

APPLE INC. v. SMITH INTERFACE TECHNOLOGIES, LLC

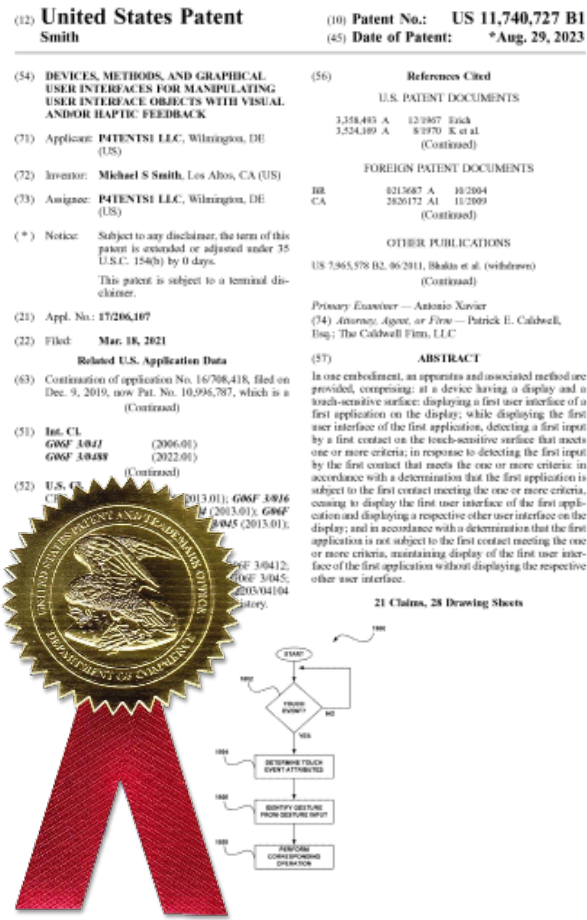
Case IPR2024-01256

Patent Owner's Hearing Demonstratives

December 16, 2025

U.S. Patent No. 11,740,727

U.S. Patent No. 10,656,754



(12) **United States Patent**
Smith

(54) DEVICES, METHODS, AND GRAPHICAL USER INTERFACES FOR MANIPULATING USER INTERFACE OBJECTS WITH VISUAL AND/OR HAPTIC FEEDBACK

(45) Date of Patent: Aug. 29, 2023

(22) Filed: Mar. 18, 2021

Petition (“Pet.”)

Paper 2

Patent Owner Response (“POR”)

Paper 13

**Petitioner’s Reply to Patent Owner’s Response
 (“Reply”)**

Paper 15

Patent Owner Sur-Reply (“Sur-reply”)

Paper 18

IPR 2024-01256

Ground	Challenged Claims	Basis for Rejection
1	1-6, 10-14, 16, and 17	§103–Ahn (US 2008/0207188), Chaudhri '842 (US 2007/0150842)

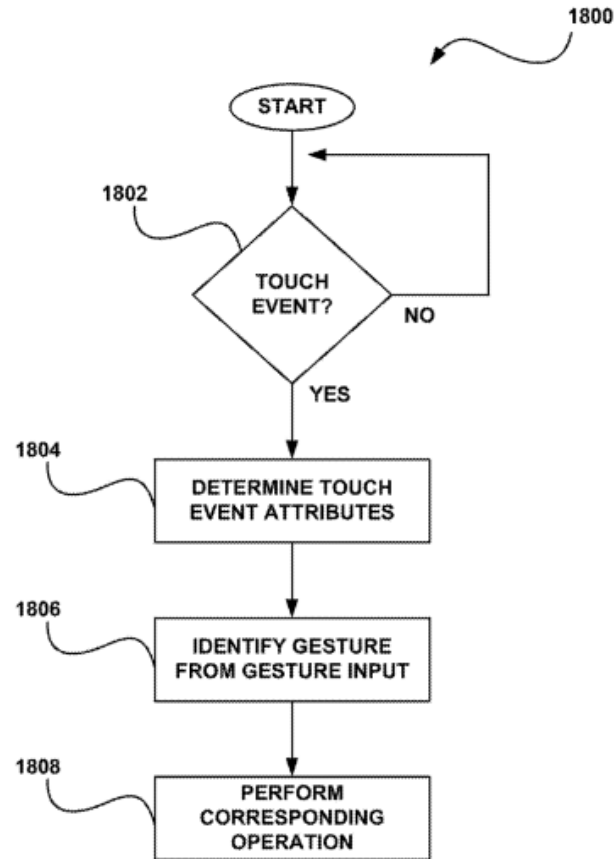
Overview

- '727 Patent
 - Touch Based Gestures
 - Independent Claim 1
- Technical Background
 - Ahn / Chaudhri
- Limitation [1.d.i]
 - No “gesture” “move[s] the object on the touch screen”
 - No “other object” is “blurred “based on a change in distance magnitude of the gesture”
 - No blurring occurs during “a portion of the gesture before a completion thereof is detected”
- Limitation [1.d.ii]
 - No increasing the blur of the “other object” as a function of the distance magnitude of the “gesture”
- Motivations to Combine
- Dependent Claims

Touch Based Gestures



'727 Patent



EX1001 at FIG. 18; POR at 4



'727 Patent

In various embodiments, gestures may be associated with operations that are carried out as functions of the gesture input, when the gesture is performed and identified.

In various embodiments, a user may be given feedback as a gesture is performed. For example, in one embodiment, a representation of the gesture may be temporarily displayed as the gesture is performed. In this way, a user may be more aware of the form of the gesture they are performing.

In various embodiments, virtual display layers may be given the appearance of depth through the use of 3D depth cues. In the context of the present description, a 3D depth cue refers to an effect, manipulation, transformation, animation, or operation which gives a visual indication of simulated depth. For example, in one embodiment, a 3D depth cue may be a blur operation, such that layers located at successively greater depths may appear blurrier than those closer to the user.

EX1001 at 58:58-60, 59:23-24, 68:37-45; POR at 4

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- Dependent Claims

Independent Claim 1

Claim 1

1. A device, comprising:

...

[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.

Overview

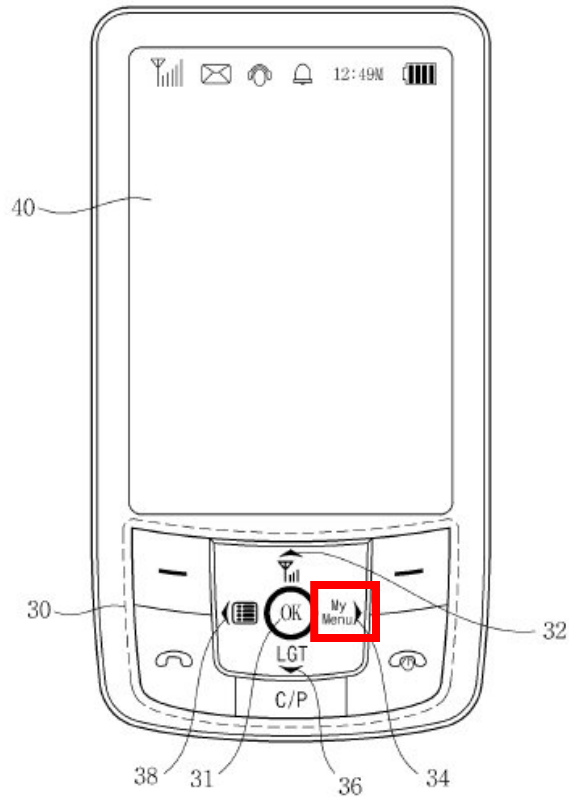
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Ahn's menus are binary



Directional Key Embodiment

FIG. 2



EX1004 at FIG. 2; POR at 8



Ahn

FIG. 3A

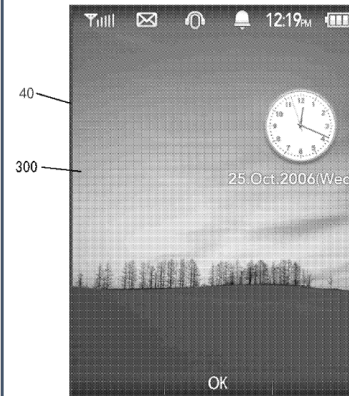


FIG. 7A

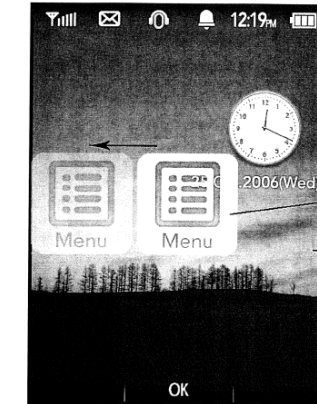
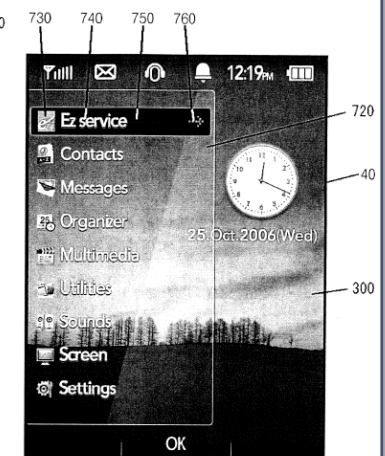


