

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,

Petitioner

v.

SMITH INTERFACE TECHNOLOGIES, LLC

Patent Owner

IPR2024-01256
Patent 11,740,727

DECLARATION OF CRAIG ROSENBERG, Ph.D.

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I. INTRODUCTION

1. My name is Dr. Craig Rosenberg, Ph.D. I have been retained by Smith Interface Technologies, LLC as an independent expert consultant in this inter partes review (“IPR”) proceeding before the United States Patent and Trademark Office (“PTO”).

II. PROFESSIONAL BACKGROUND

2. All of my opinions stated in this Declaration are based on my own personal knowledge and professional judgment. In forming my opinions, I have relied on my knowledge and experience in designing, developing, researching, and teaching the technology referenced in this Declaration.

3. I am over 18 years of age and, if I am called upon to do so, I would be competent to testify as to the matters set forth herein. I understand that a copy of my current curriculum vitae, which details my education and professional and academic experience, is being submitted as EX2007. The following provides a brief overview of some of my experiences that are relevant to the matters set forth in this Declaration.

4. My qualifications to testify about the patents in this case and the relevant technology are set forth in my curriculum vitae (“CV”), which I have included as Exhibit A. In addition, a brief summary of my qualifications is included below.

5. I hold a Bachelor of Science in Industrial Engineering, a Master of Science in Human Factors, and a Ph.D. in Human Factors from the University of Washington School of Engineering. For 30 years, I have worked in various areas, including human factors, user interface design, software development, software architecture, systems engineering, and modeling and simulation, across a wide range of application areas, such as aerospace, communications, entertainment, and healthcare.

6. I graduated from the University of Washington in 1988 with a Bachelor of Science degree in Industrial Engineering. After graduation, I continued my studies at the University of Washington College of Engineering. In 1990, I obtained an M.S. in Human Factors. Human Factors is an engineering discipline that studies the design of products, processes, equipment, and systems to enhance their efficiency in interaction with humans. The goal of human factors is to reduce human error, increase productivity and efficiency, and enhance safety and comfort, with a specific focus on the interaction and interfaces between humans and the products, processes, or systems with which they interact. In 1994, I earned a Ph.D. in Human Factors, with a focus on advanced interface design. My B.S., M.S., and Ph.D. were all taught at the University of Washington College of Engineering.

7. During my doctoral studies, I worked as an Associate Assistant Professor of Human Factors at the University of Washington's Industrial

Engineering Department. My duties included teaching, writing research proposals, designing and conducting funded human factors experiments for the National Science Foundation, and hiring and supervising students. While studying at the University of Washington, I also worked as a human factors researcher, designing and conducting advanced human factors experiments related to virtual environments, interface design, stereoscopic displays, and advanced visualization research, which the National Science Foundation funded. My duties included user interface design, system design, software development, graphics programming, experimental design, and interfacing between hardware and software.

8. I have published twenty-one research papers in professional journals and proceedings in the areas of user interface design, computer graphics, and the design of spatial, stereographic, and auditory displays. I also authored a book chapter on augmented reality displays in the book “Virtual Environments and Advanced Interface Design” (Oxford University Press, 1995). In addition, I created one of the first virtual spatial musical instruments called the MIDIBIRD that utilized the MIDI protocol, two six-dimensional spatial trackers, a music synthesizer, and a computer graphics workstation to create an advanced and novel musical instrument.

9. For the past 21 years, I have served as a consultant for Global Technica, Sunny Day Software, Stanley Associates, Techrizon, CDI Corporation,

and the Barr Group. In this capacity, I have provided advanced engineering services for many companies.

10. I consulted for the Boeing Company for over 16 years as a senior human factors engineer, user interface designer, and software architect for a wide range of advanced commercial and military programs. Many of the projects that I was involved with at Boeing involved advanced software development, user interface design, agent-based software, and modeling and simulations in the areas of missile defense, homeland security, battle command management, computer-aided design, networking and communications, air traffic control, location-based services, and Unmanned Aerial Vehicle (“UAV”) command and control. Additionally, I served as the lead system architect, developing advanced air traffic controller workstations and air traffic control analysis applications, toolsets, and trade study simulations for Boeing Air Traffic Management.

11. I was also the architect of the Boeing Human Agent Model. The Boeing Human Agent Model is an advanced model for simulating human sensory, cognitive, and motor performance as applied to the roles of air traffic controllers, pilots, and UAV operators. In another project, I served as the lead human factors engineer and user interface designer for Boeing’s primary vector and raster computer-aided drafting and editing system, which produces maintenance manuals, shop floor illustrations, and service bulletins for aircraft manufactured by the

Boeing Commercial Aircraft Company. Additional responsibilities during my time as a consultant include system engineering, requirements analysis, functional specification, use case development, user stories, application prototyping, modeling and simulation, object-oriented software architecture, graphical user interface analysis, and design, as well as software development using UML, C++, C#, and Java.

12. In 1995 and 1996, I was hired as the lead human factors engineer and user interface designer for the first two-way pager produced by AT&T. Prior to this technology, individuals could receive pages but had no way to respond using their pagers. This new technology enabled users to use a small, handheld device to receive and send canned or custom text messages, access and update their address book, and view and update their personal calendar. This high-profile project involved designing the entire feature set, user interface/user interaction design, specifications, as well as all graphical design standards.

13. From 1999–2001, I was the lead human factors engineer and user interface designer for a company called Eyematic Interfaces, where I was responsible for all user interface design and development activities associated with real-time mobile handheld 3D facial tracking, animation, avatar creation, and editing software for a product for Mattel. My work involved user interface design, human factors analysis, requirements gathering and analysis, and functional

specifications.

14. I was the lead user interface designer for a company called ObjectSpeed, which developed a portable handheld telephone for use in homes and businesses that had many of the same capabilities that we take for granted in mobile cellular phones. This portable multifunction device supports voice, email, chat, video conferencing, internet radio, streaming media, Microsoft Outlook integration, photo taking and sharing, etc. The ObjectSpeed device was specifically designed and developed as a portable handheld device.

15. I was the lead UI designer for Ahaza, a company that builds IPv6 routers. I designed the user interfaces for configuring and controlling these advanced network hardware devices. My responsibilities included requirements analysis, functional specification, user interface design, user experience design, and human factors analysis.

16. I am the founder, inventor, user interface designer, and software architect of WhereWuz. WhereWuz is a company that develops advanced mobile software for GPS-enabled smartphones and handheld devices. WhereWuz allows users to record exactly where they have been and query this data in unique ways for subsequent retrieval based on time or location. WhereWuz was specifically designed and developed to run on small handheld devices.

17. I am the co-founder of a medical technology company called

Healium. Healium developed advanced wearable and handheld user interface technology, enabling physicians to interact more effectively with electronic medical records.

18. I am the co-founder of StratoScientific, a medical technology company. StratoScientific is developing an innovative case for a smartphone that transforms a standard handheld device into a full-featured digital stethoscope, incorporating visualization and machine learning for telemedicine and automated diagnosis.

19. I designed and developed a large software project for Disney World, called xVR, which enabled operational employees to use a handheld device to view the current and historical status of all guests within multiple attractions and one of their restaurants. The application could run in a real-time/live mode, displaying data collected from sensors that show the location and status of all guests within the attraction. The application could also run in a fast time/simulated mode. The application was developed on a laptop computer and was specifically designed to run on various devices, including laptops, PCs, smartphones, and tablets.

20. I have received several awards for my engineering work relating to interface design, computer graphics, and the design of spatial, stereographic, and auditory displays, including a \$10,000 scholarship from the I/ITSEC for advancing the field of interactive computer graphics for flight simulation and a Link

Foundation award for furthering the field of flight simulation and virtual interface design. I have also created computer graphic illustrations for several popular book covers and animations for a movie produced by MIRAMAR.

III. COMPENSATION

21. My work on this matter is being billed at my customary rate of \$650 an hour. Additionally, I am reimbursed for reasonable expenses incurred in relation to my services. I have no pecuniary interest in the outcome of this proceeding. I understand I will be compensated regardless of the outcome of any proceeding in which my work is used.

IV. LEGAL CONSIDERATION

22. I am not an attorney. My understanding of the law is based on information provided by counsel for Smith Interface Technologies, LLC.

A. Anticipation

23. I understand that a reference anticipates a claim if it discloses each and every element recited in the claim, arranged as in the claim, so as to enable a person of ordinary skill in the art (“POSITA”) to make and use the claimed invention without the need for undue experimentation in light of the general knowledge available in the art. I understand that a U.S. Patent document is presumed to have sufficient description to include sufficient detail for a person of ordinary skill in the art to make and use the subject matter that the document describes.

24. I also understand that a claim limitation may be present in an alleged prior art reference either expressly or inherently, but inherency may be established only if such limitation is necessarily present in the reference. I understand that probabilities or possibilities cannot establish inherency, and the mere fact that a certain thing may result from a given set of circumstances is not sufficient to establish inherency.

B. Obviousness

25. I understand that a claimed invention is obvious and, therefore, not patentable if the subject matter claimed would have been obvious to a POSITA at the time that the invention of U.S. Patent No. 11,740,727 (“the ’727 Patent”), which I have been asked to treat as August 5, 2011.

26. I understand that a claim can be obvious in view of a single prior art reference (e.g., via modification of that prior art reference) or multiple prior art references (e.g., via a combination of two or more prior art references), if such a modification or combination was within the skill of a POSITA. I understand that there must be some articulated reasoning with some rational underpinning to support a conclusion of obviousness. I also understand that to establish a finding of obviousness one must show that one of ordinary skill in the art would have had a motivation to combine the prior art references to produce the claimed invention and a reasonable expectation that the combination would be successful.

27. I further understand that exemplary rationales that may support a conclusion of obviousness include: (1) simply arranging old elements in a way in which each element performs the same function it was known to perform, and the arrangement yields expected results, (2) merely substituting one element for another known element in the field, if the substitution yields no more than a predictable result, (3) combining elements in a way that was “obvious to try” because of a design need or market pressure, where there was a finite number of identified, predictable solutions, (4) that design incentives or other market forces in a field would have prompted variations in a work that were predictable to a person of ordinary skill in the art, and (5) that there was some teaching, suggestion, or motivation in the prior art that would have led a POSITA to modify or combine prior art references to arrive at the claimed invention.

C. Claim Interpretation

28. I understand that a claim term is interpreted according to its ordinary and customary meaning as a POSITA would have understood the term in light of the surrounding claim language, other claims, the specification, and the patent’s prosecution history, which are referred to as intrinsic evidence. I also understand that prior art references cited in the patent’s prosecution history are considered intrinsic evidence. I further understand that evidence outside the patent and its prosecution history (e.g., dictionaries and technical articles) may inform the

context in which a POSITA would have understood the claims of a patent. I understand this ordinary and customary meaning applies absent unique circumstances, such as where a patent clearly expresses an intent to set forth a special meaning for a term.

D. Overview of Task & Basis for Opinions

29. I have been asked to review the '727 Patent. I have been asked to provide opinions related to certain issues from the perspective of a person of ordinary skill, having knowledge of the relevant art, as of August 5, 2011, and—except where otherwise noted—the opinions stated in this declaration are from that perspective. The qualifications and abilities of such a person are described in Section IV.E below.

30. My opinions are based on my education, training, and experience as well as items that I reviewed to prepare my opinions, including the Petition, the documents listed in the Exhibit List included with the Petition, and any other items that I reference in my analysis below.

31. I understand that other issues may arise that require further explanation, and I will provide that explanation if appropriate. As a result, I respectfully reserve the right to update and supplement this declaration and the information and opinions provided herein.

E. Level of Skill in the Relevant Art

32. I understand that a patent must be analyzed from the perspective of a POSITA as of the time of invention of the patent, which is typically considered to be the patent's earliest filing date. While I do not necessarily agree with every aspect of Dr. Terveen's explanation of the level of ordinary skill in the art, I do not currently believe the aspects of that explanation I would change or clarify would impact the analysis set forth in this declaration. For purposes of this declaration, my opinions are therefore provided from the perspective of the POSITA described by Dr. Terveen's declaration (EX1003) as of August 5, 2011, which is produced below:

“a Bachelor of Science degree in computer science, computer engineering, electrical engineering, human-computer interaction, or a comparable field and at least two years of professional experience in the design and development of graphical user interfaces (GUIs), human-computer interfaces, or equivalents thereof. Such experience could be obtained through research and study in a graduate program or through comparable exposure through industry employment, and additional years of experience could substitute for the advanced-level degree.”

EX1003, ¶28.

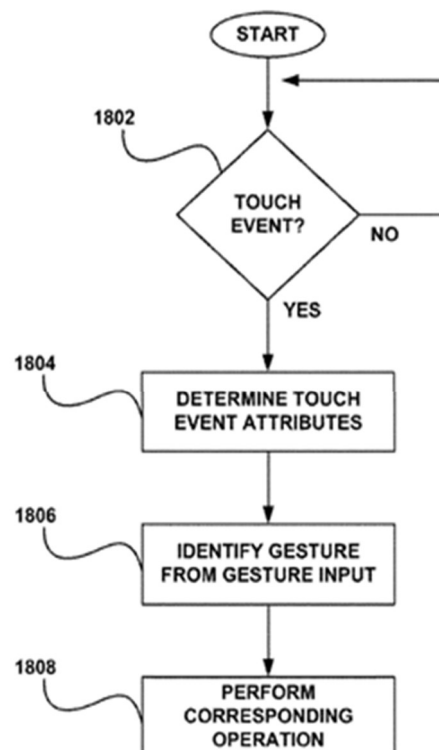
V. OVERVIEW OF THE '727 PATENT

33. The '727 Patent describes devices, methods, and graphical user interfaces for manipulating user interface objects with visual and/or haptic feedback. *See* EX1001, at Title (“Devices, Methods, and Graphical User Interfaces

for Manipulating User Interface Objects with Visual and/or Haptic Feedback”).

34. The '727 Patent describes a mobile device having various components, including user interface devices such as a touch screen. EX1001, 13:41-58. In operation, signals can be received in association with the touch interface (e.g., touch screen) and can correspond to a signal indicative of a touch interface being touched. *Id.*, 14:11-33. The user experience can then be altered utilizing these touch signals. *Id.*, 15:19-31, FIG. 3.

35. An example of these operations can be seen in FIG. 18, where attributes of touch events are detected, and gesture inputs related to these touch event attributes (both initial and over time) can be identified. EX1001, 56:8-35.



EX1001, FIG. 18.

36. These attributes can include the duration and/or distance of a gesture because often different gestures will be indistinguishable based on initial contact. EX1001, 56:8-35, 60:43-47. Once the gesture is identified, a corresponding operation can be performed (step 1808). EX1001, 56:50-51. Such operations can include the modification of one or more display attributes such as blurring the display attributes. EX1001, 57:9-10, 68:37-52. In some operations, “a user may be given feedback as a gesture is performed.” *Id.*, 59:23-24. For example, some “gestures may be associated with operations that are carried out as functions of the gesture input” EX1001, 58:58-59:3. In this way, the device can provide a user with feedback as a gesture is performed. *See* EX1001, 59:23-29, FIG. 18 (step 1802 showing continuous detection of touch event as gesture is performed).

A. Independent Claim 1

37. Independent claim 1 is directed to a “device” having one or more processors that are configured to execute instructions that cause the device to perform functions. EX1001, 102:31-50. Specifically, claim 1 recites:

[1.a] A device, comprising: at least one non-transitory memory; a touch screen; and one or more processors in communication with the at least one non-transitory memory, and the touch screen, wherein the

one or more processors execute instructions in the at least one non-transitory memory, to cause the device to:

[1.b] display an object and at least one other object;

[1.c] detect at least part of a gesture on the touch screen; and

[1.d.i] during detection of at least a portion of the gesture before a completion thereof is detected, blur, based on a change in a distance magnitude of the gesture being detected on the touch screen to thereby move the object on the touch screen, at least a portion of the at least one other object that is not overlapped

[1.d.ii] such that a magnitude of the blur itself, and not a magnitude of an area of the touch screen that is blurred, is increased as a function of an increase in the distance magnitude.

EX1001, 102:31-50.

VI. OVERVIEW OF THE PRIOR ART

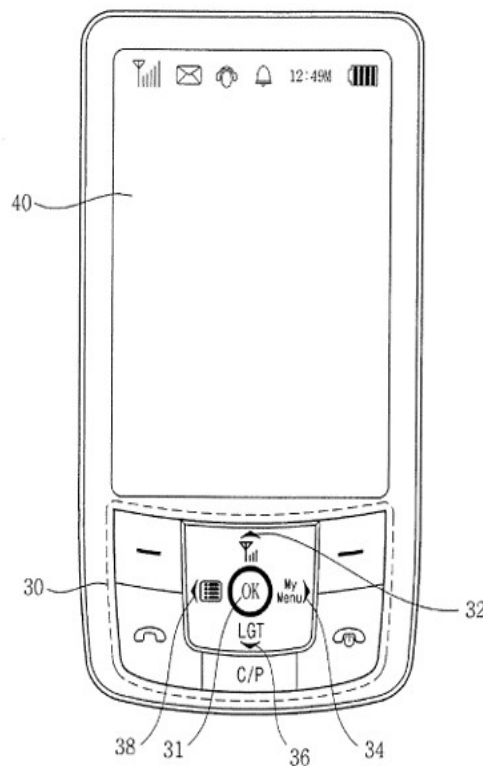
38. Dr. Terveen primarily relies on two cited references for his invalidity analysis. *See* EX1003, ¶62 (the Ahn-Chaudhri combination).

