

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MOTOROLA MOBILITY LLC AND GOOGLE LLC,
Petitioners,

v.

MULTIFOLD INTERNATIONAL INC. PTE. LTD.,
Patent Owner.

Case IPR2025-00038
Patent 8,836,842

EXHIBIT 2002

DECLARATION OF RAJEEV SURATI

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I. INTRODUCTION

1. My name is Dr. Rajeev Surati. I have been retained as an expert witness to provide my independent opinion in regards with matters at issue in the *inter partes* review of U.S. Pat. No. 8,836,842 (“the ’842 Patent”) in the IPR2025-00038 proceeding. I have been retained by Multifold International Pte. Ltd. (“Multifold”), the Patent Owner, in this proceeding. The Petitioner in this case are Motorola LLC (“Motorola”) and Google LLC (“Google”).

2. Unless otherwise noted, the statements made herein are based on my personal knowledge, and if called to testify about this declaration, I could and would do so competently and truthfully.

3. A detailed record of my professional qualifications including cases in which I was an expert is being submitted herewith as Ex. 2003 and is summarized in Section II, *infra*.

4. I am being compensated for my work in this matter at the rate of \$665/hour. I am also being reimbursed for reasonable and customary expenses associated with my work and testimony in this investigation. My compensation is not contingent on the outcome of this matter or the specifics of my testimony.

5. I am not a legal expert and offer no opinions on the law. However, I have been informed by counsel of the various legal standards that apply, and I have applied those standards in arriving at my conclusions.

6. In this declaration, I have been asked to address certain invalidity theories and opinions relating to the '842 Patent, specifically, those provided by the Petition, Paper 1 ("Petition") challenging the '842 Patent and the accompanying declaration of Dr. Jeffrey Rodriguez, Ex. 1003 ("Rodriguez Decl." or "Rodriguez declaration"), regarding the alleged invalidity of the '842 Patent. The Petition and Dr. Rodriguez argue that Claims 1-7, 10-13, 16-17, and 19-20 ("Challenged Claims") are unpatentable.

7. In this expert declaration, I provide my opinions in response to the Grounds in the Petition and the Rodriguez declaration, as well as the basis for my opinions. As I explain in detail later in this expert report, based on my study of the '842 Patent, the Rodriguez declaration, and various references cited by Petitioner and Dr. Rodriguez, it is my opinion that the Challenged Claims are patentable over the references in the Grounds.

8. I have found multiple limitations in the Challenged Claims that are not disclosed by any one of those references or a proposed combination/modification of references. I identify those undisclosed limitations on a claim-by-claim, reference-by-reference basis. I also identify proposed combinations of references in a Ground or proposed modifications of a reference in a Ground that fail to render claims obvious because a person of ordinary skill in the art ("POSITA") would not have an apparent reason to combine or modify the references as proposed by the Petitioners

and Dr. Rodriguez. That said, my decision not to address a limitation of a Challenged Claim should not be interpreted as an admission that such a limitation is found in the art in the Ground cited by Petitioner and Dr. Rodriguez, or that a POSITA would have an apparent reason to combine or modify references in a manner meeting the limitation.

9. I submit this declaration having reviewed the '842 Patent, the Challenged Claims, the '842 Patent file history, and various references cited by Petitioner in its Petition and/or in the Rodrigue declaration. The material I have considered includes but is not limited to the items set forth below:

PETITIONER MATERIALS CONSIDERED	
Paper 1	Petition
Paper 8	Institution Decision dtd May 21, 2025
Ex. 1002	Prosecution History of the '842 Patent
Ex. 1003	Declaration of Dr. Rodriguez
Ex. 1004	U.S. Pat. Pub. No. 2009/0190295 to Chin ("Chin")
Ex. 1005	U.S. Pat. Pub. No. 2005/0078211 to Whitehorn ("Whitehorn")

10. I have also considered materials from the following list of Patent Owner's list of exhibits:

PATENT OWNER MATERIAL CONSIDERED	
Ex. 2004	Challenged claims
Ex. 2005	Joint Claim Construction Brief, Dkt. 103, May 15, 2025.
Ex. 2007	U.S. Pat. No. 6,384,852 (Ye)
Ex. 2008	U.S. Pat. No. 8,977,293 (Rodriguez)
Ex. 2009	U.S. Pat. Pub. No. 2011/0043683 (Beach)
Ex. 2010	Reserved
Ex. 2011	Deposition Transcript of Dr. Jeffrey Rodriguez (Aug. 8, 2025)

11. I have also considered other materials, such as web sites and text materials in doing background research on the issues presented in this IPR.

12. My opinions as set forth in this expert declaration are based on these sources of information, together with my education, training, and experience, including my work in the field of the '842 Patent.

II. QUALIFICATIONS AND PROFESSIONAL EXPERIENCE

13. My complete qualifications and professional experience are described in my Curriculum Vitae, a copy of which is submitted as Ex. 2003. The following is a brief summary of my relevant qualifications and professional experience.

14. I have provided my full background in the curriculum vitae included here as Ex. 2003. My CV details my experience in electrical engineering and computer science and also includes a list of publications I have authored or co-authored.

15. I attended the Massachusetts Institute of Technology (MIT) from 1988 to 1999, during which, I earned a Bachelor of Science (1992), Master of Science (1995) and a Doctor of Philosophy (1999) in Electrical Engineering and Computer Science. My Ph.D. thesis was entitled “Scalable Self-Calibrating Technology for Large Scale Displays.”

16. Between 1989-1999 I was employed as a researcher/programmer at the MIT Artificial Intelligence Lab. At the lab I worked for Thomas F. Knight Jr. Ph.D., one of the noted inventors of the first bit mapped displays for computers as well as many other notable accomplishments. The lab is also noted for its excellence in machine vision.

17. In 1996 I began working on a Ph.D. thesis related to the display of multimedia across large displays. My Ph.D. thesis system was a special kind of display allowing one to create ultra-high resolution displays composed of multiple projectors tiled with a slight overlap so that a camera-based feedback system could create an inverse map to drive the system such that a person would only see a continuous seamless display with no bezel or overlap. The camera-based system

required imaging and decoding of 2d fiducials, and thus I became an expert at machine vision for the purpose of decoding and encoding 2d fiducials such as bar codes – the optical systems involved, the systems programming, etc. Today, this technology is better known as automatic calibration for projection mapping or structured light. My experience, along with a patent I developed and licensed based on my Ph.D. thesis, were used to create a new startup company named Scalable Display Technologies that works with a variety of Pro AV display companies' products.

18. I am a named inventor on U.S. Pat. No. 6,456,339, "Super-resolution Display," which reflects my Ph.D. work.

19. In 2004, I founded Scalable Display Technologies (SDT), and I have been the President and Chairman of the company since the founding. Among its operations, SDT operates in the Audio Video domain and has licensed software and firmware to various companies including Hitachi and NEC. I also wrote a network-synchronized media playback system involving encoding and decoding of video and audio content as well as real time recording and video capture, a product known as "ScalablePlayer." This product was written on top of the DirectShow system from Microsoft. In conjunction with this, for some show demonstration systems, I wrote a desktop application in C# that allowed one to preview and select different inputs and outputs.

20. Additionally, at SDT I have worked with most of the major video wall control manufacturers on customizing their systems to work with large display walls using overlapping projectors. These include Jupiter Systems, RGB Spectrum Matrox, and Datapath. In addition, I helped architect and specify some special video wall GPU functions for both AMD and NVIDIA.

21. I have received additional patents, including: U.S. Pat. No. 8,817,111, “System and method of calibrating a display system free of variation in system input resolution”; U.S. Pat. No. 8,994,757, “System and method for providing improved display quality by display adjustment and image processing using optical feedback”; U.S. Pat. No. 9,215,455, “System and method of calibrating a display system free of variation in system input resolution”; U.S. Pat. No. 9,369,683, “System and method for calibrating a display system using manual and semi-manual techniques”; and U.S. Pat. No. 9,497,447, “System and method for color and intensity calibrating of a display system for practical usage.”

22. In 2000, I started a company known as “photo.net” which was a large online photography community where I worked with many consumer electronics manufacturers in the digital camera business. There, I implemented a photo sharing system involving the delivery of multimedia content. Additionally, I worked on e-commerce capabilities that involved some product configuration options. In running photo.net I became intimately familiar with implementing file systems for use with

multimedia and super high performance image encoding/decoding systems as well as real time delivery of high bandwidth content.

23. In 1996, I founded Flash Communications, which was focused on technology related to U.S. Pat. No. 5,943,478 and associated technology that I had developed related to pop-up two-way messaging over the Internet. I am one of the named co-inventors of U.S. Pat. No. 5,943,478, which is entitled “System for Popup Messaging over the Internet,” which describes a two-way messaging system like AOL Instant Messenger and MIT’s Zephyr service built at Internet scale.

24. In 1998, Flash Communications was sold to Microsoft Corporation, and Flash Communications’ messaging technology was incorporated into Microsoft’s Messenger service and Microsoft Exchange 2000 Instant Messaging Server.

25. While working at Microsoft between 1999 and 2000, I implemented an XML-based protocol that formed a basis for the Extensible Messaging and Presence Protocol (XMPP), which is now an IETF standard for the Exchange Instant Messaging Server. I participated internally with the program management team on helping specify this protocol for the IETF standardization process.

26. Also while at Microsoft, I invented and was named as an inventor on other patents related to instant messaging, including: U.S. Pat. No. 6,415,318, “Inter-enterprise messaging system using bridgehead servers”; U.S. Pat. No. 6,604,133, “Inter-enterprise messaging system using bridgehead servers”; and U.S. Pat. No.

6,260,148, “Methods and systems for message forwarding and property notifications using electronic subscriptions.”

27. Between 2000 and 2004, I worked as a consultant and investor at Nexaweb Corporation, where I helped implement several two-way messaging features over HTTP.

28. I am on the advisory boards of several technology companies, including UnifySquare, which is a unified communications/real time collaboration consultancy; Paneve, which develops general purpose ASICs coupled with compiler technology; Nexaweb, which develops real time web application frameworks using HTTPS; Antix Labs, which develops compiler technology for universal gaming platform; and Permabit, which develops content addressable storage.

29. For my contributions as an inventor and entrepreneur, I have received several awards, including the Global Indus Technovator Award 2009 and Laureate of 2009 Computer World Honors Program.

III. RELEVANT LEGAL STANDARDS

A. Burden of Proof

30. I understand that LG has the burden of proving unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e). Preponderance of the evidence “means the greater weight of evidence, evidence which is more convincing than the

evidence which is offered in opposition to it.” *Hale v. Dep’t of Transp.*, 772 F.2d 882, 885 (Fed. Cir. 1985).

B. Anticipation (35 U.S.C. § 102)

31. I also understand that a patent may be rendered invalid or unpatentable if it is anticipated based on an alleged prior art reference as understood by a person of ordinary skill in the art (POSITA). Anticipation requires that a prior art reference disclose the claimed invention in its totality, that is, all limitations of the claim are disclosed in the reference as set forth by the claim.

32. I understand that anticipation is a demanding standard. “A claim is anticipated if each and every limitation is found either expressly or inherently in a single prior art reference.” *King Pharm., Inc. v. Eon Labs, Inc.*, 616 F.3d 1267, 1274 (Fed. Cir. 2010) (quotations omitted). “But disclosure of each element is not quite enough—this court has long held that ‘[a]nticipation requires the presence in a single prior art disclosure of all elements of a claimed invention *arranged as in the claim.*’” *Net MoneyIn v. Verisign*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) (cited omitted) (orig. italics). A prior art reference anticipates a patent claim under § 102(b) if it “discloses each and every element of the claimed invention arranged or combined in the same way as the claim.” [*Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1341 \(Fed. Cir. 2016\)](#). In other words, the reference must disclose the invention exactly as it is claimed.

C. Obviousness (35 U.S.C. § 103)

33. I also understand that a patent may be rendered “obvious” based on an alleged prior art reference or a combination of such references in view of what a person of ordinary skill in the art would understand based on his or her knowledge and the references. I understand that a patent cannot be properly granted for subject matter that would have been obvious to a person of ordinary skill in the art at the time of the alleged invention, and that a patent claim directed to such obvious subject matter is invalid under 35 U.S.C. § 103. It is also my understanding that in assessing the obviousness of claimed subject matter one should evaluate obviousness over the prior art from the perspective of one of ordinary skill in the art at the time the invention was made (and not from the perspective of either a layman or a genius in that art).

34. I have been informed that the following factors must be evaluated to determine whether the Petitioner has met its burden of proof that a claimed invention is obvious:

1. The scope and content of the prior art relied upon by Petitioner;
2. The difference or differences, if any, between each claim of the patent and the prior art;
3. The level of ordinary skill in the art at the time the invention of the patent was made; and

4. Any objective indicia of non-obviousness, such as: (1) commercial success of an embodiment; (2) a long-felt need; (3) skepticism; (4) failure by others to find the solution provided by the claimed invention; (5) copying by others of the subject matter of the claim invention; (6) unexpected results of the claimed invention; (7) acceptance of others and industry praise; and (8) licensing of the patents.

35. I have been informed that to prevail on obviousness the Petitioner must establish that (1) the prior art teaches or suggests each of the limitations of the claim; (2) there exists an apparent reason to combine and/or modify the prior art as proposed; and (3) a person of ordinary skill would have a reasonable expectation of success that the proposed combination and/or modification of the prior art would operate for its intended purpose.

36. I have been informed that a claim is not proved obvious merely by demonstrating that each of the elements was independently known in the prior art. I have been informed that many, if not all, inventions rely on building blocks already known, and claimed inventions almost of necessity will likely be combinations of what is already known.

37. I have been informed that it is important in the obviousness inquiry to identify whether a POSITA at the time of the invention would have motivation to combine or modify the prior art references in the manner proposed by the Petitioner

so as to arrive at the claimed invention. Put another way, a finding of obviousness should be supported by an apparent reason to combine or modify the prior art references as proposed by the Petitioner.

38. I have been informed that it is important in the obviousness inquiry that it is understood how the references are combined, including how the combination of references is supposed to work. An explanation of the operation of the combined references is often a prerequisite to determining whether a POSITA would have been motivated or had a reason to make the proposed combination/modification and would have had a reasonable expectation of success.

39. In assessing obviousness, I have been instructed to consider both the ordinary creativity and common sense of the person of ordinary skill in the art. I also understand that it is normally impermissible for common sense or common knowledge to be applied to fill gaps in prior art that fails to teach or suggest a limitation of the claim. I also understand that the obviousness inquiry should guard against hindsight bias or hindsight reconstruction where after-the-fact reasoning is applied to combine prior art elements using the claim as a template, without establishing that, as of the date of the invention, there exists a motivation to combine or apparent reason to combine or modify the prior art as proposed.

40. In assessing obviousness, I have been instructed that, in order to qualify as proper prior art for an obviousness analysis, a reference must qualify as analogous

art. I have been informed that a reference qualifies as analogous art with respect to the claims if it is either: (1) from the same field or endeavor as the patent; or (2) the reference is reasonably pertinent to the particular problem addressed by the invention. I have also been informed that for a reference to be reasonably pertinent, it must logically have commended itself during the ordinary course of development to an inventor's attention in considering the problem.

41. In assessing obviousness, I have also been instructed that, as noted above, secondary considerations can often be probative evidence of non-obviousness and can serve to avoid hindsight bias. I have been instructed that secondary considerations can be sufficient to overcome a prima facie case of obviousness.

IV. LEVEL OF ORDINARY SKILL IN THE ART AND PRIORITY DATE

42. My opinions in this declaration are based on the understandings of a person of ordinary skill in the art, which I understand is sometimes referred to as an "ordinary artisan" or by the acronym "POSITA" (Person of Ordinary Skill in the Art), as of the time of the invention. For purposes of this Declaration, I have been instructed to use September 27, 2011 as the time of invention (priority date), which I understand is the date that the Petitioner is using. See Ex. 1003 [Rodriguez Decl.], ¶ 50.

43. I understand that the person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention. By “relevant,” I mean relevant to the Challenged Claims of the ’842 Patent.

44. I understand that, in assessing the level of skill of a person of ordinary skill in the art, one should consider the type of problems encountered in the art, the prior solutions to those problems found in the prior art, the rapidity with which innovations are made, the sophistication of the technology, the level of education of active workers in the field, and my own experience working with those of skill in the art at the time of the invention.

45. In this case, Dr. Rodriguez has asserted in his declaration that a person of ordinary skill in the art as of the time of the ’842 Patent “would have had a bachelor’s degree in electrical engineering, computer engineering, computer science, or the equivalent plus at least two years of experience in image capture, image processing, image display, user interfaces, or a related field. Additional education could offset a lesser amount of experience and vice versa. Ex. 1003 [Rodriguez Decl.], ¶ 51.

46. I believe that Dr. Rodriguez’s definition of the POSITA is reasonable and I have applied it in my analysis. I was at the time of invention, and am currently, one of more than ordinary skill in the art through my education, research, and work experience. As of the date of the invention, I am very familiar with the types of

problems encountered in the field. Indeed, I am very familiar with people having this level of skill in the field of image processing/display and user interfaces.

V. THE '842 PATENT

47. The Petition challenges Claims 1-8, 10-13, 16-17, and 19-20 of the '842 Patent as obvious based on four grounds:

- Ground 1 challenging Claims 1-8, 10-13, 16-17, and 19-20 as anticipated by Chin;
- Ground 2 challenging Claims 1-8, 10-13, 16-17, and 19-20 as obvious based on Chin;
- Ground 3 challenging Claims 1-7 and 11 as anticipated by Whitehorn; and
- Ground 4 challenging Claims 1-7 and 11 as obvious based on Whitehorn.

See Pet., 6-7.

A. Overview of the '842 Patent

48. The '842 Patent, entitled “Capture Mode Outward Facing Modes,” is generally directed to “[m]ethods and devices for selectively presenting a user interface in a dual screen device.” '842 Patent, Abstract. “The device may present different information on the two screens based on several factors including the mode of the image capture feature, the orientation of the device, and/or the state of the device.” *Id.*

49. The '842 Patent addresses problems presented by single display devices having a “small form factor ... [that] requires a careful balancing between the displayed graphics and the area provided for receiving inputs.” '842 Patent, 1:26-28. “The dual use of the touch screen to provide content and receive user commands [inputs], while flexible for the user, may obfuscate the display and cause visual clutter, thereby leading to user frustration and loss of productivity.” '842 Patent, 1:23-25. “The balancing act is particularly difficult for single display touch screen devices” which have “limited screen space” such that “[w]hen users are entering information through the device, through the single display, the ability to interpret information in the display can be severely hampered, particularly when a complex interaction between display and interface is required.” *Id.*, 35-41.