FIG. 7B



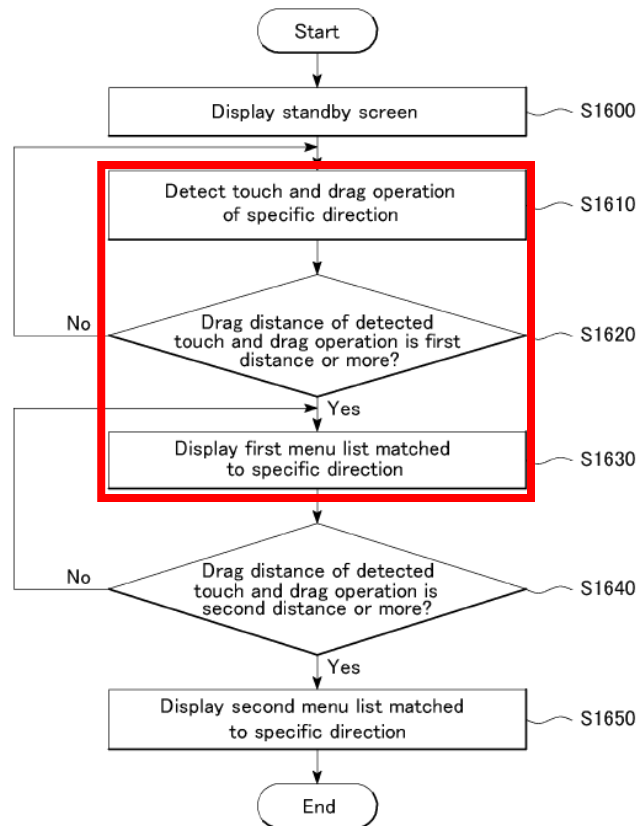
EX1004 at FIGs. 3A, 7A-7B; POR at 8-9

Ahn's menus are binary



Touch and Drag Embodiment

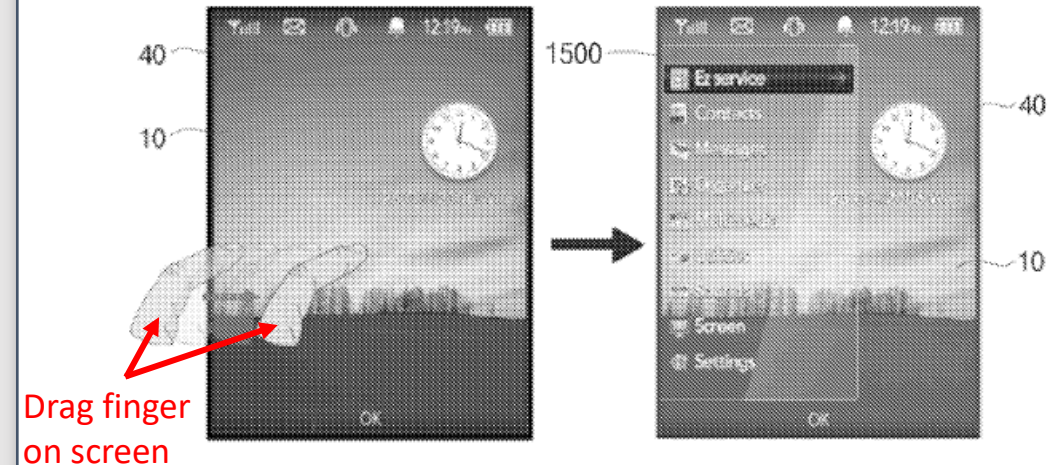
FIG. 16



EX1004 at FIG. 16; POR at 10



Ahn



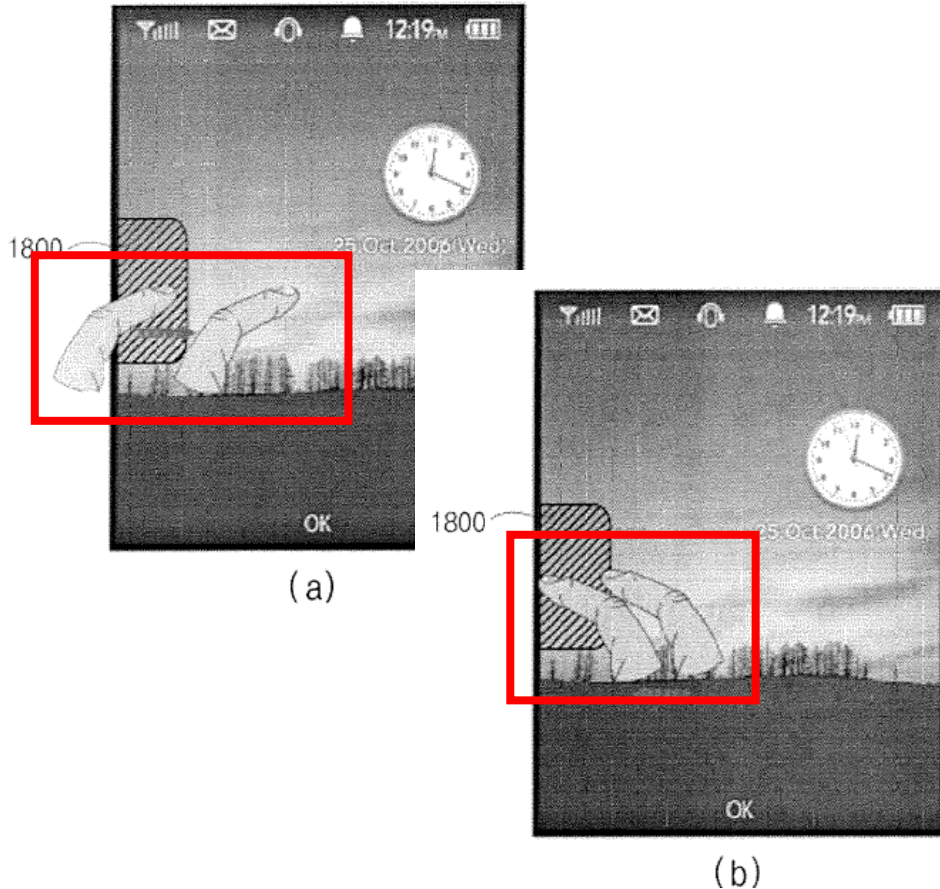
if the user drags the touch screen 10 by a distance longer than or equal to the distance d1 and shorter than the distance d2, the first menu list 1700 is displayed, and if the user drags the touch screen 10 by a distance longer than or equal to the distance d2, the second menu list 1710 is displayed. In this case, if the user drags by the distance d2 or more, the first menu list 1700 is not displayed. 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.

EX1004 at [0116], FIG. 15; POR at 10-11, 33

Ahn's menus are binary



Graphic Shadow Embodiment



EX1004 at FIG. 18(a)-(b); POR at 11

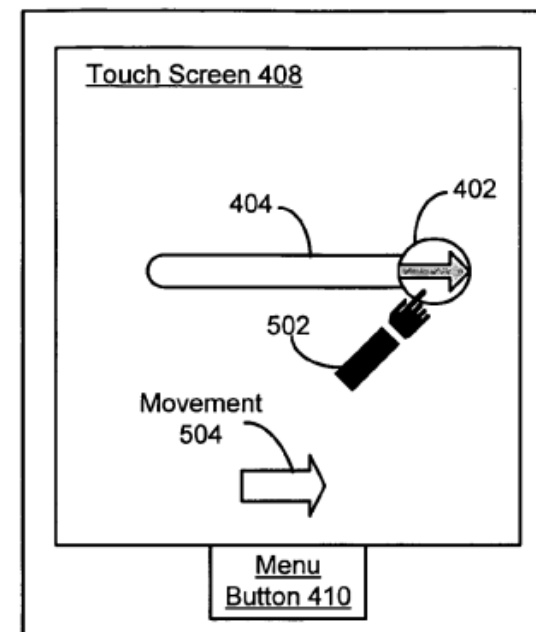
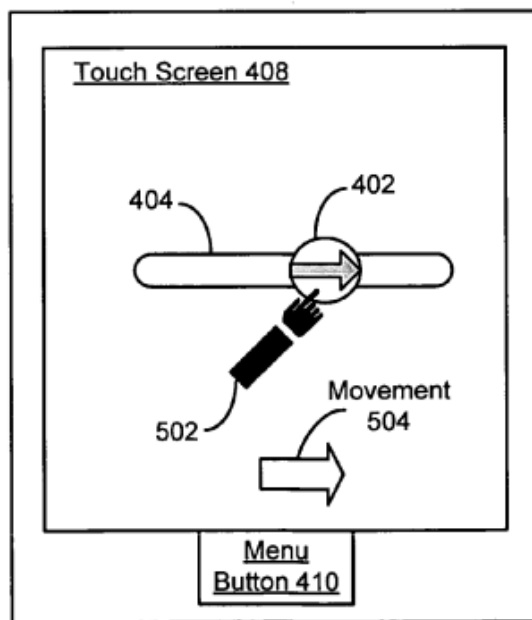
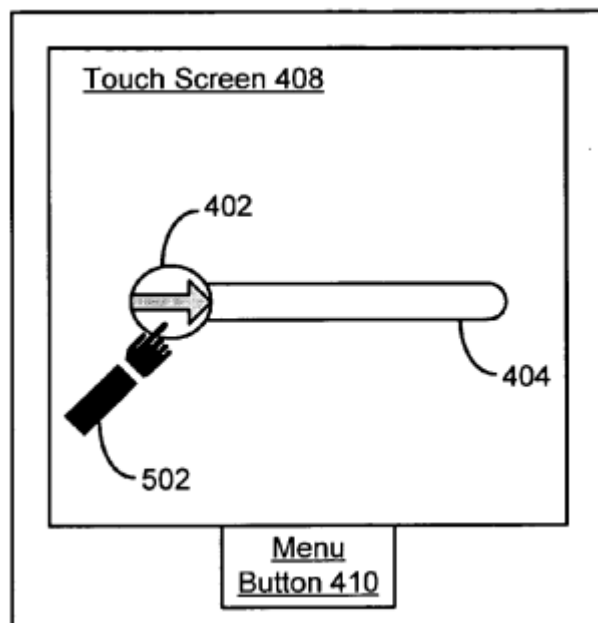


Dr. Rosenberg

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].

EX2006 at ¶51; POR at 12

Chaudhri discloses an unlocking gesture



EX1005 at FIGs. 5A-5C; POR at 13

Chaudhri's transition effect after the gesture is complete



Chaudhri's Transition Effect

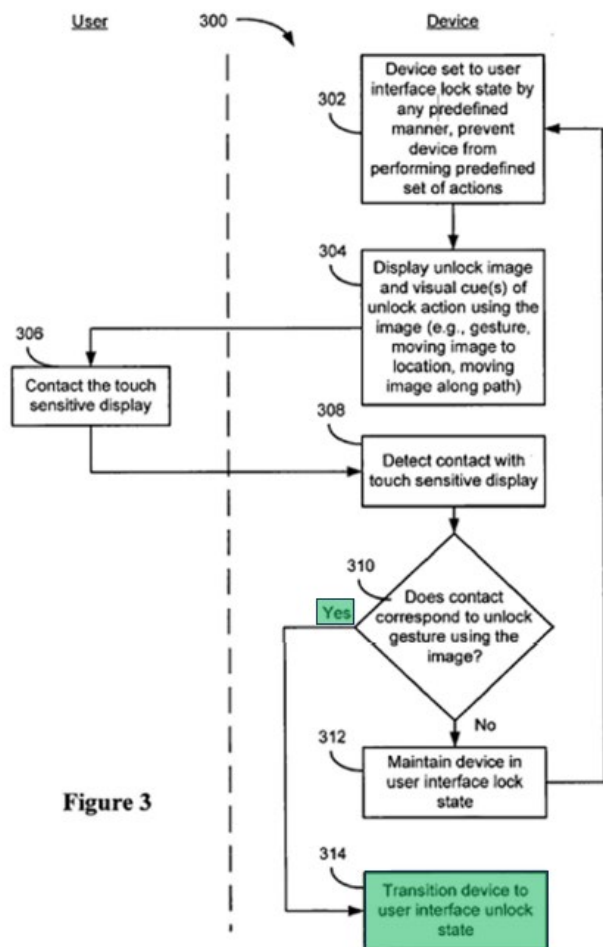


Figure 3

EX1005 at FIG. 3; Sur-Reply at 13



Chaudhri's fade-in

Unlocking a Device via Gestures

¶¶[0052]-[0079]

...

[0079] In some embodiments, the lock/unlock feature may apply to specific applications that are executing on the device 400 as opposed to the device 400 as a whole. In some embodiments, an unlock gesture transitions from one application to another, for example, from a telephone application to a music player or vice versa. The lock/unlock feature may include a hold or pause feature. In some embodiments, as the user transitions from a first application and to a second application, a user interface for the second application may fade in (i.e., increase in intensity) and a user interface for the first application may fade out (i.e., decrease in intensity). The fade in and fade out may occur smoothly over a pre-determined time interval, such as 0.2 s, 1s or 2s. The

...

Indication of Progress Towards Satisfaction of a User Input Condition

¶¶[0080]-[0096]

EX1005 at [0052], [0079]; Sur-reply at 13-14

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- Motivations to Combine
- Dependent Claims

Ahn's does not depict a “gesture” “move[s] the object on the touch screen”

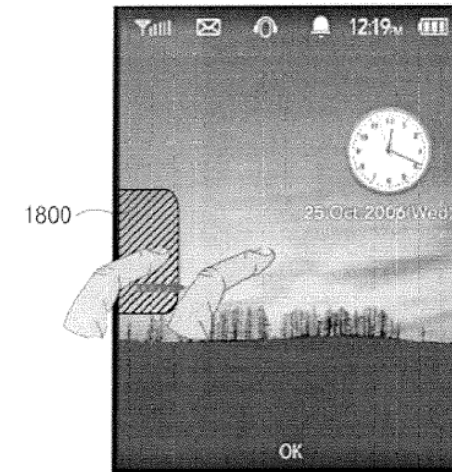
 Ahn

[0118] FIG. 18 illustrates an example of a screen for displaying a graphical display for notifying a start position of a touch and drag operation to a user. For example, referring to FIG. 18(a), if the user drags in a right direction after touching the screen, a graphical shadow 1800 is displayed in the display 40, and the menu list 1500 shown in FIG. 15(b) can be displayed in the display 40. In this case, as the user drags the graphic shadow 1800, the menu list 1500 can be displayed along the dragged graphic 1800.

[0119] Further, for example, referring to FIG. 18(b), if the user touch drags to the left, the menu list 1500 shown in FIG. 15(b) can be displayed in the display 40. In this case, as the user may press the graphic 1800 with a finger, the graphic 1800 gradually disappears in the display 40, and the menu list 1500 can be displayed as emerging from the left side of the display 40 while the graphic 1800 disappears in the display 40.

EX1004 at [0118]-[0119]; POR at 29-38.

 Ahn



(a)

EX1004 at FIG. 18(a)

**Graphic 1800 (“the object”) does not move
when the user drags in a right direction**

“Drag” exclusively refers to an external object



[0098] The controller 50 detects a touch and drag operation of a specific direction on the touch screen 10 (S1110). The touch and drag operation indicates movement of an external object on the touch screen 10.

[0103] Further, for example, referring to FIGS. 14a and b, if the user touches screen 10 and drags the touch in an upward direction, a menu list 1400 matched to the upward direction is displayed in the display 40. Further, for example, referring to FIGS. 15a and b, if the user touches screen 10 and drags the touch in a rightward direction, a menu list 1500 matched to a right direction is displayed in the display 40.