A. U.S. Patent App. No. 2008/0207188 (“Ahn”)

39. U.S. Patent App. No. 2008/0207188 is titled “Method of Displaying Menu in a Mobile Communication Terminal” and lists as its first inventor Hye Sang Ahn. I will refer to this reference as “Ahn.”

40. As depicted in FIG. 2 (inset below), Ahn discloses a mobile communication terminal that includes a display 40 along with a key input device 30 and a touch input device (e.g., element 10 in FIG. 1). EX1004, Abstract, ¶[0027]. Ahn's proposed operation attempts to solve the problem where device characteristics are unavailable when a menu list is displayed. EX1004, ¶[0005]-[0006]. In conventional browsers, the standby screen disappears when a menu screen is displayed. Thus, Ahn proposes to provide menus that only take up a portion of the display so that the standby screen can still be displayed concurrently with the menu.

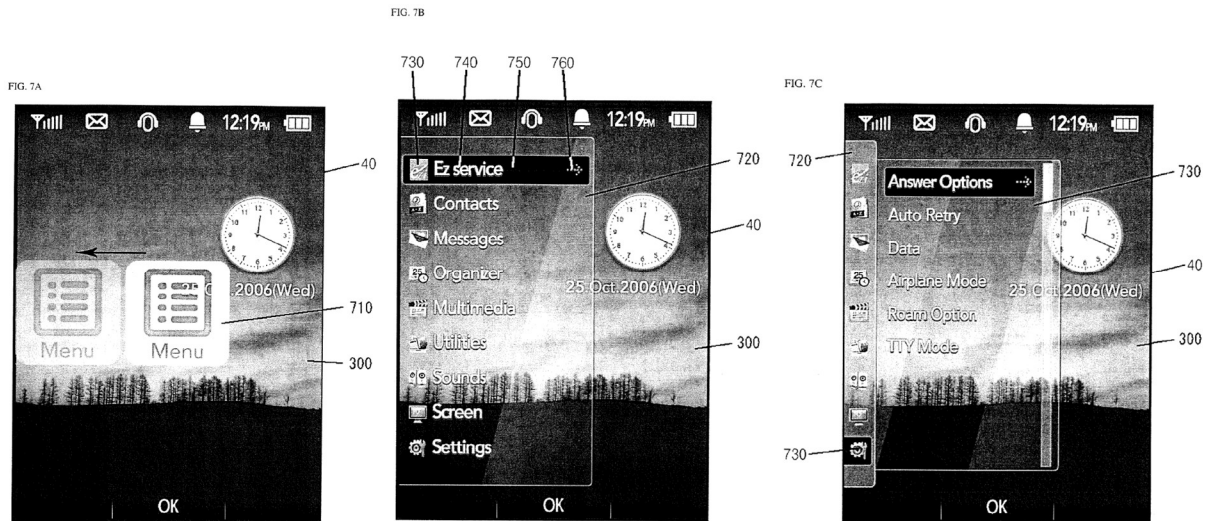
FIG. 2



41. Against this backdrop, Ahn discloses a method of displaying menus in

a mobile communication terminal, where each menu can correspond with a selection of one of a plurality of specific directions associated with the menus. EX1004, Abstract (“menu corresponding to the selected specific direction on the standby screen”). Ahn discloses three separate methods for displaying its menu via the use of (1) directional keys, (2) a simple touch and drag operation, and (3) via a start position operation. In each method, the menu is displayed after a corresponding input (e.g., button click or drag) is completed. That is, the display of the menu is a binary operation—appearing only when the input is satisfied. None of Ahn’s menus are described as dynamically following a user’s finger.

42. In a first embodiment, Ahn describes a method of displaying a menu via a selection of a specific direction on a direction key. *See* EX1004, ¶¶[0030], [0034]-[0035].]. As shown in FIGS. 7A-7C below, a menu (e.g., setting menu 720) can be accessed “when a leftward direction key is selected.” *Id.*, ¶[0062]. Ahn describes “if the user selects the leftward direction key 38 . . . *[t]hereafter*, a basic setting menu list 720 . . . is displayed”. EX1004, ¶[0063]-[0064]1; FIG. 2 (showing directional keys).



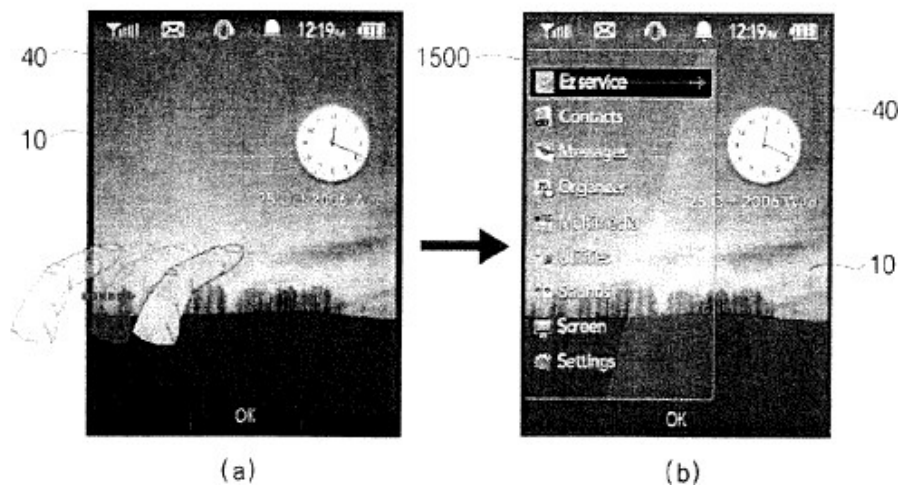
43. Ahn refers to an input of the its direction keys (e.g., 34, 38) as a “click.” EX1004, ¶¶[0045]-[0047]. The direction keys are single input buttons that can only receive one type of input and a POSITA would have recognized a selection (i.e., click) of a direction key as an input used to initiate a binary operation. Accordingly, if the direction key is pressed, then the menu is displayed “thereafter,” and if the key is not pressed, the menu is not displayed. EX1004, ¶¶[0051], [0060], [0064]. Accordingly, the opening of Ahn’s menu is performed in a binary manner rather than progressively.

44. In another embodiment, Ahn describes a method of displaying a menu via “a touch and drag operation of a specific direction.” *Id.*, ¶[0101], *see also* ¶¶[0102]-[0104]. The menus of Ahn’s “touch and drag” embodiments are identical to the menus of Ahn’s “directional key” embodiments, only differing with regard to the method of initiating their display. *Compare* EX1004, FIGS. 4B, 6B, 7B, *with*

FIGS. 13B, 14B, 15B. The opening of the menus according to Ahn's touch and drag operation is also performed in a binary manner, as explained below.

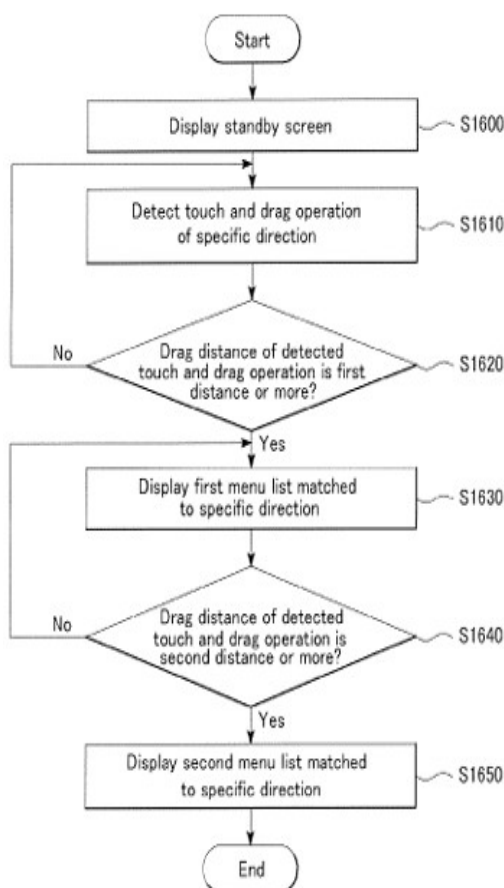
45. As shown in FIGS. 15a-b of Ahn (inset below), "[a] controller 50 detects a touch and drag operation of a specific direction in the touch screen 10." *Id.*, ¶[0107].

FIG. 15



46. Then "controller 50 determines whether a drag distance of the detected touch and drag operation is a first distance or more." *Id.*, ¶[0109]. *After* the user performs the touch and drag gesture and the controller compares the drag distance to a threshold, the menu can then be displayed. *Id.*; *see also* FIG. 16 (detecting touch at step 1610 and displaying menu at step 1630)

FIG. 16

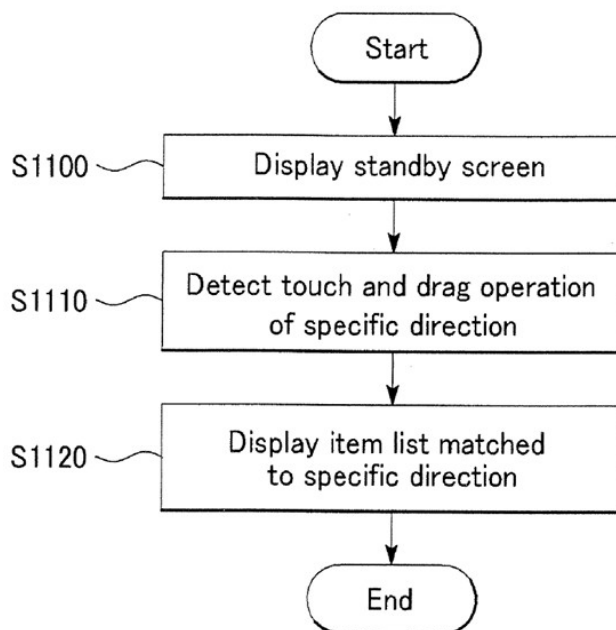


EX1004, FIG. 16.

47. Ahn’s descriptions of its “touch and drag” embodiments do not include any disclosures that would lead a POSITA to understand the “touch and drag” menus to display any more progressively than the directional key menus. *See* EX1004, ¶¶[0102]-[0103] (for example, “if the user . . . drags the touch in a left direction a menu list 1300 matched to a left direction is displayed in the display 40”). Therefore, a POSITA would recognize that, despite being initiated via a different type of user input, Ahn’s “touch and drag” menus are displayed via the same binary process by which its directional key menus are displayed.

48. This operation is also depicted in Ahn's FIG. 11, which shows that the display of the item list is after the operation is detected (*i.e.*, completed).

FIG. 11

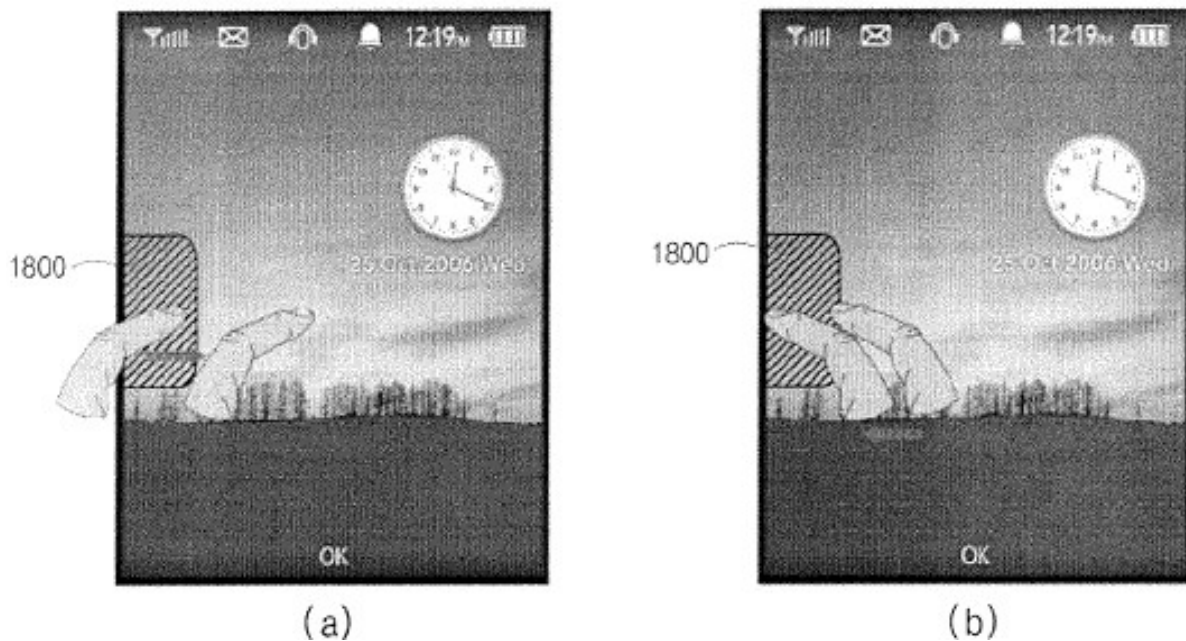


49. To the extent it is argued that Ahn's FIG. 11 operates differently than FIG. 16 by displaying a menu before the "touch and drag" operation is completed, this is inconsistent with Ahn. While paragraph [0099] states "[a]s the touch and drag operation is detected, the controller 50 controls to display an item list matched to the specific direction in the display 40 (S1120)," a POSITA would not understand the phrase "[a]s the touch and drag operation is detected" to mean the menu is displayed before the operation is complete. Ahn uses this phrase several other times to mean that the menu is displayed after the operation is completed. *See e.g.*, EX1004, ¶¶[0016], [0071], [0092], [0094]. For example, paragraph [0094] of Ahn describes the directional key embodiment where "the user setting menu 420

is displayed in the right area of the standby screen 300 *as the user selects* the rightward direction key 34.” Of course, Ahn’s device is configured such that menu 420 is displayed “after” the selection (EX1004, ¶¶[0050]-[0051]) even though it may appear fast enough for the user to think this occurs “as” the selection is happening. Similarly, Ahn’s FIG. 11 shows displaying the menu *after* the touch and drag operation is detected (*i.e.*, completed) even through the menu may be displayed “as” the user is still dragging their finger on the screen. *See* EX1004, ¶¶[0102]-[0103] (using conditional “if” clauses to describe the drag gestures like the clauses used to describe operation of FIG. 16 in Ahn’s paragraphs [0109]-[0110]).

50. In a further embodiment, Ahn states that this touch and drag operation can be used with “an identifier” such as “a specific icon for notifying a start position of the touch and drag operation.” EX1004, ¶[0117]. This operation does not diverge from the binary operation described above and simply adds an icon to notify the user that a corresponding menu is available, as shown in FIGS. 18a-b (inset below). EX1004, ¶[0117] (describing that “[i]n the above-described implementations, if the touch and drag operation of a specific direction is performed . . . an identifier for notifying the user that an item list matched to the specific direction . . . can be displayed in the display 40.”)

FIG. 18



EX1004, FIG. 18a-b.

51. As shown in FIG. 18a, the user may perform the same touch and drag operation on the graphical shadow to display a menu 1500, as is done with the touch and drag operation depicted in FIG. 15. EX1004, ¶[0118]. As shown in FIG. 18b, the user may press the graphic 1800 and, in response, “the menu list 1500 can be displayed as emerging from the left side of the display 40.” *Id.*, ¶[0119]. In either scenario, the menu will begin to open when the gesture—either after a drag operation in FIG. 18a and/or a tap operation in FIG. 18b—is completed. At no point does Ahn describe that its menu (e.g., 1500) will emerge and be displayed in some in-between state where the menu is neither fully open nor closed. EX1004, ¶¶[0118]- [0119]. Ahn’s use of the “as the user” language does not indicate that the

menu is displayed. *See e.g.*, EX1004, ¶[0094]. For example, a POSITA would have understood that “as the user may press the graphic 1800 with a finger, the graphic 1800 gradually disappears in the display 40” (EX1004, ¶[0117]) indicates programming logic that triggers an animation after an input (e.g., tap) occurs and does not indicate that the animation relies on the user to progressively hold this “press” for the duration of the animation.

52. Thus, all of Ahn’s embodiments operate in a binary manner, opening the menu after completion of the gesture. Because Ahn does not explain that the addition of a start position identifier changes the menu display process, a POSITA would have understood that Ahn’s “touch and drag” menu embodiments that include start position identifier’s display menus via binary operations like the rest of Ahn’s “touch and drag” embodiments.

