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Application Number	Not Yet Assigned
Filing Date	Herewith
First Named Inventor	Sanjiv Sirpal
Title	FOCUS CHANGE UPON APPLICATION LAUNCH
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	6583-8-CON

SIGNATURE of Applicant or Patent Practitioner

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SIGNATURE of Applicant for Patent

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FOCUS CHANGE UPON APPLICATION LAUNCH

CROSS REFERENCE TO RELATED APPLICATION

[0001] The present application is a continuation of U.S. Patent Application Serial No. 13/248,618, filed on September 29, 2011, which claims the benefits of and priority, under 35 U.S.C. § 119(e), to U.S. Provisional Application Serial Nos. 61/389,000, filed October 1, 2010, entitled "DUAL DISPLAY WINDOWING SYSTEM;" 61/389,117, filed October 1, 2010, entitled "MULTI-OPERATING SYSTEM PORTABLE DOCKETING DEVICE;" 61/389,087, filed October 1,2010, entitled "TABLET COMPUTING USER INTERFACE;"61/458,150, filed November 17, 2010, entitled "DUAL SCREEN EMAIL CLIENT;" 61/539,884, filed September 27, 2011, entitled "MOBILE DEVICE." Each of the aforementioned documents is incorporated herein by this reference in their entirety for all that they teach and for all purposes.

BACKGROUND

[0002] A substantial number of handheld computing devices, such as cellular phones, tablets, and E-Readers, make use of a touch screen display not only to deliver display information to the user but also to receive inputs from user interface commands. While touch screen displays may increase the configurability of the handheld device and provide a wide variety of user interface options, this flexibility typically comes at a price. The dual use of the touch screen to provide content and receive user commands, while flexible for the user, may obfuscate the display and cause visual clutter, thereby leading to user frustration and loss of productivity.

[0003] The small form factor of handheld computing devices requires a careful balancing between the displayed graphics and the area provided for receiving inputs. On the one hand, the small display constrains the display space, which may increase the difficulty of interpreting actions or results. On the other, a virtual keypad or other user interface scheme is superimposed on or positioned adjacent to an executing application, requiring the application to be squeezed into an even smaller portion of the display.

[0004] This balancing act is particularly difficult for single display touch screen devices. Single display touch screen devices are crippled by their limited screen space. When users are entering information into the device, through the single display, the ability to interpret information in the display can be severely hampered, particularly when a complex interaction between display and interface is required.

SUMMARY

[0005] There is a need for a dual multi-display handheld computing device that provides for enhanced power and/or versatility compared to conventional single display handheld computing devices. These and other needs are addressed by the various aspects, embodiments, and/or configurations of the present disclosure. Also, while the disclosure is presented in terms of exemplary embodiments, it should be appreciated that individual aspects of the disclosure can be separately claimed.

[0006] In one embodiment, a method includes displaying a first image that is in focus in a first display of a first screen. First input is received indicating a request to launch a second application. The second application is launched in response to the first input. The second application displays a second image on a second display. The focus is then changed from the first image to the second image.

[0007] Another embodiment is directed to a non-transitory computer readable medium storing computer executable instructions that when executed by at least one processor perform a method. The method includes receiving, by one of a first touch sensitive display, a second touch sensitive display, or a gesture capture region, input indicating a request to launch an application. In response to receiving the input, the focus is changed from a first image displayed on a first touch sensitive display of a first screen to a second image displayed by the application.

[0008] Yet another embodiment is directed to a dual screen communication device. The communication device includes a gesture capture region to receive a gesture, a first touch sensitive display, a second touch sensitive display, and a computer readable medium that stores computer executable instructions that when executed by at least one processor perform a method. The method includes receiving a tap, by the second touch sensitive display of a second screen, indicating a request to launch an application and in response, launching the application. The application displays a second image on the second touch sensitive display of the second screen. The focus is then changed from the first touch sensitive display of a first screen to the second image. Input is allowed from at least one button of the second screen.

[0009] The present disclosure can provide a number of advantages depending on the particular aspect, embodiment, and/or configuration. In a device that includes more than one screen, a decision must be made by the device as to what screen, display area, desktop, or displayed image has the focus. This decision must be made so that any input received by a user can be associated with a screen, display area, desktop, or displayed image. In embodiments, a gesture indicates

that an application should be launched and the focus should be changed from its current location, such as from an image displayed on a first screen to an image displayed as a result of the application being launched to allow interaction with the launched application. This solves the problem of where the focus is maintained when the device receives a gesture for launching application. These and other advantages will be apparent from the disclosure.

[0010] The phrases "at least one", "one or more", and "and/or" are open-ended expressions that are both conjunctive and disjunctive in operation. For example, each of the expressions "at least one of A, B and C", "at least one of A, B, or C", "one or more of A, B, and C", "one or more of A, B, or C" and "A, B, and/or C" means A alone, B alone, C alone, A and B together, A and C together, B and C together, or A, B and C together.

[0011] The term "a" or "an" entity refers to one or more of that entity. As such, the terms "a" (or "an"), "one or more" and "at least one" can be used interchangeably herein. It is also to be noted that the terms "comprising", "including", and "having" can be used interchangeably.

[0012] The term "automatic" and variations thereof, as used herein, refers to any process or operation done without material human input when the process or operation is performed. However, a process or operation can be automatic, even though performance of the process or operation uses material or immaterial human input, if the input is received before performance of the process or operation. Human input is deemed to be material if such input influences how the process or operation will be performed. Human input that consents to the performance of the process or operation is not deemed to be "material".

[0013] The term "computer-readable medium" as used herein refers to any tangible storage and/or transmission medium that participate in providing instructions to a processor for execution. Such a medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media includes, for example, NVRAM, or magnetic or optical disks. Volatile media includes dynamic memory, such as main memory. Common forms of computer-readable media include, for example, a floppy disk, a flexible disk, hard disk, magnetic tape, or any other magnetic medium, magneto-optical medium, a CD-ROM, any other optical medium, punch cards, paper tape, any other physical medium with patterns of holes, a RAM, a PROM, and EPROM, a FLASH-EPROM, a solid state medium like a memory card, any other memory chip or cartridge, a carrier wave as described hereinafter, or any other medium from which a computer can read. A digital file attachment to e-mail or other

self-contained information archive or set of archives is considered a distribution medium equivalent to a tangible storage medium. When the computer-readable media is configured as a database, it is to be understood that the database may be any type of database, such as relational, hierarchical, object-oriented, and/or the like. Accordingly, the disclosure is considered to include a tangible storage medium or distribution medium and prior art-recognized equivalents and successor media, in which the software implementations of the present disclosure are stored.

[0014] The term "desktop" refers to a metaphor used to portray systems. A desktop is generally considered a "surface" that typically includes pictures, called icons, widgets, folders, etc. that can activate show applications, windows, cabinets, files, folders, documents, and other graphical items. The icons are generally selectable to initiate a task through user interface interaction to allow a user to execute applications or conduct other operations.

[0015] The term "screen," "touch screen," or "touchscreen" refers to a physical structure that includes one or more hardware components that provide the device with the ability to render a user interface and/or receive user input. A screen can encompass any combination of gesture capture region, a touch sensitive display, and/or a configurable area. The device can have one or more physical screens embedded in the hardware. However a screen may also include an external peripheral device that may be attached and detached from the device. In embodiments, multiple external devices may be attached to the device. Thus, in embodiments, the screen can enable the user to interact with the device by touching areas on the screen and provides information to a user through a display. The touch screen may sense user contact in a number of different ways, such as by a change in an electrical parameter (e.g., resistance or capacitance), acoustic wave variations, infrared radiation proximity detection, light variation detection, and the like. In a resistive touch screen, for example, normally separated conductive and resistive metallic layers in the screen pass an electrical current. When a user touches the screen, the two layers make contact in the contacted location, whereby a change in electrical field is noted and the coordinates of the contacted location calculated. In a capacitive touch screen, a capacitive layer stores electrical charge, which is discharged to the user upon contact with the touch screen, causing a decrease in the charge of the capacitive layer. The decrease is measured, and the contacted location coordinates determined. In a surface acoustic wave touch screen, an acoustic wave is transmitted through the screen, and the acoustic wave is disturbed by user contact. A

receiving transducer detects the user contact instance and determines the contacted location coordinates.

[0016] The term "display" refers to a portion of one or more screens used to display the output of a computer to a user. A display may be a single-screen display or a multi-screen display, referred to as a composite display. A composite display can encompass the touch sensitive display of one or more screens. A single physical screen can include multiple displays that are managed as separate logical displays. Thus, different content can be displayed on the separate displays although part of the same physical screen.

[0017] The term "displayed image" refers to an image produced on the display. A typical displayed image is a window or desktop. The displayed image may occupy all or a portion of the display.

[0018] The term "display orientation" refers to the way in which a rectangular display is oriented by a user for viewing. The two most common types of display orientation are portrait and landscape. In landscape mode, the display is oriented such that the width of the display is greater than the height of the display (such as a 4:3 ratio, which is 4 units wide and 3 units tall, or a 16:9 ratio, which is 16 units wide and 9 units tall). Stated differently, the longer dimension of the display is oriented substantially horizontal in landscape mode while the shorter dimension of the display is oriented substantially vertical. In the portrait mode, by contrast, the display is oriented such that the width of the display is less than the height of the display. Stated differently, the shorter dimension of the display is oriented substantially horizontal in the portrait mode while the longer dimension of the display is oriented substantially vertical.

[0019] The term "composited display" refers to a logical structure that defines a display that can encompass one or more screens. A multi-screen display can be associated with a composite display that encompasses all the screens. The composite display can have different display characteristics based on the various orientations of the device.

[0020] The term "gesture" refers to a user action that expresses an intended idea, action, meaning, result, and/or outcome. The user action can include manipulating a device (e.g., opening or closing a device, changing a device orientation, moving a trackball or wheel, etc.), movement of a body part in relation to the device, movement of an implement or tool in relation to the device, audio inputs, etc. A gesture may be made on a device (such as on the screen) or with the device to interact with the device.

[0021] The term "module" as used herein refers to any known or later developed hardware, software, firmware, artificial intelligence, fuzzy logic, or combination of hardware and software that is capable of performing the functionality associated with that element.

[0022] The term "gesture capture" refers to a sense or otherwise a detection of an instance and/or type of user gesture. The gesture capture can occur in one or more areas of the screen, A gesture region can be on the display, where it may be referred to as a touch sensitive display or off the display where it may be referred to as a gesture capture area.

[0023] A "multi-screen application" refers to an application that is capable of multiple modes. The multi-screen application mode can include, but is not limited to, a single screen mode (where the application is displayed on a single screen) or a composite display mode (where the application is displayed on two or more screens). A multi-screen application can have different layouts optimized for the mode. Thus, the multi-screen application can have different layouts for a single screen or for a composite display that can encompass two or more screens. The different layouts may have different screen/display dimensions and/or configurations on which the user interfaces of the multi-screen applications can be rendered. The different layouts allow the application to optimize the application's user interface for the type of display, *e.g.,* single screen or multiple screens. In single screen mode, the multi-screen application may present one window pane of information. In a composite display mode, the multi-screen application may present multiple window panes of information or may provide a larger and a richer presentation because there is more space for the display contents. The multi-screen applications may be designed to adapt dynamically to changes in the device and the mode depending on which display (single or composite) the system assigns to the multi-screen application. In alternative embodiments, the user can use a gesture to request the application transition to a different mode, and, if a display is available for the requested mode, the device can allow the application to move to that display and transition modes.

[0024] A "single-screen application" refers to an application that is capable of single screen mode. Thus, the single-screen application can produce only one window and may not be capable of different modes or different display dimensions. A single-screen application is incapable of the several modes discussed with the multi-screen application.

[0025] The term "window" refers to a, typically rectangular, displayed image on at least part of a display that contains or provides content different from the rest of the screen. The window may obscure the desktop.

[0026] The terms "determine", "calculate" and "compute," and variations thereof, as used herein, are used interchangeably and include any type of methodology, process, mathematical operation or technique.

[0027] It shall be understood that the term "means" as used herein shall be given its broadest possible interpretation in accordance with 35 U.S.C., Section 112, Paragraph 6. Accordingly, a claim incorporating the term "means" shall cover all structures, materials, or acts set forth herein, and all of the equivalents thereof. Further, the structures, materials or acts and the equivalents thereof shall include all those described in the summary of the invention, brief description of the drawings, detailed description, abstract, and claims themselves.

[0028] The term "focus" refers to being active and/or selected to receive input. A screen, a display, or a component (e.g., displayed image) of a displayed graphical user interface may have "focus." Non-limiting examples of displayed images on a graphical user interface that may have "focus" include an icon of an application, an open window of an application, and/or a desktop/portion of a desktop.

[0029] The preceding is a simplified summary of the disclosure to provide an understanding of some aspects of the disclosure. This summary is neither an extensive nor exhaustive overview of the disclosure and its various aspects, embodiments, and/or configurations. It is intended neither to identify key or critical elements of the disclosure nor to delineate the scope of the disclosure but to present selected concepts of the disclosure in a simplified form as an introduction to the more detailed description presented below. As will be appreciated, other aspects, embodiments, and/or configurations of the disclosure are possible utilizing, alone or in combination, one or more of the features set forth above or described in detail below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0030] FIG. 1A includes a first view of an embodiment of a multi-screen user device;

[0031] FIG. 1B includes a second view of an embodiment of a multi-screen user device;

[0032] FIG. 1C includes a third view of an embodiment of a multi-screen user device;

[0033] FIG. 1D includes a fourth view of an embodiment of a multi-screen user device;

[0034] FIG. 1E includes a fifth view of an embodiment of a multi-screen user device;

[0035] FIG. 1F includes a sixth view of an embodiment of a multi-screen user device;

[0036] FIG. 1G includes a seventh view of an embodiment of a multi-screen user device;

[0037] FIG. 1H includes a eighth view of an embodiment of a multi-screen user device;

[0038] FIG. 1I includes a ninth view of an embodiment of a multi-screen user device;

[0039] FIG. 1J includes a tenth view of an embodiment of a multi-screen user device;

[0040] Fig. 2 is a block diagram of an embodiment of the hardware of the device;

[0041] Fig. 3A is a block diagram of an embodiment of the state model for the device based on the device's orientation and/or configuration;

[0042] Fig. 3B is a table of an embodiment of the state model for the device based on the device's orientation and/or configuration;

[0043] FIG. 4A is a first representation of an embodiment of user gesture received at a device;

[0044] FIG. 4B is a second representation of an embodiment of user gesture received at a device;

[0045] FIG. 4C is a third representation of an embodiment of user gesture received at a device;

[0046] FIG. 4D is a fourth representation of an embodiment of user gesture received at a device;

[0047] FIG. 4E is a fifth representation of an embodiment of user gesture received at a device;

[0048] FIG. 4F is a sixth representation of an embodiment of user gesture received at a device;

[0049] FIG. 4G is a seventh representation of an embodiment of user gesture received at a device;

[0050] FIG. 4H is a eighth representation of an embodiment of user gesture received at a device;

[0051] FIG. 5A is a block diagram of an embodiment of the device software and/or firmware;

[0052] FIG. 5B is a second block diagram of an embodiment of the device software and/or firmware;

[0053] FIG. 6A is a first representation of an embodiment of a device configuration generated in response to the device state;

[0054] FIG. 6B is a second representation of an embodiment of a device configuration generated in response to the device state;

[0055] FIG. 6C is a third representation of an embodiment of a device configuration generated in response to the device state;

[0056] FIG. 6D is a fourth representation of an embodiment of a device configuration generated in response to the device state;

[0057] FIG. 6E is a fifth representation of an embodiment of a device configuration generated in response to the device state;

[0058] FIG. 6F is a sixth representation of an embodiment of a device configuration generated in response to the device state;

[0059] FIG. 6G is a seventh representation of an embodiment of a device configuration generated in response to the device state;

[0060] FIG. 6H is a eighth representation of an embodiment of a device configuration generated in response to the device state;

[0061] FIG. 6I is a ninth representation of an embodiment of a device configuration generated in response to the device state;

[0062] FIG. 6J is a tenth representation of an embodiment of a device configuration generated in response to the device state;

[0063] FIGS. 7A-7C are a representation of an embodiment showing a first image in focus and the response when a gesture is made to move the focus from a first screen to a second screen;

[0064] FIGS. 8A-8C are a representation of a second embodiment showing a first image in focus and the response when a gesture is made to move the focus from a first screen to a second screen; and

[0065] FIG. 9 illustrates a flow chart of an embodiment for handling a gesture.

[0066] In the appended figures, similar components and/or features may have the same reference label. Further, various components of the same type may be distinguished by following the reference label by a letter that distinguishes among the similar components. If only the first reference label is used in the specification, the description is applicable to any one of the similar components having the same first reference label irrespective of the second reference label.

DETAILED DESCRIPTION

[0067] Presented herein are embodiments of a device. The device can be a communications device, such as a cellular telephone, or other smart device. The device can include two screens that are oriented to provide several unique display configurations. Further, the device can

receive user input in unique ways. The overall design and functionality of the device provides for an enhanced user experience making the device more useful and more efficient.

[0068] Mechanical Features:

[0069] Figs. 1A-1J illustrate a device 100 in accordance with embodiments of the present disclosure. As described in greater detail below, device 100 can be positioned in a number of different ways each of which provides different functionality to a user. The device 100 is a multi-screen device that includes a primary screen 104 and a secondary screen 108, both of which are touch sensitive. In embodiments, the entire front surface of screens 104 and 108 may be touch sensitive and capable of receiving input by a user touching the front surface of the screens 104 and 108. Primary screen 104 includes touch sensitive display 110, which, in addition to being touch sensitive, also displays information to a user. Secondary screen 108 includes touch sensitive display 114, which also displays information to a user. In other embodiments, screens 104 and 108 may include more than one display area.

[0070] Primary screen 104 also includes a configurable area 112 that has been configured for specific inputs when the user touches portions of the configurable area 112. Secondary screen 108 also includes a configurable area 116 that has been configured for specific inputs. Areas 112a and 116a have been configured to receive a "back" input indicating that a user would like to view information previously displayed. Areas 112b and 116b have been configured to receive a "menu" input indicating that the user would like to view options from a menu. Areas 112c and 116c have been configured to receive a "home" input indicating that the user would like to view information associated with a "home" view. In other embodiments, areas 112a-c and 116a-c may be configured, in addition to the configurations described above, for other types of specific inputs including controlling features of device 100, some non-limiting examples including adjusting overall system power, adjusting the volume, adjusting the brightness, adjusting the vibration, selecting of displayed items (on either of screen 104 or 108), operating a camera, operating a microphone, and initiating/terminating of telephone calls. Also, in some embodiments, areas 112a-C and 116a-C may be configured for specific inputs depending upon the application running on device 100 and/or information displayed on touch sensitive displays 110 and/or 114.

[0071] In addition to touch sensing, primary screen 104 and secondary screen 108 may also include areas that receive input from a user without requiring the user to touch the display area of

the screen. For example, primary screen 104 includes gesture capture area 120, and secondary screen 108 includes gesture capture area 124. These areas are able to receive input by recognizing gestures made by a user without the need for the user to actually touch the surface of the display area. In comparison to touch sensitive displays 110 and 114, the gesture capture areas 120 and 124 are commonly not capable of rendering a displayed image.

[0072] The two screens 104 and 108 are connected together with a hinge 128, shown clearly in Fig. 1C (illustrating a back view of device 100). Hinge 128, in the embodiment shown in Figs. 1A-1J, is a center hinge that connects screens 104 and 108 so that when the hinge is closed, screens 104 and 108 are juxtaposed (i.e., side-by-side) as shown in Fig. 1B (illustrating a front view of device 100). Hinge 128 can be opened to position the two screens 104 and 108 in different relative positions to each other. As described in greater detail below, the device 100 may have different functionalities depending on the relative positions of screens 104 and 108.

[0073] Fig. 1D illustrates the right side of device 100. As shown in Fig. 1D, secondary screen 108 also includes a card slot 132 and a port 136 on its side. Card slot 132 in embodiments, accommodates different types of cards including a subscriber identity module (SIM). Port 136 in embodiments is an input/output port (I/O port) that allows device 100 to be connected to other peripheral devices, such as a display, keyboard, or printing device. As can be appreciated, these are merely some examples and in other embodiments device 100 may include other slots and ports such as slots and ports for accommodating additional memory devices and/or for connecting other peripheral devices. Also shown in Fig. 1D is an audio jack 140 that accommodates a tip, ring, sleeve (TRS) connector for example to allow a user to utilize headphones or a headset.

[0074] Device 100 also includes a number of buttons 158. For example, Fig. 1E illustrates the left side of device 100. As shown in Fig. 1E, the side of primary screen 104 includes three buttons 144, 148, and 152, which can be configured for specific inputs. For example, buttons 144, 148, and 152 may be configured to, in combination or alone, control a number of aspects of device 100. Some non-limiting examples include overall system power, volume, brightness, vibration, selection of displayed items (on either of screen 104 or 108), a camera, a microphone, and initiation/termination of telephone calls. In some embodiments, instead of separate buttons two buttons may be combined into a rocker button. This arrangement is useful in situations where the buttons are configured to control features such as volume or brightness. In addition to

buttons 144, 148, and 152, device 100 also includes a button 156, shown in Fig. 1F, which illustrates the top of device 100. In one embodiment, button 156 is configured as an on/off button used to control overall system power to device 100. In other embodiments, button 156 is configured to, in addition to or in lieu of controlling system power, control other aspects of device 100. In some embodiments, one or more of the buttons 144, 148, 152, and 156 are capable of supporting different user commands. By way of example, a normal press has a duration commonly of less than about 1 second and resembles a quick tap. A medium press has a duration commonly of 1 second or more but less than about 12 seconds. A long press has a duration commonly of about 12 seconds or more. The function of the buttons is normally specific to the application that is currently in focus on the respective display 110 and 114. In a telephone application for instance and depending on the particular button, a normal, medium, or long press can mean end call, increase in call volume, decrease in call volume, and toggle microphone mute. In a camera or video application for instance and depending on the particular button, a normal, medium, or long press can mean increase zoom, decrease zoom, and take photograph or record video.

[0075] There are also a number of hardware components within device 100. As illustrated in Fig. 1C, device 100 includes a speaker 160 and a microphone 164. Device 100 also includes a camera 168 (Fig. 1B). Additionally, device 100 includes two position sensors 172A and 172B, which are used to determine the relative positions of screens 104 and 108. In one embodiment, position sensors 172A and 172B are Hall effect sensors. However, in other embodiments other sensors can be used in addition to or in lieu of the Hall effect sensors. An accelerometer 176 may also be included as part of device 100 to determine the orientation of the device 100 and/or the orientation of screens 104 and 108. Additional internal hardware components that may be included in device 100 are described below with respect to Fig. 2.

[0076] The overall design of device 100 allows it to provide additional functionality not available in other communication devices. Some of the functionality is based on the various positions and orientations that device 100 can have. As shown in Figs. 1B-1G, device 100 can be operated in an "open" position where screens 104 and 108 are juxtaposed. This position allows a large display area for displaying information to a user. When position sensors 172A and 172B determine that device 100 is in the open position, they can generate a signal that can be used to trigger different events such as displaying information on both screens 104 and 108.

Additional events may be triggered if accelerometer 176 determines that device 100 is in a portrait position (Fig. 1B) as opposed to a landscape position (not shown).

[0077] In addition to the open position, device 100 may also have a "closed" position illustrated in Fig. 1H. Again, position sensors 172A and 172B can generate a signal indicating that device 100 is in the "closed" position. This can trigger an event that results in a change of displayed information on screen 104 and/or 108. For example, device 100 may be programmed to stop displaying information on one of the screens, e.g., screen 108, since a user can only view one screen at a time when device 100 is in the "closed" position. In other embodiments, the signal generated by position sensors 172A and 172B, indicating that the device 100 is in the "closed" position, can trigger device 100 to answer an incoming telephone call. The "closed" position can also be a preferred position for utilizing the device 100 as a mobile phone.

[0078] Device 100 can also be used in an "easel" position which is illustrated in Fig. 1I. In the "easel" position, screens 104 and 108 are angled with respect to each other and facing outward with the edges of screens 104 and 108 substantially horizontal. In this position, device 100 can be configured to display information on both screens 104 and 108 to allow two users to simultaneously interact with device 100. When device 100 is in the "easel" position, sensors 172A and 172B generate a signal indicating that the screens 104 and 108 are positioned at an angle to each other, and the accelerometer 176 can generate a signal indicating that device 100 has been placed so that the edge of screens 104 and 108 are substantially horizontal. The signals can then be used in combination to generate events that trigger changes in the display of information on screens 104 and 108.

[0079] Fig. 1J illustrates device 100 in a "modified easel" position. In the "modified easel" position, one of screens 104 or 108 is used as a stand and is faced down on the surface of an object such as a table. This position provides a convenient way for information to be displayed to a user in landscape orientation. Similar to the easel position, when device 100 is in the "modified easel" position, position sensors 172A and 172B generate a signal indicating that the screens 104 and 108 are positioned at an angle to each other. The accelerometer 176 would generate a signal indicating that device 100 has been positioned so that one of screens 104 and 108 is faced downwardly and is substantially horizontal. The signals can then be used to generate events that trigger changes in the display of information of screens 104 and 108. For

example, information may not be displayed on the screen that is face down since a user cannot see the screen.

[0080] Transitional states are also possible. When the position sensors 172A and B and/or accelerometer indicate that the screens are being closed or folded (from open), a closing transitional state is recognized. Conversely when the position sensors 172A and B indicate that the screens are being opened or folded (from closed), an opening transitional state is recognized. The closing and opening transitional states are typically time-based, or have a maximum time duration from a sensed starting point. Normally, no user input is possible when one of the closing and opening states is in effect. In this manner, incidental user contact with a screen during the closing or opening function is not misinterpreted as user input. In embodiments, another transitional state is possible when the device 100 is closed. This additional transitional state allows the display to switch from one screen 104 to the second screen 108 when the device 100 is closed based on some user input, e.g., a double tap on the screen 110,114.

[0081] As can be appreciated, the description of device 100 is made for illustrative purposes only, and the embodiments are not limited to the specific mechanical features shown in Figs. 1A-1J and described above. In other embodiments, device 100 may include additional features, including one or more additional buttons, slots, display areas, hinges, and/or locking mechanisms. Additionally, in embodiments, the features described above may be located in different parts of device 100 and still provide similar functionality. Therefore, Figs. 1A-1J and the description provided above are nonlimiting.

[0082] Hardware Features:

[0083] Fig. 2 illustrates components of a device 100 in accordance with embodiments of the present disclosure. In general, the device 100 includes a primary screen 104 and a secondary screen 108. While the primary screen 104 and its components are normally enabled in both the opened and closed positions or states, the secondary screen 108 and its components are normally enabled in the opened state but disabled in the closed state. However, even when in the closed state a user or application triggered interrupt (such as in response to a phone application or camera application operation) can flip the active screen, or disable the primary screen 104 and enable the secondary screen 108, by a suitable command. Each screen 104, 108 can be touch sensitive and can include different operative areas. For example, a first operative area, within each touch sensitive screen 104 and 108, may comprise a touch sensitive display 110, 114. In

general, the touch sensitive display 110, 114 may comprise a full color, touch sensitive display. A second area within each touch sensitive screen 104 and 108 may comprise a gesture capture region 120, 124. The gesture capture region 120, 124 may comprise an area or region that is outside of the touch sensitive display 110, 114 area, and that is capable of receiving input, for example in the form of gestures provided by a user. However, the gesture capture region 120, 124 does not include pixels that can perform a display function or capability.

[0084] A third region of the touch sensitive screens 104 and 108 may comprise a configurable area 112, 116. The configurable area 112, 116 is capable of receiving input and has display or limited display capabilities. In embodiments, the configurable area 112, 116 may present different input options to the user. For example, the configurable area 112, 116 may display buttons or other relatable items. Moreover, the identity of displayed buttons, or whether any buttons are displayed at all within the configurable area 112, 116 of a touch sensitive screen 104 or 108, may be determined from the context in which the device 100 is used and/or operated. In an exemplary embodiment, the touch sensitive screens 104 and 108 comprise liquid crystal display devices extending across at least those regions of the touch sensitive screens 104 and 108 that are capable of providing visual output to a user, and a capacitive input matrix over those regions of the touch sensitive screens 104 and 108 that are capable of receiving input from the user.

[0085] One or more display controllers 216a, 216b may be provided for controlling the operation of the touch sensitive screens 104 and 108, including input (touch sensing) and output (display) functions. In the exemplary embodiment illustrated in Fig. 2, a separate touch screen controller 216a or 216b is provided for each touch screen 104 and 108. In accordance with alternate embodiments, a common or shared touch screen controller 216 may be used to control each of the included touch sensitive screens 104 and 108. In accordance with still other embodiments, the functions of a touch screen controller 216 may be incorporated into other components, such as a processor 204.

[0086] The processor 204 may comprise a general purpose programmable processor or controller for executing application programming or instructions. In accordance with at least some embodiments, the processor 204 may include multiple processor cores, and/or implement multiple virtual processors. In accordance with still other embodiments, the processor 204 may include multiple physical processors. As a particular example, the processor 204 may comprise a

specially configured application specific integrated circuit (ASIC) or other integrated circuit, a digital signal processor, a controller, a hardwired electronic or logic circuit, a programmable logic device or gate array, a special purpose computer, or the like. The processor 204 generally functions to run programming code or instructions implementing various functions of the device 100.

[0087] A communication device 100 may also include memory 208 for use in connection with the execution of application programming or instructions by the processor 204, and for the temporary or long term storage of program instructions and/or data. As examples, the memory 208 may comprise RAM, DRAM, SDRAM, or other solid state memory. Alternatively or in addition, data storage 212 may be provided. Like the memory 208, the data storage 212 may comprise a solid state memory device or devices. Alternatively or in addition, the data storage 212 may comprise a hard disk drive or other random access memory.

[0088] In support of communications functions or capabilities, the device 100 can include a cellular telephony module 228. As examples, the cellular telephony module 228 can comprise a GSM, CDMA, FDMA and/or analog cellular telephony transceiver capable of supporting voice, multimedia and/or data transfers over a cellular network. Alternatively or in addition, the device 100 can include an additional or other wireless communications module 232. As examples, the other wireless communications module 232 can comprise a Wi-Fi, BLUETOOTH TM, WiMax, infrared, or other wireless communications link. The cellular telephony module 228 and the other wireless communications module 232 can each be associated with a shared or a dedicated antenna 224.

[0089] A port interface 252 may be included. The port interface 252 may include proprietary or universal ports to support the interconnection of the device 100 to other devices or components, such as a dock, which may or may not include additional or different capabilities from those integral to the device 100. In addition to supporting an exchange of communication signals between the device 100 and another device or component, the docking port 136 and/or port interface 252 can support the supply of power to or from the device 100. The port interface 252 also comprises an intelligent element that comprises a docking module for controlling communications or other interactions between the device 100 and a connected device or component.

[0090] An input/output module 248 and associated ports may be included to support communications over wired networks or links, for example with other communication devices, server devices, and/or peripheral devices. Examples of an input/output module 248 include an Ethernet port, a Universal Serial Bus (USB) port, Institute of Electrical and Electronics Engineers (IEEE) 1394, or other interface.

[0091] An audio input/output interface/device(s) 244 can be included to provide analog audio to an interconnected speaker or other device, and to receive analog audio input from a connected microphone or other device. As an example, the audio input/output interface/device(s) 244 may comprise an associated amplifier and analog to digital converter. Alternatively or in addition, the device 100 can include an integrated audio input/output device 256 and/or an audio jack for interconnecting an external speaker or microphone. For example, an integrated speaker and an integrated microphone can be provided, to support near talk or speaker phone operations.

[0092] Hardware buttons 158 can be included for example for use in connection with certain control operations. Examples include a master power switch, volume control, etc., as described in conjunction with Figs. 1A through 1J. One or more image capture interfaces/devices 240, such as a camera, can be included for capturing still and/or video images. Alternatively or in addition, an image capture interface/device 240 can include a scanner or code reader. An image capture interface/device 240 can include or be associated with additional elements, such as a flash or other light source.

[0093] The device 100 can also include a global positioning system (GPS) receiver 236. In accordance with embodiments of the present invention, the GPS receiver 236 may further comprise a GPS module that is capable of providing absolute location information to other components of the device 100. An accelerometer(s) 176 may also be included. For example, in connection with the display of information to a user and/or other functions, a signal from the accelerometer 176 can be used to determine an orientation and/or format in which to display that information to the user.

[0094] Embodiments of the present invention can also include one or more position sensor(s) 172. The position sensor 172 can provide a signal indicating the position of the touch sensitive screens 104 and 108 relative to one another. This information can be provided as an input, for example to a user interface application, to determine an operating mode, characteristics of the touch sensitive displays 110, 114, and/or other device 100 operations. As examples, a screen

position sensor 172 can comprise a series of Hall effect sensors, a multiple position switch, an optical switch, a Wheatstone bridge, a potentiometer, or other arrangement capable of providing a signal indicating of multiple relative positions the touch screens are in.

[0095] Communications between various components of the device 100 can be carried by one or more buses 220. In addition, power can be supplied to the components of the device 100 from a power source and/or power control module 260. The power control module 260 can, for example, include a battery, an AC to DC converter, power control logic, and/or ports for interconnecting the device 100 to an external source of power.

[0096] Device State:

[0097] Figs. 3A and 3B represent illustrative states of device 100. While a number of illustrative states are shown, and transitions from a first state to a second state, it is to be appreciated that the illustrative state diagram may not encompass all possible states and/or all possible transitions from a first state to a second state. As illustrated in Fig. 3, the various arrows between the states (illustrated by the state represented in the circle) represent a physical change that occurs to the device 100, that is detected by one or more of hardware and software, the detection triggering one or more of a hardware and/or software interrupt that is used to control and/or manage one or more functions of device 100.

[0098] As illustrated in Fig. 3A, there are twelve exemplary "physical" states: closed 304, transition 308 (or opening transitional state), easel 312, modified easel 316, open 320, inbound/outbound call or communication 324, image/video capture 328, transition 332 (or closing transitional state), landscape 340, docked 336, docked 344 and landscape 348. Next to each illustrative state is a representation of the physical state of the device 100 with the exception of states 324 and 328, where the state is generally symbolized by the international icon for a telephone and the icon for a camera, respectfully.

[0100] In state 304, the device is in a closed state with the device 100 generally oriented in the portrait direction with the primary screen 104 and the secondary screen 108 back-to-back in different planes (see Fig. 1H). From the closed state, the device 100 can enter, for example, docked state 336, where the device 100 is coupled with a docking station, docking cable, or in general docked or associated with one or more other devices or peripherals, or the landscape state 340, where the device 100 is generally oriented with the primary screen 104 facing the user, and the primary screen 104 and the secondary screen 108 being back-to-back.

[0101] In the closed state, the device can also move to a transitional state where the device remains closed but the display is moved from one screen 104 to another screen 108 based on a user input, e.g., a double tap on the screen 110, 114. Still another embodiment includes a bilateral state. In the bilateral state, the device remains closed, but a single application displays at least one window on both the first display 110 and the second display 114. The windows shown on the first and second display 110, 114 may be the same or different based on the application and the state of that application. For example, while acquiring an image with a camera, the device may display the view finder on the first display 110 and displays a preview for the photo subjects (full screen and mirrored left-to-right) on the second display 114.

[0102] In state 308, a transition state from the closed state 304 to the semi-open state or easel state 312, the device 100 is shown opening with the primary screen 104 and the secondary screen 108 being rotated around a point of axis coincidence with the hinge. Upon entering the easel state 312, the primary screen 104 and the secondary screen 108 are separated from one another such that, for example, the device 100 can sit in an easel-like configuration on a surface.

[0103] In state 316, known as the modified easel position, the device 100 has the primary screen 104 and the secondary screen 108 in a similar relative relationship to one another as in the easel state 312, with the difference being one of the primary screen 104 or the secondary screen 108 are placed on a surface as shown.

[0104] State 320 is the open state where the primary screen 104 and the secondary screen 108 are generally on the same plane. From the open state, the device 100 can transition to the docked state 344 or the open landscape state 348. In the open state 320, the primary screen 104 and the secondary screen 108 are generally in the portrait-like orientation while in landscaped state 348 the primary screen 104 and the secondary screen 108 are generally in a landscape-like orientation.

[0105] State 324 is illustrative of a communication state, such as when an inbound or outbound call is being received or placed, respectively, by the device 100. While not illustrated for clarity, it should be appreciated the device 100 can transition to the inbound/outbound call state 324 from any state illustrated in Fig. 3. In a similar manner, the image/video capture state 328 can be entered into from any other state in Fig. 3, with the image/video capture state 328 allowing the device 100 to take one or more images via a camera and/or videos with a video capture device 240.

[0106] Transition state 322 illustratively shows primary screen 104 and the secondary screen 108 being closed upon one another for entry into, for example, the closed state 304.

[0107] Fig. 3B illustrates, with reference to the key, the inputs that are received to detect a transition from a first state to a second state. In Fig. 3B, various combinations of states are shown with in general, a portion of the columns being directed toward a portrait state 352, a landscape state 356, and a portion of the rows being directed to portrait state 360 and landscape state 364.

[0108] In Fig. 3B, the Key indicates that "H" represents an input from one or more Hall Effect sensors, "A" represents an input from one or more accelerometers, "T" represents an input from a timer, "P" represents a communications trigger input and "I" represents an image and/or video capture request input. Thus, in the center portion 376 of the chart, an input, or combination of inputs, are shown that represent how the device 100 detects a transition from a first physical state to a second physical state.

[0109] As discussed, in the center portion of the chart 376, the inputs that are received enable the detection of a transition from, for example, a portrait open state to a landscape easel state - shown in bold – "HAT." For this exemplary transition from the portrait open to the landscape easel state, a Hall Effect sensor ("H"), an accelerometer ("A") and a timer ("T") input may be needed. The timer input can be derived from, for example, a clock associated with the processor.

[0110] In addition to the portrait and landscape states, a docked state 368 is also shown that is triggered based on the receipt of a docking signal 372. As discussed above and in relation to Fig. 3, the docking signal can be triggered by the association of the device 100 with one or more other device 100s, accessories, peripherals, smart docks, or the like.

[0111] User Interaction:

[0112] Figs. 4A through 4H depict various graphical representations of gesture inputs that may be recognized by the screens 104, 108. The gestures may be performed not only by a user's body part, such as a digit, but also by other devices, such as a stylus, that may be sensed by the contact sensing portion(s) of a screen 104, 108. In general, gestures are interpreted differently, based on where the gestures are performed (either directly on the display 110, 114 or in the gesture capture region 120, 124). For example, gestures in the display 110,114 may be directed to a desktop or application, and gestures in the gesture capture region 120, 124 may be interpreted as for the system.

[0113] With reference to Figs. 4A-4H, a first type of gesture, a touch gesture 420, is substantially stationary on the screen 104,108 for a selected length of time. A circle 428 represents a touch or other contact type received at particular location of a contact sensing portion of the screen. The circle 428 may include a border 432, the thickness of which indicates a length of time that the contact is held substantially stationary at the contact location. For instance, a tap 420 (or short press) has a thinner border 432a than the border 432b for a long press 424 (or for a normal press). The long press 424 may involve a contact that remains substantially stationary on the screen for longer time period than that of a tap 420. As will be appreciated, differently defined gestures may be registered depending upon the length of time that the touch remains stationary prior to contact cessation or movement on the screen.

[0114] With reference to Fig. 4C, a drag gesture 400 on the screen 104,108 is an initial contact (represented by circle 428) with contact movement 436 in a selected direction. The initial contact 428 may remain stationary on the screen 104,108 for a certain amount of time represented by the border 432. The drag gesture typically requires the user to contact an icon, window, or other displayed image at a first location followed by movement of the contact in a drag direction to a new second location desired for the selected displayed image. The contact movement need not be in a straight line but have any path of movement so long as the contact is substantially continuous from the first to the second locations.

[0115] With reference to Fig. 4D, a flick gesture 404 on the screen 104,108 is an initial contact (represented by circle 428) with truncated contact movement 436 (relative to a drag gesture) in a selected direction. In embodiments, a flick has a higher exit velocity for the last movement in the gesture compared to the drag gesture. The flick gesture can, for instance, be a finger snap following initial contact. Compared to a drag gesture, a flick gesture generally does not require continual contact with the screen 104,108 from the first location of a displayed image to a predetermined second location. The contacted displayed image is moved by the flick gesture in the direction of the flick gesture to the predetermined second location. Although both gestures commonly can move a displayed image from a first location to a second location, the temporal duration and distance of travel of the contact on the screen is generally less for a flick than for a drag gesture.