50. Figure 1A is an exemplary dual screen handheld computing device (e.g., a cellular phone) that includes a primary screen 104, a secondary screen 108, and a camera 168:

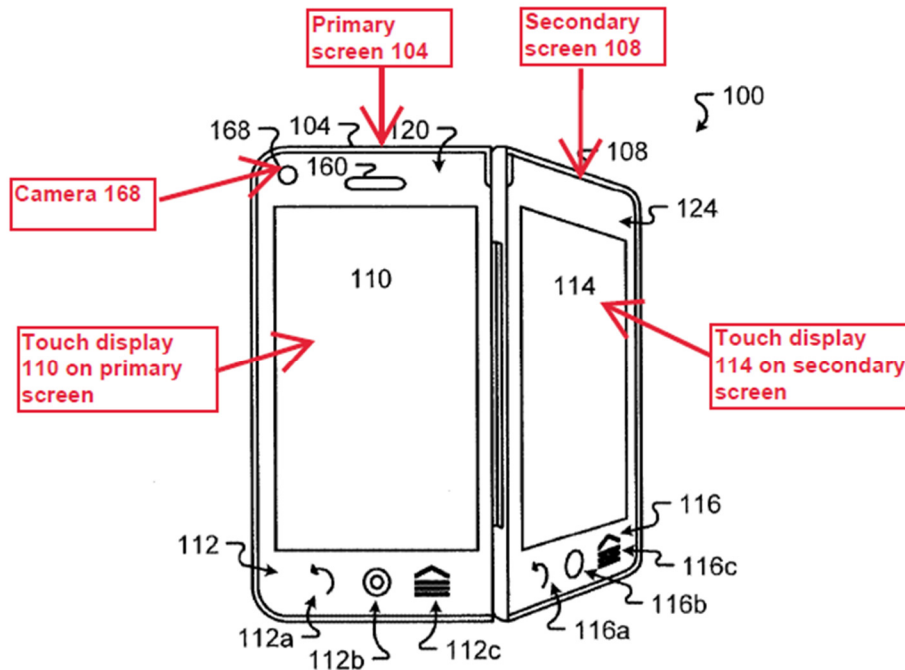


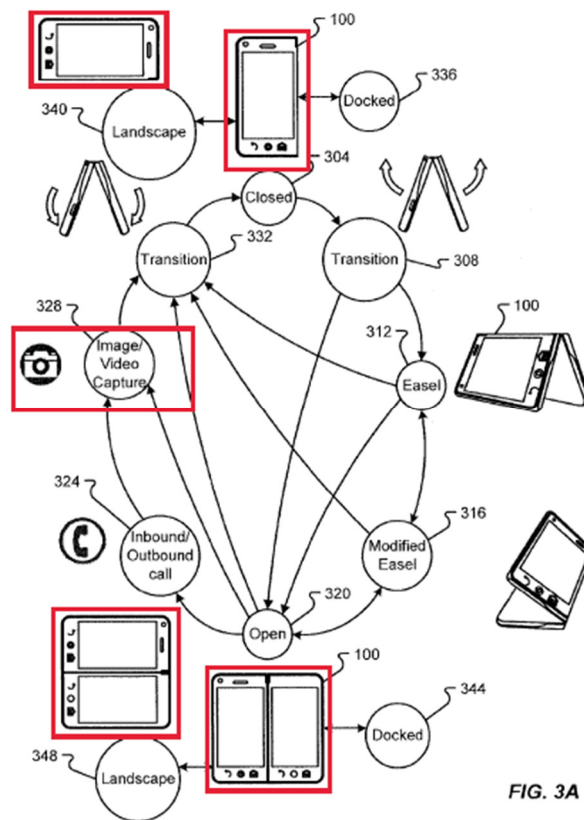
FIG. 1A

'842 Patent, Fig. 1A (annotated), 7:16-32, 8:65-66.

51. The dual screen device can operate different applications, such as a phone application or a camera application. Id. 8:55-62. The configurable area 112 and/or buttons 158 can be used to operate the camera to takes photographs or video, such as to “increase zoom, decrease zoom, and take photograph or record video.” Id., 8:59-62, 8:44-56.

52. The dual screen device can detect different orientations, such as a portrait mode or a landscape mode based on position sensor 176. Id., 12:43-54. The dual screen device can operate in a closed position, an open position, and other positions such as an easel position. The dual screen device can run the camera application in different modes when the device is in various configurations, such as

closed/landscape, closed/portrait, open/landscape, open/portrait, and easel/landscape:



'842 Patent, Fig. 3A (annotated), 10:3-9, 12:64-14:43.

53. The dual screen device can detect orientation and positioning and can provide user interfaces based on those parameters. *Id.*, 13:41-45. 21:20-29, 21:43-50. When the device is operating an image capture application (e.g., camera mode), the device can “switch between different image capture modes.” *Id.*, 12:26-28, 32:18-40. The dual screen device can determine the image capture mode based on various parameters, such as the image capture function configuration, device

orientation (portrait, landscape), and a device state (open, closed). *Id.*, 1:67-2:3 (“Based on one or more of the image capture configuration, the device orientation, and the device state, the device can enter one or more image capture modes or configurations”), 32:7-37 (Fig. 13), 34:22-39 (Fig. 17), 35:30-51 (Fig. 19).

54. Figure 19 provides an illustration of how image capture modes are determined based on parameters such as the device orientation and device state:

The device 100 may receive user input to execute the image capture function 1100, in step 1908. The device 100 can have at least a first screen 110 and second screen 114 and execute the image capture function 1100 upon receiving the user input. In order to determine how to display the image capture function 1100 in the device 100, the device 100 may determine an image capture function 1100 mode, in step 1912. The image capture function 1100 mode 1100 can be such items as self-portrait mode, outward facing mode, or other types of modes.

The device 100 may also determine a device orientation, in step 1916. The device orientation may be portrait, landscape, or other types of device configurations. The device 100 may also determine a device state, in step 1920. The device state may include whether the device 100 is opened or closed or other types of orientations. The device orientation and state are described further herein. Through these different determinations, the device 100 may determine that the image capture mode is for a dual screen configuration, in step 1924. Upon determining that the image capture mode is a dual screen configuration, the device 100 may enter the dual screen configuration, in step 1928.

'842 Patent, 35:43-64. As described in Figure 19 and the preceding text, an image capture mode is based on a device orientation (portrait, landscape, etc.) and a device state (open, closed, etc.).

55. Figure 13 describes a process for determining an image capture mode for a device executing an image capture function:

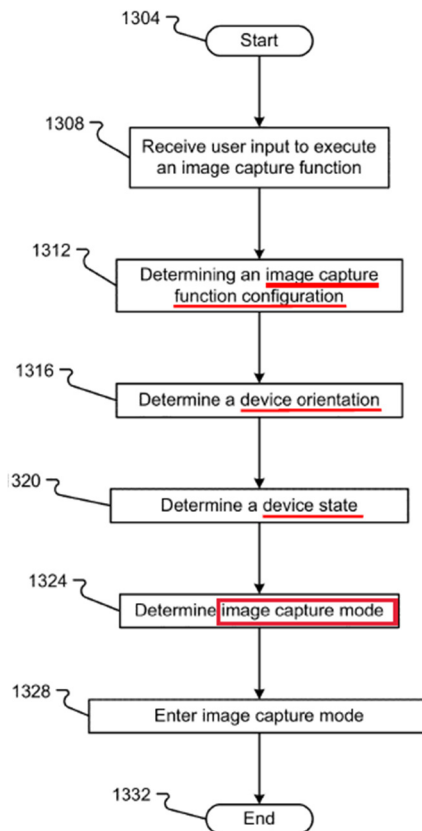


FIG. 13

' '842 Patent, Fig. 13 (annotated).

56. Figure 13 is a flowchart of a method for determining an image capture mode for a dual screen device. At step 1308, the device receives a user input to execute an image capture function. *Id.*, 33:7-15. The device determines an image

capture function configuration based on the device's state and display mode at step 1312. *Id.*, 33:16-17. At step 1316, the device 100 determines a device orientation (e.g., portrait, landscape), and at step 1320, the device determines a device state (e.g., open, closed), and at step 1324 the device determines an image capture mode. *Id.*, 33:18-21. In step 1328, the device enters an image capture mode based on the determined orientation, state, and image capture mode. *Id.*, 33:21-23.

57. In connection with Figure 13, the '842 Patent discloses that a device in a first image capture mode can change to a different image capture mode upon detecting a change in the position of the device, such as by rotating it or opening/closing it:

At some time thereafter, while remaining in the image capture mode, the device 100 may receive an orientation change. The orientation change can include a rotation of the device 100, the device 100 moving from a closed state to an open state, or from an open state to a closed state. The rotation of the device 100 may be from portrait to landscape or from landscape to portrait, or the device 100 may be flipped such that the screens face different directions from their original configuration. When received, and based on the new orientation, **the device 100 may present a new image capture mode by providing a different type of display** for the image capture function 1100 1110. A[t] least a portion of the first and/or second screen 110, 114 change from the original display to the new display.

'842 Patent, 33:24-37.

58. The above passage thus discloses that the image capture mode can change to a different image capture mode where the first screen display changes or the second screen display changes.

59. Figures 14A-16B present various image capture modes that are determined based on a device's orientation and state. *Id.*, 33:38 (“A first set of modes is shown in FIG. 14A through 16B”). For example, Figures 15A/B depicts a device in a closed state and landscape orientation. *Id.*, 33:38-40. For the image capture mode of Figures 15A/B, the second screen 114 (which faces the user) presents a preview of the scene in front of the user (Fig. 15A), and the first screen 110 on the other side (facing away from the user) presents an image of a camera lens (Fig. 15B). *Id.*, 33:45-61. “Thus, the party in the scene to be captured is presented with a visual indicia that indicates a picture or image is being taken.” *Id.*, 33:59–61. The image capture mode of Figure 15A/B is depicted below:

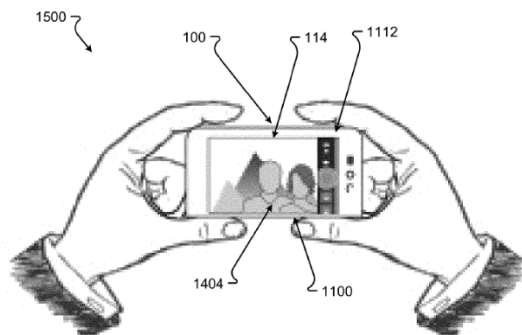


Fig. 15A

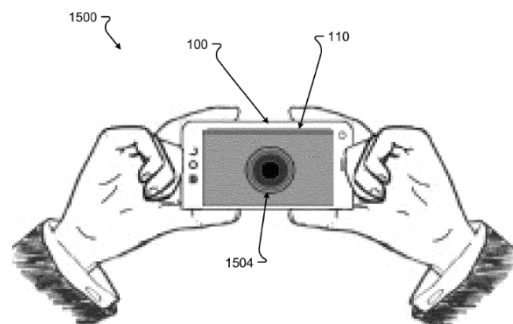


Fig. 15B

'842 Patent, Figs. 15A/B.

60. Figures 12, 20, and 21 describe a dual screen device in a first image capture mode receiving an indication that the device has been rotated, which causes the device to change to a different image capture mode. *Id.*, 36:32-63. In this example, the rotation of the device from a portrait position to a landscape position causes the device to change to a second image capture mode where the display on the first screen 110 is different between the two image capture modes, and the display on the second screen 114 is different between the two image capture modes. *Id.* The first image capture mode is depicted in Figure 12 and the second image capture mode is depicted in Figure 20:

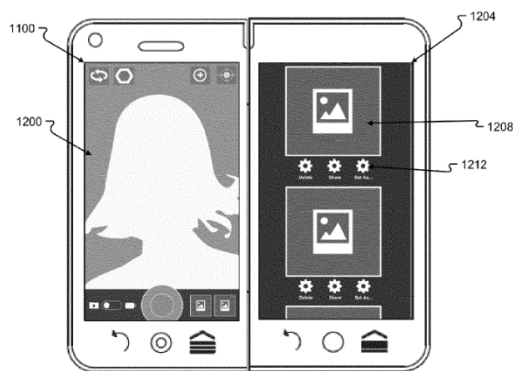


FIG. 12

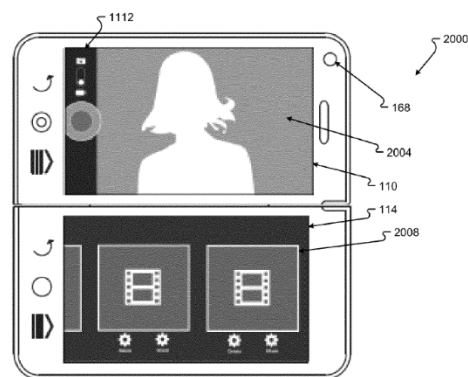


Fig. 20

'842 Patent, Figs. 12, 20, 36:32-36.

B. Prosecution History

61. The '842 Patent application was filed on September 26, 2012. Ex. 1002, 155-251. The application presented Claims 1-20, which included independent Claims 1, 11, and 16.

62. The Examiner issued a first office action dated January 31, 2014. The Examiner found that Claim 11 was allowable because the prior art failed to teach or suggest an image capture device that “enter[s] enter one of one or more image capture modes, wherein in each image capture mode a display on the first or second screen is different.” Ex. 1002, 84.

63. The applicants later amended Claim 1 to include the wherein in each image capture mode a display on the first or second screen is different limitation. Ex. 1002, 53-59.

64. The '842 Patent issued on September 16, 2014. Ex. 1002, 7, 40-44.

VI. CLAIM CONSTRUCTION

65. I understand that claims of the patent-at-issue in this IPR are generally interpreted according to their ordinary and customary meaning in the art taking into consideration the “intrinsic evidence” of the patent consisting of (1) the claim language; (2) the specification; and (3) the prosecution history.

66. I understand that claim terms may be explicitly defined in the patent specification, or they may be implicitly defined through consistent usage in the specification. I also understand that the scope of claim terms may be limited by statements in the specification or prosecution history where the applicant clearly disavows or disclaims subject matter, acts as his/her own lexicographer or otherwise indicates the meaning of claim terms through statements made by the applicant.

A. “Screen” and “Display”

67. The Petitioners and Dr. Rodriguez provide express constructions for “screen” and “display.” Pet., 16-17; Rodriguez Decl., ¶¶ 55-56. I understand that for purposes of the institution stage the Board found that there was no need to provide explicit constructions of “screen” and “display.” Decision on Institution (“DI”), Paper 8, 9. I agree with the Board that no special constructions are needed for these terms. This is because the validity analysis for Grounds 1-4 does not turn on special meanings assigned to those terms.

68. As a general matter, I have applied the ordinary and customary meaning of the claim terms in the context of the ’842 Patent in establishing the patentability of the claims.

B. Construction of “*Wherein In Each Image Capture Mode a Display on the First or Second Screen is Different*”

69. I have determined an express construction of the phrase “*wherein in each image capture mode a display on the first or second screen is different,*” which is contained in each of independent Claims 1, 11, and 16.

70. My opinion is that, based on the intrinsic evidence, a POSITA would understand the disputed term to require a different display on the first screen between image capture modes or a different display on the second screen between image capture modes. In other words, the same screen presents different displays between image capture modes. This construction is consistent with the Patent Owner’s

construction of related terms in the litigation. Ex. 2005 (Joint claim construction statement), 45.

71. This construction aligns with the aspect of the innovative claimed dual screen device rendering different image capture modes based on the dual screen device's orientation (e.g., portrait, landscape), state (e.g., open, closed), and/or image capture function configuration mode (e.g., self-portrait mode, outward-facing mode). The different image capture modes have a different display on the first screen and/or a different display on the second screen of the device. The invention thus provides for image capture modes having screen displays tailored to the device configuration parameters.

72. For example, the '842 Patent discloses providing three different image capture modes when the device is in the outward-facing mode, closed state, and horizontal orientation. '842 Patent, 33:7-44, Figs. 13, 14A-16B. Another image capture mode is disclosed for the device when in the self-portrait mode, closed state, and horizontal orientation. '842 Patent, 34:9-39, Fig. 18. The specification also discloses starting in one image capture mode [Fig. 12] and changing to another [Fig.

20] when the device is in the self-portrait mode, closed state, and portrait orientation, and changes to a landscape orientation. *Id.*, 35:30-36:62, Figs. 19, 21.¹

1. Claim Language

73. First, I address the claim language itself. Limitation 1A of Claim 1 provides that the device has a first screen and a second screen. Limitations 1D-1E then provide for entering an image capture mode, “*wherein in each image capture mode a display on the first or second screen is different.*”

74. A POSITA would understand that language as meaning that (1) the display on the first screen in one image capture mode is different from the display on the first screen in another image capture mode or (2) the display on the second screen in one image capture mode is different from the display on the second screen in another image capture mode. As I discuss below, the specification of the ’842 Patent confirms this understanding.

75. I believe this is a plain English understanding of the claim language in the context of the specification of the ’842 Patent. A POSITA would understand the

¹ The claims provide for different image capture modes “based” on at least one of the recited device configuration parameters. A POSITA would understand that the claims do not require that every change to a device’s configuration produces a different image capture mode. See Ex. 2005 (joint claim construction brief), 36.

limitation as providing that the “*display on the first screen or second screen*” for a first image capture mode is “*different*” from the “*display on the first screen or second screen*” for another image capture mode.

76. A POSITA would understand that language as entailing a comparison between the displays on the first screen and a comparison between the displays on the second screen. In other words, the comparison is first-screen-to-first-screen and second-screen-to-second-screen. A POSITA would not understand this language to encompass comparing a display of a first screen to a display of a second screen between modes. Put another way, a POSITA would not understand the claim as providing for a first-screen-to-second screen comparison. Instead, the comparison is made using the same screen.

