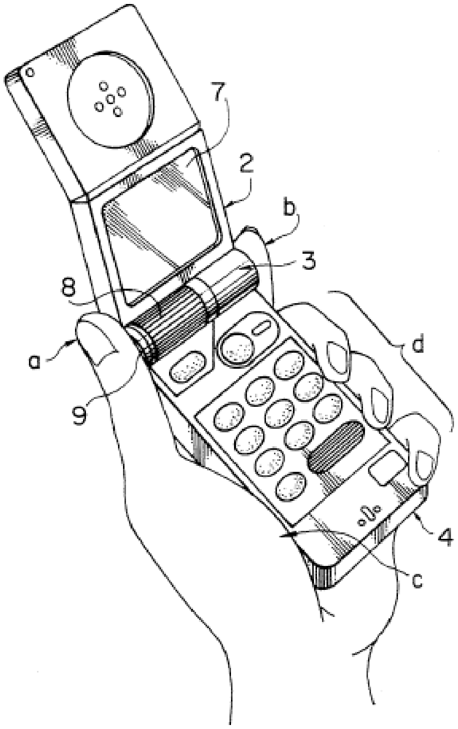
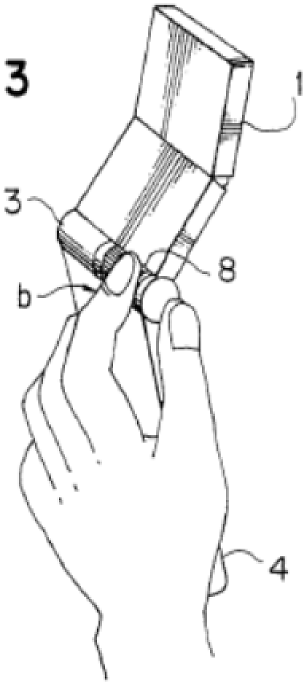


FIG. 3



5. **Dell Latitude XT**[6]

118. Dell Latitude XT teaches navigation controls configured to permit a user to control operating parameter(s) of a portable computer and content displayed.

119. Dell Latitude XT is a commercial product convertible between notebook and tablet modes via a rotating hinge. EX-1050, 30. The Dell Latitude XT is shown in Fig. 1 (EX-1050, 27) below:

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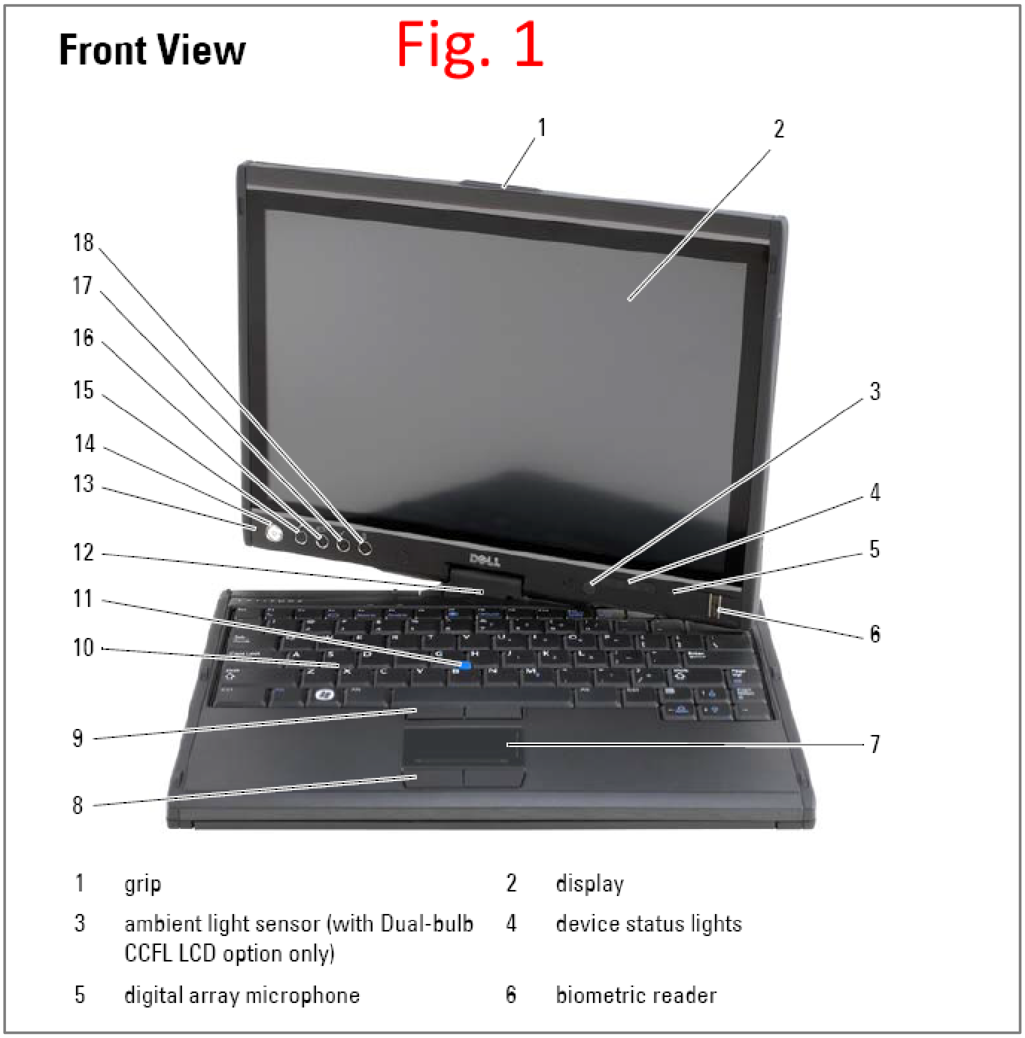
[6] See also EX-1049; EX-1050.

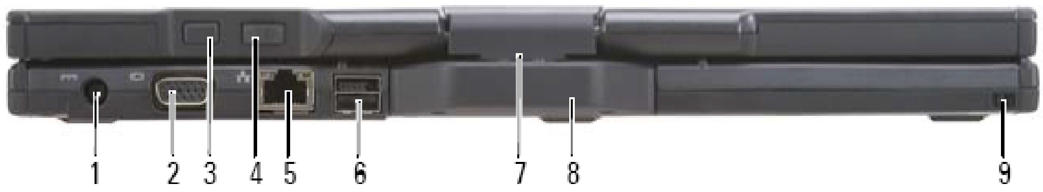


Front View Fig. 1

1	grip	2	display
3	ambient light sensor (with Dual-bulb CCFL LCD option only)	4	device status lights
5	digital array microphone	6	biometric reader

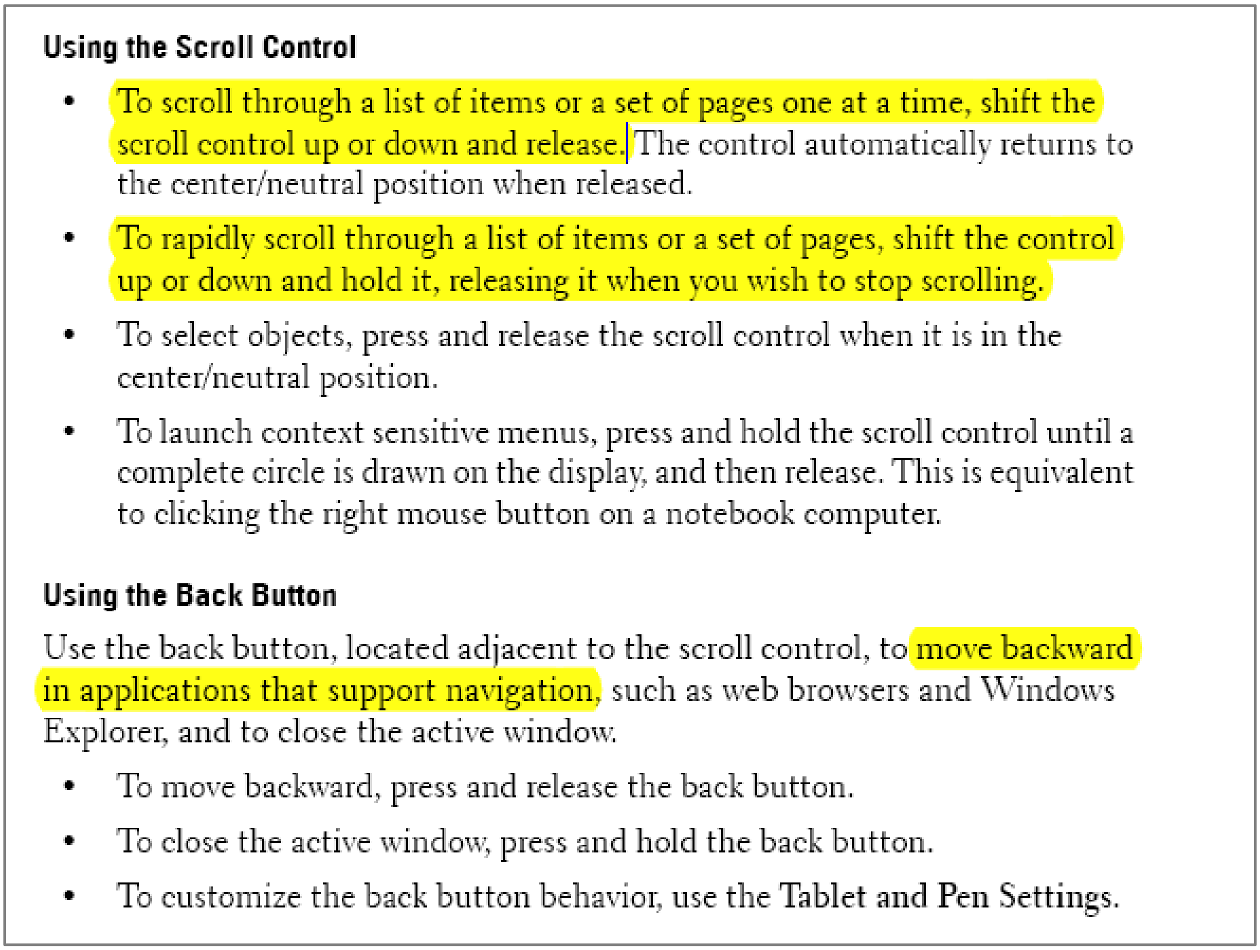
120. Dell Latitude XT teaches both a tablet back button, and a scroll control button, as shown in Fig. 2 below (EX-1050, 36):

Back View Fig. 2



1	AC adapter connector	2	video connector
3	tablet back button	4	scroll control button
5	network connector	6	powered USB connector
7	rotating hinge	8	tablet grip
9	pen tether slot		

121. Dell Latitude XT teaches that these are navigation controls configured to permit a user to control operating parameters of a portable computer and content displayed. EX-1050, 62:



Using the Scroll Control

- To scroll through a list of items or a set of pages one at a time, shift the scroll control up or down and release. The control automatically returns to the center/neutral position when released.
- To rapidly scroll through a list of items or a set of pages, shift the control up or down and hold it, releasing it when you wish to stop scrolling.
- To select objects, press and release the scroll control when it is in the center/neutral position.
- To launch context sensitive menus, press and hold the scroll control until a complete circle is drawn on the display, and then release. This is equivalent to clicking the right mouse button on a notebook computer.

Using the Back Button

Use the back button, located adjacent to the scroll control, to move backward in applications that support navigation, such as web browsers and Windows Explorer, and to close the active window.

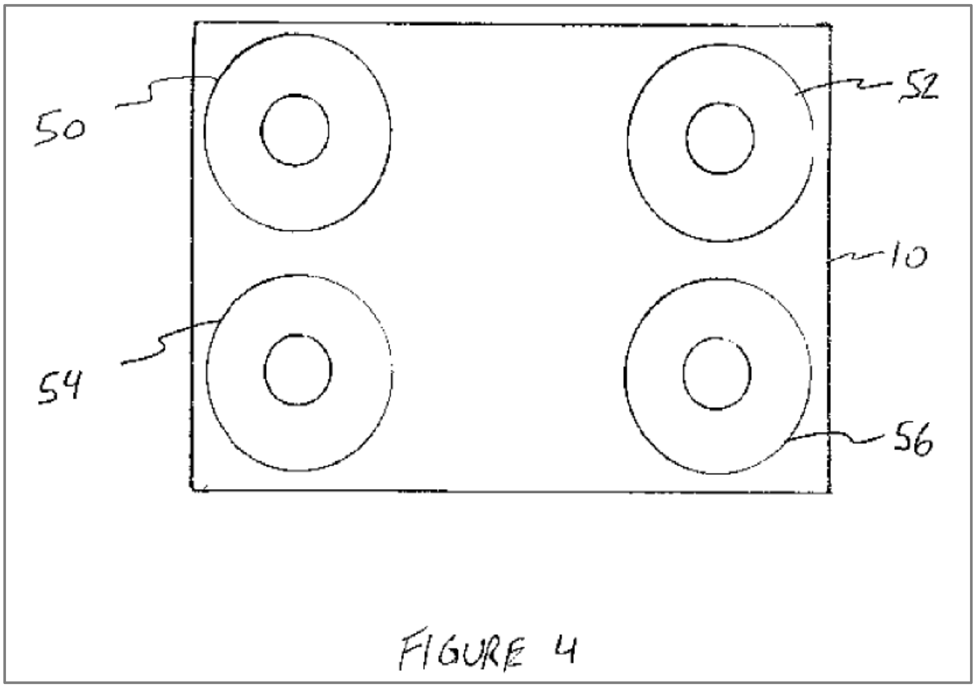
- To move backward, press and release the back button.
- To close the active window, press and hold the back button.
- To customize the back button behavior, use the **Tablet and Pen Settings**.

6. Woolley

122. Woolley teaches navigation controls configured to permit a user to control operating parameter(s) of a portable computer and content displayed.

123. Woolley teaches a touchpad for integration in a laptop or other device for controlling the position of a cursor, and for implementing a circular scrolling region (i.e. a scrollwheel) for controlling the volume of a multimedia device, controlling movement through a playlist, controlling fast forwarding and rewinding through multimedia content, controlling skipping of multimedia content in a for-

ward and a reverse direction, etc. EX-1038, Abstract, ¶¶41, 42. Fig. 4 (below) illustrates an embodiment of a rectangular touchpad and four scrolling regions dedicated to a single function or to multiple functions, depending on the mode of operation of the touchpad.



7. **Toba**[7]

124. Toba teaches navigation controls configured to permit a user to control operating parameter(s) of a portable computer and content displayed.

125. Toba teaches a rotary scroll key 4 arranged on the hinge portion 3 of a foldable portable communication device (12). (Fig. 1 and Fig. 2, below). The rota-

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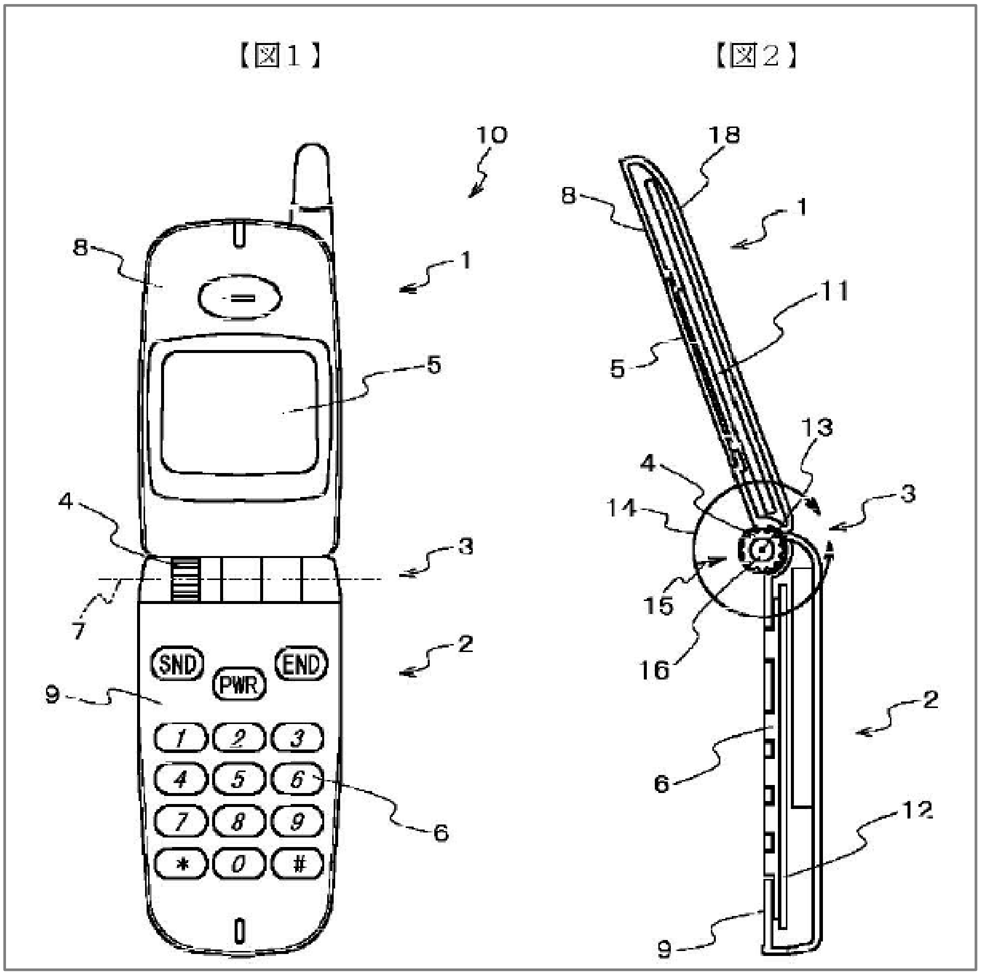
[7] Both the USPTO Toba and the EPO Toba are used. Both machine translations use consistent terminology of "rotary scroll key," etc.

ry scroll key is used for menu selection, for scrolling through information displayed on the display unit 11 such as address books (EX-1040, 2; EX-1041, 3). The scroll key, can be used in both opened and closed/folded state on the hinge (EX-1040, 2; EX-1041, 3).


【図1】
【図2】
10
8
1
5
4
3
7
2
SND
PWR
END
9
1 2 3
4 5 6
7 8 9
* 0 #
6
18
8
1
11
5
13
4
3
14
15
16
2
6
12
9

VI. CLAIM CONSTRUCTION OF CONTENT MODE—37 C.F.R. §42.104 (b)(3)

126. As discussed above, I have been advised that the claims of a patent are reviewed from the point of view of a POSITA.

127. I have been asked to offer my opinion about the understanding of the POSITA regarding certain claim terms in the '844 Patent. I understand that, in an *inter partes* review, the Patent Trial and Appeal Board construes claim terms in an unexpired patent according to the claim terms' "plain and ordinary meaning." The "plain and ordinary meaning," or *Philips* standard (as I have been informed), is in view of the specification from the viewpoint of the POSITA. I also understand that a special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. I further understand that the claims themselves and the prosecution history can provide insight into how the claims should be construed. Unless otherwise stated, I have applied the plain and ordinary meaning to claim terms.

128. I understand that "content mode" refers to the use of "first content mode" ([1c], Claim 8, [10c3], and [18d]), "second content mode" ([1d1], [10d1], and [18e1]), "modes of content" ([4a], [4b], [14a], and [14b]), and "mode of content" (Claim 6). The ’844 Patent describes “information, programs, features and applications may be grouped into the various modes of content 172.” EX-1001, 11:39-40. In the mode of content, the user may “select particular functions, features or applications within that mode.” EX-1001, 12:34-35. For example, FIG. 11 (below) depicts a block diagram of a “‘home’ screen 170 that displays a plurali-

ty of modes of content 172" that, when selected, allow "the user [to] access the content organized within that mode." EX-1001, 11:29-30, 40-44.

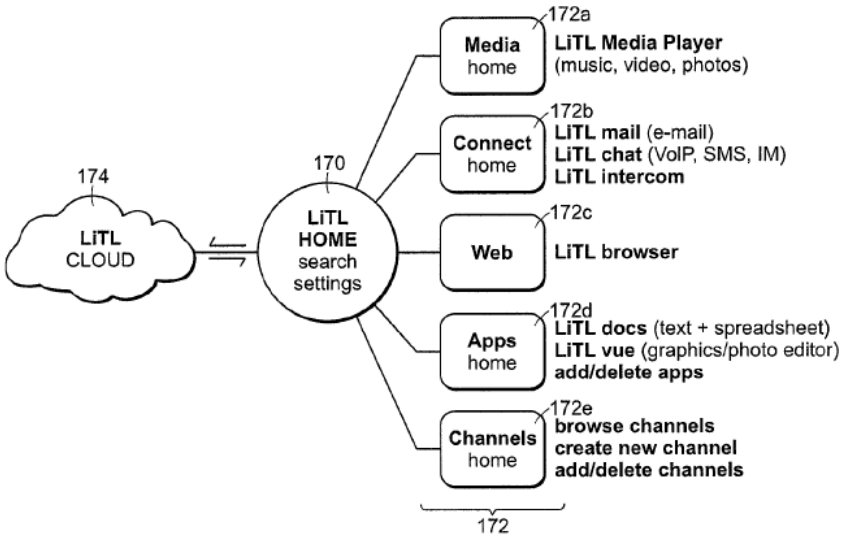

174
LiTL
CLOUD
170
LiTL
HOME
search
settings
172a
Media
home
LiTL Media Player
(music, video, photos)
172b
Connect
home
LiTL mail (e-mail)
LiTL chat (VoIP, SMS, IM)
LiTL intercom
172c
Web
LiTL browser
172d
Apps
home
LiTL docs (text + spreadsheet)
LiTL vue (graphics/photo editor)
add/delete apps
172e
Channels
home
browse channels
create new channel
add/delete channels
172

FIG. 11

129. These modes of content "may be displayed as a series of bars across the display screen 110" (FIG. 12 below), "a 'desktop' and icon configuration [not shown] a 'dashboard' type display [FIG. 13 below]," or "another configuration, as would be recognized by those skilled in the art." EX-1001, 12:6-8, 11-17.

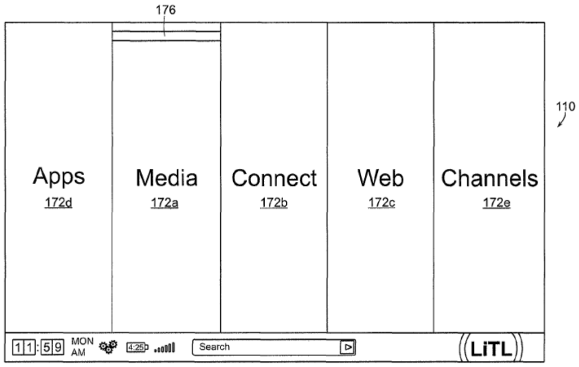

176
110
Apps
172d
Media
172a
Connect
172b
Web
172c
Channels
172e
11:59
MON
AM
4:25
Search
LiTL

FIG. 12

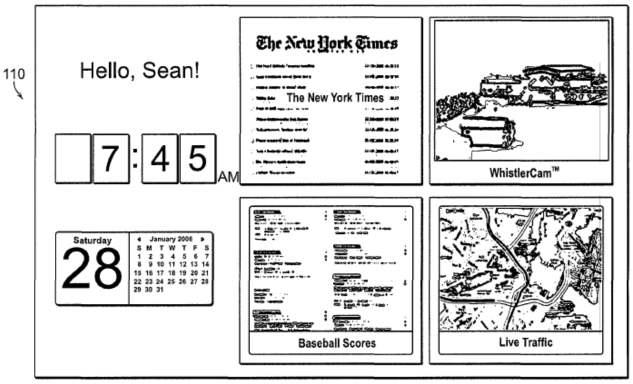

110
Hello, Sean!
7:45 AM
Saturday
28
January 2006
The New York Times
The New York Times
WhistlerCam™
Baseball Scores
Live Traffic

FIG. 13

130. For purposes of the Petition only, the “first content mode,” the “second content mode,” modes of content," and "mode of content" are each construed as "user selectable element(s) displayed on a user interface that, when selected, allows the user to access the content organized therein.” Petitioner's construction is consistent with the claim language, specification, and prosecution history of the '844 Patent. *See* VI; EX-1002, *throughout*; EX-1010, ¶159.

VII. SUMMARY OF THE PRIOR ART RELIED UPON IN MY ANALYSIS

A. Overview of Shimura

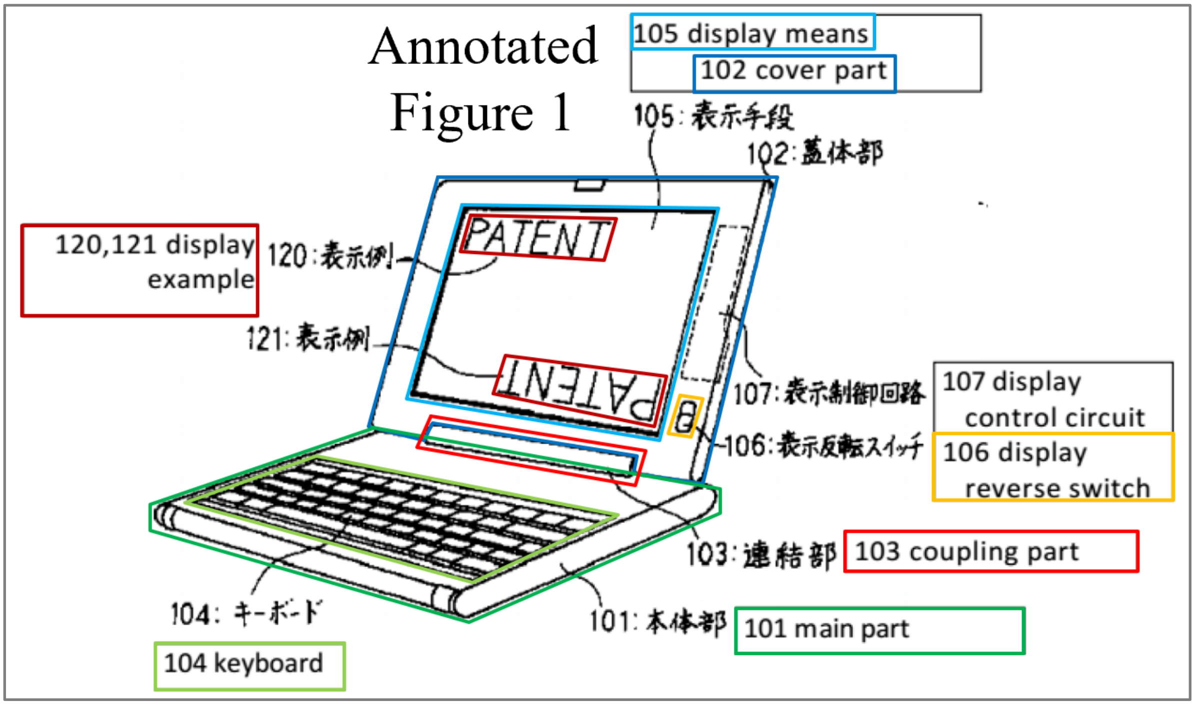
131. Shimura published as Japanese Patent No. 1994-242853 on September 2, 1994, from an application filed on February 15, 1993. I have been informed that Shimura therefore qualifies as prior art under at least pre-AIA 35 U.S.C. §§ 102(a) and (b).

132. Shimura is directed to a portable "computer which can adopt a mode suitable for a user environment." EX-1004, Abstract. The portable computer includes:

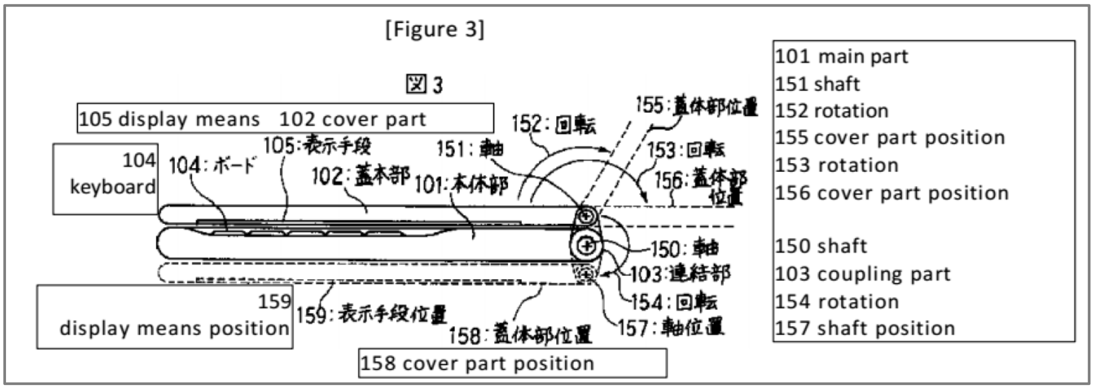
- main part 101 (dark green below in Annotated Figure 1 of Shimura) with keyboard 104 (light green);
- cover part 102 (dark blue) with display means 105 (light blue);
- coupling part 103 (red) fastening the main part 101 to the cover part 102;

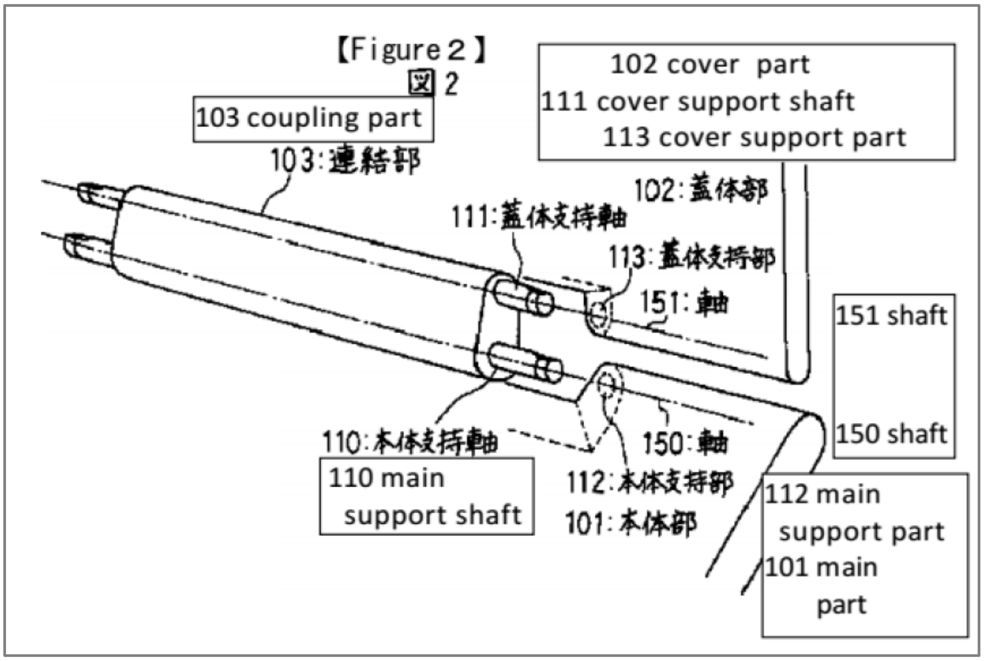
- display reverse switch 106 (orange) to set the display to a normal view or an inverted view (i.e., the displayed content is turned upside down); and
- display elements 120, 121 (dark red).

EX-1004, Abstract, ¶¶10-12, 17.

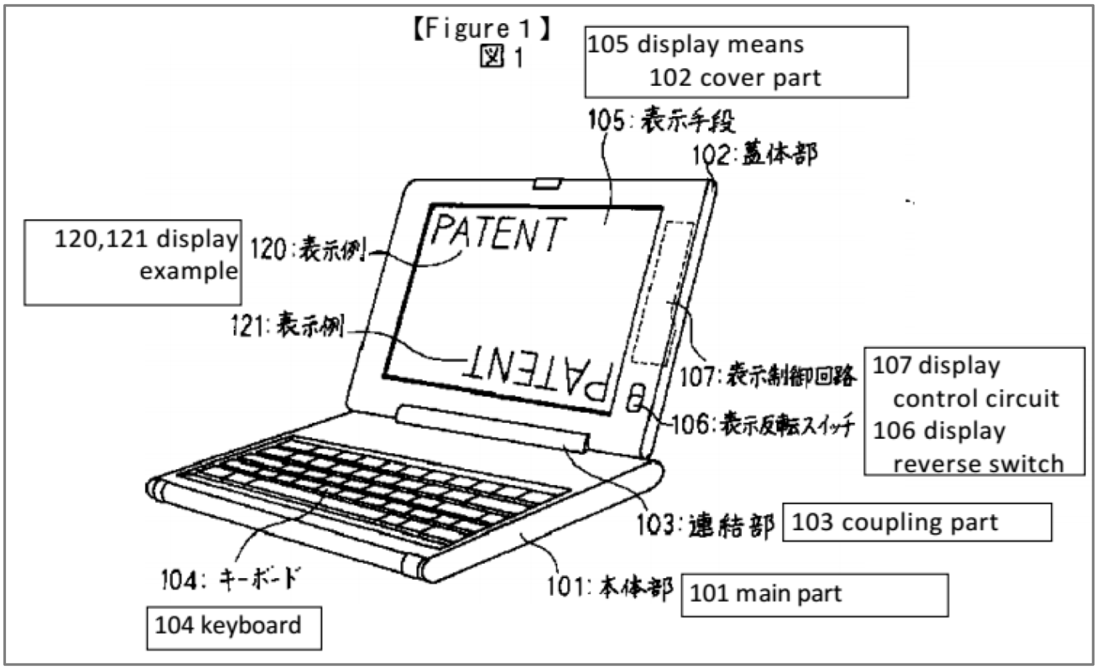

Annotated
Figure 1
105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
121: 表示例
PATENT
PATENT
107: 表示制御回路
107 display control circuit
106: 表示反転スイッチ
106 display reverse switch
103: 連結部
103 coupling part
104: キーボード
104 keyboard
101: 本体部
101 main part

133. The coupling part 103 allows the cover part 102 to be rotated up to 360° about the main part 101 into various display modes, as illustrated in Figure 3 below. EX-1004, ¶¶11-17. The coupling part 103 may include two shafts 150, 151, which facilitates rotation of the cover part 102 about the main part 101, as illustrated in Figure 2 below. EX-1004, ¶¶13-14. The coupling part 103 includes main support part 112 of the main part 101 and cover support part 113 of the cover part 102. EX-1004, ¶13.

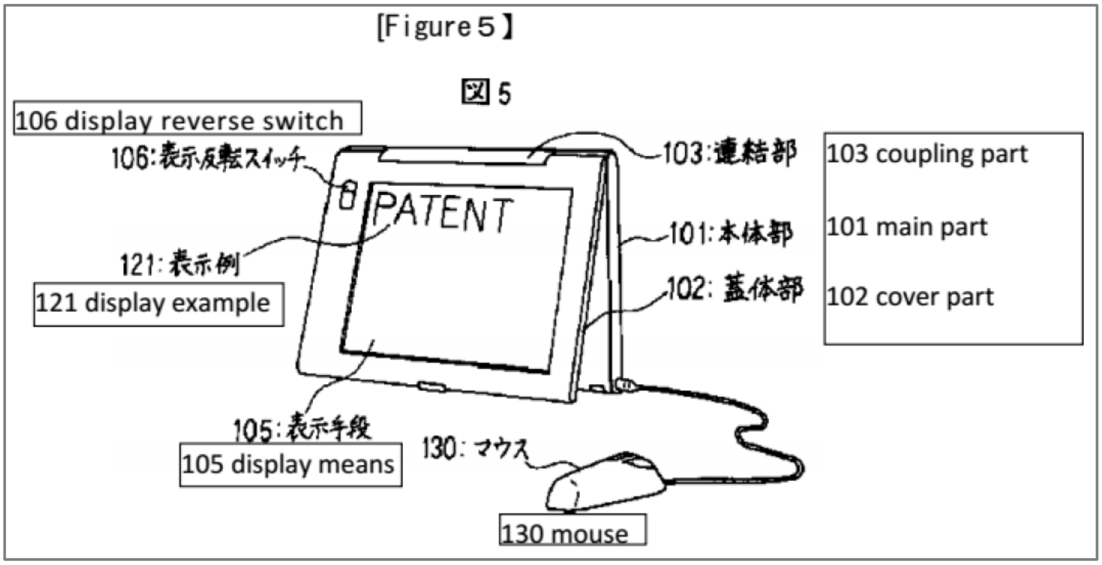

[Figure 3]
図3
105 display means 102 cover part
104 keyboard
104:ボード
105:表示手段
102:蓋本部
101:本体部
151:軸
152:回転
155:蓋体部位置
153:回転
156:蓋体部位置
150:軸
103:連結部
154:回転
157:軸位置
158:蓋体部位置
159:表示手段位置
159 display means position
158 cover part position
101 main part
151 shaft
152 rotation
155 cover part position
153 rotation
156 cover part position
150 shaft
103 coupling part
154 rotation
157 shaft position


【Figure 2】
図2
103 coupling part
103:連結部
102 cover part
111 cover support shaft
113 cover support part
102:蓋体部
111:蓋体支持軸
113:蓋体支持部
151:軸
151 shaft
150 shaft
110:本体支持軸
110 main support shaft
150:軸
112:本体支持部
101:本体部
112 main support part
101 main part

134. In a first display mode, which corresponds to the laptop mode of the '844 Patent, the keyboard 104 is facing upward and the display means 105 is facing the user, as illustrated in Figure 1 below. EX-1004, ¶¶11, 14.


【Figure 1】
図1
105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
121: 表示例
PATENT
107: 表示制御回路
107 display control circuit
106: 表示反転スイッチ
106 display reverse switch
103: 連結部
103 coupling part
104: キーボード
104 keyboard
101: 本体部
101 main part

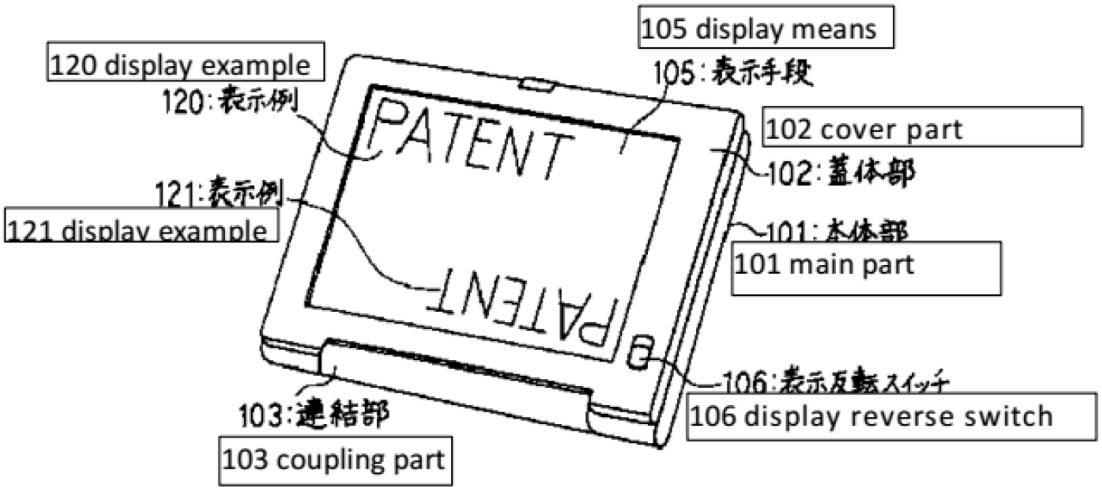
135. In a second display mode, which corresponds to the easel mode of the '844 Patent, the cover part is rotated 340° about the main part 101 such that the display means 105 is facing the user and the keyboard 104 is facing away from the user, and the user may be limited to interacting with the operating environment using a mouse 130, as illustrated in Figure 5 below. EX-1004, ¶¶14-16


[Figure 5]
図5
106 display reverse switch
106: 表示反転スイッチ
PATENT
121: 表示例
121 display example
103: 連結部
101: 本体部
102: 蓋体部
103 coupling part
101 main part
102 cover part
105: 表示手段
105 display means
130: マウス
130 mouse

136. In a third display mode, which corresponds to the frame mode of the '844 Patent, the keyboard 104 and the display means 105 are facing away from each other, as illustrated in Figure 4 below. EX-1004, ¶17.[8]

[Figure 4]

図4


105 display means
105：表示手段
120 display example
120：表示例
PATENT
102 cover part
102：蓋体部
121：表示例
121 display example
PATENT
101：本体部
101 main part
106：表示反転スイッチ
106 display reverse switch
103：連結部
103 coupling part

137. Shimura also discloses a "second switching means" that can be set to invalidate input from the keyboard. EX-1004, ¶8. The input invalidation functionality can be used in a frame mode, as depicted in Shimura's Figure 4 (above), where data may be mistakenly inputted from the keyboard on the back of the dis-

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[8] The '844 Patent describes that in frame mode, "the keyboard 106 [is] 'face down' on the surface 212 and the display 110 [is] facing upward." EX-1001, 16:1-5. Likewise, Figure 4 of Shimura shows the keyboard face down on a surface and the display facing upward. EX-1004, ¶¶16, 18. Shimura further discloses that the portable computer can be configured to any angle between 0° to 360°, such as 340°. *Id.*, ¶¶8, 10, 17.

play means 105. EX-1004, ¶18. Shimura also discloses that the input invalidation functionality operates automatically based on an angle of the cover part 102 compared to main part 101. EX-1004, ¶¶18, 19.