[0116] With reference to Fig. 4E, a pinch gesture 408 on the screen 104,108 is depicted. The pinch gesture 408 may be initiated by a first contact 428 to the screen 104,108 by, for example, a

first digit and a second contact 428b to the screen 104,108 by, for example, a second digit. The first and second contacts 428a,b may be detected by a common contact sensing portion of a common screen 104,108, by different contact sensing portions of a common screen 104 or108, or by different contact sensing portions of different screens. The first contact 428a is held for a first amount of time, as represented by the border 432a, and the second contact 428b is held for a second amount of time, as represented by the border 432b. The first and second amounts of time are generally substantially the same, and the first and second contacts 428 a, b generally occur substantially simultaneously. The first and second contacts 428 a, b generally also include corresponding first and second contact movements 436 a, b, respectively. The first and second contact movements 436 a, b are generally in opposing directions. Stated another way, the first contact movement 436a is towards the second contact 436b, and the second contact movement 436b is towards the first contact 436a. More simply stated, the pinch gesture 408 may be accomplished by a user's digits touching the screen 104,108 in a pinching motion.

[0117] With reference to Fig. 4F, a spread gesture 410 on the screen 104,108 is depicted. The spread gesture 410 may be initiated by a first contact 428a to the screen 104,108 by, for example, a first digit and a second contact 428b to the screen 104,108 by, for example, a second digit. The first and second contacts 428a,b may be detected by a common contact sensing portion of a common screen 104,108, by different contact sensing portions of a common screen 104,108, or by different contact sensing portions of different screens. The first contact 428a is held for a first amount of time, as represented by the border 432a, and the second contact 428b is held for a second amount of time, as represented by the border 432b. The first and second amounts of time are generally substantially the same, and the first and second contacts 428 a, b generally occur substantially simultaneously. The first and second contacts 428 a, b generally also include corresponding first and second contact movements 436a, b, respectively. The first and second contact movements 436 a, b are generally in a common direction. Stated another way, the first and second contact movements 436 a, b are away from the first and second contacts 428a, b. More simply stated, the spread gesture 410 may be accomplished by a user's digits touching the screen 104,108 in a spreading motion.

[0118] The above gestures may be combined in any manner, such as those shown by Figs. 4G and 4H, to produce a determined functional result. For example, in Fig. 4G a tap gesture 420 is combined with a drag or flick gesture 412 in a direction away from the tap gesture 420. In Fig.

4H, a tap gesture 420 is combined with a drag or flick gesture 416 in a direction towards the tap gesture 420.

[0119] The functional result of receiving a gesture can vary depending on a number of factors, including a state of the device 100, display 110, 114, or screen 104, 108, a context associated with the gesture, or sensed location of the gesture. The state of the device commonly refers to one or more of a configuration of the device 100, a display orientation, and user and other inputs received by the device 100. Context commonly refers to one or more of the particular application(s) selected by the gesture and the portion(s) of the application currently executing, whether the application is a single- or multi-screen application, and whether the application is a multi-screen application displaying one or more windows in one or more screens or in one or more stacks. Sensed location of the gesture commonly refers to whether the sensed set(s) of gesture location coordinates are on a touch sensitive display 110, 114 or a gesture capture region 120, 124, whether the sensed set(s) of gesture location coordinates are associated with a common or different display or screen 104,108, and/or what portion of the gesture capture region contains the sensed set(s) of gesture location coordinates.

[0120] A tap, when received by an a touch sensitive display 110, 114, can be used, for instance, to select an icon to initiate or terminate execution of a corresponding application, to maximize or minimize a window, to reorder windows in a stack, and to provide user input such as by keyboard display or other displayed image. A drag, when received by a touch sensitive display 110, 114, can be used, for instance, to relocate an icon or window to a desired location within a display, to reorder a stack on a display, or to span both displays (such that the selected window occupies a portion of each display simultaneously). A flick, when received by a touch sensitive display 110, 114 or a gesture capture region 120, 124, can be used to relocate a window from a first display to a second display or to span both displays (such that the selected window occupies a portion of each display simultaneously). Unlike the drag gesture, however, the flick gesture is generally not used to move the displayed image to a specific user-selected location but to a default location that is not configurable by the user.

[0121] The pinch gesture, when received by a touch sensitive display 110, 114 or a gesture capture region 120, 124, can be used to minimize or otherwise increase the displayed area or size of a window (typically when received entirely by a common display), to switch windows displayed at the top of the stack on each display to the top of the stack of the other display

(typically when received by different displays or screens), or to display an application manager (a "pop-up window" that displays the windows in the stack). The spread gesture, when received by a touch sensitive display 110, 114 or a gesture capture region 120, 124, can be used to maximize or otherwise decrease the displayed area or size of a window, to switch windows displayed at the top of the stack on each display to the top of the stack of the other display (typically when received by different displays or screens), or to display an application manager (typically when received by an off-screen gesture capture region on the same or different screens).

[0122] The combined gestures of Fig. 4G, when received by a common display capture region in a common display or screen 104,108, can be used to hold a first window stack location in a first stack constant for a display receiving the gesture while reordering a second window stack location in a second window stack to include a window in the display receiving the gesture. The combined gestures of Fig. 4H, when received by different display capture regions in a common display or screen 104,108 or in different displays or screens, can be used to hold a first window stack location in a first window stack constant for a display receiving the tap part of the gesture while reordering a second window stack location in a second window stack to include a window in the display receiving the flick or drag gesture. Although specific gestures and gesture capture regions in the preceding examples have been associated with corresponding sets of functional results, it is to be appreciated that these associations can be redefined in any manner to produce differing associations between gestures and/or gesture capture regions and/or functional results.

[0123] Firmware and Software:

[0124] Referring now to Fig. 5A, one embodiment of device software 500 is illustrated. The memory 508 may store and the processor 504 may execute one or more software components. These components can include at least one operating system (OS) 516, an application manager 562, a desktop 566, and/or one or more applications 564a and/or 564b from an application store 560. The OS 516 can include a framework 520, one or more frame buffers 548, one or more drivers 512, previously described in conjunction with Fig. 2, and/or a kernel 518. The OS 516 can be any software, consisting of programs and data, which manages computer hardware resources and provides common services for the execution of various applications 564. The OS 516 can be any operating system and, at least in some embodiments, dedicated to mobile devices, including, but not limited to, Linux, ANDROID™, iPhone OS (IOS™), WINDOWS PHONE 7™,

etc. The OS 516 is operable to provide functionality to the phone by executing one or more operations, as described herein.

[0125] The applications 564 can be any higher level software that executes particular functionality for the user. Applications 564 can include programs such as email clients, web browsers, texting applications, games, media players, office suites, etc. The applications 564 can be stored in an application store 560, which may represent any memory or data storage, and the management software associated therewith, for storing the applications 564. Once executed, the applications 564 may be run in a different area of memory 508.

[0126] The framework 520 may be any software or data that allows the multiple tasks running on the device to interact. In embodiments, at least portions of the framework 520 and the discrete components described hereinafter may be considered part of the OS 516 or an application 564. However, these portions will be described as part of the framework 520, but those components are not so limited. The framework 520 can include, but is not limited to, a Multi-Display Management (MDM) module 524, a Surface Cache module 528, a Window Management module 532, an Input Management module 536, a Task Management module 540, an Application Model Manager 542, a Display Controller, one or more frame buffers 548, a task stack 552, one or more window stacks 550 (which is a logical arrangement of windows and/or desktops in a display area), and/or an event buffer 556.

[0127] The MDM module 524 includes one or more modules that are operable to manage the display of applications or other data on the screens of the device. An embodiment of the MDM module 524 is described in conjunction with Fig. 5B. In embodiments, the MDM module 524 receives inputs from the other OS 516 components, such as, the drivers 512, and from the applications 564 to determine continually the state of the device 100. The inputs assist the MDM module 524 in determining how to configure and allocate the displays according to the application's preferences and requirements, and the user's actions. Once a determination for display configurations is made, the MDM module 524 can bind the applications 564 to a display. The configuration may then be provided to one or more other components to generate a window with a display.

[0128] The Surface Cache module 528 includes any memory or storage and the software associated therewith to store or cache one or more images of windows. A series of active and/or non-active windows (or other display objects, such as, a desktop display) can be associated with

each display. An active window (or other display object) is currently displayed. A non-active windows (or other display objects) were opened and, at some time, displayed but are now not displayed. To enhance the user experience, before a window transitions from an active state to an inactive state, a "screen shot" of a last generated image of the window (or other display object) can be stored. The Surface Cache module 528 may be operable to store a bitmap of the last active image of a window (or other display object) not currently displayed. Thus, the Surface Cache module 528 stores the images of non-active windows (or other display objects) in a data store.

[0129] In embodiments, the Window Management module 532 is operable to manage the windows (or other display objects) that are active or not active on each of the displays. The Window Management module 532, based on information from the MDM module 524, the OS 516, or other components, determines when a window (or other display object) is visible or not active. The Window Management module 532 may then put a non-visible window (or other display object) in a "not active state" and, in conjunction with the Task Management module Task Management 540 suspends the application's operation. Further, the Window Management module 532 may assign, through collaborative interaction with the MDM module 524, a display identifier to the window (or other display object) or manage one or more other items of data associated with the window (or other display object). The Window Management module 532 may also provide the stored information to the application 564, the Task Management module 540, or other components interacting with or associated with the window (or other display object). The Window Management module 532 can also associate an input task with a window based on window focus and display coordinates within the motion space.

[0130] The Input Management module 536 is operable to manage events that occur with the device. An event is any input into the window environment, for example, a user interface interactions with a user. The Input Management module 536 receives the events and logically stores the events in an event buffer 556. Events can include such user interface interactions as a "down event," which occurs when a screen 104, 108 receives a touch signal from a user, a "move event," which occurs when the screen 104, 108 determines that a user's finger is moving across a screen(s), an "up event, which occurs when the screen 104, 108 determines that the user has stopped touching the screen 104, 108, etc. These events are received, stored, and forwarded to other modules by the Input Management module 536. The Input Management module 536 may

also map screen inputs to a motion space which is the culmination of all physical and virtual display available on the device.

[0131] The motion space is a virtualized space that includes all touch sensitive displays 110,114 "tiled" together to mimic the physical dimensions of the device 100. For example, when the device 100 is unfolded, the motion space size may be 960x800, which may be the number of pixels in the combined display area for both touch sensitive displays 110, 114. If a user touches on a first touch sensitive display 110 on location (40, 40), a full screen window can receive touch event with location (40, 40). If a user touches on a second touch sensitive display 114, with location (40, 40), the full screen window can receive touch event with location (520, 40), because the second touch sensitive display 114 is on the right side of the first touch sensitive display 110, so the device 100 can offset the touch by the first touch sensitive display's 110 width, which is 480 pixels. When a hardware event occurs with location info from a driver 512, the framework 520 can up-scale the physical location to the motion space because the location of the event may be different based on the device orientation and state. The motion space may be as described in U.S. Patent Application No. 13/187,026, filed July 20, 2011, entitled "Systems and Methods for Receiving Gesture Inputs Spanning Multiple Input Devices," which is hereby incorporated by reference in its entirety for all that it teaches and for all purposes.

[0132] A task can be an application and a sub-task can be an application component that provides a window with which users can interact to do something, such as dial the phone, take a photo, send an email, or view a map. Each task may be given a window in which to draw a user interface. The window typically fills a display (for example, touch sensitive display 110,114), but may be smaller than the display 110,114 and float on top of other windows. An application usually consists of multiple sub-tasks that are loosely bound to each other. Typically, one task in an application is specified as the "main" task, which is presented to the user when launching the application for the first time. Each task can then start another task or sub-task to perform different actions.

[0133] The Task Management module 540 is operable to manage the operation of one or more applications 564 that may be executed by the device. Thus, the Task Management module 540 can receive signals to launch, suspend, terminate, etc. an application or application sub-tasks stored in the application store 560. The Task Management module 540 may then instantiate one or more tasks or sub-tasks of the application 564 to begin operation of the application 564.

Further, the Task Management Module 540 may launch, suspend, or terminate a task or sub-task as a result of user input or as a result of a signal from a collaborating framework 520 component. The Task Management Module 540 is responsible for managing the lifecycle of applications (tasks and sub-task) from when the application is launched to when the application is terminated.

[0134] The processing of the Task Management Module 540 is facilitated by a task stack 552, which is a logical structure associated with the Task Management Module 540. The task stack 552 maintains the state of all tasks and sub-tasks on the device 100. When some component of the operating system 516 requires a task or sub-task to transition in its lifecycle, the OS 516 component can notify the Task Management Module 540. The Task Management Module 540 may then locate the task or sub-task, using identification information, in the task stack 552, and send a signal to the task or sub-task indicating what kind of lifecycle transition the task needs to execute. Informing the task or sub-task of the transition allows the task or sub-task to prepare for the lifecycle state transition. The Task Management Module 540 can then execute the state transition for the task or sub-task. In embodiments, the state transition may entail triggering the OS kernel 518 to terminate the task when termination is required.

[0135] Further, the Task Management module 540 may suspend the application 564 based on information from the Window Management Module 532. Suspending the application 564 may maintain application data in memory but may limit or stop the application 564 from rendering a window or user interface. Once the application becomes active again, the Task Management module 540 can again trigger the application to render its user interface. In embodiments, if a task is suspended, the task may save the task's state in case the task is terminated. In the suspended state, the application task may not receive input because the application window is not visible to the user.

[0136] The frame buffer 548 is a logical structure(s) used to render the user interface. The frame buffer 548 can be created and destroyed by the OS kernel 518. However, the Display Controller 544 can write the image data, for the visible windows, into the frame buffer 548. A frame buffer 548 can be associated with one screen or multiple screens. The association of a frame buffer 548 with a screen can be controlled dynamically by interaction with the OS kernel 518. A composite display may be created by associating multiple screens with a single frame buffer 548. Graphical data used to render an application's window user interface may then be written to the single frame buffer 548, for the composite display, which is output to the multiple

screens 104,108. The Display Controller 544 can direct an application's user interface to a portion of the frame buffer 548 that is mapped to a particular display 110,114, thus, displaying the user interface on only one screen 104 or 108. The Display Controller 544 can extend the control over user interfaces to multiple applications, controlling the user interfaces for as many displays as are associated with a frame buffer 548 or a portion thereof. This approach compensates for the multiple physical screens 104,108 that are in use by the software component above the Display Controller 544.

[0137] The Application Manager 562 is an application that provides a presentation layer for the window environment. Thus, the Application Manager 562 provides the graphical model for rendering by the Task Management Module 540. Likewise, the Desktop 566 provides the presentation layer for the Application Store 560. Thus, the desktop provides a graphical model of a surface having selectable application icons for the Applications 564 in the Application Store 560 that can be provided to the Window Management Module 556 for rendering.

[0138] Further, the framework can include an Application Model Manager (AMM) 542. The Application Manager 562 may interface with the AMM 542. In embodiments, the AMM 542 receives state change information from the device 100 regarding the state of applications (which are running or suspended). The AMM 542 can associate bit map images from the Surface Cache Module 528 to the tasks that are alive (running or suspended). Further, the AMM 542 can convert the logical window stack maintained in the Task Manager Module 540 to a linear ("film strip" or "deck of cards") organization that the user perceives when the using the off gesture capture area 120 to sort through the windows. Further, the AMM 542 may provide a list of executing applications to the Application Manager 562.

[0139] An embodiment of the MDM module 524 is shown in Fig. 5B. The MDM module 524 is operable to determine the state of the environment for the device, including, but not limited to, the orientation of the device, whether the device 100 is opened or closed, what applications 564 are executing, how the applications 564 are to be displayed, what actions the user is conducting, the tasks being displayed, etc. To configure the display, the MDM module 524 interprets these environmental factors and determines a display configuration, as described in conjunction with Figs. 6A-6J. Then, the MDM module 524 can bind the applications 564 or other device components to the displays. The configuration may then be sent to the Display Controller 544 and/or the other components within the OS 516 to generate the display. The MDM module 524

can include one or more of, but is not limited to, a Display Configuration Module 568, a Preferences Module 572, a Device State Module 574, a Gesture Module 576, a Requirements Module 580, an Event Module 584, and/or a Binding Module 588.

[0140] The Display Configuration Module 568 determines the layout for the display. In embodiments, the Display Configuration Module 568 can determine the environmental factors. The environmental factors may be received from one or more other MDM modules 524 or from other sources. The Display Configuration Module 568 can then determine from the list of factors the best configuration for the display. Some embodiments of the possible configurations and the factors associated therewith are described in conjunction with Figs. 6A-6F.

[0141] The Preferences Module 572 is operable to determine display preferences for an application 564 or other component. For example, an application can have a preference for Single or Dual displays. The Preferences Module 572 can determine an application's display preference (e.g., by inspecting the application's preference settings) and may allow the application 564 to change to a mode (e.g., single screen, dual screen, max, etc.) if the device 100 is in a state that can accommodate the preferred mode. However, some user interface policies may disallow a mode even if the mode is available. As the configuration of the device changes, the preferences may be reviewed to determine if a better display configuration can be achieved for an application 564.

[0142] The Device State Module 574 is operable to determine or receive the state of the device. The state of the device can be as described in conjunction with Figs. 3A and 3B. The state of the device can be used by the Display Configuration Module 568 to determine the configuration for the display. As such, the Device State Module 574 may receive inputs and interpret the state of the device. The state information is then provided to the Display Configuration Module 568.

[0143] The Gesture Module 576 is shown as part of the MDM module 524, but, in embodiments, the Gesture module 576 may be a separate Framework 520 component that is separate from the MDM module 524. In embodiments, the Gesture Module 576 is operable to determine if the user is conducting any actions on any part of the user interface. In alternative embodiments, the Gesture Module 576 receives user interface actions from the configurable area 112,116 only. The Gesture Module 576 can receive touch events that occur on the configurable area 112,116 (or possibly other user interface areas) by way of the Input Management Module

536 and may interpret the touch events (using direction, speed, distance, duration, and various other parameters) to determine what kind of gesture the user is performing. When a gesture is interpreted, the Gesture Module 576 can initiate the processing of the gesture and, by collaborating with other Framework 520 components, can manage the required window animation. The Gesture Module 576 collaborates with the Application Model Manager 542 to collect state information with respect to which applications are running (active or paused) and the order in which applications must appear when a user gesture is performed. The Gesture Module 576 may also receive references to bitmaps (from the Surface Cache Module 528) and live windows so that when a gesture occurs it can instruct the Display Controller 544 how to move the window(s) across the display 110,114. Thus, suspended applications may appear to be running when those windows are moved across the display 110,114.

[0144] Further, the Gesture Module 576 can receive task information either from the Task Manage Module 540 or the Input Management module 536. The gestures may be as defined in conjunction with Figs. 4A through 4H. For example, moving a window causes the display to render a series of display frames that illustrate the window moving. The gesture associated with such user interface interaction can be received and interpreted by the Gesture Module 576. The information about the user gesture is then sent to the Task Management Module 540 to modify the display binding of the task.

[0145] The Requirements Module 580, similar to the Preferences Module 572, is operable to determine display requirements for an application 564 or other component. An application can have a set display requirement that must be observed. Some applications require a particular display orientation. For example, the application "Angry Birds" can only be displayed in landscape orientation. This type of display requirement can be determined or received, by the Requirements Module 580. As the orientation of the device changes, the Requirements Module 580 can reassert the display requirements for the application 564. The Display Configuration Module 568 can generate a display configuration that is in accordance with the application display requirements, as provided by the Requirements Module 580.

[0146] The Event Module 584, similar to the Gesture Module 576, is operable to determine one or more events occurring with an application or other component that can affect the user interface. Thus, the Event Module 584 can receive event information either from the event buffer 556 or the Task Management module 540. These events can change how the tasks are

bound to the displays. The Event Module 584 can collect state change information from other Framework 520 components and act upon that state change information. In an example, when the phone is opened or closed or when an orientation change has occurred, a new message may be rendered in a secondary screen. The state change based on the event can be received and interpreted by the Event Module 584. The information about the events then may be sent to the Display Configuration Module 568 to modify the configuration of the display.

[0147] The Binding Module 588 is operable to bind the applications 564 or the other components to the configuration determined by the Display Configuration Module 568. A binding associates, in memory, the display configuration for each application with the display and mode of the application. Thus, the Binding Module 588 can associate an application with a display configuration for the application (e.g. landscape, portrait, multi-screen, etc.). Then, the Binding Module 588 may assign a display identifier to the display. The display identifier associated the application with a particular display of the device 100. This binding is then stored and provided to the Display Controller 544, the other components of the OS 516, or other components to properly render the display. The binding is dynamic and can change or be updated based on configuration changes associated with events, gestures, state changes, application preferences or requirements, etc.

[0148] User Interface Configurations:

[0149] With reference now to Figs. 6A-J, various types of output configurations made possible by the device 100 will be described hereinafter.

[0150] Figs. 6A and 6B depict two different output configurations of the device 100 being in a first state. Specifically, Fig. 6A depicts the device 100 being in a closed portrait state 304 where the data is displayed on the primary screen 104. In this example, the device 100 displays data via the touch sensitive display 110 in a first portrait configuration 604. As can be appreciated, the first portrait configuration 604 may only display a desktop or operating system home screen. Alternatively, one or more windows may be presented in a portrait orientation while the device 100 is displaying data in the first portrait configuration 604.

[0151] Fig. 6B depicts the device 100 still being in the closed portrait state 304, but instead data is displayed on the secondary screen 108. In this example, the device 100 displays data via the touch sensitive display 114 in a second portrait configuration 608.

[0152] It may be possible to display similar or different data in either the first or second portrait configuration 604, 608. It may also be possible to transition between the first portrait configuration 604 and second portrait configuration 608 by providing the device 100 a user gesture (e.g., a double tap gesture), a menu selection, or other means. Other suitable gestures may also be employed to transition between configurations. Furthermore, it may also be possible to transition the device 100 from the first or second portrait configuration 604, 608 to any other configuration described herein depending upon which state the device 100 is moved.

[0153] An alternative output configuration may be accommodated by the device 100 being in a second state. Specifically, Fig. 6C depicts a third portrait configuration where data is displayed simultaneously on both the primary screen 104 and the secondary screen 108. The third portrait configuration may be referred to as a Dual-Portrait (PD) output configuration. In the PD output configuration, the touch sensitive display 110 of the primary screen 104 depicts data in the first portrait configuration 604 while the touch sensitive display 114 of the secondary screen 108 depicts data in the second portrait configuration 608. The simultaneous presentation of the first portrait configuration 604 and the second portrait configuration 608 may occur when the device 100 is in an open portrait state 320. In this configuration, the device 100 may display one application window in one display 110 or 114, two application windows (one in each display 110 and 114), one application window and one desktop, or one desktop. Other configurations may be possible. It should be appreciated that it may also be possible to transition the device 100 from the simultaneous display of configurations 604, 608 to any other configuration described herein depending upon which state the device 100 is moved. Furthermore, while in this state, an application's display preference may place the device into bilateral mode, in which both displays are active to display different windows in the same application. For example, a Camera application may display a viewfinder and controls on one side, while the other side displays a mirrored preview that can be seen by the photo subjects. Games involving simultaneous play by two players may also take advantage of bilateral mode.

[0154] Figs. 6D and 6E depicts two further output configurations of the device 100 being in a third state. Specifically, Fig. 6D depicts the device 100 being in a closed landscape state 340 where the data is displayed on the primary screen 104. In this example, the device 100 displays data via the touch sensitive display 110 in a first landscape configuration 612. Much like the

other configurations described herein, the first landscape configuration 612 may display a desktop, a home screen, one or more windows displaying application data, or the like.

[0155] Fig. 6E depicts the device 100 still being in the closed landscape state 340, but instead data is displayed on the secondary screen 108. In this example, the device 100 displays data via the touch sensitive display 114 in a second landscape configuration 616. It may be possible to display similar or different data in either the first or second portrait configuration 612, 616. It may also be possible to transition between the first landscape configuration 612 and second landscape configuration 616 by providing the device 100 with one or both of a twist and tap gesture or a flip and slide gesture. Other suitable gestures may also be employed to transition between configurations. Furthermore, it may also be possible to transition the device 100 from the first or second landscape configuration 612, 616 to any other configuration described herein depending upon which state the device 100 is moved.

[0156] Fig. 6F depicts a third landscape configuration where data is displayed simultaneously on both the primary screen 104 and the secondary screen 108. The third landscape configuration may be referred to as a Dual-Landscape (LD) output configuration. In the LD output configuration, the touch sensitive display 110 of the primary screen 104 depicts data in the first landscape configuration 612 while the touch sensitive display 114 of the secondary screen 108 depicts data in the second landscape configuration 616. The simultaneous presentation of the first landscape configuration 612 and the second landscape configuration 616 may occur when the device 100 is in an open landscape state 340. It should be appreciated that it may also be possible to transition the device 100 from the simultaneous display of configurations 612, 616 to any other configuration described herein depending upon which state the device 100 is moved.

[0157] Figs. 6G and 6H depict two views of a device 100 being in yet another state. Specifically, the device 100 is depicted as being in an easel state 312. Fig. 6G shows that a first easel output configuration 618 may be displayed on the touch sensitive display 110. Fig. 6H shows that a second easel output configuration 620 may be displayed on the touch sensitive display 114. The device 100 may be configured to depict either the first easel output configuration 618 or the second easel output configuration 620 individually. Alternatively, both the easel output configurations 618, 620 may be presented simultaneously. In some embodiments, the easel output configurations 618, 620 may be similar or identical to the landscape output configurations 612, 616. The device 100 may also be configured to display one

or both of the easel output configurations 618, 620 while in a modified easel state 316. It should be appreciated that simultaneous utilization of the easel output configurations 618, 620 may facilitate two-person games (e.g., Battleship®, chess, checkers, etc.), multi-user conferences where two or more users share the same device 100, and other applications. As can be appreciated, it may also be possible to transition the device 100 from the display of one or both configurations 618, 620 to any other configuration described herein depending upon which state the device 100 is moved.

[0158] Fig. 6I depicts yet another output configuration that may be accommodated while the device 100 is in an open portrait state 320. Specifically, the device 100 may be configured to present a single continuous image across both touch sensitive displays 110, 114 in a portrait configuration referred to herein as a Portrait-Max (PMax) configuration 624. In this configuration, data (e.g., a single image, application, window, icon, video, etc.) may be split and displayed partially on one of the touch sensitive displays while the other portion of the data is displayed on the other touch sensitive display. The Pmax configuration 624 may facilitate a larger display and/or better resolution for displaying a particular image on the device 100. Similar to other output configurations, it may be possible to transition the device 100 from the Pmax configuration 624 to any other output configuration described herein depending upon which state the device 100 is moved.

[0159] Fig. 6J depicts still another output configuration that may be accommodated while the device 100 is in an open landscape state 348. Specifically, the device 100 may be configured to present a single continuous image across both touch sensitive displays 110, 114 in a landscape configuration referred to herein as a Landscape-Max (LMax) configuration 628. In this configuration, data (e.g., a single image, application, window, icon, video, etc.) may be split and displayed partially on one of the touch sensitive displays while the other portion of the data is displayed on the other touch sensitive display. The Lmax configuration 628 may facilitate a larger display and/or better resolution for displaying a particular image on the device 100. Similar to other output configurations, it may be possible to transition the device 100 from the Lmax configuration 628 to any other output configuration described herein depending upon which state the device 100 is moved.

[0160] FIGS. 7A-7C illustrate an embodiment showing device 100 and how device 100 responds when a gesture is made. FIG. 7A illustrates device 100 (with screens 104 and 108)

when a focus is on screen 104 and display area 110. As noted above, "focus" means active and selected for receiving input. Accordingly, in FIG. 7A screen 104 and display area 110 are active and selected for input. Highlight 704 provides an indication to a user that screen 104 and display area 110 have the focus. If a user presses configurable area 112, device 100 will consider the inputs as inputs for screen 104 and/or for display 110.

[0161] As shown in FIG. 7B, a user can make a gesture 708, such as a tap, drag, or flick gesture on display 114 to indicate a request to launch an application. In some embodiments, the gesture may be made in gesture capture region 120 (e.g., gesture 708A). Device 100 receives the gesture 708 or 708A. In the embodiment shown in FIG. 7, the gesture 708 is made on an icon 716 that represents the application. In response to the gesture 708, an application is launched. As shown in FIG 7C, the launching of the application results in an image 720 being displayed on display 114. The focus is also moved from screen 104 to screen 108, and display area 114, so that image 720 is in focus and a user can immediately begin to interact with the launched application through the image 720. Also, highlighting 704 changes from screen 104 and display area 110 to screen 108 and display area 114. The highlighting 704 provides an indication to a user of what screen, display, and/or application currently has the focus.

[0162] Highlighting 704 as noted above, indicates that screen 104 and display 110 are active. Highlighting 704 can be effected in a number of different ways. In some embodiments, the highlighting 704 is accomplished using light. In these embodiments, a backlight in device 100 may be configured to provide brighter light in some areas, such as around a border as shown in FIGS. 7A-7C. In other embodiments, the brighter light may be located on just one side/area or may be the entire display 110, which is made brighter than at least a portion of screen 108 and/or display 114.

[0163] In other embodiments, highlighting 704 may be accomplished using color, or a displayed image such as an icon that indicates that a screen (104 or 108) and/or a display (110 or 114) have the focus. In other embodiments, the highlighting may be accomplished by some other difference, such as changing text to a different font type, size, or other format change (e.g., italics, underline, bold etc). In some embodiments, the highlighting can be accomplished, or enhanced, by changing a different screen, display, and/or displayed image. For example, in embodiments, the screen, display and/or displayed image that does not have the focus, will be deemphasized by darkening, a color change, or other features that distinguishes it from the

highlighted screen, display, and/or image. As can be appreciated, a combination of one or more of the above highlighting features may be used in some embodiments.

[0164] In one embodiment, in addition to highlighting 704, configurable area 112 of screen 104 is highlighted to indicate that screen 104 and display 110 have the focus. Device 100 can be configured so that configurable areas are only highlighted when the corresponding screen has the focus. That is, configurable area 112 is highlighted when screen 104 is in focus, while configurable area 116 is highlighted when focus is on screen 108. As indicated above, the highlighting may be effected by lighting, color, or an image displayed near the configurable area. In the embodiment, shown in FIGS. 7A-7C, when screen 104 is in focus, the configurable area 112 is back lit to show buttons that can be used to receive input from a user.

[0165] In some embodiments, when configurable area 112 is highlighted, input can be received by pressing portions of area 112. At the same time, device 100 may be configured so that no input is received from configurable area 116. Thus, even if a user presses on area 116, no input will be received by device 100. Similarly, when configurable area 116 is highlighted device 100 will allow input to be received from area 116, and no input will be received from area 112. In other embodiments, only one configurable area will be highlighted at a time reflecting the particular screen, display, or image that is in focus. That is, when configurable area 112 is highlighted configurable area 116 will not be highlighted, and when configurable area 116 is highlighted configurable area 112 will not be highlighted.

[0166] It is noted that although gesture 708 is made on display 114, in other embodiments, the gesture 708 may be made on one or more portions of display 110, display 114, configurable area 112, configurable area 116, or as shown in FIG 7B (gesture 708A). The gesture 708 may involve touching portions of screens 104 and/or 108 or can involve only movement above the surface of portions of screens 104 and/or 108. In some embodiments, for the gesture to be recognized, contact is required to be made with the display 110 or 114 for a predetermined period of time.

[0167] As a result of receiving the gesture 708, an application is launched and focus changes from screen 104 and display 110 to screen 108 and display 114. In some embodiments, device 100 is configured to interpret different gestures as indications of different operations. For example, the device 100 may be configured to move an image when the gesture 708 is a drag gesture or flick gesture, but launch applications if gesture 708 is a flick, tap gesture, or double tap gesture. In embodiments, when an application is launched, any image displayed in response

to the launching of the application (e.g., open window) is placed in focus. This allows a user to immediately begin to interact with the open application to the displayed image. In some embodiments, the location of the gesture 708, whether in gesture capture region 120 or some other portion of displays 110 and 114, may determine what operation is performed.

[0168] FIGS. 8A-8C illustrates another embodiment of device 100 and its output in response to receiving a gesture. In FIG. 8A the focus is on screen 104, display 110, and image 804. Image 804 is in embodiments a window of an active application which is selected to receive input from a user. In other embodiment, image 804 is an icon on a desktop. In the embodiment shown in FIGS. 8A-8C, a user makes a gesture 708 on display 114. The gesture is a gesture that is associated with launching an application, i.e. a tap on display 114. In response to the gesture 708, device 100 launches an application and then changes focus away from screen 104, display 110, and image 804 and to screen 108 and display 114.

[0169] In some embodiments, as shown in FIG. 8C, the gesture 708 that results in automatically launching an application and placing the focus on an image, i.e., image 808, displayed when the application is launched, does not have to occur on an icon or other representation of an application. In these embodiments, device 100 may be configured by a user so that when the gesture is received on any portion of display 114 (or in other embodiments 110), an application is launched and the focus will be changed on an image, e.g., a window of an open application, displayed as a result of the launched application. The user may, for example, list applications in order of priority such that an application at the top of the list will be launched first. If a window is open for an application at the top the list, then the list can be traversed in order of priority until an application without an open window is found. If all of the applications on the list have open windows then the gesture will not cause any applications to launch, but instead the focus will change to the open window, on display 114 and screen 108, of the application associated with the application at the top of the priority list. In some embodiments, the focus may be changed to a window of the same application that was previously in focus, e.g., a window associated with the same application as image 804. In other embodiments, the gesture 708 may always launch a default application and place the focus on an image displayed as a result of the launch (e.g., open window).

[0170] In some embodiments, device 100 is configured so that depending upon the particular gesture 708, an application may be launched and be placed in focus or not. For example, the

device 100 may be configured to, in response to gesture 708, launch an application and place the focus on an image displayed as a result of the launch. However, if gesture 708 is a different gesture, a different application may be launched, no application will be launched, or an application may be launched but focus is not changed to an image displayed as a result of the launched application. In other embodiments, the location of the gesture 708, whether in gesture capture region 120 or some other portion of displays 110 and 114, may determine whether an application is launched or not.

[0171] It is noted that although gesture 708 is being made on display 114, in other embodiments, the gesture 708 is made on one or more gesture capture regions (e.g., 120), which are not on display 110 or display 114. The gesture 708 may involve touching some portion of screens 102 or 104 and or can involve only movement above the surface of displays 110 and 114.

[0172] As shown in FIG. 8C, when an application is launched and focus is changed to screen 108 and display 114, configurable area 116 is highlighted to indicate that the focus is changed. Device 100 can be configured so that configurable areas are only highlighted when the corresponding screen has the focus. That is, configurable area 112 is highlighted when screen 104 and/or display 110 is in focus, while configurable area 116 is highlighted when focus is on screen 108 and/or display 114. As indicated above, the highlighting may be effected by lighting, color, or an image displayed near the configurable area. In the embodiment, shown in FIGS. 8A-8C, when screen 104 and/or display 110 is in focus, the configurable area 112 is back lit to show buttons that can be used to receive input from a user. Similarly, when focus changes to screen 108 and/or display 114, the configurable area 116 is back lit to show buttons that can be used to receive input from a user.

[0173] Referring now to FIG. 9, a flow diagram 900 in accordance with at least some embodiments of the present disclosure is shown and will be described. Flow 900 is in embodiments performed by a device such as device 100. More specifically, one or more hardware or software components may be involved in performing flow 900. In one embodiment, modules in middleware 520 (FIG. 5A) such as multi-display management class 524 (FIG. 5B) perform one or more of the steps of flow 900. In other embodiments, in addition to, or in lieu of, middleware 520 performing steps of flow 900, operating system kernel(s) 516a, processor 504, and/or drivers 512a-512b may also perform steps of flow 900.

[0174] Flow 900 is initiated at 904. Flow 900 passes from 904 to optional step 908 where input regarding focus behavior is received. In this step, a user may provide configuration information that indicates how a device should handle gestures. In embodiments, the device is device 100 (FIGS. 1-3), which includes multiple screens. The user may input any information that affects how a device 100 may handle input gestures, including but not limited to, what applications are launched, changes (if any) that occur to displays 104 and 108 when a gesture has been received, what is highlighted when focus is changed, priority list of applications when a gesture is received, whether focus changes are limited to a display, screen, and/or displayed image, whether the type of gesture received results in different operations, and other information. In one embodiment, the input indicates that in response to a gesture, an application should be launched and focus should be placed on an image displayed as a result of the launching of the application.

[0175] From step 908, flow 900 passes to step 910 where a gesture is received. The gesture can be received in some embodiments by pressure sensitive displays 110 and 114 or gesture capture regions such as regions 120 and 124. In some embodiments, as shown in FIGS. 1 and 2, the gesture capture region(s) is distinct and located away from the pressure sensitive displays. In other embodiments the gesture capture area may overlap partially or completely with the pressure sensitive displays.

[0176] The gesture may be any type of gesture. In embodiments, the gesture is one or more of the gestures illustrated in FIG. 4A-4H. The device 100 is configured so that the gesture received at 910 indicates a request to launch an application and change focus to an image (e.g., window) displayed as a result of launching the application.

[0177] Flow 900 passes from 912 to step 916 where the focus is changed to an image displayed as a result of launching the application. The image may be for example a window that provides a user interface for a user to begin interacting with the application. In some embodiments, this may involve changing the focus from a different window that is displayed on a different display and/or screen. For example, if at the time the gesture is received at step 910 the focus is on a window of a different application, the focus will be changed from the different window to the newly opened window. In other embodiments, there may not be any image that currently has the focus in which case the focus is placed on the newly opened window. As indicated above, if the newly opened window is on a different screen and display than a window

that currently is in focus, the focus will change to the different screen and display where the new the opened window is displayed. The newly opened window, in some embodiments, is displayed on a display and screen which currently displays a window that is in focus. In these instances, the focus will change from a window with the current focus to the newly opened window.

[0178] It should be noted that in some embodiments, step 916 may involve a number of sub steps. For example, in some embodiments as part of step 916, a configurable area may be highlighted, a display may be highlighted, an icon may be generated indicating the focus change, and/or portions of a first screen may be changed to emphasize the highlighting on a second screen. In some embodiments, the substeps may involve not allowing input from a configurable area associated with a first screen and allowing input from a configurable area associated with a second screen. Flow 900 ends at 920.

[0179] The exemplary systems and methods of this disclosure have been described in relation to FIGS 1-10. However, to avoid unnecessarily obscuring the present disclosure, the preceding description omits a number of known structures and devices. This omission is not to be construed as a limitation of the scopes of the claims. Specific details are set forth to provide an understanding of the present disclosure. It should however be appreciated that the present disclosure may be practiced in a variety of ways beyond the specific detail set forth herein.

[0180] Furthermore, while the exemplary aspects, embodiments, and/or configurations illustrated herein show the various components of the system collocated, certain components of the system can be located remotely, at distant portions of a distributed network, such as a LAN and/or the Internet, or within a dedicated system. Thus, it should be appreciated, that the components of the system can be combined in to one or more devices, such as a phone, computer, PDA, electronic book reader, gaming device, or collocated on a particular node of a distributed network, such as an analog and/or digital telecommunications network, a packet-switch network, or a circuit-switched network. It will be appreciated from the preceding description, and for reasons of computational efficiency, that the components of the system can be arranged at any location within a distributed network of components without affecting the operation of the system. For example, the various components can be located in a switch such as a PBX and media server, gateway, in one or more communications devices, at one or more users' premises, or some combination thereof. Similarly, one or more functional portions of the system

could be distributed between a telecommunications device(s) and an associated computing device.

[0181] Furthermore, it should be appreciated that the various links connecting the elements can be wired or wireless links, or any combination thereof, or any other known or later developed element(s) that is capable of supplying and/or communicating data to and from the connected elements. These wired or wireless links can also be secure links and may be capable of communicating encrypted information. Transmission media used as links, for example, can be any suitable carrier for electrical signals, including coaxial cables, copper wire and fiber optics, and may take the form of acoustic or light waves, such as those generated during radio-wave and infra-red data communications.

[0182] Also, while the flowcharts have been discussed and illustrated in relation to a particular sequence of events, it should be appreciated that changes, additions, and omissions to this sequence can occur without materially affecting the operation of the disclosed embodiments, configuration, and aspects.

[0183] A number of variations and modifications of the disclosure can be used. It would be possible to provide for some features of the disclosure without providing others.

[0184] For example in one alternative embodiment, all of the focus behavior information and information regarding launching applications may be preprogrammed into the device 100. In these embodiments, there would be no input received from a user regarding how a device 100 handles gestures indicating the launching of applications or a change in focus.