77. I believe that the Petitioners implicitly used an incorrect interpretation providing for a first-screen-to-second screen comparison because they argue that a first display unit is different from a second display unit when analyzing the Chin reference. See Pet., 30-33 (arguing that the display on second display unit 52 is different from the display on first display unit 51 in Figure 6 compared to Figure 5 of Chin).

2. Specification of the '842 Patent

78. My understanding is that the specification informs the meaning of the claim language. I also understand that repeated and consistent descriptions in the specification can implicitly define claim language.

79. I have studied the specification of the '842 Patent and find that it consistently describes different image capture modes where the first display on a first screen is different between modes or the second display on a second screen is different between modes. Below I provide some examples of this consistent description.

80. For example, the '842 Patent discusses the determining of an “image capture mode” based on certain parameters, such as the orientation of the device. '842 Patent, Fig. 13 (steps 1312-1324). The '842 Patent describes that when the orientation of a device having a first screen and a second screen changes, it results in the device changing to a “new image capture mode”:

When received, and based on the new orientation, the device 100 may present a **new image capture mode** by providing a different type of display for the image capture function 1100 []. A[t] least a portion of the **first and/or second screen 110, 114 change from the original display to the new display.**

'842 Patent, 33:32-37 (emph. added).

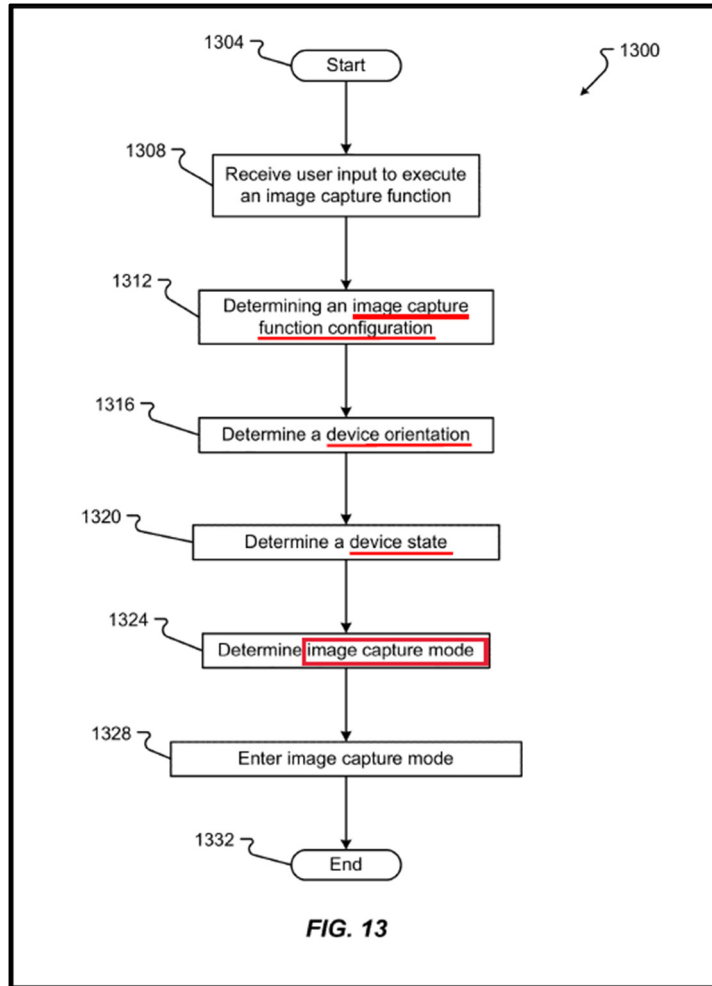
81. Thus, a POSITA would understand the specification as describing that a new capture mode is provided where the display on the first screen changes and/or

the display on the second screen changes. In other words, a POSITA would understand the specification as disclosing that the image capture mode changes based on a first screen/first screen comparison or a second screen/second screen comparison. A POSITA would not understand it to be referring to a first screen/second screen comparison. Instead, the same screen must present different displays between the image capture modes.

82. The specification consistently discloses the existence of different image capture modes where the display of the first screen changes between modes or the display of the second screen changes between modes.

83. As one example, Figure 13 in the specification discloses a process for determining an image capture mode based on the image capture function configuration (e.g., inward facing image, outward facing image), the device orientation (e.g., landscape, portrait), and the device state (e.g., device in open state, device in closed state). '842 Patent, 32:61-34:8, Fig. 13.

84. Figure 13 is depicted below:



'842 Patent, Fig. 13.

85. In connection with Figure 13, the specification discloses:

In a first device configuration, the device 100 may have a first screen 110 and a second screen 114 and the device 100 may be in a closed state as described herein. In this closed state, the first and second screens 110, 114 may face opposite directions. In a first display mode, a first window may be provided or presented on a first screen 110. While in this mode, the device 100 may receive an input from a user. The input received can request the execution of image capture function 1100, in step 1308. The device 100 can determine an image capture

function 1100 configuration based on the devices state and display mode, in step 1312. The device 100 can determine a devices orientation, in step 1316, a device state, in step 1320, and a device image capture mode, in step 1324. Based on the determined orientation, state, and image capture mode, the device 100 may enter an image capture mode that is presented to the user, in step 1328.

At some time thereafter, while remaining in the image capture mode, the device 100 may receive an orientation change. The orientation change can include a rotation of the device 100, the device 100 moving from a closed state to an open state, or from an open state to a closed state. The rotation of the device 100 may be from portrait to landscape or from landscape to portrait, or the device 100 may be flipped such that the screens face different directions from their original configuration. When received, and based on the new orientation, the **device 100 may present a new image capture mode by providing a different type of display for the image capture function 1100 1110. A[t] least a portion of the first and/or second screen 110, 114 change from the original display to the new display.**

A first set of [image capture] modes is shown in FIGS. 14A through 16B. In FIGS. 14A through 16B, the device 100 is in a closed state and landscape orientation. The image capture mode 1400 is to capture an outward facing image (e.g. a scene in front of the user). Further, while in the outward facing image mode, three or more different configurations for the image capture feature 1100 may be presented.

For example, as shown in FIG. 14A, the second screen 114, facing the user, **shows a preview 1404** in the window 114. The control bar 1112 is arranged vertically along the right side of the display window 1100. **The first screen 110, which faces the scene to be captured in the image, is shown in FIG. 14B. The second display 1408 is disabled and is not displaying anything.** As such, display 1408 is [] blank in this configuration and is viewed as a black screen by anyone in front of the user.

In a second configuration 1500 shown in FIGS. 15A and 15B the **preview 1404 is again shown in screen 114. In contrast to FIG. 14B, an image 1504 is displayed in the first screen 110, as shown in FIG. 15B. The first screen 110 shows an image that looks like a camera lens to anyone in front of the user.** Thus, the party in the scene to be captured is presented with a visual indicia that indicates a picture or image is being taken.

Still another configuration is presented in FIGS. 16A and 16B. In FIG. 16A, **a second screen 114 again shows the preview 1404** as described in FIGS. 14A and 15A. However, **the first screen 110 also displays a preview 1604 to the party in the scene to be captured.** As such, the preview is displayed both on the first screen 110 and the second screen 114. This configuration allows the party who is having their image taken to preview or see what image is being captured.

'842 Patent, 33:7-34:2 (emph. added).

86. I note that in each of Figures 14A/14B, 15A/15B, and 16A/16B, the first figure (e.g., Fig. 14A) corresponds to a display on second screen 114 and the

second figure (e.g., Fig. 14B) corresponds to a display on first screen 110 of the device 100. See '842 Patent, 33:45-53, Figs. 1A/1B.

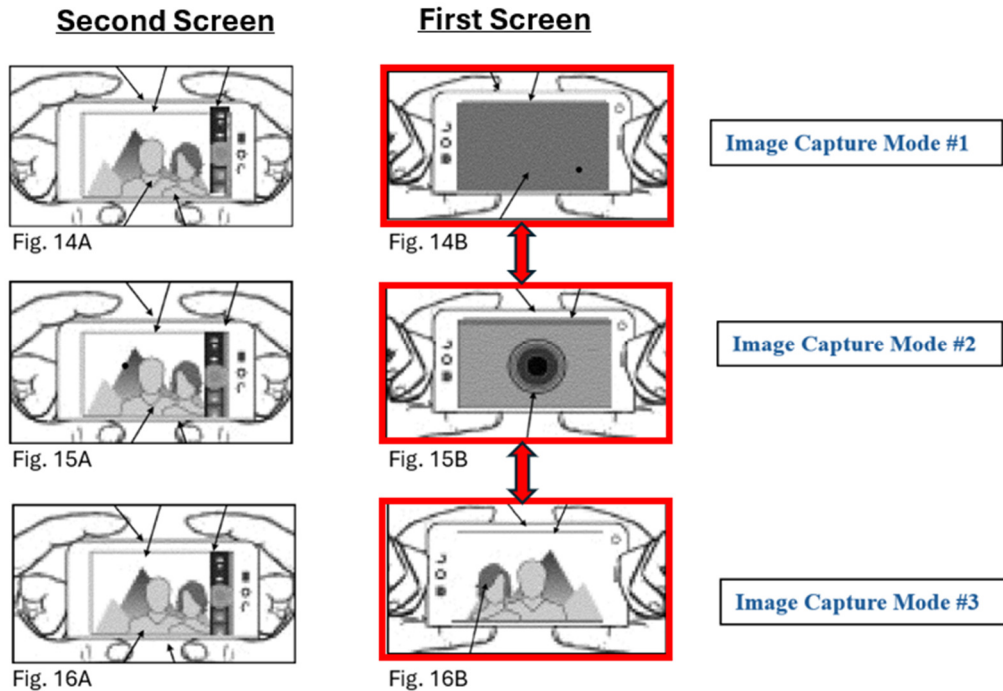
87. Figures 14A/14B depict a first image capture mode where the second screen depicts a preview of the audience and the first screen is a blank screen (e.g., by disabling that screen). '842 Patent, 33:38-53.

88. In Figures 15A/15B, a second image capture mode is presented where the second screen depicts a preview of the audience (like Fig. 14A), and the first screen depicts a camera lens instead of a blank screen. '842 Patent, 33:54-61.

89. Thus, the image display mode of Figure 15A/15B is different from the image display mode of Figure 14A/14B because the display on the first screen has changed from a blank display to the display of a camera lens. The display on the second screen has remained the same. Thus, we have different display modes based on a first-screen-to-first-screen comparison. '842 Patent, 33:45-61.

90. In Figures 16A/16B, a third image capture mode is presented where the second screen depicts a preview of the audience (like Fig. 14A), and the first screen depicts a preview instead of a blank screen. '842 Patent, 33:62-34:2. We again have a different display mode based on a first-screen-to-first-screen comparison.

91. The diagram below illustrates the three image capture modes of Figures 14A-16B:



'842 Patent, Figs. 14A-16B (annotated). 33:38-34:2.

92. As can be seen, each has a different display on the first screen. In other words, the display on the first screen differs between image capture modes. This corresponds to a first-screen-to-first-screen comparison, which is consistent with the construction of the disputed limitation providing that the same screen presents different displays between image capture modes.

93. Figures 17-18 illustrate a fourth image capture mode. Based on the image capture function configuration (step 1712), the device orientation (step 1716), and the device state (step 1720), an image capture mode is determined (step 1724).

94. The specification of the '842 Patent describes Figures 17-18 as follows:

A next mode available with the image capture function 1100 may be a self-portrait mode. Similar to the method described in conjunction

with FIG. 13, the device 100 may receive user input to execute an image capture function 1100, in step 1708. The input may be received in a device 100 that has at least the first screen 110 and second screen 114. The device 100 may then make one or more determinations. For example, the device 100 may determine an image capture function 1100 configuration, in step 1712. The image capture function 1100 configuration may be a self-portrait mode. Further, the device 100 may determine the devices orientation, in step 1716, as described herein. The device 100 may also determine a devices state, in step 1720. From these different determinations the device 100 may then determine that the image capture mode is for a self-portrait, in step 1724. Based on the determination that the device is un a self-portrait mode, the device 100 may enter the self-portrait configuration, in step 1728.

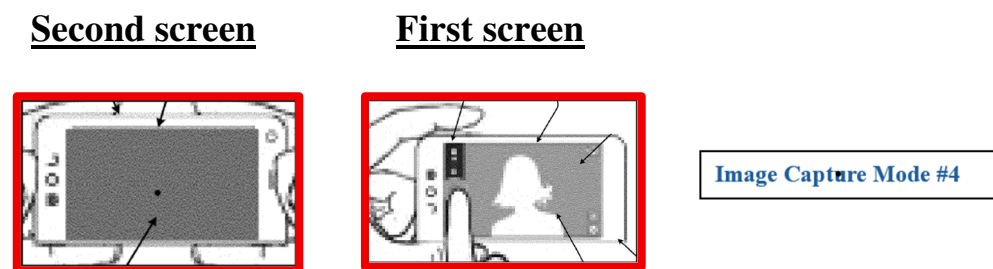
An example of a self-portrait configuration 1800 is as shown in FIG. 18. The device 100 configuration 1800 may provide a preview screen 1804. To limit the amount of hardware provided with the device 100, there may be a single lens or other hardware used to capture the image, as shown in FIGS. 1A-IJ. As shown in FIG.11, the lens 1136 is associated with the first screen 110. Thus, to accomplish a self-portrait, the first screen 110 must face the user. This device orientation is in contrast to what is shown in FIGS. 14A through 16B where the lens faces away from the user to attain an outward facing image. Further, the device 100 may be in the closed state in landscape orientation such that the lens associated with the screen is pointing towards the user.

The other screen 114 may be disabled. Thus, the second screen 114 cannot receive user input while the device is a self-portrait mode.

Prohibiting user input on the second screen 114 prevents inadvertent interfere with the capture of the self-portrait.

'842 Patent, 34:22-57, Figs. 17-18.

95. Thus, a POSITA would understand the '842 Patent as disclosing a fourth image capture mode having a disabled second screen and a preview display of the user on the first screen, as follows:



'842 Patent, Fig. 14B, Fig. 18 (excerpted, annotated).

96. The display for the second screen for Figure 18 is disabled and would show a blank screen ('842 Patent, 34:53-55), which is like Figure 14B ('842 Patent, 33:50-53). I mention this because the above diagram uses an excerpt from Figure 14B to depict the second screen of Figure 18.

97. A POSITA would understand Figure 18 as disclosing a fourth image capture mode where there is a different display on the first screen and a different display on the second screen. For example, the second screen has a blank display, which is different from the displays in Figures 14A/15A/16A. Also, the first screen is a display of the camera user, which is different from the displays in Figures 14B/15B/16B.

98. Thus, a POSITA would understand Figures 17-18 as describing a fourth image capture mode based on a different display on the first screen and a different display on the second screen, consistent with Patent Owner's construction. We again have a first-screen-to-first-screen comparison and a second-screen-to-second-screen comparison. The same screen presents different displays between image capture modes. There is no first-screen-to-second-screen comparison.

99. Figure 21 provides another example of an image capture mode. In Figure 21, there is an image capture mode where the device (which is open) has a portrait orientation as reflected in Figure 12. When the orientation changes to landscape, a different image capture mode is provided as depicted in Figure 20.

100. With regard to Figure 21, the '842 Patent states:

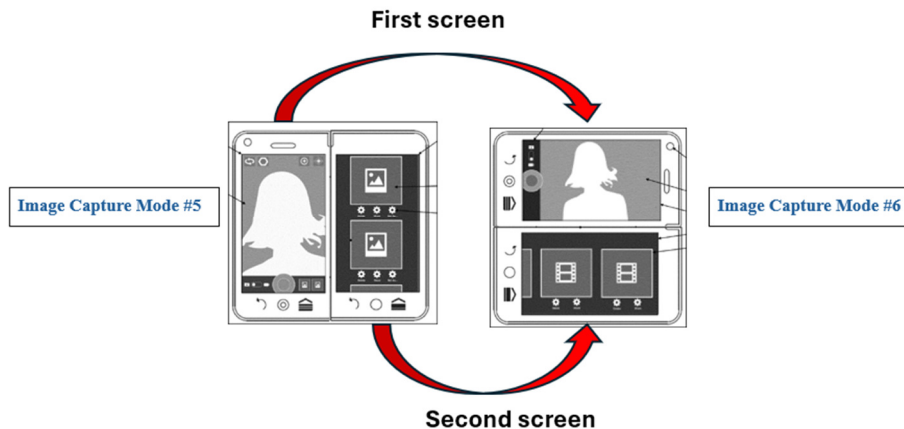
While in the dual screen mode, device orientation changes may be received. For example, the dual screen orientation as shown in FIG. 12 may change to that shown in FIG. 20 when the device 100 is rotated either clockwise or counterclockwise. Thus, the device 100 may receive a user input to execute an image capture function 1100, in step 2108. A first display 1200 may be presented for the image capture function 1100, in step 2112, as described hereinbefore in FIGS. 13 through 19. After presenting the first display 1200 for the image capture function 1100, the device 100 may receive a rotation of the device 100, in step 2116. In response to the rotation of the device 100, the device 100 may present a second display 2000 for the image capture function 1100 that is different from the first display 1200, in step 2120.

The image capturing function may be configured to be in a dual screen orientation capturing an inward facing image, as shown in FIG. 12. Thus, the device 100 is in an open state and the first display 1200 is in a portrait orientation. With the rotation, the display can change to a landscape orientation 2000, as shown in FIG. 20. One or more portions of the display may change due to the rotation. For example, the preview image 1108, shown in FIG. 12, changes to a landscape orientation 2004, shown in FIG. 20.

Likewise, the film roll 1204, shown in FIG. 12, changes to a landscape orientation 2008, shown in FIG. 20. As the film roll 1204, 2008 is navigable, the film roll 2008 may now move horizontally rather than vertically along the long axis of the screen 114, thus the film roll 2008 changes movement from a vertical orientation to a horizontal orientation. Further, the images within the film roll 2008 may change from a portrait orientation to a landscape orientation.

'842 Patent, 36:32-62, Fig. 12, Fig. 20.

101. Figure 21 thus discloses two additional image capture modes in Figures 12 and 20. I shall refer to them as the fifth capture mode and the six capture mode. They are depicted in the diagram below:



'842 Patent, Fig. 12, Fig. 20, 36:32-56.