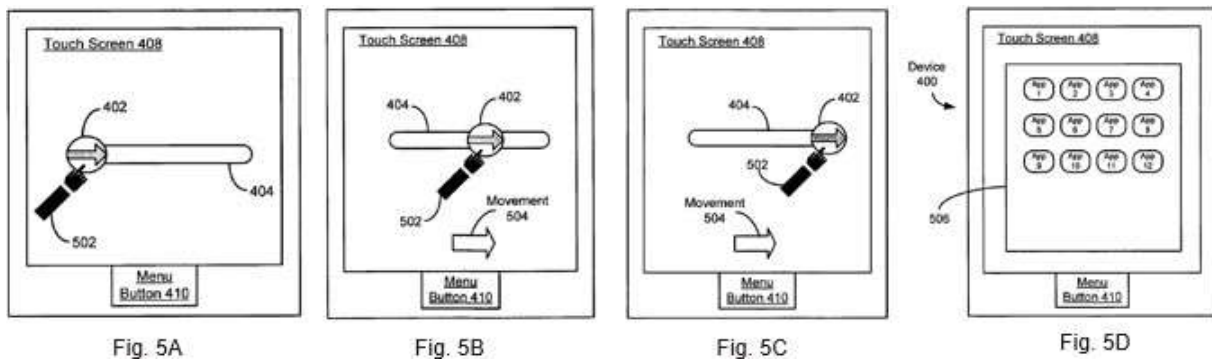
B. U.S. Patent App. No. 2007/0150842 (“Chaudhri”)

53. U.S. Pat. Pub. No. 2007/0150842 is titled “Unlocking a Device by Performing Gestures on an Unlock Image” and lists Imran Chaudhri as its first inventor. I will refer to this reference as “Chaudhri.”

54. Chaudhri discloses “[a] device with a touch sensitive display [that] may be unlocked via gestures performed on the touch-sensitive display.” EX1005, Abstract. The primary focus of Chaudhri is a method for “unlocking [a] device” via a “predefined gesture,” where the method includes “moving [an] unlock image

to a predefined location and/or moving the unlock image along a predefined path.”

EX1005, Abstract. Chaudhri shows progress of such an unlocking gesture by the distance an indicator 402 (shown in FIGS. 5A-5C) moves toward an “end” of a channel 404. EX1005, ¶[0071] (The end of the channel 404 “serves as a predefined location to which the unlock image 402 is to be dragged.”).

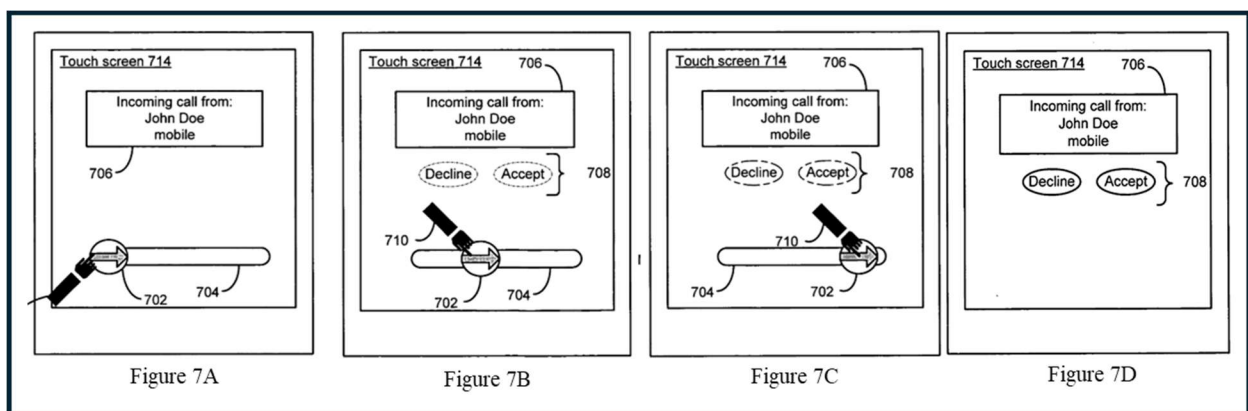


EX1005, FIGS. 5A-5D.

55. As shown in FIGS. 5A-5D (above), this operation starts when a user “touch[es] a touch screen 408 of device 400 with her finger 502.” *Id.*, ¶[0074]. Specifically, “[t]he user touches the touch screen 408 at the location corresponding to the unlock image 402, which is located initially at the left end of the channel 404.” *Id.* When the user drags their finger “in the direction of movement 504 [] [t]he unlock image 402 is dragged along the channel 404 as a result of the gesture.” *Id.*, ¶[0075]. When “the user has dragged the unlock image 402 to the right end of the channel 404 . . . [and] releases the unlock image 402 . . . the unlock action is complete.” *Id.*, ¶[0076]. When the unlock action is complete, “the device unlocks and displays on the touch screen 408 user-interface objects associated with normal

operation of device 400[,]" such as menu 506. *Id.*

56. Chaudhri discloses a process for displaying additional interface objects on the lock screen. Here, Chaudhri describes a method of unlocking a device using a predefined gesture via displaying additional interface objects on a lock screen. *See* EX1005, ¶¶[0091]–[0093]. As shown in FIGS. 7A–7D (below), this operation starts when “device 700 is locked . . . [and] display[s] a prompt 706 to the user, informing the user of [an] incoming call” *Id.*, ¶[0091]. When the user “drag[s] unlock image 702 along the channel 704 in the direction of movement 712 . . . a set of virtual buttons 708 appears and increases in optical intensity.” *Id.*, ¶[0092]. When “the user completes the unlock action by dragging the unlock image to the right end of channel 704 . . . [t]he unlock image 702 and the channel 704 disappear from the display and the virtual buttons 708 are at their final optical intensity levels.” *Id.*, ¶[0093]. Once the virtual buttons are at their final intensity levels, “the user may interact with virtual buttons 708 and accept or decline the incoming call.” *Id.*



EX1005, FIGS. 7A-7D.

57. Similar to the operation above, the device only transitions “to the second user-interface state if the condition is satisfied.” EX1005, ¶[0084]. That is, the transition occurs only after the gesture is completed. As shown in FIGS. 7C-7D, the indicator (e.g., image 702 and channel 704) do not disappear or fade out until after the gesture is determined to be completed. EX1005, ¶[0093] (“the user completes the unlock action by dragging the unlock image to the right end of the channel 704 and releasing the unlock image 702. The device 700 transitions to the unlock state. The unlock image 702 and the channel 704 disappear from the display and the virtual buttons 708 are at their final optical intensity levels, as illustrated by their solid outlines.”).

VII. CLAIM CONSTRUCTION

58. Dr. Terveen’s declaration does not include a claim construction section. However, Dr. Terveen does offer certain constructions.

A. “Blur”

59. Dr. Terveen states that “the word ‘translucent’ means ‘allowing light, but not detailed images, to pass through; semitransparent.’” EX1003, ¶36. And “[a] POSITA would have understood not transmitting detail as a type of blurring, because the word ‘blur’ means to ‘make or become unclear or less distinct.’” *Id.* I understand the Board construed “the blurring of an object as displaying that object

with less detail” for purposes of institution. I.D., 8. While I do not necessarily agree that “blur” requires construction, where necessary, I apply the Board’s construction.

B. “Distance Magnitude”

60. I understand that, in the Litigation, Apple contends that “distance magnitude [of the gesture]” means “length [of the gesture].” EX2003, 9-11. I understand the Board construed “distance magnitude” as “length.” I.D., 8. While I do not necessarily agree that “distance magnitude” requires construction, where necessary, I apply the Board’s construction.

C. “Top,” “Bottom,” “Right,” and “Left”

61. For Claims 2 and 3, Dr. Terveen contends that a POSITA would have understood “the terms ‘top’ and ‘bottom’ as broadly encompassing changes in device orientation” (EX1003, ¶87) and “the terms ‘right’ and ‘left’ to encompass an orientation of the device” (*id.*, ¶103). In my opinion, the plain and ordinary meaning of these terms are readily understandable, and these terms do not need construction.

VIII. A POSITA WOULD NOT HAVE BEEN MOTIVATED TO COMBINE AHN AND CHAUDHRI

A. Dr. Terveen Failed to Articulate Any Credible Motivation to Combine Ahn and Chaudhri

62. Dr. Terveen identified four motivations to combine Ahn and Chaudhri. In my opinion, a POSITA would not have considered any of these

motivations because Dr. Terveen did not identify any actual problem with Ahn that Chaudhri would solve or any benefit of the combination that was not already present in Ahn. Particularly, when Chaudhri is directed to lock screens and Ahn is directed to displaying menus.

63. Dr. Terveen first asserts that Ahn discloses blurring but “leaves the implementation details to POSITAs” who would have looked Chaudhri that “provides one example of implementation details.” EX1003, ¶50. In my opinion, this assertion that a POSITA would be motivated to look to Chaudhri is contradicted by the disclosure of Ahn. Specifically, Dr. Terveen describes that:

Ahn teaches at least *two ways that its user interface may utilize blur*.¹ First, Ahn teaches that, instead of a transparent form, its menus “can be embodied in a translucent form or an opaque form, depending on implementation.” . . . the word “translucent” means “allowing light, but not detailed images, to pass through; semitransparent.” A POSITA would have understood not transmitting detail as *a type of blurring*, because the word “blur” means to “make or become unclear or less distinct.” . . . In other words, a POSITA would have known and found it obvious that Ahn contemplates that, *when embodied in translucent form, its menus would have blurred at least a portion of the background standby screen* (e.g., shown in FIG. 12).

EX1003, ¶36 (underline in original; internal citations omitted).

64. Here, Dr. Terveen asserts that “translucent” is “not transmitting detail” and is “a type of blurring.” As discussed in Section VII.A, The Board

¹ All emphasis added unless otherwise noted.

construed “the blurring of an object as displaying that object with less detail” for purposes of institution. I.D., 8. Thus, under Dr. Terveen’s interpretation of “blurring” to include translucency of an overlying element, Ahn already teaches such translucency, leaving no reason to look to Chaudhri. A POSITA therefore would not have looked to Chaudhri to find details relating to such translucency that already existed in Ahn.

65. Dr. Terveen confirmed that a POSITA would not have looked to Chaudhri to accomplish the first way (translucent menus) that a user “may utilize blur” that is described by Ahn, but would look to Chaudhri only for the second way, when “Ahn illustrates that the clock widget is blurred.” EX1003, ¶¶37-38; EX2008, 23:21-25:3. Ahn already describes what Dr. Terveen points to as how “its user interface may utilize blur.” Dr. Terveen identifies no deficiency with this method, and fails to describe why a POSITA would have any motivation to look to Chaudhri for what Dr. Terveen points to as the second way to “utilize blur” (of the clock widget).

66. Dr. Terveen asserts that a POSITA would look to Chaudri for “‘cues’ that “to help the user know what gesture to utilize and whether they are correctly performing the gesture.” EX1003, ¶52. These “cues” include “changes in optical intensity [that] provide the user *a visual indication that they are performing a particular operation*” and “transparency, translucency/blurring, and other ‘focus

and context’ techniques [that] may be utilized in user interfaces to help *draw a user’s attention to the most relevant part of a user interface.*” *Id.*, ¶¶52-54.

67. As discussed above, under Dr. Terveen’s interpretation of “blurring” to include translucency of an overlying element, Ahn already teaches changes in optical intensity to provide a visual indication that a user is performing an operation and provide focus to draw a user’s attention using translucency. Specifically, Ahn teaches using translucent menus. EX1004, ¶[0070]. Dr. Terveen describes that a POSITA would understand that translucency “would have the effect of helping user distinguish between the object on top . . . that was displayed in a translucent form, and anything behind it [that] would, in fact, be blurred or faded.” EX2008, 22:24-23:20. Translucency has a “distinguishing effect” and “would be one way of [] conveying focus.” *Id.* At least because Ahn’s use of translucent menus provides both a visual indication that the user is using the menu and draws a user’s attention to the menu in use and Dr. Terveen identifies no deficiency with Ahn’s disclosure, Dr. Terveen does not articulate why a POSITA would have a motivation to look to Chaudhri.

68. Dr. Terveen asserts that “a POSITA would have known that varying optical intensity for a user interface object . . . as a function of the magnitude of the user’s touch and drag gesture would have been one of a limited number of ways of implementing the blurring effect.” EX1003, ¶52. Dr. Terveen then states that “a

POSITA could have *implemented the blurring effect in a binary fashion*,” as taught by Ahn. *Id.*; see Section VI.A above. Dr. Terveen provides no reason why—given that Ahn describes a way to implement “the blurring effect”—a POSITA would have been motivated to look to Chaudhri for a second method for “blurring.”

B. Dr. Terveen’s Proposed Modification Would Not Achieve the Functionality or Benefits Allegedly Motivating the Ahn-Chaudhri Combination

69. Dr. Terveen relies on several of the benefits associated with Chaudhri’s operation as motivation for a POSITA to make the modifications to Ahn. EX1003, ¶76. But, as explained in Section IX, Dr. Terveen’s proposed modifications are inconsistent with Chaudhri’s teachings and, ultimately, none of those purportedly motivating benefits actually carry over to Dr. Terveen’s proposed combination.

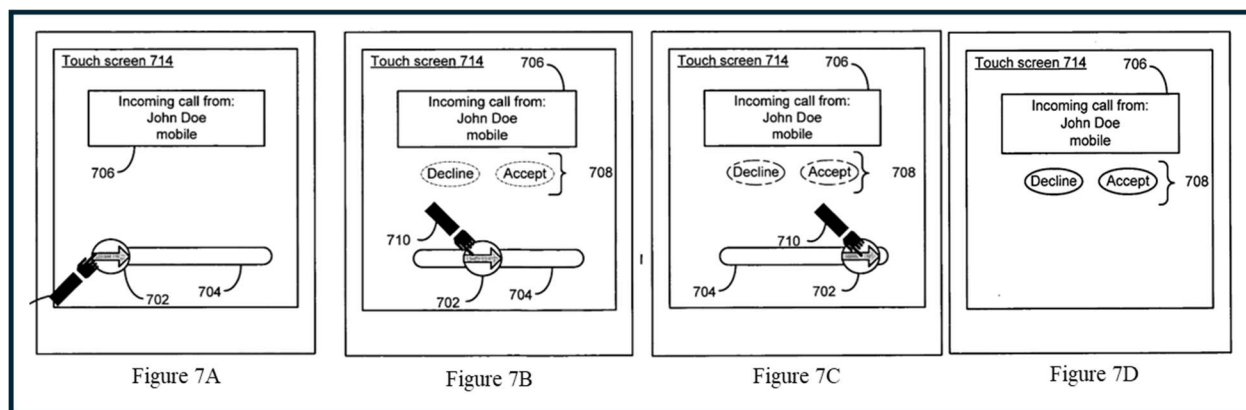
70. To illustrate, Dr. Terveen opines that it would have been obvious to implement the proposed modification—“blurring” of the clock widget during the touch and drag operation—“to provide *visual feedback* regarding the *progress* of a transition between user interface states.” EX1003, ¶72. According to Dr. Terveen, this would (1) “provid[e] a visual indication to the user of their progress in completing the gesture” and (2) “help differentiate between the user-interface object (*e.g.*, the menu list 1300) and the background (*e.g.*, the standby screen

and/or clock widget).” EX1003, ¶76. But a POSITA would not have expected either purported motivation to be present in Dr. Terveen’s proposed Ahn-Chaudhri combination.

1. Dr. Terveen’s proposed modification does not provide visual feedback of the progress of a user’s gesture

71. The “blurring” of Ahn’s clock widget proposed by Dr. Terveen during Ahn’s “touch and drag operation” would not provide the user with any indication of progress of opening menu 420/1300.

72. Chaudhri shows progress by an indicator 702 moving toward an “end” of a channel 704. EX1005, FIGS. 7A-7D; *see also id.*, [0071] (end of the channel 404 “serves as a predefined location to which the unlock image 402 is to be dragged.”). Simultaneously, the optical intensity of the virtual buttons 708 increases to “their final optical intensity levels, as illustrated by their solid outlines.” EX1005, ¶[0093].



EX1005, FIGS. 7A-7D.

73. Thus, a user is given feedback of the progress of an “unlock action”

by the distance the indicator 702 has moved relative to the total length of the channel 704, and by virtual buttons 708—associated with the second user-interface state—increasing in optical intensity to an opaque end point with “solid outlines.” *Id.*, ¶¶[0090]-[0093]; *see also id.*, ¶[0087] (“the indication of progress may be defined in terms of the distance between the two edges because the distance remaining objectively measures how much further the user has to move her finger to complete the gesture”). Chaudhri’s visual feedback is thus provided only because the selectable virtual buttons 708 of the second user-interface state increase in optical intensity.