[0185] In other alternative embodiments, device 100 may be in any configuration described above with respect to FIGS. 6A-6J. In these embodiments, gestures would be received as described above indicating a request for launching an application or changing focus.

[0186] In yet another embodiment, the systems and methods of this disclosure can be implemented in conjunction with a special purpose computer, a programmed microprocessor or microcontroller and peripheral integrated circuit element(s), an ASIC or other integrated circuit, a digital signal processor, a hard-wired electronic or logic circuit such as discrete element circuit, a programmable logic device or gate array such as PLD, PLA, FPGA, PAL, special purpose computer, any comparable means, or the like. In general, any device(s) or means capable of implementing the methodology illustrated herein can be used to implement the various aspects of this disclosure. Exemplary hardware that can be used for the disclosed embodiments,

configurations and aspects includes computers, handheld devices, telephones (e.g., cellular, Internet enabled, digital, analog, hybrids, and others), and other hardware known in the art. Some of these devices include processors (e.g., a single or multiple microprocessors), memory, nonvolatile storage, input devices, and output devices. Furthermore, alternative software implementations including, but not limited to, distributed processing or component/object distributed processing, parallel processing, or virtual machine processing can also be constructed to implement the methods described herein.

[0187] In yet another embodiment, the disclosed methods may be readily implemented in conjunction with software using object or object-oriented software development environments that provide portable source code that can be used on a variety of computer or workstation platforms. Alternatively, the disclosed system may be implemented partially or fully in hardware using standard logic circuits or VLSI design. Whether software or hardware is used to implement the systems in accordance with this disclosure is dependent on the speed and/or efficiency requirements of the system, the particular function, and the particular software or hardware systems or microprocessor or microcomputer systems being utilized.

[0188] In yet another embodiment, the disclosed methods may be partially implemented in software that can be stored on a storage medium, executed on programmed general-purpose computer with the cooperation of a controller and memory, a special purpose computer, a microprocessor, or the like. In these instances, the systems and methods of this disclosure can be implemented as program embedded on personal computer such as an applet, JAVA® or CGI script, as a resource residing on a server or computer workstation, as a routine embedded in a dedicated measurement system, system component, or the like. The system can also be implemented by physically incorporating the system and/or method into a software and/or hardware system.

[0189] Although the present disclosure describes components and functions implemented in the aspects, embodiments, and/or configurations with reference to particular standards and protocols, the aspects, embodiments, and/or configurations are not limited to such standards and protocols. Other similar standards and protocols not mentioned herein are in existence and are considered to be included in the present disclosure. Moreover, the standards and protocols mentioned herein and other similar standards and protocols not mentioned herein are periodically superseded by faster or more effective equivalents having essentially the same functions. Such

replacement standards and protocols having the same functions are considered equivalents included in the present disclosure.

[0190] The present disclosure, in various aspects, embodiments, and/or configurations, includes components, methods, processes, systems and/or apparatus substantially as depicted and described herein, including various aspects, embodiments, configurations embodiments, subcombinations, and/or subsets thereof. Those of skill in the art will understand how to make and use the disclosed aspects, embodiments, and/or configurations after understanding the present disclosure. The present disclosure, in various aspects, embodiments, and/or configurations, includes providing devices and processes in the absence of items not depicted and/or described herein or in various aspects, embodiments, and/or configurations hereof, including in the absence of such items as may have been used in previous devices or processes, e.g., for improving performance, achieving ease and\or reducing cost of implementation.

[0191] The foregoing discussion has been presented for purposes of illustration and description. The foregoing is not intended to limit the disclosure to the form or forms disclosed herein. In the foregoing Detailed Description for example, various features of the disclosure are grouped together in one or more aspects, embodiments, and/or configurations for the purpose of streamlining the disclosure. The features of the aspects, embodiments, and/or configurations of the disclosure may be combined in alternate aspects, embodiments, and/or configurations other than those discussed above. This method of disclosure is not to be interpreted as reflecting an intention that the claims require more features than are expressly recited in each claim. Rather, as the following claims reflect, inventive aspects lie in less than all features of a single foregoing disclosed aspect, embodiment, and/or configuration. Thus, the following claims are hereby incorporated into this Detailed Description, with each claim standing on its own as a separate preferred embodiment of the disclosure.

[0192] Moreover, though the description has included description of one or more aspects, embodiments, and/or configurations and certain variations and modifications, other variations, combinations, and modifications are within the scope of the disclosure, e.g., as may be within the skill and knowledge of those in the art, after understanding the present disclosure. It is intended to obtain rights which include alternative aspects, embodiments, and/or configurations to the extent permitted, including alternate, interchangeable and/or equivalent structures, functions, ranges or steps to those claimed, whether or not such alternate, interchangeable and/or equivalent

structures, functions, ranges or steps are disclosed herein, and without intending to publicly dedicate any patentable subject matter.

What is claimed is:

1. A method, comprising:

displaying a first image on a first display of a first screen, wherein the first image is in focus;

receiving first input indicating a request to launch a second application;

launching the second application;

the second application, displaying a second image on a second display; and

changing the focus from the first image to the second image.

2. The method of claim 1, wherein the first image is displayed in portrait mode on the first display and the second image is displayed in portrait mode on the second display.

3. The method of claim 1, wherein the first image is displayed in landscape mode on the first display and the second image is displayed in landscape mode on the second display.

4. The method of claim 2, further comprising:

wherein the first image is a first open window of a first application and the second image is a second open window of the second application.

5. The method of claim 1, further comprising:

receiving second input indicating that in response to receiving the first input, the second application should be launched and the focus should be placed on the second image displayed by the second application.

6. The method of claim 1, wherein the second display is on a second screen and the method further comprising:

highlighting a configurable area on the first screen when the focus is on the first image in the first display; and

highlighting a second configurable area on the second screen when the focus is on the second image in the second display.

7. The method of claim 1, wherein the second display is on a second screen and further comprising: in response to receiving the first input, highlighting the at least one of the second image, the second display, or the second screen.

8. The method of claim 1, wherein the second display is on a second screen and in response to receiving the input, lighting a second configurable area of a second screen.

9. The method of claim 1, wherein the input is a tap gesture.

10. A non-transitory computer readable medium storing computer executable instructions that when executed by at least one processor perform a method comprising:

receiving input indicating a request to launch an application, the input is received by one of a first touch sensitive display, a second touch sensitive display, or a gesture capture region; and

in response to receiving the input, changing focus from a first image displayed on the first touch sensitive display to a second image displayed by the application.

11. The non-transitory computer readable medium of claim 10, wherein the input is a tap on the second touch sensitive display.

12. The non-transitory computer readable medium of claim 10, wherein the second touch sensitive display is on a second screen and wherein the method further comprises:

in response to receiving the input, lighting a portion of a second configurable area of the second screen and allowing input from the second configurable area.

13. The non-transitory computer readable medium of claim 10, wherein the second touch sensitive display is on a second screen and wherein the method further comprises:

in response to receiving the input, darkening a portion of a first configurable area of the first screen and highlighting a portion of a second configurable area of the second screen.

14. The non-transitory computer readable medium of claim 13, wherein the method further comprises:

allowing input from the second configurable area; and

not allowing input from the first configurable area.

15. The non-transitory computer readable medium of claim 10, wherein the method further comprises:

receiving input indicating that in response to the input, the focus should be changed to the second image displayed by the application.

16. The non-transitory computer readable medium of claim 11, wherein the tap requires contact with the second touch sensitive display for a predetermined period of time.

17. A dual screen communication device, comprising:

a first touch sensitive display of a first screen;

a second touch sensitive display of a second screen;

a computer readable medium that stores computer executable instructions that when executed by at least one processor perform a method comprising:

receiving a tap, by the second touch sensitive display of a second screen, indicating a request to launch an application;

launching the application;

the application, displaying a second image on the second touch sensitive display;

changing the focus from the first touch sensitive display of a first screen to the second image; and

allowing input from at least one button of the second screen.

18. The device of claim 17, wherein the method further comprises:

highlighting a portion of the at least one button.

19. The device of claim 17, wherein the method further comprises:

not allowing input from at least a portion of the first touch sensitive display.

20. The device of claim 17, wherein the method further comprises:

highlighting a portion of the second touch sensitive display when the focus is on the second image.

ABSTRACT

Embodiments are described for handling focus when a gesture is input in a multi-screen device. In embodiments, a first image displayed on a first touch sensitive display of a first screen may be currently in focus. In embodiments, the gesture is a tap on a second touch sensitive display of the device. In response to the gesture, an application is launched, which displays a second image on a second display of a second screen. Focus is then changed from the first image on the first touch sensitive display to the second image on the second touch sensitive display.

Electronic Patent Application Fee Transmittal	
Application Number:	
Filing Date:	
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Filer:	Dean Reinhardt/Leslie Roberts
Attorney Docket Number:	6583-8-CON
Filed as Large Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility application filing	1011	1	280	280
Utility Search Fee	1111	1	600	600
Utility Examination Fee	1311	1	720	720
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**1600**

Electronic Acknowledgement Receipt	
EFS ID:	20508799
Application Number:	14523069
International Application Number:	
Confirmation Number:	7687
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Customer Number:	111285
Filer:	Dean Reinhardt/Leslie Roberts
Filer Authorized By:	Dean Reinhardt
Attorney Docket Number:	6583-8-CON
Receipt Date:	24-OCT-2014
Filing Date:	
Time Stamp:	14:40:34
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1600
RAM confirmation Number	1004
Deposit Account	191970
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Drawings-only black and white line drawings	FIGURES.pdf	243221 35fcc3f2d8bb5541e24f90bbe245f8a539d473b7	no	20
Warnings:					
Information:					
2	Application Data Sheet	ADS.pdf	1421730 a7f2c2f98bbaf1bfc912af63fdbb096a558471d2	no	6
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3	Oath or Declaration filed	Executed_Declaration.pdf	681909 9e8c521be968b5ca876eb9aae919f5b247623b55	no	4
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4		PRELIMINARY_AMENDMENT.pdf	78951 dbcfa4aad96692b7a6b23ff19fef24e8695b444d	yes	7

Multipart Description/PDF files in .zip description

Document Description	Start	End
Preliminary Amendment	1	1
Claims	2	6
Applicant Arguments/Remarks Made in an Amendment	7	7

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	Specification	1	45
	Claims	46	49
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		Total Files Size (in bytes):	3052153		

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Acknowledgement Receipt	
EFS ID:	20508799
Application Number:	14523069
International Application Number:	
Confirmation Number:	7687
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Customer Number:	111285
Filer:	Dean Reinhardt/Leslie Roberts
Filer Authorized By:	Dean Reinhardt
Attorney Docket Number:	6583-8-CON
Receipt Date:	24-OCT-2014
Filing Date:	
Time Stamp:	14:40:34
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1600
RAM confirmation Number	1004
Deposit Account	191970
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Drawings-only black and white line drawings	FIGURES.pdf	243221 35fcc3f2d8bb5541e24f90bbe245f8a539d473b7	no	20
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2	Application Data Sheet	ADS.pdf	1421730 a7f2c2f98bbaf1bfc912af63fdbb096a558471d2	no	6
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Multipart Description/PDF files in .zip description

Document Description	Start	End
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Claims	2	6
Applicant Arguments/Remarks Made in an Amendment	7	7

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	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Specification	1	45
	Claims	46	49
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New International Application Filed with the USPTO as a Receiving Office
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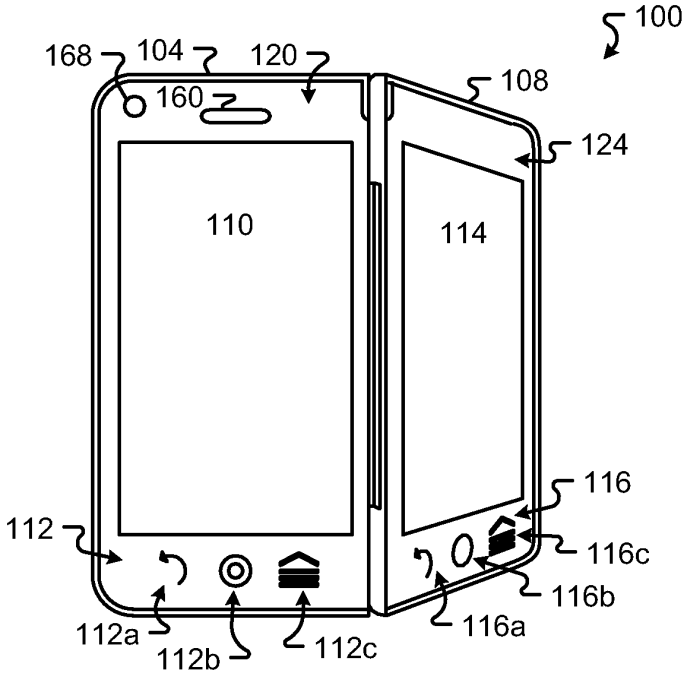

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116b
116a
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FIG. 1A

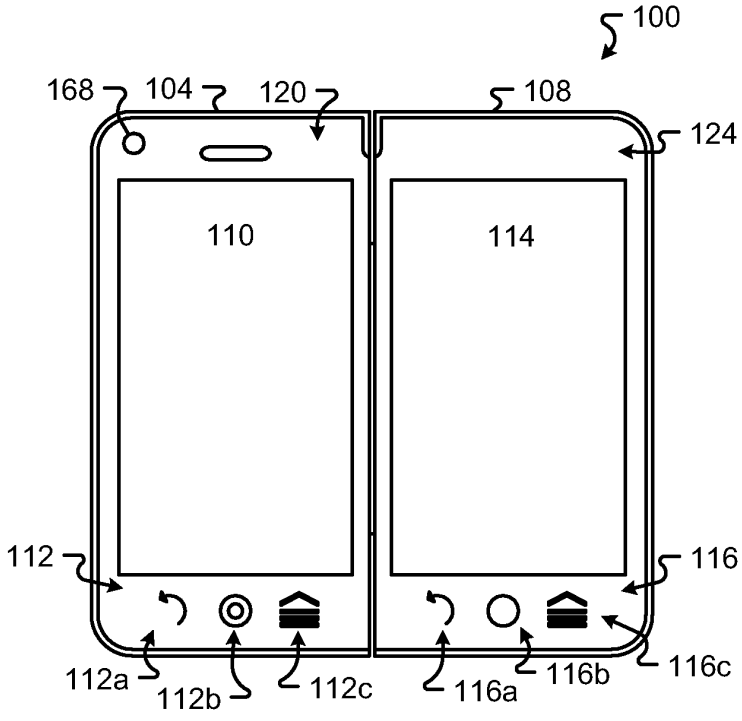

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112b
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116b
116c

FIG. 1B

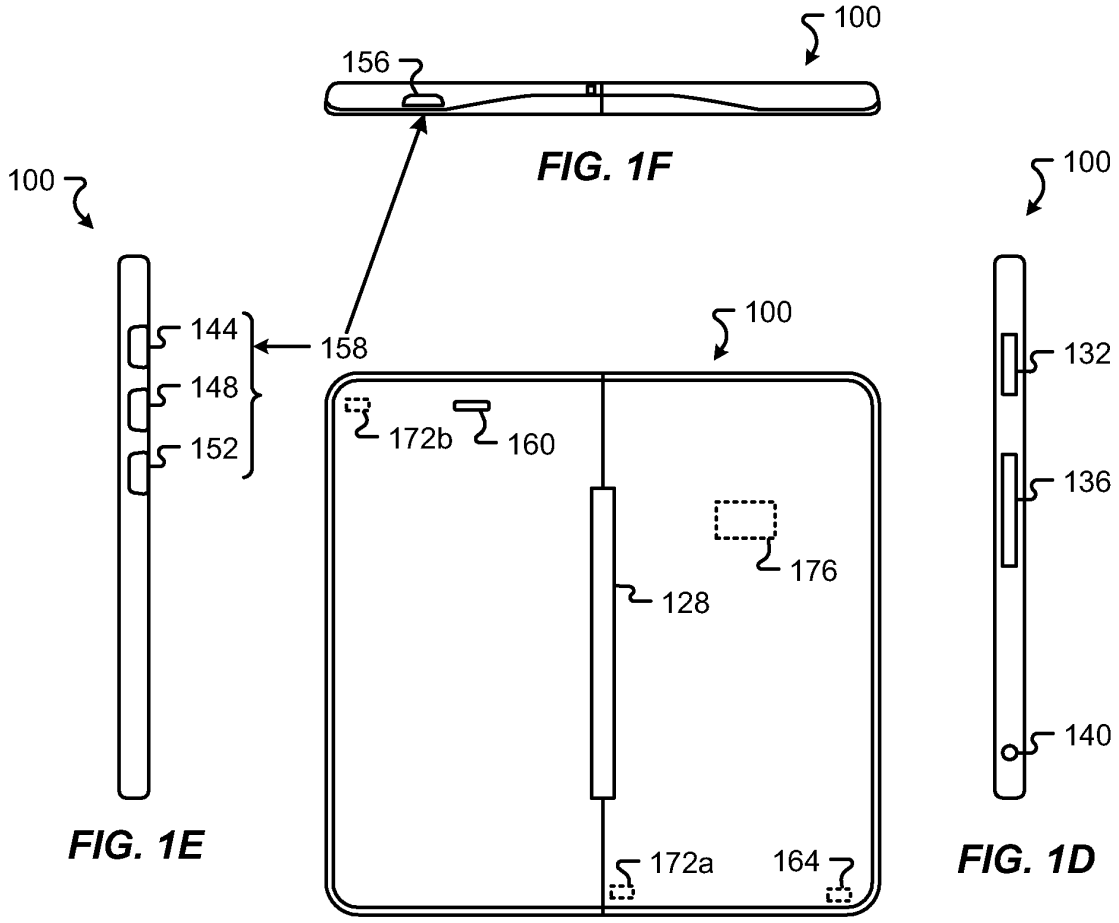


FIG. 1F

FIG. 1E

FIG. 1D

FIG. 1C

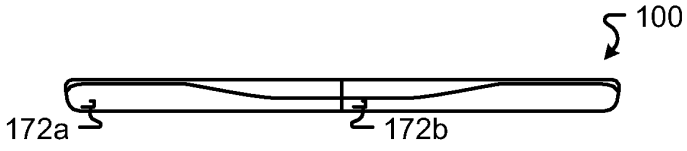


FIG. 1G

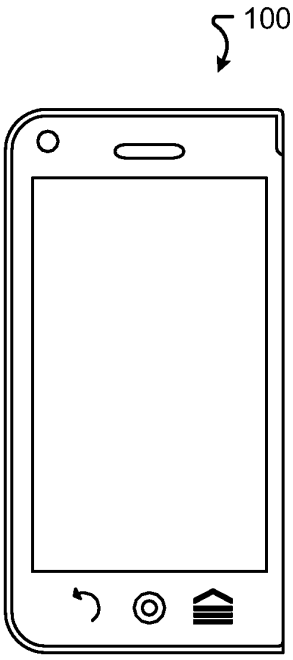


FIG. 1H

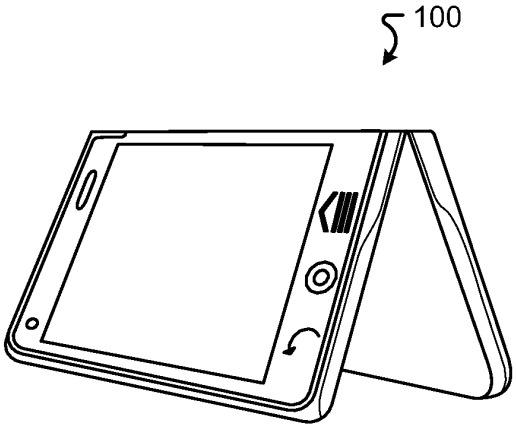


FIG. 1I

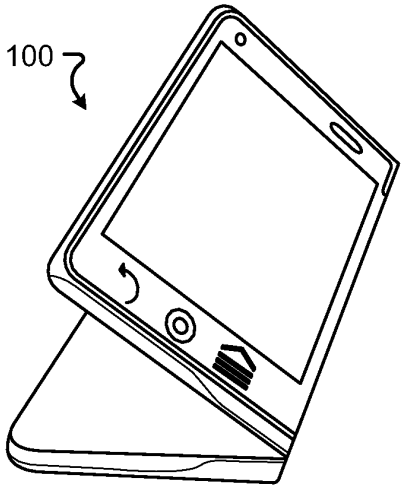


FIG. 1J

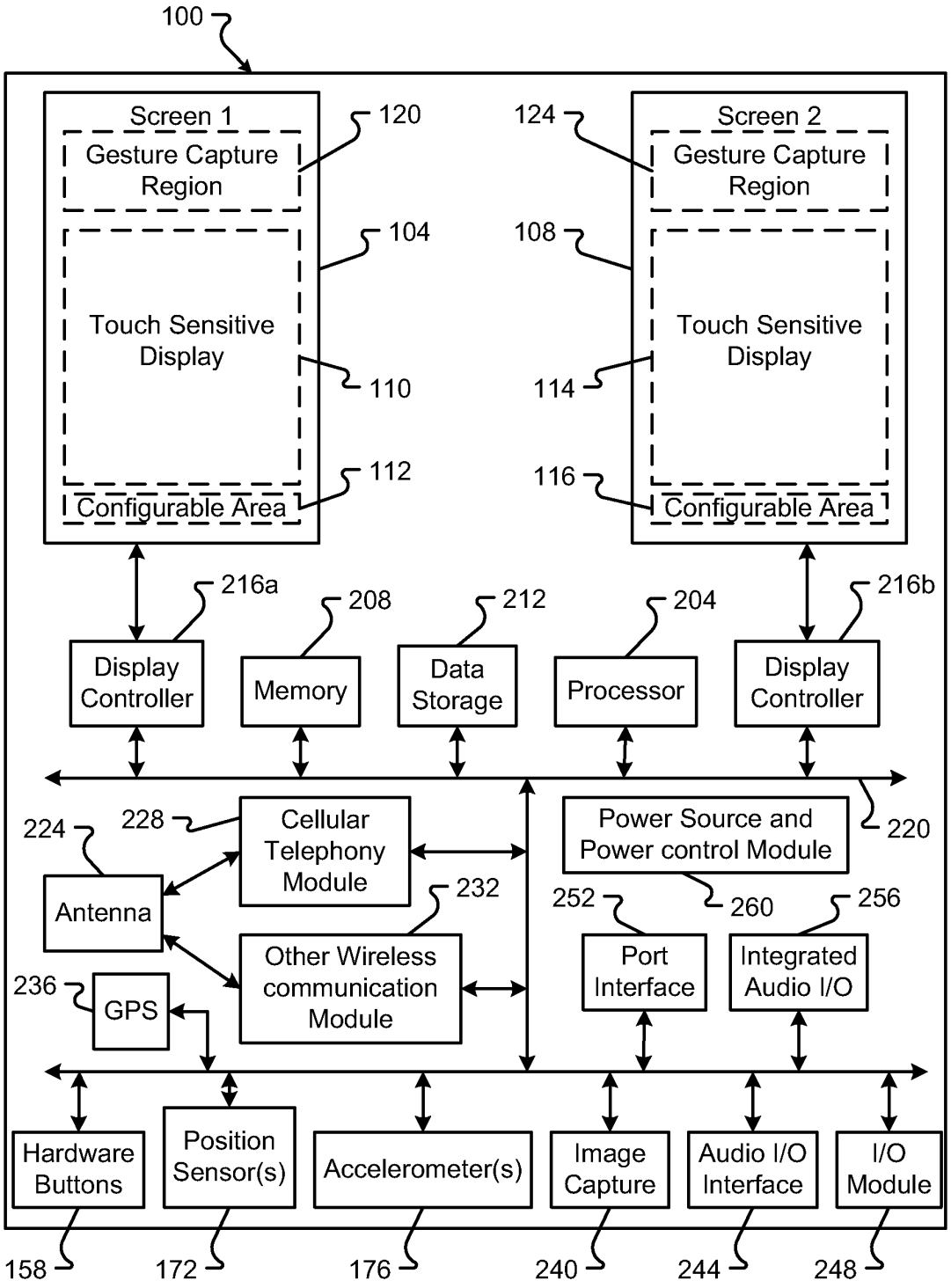

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Gesture Capture Region
120
104
Touch Sensitive Display
110
112
Configurable Area
124
Screen 2
Gesture Capture Region
108
Touch Sensitive Display
114
116
Configurable Area
216a
208
212
204
216b
Display Controller
Memory
Data Storage
Processor
Display Controller
220
224
228
Cellular Telephony Module
Power Source and Power control Module
Antenna
232
252
260
256
Other Wireless communication Module
Port Interface
Integrated Audio I/O
236
GPS
Hardware Buttons
Position Sensor(s)
Accelerometer(s)
Image Capture
Audio I/O Interface
I/O Module
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172
176
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244
248

FIG. 2

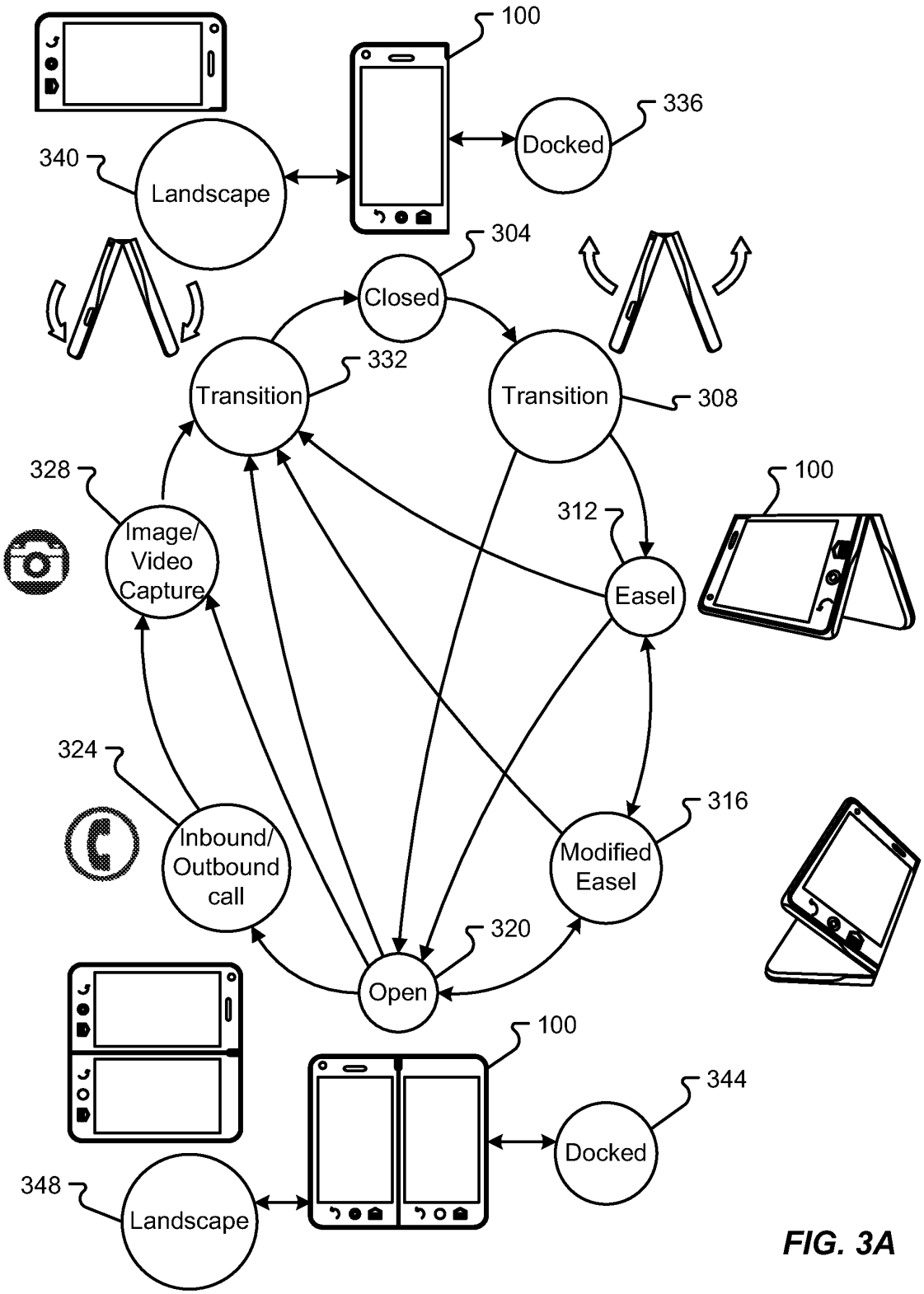
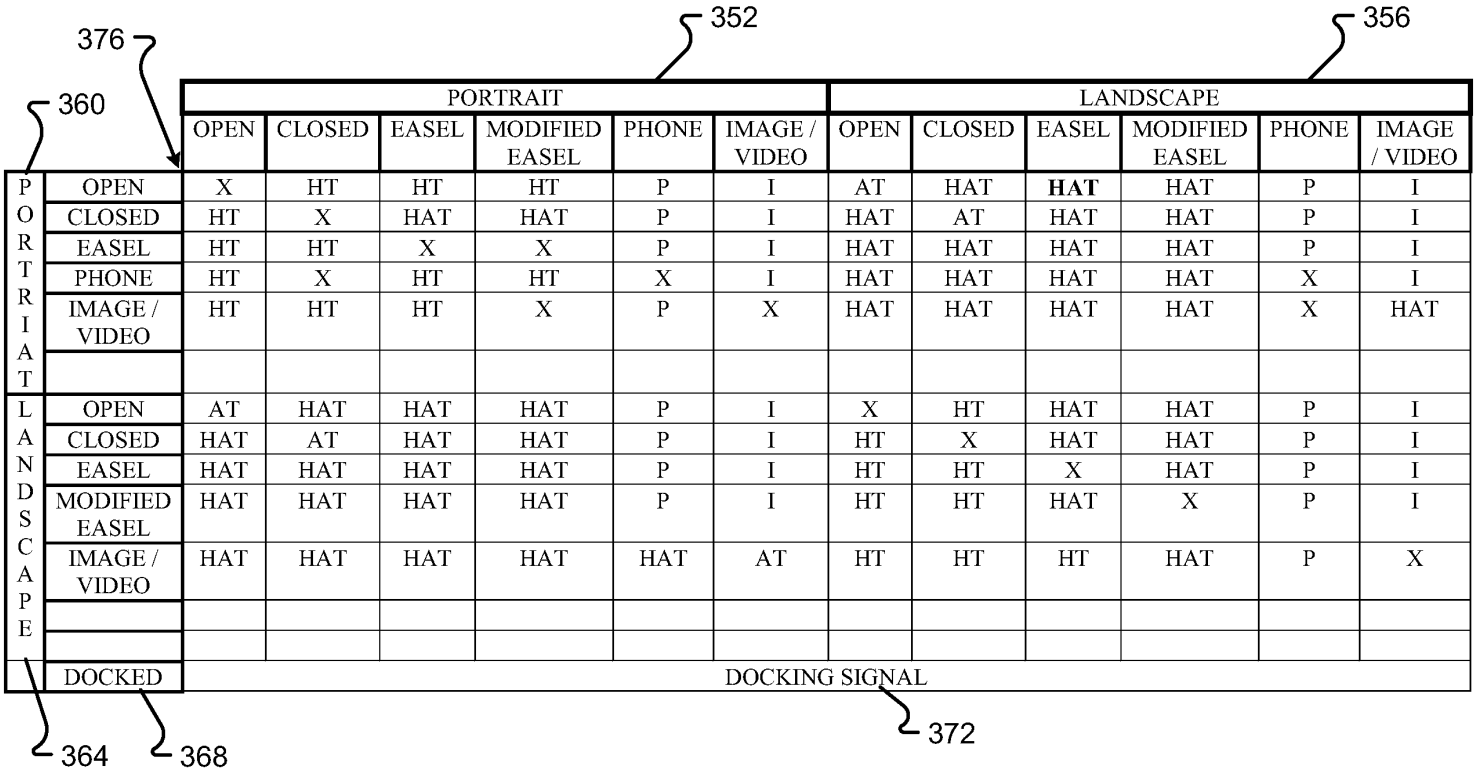

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Docked
340
Landscape
304
Closed
332
Transition
Transition
308
328
Image/
Video
Capture
312
100
Easel
324
Inbound/
Outbound
call
316
Modified
Easel
320
Open
100
344
Docked
348
Landscape

FIG. 3A



Key:
H - Hall Effect Sensor(s)
a - accelerometer(s)
T- Timer
P – communications Trigger
I – Image / Video capture Request

FIG. 3B

Tap

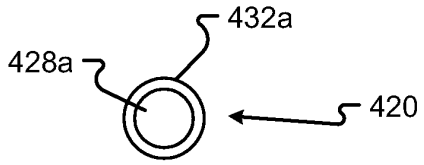


FIG. 4A

Long Press

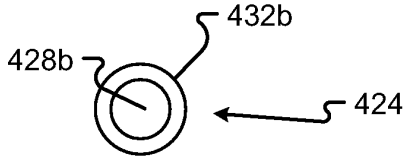


FIG. 4B

Drag

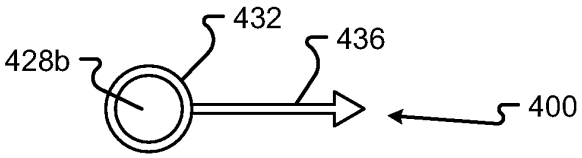


FIG. 4C

Flick

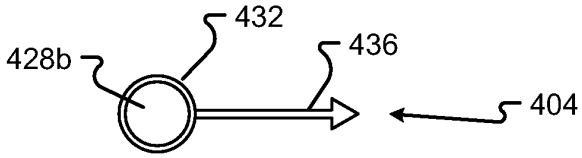


FIG. 4D

Pinch

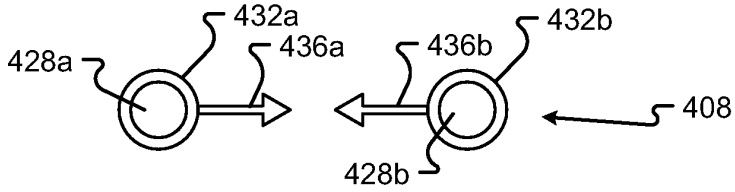


FIG. 4E

Spread

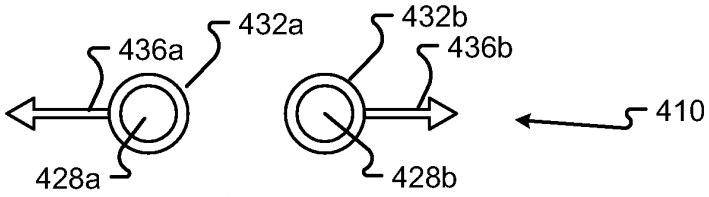


FIG. 4F

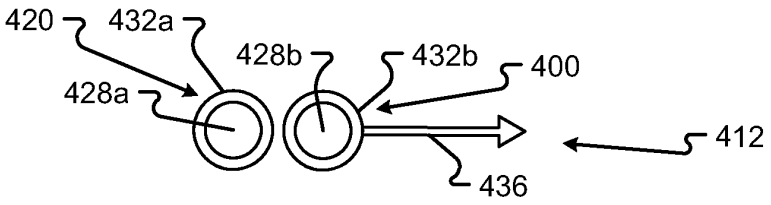

420
432a
428b
432b
400
428a
412
436

FIG. 4G

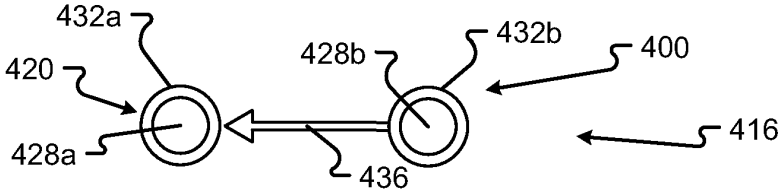

432a
420
428b
432b
400
428a
416
436

FIG. 4H

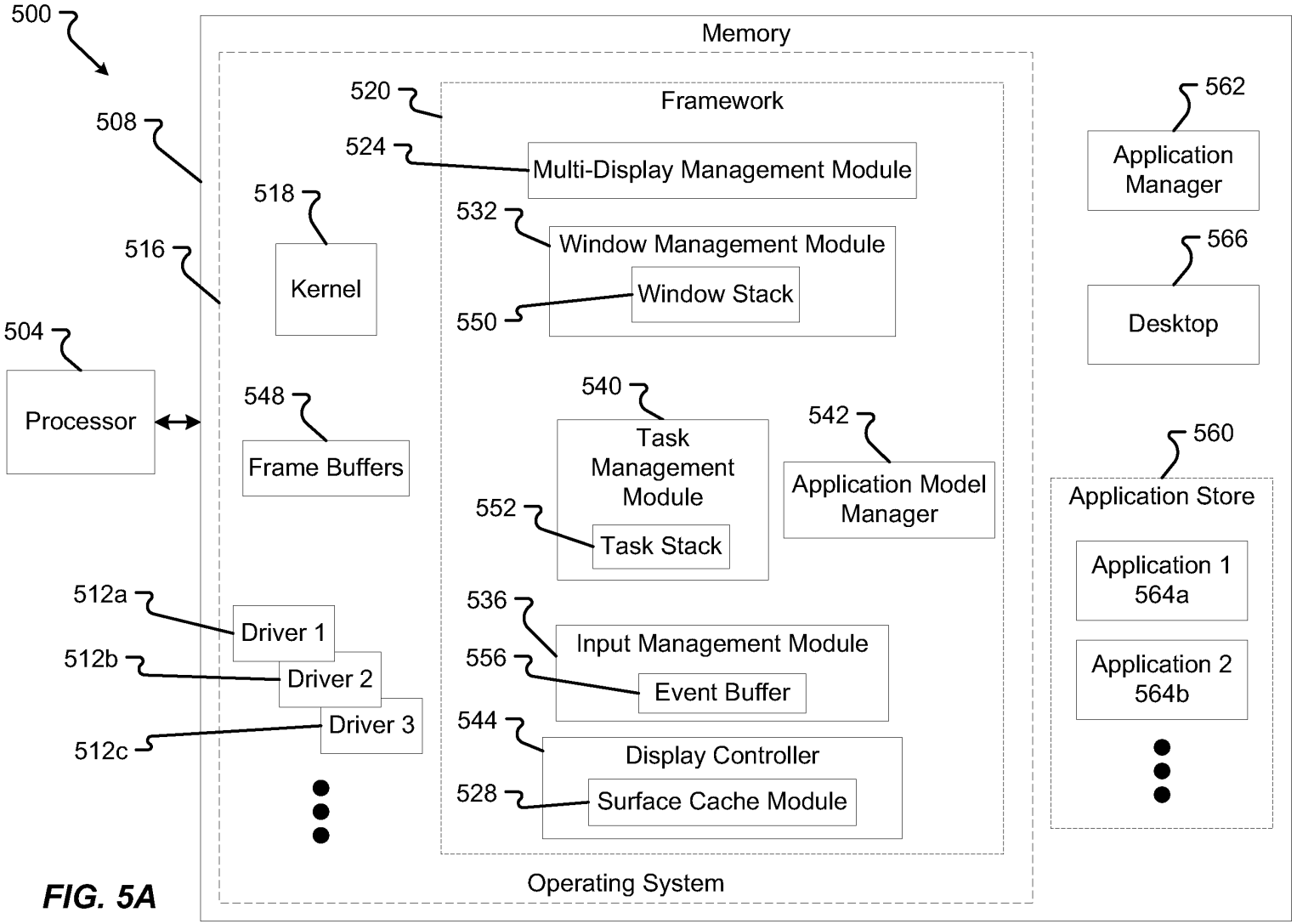

500
Memory
508
520
Framework
524
Multi-Display Management Module
562
Application Manager
518
532
Window Management Module
516
Kernel
566
Desktop
550
Window Stack
504
Processor
548
Frame Buffers
540
Task Management Module
542
Application Model Manager
560
Application Store
552
Task Stack
512a
Driver 1
536
Input Management Module
Application 1 564a
512b
Driver 2
556
Event Buffer
Application 2 564b
512c
Driver 3
544
Display Controller
528
Surface Cache Module
Operating System