B. Overview of Tsuji

138. Tsuji published on March 24, 2005 and claims priority to a Japanese application filed on September 19, 2003. I have been informed that Tsuji therefore qualifies as prior art under at least pre-AIA 35 U.S.C. §§ 102(a), (b), and (e).

139. Referring to FIGS. 1 and 5 below, Tsuji discloses portable computer 1 including computer main body 11. EX-1005, ¶30. Tsuji's display unit 12 is "implemented as a touch screen device that is capable of recognizing a position indicated by a stylus (pen) or a user's finger." EX-1005, ¶31; FIGS. 1 and 5 below. The portable computer 1 can be configured into a PC style, as illustrated in FIG. 1 below, and a PDA style, as illustrated in FIG. 5 below. EX-1005, ¶34.

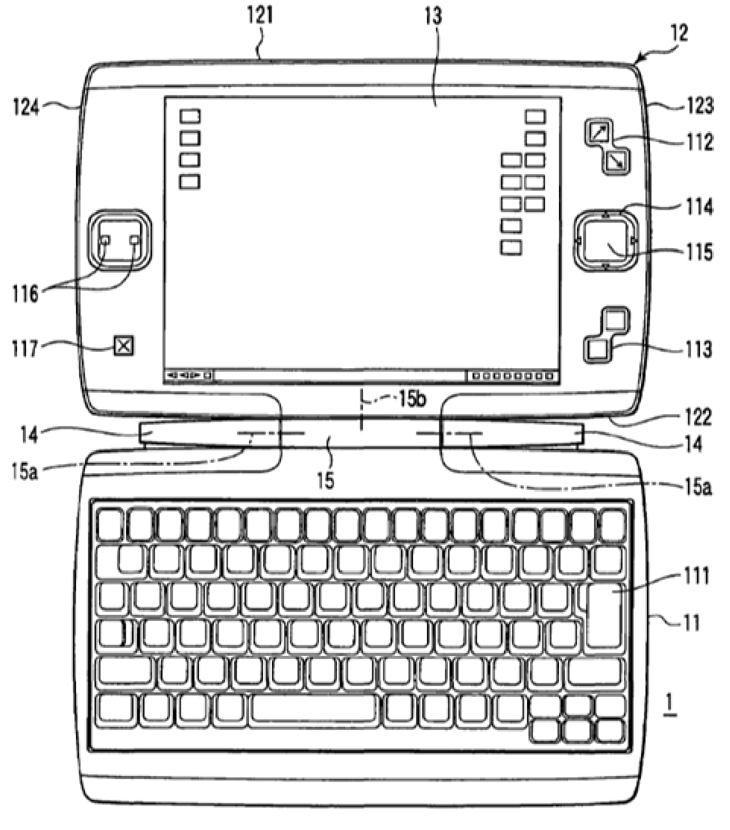

FIG. 1

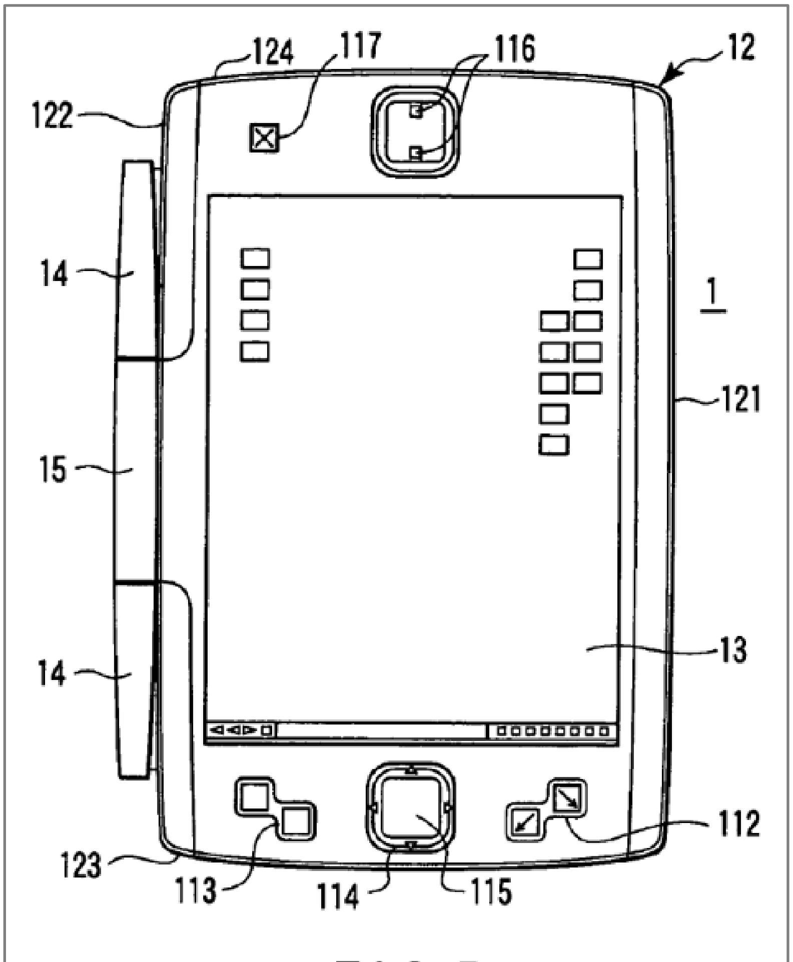

FIG. 5

140. A display driver 303 in the portable computer 1 "performs an operation for rotating a screen image displayed on the LCD 13 and a scaling operation for varying the aspect ratio in response to an instruction from the BIOS 301." EX-1005, ¶70. The BIOS 301 relies on gravity sensor 203 and/or rotation angle sensor 202, illustrated in FIG. 10 below, to orient the display unit 12 (i.e., rotate the screen image). EX-1005, ¶¶48, 50-51, 74, 77.

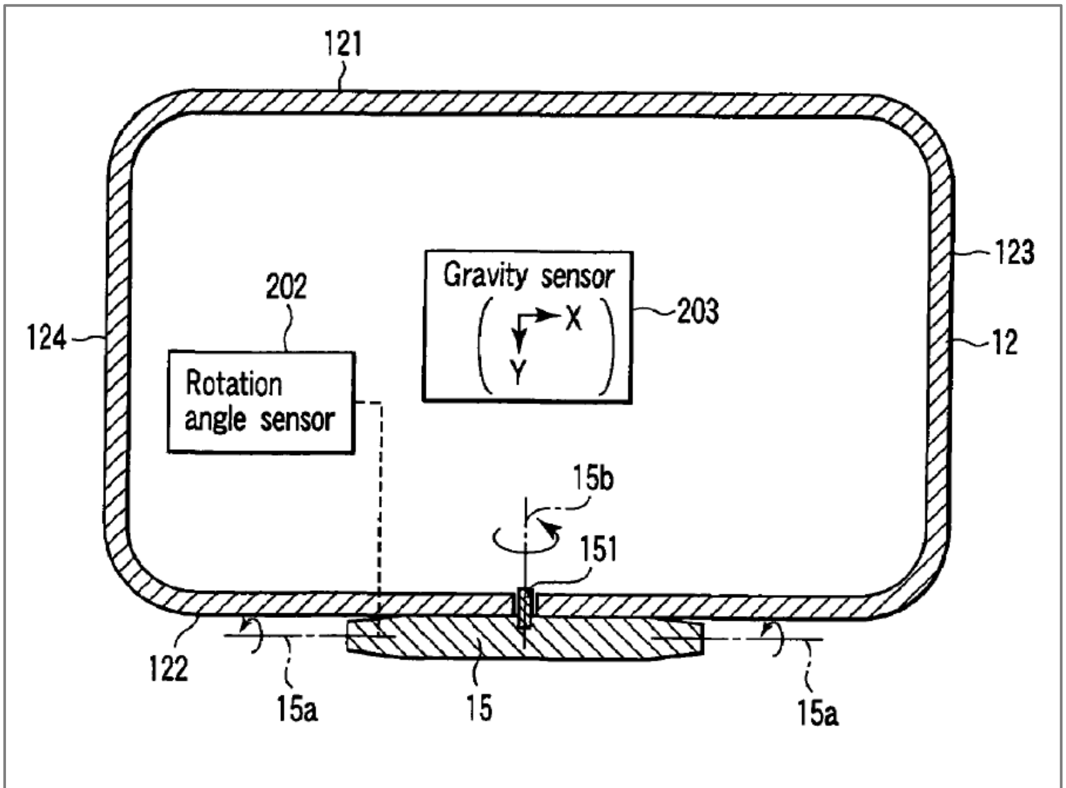
121
123
202
Gravity sensor
X
Y
203
124
12
Rotation angle sensor
15b
151
122
15a
15
15a

FIG. 10

141. Tsuji also discloses key switches 118 and 119 referred to as a R (right) button and an L (left) button illustrated in FIG. 4 below. EX-1005, ¶38 ("Any given function can programmably be assigned to each of the R and L button switches 118 and 119.").

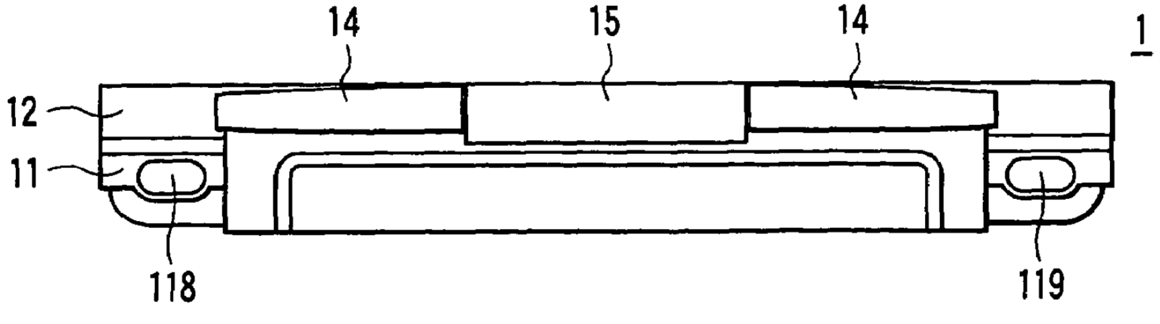
14
15
14
1
12
11
118
119

FIG. 4

142. For example, Tsuji discloses Shift, Ctrl, Alt, Enter, Esc, and arrow keys on the keyboard 11 that can be assigned to the R and L buttons 118 and 119. EX-1005, ¶¶42-45. The R and L buttons "are exposed regardless of whether the computer 1 is used in a PC style or a PDA style." EX-1005, ¶39. Tsuji discloses "a key assignment changing function [that] automatically chang[es] a function assigned to each of the R and L button[s] . . . 118 and 119 according to [a given display mode]." EX-1005, ¶46.

C. Overview of Pogue[9]

143. I have been informed that Pogue is a printed publication and is prior art under at least pre-AIA 35 U.S.C. §§ 102(a) and (b).

144. Pogue is meant "to serve as the manual that should have accompanied Windows XP" and includes "step-by-step instructions for using almost every Windows feature." EX-1006, 2. "Windows is an operating system, the software that controls your computer," and Windows XP is one version of the Windows operating system. EX-1006, 1, 5. "Every application on your machine, as well as every document you create, is represented on the screen by an icon." EX-1006, 5. For example, the "[d]esktop[] covers everything you see on the screen when you turn

---

[9] All citations to Pogue are to the pages of the reference itself, not the stamped EX-1006 page numbers.

on a Windows XP computer: icons, windows, menus, scroll bars, the Recycle Bin, shortcuts, the Start menu, shortcut menus, and so on":

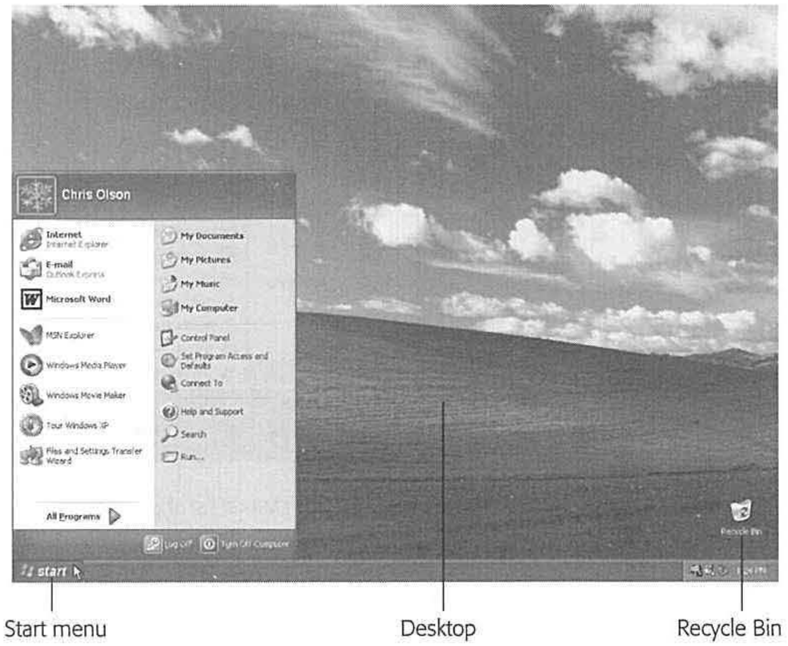
Chris Olson
Internet
Internet Explorer
E-mail
Outlook Express
Microsoft Word
MSN Explorer
Windows Media Player
Windows Movie Maker
Tour Windows XP
Files and Settings Transfer Wizard
All Programs
My Documents
My Pictures
My Music
My Computer
Control Panel
Set Program Access and Defaults
Connect To
Help and Support
Search
Run...
Log Off
Turn Off Computer
start
Recycle Bin
Start menu
Desktop
Recycle Bin

Figure 2-2:
A brand new Windows XP computer screen looks like this. Everything you'll ever do on the computer will begin with a click on one of these three elements: a desktop icon, the Start button, or the taskbar, which is described in Chapter 2. (The Start menu, now in a new, improved two-column format, lists every significant command and software component on your PC.) Some people enjoy the newly streamlined Windows XP desktop. Others deliberately place additional icons on the desktop–favorite programs and documents–for quicker access. Let your personality be your guide.

EX-1006, 3, 23.

145. In order to quickly access the Start menu (light green in Figure 2-3 below) and make it visible, a user can click the Start button (purple) or press the Windows logo key or Ctrl+Esc. EX-1006, 25. In the Start menu, the user has access to "Internet" (dark green), "E-mail" (orange), "Microsoft Word" (blue), and "Windows Media Player" (red). EX-1006, 23-25.

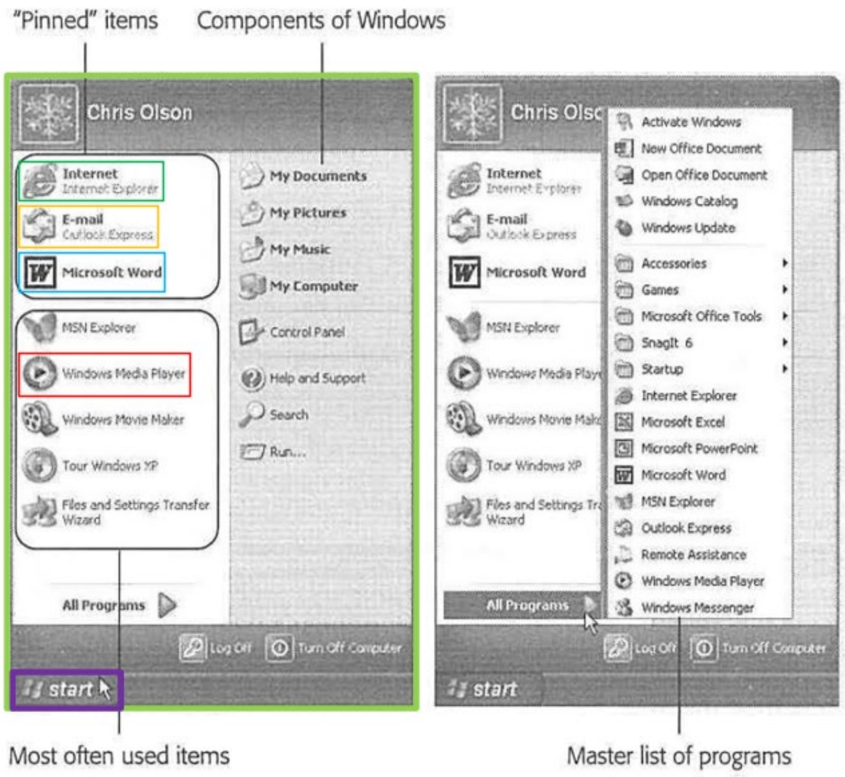
"Pinned" items
Components of Windows
Chris Olson
Internet
Internet Explorer
E-mail
Outlook Express
Microsoft Word
MSN Explorer
Windows Media Player
Windows Movie Maker
Tour Windows XP
Files and Settings Transfer Wizard
All Programs
My Documents
My Pictures
My Music
My Computer
Control Panel
Help and Support
Search
Run...
Log Off
Turn Off Computer
start
Activate Windows
New Office Document
Open Office Document
Windows Catalog
Windows Update
Accessories
Games
Microsoft Office Tools
SnagIt 6
Startup
Internet Explorer
Microsoft Excel
Microsoft PowerPoint
Microsoft Word
MSN Explorer
Outlook Express
Remote Assistance
Windows Media Player
Windows Messenger
Most often used items
Master list of programs

Figure 2-3:
Left: The Start menu is divided into several distinct sections. The top left section is yours to play with. You can "pin" whatever programs you want here, in whatever order you like. The lower-left section lists the programs you use most often, by Windows XP's calculations. (You can delete individual items here, but you can't add items manually or rearrange them.) The right-side column provides direct access to certain Windows features and standard Windows programs.

Right: The All Programs menu superimposes itself on the standard two-column Start menu, listing almost every piece of software you've ever installed. You can rearrange, add to, or delete items from this list.

146. Clicking on the Internet icon opens Internet Explorer to navigate the web. EX-1006, 337-338. After opening Internet Explorer, a web interface is displayed, as illustrated in Figure 11-1 below, which includes a standard buttons bar, an address bar, a links bar, an explorer logo, and an explorer bar. EX-1006, 337-338.

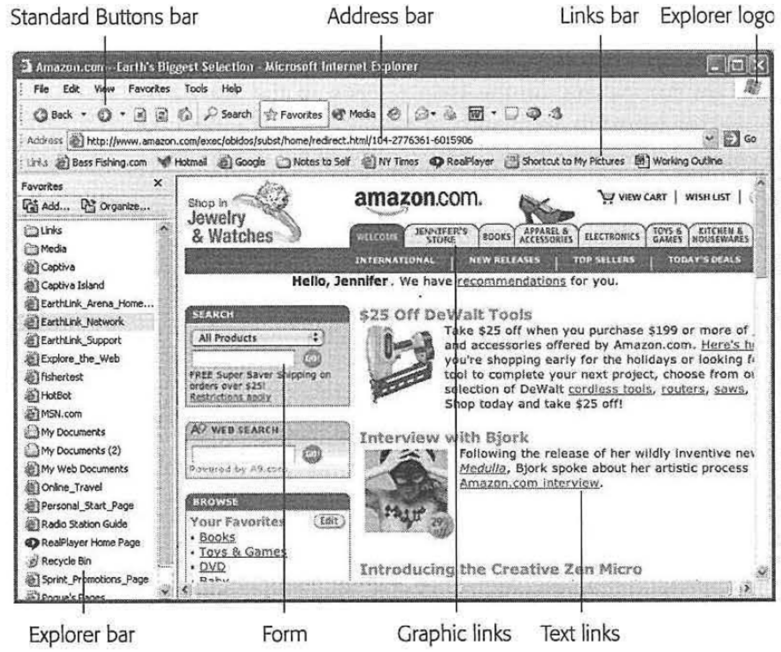
Standard Buttons bar
Address bar
Links bar
Explorer logo
Explorer bar
Form
Graphic links
Text links

Figure 11-1: *The Internet Explorer window offers tools and features that let you navigate the Web almost effortlessly; these various toolbars and status indicators are described in this chapter. Chief among them: the Address bar, which displays the address (URL) of the Web page you're currently seeing, and the standard set of buttons, which let you control the Web-page loading process.*

147. Clicking on the E-mail icon opens Outlook Express "that lets you receive and send email messages." EX-1006, 373. After opening Outlook express, an email interface is displayed, as illustrated in Figure 12-1 below, including a folder list, an attachment icon, a list pane, a toolbar, a contacts list, and a preview pane. EX-1006, 375.

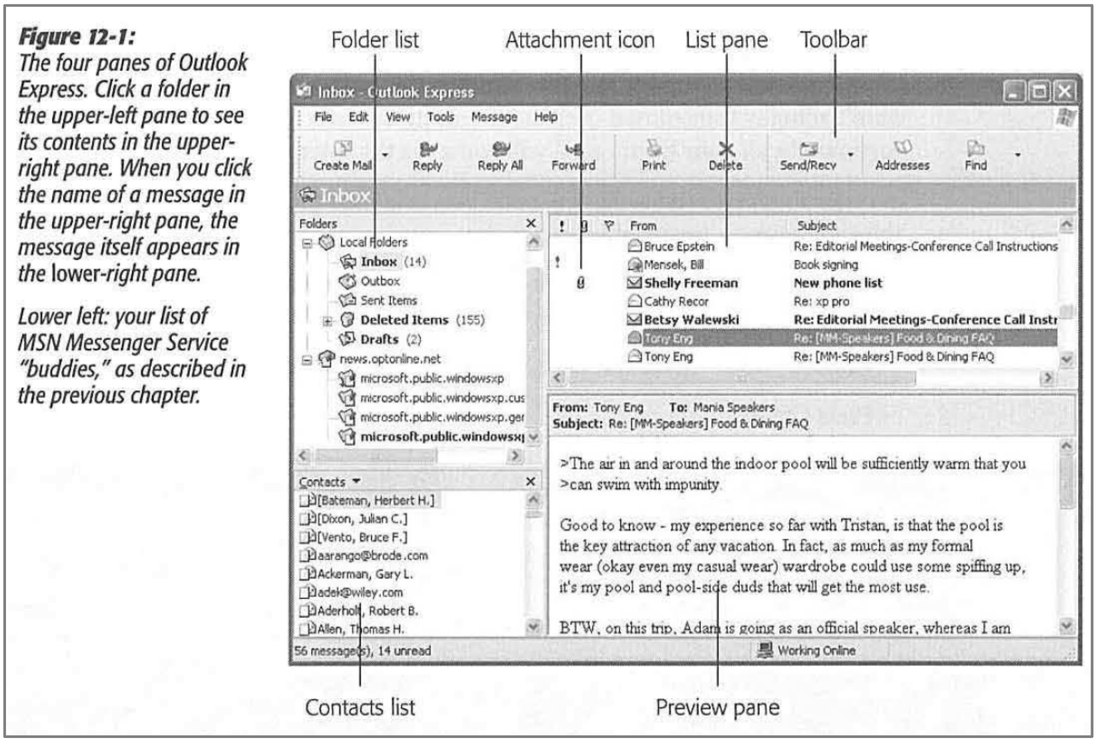

Figure 12-1:
The four panes of Outlook Express. Click a folder in the upper-left pane to see its contents in the upper-right pane. When you click the name of a message in the upper-right pane, the message itself appears in the lower-right pane.

Lower left: your list of MSN Messenger Service "buddies," as described in the previous chapter.

Folder list
Attachment icon
List pane
Toolbar
Inbox - Outlook Express
File Edit View Tools Message Help
Create Mail
Reply
Reply All
Forward
Print
Delete
Send/Recv
Addresses
Find
Inbox
Folders
Local Folders
Inbox (14)
Outbox
Sent Items
Deleted Items (155)
Drafts (2)
news.optonline.net
microsoft.public.windowsxp
microsoft.public.windowsxp.cus
microsoft.public.windowsxp.ger
microsoft.public.windowsxj
Contacts
[Bateman, Herbert H.]
[Dixon, Julian C.]
[Vento, Bruce F.]
aarango@brode.com
Ackerman, Gary L.
adek@wiley.com
Aderholt, Robert B.
Allen, Thomas H.
56 message(s), 14 unread
Working Online
Contacts list
Preview pane

From	Subject
Bruce Epstein	Re: Editorial Meetings-Conference Call Instructions
Mensek, Bill	Book signing
Shelly Freeman	**New phone list**
Cathy Recor	Re: xp pro
Betsy Walewski	**Re: Editorial Meetings-Conference Call Instr**
Tony Eng	Re: [MM-Speakers] Food & Dining FAQ
Tony Eng	Re: [MM-Speakers] Food & Dining FAQ

From: Tony Eng **To:** Mania Speakers
Subject: Re: [MM-Speakers] Food & Dining FAQ

>The air in and around the indoor pool will be sufficiently warm that you
>can swim with impunity.

Good to know - my experience so far with Tristan, is that the pool is the key attraction of any vacation. In fact, as much as my formal wear (okay even my casual wear) wardrobe could use some spiffing up, it's my pool and pool-side duds that will get the most use.

BTW, on this trip, Adam is going as an official speaker, whereas I am

148. Clicking on the Microsoft Word icon opens a word processing interface, as illustrated in Figure 8-12 below." EX-1006, 4, 6, 31.

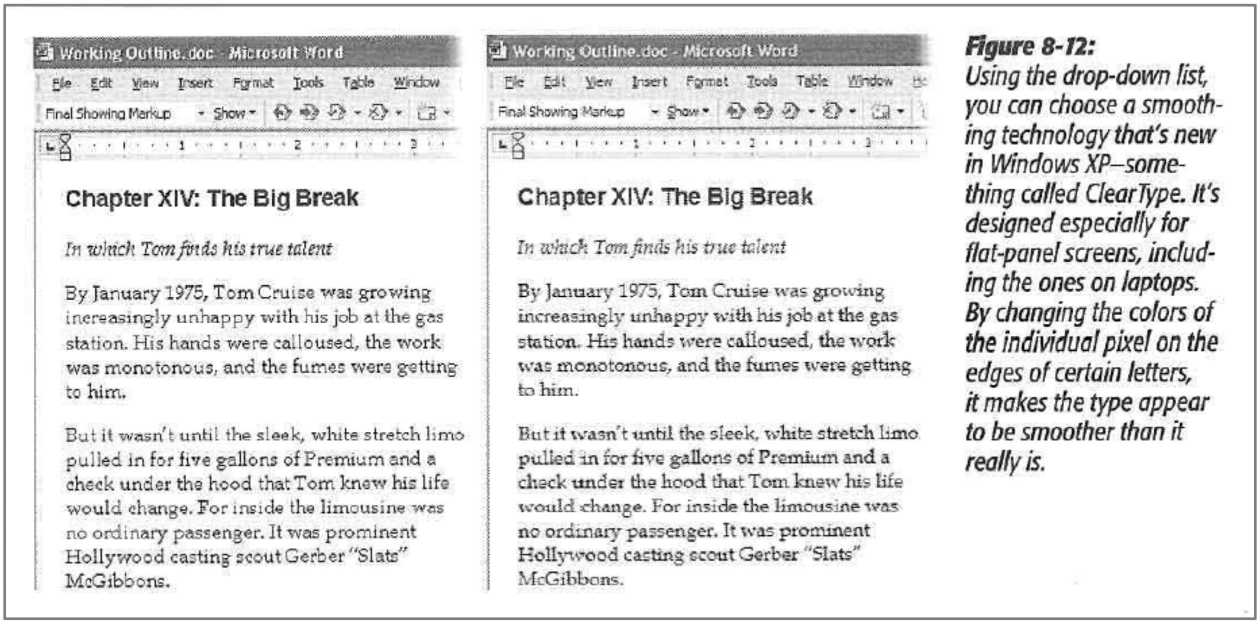

Figure 8-12:
Using the drop-down list, you can choose a smoothing technology that's new in Windows XP—something called ClearType. It's designed especially for flat-panel screens, including the ones on laptops. By changing the colors of the individual pixel on the edges of certain letters, it makes the type appear to be smoother than it really is.

Working Outline.doc - Microsoft Word
File Edit View Insert Format Tools Table Window
Final Showing Markup
Show

Chapter XIV: The Big Break

In which Tom finds his true talent

By January 1975, Tom Cruise was growing increasingly unhappy with his job at the gas station. His hands were calloused, the work was monotonous, and the fumes were getting to him.

But it wasn't until the sleek, white stretch limo pulled in for five gallons of Premium and a check under the hood that Tom knew his life would change. For inside the limousine was no ordinary passenger. It was prominent Hollywood casting scout Gerber "Slats" McGibbons.

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149. Clicking on the Windows Media Player icon opens Windows Media Player, "which lets you play movies, listen to distant radio stations over the Internet, burn music CDs, and transfer music files to your portable MP3 player." EX-1006, 4, 13, 26. When playing a movie in Windows Media Player, the original window size may be "relatively small." EX-1006, 227. It is recommended to enlarge the window to fill the screen. EX-1006, 228. The Windows Media Player may include a media interface, as illustrated in Figure 7-13 below, which includes a DVD menu, playback controls, hide/show chapter list, and chapter list. EX-1006, 228.

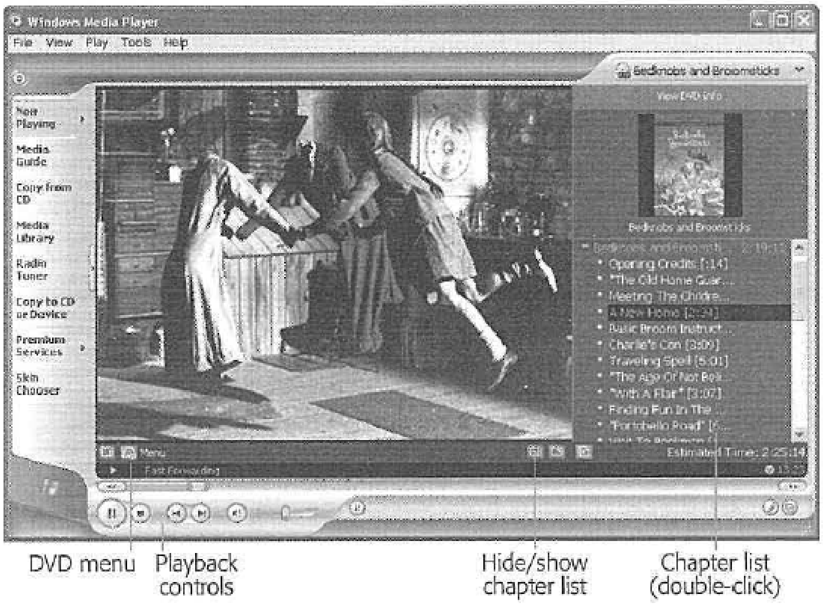

Windows Media Player
File
View
Play
Tools
Help
Now Playing
Media Guide
Copy from CD
Media Library
Radio Tuner
Copy to CD or Device
Premium Services
Skin Chooser
Bedknobs and Broomsticks
View DVD Info
Bedknobs and Broomsticks
Opening Credits [:14]
"The Old Home Guar...
Meeting The Childre...
A New Home [2:24]
Basic Broom Instruct...
Charlie's Con [3:09]
Traveling Spell [5:01]
"The Age Of Not Beli...
"With A Flair" [3:07]
Finding Fun In The ...
"Portobello Road" [6...
Menu
Fast Forwarding
Estimated Time: 2:25:14
DVD menu
Playback controls
Hide/show chapter list
Chapter list (double-click)

Figure 7-13:
Once the DVD is playing, you control the playback using the standard Media Player controls (at the bottom-left edge of the window). To switch to a different "chapter," use the list at right (click the little Show Playlist button if you don't see it).

To change language or parental-control options, choose Tools→Options and click the DVD tab.

When you're playing the movie full screen, the playback controls reappear when you move the mouse a bit.

150. Windows XP also includes a volume control interface where a user can drag the volume bar (blue in Figure 7-14 below) or press "Mute all" (red), among other features of the volume control interface. EX-1006, 229-231.

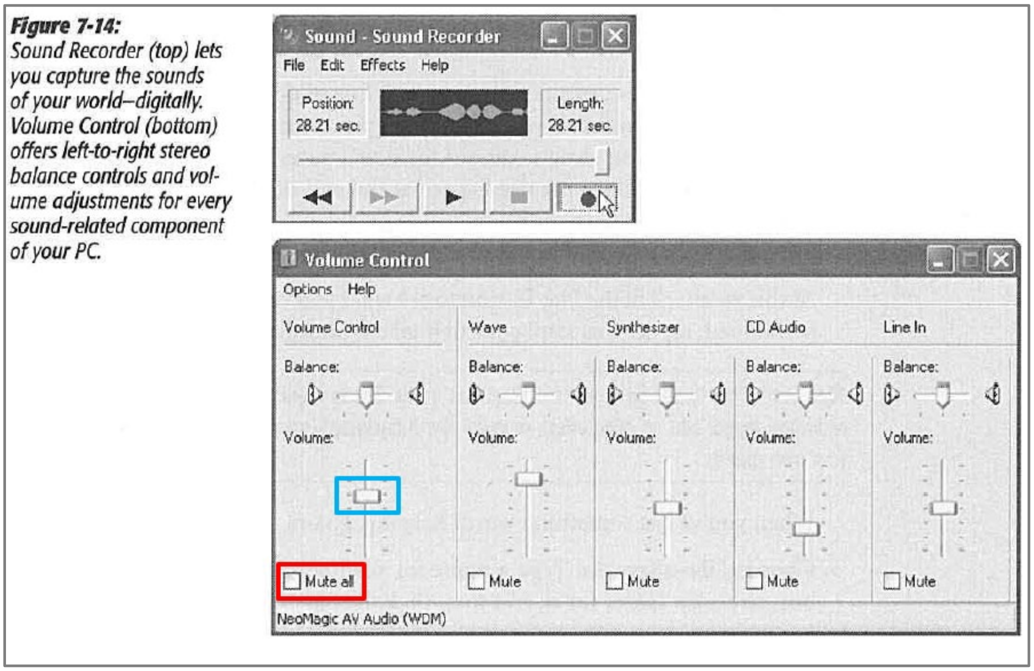


Figure 7-14:
Sound Recorder (top) lets you capture the sounds of your world—digitally. Volume Control (bottom) offers left-to-right stereo balance controls and volume adjustments for every sound-related component of your PC.

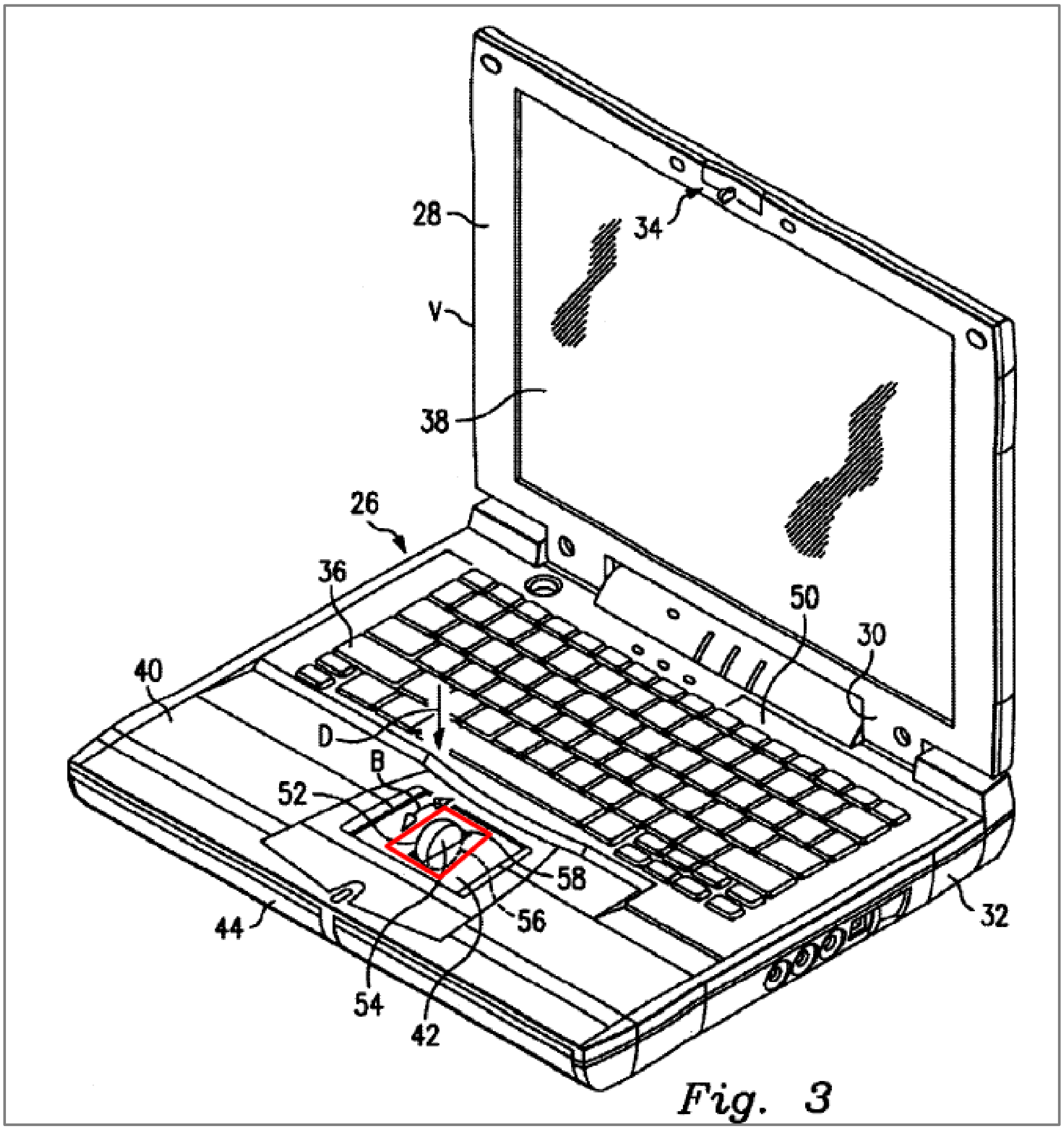
Sound - Sound Recorder
File Edit Effects Help
Position: 28.21 sec.
Length: 28.21 sec.
Volume Control
Options Help
Volume Control
Wave
Synthesizer
CD Audio
Line In
Balance:
Volume:
☐ Mute all
☐ Mute
NeoMagic AV Audio (WDM)

151. Windows XP's hardware requirements include a computer with 233 MHz processor clock speed, 64 MB of RAM, 1.5 GB of free hard disk space, 800 x 600 resolution video adapter and monitor, a CD-ROM or DVD drive, and a keyboard and compatible pointing device. EX-1006, 558. Pogue also discloses various well-known input devices for computers, including a keyboard, a trackpad, and a mouse. EX-1006, 273-274.

D. Overview of Escamilla

152. Escamilla issued as a U.S. patent on April 20, 2004 from a U.S. patent application filed on September 22, 2000. I have been informed that Escamilla therefore qualifies as prior art under at least pre-AIA 35 U.S.C. §§ 102(a), (b), and (e).