74. A POSITA would have understood that this visual feedback is absent from Dr. Terveen’s proposed modification to “blur” the clock widget of Ahn. *See* EX1003, ¶76. In Dr. Terveen’s proposed modification, the user cannot compare its gesture to some visual end point and, instead, would see only in abstract the proposed “blurring” of the clock widget. But that change in appearance of the clock widget offers no indication of progress, at least because its end state cannot be perceived or predicted based on that alleged change in appearance. Nor does it direct a user to a selectable object, as in Chaudhri, because a user would not be able to interact with Ahn’s clock widget once the menu is displayed over the top of that clock widget. Nor is this end-state (display of the menu) otherwise related to the alteration of the clock widget in any manner that is perceivable by a user. For

example, there is no frame of reference to discern any progress, relative to the required distance of the gesture, based on the changing appearance of the clock widget.

75. As such, the alleged “blurring” during the touch and drag operation would not provide any indication of (1) how much of the gesture is completed, or (2) how much of the gesture is remaining. *See* EX1005, ¶¶[0088]-[0090] (“If the user input condition includes a predefined gesture, then the indication of progress of the gesture may be defined in terms of how much of the gesture is completed and how much of the gesture is remaining”); EX1003, ¶75 (quoting same). In other words, a user cannot tell from the alleged “blurring” how much more “blurring” or swiping is needed before the menu will be completed.

76. Further, Dr. Terveen’s proposed modification to have menu 1300 slide out with graphical shadow 1800 “as part of the touch and drag gesture” (EX1003, ¶¶78-79) renders the “blurring” of the clock widget even less relevant. A user would know the gesture is completed when the menu 1300 stops advancing according to the user’s drag. There is no evidence or logical explanation to suggest that the “blurring” of the clock widget—to a state that is not completely transparent (EX1004, FIGS. 4B, 13B)—would suggest the gesture is complete or how much of that gesture remains until the menu is fully opened. Accordingly, a POSITA would have understood that Dr. Terveen’s purported modification to blur the clock widget

would not provide any indication of a user's progress in completing Ahn's "touch and drag" gesture because, unlike Chaudhri, Dr. Terveen's proposed UI shows no indication of progress toward a clearly visible end goal. And Dr. Terveen's remaining modifications (to fade out the graphical shadow 1800 or slide in menu 1300) do not meet the claim language. Dr. Terveen only identifies Ahn's clock widget as the claimed "at least one other object." Thus, Dr. Terveen's "progress" motivation would not have led a POSITA to make the proposed modification of Ahn.

2. Dr. Terveen's proposed modification does not help differentiate between objects

77. Dr. Terveen's assertion that "utilizing this progressive translucency or blurring effect would have helped differentiate between the user-interface object (e.g., the menu list 1300) and the background (e.g., the standby screen and/or clock widget)" is misguided and is not supported by evidence. EX1003, ¶76.

78. Dr. Terveen's proposed modification is to use the changes in optical intensity taught in Chaudhri to blur Ahn's clock widget to provide "visual differentiation" between the clock widget and the menu 1300. EX1003, ¶¶49, 53. As explained above, the menu 1300 in Ahn is not selectable until the gesture is complete. Additionally, Dr. Terveen does not modify Ahn so that the clock widget is "blurred" more than already pictured in Ahn (e.g., transparency of the clock widget in Dr. Terveen's proposed modification is not reduced as compared to

Ahn's FIG. 4B). *See* EX1003, ¶¶71-83. When displayed in a selectable state, the differentiation of the clock widget and the menu 1300 is identical in Ahn's disclosure and Dr. Terveen's proposed modification. Thus, this alleged 'differentiation' motivation offers no change from the 'differentiation' already provided by Ahn. That is, the alleged motivation provides no actual solution and is based on a problem that does not exist.

79. Further, a POSITA would understand that the cited portion of Chaudhri teaches that differentiation between a user-interface element and a background is a function of the total difference of optical intensity and not any progressive change in optical intensity. EX1005, ¶¶[0085] (defining "the optical intensity"—not a progressive change in optical intensity—as "the visual differentiation between the user-interface object and the background"); EX1003, ¶¶74 (citing EX1005, ¶¶[0085]). Thus, it is the difference in opacity between the UI element and the background that results in the visual differentiation of Chaudhri. EX1005, ¶¶[0085]. Accordingly, a POSITA reading Chaudhri would have understood that progressively changing the appearance of Ahn's background would not improve the visual differentiation of Ahn's menu 1300. Thus, Dr. Terveen's "differentiation" motivation would not have led a POSITA to make the asserted modification of Ahn.

3. Dr. Terveen's implementation details motivation is contrary to Chaudhri

80. Dr. Terveen asserts generally that “Chaudhri-842 provides one example of implementation details that are lacking for a feature otherwise disclosed in Ahn.” EX1003, ¶50. “Specifically, . . . Chaudhri ’842 provides details for utilizing transitions in optical intensity [blurring] during transitions in user interface state.” *Id.*, ¶51. And “[a] POSITA would have understood and found obvious that the opening of the edge menus described in Ahn are a form of transition in user interface state.” *Id.* However, for the reasons explained below in Section IX, Chaudhri (1) discloses varying the optical intensity of foreground UI elements (not the background), (2) discloses increasing the optical intensity of UI elements associated with a second user-interface state (not decreasing optical intensity of a background associated with first user-interface state), and (3) discloses decreasing the optical intensity of a first application (not a second application that would be associated with Ahn’s background/clock widget). As such, Dr. Terveen’s proposed modifications to Ahn do not implement the alleged “implementation details” of Chaudhri.

4. Dr. Terveen's choice of progressive blurring is not supported

81. Dr. Terveen asserts generally that “POSITA would have known that varying optical intensity for a user interface object (e.g., the blurring of Ahn’s clock widget) as a function of the magnitude of the user’s touch and drag gesture

would have been one of a limited number of ways of implementing the blurring effect that's shown in FIGS. 4B, 10, and 13B of Ahn." EX1003, ¶55. Dr. Terveen continues that "[e]ither a POSITA could have implemented the blurring effect in a binary fashion (e.g., toggling instantaneously between unblurred and blurred) or progressively varied the blur as a function of the user's gesture, as taught by Chaudhri-842." EX1003, ¶55.

82. As explained in Section VI.A above, Ahn's clock widget is not "blurred" until after the "touch and drag" operation is complete. Weighing against doing so is the fact that varying the optical intensity of the background is not without cost. In particular, progressively varying the optical intensity of the background in a touch input device 10 like Ahn's would require code that would eat into the device's limited storage, as well as the use of limited processing and memory bandwidth, and limited battery power, to execute the function of varying that optical intensity. In Dr. Terveen's proposed combination, progressively varying the optical intensity of the background while the menu 1300 is not selectable would serve no purpose. As such, even assuming Dr. Terveen's false binary, a POSITA would have chosen not to expend resources to make that modification to Ahn.

83. For the reasons explained above, Dr. Terveen's modification would not achieve any of the purported benefits alleged to motivate Dr. Terveen's

modifications of Ahn.

IX. DR. TERVEEN'S ANALYSIS FAILS TO SHOW OBVIOUSNESS OF CLAIM 1 BY THE AHN-CHAUDHRI COMBINATION

A. Dr. Terveen's Mapping to Limitation [1.d.i] is Deficient

84. Limitation [1.d.i] recites “during detection of at least a portion of the gesture before a completion thereof is detected, blur, based on a change in a distance magnitude of the gesture being detected on the touch screen to thereby move the object on the touch screen, at least a portion of the at least one other object that is not overlapped.” EX1001, 102:31-50. Dr. Terveen's theories, when mapping to Limitation [1.d.i], fail to meet the Limitation.

1. Dr. Terveen's theory does not establish that a “gesture” “move[s] the object on the touch screen”

85. Dr. Terveen asserts that Ahn's “graphical shadow 1800” moves with the user's finger as the user drags their finger across the display. *See* EX1003, ¶78. Dr. Terveen must show this assertion to be true in order for its mapping of Ahn to meet Limitation [1.d.i]. Unless Ahn's “graphical shadow 1800” follows the user's finger across the display, the overlap of Ahn's menu onto the standby screen does not occur “based on a change in a distance magnitude of the gesture being detected on the touch screen to thereby move the object on the touch screen” as required by Limitation [1.d.i].

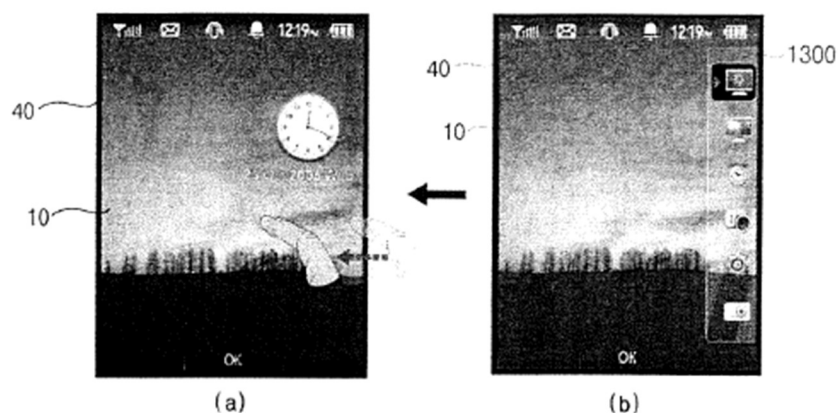
86. To establish Ahn's menu progressively slides with the user's finger, Dr. Terveen relies on one sentence in Ahn's paragraph [0118]: “as the user drags

the graphic shadow 1800, the menu list 1500 can be displayed along the dragged graphic 1800.” EX1003, ¶86. The crux of Dr. Terveen’s theory is that “drags the graphic shadow” means the object shown is depicted as *moving with* the user’s finger when it performs a touch and drag operation. But this is inconsistent with Ahn’s use of the term “drag” and the depiction of graphic 1800 in FIGS. 18a and 18b.

a) Ahn’s Menus are Not Progressive

87. Ahn unambiguously uses “drag” to describe the input—*not* any responsive movement of graphic 1800. In Ahn, “drag” “indicates movement of an *external object* on the touch screen 10.” EX1004, ¶[0098]. In other words, “drag” means an external object (e.g., finger, stylus, etc.) is acting on the screen or part of the screen, not that a graphic is moving. For example, where Ahn states that “if the user *touches a specific position* of the touch screen 10 and *drags the touch* in a left direction a menu list 1300 . . . is displayed[,]” (EX1004, ¶[0102]) the user is dragging a finger across the touch screen as shown in FIG. 13 below.

FIG. 13

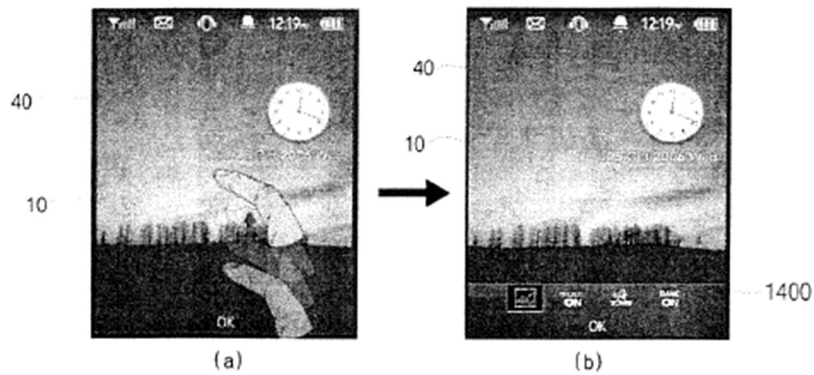


88. In the Institution Decision, the Board stated that “Figure 13a depicts a display at the start of the user gesture, while Figure 13b depicts the display after the gesture,” such that “[n]either figure depicts the details of what occurs during the gesture.” D.I., 25. In my opinion, the Board’s premise and conclusion are both mistaken. In particular, FIG. 13a plainly depicts what occurs during the gesture itself—*i.e.*, FIG. 13a shows the user’s finger moving from the gesture’s starting position to the gesture’s ending position. However, Ahn’s FIG. 13a does not show any portion of the menu list 1300, and therefore depicts an example of the binary (on/off) menu display shown in the flowchart of Ahn’s FIG. 16. Stated another way, FIGS. 13a and 13b are neither silent nor ambiguous on this point, and a POSITA would understand that Ahn’s FIGS. 13a and 13b show that menu list 1300 is not displayed until after the gesture is completed.

89. Similarly, for FIG. 14 shown below, Ahn teaches that “if the user touches screen 10 and drags the touch in an upward direction, a menu list 1400 . . .

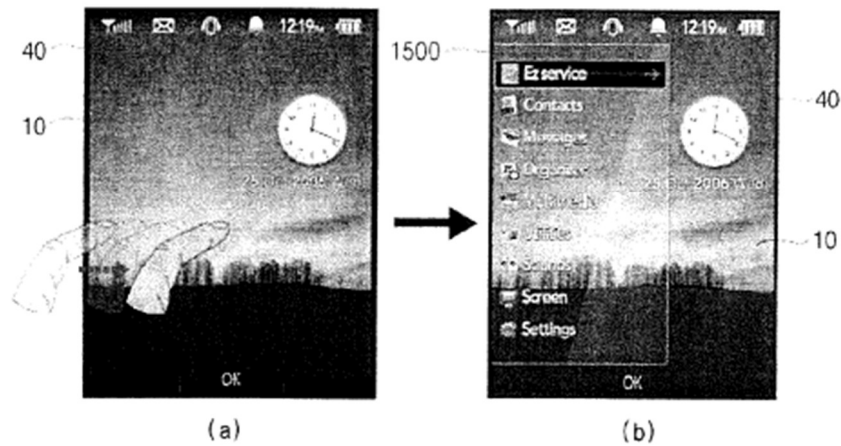
is displayed.” EX1004, ¶[0103].

FIG. 14



90. For FIG. 15 shown below, Ahn teaches that “if the user touches screen 10 and drags the touch in a rightward direction, a menu list 1500 . . . is displayed.” *Id.*

FIG. 15

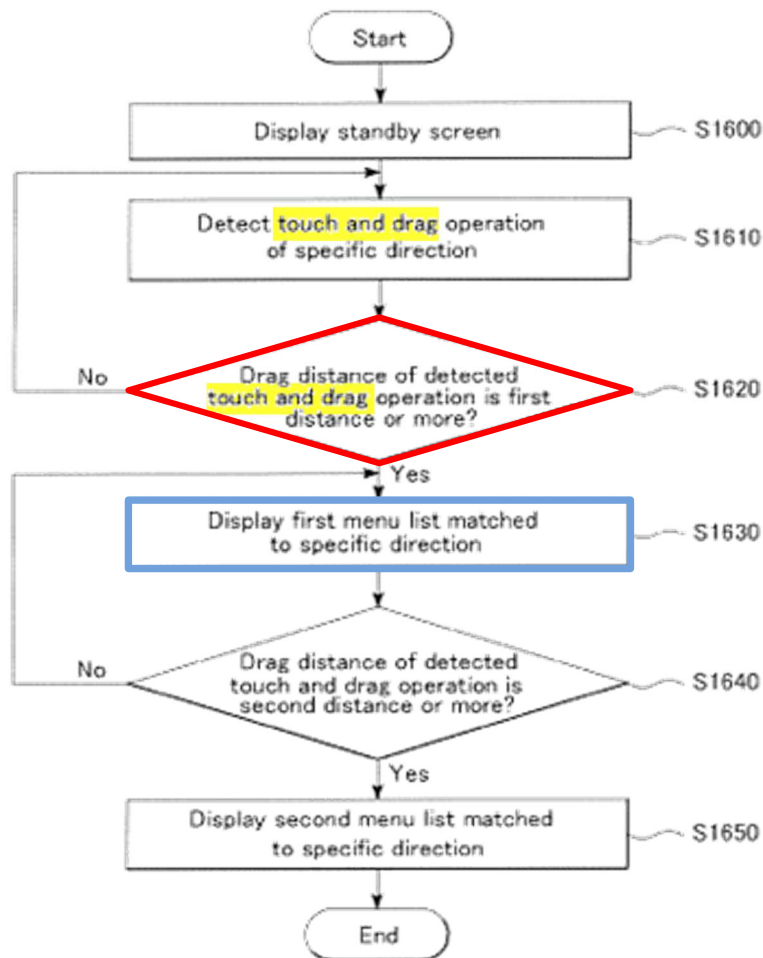


91. For FIG. 17 shown below, Ahn states that “if the user *drags the touch screen 10* by a distance longer than or equal to the distance $d1$ and shorter than the distance $d2$, the first menu list 1700 is displayed.” EX1004, ¶[0116]. In this case, the user is not moving the touch screen 10 (which is depicted in Ahn’s FIG. 1) but

is merely performing a *drag gesture that starts on the touch screen*, in response to which the first menu list is displayed. See EX1004, ¶[0111] (describing touch operation as “dragged”). Likewise, when “the user drags the graphic shadow 1800” (EX1004, ¶[0118]), the user is merely performing a drag gesture that *starts* on the graphic shadow, in response to which the menu list 1500 is displayed.