EX1004 at [0098], [0103]; POR at 31-33



FIG. 14

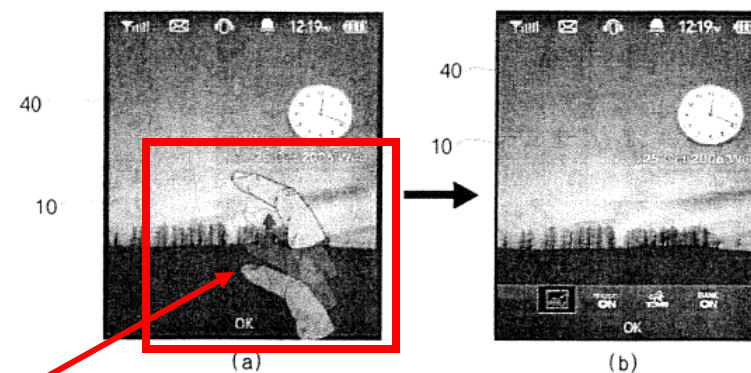
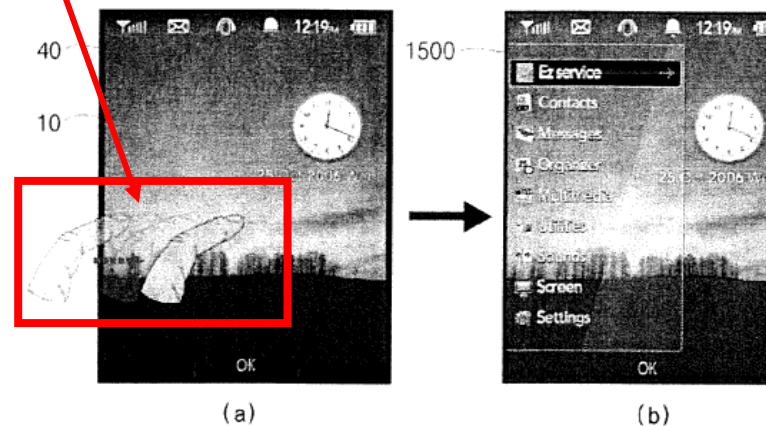


FIG. 15



EX1004 at FIGs. 14 and 15

“Drag” exclusively refers to an external object

 Ahn

[0116]

Referring to FIG.

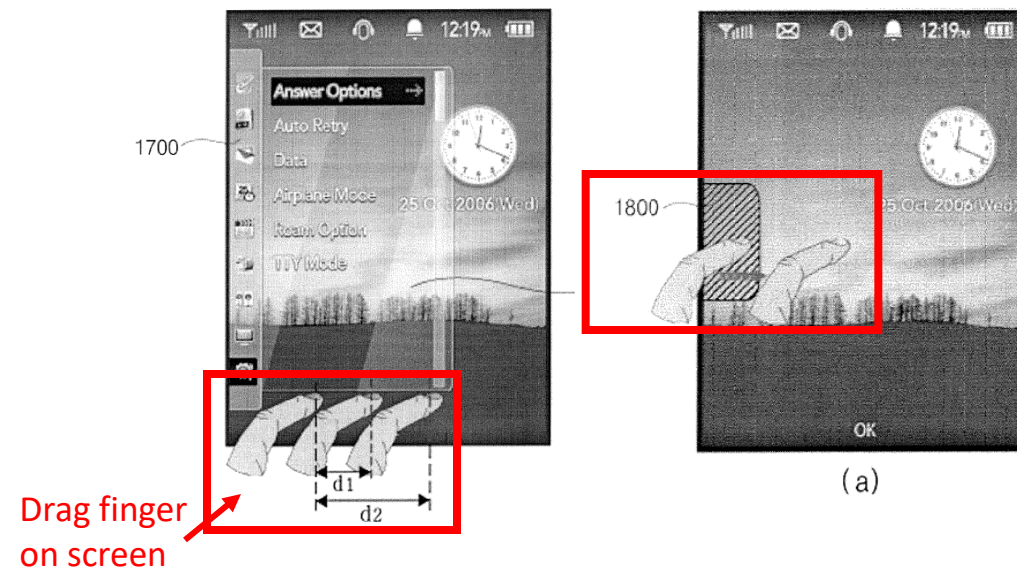
17, if the user drags the touch screen 10 by a distance longer than or equal to the distance $d1$ and shorter than the distance $d2$, the first menu list 1700 is displayed,

[0118] FIG. 18 illustrates an example of a screen for displaying a graphical display for notifying a start position of a touch and drag operation to a user. For example, referring to FIG. 18(a), if the user drags in a right direction after touching the screen, a graphical shadow 1800 is displayed in the display 40, and the menu list 1500 shown in FIG. 15(b) can be displayed in the display 40. In this case, as the user drags the graphic shadow 1800, the menu list 1500 can be displayed along the dragged graphic 1800.

EX1004 at [0116], [0118]; POR at 31-33

 Ahn

FIG. 17



EX1004 at FIGs. 17 and 18(a); POR at 33-36

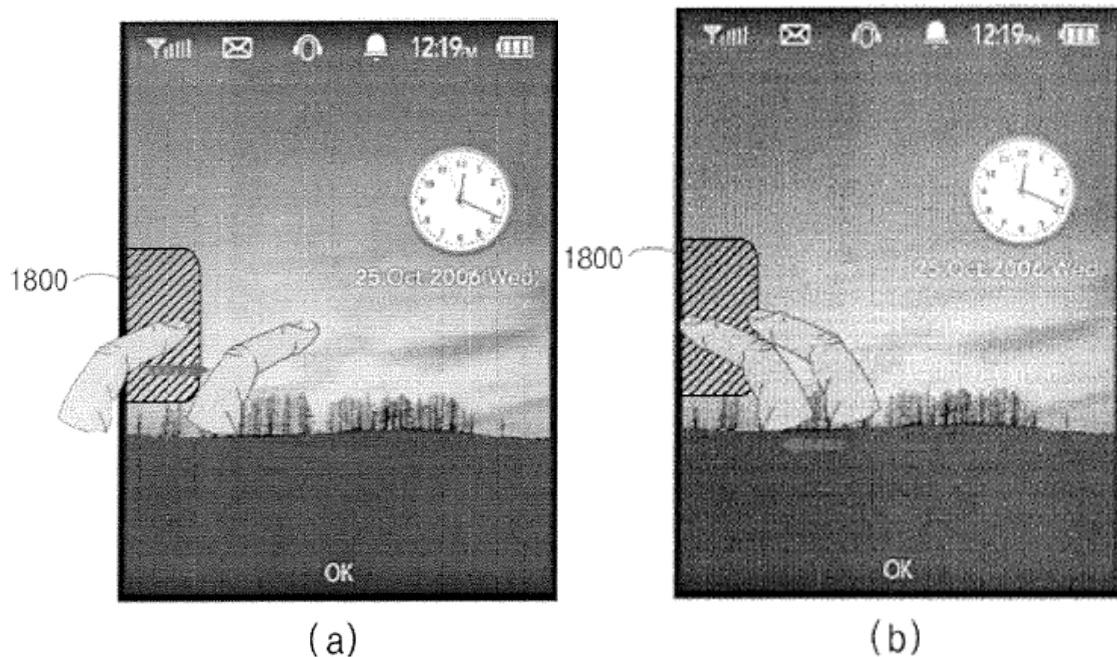
Adding graphic 1800 (“the object”) at the start position does not change Ahn’s operation

No “gesture” “move[s] the object on the touch screen”

Ahn does not depict graphic 1800 (“the object”) moving on the touch screen despite depicting icons moving in other figures.



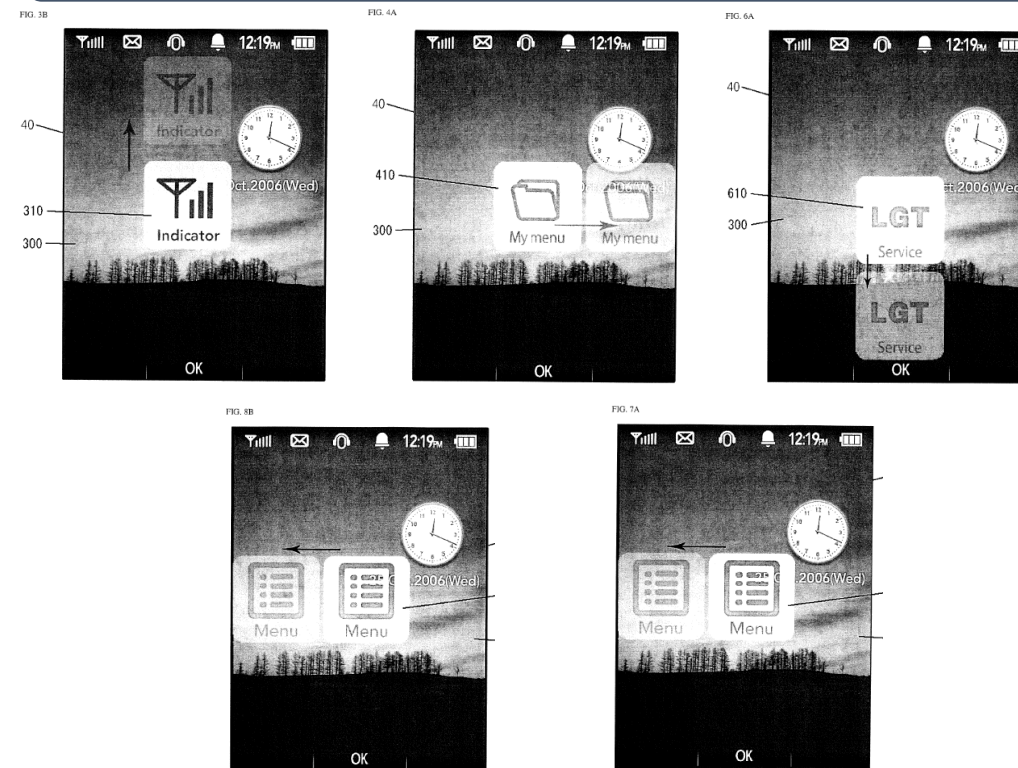
Graphic 1800 is not depicted as moving



EX1004 at FIG. 18; POR at 36



Ahn depicts moving objects



EX1004 at FIGs. 3B, 4A, 6A, 8B, and 7A; POR at 36-37

Generic reference to Chaudhri is insufficient



Petition

Indeed, as described by Chaudhri '842, it was known to utilize “cues” to help the user know what gesture to utilize and whether they are correctly performing the gesture (*e.g.*, graphics such as movable images that help the user visualize the correct gesture and how to complete it successfully). *See* EX1005, Abstract, [0054], [0062], [0073]; EX1003, [79]. Based at least on these teachings, a POSITA would have understood and found it obvious that, in the mobile device of the Ahn-Chaudhri combination, the *change in a distance magnitude of the gesture being detected on the touch screen* would have been *to thereby move the object on the touch screen* (*e.g.*, moving the graphic 1800 as part of the touch and drag gesture), as recited in [1.d.i]. EX1003, [79].

Pet. at 40-41

POR

Notably, the Petition does not articulate 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.” Pet., 40–41; EX2006, ¶99. Moreover, as discussed below, Petitioner's modification is the opposite of what Chaudhri teaches, *i.e.*, changing the optical intensity of “the object” not “the other object” to the extent a gesture moves “the object on the touch screen.”