FIG. 5A

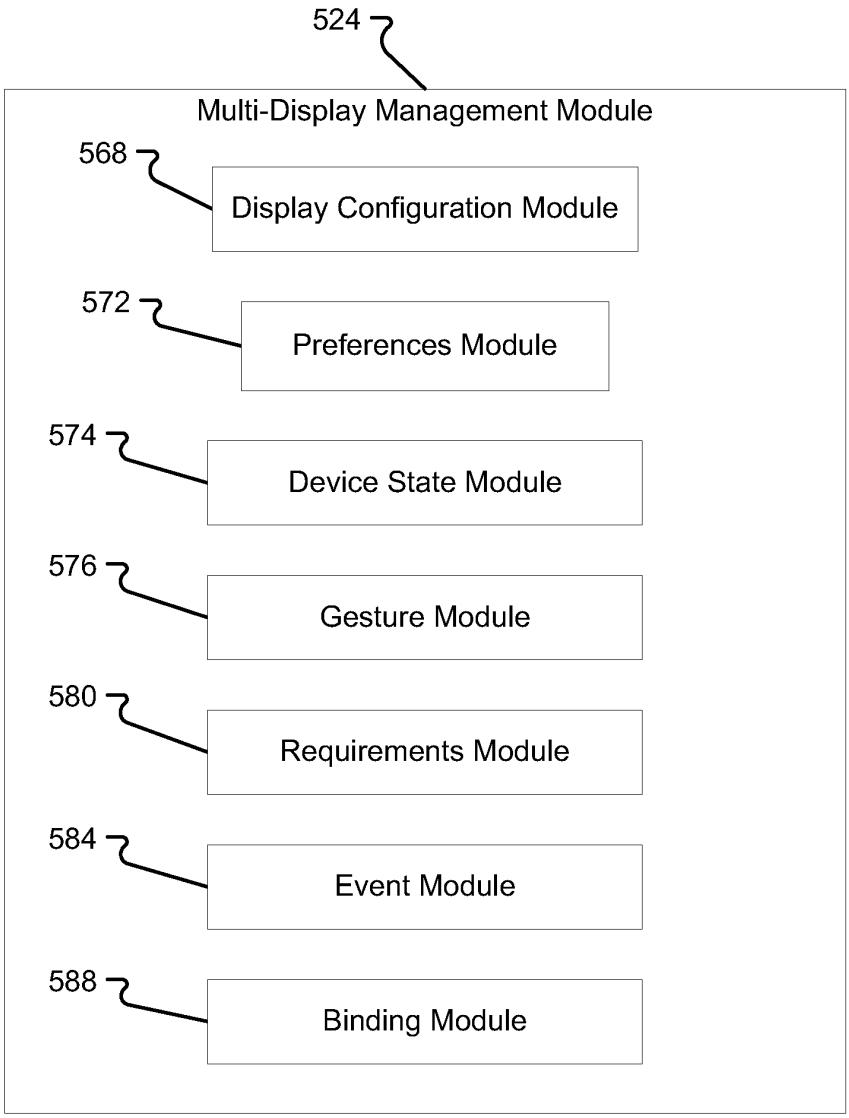

524
Multi-Display Management Module
568
Display Configuration Module
572
Preferences Module
574
Device State Module
576
Gesture Module
580
Requirements Module
584
Event Module
588
Binding Module

FIG. 5B

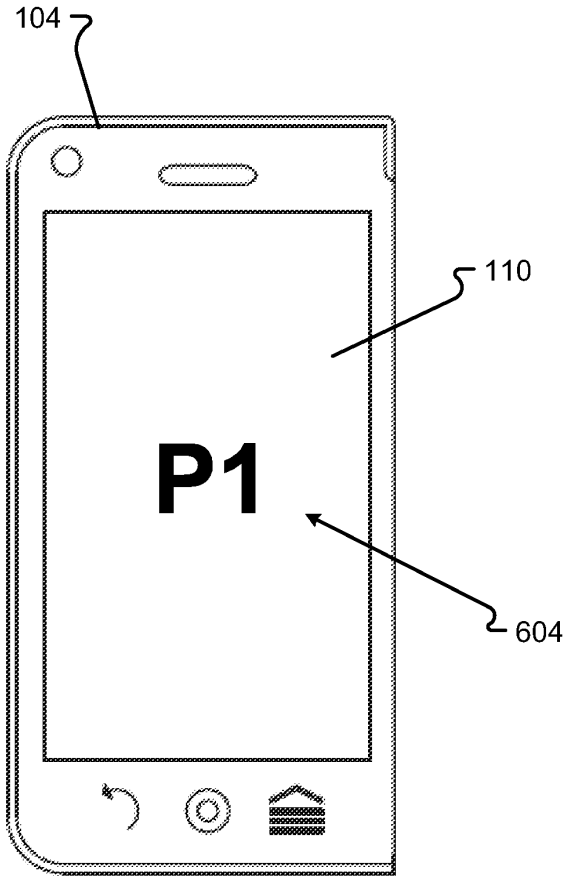


FIG. 6A

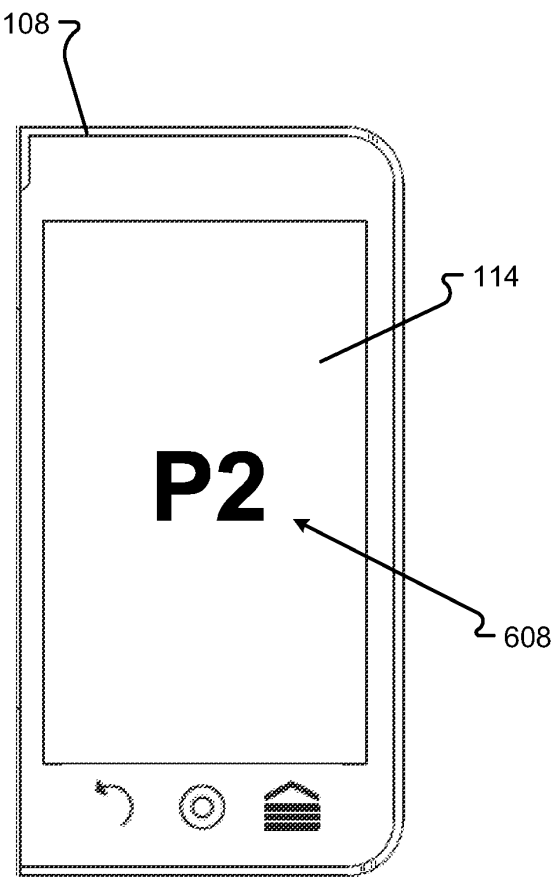


FIG. 6B

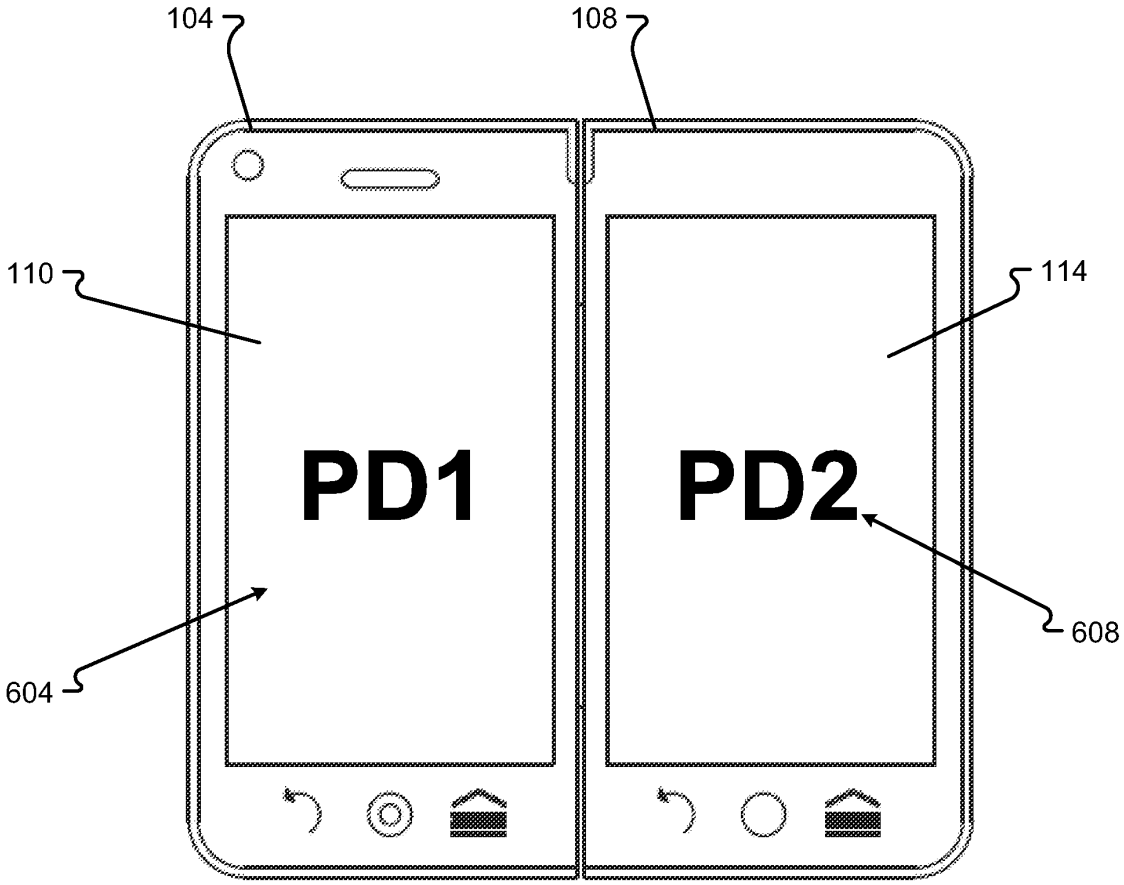


FIG. 6C

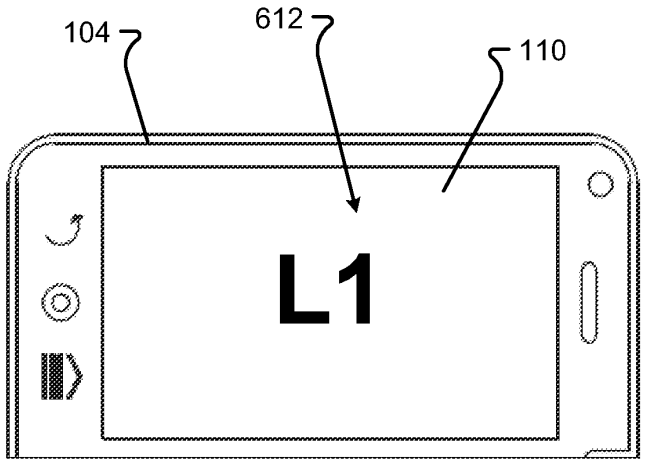


FIG. 6D

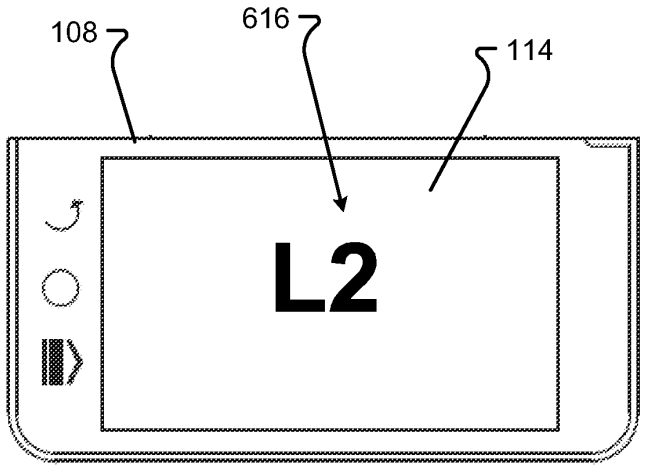


FIG. 6E

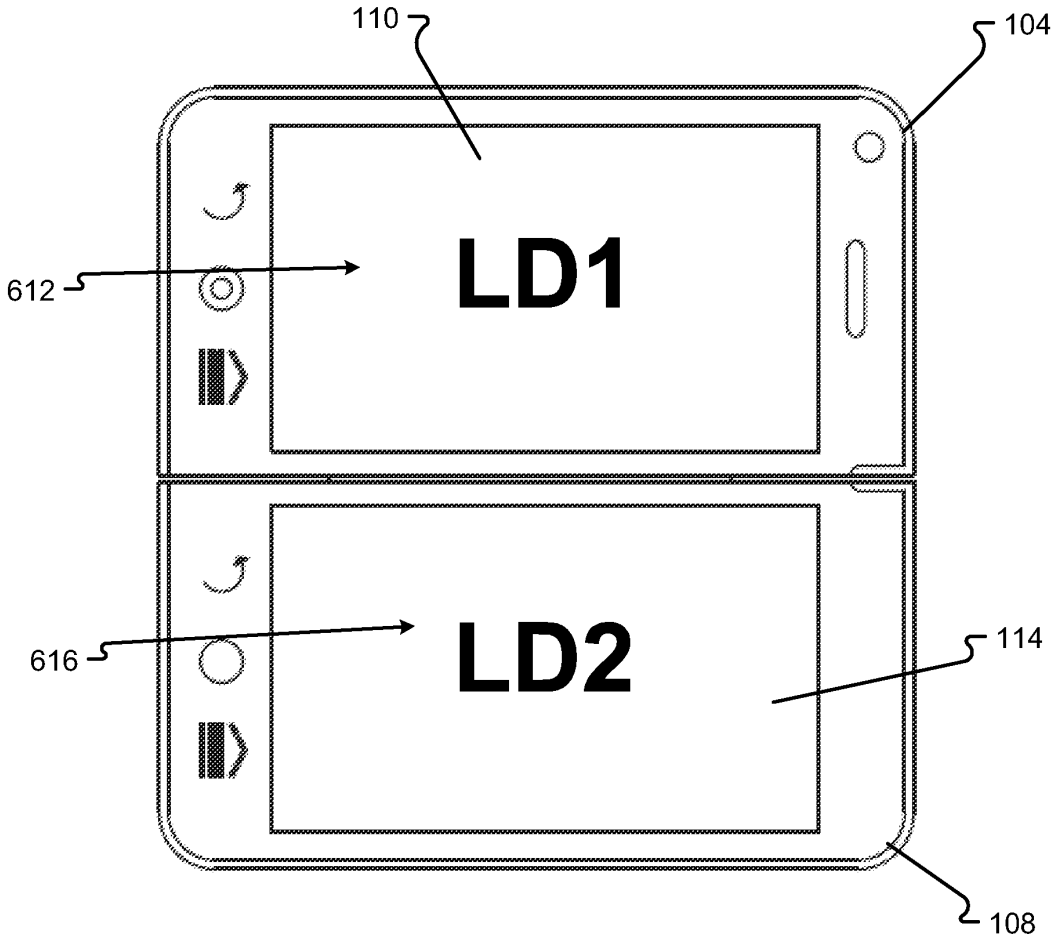


FIG. 6F

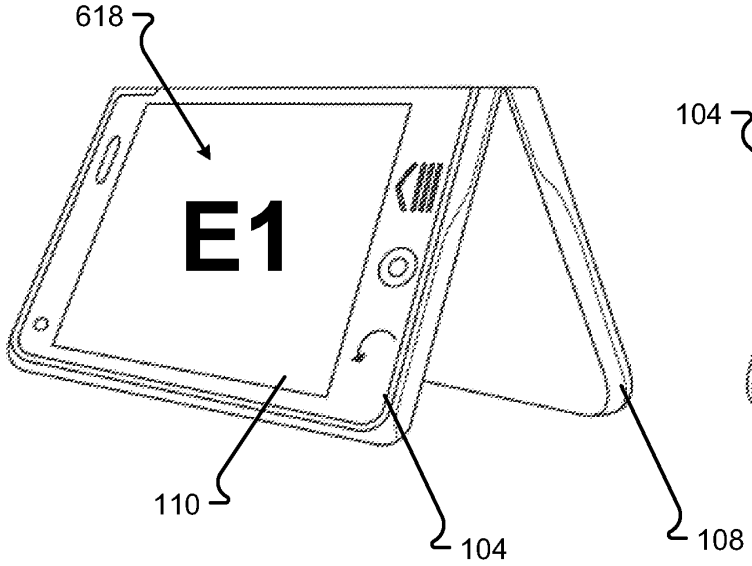


FIG. 6G

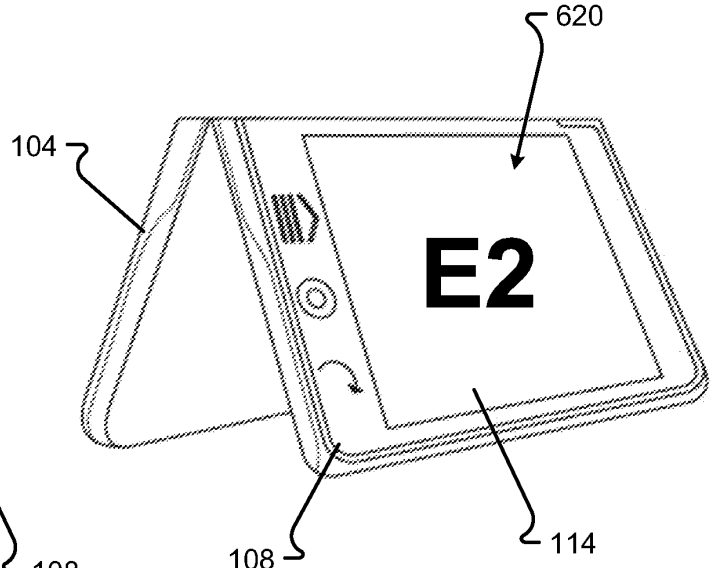


FIG. 6H

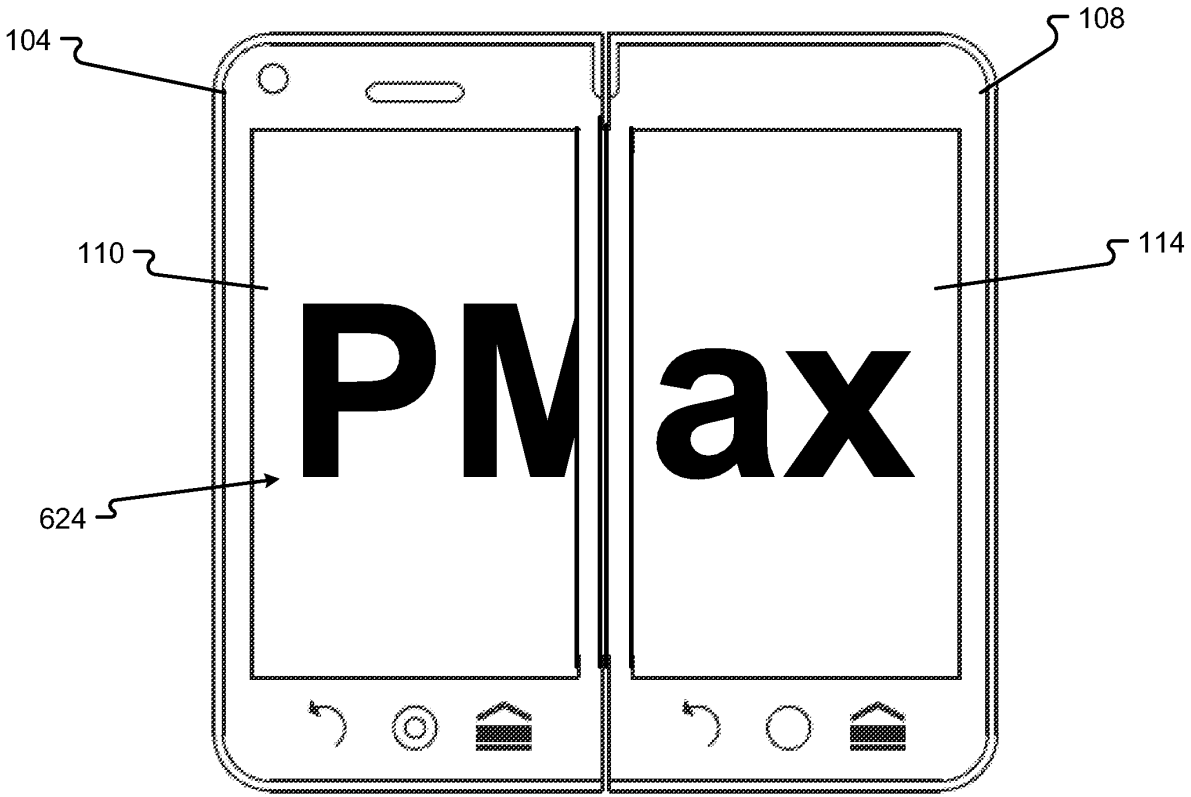


FIG. 6I

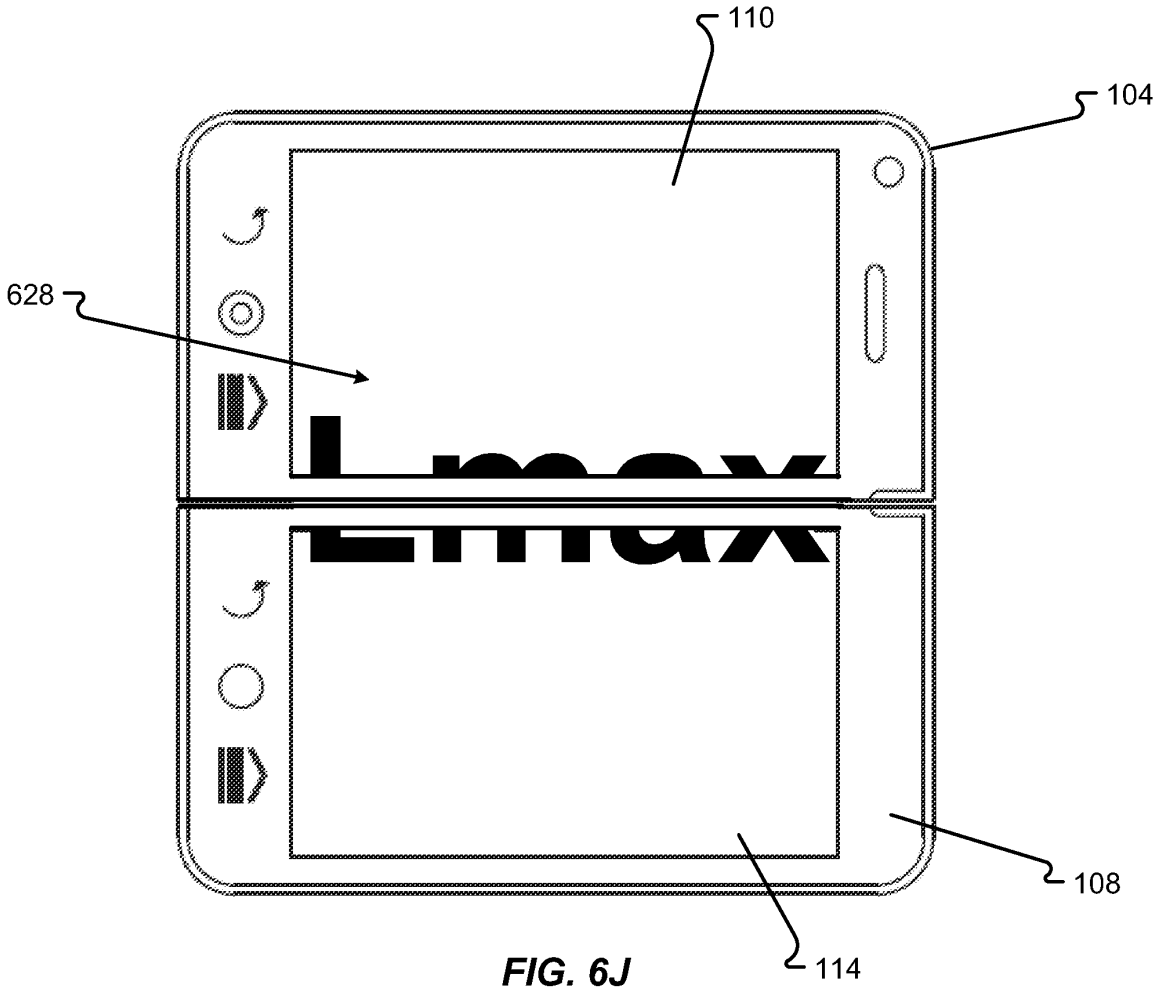


FIG. 6J

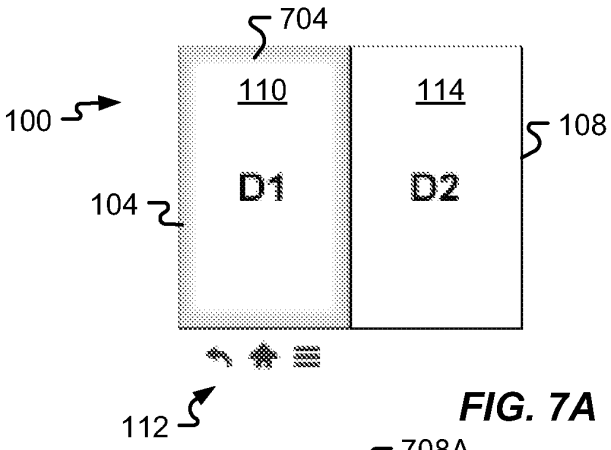


FIG. 7A

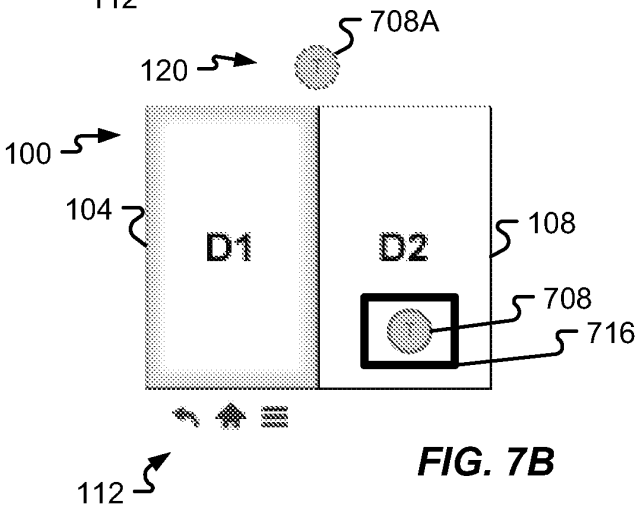


FIG. 7B

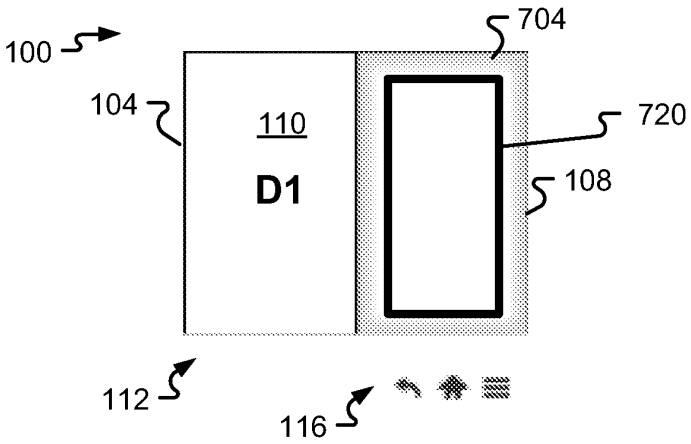


FIG. 7C

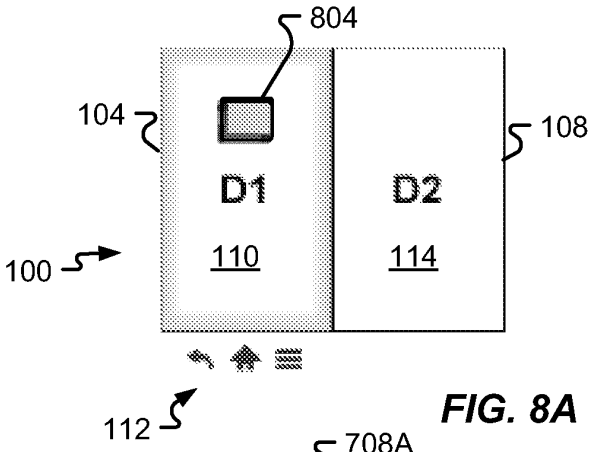


FIG. 8A

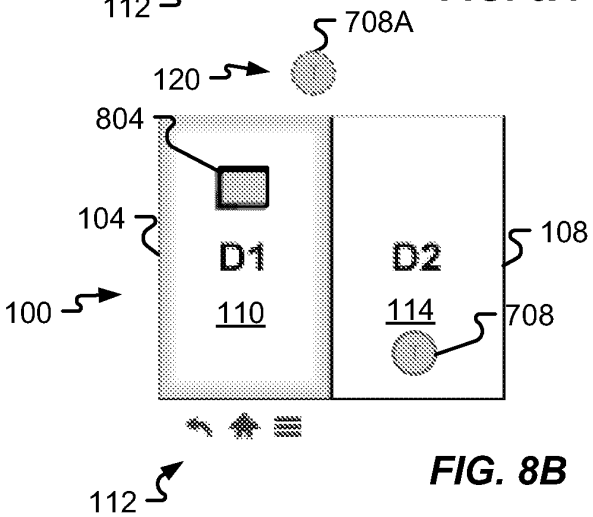


FIG. 8B

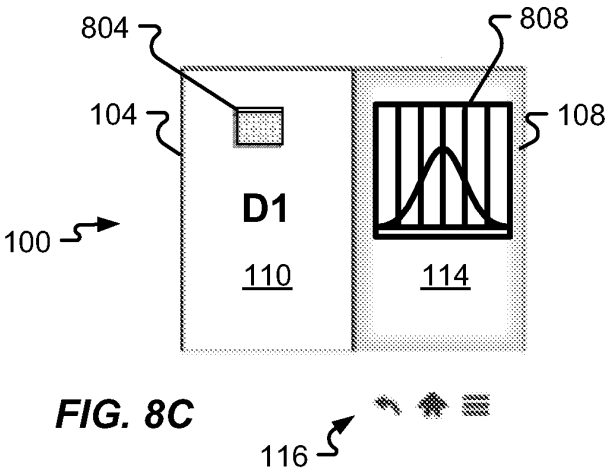


FIG. 8C

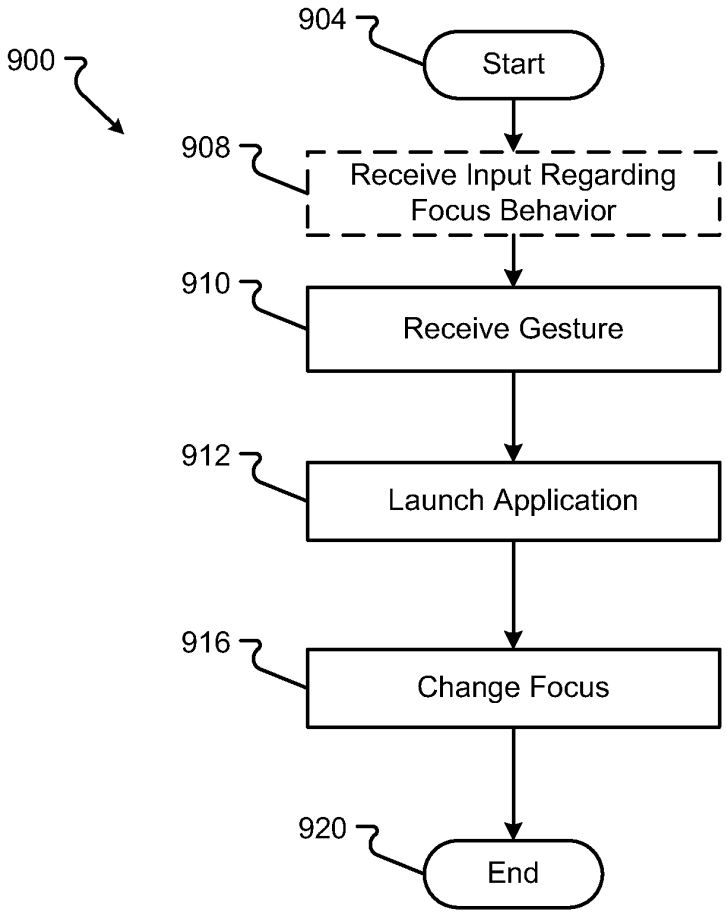

900
904
Start
908
Receive Input Regarding Focus Behavior
910
Receive Gesture
912
Launch Application
916
Change Focus
920
End

FIG. 9

PTO/SB/14 (11-08)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-8-CON
	Application Number	
Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1 Remove

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Sanjiv		Sirpal	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Oakville, Ontario	Country Of Residence[i]	CA
Citizenship under 37 CFR 1.41(b)[i]	CA		

Mailing Address of Applicant:

Address 1	3264 Stocksbridge Avenue		
Address 2			
City	Oakville, Ontario	State/Province	
Postal Code	L6M 0E3	Country[i]	CA

Applicant 2 Remove

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Paul	Edward	Reeves	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Oakville, Ontario	Country Of Residence[i]	CA
Citizenship under 37 CFR 1.41(b)[i]	CA		

Mailing Address of Applicant:

Address 1	1215 Riverbank Way		
Address 2			
City	Oakville, Ontario	State/Province	
Postal Code	L6H 6X4	Country[i]	CA

Applicant 3 Remove

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Alexander		de Paz	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Burlington, Ontario	Country Of Residence[i]	CA

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-8-CON
	Application Number	
Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH	

Citizenship under 37 CFR 1.41(b) i	CA				
Mailing Address of Applicant:					
Address 1	5444 Valleyhigh Drive				
Address 2					
City	Burlington, Ontario	**State/Province**			
Postal Code	L7L 6Z6	**Country**i	CA		

Applicant 4 Remove

Applicant Authority (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Rodney	Wayne	Schrock	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	San Diego	**State/Province**	CA	**Country of Residence** i	US
Citizenship under 37 CFR 1.41(b) i	US				
Mailing Address of Applicant:					
Address 1	13921 Rancho Dorado Bend				
Address 2					
City	San Diego	**State/Province**	CA		
Postal Code	92130	**Country**i	US		

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	111285		
Email Address	flexpatents@sheridanross.com	Add Email	Remove Email

Application Information:

Title of the Invention	FOCUS CHANGE UPON APPLICATION LAUNCH		
Attorney Docket Number	6583-8-CON	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		**Sub Class (if any)**	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	20	**Suggested Figure for Publication (if any)**	7A

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-8-CON
	Application Number	
Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH	

Publication Information:

☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐	**Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S. C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	111285		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation of	13248618	2011-09-29
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13248618	non provisional of	61539884	2011-09-27
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13248618	non provisional of	61458150	2010-11-17
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13248618	non provisional of	61389000	2010-10-01
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13248618	non provisional of	61389117	2010-10-01
Prior Application Status	Expired		Remove

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-8-CON
	Application Number	
Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH	

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13248618	non provisional of	61389087	2010-10-01

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove

Application Number	Country [i]	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			◉ Yes ○ No

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1 Remove

If the Assignee is an Organization check here. ☒			
Organization Name	Z124		
Mailing Address Information:			
Address 1	P.O. Box 309GT		
Address 2	Ugland House, South Church St.		
City	Grand Cayman, Cayman Islands	**State/Province**	
Country [i] KY		Postal Code	11104
Phone Number		Fax Number	
Email Address			

Additional Assignee Data may be generated within this form by selecting the **Add** button. Add

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Dean N. Reinhardt/			Date (YYYY-MM-DD)	2014-10-24
First Name	Dean N.	Last Name	Reinhardt	Registration Number	50225

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-8-CON
	Application Number	
Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH

As the below named inventor(s), I/we declare that:

This declaration is directed to:

- [x] The attached application, or
- [ ] United States application or PCT international application number _____
  filed on _____
  - [ ] As amended on _____ (if applicable);

I/we believe that I/we am/are the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought;

I/we have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment specifically referred to above;

I/we acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me/us to be material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT International filing date of the continuation-in-part application.

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All statements made herein of my/our own knowledge are true, all statements made herein on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001, and may jeopardize the validity of the application or any patent issuing thereon.

FULL NAME OF INVENTOR(S)

Inventor one: Sanjiv Sirpal Date: Sept 26/2011

Signature: Sanjiv Sirpal Citizen of: CA

Inventor two: Paul Edward Reeves Date: _____

Signature: _____ Citizen of: CA

- [x] Additional inventors or a legal representative are being named on 1 additional form(s) attached hereto.

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FULL NAME OF INVENTOR(S)

Inventor one: Sanjiv Sirpal Date: _____

Signature: _____ Citizen of: CA

Inventor two: Paul Edward Reeves Date: 27 SEP 2011

Signature: Paul Reeves Citizen of: CA

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FULL NAME OF INVENTOR(S)

Inventor one: Alexander de Paz Date: Sept 26 2011

Signature: _____ Citizen of: CA

Inventor two: Rodney Wayne Schrock Date: _____

Signature: _____ Citizen of: US

- [ ] Additional inventors or a legal representative are being named on _____ additional form(s) attached hereto.

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I/we have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment specifically referred to above;

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FULL NAME OF INVENTOR(S)

Inventor one: Alexander de Paz Date: _____

Signature: _____ Citizen of: CA

Inventor two: Rodney Wayne Schrock Date: 9/29/2011

Signature: _____ Citizen of: US

- [ ] Additional inventors or a legal representative are being named on _____ additional form(s) attached hereto.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.:	Not Yet Assigned	)	
		)	
Applicant:	Sanjiv Sirpal	)	
		)	
Filed:	Herewith	)	**PRELIMINARY AMENDMENT**
		)	
Docket No.:	6583-8-CON	)	
		)	
For:	FOCUS CHANGE UPON APPLICATION LAUNCH	)	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

Prior to the initial review of the above-identified patent application on the merits, and prior to calculation of the filing fees for this application, please enter the following Preliminary Amendment. No new matter has been added. Although Applicant does not believe that any fees are due based upon the filing of this Preliminary Amendment, please charge any such fees to Deposit Account 19-1970.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 7 of this paper.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-20. (Canceled)

21. (New) A method, comprising:

displaying a first image of a first application on a first display, wherein the first image is in focus, wherein input options for the first application are displayed in a first configurable area, wherein input is allowed from the first configurable area and the first display, wherein no input options are displayed in a second configurable area, wherein input is not allowed from the second configurable area, and wherein input is allowed from a second display;

receiving first input indicating a request to launch a second application;

launching the second application;

displaying, by the second application, a second image on the second display; and

changing the focus from the first image to the second display, wherein no input options are displayed in the first configurable area, wherein input is not allowed from the first configurable area, wherein input is allowed from the first display, wherein input options for the second application are displayed in the second configurable area, and wherein input is allowed from the second configurable area and the second display.

22. (New) The method of claim 21, wherein the first image is displayed in portrait mode on the first display and the second image is displayed in portrait mode on the second display, and wherein the first display, the first configurable area, the second display, and the second configurable area are on a common first screen.

23. (New) The method of claim 21, wherein the first image is displayed in landscape mode on the first display and the second image is displayed in landscape mode on the second display, and wherein the first display and the first configurable area are on a first screen, and wherein the second display and the second configurable area are on a different second screen.

24. (New) The method of claim 21, further comprising:

wherein the first image is a first open window of the first application and the second image is a second open window of the second application.

25. (New) The method of claim 21, further comprising:

receiving second input indicating that in response to receiving the first input, the second application should be launched and the focus should be placed on the second image displayed by the second application.

26. (New) The method of claim 21, further comprising:

highlighting the first configurable area when the focus is on the first image in the first display; and

changing the highlighting to the second configurable area when the focus is on the second image in the second display.

27. (New) The method of claim 26, wherein the first configuration area is separate from the first display and the second configurable area is separate from the second display.

28. (New) The method of claim 21, further comprising: in response to receiving the first input, highlighting at least one of the second image or the second display.

29. (New) The method of claim 21, wherein the first input is a tap gesture received by one of the first display, the second display, a first gesture capture region, or a second gesture capture region, wherein the first gesture capture region is separate from the first display and the second gesture capture region is separate from the second display, and wherein the first and second gesture capture regions are not capable of displaying images of applications.

30. (New) A non-transitory computer readable medium storing computer executable instructions that when executed by at least one processor perform a method, comprising:

displaying a first image of a first application on a first display, wherein the first image is in focus, wherein input is allowed from the first display, and wherein input is allowed from a second display;

receiving first input indicating a request to launch a second application, the input is received by one of the first display and the second display;

in response to receiving the first input, launching the second application;

displaying, by the second application, a second image on the second display; and

changing focus from the first image to the second display, wherein input is allowed from the first display, and wherein input is allowed from the second display.

31. (New) The non-transitory computer readable medium of claim 30, wherein the first display, the first configurable area, the second display, and the second configurable area are on a common first screen, wherein the first input is a tap gesture received by one of the first display, the second display, a first gesture capture region, or a second gesture capture region, wherein the tap requires contact with the second display for a predetermined period of time, wherein the first gesture capture region is separate from the first display and the second gesture capture region is separate from the second display, and wherein the first and second gesture capture regions are not capable of displaying images of applications.