92. Ahn’s description of its other operations confirms this interpretation. As explained in Section V.A, a POSITA would understand Ahn’s menu operations are binary and would open after a corresponding input is received. Ahn’s “touch and drag” embodiments, such as FIGS. 13-18, are described as binary—not progressive—and only display a menu *after* determining that a drag distance exceeds a first distance as opposed to displaying the menu during the gesture. EX1004, ¶¶[0095]-[0119].

FIG. 16

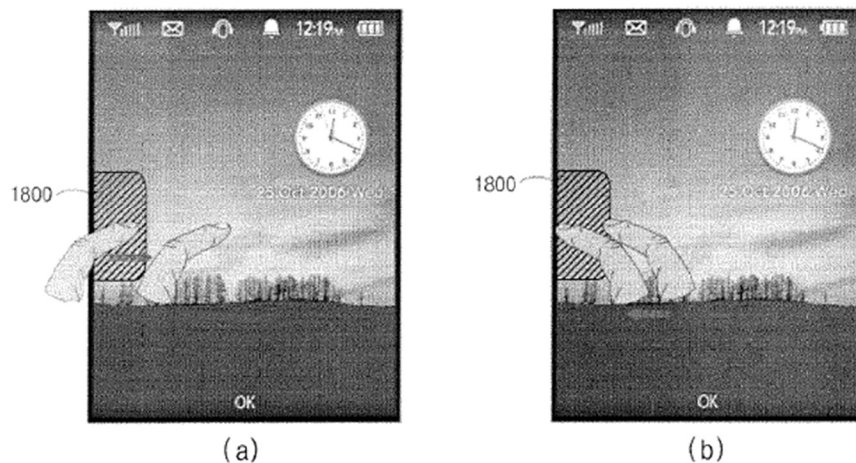


EX1004, FIG. 16 (step S1630 only occurs after S1620 is met); EX1004, ¶[0109] (“controller 50 determines whether a drag distance of the detected touch and drag operation is a first distance or more (S1620). ***If a drag distance of the detected touch and drag operation is a first distance or more***, the controller 50 controls to display a first menu list.”).

93. Ahn’s disclosure to add “an identifier” for “notifying a start position of the touch and drag operation” (EX1004, ¶[0118]) does not change the described

binary menu opening operation to a progressive one. Paragraphs [0118] and [0119] of Ahn merely describe adding a start position identifier to the binary “touch and drag” menu embodiments already described elsewhere in Ahn’s disclosure and do not describe differences in the process through which the menus are displayed. While Dr. Terveen explained that ¶118 describing FIG. 18a and ¶119 describing FIG. 18b are describing “one gesture” (EX2008, 30:15-23), ***neither FIG. 18a nor FIG. 18b show that graphic 1800 moves at all.*** In fact, and very importantly, Ahn illustrates the user’s finger moves along the display while the graphic 1800 does not move and remains stationary, despite both showing movement of the user’s finger.

FIG. 18



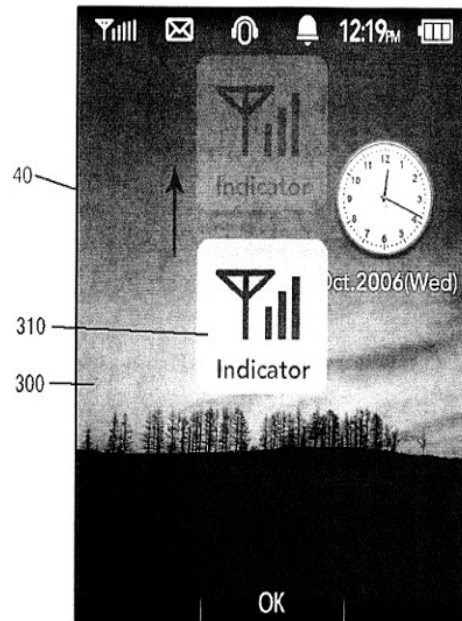
EX1004, FIGS. 18a and 18b.

94. Dr. Terveen provides no explanation or reasoning as to why “drag” in Ahn’s paragraph [0118] would be read in a different context than is used in the rest

of Ahn's description. *See* EX1004, ¶¶[0098], [0116]. Instead, Dr. Terveen makes an unexplained assumption that is inconsistent with Ahn's use of the term dragged. Further, Dr. Terveen provides no explanation for why moving the graphical shadow 1800, which Ahn explicitly discloses as indicating "a start position of a touch and drag operation," would have served any purpose. EX1004, ¶[0118]. Because Dr. Terveen maps exclusively to the graphical shadow 1800 as the claimed "object" (EX1003, ¶¶65, 78), he cannot show that Ahn's gesture is "to thereby move the object on the touch screen" as stated in Limitation [1.d.i].

95. If Ahn wanted to display the graphic 1800 as moving with the finger, it knew how to display such a movement. Ahn would have simply shown the shadow in multiple positions, just as it showed the finger in multiple positions to indicate movement. In fact, Ahn's Figures 3B, 4A, 6A, 7A, and 8B depict an object as moving in response to an input. *See e.g.*, EX1004, ¶[0037] ("an icon 310 . . . disappears in the standby screen 300 ***while moving in an upward direction*** after being displayed around the center of the standby screen 300").

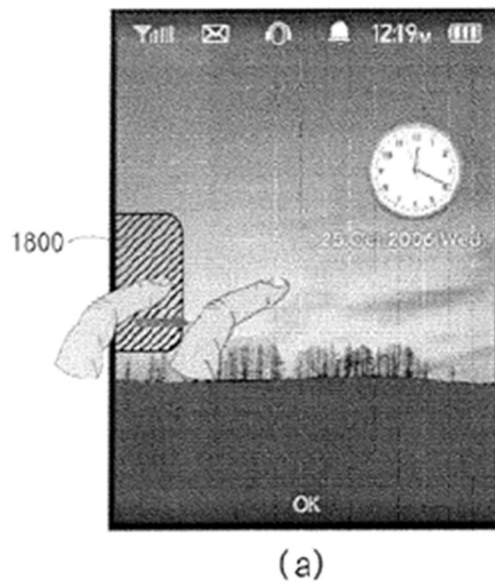
FIG. 3B



EX1004, FIG. 3B.

96. Ahn also clearly depicts movement of a finger. EX1004, FIGS. 13-15. EX1004, ¶[0102] (“drags the touch in a left direction”). In fact, FIG. 18a of Ahn illustrates the user’s finger moving along the display while the graphic 1800 remains stationary. EX1004, ¶[0118] (“if the user drags in a right direction”).

FIG. 18



EX1004, FIG. 18a. Thus, if Ahn wanted to display the graphic 1800 as moving with the finger, it knew how to display such a movement. But Ahn does not depict (or describe the) any such movement of graphic 1800 or menu 1300, like it does for its objects 310, 410, 610, 710 which it describes a “moving.” EX1004, ¶¶[0037], [0050], [0059], [0063] and FIGS. 3B, 4A, 6A, 7A.

97. Ahn does not describe graphic shadow as “moving” or depict the shadow as moving. There is nothing to establish that Ahn’s paragraph [0118] intends to use the term “drag” inconsistently with the rest of the specification or operate the menu in a manner contrary to the described touch and drag operation.

98. For the “graphic 1800” to move with the user’s finger as the user drags their finger across the display (EX1003, ¶78), Dr. Terveen, must create several internal inconsistencies within Ahn’s disclosure. Dr. Terveen must

establish that Ahn's paragraph [0118]: (1) uses the term 'drag' inconsistently with the rest of Ahn's disclosure; (2) displays a menu before the gesture is completed contrary to the described touch and drag operation; and (3) is inconsistent with the Ahn's depiction and description of other objects as "moving" and FIG. 18(a)'s depiction of graphic 1800 as stationary. A POSITA would not have created so many inconsistencies to arrive at such an interpretation and would have understood Ahn's paragraph [0118] to describe displaying a menu after a touch and drag operation—starting on graphic 1800—is detected to be complete as is consistent with Ahn's specification, figures, and other embodiments.

99. Dr. Terveen in paragraph 79, includes a general discussion of Chaudhri's "cues," in the context of an interpretation of Ahn. Dr. Terveen does not describe how these "cues" would be applied to graphic 1800 from Ahn. Specifically, Dr. Terveen does not explain how or why a POSITA would make any modification of Ahn's graphic 1800 based on Chaudhri and only refers to graphic 1800 in the context of Ahn's touch and drag operation, i.e., "moving the graphic 1800 as part of the touch and drag gesture."

2. Dr. Terveen's theory does not establish that "the at least one other object" is "blur[red], based on a change in distance magnitude of the gesture"

100. Dr. Terveen's modification of Ahn with Chaudhri is premised on providing a user with an indication of or feedback on the progress of Ahn's

gesture. EX1003, ¶49 (“Ahn-Chaudhri combination is a mobile device that changes an optical intensity of one or more user interface objects as a function of progress towards satisfaction of a user’s gesture input”). Specifically, Limitation [1.d.i] requires that “the at least one other object” is “blur[red], based on a change in distance magnitude of the gesture.” Dr. Terveen asserts that Ahn-Chaudhri teaches this limitation because a POSITA viewing Chaudhri would have found it obvious to “*transition[] optical intensity to provide visual feedback regarding the progress of a transition* between user interface states as a result of detecting a user’s input of a predefined gesture.” EX1003, ¶72. But this is logically incorrect.

a) Dr. Terveen’s modification does not show progress

101. First, Dr. Terveen’s alleged “blurring” of Ahn’s clock widget during Ahn’s “touch and drag operation” would not provide the user with any indication of progress of opening the corresponding menu list, i.e., does not “blur, based on a change in distance magnitude of the gesture . . . at least a portion of the at least one other object that is not overlapped.” In Dr. Terveen’s modification, the “clock widget [is] blurred *when user menu 420 is opened*,” as illustrated by Ahn’s FIGS. 3A and 4B.

FIG. 3A

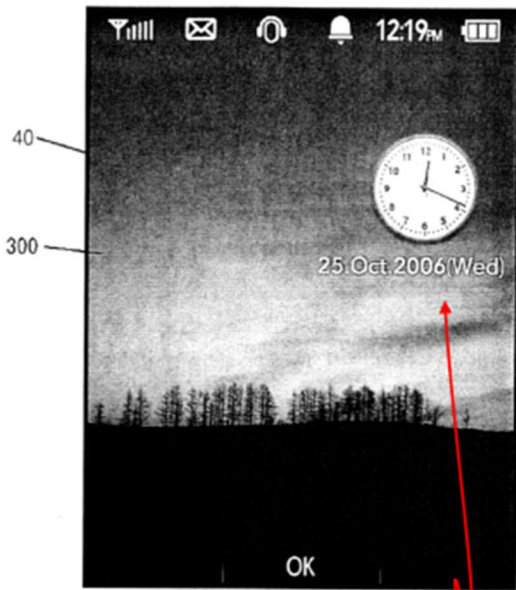
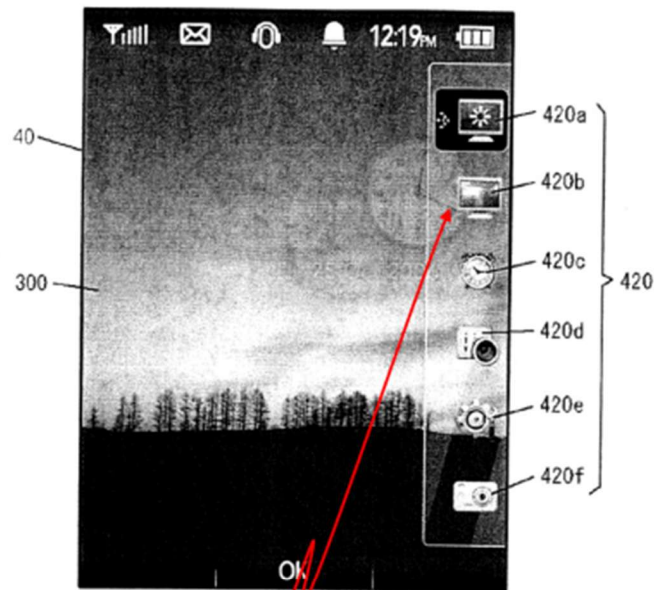


FIG. 4B

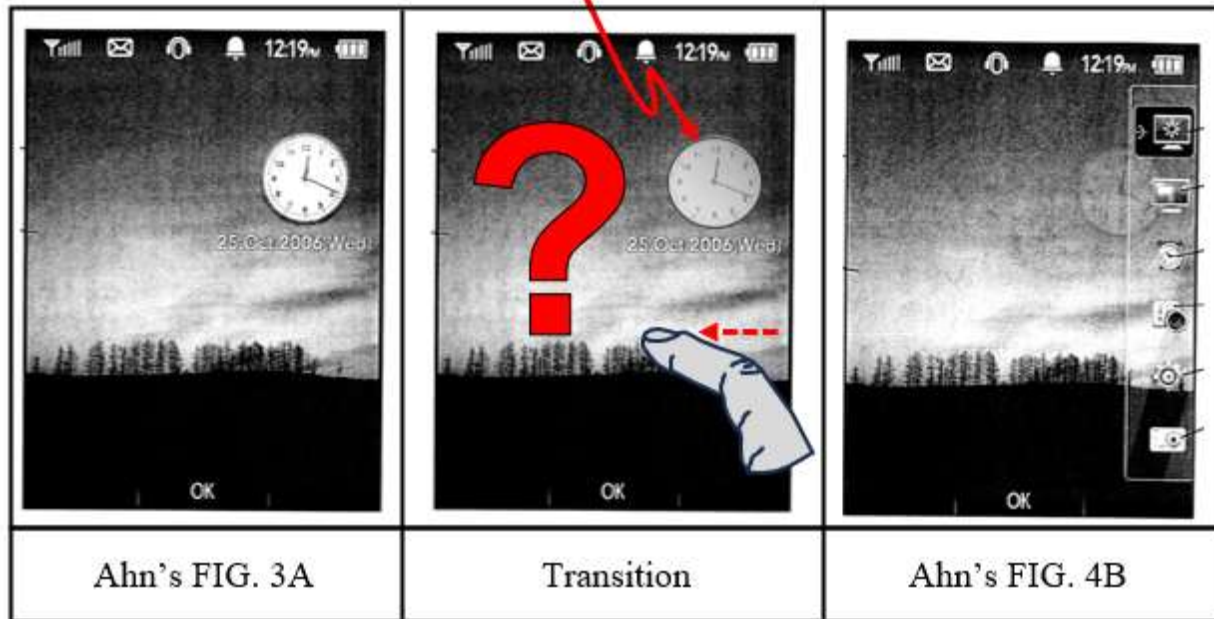


Entire clock widget blurred when user menu 420 is opened, including portion not overlapped/obscured by the open menu

EX1003, ¶71.

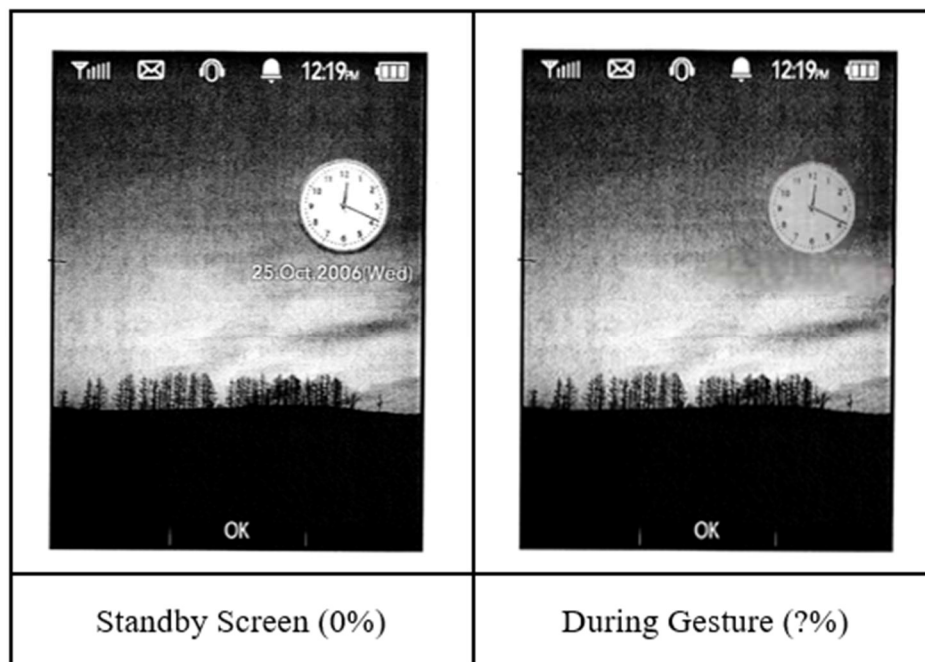
102. Dr. Terveen’s alleged modification of Ahn is illustrated by the below progression which transitions from a Standby Screen (corresponding to Ahn’s FIG. 3A) to a Menu Screen (corresponding to Ahn’s FIG. 4B) in response to a touch and drag gesture as described in Ahn. *See* EX1003, ¶76 (“obvious to vary . . . the optical intensity of the standby screen or at least portions thereof (e.g., the blurring of the clock widget, as shown in FIGS. 4B, 10, and 13b) as a visual indication of a user’s progress in completing Ahn’s ‘touch and drag’ gesture”).