POR at 39

Overview

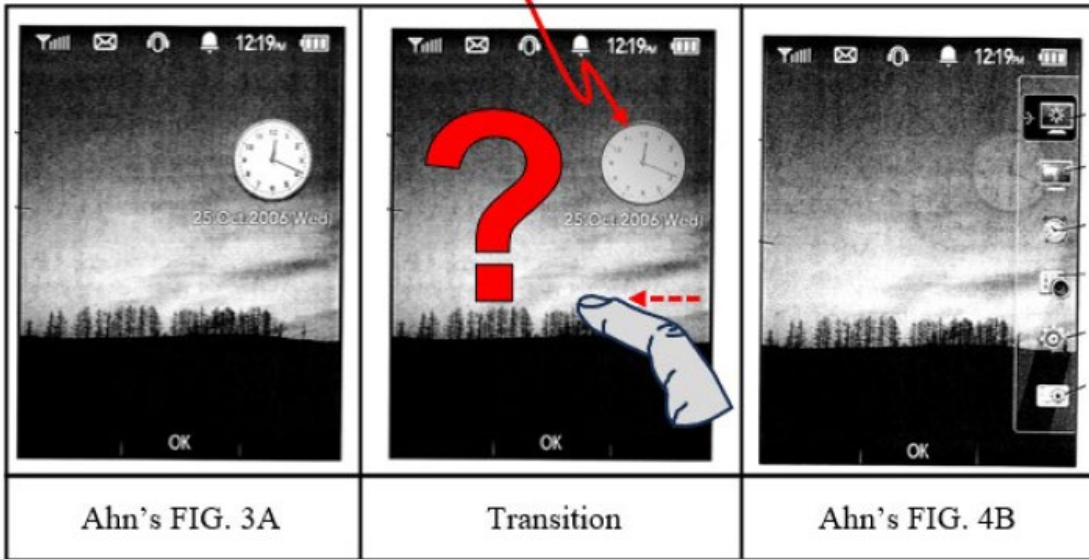
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- Motivations to Combine
- Dependent Claims

Modification does not show progress

No blurring of the “other object” (clock widget) “based on a change in distance magnitude of the gesture”

Petitioner's Modification

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

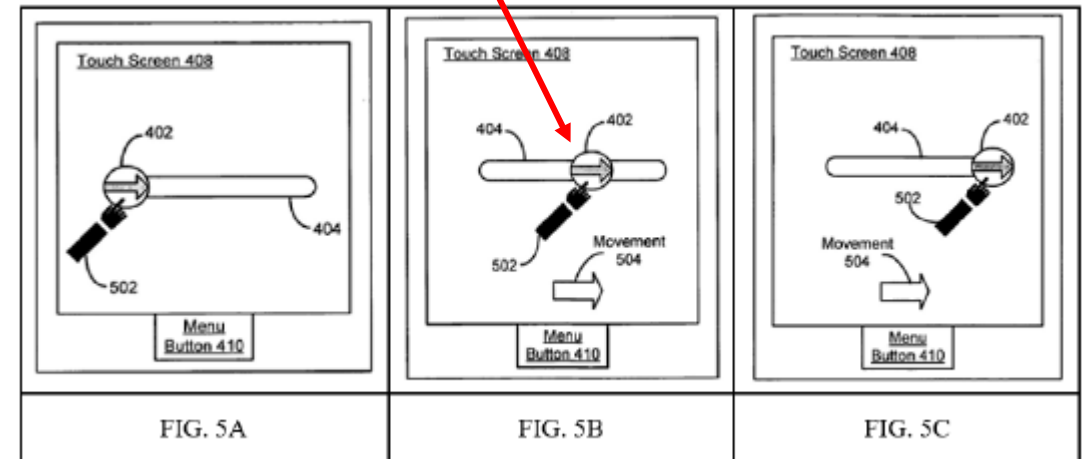


EX1004 at FIGs. 3A, 4B; POR at 40-42, 49



Chaudhri

60-70% progress

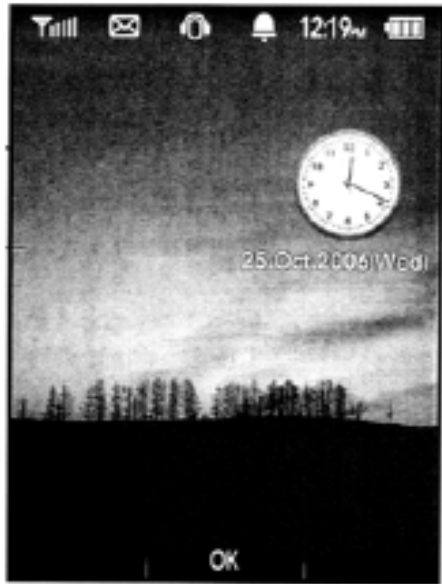


EX1005 at FIGs. 5A-5C; POR at 13

Modification does not show progress

No blurring of the “other object” (clock widget) “based on a change in distance magnitude of the gesture”

Petitioner's Modification



Standby Screen (0%)

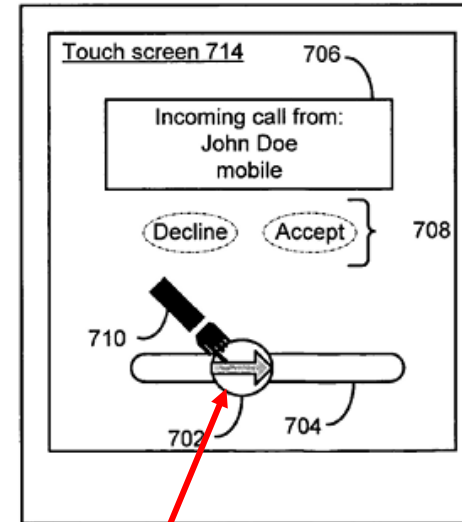


During Gesture (?%)

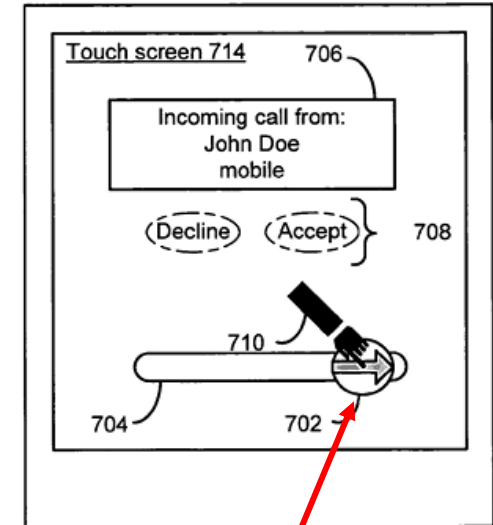
EX1004 FIGs. 3A, 4B; POR at 43



Chaudhri



40-50% progress



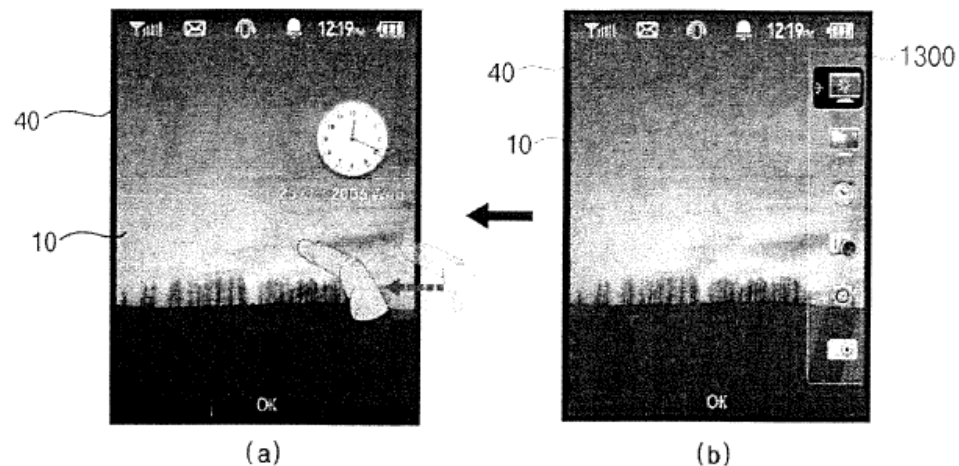
85-95% progress

EX1005 at FIGs. 7B-7C; POR at 48

Petitioner's modification is contrary to Chaudhri

Modification Decreases Visibility of Foreground Objects

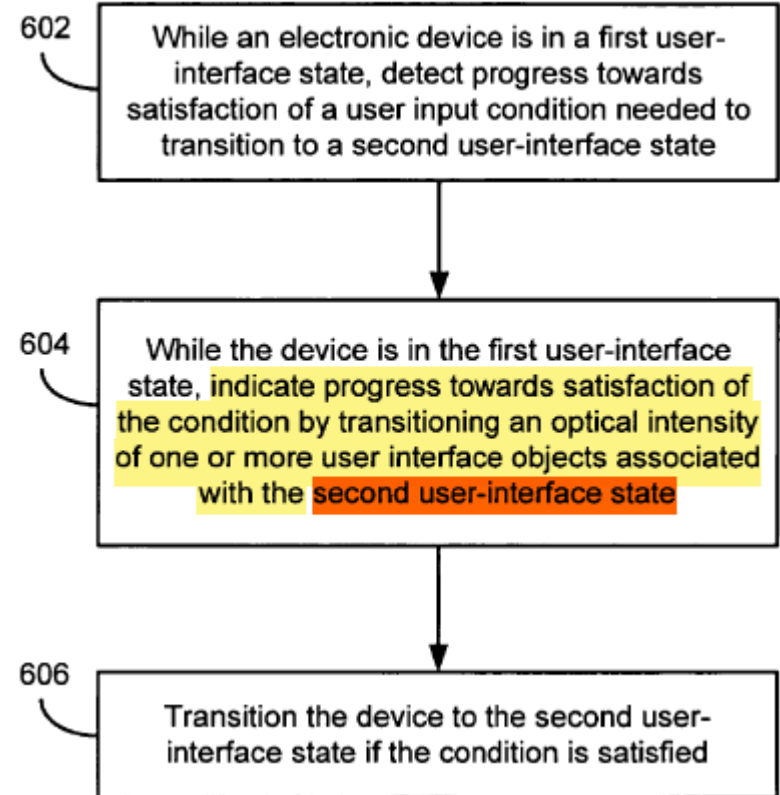
FIG. 13



EX1004 at FIG. 13; POR at 47



Chaudhri Increases Visibility of Unseen Objects

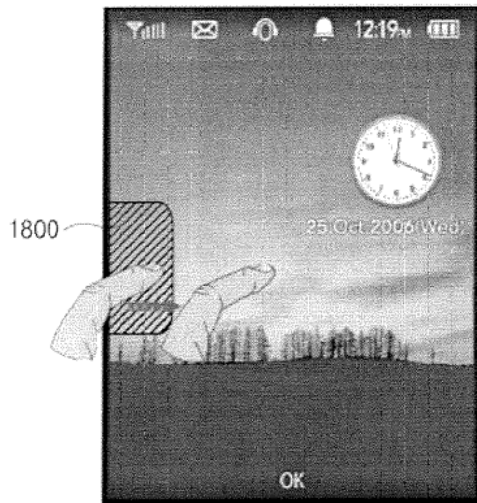


EX1005 at FIG. 6; POR at 46

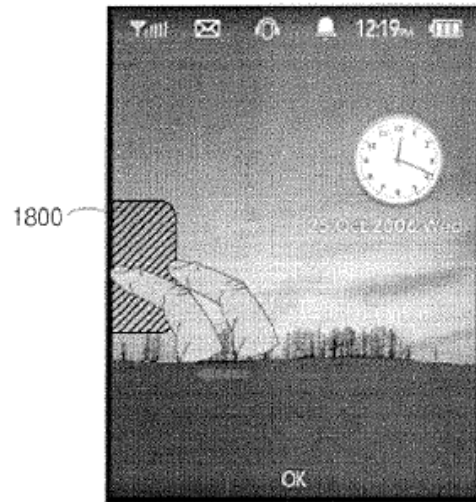
Petitioner's new Ahn theory in Reply

Petitioner's Reply:

- Focuses on movement of a “menu” that is not required by the claims
- Combines Ahn's FIGs. 18(a) & 18(b) that are different embodiments with no motivation
- Alleges new motivation of “straightforward design choice”



(a)



(b)

EX1004 at FIG. 18; Sur-reply at 2-3



[0118] FIG. 18 illustrates an example of a screen for displaying a graphical display for notifying a start position of a touch and drag operation to a user. For example, referring to FIG. 18(a), if the user drags in a right direction after touching the screen, a graphical shadow 1800 is displayed in the display 40, and the menu list 1500 shown in FIG. 15(b) can be displayed in the display 40. In this case, as the user drags the graphic shadow 1800, the menu list 1500 can be displayed along the dragged graphic 1800.

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EX1004 at [0118]-[0119]; Sur-reply at 2-3

Petitioner's new Ahn-Chaudhri theory in Reply

Petition did not modify Ahn with Chaudhri to move “graphic 1800” with the gesture, but only relied on Chaudhri for changes in “optical intensity”

Apple's Petition

Applying at least the above teachings of Chaudhri '842 in the context of Ahn's “touch and drag” gesture and Ahn's corresponding transition between a user interface state where the standby screen is displayed (*see, e.g.*, EX1004, FIG. 13a, 18(a)) and a user interface state where a menu list 1300 is displayed above or on top of the standby screen (*see, e.g.*, EX1004, FIG. 4B, 10, and 13b), a POSITA would have at least found it obvious to vary, according to the teachings of Chaudhri '842, 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.

Pet. at 38-39; Sur-reply at 5



Apple's Motivations are Limited to Changes in Optical Intensity

3. The Combination, Reasons to Combine, & Expectation of Success

First ... Chaudhri '842 provides details for utilizing transitions in optical intensity during transitions in user interface state ... Chaudhri '842 provides additional details about the use of varying optical intensity for user interface objects that a POSITA would have found helpful ...