153. As shown in FIG. 3 below, Escamilla is directed to a multi-function scroll device (red) in a portable computer that is bi-directionally rotatable relative to the exterior surface. EX-1007, Abstract, 1:66-2:2.



154. In the background section, Escamilla discusses that portable laptop computers do not have an integrated multi-function scrolling device, which can be used to pan, zoom, horizontal scroll, vertical scroll, and autoscroll. EX-1007,

1:10-11, 14-35. As shown above in FIG. 3, Escamilla integrates multi-function scroll member 52 into the base of the portable computer. EX-1007, 3:5-18.

E. Overview of Yeh

155. Yeh issued as a U.S. patent on May 28, 2002 from a U.S. patent application filed on March 11, 2000. I have been informed that Yeh therefore qualifies as prior art under at least pre-AIA 35 U.S.C. §§ 102(a), (b), and (e).

156. Yeh is directed to a volume control knob for use with a laptop computer. EX-1008, Abstract. The volume control knob can be rotated clockwise, as illustrated in FIG. 6 below, to increase the volume and rotated counterclockwise, as illustrated in FIG. 7 below, to decrease the volume. EX-1008, 3:1-7.

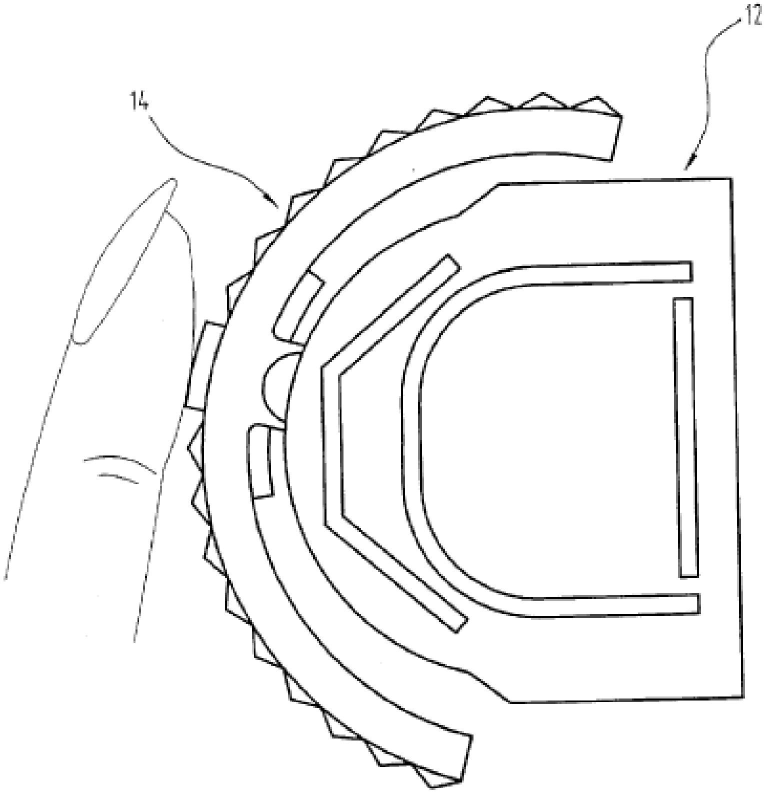


Fig. 6

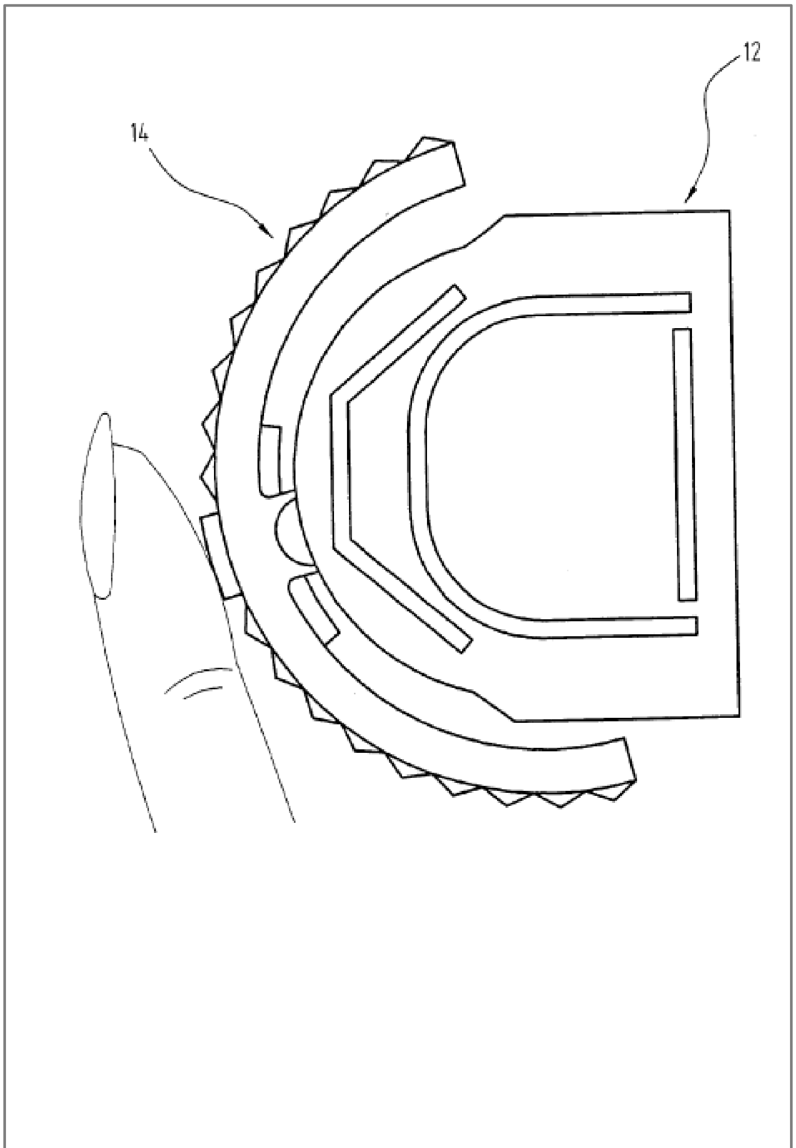


Fig. 7

F. Overview of Lin

157. Lin published on January 18, 2007 from a U.S. patent application filed on July 5, 2006. I have been informed that Lin therefore qualifies as prior art under at least pre-AIA 35 U.S.C. §§ 102(a), (b), and (e).

158. As shown in FIG. 2 below, Lin is directed to a rotary knob (red) disposed in pivot portion 230 (blue) of the portable computer 200. EX-1009, Abstract, ¶28.

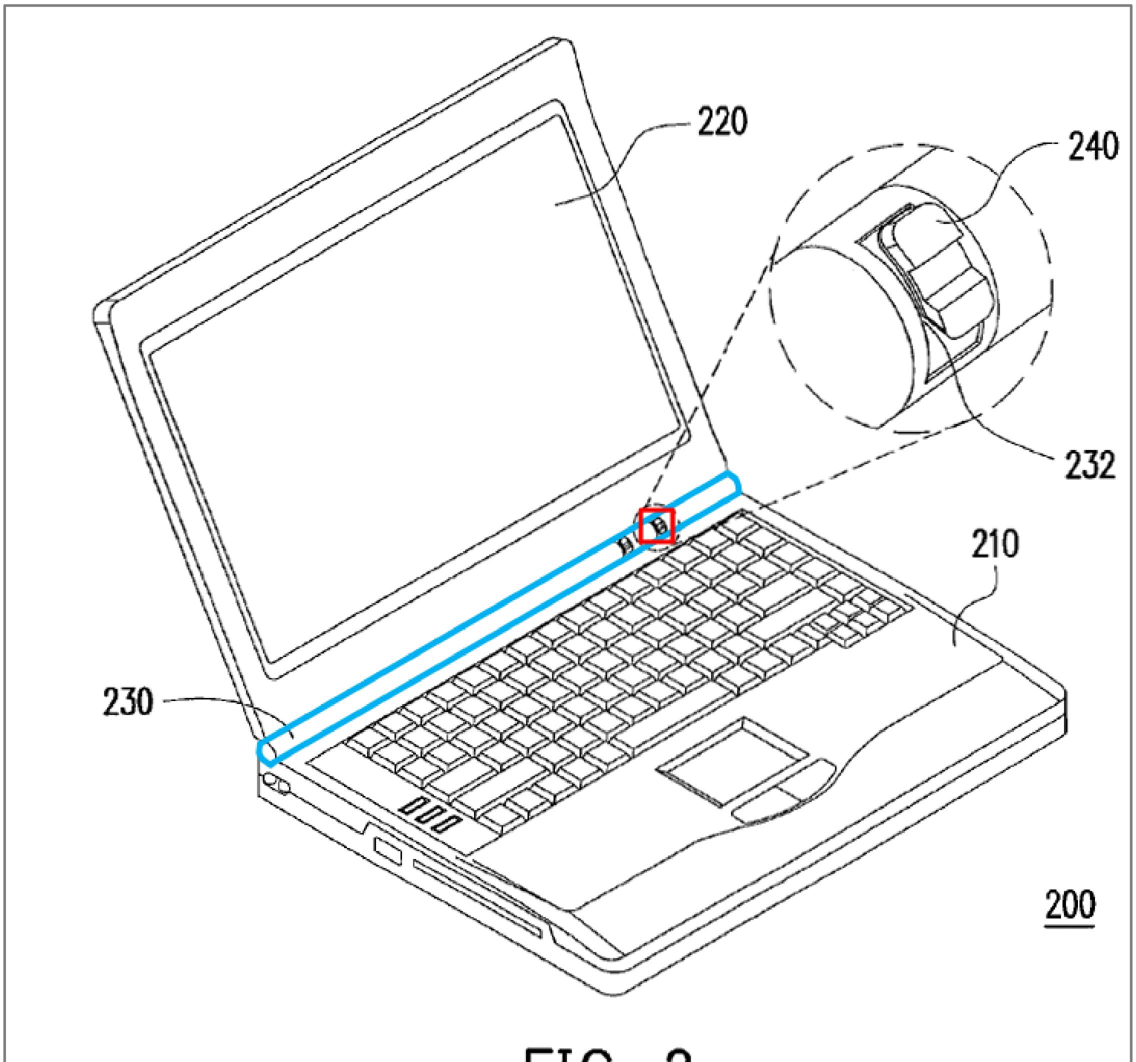


FIG. 2

159. The rotary knob can be used to activate a desired function of the portable computer. EX-1009, ¶¶9, 28.

G. Family Diagram

160. EX-1013 is a diagram depicting different modified Portable Computers of Shimura used in the Grounds below.

VIII. SUMMARY OF FINDINGS

Ground	**Claim element**	**Prior art relied on**
1	1, 3-5, 7-10, and 13-16	Obvious over Shimura in view of Tsuji, in further view of Pogue
2	6	Obvious over Shimura in view of Tsuji and Pogue, in further view of Escamilla
3	2	Obvious over Shimura in view of Tsuji and Pogue, in further view of Escamilla and Yeh
4	18 and 22	Obvious over Shimura in view of Tsuji and Pogue, in further view of Lin
5	11, 12, 19, and 21	Obvious over Shimura in view of Tsuji Pogue, and Escamilla, in further view of Lin
6	20	Obvious over Shimura in view of Tsuji Pogue, Escamilla, and Lin, in further view of Yeh

A. Ground 1: Shimura in view of Tsuji and Pogue renders Claims 1, 3-5, 7-10, and 13-16 obvious.

1. Combination of Shimura and Tsuji (hereafter "Shimura-Tsuji combination")

161. A POSITA would have been motivated to combine Shimura with Tsuji for several reasons. For example, they both:

- are contemporaneous patents directed toward complementary solutions to highly analogous problems in the same field of endeavor;
- are directed toward a portable computer that can be used in various display modes and displayed content orientations (EX-1004, ¶¶10–17, Figures 1, 3, 4, 5; EX-1005, ¶¶34, 51FIGs. 1, 5-8); and
- discuss display modes where the keyboard is inoperable and/or inaccessible (EX-1004, ¶¶8, 18, 19; EX-1005, ¶¶32, 45);

162. While Shimura discloses a portable computer capable of receiving pen input, EX-1004, Abstract, ¶¶4, 5, 9, 11, 16, 20, it does not explicitly disclose receiving input from a finger; Tsuji, however, explicitly discloses that the touch screen can also receive input from a stylus and finger. EX-1005, ¶31 .

a. Incorporating Tsuji's Touch Screen into the Shimura Computer

163. A POSITA would have been motivated to incorporate Tsuji's touch screen, capable of both finger and stylus inputs, into the Shimura Computer because such a display was well-known at the Critical Date and would provide an input device (e.g., a finger) that would not require an external peripheral device (e.g., a mouse, or stylus). There is additional motivation to incorporate Tsuji's touch-

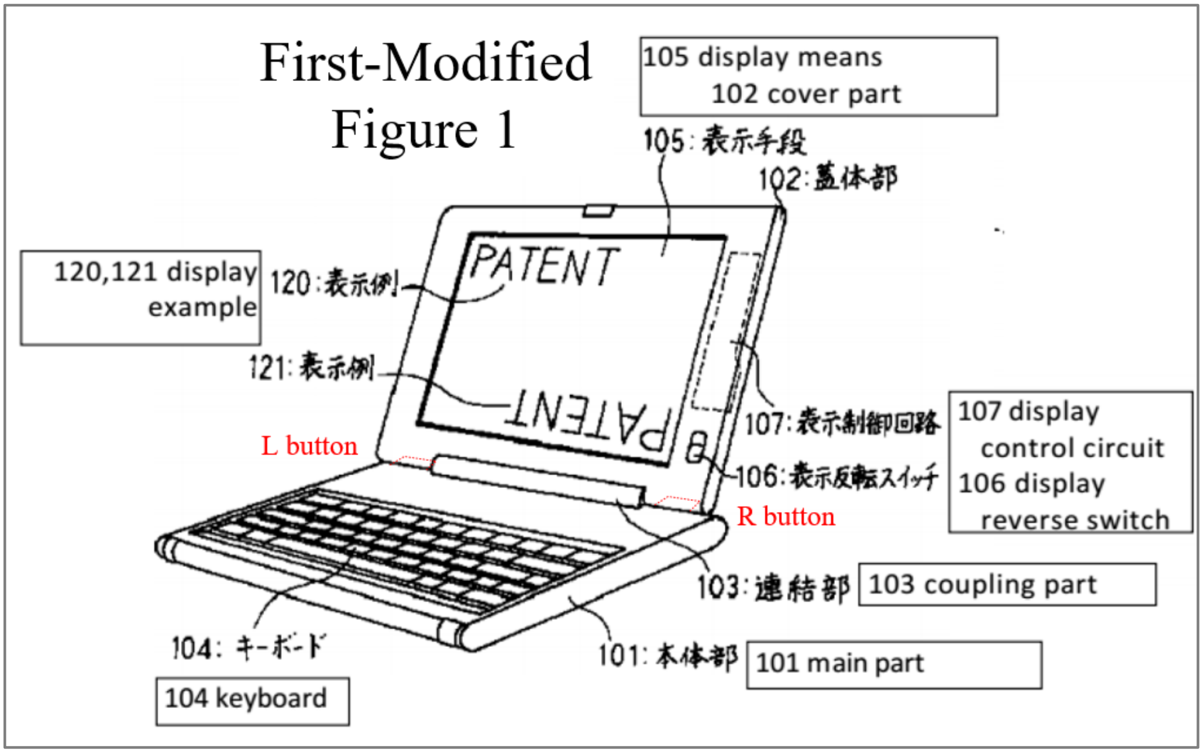
sensitive display because the keyboard is not always accessible or operable in all of the display modes of the Shimura Computer. Thus, a display capable of receiving input from a finger would improve a user's interaction with the Shimura Computer..

164. A POSITA would have understood that the Shimura Computer incorporating Tsuji's touch screen includes other well-known portable computer components. For example, Tsuji discloses that the computer main body 11 includes a CPU (central processing unit). EX-1005, ¶¶30, 63 . While such a CPU is not explicitly disclosed in Shimura, a POSITA would have known that the Shimura Computer must include such a well-known standard component of a portable computer.

b. Further Incorporating Tsuji's R and L Buttons into the Shimura Computer

165. A POSITA would have been motivated to further incorporate Tsuji's R and L buttons 118 and 119 into the Shimura Computer, to improve the user operability of the portable computer, regardless of the display mode. Tsuji provides express motivation for the proposed modification. EX-1005, ¶39 ("The R and L button switches 118 and 119 are exposed regardless of whether the computer 1 is used in a PC style or a PDA style."). With the integrated R and L buttons, as illustrated in First-Modified Figure 1 of Shimura below (i.e., a laptop mode), First-

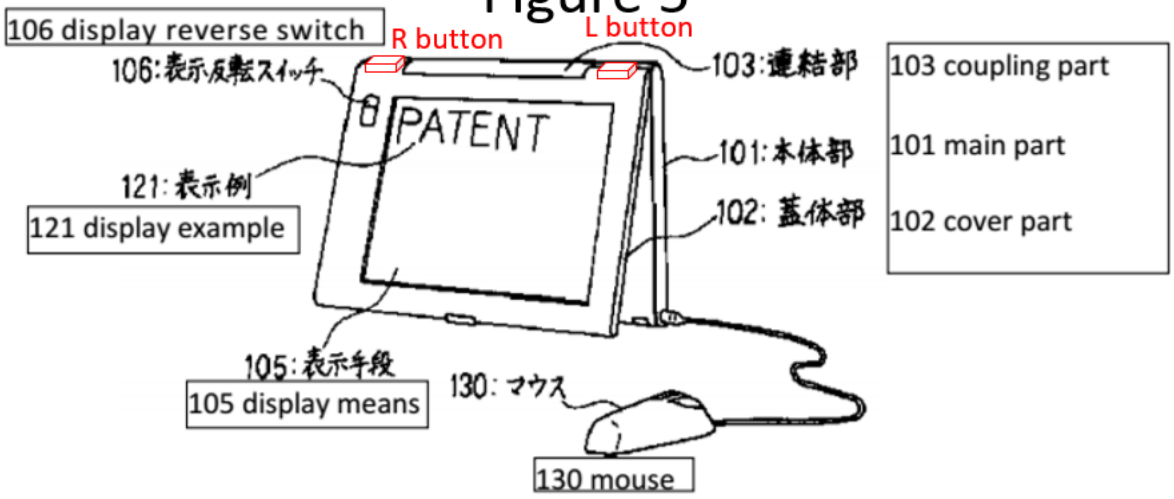
Modified Figure 5 below (an easel mode), and First-Modified Figure 4 below (a frame mode), a user would be able to navigate the contents and/or interface of the Shimura Computer in these display modes. Tsuji's R and L buttons 118 and 119 can be programmed to perform any given function, including standard well-known keyboard keys (e.g., Shift, Ctrl, Alt, Enter, Esc, and arrow keys), and any other known function of a portable computer. *Id.*, ¶¶38-46. Using such buttons to control operating parameters of the portable computer and content displayed were well-known in the art before the Critical Date. EX-1004; EX-1005; EX-1005; EX-1017; EX-1036; EX-1037; EX-1038; EX-1039.



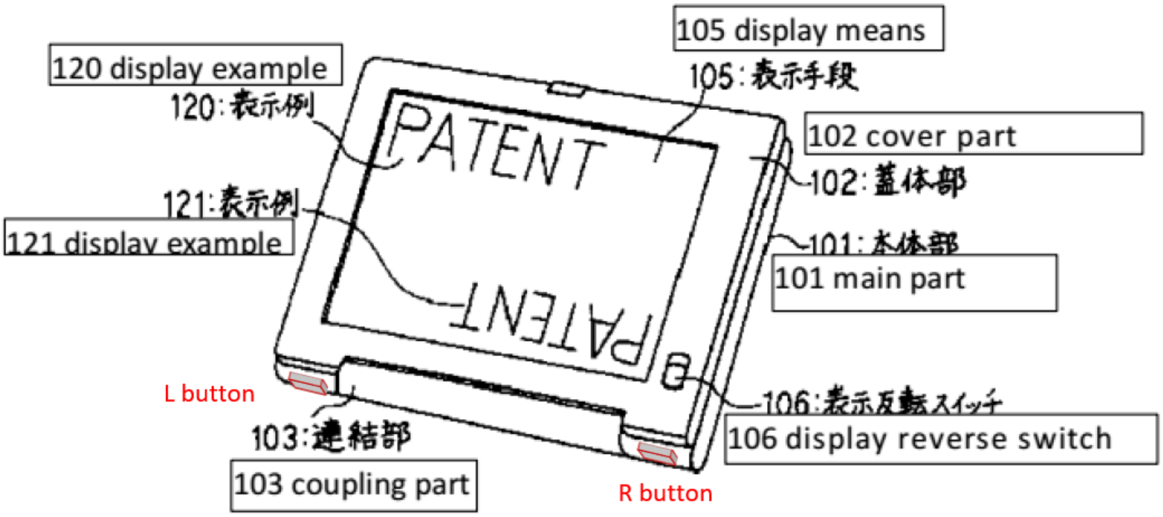
First-Modified Figure 1

105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
PATENT
PATENT
121: 表示例
L button
107: 表示制御回路
107 display control circuit
106: 表示反転スイッチ
106 display reverse switch
R button
103: 連結部
103 coupling part
104: キーボード
104 keyboard
101: 本体部
101 main part

First-Modified
Figure 5


106 display reverse switch
106:表示反転スイッチ
R button
L button
103:連結部
103 coupling part
101:本体部
101 main part
102:蓋体部
102 cover part
PATENT
121:表示例
121 display example
105:表示手段
105 display means
130:マウス
130 mouse

First-Modified
Figure 4


105 display means
105:表示手段
120 display example
120:表示例
PATENT
102 cover part
102:蓋体部
121:表示例
121 display example
PATENT
101:本体部
101 main part
L button
106:表示反転スイッチ
106 display reverse switch
103:連結部
103 coupling part
R button

c. Further Incorporating Tsuji's Rotation Angle and Gravity Sensors into the Shimura Computer

166. A POSITA would have been motivated further to incorporate Tsuji's rotation angle and gravity sensors, illustrated in FIG. 10 below, into the Shimura

Computer to improve operability and/or usability by providing the option of automatically controlling the orientation of the displayed content based on one or more sensors. EX-1005, ¶¶58-60.

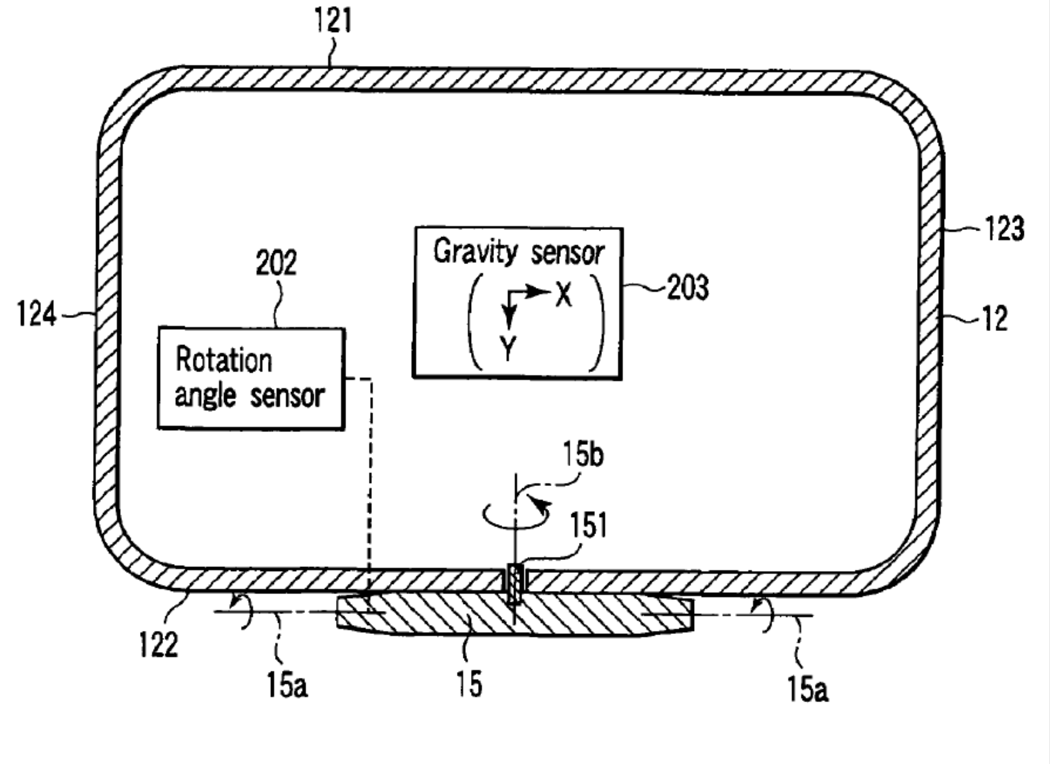
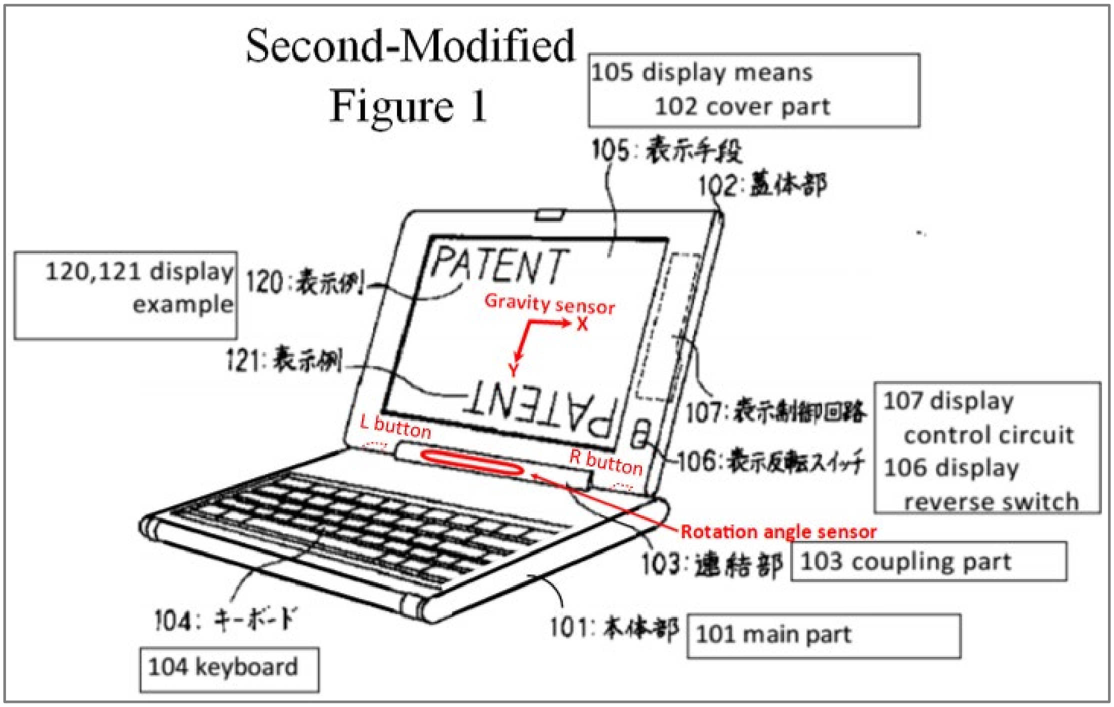


FIG. 10

167. Specifically, Tsuji discloses the rotation angle sensor 202 sensing whether a rotation angle is greater than a specific rotation angle, and the gravity sensor 203 "sensing which orientation the display unit main body is located in relative to the orientation of the force of gravity." *Id.*, ¶58-59. Based on this disclosure, a POSITA would have been motivated to implement the combination of the rotation angle sensor 202 and the gravity sensor 203 in the Shimura Computer to

enable it to distinguish between various display modes (e.g., the laptop, easel, and frame modes). For example, as detailed below, even when the easel and frame modes have the same rotation angle such that the output of the rotation angle sensor 202 would be the same, the output of the gravity sensor 203 would be different in those two modes and this difference can be used to distinguish between them.

168. Also based on the above disclosure of Tsuji, a POSITA would have been motivated to implement Tsuji's rotation angle sensor in the hinge of the Shimura Computer, and Tsuji's gravity sensor in the cover part 102 of the Shimura Computer, as illustrated in Second-Modified Figure 1 of Shimura below.

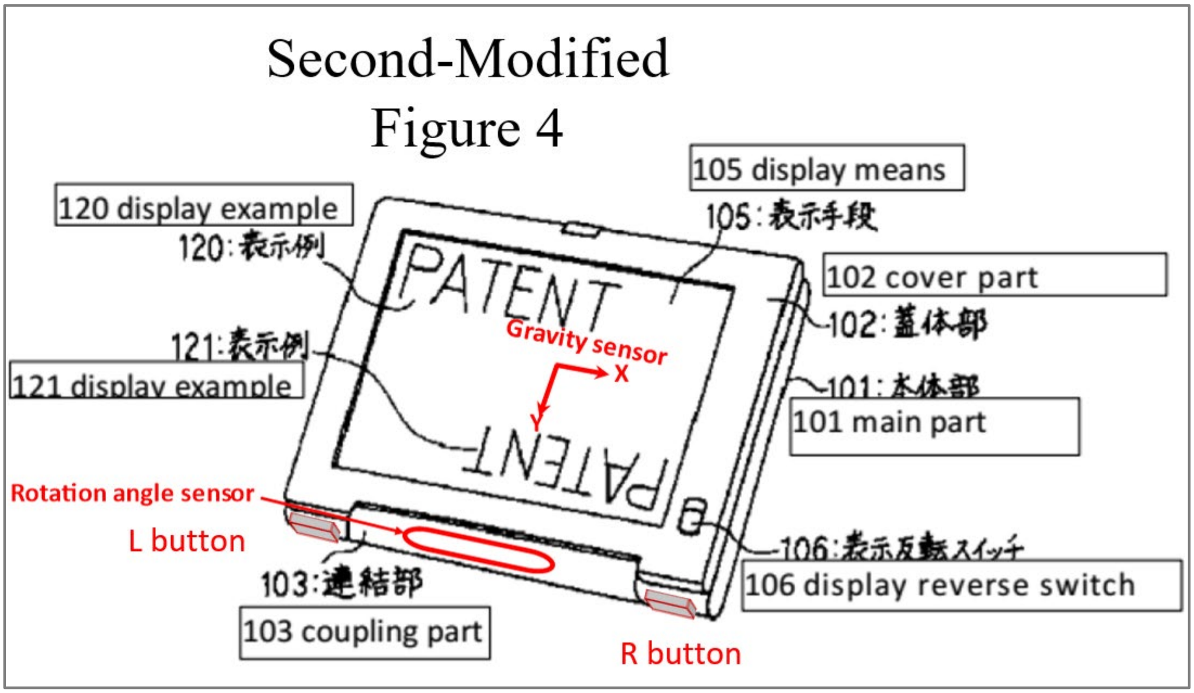

Second-Modified Figure 1

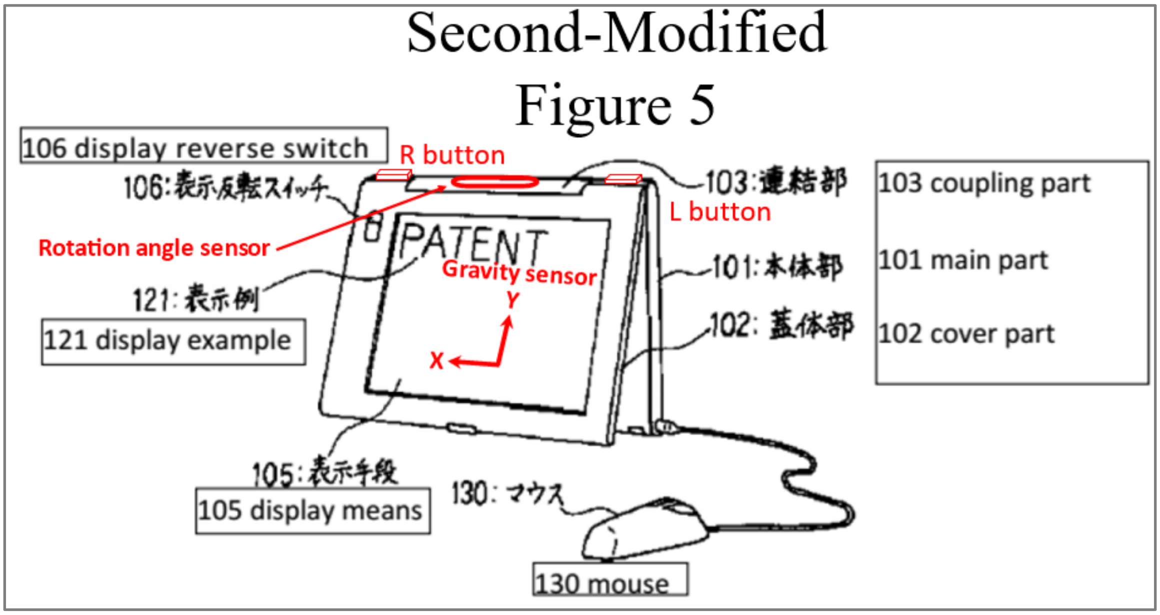
105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
121: 表示例
PATENT
Gravity sensor
X
Y
PATENT
L button
R button
107: 表示制御回路
106: 表示反転スイッチ
107 display control circuit
106 display reverse switch
Rotation angle sensor
103: 連結部
103 coupling part
104: キーボード
104 keyboard
101: 本体部
101 main part

169. The output of the rotation angle sensor indicates the amount of rotation of the display component (102) relative to the base (101). The output of the

gravity sensor indicates the X-component and the Y-component of gravity in the plane of the display component (102). In the annotated laptop mode example below, the output of the gravity sensor would indicate the Y-component of gravity in the plane of the display component (102) pointing towards the hinge (103).

170. By monitoring the Y-component of gravity in the plane of the display component, illustrated in Second-Modified Figures 4 and 5 of Shimura below, the easel and frame modes can be distinguished.


Second-Modified
Figure 4
105 display means
105:表示手段
120 display example
120:表示例
102 cover part
102:蓋体部
121:表示例
121 display example
PATENT
Gravity sensor
X
Y
101:本体部
101 main part
PATENT
Rotation angle sensor
L button
B
106:表示反転スイッチ
106 display reverse switch
103:連結部
103 coupling part
R button


Second-Modified
Figure 5

106 display reverse switch
R button
106:表示反転スイッチ
103:連結部
103 coupling part
L button
Rotation angle sensor
PATENT
Gravity sensor
Y
X
101:本体部
101 main part
121:表示例
121 display example
102:蓋体部
102 cover part
105:表示手段
105 display means
130:マウス
130 mouse

171. Exemplary logic for determining the display mode based on outputs of the rotation angle and gravity sensors is summarized in Table 1 below:

Rotation Angle Sensor Rotating Angle	**Gravity Direction (Y-Component)**	**Display Mode**
Between 0º and 180º	Not used	Laptop mode
>180º	Away from the hinge assembly	Easel mode
>270º[10]	Towards the hinge assembly, or none	Frame mode[11]

Table 1

172. Additionally, accelerometers configured to detect the direction of gravity were well-known and commercially available at the Critical Date. For example, an application note by Freescale Semiconductor, Inc. indicates that the company manufactured MMA6200Q and MMA7260Q series accelerometers that

---

[10] *See* n.8.

[11] This assumes that the surface on which the base rests (e.g., a desktop) is horizontal/flat with respect to the Earth.

can measure the tilt of an object. EX-1019, 1. As the figures below from the application note demonstrates, the tilt is "a static measurement where gravity is the acceleration being measured." EX-1019, 1.

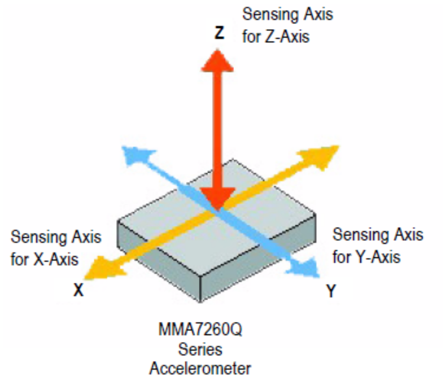

Sensing Axis
for Z-Axis
Z
Sensing Axis
for X-Axis
X
Sensing Axis
for Y-Axis
Y
MMA7260Q
Series
Accelerometer

Figure 2. Sensing Axis for the MMA7260Q Accelerometer With X, Y, and Z-Axis for Sensing Acceleration

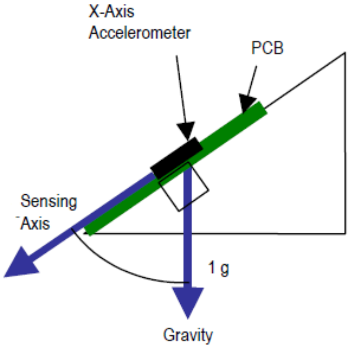

X-Axis
Accelerometer
PCB
Sensing
Axis
1 g
Gravity

Figure 3. Gravity Component of a Tilted X-Axis Accelerometer

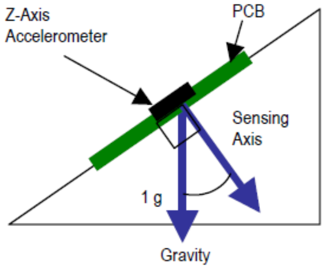
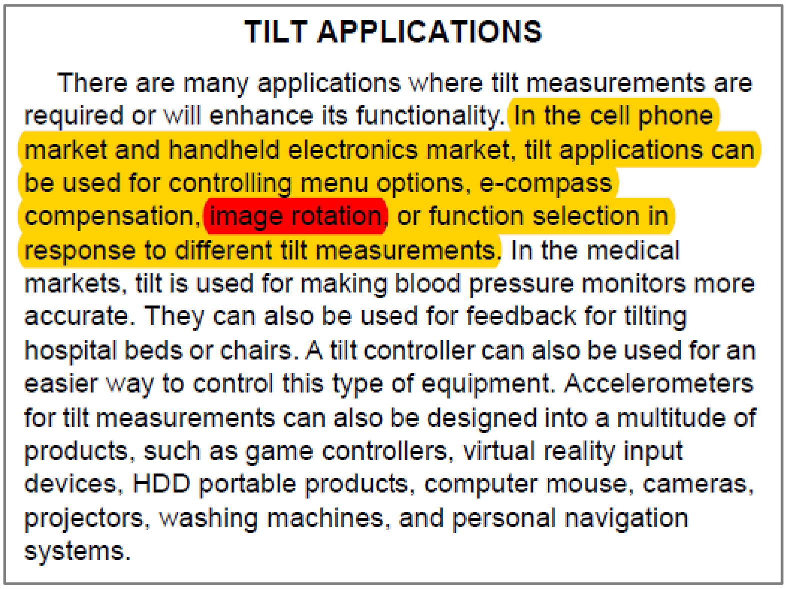

Z-Axis
Accelerometer
PCB
Sensing
Axis
1 g
Gravity

Figure 4. Gravity Component of a Tilted Z-Axis Accelerometer

173. In fact, the application note identifies image rotation in a portable device as one of the applications of the accelerometers. EX-1019, 1. So a POSITA would have known to use such a commercially available accelerometer and to use it as a gravity sensor.



TILT APPLICATIONS

There are many applications where tilt measurements are required or will enhance its functionality. In the cell phone market and handheld electronics market, tilt applications can be used for controlling menu options, e-compass compensation, image rotation, or function selection in response to different tilt measurements. In the medical markets, tilt is used for making blood pressure monitors more accurate. They can also be used for feedback for tilting hospital beds or chairs. A tilt controller can also be used for an easier way to control this type of equipment. Accelerometers for tilt measurements can also be designed into a multitude of products, such as game controllers, virtual reality input devices, HDD portable products, computer mouse, cameras, projectors, washing machines, and personal navigation systems.