102. A POSITA would appreciate that the portrait display of a preview image of the user in Figure 12 changes to a landscape orientation in Figure 20 for the first screen. '842 Patent, 36:52-54. The display on the second screen changes, as well. The film roll of Figure 12 for the second screen changes to a landscape orientation in Figure 20. '842 Patent, 36:55-56.

103. Accordingly, the image capture mode of Figure 20 has a first screen display that is different from the first screen display of Figure 12. Figure 20 also has a second screen display that is different from the second screen display of Figure 12.

104. A POSITA would understand that in this example the image capture mode has changed because the first screen display has changed, and the second screen display has changed. This corresponds to a first-screen-to-first-screen comparison and a second-screen-to-second-screen comparison, which supports the construction I provided above.

105. Considering them as a whole, the disclosures in Figures 12, 13, 14A-16B, 17, 18, 20, and 21 consistently describe different display modes where there is a different display on the first screen between image capture modes or there is a different display on the second screen between image capture modes.

106. A POSITA would understand this consistent disclosure as supporting Patent Owner's construction that "*wherein in each image capture mode a display on the first or second screen is different*" as requiring a different display on the first screen between image capture modes or a different display on the second screen between image capture modes.

3. A Broader Construction Is Incorrect

107. In the Board's preliminary analysis in the Decision on Institution, the Board did not make an explicit construction of the disputed language. The Board indicated that Patent Owner's construction was improperly incorporating a limitation from the specification, and thus the term is broadly construed to "merely require the display on the first or second screen is different in each image capture mode." DI, 8-9.

108. The Board's point about incorporating a limitation was based on the Patent Owner Preliminary Response's ("POPR") discussion of Figure 21 of the '842 Patent. POPR, 11-14; DI, 8-9. The POPR did not address the multiple other embodiments (discussed above) besides Figure 21 providing repeated

characterizations consistent with the Patent Owner's construction. A POSITA would understand from the preceding paragraphs that the '842 Patent repeatedly and consistently describes image capture modes as having a different display on the first screen or a different display on the second screen, across modes. I have demonstrated that above for Figures 12, 13, 14A-16B, 17, 18, 20, 21 for a variety of image capture modes. Taking these additional disclosures into account, it is my opinion that Patent Owner's construction does not improperly incorporate a limitation from the specification into the claim. Instead, the '842 Patent consistently describes image capture modes consistent with Patent Owner's proposed construction of the disputed limitation.

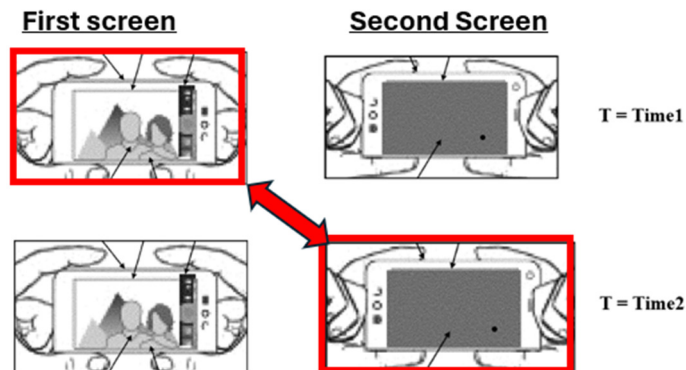
109. It is my understanding that the Board's comment that the claim "merely requires the display on the first or second screen is different in each image capture mode" is preliminary analysis at the institution stage. It is not clear to me whether the Board's language was intended to encompass different image capture modes by comparing a display on a first screen to a display on a second screen. I believe that interpretation of the claim language would be incorrect.

110. First, such a first-screen-to-second-screen interpretation would be inconsistent with the language of limitation 1D, which I discussed previously. Second, such an interpretation would be inconsistent with the many disclosures in the specification of different image capture modes based on a first screen/first screen

comparison or second screen/second screen comparison. This is reflected in the multiple image capture modes I discussed above in connection with Figures 12, 13, 14A-16B, 17, 18, 20, and 21.

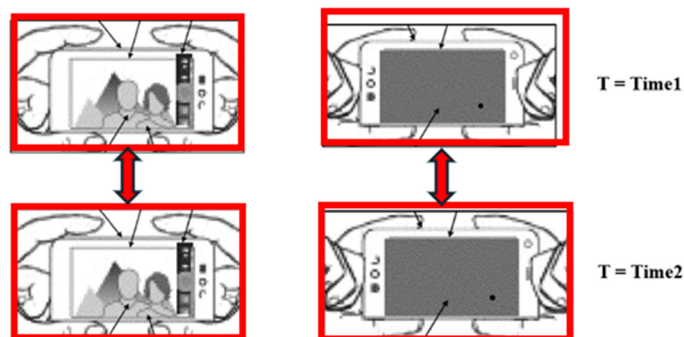
111. Additionally, an interpretation of the claim language as defining different image capture modes based on comparing a first screen display to a second screen display leads to incorrect results, which indicates that it is not a proper construction. I provide an example to illustrate the point. Assume that the image capture mode of Figures 14A/B is presented at a first time (Time1). Then that same image capture mode is presented at a later time (Time2). The first screen display at Time1 is different from the second screen display at Time 2, as illustrated in the figure below. Under the broader construction, this would define the two instances as being different image capture modes. However, the image capture mode is the same in both instances. It is image capture mode #1 for Figures 14A/B that I discussed previously. This indicates that the broader construction would be incorrect because it would result in the **same** image capture mode being deemed **different** image capture modes.

112. The above point is illustrated in the diagram below:



Figs. 14A/B (excerpted, annotated).

113. I note that when the Patent Owner's construction is applied to this example, the image capture modes are correctly deemed to be the same because the first displays are the same and the second displays are the same:



'842 Patent, Figs. 14A/B (annotated).

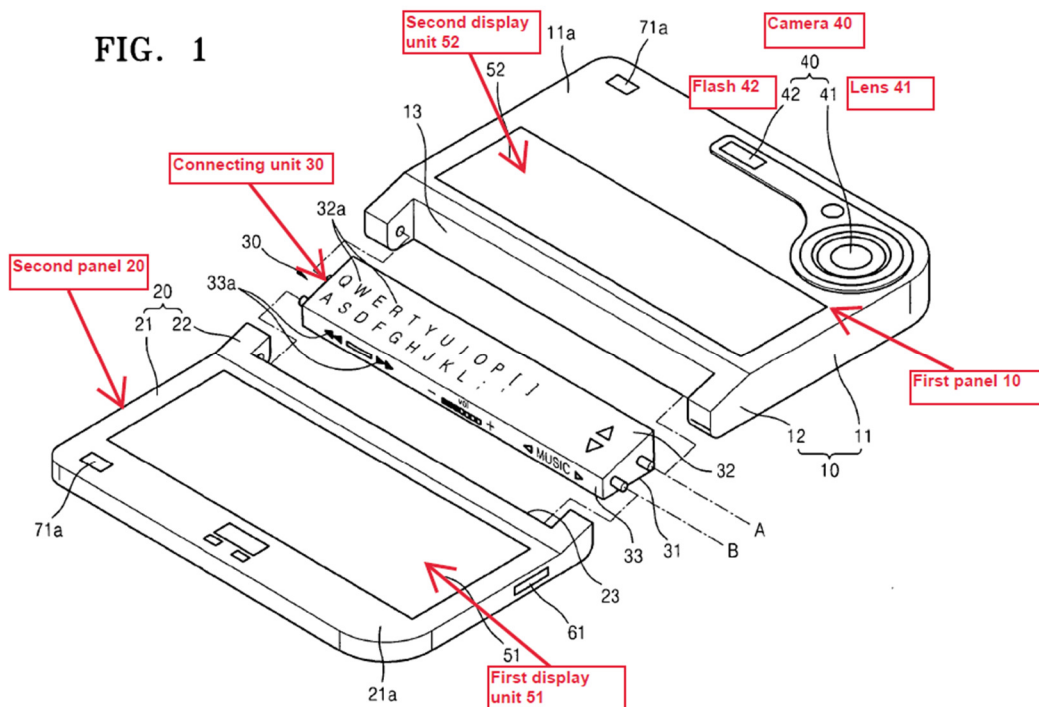
114. This provides additional support that the proper construction requires a different display on the first screen between image capture modes or a different display on the second screen between image capture modes.

VII. THE PRINCIPAL APPLIED REFERENCES

A. Chin (Ex. 1004)

115. Chin, entitled “Portable Information Terminal,” is generally directed to a portable information terminal (e.g., PDA) having a first flat board portion with a display and a second flat board portion with a display, where the first flat board portion and second flat board portion are attached using a connecting unit having a first hinge coupling the first flat board portion and a second hinge coupling the second flat board portion. The first flat board portion is rotatable about the first hinge, and the second flat board portion is rotatable about the second hinge. Chin, Abstract, Fig. 1.

116. More particularly, Chin discloses a portable information terminal with a first panel 10 (having second display unit 52) that is hingably attached to a second panel 20 (having first display unit 51):

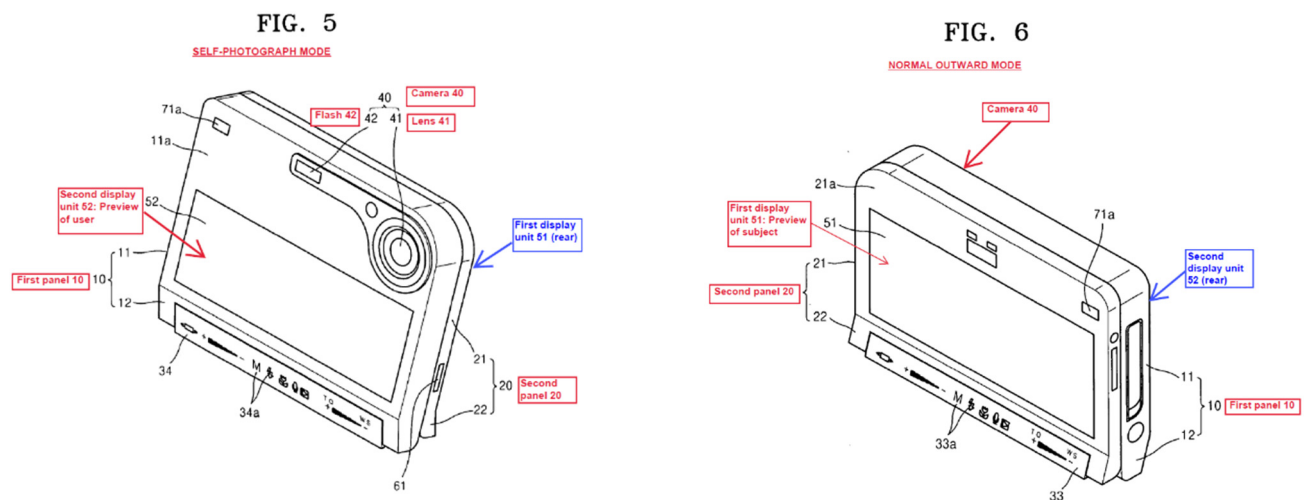


Chin, Fig. 1 (annotated), Abstract, [0041]-[0046].

117. The first panel 10 and second panel 20 are connected via connecting unit 30 having hinges on each side providing for rotation around a first pivot axis A on one side and around a second pivot axis B on the other side. Chin, [0043].

118. The “first display unit 51 may be a display apparatus ... for displaying web pages, text, or images.” Chin, [0045]. The “second display unit 52 may cooperate with the camera 40 for facilitating a preview function in which images are displayed before the images are captured by the digital camera.” Chin, [0045].

119. The first and second panels can be rotated around the connecting unit 30 to bring the portable terminal into a closed position (“second position”) per Figures 5-6 where the terminal is operating in a camera mode. Chin, [0046], [0062] (“in the second position, the portable information terminal is designed to function as a digital camera”):



Chin, Figs. 5-6 (annotated);

120. If functioning as a digital camera in the closed position of Figures 5-6, the portable terminal can operate in a self-photograph mode (Figure 5) or a normal outward-facing photograph mode (Figure 6). Chin, [0068], [0076]-[0079]. In the self-photograph mode, the second display unit 52 (of first panel 10) presents a preview image of the user. I note that Chin does not disclose what, if anything, is displayed on the first display unit 51 (of second panel 20) in this mode.

121. In the normal outward-facing photograph mode, the first display unit 51 (of second panel 20) presents a preview of the subject. I note that Chin does not disclose what, if anything, is displayed on the second display 52 (of first panel 10). Chin, [0068]-[0069], [0077]-[0079].

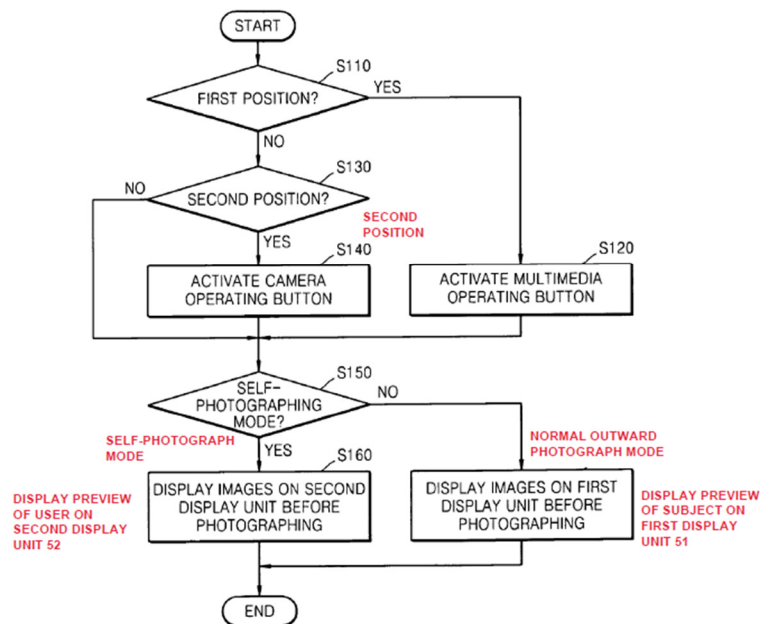
122. Chin describes that the self-photographing mode can be set by the user making a selection or by automatically selecting the self-photographing mode:

When the positions of the first and second panels are in a state in which a digital camera can be used, it is judged in step S150 whether the portable information terminal is set or otherwise being used in a self-photographing mode. The self-photographing mode in which a user photographs him or herself can be set by allowing the user to operate the portable information terminal in order to select the mode, or by allowing a controlling unit to automatically select the mode when the first and second panels are in the second position.

Chin, [0077]. A POSITA would understand this to mean that the user could manually select the self-photograph mode or instead the devices could automatically default to the self-photograph mode when the device is in the second position.

123. Figure 9 of Chin illustrates the device in the self-photograph camera mode and in the outward-facing photograph camera mode:

FIG. 9



Chin, Fig. 9 (annotated).

124. Chin describes the method of Figure 9 for the self-photograph mode and the outward-facing photograph mode. At step S150, if it is determined that the terminal is operating in the self-photograph mode, then the second display unit 52 (of first panel 10) displays a preview image of the user at step S160. Chin does not

disclose what, if anything, is displayed on the first display unit 51 (of second panel 20) in the self-photograph mode. At step 150, if it is determined that the terminal is operating in the outward-facing photograph mode, then first display unit 51 (of second panel 20) displays a preview image of the subject at step S170. Chin does not disclose what, if anything, is displayed on the second display unit 52 (of first panel 10) in the outward-facing photograph mode. Chin, [0076]-[0079].

B. Whitehorn (Ex. 1005)

125. Whitehorn, entitled “Handheld Device with Integral Axial Camera,” is generally directed to a handheld device such as a PDA or cellphone having a top cover with a top large screen and a bottom cover with a bottom large screen, where the top and bottom covers are coupled with a first axial hinge. The device has an embedded image capture device (camera) on one side of the first axial hinge and a small camera screen (viewfinder) on the other side. Whitehorn, Abstract, Figs. 1-2. The top cover can rotate to and from the bottom cover via the first axial hinge, much like a conventional flip-phone. There is a second axial hinge perpendicular to the first axial hinge that allows the top cover to rotate around the bottom portion even while the bottom cover is held in a fixed position. Whitehorn, Abstract, Figs. 1-5. The device operates in different modes based on detecting the orientation of the top cover with respect to the bottom cover. *Id.*, [0021], Fig. 6.

126. More specifically, Whitehorn discloses a handheld device with multiple screens and an integral axial camera. A top screen portion (106) and a bottom screen portion (108) can be rotated so that the device can operate in one of several modes, including a “first image capture mode” (Figs. 1, 3, 4) and a “second image capture mode” (Fig. 5). Ex. 1005 (Whitehorn), Abstract, Figs. 1, 3, 4, 5. “The rotation of the top and bottom covers 106 and 108 with respect to each other automatically determines a mode in which the device 102 operates.” *Id.*, [0021].

127. Figure 2 depicts the handheld device in an open configuration where the top cover 106 is not closed onto bottom cover 108:

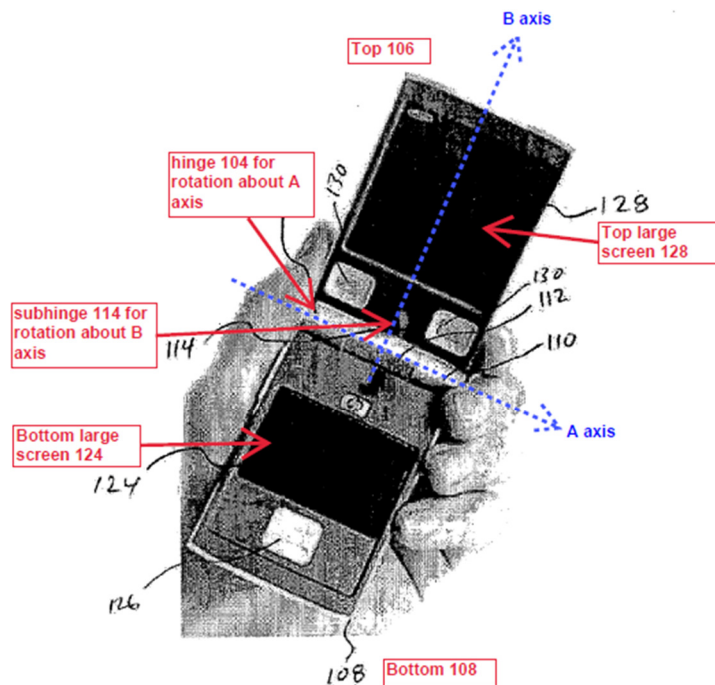


Fig. 2

Whitehorn, Fig. 2 (annotated), [0018]-[0025].