Second Chaudhri '842 teaches that the “change in optical intensity of the user interface objects” provides a user with sensory feedback of the progress in transitioning between user interface states.”

Third, a POSITA would have known that transparency, translucency/blurring, and other “focus and context” techniques may be utilized ...

Fourth, a POSITA would have known that varying optical intensity for a user interface object ... would have been one of a limited number of ways ...

Pet. at 18-23

Petitioner's new Ahn-Chaudhri theory in Reply

Chaudhri's "cues" do not include "graphics such as moveable images," e.g., "unlock image 402"

Apple's Petition

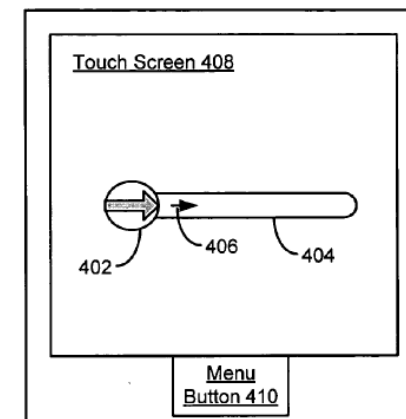
Indeed, as described by Chaudhri '842, it was known to utilize "cues" to help the user know what gesture to utilize and whether they are correctly performing the gesture (e.g., graphics such as movable images that help the user visualize the correct gesture and how to complete it successfully). See EX1005, Abstract, [0054], [0062], [0073]; EX1003, [79].

Pet. at 40-41; Sur-reply at 6

Chaudhri

[0065] The device is locked upon satisfaction of a lock condition (302), similar to the operation 202 (FIG. 2). An unlock image and visual cues of the unlock action using the unlock image are displayed (304). The operation 304 is the same as the operation 204 (FIG. 2), except that in the operation 304 an unlock image is displayed in addition to the visual cues.

[0071] FIGS. 4A-4B illustrate the GUI display of a device in a user-interface lock state, according to some embodiments of the invention. In FIG. 4A, device 400 includes a touch screen 408 and a menu button 410. The device 400 is locked and the touch screen 408 is displaying an unlock image 402 and visual cues. The visual cues shown include a channel 404 indicating the path of the gesture/movement along which the unlock image 402 is to be dragged, similar to a groove along which a slider switch moves; and one or more arrows 406 indicating the direction of the gesture/movement. The end of the channel 404 (in FIGS. 4A-4B and



EX1005 at FIG. 4, [0065], [0071]; Sur-reply at 6

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- Motivations to Combine
- Dependent Claims

Ahn's “blurring” occurs after gesture is complete



FIG. 4A

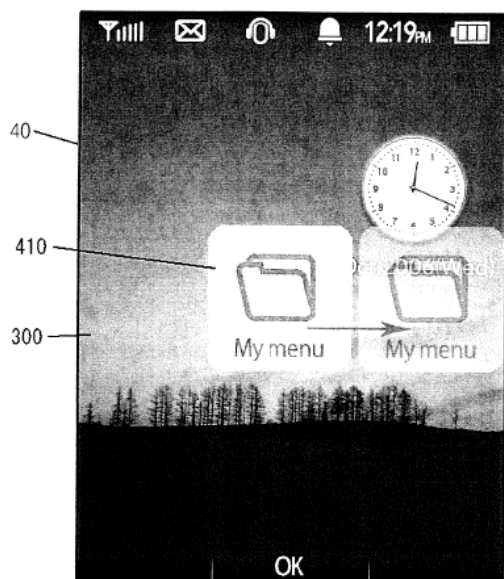
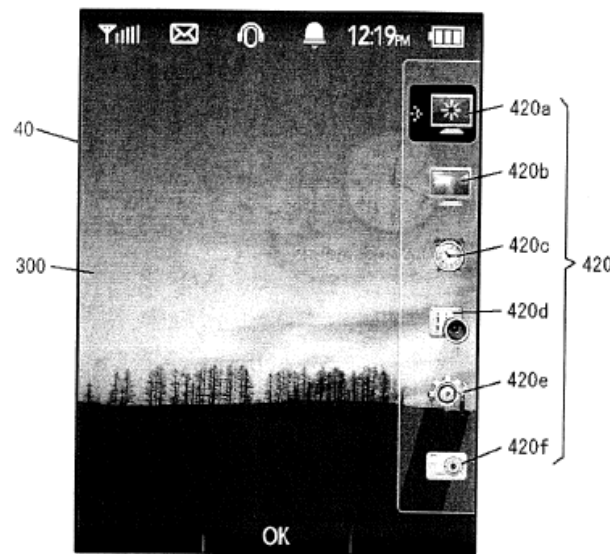


FIG. 4B



EX1004 at FIGs. 4A-4B; POR at 51-52



[0050] First, when the standby screen 300 is displayed, as in FIG. 3A, if the user selects the rightward direction key 34 provided in the key input device 30, an icon 410 corresponding to an icon displayed in the rightward direction key 34 disappears on the standby screen 300 while moving to the right side after being displayed around the center of the standby screen 300, as shown in FIG. 4A.

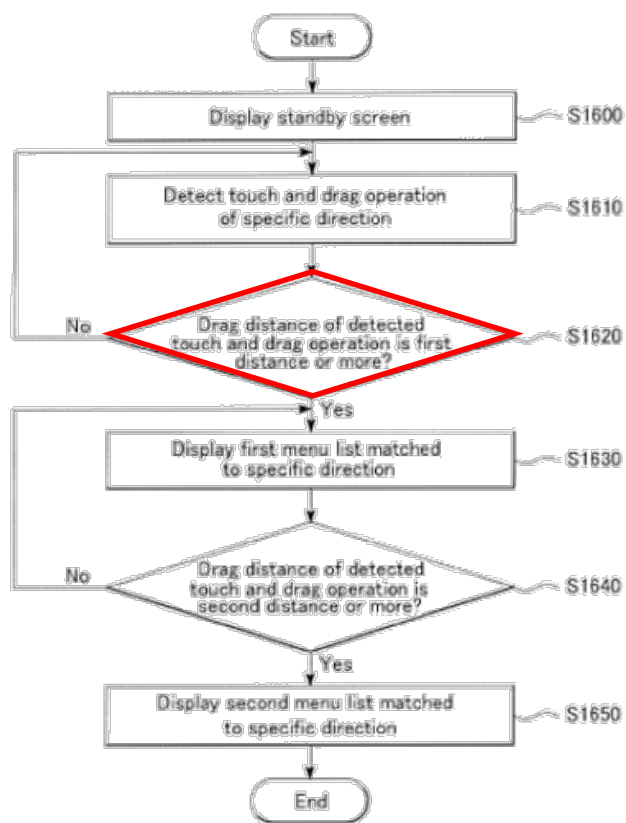
[0051] Thereafter, a user menu 420 as shown in FIG. 4B is displayed at the right side of the standby screen 300. The user menu 420 comprises sub-menus set by the user in order for the user to easily enter a menu in which the user frequently uses. In FIG. 4B, the user menu 420 may comprise sub-menus such as a brightness setting menu 420a, a standby screen setting menu 420b, an alarm setting menu 420c, a bell sound setting menu 420d, an initial value setting menu 420e, and a camera menu 420f.

EX1004 at [0050], [0051]

Ahn's "blurring" occurs after gesture is complete

 Ahn

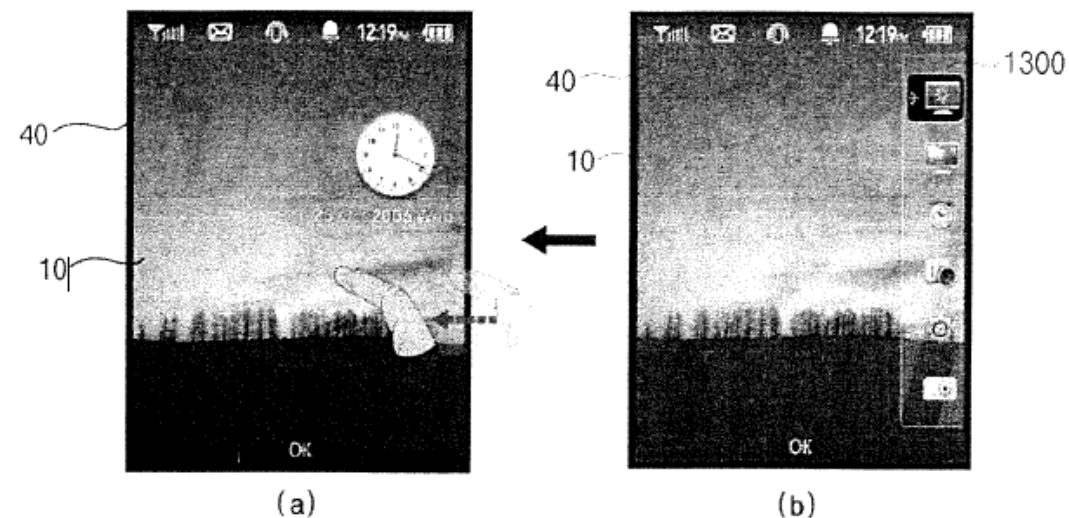
FIG. 16



EX1004 at FIG. 16; POR at 54

 Ahn

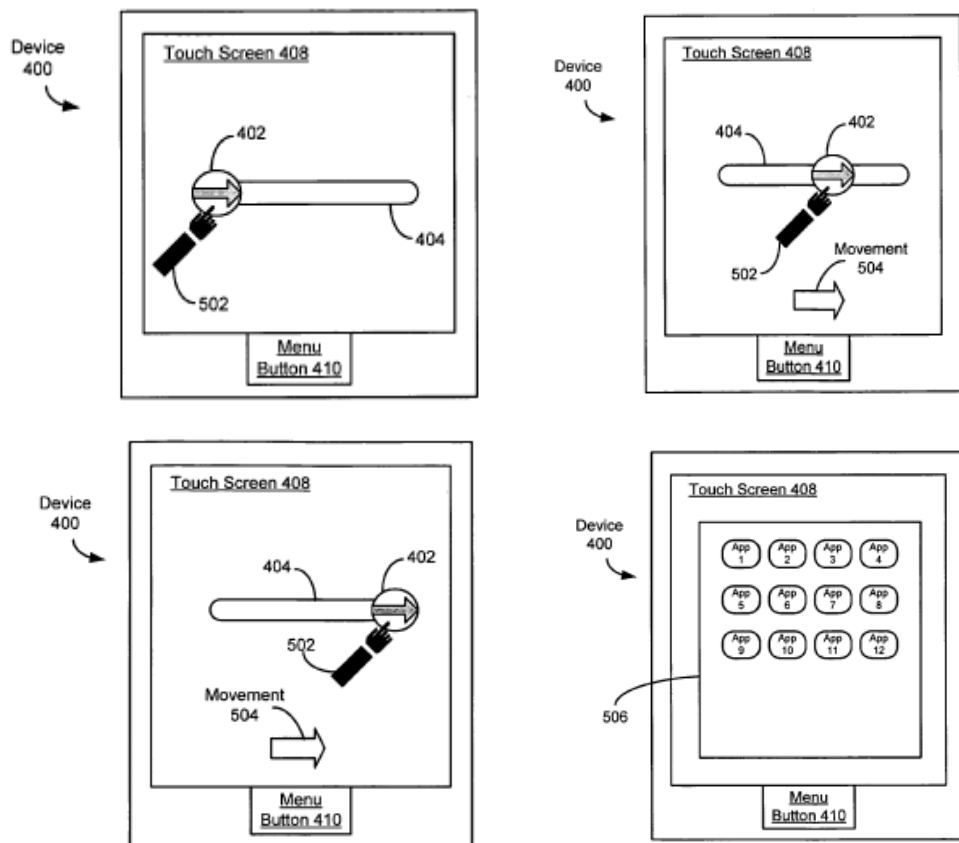
FIG. 13



EX1004 at FIG. 13; POR at 53

Chaudhri's menu is displayed after gesture is complete

Chaudhri



EX1005 at FIGs. 5A-5D; POR at 13

Chaudhri

[0076] In FIG. 5C, the user has dragged the unlock image 402 to the right end of the channel 404. Once the user releases the unlock image 402 at the right end of the channel 404, the unlock action is complete. Upon completion of the unlock gesture, the device unlocks and displays on the touch screen 408 user-interface objects associated with normal operation of the device 400. FIG. 5D illustrates an example of user-interface objects that may be displayed when the device 400 is unlocked. In FIG. 5D, the device 400 displays a menu 506. The menu 506 includes interactive user-inter-

EX1005 at [0076]; POR at 13

Petitioner's Reply relies on two distinct embodiments



Chaudhri's Indication of Progress

Indication of Progress Towards Satisfaction of a
User Input Condition ¶¶[0080]-[0096]

[0082] While the device is in the first user-interface state, 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. The change in optical intensity of the user-interface objects provides a user with sensory feedback of the progress in transitioning between user interface states.