174. The modified display control circuit 107 and modified electronic circuit of Shimura receiving the outputs of Tsuji's rotation angle sensor 202 and gravity sensor 203 orient the displayed content between at least a normal view and an inverted view. For example, the displayed content would be oriented in a normal view in the laptop mode and frame mode and an inverted view in the easel mode. In a laptop mode, where the rotation angle sensor is less than 180°, the displayed content is in a normal view. In an easel mode, where the rotation angle sensor is greater than 180°, and the output of the gravity sensor indicates the Y-component of gravity in the plane of the cover part 102 points away from the hinge assembly, the displayed content is in an inverted view. Otherwise, the displayed content would appear upside-down to the user. Finally, in a frame mode, where the rotation angle sensor is greater than 270°, and the output of the gravity sensor indicates the Y-component of gravity in the plane of the cover part 102 points to-

ward the hinge assembly or is zero, the displayed content is in a normal view. Otherwise the displayed content would appear upside-down to the user. Automatically controlling the orientation of displayed content in different display modes of a portable computing device based on a rotation angle sensor and/or an accelerometer (e.g., a gravity sensor) was well-known at the Critical Date. EX-1005; EX-1018; EX-1020; EX-1022, EX-1024. Moreover, it was well-known to configure a portable computing device into multiple display modes. EX-1004; EX-1005; EX-1010, ¶; EX-1014; EX-1018; EX-1020; EX-1022, EX-1024; EX-1026; EX-1027; EX-1028; EX-1029; EX-1030.

d. Combining Tsuji with Shimura to Arrive at the Shimura-Tsuji Computer

175. It would have been obvious to incorporate Tsuji's:

- touch-sensitive display into Shimura's display component;
- R and L buttons 118 and 119 into the main part 101 of the Shimura Computer; and
- automatic display-orientation control feature used to process the sensor(s)'s outputs into Shimura's modified display control circuit 107 and modified electronic circuit.

176. The resulting system will be hereafter referred to as the "Shimura-Tsuji Computer."

177. There would have been motivation to combine, and a reasonable expectation of success in combining, Tsuji with Shimura because the combination is merely a combination of well-known prior art elements according to known methods to yield predictable results. That is, Tsuji taught the well-known prior art concept of:

- a touch-sensitive display that can receive input from a finger;
- integrating input devices (i.e., R and L buttons) that are accessible in multiple display modes; and
- automatically controlling the orientation of the displayed content in different display modes based on the rotation angle and gravity sensors.

Application of these teachings to Shimura would have yielded a predictable portable computer with the above three known prior art concepts.

178. For all the reasons identified in VIII.A.1, the POSITA would have been motivated to arrive at the Shimura-Tsuji Computer by adding or otherwise integrating into the Shimura Computer:

- an improved touch-sensitive display that is not limited to pens, but can also receive input from a finger, as in Tsuji;
- R and L buttons, as in Tsuji, so a user could interact with the portable computer in multiple display modes; and

- Tsuji's sensor(s) to improve operability and/or usability by automatically controlling the orientation of the displayed content in different display modes.

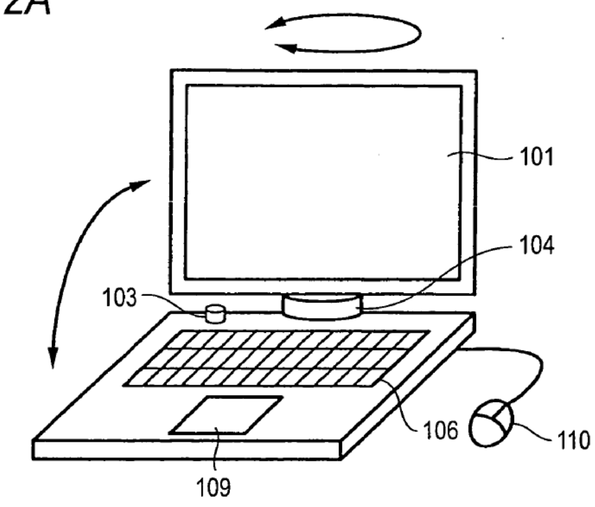
2. Combination of Shimura, Tsuji, and Pogue (hereafter "Shimura-Tsuji-Pogue combination")

179. A POSITA would have been motivated to combine Tsuji with Shimura (VIII.A.1), and combine Pogue with the foregoing for several reasons.

180. The hardware requirements to run Windows XP include a 233 MHz processor clock speed, 64 MB of RAM, 1.5 GB of free hard disk space, 800x600 resolution video adapter and monitor, a CD-ROM or DVD drive, and a keyboard and compatible pointing device. *See* VII.C; EX-1006, 558. Multiple computers at the Critical Date would have met at least these requirements. EX-1016, EX-1017; EX-1018; EX-1031; EX-1032; EX-1033; EX-1034; EX-1035. As an example, the Panasonic CF-19 series laptop, Dell Latitude XT laptop, and Lenovo Thinkpad X61 laptop—all from before the Critical Date—each met these hardware requirements and was able to run on Windows XP. EX-1016, *throughout*; EX-1017, *throughout*; EX-1018, *throughout*. While Shimura and Tsuji disclose hardware components and related circuitry, they do not expressly disclose an operating system; Pogue explicitly discloses Windows XP, one example of a well-known oper-

ating system at the Critical Date. EX-1006, 1, 5. Moreover, Pogue provides disclosure of well-known standard components of portable computers, including a trackpad. EX-1006, 274. A POSITA would have known to implement the trackpad on an upper surface of the base 101, as was well-known at the time. EX-1014, ¶25 (disclosing a convertible notebook PC including, among other components, touch-pad 108 integrated into a top surface of the base, as illustrated in FIG. 2A below).[12]

FIG. 2A



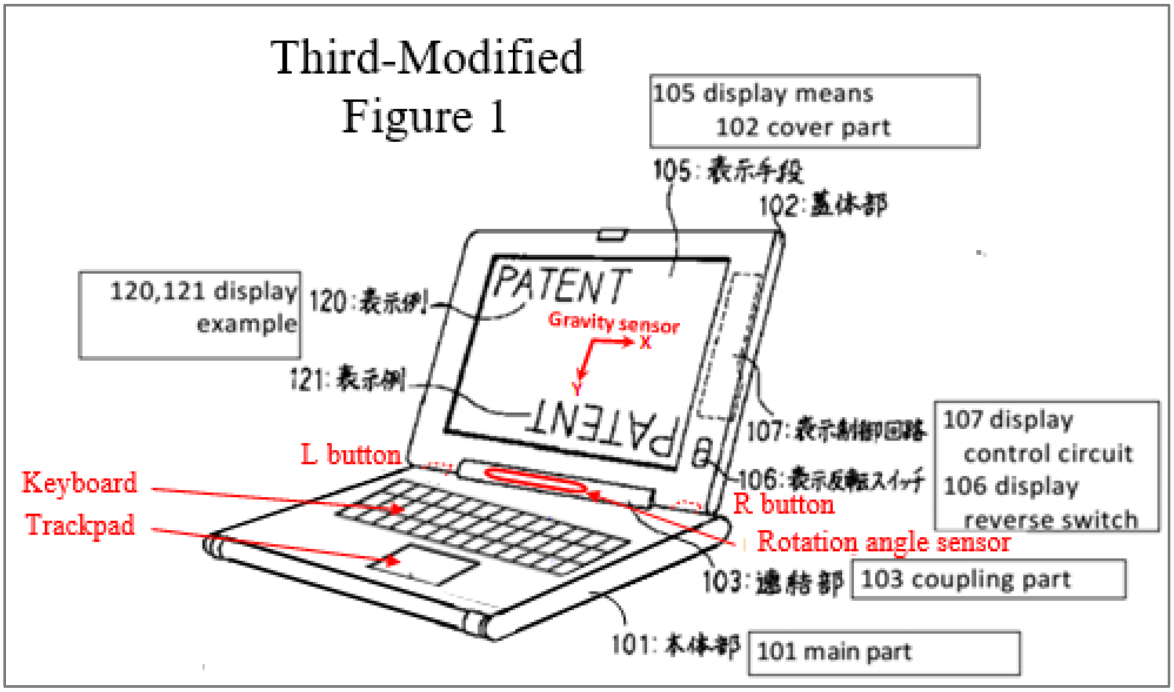
NOTEBOOK MODE
ROTATION SWITCH: 0°
RECLOSABLE SWITCH: OPEN

181. The resulting system, as illustrated in Third-Modified Figure 1 of Shimura, including Windows XP and Pogue's trackpad disposed into an upper sur-

---

[12] The touch-pad appears to be labeled in FIG. 2A as 109. A POSITA would have understood this was a typographical error and that it should be labeled as touch-pad 108.

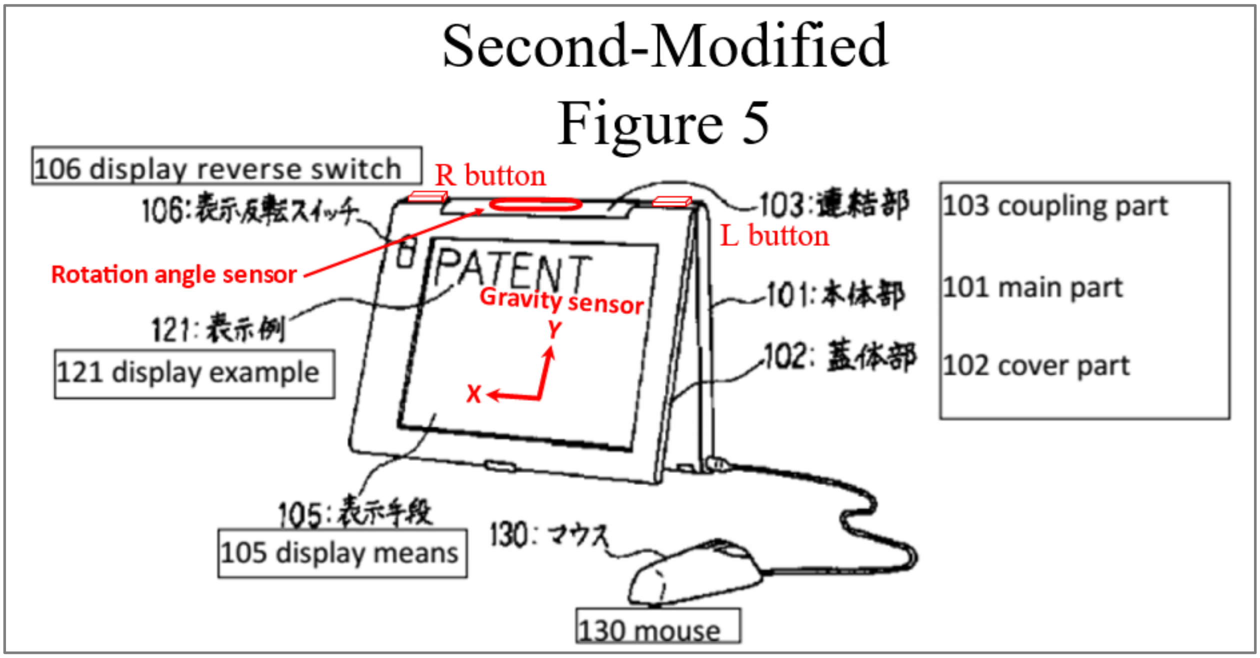
face of main part 101, will be hereafter referred to as the "Shimura-Tsuji-Pogue Computer."



Third-Modified Figure 1

105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
PATENT
Gravity sensor
X
Y
121: 表示例
107: 表示制御回路
107 display control circuit
L button
Keyboard
Trackpad
106: 表示反転スイッチ
106 display reverse switch
R button
Rotation angle sensor
103: 連結部
103 coupling part
101: 本体部
101 main part

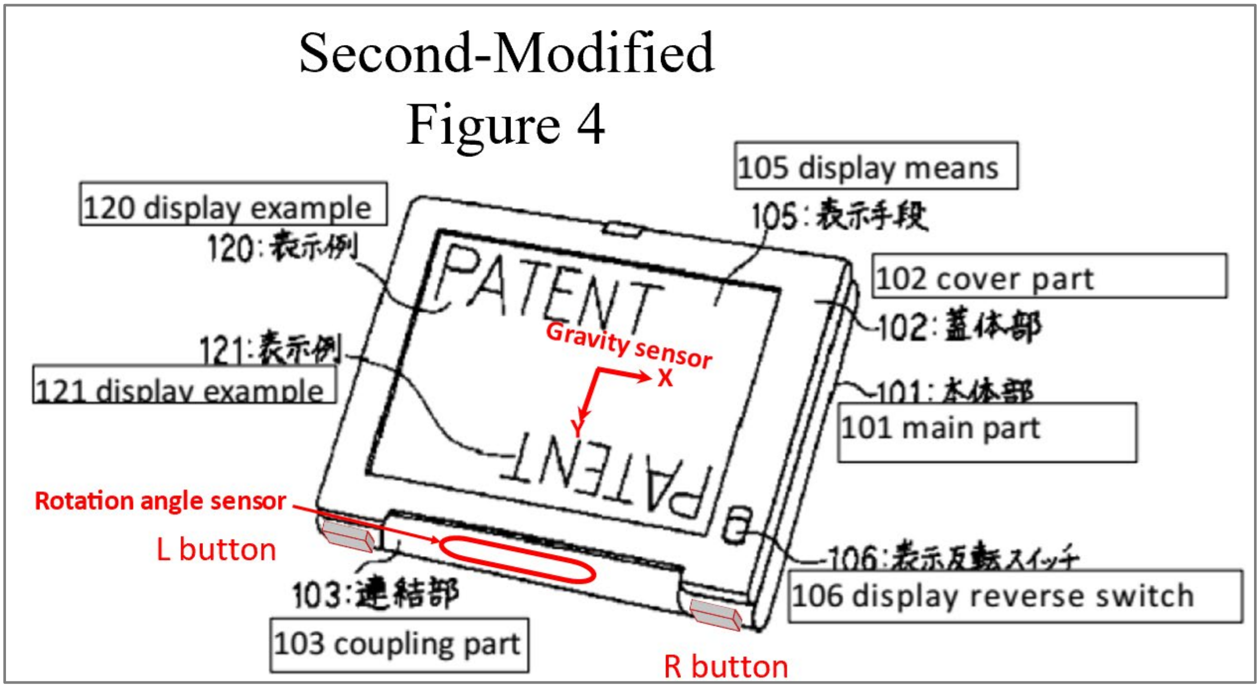
182. Second-Modified Figure 5 of Shimura below illustrates the same system in the easel mode.



Second-Modified
Figure 5

106 display reverse switch
R button
106:表示反転スイッチ
Rotation angle sensor
121:表示例
121 display example
PATENT
Gravity sensor
Y
X
103:連結部
L button
103 coupling part
101:本体部
101 main part
102:蓋体部
102 cover part
105:表示手段
105 display means
130:マウス
130 mouse

183. Second-Modified Figure 4 of Shimura below illustrates the same system in the frame mode.



Second-Modified
Figure 4

120 display example
120:表示例
105 display means
105:表示手段
102 cover part
102:蓋体部
PATENT
Gravity sensor
X
Y
121:表示例
121 display example
101:本体部
101 main part
PATENT
Rotation angle sensor
L button
103:連結部
103 coupling part
106:表示反転スイッチ
106 display reverse switch
R button

184. In Windows XP, a user can access the Start menu via a Start menu button (e.g., pressing the Windows logo key or Ctrl+Esc on the keyboard, or clicking the Start menu button on the desktop). EX-1006, 25. Keyboards at the Critical Date, such as the Panasonic CF-19 series laptop, Dell Latitude XT laptop, and Lenovo Thinkpad X61 laptop, had a Windows logo key, a Ctrl key, and an Esc key, as well as arrow keys, an Enter key, and other standard well-known keys.

185. Tsuji also provides express disclosure that "***[a]ny given function*** can programmably be assigned to each of the R and L button switches 118 and 119." *See* VII.B; EX-1005, ¶38 (emphasis added). As such, a POSITA would have been motivated to program the R or L button to the Start menu button (e.g., a Windows logo key or Ctrl+Esc functionality) so that a user would be able to easily access the Start menu in all display modes by pressing the programmed R or L button. From the Start menu, a user would be able to select and open a content mode, such as the "Internet," E-mail," "Windows Media Player," and "Microsoft Word" modes using the touch screen, programmed R and L buttons, or keyboard of the Shimura-Tsuji-Pogue Computer.

186. Pogue discloses accessing various content modes. The "content mode" terms each means "user selectable element(s) displayed on a user interface that, when selected, allows the user to access the content organized therein" which

includes one or more of media, channel, connect, application, and web content modes, as shown in FIGs. 11 and 12 below. *See* VI; EX-1001, 11:44-52.

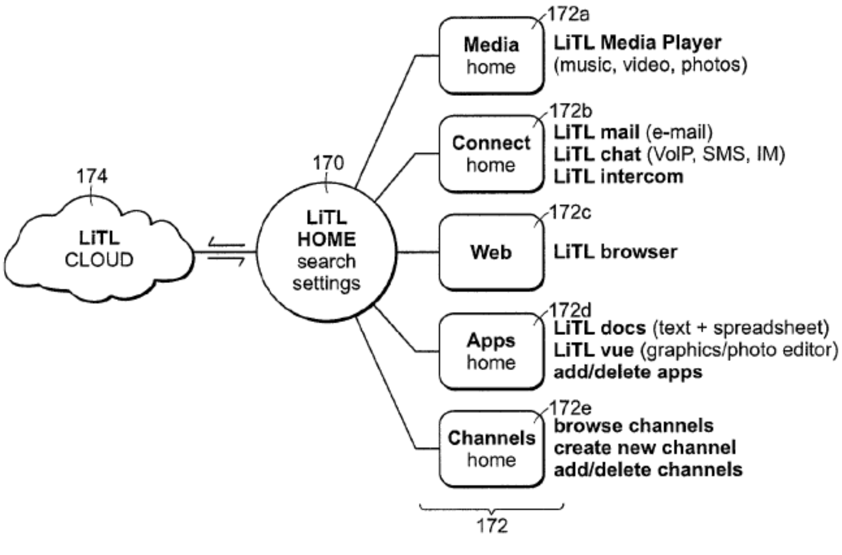

174
LiTL
CLOUD
170
LiTL
HOME
search
settings
172a
Media
home
LiTL Media Player
(music, video, photos)
172b
Connect
home
LiTL mail (e-mail)
LiTL chat (VoIP, SMS, IM)
LiTL intercom
172c
Web
LiTL browser
172d
Apps
home
LiTL docs (text + spreadsheet)
LiTL vue (graphics/photo editor)
add/delete apps
172e
Channels
home
browse channels
create new channel
add/delete channels
172

FIG. 11

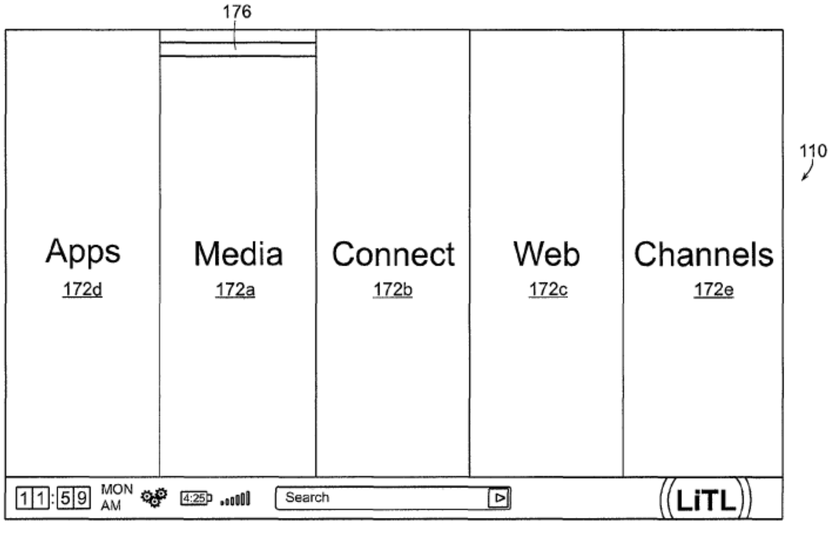

176
110
Apps
172d
Media
172a
Connect
172b
Web
172c
Channels
172e
11:59
MON
AM
4:25
Search
LiTL

FIG. 12

187. As shown in Figure 11-1 below, Pogue discloses the user selecting "Internet Explorer" on the graphical user interface (GUI) to navigate the web using a web interface and access online content. EX-1006, 337-338.

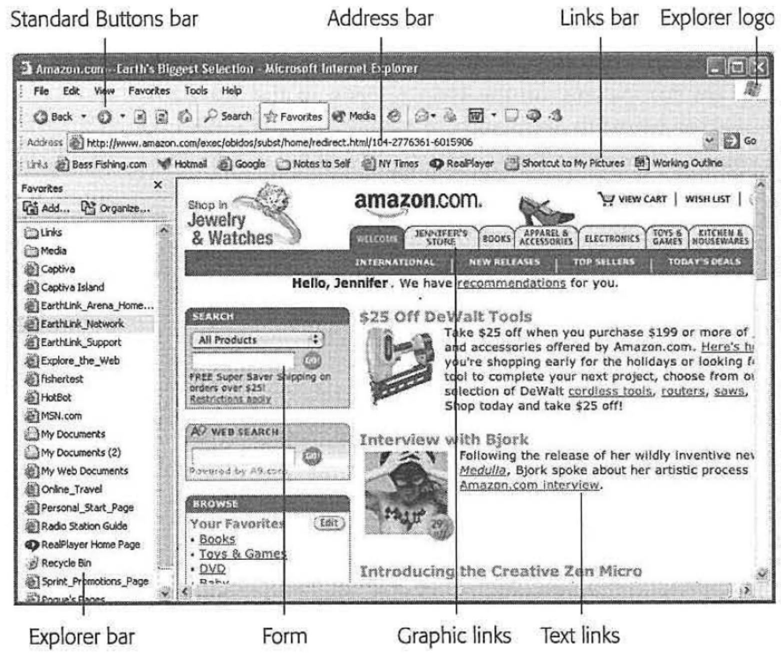


Figure 11-1: *The Internet Explorer window offers tools and features that let you navigate the Web almost effortlessly; these various toolbars and status indicators are described in this chapter. Chief among them: the Address bar, which displays the address (URL) of the Web page you're currently seeing, and the standard set of buttons, which let you control the Web-page loading process.*

188. Thus, Pogue's "Internet Explorer," like the web mode 172c of the '844 Patent, discloses a first content mode.

189. As shown in Figure 7-13 below, Pogue also discloses the user selecting Windows Media Player on the GUI, "which lets you play movies, listen to distant radio stations over the Internet, burn music CDs, and transfer music files to your portable MP3 player" via a media interface, thereby providing access to media content. EX-1006, 13, 227-228.

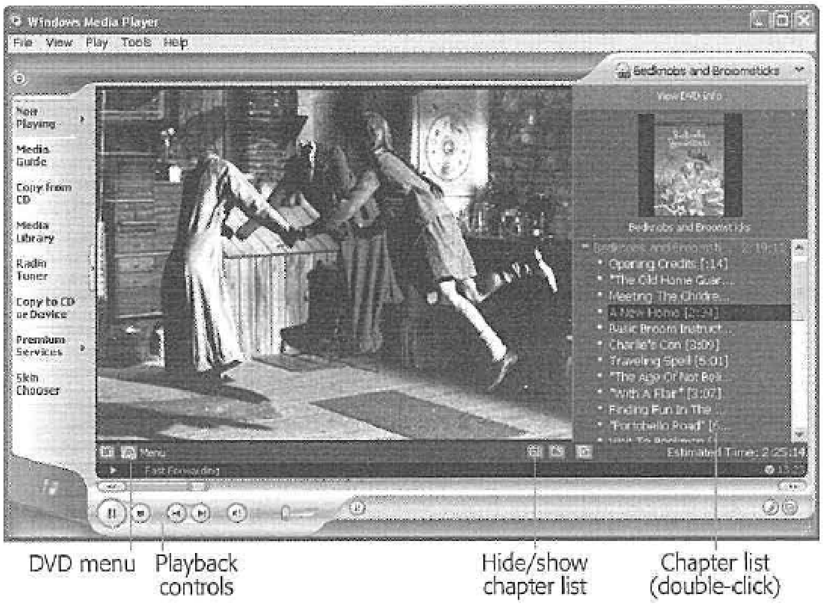

Windows Media Player
File View Play Tools Help
Now Playing
Media Guide
Copy from CD
Media Library
Radio Tuner
Copy to CD or Device
Premium Services
Skin Chooser
Bedknobs and Broomsticks
View DVD Info
Opening Credits [:14]
"The Old Home Guar...
Meeting The Childre...
A New Home [2:24]
Basic Broom Instruct...
Charlie's Con [3:09]
Traveling Spell [5:01]
"The Age Of Not Beli...
"With A Flair" [3:07]
Finding Fun In The ...
"Portobello Road" [6...
Menu
Estimated Time: 2:25:14
Fast Forwarding
DVD menu
Playback controls
Hide/show chapter list
Chapter list (double-click)

Figure 7-13:
Once the DVD is playing, you control the playback using the standard Media Player controls (at the bottom-left edge of the window). To switch to a different "chapter," use the list at right (click the little Show Playlist button if you don't see it).

To change language or parental-control options, choose Tools→Options and click the DVD tab.

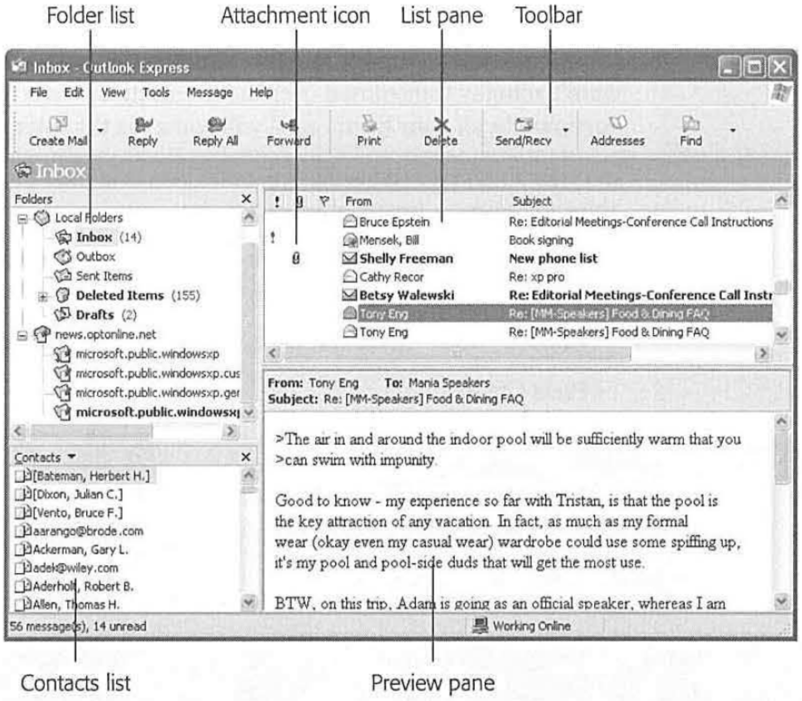
When you're playing the movie full screen, the playback controls reappear when you move the mouse a bit.

190. Thus, Pogue's "Windows Media Player," like the media mode 172a of the '844 Patent, discloses a second content mode.

191. As shown in Figure 12-1 below, Pogue also discloses the user selecting Outlook Express on the GUI "that lets you receive and send email messages" via an email interface, thereby providing access to emails. EX-1006, 373-375.

Figure 12-1:
The four panes of Outlook Express. Click a folder in the upper-left pane to see its contents in the upper-right pane. When you click the name of a message in the upper-right pane, the message itself appears in the lower-right pane.

Lower left: your list of MSN Messenger Service "buddies," as described in the previous chapter.


Folder list
Attachment icon
List pane
Toolbar
Inbox - Outlook Express
File
Edit
View
Tools
Message
Help
Create Mail
Reply
Reply All
Forward
Print
Delete
Send/Recv
Addresses
Find
Inbox
Folders
Local Folders
Inbox (14)
Outbox
Sent Items
Deleted Items (155)
Drafts (2)
news.optonline.net
microsoft.public.windowsxp
microsoft.public.windowsxp.cus
microsoft.public.windowsxp.gei
microsoft.public.windowsxj
Contacts
[Bateman, Herbert H.]
[Dixon, Julian C.]
[Vento, Bruce F.]
aarango@brode.com
Ackerman, Gary L.
adek@wiley.com
Aderholt, Robert B.
Allen, Thomas H.
56 message(s), 14 unread
Working Online
Contacts list
Preview pane

From	Subject
Bruce Epstein	Re: Editorial Meetings-Conference Call Instructions
Mensek, Bill	Book signing
Shelly Freeman	**New phone list**
Cathy Recor	Re: xp pro
Betsy Walewski	**Re: Editorial Meetings-Conference Call Instr**
Tony Eng	Re: [MM-Speakers] Food & Dining FAQ
Tony Eng	Re: [MM-Speakers] Food & Dining FAQ

From: Tony Eng **To:** Mania Speakers
Subject: Re: [MM-Speakers] Food & Dining FAQ

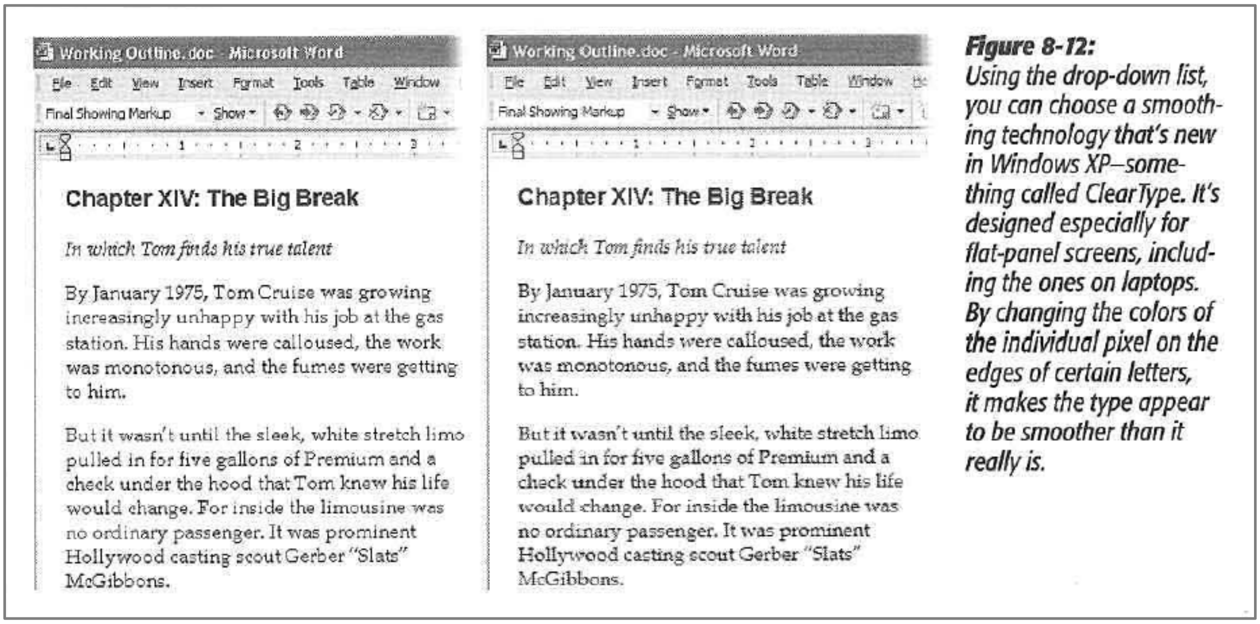
>The air in and around the indoor pool will be sufficiently warm that you
>can swim with impunity.

Good to know - my experience so far with Tristan, is that the pool is the key attraction of any vacation. In fact, as much as my formal wear (okay even my casual wear) wardrobe could use some spiffing up, it's my pool and pool-side duds that will get the most use.

BTW, on this trip, Adam is going as an official speaker, whereas I am

192. Thus, Pogue's "Outlook Express," like the connect mode 172b of the '844 Patent, discloses a third content mode.

193. As shown in Figure 8-12 below, Pogue discloses the user selecting Microsoft Word on the GUI, which includes a word processing interface, thereby providing access to Word documents. EX-1006, 31, 266.


Working Outline.doc - Microsoft Word
File Edit View Insert Format Tools Table Window
Final Showing Markup
Show
Working Outline.doc - Microsoft Word
File Edit View Insert Format Tools Table Window
Final Showing Markup
Show

Chapter XIV: The Big Break

In which Tom finds his true talent

By January 1975, Tom Cruise was growing increasingly unhappy with his job at the gas station. His hands were calloused, the work was monotonous, and the fumes were getting to him.

But it wasn't until the sleek, white stretch limo pulled in for five gallons of Premium and a check under the hood that Tom knew his life would change. For inside the limousine was no ordinary passenger. It was prominent Hollywood casting scout Gerber "Slats" McGibbons.

Chapter XIV: The Big Break

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But it wasn't until the sleek, white stretch limo pulled in for five gallons of Premium and a check under the hood that Tom knew his life would change. For inside the limousine was no ordinary passenger. It was prominent Hollywood casting scout Gerber "Slats" McGibbons.

Figure 8-12:
Using the drop-down list, you can choose a smoothing technology that's new in Windows XP—something called ClearType. It's designed especially for flat-panel screens, including the ones on laptops. By changing the colors of the individual pixel on the edges of certain letters, it makes the type appear to be smoother than it really is.

194. Thus, Pogue's "Microsoft Word," like the applications mode 172d of the '844 Patent, discloses a fourth content mode.

195. Various content modes identified in the '844 Patent and Pogue are summarized in Table 2 below:

'844 Patent	Pogue
Web mode 172c	Internet (Internet Explorer)
Media mode 172a	Windows Media Player
Connect mode 172b	Email (Outlook Express)
Applications mode 172d	Microsoft Word

Table 2

196. There would have been motivation to combine, and a reasonable expectation of success in combining, Pogue with Shimura and Tsuji because prior art elements are merely combined according to known methods to yield predictable results. That is, Pogue taught the well-known Windows XP operating system and

various content modes, and application of this teaching to Shimura and Tsuji would have yielded a predictable portable computer with Tsuji's R or L button programmed to access Pogue's Start menu.

197. Thus, the POSITA would have been motivated to combine the teachings of Shimura and Tsuji with Pogue's teachings to arrive at the Shimura-Tsuji-Pogue Computer using the Windows XP operating system that utilizes the R or L button programmed to access Pogue's Start menu and various content modes therein.

3. Claim 1

a. Limitation [1pre]

[1pre] "A portable computer configurable between a plurality of display modes including a laptop mode and an easel mode wherein transitions between the plurality of display modes allows an operator to interact with a single display screen in each of the plurality of display modes, the portable computer comprising:"

198. The Shimura-Tsuji combination discloses [1pre] and renders it obvious. *See* VII.A; VIII.A.1.a.

199. As shown in Figures 1, 4, and 5 below, Shimura discloses a laptop computer, which is a portable computer, configurable into various display modes. As summarized in Table 3 below, a POSITA would have understood that:

- Shimura's Figure 1 discloses the claimed "laptop mode" of the '844 Patent (FIG. 1);
- Shimura's Figure 5 discloses the claimed "easel mode" of the '844 Patent (FIG. 4); and
- Shimura's Figure 4 discloses the claimed "frame mode" of the '844 Patent (FIG. 26).

<table>
<tr><th>Shimura</th><th>'844 Patent</th></tr>
<tr><td colspan="2">Laptop mode</td></tr>
<tr><td>
【Figure 1】
図 1

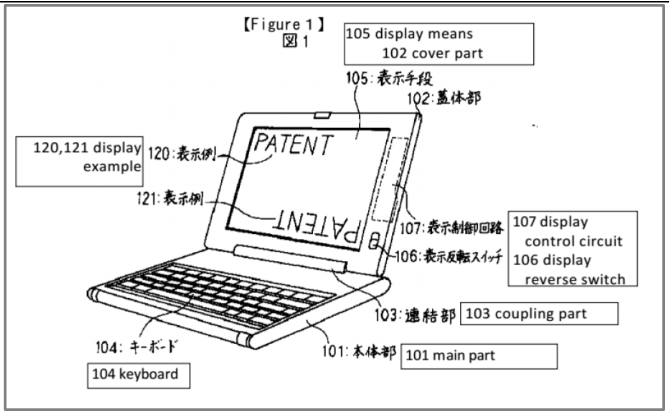
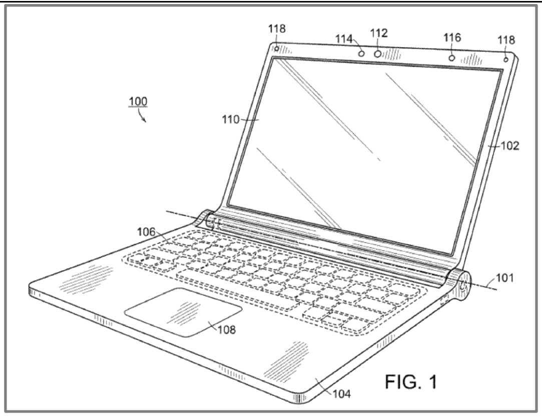

105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
121: 表示例
PATENT
PATENT
107: 表示制御回路
106: 表示反転スイッチ
107 display control circuit
106 display reverse switch
103: 連結部
103 coupling part
104: キーボード
104 keyboard
101: 本体部
101 main part
</td><td>

118
114
112
116
118
100
110
102
106
101
108
104

FIG. 1
</td></tr>
</table>

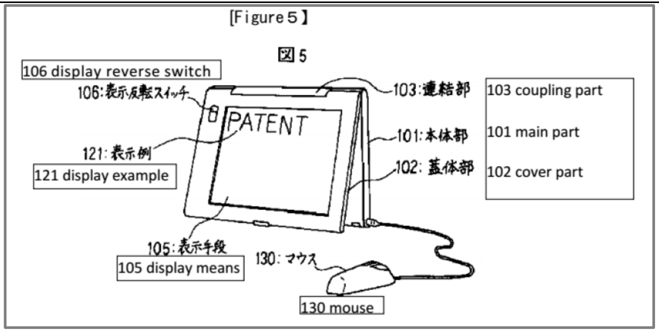
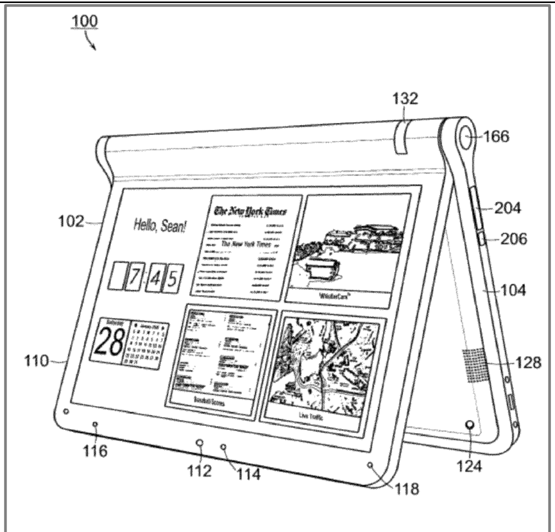
<table>
<tr><th colspan="2">Easel mode</th></tr>
<tr><td>

[Figure 5]
図5
106 display reverse switch
106:表示反転スイッチ
PATENT
103:連結部
103 coupling part
101:本体部
101 main part
102:蓋体部
102 cover part
121:表示例
121 display example
105:表示手段
105 display means
130:マウス
130 mouse
</td><td>

100
132
166
204
206
104
128
102
Hello, Sean!
The New York Times
7 4 5
28
WeatherCam
Baseball Scores
Live Traffic
110
116
112
114
118
124

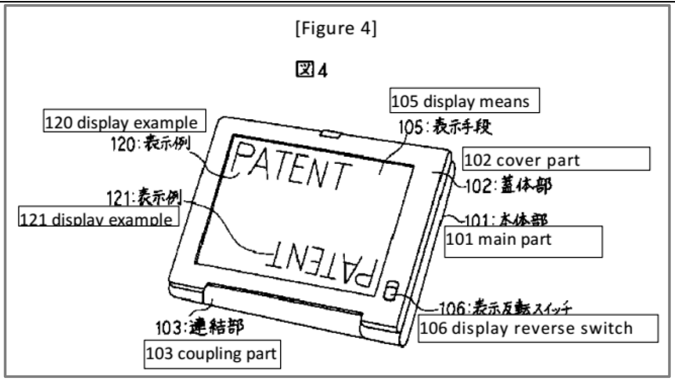
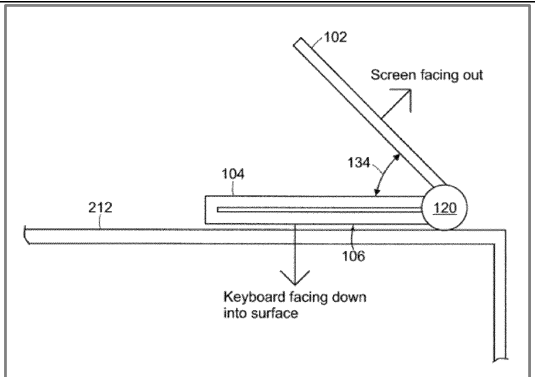
FIG. 4
</td></tr>
<tr><th colspan="2">Frame mode</th></tr>
<tr><td>

[Figure 4]
図4
120 display example
120:表示例
121:表示例
121 display example
PATENT
PATENT
105 display means
105:表示手段
102 cover part
102:蓋体部
101:本体部
101 main part
106:表示反転スイッチ
106 display reverse switch
103:連結部
103 coupling part
</td><td>

102
Screen facing out
134
104
212
120
106
Keyboard facing down into surface

FIG. 26
</td></tr>
</table>

Table 3

200. A POSITA would have been motivated to combine the teachings of Tsuji with the teachings of Shimura to arrive at the Shimura-Tsuji Computer capable of transitioning between the plurality of display modes. *See* VIII.A.1.a. This

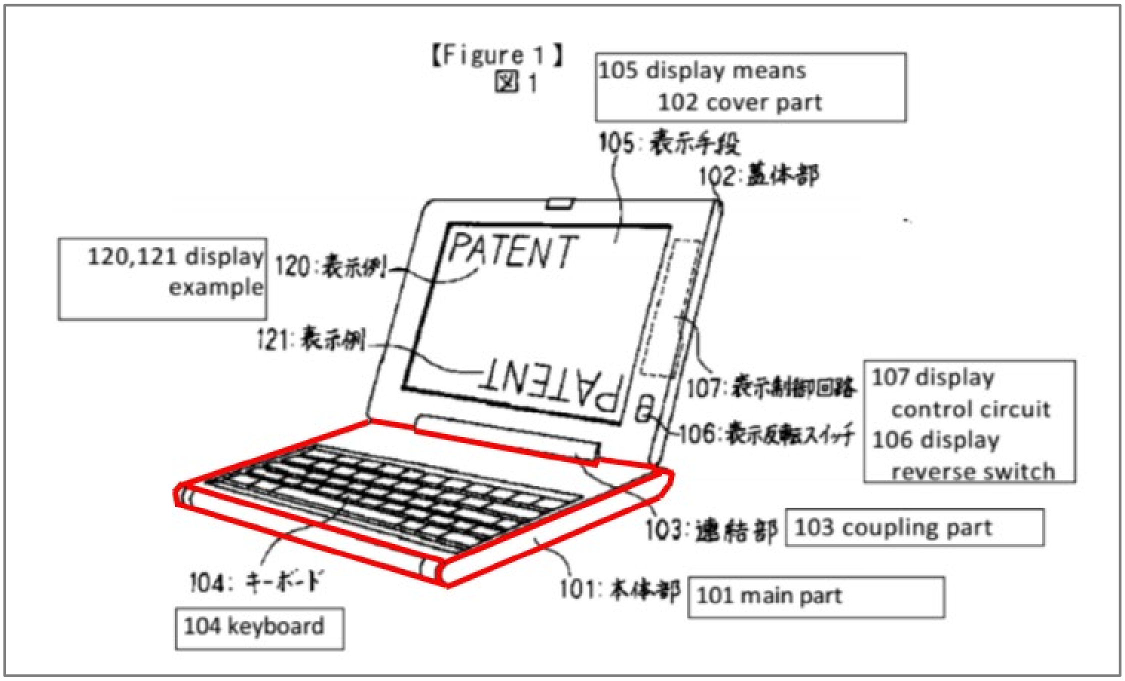
computer has, as explicitly disclosed by Tsuji, a touch-sensitive display in the cover part 102 capable of receiving input from a stylus pen or finger to "allow an operator to interact with a single display screen in each of the plurality of display modes." EX-1005, ¶31.

b. Limitation [1a]

[1a] "a base including a keyboard;"

201. Shimura discloses [1a]. *See* VII.A.

202. Shimura's Figure 1 below shows the claimed "base" (Shimura's main part 101 outlined in red) including the claimed "keyboard" (Shimura's keyboard 104).