32. (New) The non-transitory computer readable medium of claim 31, wherein in response to changing focus to the second display, allowing input from the second gesture capture region, and allowing input from the first gesture capture region.

33. (New) The non-transitory computer readable medium of claim 30, wherein the tap requires contact with the second display for a predetermined period of time, wherein the first display and the first configurable area are on a first screen, and wherein the second display and the second configurable area are on a different second screen.

34. (New) The non-transitory computer readable medium of claim 30, wherein the method further comprises:

highlighting a first configurable area on a first screen when the focus is on the first image in the first display, wherein input options for the first application are displayed in the first configurable area when the focus is on the first image, wherein input is allowed from the first configurable area when the focus is on the first image, wherein no input options are displayed in a second configurable area of the first screen and input is not allowed from the second configurable area when the focus is on the first image; and

changing the highlighting to the second configurable area when the focus is on the second image in the second display, wherein input options for the second application are displayed in the second configurable area when the focus is on the second image, wherein input is allowed from the second configurable area when the focus is on the second image, and wherein no input options are displayed in the first configurable area and input is not allowed from the first configurable area when the focus is on the second image.

35. (New) The non-transitory computer readable medium of claim 34, wherein the first configurable area is separate from the first display and the second configurable area is separate from the second display.

36. (New) The non-transitory computer readable medium of claim 30, wherein the method further comprises: receiving second input indicating that in response to the first input, the focus should be changed to the second display.

37. (New) A communication device, comprising:

a first touch sensitive display and a first configurable area;

a second touch sensitive display and a second configurable area;

a computer readable medium that stores computer executable instructions that, when executed by at least one processor, perform a method comprising:

displaying a first image of a first application on the first touch sensitive display, wherein the first image is in focus, wherein input options for the first application are displayed in the first configurable area, wherein input is allowed from the first configurable area and the first touch sensitive display, wherein no input options are displayed in the second configurable area, wherein input is not allowed from the second configurable area, and wherein input is allowed from the second touch sensitive display;

receiving first input on the first touch sensitive display or the second touch sensitive display indicating a request to launch a second application;

launching the second application;

displaying, by the second application, a second image on the second touch sensitive display; and

changing the focus from the first touch sensitive display to the second touch sensitive display wherein no input options are displayed in the first configurable area, wherein input is not allowed from the first configurable area, wherein input is allowed from the first touch sensitive display, wherein input options for the second application are displayed in the second configurable area, and wherein input is allowed from the second configurable area and the second touch sensitive display.

38. (New) The device of claim 37, wherein the first display, the first configurable area, the second display, and the second configurable area are on a common first screen and wherein the method further comprises:

providing a visual indication that focus is on the first image in the first touch sensitive display, wherein the indication identifies which display or application has the focus; and

changing the visual indication when the focus is on the second image in the second touch sensitive display.

39. (New) The device of claim 37, wherein the first configurable area is separate from the first touch sensitive display and the second configurable area is separate from the second touch sensitive display, wherein the first display and the first configurable area are on a first screen, and wherein the second display and the second configurable area are on a different second screen.

40. (New) The device of claim 37, wherein the first input is a tap gesture received by one of the first touch sensitive display, the second touch sensitive display, a first gesture capture region, or a second gesture capture region, wherein the first gesture capture region is separate from the first touch sensitive display and the second gesture capture region is separate from the second touch sensitive display, and wherein the first and second gesture capture regions are not capable of displaying images of applications.

REMARKS/ARGUMENTS

Claims 1-20 have been canceled, without intending to abandon or to dedicate to the public any patentable subject matter. Claims 21-40 are new and are supported by the Specification, as filed. No new matter has been added. Accordingly, claims 21-40 are now pending.

The above amendments are being submitted in connection with the filing of the present Application. Based upon the foregoing, Applicant believes that all pending claims are in a condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. In the event that a telephone conference would expedite prosecution of and/or expedite allowance this application, the Examiner is invited to contact the undersigned at (303) 863-9700.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Dean N. Reinhardt/
Dean N. Reinhardt
Registration No. 50,225
1560 Broadway, Suite 1200
Denver, Colorado 80202
(303) 863-9700

Date: October 24, 2014

Electronic Patent Application Fee Transmittal

Application Number:	14523069
Filing Date:	
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Filer:	Dean Reinhardt/Leslie Roberts
Attorney Docket Number:	6583-8-CON

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
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Pages:				
Claims:				
Miscellaneous-Filing:				
Late Filing Fee for Oath or Declaration	1051	1	140	140
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**140**

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EFS ID:	20511101
Application Number:	14523069
International Application Number:	
Confirmation Number:	7687
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Customer Number:	111285
Filer:	Dean Reinhardt/Leslie Roberts
Filer Authorized By:	Dean Reinhardt
Attorney Docket Number:	6583-8-CON
Receipt Date:	24-OCT-2014
Filing Date:	
Time Stamp:	14:53:25
Application Type:	Utility under 35 USC 111(a)

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1	Fee Worksheet (SB06)	fee-info.pdf	29953 96f58671ff7ed62fa4d9e304141e8fc95a982fc8	no	2

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01 FC : 1051 140.00 CR

SCORE Placeholder Sheet for IFW Content

Application Number: 14523069 Document Date: 10/24/2014

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- Drawings – Other than Black and White Line Drawings

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Form Revision Date: September 30, 2013

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/523,069	Filing Date 10/24/2014	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT

10/24/2014	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $80 =	0
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $420 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/RENEE HAWKINS/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 14/523,069

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	280
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	600
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	720
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*			OR	x 80 =	0.00
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*				x 420 =	0.00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1600

APPLICATION AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
14/523,069	10/24/2014	2611	1600	6583-8-CON	20	3

CONFIRMATION NO. 7687

111285
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

FILING RECEIPT

OC000000071668967

Date Mailed: 11/05/2014

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Sanjiv Sirpal, Oakville, CANADA;
Paul Edward Reeves, Oakville, CANADA;
Alexander de Paz, Burlington, CANADA;
Rodney Wayne Schrock, San Diego, CA;

Applicant(s)

Sanjiv Sirpal, Oakville, CANADA;
Paul Edward Reeves, Oakville, CANADA;
Alexander de Paz, Burlington, CANADA;
Rodney Wayne Schrock, San Diego, CA;

Assignment For Published Patent Application

Z124, Grand Cayman, Cayman Islands, CAYMAN ISLANDS

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 13/248,618 09/29/2011 PAT 8875050
which claims benefit of 61/539,884 09/27/2011
and claims benefit of 61/458,150 11/17/2010
and claims benefit of 61/389,000 10/01/2010
and claims benefit of 61/389,117 10/01/2010
and claims benefit of 61/389,087 10/01/2010

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

If Required, Foreign Filing License Granted: 11/03/2014

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/523,069**

Projected Publication Date: 02/12/2015

Non-Publication Request: No

Early Publication Request: No

Title

FOCUS CHANGE UPON APPLICATION LAUNCH

Preliminary Class

345

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/523,069	10/24/2014	Sanjiv Sirpal	6583-8-CON

CONFIRMATION NO. 7687

111285
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

NOTICE

OC000000071668968

Date Mailed: 11/05/2014

INFORMATIONAL NOTICE TO APPLICANT

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

The item(s) indicated below are also required and should be submitted with any reply to this notice to avoid further processing delays.

A new inventor's oath or declaration that identifies this application (e.g., by Application Number and filing date) is required. The inventor's oath or declaration does not comply with 37 CFR 1.63 in that it:

- does not state that the above-identified application was made or authorized to be made by the person executing the oath or declaration.
  - Sanjiv Sirpal
  - Paul Edward Reeves
  - Alexander de Paz
  - Rodney Wayne Schrock

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/523,069	10/24/2014	Sanjiv Sirpal	6583-8-CON

CONFIRMATION NO. 7687

IMPROPER CPOA LETTER

111285
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

OC000000071686767

Date Mailed: 11/05/2014

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the power of attorney filed 10/24/2014. The power of attorney in this application is not accepted for the reason(s) listed below:

- The power of attorney has not been accepted because the party who is giving power has not been identified. Power of attorney may only be signed by the applicant for patent (37 CFR 1.42) or the patent owner. A party who is not the applicant must become the applicant in accordance with 37 CFR 1.46(c) and appoint any power of attorney in compliance with 37 CFR 3.71 and 3.73. For a reissue application, reexamination proceeding, or supplemental examination proceeding, a patent owner who was not the applicant under 37 CFR 1.46 must appoint any power of attorney in compliance with 37 CFR 3.71 and 3.73. See 37 CFR 1.32(b)(4).

/wtsige/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
Approved for use through 11/30/2014. OMB 0651-0051
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TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	14/523,069
Filing Date	10/24/2014
First Named Inventor	SIRPAL, Sanjiv
Title	Focus Change Upon Application Launch
Art Unit	2172
Examiner Name	PESIN, Boris M.
Attorney Docket Number	6583-8-CON

SIGNATURE of Applicant or Patent Practitioner

Signature	/Dean N. Reinhardt/	Date (Optional)	2015-02-06
Name	Dean N. Reinhardt/	Registration Number	50225
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82B (07-13)
Approved for use through 11/30/2014. OMB 0651-0051
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 111285

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☑ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Z124

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature	Timothy L Stewart	Date (Optional)	Aug 30, 2013
Name	Timothy L. Stewart		
Title	Secretary		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PTO/AIA/96 (08-12)
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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Z124

Application No./Patent No.: 14/523,069 Filed/Issue Date: October 24, 2014

Titled: Focus Change Upon Application Launch

Z124, a Corporation

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Sanjiv Sirpal et al. To: IMERJ LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 027109, Frame 0204, or for which a copy thereof is attached.

2. From: IMERJ LLC To: Z124

The document was recorded in the United States Patent and Trademark Office at
Reel 028300, Frame 0038, or for which a copy thereof is attached.

This collection of information is required by37 CFR3.73(b). The information is required toobtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentialityis governed by35 U.S.C. 122and 37 CFR1.11 and1.14. Thiscollection is estimated to take 12 minutes to complete, including gathering, preparing, and submittingthe completed application form to the USPTO.Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent tothe Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.**SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
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STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

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4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

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5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Dean N. Reinhardt/	February 6, 2015
Signature	Date
Dean N. Reinhardt	50225
Printed or Typed Name	Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that yoube given certain informationin connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, pleasebe advised that: (1) the general authority forthe collection of thisinformation is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and(3) the principal purpose forwhich the information isused by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent applicationor patent. If you do not furnish the requested information,the U.S. Patent and Trademark Office may not be able to process and/or examineyour submission,which may result in termination of proceedings or abandonment of the applicationor expiration of the patent.

The informationprovided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the informationin order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an InternationalApplication filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, arecord may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from thissystem of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	21426483
Application Number:	14523069
International Application Number:	
Confirmation Number:	7687
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Customer Number:	111285
Filer:	Dean Reinhardt/Amy Duarte
Filer Authorized By:	Dean Reinhardt
Attorney Docket Number:	6583-8-CON
Receipt Date:	06-FEB-2015
Filing Date:	24-OCT-2014
Time Stamp:	15:41:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Corrected Filing Receipt	Response_Info_Notice_and_Request_CFR.pdf	114038 ebae08312368dcb2de2078f55d7a162dd3c01d1d	no	1

Warnings:
Information:

2	Application Data Sheet	ADS_corrected-FINAL.pdf	578886 8c8b2fdeffe48b351cf7a02992af3c7db556739a	no	8
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
3	Oath or Declaration filed	Executed_Declaration_REEVES.pdf	134593 3463d8d9d827a5d0a60353b12b9da21b7f84655a	no	2
Warnings:					
Information:					
4	Oath or Declaration filed	Executed_Declaration_SIRPAL.pdf	145090 3e23df002e08ff09729cc0ff2b7229d513962b2d	no	2
Warnings:					
Information:					
5	Oath or Declaration filed	Executed_Declaration_DEPAZ.pdf	418897 b8b78fbcf5c95a6c153e9a9a0cbfcdd7e646048b	no	1
Warnings:					
Information:					
6	Oath or Declaration filed	Executed_Declaration_SCHROCK.pdf	1515946 5fe6c1fecb0544fbb4045f012fc207dcad9f40e8	no	1
Warnings:					
Information:					
7	Power of Attorney	Z124_Gen_POA.pdf	328365 9769fd3a0aeace1d1030cc50a9c21146c2e476e9	no	2
Warnings:					
The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing					
Information:					
8	Assignee showing of ownership per 37 CFR 3.73.	Statement_3-73c.pdf	120123 5dc45fb7d3611fa46837b43a0efcde6b4dabcdf7	no	3
Warnings:					
Information:					
			Total Files Size (in bytes):	3355938	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	Group Art Unit: 2172
SIRPAL et al.	Confirmation No.: 7687
Serial No.: 14/523,069	Examiner: PESIN, Boris M.
Filed: October 24, 2014	
Atty. File No.: 6583-8-CON	
Entitled: "FOCUS CHANGE UPON APPLICATION LAUNCH"	***Submitted Via EFS-Web***

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO INFORMATIONAL NOTICE TO APPLICANT AND REQUEST FOR CORRECTED FILING RECEIPT

Dear Sir/Madam:

In response to the Informational Notice to Applicant mailed November 5, 2014, in connection with the above-identified application, submitted herewith are executed Declarations by the inventors: Sanjiv Sirpal, Paul Edward Reeves, Alexander de Paz, and Rodney Wayne Schrock. Also submitted herewith is a marked-up Application Data Sheet correcting the Applicant to Z124. A corrected Filing Receipt is requested.

Although no fees are believed to be due with this submission, please charge any underpayment or credit any overpayment to Deposit Account No. 19-1970.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Dean N. Reinhardt/
Dean N. Reinhardt
Registration No. 50,225
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: February 6, 2015

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-8-CON
	Application Number	14/523,069
Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Sanjiv		Sirpal	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Oakville~~, Ontario~~	Country of Residence [i]	CA

Mailing Address of Inventor:

Address 1	3264 Stocksbridge Avenue		
Address 2			
City	Oakville~~, Ontario~~	State/Province	ON
Postal Code	L6M 0E3	Country [i]	CA

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Paul	Edward	Reeves	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Oakville~~, Ontario~~	Country of Residence [i]	CA

Mailing Address of Inventor:

Address 1	1215 Riverbank Way		
Address 2			
City	Oakville~~, Ontario~~	State/Province	ON
Postal Code	L6H 6X4	Country [i]	CA

Inventor 3 Remove

Legal Name

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-8-CON
	Application Number	
Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH	

Prefix	Given Name	Middle Name	Family Name	Suffix
	Alexander		de Paz	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Burlington~~, Ontario~~	Country of Residence [i]	CA

Mailing Address of Inventor:

Address 1	5444 Valleyhigh Drive		
Address 2			
City	Burlington~~, Ontario~~	State/Province	ON
Postal Code	L7L 6Z6	Country [i]	CA

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Rodney	Wayne	Schrock	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	San Diego	State/Province	CA	Country of Residence [i]	US

Mailing Address of Inventor:

Address 1	13921 Rancho Dorado Bend		
Address 2			
City	San Diego	State/Province	CA
Postal Code	92130	Country [i]	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	111285		
Email Address	flexpatents@sheridanross.com	Add Email	Remove Email

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-8-CON
	Application Number	
Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH	

Application Information:

Title of the Invention	FOCUS CHANGE UPON APPLICATION LAUNCH		
Attorney Docket Number	6583-8-CON	**Small Entity Status Claimed** ☐	
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	20	**Suggested Figure for Publication (if any)**	

Filing By Reference :

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	111285		

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-8-CON
	Application Number	
Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH	

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the application number blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation of	13248618	2011-09-29
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13248618	Claims benefit of provisional	61539884	2011-09-27
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13248618	Claims benefit of provisional	61458150	2010-11-17
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13248618	Claims benefit of provisional	61389000	2010-10-01
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13248618	Claims benefit of provisional	61389117	2010-10-01
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13248618	Claims benefit of provisional	61389087	2010-10-01

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

			Remove
Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-8-CON
	Application Number	
Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH	

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Authorization to Permit Access:

☐ Authorization to Permit Access to the Instant Application by the Participating Offices

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date o f filing this Authorization.

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

PTO/AIA/14 (12-13)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-8-CON
	Application Number	
Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH	

Applicant 1

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

(•) Assignee	( ) Legal Representative under 35 U.S.C. 117	( ) Joint Inventor
( ) Person to whom the inventor is obligated to assign.	( ) Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor :

If the Applicant is an Organization check here. ☒

Organization Name	Z124		
Mailing Address Information For Applicant:			
Address 1	P.O. Box 309GT		
Address 2	Ugland House, South Church St.		
City	George Town	**State/Province**	GC
Country	KY	Postal Code	KY1-1104
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button.

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not subsitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication . An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

~~If the Assignee or Non-Applicant Assignee is an Organization check here.~~ ☒

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6583-8-CON
	Application Number	
Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH	

~~Organization Name~~	~~Z124~~		
~~**Mailing Address Information For Assignee including Non-Applicant Assignee:**~~			
~~**Address 1**~~	~~P.O. Box 309GT~~		
~~Address 2~~	~~Ugland House, South Church St.~~		
~~**City**~~	~~Grand Cayman, Cayman Islands~~	~~**State/Province**~~	
~~**Country**~~ i	~~KY~~	~~Postal Code~~	~~11104~~
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

Signature:

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Signature	/Dean N. Reinhardt/			Date (YYYY-MM-DD)	2015-02-06
First Name	Dean N.	Last Name	Reinhardt	Registration Number	50225

Additional Signature may be generated within this form by selecting the Add button.

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent C o o p eration Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH

As the below named inventor, I hereby declare that:

This declaration is directed to:

- ☐ The attached application, or
- ■ United States application or PCT international application number 14/523,069 filed on October 24, 2014.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Paul Edward Reeves Date (Optional): Dec 3 / 2014

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
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filed on October 24, 2014.

The above-identified application was made or authorized to be made by me.

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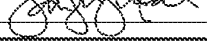
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LEGAL NAME OF INVENTOR

Inventor: Sanjiv Sirpal Date (Optional) :

Signature: 

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■ United States application or PCT international application number 14/523,069 filed on October 24, 2014.

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LEGAL NAME OF INVENTOR

Inventor: Alexander de Paz Date (Optional): Dec 5, 2014

Signature: Alex de Paz

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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LEGAL NAME OF INVENTOR

Inventor: Rodney Wayne Schrock Date (Optional): 12/3/14

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/523,069	10/24/2014	Sanjiv Sirpal	6583-8-CON

CONFIRMATION NO. 7687

111285
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

PUBLICATION NOTICE



Title:FOCUS CHANGE UPON APPLICATION LAUNCH

Publication No.US-2015-0046851-A1
Publication Date:02/12/2015

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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14/523,069	10/24/2014	Sanjiv Sirpal	6583-8-CON

CONFIRMATION NO. 7687

111285
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

POA ACCEPTANCE LETTER

OC000000073435249

Date Mailed: 02/17/2015

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 02/06/2015.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/qtran/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
14/523,069	10/24/2014	2172	1600	6583-8-CON	20	3

CONFIRMATION NO. 7687

REPLACEMENT FILING RECEIPT

111285
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

OC000000073435228

Date Mailed: 02/17/2015

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Sanjiv Sirpal, Oakville, CANADA;
Paul Edward Reeves, Oakville, CANADA;
Alexander de Paz, Burlington, CANADA;
Rodney Wayne Schrock, San Diego, CA;

Applicant(s)

Z124, George Town, CAYMAN ISLANDS

Power of Attorney: The patent practitioners associated with Customer Number 111285

Domestic Priority data as claimed by applicant

This application is a CON of 13/248,618 09/29/2011 PAT 8875050
which claims benefit of 61/539,884 09/27/2011
and claims benefit of 61/458,150 11/17/2010
and claims benefit of 61/389,000 10/01/2010
and claims benefit of 61/389,117 10/01/2010
and claims benefit of 61/389,087 10/01/2010

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

If Required, Foreign Filing License Granted: 11/03/2014
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/523,069**

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No

Title

FOCUS CHANGE UPON APPLICATION LAUNCH

Preliminary Class

715

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	14/523,069
				Filing Date	October 24, 2014
				First Named Inventor	Sanjiv Sirpal
(Use as many sheets as necessary)				Art Unit	2172
				Examiner Name	Boris M Pesin
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Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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				Filing Date	October 24, 2014
				First Named Inventor	Sanjiv Sirpal
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D1

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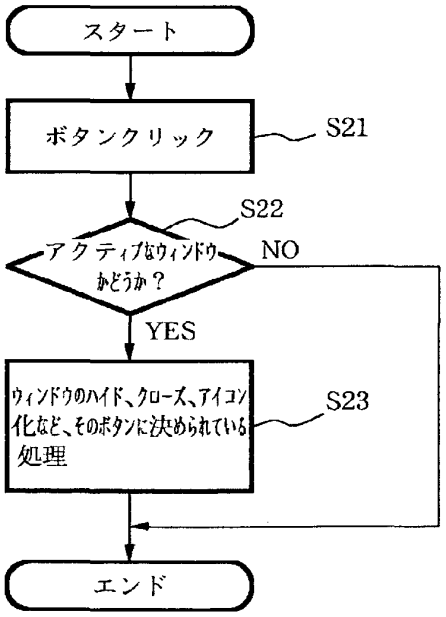
(74)代理人　弁理士　渡部　敏彦

(54)【発明の名称】　マルチウィンドウ表示制御装置

(57)【要約】

【目的】　ウィンドウ内に表示されたボタンに対応する処理がユーザーの意に反して実行されるのを防止できるようにする。

【構成】　各種処理を指示するためのボタンが夫々表示された複数のウィンドウをオーバーラップさせて表示するマルチウィンドウ表示制御装置において、ボタンがポインティングデバイスにより指定された際、該ボタンを表示しているウィンドウがアクティブウィンドウであるか否かを判別し、アクティブウィンドウでない場合には、指定に係るボタンに対応する処理の実行を禁止し、アクティブウィンドウである場合は、指定に係るボタンに対応する処理を実行する。



【特許請求の範囲】
【請求項１】　各種処理を指示するためのボタンが夫々表示された複数のウィンドウをオーバーラップさせて表示するマルチウィンドウ表示制御装置において、
前記ボタンがポインティングデバイスにより指定された際、該ボタンを表示しているウィンドウがアクティブウィンドウであるか否かを判別する判別手段と、
少なくとも前記判別手段によりアクティブウィンドウでないと判別された場合は、前記指定に係るボタンに対応する処理の実行を禁止する制御手段と、
を備えたことを特徴とするマルチウィンドウ表示制御装置。
【請求項２】　前記制御手段は、前記判別手段によりアクティブウィンドウでないと判別された場合は、前記指定に係るボタンに対応する処理の実行を禁止し、アクティブウィンドウであると判別された場合は、前記指定に係るボタンに対応する処理を実行することを特徴とする請求項１記載のマルチウィンドウ表示制御装置。
【請求項３】　前記制御手段は、前記判別手段によりアクティブウィンドウでないと判別された場合は、前記指定に係るボタンに対応する処理の実行を禁止し、アクティブウィンドウであると判別された場合は、該ウィンドウをアクティブ化することを特徴とする請求項１記載のマルチウィンドウ表示制御装置。
【請求項４】　前記制御手段は、前記判別手段によりアクティブウィンドウでないと判別された場合は、前記指定に係るボタンに対応する処理の実行を禁止し、アクティブウィンドウであると判別された場合は、予め設定された処理を実行させることを特徴とする請求項１記載のマルチウィンドウ表示制御装置。
【請求項５】　複数のウィンドウをオーバーラップさせて表示するマルチウィンドウ表示制御装置において、
アクティブ化されていないウィンドウ内には各種処理を指示するためのボタンを表示せず、アクティブ化されたウィンドウ内には前記ボタンを表示する制御手段、
を備えたことを特徴とするマルチウィンドウ表示制御装置。
【請求項６】　複数のウィンドウをオーバーラップさせて表示するマルチウィンドウ表示制御装置において、
ポインティングデバイスに設けられたスイッチのオン操作に応答して、該ポインティングデバイスにより現在指定されているウィンドウを消去する消去手段と、
前記スイッチのオフ操作に応答して、前記消去に係るウィンドウを再表示する再表示手段と、
を備えたことを特徴とするマルチウィンドウ表示制御装置。
【請求項７】　前記消去手段は、前記ポインティングデバイスによりウィンドウ内に常時表示されている部分が指定されて前記スイッチがオンされた場合に該ポインティングデバイスにより現在指定されているウィンドウを消去し、前記再表示手段は、前記ポインティングデバイスによる指定位置を問わずに前記スイッチのオフ操作に応答して、前記消去に係るウィンドウを再表示することを特徴とする請求項６記載のマルチウィンドウ表示制御装置。
【請求項８】　前記消去手段は、前記ポインティングデバイスにより現在指定されているウィンドウ内に常時表示されている部分を残して該ウィンドウを消去することを特徴とする請求項６、または請求項７記載のマルチウィンドウ表示制御装置。
【請求項９】　前記消去手段は、前記ポインティングデバイスにより現在指定されているウィンドウの全ての部分を消去することを特徴とする請求項６、または請求項７記載のマルチウィンドウ表示制御装置。
【請求項１０】　前記ポインティングデバイスは、マウスにより構成されていることを特徴とする請求項１～９記載のマルチウィンドウ表示制御装置。
【発明の詳細な説明】
【０００１】
【産業上の利用分野】本発明は、複数のウィンドウをオーバーラップさせて表示するマルチウィンドウ表示制御装置に関する。
【０００２】
【従来の技術】最近のコンピュータ技術の発達により、ユーザは１台のコンピュータシステム上で幾つかのソフトウェアアプリケーションを同時に実行することが出来るようになり、加えて、アプリケーションからのデータに同時にアクセスしたり、そのようなデータを同時に表示させたり、同時に操作できるようになった。
【０００３】このような環境の下では、コンピュータディスプレイ上で複数のアプリケーションを同時に管理できるように、ウィンドウという概念が利用されており、ウィンドウという概念で実現されたシステム（ウィンドウシステム）では、複数個のアプリケーションのうち、一部あるいは全部がコンピュータディスプレイ上の個別の「ウィンドウ」に表示される。また、ウィンドウ上での操作指定手段として、マウス等のポインティングデバイスが用いられている。多くのウィンドウシステムでは、限られたディスプレイ表示面を有効に利用するために、１つのウィンドウの上に他のウィンドウを重ねる（オーバーラップ）か、又は、直ぐには操作する必要の無いアプリケーションのウィンドウを、ディスプレイ表示上の邪魔にならない位置にアイコン表示することが行われている。
【０００４】このようなウィンドウシステムでは、複数のウィンドウが表示れているとき、任意のウィンドウをポインティングデバイスで指定すると、そのウィンドウが作業可能なアクティブウィンドウになる。
【０００５】また、ウィンドウ同士が重なった状態にあるとき、ユーザが前面のウィンドウの下に隠れたウィン

ドウを参照する場合には、上層のウィンドウを移動したり、サイズを変更したり、最小化（アイコン化）したり、あるいは、上層のウィンドウ（アプリケーション）をクローズする等の方法が用いられており、このような処理を行うために、各ウィンドウ内のタイトルバーの部分などに各処理を指示するためのボタンを表示する場合もある。このような場合には、そのボタンをポインティングデバイスで指定すると、そのウィンドウがアクティブウィンドウか否かに拘らず、ウィンドウの移動、ハイド、クローズ、アイコン化など、そのボタンに対応する処理が実行される。

【０００６】例えば、図９に示すように、ウィンドウＷ５に隠れたウィンドウＷ６を参照するために、ウィンドウＷ５上に設けられたアイコン化ボタンＢ２をマウスカーソルＭＣでクリックする。するとウィンドウＷ５はアイコンＩとなり、ウィンドウＷ６が現れて参照することができるようになる。ウィンドウＷ６の参照の後に、再びウィンドウＷ５を表示するためには、アイコンＩにマウスカーソルＭＣを位置付け、ダブルクリックしてウィンドウ化する。

【０００７】また、ボタン以外の部分をポインティングデバイスで指定すると、指定されたウィンドウがアクティブウィンドウとなる。

【０００８】

【発明が解決しようとする課題】しかし、上記従来技術では、ボタンをポインティングデバイスで指定すると、そのウィンドウがアクティブウィンドウか否かに拘らず、ウィンドウの移動、ハイド、クローズ、アイコン化など、そのボタンに対応する処理が実行されるので、アクティブウィンドウではないウィンドウのボタンを誤って指定してしまった場合、ユーザの意に反してそのウィンドウがハイド、クローズ等されてしまうという問題があった。

【０００９】また、上層のウィンドウの下に隠れたウィンドウを参照する場合、上層のウィンドウを移動したり、サイズを変更したり、最小化（アイコン化）したり、あるいは、上層のウィンドウをクローズするという操作を行わなければならず、加えて、参照が終わった後では、上層のウィンドウを元に戻す操作（元の場所に移動する、元のサイズにする、最小化されたアイコンを選択してウィンドウ表示に戻す、あるいは、アプリケーションを再起動する）を行わなければならず、ユーザの操作手順が増えるとともに、ポインティングデバイスの移動という操作を伴うため、操作が繁雑になるという問題があった。

【００１０】本発明は、このような背景の下になされたもので、その第１の目的は、ウィンドウ内に表示されたボタンに対応する処理がユーザーの意に反して実行されるのを防止できるようにすることにある。

【００１１】本発明の第２の目的は、簡単な操作で隠れたウィンドウを参照して、元の状態に復帰できるようにすることにある。

【００１２】

【課題を解決するための手段】上記第１の目的を達成するため、請求項１記載の発明は、各種処理を指示するためのボタンが夫々表示された複数のウィンドウをオーバーラップさせて表示するマルチウィンドウ表示制御装置において、前記ボタンがポインティングデバイスにより指定された際、該ボタンを表示しているウィンドウがアクティブウィンドウであるか否かを判別する判別手段と、少なくとも前記判別手段によりアクティブウィンドウでないと判別された場合は、前記指定に係るボタンに対応する処理の実行を禁止する制御手段とを備えている。

【００１３】上記第１の目的を達成するため、請求項２記載の発明では、請求項１記載の前記制御手段は、前記判別手段によりアクティブウィンドウでないと判別された場合は、前記指定に係るボタンに対応する処理の実行を禁止し、アクティブウィンドウであると判別された場合は、前記指定に係るボタンに対応する処理を実行するように構成されている。

【００１４】上記第１の目的を達成するため、請求項３記載の発明では、請求項１記載の前記制御手段は、前記判別手段によりアクティブウィンドウでないと判別された場合は、前記指定に係るボタンに対応する処理の実行を禁止し、アクティブウィンドウであると判別された場合は、該ウィンドウをアクティブ化するように構成されている。

【００１５】上記第１の目的を達成するため、請求項４記載の発明では、請求項１記載の前記制御手段は、前記判別手段によりアクティブウィンドウでないと判別された場合は、前記指定に係るボタンに対応する処理の実行を禁止し、アクティブウィンドウであると判別された場合は、予め設定された処理を実行させるように構成されている。

【００１６】上記第１の目的を達成するため、請求項５記載の発明は、複数のウィンドウをオーバーラップさせて表示するマルチウィンドウ表示制御装置において、アクティブ化されていないウィンドウ内には各種処理を指示するためのボタンを表示せず、アクティブ化されたウィンドウ内には前記ボタンを表示する制御手段を備えている。

【００１７】上記第２の目的を達成するため、請求項６記載の発明は、複数のウィンドウをオーバーラップさせて表示するマルチウィンドウ表示制御装置において、ポインティングデバイスに設けられたスイッチのオン操作に応答して、該ポインティングデバイスにより現在指定されているウィンドウを消去する消去手段と、前記スイッチのオフ操作に応答して、前記消去に係るウィンドウを再表示する再表示手段とを備えている。

【００１８】上記第２の目的を達成するため、請求項７記載の発明では、請求項６記載の前記消去手段は、前記ポインティングデバイスによりウィンドウ内に常時表示されている部分が指定されて前記スイッチがオンされた場合に該ポインティングデバイスにより現在指定されているウィンドウを消去し、前記再表示手段は、前記ポインティングデバイスによる指定位置を問わずに前記スイッチのオフ操作に応答して、前記消去に係るウィンドウを再表示するように構成されている。

【００１９】上記第２の目的を達成するため、請求項８記載の発明では、請求項６、または請求項７記載の前記消去手段は、前記ポインティングデバイスにより現在指定されているウィンドウ内に常時表示されている部分を残して該ウィンドウを消去するように構成されている。

【００２０】上記第２の目的を達成するため、請求項９記載の発明では、請求項６、または請求項７記載の前記消去手段は、前記ポインティングデバイスにより現在指定されているウィンドウの全ての部分を消去するように構成されている。

【００２１】上記第２の目的を達成するため、請求項１０記載の発明では、請求項１～９記載の前記ポインティングデバイスは、マウスにより構成されている。

【００２２】

【作用】請求項１記載の発明では、前記制御手段は、少なくとも前記判別手段によりアクティブウィンドウでないと判別された場合は、前記指定に係るボタンに対応する処理の実行を禁止することにより、ウィンドウ内に表示されたボタンに対応する処理がユーザーの意に反して実行されるのを防止する。

【００２３】請求項２記載の発明では、請求項１記載の前記制御手段は、前記判別手段によりアクティブウィンドウでないと判別された場合は、前記指定に係るボタンに対応する処理の実行を禁止し、アクティブウィンドウであると判別された場合は、前記指定に係るボタンに対応する処理を実行することにより、ウィンドウ内に表示されたボタンに対応する処理がユーザーの意に反して実行されるのを防止する。

【００２４】請求項３記載の発明では、請求項１記載の前記制御手段は、前記判別手段によりアクティブウィンドウでないと判別された場合は、前記指定に係るボタンに対応する処理の実行を禁止し、アクティブウィンドウであると判別された場合は、該ウィンドウをアクティブ化することにより、ウィンドウ内に表示されたボタンに対応する処理がユーザーの意に反して実行されるのを防止する。

【００２５】請求項４記載の発明では、請求項１記載の前記制御手段は、前記判別手段によりアクティブウィンドウでないと判別された場合は、前記指定に係るボタンに対応する処理の実行を禁止し、アクティブウィンドウであると判別された場合は、予め設定された処理を実行させることにより、ウィンドウ内に表示されたボタンに対応する処理がユーザーの意に反して実行されるのを防止する。

【００２６】請求項５記載の発明では、前記制御手段は、アクティブ化されていないウィンドウ内には各種処理を指示するためのボタンを表示せず、アクティブ化されたウィンドウ内には前記ボタンを表示することにより、ウィンドウ内に表示されたボタンに対応する処理がユーザーの意に反して実行されるのを防止する。

【００２７】請求項６記載の発明は、前記消去手段は、ポインティングデバイスに設けられたスイッチのオン操作に応答して、該ポインティングデバイスにより現在指定されているウィンドウを消去し、前記再表示手段は、前記スイッチのオフ操作に応答して、前記消去に係るウィンドウを再表示することにより、簡単な操作で隠れたウィンドウを参照して、元の状態に復帰できるようにする。

【００２８】請求項７記載の発明では、請求項６記載の前記消去手段は、前記ポインティングデバイスによりウィンドウ内に常時表示されている部分が指定されて前記スイッチがオンされた場合に該ポインティングデバイスにより現在指定されているウィンドウを消去し、前記再表示手段は、前記ポインティングデバイスによる指定位置を問わずに前記スイッチのオフ操作に応答して、前記消去に係るウィンドウを再表示することにより、ウィンドウのどの位置を指定しても隠れたウィンドウを参照して、表示画面のどの位置を指定しても元の状態に復帰でるようにする。

【００２９】請求項８記載の発明では、請求項６、または請求項７記載の前記消去手段は、前記ポインティングデバイスにより現在指定されているウィンドウ内に常時表示されている部分を残して該ウィンドウを消去することにより、簡単な操作で隠れたウィンドウを参照して、元の状態に復帰でるようにする。

【００３０】請求項９記載の発明では、請求項６、または請求項７記載の前記消去手段は、前記ポインティングデバイスにより現在指定されているウィンドウの全ての部分を消去することにより、簡単な操作で隠れたウィンドウの全ての部分を参照して、元の状態に復帰でるようにする。

【００３１】請求項１０記載の発明では、請求項１～９記載の前記ポインティングデバイスは、マウスにより構成されており、簡単な操作で隠れたウィンドウを参照して、元の状態に復帰でるようになる。

【００３２】

【実施例】以下、本発明の実施例を図面を参照しながら説明する。

【００３３】［第１実施例］図１は、本発明の実施例によるマルチウィンドウ表示制御装置を適用した情報処理装置の概略構成を示すブロック図である。

【００３４】図１において、１は情報処理装置全体の制御を司る、例えばマイクロプロセッサ等にて構成される中央処理装置（ＣＰＵ）、２は各入出力装置間のデータ転送を行うためのデータバス、３は、制御プログラムや固定データを格納するためのＲＯＭ、４はＣＰＵ１がプログラムを実行する際に各種ワークエリアとして使用されるＲＡＭ、５はソフトアプリケーションファイル等のプログラムファイルやデータファイルが格納された外部記憶装置、６はウィンドウが表示されるディスプレイ、７はデータ入力やコマンド入力を行うためのキーボード、８はディスプレイ上でマウスカーソルを移動させて位置指定等を行うためのマウス、８ａはマウスボタンである。

【００３５】本情報処理装置では、ＣＰＵ１は、複数のソフトアプリケーションを同時に実行すべく、例えば図２に示したように、ディスプレイ６の画面上にウィンドウＷ１，Ｗ２，Ｗ３を表示すると共に、これらウィンドウの管理処理を行っている。これらウィンドウＷ１，Ｗ２，Ｗ３は、図示したようにオーバラップされて表示されている。各ウィンドウＷ１，Ｗ２，Ｗ３には、予めタイトルバーＴＢが表示されており、このタイトルバーＴＢには、当該ウィンドウのクローズを行うためのクローズボタンＢ１、アイコン化を行うためのアイコン化ボタンＢ２が付けられている。このような重なり表示を行うために、ＲＡＭ４内に重なりに関する優先度のデータが格納されており、この優先度が最も高いウィンドウがアクティブウィンドウである。

【００３６】次に、第１実施例におけるウィンドウ処理を図３のフローチャートに従って説明する。

【００３７】ウィンドウシステム（ＣＰＵ１）は、マウス８によりウィンドウのクローズボタンＢ１、またはアイコン化ボタンＢ２がクリックされると（ステップＳ１）、そのウィンドウが作業中のアクティブウィンドウであるか否かをＲＡＭ４に格納された優先度のデータにより判別する（ステップＳ２）。その結果、アクティブウィンドウでなければ、そのウィンドウをアクティブ化して（ステップＳ３）、ウィンドウ処理を終了する。一方、アクティブウィンドウであれば、クリックされたボタンに対応する処理を実行して（ステップＳ４）、ウィンドウ処理を終了する。

【００３８】［第２実施例］次に、第２実施例におけるウィンドウ処理を図４のフローチャートに従って説明する。

【００３９】ＣＰＵ１は、マウス８によりウィンドウのクローズボタンＢ１、またはアイコン化ボタンＢ２がクリックされると（ステップＳ２１）、そのウィンドウが作業中のアクティブウィンドウであるか否かを判別する（ステップＳ２２）。その結果、アクティブウィンドウでなければ、クリックは無効としてそのままウィンドウ処理を終了する。一方、アクティブウィンドウであれば、クリックされたボタンに対応する処理を実行して（ステップＳ２３）、ウィンドウ処理を終了する。

【００４０】［第３実施例］第３実施例では、ユーザは、予めアクティブではないウィンドウのボタンが指定（クリック）された場合に行う処理として、例えば“そのウィンドウをアクティブ化する”、“クリックを無効にする”など、いくつかの選択肢の中から選択して、ＲＡＭ４に予め設定しておく。

【００４１】次に、第３実施例におけるウィンドウ処理を図５のフローチャートに従って説明する。

【００４２】ＣＰＵ１は、マウス８によりウィンドウのクローズボタンＢ１、またはアイコン化ボタンＢ２がクリックされると（ステップＳ３１）、そのウィンドウが作業中のアクティブウィンドウであるか否かを判別する（ステップＳ３２）。その結果、アクティブウィンドウでなければ、ユーザーが予め設定した処理を実行して（ステップＳ３３）、ウィンドウ処理を終了する。一方、アクティブウィンドウであれば、クリックされたボタンに対応する処理を実行して（ステップＳ３４）、ウィンドウ処理を終了する。