EX1005 at [0082]; Sur-reply at 7-8

Pet. at 33-41



Chaudhri's Fade-in/Fade-out

Unlocking a Device via Gestures ¶¶[0052]-[0079]

...

[0079] In some embodiments, the lock/unlock feature may apply to specific applications that are executing on the device 400 as opposed to the device 400 as a whole. In some embodiments, an unlock gesture transitions from one application to another, for example, from a telephone application to a music player or vice versa. The lock/unlock feature may include a hold or pause feature. In some embodiments, as the user transitions from a first application and to a second application, a user interface for the second application may fade in (i.e., increase in intensity) and a user interface for the first application may fade out (i.e., decrease in intensity).

EX1005 at [0052], [0079]; Sur-reply at 7-11

Not cited in Petition

Chaudhri's transition is after the gesture is complete



Chaudhri's Transition Effect

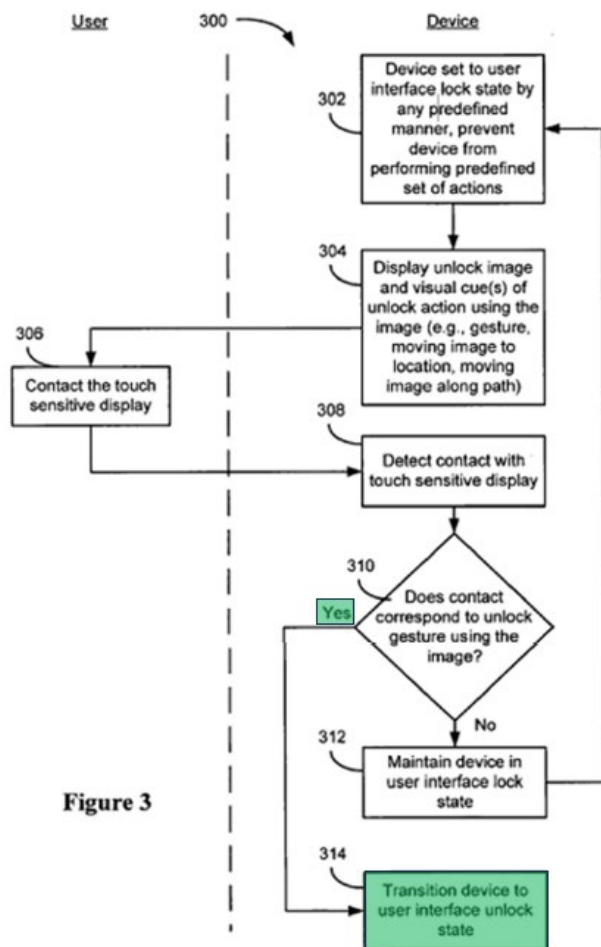


Figure 3

EX1005 at FIG. 3; Sur-reply at 13



Chaudhri's Fade-in

[0076] In FIG. 5C, the user has dragged the unlock image 402 to the right end of the channel 404. Once the user releases the unlock image 402 at the right end of the channel 404, the unlock action is complete. Upon completion of the unlock gesture, the device unlocks and displays on the touch screen 408 user-interface objects associated with normal operation of the device 400. FIG. 5D illustrates an example

[0079] In some embodiments, the lock/unlock feature may apply to specific applications that are executing on the device 400 as opposed to the device 400 as a whole. In some embodiments, an unlock gesture transitions from one application to another, for example, from a telephone application to a music player or vice versa. The lock/unlock feature may include a hold or pause feature. In some embodiments, as the user transitions from a first application and to a second application, a user interface for the second application may fade in (i.e., increase in intensity) and a user interface for the first application may fade out (i.e., decrease in intensity). The fade in and fade out may occur smoothly over a pre-determined time interval, such as 0.2 s, 1s or 2s. The pre-determined time interval may be in accordance with the unlock gesture, such as the time it takes the user to perform the gesture. Indication of Progress Towards Satisfaction of a User Input Condition

EX1005 at [0076], [0079]; Sur-reply at 13-14

Petitioner's new Chaudhri theory in Reply



Reply New Argument/Citation

In an example of a locked device, Chaudhri-842 describes an unlock action with respect to “an unlock image” displayed “along with the visual cues,” and teaches that performing an unlock action with respect to “the image includes dragging the unlock image..., which moves the unlock image across the touch screen.” EX1005, [0062]. To leave no confusion, an example of this “unlock action” is shown in FIGS. 5A-5C (reproduced below), which illustrate a user “performing [a] gesture by moving her finger, which is in continuous contact with the touch screen [], in the direction of movement” and an image being “dragged along...as a result of the gesture.” See EX1005, [0074]-[0079]; EX1023, [13].

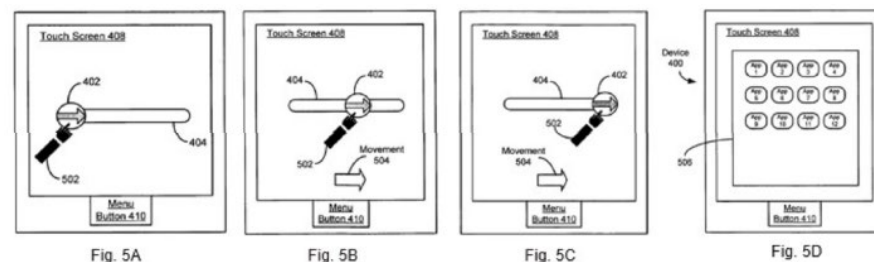
Reply at 5

- **New theory mapping “unlock image 402” does not establish any blurring occurs during “a portion of the gesture before a completion thereof is detected”**



Chaudhri

[0076] In FIG. 5C, the user has dragged the unlock image 402 to the right end of the channel 404. Once the user releases the unlock image 402 at the right end of the channel 404, the unlock action is complete. Upon completion of the unlock gesture, the device unlocks and displays on the touch screen 408 user-interface objects associated with normal operation of the device 400. FIG. 5D illustrates an example of user-interface objects that may be displayed when the device 400 is unlocked. In FIG. 5D, the device 400 displays a menu 506. The menu 506 includes interactive user-interface objects corresponding to various applications or operations. A user may interact with the user-interface objects to activate an application or perform an operation. It should be appreciated, however, that the device 400, upon being unlocked, may display additional or alternative user-interface objects.



EX1005 at [0076], FIGs. 5A-5D; Sur-reply at 8-10

Petitioner's new references in Reply

Reply

This sequence of events is consistent with the express teachings of Ahn and Chaudhri-842, which is unsurprising, as this method of opening a menu was well known in the art, as evidenced by other references cited in the Petition. For example, Hinckley describes the opening of a menu from the side of a display similar to Ahn and teaches that the menu “slides out and tracks with the user’s finger.” EX1006, [0080]. And Hisatomi describes “displaying [a] pull-out menu”

This is further corroborated by Nan, which describes an example of “edge gestures” that open a menu, and that a menu “presented in response to a gesture [can] be presented prior to completion of the gesture” and “progressively as the

Reply at 7-8

Reply

Thus, as explained in the Petition, “[a] POSITA would have found obvious from these teachings that ... Ahn’s menu list would have been graphically displayed as emerging onto the display based on a change in a magnitude of the ‘touch and drag’ gesture being detected on the touch screen.” Petition, 28; *see also* EX1023, [16].

Reply at 9

- **Petitioner provides no motivation to combine these new references**
- **References relate to opening side/edge “menus” not movement of an “object”**
- **Petitioner’s conclusion is divorced from the claim language – no “menu” in the claim**

Overview

- '727 Patent
 - Touch Based Gestures
 - Independent Claim 1
- Technical Background
 - Ahn / Chaudhri
- Limitation [1.d.i]
 - No “gesture” “move[s] the object on the touch screen”
 - No “other object” is “blurred “based on a change in distance magnitude of the gesture”
 - No blurring occurs during “a portion of the gesture before a completion thereof is detected”
- **Limitation [1.d.ii]**
 - **No increasing blur of the “other object” as a function of distance magnitude of the “gesture”**
- Motivations to Combine
- Dependent Claims

Petitioner does not address “a function of an increase in the distance magnitude” in the Petition

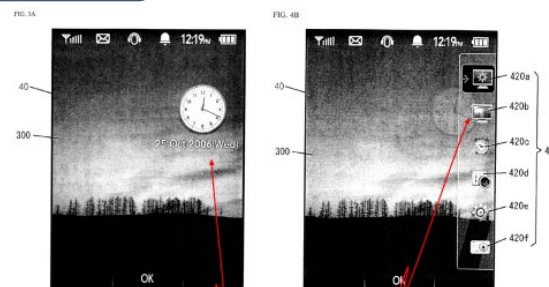


Petition

[1.d.ii]

The Ahn-Chaudhri combination renders obvious Element [1.d.ii]. EX1003, [80]-[83].

As discussed with respect to Element [1.d.i], *supra*, a POSITA would have at least found it obvious to vary, according to the teachings of Chaudhri '842, 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. See EX1005, [0080]-[0089]; EX1003, [81]. Consistent with the illustration of FIGS. 4B, 10, and 13b, a POSITA would have understood and found it obvious to apply this progressive transition in blur to the entire portion of the standby screen that is blurred. EX1003, [81].



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

EX1004, FIGS. 3A and 4B (annotated)

For example, as shown in FIG. 4B (annotated above), the entire clock widget is illustrated as being blurred, including those portions that are not overlapped by the menu 420. See EX1004, FIG. 4B; EX1003, [82]. And Chaudhri '842 describes applying its changes in optical intensity to entire "graphical objects," not just portions of them. See EX1005, [0042] ("The optical intensity module 142 controls the optical intensity of graphical objects, such as user-interface objects, displayed on the touch screen 126."); [0079] ("a user interface for the second application may

faded in (i.e., increase in intensity) and a user interface for the first application may fade out (i.e., decrease in intensity)"); [0082] ("The change in optical intensity of the user-interface objects provides a user with sensory feedback of the progress in transitioning between user interface states."); [0085] ("The optical intensity of a user-interface object, as used herein, is the object's degree of visual materialization."); EX1003, [82].

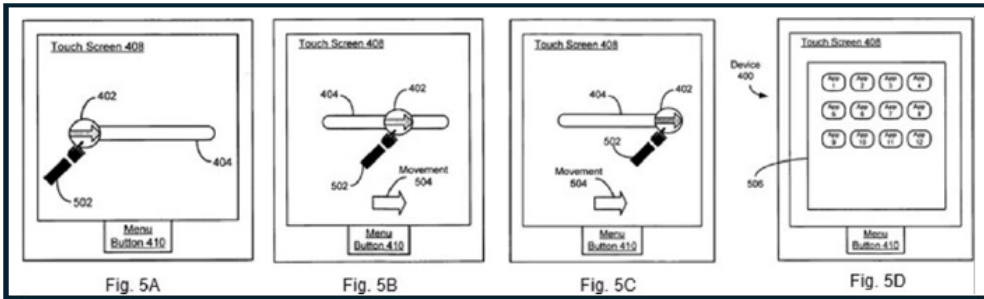
Based on these teachings a POSITA would have at least found it obvious in the mobile device of the Ahn-Chaudhri combination *that a magnitude of the blur itself, and not a magnitude of an area of the touch screen that is blurred, is increased as a function of an increase in the distance magnitude* (e.g., the entire area of the clock widget is progressively blurred as the touch and drag gesture is detected and a menu is opened, such that the size of the area being blurred does not change), as recited in [1.d.ii]. EX1003, [83].