Clock cannot provide
indication of “progress” or
associated operation of gesture



103. As is apparent in this sequence of figures (and Ahn's FIG. 13b), the clock widget remains visible throughout the transition. EX1004, FIG. 4B (depicting clock widget after menu is displayed). The optical transition of the clock widget, from left to right in the images above, does not suggest to a user when or if the menu 420 will appear as in Ahn's FIG. 4B—"blur" is not "based on a change in distance magnitude of the gesture." Nor is this end-state (display of the menu) otherwise related to the alteration of the clock widget in any manner that is perceivable by a user. For example, there is no frame of reference to discern any progress, relative to its required distance, of the gesture based on the changing appearance of the clock widget.

104. As such, the change in optical intensity during the touch and drag operation would not provide any indication of (1) how much of the gesture is completed, or (2) how much of the gesture is remaining. *Contra* EX1005, ¶¶88, 90 (“If the user input condition includes a predefined gesture, then the indication of progress of the gesture may be defined in terms of how much of the gesture is completed and *how much of the gesture is remaining*”); EX1003, ¶75 (quoting same). In other words, a user cannot tell from the alleged “blurring” how much more “blurring” or swiping is needed before the menu will appear. This can be illustrated in the figure below:



105. Unless a user can accurately determine the amount of progress for Ahn’s touch and drag gesture based on the variation in the clock widget in the above image, then it cannot indicate progress. *Contra* EX1005, FIG. 5B (depicting

progress of gesture).

106. A POSITA would understand that this change in appearance merely indicates that a gesture is happening, but the user *already* knows that much because the user *is performing* that gesture. As in Ahn alone, the user would only know the gesture is complete once the menu list 1300/420 appears, ***upon completion of the gesture***. Accordingly, a POSITA would have understood that Dr. Terveen's purported modification would not provide any indication of a user's progress in completing Ahn's "touch and drag" gesture because, unlike Chaudhri, the Petition's proposed UI shows no indication of progress toward a clearly visible end goal. Thus, Dr. Terveen's purported 'progress' motivation would not have led a POSITA to make the asserted modification of Ahn.

107. Furthermore, as explained in Section VI.A, the alleged variation in optical intensity would not have helped differentiate between the user-interface object (e.g., the menu list 1300) and the background (e.g., the standby screen and/or clock widget) because the menu is not shown until ***after*** the gesture is completed. Because the menu is not displayed during the gesture, there can be no differentiation until the menu appears, which is ***after the gesture is completed***. Thus, differentiation cannot provide a logical motivation for why a POSITA would vary the optical intensity of the clock during Ahn's "touch and drag" gesture.

b) Dr. Terveen's modification operates contrary to Chaudhri

108. Dr. Terveen contends it obvious to decrease “the optical intensity of the standby screen or at least portions thereof (e.g., the blurring of the clock widget . . .),” which Dr. Terveen identifies as Ahn’s background. EX1003, ¶76; *see id.*, ¶77 (“progressively blurring at least a portion of the standby screen 300 such as the clock widget throughout detection of the touch and drag operation consistent with the teachings of Chaudhri ’842”). Thus, Dr. Terveen’s modification decreases the optical intensity of Ahn’s background, which Dr. Terveen associates with Chaudhri’s “first user interface state.” EX1003, ¶94. Chaudhri teaches the opposite of Dr. Terveen’s modification.

109. First, Chaudhri does not vary the optical intensity of a background. To the contrary, Chaudhri discloses adjusting the optical intensity of user interface (UI) objects: “The optical intensity of a user-interface object, as used herein, is the object’s degree of visual materialization.” EX1005, ¶[0085]. And Chaudhri repeatedly makes clear that user interface objects are distinct from a background. *See, e.g., id.* (“optical intensity may be the visual differentiation *between* the user-interface object and *the background*”). Thus, Chaudhri teaches varying the optical intensity of foreground UI elements.

110. Unlike Chaudhri’s foreground UI elements, Ahn’s clock widget is part of the background, as conceded by Dr. Terveen. *See* EX1003, ¶71 (“that a clock

widget is part of the background standby screen 300”), ¶76 (“the background (e.g., the standby screen and/or clock widget).”). But Chaudhri does not suggest adjusting the optical intensity (or otherwise altering) a background, and Dr. Terveen does not explain this gap in logic.

111. Second, the relied upon portion of Chaudhri explains that “progress is indicated (604) towards satisfaction of the condition by transitioning an optical intensity of one or more user interface objects *associated with the second user-interface state.*” EX1005, ¶¶[0081]-[0082], FIG. 6 (reproduced and annotated below).

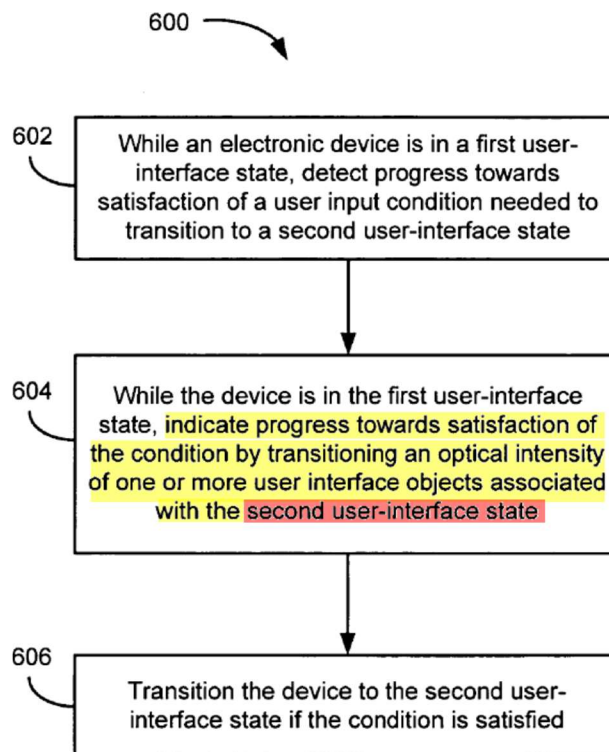
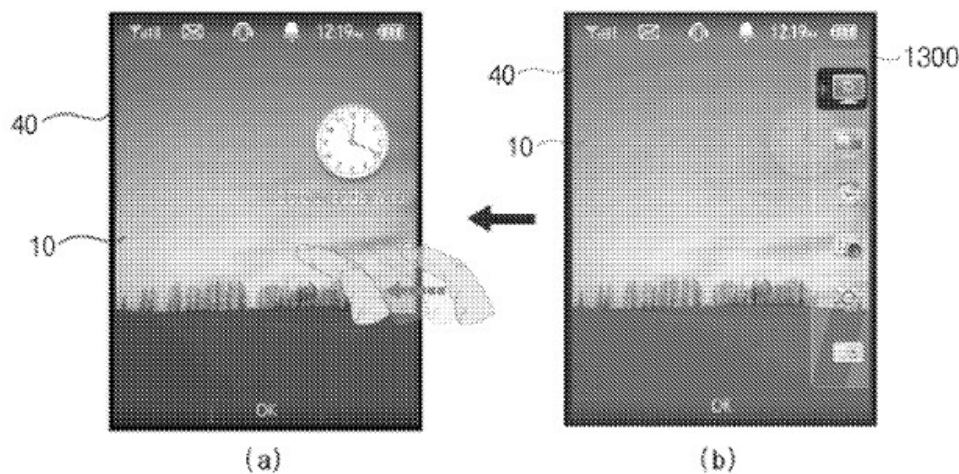


Figure 6

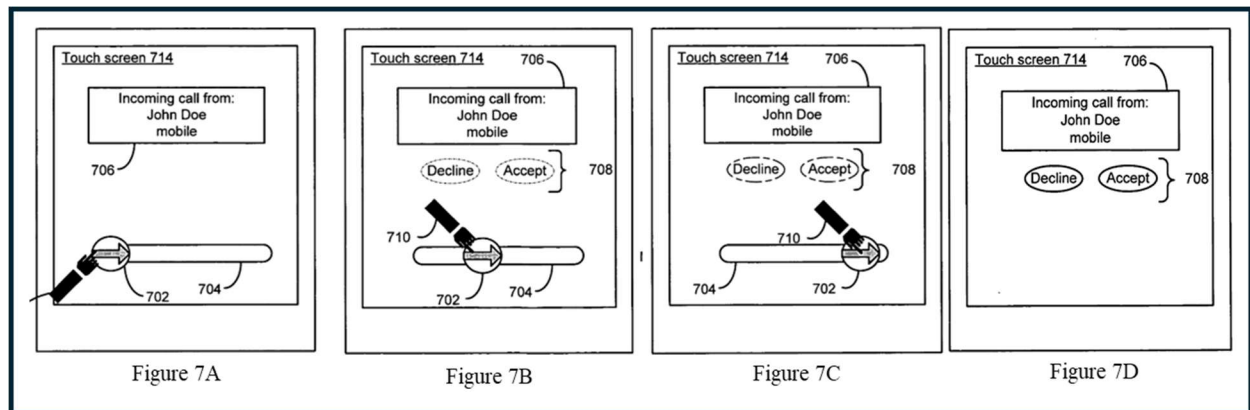
112. In contrast, Dr. Terveen’s Ahn-Chaudhri combination relies on **reducing** optical intensity of Ahn’s background (the alleged *first* user interface state). Specifically, Dr. Terveen identifies Ahn’s **standby screen** (FIG. 13a - below left) as corresponding to the alleged first user-interface state and “**state where a menu list 1300 is displayed**” (FIG. 13b - below right) as the alleged second user-interface state. EX1003, ¶¶76, 94.



113. In Dr. Terveen’s Ahn mapping, the clock widget is displayed in (e.g., associated with) the **first** user-interface state. However, Chaudhri does not teach adjusting the optical intensity of an object associated with the **first** user-interface state. Thus, Dr. Terveen’s modification to change the appearance of Ahn’s clock widget (of the **first** user-interface state) is inconsistent with Chaudhri’s teaching to “transition[] an optical intensity of one or more user interface objects associated with the **second user-interface state**.” EX1005, ¶[0082].

114. Importantly, Chaudhri’s teaching of changing the optical intensity of

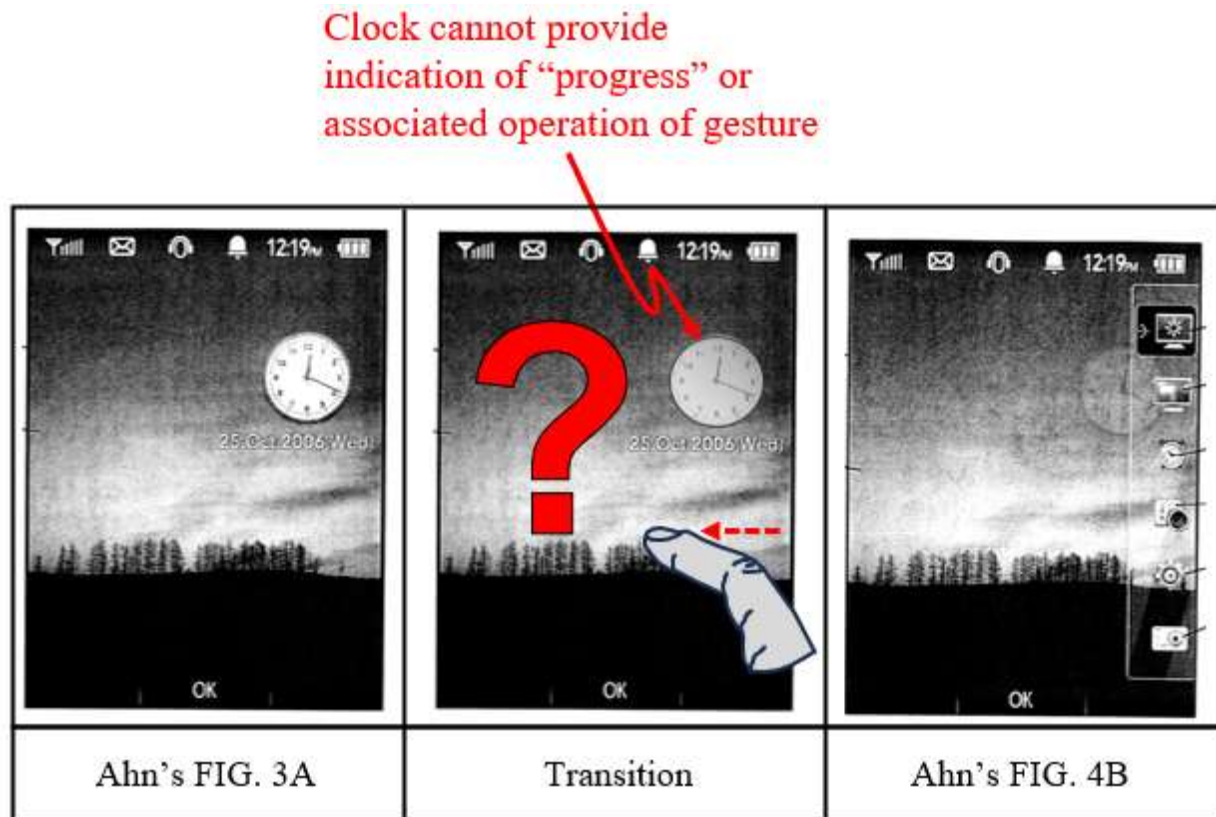
foreground objects of a second user-interface state provides its user with an indication of progress. Chaudhri illustrates this concept in its Figures 7A-7D (inset below), where as the user drags arrow 702 to the right, the optical intensity of the virtual buttons 708—associated with the second user interface state—increases. EX1005, [0092]-[0093].



EX1005, FIGS. 7A-7D. Here, the user would realize that the gesture—continuing to slide arrow 702—is related to the appearing foreground icons 708 and that their increasing optical intensity indicates these icons would be selectable when the gesture is completed. *Id.* Thus, the user is provided with a visual indication of their progress in completing the gesture; both in how much progress of the gesture is left and what functionality this gesture will trigger.

115. In contrast, Petitioner’s modification changes the appearance of the background clock widget as the user drags their finger towards an undefined end, which would not offer any context to the user on what operation will occur or when. The appearance of the clock widget is unrelated to the menu 420 and the

user would not realize that decreasing optical intensity of the clock widget would result in a menu being displayed, as illustrated below.



Thus, a POSITA would understand that reducing optical intensity for a background object (in a first interface state)—as Dr. Terveen proposes—would not result in a visual indication of progress like that taught for Chaudhri's increasing of optical intensity for a foreground object of a second interface state.

116. Third, Chaudhri ¶79 again describes operations opposite to the claim language and Dr. Terveen's allegations regarding the Ahn-Chaudhri combination. A POSITA would understand that to switch between, for example, a “telephone application to a music player” (EX1005, ¶[0079]), Chaudhri's “first application”

[telephone application] would be the focus of “the gesture.” Thus, Chaudhri’s “first application” would be mapped to the claimed “object”—because it has elements that are moved “on the touch screen”—e.g., Dr. Terveen’s mapped Ahn’s graphic 1800. Chaudhri’s “second application” [music player] would be mapped to the claimed “other object,” e.g., Dr. Terveen’s mapped Ahn’s clock widget. However, Chaudhri’s paragraph [0079] teaches that the “first application” (claimed “object” [graphic 1800]) “may fade out” and the “second application” (claimed “other object” [clock widget]) “may fade in.” This is the opposite of Limitation [1.d.i] that requires the “other object” to “blur, based on a change in distance magnitude of the gesture.”

117. In sum, Dr. Terveen’s alleged modification does the opposite of what Chaudhri teaches, and a POSITA would not have made this conflicting modification, especially not without an articulable reason, which Dr. Terveen does not provide.

3. Ahn-Chaudhri would not blur during detection of the gesture and before a completion of the gesture is detected

118. Limitation [1.d.i] recites that “*during* detection of at least a portion of the gesture before a completion thereof is detected” the processor executes instructions to cause the device to “blur [at least a portion of the at least one other object] based on a change in a magnitude of the gesture.” Dr. Terveen asserts that the change in the appearance of Ahn’s clock widget (EX1004, FIG. 4B) discloses

the claimed “blurring” by applying the use of transitioning optical intensity of Chaudhri. EX1003, ¶¶71-72. “The optical intensity of a user-interface object, as used herein, is the object’s degree of visual materialization,” (EX1005, [0085]), which Dr. Terveen identifies as “transparency” or translucency. EX1003, ¶74 (emphasis in original); *see also id.*, ¶76 (“utilizing this progressive translucency or blurring effect”). However, Dr. Terveen’s mapping fails to show that Ahn’s clock widget is blurred *during*—and *before* completion of—a gesture.

119. As discussed in Section VI.A, Ahn consistently teaches that its menus are displayed in a binary operation. At no point does Ahn explain, identify, or even allude to any gradual change in the appearance of its clock widget.