128. The top cover 106 includes a top large screen interface 128 that can display images. Whitehorn, [0024]. The bottom cover 108 includes a bottom large screen interface 124 that can display images. Whitehorn, [0023]. The first hinge 104 allows top portion 106 to rotate about an A axis so that it can partially or totally close onto bottom portion 108. There is a second hinge, referred to as sub-hinge 114, that enables top portion 106 to rotate to change its orientation with respect to bottom portion 108 about a B axis that is perpendicular to the A axis. Whitehorn, [0017]-[0025].

129. Figure 1 depicts the device entering a “first image capture mode” “if top cover [106] is folded onto bottom cover [108], and top [large screen 128] and bottom large screen [124] interfaces are facing each other” (Fig. 6, step 604):

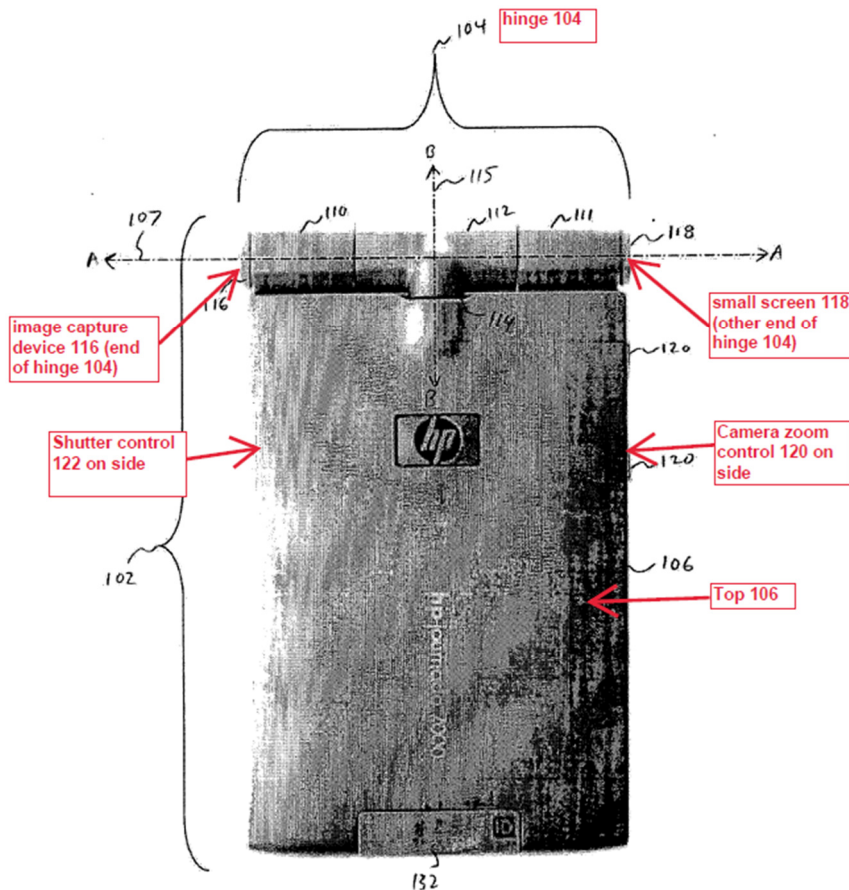


Fig. 1

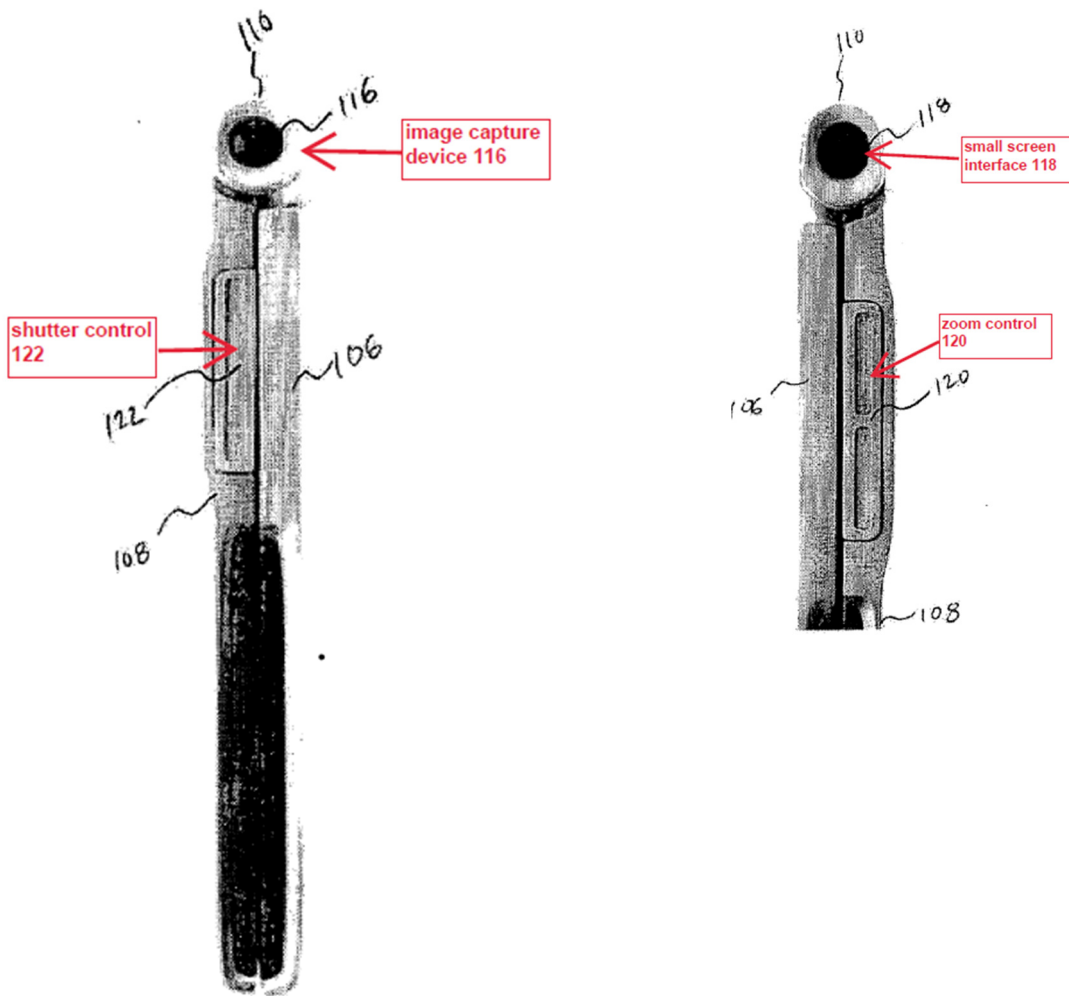
Chin, Fig. 1 (annotated), Fig. 6 (step 604).

130. In the first image capture mode above, the top part 106 is rotated about the A axis to close it onto the bottom part 108. Whitehorn, Fig. 6 (step 604). The first hinge 104 includes an “image capture device” 116 (i.e., a camera with a light sensor and lens) on one end and a “small screen interface” 118 at the other end that “is preferably capable of displaying both captured images (either in real-time like a viewfinder or which have been previously recorded) and any other information generated by the device 102.” Whitehorn, [0022].

131. “Both the image capture device 116 and the small screen interface 118 are preferably aligned along the hinge’s axis of rotation [A axis] so that users may simultaneously capture and view images when the top and bottom covers 106 and 108 of the device are closed.” Whitehorn, [0022]. Thus, in this mode the user can point the image capture device 116 towards the subject while previewing the image by viewing it using small screen 118.

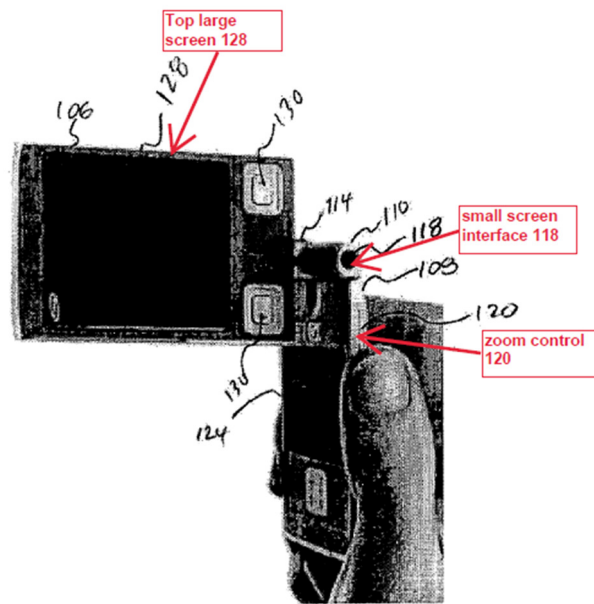
132. I note that Whitehorn does not disclose what, if anything, is displayed on top large screen 128 when the device is in the first image capture mode of Figure 1.

133. Figure 3 is a side view of the device in the first image capture mode including the image capture device 116 (image sensor/lens) and the shutter control 122 that “instructs the device 102 to capture one or more images.” Whitehorn, [0023]. Figure 4 provides a view of the device from the other side, depicting the small screen 118 (viewfinder) and zoom control 120:



Whitehorn, Figs. 3-4 (annotated), [0023].

134. Figure 5 depicts the device in the “second image capture mode”:



Whitehorn, Fig. 5 (annotated).

135. Whitehorn discloses that the device enters the second image capture mode “if top cover [106] is not folded onto bottom cover [108], and there is more than +/- 45 degrees of rotation about the sub-hinge [114] with respect to the home position” (i.e., more than 45 degrees of rotation about the B axis). Whitehorn, [0029], Fig., 5, Fig 6 (step 608). A POSITA would understand Figure 5 as depicting that “the top cover 106] [h]as been rotated approximately 90 degrees about the sub-hinge 114.” Id., [0029]. In this second image capture mode, “users are capturing images with the image capture device 116 while looking through the top large screen interface 128 at what is being captured.” Id., [0029].

136. Whitehorn discloses that “[u]sers may prefer this [second image capture] mode when viewing images on the top large screen interface 128 would be more convenient than viewing them on the small screen interface 118.” *Id.*, [0029].

137. A POSITA would understand Whitehorn as disclosing that when in the second capture mode, the small screen interface 118 would still be available to provide the same display as it provides in the first capture mode (i.e., as a viewfinder providing a preview image from camera 116), although the user might prefer to view the image through the larger top screen interface 128. Whitehorn, [0022], [0029].

138. Figure 6 of Whitehorn is a flowchart illustrating several image capture modes of the device including, in pertinent part, the “first image capture mode” and the “second image capture mode”:

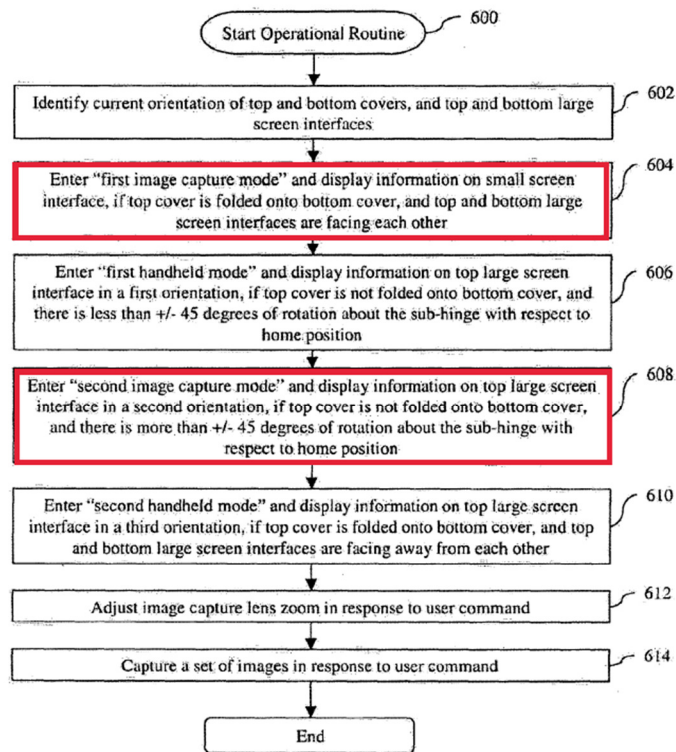


Fig. 6

Whitehorn, Fig. 6 (annotated).

VIII. CLAIMS 1-7, 10-13, 16-17, AND 19-20 ARE NOT ANTICIPATED BY CHIN (GROUND 1)

A. Independent Claims 1, 11, and 16 Are Not Anticipated by Chin

139. Claim 1 provides for the device entering one or more image capture modes, “*wherein in each image capture mode a display on the first or second screen is different.*” Cl. 1 (limitation 1E). Independent Claims 11 and 16 have the same limitation.

140. As discussed above in Section VI.B, the proper construction of this limitation requires a different display on the first screen between image capture

modes or a different display on the second screen between image capture modes. This requires a first-screen-to-first-screen comparison or second-screen-to-second-screen comparison, i.e., the displays on the same screen differ between the different image capture modes.

141. This feature is an important aspect of the claimed innovative dual screen device where different image capture modes are provided based on the dual screen device's orientation (e.g., portrait, landscape), state (e.g., open, closed), and/or image capture function configuration (e.g., self-portrait mode, outward-facing mode). The different image capture modes have a different display on the first screen and/or a different display on the second screen of the device. The invention thus provides for image capture modes having display screens tailored to the device parameters.²

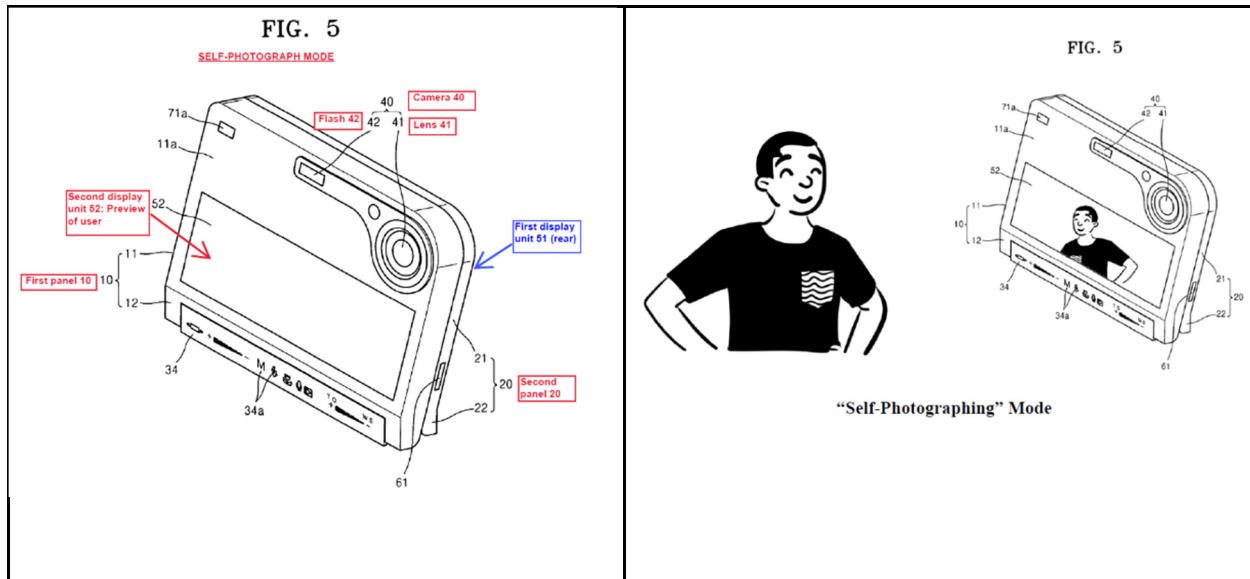
1. In the Self-Photographing Mode, Chin Displays a Preview on Second Screen 52.

142. Petitioners fail to establish that Chin discloses limitation 1E because they make a first-screen-to-second screen comparison to establish different displays,

² The claims do not require that every change to a device's configuration produces a different image capture mode. See Ex. 2005 (joint claim construction brief), 36.

not a first-screen-to-first-screen comparison or a second-screen-to-second-screen comparison.

143. Petitioners argue that Chin discloses a first image capture mode that is the self-photographing mode of Figure 5:

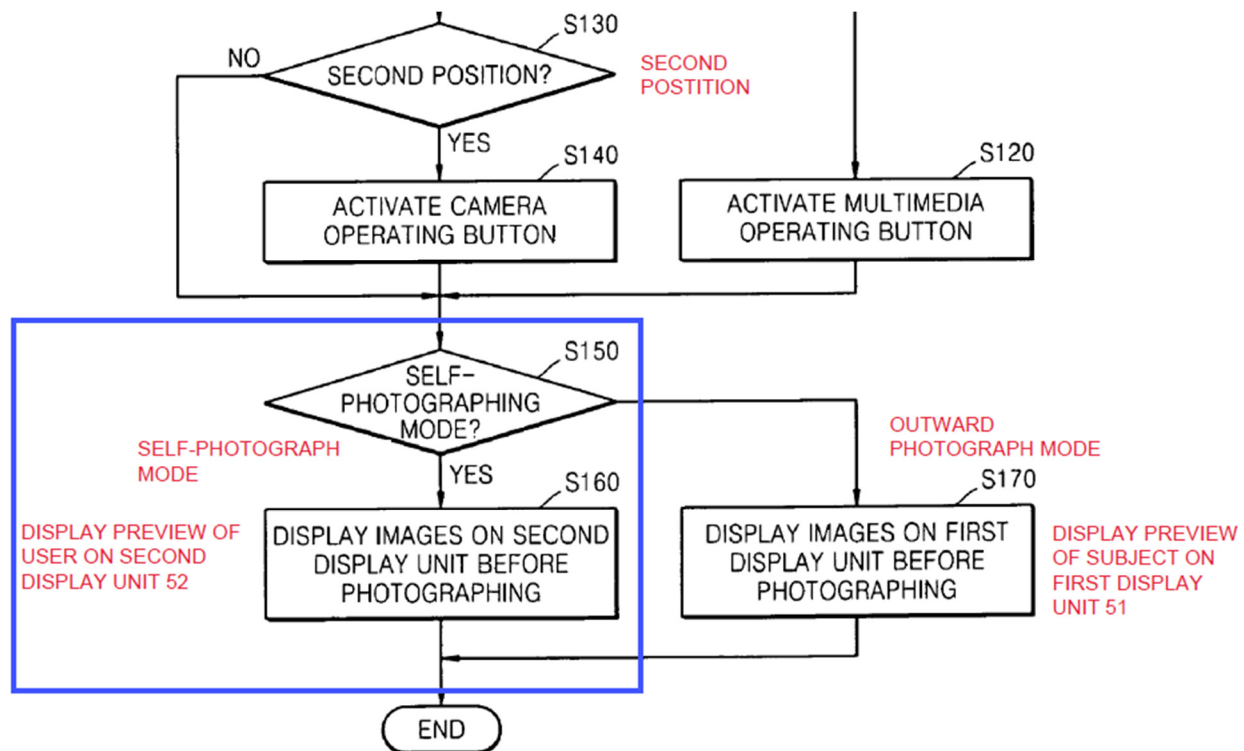


Chin, Fig. 5 (annotated by Patent Owner on left). Chin, Fig. 5 (annotated by Petitioners on right) (Pet., 32) (both depicting self-photograph mode).