Pet. at 41-43

- Petition does not analyze in any way increased blurring as an increase in distance of a gesture

Chaudhri does not teach blurring of the “other object” as an increase in distance of the gesture

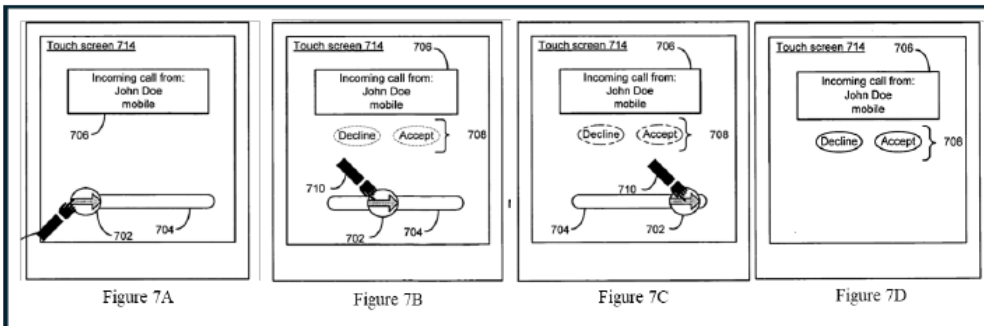
Chaudhri



Chaudhri

[0087] In some embodiments, the indication of progress towards completion of the user input condition is a function of the user's satisfaction of the condition. For example, for a transition to an unlock state, the indication of progress towards completion is a function of the user's performance of an unlock action. For a linear function, the indication of progress is 10% complete when the unlock action is 10% complete; the indication of progress is 50% complete when the unlock action is 50% complete, and so forth, up to 100% completion of the unlock action, at which point the transition to the unlock state occurs.

EX1005 at [0087]-[0088]; POR at 56-57



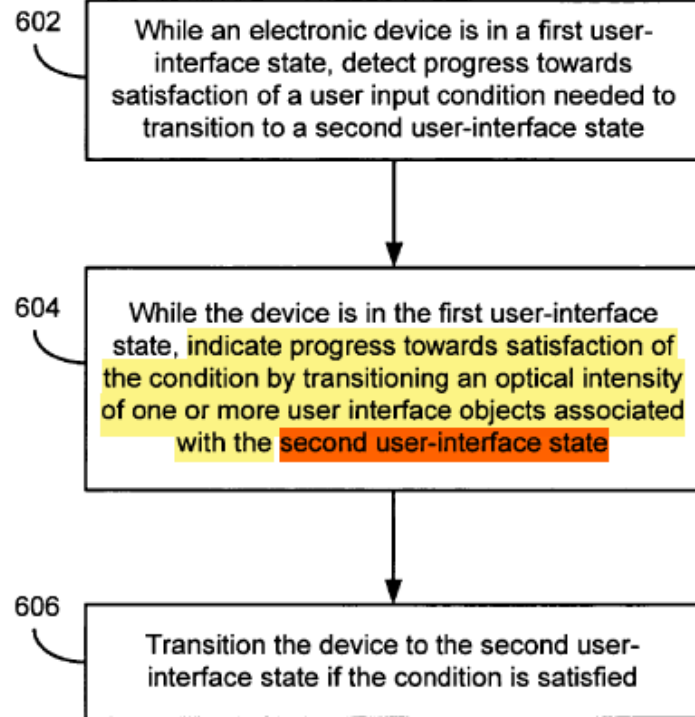
EX1005 at FIGs. 5A-5D, 7A-7D; POR at 56-57

- “Indication of progress” is on the lock screen that can only be related to “the object” [Ahn’s graphic 1800] not the “other object” [Ahn’s clock widget] as required

Chaudhri does not teach increase in blurring as a function of distance of the gesture



Chaudhri



EX1005 at FIGs. 8A-8C



Chaudhri

Correspondingly, for a linear function, the transition of the optical intensity from an initial value to a final value is 10% complete when the unlock action is 10% complete; the transition is 50% complete when the unlock action is 50% complete, and so forth, up to 100% completion of the unlock action, at which point the optical intensity is at its final value. In some embodiments, the user may perceive the optical intensity transition as a fading in of the user-interface objects as the unlock action is performed. It should be appreciated that the function need not be linear and alternative functions may be used, further details of which are described below, in relation to FIGS. 8A-8C.

[0088] 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. For example, if the gesture includes moving the finger from one edge of the screen to the opposite edge horizontally, then 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.

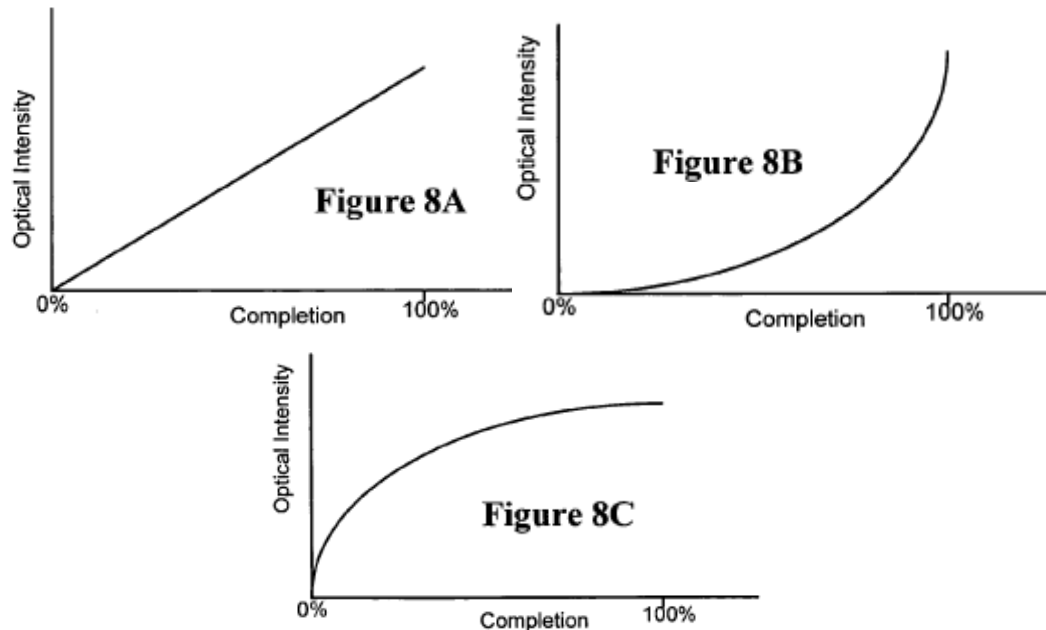
EX1005 at [0087]-[0088]; POR at 56; Sur-reply at 14-15

- “Second user-interface state” increases in optical intensity – the opposite of blurring

Chaudhri does not teach increase in blurring as a function of distance of the gesture



Chaudhri



EX1005 at FIGS. 8A-8C

“Second user-interface state” increases in optical intensity – the opposite of blurring



Chaudhri

Correspondingly, for a linear function, the transition of the optical intensity from an initial value to a final value is 10% complete when the unlock action is 10% complete; the transition is 50% complete when the unlock action is 50% complete, and so forth, up to 100% completion of the unlock action, at which point the optical intensity is at its final value. In some embodiments, the user may perceive the optical intensity transition as a fading in of the user-interface objects as the unlock action is performed. It should be appreciated that the function need not be linear and alternative functions may be used, further details of which are described below, in relation to FIGS. 8A-8C.

[0088] 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. For example, if the gesture includes moving the finger from one edge of the screen to the opposite edge horizontally, then 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.

EX1005 at [0087]-[0088]; POR at 56; Sur-reply at 14-15

Overview

- '727 Patent
 - Touch Based Gestures
 - Independent Claim 1
- Technical Background
 - Ahn / Chaudhri
- Limitation [1.d.i]
 - No “gesture” “move[s] the object on the touch screen”
 - No “other object” is “blurred “based on a change in distance magnitude of the gesture”
 - No blurring occurs during “a portion of the gesture before a completion thereof is detected”
- Limitation [1.d.ii]
 - No increasing the blur of the “other object” as a function of the distance magnitude of the “gesture”
- **Motivations to Combine**
- Dependent Claims

Petition fails to identify a problem with Ahn that Chaudhri solves

Ahn teaches blurring via translucency – no reason to look to Chaudhri for another method



Petition

Ahn teaches at least two ways that its user interface may utilize blur. 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.” EX1004, [0070] (emphasis added). A POSITA would have known and found it obvious that, when differentiated from “transparent” and “opaque” in the manner they are used by Ahn, the word “translucent” means “allowing light, but not detailed images, to pass through; semitransparent.” EX1009, 6. 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.” EX1009, 3. 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].

Pet. at 10-11, 19-20



Dr. Terveen

24 Q. So the translucency of a menu would help
25 the user distinguish between the menu and, for
Page 23
1 example, the clock. Correct?
2 A. Well, if a menu, or any interface object,
3 but let's say a menu. If it is shown in a
4 translucent way, that means it doesn't fully allow
5 light to pass through, conceptually.
6 That would mean that any -- any part of
7 anything below it would be -- would be blurred or
8 faded, as one would describe it.
9 And that would have the effect of helping
10 the user distinguish between the object on top, if
11 you will, that was displayed in a translucent form,
12 and anything behind it. Because the stuff behind
13 it -- behind the object would, in fact, be blurred
14 or faded.
15 So yes. It would have that distinguishing
16 effect.
17 Q. And that would help bring focus to the
18 menu. The translucent menu. Correct?
19 A. Yes. That would be one way of
20 conveying -- conveying focus. Yes.

EX2008 at 22:24-23:20; POR at 18

Petition fails to identify a problem with Ahn that Chaudhri solves

Ahn's translucency provides "visual indication" and draws a user's attention" – no reason to look to Chaudhri for another method

Petition

Second, Chaudhri '842 teaches that the "change in optical intensity of the user-interface objects provides a user with sensory feedback of the progress in performing a predefined gesture, for example, the changes in optical intensity provide the user a visual indication that they are performing a particular operation (e.g., the optical intensity changes help the user see more clearly that the user interface state is changing).

Third, a POSITA would have known that transparency, translucency/blurring, and other "focus and context" techniques may be utilized in user interfaces to help draw a user's attention to the most relevant part of a user interface.

Pet. at 20-22

Dr. Terveen

24 Q. So the translucency of a menu would help
25 the user distinguish between the menu and, for

Page 23

1 example, the clock. Correct?

2 A. Well, if a menu, or any interface object,
3 but let's say a menu. If it is shown in a
4 translucent way, that means it doesn't fully allow
5 light to pass through, conceptually.

6 That would mean that any -- any part of
7 anything below it would be -- would be blurred or
8 faded, as one would describe it.

9 And that would have the effect of helping
10 the user distinguish between the object on top, if
11 you will, that was displayed in a translucent form,
12 and anything behind it. Because the stuff behind
13 it -- behind the object would, in fact, be blurred
14 or faded.

15 So yes. It would have that distinguishing
16 effect.

17 Q. And that would help bring focus to the
18 menu. The translucent menu. Correct?

19 A. Yes. That would be one way of
20 conveying -- conveying focus. Yes.

EX2008 at 22:24-23:20; POR at 18-19

Petition fails to identify a problem with Ahn that Chaudhri solves

Petitioner acknowledges that Ahn provides “the blurring effect in a binary manner” and Petitioner provides no reason to look to Chaudhri for another method



Petition

Fourth, a 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 explicitly shown in FIGS. 4B, 10, and 13B of Ahn. EX1003, [55]; see *Uber Technologies, Inc. v. X One, Inc.*, 957 F.3d 1334, 1339-40 (Fed. Cir. 2020). **Either 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].

Pet. at 23; POR 19-20

Petitioner new motivation in Reply

Ahn's "transparent" menu provides no benefit beyond a "translucent" menu



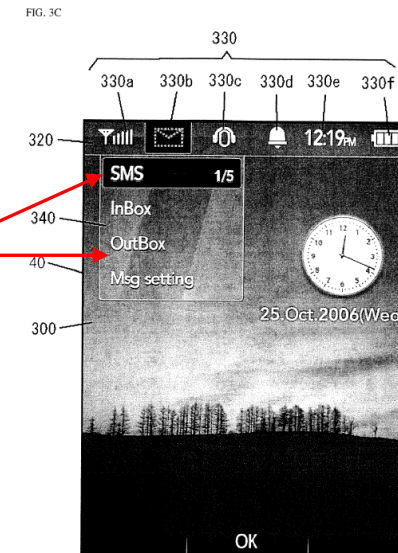
In the proposed combination, a POSITA would have turned to Chaudhri-842 with respect to this explicit implementation of Ahn. Petition, 19-20. That Ahn illustrates and describes this implementation demonstrates its utility, but Ahn goes further to explain a benefit of a transparent menu: "the user can directly enter a menu related to the icon 330 while viewing the standby screen 300 in a standby screen state." EX1004, [0039]. This benefit would not be achieved with either a translucent or opaque menu, so a POSITA seeking the benefit would not utilize a translucent menu, as Smith implies. See POR, 18; EX1023, [24]. Accordingly, the Petition's first motivation stands, and it alone would have supported the Petition's Ahn-Chaudhri combination.