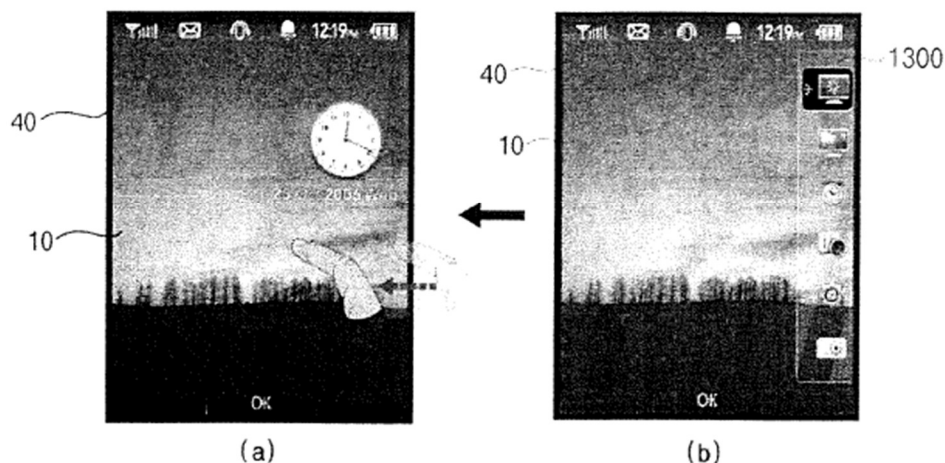
120. Dr. Terveen fails to show that display of Ahn’s menu 420 would cause the alleged ‘blurring’ of the clock widget “during detection of at least a portion of the gesture” and “before a completion [of the gesture] is detected.” At no point does Ahn explain, identify, or even allude to the change in appearance of its clock widget. In fact, the only discussion in Ahn of translucency is in reference to menus, and not the background standby screen or the clock widget. *See* EX1004, ¶[0070]. As such, Dr. Terveen relies exclusively on the figures of Ahn for the “blurring” of the clock widget. *See e.g.*, EX1003, ¶71. But this fails to establish that Ahn’s clock is “blurred” during the gesture in Dr. Terveen’s mapping.

121. As such, Dr. Terveen turns to Chaudhri as allegedly motivating a

gradual transition from Ahn's Figure 3A to Ahn's Figure 13b during a touch and drag operation to deploy Ahn's menu 1300. EX1003, ¶¶71-79. However, Dr. Terveen's cited portions of Chaudhri do not suggest this; instead, Chaudhri *increases* the optical intensity of a *foreground* element. Ultimately, Chaudhri does not suggest either changing the appearance of a background *during* detection of a gesture or *decreasing* optical intensity of a background that remains visible upon completion of the gesture.

122. Referring to Ahn's FIGS. 13a and 13b (below), a user touches the screen and "drags the touch in a left direction" (EX1004, ¶[0102]) and afterwards a menu list 1300 matched to a left direction is displayed (FIG. 13B).

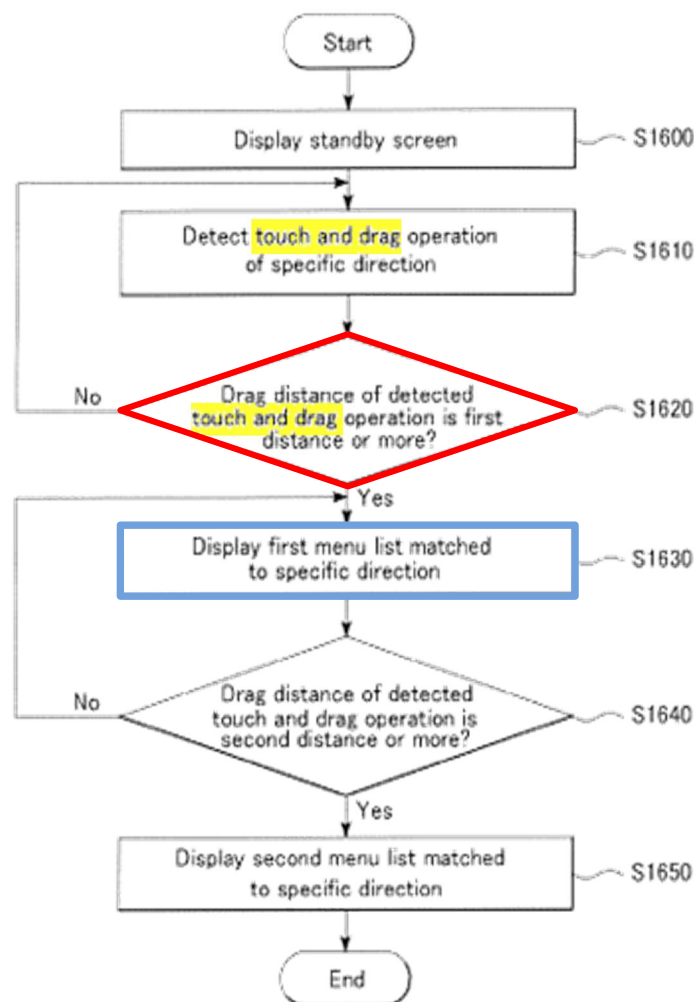
FIG. 13



123. As shown in FIG. 13a, the user's finger drags from a first point to a second point on the display, while the display does not change as the user's finger "drags the touch in a left direction." See EX1004, ¶[0102]. Only *after* "the touch

and drag operation [i.e., gesture] of the user is completed” is the appearance of the clock changed (FIG. 13b). See EX1004, ¶[0116]. This operation is confirmed by Ahn’s FIG. 16 (below), in which Ahn displays its menu (1630) only *after* determining a drag distance exceeded a first distance (1620). See EX1004, ¶¶[0107]-[0109].

FIG. 16



EX1004, FIG. 16.

124. “That is, if the touch and drag operation of the user *is completed*, the

controller 50 determines a distance of the touch and drag operation, whereby a specific menu list corresponding to the distance can be displayed in the display 40.” *Id.*, ¶[0116]. Thus, the menu 1300 is not displayed *during* the gesture; rather, it is displayed only *after* the gesture is completed.

125. As another example, the user interacts with graphic 1800 shown in FIG. 18, e.g., “press the graphic 1800 with a finger” to cause the graphic 1800 to gradually disappear in the display 40 and the menu list 1500 to be displayed. EX1004, ¶[0119]. Again, there is nothing in Ahn that suggests that any object is “blurred” *during* the interaction. In fact, even graphic 1800 does not “gradually disappear[]” until after the interaction. EX1004, ¶[0119]. Thus, Ahn does not disclose “blurring” any object—much less its clock widget—*during* a touch and drag operation or based on any other interaction with graphic 1800.

B. Dr. Terveen’s Mapping to Limitation [1.d.ii] is Deficient

126. For Limitation [1.d.ii], Dr. Terveen must show that “blur” of the clock widget increases as a function of the distance magnitude of the gesture. But Dr. Terveen’s analysis of Limitation [1.d.ii] focuses solely on the portion of the clock widget being blurred, not that the blur is increased as a function of the magnitude of the gesture. EX1003, ¶¶81-83.

1. Ahn-Chaudhri would not increase the magnitude of the blur of Ahn's clock widget as a function of an increase in the distance magnitude of the gesture

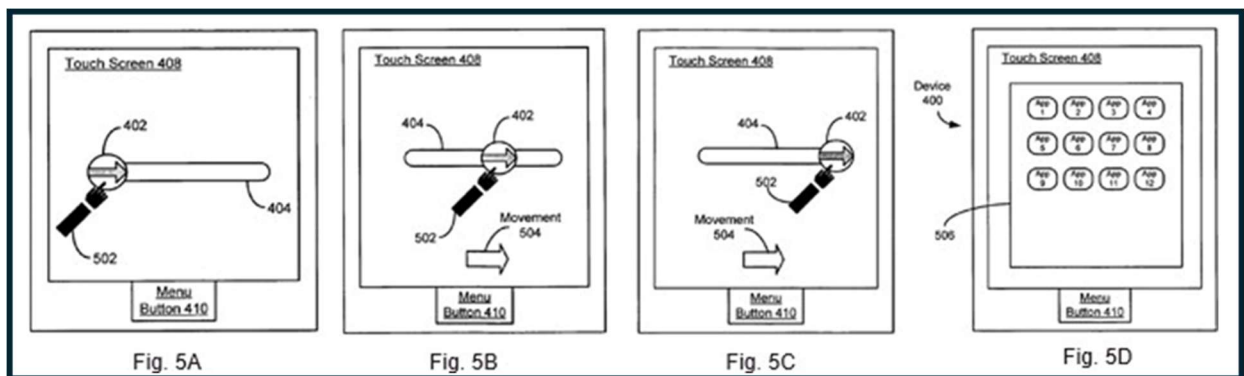
127. As explained above, for Limitation [1.d.ii], Dr. Terveen must show that the “blur” of the clock widget increases as a function of the distance magnitude of the gesture. Dr. Terveen's analysis of Limitation [1.d.ii] focuses solely on the portion of the clock widget being blurred, not that the blur is increased as a function of the gesture. EX1003, ¶¶81-83. Ahn fails to describe any gradual change in the appearance of the clock widget. As discussed in Section VI.A, Ahn teaches a binary operation and fails to describe any gradual change in the appearance of its clock widget. *See generally* EX1004.

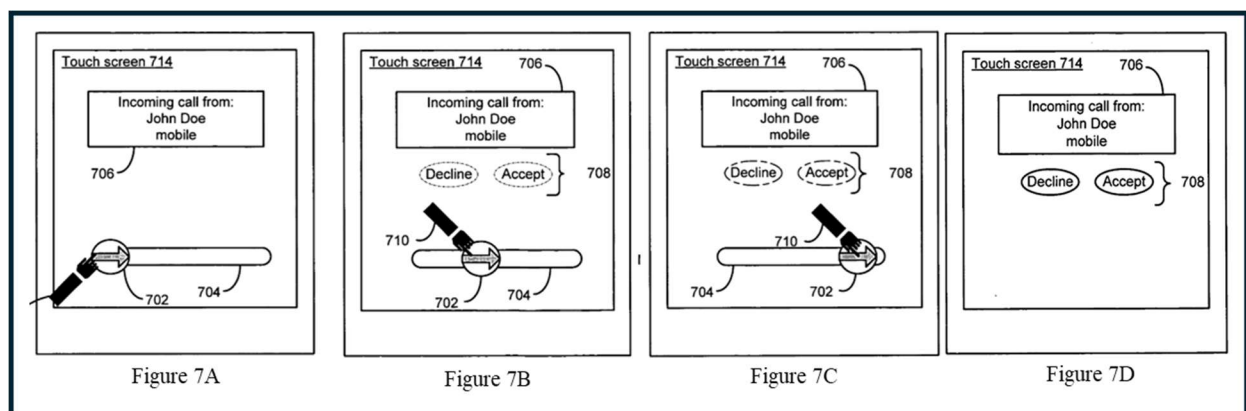
128. And, while Dr. Terveen cites to paragraph [0079] of Chaudhri as teaching that a first application may “fade out,” this is not done as a function of an increase in the distance magnitude. Instead, Chaudhri explains this is performed according to a pre-set temporal interval, not a distance magnitude. EX1005, ¶[0079] (“over a pre-determined time interval”).

129. Dr. Terveen cites to a general range in Chaudhri at ¶¶[0080]-[0089], in support of varying “the optical intensity of the standby screen.” EX1003, ¶76. However, Dr. Terveen does not specifically address the part of the Limitation [1.d.ii] requiring the blurring to increase a “a function of an increase in the distance magnitude.” *Id.* This phrase does not even appear in Dr. Terveen's analysis. *Id.*,

¶¶70-79.

130. Chaudhri's paragraph [0087] also fails to teach an *increase in the magnitude of the blurring of Ahn's clock widget* ("other object") as a function of the increase in the distance magnitude of the gesture. This paragraph teaches that "the indication of progress towards completion of the user input condition is a function of the user's satisfaction of the condition." EX1005, ¶[0087]. Chaudhri's "user input condition" is described as a "predefined gesture" or "dragging an image along a predefined path," as examples. EX1005, ¶¶[0088], [0090]. This is shown, for example, in FIGS. 5A–5D and 7A–7D below, where Chaudhri illustrates "the indication of progress is 10% complete when the unlock action is 10% complete; . . . and so forth, up to 100% completion of the unlock action, at which point the transition to the unlock state occurs." EX1005, ¶[0087].





EX1005, FIGS. 5A–5D, 7A–7D.

131. Notably this transition occurs on a lock screen in Chaudhri, which could only be mapped to graphic 1800 or “the object” of Claim 1. *See* Section VI.B above. Chaudhri then teaches that “*the transition of the optical intensity* from an initial value to a final value is 10% complete when the unlock action is 10% complete; . . . and so forth, up to 100% completion of the unlock action, at which point the optical intensity is at its final value.” EX1005, ¶[0087]. Thus, Chaudhri teaches a change in the “optical intensity” of lock screen, i.e., “the object” of Claim 1. Conversely, Limitation [1.d.ii] requires increase in the “magnitude of the blur” of the “other object” [clock widget] not “the object” [graphic 1800]. Dr. Terveen does not provide a rationale or reasoning why a POSITA would have applied Chaudhri’s transition in optical intensity described in paragraph [0087] to Ahn’s clock widget rather than to Ahn’s graphic 1800.

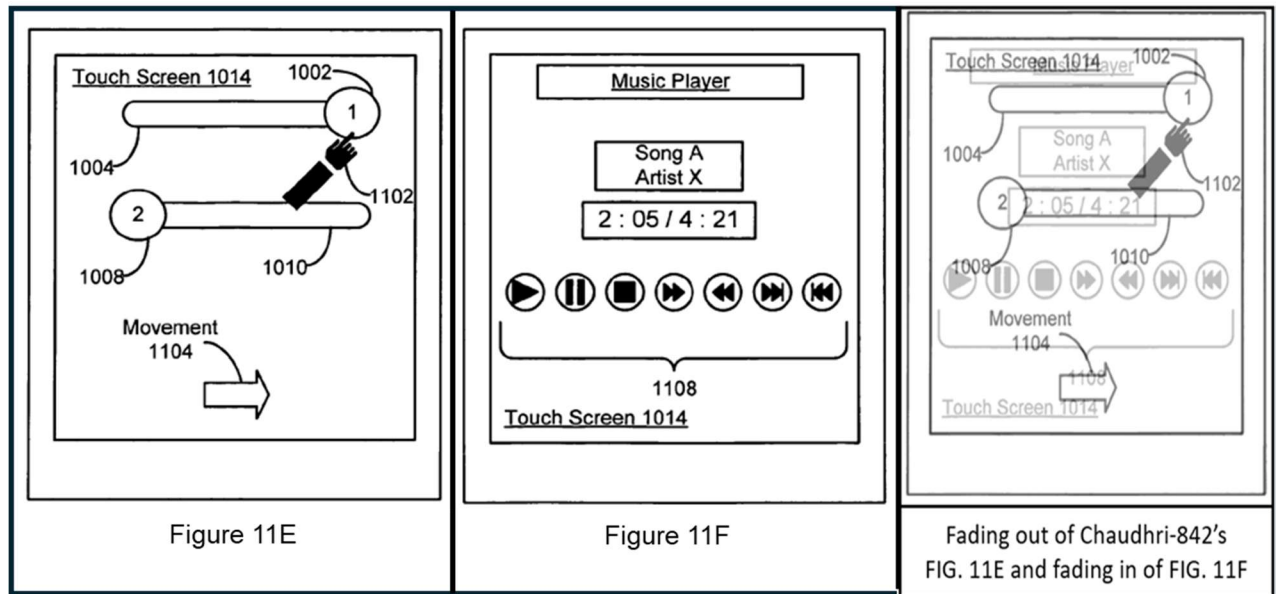
2. Chaudhri’s change in “optical intensity” does not apply to Dr. Terveen’s modification

132. Further, the change in optical intensity described in Chaudhri’s

paragraph [0087] does not apply to Dr. Terveen's Ahn-Chaudhri combination.

Specifically, the fading out of the *entire* user interface for the first application, and the fading in of the *entire* user interface for the second application, does not teach and is not applicable to Dr. Terveen's alleged modification to decrease the optical intensity of an isolated "other object" [clock widget].

133. Ahn displays a background screen and then displays a popout menu over a portion of that background screen. This does not necessitate ceasing the display of the background screen and, in fact, Ahn chooses to continue displaying the background screen. Ahn's and Chaudhri's goals are completely opposing on this point. Ahn emphasizes the benefits of its directional pop out menus is to enable the standby screen to *remain visible* while using the menus. *Supra*, Section VI.A; EX1004, ¶¶[0005], [0006], [0039], [0064] (displaying menus and standby screen concurrently). On the other hand, a POSITA would have understood that, when transitioning from a first application to a second application, allowing the first application UI to *remain visible* during a gesture would lead to a poor user experience. This is illustrated by comparing the isolated fading in of two buttons as shown in Chaudhri's FIG. 7C, with a fading in and fading out between Chaudhri's unlock screen (FIG. 11E) and music player application (FIG. 11F). EX1005, ¶[0107]; *see* EX1005, ¶[0079] ("music player application").