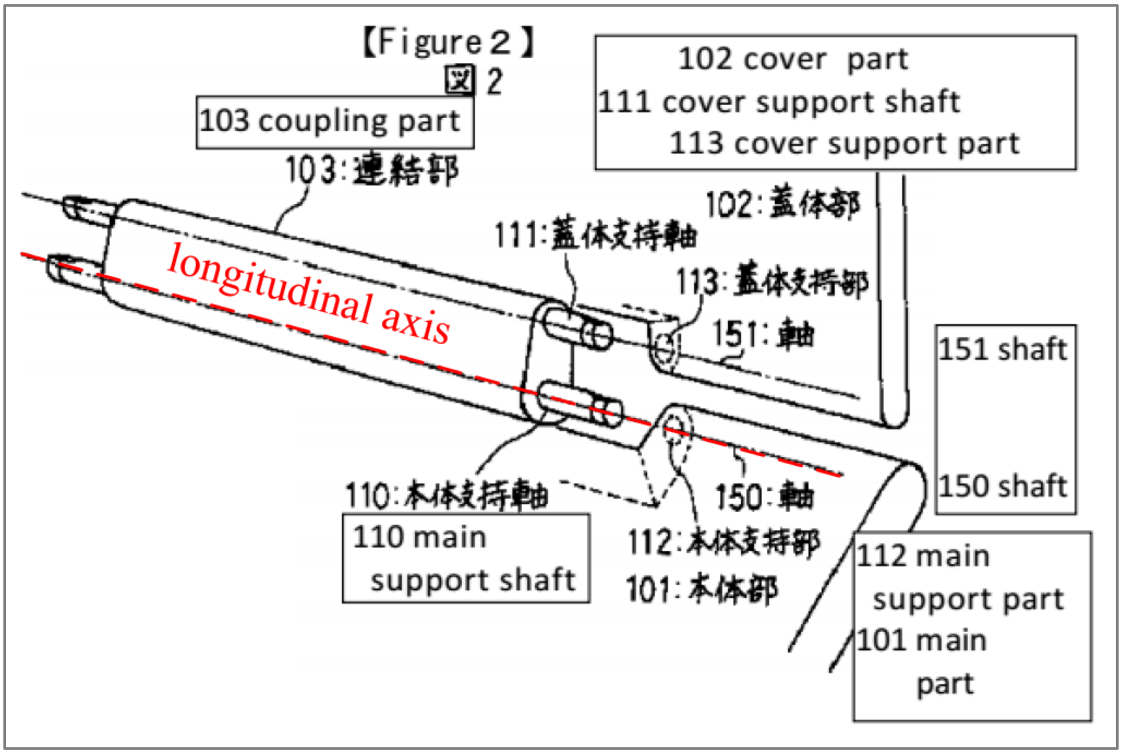

【Figure 1】
図1
105 display means
102 cover part
105:表示手段
102:蓋体部
PATENT
PATENT
120,121 display example
120:表示例
121:表示例
107:表示制御回路
106:表示反転スイッチ
107 display control circuit
106 display reverse switch
103:連結部
103 coupling part
104:キーボード
104 keyboard
101:本体部
101 main part

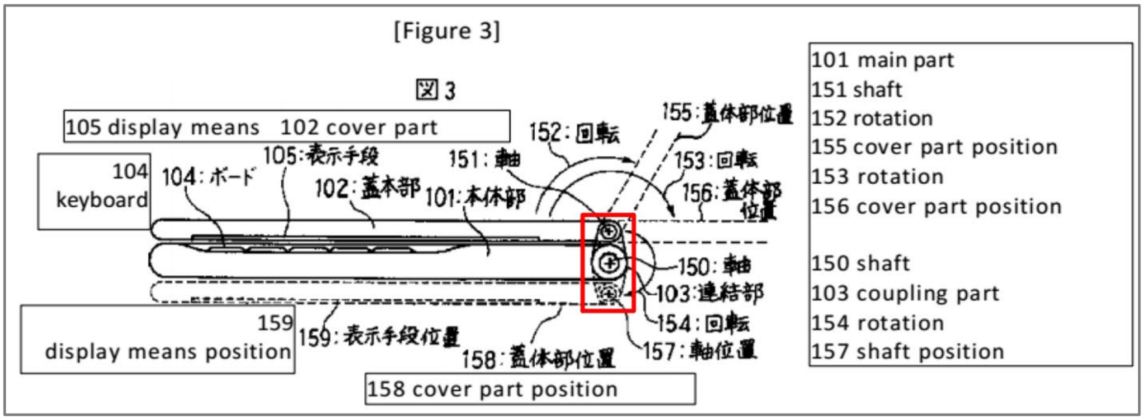
c. Limitation [1b1]

[1b1] "a main display component rotatably coupled to the base such that the main display component and the base are rotatable with respect to one another about a longitudinal axis running along an interface between the main display component and the base to transition between at least the laptop mode and the easel mode,"

203. Shimura discloses [1b1]. *See* VII.A.

204. As shown in Figures 2 and 3 below, the Shimura Computer discloses "a main display component [Shimura's cover part 102] rotatably coupled to the base [Shimura's main part 101] such that the main display component [102] and the base [101] are rotatable with respect to one another about a longitudinal axis [Shimura's support shaft 110]" to transition between the plurality of display modes (e.g., laptop and easel modes). EX-1004, ¶¶12-13. The Shimura Computer further discloses that Shimura's support shaft 110 "run[s] along an interface between the main display component [102] and the base [101]."


【Figure 2】
図 2
103 coupling part
103:連結部
102 cover part
111 cover support shaft
113 cover support part
102:蓋体部
111:蓋体支持軸
113:蓋体支持部
151:軸
longitudinal axis
151 shaft
150 shaft
110:本体支持軸
110 main support shaft
150:軸
112:本体支持部
101:本体部
112 main support part
101 main part

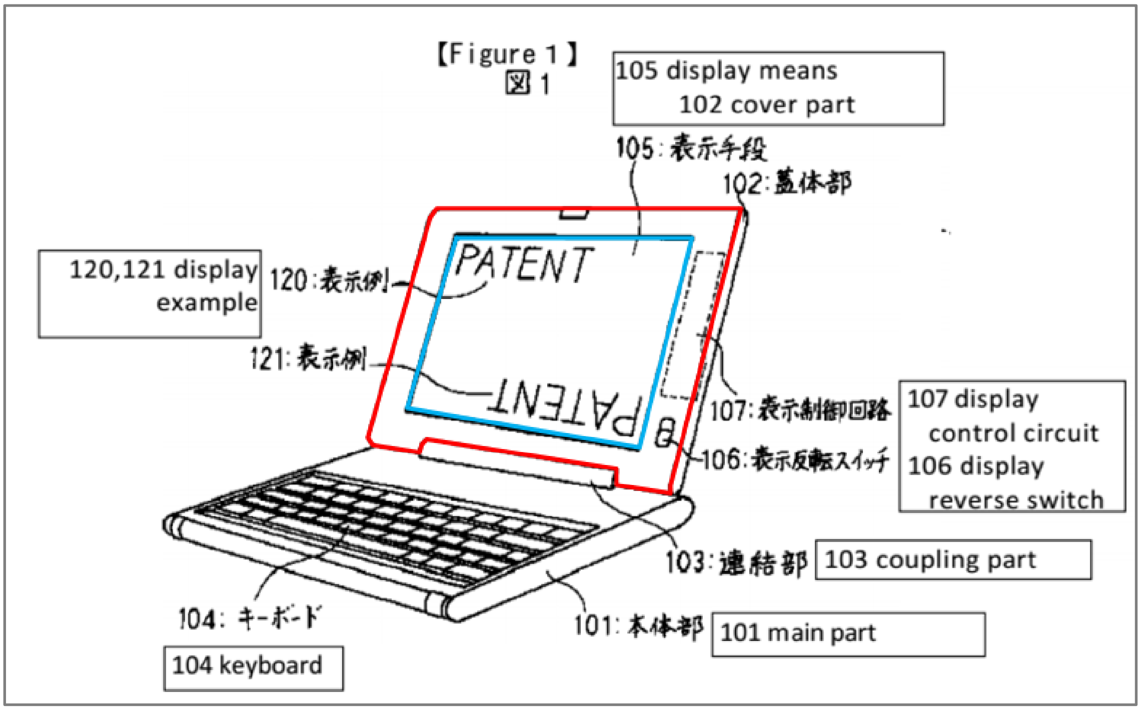

[Figure 3]
図 3
105 display means 102 cover part
104 keyboard
104:ボード
105:表示手段
102:蓋本部
101:本体部
151:軸
152:回転
155:蓋体部位置
153:回転
156:蓋体部位置
150:軸
103:連結部
154:回転
157:軸位置
158:蓋体部位置
159:表示手段位置
159 display means position
158 cover part position
101 main part
151 shaft
152 rotation
155 cover part position
153 rotation
156 cover part position
150 shaft
103 coupling part
154 rotation
157 shaft position

d. Limitation [1b2]

[1b2] "the main display component including the single display screen,"

205. The Shimura-Tsuji combination discloses [1b2] and renders it obvious. *See* VIII.A.1.a; [1pre].

206. As illustrated in Shimura's Figure 1 below, Shimura discloses "the main display component [102 red]," and Tsuji discloses "the single display screen [Tsuji's touch-sensitive display blue]."


【Figure 1】
図1
105 display means
102 cover part
105：表示手段
102：蓋体部
120,121 display example
120：表示例
121：表示例
PATENT
PATENT
B
107：表示制御回路
106：表示反転スイッチ
107 display control circuit
106 display reverse switch
103：連結部
103 coupling part
104：キーボード
104 keyboard
101：本体部
101 main part

e. Limitation [1b3]

[1b3] "wherein the transition between the laptop mode and the easel mode allows the operator to operate the portable computer while viewing the single display screen in each of the plurality of display modes, wherein"

207. The Shimura-Tsuji combination discloses [1b3] and renders it obvious. *See* VIII.A.1.a; VIII.A.1.c; [1pre].

208. Shimura discloses display modes (i.e., laptop and easel modes) where the display component (102) is facing the operator (i.e., "while [the operator] view[s] the single display screen in each of the plurality of display modes"). *See* VII.A; [1pre]. The Shimura-Tsuji Computer discloses a portable computer capable of transitioning between the plurality of display modes and having a touch-sensitive display that "allows the operator to operate the portable computer" in the laptop and easel modes. *See* VIII.A.1.a.

f. Limitation [1c]

[1c] "the laptop mode is configured to display to a user on the main display component a first content mode having a first content display orientation with the main display component oriented towards the user and the keyboard oriented to receive input from the user;"[13]

209. The Shimura-Tsuji-Pogue combination discloses [1c] and renders it obvious. *See* VII.A; VIII.A.1.c; VIII.A.2.

210. The "first content mode" means "a user selectable element displayed on a user interface that, when selected, allows the user to access the content orga-

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[13] Claim 1 references both an operator and a user interchangeably, and they are understood to mean the same thing.

nized therein," which includes at least a web content mode. *See* VI; EX-1001, 11:49-50.

211. Pogue discloses "a first content mode" (i.e., "Internet Explorer" used to navigate the web using a web interface, as shown in Figure 11-1 below) corresponding to the web mode of the '844 Patent. *See* VIII.A.2; EX-1001, 11:49-50; EX-1006, 337-338.

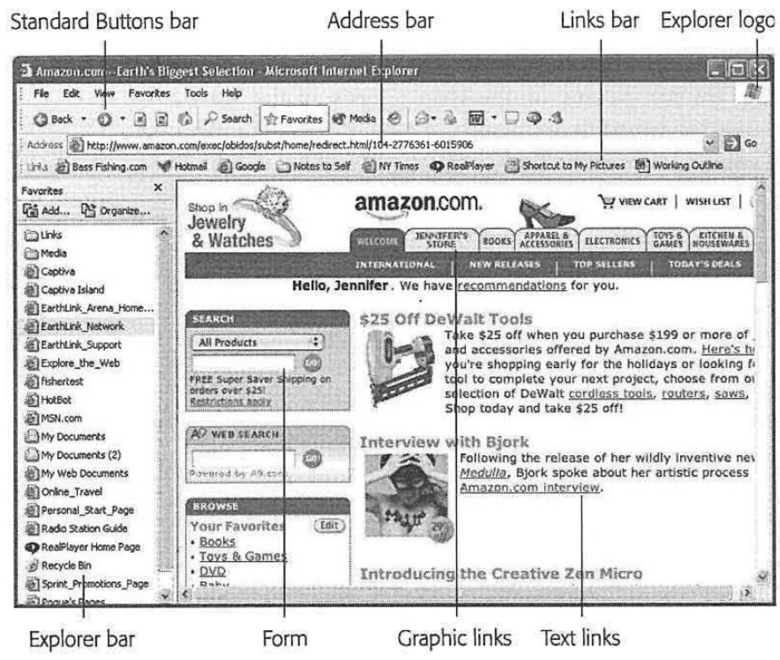


Figure 11-1: *The Internet Explorer window offers tools and features that let you navigate the Web almost effortlessly; these various toolbars and status indicators are described in this chapter. Chief among them: the Address bar, which displays the address (URL) of the Web page you're currently seeing, and the standard set of buttons, which let you control the Web-page loading process.*

212. When the Shimura-Tsuji-Pogue Computer is configured in the laptop mode (i.e., the cover part and keyboard of the Shimura-Tsuji-Pogue Computer face the user), the orientation of the displayed content is in a normal view. *See* VIII.A.1; EX-1004, ¶¶11, 14. When the user opens Internet Explorer in the laptop mode, the displayed content would be in a normal view. *See* VIII.A.1.c. Thus, the

Shimura-Tsuji-Pogue Computer "display[s] to a user on the main display component [102] a first content mode [Pogue's Internet Explorer] having a first content display orientation [normal view] with the main display component [102] oriented towards the user and the keyboard [104] oriented to receive input from the user."

g. Limitation [1d1]

> ***[1d1] "the easel mode is configured to display to the user on the main display component a second content mode having a second content display orientation with the main display component oriented towards the user and the keyboard oriented away from the user, wherein the first and second content display orientations are 180 degrees relative to each other,"***

213. The Shimura-Tsuji-Pogue combination discloses [1d1] and renders it obvious. *See* VII.A; VIII.A.1.c; VIII.A.2.

214. The "second content mode" means "a user selectable element displayed on a user interface that, when selected, allows the user to access the content organized therein," which includes at least a media mode. *See* VI; EX-1001, 11:44-46.

215. Pogue discloses "a second content mode" (i.e., "Windows Media Player" to display a media interface where a user can watch a movie, as shown in

Figure 7-13 below) corresponding to the media mode of the '844 Patent. *See* VIII.A.2; EX-1006, 227-228. A POSITA would readily understand that in an easel mode, it would be convenient to watch a video using Windows Media Player because there is no distraction of a keyboard and it takes up less real estate on a surface.

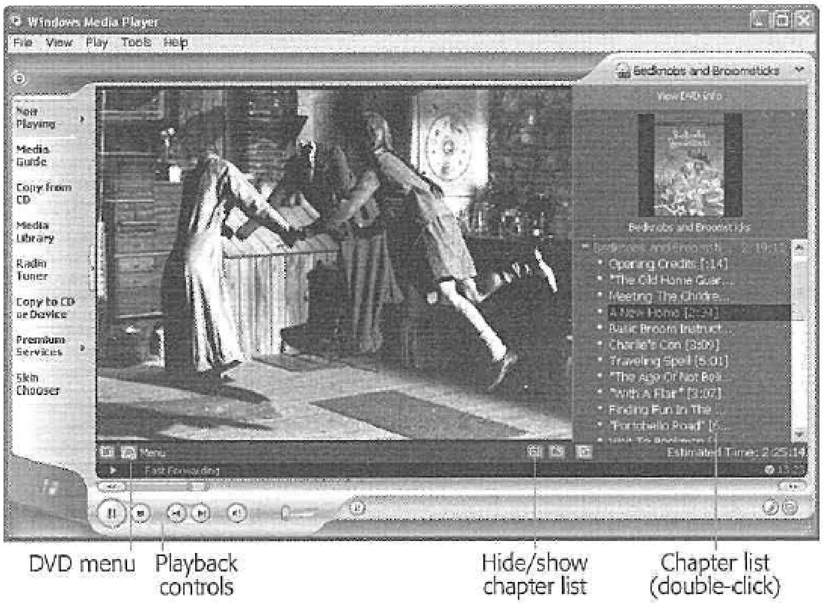

Windows Media Player
File View Play Tools Help
Now Playing
Media Guide
Copy from CD
Media Library
Radio Tuner
Copy to CD or Device
Premium Services
Skin Chooser
DVD menu
Playback controls
Hide/show chapter list
Chapter list (double-click)

Figure 7-13: *Once the DVD is playing, you control the playback using the standard Media Player controls (at the bottom-left edge of the window). To switch to a different "chapter," use the list at right (click the little Show Playlist button if you don't see it).*

To change language or parental-control options, choose Tools→Options and click the DVD tab.

When you're playing the movie full screen, the playback controls reappear when you move the mouse a bit.

216. When the Shimura-Tsuji-Pogue Computer is configured in the easel mode (i.e., the cover part 102 faces the user, and the keyboard faces away from the user), the orientation of the displayed content is in an inverted view. *See* VIII.A.1; [1pre]; EX-1004, ¶¶11, 14. When the user opens Windows Media Player in the easel mode, the displayed content would be in an inverted view. *See* VIII.A.1.c. Thus, the Shimura-Tsuji-Pogue Computer "display[s] to a user on the main display component [102] a second content mode [Pogue's Windows Media Player] having

a second content display orientation [inverted view] with the main display component [102] oriented towards the user and the keyboard [104] oriented away from the user."

h. Limitation [1d2]

> ***[1d2] "and wherein the portable computer is operable in the easel mode to enable the user to interact with displayed content without interacting with the keyboard; and"***

217. The Shimura-Tsuji-Pogue combination discloses [1d2] and renders it obvious. *See* VII.A; VIII.A.1.a; [1pre] (discussion of touch-sensitive display).

218. The Shimura-Tsuji-Pogue Computer in the easel mode would be configured to display a video using Windows Media Player. *See* [1d1]. Using the touch screen of the Shimura-Tsuji-Pogue Computer would allow a user to play, pause, or affect playback of the video by touching the playback controls (red in FIG. 7-13 below).

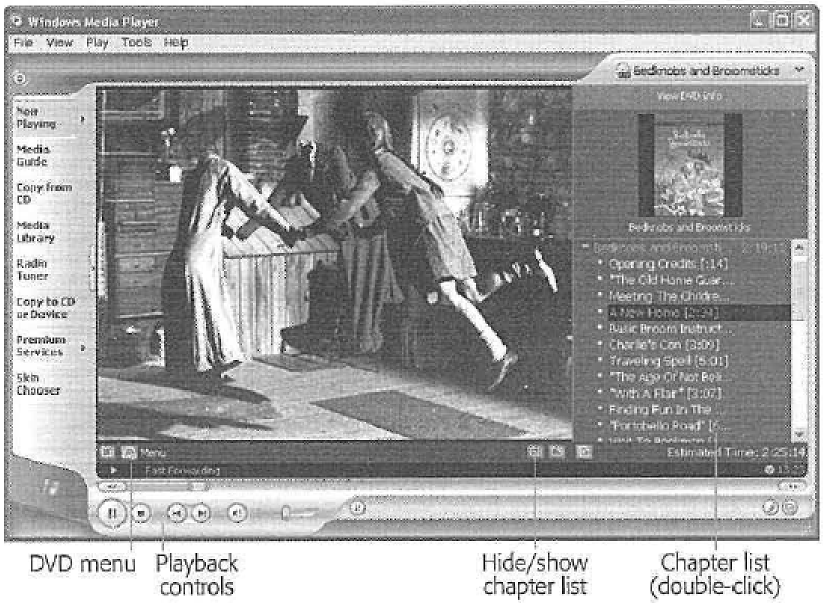

Windows Media Player
File View Play Tools Help
Now Playing
Media Guide
Copy from CD
Media Library
Radio Tuner
Copy to CD or Device
Premium Services
Skin Chooser
Bedknobs and Broomsticks
View DVD Info
Opening Credits [1:14]
"The Old Home Guar...
Meeting The Childre...
A New Home [2:54]
Basic Broom Instruct...
Charlie's Con [3:09]
Traveling Spell [5:01]
"The Age Of Not Beli...
"With A Flair" [3:07]
Finding Fun In The ...
"Portobello Road" [6...
Menu
Fast Forwarding
Estimated Time: 2:25:14
DVD menu
Playback controls
Hide/show chapter list
Chapter list (double-click)

Figure 7-13:
Once the DVD is playing, you control the playback using the standard Media Player controls (at the bottom-left edge of the window). To switch to a different "chapter," use the list at right (click the little Show Playlist button if you don't see it).

To change language or parental-control options, choose Tools→Options and click the DVD tab.

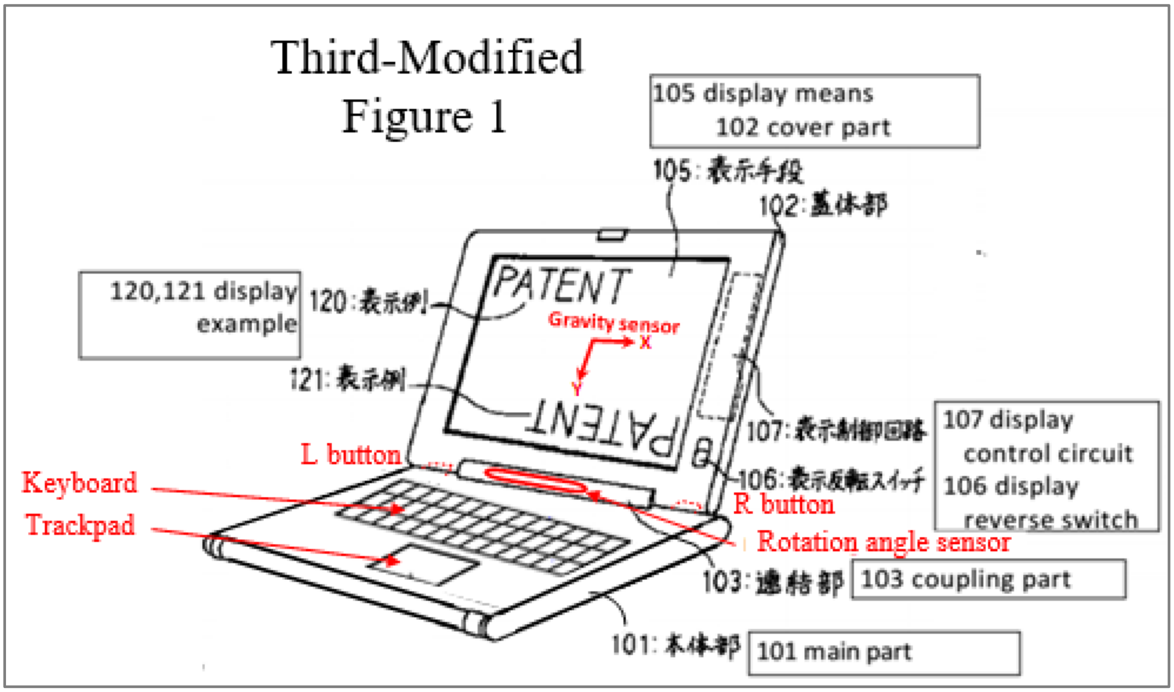
When you're playing the movie full screen, the playback controls reappear when you move the mouse a bit.

i. Limitation [1e1]

> ***[1e1] "a navigation control disposed at least partially within the base and rotatable about the longitudinal axis, the navigation control configured to permit a user to control at least one of operating parameters of the portable computer and content displayed on the single display screen"***

219. The Shimura-Tsuji-Pogue combination discloses [1e1] and renders it obvious. *See* VII.C; VIII.A.2.

220. The Shimura-Tsuji-Pogue Computer includes a trackpad disposed on the upper surface of the base. *See* VIII.A.2; Third-Modified Figure 1 of Shimura (below).


Third-Modified
Figure 1
105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
121: 表示例
PATENT
Gravity sensor
X
Y
PATENT
L button
Keyboard
Trackpad
107: 表示制御回路
107 display control circuit
106: 表示反転スイッチ
106 display reverse switch
R button
Rotation angle sensor
103: 連結部
103 coupling part
101: 本体部
101 main part

221. The trackpad of the Shimura-Tsuji-Pogue Computer is the "navigation control [1] disposed at least partially within the base and [2] rotatable about the longitudinal axis" because (1) the trackpad is disposed within the main part 101 of the Shimura-Tsuji-Pogue Computer that (2) can be rotated about the main support shaft 110 of the coupling part 103 of the Shimura-Tsuji-Pogue Computer.

222. Moreover, the trackpad of the Shimura-Tsuji-Pogue Computer can be used to control various features of the portable computer via a software-driven graphical user interface. One example is controlling the volume by, for example, dragging the volume bar (blue) up or clicking "Mute all" (red) illustrated in Figure 7-14 below. EX-1006, 229-231.

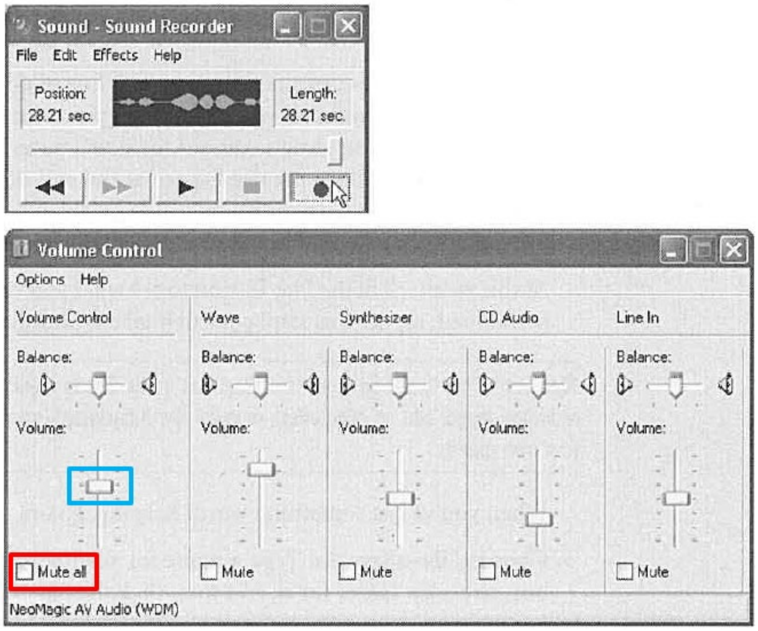

Sound - Sound Recorder
File Edit Effects Help
Position: 28.21 sec.
Length: 28.21 sec.
Volume Control
Options Help
Volume Control
Wave
Synthesizer
CD Audio
Line In
Balance:
Volume:
Mute all
Mute
NeoMagic AV Audio (WDM)

Figure 7-14: *Sound Recorder (top) lets you capture the sounds of your world–digitally. Volume Control (bottom) offers left-to-right stereo balance controls and volume adjustments for every sound-related component of your PC.*

223. In this example, the trackpad of the Shimura-Tsuji-Pogue Computer "control[s] at least one of operating parameters of the portable computer" because the '844 Patent describes one example of controlling an operating parameter as "adjust[ing] a volume of sound produced by the portable computer." EX-1001, 3:36-38.

224. The trackpad of the Shimura-Tsuji-Pogue Computer can also be used to press Pogue's Start menu button (purple in Figure 2-3 below) that opens the Start menu (light green) that lists at least "Internet" (dark green), "E-mail" (orange), "Microsoft Word" (blue), and "Windows Media Player" (red). EX-1006, 24-25.

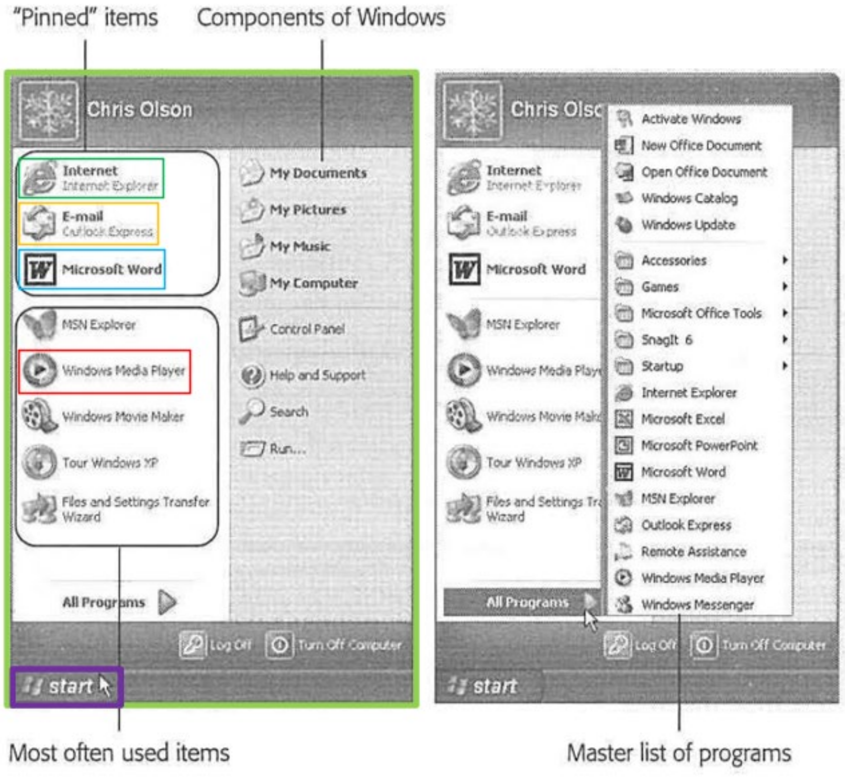

"Pinned" items
Components of Windows
Chris Olson
Internet
Internet Explorer
E-mail
Outlook Express
Microsoft Word
MSN Explorer
Windows Media Player
Windows Movie Maker
Tour Windows XP
Files and Settings Transfer Wizard
All Programs
My Documents
My Pictures
My Music
My Computer
Control Panel
Help and Support
Search
Run...
Log Off
Turn Off Computer
start
Activate Windows
New Office Document
Open Office Document
Windows Catalog
Windows Update
Accessories
Games
Microsoft Office Tools
SnagIt 6
Startup
Internet Explorer
Microsoft Excel
Microsoft PowerPoint
Microsoft Word
MSN Explorer
Outlook Express
Remote Assistance
Windows Media Player
Windows Messenger
Most often used items
Master list of programs

Figure 2-3:
Left: The Start menu is divided into several distinct sections. The top left section is yours to play with. You can "pin" whatever programs you want here, in whatever order you like. The lower-left section lists the programs you use most often, by Windows XP's calculations. (You can delete individual items here, but you can't add items manually or rearrange them.) The right-side column provides direct access to certain Windows features and standard Windows programs.

Right: The All Programs menu superimposes itself on the standard two-column Start menu, listing almost every piece of software you've ever installed. You can rearrange, add to, or delete items from this list.

225. In this example, the trackpad of the Shimura-Tsuji-Pogue Computer "control[s] . . . content displayed on the single display screen" because the '844 Patent describes one example of controlling displayed content as "display[ing] at least one of a plurality of modes of content." EX-1001, 3:36-38.

226. Thus, the trackpad of the Shimura-Tsuji-Pogue Computer in each of the above-described examples discloses the claimed "navigation control."

227. Alternatively, Pogue discloses a user using the Start menu button (e.g., pressing Windows logo key or Ctrl+Esc) on the keyboard to open the Start menu (illustrated in Figure 2-3 above) that lists at least "Internet," E-mail," "Windows Media Player," and "Microsoft Word." EX-1006, 24-25. A POSITA would

have known to implement the Start menu button in the keyboard of the Shimura-Tsuji-Pogue Computer, which is "disposed at least partially within the base [101] and rotatable about the longitudinal axis [main support shaft 110]."

228. Thus, the Start menu button on the keyboard of the Shimura-Tsuji-Pogue Computer "control[s] . . . content displayed on the single display screen" because the '844 Patent describes one example of controlling displayed content as "display[ing] at least one of a plurality of modes of content." EX-1001, 3:36-38.

229. The keyboard of the Shimura-Tsuji-Pogue Computer includes arrow keys, as disclosed in Tsuji. *See* VII.B; VIII.A.1.b. With the Start menu open, a user would be able to use the arrow keys on the keyboard to select for display one of the modes of content (e.g., "Internet," E-mail," "Windows Media Player," and "Microsoft Word"). EX-1005, ¶¶35, 43; EX-1006, 23-26, 43.

230. In this example, the arrow keys of the Shimura-Tsuji-Pogue Computer "control at least one of operating parameters of the portable computer" because the '844 Patent describes one example of controlling an operating parameter as "select[ing] a mode of content for display by the portable computer." EX-1001, 3:38-41.

231. Thus, the Start menu button and the arrow keys on the keyboard of the Shimura-Tsuji-Pogue Computer in the above-described examples disclose the claimed "navigation control."

j. Limitation [1e2]

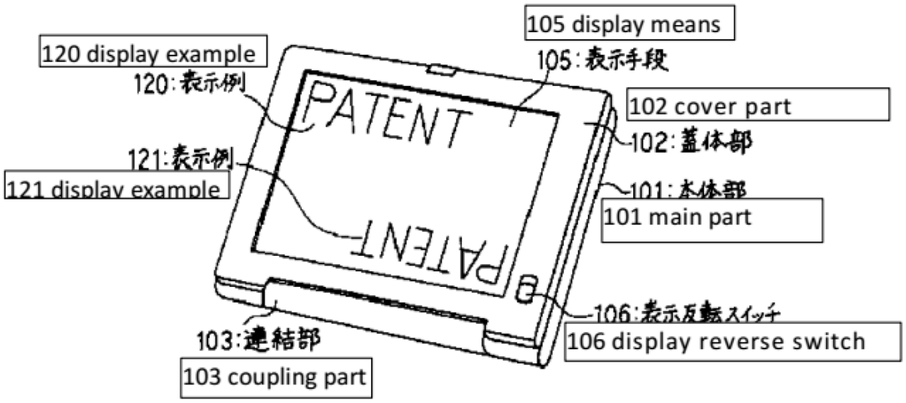
> ***[1e2] "wherein the plurality of modes includes a frame [mode] in which the main display component is oriented towards the operator, the base contacts a substantially horizontal surface, and the keyboard faces the substantially horizontal surface."[14]***

232. Shimura discloses [1e2]. *See* VII.A; VIII.A.1.c; VIII.A.2; [1pre]

233. When the Shimura-Tsuji-Pogue Computer is configured in the frame mode, with the cover part 102 facing up toward the user and the keyboard 104 facing down toward a desk, the orientation of the displayed content is in a normal view. *See* VIII.A.1; [1pre]; EX-1004, ¶¶11, 14, Figure 4 (below).

[Figure 4]

図4


105 display means
105：表示手段
120 display example
120：表示例
PATENT
102 cover part
102：蓋体部
121：表示例
121 display example
101：本体部
101 main part
PATENT
106：表示反転スイッチ
106 display reverse switch
103：連結部
103 coupling part

---

[14] The term "mode" is missing and is assumed to be included.

234. In this configuration, the keyboard 104 faces "a substantially horizontal surface" of the desk on which the portable computer is placed.

235. Accordingly, the Shimura-Tsuji-Pogue combination renders obvious Claim 1.

4. Claim 3

"The portable computer of claim 1, further comprising a first navigation button disposed on one of the base and the display component and configured to permit the user to manipulate selected content displayed on the screen."

236. The Shimura-Tsuji-Pogue combination discloses the additional limitation of this claim and renders the claim obvious. *See* VII.C; VIII.A.2.