【００４３】以上説明したように、第１～第３実施例では、アクティブでないウィンドウのボタンが指定された場合は、その指定されたボタンに対応する処理を禁止しているので、たとえユーザがアクティブでないウィンドウのボタンを誤って指定したとしても、そのボタンに対応する処理が意に反して実行されるのを防止することができる。

【００４４】［第４実施例］なお、ウィンドウがアクティブウィンドウになった場合に限り、ウィンドウのハイドやクローズ、アイコン化などを行うためのボタンを表示し、ウィンドウがアクティブウィンドウではなくなったときは、そのウィンドウのボタンを非表示にすることにより、ユーザがアクティブでないウィンドウのボタンを誤って指定することのないようにして、ボタンに対応する処理が意に反して実行されるのを防止することも可能である。

【００４５】［第５実施例］第５，第６実施例におけるウィンドウ処理は、各ソフトアプリケーション（すなわちウィンドウ）ごとに、従来からのアプリケーションの処理に付加される形で実装されているものとする。また、上記制御プログラムにより実現されるウィンドウシステムでは、「マウスボタンが押された」、「マウスが動いた」、「キーが押された」、「ウィンドウの再描画が要求された」等のイベントがウィンドウシステムから当該アプリケーション（ウィンドウ）に通知されるようになっており、各アプリケーションは、受け取ったイベントに基づいて処理を進めている。

【００４６】次に、第５実施例におけるウィンドウ処理を、図７を参照しながら図６のフローチャートに従って説明する。

【００４７】今、ディスプレイ６には、図７（ａ）のようなウィンドウが表示され、例えば、ウィンドウＷ４はワードプロセッサ、ウィンドウＷ５はスプレッドシートのアプリケーションが実行しており、ウィンドウＷ６がウィンドウＷ５に隠れてターミナルソフトを実行しているものとする。

【００４８】このような状況の下で、例えばスプレッドシートを見ながらワードプロセッサで文章を作成している途中で、ターミナルソフトのウィンドウ（例えばホストプログラムの実行状況を見るために）を参照するような場合には、ユーザは、マウス８を操作してウィンドウＷ５のタイトルバーＴＢにマウスカーソルＭＣを位置付ける。そして、ウィンドウＷ５を一旦消去する目的で、マウスボタン８ａを押す。マウスボタン８ａが押されると、ウィンドウシステムは、ウィンドウＷ５に「マウスボタンが押された」旨のイベントを通知する。

【００４９】ウィンドウＷ５は、それに実装された処理を図６のフローチャートに従って行う。すなわち、ウィンドウＷ５は、ウィンドウシステムからイベントを受け取ると（ステップＳ５１）、そのイベントが「マウスボタンが押された」か否かを判別する（ステップＳ５２）。その結果、マウスボタン８ａが押されたのであれば、ウィンドウのどこで押されたかを認識すべく、マウスカーソル位置を取得する（ステップＳ５３）。そして、ウィンドウ内に常時表示されているタイルトバーＴＢの位置で押されたのか否かを判別し（ステップＳ５４）、タイトルバーＴＢの外で押されたのであれば、その他のイベントに従った処理を行って（ステップＳ６１）、ステップＳ５１に戻り、次のイベントの入力を待つ。

【００５０】一方、タイトルバーＴＢの位置で押されたのであれば、ウィンドウの消去指示とみなし、当該ウインドウ（ここではＷ５）のタイトルバーＴＢの表示のみを残して当該ウィンドウを消去し（ステップＳ５５）、ウィンドウを消去したことを記憶すべく、ウィンドウ消去フラグをオンして（ステップＳ５６）、ステップＳ５１に戻る。

【００５１】このとき、今まで隠れていたウィンドウＷ６が表示面に出現することになり、それを検出したウィンドウシステムは、ウィンドウＷ６に対して、「ウィンドウの再描画」要求のイベントを通知する。ウィンドウＷ６はウィンドウの再描画要求のイベントを受け取ると、自身のウィンドウＷ６を図７（ｂ）に実線で示したように表示する。

【００５２】次に、ユーザがウィンドウＷ６を参照し終わって、ウィンドウＷ５を元に戻す場合について説明する。

【００５３】ユーザは、図７（ｂ）の状態でマウス８のマウスボタン８ａを離す。マウスボタン８ａが離されると、「マウスボタンが離された」旨のイベントがウィンドウＷ５に通知される。ウィンドウＷ５は、ステップＳ５１にてベントを受け取り、ステップＳ５２にて「マウスボタンが押された」旨のイベントであるか否かを判別するが、この場合、「マウスボタンが離された」旨のイベントであるので、次にステップＳ５７からステップＳ５８に進み、ウィンドウ消去フラグを参照して当該ウィンドウＷ５は消去中であるか否かを判別する。

【００５４】ここでは、当該ウィンドウＷ５は消去中であるので、ウィンドウＷ５を再表示して元の図７（ａ）の表示状態に戻し（ステップＳ５９）、ウィンドウ消去フラグをオフして（ステップＳ６０）、ステップＳ５１に戻る。なお、ステップＳ５７にて「マウスボタンが離された」旨のイベントでないと判別されたとき、およびステップＳ５８にて当該ウィンドウＷ５は消去中でないと判別されたときは、ステップＳ６１に進み、その他のイベントに従った処理を行う。

【００５５】このように、マウスボタン８ａを離すと図７（ｂ）の状態から図７（ａ）の状態に戻り、再びウィンドウＷ５がウィンドウＷ６を隠すことになる。

【００５６】なお、上記のフローチャートの説明、および図７（ａ），（ｂ）から明らかなように、マウスボタン８ａを離して元のウィンドウに復帰する場合に、マウス８を移動した後にマウスボタン８ａを離すという手順を踏むことはない。すなわち、上層のウィンドウのタイトルバーＴＢの上でマウスボタン８ａを押して上層のウィンドウを消去し、マウスを移動させずにマウスボタン８ａをそのまま押し続けて上記消去により現れた下層のウィンドウを参照し、参照し終わったらマウスボタン８ａを離して、上層にあったウィンドウを再表示させるという簡単な操作で、隠れたウィンドウの参照、および元の状態への復帰処理を行うことができる。換言すれば、隠れたウィンドウを参照して、元の状態へ復帰する場合は、上層のウィンドウのタイトルバーＴＢ上にマウスカーソルＭＣを位置付けして、マウスボタンをしばらくの間押し続けて離すだけでよい。もちろん、マウス８を表示画面の任意の位置に移動してマウスボタン８ａを離してもよい。

【００５７】［第６実施例］第５実施例では、ウィンドウ内に常時表示されているタイトルバーＴＢの上でマウスボタン８ａを操作し、タイトルバーＴＢを残して当該ウィンドウを消去していたが、ウィンドウ内の任意の位置でマウスボタン８ａを操作し、当該ウィンドウの全てを消去するようにしてもよい。

【００５８】このような機能は、図６のフローチャートとほぼ同様の処理により実現できる。すなわち、図６のフローチャートのステップＳ５４の処理を省略し、ステップＳ５５にて、タイトルバーＴＢを残すことなくウィンドウ全体を消去するようにすればよい。

【００５９】例えば、図８（ａ）に示したようなウィンドウが表示されているとき、ウィンドウＷ５に隠れたウ

ィンドウＷ６を参照したいときは、８（ａ）に示したように、ウィンドウＷ５のタイトルバーＴＢ上にマウスカーソルＭＣを位置付けし、マウスボタン８ａを押す。すると、図８（ｂ）に示したように、ウィンドウＷ５全体が消去され、ウィンドウＷ６が表示される。そこで、マウス８を移動させずにマウスカーソルＭＣの位置を固定したままで、マウスボタン８ａを押し続けながらウィンドウＷ６を参照し、参照し終わったら、マウスボタン８ａを離す。すると、ウィンドウＷ５が再表示されてウィンドウＷ６が隠れ、図８（ａ）の元の状態に復帰する。

【００６０】本実施例では、第５実施例の効果に加え、例えば上層のウィンドウよりも下層のウィンドウの方が大きく、上層のウィンドウのタイトルバーＴＢの部分にも下層のウィンドウの一部が隠れているような場合に、隠れた全てのデータを参照できるという効果がある。

【００６１】なお、本発明は、上記実施例に限定されることなく、各実施例を任意に組み合わせることも可能である。

【００６２】

【発明の効果】以上説明したように、本発明によれば、アクティブではないウィンドウのボタン部分をユーザが誤ってポインティングデバイスで指定したとき、そのウィンドウに対してハイドやクローズ、アイコン化などが行われてしまうのを防ぐことができる。また、簡単な操作により、ウィンドウに隠れたウィンドウを参照でき、さらに元の状態に復帰できるようになり、複数個のウィンドウアプリケーションを効果的に利用できる。

【図面の簡単な説明】

【図１】本発明の実施例によるマルチウィンドウ表示制御装置を適用した情報処理装置の概略構成を示すブロック図である。

【図２】複数のウィンドウのオーバーラップ状態を示した図である。

【図３】第１実施例におけるウィンドウ処理を示すフローチャートである。

【図４】第２実施例におけるウィンドウ処理を示すフローチャートである。

【図５】第３実施例におけるウィンドウ処理を示すフローチャートである。

【図６】第５実施例におけるウィンドウ処理を示すフローチャートである。

【図７】第５実施例におけるウィンドウ処理を説明するための説明図である。

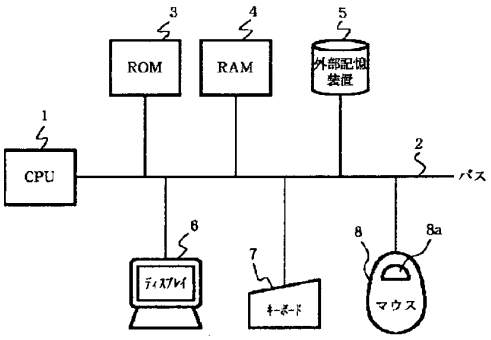
【図８】第６実施例におけるウィンドウ処理を説明するための説明図である。

【図９】従来のウィンドウ処理を説明するための説明図である。

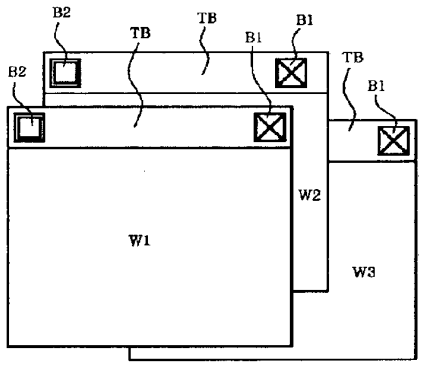
【符号の説明】

１…ＣＰＵ
３…ＲＯＭ
４…ＲＡＭ
５…外部記憶装置
６…ディスプレイ
６…キーボード
８…マウス
８ａ…マウスボタン
Ｗ４～Ｗ６…ウィンドウ
ＴＢ…タイトルバー
ＭＣ…マウスカーソル

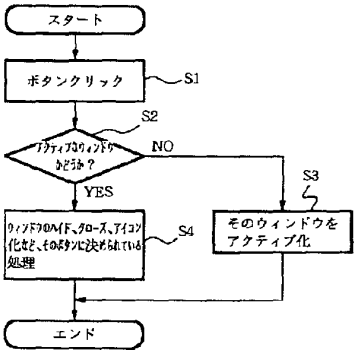
【図１】



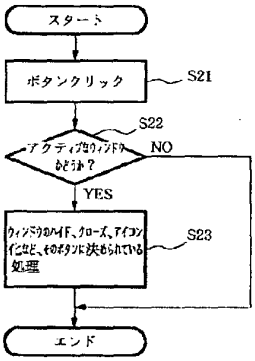
【図２】



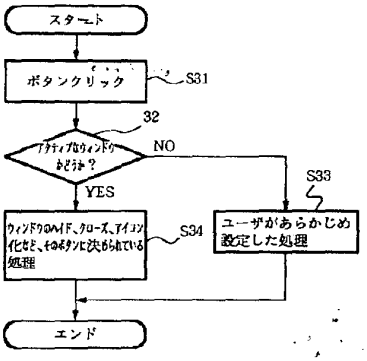
【図3】


スタート
ボタンクリック
S1
S2
NO
YES
S3
そのウィンドウをアクティブ化
S4
エンド

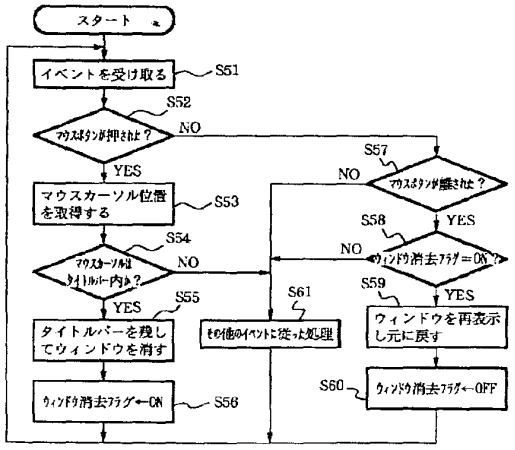
【図4】


スタート
ボタンクリック
S21
S22
NO
YES
S23
エンド

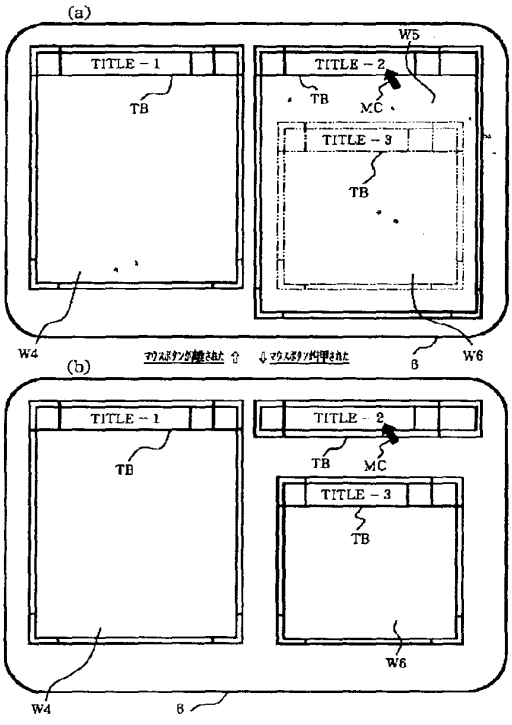
【図5】


スタート
ボタンクリック
S31
32
NO
YES
S33
ユーザがあらかじめ設定した処理
S34
エンド

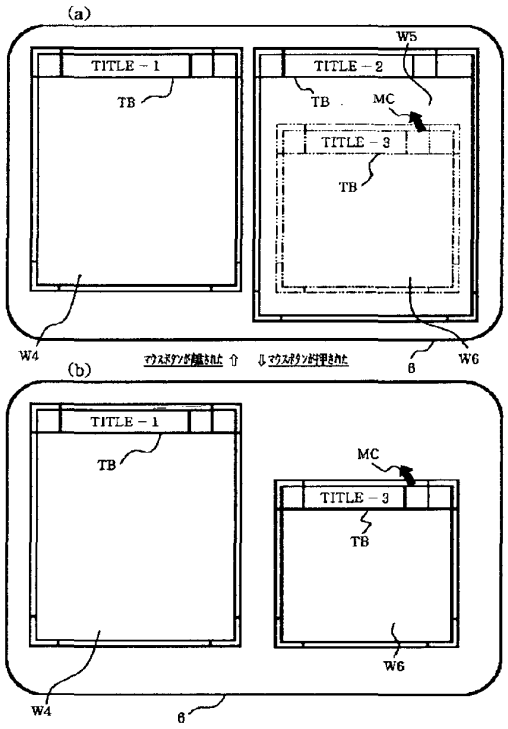
【図6】


スタート
イベントを受け取る
S51
S52
NO
YES
マウスカーソル位置を取得する
S53
S54
NO
YES
S55
タイトルバーを残してウィンドウを消す
ウィンドウ消去フラグ←ON
S56
S57
NO
YES
S58
NO
YES
S59
ウィンドウを再表示し元に戻す
S60
ウィンドウ消去フラグ←OFF
S61

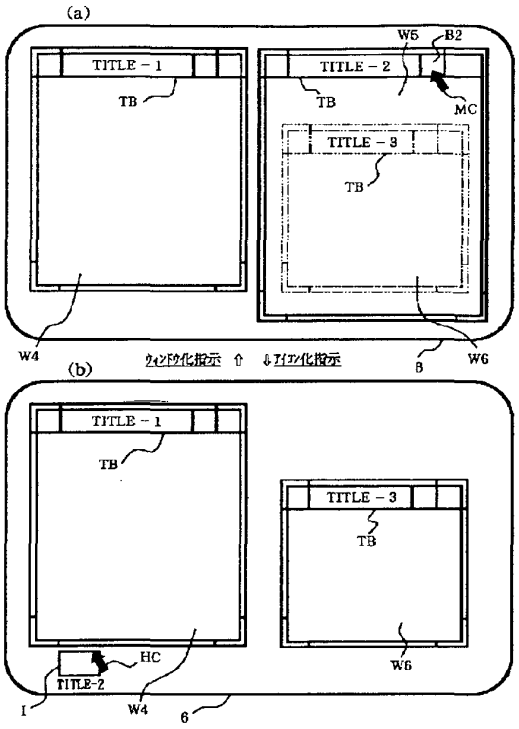
【図7】


(a)
TITLE－1
TITLE－2
TITLE－3
TB
MC
W5
W4
W6
B
(b)

【図8】


(a)
TITLE－1
TB
TITLE－2
TB
W5
MC
TITLE－3
TB
W4
マウスボタンが離された ⇧ ⇩マウスボタンが押された
6
W6
(b)
TITLE－1
TB
MC
TITLE－3
TB
W6
W4
6

【図9】


(a)
TITLE－1
TB
TITLE－2
TB
W5
B2
MC
TITLE－3
TB
W4
ウィンドウ化指示 ⇧ ⇩アイコン化指示
6
W6
(b)
TITLE－1
TB
TITLE－3
TB
HC
TITLE-2
W6
I
W4
6

Espacenet

Bibliographic data: JPH08234953 (A) — 1996-09-13

MULTIWINDOW DISPLAY CONTROLLER

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Applicant(s): CANON KK ± (CANON INC)

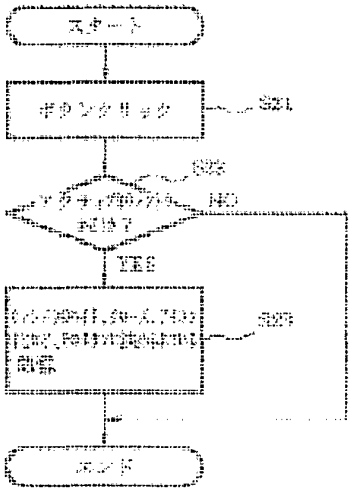
Classification: - **international:** ***G06F3/048; G06F3/14;*** (IPC1-7): G06F3/14
- **cooperative:**

Application number: JP19950065115 19950228

Priority number (s): JP19950065115 19950228

Abstract of JPH08234953 (A)

PURPOSE: To prevent a process corresponding to a button displayed in a window from being executed although a user does not intend. CONSTITUTION: The multiwindow display controller displays plural windows wherein buttons for indicating various processes are displayed so that the windows overlap with one another. When one button is specified with a pointing device, it is decided whether the window wherein the button is displayed is an active window and when the window is not the active window, the process corresponding to the button regarding the specification is inhibited from being executed, but when the window is the active window, the process corresponding to the button regarding the specification is executed.



English translation of JP H08-234953 A

[0001]

[Industrial Field of Application]

The present invention relates to a multiwindow display controller for displaying a plurality of overlapping windows.

[0002]

[Related Art]

Recent development in computer technology enables users to simultaneously run several software applications on a single computer system and to simultaneously access data from the applications, and simultaneously display and simultaneously operate such data.

[0003] In such an environment, a concept of windows is used in order to simultaneously manage a plurality of applications on a computer display. In the system implemented based on the concept of windows (window system), a part or all of applications appear on individual "windows" on the computer display. A pointing device such as a mouse is used as operation specifying means on windows. In most of the window systems, to efficiently use a limited display surface, a window is placed on another window (overlap), or a window for an application that does not require immediate operation is reduced to an icon at a position where it does not interfere with the display.

[0004] In such a window system, specifying any one of a plurality of displayed windows with a pointing device will make the window an operable active window.

[0005] When windows overlap one another, to refer to a window hidden under a front-most window, the user may move or resize or minimize (iconify) the front-most window or close the front-most window (application). To allow such a process, for example, a title bar in each window may contain a button for specifying each process. In such a case, once the button is specified with a pointing device, the process associated with the button, such as moving, hiding, closing, or iconifying the window, can be executed irrespective of whether the window is active or not.

[0006] For example, as shown in FIG. 9, to refer to a window W6 hidden under a window W5, the user clicks an iconify button B2 on the window W5 with a mouse cursor MC. The window W5 is then reduced to an icon I, and the window W6 appears and can be referred to. To display the window W5 again after referring to the window W6, the user positions the mouse cursor MC on the icon I and double-clicks the icon I to open the window.

[0007] Specifying a portion other than the button with a pointing device causes the specified window to become active.

[0008]

[Problems which the Invention Attempts to Solve]

However, in the conventional technique described above, once the button is specified with a pointing device, the process associated with the button, such as moving, hiding, closing or iconifying the window, is executed irrespective of whether the window is active or not. If the button in an inactive window is specified by mistake, the window is hidden or closed against the user's intention.

[0009] To refer to a window hidden under a front-most window, it is necessary to perform an operation such as moving, resizing, or minimizing (iconifying) the front-most window or closing the front-most window. It is additionally necessary to perform an operation for restoring the front-most window (moving it to the original position, resizing it to the original size, or selecting and restoring the minimized icon to a window, or restarting the application) after referring to the hidden window. The number of operation procedures taken by the user thus increases, and the involved operation of moving the pointing device makes the operation complicated.

[0010] The present invention is made in such a background. A first object of the present invention is to prevent a process associated with a button in a window from being executed against the user's intention.

[0011] A second object of the present invention is to provide a simple operation to refer to a hidden window and return to the original state.

[0012]

[Means for Solving the Problems]

To achieve the first object, the invention according to claim 1 provides a multiwindow display controller for displaying a plurality of overlapping windows each containing a button for specifying a process, the multiwindow display controller includes: determination means for, when the button is specified with a pointing device, determining whether the window that contains the specified button is an active window; and control means for prohibiting a process associated with the specified button from being executed at least when the determination means determines that the window is not an active window.

[0013] To achieve the first object, in the invention according to claim 2, the control means described in claim 1 prohibits the process associated with the specified button from being executed when the determination means determines that the window is not an active window, and executes the process associated with the specified button when the determination means determines that the window is an active window.

[0014] To achieve the first object, in the invention according to claim 3, the control

means described in claim 1 prohibits the process associated with the specified button from being executed when the determination means determines that the window is not an active window, and activates the window when the determination means determines that the window is an active window.

[0015] To achieve the first object, in the invention according to claim 4, the control means described in claim 1 prohibits the process associated with the specified button from being executed when the determination means determines that the window is not an active window, and executes a preset process when the determination means determines that the window is an active window.

[0016] To achieve the first object, the invention according to claim 5 provides a multiwindow display controller for displaying a plurality of overlapping windows, the multiwindow display controller includes control means for hiding a button for specifying a process in an inactivated window and displaying the button in an activated window.

[0017] To achieve the second object, the invention according to claim 6 provides a multiwindow display controller for displaying a plurality of overlapping windows, the multiwindow display controller includes: erasing means for erasing a window currently specified with a pointing device in response to an operation of turning on a switch provided in the pointing device; and redisplay means for redisplaying the erased window in response to an operation of turning off the switch.

[0018] To achieve the second object, in the invention according to claim 7, the erasing means described in claim 6 erases the window currently specified with the pointing device when a portion normally displayed in the window is specified with the pointing device and the switch is turned on, and the redisplay means redisplays the erased window in response to an operation of turning off the switch, irrespective of a position specified with the pointing device.

[0019] To achieve the second object, in the invention according to claim 8, the erasing means described in claim 6 or claim 7 erases the window currently specified with the pointing device while the portion normally displayed in the window is kept.

[0020] To achieve the second object, in the invention according to claim 9, the erasing means described in claim 6 or claim 7 erases the entire window currently specified with the pointing device.

[0021] To achieve the second object, in the invention according to claim 10, the pointing device described in claims 1 to 9 includes a mouse.

[0022]

[Operation]

In the invention according to claim 1, the control means prohibits the process associated with the specified button from being executed at least when the determination means determines that the window is not an active window, thereby preventing the process associated with the button displayed in the window from being executed against the user's intention.

[0023] In the invention according to claim 2, the control means described in claim 1 prohibits the process associated with the specified button from being executed when the determination means determines that the window is not an active window, and executes the process associated with the specified button when the determination means determines that the window is an active window, thereby preventing the process associated with the button displayed in the window from being executed against the user's intention.

[0024] In the invention according to claim 3, the control means described in claim 1 prohibits the process associated with the specified button from being executed when the determination means determines that the window is not an active window, and activates the window when the determination means determines that the window is an active window, thereby preventing the process associated with the button displayed in the window from being executed against the user's intention.

[0025] In the invention according to claim 4, the control means described in claim 1 prohibits the process associated with the specified button from being executed when the determination means determines that the window is not an active window, and executes a preset process when the determination means determines that the window is an active window, thereby preventing the process associated with the button displayed in the window from being executed against the user's intention.

[0026] In the invention according to claim 5, the control means hides a button for specifying a process in an inactivated window and displays the button in an activated window, thereby preventing the process associated with the button displayed in the window from being executed against the user's intention.

[0027] In the invention according to claim 6, the erasing means erases a window currently specified with a pointing device in response to an operation of turning on a switch provided in the pointing device, and the redisplay means redisplays the erased window in response to an operation of turning off the switch, thereby providing a simple operation to refer to the hidden window and return to the original state.

[0028] In the invention according to claim 7, the erasing means described in claim 6 erases the window currently specified with the pointing device when a portion normally displayed in the window is specified with the pointing device and the switch is turned

on, and the redisplay means redisplays the erased window in response to an operation of turning off the switch, irrespective of a position specified with the pointing device, whereby the hidden window can be referred to by specifying any position in the window and the original state can be returned by specifying any position in the display screen.

[0029] In the invention according to claim 8, the erasing means described in claim 6 or claim 7 erases the window currently specified with the pointing device while the portion normally displayed in the window is kept, thereby providing a simple operation to refer to the hidden window and return to the original state.

[0030] In the invention according to claim 9, the erasing means described in claim 6 or claim 7 erases the entire window currently specified with the pointing device, thereby providing a simple operation to refer to the entire hidden window and return to the original state.

[0031] In the invention according to claim 10, the pointing device described in claims 1 to 9 includes a mouse, thereby providing a simple operation to refer to the hidden window and return to the original state.

[0032]

[Embodiments]

Embodiments of the present invention will be described below with reference to the figures.

[0033] [First Embodiment]

FIG. 1 is a block diagram showing the overall configuration of an information processing apparatus to which a multiwindow display controller is applied according to an embodiment of the present invention.

[0034] In FIG. 1, reference numeral 1 denotes a central processing unit (CPU) configured, for example, with a microprocessor for controlling the entire information processing apparatus, reference numeral 2 denotes a data bus for data transfer between input/output devices, reference numeral 3 denotes a ROM for storing a control program and fixed data, reference numeral 4 denotes a RAM for use as a work area of various types for the CPU 1 to execute a program, reference numeral 5 denotes an external storage device in which program files such as software application files and data files are stored, reference numeral 6 denotes a display for displaying windows, reference numeral 7 denotes a keyboard for making data input and command input, reference numeral 8 denotes a mouse for specifying a position by moving a mouse cursor on the display, and reference numeral 8a denotes a mouse button.

[0035] In this information processing apparatus, the CPU 1 displays windows W1, W2,

W3 on a screen of the display 6, for example, as shown in FIG. 2 in order to simultaneously execute a plurality of software applications and performs a process of managing these windows. These windows W1, W2, W3 appear so as to overlap with each other as shown in the figures. A title bar TB appears on each window W1, W2, W3 in advance, and this title bar TB is provided with a close button B1 for closing the window and an iconify button B2 for iconifying the window. To display such overlapping windows, data of priority regarding the overlap is stored in the RAM 4, and a window with the highest priority is an active window.

[0036] Window processing in a first embodiment will now be described with reference to the flowchart in FIG. 3.

[0037] When the close button B1 or the iconify button B2 in a window is clicked with the mouse 8 (step S1), the window system (CPU 1) determines whether the window is the focused active window, based on the priority data stored in the RAM 4 (step S2). If the window is not an active window, it is activated (step S3), and the window processing then ends. If the window is an active window, the process associated with the clicked button is executed (step S4), and the window processing ends.

[0038] [Second Embodiment]

Window processing in a second embodiment will now be described with reference to the flowchart in FIG. 4.

[0039] When the close button B1 or the iconify button B2 is clicked with the mouse 8 (step S21), the CPU 1 determines whether the window is the focused active window (step S22). If the window is not an active window, the click is disabled, and the window processing ends. If the window is an active window, the process associated with the clicked button is executed (step S23), and the window processing ends.

[0040] [Third Embodiment]

In a third embodiment, the user selects a process to be executed when the button in an inactive window is specified (clicked). The process is selected from several options such as, for example, "activating the window" and "disabling the click", and the selected process is set to the RAM 4 in advance.

[0041] Window processing in the third embodiment will now be described with reference to the flowchart in FIG. 5.

[0042] When the close button B1 or the iconify button B2 is clicked with the mouse 8 (step S31), the CPU 1 determines whether the window is the focused active window (step S32). If the window is not an active window, the process preset by the user is executed (step S33), and the window processing ends. If the window is an active window, the process associated with the clicked button is executed (step S34), and the

window processing ends.

[0043] As described above, in the first to third embodiments, when a button in an inactive window is specified, the process associated with the specified button is prohibited. Therefore, even when the user specifies a button in an inactive window by mistake, the process associated with the button can be prevented from being executed against the intention.

[0044] [Fourth Embodiment]

A button for hiding, closing, or iconifying a window may appear only when a window becomes active. When the window becomes inactive, the button in the window may be hidden so that the user cannot specify the button in the inactive window by mistake, thereby preventing the process associated with the button from being executed against the intention.

PATENT ABSTRACTS OF JAPAN

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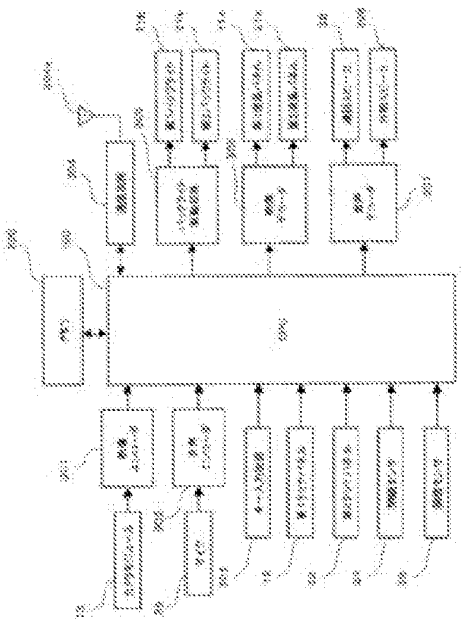
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(54) PORTABLE TERMINAL DEVICE

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a mobile terminal device allowing accurate drag operation between two display parts.
SOLUTION: A cellular phone includes: a first display 11; a second display 21 arranged adjacent to the first display 11; and touch panels 12 and 22 arranged in each of the displays to detect that an icon has been dragged. When the icon is dragged, a CPU 100 reduces display screens of the displays 11 and 21 to be displayed in a display wherein the drag operation is carried out. When the drag operation is completed, the reduced display screens are restored to the original size. On the display screen of the original size, the icon is displayed in the position corresponding to a position on the reduced display screen where the drag operation is completed.



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CLAIMS

[Claim(s)]
[Claim 1]
In personal digital assistant equipment,
A first display part,
Said first display part and a second display part put in order,
A display control part which controls a display of said first display part and said second display part,

It has a primary detecting element for detecting that drag operation was made to a moved object displayed on said first display part or said second display part,
The aforementioned display control part,
When drag operation of the aforementioned moved object is carried out, reduced screen display processing displayed on a display part which reduces a display screen displayed on said first display part and a second display part, and by which the aforementioned drag operation is made in a reduced display screen is performed,
When the aforementioned drag operation is completed, while returning a display screen which contracted [aforementioned] to a display screen of the original size and making it display on said first display part and a second display part, The aforementioned moved object is displayed on a position equivalent to a position at the time of the aforementioned drag operation completion on a display screen which contracted [aforementioned] in a display screen of above-mentioned original size,
Personal digital assistant equipment characterized by things.
[Claim 2]
In the personal digital assistant equipment according to claim 1,
The aforementioned display control part will perform the aforementioned reduced screen display processing, if the aforementioned drag operation is started,
Personal digital assistant equipment characterized by things.
[Claim 3]
In the personal digital assistant equipment according to claim 1,
The aforementioned display control part performs the aforementioned reduced screen display processing based on a situation of the aforementioned drag operation,
Personal digital assistant equipment characterized by things.
[Claim 4]
In the personal digital assistant equipment according to claim 3,
The aforementioned display control part will perform the aforementioned reduced screen display processing, if the aforementioned drag operation reaches within the limits of predetermined from a boundary with a display part of another side,
Personal digital assistant equipment characterized by things.
[Claim 5]

In the personal digital assistant equipment according to claim 3,
The aforementioned display control part will perform the aforementioned reduced screen display processing, if the aforementioned drag operation is made in the direction of a display part of another side,
Personal digital assistant equipment characterized by things.
[Claim 6]
In the personal digital assistant equipment according to claim 1,
The aforementioned display control part will perform the aforementioned reduced screen display processing, if predetermined key operation is performed after the aforementioned drag operation is started,
Personal digital assistant equipment characterized by things.
[Claim 7]
In the personal digital assistant equipment according to any one of claims 1 to 6,
If the aforementioned display control part has the arrival of a telephone during the aforementioned drag operation, a display control process based on the aforementioned drag operation will be stopped, and mail arrival information will be performed,
Personal digital assistant equipment characterized by things.
[Claim 8]
In the personal digital assistant equipment according to any one of claims 1 to 7,
If the aforementioned display control part has the arrival of an E-mail during the aforementioned drag operation, mail arrival information will be performed after completion of the aforementioned drag operation,
Personal digital assistant equipment characterized by things.

[Translation done.]

* NOTICES *

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[Field of the Invention]
[0001]
The present invention relates to personal digital assistant equipment, such as a cellular phone and PDA (Personal Digital Assistant).
[Background of the Invention]
[0002]
Generally, in a cellular phone, an operation screen, a mail document, television imagery, etc. are displayed on the display by a liquid crystal panel etc. If a display is large, many information, including document etc., can be displayed at once, or television imagery can be projected largely. However, it becomes obstructive, when apparatus's own size will become largely and will carry, if a display becomes [one side] largely.
[0003]
Then, the first display always exposed outside in view of such problem, At the time of carrying, it is accommodated in an equipment body, and has a second display exposed outside if needed, and the cellular phone which enabled it to display an image in one display surface which made two displays unify can be considered (for example, Patent document 1).
[Citation list]
[Patent literature]
[0004]
[Patent document 1] JP,2002-44202,A
[Summary of Invention]
[Problem to be solved by the invention]
[0005]
By the way, these days, a touch panel is arranged on a display and the cellular phone with which various applications are performed is commercialized by touching with a finger etc. the icon displayed on the display. In this cellular phone, an icon is movable to the position of the request on a screen by carrying out drag operation.
[0006]
Also in the cellular phone provided with the two above-mentioned displays, a touch panel can be arranged on each display and it can have composition which can perform the operational input using a touch panel. In this case, movement of the icon by drag operation may be performed between a first display and second display.
[0007]
However, between a first display and second display, the portion of the cabinet in which a display is accommodated usually exists. For this reason, since contact of the finger to a display surface, etc. will be severed, it is [in / in the case of drag operation / the portion of a cabinet] once hard to be

detected that drag operation was made between two displays.
[0008]
Therefore, in spite of having carried out drag operation of the icon from one display to the display of another side, the judgment which was mistaken in drag operation having been completed at the end of one display is made, and there is **** to which an icon stops at the end.
[0009]
The present invention is made in view of this problem.
The purpose is to provide personal digital assistant equipment which can perform drag operation between two display parts with sufficient accuracy.

[Means for solving problem]
[0010]
The second display part by which the personal digital assistant equipment of the present invention was compared with the first display part and the above-mentioned first display part, It has a primary detecting element for detecting that drag operation was made to the moved object displayed on the display control part which controls the display of the above-mentioned first display part and the above-mentioned second display part, and the above-mentioned first display part or the above-mentioned second display part. Here, the aforementioned display control part performs reduced screen display processing displayed on the display part which reduces the display screen displayed on the above-mentioned first display part and the second display part, and by which the aforementioned drag operation is made in the reduced display screen, when drag operation of the aforementioned moved object is carried out. And when the aforementioned drag operation is completed, while returning the display screen which contracted [aforementioned] to the display screen of the original size and making it display on the above-mentioned first display part and a second display part, The aforementioned moved object is displayed on the position equivalent to the position at the time of the aforementioned drag operation completion on the display screen which contracted [aforementioned] in the display screen of above-mentioned original size.
[0011]
Since according to the composition of the present invention drag operation of the portion into which the display part broke off is not carried out when drag operation is performed between two display parts, drag operation is easily detectable. Therefore, drag operation between two display parts can be performed with sufficient accuracy.
[0012]
In the personal digital assistant equipment of the present invention, a start of the aforementioned drag operation may consider the aforementioned display control part as the composition which performs the aforementioned reduced screen display processing.
[0013]
When it had such composition and drag operation is made, reduced screen display processing is always performed.
[0014]
In the personal digital assistant equipment of the present invention, the aforementioned display control part may be considered as the composition which performs the aforementioned reduced screen display processing based on the situation of the aforementioned drag operation.
[0015]
For example, the aforementioned display control part may be considered as the composition which performs the aforementioned reduced screen display processing, when the aforementioned drag operation reaches within the limits of predetermined from a boundary with the display part of another side.
[0016]
Or the aforementioned display control part may be considered as the composition which performs

the aforementioned reduced screen display processing, when the aforementioned drag operation is made in the direction of the display part of another side.

[0017]

If it has such composition, when a possibility that drag operation will be made between two display parts is high, reduced screen display processing is performed. Therefore, when performing drag operation within the limits of one display part, it can be operated in the state of the original size.

[0018]

In the personal digital assistant equipment of the present invention, the aforementioned display control part may be considered as the composition which performs the aforementioned reduced screen display processing, when predetermined key operation is performed after the aforementioned drag operation is started.

[0019]

If it has such composition, when a user will perform drag operation between two display parts, reduced screen display processing is performed by a user's key operation. Therefore, the user can operate it in the state of the original size, when trying to perform drag operation within the limits of one display part.

[0020]

In the personal digital assistant equipment of the present invention, when the aforementioned display control part has the arrival of a telephone during the aforementioned drag operation, it may be considered as the composition which stops the display control process based on the aforementioned drag operation, and performs mail arrival information.

[0021]

When it had such composition and the arrival of a telephone is during drag operation, the user can answer in the phone quickly. A user can be prevented from moving a moved object to an undesirable position in response to the arrival of a telephone.

[0022]

In the personal digital assistant equipment of the present invention, when the aforementioned display control part has the arrival of an E-mail during the aforementioned drag operation, it may be considered as the composition which performs mail arrival information after completion of the aforementioned drag operation.

[0023]

If it has such composition, the user can perform drag operation, without being interfered by the mail arrival information of an E-mail. After drag operation is completed, it can know that there was arrival of an E-mail.

[Effect of the Invention]

[0024]

According to the present invention, the personal digital assistant equipment which can perform drag operation between two display parts with sufficient accuracy can be provided.

[0025]

The effect thru/or meaning of the present invention will become still clearer by the description of the embodiment shown below. However, following embodiments are one illustration at the time of enforcement-izing the present invention to the last, and the present invention is not restricted to what was described in following embodiments at all.

[Brief Description of the Drawings]

[0026]

[Drawing 1]It is a figure showing the appearance composition of the cellular phone concerning an embodiment.

[Drawing 2]It is a figure for describing about the switching operation from the 1st displaying condition on the 1st display concerning an embodiment to the 2nd displaying condition on the 1st display and the 2nd display.