Reply at 18



[0039] Further, as a pop-up menu window 340 related to the icon 330 is transparently displayed on the standby screen 300, the preset standby screen 300 is not hidden by the pop-up menu window 340 related to the icon 330, whereby the user can directly enter a menu related to the icon 330 while viewing the standby screen 300 in a standby screen state.

Opaque or translucent portions described as "transparently displayed"



Still able to view standby screen

EX1004 at FIG. 3C, [0039]; Reply at 18; Sur-reply at 19

Petitioner new motivation in Reply

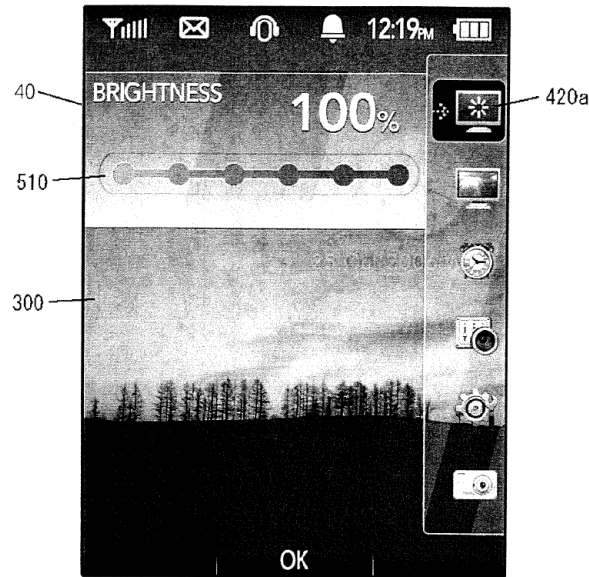
Ahn's "transparent" menu provides no benefit beyond a "translucent" menu



Ahn

[0053] Referring to FIG. 5A, when the user selects the brightness setting menu 420a, a brightness setting window 510 for setting brightness is displayed in a transparent window, for example, at the left side of the brightness setting menu 420a.

FIG. 5A



EX1004 at FIG. 5A, [0053]; Sur-reply at 19-20

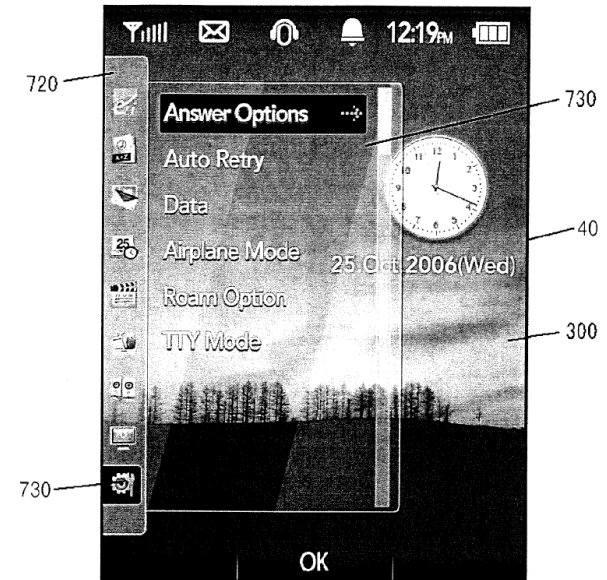


Ahn

[0064] Thereafter, a basic setting menu list 720 of the mobile communication terminal 100 shown in FIG. 7B is displayed in a transparent window form in a left area of the standby screen 300. The basic setting menu list 720 comprises a plurality of menus, and each menu comprises an icon 730 and a menu name 740 corresponding thereto. A plurality of menus constituting the basic setting menu list 720 are arranged in a vertical direction, and the icon 730 and the menu name 740 are arranged in a horizontal direction. In this implementation, the user can select a specific menu while viewing the standby screen 300 without entering a separate menu screen.

[0066] If the user presses the rightward direction key 34 or the confirmation key 31 after moving the cursor 750 to one menu of the basic setting menu list 720 shown in FIG. 7B, a width of the basic setting menu list 720 is reduced, as shown in FIG. 7C, and sub-menus 730 of the selected menu are displayed in a transparent window form at the right side of the basic setting menu list 720.

FIG. 7C



EX1004 at FIG. 7C, [0064], [0066]; Sur-reply at 19-20

Petitioner fails to show an “obvious to try” theory



“To prove obviousness under an obvious to try theory, [Petitioner] must show (1) a design or market need to solve a particular problem, and (2) that ‘there are a finite number of identified, predictable solutions’ that would lead to an expectation of success.”

Grunenthal GMBH v. Alkem Labs. Ltd., 919 F.3d 1333, 1345 (Fed. Cir. 2019); sur-reply at 10.



Apple’s Petition

Fourth, a 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 explicitly shown in FIGS. 4B, 10, and 13B of Ahn. EX1003, [55]; see *Uber Technologies, Inc. v. X One, Inc.*, 957 F. 3d 1334, 1339-40 (Fed. Cir. 2020). Either 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].

NO PROBLEM

Pet. at 23

Petitioner fails to show an “obvious to try” theory



“To prove obviousness under an obvious to try theory, [Petitioner] must show (1) a design or market need to solve a particular problem, *and* (2) that ‘there are a finite number of identified, predictable solutions’ that would lead to an expectation of success.”

Grunenthal GMBH v. Alkem Labs. Ltd., 919 F.3d 1333, 1345 (Fed. Cir. 2019); sur-reply at 10.

Additionally, Petitioner’s and Dr. Terveen’s framing of blurring as being limited to merely ‘binary’ or ‘progressive’ is incorrect and unsupported. Reply, 20. There are numerous ways to “blur” an object that are not progressively as a function of the user’s gesture. For example, blurring after a keypad input (EX1004, [0049]–[0051]); providing an intermediate animation before the blurring operation (EX1004, FIG. 4A); blurring the object instantaneously at the start of the gesture, during the gesture, or after the gesture is complete; blurring gradually at the start of the gesture or after the gesture, blurring over a predetermined time (EX1005, [0079]) at the start, during, or after the gesture.

Sur-reply at 23-24

Dr. Terveen’s blatant

neglect of alternatives does not somehow narrow the choices to two. Moreover, if the problem/solution is viewed without hindsight narrowing, there are countless alternatives to blurring which further undermine this false binary.

Sur-reply at 24

Dr. Terveen’s contrived finiteness.

Overview

- '727 Patent
 - Touch Based Gestures
 - Independent Claim 1
- Technical Background
 - Ahn / Chaudhri
- Limitation [1.d.i]
 - No “gesture” “move[s] the object on the touch screen”
 - No “other object” is “blurred “based on a change in distance magnitude of the gesture”
 - No blurring occurs during “a portion of the gesture before a completion thereof is detected”
- Limitation [1.d.ii]
 - No increasing the blur of the “other object” as a function of the distance magnitude of the “gesture”
- Motivations to Combine
- **Dependent Claims**

Limitation [2.b] and Claims 3 and 11-14



Object Location and Aspect

[2.b] The device of claim 1, wherein the device is configured such that: **the object** is displayed closer to a top edge of the touch screen than a bottom edge of the touch screen;

3. The device of claim 2, wherein the device is configured such that **the object** is displayed closer to a right edge of the touch screen than a left edge of the touch screen.

11. The device of claim 2, wherein the device is configured such that the aspect of **the object** includes a size of the object.

12. The device of claim 2, wherein the device is configured such that the aspect of **the object** includes a size of the object, ...

13. The device of claim 2, wherein the device is configured such that the aspect of **the object** includes a color of the object.

14. The device of claim 2, wherein the device is configured such that the aspect of **the object** includes a color of the object, ...



Apple's Reply

Yet, the Petition cited to Ahn's disclosure that "[a] position in which **the item list** is displayed in the display 40 can be preset" and explained that a "POSITA would have understood and found obvious that **the position at which the menus are displayed** (e.g., at which edge) is a design choice." Petition, 47 (citing EX1004, [0104]). These arguments inappropriately focus on "the disclosures of individual prior-art references, with little recourse to the knowledge, creativity, and common sense that an ordinarily skilled artisan." *Randall Mfg. v. Rea*, 733 F. 3d 1355, 1362 (Fed. Cir. 2013). Smith's arguments with respect to claims 3 and 11-14 similarly do not account for the cited evidence.

Reply at 24-25

Limitation [2.c] and Claims 11-14

Petitioner does not address that the “aspect” is modified based on the change in distance of the gesture



Object Aspect

[2.c] The device of claim 1, wherein the device is configured such that: **an aspect of the object** other than a location thereof is modified, based on the change in the distance magnitude of the gesture being detected on the touch screen;

11. The device of claim 2, wherein the device is configured such that **the aspect of the object** includes a size of the object.

12. The device of claim 2, wherein the device is configured such that **the aspect of the object** includes a size of the object, ...

13. The device of claim 2, wherein the device is configured such that **the aspect of the object** includes a color of the object.

14. The device of claim 2, wherein the device is configured such that **the aspect of the object** includes a color of the object, ...

POR

Claims 11-12:

Petitioner

relies on its arguments related to Limitation [2.c], e.g., “graphic 1800” disappearing in Ahn’s paragraph 119. Pet., 67, 49.⁶ However, Ahn fails to teach that menu identifier icon/graphic 1800 changes in size with the change in distance magnitude of the gesture. EX2006, ¶154.

Claims 13-14:

Petitioner

cites Chaudhri’s paragraph 85 that refers to “visual differentiation between the user-interface object and the background, based on color...” and also cites to Chaudhri’s paragraph 44, claim 10, and EX1008. EX2006, ¶158. However, while including the word “color,” Chaudhri’s paragraph 85 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 44 nor claim 10 address “color.” *Id.*

POR at 69-70

Claims 5, 6, and 17

Petitioner relies on Chaudhri's "fade in"/ "fade out" and FIGs. 8A-8C that show only and increase in "optical intensity" – the opposite of blurring

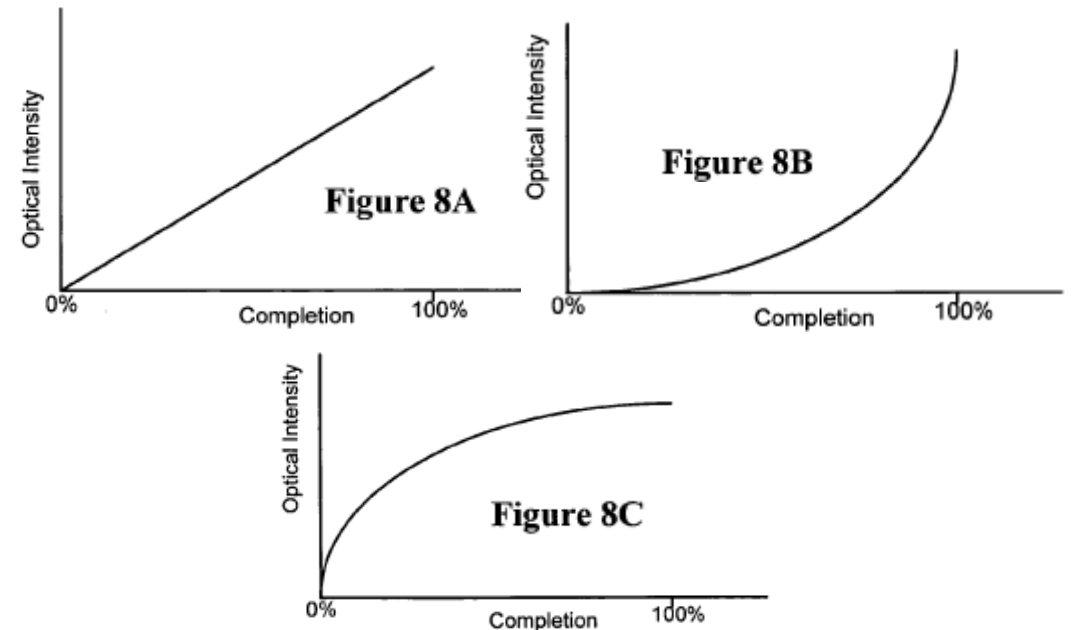
Object Blurring

5. The device of claim 2, wherein the device is configured such that, 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.

6. The device of claim 2, wherein the device is configured such that, during at least a part 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.

17. The device of claim 2, wherein the device is configured such that: ... during at least a part of an initial change in the distance magnitude, an entirety of the object is blurred;

Chaudhri



EX1005 at FIGs. 8A-8C; Reply at 25-26; Sur-reply at 17-18