237. The Shimura-Tsuji-Pogue Computer discloses "a first navigation button [a Windows logo key on the keyboard 104] disposed on . . . the base [101]." *See* VIII.A.2; [1e1]. Pogue's Start menu discloses the claimed "selected content displayed on the screen" because a user selects this displayed content by pressing, for example, the Windows logo key. EX-1006, 25. Opening the Start menu using the Windows logo key "permit[s] the user to manipulate selected content," e.g., highlight, drag and drop, or launch a content mode such as Microsoft Word, "via an input device," e.g., trackpad, touch screen, keyboard, mouse, etc.

5. Claim 4

a. Limitation [4a]

[4a] "The portable computer of claim 3, wherein the screen is configured to display at least one of a plurality of modes of content; and"

238. Pogue discloses [4a]. *See* VII.C; [1c]; [1d1].

239. The "modes of content" means "user selectable elements displayed on a user interface that, when selected, allows the user to access the content organized therein," which includes one or more of media, connect, application, and web content modes. *See* VI; EX-1001, 11:44-52.

240. Pogue discloses various "modes of content" (i.e., "Internet Explorer" corresponding to the web mode of the '844 Patent, "Outlook Express " corresponding to the connect mode of the '844 Patent, "Windows Media Player" corresponding to the media mode of the '844 Patent, and "Microsoft Word" corresponding to the applications mode of the '844 Patent. *See* VIII.A.2; EX-1001, 11:49-50; EX-1006, 3, 4, 23-25, 337-338.

241. The '844 Patent describes a "home screen" as a user interface that "displays a plurality of modes of content 172." EX-1001, 11:35-38.

242. Pogue's Start menu button (purple in Figure 2-3 below) that opens the Start menu (light green) lists at least "Internet" (dark green), "E-mail" (orange), "Microsoft Word" (blue), and "Windows Media Player" (red). EX-1006, 23-25.

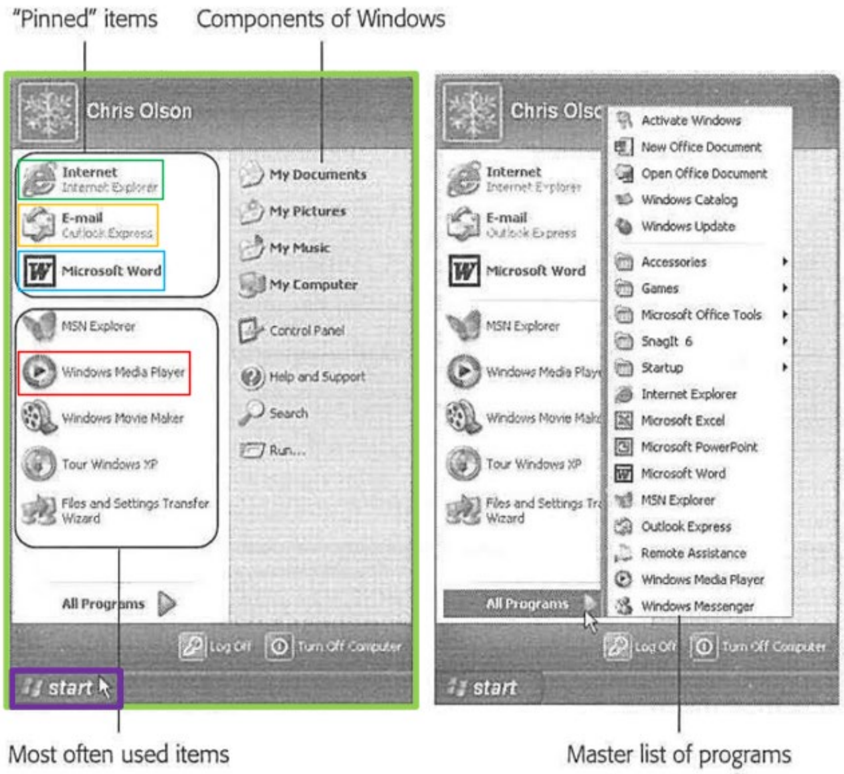

"Pinned" items
Components of Windows
Chris Olson
Internet
Internet Explorer
E-mail
Outlook Express
Microsoft Word
MSN Explorer
Windows Media Player
Windows Movie Maker
Tour Windows XP
Files and Settings Transfer Wizard
All Programs
My Documents
My Pictures
My Music
My Computer
Control Panel
Help and Support
Search
Run...
Log Off
Turn Off Computer
start
Activate Windows
New Office Document
Open Office Document
Windows Catalog
Windows Update
Accessories
Games
Microsoft Office Tools
SnagIt 6
Startup
Internet Explorer
Microsoft Excel
Microsoft PowerPoint
Microsoft Word
MSN Explorer
Outlook Express
Remote Assistance
Windows Media Player
Windows Messenger
Most often used items
Master list of programs

Figure 2-3:
Left: The Start menu is divided into several distinct sections. The top left section is yours to play with. You can "pin" whatever programs you want here, in whatever order you like. The lower-left section lists the programs you use most often, by Windows XP's calculations. (You can delete individual items here, but you can't add items manually or rearrange them.) The right-side column provides direct access to certain Windows features and standard Windows programs.

Right: The All Programs menu superimposes itself on the standard two-column Start menu, listing almost every piece of software you've ever installed. You can rearrange, add to, or delete items from this list.

243. The Start menu can be opened via the keyboard or another input device (e.g., trackpad, mouse, etc.). EX-1006, 23-25, 274, 550. Thus, Pogue's Start menu, like the home screen of the '844 Patent, discloses multiple modes of content, summarized in Table 2, reproduced again below:

'844 Patent	Pogue
Web mode 172c	Internet (Internet Explorer)
Media mode 172a	Windows Media Player
Connect mode 172b	Email (Outlook Express)
Applications mode 172d	Microsoft Word

Table 2

b. Limitation [4b]

[4b] "wherein the [first] navigation button is configured to permit the user to select for display one of the plurality of modes of content."[15]

244. The Shimura-Tsuji-Pogue combination discloses [4b] and renders it obvious. *See* VII.C; VIII.A.2; Claim 3; [4a].

245. The Shimura-Tsuji-Pogue Computer discloses "the [first] navigation button," i.e., a Windows logo key on the keyboard 104. *See* VIII.A.2Opening the Start menu using the Windows logo key "permit[s] the user to select for display one of the plurality of modes of content," e.g., highlight or launch a content mode such as Microsoft Word, "via an input device," e.g., trackpad, touch screen, keyboard, mouse, etc."

246. Accordingly, the Shimura-Tsuji-Pogue combination renders obvious Claim 4.

---

[15] The navigation button is understood to refer to the first navigation button.

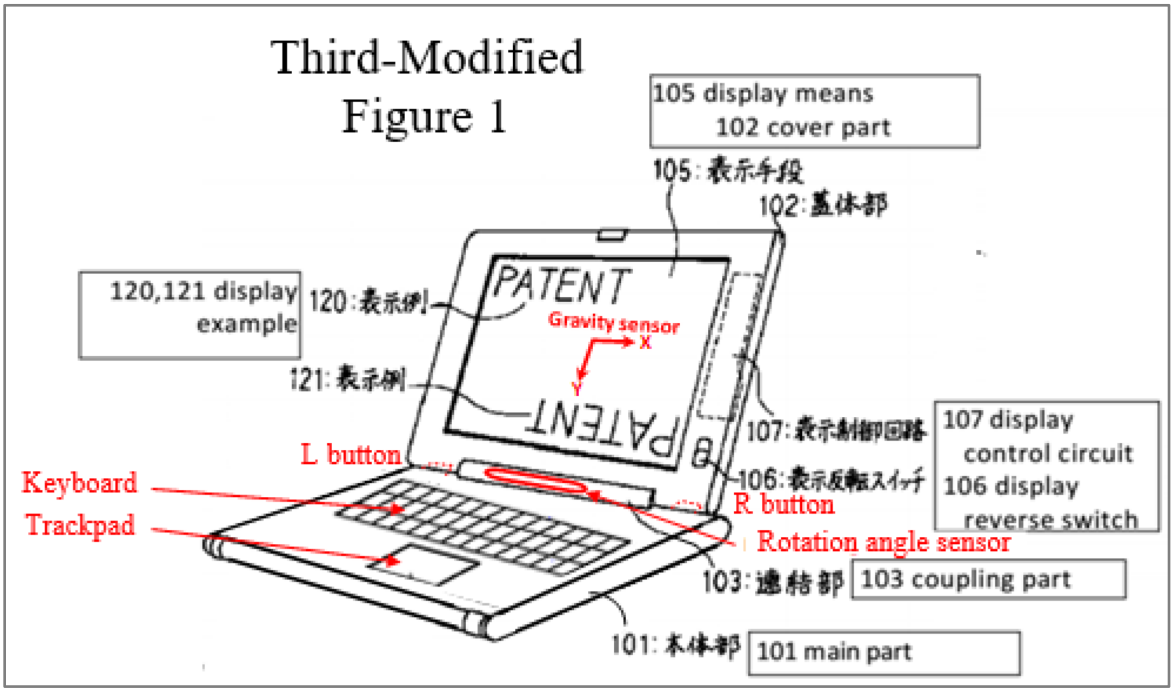
6. Claim 5

a. Limitation [5a]

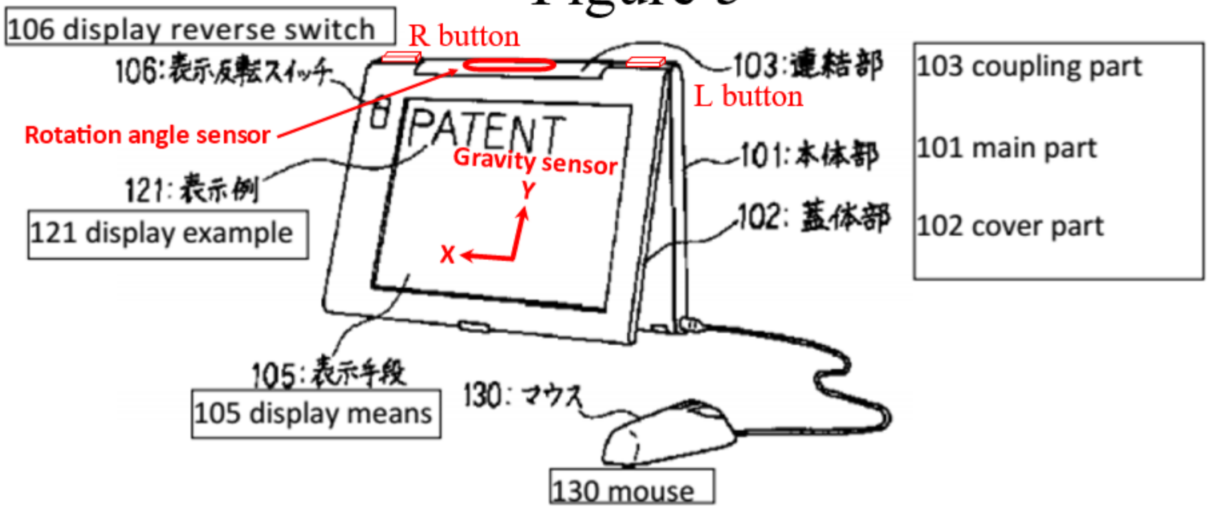
> ***[5a] "The portable computer of claim 3, further comprising a second navigation button;"***

247. The Shimura-Tsuji-Pogue combination discloses [5a] and renders it obvious. *See* VII.B; VIII.A.1.b.

248. Tsuji discloses R and L buttons 118 and 119 integrated into the base of the Shimura-Tsuji-Pogue Computer, as illustrated in Third-Modified Figure 1 of Shimura and Second-Modified Figure 5 of Shimura below. *See* VIII.A.1.b; EX-1005, ¶38.


Third-Modified
Figure 1
105 display means
102 cover part
105:表示手段
102:蓋体部
120,121 display example
120:表示例
121:表示例
PATENT
Gravity sensor
X
Y
PATENT
8
L button
Keyboard
Trackpad
107:表示制御回路
107 display control circuit
106:表示反転スイッチ
106 display reverse switch
R button
Rotation angle sensor
103:連結部
103 coupling part
101:本体部
101 main part

Second-Modified
Figure 5


106 display reverse switch
R button
106:表示反転スイッチ
103:連結部
L button
103 coupling part
Rotation angle sensor
PATENT
Gravity sensor
Y
X
101:本体部
101 main part
121:表示例
121 display example
102:蓋体部
102 cover part
105:表示手段
105 display means
130:マウス
130 mouse

249. The R or L button can be programmed with any given function, including arrow keys (e.g., up, down, left, and right directions), used to navigate around the display screen. *See* VII.B; VIII.A.1.b; EX-1005, ¶39-46. Such a programmed R or L button discloses the claimed "second navigation button."

250. Alternatively, the R or L button can be programmed with another function, including (1) the display inversion functionality disclosed in Shimura by the display reverse switch 106 and disclosed in Tsuji by using the rotation angle sensor and the gravity sensor and (2) Pogue's Start menu button.

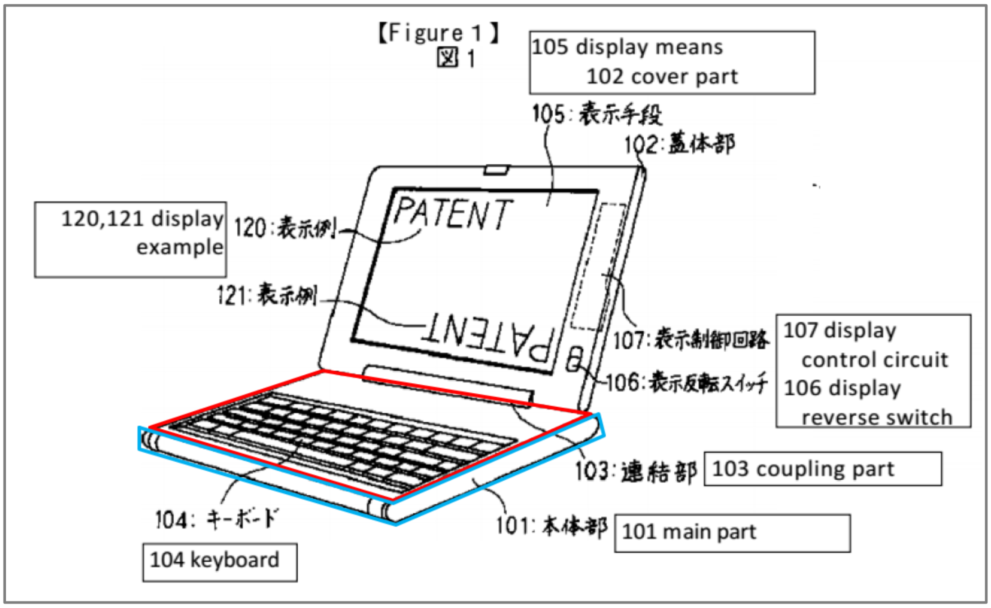
251. The R or L button programmed with any one of these functions discloses the claimed "second navigation button."

b. Limitation [5b]

[5b] "wherein the first navigation button is disposed on a major surface of the base; and"

252. The Shimura-Tsuji-Pogue combination discloses [5b] and renders it obvious. *See* VII.A; VII.C; VIII.A.2; Claim 3.

253. As shown in Figure 1 below, the Shimura Computer includes the base (101) with the keyboard (104) disposed on a first surface (i.e., upper surface boxed in red), which a POSITA would have understood to be a major surface. The base (102) also includes a second surface (i.e., lateral surface boxed in blue), which a POSITA would have understood to be a minor surface. Thus, the Shimura-Tsuji-Pogue Computer discloses "the first navigation button [Windows logo key of keyboard 104] is disposed on a major surface [first surface] of the base [101]."


【Figure 1】
図1
105 display means
102 cover part
105:表示手段
102:蓋体部
120,121 display example
120:表示例
121:表示例
PATENT
PATENT
107:表示制御回路
106:表示反転スイッチ
107 display control circuit
106 display reverse switch
103:連結部
103 coupling part
104:キーボード
104 keyboard
101:本体部
101 main part

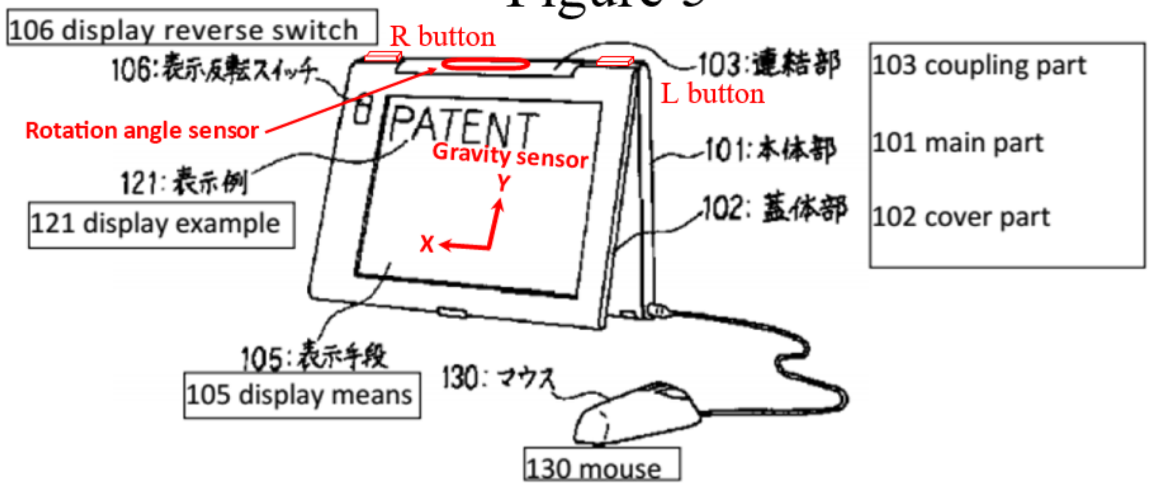
c. Limitation [5c]

> ***[5c] "wherein the second navigation button is disposed on a minor surface of the base."***

254. The Shimura-Tsuji-Pogue combination discloses [5c] and renders it obvious. *See* VII.B; VIII.A.1.b; [5a]; [5b].

255. The programmed R or L button of the Shimura-Tsuji-Pogue Computer, as shown in Second-Modified Figure 5 of Shimura below, discloses "the second navigation button . . . disposed on a minor surface of the base [101]."

Second-Modified Figure 5


106 display reverse switch
R button
106:表示反転スイッチ
103:連結部
103 coupling part
L button
Rotation angle sensor
PATENT
Gravity sensor
Y
X
121:表示例
121 display example
101:本体部
101 main part
102:蓋体部
102 cover part
105:表示手段
105 display means
130:マウス
130 mouse

256. Accordingly, the Shimura-Tsuji-Pogue combination renders obvious Claim 5.

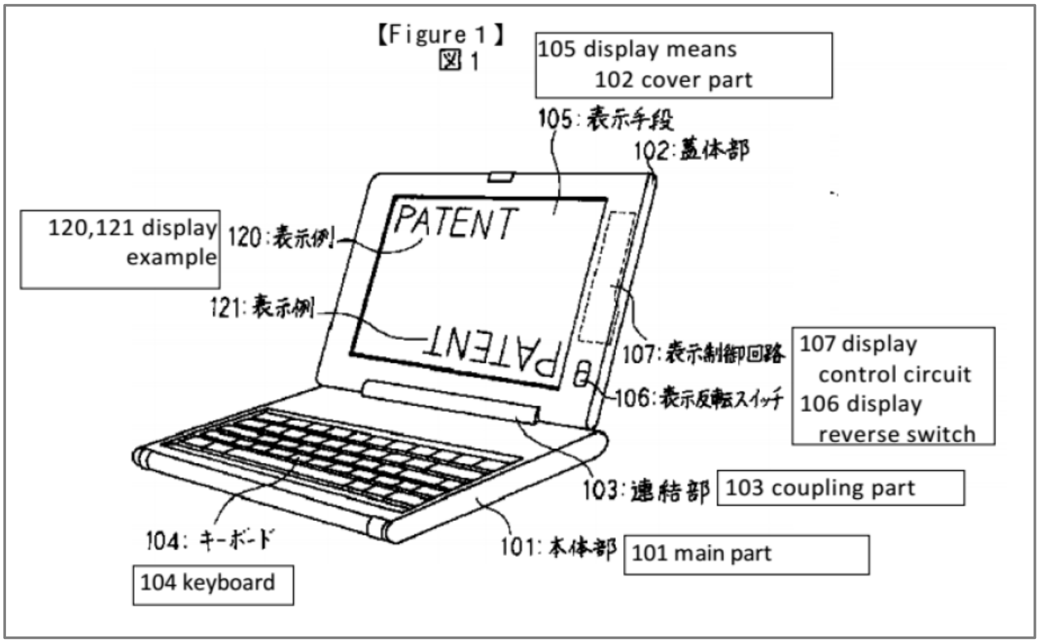
7. Claim 7

a. Limitation [7a]

[7a] "The portable computer of claim 1, wherein rotating either the display component or the base about the longitudinal axis up to approximately 180 degrees from a closed mode in which the display screen is disposed substantially against the base configures the portable computer into the laptop mode; and"

257. Shimura discloses [7a]. *See* VII.A.

258. In the laptop mode, as illustrated in Shimura's FIG. 1 below, the hinge rotation angle is less than 180° from the closed mode. EX-1004, ¶¶11-14, FIG. 1 below.


【Figure 1】
図 1
105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
121: 表示例
PATENT
PATENT
107: 表示制御回路
106: 表示反転スイッチ
107 display control circuit
106 display reverse switch
103: 連結部
103 coupling part
104: キーボード
104 keyboard
101: 本体部
101 main part

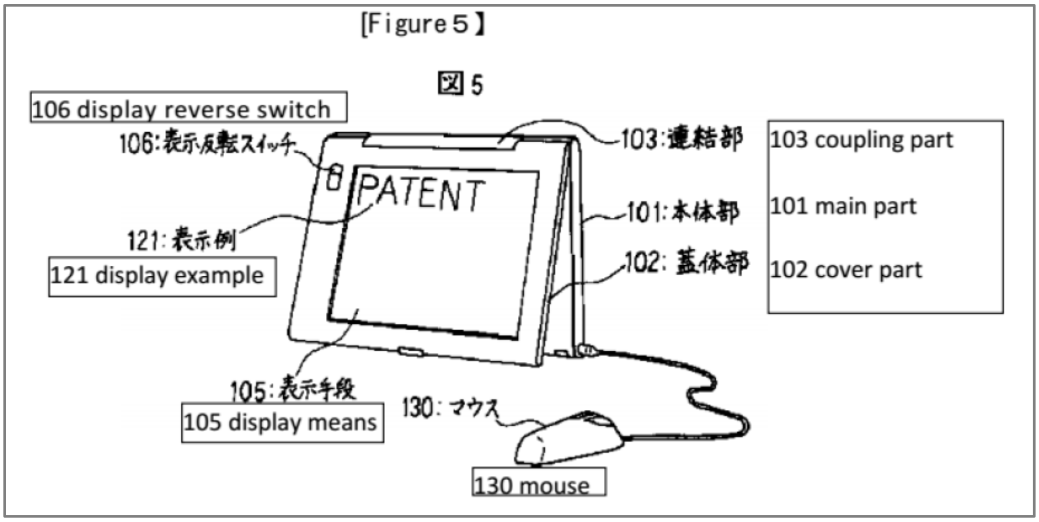
b. Limitation [7b]

[7b] "wherein rotating either the display component or the

base about the longitudinal axis beyond approximately 180 degrees from the closed mode configures the portable computer into the easel mode."

259. Shimura discloses [7b]. *See* VII.A; [7a].

260. In the easel mode, as illustrated in Shimura's FIG. 5 below, the hinge rotation angle is more than 180° from the closed mode. EX-1004, ¶¶14-17.


[Figure5]
図5
106 display reverse switch
106:表示反転スイッチ
PATENT
121:表示例
121 display example
103:連結部
101:本体部
102:蓋体部
103 coupling part
101 main part
102 cover part
105:表示手段
105 display means
130:マウス
130 mouse

261. Accordingly, the Shimura-Tsuji-Pogue combination renders obvious Claim 7.

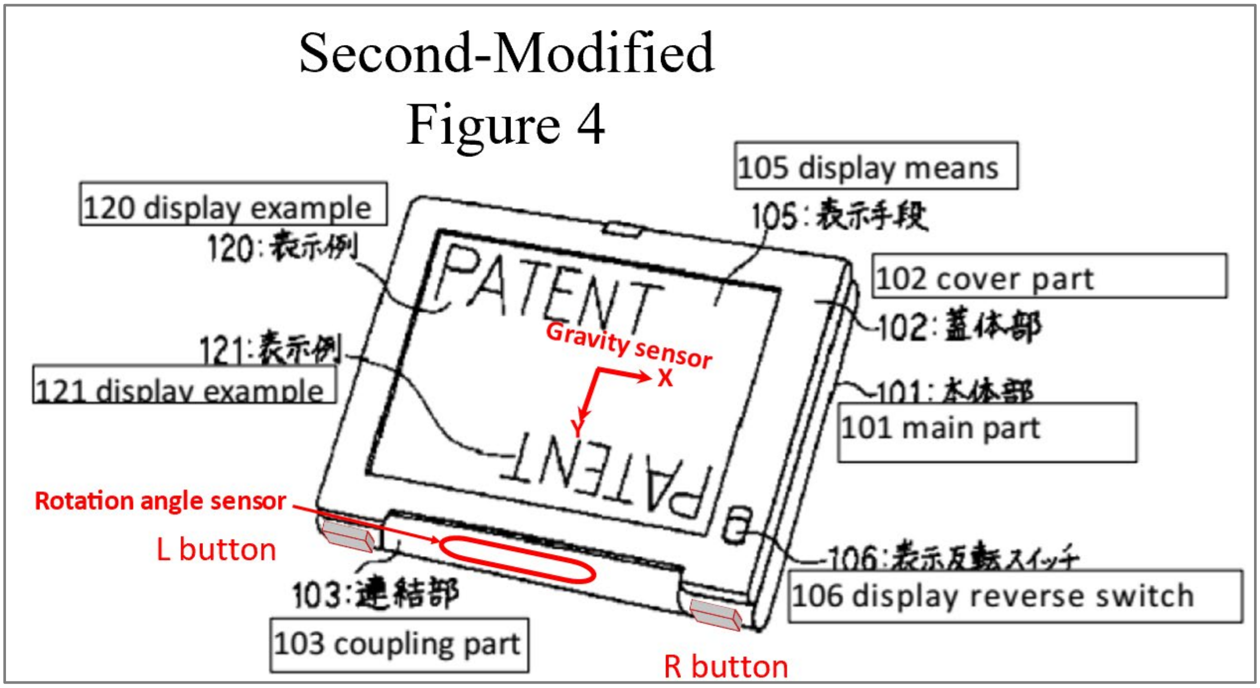
8. Claim 8

"The portable computer of claim 1, wherein the frame mode is configured to display to a user on the main display component the first content mode having the first content display orientation."

262. The Shimura-Tsuji-Pogue combination discloses the additional limitation of this claim and renders the claim obvious. *See* VII.A; VIII.A.1.c; VIII.A.2.

263. Pogue discloses "first content mode" means "a user selectable element displayed on a user interface that, when selected, allows the user to access the content organized therein," which includes at least a web content mode. *See* [1c]; VI; EX-1001, 11:49-50.

264. As shown in Second-Modified Figure 4 of Shimura below, the Shimura-Tsuji-Pogue Computer discloses the frame mode in a first content display orientation (i.e., a normal view). *See* VIII.A.1.c; [1e2]; EX-1004, ¶8.


Second-Modified Figure 4

105 display means
105:表示手段
120 display example
120:表示例
102 cover part
102:蓋体部
121:表示例
121 display example
PATENT
Gravity sensor
X
Y
PATENT
101:本体部
101 main part
Rotation angle sensor
L button
106:表示反転スイッチ
106 display reverse switch
103:連結部
103 coupling part
R button

265. Also, Pogue discloses "a first content mode." *See* VIII.A.2; [1c]; EX-1006, 337-338.

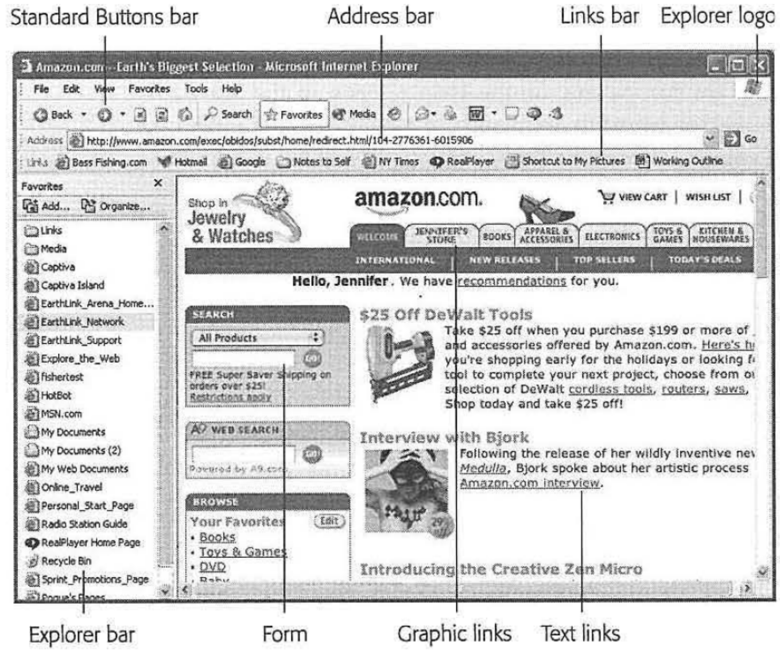


Figure 11-1: *The Internet Explorer window offers tools and features that let you navigate the Web almost effortlessly; these various toolbars and status indicators are described in this chapter. Chief among them: the Address bar, which displays the address (URL) of the Web page you're currently seeing, and the standard set of buttons, which let you control the Web-page loading process.*

266. When the user opens Internet Explorer in the frame mode, the displayed content would be in a normal view. *See* VIII.A.1.c. Thus, the Shimura-Tsuji-Pogue Computer "display[s] to a user on the main display component [102] the first content mode [Pogue's Internet Explorer] having the first content display orientation [normal view]."

9. Claim 9

> ***"The portable computer of claim 1, wherein the portable computer is configured to prevent the portable computer from responding to keyboard input when the portable computer is in the frame mode."***

267. Shimura discloses the additional limitation of this claim, and the Shimura-Tsuji-Pogue combination renders the claim obvious. *See* VII.A; VIII.A.2.

268. Shimura discloses a "second switching means" to invalidate input from the keyboard. EX-1004, ¶8. The second switching means can be set so that input to the keyboard is invalidated. EX-1004, ¶8. The input invalidation may be used in a frame mode as depicted in Shimura's Figure 4. EX-1004, ¶¶8, 18 ("A switching means . . . should be set in place to invalidate input from the keyboard to prevent this."). The input invalidation functionality may operate automatically based on an angle of the cover part 102 relative to the main part 101. EX-1004, ¶¶18, 19. This input invalidation of Shimura discloses the limitation "prevent the portable computer from responding to keyboard input when the portable computer is in the frame mode."

10. Claim 10

a. Limitation [10pre]

[10pre] "A portable computer configurable between a plurality of display modes including a laptop mode and an easel mode wherein transitions between the plurality of display modes permit an operator to interact with a single display screen in each of the plurality of display modes, the portable computer comprising:"

269. The Shimura-Tsuji combination discloses [10pre] and renders it obvious. *See* VII.A; VIII.A.1.a; [1pre].

b. Limitation [10a]

[10a] "a base including a keyboard;"

270. Shimura discloses [10a]. *See* VII.A; [1a].

c. Limitation [10b]

[10b] "a main display component rotatably coupled to the base and including the single display screen which displays content;"

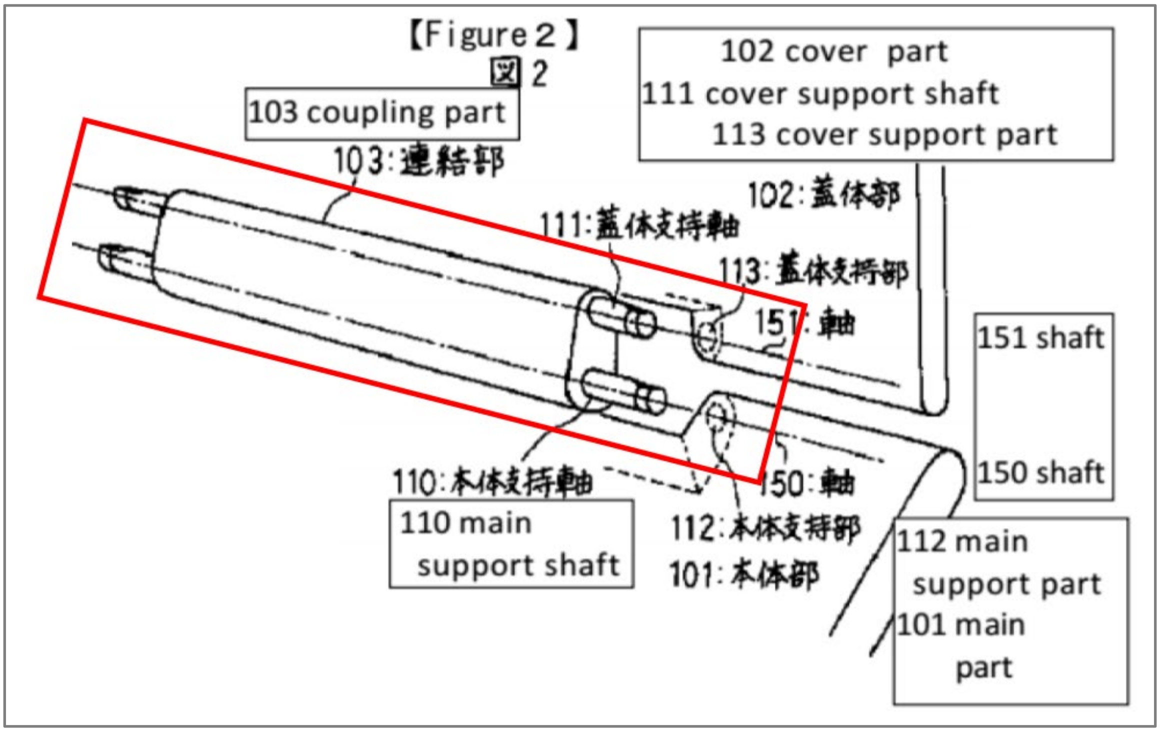
271. The Shimura-Tsuji combination discloses [10b] and renders it obvious. *See* VII.A; VIII.A.1.a; [1pre]; [1b1]; [1b2].

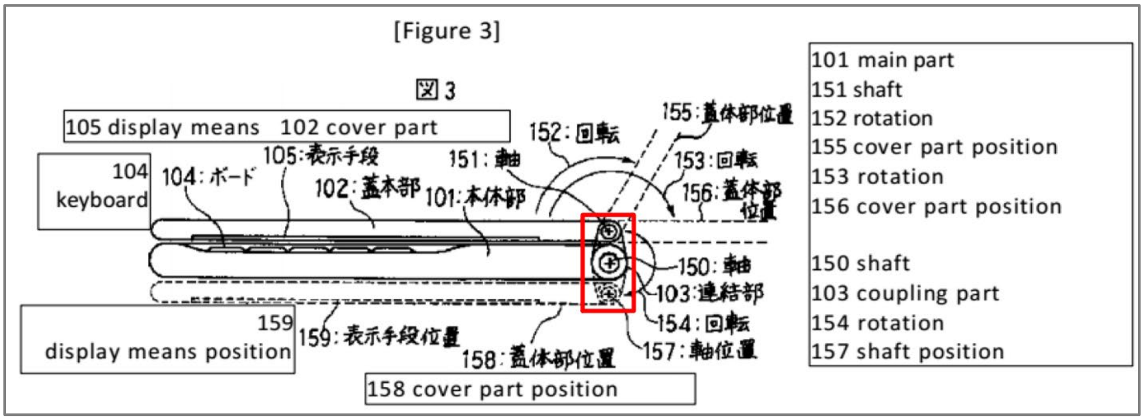
d. Limitation [10c1]

[10c1] "a hinge assembly disposed at least partially within the base and the main display component that defines an axis of rotation about which both the base and the main display component are rotatable to transition the portable computer between at least the laptop mode and the easel mode,"

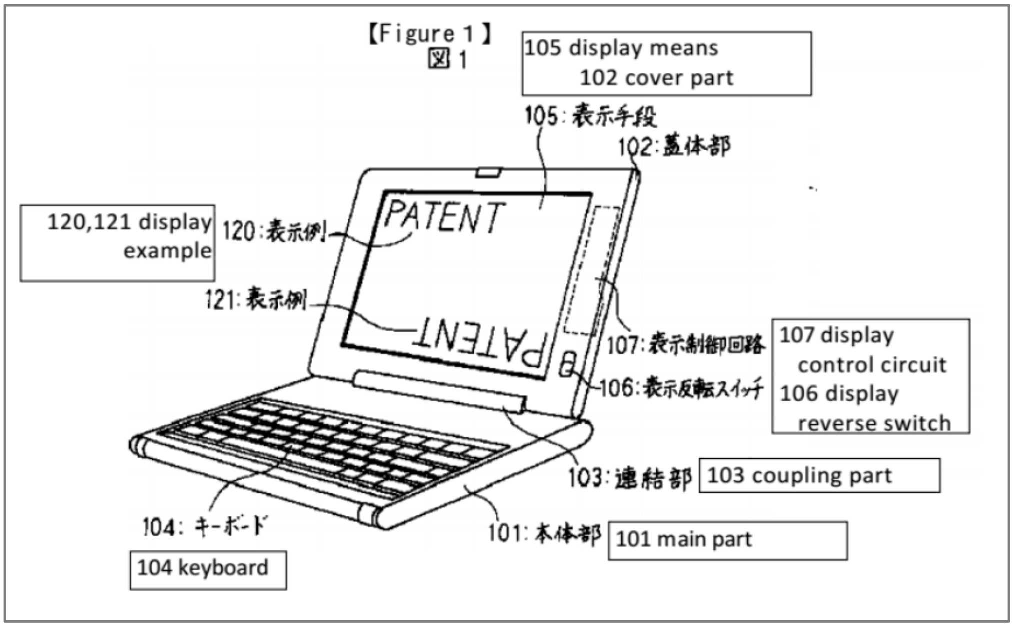
272. Shimura discloses [10c1]. *See* VII.A.

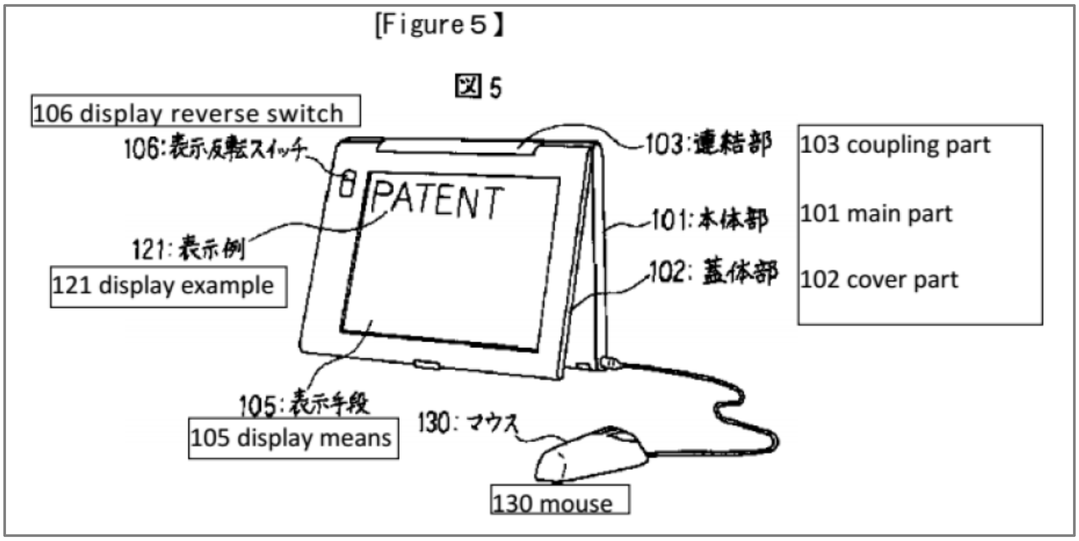
273. The Shimura Computer discloses the claimed "hinge assembly" (coupling part 103 red) that "defines an axis of rotation [main support shaft 110] about which both the base [101] and the main display component [102] are rotatable" to transition between the plurality of display modes. EX-1004, ¶¶12-13, Figures 2 & 3 (below).