Chaudhri's FIGS. 11E, 11F, and amalgamation of FIGS. 11E and 11F

134. As shown, when the user is at 50% progress of the unlock gesture the transparency of the unlock screen and the music application would be at 50%.

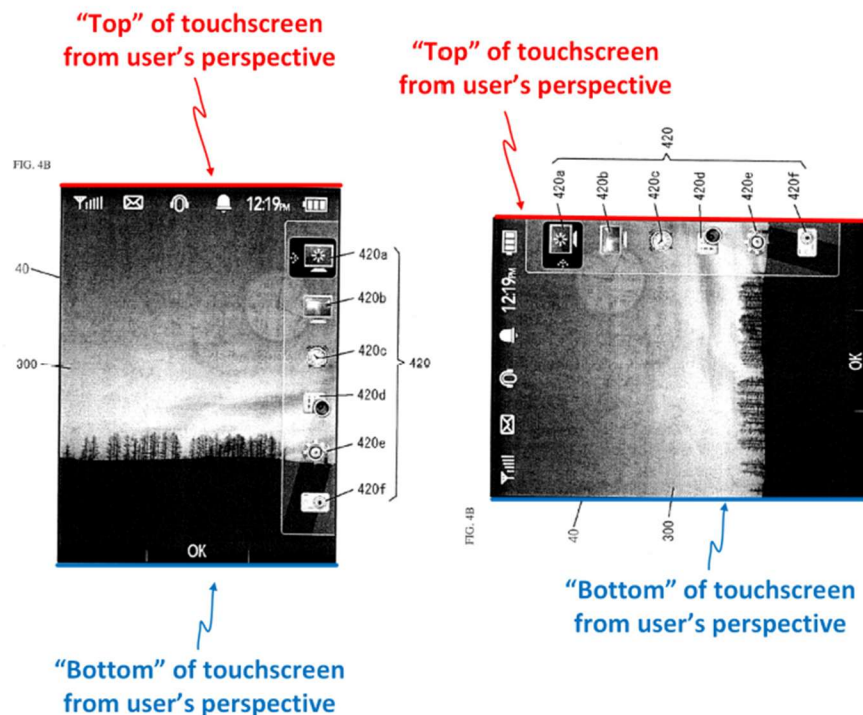
EX1005, ¶[0087]. However, this fails to provide a clear indication of the progress of the gesture or transition as the significant overlap of UI elements leads to a poor user experience and would confuse the user. Additionally, such a transition has no relationship to the claim language that recites “such that a magnitude of the blur itself, *and not a magnitude of an area of the touch screen that is blurred, is increased* as a function of an increase in the distance magnitude.” Thus, a POSITA would understand Chaudhri's fade in/fade out of applications as occurring after the gesture is complete and not as “a function of an increase in the distance magnitude.

X. DR. TERVEEN DOES NOT ESTABLISH THAT AHN-CHAUDRHI TEACHES MULTIPLE DEPENDENT CLAIMS

A. Claim 2

135. Dr. Terveen provides no motivation to combine art supporting alleged invalidity of Claim 2, and therefore, fails to establish that Claim 2 is obvious.

Limitation [2.b] recites “the object is displayed closer to a top edge of the touch screen than a bottom edge of the touch screen.” Dr. Terveen provides two orientations of FIG. 4B—portrait and landscape orientations—that allegedly teach this limitation, shown below.



EX1003, ¶87.

136. For the orientation shown in Ahn’s FIG. 4B portrait orientation (EX1003, ¶87 (left figure)), Dr. Terveen cites nothing in Ahn or Chaudhri to

support that the object, i.e., menu identifier icon/graphic 1800, is “displayed closer to the top edge of the touch screen than a bottom edge of the touch screen.”

EX1003, ¶88. Indeed, Ahn’s FIG. 4B relied on by Dr. Terveen, does not include any menu identifier icon/graphic 1800 at all; the menu 420 shown is as close to the top as the bottom; and FIG. 18 actually illustrates “graphic 1800” closer to the bottom of the screen. A POSITA would have found it more intuitive and ergonomic to have “graphic 1800” located closer to the bottom of the screen in the portrait orientation. Further, Ahn’s paragraph [0104], cited by Dr. Terveen, is directed to the location of “the item list” (items in menu 420) and not the menu identifier icon/graphic 1800. EX1003, ¶89.

137. When discussing the orientation, Dr. Terveen asserts that “in the context of Ahn’s mobile communication terminal 100, what the user sees as the top and bottom would change depending on whether the user holds the device as illustrated in FIG. 4B or oriented 90 degrees from what is illustrated in FIG. 4B, particularly where the orientation of what is displayed on display 40 is ‘locked’ or not otherwise configured to respond to how the user holds the terminal 100.”

EX1003, ¶87. Dr. Terveen provides no reason why a POSITA would understand that the orientation on display 40 would remain “locked” such that a user would need to rotate their own head 90 degrees to read the display 40.

138. Having nothing for support in Ahn, Dr. Terveen cites two additional

references to support its invalidity analysis (EX1006 and EX1011). Dr. Terveen asserts EX1006 suggests “the right and *top edges* may still be associated with bezel menus,” and EX1011 teaches “pull-out menus associated with all found edges of the display.” EX1003, ¶90. However, Dr. Terveen provides no motivation to combine these references with its Ahn-Chaudhri combination. These exhibits are not described anywhere or cited as part of Ground 1.

139. Limitation [2.d] recites that “the at least one other object includes a background image” (requiring that “a background image” be blurred). Dr. Terveen admits that “Ahn only specifically illustrates that the clock widget [is] blurred” and not the remaining background. EX1003, ¶99. Dr. Terveen then alleges that “Chaudhri ’842 explicitly describes differentiating between a menu and ‘the background’—not simply a portion thereof—displayed on the touch screen during its user interface state transition process.” EX1003, ¶99. However, as discussed in Section IX.B, Chaudhri does not vary the optical intensity of a background. To the contrary, Chaudhri discloses adjusting an optical intensity of UI objects, which are distinct from the background. EX1005, ¶[0085]. Chaudhri’s paragraph [0085] discusses optical intensity of “a user-interface object” including that “optical intensity may be perceived by users as a transparency effect (or lack thereof) applied to the user-interface objects.” *Id.* Chaudhri then makes clear that “optical intensity may be the visual differentiation between the user-interface object and *the*

background.” Thus, rather than teaching the blurring of “a background image,” Chaudhri teaches varying the optical intensity of foreground UI elements to directly contrast with the background.

140. Unable to rely on Ahn or Chaudhri, Dr. Terveen cites to EX1008 as teaching that “objects within layers at progressively different layers of depth are assigned *progressively lower relevance* and displayed *with greater blur.*” EX1003, ¶100. Dr. Terveen then alleges “[a]pplying these known techniques to the teachings of Ahn, a POSITA would have at least found it obvious to blur the entire standby screen 300.” EX1003, ¶101. Again, Dr. Terveen is relying on EX1008 to establish invalidity and fails to provide a motivation to combine EX1008 with Ahn-Chaudhri. Notably, Dr. Terveen reaches his conclusions without identifying any portion of EX1008 that concerns blurring *the background* rather than other layers. Thus, even if Dr. Terveen had provided a motivation to combine EX1008 with Ahn-Chaudhri, a POSITA would not understand the combination to suggest blurring the background.

141. Dr. Terveen has failed to establish that Ahn-Chaudhri would render obvious Claim 2.

B. Claim 3

142. Claim 3 depends from Claim 2 and recites: “the object is displayed closer to a right edge of the touch screen than a left edge of the touch screen.” As

discussed above related to Claim 2, Dr. Terveen includes two orientations of Ahn's FIG. 4B—portrait and landscape orientations—in his mapping for Limitation [2.b], but fails to provide the required motivation to combine Ahn and Chaudhri for its invalidity theory related to the portrait orientation. Dr. Terveen similarly fails to establish that Claim 3 is obvious.

143. Dr. Terveen maps Claim 3 only to portrait orientations of an amalgamation of Ahn's FIGS. 3A/18a and FIG. 4B and asserts that menu identifier icon/graphic 1800 and menu 420 are shown closer to the right edge of the touch screen. EX1003, ¶¶104–105. Dr. Terveen fails to allege invalidity of Claim 3 related to a landscape orientation at all. Thus, to the extent Dr. Terveen relies on the landscape orientation to establish Ahn teaches Limitation [2.b], Dr. Terveen's mapping of Claim 3 is inconsistent.

144. Further, as discussed above, Dr. Terveen fails to provide the required motivations to combine for its arguments related to FIG. 4B's portrait orientation. And, for at least this reason, Dr. Terveen's mapping of Claim 3 based on a portrait orientation also fails.

145. Additionally, similar to Claim 2, Dr. Terveen relies on EX1006 ("the *right and top edges* may still be associated with bezel menus") and EX1011 to support its invalidity arguments related to Claim 3 but fails to provide a motivation to combine any of EX1006 or EX1011 with Ahn-Chaudhri. EX1003, ¶106.

146. For at least these reasons, Dr. Terveen has failed to establish that Ahn-Chaudhri would render obvious Claim 3.

C. Claims 5 and 17

147. Claims 5 and 17 depend from Claim 2 and recite: “during at least a part of at least an initial portion of the change in the distance magnitude, an entirety of the object is blurred.” Dr. Terveen relies on arguments related to Limitation [2.c], e.g., menu identifier icon/graphic 1800 disappearing in Ahn’s paragraph [0119], to teach that “an entirety of the object is blurred,” but entirely fails to address blurring during “an initial portion of the change in the distance magnitude.” EX1003, ¶¶112–113, 141. As discussed in Section IX.A, Ahn’s paragraph [0119] discloses that “the user may press the graphic 1800 with a finger, the graphic 1800 gradually disappears.” Thus, Ahn’s graphic 1800 is not described as disappearing related to any “change in the distance magnitude.” As such, Ahn does not describe blurring “an entirety of the object” during “*an initial portion of the change in the distance magnitude.*” Dr. Terveen fails to even address this portion of Claims 5 and 17.

148. As such, Dr. Terveen has failed to establish that Ahn-Chaudhri would render obvious Claims 5 and 17.

D. Claim 6

149. Claim 6 depends from Claim 2 and recites: “during at least a part of at

least an initial portion of the change in the distance magnitude, an entirety of a virtual display layer in which the object is displayed, is blurred.” Dr. Terveen asserts that menu identifier icon/graphic 1800 is displayed in a “virtual display layer” and because the “entire menu identifier icon fades out,” it is obvious that “one way to blur the menu identifier icon in this manner would have been to blur the virtual display layer that includes the menu identifier.” EX1003, ¶¶117–118.

150. First, as discussed above related to Claim 5, Ahn’s graphic 1800 does not “blur” during “*an initial portion of the change in the distance magnitude.*” Dr. Terveen provides no rationale why a “virtual display layer” that contains graphic 1800 would “blur” during “*an initial portion of the change in the distance magnitude.*” Dr. Terveen fails to even address this portion of Claim 6.

151. Further, Dr. Terveen’s analysis for Claim 6 appears to be inconsistent with his analysis for Limitation [2.d] in which the background (i.e., “the entire standby screen 300”) purportedly blurs to “more effectively draw a user’s attention to the opened item” (i.e., the layer in which the “graphical shadow 1800” is displayed). EX1003, ¶¶101, 117. Moreover, in my opinion, Ahn provides no disclosure related to the blurring of the virtual display layer that contains the graphic shadow 1800.

152. Second, Dr. Terveen cites two additional references to support its invalidity analysis (EX1008 and EX1007), but provides no motivation to combine

these references with Ahn-Chaudhri. EX1003, ¶119 (“[b]ased on these teachings, a POSITA would have understood and found obvious ...”), ¶121 (“[a]pplying this known technique for determining the degree of blur utilized in displaying user interface objects to the teachings of Ahn, a POSITA would have found it obvious...”). For at least these reasons, Dr. Terveen has failed to establish that Ahn-Chaudhri would render Claim 6 obvious.

E. Claims 11 and 12

153. Claims 11 and 12 depend from Claim 2 and recite: “the aspect of the object includes a size of the object.” Claim 2 requires that the “aspect of the object ... is modified, based on the change in distance magnitude of the gesture...” Dr. Terveen relies on its arguments related to Limitation [2.c], e.g., “graphic 1800” disappearing in Ahn’s paragraph [0119]. EX1003, ¶¶126, 128.²

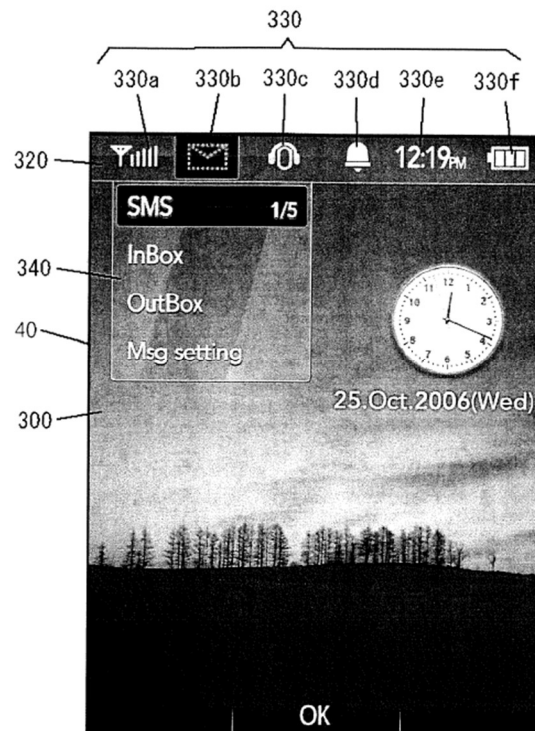
154. Ahn fails to teach that the menu identifier icon/graphic 1800 changes in size with the change in distance magnitude of the gesture. Dr. Terveen admits that “Ahn does not dictate or otherwise limit how the menu identifier icon, such as graphic 1800, ‘disappears.’” EX1003, ¶93. Dr. Terveen then turns to Chaudhri’s

² Dr. Terveen provides no support in Ahn—and indeed there is no support in Ahn—for Dr. Terveen’s “amalgamation” of four different figures and assertion that “[m]enu identifier icon ‘fades out’ and/or *is made smaller as it is dragged.*”

paragraph [0044] and claim 10 and EX1008, which Dr. Terveen alleges teaches “geometry changes” and “describes use of blurring techniques along with size.” EX1003, ¶94.

155. First, neither Chaudhri’s paragraph [0044] nor claim 10 address change in size. Dr. Terveen corrected his reference to Chaudhri indicating it should refer to Ahn. EX2008, 9:8-18. Ahn paragraph [0044] is directed to FIG. 3C (below) and states that “the message notification icon 330b may be displayed in a size different from that of other icons . . .”

FIG. 3C



156. Ahn claim 10 states “[t]he mobile communication terminal of claim 9, wherein the controller controls so that a color or a size of the icon is displayed with changed or the icon is displayed with highlighted.” Anh claim 9 recites “wherein

the each menu corresponding to the specific direction comprises one of a menu related to an icon displayed in an indicator area on the standby screen . . .” and Ahn defines “indicator area 320” in FIG. 3C above. Dr. Terveen fails to explain how a “message notification icon 330b” or any other icon in “indicator area 320” relates to changing the size of graphic 1800.

157. And, as discussed related to Claim 2, Dr. Terveen provides no motivation to combine EX1008 with Ahn and/or Chaudhri. Dr. Terveen has failed to establish that Ahn-Chaudhri would render obvious Claims 11 and 12.

F. Claims 13 and 14

158. Claims 13 and 14 depend from Claim 2 and recite: “the aspect of the object includes a color of the object.” Claim 2 requires that the “aspect of the object ... is modified, based on the change in distance magnitude of the gesture...” Dr. Terveen cites Chaudhri’s paragraph [0085] that refers to “visual differentiation between the user-interface object and the background, based on color...” and also cites to Chaudhri’s paragraph [0044], claim 10, and EX1008. EX1003, ¶132. However, while including the word “color,” Chaudhri’s paragraph [0085] does not teach that the color of an object changes, or changes “based on the change in distance magnitude of the gesture,” and neither Chaudhri’s paragraph [0044] nor claim 10 address “color.”

159. As discussed related to Claim 2, Dr. Terveen provides no motivation

to combine EX1008 with Ahn-Chaudhri. Dr. Terveen has failed to establish that Ahn-Chaudhri would render obvious Claims 13 and 14.

XI. CONCLUSION

All statements made herein of my own knowledge are true, all statements made herein on information and belief are believed to be true, and these statements were made with the knowledge that willful false statement and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001.

Dated: July 3, 2025

Respectfully submitted,



Craig Rosenberg, Ph.D.