[Drawing 3]It is a block diagram showing the entire configuration of the cellular phone concerning an embodiment.
[Drawing 4]It is a figure showing the example of a screen display in the 1st display and the 2nd display concerning an embodiment.
[Drawing 5]It is a flow chart which shows a display control process when drag operation is made in the 2nd displaying condition concerning an embodiment.
[Drawing 6]It is a figure showing the example of a screen display when the drag operation to the 2nd display from the 1st display concerning an embodiment is made.
[Drawing 7]It is a flow chart which shows a display control process when drag operation is made in the 2nd displaying condition concerning the example 1 of change.
[Drawing 8]It is a figure showing the example of a screen display when the drag operation to the 2nd display from the 1st display concerning the example 1 of change is made.
[Drawing 9]It is a flow chart which shows a display control process when drag operation is made in the 2nd displaying condition concerning the example 2 of change.
[Drawing 10]It is a figure showing the example of a screen display when the drag operation to the 2nd display from the 1st display concerning the example 2 of change is made.
[Drawing 11]It is a flow chart which shows a display control process when drag operation is made in the 2nd displaying condition concerning the example 3 of change.
[Drawing 12]It is a figure showing the example of a screen display in case drag operation of the thumbnail displayed on the thumbnail screen of the 1st display concerning the example 4 of change is carried out to the thumbnail screen of the 2nd display.
[Drawing 13]It is a figure showing the example of a screen display in case drag operation of the thumbnail displayed on the thumbnail screen of the 1st display concerning the example 4 of change is carried out to the photo region displayed on the telephone directory screen of the 2nd display.
[Drawing 14]It is a figure showing the example of a screen display in case drag operation of the character string expressed by the document preparation screen of the 1st display concerning the example 4 of change is carried out to the document preparation screen of the 2nd display.
[Drawing 15]It is a figure showing the example of a screen display in case drag operation of the character string expressed to the detailed display screen of the 1st display concerning the example 4 of change is carried out to the document preparation screen of the 2nd display.
[Drawing 16]It is a figure showing the example of a screen display in case drag operation of the character string expressed to the detailed display screen of the 1st display concerning the example 4 of change is carried out to the web screen of the 2nd display.
[Drawing 17]It is a flow chart which shows control management when interruption of the arrival of a telephone, etc. is during the drag operation concerning the example 5 of change.
[Drawing 18]It is a figure showing the example of change of the display screen of the 1st display and the 2nd display reduced by reduced screen display processing.
[Description of Embodiments]
[0027]
Hereafter, with reference to Drawings, it describes about an embodiment of the invention.
[0028]
Fig.1 is a figure (exploded perspective view) showing the composition of a cellular phone. The cellular phone comprises the 1st cabinet 1, the 2nd cabinet 2, and the supporter 3 holding these 1st and 2nd cabinets 1 and 2.
[0029]
The 1st cabinet 1 has oblong rectangular parallelepiped shape. The 1st display 11 is arranged at the 1st cabinet 1, and the display face has faced the transverse plane of the 1st cabinet 1. The 1st display 11 comprises the 1st backlight 11b that illuminates the 1st liquid crystal panel 11a and the 1st liquid crystal panel 11a like the after-mentioned.
[0030]

The 1st touch panel 12 is arranged at the front face of the 1st display 11. The 1st touch panel 12 has a transparent sheet shaped, and can see the display screen which spaces the 1st touch panel 12 and is displayed on the display 11.

[0031]

The 1st touch panel 12 is provided with the 1st transparent electrode and the 2nd transparent electrode which were arranged at matrix form. By detecting change of the electrostatic capacitance between these transparent electrodes, the 1st touch panel 12 detects the position on the display face touched by the user, and outputs the position signal according to the position. The 1st touch panel 12 may not be restricted to an electrostatic capacitance-type touch panel, but may be touch panels, such as a resistance film system and a pressure-sensitive type.

[0032]

the inside of the 1st cabinet 1 -- Chuo -- the camera module 13 is a little arranged at the back position. The lens window (not shown) for incorporating the object image in this camera module 13 is provided by the lower surface of the 1st cabinet 1. The magnet 14 is arranged at the inside of the 1st cabinet 1 in the middle position near the front face, and the magnet 15 is arranged at the forward right corner. The protruding parts 16 and 17 are provided by the right lateral and left lateral of the upper cabinet 1, respectively.

[0033]

The 2nd cabinet 2 has oblong rectangular parallelepiped shape. That is, the 2nd cabinet 2 has the substantially same form and size as the 1st cabinet 1. The 2nd display 21 is arranged at the 2nd cabinet 2, and the display face has faced the transverse plane of the 2nd cabinet 2. The 2nd display 21 comprises the 2nd backlight 21b that illuminates the 2nd liquid crystal panel 21a and the 2nd liquid crystal panel 21a like the after-mentioned. The 1st display 11 and the 2nd display 21 may be constituted by other display devices, such as organic electroluminescence.

[0034]

The 2nd touch panel 22 is arranged at the front face of the 2nd display 21. The composition of the 2nd touch panel 22 is the same as that of the 1st touch panel 12.

[0035]

The magnet 23 is arranged at the inside of the 2nd cabinet 2 in the middle position near the rear face.

When it is in the state (the 2nd displaying condition) where the 1st cabinet 1 and the 2nd cabinet 2 were positioned in the position which constitutes a big screen like the after-mentioned, this magnet 23 and the magnet 14 of the 1st cabinet 1 are constituted so that it may pay well mutually. In the 1st cabinet 1 and the 2nd cabinet 2, as long as the magnetism of one magnet is large enough, the magnet of another side may be replaced with a magnetic body.

[0036]

In 2nd cabinet 2 inside, the closing sensor 24 is arranged at the forward right corner, and the open sensor 25 is arranged at the right rear corner. These sensors 24 and 25 comprise a hole IC etc., and output a detecting signal in response to magnetic magnetism, for example. Since the magnet 15 of the 1st cabinet 1 will approach the closing sensor 24 if it will be lapped by the 1st cabinet 1 and the 2nd cabinet 2 so that it may mention later, an ON signal is outputted from the closing sensor 24. Since the magnet 15 of the 1st cabinet 1 will approach the open sensor 25 on the other hand if the 1st cabinet 1 and the 2nd cabinet 2 will be stood in a line forward and backward, an ON signal is outputted from the open sensor 25.

[0037]

The two shanks 26 are provided by the right lateral of the 2nd cabinet 2, and the two shanks 27 are provided by the left lateral.

[0038]

The supporter 3 comprises the bottom plate part 31, the right holding part 32 formed in the right end section of the bottom plate part 31, and the left holding part 33 formed in the left edge part of

the bottom plate part 31. The 1st cabinet 1 and the 2nd cabinet 2 are accommodated in the receiving region R surrounded by the bottom plate part 31, the right holding part 32, and the left holding part 33 in the state where it lapped up and down.

[0039]

It is arranged at the bottom plate part 31 so that the three coil springs 34 may be located in a line with right and left directions. In the state where the 2nd cabinet 2 was attached to the supporter 3, the lower surface of the 2nd cabinet 2 is abutted and these coil springs 34 give the power pushed up up to the 2nd cabinet 2.

[0040]

The microphone 35 and the power key 36 are arranged at the upper surface of the right holding part 32. The operation key group 37 is arranged at the outer side surface of the right holding part 32. The operation key group 37 consists of two or more keys, such as a set key of a manner mode. About a fixed function, it performs by operating these operation keys, without operating the touch panels 12 and 22. The telephone call loudspeaker 38 is arranged at the upper surface of the left holding part 33. A user talks over the telephone by having a cellular phone so that the left holding part 33 side may come to close to his ears and the right holding part 32 side may come to the month.

[0041]

The guide rail 39 (only the left holding part 33 side is illustrated) is formed in the inner side surface of the right holding part 32 and the left holding part 33. The guide rail 39 comprises the upper groove 39a and the subfissure 39b which are extended in forward/rearward direction, and the two flutings 39c extended up and down so that it may be formed in the front side of a slot and may be connected with the upper groove 39a and the subfissure 39b.

[0042]

When assembling a cellular phone, the shanks 26 and 27 are inserted in the subfissure 39b of the guide groove 39, The 2nd cabinet 2 is arranged in the receiving region R of the supporter 3, further, as the protruding parts 16 and 17 are inserted in the upper groove 39a of the guide groove 39, it is in the receiving region R of the supporter 3, and the 1st cabinet 1 is arranged on the 2nd cabinet 2.

[0043]

In this way, the 1st cabinet 1 is shown in the upper groove 39a, and the slide of it to order is attained. The 2nd cabinet 2 is shown at the subfissure 39b, and the slide of it to order is attained. If the 2nd cabinet 2 moves ahead and the shanks 26 and 27 come to the fluting 39c, the 2nd cabinet 2 will be shown at the fluting 39c, and the slide of it will be attained up and down.

[0044]

Fig.2 is a figure for describing about the switching operation from the 1st displaying condition on the 1st display 11 to the 2nd displaying condition on the 1st display 11 and the 2nd display 21.

[0045]

In the early state, as shown in the figure (a), the 2nd cabinet 2 is in the state where it hid behind the 1st cabinet 1. In this state, only the 1st display 11 is outside exposed. This state is called "1st displaying condition." Operation of a change is manually performed by the user.

[0046]

First, a user moves the 1st cabinet 1 back, as shown in the figure (b). Next, completion of movement behind the 1st cabinet 1 will pull out the 2nd cabinet 2 to the front, as shown in the figure (c). By this drawer operation, since the shanks 26 and 27 will come to the fluting 39c as mentioned above if it moves to the position to which the 2nd cabinet 2 does not lap with the 1st cabinet 1 completely, i.e., the position located in a line in front of the 1st cabinet 1, the 2nd cabinet 2 is pushed on the coil spring 33, and goes up. At this time, when the magnet 14 and the magnet 23 pay well, still bigger climbing power works. In this way, as shown in the figure (d), the 1st cabinet 1 and the 2nd cabinet 2 are located in a line so that it may stick forward and backward, and so that it may become flat-tapped. The 1st display 11 and the 2nd display 21 are unified, and it will be in the state of a big

screen. This state is called "2nd displaying condition."
[0047]
Fig.3 is a block diagram showing the entire configuration of a cellular phone. Each component which the cellular phone of this embodiment mentioned above. It has CPU100, the memory 200, the video encoder 301, the voice encoder 302, the keystroke circuit 303, the communication circuit 304, the backlight drive circuit 305, the video decoder 306, the audio decoder 307, and the external speaker 308.
[0048]
The camera module 13 has image sensors, such as CCD. The camera module 13 digitizes the imaging signal outputted from the image sensor, performs various correction of a gamma correction etc. to the imaging signal, and outputs it to the video encoder 301. The video encoder 301 performs encoding processing to the imaging signal from the camera module 13, and outputs it to CPU100.
[0049]
The microphone 35 converts the sound which collected the sound to an audio signal, and outputs it to the voice encoder 302. The voice encoder 302 performs encoding processing to a digital audio signal, and outputs it to CPU100 while it converts the audio signal of the analog from the microphone 35 to a digital audio signal.
[0050]
The keystroke circuit 303 outputs the input signal according to each key to CPU100, when the power key 36 and each key of the operation key group 37 are operated.
[0051]
The communication circuit 304 converts send data, such as an audio signal from CPU100, a picture signal, a text signal, to a radio signal, and transmits to a base station via the antenna 304a. The radio signal received via the antenna 304a is converted to received data, such as an audio signal, a picture signal, a text signal, and it outputs to CPU100.
[0052]
The backlight drive circuit 305 supplies the voltage signal according to the control signal from CPU100 to the 1st backlight 11b and the 2nd backlight 21b. The light is switched on with the voltage signal from the backlight drive circuit 305, and the 1st backlight 11b illuminates the 1st liquid crystal panel 11a. The light is switched on with the voltage signal from the backlight drive circuit 305, and the 2nd backlight 21b illuminates the 2nd liquid crystal panel 21a.
[0053]
The video decoder 306 is converted to the analog or the digital video signal which can display the video signal from CPU100 with the 1st liquid crystal panel 11a and the 2nd liquid crystal panel 21a, and is outputted to these liquid crystal panels 11a and 21a. The 1st liquid crystal panel 11a and the 2nd liquid crystal panel 21a display the image (display screen) according to a video signal on each display face.
[0054]
The audio decoder 307 decodes from CPU100 to an audio signal, is further converted to the audio signal of an analog, and is outputted to the telephone call loudspeaker 38. The audio decoder 307 decodes in the correspondence item of various informing sounds, such as a ringer tone from CPU100, and an alarm sound, is further converted to the correspondence item of an analog, and is outputted to the external speaker 308. The telephone call loudspeaker 38 reproduces the audio signal from the audio decoder 307 as a sound. The external speaker 308 reproduces the ringer tone from the audio decoder 307, etc.
[0055]
The memory 200 contains ROM and RAM. The control program for giving a control facility to CPU100 is memorized by the memory 200. In the memory 200, the image data photoed with the camera module 13, the image data incorporated from outside via the communication circuit 304, text data (mail data), etc. are saved by a predetermined file format.

[0056]
CPU100 operates the camera module 13, the microphone 35, the communication circuit 304, the liquid crystal panels 11a and 21a, the telephone call loudspeaker 38, the external speaker 308, etc. according to a control program based on the keystroke circuit 303 and the control input signal from the touch panels 12 and 22. This performs various functions (application), such as a talking function and an electronic mail function.
[0057]
CPU100 generates the display screen displayed on each display 11 and 21 in the work area prepared in the memory 200, and outputs the video signal for constituting a display screen.
[0058]
Fig.4 is a figure showing the example of a screen display in the 1st display 11 and the 2nd display 21.

[0059]
When the 2nd cabinet 2 is closed, a display screen is displayed on the 1st display 11. For example, a menu screen is displayed on the 1st display 11 as an initial screen. As shown in Fig.4 (a), the icon for performing various kinds of applications is displayed on a menu screen, for example. The application which is available and was obtained by the download etc. to which application led the Internet is added to a cellular phone by installation. When application increases and the icon corresponding to it increases, it becomes impossible to display no icons by one display screen. In this case, if the 2nd cabinet 2 will open and it will be in the 2nd displaying condition on the 1st display 11 and the 2nd display 21 as shown in Fig.4 (b), the icon which was not able to be displayed on the 1st display 11 will be displayed on the 2nd display 21.
[0060]
The icon displayed on each display 11 and 21 can be moved to a desired position by drag operation. According to this embodiment, the icon by drag operation is movable between not only the range of one display but the 1st display 11, and the 2nd display 21. For example, the icon of frequently-used application may be displayed on the 1st display 11. And when frequency in use decreases, the icon of the application may be moved to the 2nd display 21 by drag operation.
[0061]
Fig.5 is a flow chart which shows a display control process when drag operation is made in the 2nd displaying condition. Fig.6 is a figure showing the example of a screen display when the drag operation to the 2nd display 21 from the 1st display 11 is made. The case where drag operation is hereafter made to the icon displayed on the 1st display 11 is taken for an example, and the processing operation is described.
[0062]
With reference to Fig.5, CPU100 acquires the signal from each touch panel 12 and 22 (S1), and detects whether the signal is a position signal (S2). For example, if the icon is touched in order that a user may drag the icon displayed on the 1st display 11, the position signal based on the touched position will be outputted from the 1st touch panel 12. A position signal consists of a signal which shows the position (coordinates) of the vertical direction in a display, and a signal which shows the position (coordinates) of right and left directions.
[0063]
It is judged whether CPU100 has an icon (moved object) in the detected position, when the position signal from the 1st touch panel 12 is detected (S2:YES) (S3). And if it judges with the detected position having an icon (S3:YES), the signal from the 1st touch panel 12 will be acquired again, and it will be detected whether (S4) and its signal are position signals (S5). Drag operation was made to the icon CPU100 as detecting a position signal succeedingly, or no is judged (S6). (S5:YES) If CPU100 compares this detection position with the last detection position and differs in both, it will judge with drag operation having been made.
[0064]

If drag operation was made and (Fig.6 (a) reference) and CPU100 are judged when an icon is dragged by the user (S6:YES), reduced screen display processing will be performed. Namely, CPU100 reduces the size of the upper and lower sides of the display screen (henceforth "a second screen") displayed on the display screen (henceforth "a first screen") displayed on the 1st display 11, and the 2nd display 21 to a half, Size which can display both display screens on one display is chosen (S7). And the both sides of a first screen and a second screen are displayed on the display 11 on which drag operation was made, i.e., the 1st display, (S8). At this time, the icon reduced with reduction of a display screen is displayed on the 1st display 11 (refer to Fig.6 (b)). Even if a screen changes in this way, the icon for a drug is maintained by the position with which the user is in contact.

[0065]

Next, CPU100 acquires the signal from the 1st touch panel 12 again, and detects whether (S9) and its signal are position signals (S10). And if a position signal is detected succeedingly (S10:YES), the dragged icon will be moved to the detection position (S11). Thereby, the icon dragged to the detection position is displayed (refer to Fig.6 (b)). At this time, the icon displayed on a detection position is made into the size before reduction, and is displayed by the display style (for example, translucent) which can recognize further that it is during drag operation. The icon under drag operation is shown to Fig.6 (b) by the slash for convenience.

[0066]

Then, if drag operation is continued by the user, CPU100 will repeat processing of Step S11 from step S9. Thereby, drag operation is followed and an icon moves in the 1st display 11 top.

[0067]

A user moves an icon on a second screen to move the dragged icon to the 2nd display 21, as shown in Fig.6 (b). And if an icon is dragged to the position of the request on a second screen, a finger etc. will be lifted from the 1st display 11 and drag operation will be completed.

[0068]

A user's completion of drag operation stops detecting the position signal from the 1st touch panel 12. If a position signal is no longer detected in Step S10 (S10:NO), CPU100 will judge that drag operation was completed and will restore a first screen and second screen to the original size. And a first screen is displayed on the 1st display 11, and a second screen is displayed on the 2nd display 21 (S12). At this time, as shown in Fig.6 (c), CPU100 eliminates the icon dragged from the first screen. And in a second screen, the icon dragged to the position equivalent to the position of the icon on the second screen where it was reduced at the time of the completion of a drug is displayed.

[0069]

When a user lifts a finger etc., without dragging although the icon was once touched, while not being judged with drag operation having been carried out at Step S6 by it (S6:NO), a position signal is no longer detected at Step S5 (S5:NO). If it becomes like this, processing will be completed with the display of the 1st display 11 not changed.

[0070]

As shown in Fig.6 (b), what kind of form may the display style of other displays when two display screens shift to one display be? For example, a specific background image (monochromatic images, such as all in white, are included) may be displayed, and a former display screen may be displayed as it is. Or a display may be turned off.

[0071]

As described above, when drag operation of moved objects, such as an icon, is performed between the 1st display 11 and the 2nd display 12 in this embodiment, Since drag operation of the portion of the cabinet where a display breaks off is not carried out, drag operation is easily detectable. Therefore, drag operation between the two displays 11 and 21 can be performed with sufficient accuracy.

[0072]
Since it is not necessary to actually move an icon between 2 displays and what is necessary is just to make it move within one display, migration length of an icon can be shortened and drag operation can be performed quickly.
[0073]
<The example 1 of change>
Fig.7 is a flow chart which shows the display control process concerning the example 1 of change when drag operation is made in the 2nd displaying condition. Fig.8 is a figure showing the example of a screen display concerning the example 1 of change when the drag operation to the 2nd display 21 from the 1st display 11 is made.
[0074]
According to the above-mentioned embodiment, whenever drag operation is started, reduced screen display processing (S7, S8) is performed. For this reason, even if that drag operation is made within the limits of one display is a case where it is meant, operation will be performed by the reduced display screen. In this case, since images, such as an icon, become small, there is **** operation actually becomes difficult to do.
[0075]
So, only in a desired case, in the composition of the example 1 of change, reduced screen display processing (S7, S8) is performed for a user.
[0076]
The case where drag operation is hereafter made like the above-mentioned embodiment to the icon displayed on the 1st display 11 is taken for an example, and the processing operation is described. Here, it describes only about different processing from the above-mentioned embodiment.
[0077]
If CPU100 judges with drag operation having been made at Step S6, it will move the dragged icon (moved object) to this detection position (S13). Thereby, the icon dragged to the detection position is displayed by the display style which shows under drag operation (refer to Fig.8 (a)).
[0078]
Next, it is judged whether CPU100 had the alter operation of the predetermined key of the operation key group 37 (S14). And if there is no alter operation of a predetermined key (S14:NO), a series of processings of step S5 ->S6 ->S13 will be repeated. Thereby, drag operation is followed and an icon moves in the 1st display 11 top.
[0079]
A user does not press a predetermined key, when completing drag operation within the limits of the 1st display 11. And a finger etc. will be lifted from an icon if an icon is moved to a desired position.
[0080]
Thereby, if a detecting position is no longer made at Step S5 (S5:NO), CPU100 will display an icon on the last detection position by the usual display style, and will end processing.
[0081]
On the other hand, a user presses a predetermined key, when moving an icon to the 2nd display 21.
[0082]
Thereby, if CPU100 judges with the alter operation of the predetermined key having been made at Step S14 (S14:YES), it will perform reduced screen display processing (S7, S8). Thereby, the reduced first screen and a second screen are displayed on the 1st display 11 (refer to Fig.8 (b)). Subsequent processing is the same as that of the above-mentioned embodiment.
[0083]
Thus, if it has composition of the example 1 of change, the user can operate it in the state of the original size, when performing drag operation within the limits of one display. Therefore, the image of moved objects, such as an icon, does not become small unnecessarily, and there is no **** operation becomes difficult to do.

[0084]
<The example 2 of change>
Fig.9 is a flow chart which shows the display control process concerning the example 2 of change when drag operation is made in the 2nd displaying condition. Fig.10 is a figure showing the example of a screen display concerning the example 2 of change when the drag operation to the 2nd display 21 from the 1st display 11 is made.
[0085]
In the composition of the example 1 of change, a user has to perform key operation in detail.
[0086]
So, in the composition of the example 2 of change, the situation where a possibility that drag operation will be performed between the 1st display 11 and the 2nd display 21 is high is detected automatically, and, in such a case, reduced screen display processing (S7, S8) is performed. Here, it describes only about different processing from the above-mentioned embodiment and the example 2 of change.
[0087]
If CPU100 moves the dragged icon to a detection position in Step S13 like the example 2 of change (S13) next, it will judge whether it is a position in the border area where the detection position was set up previously (S15). A border area is set as the lower end part of the 1st display 11 and the upper end part of the 2nd display 21 which are ends by the side of the boundary of the 1st display 11 and the 2nd display 21, as shown in Fig.10 (a).
[0088]
A user makes it move to the lower end part of the 1st display 11, when dragging an icon to the 2nd display 21 side (refer to Fig.10 (a)).
[0089]
If CPU100 judges with a detection position being a position in a border area by moving an icon to a border area (S15:YES), it will perform reduced screen display processing (S7, S8). Thereby, the reduced first screen and a second screen are displayed on the 1st display 11 (refer to Fig.10 (b)). Subsequent processing is the same as that of the above-mentioned embodiment.
[0090]
Thus, if it has composition of the example 2 of change, as well as the example 1 of change when drag operation is made within the limits of one display, it can be operated in the state of the original size. Therefore, the image of moved objects, such as an icon, does not become small unnecessarily, and there is no **** operation becomes difficult to do. And the user does not need to perform key operation in detail.
[0091]
<The example 3 of change>
Fig.11 is a flow chart which shows the display control process concerning the example 3 of change when drag operation is made in the 2nd displaying condition.
[0092]
In the composition of the example 2 of change, since an icon will be placed at the lower end part of the 1st display 11 when reduced screen display processing is performed as shown in Fig.10 (b), when moving an icon to the desired position of a second screen, an icon will be returned up. Therefore, it is easy to produce futility in a motion of an icon.
[0093]
So, in the composition of the example 3 of change, processing of Step S16 which is changed to processing of Step S15 of the Fig.9 in the example 2 of change, and is shown in Fig.11 is performed. That is, CPU100 judges whether the icon was moved in the direction of a boundary, i.e., the direction which faces to the 2nd display 21, (S16). Here, CPU100 compares the last detection position with this detection position, and if this position is a position near the 2nd display 21, it will judge with having been moved in the direction of a boundary. And if it judges with the icon having

been moved in the direction of a boundary (S16:YES), reduced screen display processing (S7, S8) will be performed.

[0094]

Thus, since reduced screen display processing will be performed even if an icon is not moved to the end of a display if it has composition of the example 3 of change, it is hard to become a situation where an icon is returned to the inside of a display after that. Therefore, futility can be made hard to produce in a motion of an icon.

[0095]

<The example 4 of change>

According to the above-mentioned embodiment, it described about the display control process by making into an example the case where drag operation is made to the icon displayed on the menu screen. However, the display control process shown in Fig.5 is applicable also in the drag operation to the character string by which range specification was carried out for the thumbnail of a photograph, the copy, etc. so that it may describe to other moved objects, for example, the following.

[0096]

Fig.12 is a figure showing the example of a screen display in case drag operation of the thumbnail displayed on the thumbnail screen of the 1st display 11 is carried out to the thumbnail screen of the 2nd display 21. The thumbnail screen on which the thumbnail of the many photograph was arranged is displayed on the 1st display 11 and the 2nd display 21.

[0097]

In the 1st display 11, if one thumbnail is dragged (refer to Fig.12 (a)), two thumbnail screens will be reduced and it will be displayed on the 1st display 11 (refer to Fig.12 (b)). Then, in the 1st display 11, if the dragged thumbnail is moved to the position of a request of a lower thumbnail screen and drag operation is completed, two thumbnail screens will be restored to the original size, and each thumbnail screen will be displayed on the original displays 11 and 21. At this time, the dragged thumbnail is eliminated from the 1st display 11, and is displayed on the 2nd display 21 (refer to Fig.12 (c)).

[0098]

Fig.13 is a figure showing the example of a screen display in case drag operation of the thumbnail displayed on the thumbnail screen of the 1st display 11 is carried out to the photo region displayed on the telephone directory screen of the 2nd display 21. A thumbnail screen is displayed on the 1st display 11, and the telephone directory screen where the partner's name and telephone number were described is displayed on the 2nd display 21.

[0099]

In the 1st display 11, if one thumbnail is dragged (refer to Fig.13 (a)), a thumbnail screen and a telephone directory screen will be reduced, and it will be displayed on the 1st display 11 (refer to Fig.13 (b)). Then, in the 1st display 11, if the dragged thumbnail is moved to the photo region of a telephone directory screen and drag operation is completed, a thumbnail screen and a telephone directory screen will be restored to the original size, and will be displayed on the original displays 11 and 21. While the dragged thumbnail is displayed on the original position of the 1st display 11 at this time, the photograph corresponding to the dragged thumbnail is arranged at the photo region of the telephone directory screen displayed on the 2nd display 21 (refer to Fig.13 (c)).

[0100]

Fig.14 is a figure showing the example of a screen display in case drag operation of the character string expressed by the document preparation screen of the 1st display 11 is carried out to the document preparation screen of the 2nd display 21. The document preparation screen which draws up the document of transmitting mail is displayed on the 1st display 11 and the 2nd display 21. The document preparation screen of the 1st display 11 and the document preparation screen of the 2nd display 21 are a continuous screen, and the text of the lower document preparation screen follows

the text of the upper document preparation screen.

[0101]

In the 1st display 11, if the character string by which range specification was carried out as a copy object is dragged (refer to Fig.14 (a)), two document preparation screens will be reduced and it will be displayed on the 1st display 11 (refer to Fig.14 (b)). Then, in the 1st display 11, if the dragged character string is moved to the position of a request of a lower document preparation screen and drag operation is completed, two document preparation screens will be restored to the original size, and each document preparation screen will be displayed on the original displays 11 and 21. While the dragged character string is displayed on the original position of the 1st display 11 at this time, the copy of a character string is displayed on the 2nd display 21 (refer to Fig.14 (c)).

[0102]

Fig.15 is a figure showing the example of a screen display in case drag operation of the character string expressed to the detailed display screen of the 1st display 11 is carried out to the document preparation screen of the 2nd display 21. The detailed display screen in which the text of reception mail was described is displayed on the 1st display 11, and the document preparation screen which draws up the document of transmitting mail is displayed on the 2nd display 21.

[0103]

In the 1st display 11, if the character string by which range specification was carried out as a copy object is dragged (refer to Fig.15 (a)), a detailed display screen and a document preparation screen will be reduced, and it will be displayed on the 1st display 11 (refer to Fig.15 (b)). Then, in the 1st display 11, if the dragged character string is moved to the position of a request of a document preparation screen and drag operation is completed, a detailed display screen and a document preparation screen will be restored to the original size, and will be displayed on the original displays 11 and 21. While the dragged character string is displayed on the original position of the 1st display 11 at this time, the copy of a character string is displayed on the 2nd display 21 (refer to Fig.15 (c)).

[0104]

Fig.16 is a figure showing the example of a screen display in case drag operation of the character string expressed to the detailed display screen of the 1st display 11 is carried out to the web screen of the 2nd display 21. The detailed display screen in which the text of reception mail was described is displayed on the 1st display 11, and the web screen of the Internet is displayed on the 2nd display 21.

[0105]

For example, the case where it refers to a web screen about the term described in the detailed display screen is taken for an example. In the 1st display 11, if the character string (term) by which range specification was carried out is dragged (refer to Fig.16 (a)), a detailed display screen and a web screen will be reduced, and it will be displayed on the 1st display 11 (refer to Fig.16 (b)). Then, in the 1st display 11, if the dragged character string is moved to the search text box of a web screen and drag operation is completed, a detailed display screen and a web screen will be restored to the original size, and will be displayed on the original displays 11 and 21. While the dragged character string is displayed on the original position of the 1st display 11 at this time, the copy of a character string is arranged at the search text box of the web screen displayed on the 2nd display 21 (refer to Fig.16 (c)).

[0106]

The display control process shown in Fig.7, Fig.9, and Fig.11 is also applicable to the example of Fig.16 from Fig.12.

[0107]

<The example 5 of change>

Fig.17 is a flow chart which shows the control management concerning the example 5 of change when interruption of the arrival of a telephone, etc. is during drag operation.

[0108]
This control management is performed by CPU100 in parallel to the display control process of the above-mentioned Fig.5, Fig.7, Fig.9, and Fig.11.
[0109]
If drag operation is started (S21:YES), CPU100 will supervise whether there was any arrival of a telephone, whether there was any arrival of an E-mail, and whether the information time of alarm came until drag operation is completed (S22->S25->S28->S29).
[0110]
If it judges with CPU100 having had the arrival of a telephone during drag operation (S22:YES), the display control process which was being performed will be stopped (S23). And the arrival of a telephone is reported (S24). That is, while displaying the mail arrival screen which becomes the 1st display 11 and the 2nd display 21 from a partner's name, a telephone number, etc., a ringer tone is outputted from the external speaker 308.
[0111]
Thereby, the user can answer in the phone quickly.
[0112]
On the other hand, if it judges with CPU100 having the arrival of an E-mail (S25:YES), Or if it judges with the information time of alarm having passed (S28:YES), and it will judge whether drag operation was completed (S26) and drag operation will not be completed (S26:NO), it stands by as it is. And if drag operation is completed (S26:YES), mail arrival will be reported when it is the arrival of an E-mail (S27). That is, while outputting a ringer tone from the external speaker 308, the icon which shows the arrival of an E-mail is displayed on the 1st display 11 or 2nd DIPUREI 21.
[0113]
Thereby, the user can perform drag operation, without being interfered by the mail arrival information and the alarm sound of an E-mail. After drag operation is completed, it can know that there having been arrival of an E-mail and alarm information time passed.
[0114]
About the icon which shows the arrival of an E-mail, it may be displayed by the corner of the 1st display 11 or the 2nd display 21 during drag operation.
[0115]
<Others>
Besides the form shown in the above-mentioned embodiment and the example of change, it can change variously further.
[0116]
For example, although the display screen of the 1st display 11 and the 2nd display 21 is reduced to the vertical direction, it may be made to reduce in the direction of four directions in reduced screen display processing, in the above-mentioned embodiment and the example of change, as shown in Fig.18 (a).
[0117]
Although the icon under drag operation is made into the original size, this icon is reduced and it may be made to display like a surrounding display screen in reduced screen display processing, in the above-mentioned embodiment and the example of change, as shown in Fig.18 (b).
[0118]
In the above-mentioned embodiment, the present invention is applied to the so-called cellular phone of the sliding type. However, the present invention may be applied not only to this but to what is called a foldaway cellular phone.
[0119]
The personal digital assistant equipment of the present invention may not be restricted to a cellular phone, but may be PDA (Personal Digital Assistant) etc.
[0120]

In addition, various change suitably is possible for an embodiment of the invention within the limits of the technical idea shown in Claims.

[Explanations of letters or numerals]

[0121]

11 The 1st display (first display part)
21 The 2nd display (second display part)
12 The 1st touch panel (primary detecting element)
22 The 2nd touch panel (primary detecting element)
100 CPU (display control part)

[Translation done.]

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TECHNICAL FIELD

[Field of the Invention]
[0001]
The present invention relates to personal digital assistant equipment, such as a cellular phone and PDA (Personal Digital Assistant).

[Translation done.]

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PRIOR ART

[Background of the Invention]
[0002]
Generally, in a cellular phone, an operation screen, a mail document, television imagery, etc. are displayed on the display by a liquid crystal panel etc. If a display is large, many information, including document etc., can be displayed at once, or television imagery can be projected largely. However, it becomes obstructive, when apparatus's own size will become largely and will carry, if a display becomes [one side] largely.
[0003]
Then, the first display always exposed outside in view of such problem, At the time of carrying, it is accommodated in an equipment body, and has a second display exposed outside if needed, and the cellular phone which enabled it to display an image in one display surface which made two displays unify can be considered (for example, Patent document 1).

[Translation done.]

* NOTICES *

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EFFECT OF THE INVENTION

[Effect of the Invention]
[0024]
According to the present invention, the personal digital assistant equipment which can perform drag operation between two display parts with sufficient accuracy can be provided.
[0025]
The effect thru/or meaning of the present invention will become still clearer by the description of the embodiment shown below. However, following embodiments are one illustration at the time of enforcement-izing the present invention to the last, and the present invention is not restricted to what was described in following embodiments at all.

[Translation done.]

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TECHNICAL PROBLEM

[Problem to be solved by the invention]
[0005]
By the way, these days, a touch panel is arranged on a display and the cellular phone with which various applications are performed is commercialized by touching with a finger etc. the icon displayed on the display. In this cellular phone, an icon is movable to the position of the request on a screen by carrying out drag operation.
[0006]
Also in the cellular phone provided with the two above-mentioned displays, a touch panel can be arranged on each display and it can have composition which can perform the operational input using a touch panel. In this case, movement of the icon by drag operation may be performed by Hazama of a first display and second display.
[0007]
However, between a first display and second display, the portion of the cabinet in which a display is accommodated usually exists. For this reason, since contact of the finger to a display surface, etc. will be severed, it is [in / in the case of drag operation / the portion of a cabinet] once hard to be detected that drag operation was made by Hazama of two displays.
[0008]
Therefore, in spite of having carried out drag operation of the icon from one display to the display of another side, the judgment which was mistaken in drag operation having been completed at the end of one display is made, and there is **** to which an icon stops at the end.
[0009]
The present invention is made in view of this problem.
The purpose is to provide personal digital assistant equipment which can perform drag operation between two display parts with sufficient accuracy.

[Translation done.]

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MEANS

[Means for solving problem]
[0010]
The second display part by which the personal digital assistant equipment of the present invention was compared with the first display part and the above-mentioned first display part, It has a primary detecting element for detecting that drag operation was made to the moved object displayed on the display control part which controls the display of the above-mentioned first display part and the above-mentioned second display part, and the above-mentioned first display part or the above-mentioned second display part. Here, the aforementioned display control part performs reduced screen display processing displayed on the display part which reduces the display screen displayed on the above-mentioned first display part and the second display part, and by which the aforementioned drag operation is made in the reduced display screen, when drag operation of the aforementioned moved object is carried out. And when the aforementioned drag operation is completed, while returning the display screen which contracted [aforementioned] to the display screen of the original size and making it display on the above-mentioned first display part and a second display part, The aforementioned moved object is displayed on the position equivalent to the position at the time of the aforementioned drag operation completion on the display screen which contracted [aforementioned] in the display screen of above-mentioned original size.
[0011]
Since according to the composition of the present invention drag operation of the portion into which the display part broke off is not carried out when drag operation is performed by Hazama of two display parts, drag operation is easily detectable. Therefore, drag operation between two display parts can be performed with sufficient accuracy.
[0012]
In the personal digital assistant equipment of the present invention, a start of the aforementioned drag operation may consider the aforementioned display control part as the composition which performs the aforementioned reduced screen display processing.
[0013]
When it had such composition and drag operation is made, reduced screen display processing is always performed.
[0014]
In the personal digital assistant equipment of the present invention, the aforementioned display control part may be considered as the composition which performs the aforementioned reduced screen display processing based on the situation of the aforementioned drag operation.
[0015]
For example, the aforementioned display control part may be considered as the composition which performs the aforementioned reduced screen display processing, when the aforementioned drag operation reaches within the limits of predetermined from a boundary with the display part of

another side.
[0016]
Or the aforementioned display control part may be considered as the composition which performs the aforementioned reduced screen display processing, when the aforementioned drag operation is made in the direction of the display part of another side.
[0017]
If it has such composition, when a possibility that drag operation will be made by Hazama of two display parts is high, reduced screen display processing is performed. Therefore, when performing drag operation within the limits of one display part, it can be operated in the state of the original size.
[0018]
In the personal digital assistant equipment of the present invention, the aforementioned display control part may be considered as the composition which performs the aforementioned reduced screen display processing, when predetermined key operation is performed after the aforementioned drag operation is started.
[0019]
If it has such composition, when a user will perform drag operation between two display parts, reduced screen display processing is performed by a user's key operation. Therefore, the user can operate it in the state of the original size, when trying to perform drag operation within the limits of one display part.
[0020]
In the personal digital assistant equipment of the present invention, when the aforementioned display control part has the arrival of a telephone during the aforementioned drag operation, it may be considered as the composition which stops the display control process based on the aforementioned drag operation, and performs mail arrival information.
[0021]
When it had such composition and the arrival of a telephone is during drag operation, the user can answer in the phone quickly. A user can be prevented from moving a moved object to an undesirable position in response to the arrival of a telephone.
[0022]
In the personal digital assistant equipment of the present invention, when the aforementioned display control part has the arrival of an E-mail during the aforementioned drag operation, it may be considered as the composition which performs mail arrival information after completion of the aforementioned drag operation.
[0023]
If it has such composition, the user can perform drag operation, without being interfered by the mail arrival information of an E-mail. After drag operation is completed, it can know that there was arrival of an E-mail.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[0026]
[Drawing 1]It is a figure showing the appearance composition of the cellular phone concerning an embodiment.
[Drawing 2]It is a figure for describing about the switching operation from the 1st displaying condition on the 1st display concerning an embodiment to the 2nd displaying condition on the 1st display and the 2nd display.
[Drawing 3]It is a block diagram showing the entire configuration of the cellular phone concerning an embodiment.
[Drawing 4]It is a figure showing the example of a screen display in the 1st display and the 2nd display concerning an embodiment.
[Drawing 5]It is a flow chart which shows a display control process when drag operation is made in the 2nd displaying condition concerning an embodiment.
[Drawing 6]It is a figure showing the example of a screen display when the drag operation to the 2nd display from the 1st display concerning an embodiment is made.
[Drawing 7]It is a flow chart which shows a display control process when drag operation is made in the 2nd displaying condition concerning the example 1 of change.
[Drawing 8]It is a figure showing the example of a screen display when the drag operation to the 2nd display from the 1st display concerning the example 1 of change is made.
[Drawing 9]It is a flow chart which shows a display control process when drag operation is made in the 2nd displaying condition concerning the example 2 of change.
[Drawing 10]It is a figure showing the example of a screen display when the drag operation to the 2nd display from the 1st display concerning the example 2 of change is made.
[Drawing 11]It is a flow chart which shows a display control process when drag operation is made in the 2nd displaying condition concerning the example 3 of change.
[Drawing 12]It is a figure showing the example of a screen display in case drag operation of the thumbnail displayed on the thumbnail screen of the 1st display concerning the example 4 of change is carried out to the thumbnail screen of the 2nd display.
[Drawing 13]It is a figure showing the example of a screen display in case drag operation of the thumbnail displayed on the thumbnail screen of the 1st display concerning the example 4 of change is carried out to the photo region displayed on the telephone directory screen of the 2nd display.
[Drawing 14]It is a figure showing the example of a screen display in case drag operation of the character string expressed by the document preparation screen of the 1st display concerning the example 4 of change is carried out to the document preparation screen of the 2nd display.
[Drawing 15]It is a figure showing the example of a screen display in case drag operation of the character string expressed to the detailed display screen of the 1st display concerning the example 4 of change is carried out to the document preparation screen of the 2nd display.