【Figure 2】
図 2
103 coupling part
103:連結部
102 cover part
111 cover support shaft
113 cover support part
102:蓋体部
111:蓋体支持軸
113:蓋体支持部
151:軸
151 shaft
150 shaft
110:本体支持軸
150:軸
110 main support shaft
112:本体支持部
101:本体部
112 main support part
101 main part


[Figure 3]
図 3
105 display means 102 cover part
104 keyboard
104:ボード
105:表示手段
102:蓋本部
151:軸
101:本体部
152:回転
155:蓋体部位置
153:回転
156:蓋体部位置
150:軸
103:連結部
154:回転
157:軸位置
159 display means position
159:表示手段位置
158:蓋体部位置
158 cover part position
101 main part
151 shaft
152 rotation
155 cover part position
153 rotation
156 cover part position
150 shaft
103 coupling part
154 rotation
157 shaft position

274. The Shimura Computer can be configured into the laptop and easel modes, as illustrated in Shimura's Figures 1 and 5 below. *See* [1pre]


【Figure 1】
図1
105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
121: 表示例
PATENT
PATENT
107: 表示制御回路
107 display control circuit
106: 表示反転スイッチ
106 display reverse switch
103: 連結部
103 coupling part
104: キーボード
104 keyboard
101: 本体部
101 main part


[Figure 5】
図5
106 display reverse switch
106: 表示反転スイッチ
PATENT
121: 表示例
121 display example
103: 連結部
101: 本体部
102: 蓋体部
103 coupling part
101 main part
102 cover part
105: 表示手段
105 display means
130: マウス
130 mouse

275. The hinge assembly 103 includes main support shaft 110 and cover support shaft 111 that would be placed inside, respectively, the main support part 112 of the main 101 and the cover support part 113 of the cover part 102. Thus, the "hinge assembly" (103) is "at least partially housed within the base" (101) and the "main display component" (102).

e. Limitation [10c2]

[10c2] "wherein the transition between the laptop mode and the easel mode allows the operator to operate the portable computer while viewing the single display screen in each of the plurality of display modes, wherein"

276. The Shimura-Tsuji combination discloses [10c2] and renders it obvious. *See* VII.A; VIII.A.1.a; [1b3].

f. Limitation [10c3]

[10c3] "the laptop mode is configured to display to a user on the main display component a first content mode having a first content display orientation with the main display component oriented towards the user and the keyboard oriented to receive input from the user;"

277. The Shimura-Tsuji-Pogue combination discloses [10c3] and renders it obvious. *See* VII.A; VII.C; VIII.A.1.a; VIII.A.2; [1c].

g. Limitation [10d1]

[10d1] "the easel mode is configured to display to the user on the main display component a second content mode having a second content display orientation with the main display component oriented towards the user and the keyboard oriented away from the user, wherein the first and second content display orientations are 180 degrees relative to each other,"

278. The Shimura-Tsuji-Pogue combination discloses [10d1] and renders it obvious. *See* VII.A; VII.C; VIII.A.1.a; VIII.A.2; [1d1].

h. Limitation [10d2]

[10d2] "and wherein the portable computer is operable in the easel mode to enable the user to interact with displayed content without interacting with the keyboard; and"

279. The Shimura-Tsuji combination discloses [10d2] and renders it obvious. *See* VII.A; VIII.A.1.a; [1d2].

i. Limitation [10e1]

[10e1] "a navigation control accessible in each of the plurality of display modes and configured to permit a user to manipulate at least one of operating parameters of the portable computer and the content displayed on the single display screen"

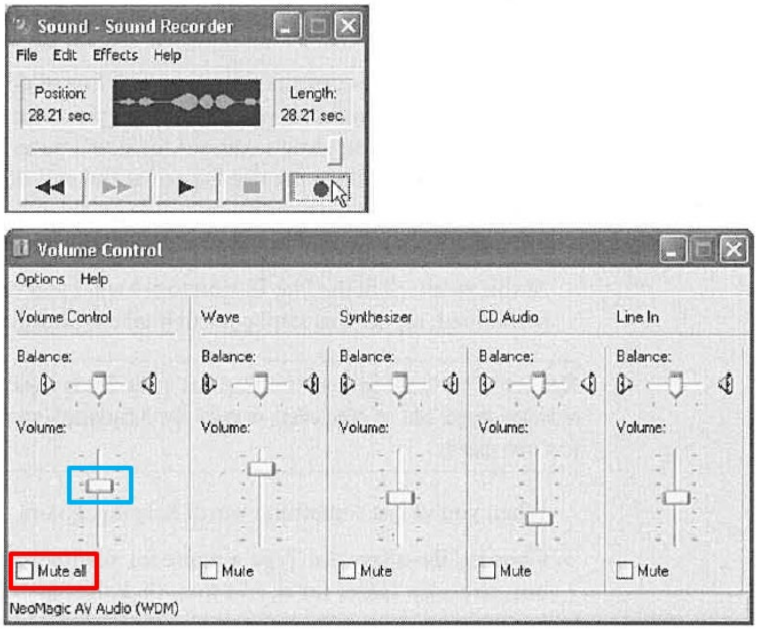
280. Shimura and the Shimura-Tsuji-Pogue combination each disclose [10e1] and the Shimura-Tsuji-Pogue combination renders it obvious. *See* VII.A; VIII.A.1.a; VIII.A.1.b; VIII.A.2.

(1) Touch screen as the navigation control

281. The Shimura-Tsuji-Pogue Computer includes a touch screen. *See* VIII.A.1.a. This touch screen is the "navigation control accessible in each of the plurality of display modes" because it can be accessed in the laptop, easel, and

frame modes. Moreover, it can be used to control the volume by, for example, dragging the volume bar (blue) up or pressing "Mute all" (red), disclosing "manipulat[ing] at least one of operating parameters of the portable computer." *See* [1e1]; EX-1006, 229-231.

Figure 7-14: *Sound Recorder (top) lets you capture the sounds of your world–digitally. Volume Control (bottom) offers left-to-right stereo balance controls and volume adjustments for every sound-related component of your PC.*


Sound - Sound Recorder
File
Edit
Effects
Help
Position:
28.21 sec.
Length:
28.21 sec.
Volume Control
Options
Help
Volume Control
Wave
Synthesizer
CD Audio
Line In
Balance:
Volume:
Mute all
Mute
NeoMagic AV Audio (WDM)

282. The touch screen of the Shimura-Tsuji-Pogue Computer can also be used to press Pogue's Start menu button (purple in Figure 2-3 below) that opens the Start menu (light green) that lists at least "Internet" (dark green), "E-mail" (orange), "Microsoft Word" (blue), and "Windows Media Player" (red). *See* [1e1]; EX-1006, 24-25.

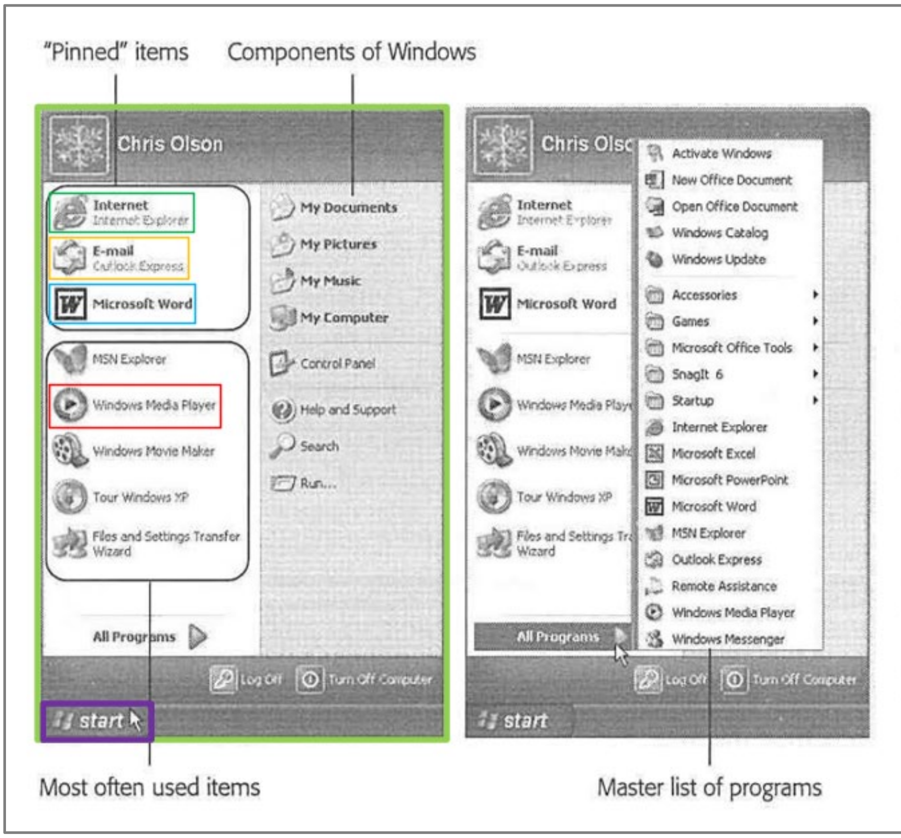
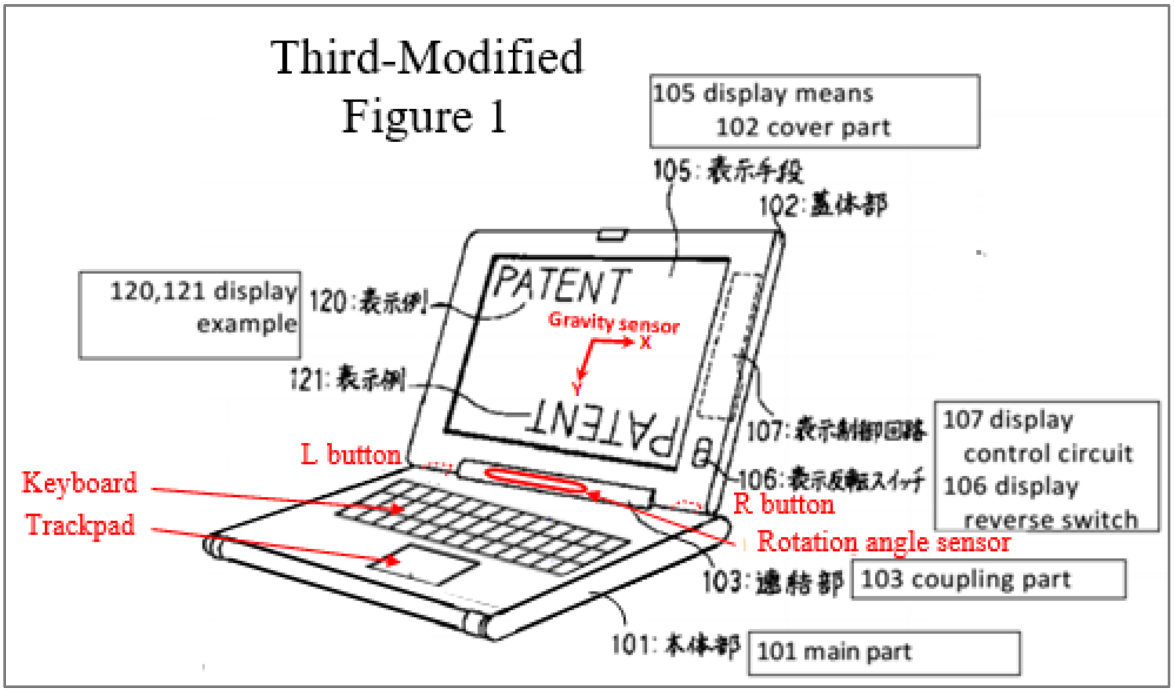

"Pinned" items
Components of Windows
Chris Olson
Internet
Internet Explorer
E-mail
Outlook Express
Microsoft Word
MSN Explorer
Windows Media Player
Windows Movie Maker
Tour Windows XP
Files and Settings Transfer Wizard
All Programs
My Documents
My Pictures
My Music
My Computer
Control Panel
Help and Support
Search
Run...
Log Off
Turn Off Computer
start
Activate Windows
New Office Document
Open Office Document
Windows Catalog
Windows Update
Accessories
Games
Microsoft Office Tools
SnagIt 6
Startup
Internet Explorer
Microsoft Excel
Microsoft PowerPoint
Microsoft Word
MSN Explorer
Outlook Express
Remote Assistance
Windows Media Player
Windows Messenger
Most often used items
Master list of programs

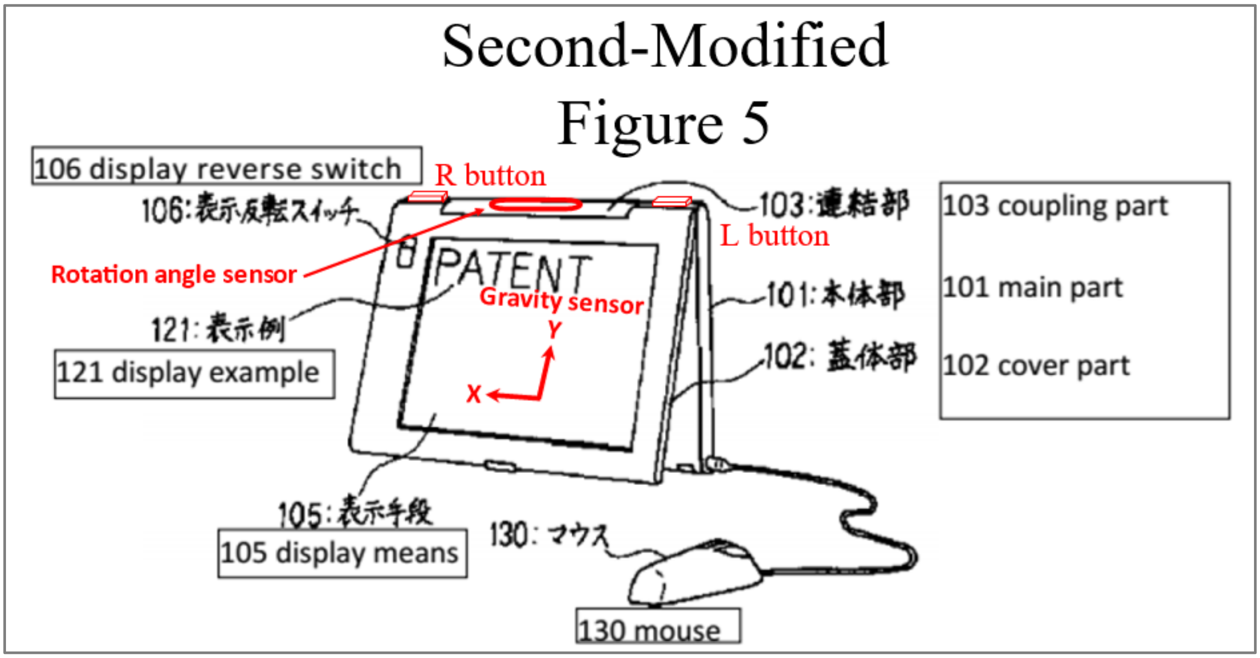
Figure 2-3:
Left: The Start menu is divided into several distinct sections. The top left section is yours to play with. You can "pin" whatever programs you want here, in whatever order you like. The lower-left section lists the programs you use most often, by Windows XP's calculations. (You can delete individual items here, but you can't add items manually or rearrange them.) The right-side column provides direct access to certain Windows features and standard Windows programs.

Right: The All Programs menu superimposes itself on the standard two-column Start menu, listing almost every piece of software you've ever installed. You can rearrange, add to, or delete items from this list.

(2) Programmed R and L buttons as the navigation control

283. Alternatively, the programmed R and L buttons 118 and 119 of the Shimura-Tsuji-Pogue Computer are integrated into a side of the base of portable computer 1. *See* VIII.A.1.b; [5a]; EX-1005, ¶38Third-Modified Figure 1 & Second-Modified Figure 5 of Shimura (below).


Third-Modified
Figure 1
105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
PATENT
Gravity sensor
X
Y
121: 表示例
PATENT
L button
Keyboard
Trackpad
107: 表示制御回路
107 display control circuit
106: 表示反転スイッチ
106 display reverse switch
R button
Rotation angle sensor
103: 連結部
103 coupling part
101: 本体部
101 main part

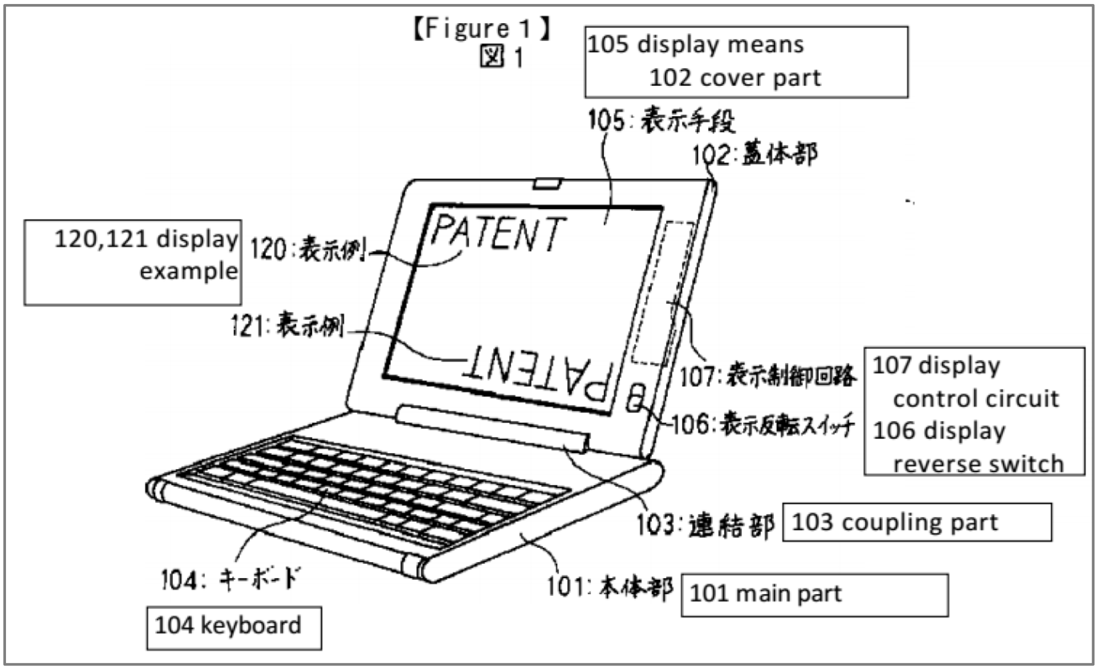

Second-Modified
Figure 5
106 display reverse switch
R button
106: 表示反転スイッチ
103: 連結部
103 coupling part
L button
Rotation angle sensor
PATENT
Gravity sensor
Y
X
101: 本体部
101 main part
121: 表示例
121 display example
102: 蓋体部
102 cover part
105: 表示手段
105 display means
130: マウス
130 mouse

284. The R and L buttons can be programmed with any given function, including arrow keys (e.g., up, down, left, and right directions) and an enter key used to navigate around the display screen and select content on the display screen, as

well as Pogue's Start menu button to open the Start menu. *See* VII.B; VIII.A.1.b; EX-1005, ¶¶43, 45. The R and L buttons are accessible in the laptop, easel, and frame modes. *Id.* A user would be able to press an L button programmed to operate as the Start menu button, and press the R button to move down through the list of functionalities presented by the Start menu, thereby "manipulat[ing] at least one of operating parameters of the portable computer and the content displayed on the single display screen." *See* [1e1].

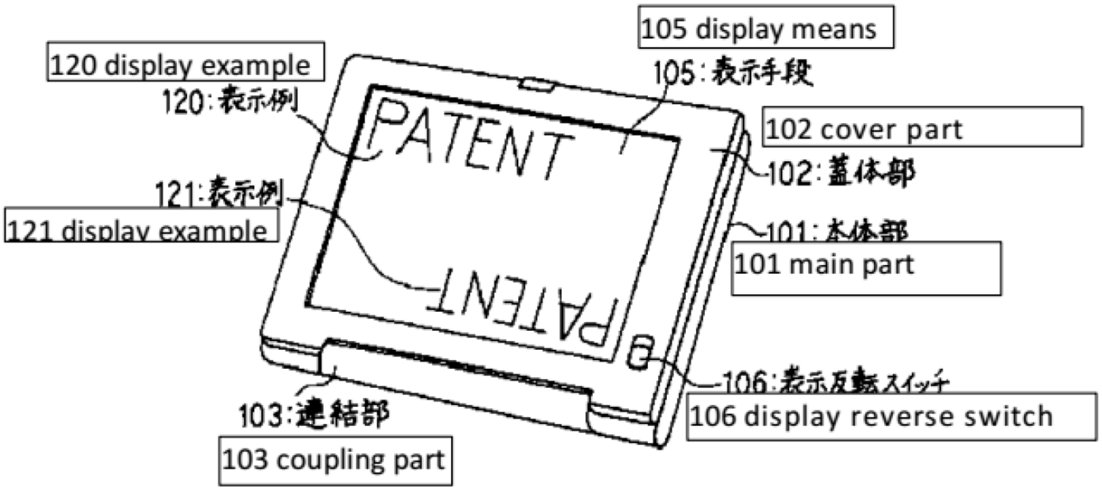
(3) Display reverse switch as the navigation control

285. Alternatively, Shimura discloses the display reverse switch 106 to orient the displayed content. EX-1004, ¶12. The display reverse switch 106 is accessible in the laptop, easel, and frame modes. *See* VII.A; Shimura's Figures 1, 4, & 5 (below).


【Figure 1】
図1
105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
121: 表示例
PATENT
PATENT
B
107: 表示制御回路
106: 表示反転スイッチ
107 display control circuit
106 display reverse switch
103: 連結部
103 coupling part
104: キーボード
104 keyboard
101: 本体部
101 main part

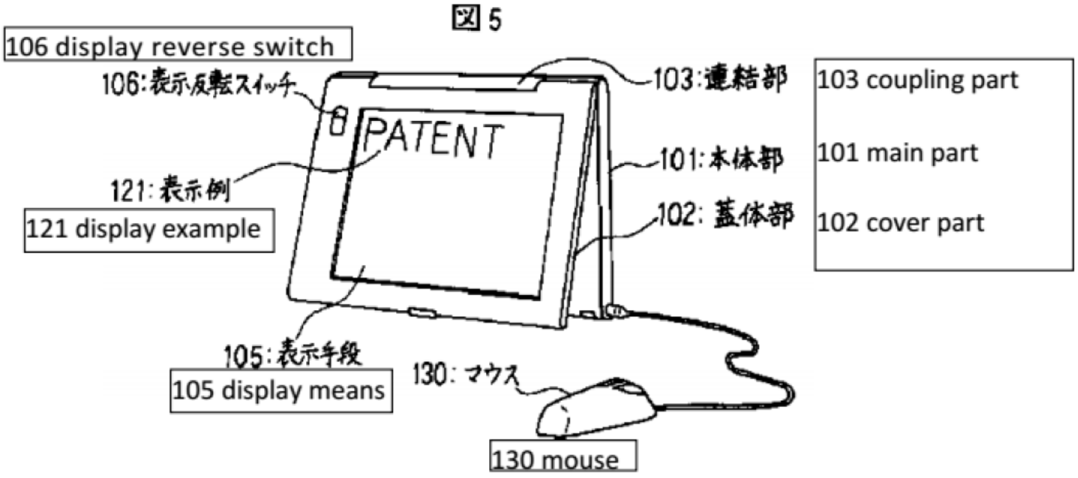
[Figure 4]

図4


105 display means
105:表示手段
120 display example
120:表示例
PATENT
102 cover part
102:蓋体部
121:表示例
121 display example
101:本体部
101 main part
PATENT
106:表示反転スイッチ
106 display reverse switch
103:連結部
103 coupling part

[Figure 5]

図5


106 display reverse switch
106:表示反転スイッチ
103:連結部
103 coupling part
PATENT
101:本体部
101 main part
121:表示例
121 display example
102:蓋体部
102 cover part
105:表示手段
105 display means
130:マウス
130 mouse

286. A POSITA would have understood that inverting the displayed content discloses "manipulat[ing] at least one of operating parameters of the portable computer and the content displayed on the single display screen."

287. Thus, each of the touch screen, the R and L buttons, and the display reverse switch in the above-described examples discloses the claimed "navigation control."

j. Limitation [10e2]

> ***[10e2] "wherein the plurality of modes includes a frame mode in which the main display component is oriented towards the operator, the base contacts a substantially horizontal surface, and the keyboard faces the substantially horizontal surface."***

288. Shimura discloses [10e2]. *See* VII.A; VIII.A.1.c; VIII.A.2; [1e2].

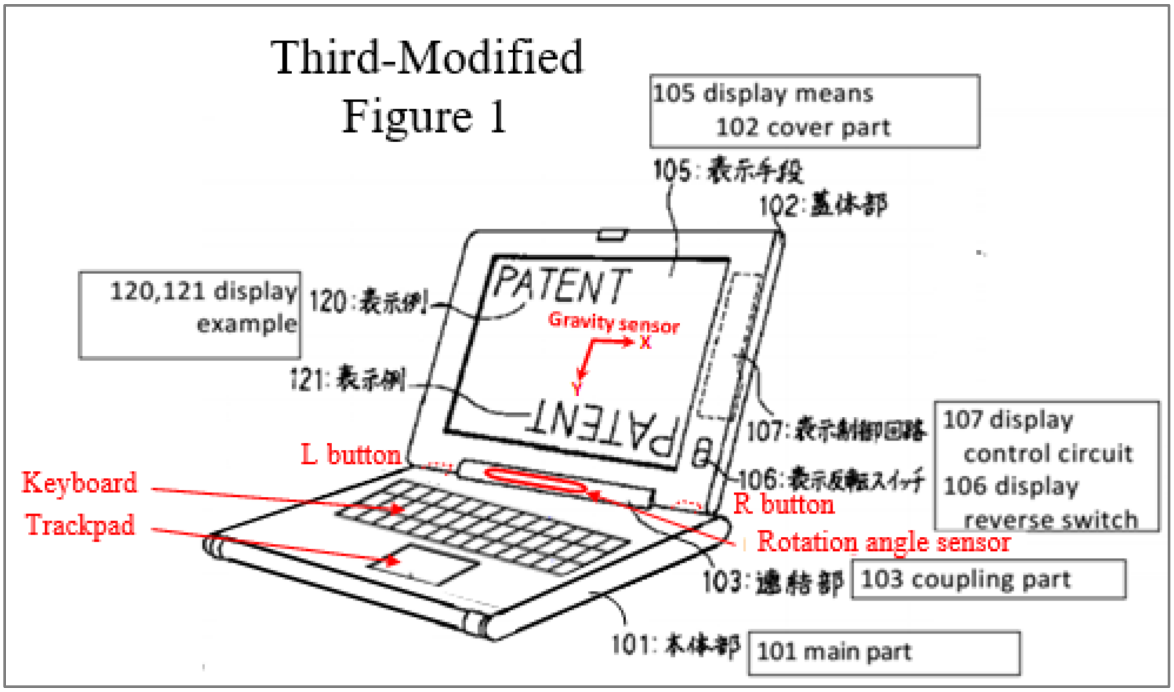
289. Accordingly, the Shimura-Tsuji-Pogue combination renders obvious Claim 10.

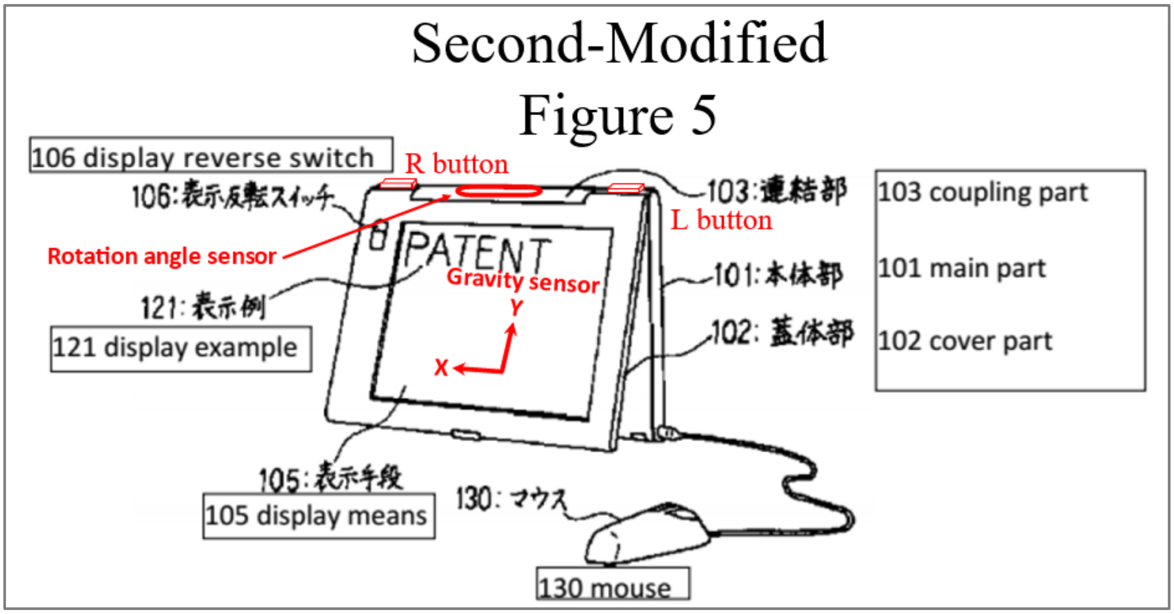
11. Claim 13

> ***"The portable computer of claim 10, further comprising a first navigation button user-accessible in each of the laptop mode and the easel mode, and configured to permit the user to manipulate selected content displayed on the screen."***

290. The Shimura-Tsuji combination discloses the additional limitation of this claim, and the Shimura-Tsuji-Pogue combination renders the claim obvious. *See* VII.A; VIII.A.1.b; VIII.A.2.

291. Tsuji discloses R and L buttons 118 and 119 integrated into a side of the base of portable computer 1 that is accessible in the laptop and easel modes, as illustrated in the Third-Modified Figure 1 of Shimura and the Second-Modified Figure 5 of Shimura below. EX-1005, ¶38.


Third-Modified
Figure 1
105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
121: 表示例
PATENT
Gravity sensor
X
Y
PATENT
L button
Keyboard
Trackpad
107: 表示制御回路
107 display control circuit
106: 表示反転スイッチ
106 display reverse switch
R button
Rotation angle sensor
103: 連結部
103 coupling part
101: 本体部
101 main part


Second-Modified
Figure 5
106 display reverse switch
R button
106: 表示反転スイッチ
103: 連結部
103 coupling part
L button
Rotation angle sensor
PATENT
Gravity sensor
Y
X
101: 本体部
101 main part
121: 表示例
121 display example
102: 蓋体部
102 cover part
105: 表示手段
105 display means
130: マウス
130 mouse

292. The R or L button can be programmed with any given function, including arrow keys (e.g., up, down, left, and right directions) used to navigate around the display screen and select content on the display screen. *See* VII.B; VIII.A.1.b; EX-1005, ¶¶39-45. Thus, Tsuji discloses "a first navigation button [i.e., the R or L button programmed to be a down arrow key] user-accessible in each of the laptop mode and the easel mode [i.e., a back side of the base 101]."

293. Pogue's Start menu discloses the claimed "selected content displayed on the screen" because a user selects this displayed content by pressing, for example, the Windows logo key via the touch screen of the Shimura-Tsuji-Pogue Computer. EX-1006, 25. With the Start menu open, a user would be able to use the programmed R button or L button to select for display one of the modes of content (e.g., "Internet," E-mail," "Windows Media Player," and "Microsoft Word"). Activating the R or L button programmed to be the down arrow key discloses manipulating the "selected content displayed on the screen." *See* [1e1]; EX-1005, ¶¶35, 43.

12. Claim 14

a. Limitation [14a]

[14a] "The portable computer of claim 13, wherein the screen is configured to display at least one of a plurality of modes of content; and"

294. Pogue discloses [14a]. *See* VII.B; VII.C; VIII.A.1.a; VIII.A.2; [1c]; [1d1]; [4a].

b. Limitation [14b]

> ***[14b] "wherein the first navigation button is configured to permit the user to select for display one of the plurality of modes of content."***

295. The Shimura-Tsuji-Pogue combination discloses [14b] and renders it obvious. *See* VII.B; VII.C; VIII.A.1.a; VIII.A.2; [4b].

296. Accordingly, the Shimura-Tsuji-Pogue combination renders obvious Claim 14.

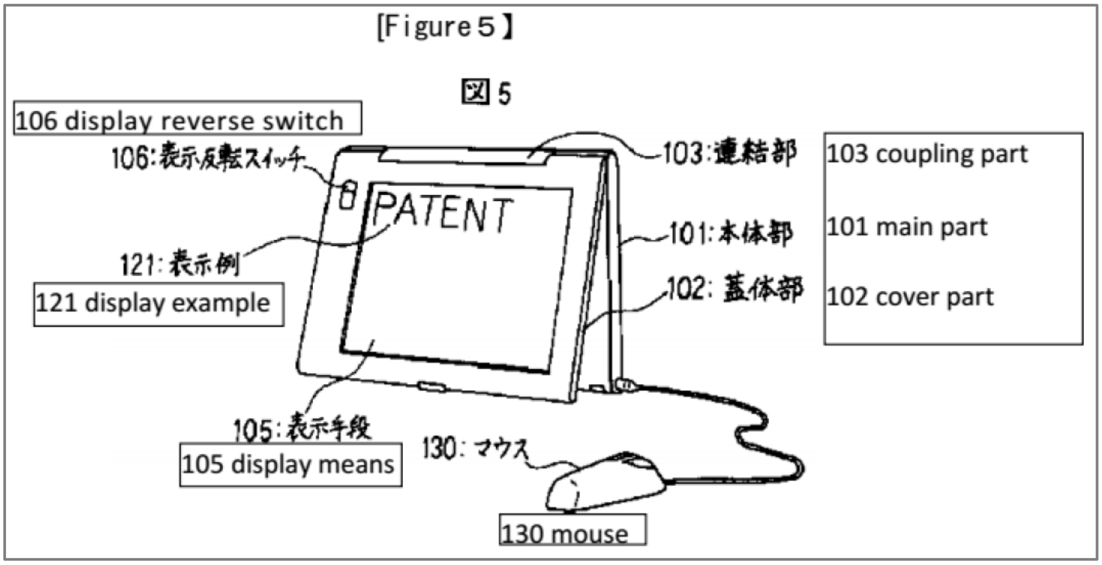
13. Claim 15

> ***"The portable computer of claim 13, further comprising a second navigation button that is not user-accessible when the portable computer is in the easel mode."***

297. The Shimura-Tsuji-Pogue combination discloses the additional limitation of this claim and renders the claim obvious. *See* VII.B; VII.C; VIII.A.2.

298. The Shimura-Tsuji-Pogue Computer discloses various keys (e.g., arrow keys, Windows logo key, etc.) on the keyboard 104 and a trackpad on the same surface as the keyboard 104. *See* Claim 3. The keyboard 104 and the trackpad are not accessible in the easel mode, as shown in Shimura's Figure 5 below.

EX-1004, ¶17 ("At this time, keyboard 104 is completely on the back side when seen by the user.").


[Figure 5]
図5
106 display reverse switch
106:表示反転スイッチ
PATENT
103:連結部
103 coupling part
101:本体部
101 main part
102:蓋体部
102 cover part
121:表示例
121 display example
105:表示手段
105 display means
130:マウス
130 mouse

14. Claim 16

[16] "The portable computer of claim 10, wherein an operating display mode is selected from the plurality of display modes based on a physical orientation of the portable computer."

299. The Shimura-Tsuji combination discloses the additional limitation of this claim, and the Shimura-Tsuji-Pogue combination renders it obvious. *See* VII.A; VII.B; VIII.A.1.c; VIII.A.2.

300. Tsuji's rotation angle sensor and gravity sensor can be used to determine the display mode (i.e., physical orientation of the portable computer) and corresponding orientation of the displayed content. *See* Table 1; VIII.A.1.

B. Ground 2: Shimura in view of Tsuji, Pogue, and Escamilla renders Claim 6 obvious.

1. Combination of Shimura, Tsuji, Pogue, and Escamilla (hereafter "Shimura-Tsuji-Pogue-Escamilla combination")

301. A POSITA would have been motivated to combine Pogue with Shimura and Tsuji (VIII.A.2), and to combine Escamilla with the foregoing for several reasons.

302. A scroll wheel was not explicitly disclosed in Shimura, Tsuji, or Pogue. However, at the Critical Date, a scroll wheel was a standard component that found uses in various electronic devices including portable computers. Such a scroll wheel (red) is explicitly disclosed in Escamilla. EX-1007, Abstract, 3:1-7, FIG. 3 (below).

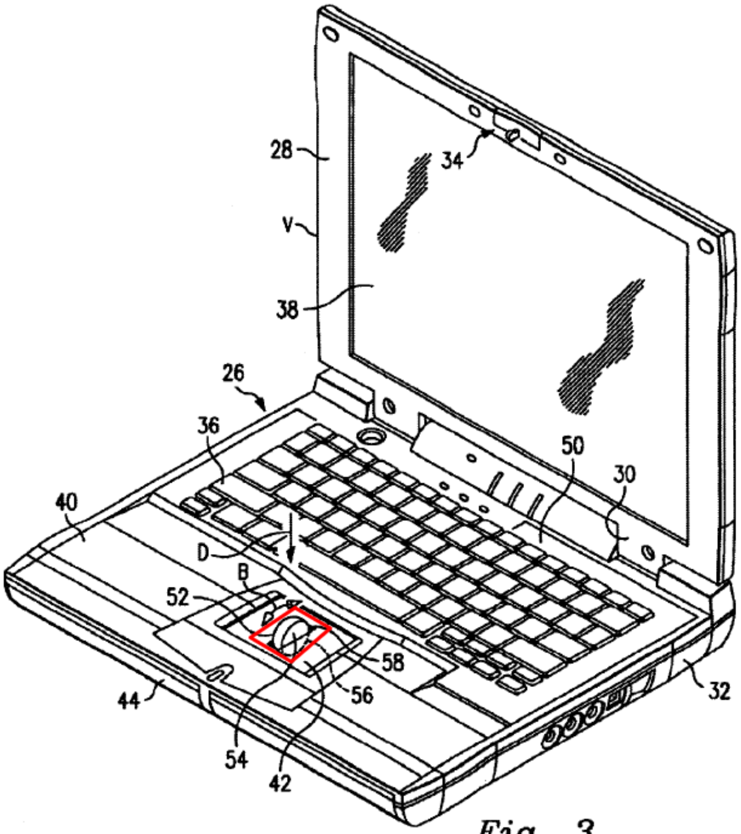
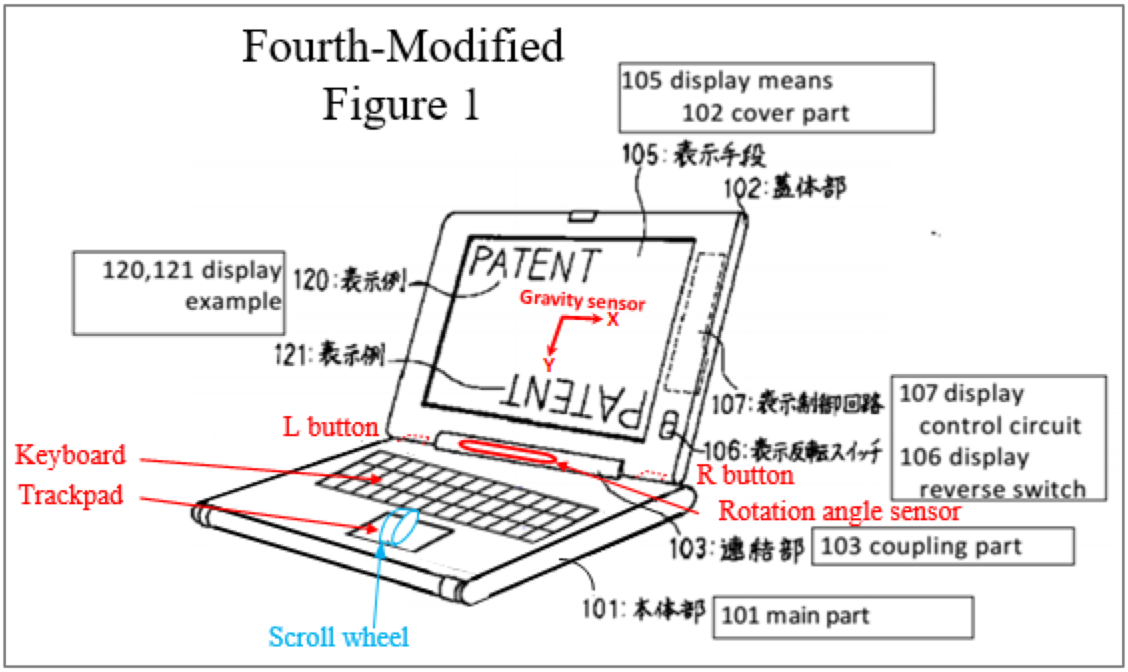


Fig. 3

303. Thus, a POSITA would have been motivated to incorporate the well-known standard scroll wheel of Escamilla into the Shimura-Tsuji-Pogue Computer to arrive at the "Shimura-Tsuji-Pogue-Escamilla Computer" with the scroll wheel (blue), as illustrated in Fourth-Modified Figure 1 of Shimura. .