144. Chin explains that in the self-photographing mode, “the portable information terminal displays images on a second display unit [52] before a photograph is taken, so that the second display unit [52] can perform a preview function.” Chin, [0078], Fig. 5. See Pet., 27.

Accordingly, when the user uses the self-photographing function, the user can preview him or herself as shown on the second display unit 52 and take a photograph by operating the third button unit 34a.
Chin, [0069].

145. Figure 9 of Chin confirms that in the self-photograph mode the second display unit 52 displays a preview of the photograph:



Chin, Fig. 9 (excerpted, annotated), [0078]. See Pet., 31.

146. Accordingly, there is no dispute that in the alleged first image capture mode, Chin's second display unit 52 presents a preview of the photograph to the user.

147. I note that Chin does not disclose what, if anything, is displayed by the first display unit 51 on the other side of the device in the self-photography mode. See Chin, [0068]-[0069], [0077]-[0078], Fig. 5.

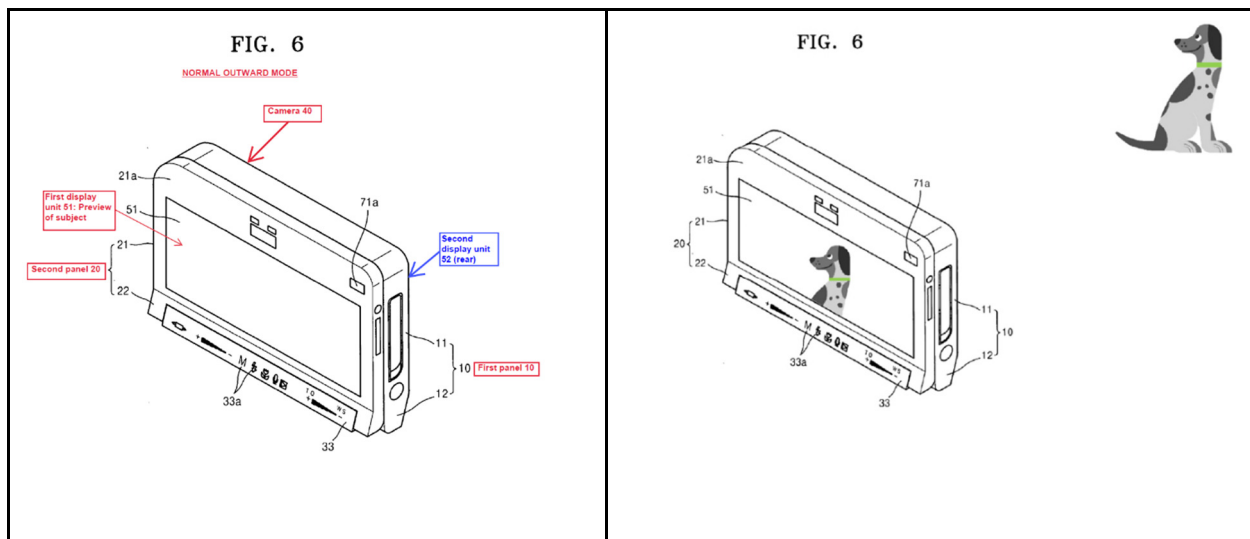
2. In the Outward-Facing Photograph Mode, Chin Displays a Preview on First Screen 51.

148. Petitioners argue that Chin discloses a second image capture mode that is the non-self-photographing mode (the outward-facing image mode) of Figures 6 and 9:

Chin also teaches that the device can enter a second image capture mode, where “the portable information terminal in step S170 displays images on a first display unit [51] before a photograph is taken, so that the first display unit [51] can perform a preview function.” Ex. 1004, [0079]. A POSITA would have understood this mode to be one where the device takes an outward-facing image, as opposed to the self-photographing mode.

Pet., 29.

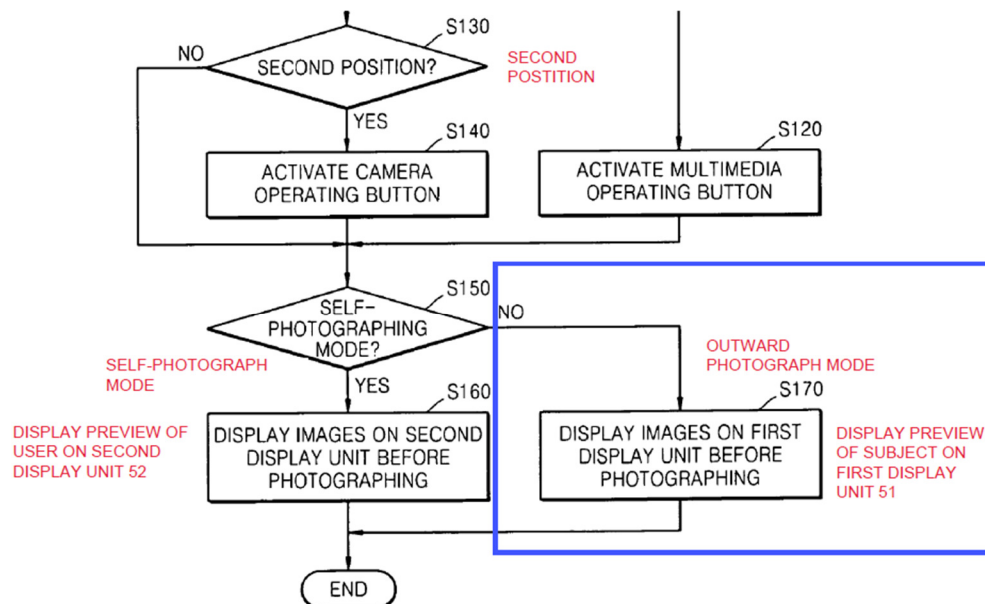
149. In the outward-facing photograph mode, the first display 51 provides the user a preview of the photograph:



Chin, Fig. 6 (annotated by Patent Owner on left). Chin, Fig. 6 (annotated by Petitioners on right) (Pet., 33).

150. Chin discloses in the outward-facing photograph mode, “the portable information terminal in step 170 displays images on a first display unit [51] before a photograph is taken, so that the first display unit [51] can perform a preview function.” Chin, [0079], Fig. 5. See Pet., 29.

151. Figure 9 of Chin confirms that the first display unit 51 displays a preview in the outward-facing mode:



Chin, Fig. 9 (excerpted, annotated).

152. The parties do not dispute that in the alleged second image capture mode, Chin’s first display unit 51 presents a preview of the photograph. I note that

Chin does not disclose what, if anything, is displayed by the second display 52 on the other side of the device in the outward-facing photograph mode. See Chin, [0068]-[0069], [0079], Fig. 6.

3. Petitioner's First-Screen-to-Second-Screen Comparison Does Not Meet the Claim Limitation.

153. Petitioners argue that limitation 1E is met because the display in the first screen in the alleged first display mode (self-photograph mode) is different from the display on the second screen in the alleged second display mode (outward-facing photograph mode):

Thus, *the **second** display unit 52 configured on a surface 11a of the first flat board unit 11 can display live/preview and/or captured images obtained by the digital camera 40.*" Ex. 1004, [0068]; [0078].

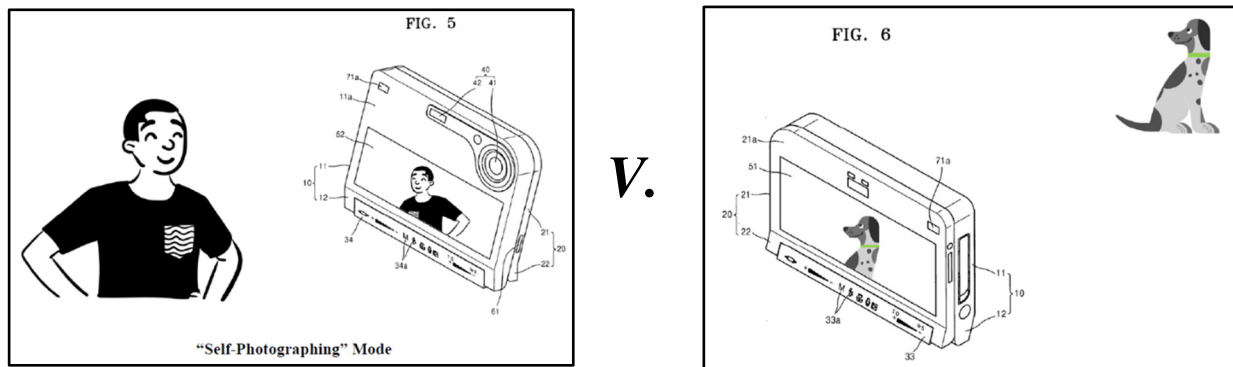
In contrast, in the other, outward-facing mode, "the portable information terminal in step S170 *displays images on a **first** display unit [51] before a photograph is taken, so that the first display unit [51] can perform a preview function.*" Id., [0079]. Thus, *both* the first and second screens have different displays in the two image capture modes, because which screen displays the preview or images changes between the two modes.

Pet., 30 (orig. emph., orig. italics).

154. Petitioners' argument is that the display on the first screen (second display unit 52) in the alleged first mode is different from the display on the second screen (first display unit 51) in the alleged second mode. This first-screen-to-second-

screen comparison does not meet the claim limitation, which requires a showing that the same screen has different displays between the image capture modes. See Section VI.B.

155. Petitioners are comparing the first screen (display unit 52) to the second screen (display unit 51) to attempt to meet limitation 1E:



(Pet., 32-33 (second display unit 52 in Fig. 5 compared to first display unit 51 in Fig. 6)).

156. As reflected above, Petitioners are comparing the second display 55 in Figure 5 to the first display 51 in Figure 6. This does not correspond to limitation 1E, which requires that the same display be different between the image capture modes.

4. Chin Does Not Disclose Limitation 1E For a Different Display on the First Screen Between Image Capture Modes or a Different Display on the Second Screen Between Image Capture Modes.

157. As discussed above in Sections VIII.A.1-2, in the first alleged image capture mode Chin discloses a preview in second screen 52 (Fig. 5). Chin does not disclose what, if anything, is presented by first screen 51 in that mode. In the second alleged image capture mode (Fig. 6), Chin discloses a preview in first screen 51. Chin does not disclose what, if anything, is presented by second screen 52 in that mode.

158. Chin thus does not disclose different displays in first screen 51 between the two alleged image capture modes. Chin does not disclose different displays in second screen 52 between the two alleged image capture modes. Chin thus does not anticipate because it does not expressly disclose limitation 1E.

159. I note that Petitioners make no argument that Chin inherently meets limitation 1E. Pet., 29-33.

160. I understand there can be no anticipation through inherency if the reference does not necessarily include the claim limitation. Here, the claim limitation requires that the displays on the first screen or the displays on the second screen differ between image capture modes. But it is not inherent that the displays on Chin's first display 51 or the displays on the second display 52 differ between the self-photograph mode and the outward-facing image mode.

161. For example, in the self-photograph mode (Fig. 5), the second screen 52 provides a preview of the photograph to be taken. For the outward-facing photograph mode (Fig. 6), a POSITA would understand that the second screen 52 could provide a preview of the photograph to be taken, such as a preview that the subject can view. Chin's handheld computing device could thus provide a preview of the photograph on second screen 52 in both modes. This proves that limitation 1E is not inherently satisfied because the display on second display 52 can be the same between the two modes.

162. Likewise, the first screen 51 displays a preview of the photograph in the outwardly-facing mode of Figure 6. For the self-photograph mode of Figure 5, a POSITA would recognize that there the first screen 51 could provide a preview of the photograph. Thus, it is not inherent that the displays on first screen 51 differ between the two modes.

163. Thus, Claim 1 is patentable because Chin does not disclose limitation 1E. Independent Claims 11 and 16 contain the same limitation that is missing from Chin. Cl. 11 (limitation 11H), Cl. 16 (limitation 16D). Claims 11 and 16 are thus patentable over Chin for the same reasons as Claim 1.

B. Independent Claim 11 Is Not Anticipated by Chin Because Limitation 11A Is Not Disclosed

164. Petitioners' theory for limitation 11A of Claim 11 is that Chin discloses a "device with a 'first display unit 51'" that is implemented as a "liquid crystal display

[that] is a ‘touch-screen type.’” Pet., 40-41 (citing Chin, [0061]; Rodriguez Decl., ¶¶ 170-174).

165. Specifically, Petitioners assert that Chin at [0061] discloses that the first/second display units 51/52 can be touch-screen displays. Pet., 40-41. As explained in detail for dependent Claim 10 in Section VIII.E below, Chin at [0061] discloses that a second button unit 33a on **connecting unit 33** can be a touch screen. Connecting unit 33 connects the first display unit 51 to the second display unit 52. Chin, [0045], [0049], Fig. 1. Connecting unit is not part of the first display 51 or the second display 52; rather, it is a separate component. Thus, Chin discloses that **connecting unit 33** can have a touch screen display. Chin does not disclose that first display 51 or second display 52 can be a touch screen display.

166. Thus, Petitioners’ and its expert’s argument that limitation 11A is met because Chin’s first display unit 51 is disclosed to be a touch screen is incorrect. Pet., 40-41. Chin does not anticipate Claim 11.

C. Independent Claim 16 Is Not Anticipated by Chin Because Limitation 16E Is Not Disclosed.

167. Petitioners argue that limitation 16E (“*wherein the image capture mode is ... a full and disabled mode*””) is disclosed for the same reasons as dependent Claim 13. Pet., 51. As explained below in Section VIII.F for Claim 13, Chin does not disclose the image capture mode being a “*full and disabled mode*.” Accordingly, Claim 16 is patentable over Chin because limitation 16E is not disclosed.

D. Dependent Claims 6-7 and 19 Are Not Anticipated by Chin.

168. Dependent Claim 6 provides “*wherein, in the image capture mode, the device does not display an image on a first screen and displays a preview on a second screen.*” Dependent Claim 7 provides “*wherein the first screen is disabled and does not receive user input while in the image capture mode.*”

169. Both claims depend (through other claims) from Claim 2. Claim 2 provides that the received user input of limitation 1B is for executing an “*image capture[] function [that] is configured to capture an outward-facing image.*” Petitioners apply Claim 2 to the outward-facing image mode of Figure 6 of Chin. Pet., 34 (“This is shown in annotated Figure 6 above ...”).

Claim 6

170. Claim 6 further provides that “*in the image capture mode, the device does not display an image on a first screen and displays a preview on a second screen.*” Petitioners correctly point out that Chin discloses providing a preview on first display 51 in the outwardly-facing mode. Pet., 38 (citing Chin, [0079]) (corresponding to the claimed “*second screen*”). However, Chin does not disclose that the device does not display an image on second display 52 (corresponding to the claimed “*first screen*”) in this mode, as required by Claim 6.

171. As discussed above in Section VIII.A.2, Chin does not disclose what, if anything, is displayed by the second display 52 on the other side of the device in

the outward-facing photograph mode. See Chin, [0068]-[0069], [0079], Fig. 6. Petitioners and its expert do not provide any evidence that the second display 52 does not display an image, as required by Claim 6. See Pet., 38-39 (citing to Rodriguez Decl., ¶¶ 161-162).

172. Dr. Rodriguez asserts: “A POSITA would have understood that absent any indication to the contrary, ‘the device does not display an image on a first screen,’” but he provides no factual basis for the assertion. Rodriguez Decl., ¶ 162.

173. As I explained above for limitation 1E in Section VIII.A.4, Chin does not disclose, expressly or inherently, that second display 52 does not display anything in the outward-facing image mode of Figure 6.

174. Thus, Chin does not anticipate Claim 6.

175. My understanding is that a reference can anticipate if it inherently discloses a limitation, meaning that it necessarily follows that the reference has the claimed feature. However, Petitioner made no inherency argument. Pet., 38-39.

176. It is my opinion that an inherency argument for Claim 6 would fail on the merits. A POSITA would readily understand that the second display 52 in Chin’s outward-facing mode of Figure 6 could display an image. For example, the camera display could present a screen saver, a preview, or some other image. Ex. 2007 (Ye), Abstract, 1:5-50, Figs. 2-3, Cl. 1; Ex. 2008 (Rodriguez), Abstract, 1:44-4:53, 65:13-

16. Because it is not necessary that Chin provides no display on second display 52, it does not anticipate Claim 6 through inherency.

Claim 7

177. Claim 7 provides that “*the first screen is disabled and does not receive user interface input while in the image capture mode.*” As with Claim 6, Petitioners apply Claim 7 to the outward-facing mode in Chin’s Figure 6. As with Claim 6 and as discussed in Section VIII.A.2, Chin is silent on second display 52 for Figure 6. Chin certainly does not expressly disclose that second display 52 is disabled and unable to receive user input. As with Claim 6, Dr. Rodriguez’s assertion that because Chin does not expressly state that second display 52 is enabled, then it follows that it is disabled and unable to receive input is unsupportable. See Pet., 39 (citing Rodriguez Decl., ¶¶ 163-164). Chin does not expressly disclose that second display 52 is disabled, let alone does it disclose that it is unable to receive user input.