Fourth-Modified
Figure 1

105 display means
102 cover part
105:表示手段
102:蓋体部
120,121 display example
120:表示例
121:表示例
PATENT
Gravity sensor
X
Y
PATENT
8
107:表示制御回路
107 display control circuit
106:表示反転スイッチ
106 display reverse switch
L button
R button
Keyboard
Trackpad
Rotation angle sensor
103:連結部
103 coupling part
101:本体部
101 main part
Scroll wheel

304. There would have been motivation to combine, and a reasonable expectation of success in combining, Escamilla with Shimura, Tsuji, and Pogue because prior art elements are merely combined according to known methods to yield predictable results. That is, Escamilla taught a scroll wheel integrated into a portable computer, and application of this teaching to Shimura, Tsuji, and Pogue would have yielded a predictable portable computer with Escamilla's multi-functional scroll wheel integrated into the base of the portable computer.

305. Thus, the POSITA would have been motivated to combine the teachings of Shimura, Tsuji, and Pogue with Escamilla's teachings to arrive at the Shimura-Tsuji-Pogue-Escamilla Computer that implements Escamilla's scroll wheel into the portable computer.

2. Claim 6

"The portable computer of claim 1, wherein the navigation control includes a scroll wheel configured to permit the user to select a mode of content for display by the portable computer."

306. The Shimura-Tsuji-Pogue-Escamilla combination discloses the additional limitation of this claim and renders the claim obvious. *See* VII.A; VII.D; VIII.B.1; VIII.C.1.

307. Escamilla discloses that the scroll wheel can provide functionality similar to a wheel on a mouse, including a scroll function to scroll up and down. EX-1007, 1:20-27.

308. The "mode of content" means "a user selectable element displayed on a user interface that, when selected, allows the user to access the content organized therein," which includes at least one of media, connect, application, and web content modes. See VI; EX-1001, 11:44-52.

309. Pogue discloses clicking on a Start button (purple in Figure 2-3 below) to open a Start menu (light green). *See* VII.C; VIII.A.2; EX-1006, 25. In the Start menu, the user has access to "Internet" (dark green), "E-mail" (orange), "Microsoft Word" (blue), and "Windows Media Player" (red), which correspond to different modes of content. *See* [4a]; VII.C; VIII.A.2; EX-1006, 23-25.

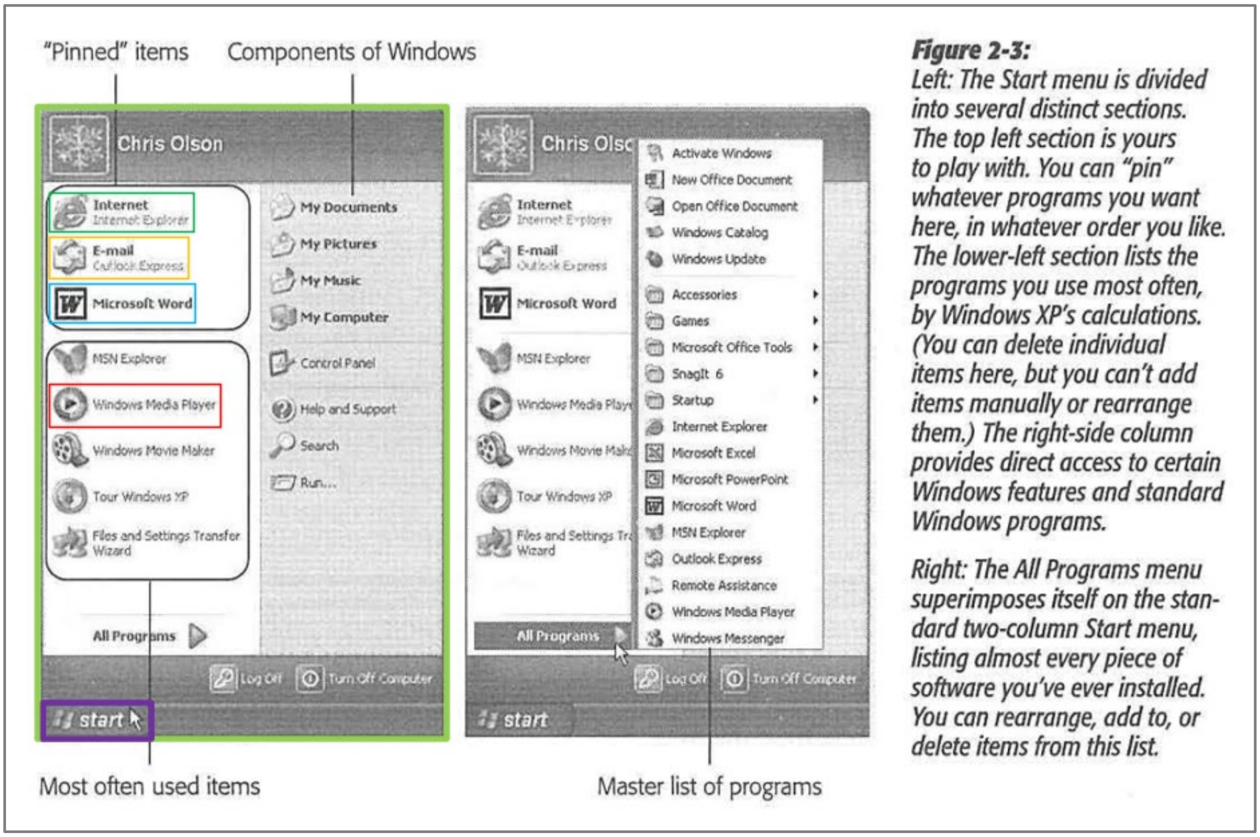

"Pinned" items
Components of Windows
Chris Olson
Internet
Internet Explorer
E-mail
Outlook Express
Microsoft Word
MSN Explorer
Windows Media Player
Windows Movie Maker
Tour Windows XP
Files and Settings Transfer Wizard
All Programs
My Documents
My Pictures
My Music
My Computer
Control Panel
Help and Support
Search
Run...
Log Off
Turn Off Computer
start
Activate Windows
New Office Document
Open Office Document
Windows Catalog
Windows Update
Accessories
Games
Microsoft Office Tools
SnagIt 6
Startup
Internet Explorer
Microsoft Excel
Microsoft PowerPoint
Microsoft Word
MSN Explorer
Outlook Express
Remote Assistance
Windows Media Player
Windows Messenger
Most often used items
Master list of programs

Figure 2-3:
Left: The Start menu is divided into several distinct sections. The top left section is yours to play with. You can "pin" whatever programs you want here, in whatever order you like. The lower-left section lists the programs you use most often, by Windows XP's calculations. (You can delete individual items here, but you can't add items manually or rearrange them.) The right-side column provides direct access to certain Windows features and standard Windows programs.

Right: The All Programs menu superimposes itself on the standard two-column Start menu, listing almost every piece of software you've ever installed. You can rearrange, add to, or delete items from this list.

310. With the Start menu opened using the Windows logo key, a user could use the scroll wheel to "permit the user to select a mode of content for display," e.g., scroll through or highlight a content mode such as Microsoft Word.

C. Ground 3: Shimura in view of Tsuji, Pogue, Escamilla, and Yeh renders Claim 2 obvious.

1. Combination of Shimura, Tsuji, Pogue, Escamilla, and Yeh (hereafter "Shimura-Tsuji-Pogue-Escamilla-Yeh combination")

311. A POSITA would have been motivated to combine Escamilla with Shimura, Tsuji, and Pogue (VIII.B.1), and to combine Yeh with the foregoing for several reasons.

312. Escamilla discloses that the scroll wheel is a multi-function input device without providing explicit disclosure that one such function is volume control. EX-1007, 1:66-2:2. However, at the Critical Date, Yeh disclosed this function as to a control knob: where clockwise rotation increases the volume and counter-clockwise rotation decreases the volume. EX-1008, Abstract, 3:1-7. Thus, a POSITA would have been motivated to program the function disclosed in Yeh into the multi-function scroll wheel of the Shimura-Tsuji-Pogue-Escamilla Computer to arrive at the "Shimura-Tsuji-Pogue-Escamilla-Yeh Computer" capable of controlling the volume with the scroll wheel.

313. There would have been motivation to combine, and a reasonable expectation of success in combining, Yeh with Shimura, Tsuji, Pogue, and Escamilla because prior art elements are merely combined according to known methods to yield predictable results. That is, Yeh taught the use of a scroll wheel for controlling volume ("volume control knob"). Application of this teaching to Shimura, Tsuji, Pogue, and Escamilla would have yielded a predictable portable computer with Escamilla's scroll wheel capable of controlling the volume by rotating the scroll wheel.

314. Thus, the POSITA would have been motivated to combine the teachings of Shimura, Tsuji, Pogue, and Escamilla with Yeh's teachings to arrive at the

Shimura-Tsuji-Pogue-Escamilla-Yeh Computer that implements Yeh's volume control functionality into Escamilla's scroll wheel.

2. Claim 2

> ***"The portable computer of claim 1, where the navigation control includes a scroll wheel configured to permit the user to adjust a volume of sound produced by the portable computer."***

315. The Shimura-Tsuji-Pogue-Escamilla-Yeh combination discloses the additional limitation of this claim and renders the claim obvious. *See* VII.A; VII.D; VII.E; VIII.B.1; VIII.C.1.

316. A POSITA would have been motivated to incorporate Yeh's volume control functionality into Escamilla's multi-function scroll wheel. *See* VIII.C.1; EX-1007, 1:66-2:2; EX-1008, Abstract, 3:1-7.

D. Ground 4: Shimura in view of Tsuji, Pogue, and Lin renders Claims 18 and 22 obvious.

1. Combination of Shimura, Tsuji, Pogue, and Lin (hereafter "Shimura-Tsuji-Pogue-Lin combination")

317. A POSITA would have been motivated to combine Pogue with Shimura and Tsuji (VIII.B.1), and to combine Lin with the foregoing for several reasons.

318. A rotary knob was not explicitly disclosed in Shimura, Tsuji, or Pogue. However, at the Critical Date, a rotary knob was a standard component

used in various electronic devices, including portable computers, such as the rotary knob (red) explicitly disclosed in Lin. EX-1008, Abstract, ¶28, FIG. 2 (below).

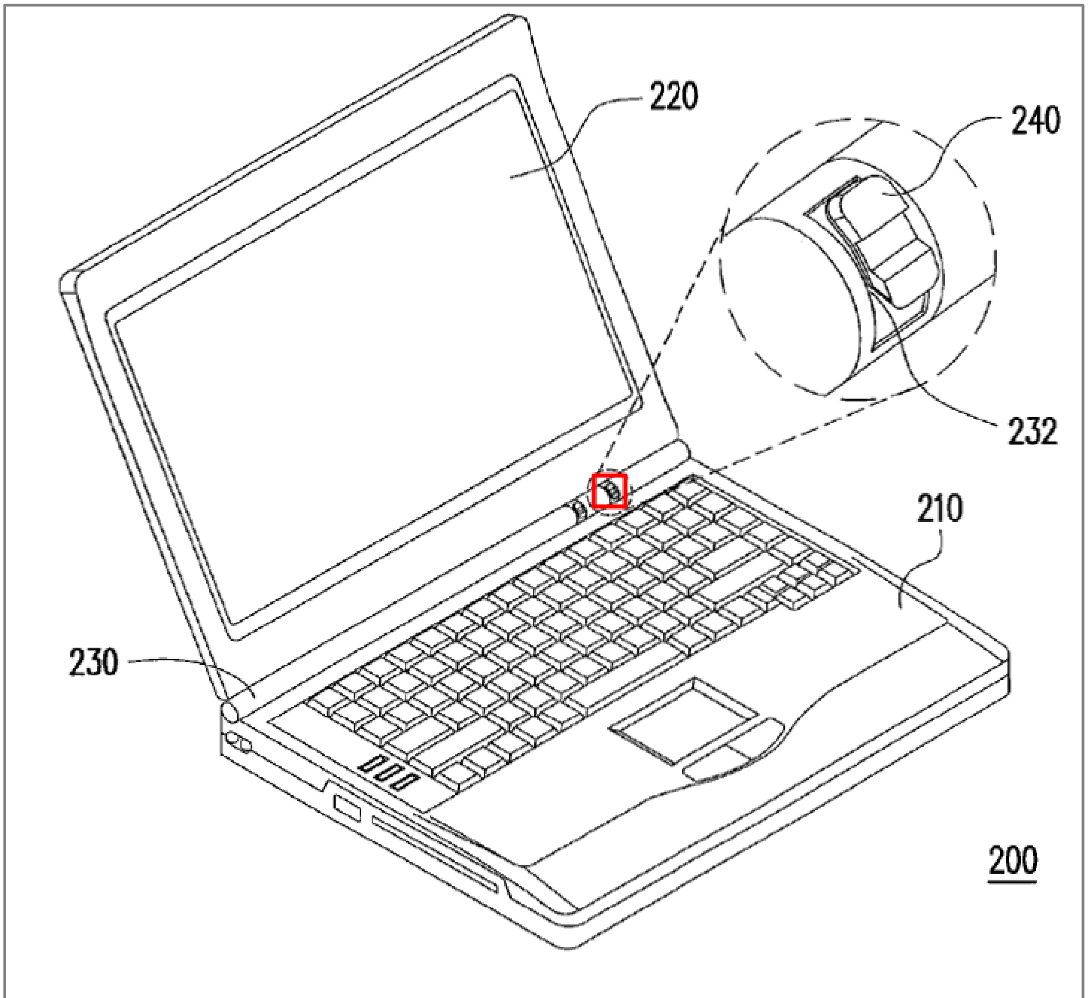


FIG. 2

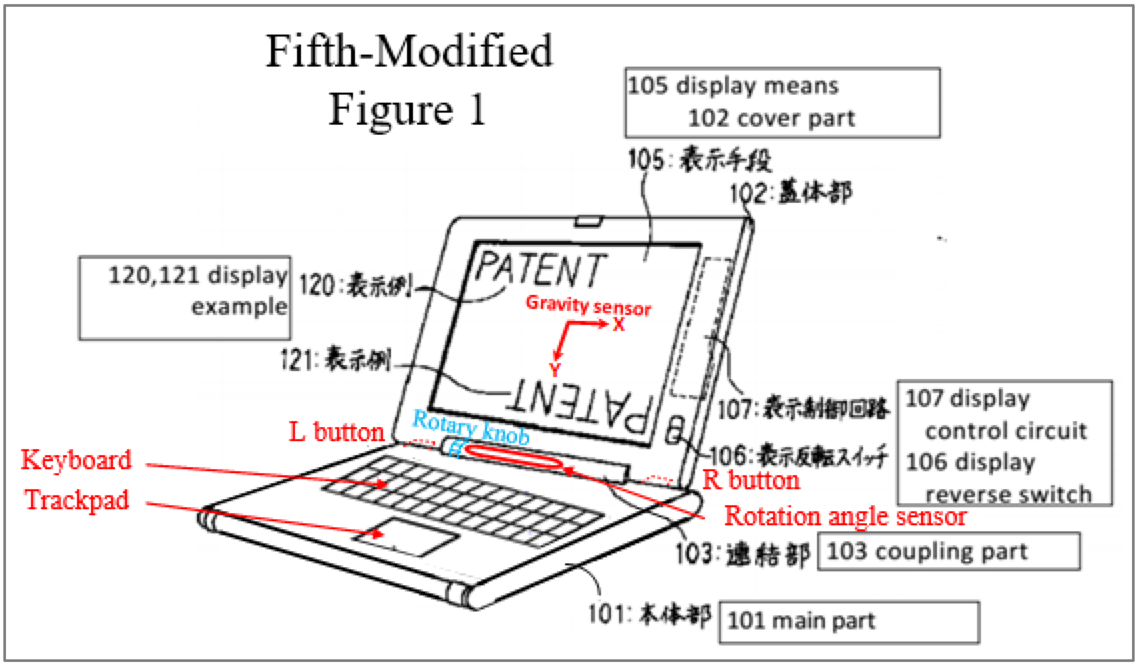
319. Lin discloses that the rotary knob can be used to activate a desired function of the portable computer. EX-1009, ¶¶8, 28. Tsuji teaches various functions of a portable computer, such as up and down arrow keys of a keyboard. *See* VIII.D.1; EX-1005, ¶¶38-46. Given this, a POSITA would have been motivated to associate at least the functions of Tsuji's up and down arrow keys with Lin's rotary

knob, such that moving the rotary knob up moves the displayed content up, and moving the rotary knob down moves the displayed content down.

320. Moreover, the POSITA would have been motivated to incorporate Lin's rotary knob, disposed in the hinge assembly, into the portable computer so that "the available space inside the upper chassis of the main body is increased." EX-1009, ¶28.

321. Additionally, the POSITA would have been motivated to incorporate Lin's rotary knob, disposed on the hinge assembly, into the portable computer so that it could be accessed in the various display modes, including in those display modes where the keyboard is not accessible (e.g., easel and frame modes).

322. Thus, a POSITA would have been motivated to incorporate the well-known standard rotary knob of Lin into the Shimura-Tsuji-Pogue Computer to arrive at the "Shimura-Tsuji-Pogue-Lin Computer" with the rotary knob (blue). *See* Fifth-Modified Figure 1 of Shimura (below).


Fifth-Modified
Figure 1
105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
121: 表示例
PATENT
Gravity sensor
X
Y
PATENT
107: 表示制御回路
107 display control circuit
106: 表示反転スイッチ
106 display reverse switch
L button
Rotary knob
R button
Keyboard
Trackpad
Rotation angle sensor
103: 連結部
103 coupling part
101: 本体部
101 main part

323. There would have been motivation to combine, and a reasonable expectation of success in combining, Lin with Shimura, Tsuji, and Pogue because prior art elements are merely combined according to known methods to yield predictable results. I.e., Lin taught a rotary knob integrated into a hinge assembly, and application of this teaching to Shimura, Tsuji, and Pogue would have yielded a predictable portable computer with Lin's rotary knob integrated into the base of the portable computer.

324. Thus, the POSITA would have been motivated to combine the teachings of Shimura, Tsuji, and Pogue with Lin's teachings to arrive at the Shimura-Tsuji-Pogue-Lin Computer that implements Lin's rotary knob into the portable computer.

2. **Claim 18**

a. Limitation [18pre]

[18pre] "A portable computer configurable between a plurality of display modes including a laptop mode and an easel mode wherein transitions between the plurality of display modes allow an operator to interact with a single display screen in each of the plurality of display modes, the portable computer comprising:"

325. The Shimura-Tsuji combination discloses [18pre] and renders it obvious. *See* VII.A; VIII.A.1.a; [1pre].

b. Limitation [18a]

[18a] "a base including a keyboard;"

326. Shimura discloses [18a]. *See* VII.A; [1a].

c. Limitation [18b]

[18b] " a main display component including the single display screen configured to display content;"

327. The Shimura-Tsuji combination discloses [18b] and renders it obvious. *See* VII.A; VIII.A.1.a; [1pre]; [1b1]; [1b2].

d. Limitation [18c1]

[18c1] " a hinge assembly disposed at least partially within the base configured to rotatably couple the main display component to the base, the hinge assembly defining a longitudinal axis running along an interface between the display component and the base about which the display component and the base are rotatable to transition the portable computer between at least the laptop mode and the easel mode,"

328. Shimura discloses [18c1]. *See* VII.A; [1b1]; [10c1].

e. Limitation [18c2]

[18c2] "wherein the transition between the laptop mode and the easel mode allows the operator to operate the portable computer while viewing the single display screen in each of the plurality of display modes, wherein"

329. The Shimura-Tsuji combination discloses [18c2] and renders it obvious. *See* VIII.A.1.a; VIII.A.1.c; [1pre]; [1b3].

f. Limitation [18d]

[18d] "the laptop mode is configured to display to a user on the main display component a first content mode having a first content display orientation with the main display component oriented towards the user and the keyboard oriented to receive input from the user;"

330. The Shimura-Tsuji-Pogue combination discloses [18d] and renders it obvious. *See* VII.A; VIII.A.1.c; VIII.A.2; [1c].

g. Limitation [18e1]

[18e1] "the easel mode is configured to display to the user on the main display component a second content mode having a second content display orientation with the main display component oriented towards the user and the keyboard oriented away from the user, wherein the first and second content display orientations are 180 degrees relative to each other,"

331. The Shimura-Tsuji-Pogue combination discloses [18e1] and renders it obvious. *See* VII.A; VII.C; VIII.A.1.a; VIII.A.2; [1d1].

h. Limitation [18e2]

[18e2] "and wherein the portable computer is operable in the easel mode to enable the user to interact with displayed content without interacting with the keyboard; and "

332. The Shimura-Tsuji combination discloses [18e2] and renders it obvious. *See* VII.A; VIII.A.1.a; [1d2].

i. Limitation [18f1]

[18f1] " a navigation control disposed at least partially about the longitudinal axis"

333. The Shimura-Tsuji-Pogue-Lin combination discloses [18f1] and renders it obvious.

334. Lin discloses a rotary knob integrated into the hinge assembly, which is "at least partially about the longitudinal axis." *See* VIII.D.1; EX-1008, ¶28. Lin's rotary knob is used to activate a function. Given Tsuji's teaching of various functions of a portable computer, including up and down arrow keys, a POSITA would have been motivated to program the rotary knob to perform at least the up and down arrow key functions such that moving the rotary knob up moves the displayed content up and moving the rotary knob down moves the displayed content down. *See* VIII.D.1. Thus, Lin's rotary knob discloses the claimed "navigation control."

j. Limitation [18f2]

[18f2] "wherein the plurality of modes includes a frame mode in which the main display component is oriented towards the operator, the base contacts a substantially horizontal surface, and the keyboard faces the substantially horizontal surface."

335. Shimura discloses [18f2]. *See* VII.A; VIII.A.1.c; VIII.A.2; [1pre]; [1e2].

336. Accordingly, the Shimura-Tsuji-Pogue-Lin combination renders obvious Claim 18.

3. Claim 22

[22] "The portable computer of claim 18, further comprising at least one navigation button disposed on one of the base and the display component."

337. The Shimura-Tsuji-Pogue combination discloses the additional limitation of this claim, and the Shimura-Tsuji-Pogue-Lin combination renders the claim obvious. *See* VII.A; VIII.A.1.a; VIII.A.1.b; VIII.A.2; Claim 3, [4a]; [4b]; [5a]; [5b]; [5c].

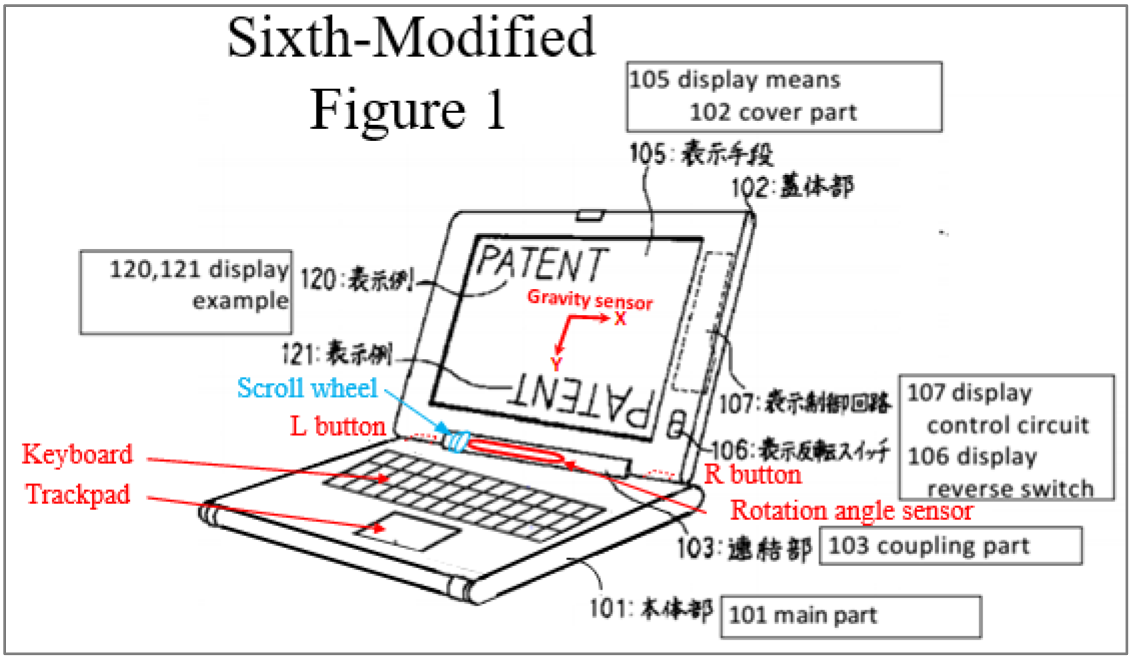
E. Ground 5: Shimura in view of Tsuji, Pogue, Escamilla, and Lin renders Claims 11, 12, 19, and 21 obvious.

1. Combination of Shimura, Tsuji, Pogue, Escamilla, and Lin (hereafter "Shimura-Tsuji-Pogue-Escamilla-Lin combination")

338. A POSITA would have been motivated to combine Escamilla with Shimura, Tsuji, and Pogue (VIII.B.1), and to combine Lin with the foregoing for several reasons.

339. In one embodiment, Escamilla discloses the scroll wheel is mounted on a base of a computer. EX-1007, 2:1-2. However, at the Critical Date, Lin disclosed a rotary knob disposed in pivot portion 230 of the main body 210. EX-1009, ¶28. Thus, a POSITA would have known that implementing Escamilla's

scroll wheel into a location that was accessible in all modes, such as Lin's pivot portion 230, was an obvious design choice for a portable computer with multiple display modes. The resulting system will be hereafter referred to as the "Shimura-Tsuji-Pogue-Escamilla-Lin Computer" with the scroll wheel (blue) implemented at least partially in the hinge assembly. *See* Sixth-Modified Figure 1 of Shimura (below).


Sixth-Modified Figure 1

105 display means
102 cover part
105: 表示手段
102: 蓋体部
120,121 display example
120: 表示例
PATENT
Gravity sensor
X
Y
121: 表示例
PATENT
Scroll wheel
L button
Keyboard
Trackpad
107: 表示制御回路
107 display control circuit
106: 表示反転スイッチ
106 display reverse switch
R button
Rotation angle sensor
103: 連結部
103 coupling part
101: 本体部
101 main part

340. There would have been motivation to combine, and a reasonable expectation of success in combining, Lin with Shimura, Tsuji, Pogue, and Escamilla because prior art elements are merely combined according to known methods to yield predictable results. I.e., Lin taught implementing a scroll wheel into a hinge assembly, and application of this teaching to Shimura, Tsuji, Pogue, and Escamilla

would have yielded a predictable portable computer with Escamilla's scroll wheel disposed within the hinge assembly of the portable computer.

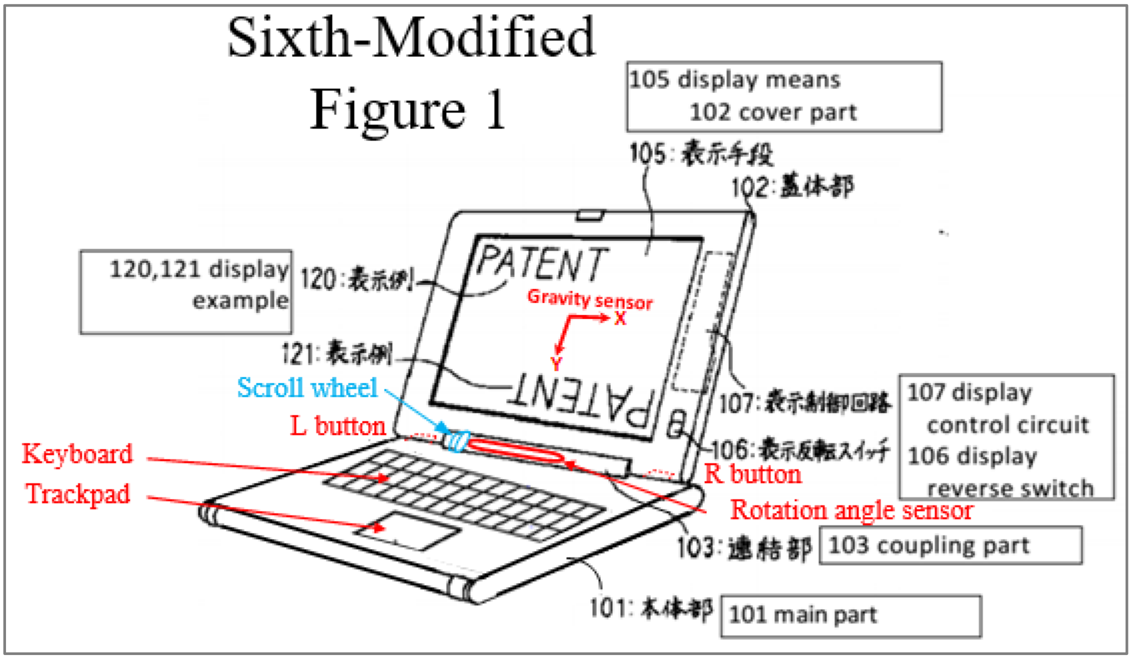
341. Thus, the POSITA would have been motivated to combine the teachings of Shimura, Tsuji, Pogue, and Escamilla with Lin's teachings to arrive at the Shimura-Tsuji-Pogue-Escamilla-Lin Computer that implements Escamilla's scroll wheel into the hinge assembly of the portable computer.

2. Claim 11

"The portable computer of claim 10, wherein the navigation control includes a scroll wheel disposed at least partially about the axis of rotation of the display component relative to the base."

342. The Shimura-Tsuji-Pogue-Escamilla-Lin combination discloses the additional limitation of this claim and renders the claim obvious. *See* VII.A; VII.D; VII.F; VIII.B.1; VIII.E.1.

343. The Shimura-Tsuji-Pogue-Escamilla-Lin Computer discloses a scroll wheel (blue) implemented in the hinge assembly. *See* VIII.E.1; Sixth-Modified Figure 1 of Shimura (below).


Sixth-Modified Figure 1
105 display means
102 cover part
105:表示手段
102:蓋体部
120,121 display example
120:表示例
PATENT
Gravity sensor
X
Y
121:表示例
Scroll wheel
L button
Keyboard
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B
107:表示制御回路
107 display control circuit
106:表示反転スイッチ
106 display reverse switch
R button
Rotation angle sensor
103:連結部
103 coupling part
101:本体部
101 main part

3. Claim 12

> ***"The portable computer of claim 11, wherein the scroll wheel provides a default action which effects [sic] manipulation of the at least one of the operating parameters of the portable computer, wherein the default action is defined differently responsive to a display mode of the portable computer."***

344. The Shimura-Tsuji-Pogue-Escamilla-Lin combination discloses the additional limitation of this claim and renders the claim obvious. *See* VII.A; VII.D; VII.F; VIII.B.1; VIII.E.1.

345. Tsuji discloses automatically changing the function of the R and L buttons 118 and 119 based on a current display mode. *See* VII.B; EX-1005, ¶46.

346. Given Tsuji's disclosure, a POSITA would have been motivated to program the multi-function scroll wheel of the Shimura-Tsuji-Pogue-Escamilla-Lin Computer to change a default action in the different display modes. For example, the scroll wheel could scroll up and down in the laptop mode while reviewing and editing a document, and increase and decrease volume in the easel mode while consuming media (e.g., video). EX-1007, 1:20-30.

4. **Claim 19**

> ***" The portable computer of claim 18, wherein the navigation control includes a scroll wheel configured to permit a user to manipulate the content displayed on the screen."***

347. The Shimura-Tsuji-Pogue-Escamilla-Lin combination discloses the additional limitation of this claim and renders the claim obvious. *See* VII.A; VII.D; VII.F; VIII.B.1; VIII.E.1.

348. Escamilla discloses that the scroll wheel can provide functionality similar to a wheel on a mouse, including a scroll function to scroll up and down. EX-1007, 1:20-27. With the Start menu using the Windows logo key, a user could use the scroll wheel to "permit a user to manipulate the content displayed on the screen [e.g., scroll through or highlight the modes of content (e.g., "Internet," "Windows Media Player," "Email," and "Microsoft Word")]."

5. Claim 21

" The portable computer of claim 18, wherein the navigation control includes a scroll wheel disposed at least partially within the hinge assembly."

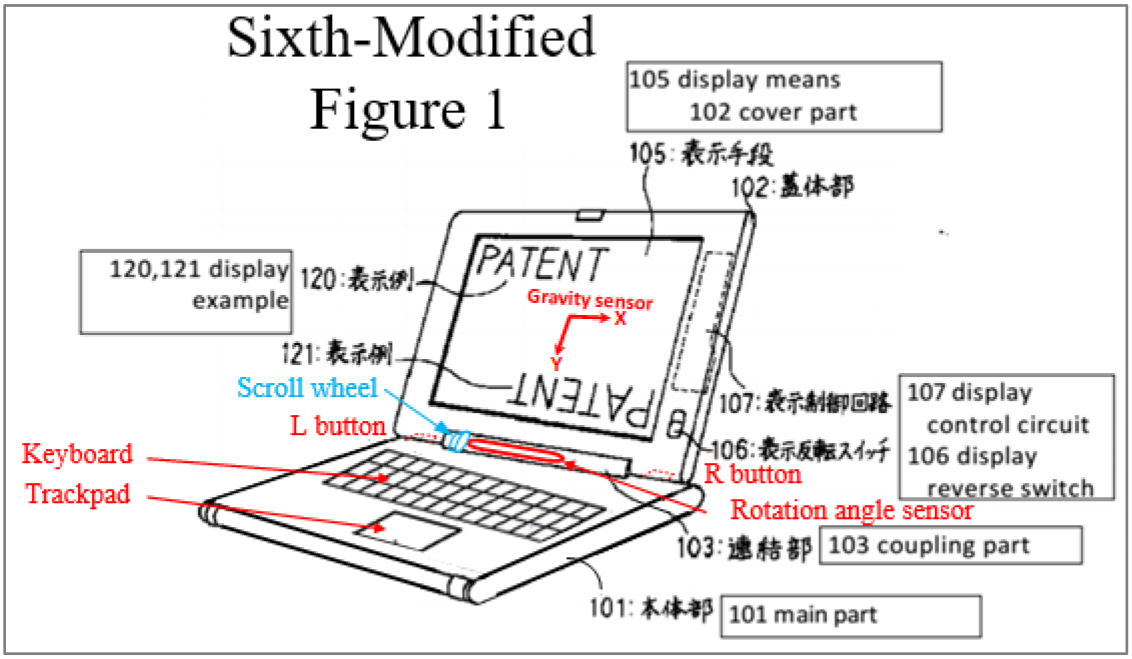
349. The Shimura-Tsuji-Pogue-Escamilla-Lin combination discloses the additional limitation of this claim and renders the claim obvious. *See* VII.A; VII.D; VII.F; VIII.B.1; VIII.E.1; Claim 11.

F. Ground 6: Shimura in view of Tsuji, Pogue, Escamilla, Lin, and Yeh renders Claim 20 obvious.

1. Combination of Shimura, Tsuji, Pogue, Escamilla, Lin, and Yeh (hereafter "Shimura-Tsuji-Pogue-Escamilla-Lin-Yeh combination")

350. A POSITA would have been motivated to combine Lin with Shimura, Tsuji, Pogue, and Escamilla (VIII.E.1), and to combine Yeh with the foregoing for several reasons. .

351. Lin discloses implementing the multi-function scroll wheel (blue) at least partially in the hinge assembly. *See* VIII.E.1; Sixth-Modified Figure 1 of Shimura (below).


Sixth-Modified Figure 1
105 display means
102 cover part
105:表示手段
102:蓋体部
120,121 display example
120:表示例
121:表示例
PATENT
Gravity sensor
X
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107 display control circuit
106:表示反転スイッチ
106 display reverse switch
R button
Rotation angle sensor
103:連結部
103 coupling part
101:本体部
101 main part

352. Escamilla also discloses that the scroll wheel is a multi-function input device, but without providing explicit disclosure that one such function is volume control. EX-1007, 1:66-2:2. However, at the Critical Date, Yeh disclosed this function as to a control knob: where clockwise rotation increases the volume and counterclockwise rotation decreases the volume. EX-1008, Abstract, 3:1-7. Thus, a POSITA would have been motivated to program the function disclosed in Yeh into the multi-function scroll wheel of the Shimura-Tsuji-Pogue-Escamilla-Lin Computer to arrive at the "Shimura-Tsuji-Pogue-Escamilla-Lin-Yeh Computer" capable of controlling the volume with the scroll wheel implemented at least partially in the hinge assembly.

353. There would have been motivation to combine, and a reasonable expectation of success in combining, Yeh with Shimura, Tsuji, Pogue, Escamilla, and

Lin because prior art elements are merely combined according to known methods to yield predictable results. I.e, Yeh taught volume control functionality, and application of this teaching to Shimura, Tsuji, Pogue, Escamilla, and Lin would have yielded a predictable portable computer with Escamilla's scroll wheel capable of controlling the volume by being rotated.

354. Thus, the POSITA would have been motivated to combine the teachings of Shimura, Tsuji, Pogue, Escamilla, and Lin with Yeh's teachings to arrive at the Shimura-Tsuji-Pogue-Escamilla-Lin-Yeh Computer that implements Yeh's volume control functionality into Escamilla's scroll wheel implemented at least partially in the hinge assembly.

2. Claim 20

> ***"The portable computer of claim 18, wherein the navigation control includes a scroll wheel configured to permit a user to control a volume of sound played by the portable computer."***

355. The Shimura-Tsuji-Pogue-Escamilla-Lin-Yeh combination discloses the additional limitation of this claim and renders the claim obvious. *See* VII.A; VII.D-VII.E; VIII.B.1-VIII.C.1; VIII.E.1; VIII.F.1; Claim 2.

IX. OPINIONS IN SUMMARY

356. In summary, it is my opinion that claims 1-16 and 18-22 of the '844 Patent (the Challenged Claims) are obvious based on the following combined

teachings of the prior art: Shimura in view of Tsuji and Pogue; Shimura in view of Tsuji, Pogue, and Escamilla; Shimura in view of Tsuji, Pogue, Escamilla, and Yeh; Shimura in view of Tsuji, Pogue, and Lin; Shimura in view of Tsuji, Pogue, Escamilla, and Lin; Shimura in view of Tsuji, Pogue, Escamilla, Lin, and Yeh.

357. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed on April 30, 2021, in Watertown, Massachusetts.

Jean Renard Ward

Jean Renard Ward