178. Thus, Chin does not anticipate Claim 7.

179. Petitioners and its expert make no inherency argument for Claim 7 (see Pet., 39; Rodriguez Decl., ¶¶ 163-164). Even so, an inherency argument would fail on the merits for the same reasons as Claim 6. In particular, a POSITA would readily recognize that in Chin’s outward-facing mode the second display 52 could be enabled to display content such as a screen saver, preview, or the like. Accordingly, Chin does not inherently anticipate Claim 7.

Claim 19

180. Claim 19 provides that “*user input for the second screen is disabled.*” Like Claim 7, Petitioners apply independent Claim 16 to the outward-facing mode in Figure 6 of Chin. Petitioners assert that dependent Claim 19 is anticipated for the same reasons as Claim 7. See Pet., 50-51; Rodriguez Decl., ¶ 240-241. It is my opinion that Claim 19 is patentable over Chin for the same reasons I set forth above for Claim 7.

E. Dependent Claim 10 Is Not Anticipated by Chin.

181. Dependent Claim 10 provides that “*one or more controls are presented on the second screen.*”

182. Claim 10 depends from dependent Claim 2. Claim 2 provides that the received user input of limitation 1B is to execute an “*image capture[] function [that] is configured to capture an outward-facing image.*” Petitioners apply Claim 2 to the outward-facing configuration of Figure 6 of Chin. Pet., 34 (“This is shown in annotated Figure 6 above ...”).

183. Petitioners and their expert assert that Chin teaches that “the display units” (first display unit 51 and second display unit 52) “may be of a ‘touch screen-type, and that the buttons for controlling the device can be implemented on a touch-screen.” Pet., 39 (citing Chin, [0061], Rodriguez Decl., ¶¶ 165-166). They conclude that “one or more controls are presented on the second screen of the disclosed

embodiment of Chin where the buttons ('controls') are implemented as a touch-screen." Pet., 39-40, (citing Rodriguez Decl., ¶¶ 165-166).

184. Petitioners and their expert are incorrect. Chin does not disclose that either of the first display unit 51 and second display unit 52 is a touch screen device, let alone a touch screen device with control buttons. Petitioners and their expert rely on paragraph [0061] of Chin, which explains that a second button unit 33a on **connecting unit 30** (not on first screen unit 51 or second screen unit 52) can have buttons on a touch screen surface:

[0061] The second button unit 33a includes a plurality of push-type buttons (e.g., microswitches, snap domes, etc.) which may include a light-emitting diode (LED). As shown in FIG. 2, some of the buttons of button unit 33a may have a function of the camera operating button 33b and some may have a function of the multimedia operating button 33c. Accordingly, the second button unit 33a receives signals from the controlling unit 70 (relative to the sensor unit 71) so as to activate the camera operating button 33b or the multimedia operating button 33c. The structure of the second button unit 33a is not limited to the above structure, and may be embodied by using different components such as a touch screen-type liquid crystal display.

Chin, [0061] (cited by Pet., at 39, and Rodriguez Decl., ¶¶ 165-166).

185. Connecting unit 30 is coupled on one side to first display 51 and is connected on the other side to second display 52. Chin, Fig. 1. Chin discloses that second button unit 33a is part of connecting unit 30; it is not part of first display 51

or second display 52. Specifically, second button unit 33a, which can have a touch screen, is on the third face 33 of connecting unit 30:

[0041] Referring to FIG. 1, the portable information terminal according to an embodiment of the present invention includes a first panel 10, a second panel 20, and **a connecting unit 30 connecting the first panel 10 and the second panel 20.** ...

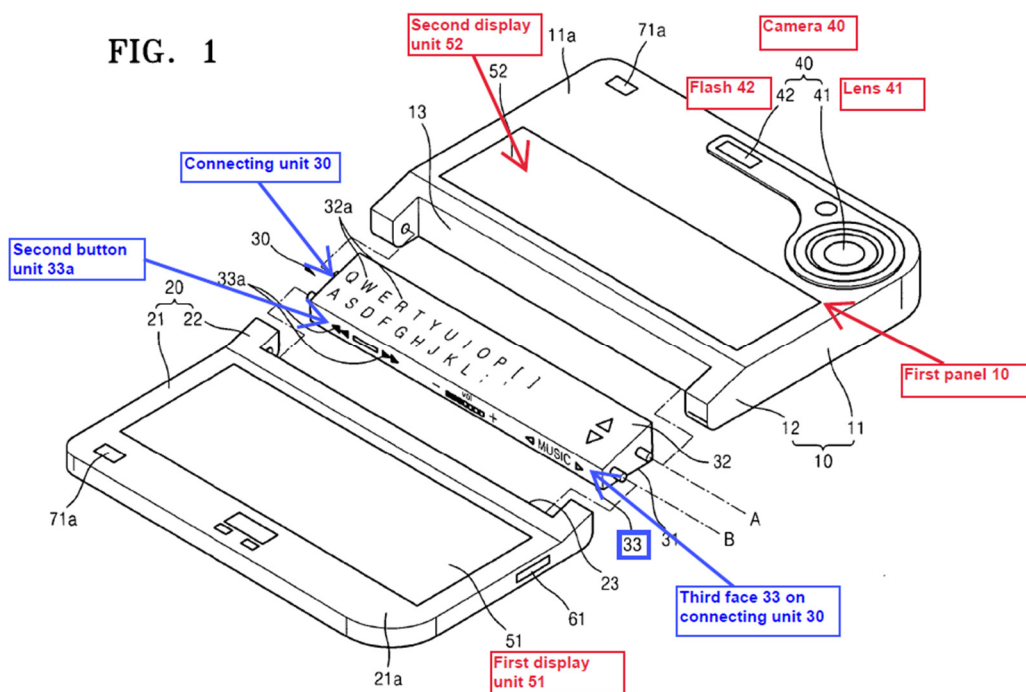
[0042] The first panel 10 includes a first flat board unit 11 and a first hinge unit 12. The second panel 20 includes a second flat board unit 21 and a second hinge unit 22. ...

[0045] A first display unit 51 is configured on a first generally planar surface 21a of the second flat board unit 21, and a second display unit 52 is configured on the first generally planar surface 11a of the first flat board unit 11. ...

[0049] Since the connecting unit 30 has a quadrangle-shaped cross section (when cut by a plane cross to pivot axes A and/or B), the connecting unit 30 has four faces (except for the two lateral/end faces that are rotatably coupled to the first hinge unit 12 and the second hinge unit 22) on which the button unit(s) may be configured. FIG. 1 illustrates a first face 31, a second face 32 which is an opposite surface of the first face 31, and **a third face 33.** ... As can be appreciated from FIGS. 1 and 8, the third face 33 is generally configured to have a substantially similar surface area as edge 23, and the fourth face 34 is generally configured to have a substantially similar surface area as edge 13. ... In FIG. 1, a first button unit 32a on the second face 32 and **a second button unit 33a on the third face 33** [of connecting unit 30] are illustrated as examples of the button unit.

Chin, [0041]-[0042], [0045], [0049] (emph. added).

186. Figure 1 confirms that second button unit 33a is part of connecting unit 30, not part of first display unit 51 or second display unit 52:



Chin, Fig. 1 (annotated), [0049].

187. Accordingly, Chin discloses that a button unit on connecting unit 30 can be a touch screen. Chin does not disclose or suggest that either the first display unit 51 or second display unit 52 can be a touch screen or that either has controls, per the Petitioners' argument for Claim 10. Claim 10 is thus not anticipated by Chin

F. Dependent Claims 13 and 17 Are Not Anticipated by Chin.

188. Dependent Claim 13 states that *"the image capture mode is one of a full and disabled mode, a full and static mode, or a full and live mode."* Petitioners

argues that Chin discloses a “*full and disabled mode*” based on the outward-facing mode of Chin’s Figure 6. Pet., 48 (citing Chin, [0079]). Petitioners rely on the same argument they presented for Claims 6-7. Pet., 48. As explained for Claims 6-7 in Section VIII.D above, Chin does not disclose that the second display unit 52 is in a disabled state, as required by Petitioners’ theory for Claim 13.

189. For dependent Claim 17 (“*the full and disabled mode*”) the Petitioners make the same argument as for Claim 13. Pet., 51. Claim 17 is not anticipated by Chin for the same reasons as Claim 13.

190. Accordingly, Claims 13 and 17 are patentable over Chin.

G. Dependent Claims 2-7, 10, 12-13, 17, and 19-20 and 19 Are Not Anticipated by Chin.

191. Dependent Claims 2-7, 10, 12-13, 17, and 19-20 are patentable over Chin for at least the reasons set forth for the independent claims in Section VIII.A-C above.

IX. CLAIMS 1-7, 10-13, 16-17, AND 19-20 ARE NOT OBVIOUS BASED ON CHIN (GROUND 2)

A. Independent Claims 1, 11, and 16

192. For limitation 1E providing that “*wherein in each image capture mode a display on the first or second screen is different,*” Petitioners’ obviousness theory is premised on Chin “specify[ing] that the preview is shown on one screen or the other, and not on both screens.” Pet., 55 (citing Rodriguez Decl., ¶¶ 257-258). But,

as explained in Sections VIII.A.1-4 above, this assertion is incorrect: Chin does not disclose that first display unit 51 provides no display in the self-photograph mode of Figure 5 or that second display unit 52 provides no display in the outward-facing mode of Figure 6. Petitioners' obviousness argument fails because its premise is invalid.

193. Petitioners' expert argues that "a POSITA would have been motivated to turn off or disable a screen that is not facing the user." Rodriguez Decl., ¶ 258. See Pet., 55. But neither the Petitioners or their expert cites any prior art or other evidence that it was known in the art to turn off or disable a screen that is not facing a user. The expert testimony is unsupported by evidence. See Rodriguez Decl., ¶ 258.

194. Further, Petitioners' expert cited five different extrinsic references as allegedly representing the state of the art: (1) Aono (Ex. 1006), (2) Lee (Ex. 1009), (3) Kim (Ex. 1010), (4) Kawaski (Ex. 1011), and (5) Park (Ex. 1012). Rodriguez Decl., ¶¶ 62-66. Yet, Petitioners' expert does not assert that any of these extrinsic references teach turning off/disabling a screen that is not facing the user. Dr. Rodriguez confirmed in deposition that he did not assert that any of these five references allegedly representing the state of the art taught turning off or disabling a screen when it is not facing a user. Ex. 2011 (Dep. Trans. Rodriguez), 43:20-48:4.

195. Indeed, the state of the art at the time was that a camera-type device (e.g., an iPhone or digital camera) would continue to provide a preview on the screen after a screen pointed towards a user was pointed away from the user. Thus, the state of the art does not teach turning off/disabling a screen based on whether the screen was facing a user. Ex. 2009 (Beach), [0004]-[0005], [0073], [0075].

196. Further, I recall from personal experience using the iPhone with a single camera in the 2007-2009 timeframe. The screen could be pointed towards the user and would provide a preview when the user was taking a photograph. If the user turned the phone around to take a “selfie,” the screen would now be pointing away from the user, yet it would continue to display a preview. This is contrary to the Petitioners’ and their expert’s assertion that it was known in the art to turn off or disable a screen pointing away from a user.

197. Accordingly, there is no basis for turning off or disabling a screen because it is pointing away from the user. The proposed combination of non-prior art turning off/disabling with Chin does not render limitation 1E obvious.

198. Further, Petitioners and their expert fail to establish that their proposed modification of Chin to “turn off or disable a screen that is not facing the user” would have a reasonable expectation of success. Petitioners and their expert do not even address this consideration of the obviousness framework. See Rodriguez Decl., ¶¶ 256-258; Pet., 54-55.

199. Indeed, it is my opinion that a POSITA would not modify Chin “to turn off or disable a screen that is not facing the user.” For example, assume the device is being used in the self-photograph mode of Figure 5 where a preview is provided on display 52. If the user turns the device around, display 52 is now facing away from the user. Petitioners and their expert propose that the device would be modified so that display 52, having been rotated to face away from the user, would be turned off/disabled. However, a POSITA would not make that modification. Such a modification would require architecting the device so that it somehow detects the presence of the user’s face to “know” that the screen is facing the user, and then somehow it would detect the absence of the user’s face to “know” that the screen is not facing the user after the device has been rotated. In the 2011 timeframe, it would be extremely difficult to design such a detection mechanism. For this reason, a POSITA would not make the proposed modification to Chin.

200. Perhaps more significant, it would be very difficult to design such a detection mechanism that would work in a reliable manner. A POSITA would understand that users would become very frustrated if a screen is turning on and off as the user rotates the device in taking a series of photographs. For this reason, a POSITA would not make such a modification to Chin because it would be a very unreliable feature.

201. Furthermore, the likelihood that a heuristic used to do this (face detection in camera mode) would get it right is likely something like 50 percent or less. Nevermind that the Petitioner does not even discuss or address this issue. Consistency is important to users in user interface design.

202. Accordingly, a POSITA would not have reason to make the proposed modification to Chin for it to “turn off or disable a display not facing the user.” For the same reasons I have set forth, a POSITA would not have a reasonable expectation of success that the Chin device would work properly if such a modification was made.

203. Claim 11 (limitation 11H) and Claim 16 (limitation 16D) have the same limitation, and Petitioner makes the same argument as for Claim 1. Pet., 55. Accordingly, Chin does not render obvious limitation 11H of Claim 11 and limitation 16D of Claim 16.

B. Independent Claim 11 and Dependent Claim 10

204. Limitation 11A of independent Claim 11 recites a “*gesture capture region*” on the first screen. Dependent Claim 10 requires that “*one or more controls are presented on a second screen.*”

205. Petitioners’ argument is that these limitations would be met by modifying either of Chin’s first display unit 51 or second display unit 52 to be a touch screen device as referenced for Chin’s connecting device 30 because touch

screens were allegedly known in the art. Pet., 53-54 (referencing Rodriguez Decl., ¶¶ 252-255; Chin, [0061]).

206. However, my opinion is that a POSITA would not make that modification because it is contrary to the design principle of Chin to separate the display function from the control function.

207. Specifically, in Chin the control of the displays 51/52 is implemented using control buttons on the connecting unit 30 that are separate from displays 51/52. See, e.g., Chin Fig. 1 (button unit 33a on connecting unit 33 is separate from displays 51/52). Indeed, Chin explains that the problem with prior art devices combining display and control is that when the device is in a folded state, the “buttons disposed on a lateral surface of the display apparatus ... are not externally exposed, and thus, are inaccessible which makes it difficult to operate the portable information terminal.” Chin, [0009]. Chin’s design principle is thus having a control interface that is separate from the display. For this reason, a POSITA would not have reason to modify display units 51/52 to be touch screen interfaces because it would run contrary to Chin’s principle of operation.

208. Accordingly, Chin does not render Claim 10 or Claim 11 obvious.

C. Independent Claim 16 and Dependent Claims 6-7, 13 and 17

209. For limitation 16E and dependent Claims 6-7, 13, and 17 providing for disabling a screen or not displaying an image on the screen, Petitioners rely on the same argument provided for limitation 1E of independent Claim 1. See Pet., 55.

210. The claimed features are not obvious for the reasons set forth above for limitation 1E in Section IX.A above.

D. Dependent Claims 2-7, 10, 12-13, 16-17, and 19-20

211. Each of the dependent claims is patentable over Chin for at least the reasons set forth for their respective independent claims.

X. CLAIMS 1-7 AND 11 ARE NOT ANTICIPATED BY WHITEHORN (GROUND 3)

A. Independent Claims 1 and 11 Are Not Anticipated Because Whitehorn Does Not Disclose Limitation 1E

212. Limitation 1E of independent Claim 1 provides for the device entering one or more image capture modes “*wherein in each image capture mode a display on the first or second screen is different.*”

213. As discussed above in Section VI.B, the proper construction of limitation 1E requires a different display on the first screen between image capture modes or a different display on the second screen between image capture modes. In other words, the same screen must present different displays between image capture modes.

216. Whitehorn discloses the first image capture mode as follows:

[0027] Next in step 604, the device 102 enters a “first image capture mode” and displays information on the small screen interface 118, if the top cover 106 is folded onto bottom cover 108, and top and bottom large screen interfaces 128 and 124 are facing each other. FIGS. 1, 3 and show the device in the “first image capture mode.” In this mode, users are capturing images with the image capture device 116 while looking through the small screen interface 118 at what is being captured. Users may prefer this mode out of convenience or due to bright lighting conditions which would otherwise obscure images displayed on one of the large screen interfaces 124 and 128.

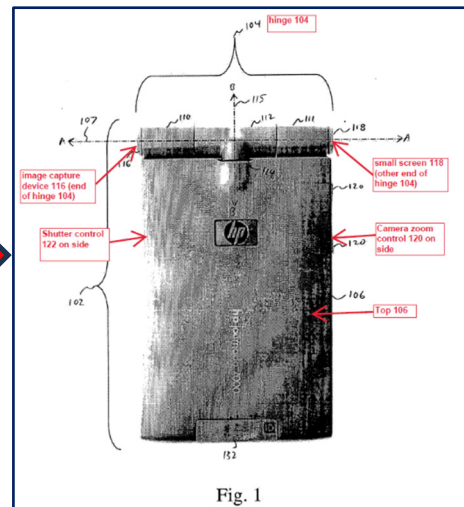
Whitehorn, [0027].

217. Whitehorn thus discloses that in the first image capture mode the small screen 118 displays a preview of the image being captured. Whitehorn does not disclose what, if anything, is displayed on top large screen 128.

218. Petitioners argue: “Thus, in the first image capture mode, the top large screen interface [128] is not visible and does not display an image.” Pet., 66 (citing Rodriguez Decl., ¶ 297). While it is true that in this mode the top large screen 128 is not visible, there is no express disclosure that top large screen 128 is not displaying an image. See Whitehorn, [0027]. Whitehorn is completely silent as to what top large screen 128 displays in this mode. See Whitehorn, [0027], Fig. 6 (step 604).

219. A POSITA would appreciate that top large screen 128 could display a preview in the first image capture mode. For example, the user might start in the

second image capture mode of Figure 5, where top large screen 128 is displaying a preview. Whitehorn, [0029], (“top large screen interface 128 [displaying] what is being captured”), Fig. 6 (step 608). If the user then rotates top cover 106 to close it onto bottom cover 108 with top screen 128, then the device changes from the second image capture mode (Fig. 5) to the first image capture mode (Whitehorn, Fig. 1, Fig. 6 (step 604), [0027]), as depicted below:



Whitehorn, Fig. 5 (“second image capture mode”), Fig. 1 (“first image capture mode”) (both annotated).

image capture mode, as alleged, and this example further demonstrates that it is not inherent that top large screen 128 would not be displaying an image in that mode.

221. Thus, while it is correct that in the second image capture mode, the top large screen 128 will be displaying a preview (Pet., 67-68 (citing Whitehorn, [0029] (top large screen 128 displays “what is being captured”))), there is no express (or inherent) disclosure that the top large screen 128 provides no display, as alleged, in the first image capture mode. Accordingly, there is no disclosure in Whitehorn that the display in the top large screen 128 differs in the first image capture mode and second image capture mode, and thus limitation 1E is not met.

222. Accordingly, limitation 1E of Claim 1 is not anticipated by Whitehorn. Limitation 11H is the same as limitation 1E, and Petitioners make the same argument. Pet., 79-80. Thus, Claim 11 is not anticipated by Whitehorn.

B. Independent Claim 11 Is Not Anticipated by Whitehorn Because Limitation 11B Is Not Disclosed

223. Limitation 11B provides that “*the second screen faces an opposite direction from the first screen when the device is closed.*” Limitation 11B also provides “*wherein an image capture lens is associated with the second screen.*”

224. Petitioners allege that Whitehorn’s bottom large screen 124 is the claimed “*first screen.*” Pet., 75-76. Petitioners allege that the top large screen 128 is the claimed “*second screen.*” Pet., 76 (citing Rodriguez Decl., ¶¶ 329-334).

“the second screen faces an opposite direction from the first screen when the device is closed”

225. Petitioners rely on Whitehorn’s first image capture mode for “*the second screen faces an opposite direction from the first screen when the device is closed.*” Pet., 76 (citing first image capture mode of Whitehorn’s Figs. 1, 3, and 4). But, Whitehorn’s first image capture mode has the bottom large screen 124 and top large screen 128 are facing towards each other, not facing away from one another as claimed (“*second screen faces an opposite direction from the first screen when the device is closed*”).

226. Consistent with this ordinary understanding of the claim language, the ’842 Patent describes that the first screen 110 and second screen 114 are facing “opposite directions” when they are facing away from one another, not when they are facing towards each another.

Additionally, it is desirable to have the multi-display device that can use either display when the device is closed. Thus, the user, based on the user's desires, can take better advantage of the phones capabilities. The device can have at least two screens that face in opposite directions when closed. A primary screen may be used for most applications. However, the user, or by some other input or event, can change the display to a secondary screen. Thus, the display may be provided on the opposite screen facing the opposite direction.

’842 Patent, 1:53-61.

In a first device configuration, the device 100 may have a first screen 110 and a second screen 114 and the device 10 may be in a closed state as described herein. In this closed state, the first and second screens 110, 114 may face opposite directions.

'842 Patent, 33:7-11, Fig. 1H, Fig. 3A (100).

227. I note that Whitehorn discloses that the display screens are facing towards one another, not facing away: The device enters the first image capture mode “if top cover is folded onto bottom cover, and top [large screen 128] and bottom large screen [124] interfaces are *facing each other*” (Fig. 6, step 604). Whitehorn, [0027] (emph. added). Thus, limitation 11B is not met.

228. Petitioners and their expert have a back-up theory that relies on the “second handheld mode” of Whitehorn, where the device function as a tablet. Pet., 76 (citing Whitehorn, [0024], [0031]). See Whitehorn, Fig. 6 (step 610). In this mode, top screen 128 and bottom screen 124 are facing in opposite directions. However, the device is functioning as a tablet, not in an “*image capture mode*” as required by Claim 11 (e.g., limitation 11G). Whitehorn thus does not anticipate under Petitioners’ back-up theory.

“image capture lens is associated with the second screen”

229. Limitation 11B also requires that the “*image capture lens is associated with the second screen.*”

230. Petitioners’ argument for the “*image capture lens is associated with the second screen*” in limitation 11B fails because it is based on the second image capture mode of Whitehorn (Fig. 5), which conflicts with the Petitioners’ reliance on the first image capture mode (Fig. 1) or second handheld mode (Fig. 6, step 610) for “*the second screen faces an opposite direction from the first screen when the device is closed*” in the first part of limitation 11B. Pet. 76-77.

231. Also, the second image capture mode of Whitehorn does not disclose an image capture lens associated with a second screen. The ’842 Patent discloses an image capture lens (camera) 168 on screen 104 as depicted below:

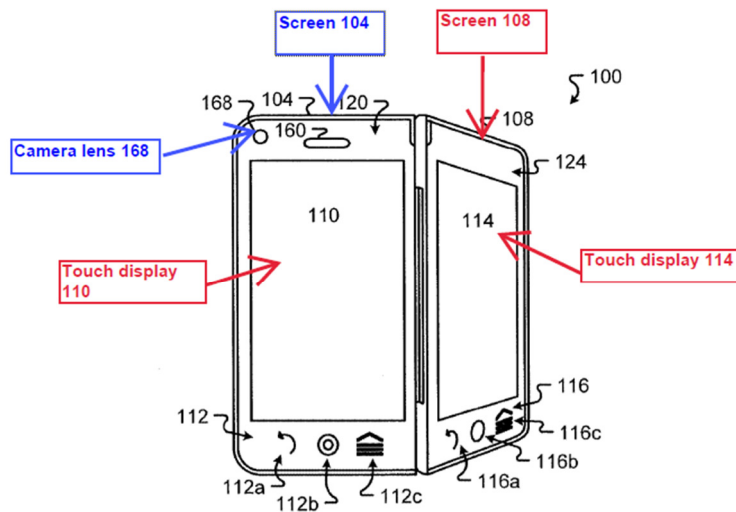


FIG. 1A

’842 Patent, Fig. 1A (annotated).

232. According to the Petitioners’ argument, the alleged “*second screen*” in Whitehorn is top large screen 128. But image capture device 116 (alleged “*image*”

capture lens”) is part of hinge 104. It is not part of top large screen 128 (alleged “*second screen*”). Hinge 104 and top large screen 128 are physically separate components:

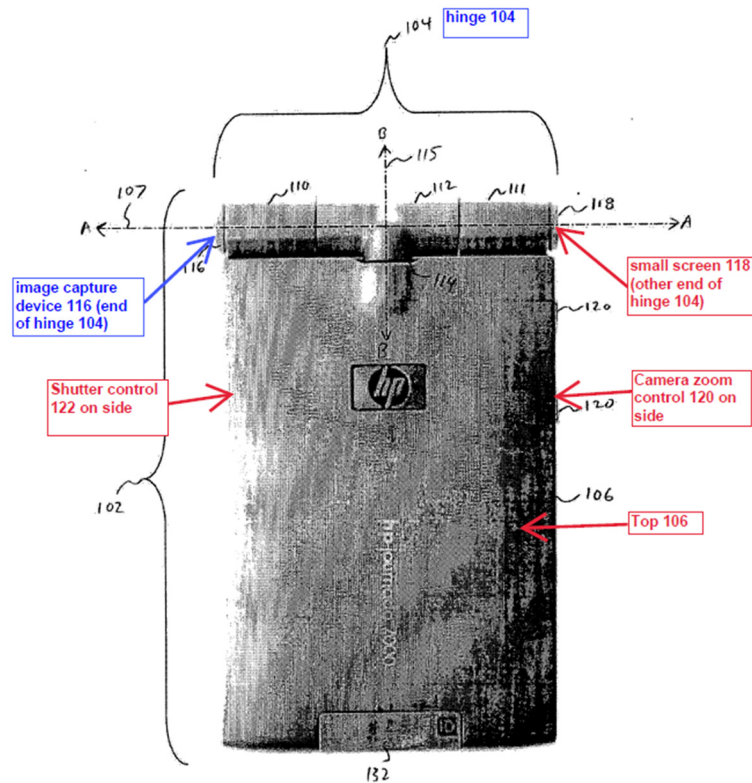


Fig. 1

Whitehorn, Fig. 1 (annotated).

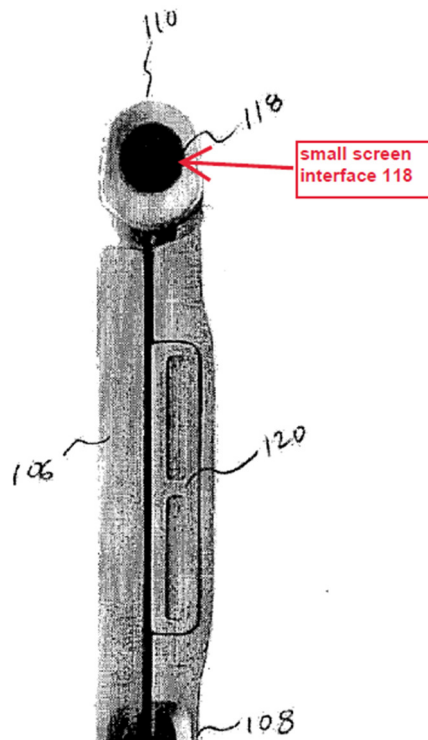
233. Whitehorn discloses that the image capture device 116 is associated with hinge 104, not with the top large screen 128 as alleged by Petitioners. For this additional reason, Whitehorn does not disclose limitation 11B.

C. Dependent Claim 4 Is Not Anticipated by Whitehorn

234. Petitioners and their expert apply Whitehorn’s first image capture mode as allegedly anticipating Claim 3 providing “wherein the device is in a

closed state.” In that mode, large top screen 128 and large bottom screen 124 are in the closed position, facing one another, and the user views a preview through small screen interface 118 on the side of the device. Whitehorn, Fig. 1 (118), Fig. 6 (step 604), [0027] (“users are ... looking through the small screen interface 118 at what is being captured”). Pet., 73.

235. Claim 4 provides that “*the device is in a landscape or portrait orientation.*” However, in Whitehorn’s first image capture mode the small screen interface 118 used for the display is not in a landscape or portrait orientation. A POSITA would understand it to be a circular screen, as illustrated below:



Whitehorn, Fig. 4 (annotated).

236. A POSITA viewing Figure 4 would understand that the device is not in the landscape mode or the portrait mode. I note that the '842 Patent states the following:

In landscape mode, the display is oriented such that the width of the display is greater than the height of the display (such as a 4:3 ratio, which is 4 units wide and 3 units tall, or a 16:9 ratio, which is 16 units wide and 9 units tall). Stated differently, the longer dimension of the display is oriented substantially horizontal in landscape mode while the shorter dimension of the display is oriented substantially vertical. In the portrait mode, by contrast, the display is oriented such that the width of the display is less than the height of the display.

'842 Patent, 3:44-52.

237. A POSITA would consider the device as having a display 118 that is circular, and thus the device is not in either a landscape or portrait orientation. Thus, Whitehorn does not anticipate Claim 4.

D. Dependent Claim 6 Is Not Anticipated by Whitehorn

238. Claim 6 provides that “*the device does not display an image on a first screen and displays a preview on a second screen.*” Petitioners make the same argument as they made for limitation 1E, namely, that in the first image capture mode Whitehorn’s “top large screen interface 128” allegedly “does not display an image.” Pet., 74 (referencing argument for limitation 1E). But, as explained above in Section X.A, Whitehorn does not disclose that top large screen 128 displays no

image when the device is in the first image capture mode. Whitehorn thus does not anticipate Claim 6.

E. Dependent Claim 7 Is Not Anticipated by Whitehorn

239. Claim 7 provides that “*the first screen is disabled and does not receive user interface input while in the image capture mode.*”

240. Petitioners apply Whitehorn’s first image capture mode to Claim 7 and argue that “the top large screen interface 128 does not display an image” and is also “disabled.” Pet., 74-75 (citing Rodriguez Decl., ¶¶ 321-323). But, as explained in Section X.A for limitation 1E, Whitehorn does not disclose, expressly or inherently, that top large screen 128 displays no image when the device is in the first image capture mode.

241. Also, Petitioners and its expert are improperly conflating the first screen being “*disabled and does not receive user input*” per Claim 7 with it “*not display[ing] an image*” per Claim 6. Petitioners’ logic is incorrect. A screen does not display an image when it is disabled. However, it does not follow that because a screen is not displaying an image that the screen is disabled. A POSITA would understand that ordinary and customary usage is that a screen not displaying an image is different from the screen being disabled and unable to receive user input.

242. The '842 Patent describes a screen being disabled so it cannot receive user input ('842 Patent, 34:53-57), which is different from a screen not displaying an image:

The other screen 114 may be disabled. Thus, the second screen 114 cannot receive user input while the device is a self-portrait mode.

Prohibiting user input on the second screen 114 prevents inadvertent interfere[nce] with the capture of the self-portrait.

'824 Patent, 34:53-57.

243. The '842 Patent also describes how an outwardly-facing secondary screen can be “enabled” or “disabled,” which illustrates the distinction between a screen being disabled and it merely not displaying an image:

In general, the device 100 includes a primary screen 104 and a secondary screen 108. While the primary screen 104 and its components are normally enabled in both the opened and closed positions states, the secondary screen 108 and its components are normally enabled in the opened state but disabled in the closed state. However, even when in the closed state a user or application triggered interrupt (such as in response to a phone application or camera application operation) can flip the active screen, or disable the primary screen 104 and enable the secondary screen 108, by a suitable command.

'842 Patent, 10:33-43. See Fig. 1H (closed position where secondary screen 108 is physically accessible on back side of device).

244. Petitioners make no showing that in Whitehorn’s first image capture mode that top large screen 128 is disabled and unable to receive input. Petitioners assert that screen 128 is “closed and not visible to the user” and “[t]hus, the large top screen interface 128 is disabled.” Pet., 75. This logic does not hold, as I explained above. Also, contrary to Dr. Rodriguez’s testimony (¶¶ 321-323), a POSITA would readily recognize that the screen being folded and not visible does not mean that the screen is disabled.

245. Thus, Whitehorn does not anticipate Claim 7.

F. Dependent Claims 2-7 Are Not Anticipated by Whitehorn

246. Dependent Claims 2-7 are patentable over Whitehorn for at least the reasons set forth for independent Claim 1 in Section X.A above.

XI. CLAIMS 1-7 AND 11 ARE NOT OBVIOUS BASED ON WHITEHORN (GROUND 4)

A. Independent Claims 1 and 11 Are Not Obvious Based on Whitehorn

247. For limitation 1E providing “*wherein in each image capture mode a display on the first or second screen is different,*” Petitioners’ obviousness theory is based on the premise that in Whitehorn’s first image capture mode (Fig. 1) “the top large screen interface 128 is not displaying anything and is turned off.” Pet., 83 (citing Rodriguez Decl., ¶¶ 375-376).

248. However, as explained in Sections X.A (limitation 1E) and X.E (Cl. 7), this assertion is incorrect: Whitehorn does not teach that top large screen 128 is not displaying anything and is turned off when in the first image capture mode. Petitioners' obviousness argument fails because this premise is incorrect.

249. Next, Petitioners argue that "a POSITA would have been motivated to turn off (disable) this screen [top large screen 128] in the first image capture mode" because it would not be visible to the user. Pet., 83 (citing Rodriguez Decl., ¶ 376). More specifically, Petitioners' expert argues that a POSITA "would have been motivated to turn off or disable a screen that is not facing the user." Rodriguez Decl., ¶ 376. Pet., 82-83.

250. I note that neither the Petitioners or their expert cites any prior art or other evidence that it was known in the art to turn off a screen in when the screen is not facing a user. See Rodriguez Decl., ¶ 376.

251. I note that Dr. Rodriguez cites five different extrinsic references as allegedly representing the state of the art: (1) Aono (Ex. 1006), (2) Lee (Ex. 1009), (3) Kim (Ex. 1010), (4) Kawaski (Ex. 1011), and (5) Park (Ex. 1012). Rodriguez Decl., ¶ 62-66. Yet, Dr. Rodriguez does not assert that any of these references teach turning off/disabling a screen that is not facing the user. He confirmed that in deposition. Ex. 2011 (Dep. Trans. Rodriguez), 43:20-48:4.

252. Instead, at the timeframe of the invention a camera-type device (e.g., an iPhone or digital camera) would continue to provide a preview on the screen after a screen pointed towards the user (e.g., in the standard photograph mode) was then pointed away from the user (e.g., as in a “selfie”). Thus, the state of the art does not teach turning off/disabling a screen if the screen was facing away from the user. Ex. 2009 (Beach), [0004]-[0005], [0073], [0075] .

253. Additionally, for the same reasons as explained in Section IX.A for Ground 2, a POSTA would not have reason to modify Whitehorn so that it “turn[s] off or disable[s] a screen that is not facing the user.” Petitioners and their expert provide no evidence that the modification was common knowledge in the art at the time of the invention. As explained in Section IX.A, even if that concept was known in the art (it was not), a POSITA would not make the modification because it would require a complex and unreliable detection mechanism for the device to know when the screen was facing a user and when a screen was not facing a user to cause it to disable the screen. Users would be annoyed by a feature turning the screen on and off as they move and rotate the device. Further, there would be no reasonable expectation of success that such a modification would work reliably. Petitioners and their expert do not even address reasonable expectation of success in their analysis. See Pet., 82-83; Rodriguez Decl., ¶¶ 375-376.

254. Thus, Whitehorn does not render limitation 1E obvious. Claim 1 is patentable over Whitehorn. Claim 11 (limitation 11H) recites the same limitation, and Petitioner makes the same argument as in Claim 1. Pet., 82-83. Accordingly, the asserted art does not render Claim 11 obvious.

B. Dependent Claims 6-7

255. Claims 6-7 provide for not displaying an image or for disabling a screen. For these claims, Petitioners rely on the same argument provided for limitation 1E of independent Claim 1. See Pet., 83. The claimed features are not obvious for the reasons set forth above for limitation 1E in Section XI.A above.

XII. CONCLUSION

256. I hereby declare that all statements made herein of my own knowledge are true and all statements made herein on information and belief were and are believed by me to be true, and that all statements herein were and are 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 and that any such willful false statements may jeopardize the validity of the application or any patents issued thereon.

Respectfully submitted,



Rajeev Surati

Dated: August 25, 2025