[Drawing 16]It is a figure showing the example of a screen display in case drag operation of the character string expressed to the detailed display screen of the 1st display concerning the example 4 of change is carried out to the web screen of the 2nd display.
[Drawing 17]It is a flow chart which shows control management when interruption of the arrival of a telephone, etc. is during the drag operation concerning the example 5 of change.
[Drawing 18]It is a figure showing the example of change of the display screen of the 1st display and the 2nd display reduced by reduced screen display processing.

[Translation done.]

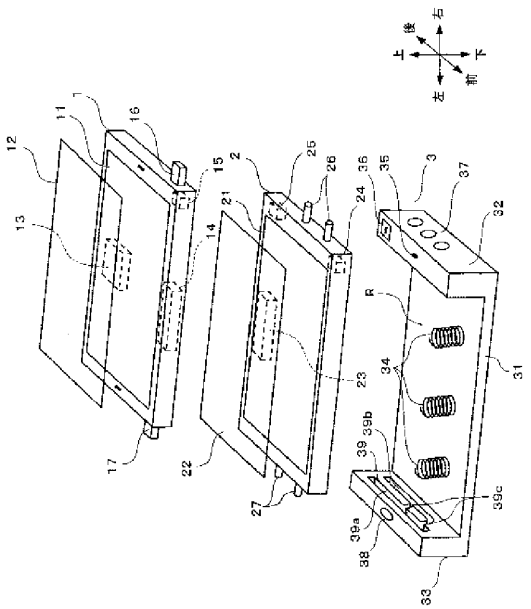
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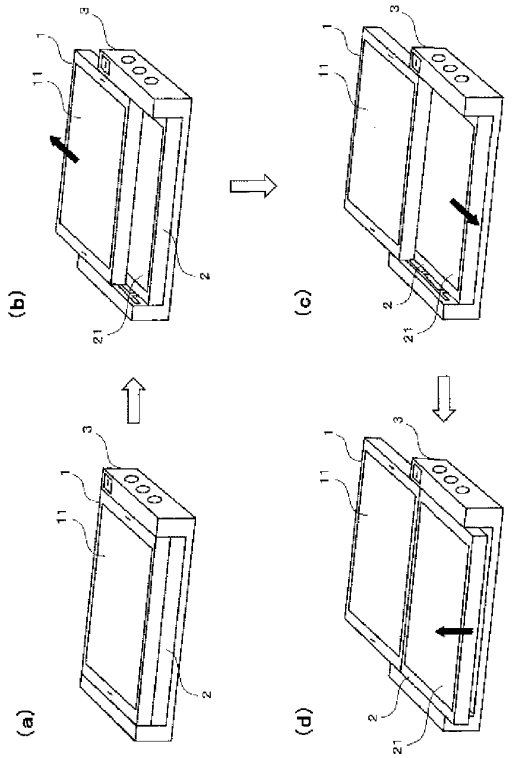
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DRAWINGS

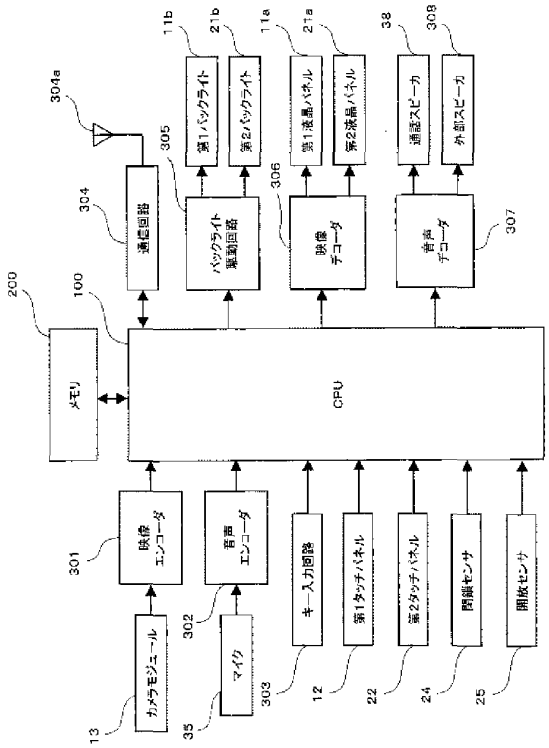
[Drawing 1]



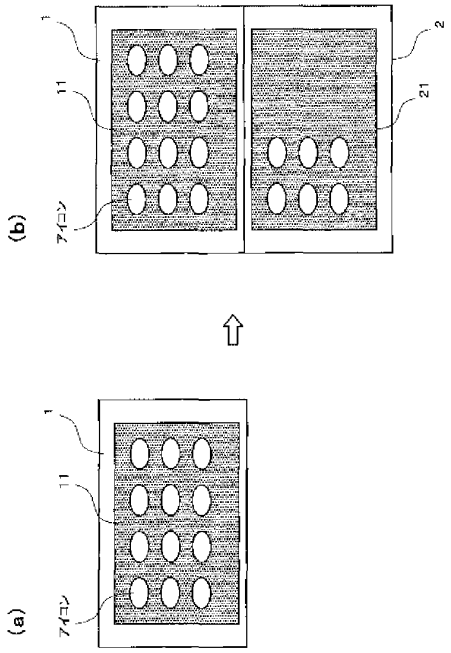
[Drawing 2]


(a)
(b)
(c)
(d)

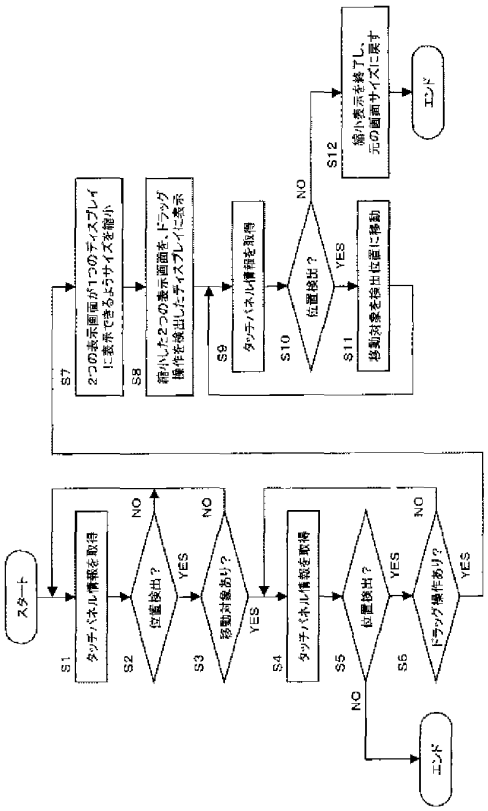
[Drawing 3]


CPU
メモリ
通信回路
バックライト駆動回路
映像デコーダ
音声デコーダ
第1バックライト
第2バックライト
第1液晶パネル
第2液晶パネル
通話スピーカ
外部スピーカ
映像エンコーダ
音声エンコーダ
キー入力回路
第1タッチパネル
第2タッチパネル
開閉センサ
開放センサ
カメラモジュール
マイク

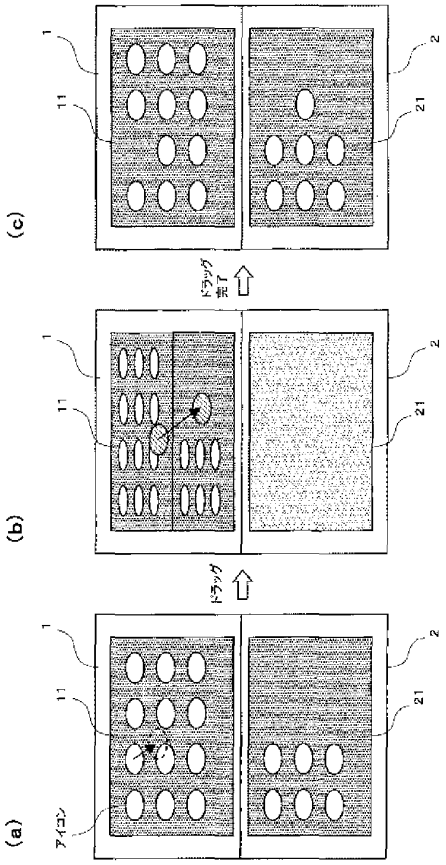
[Drawing 4]



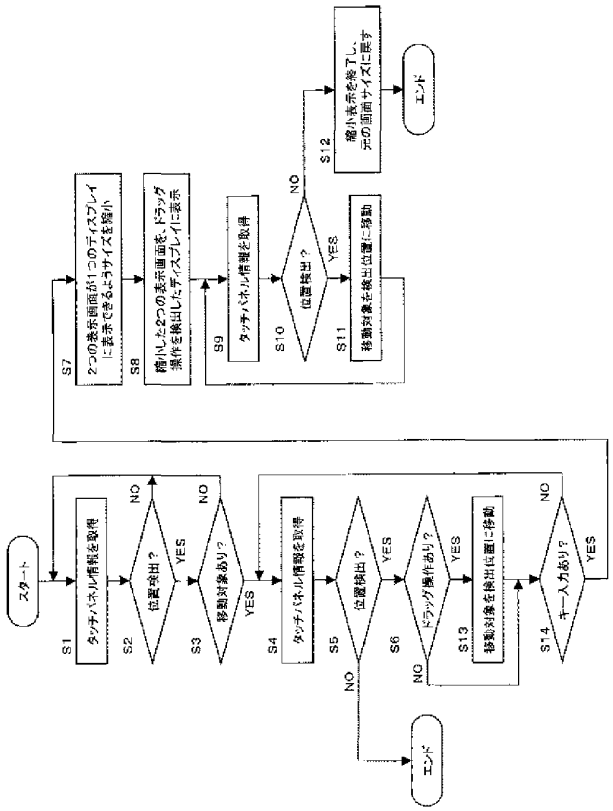
[Drawing 5]


スタート
S1
タッチパネル情報を取得
S2
位置検出？
NO
YES
S3
移動対象あり？
NO
YES
S4
タッチパネル情報を取得
S5
位置検出？
NO
YES
S6
ドラッグ操作あり？
NO
YES
エンド
S7
2つの表示画面が1つのディスプレイに表示できるようサイズを縮小
S8
縮小した2つの表示画面を、ドラッグ操作を検出したディスプレイに表示
S9
タッチパネル情報を取得
S10
位置検出？
NO
YES
S11
移動対象を検出位置に移動
S12
縮小表示を終了し、元の画面サイズに戻す
エンド

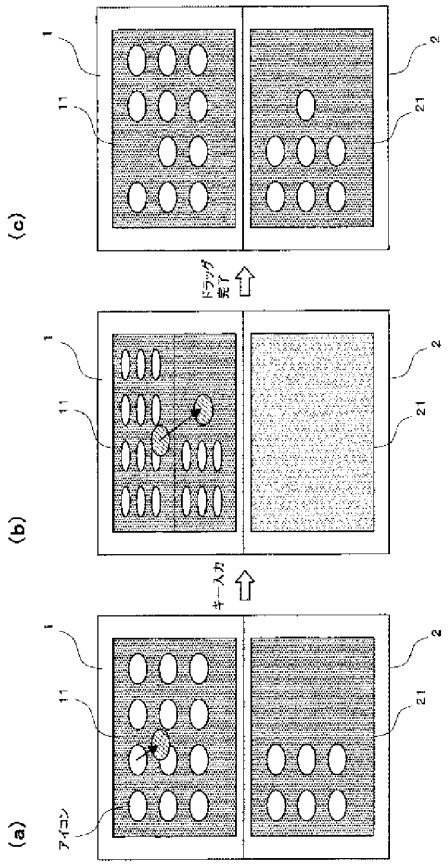
[Drawing 6]



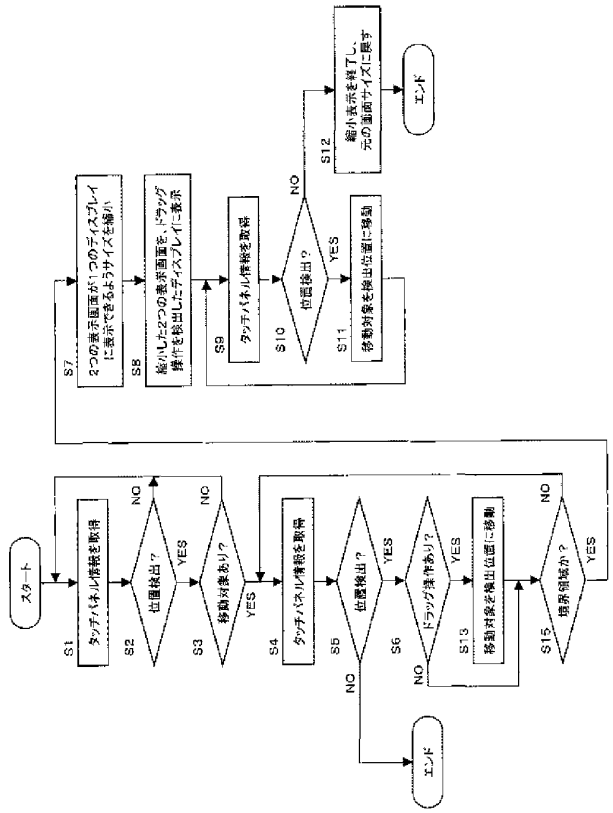
[Drawing 7]


スタート
S1
タッチパネル情報を取得
S2
位置検出？
NO
YES
S3
移動対象あり？
NO
YES
S4
タッチパネル情報を取得
S5
位置検出？
NO
YES
S6
ドラッグ操作あり？
NO
YES
S13
移動対象を検出位置に移動
S14
キー入力あり？
NO
YES
エンド
S7
2つの表示領域が1つのディスプレイに表示できるようサイズを縮小
S8
縮小した2つの表示画面を、ドラッグ操作を検出したディスプレイに表示
S9
タッチパネル情報を取得
S10
位置検出？
NO
YES
S11
移動対象を検出位置に移動
S12
縮小表示を終了し、元の画面サイズに戻す
エンド

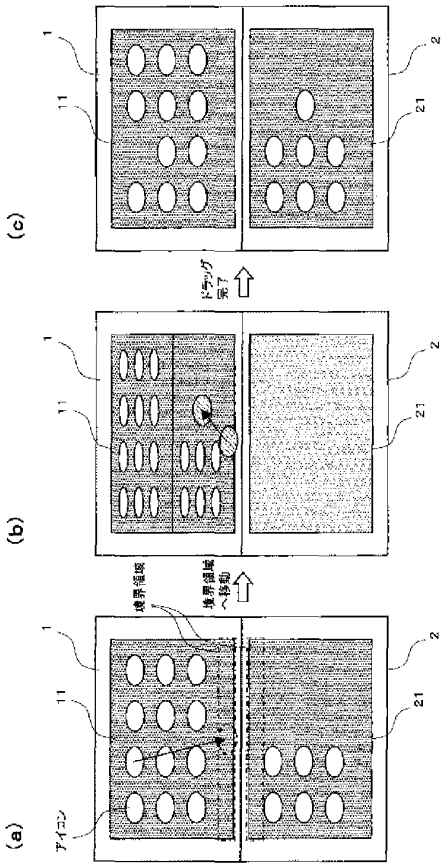
[Drawing 8]



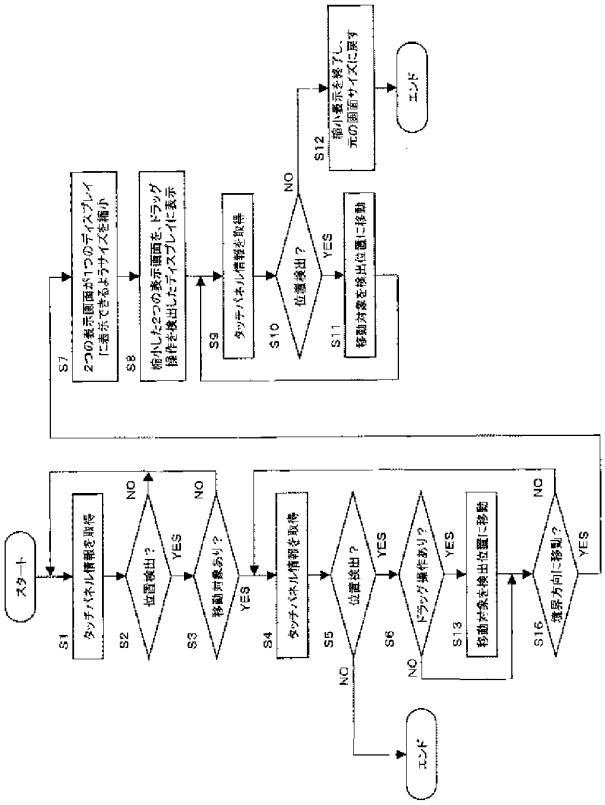
[Drawing 9]


スタート
S1
タッチパネル情報を取得
S2
位置検出？
NO
YES
S3
移動対象あり？
NO
YES
S4
タッチパネル情報を取得
S5
位置検出？
YES
NO
エンド
S6
ドラッグ操作あり？
YES
NO
S13
移動対象を検出位置に移動
S15
指定領域か？
NO
YES
S7
2つの表示画面が1つのディスプレイに表示できるようサイズを縮小
S8
縮小した2つの表示画面を、ドラッグ操作を検出したディスプレイに表示
S9
タッチパネル情報を取得
S10
位置検出？
NO
YES
S11
移動対象を検出位置に移動
S12
縮小表示を終了し、元の画面サイズに戻す
エンド

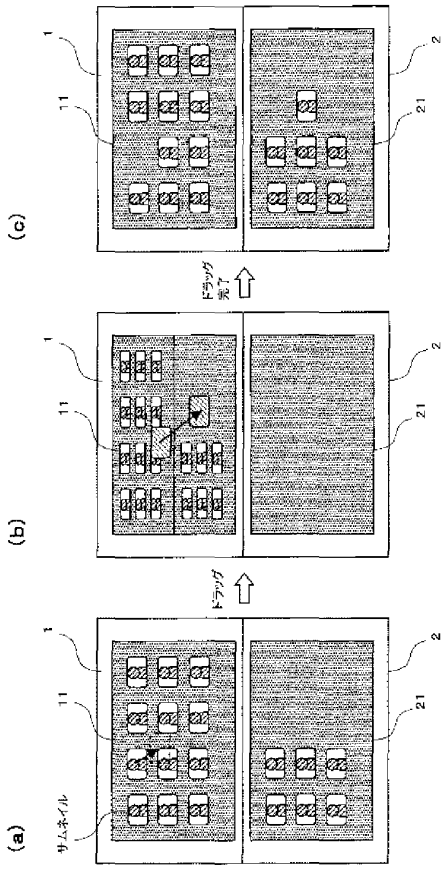
[Drawing 10]



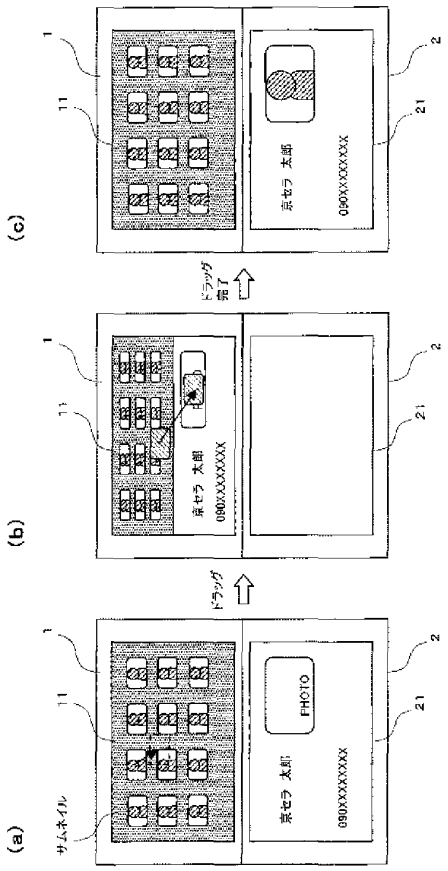
[Drawing 11]


スタート
S1
タッチパネル情報を取得
S2
位置検出？
NO
YES
S3
移動対象あり？
NO
YES
S4
タッチパネル情報を取得
S5
位置検出？
YES
NO
S6
ドラッグ操作あり？
YES
NO
S13
移動対象を検出位置に移動
S16
復帰方向に移動？
NO
YES
エンド
S7
2つの表示画面が1つのディスプレイに表示できるようサイズを縮小
S8
縮小した2つの表示画面を、ドラッグ操作を検出したディスプレイに表示
S9
タッチパネル情報を取得
S10
位置検出？
NO
YES
S11
移動対象を検出位置に移動
S12
縮小表示を終了し、元の画面サイズに戻す
エンド

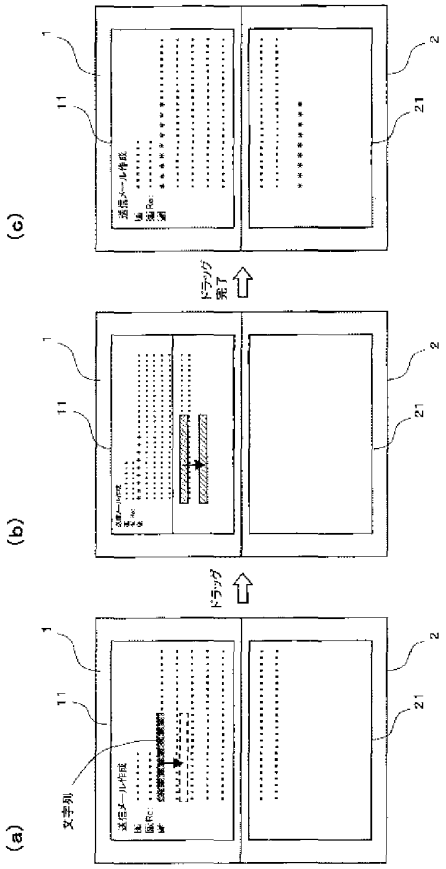
[Drawing 12]



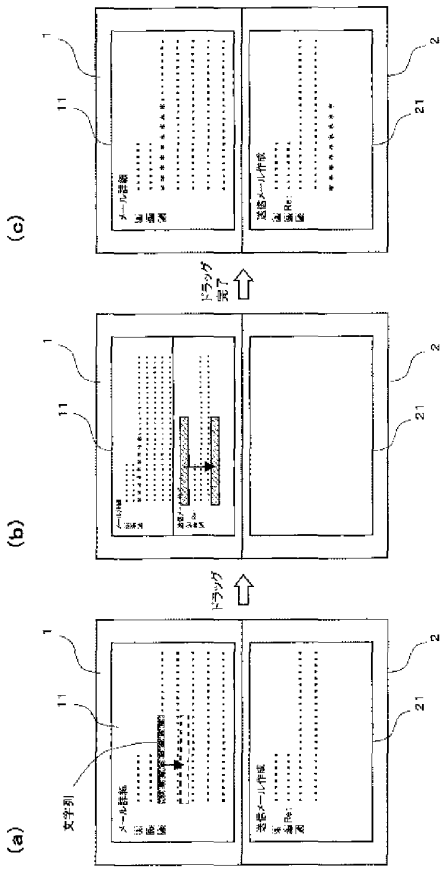
[Drawing 13]


(a)
(b)
(c)
ドラッグ
ドラッグ終了
FHOTO
080XXXXXXXX
080XXXXXXXX
080XXXXXXXX

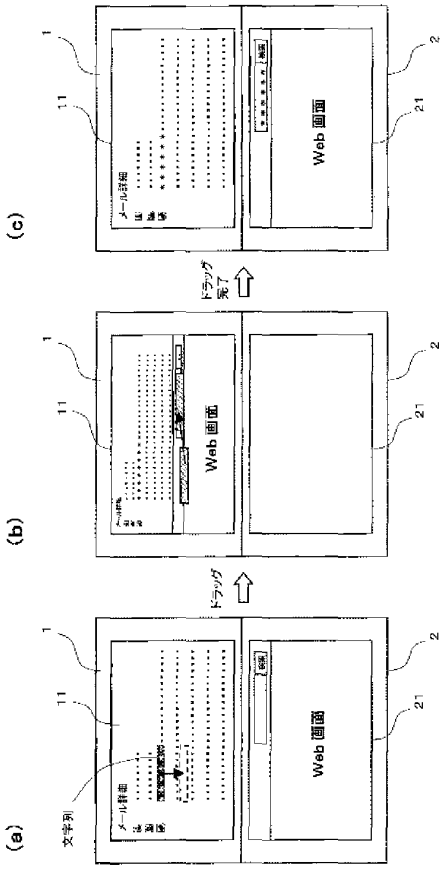
[Drawing 14]



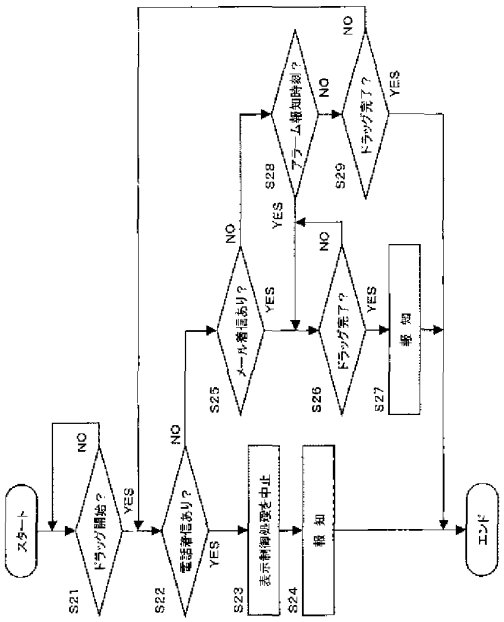
[Drawing 15]



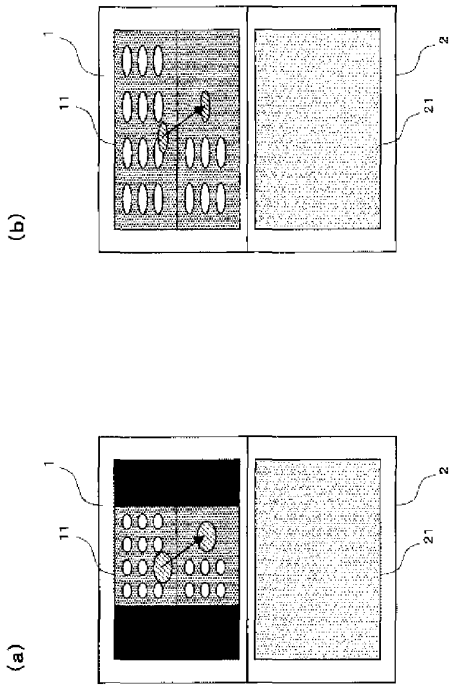
[Drawing 16]



[Drawing 17]


スタート
ドラッグ開始？
NO
YES
S21
電話着信あり？
NO
YES
S22
表示制御処理を中止
S23
報 知
S24
メール着信あり？
NO
YES
S25
ドラッグ完了？
NO
YES
S26
報 知
S27
アラーム報知時刻？
NO
YES
S28
ドラッグ完了？
NO
YES
S29
エンド

[Drawing 18]


(b)
1
11
2
21
(a)
1
11
2
21

[Translation done.]

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H04M	1/247	(2006.01)	H04M	1/247		5K023
H04M	1/02	(2006.01)	H04M	1/02	C	5K127

審査請求 有　請求項の数 8　OL　（全 20 頁）

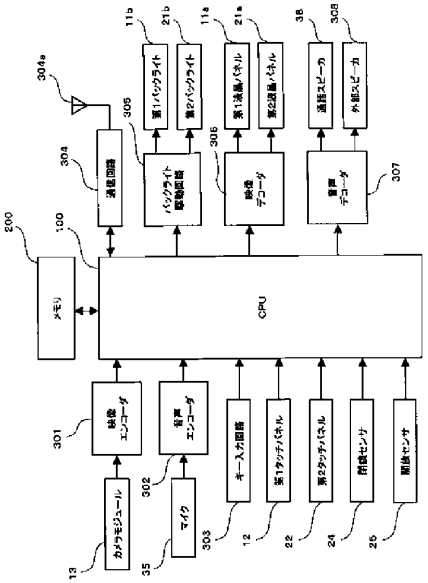
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Fターム(参考)　5E501 AA04 AC15 AC37 BA05 CA04 CB05 EA08 EA11 EA12 EB05 EB06 FA04 FA13 FB04 FB22 FB43
5K023 AA07 BB12 HH06
5K127 AA11 BA06 BA08 BB14 CA08 CB02 CB13 CB22 HA08

(54)【発明の名称】携帯端末装置

(57)【要約】
【課題】２つの表示部の間でのドラッグ操作を精度良く行うことができる携帯端末装置を提供することを目的とする。
【解決手段】携帯電話機は、第１ディスプレイ１１と、第１ディスプレイ１１と並べられた第２ディスプレイ２１と、アイコンがドラッグ操作されたことを検出するため各ディスプレイに配されるタッチパネル１２、２２を備える。ここで、ＣＰＵ１００は、アイコンがドラッグされると、各ディスプレイ１１、２１の表示画面を縮小して、縮小した表示画面をドラッグ操作がなされているディスプレイに表示させる縮小画面表示処理を実行する。そして、前記ドラッグ操作が完了すると、前記縮小した表示画面を元のサイズの表示画面に戻す。そして、元のサイズの表示画面において、縮小した表示画面上でのドラッグ操作完了時の位置に相当する位置にアイコンを表示させる。
【選択図】図３



【特許請求の範囲】
【請求項１】
携帯端末装置において、
第１の表示部と、
前記第１の表示部と並べられた第２の表示部と、
前記第１の表示部および前記第２の表示部の表示を制御する表示制御部と、
前記第１の表示部または前記第２の表示部に表示された移動対象に対してドラッグ操作がなされたことを検出するための検出部と、を備え、
前記表示制御部は、
前記移動対象がドラッグ操作されているときに、前記第１の表示部および第２の表示部に表示された表示画面を縮小して、縮小した表示画面を前記ドラッグ操作がなされている表示部に表示させる縮小画面表示処理を実行し、
前記ドラッグ操作が完了すると、前記縮小した表示画面を元のサイズの表示画面に戻して前記第１の表示部および第２の表示部に表示させるとともに、前記元のサイズの表示画面において、前記縮小した表示画面上での前記ドラッグ操作完了時の位置に相当する位置に前記移動対象を表示させる、
ことを特徴とする携帯端末装置。
【請求項２】
請求項１に記載の携帯端末装置において、
前記表示制御部は、前記ドラッグ操作が開始されると、前記縮小画面表示処理を実行する、
ことを特徴とする携帯端末装置。
【請求項３】
請求項１に記載の携帯端末装置において、
前記表示制御部は、前記ドラッグ操作の状況に基づいて、前記縮小画面表示処理を実行する、
ことを特徴とする携帯端末装置。
【請求項４】
請求項３に記載の携帯端末装置において、
前記表示制御部は、他方の表示部との境界から所定の範囲内に前記ドラッグ操作が達すると、前記縮小画面表示処理を実行する、
ことを特徴とする携帯端末装置。
【請求項５】
請求項３に記載の携帯端末装置において、
前記表示制御部は、他方の表示部の方向に前記ドラッグ操作がなされると、前記縮小画面表示処理を実行する、
ことを特徴とする携帯端末装置。
【請求項６】
請求項１に記載の携帯端末装置において、
前記表示制御部は、前記ドラッグ操作が開始された後に所定のキー操作が行われると、前記縮小画面表示処理を実行する、
ことを特徴とする携帯端末装置。
【請求項７】
請求項１ないし６の何れか一項に記載の携帯端末装置において、
前記表示制御部は、前記ドラッグ操作中に電話の着信があると、前記ドラッグ操作に基づく表示制御処理を中止して着信報知を行う、
ことを特徴とする携帯端末装置。
【請求項８】
請求項１ないし７の何れか一項に記載の携帯端末装置において、
前記表示制御部は、前記ドラッグ操作中に、電子メールの着信があると、前記ドラッグ

操作の完了後に着信報知を行う、
ことを特徴とする携帯端末装置。
【発明の詳細な説明】
【技術分野】
【０００１】
本発明は、携帯電話機やＰＤＡ（Personal Digital Assistant）等の携帯端末装置に関するものである。
【背景技術】
【０００２】
一般に、携帯電話機においては、液晶パネル等によるディスプレイに操作画面やメール文書、テレビ映像などが表示されるようになっている。ディスプレイが大きいと、一度に多くの情報（文書など）を表示したり、テレビ映像を大きく映し出したりすることができる。しかし、一方で、ディスプレイが大きくなると機器自身のサイズが大きくなってしまい、携帯する際に邪魔になる。
【０００３】
そこで、このような課題に鑑み、常に外部に露出している第１のディスプレイと、携帯時などには機器本体内に収容され、必要に応じて外部に露出される第２のディスプレイとを備え、２つのディスプレイを一体化させた一つの表示面にて画像を表示できるようにした携帯電話機が考えられ得る（たとえば、特許文献１）。
【先行技術文献】
【特許文献】
【０００４】
【特許文献１】特開２００２－４４２０２号公報
【発明の概要】
【発明が解決しようとする課題】
【０００５】
ところで、最近では、ディスプレイ上にタッチパネルが配され、ディスプレイに表示されたアイコンを指などでタッチすることにより、各種アプリケーションが実行される携帯電話機が商品化されている。かかる携帯電話機では、ドラッグ操作することによって、アイコンを画面上の所望の位置に移動することができる。
【０００６】
上記の２つのディスプレイを備えた携帯電話機においても、各ディスプレイにタッチパネルを配し、タッチパネルを用いた操作入力が行える構成とすることができる。この場合、第１のディスプレイと第２のディスプレイとの間でドラッグ操作によるアイコンの移動が行われ得る。
【０００７】
しかしながら、第１のディスプレイと第２のディスプレイとの間には、通常、ディスプレイを収容するキャビネットの部分が存在する。このため、ドラッグ操作の際、キャビネットの部分において、一旦、ディスプレイ表面への指などの接触が断たれてしまうので、２つのディスプレイの間でドラッグ操作がなされたことが検出されにくい。
【０００８】
したがって、一方のディスプレイから他方のディスプレイへアイコンがドラッグ操作されたにもかかわらず、一方のディスプレイの端部でドラッグ操作が完了したと誤った判定がなされ、その端部にアイコンが留まってしまう惧れがある。
【０００９】
本発明は、かかる課題に鑑みてなされたものであり、２つの表示部の間でのドラッグ操作を精度良く行うことができる携帯端末装置を提供することを目的とする。
【課題を解決するための手段】
【００１０】
本発明の携帯端末装置は、第１の表示部と、前記第１の表示部と並べられた第２の表示

部と、前記第１の表示部および前記第２の表示部の表示を制御する表示制御部と、前記第１の表示部または前記第２の表示部に表示された移動対象に対してドラッグ操作がなされたことを検出するための検出部とを備える。ここで、前記表示制御部は、前記移動対象がドラッグ操作されているときに、前記第１の表示部および第２の表示部に表示された表示画面を縮小して、縮小した表示画面を前記ドラッグ操作がなされている表示部に表示させる縮小画面表示処理を実行する。そして、前記ドラッグ操作が完了すると、前記縮小した表示画面を元のサイズの表示画面に戻して前記第１の表示部および第２の表示部に表示させるとともに、前記元のサイズの表示画面において、前記縮小した表示画面上での前記ドラッグ操作完了時の位置に相当する位置に前記移動対象を表示させる。

【００１１】

本発明の構成によれば、２つの表示部の間でドラッグ操作が行われる場合に、表示部が途切れた部分をドラッグ操作されることがないので、ドラッグ操作の検出を容易に行うことができる。よって、２つの表示部の間でのドラッグ操作を精度良く行うことができる。

【００１２】

本発明の携帯端末装置において、前記表示制御部は、前記ドラッグ操作が開始されると、前記縮小画面表示処理を実行する構成とされ得る。

【００１３】

このような構成とすれば、ドラッグ操作がなされた際には、常に縮小画面表示処理が実行される。

【００１４】

本発明の携帯端末装置において、前記表示制御部は、前記ドラッグ操作の状況に基づいて、前記縮小画面表示処理を実行する構成とされ得る。

【００１５】

たとえば、前記表示制御部は、他方の表示部との境界から所定の範囲内に前記ドラッグ操作が達すると、前記縮小画面表示処理を実行する構成とされ得る。

【００１６】

あるいは、前記表示制御部は、他方の表示部の方向に前記ドラッグ操作がなされると、前記縮小画面表示処理を実行する構成とされ得る。

【００１７】

このような構成とすれば、２つの表示部の間でドラッグ操作がなされる可能性が高い場合に、縮小画面表示処理が実行される。よって、１つの表示部の範囲内でドラッグ操作を行う場合には、元のサイズの状態で操作を行うことができる。

【００１８】

本発明の携帯端末装置において、前記表示制御部は、前記ドラッグ操作が開始された後に所定のキー操作が行われると、前記縮小画面表示処理を実行する構成とされ得る。

【００１９】

このような構成とすれば、ユーザが、２つの表示部の間でドラッグ操作を行うときに、ユーザのキー操作によって縮小画面表示処理が実行される。よって、ユーザは、１つの表示部の範囲内でドラッグ操作を行おうとする場合には、元のサイズの状態で操作を行うことができる。

【００２０】

本発明の携帯端末装置において、前記表示制御部は、前記ドラッグ操作中に電話の着信があると、前記ドラッグ操作に基づく表示制御処理を中止して着信報知を行う構成とされ得る。

【００２１】

このような構成とすれば、ドラッグ操作中に電話の着信があった場合、ユーザは、素早く電話に出ることができる。また、ユーザが、電話の着信に反応して、移動対象を不所望な位置に移動させるのを防止できる。

【００２２】

本発明の携帯端末装置において、前記表示制御部は、前記ドラッグ操作中に、電子メー

ルの着信があると、前記ドラッグ操作の完了後に着信報知を行う構成とされ得る。
【００２３】
このような構成とすれば、ユーザは、電子メールの着信報知に邪魔されることなく、ドラッグ操作を行うことができる。さらに、ドラッグ操作が完了した後には、電子メールの着信があったことを知ることができる。
【発明の効果】
【００２４】
本発明によれば、２つの表示部の間でのドラッグ操作を精度良く行うことができる携帯端末装置を提供することができる。
【００２５】
本発明の効果ないし意義は、以下に示す実施の形態の説明により更に明らかとなろう。ただし、以下の実施の形態は、あくまでも、本発明を実施化する際の一つの例示であって、本発明は、以下の実施の形態に記載されたものに何ら制限されるものではない。
【図面の簡単な説明】
【００２６】
【図１】実施の形態に係る携帯電話機の外観構成を示す図である。
【図２】実施の形態に係る第１ディスプレイによる第１表示状態から第１ディスプレイと第２ディスプレイとによる第２表示状態への切替え操作について説明するための図である。
【図３】実施の形態に係る携帯電話機の全体構成を示すブロック図である。
【図４】実施の形態に係る第１ディスプレイおよび第２ディスプレイにおける画面表示例を示す図である。
【図５】実施の形態に係る第２表示状態においてドラッグ操作がなされた場合の表示制御処理を示すフローチャートである。
【図６】実施の形態に係る第１ディスプレイから第２ディスプレイへのドラッグ操作がなされたときの画面表示例を示す図である。
【図７】変更例１に係る第２表示状態においてドラッグ操作がなされた場合の表示制御処理を示すフローチャートである。
【図８】変更例１に係る第１ディスプレイから第２ディスプレイへのドラッグ操作がなされたときの画面表示例を示す図である。
【図９】変更例２に係る第２表示状態においてドラッグ操作がなされた場合の表示制御処理を示すフローチャートである。
【図１０】変更例２に係る第１ディスプレイから第２ディスプレイへのドラッグ操作がなされたときの画面表示例を示す図である。
【図１１】変更例３に係る第２表示状態においてドラッグ操作がなされた場合の表示制御処理を示すフローチャートである。
【図１２】変更例４に係る第１ディスプレイのサムネイル画面に表示されたサムネイルが第２ディスプレイのサムネイル画面へドラッグ操作される場合の画面表示例を示す図である。
【図１３】変更例４に係る第１ディスプレイのサムネイル画面に表示されたサムネイルが第２ディスプレイの電話帳画面に表示されたフォト領域へドラッグ操作される場合の画面表示例を示す図である。
【図１４】変更例４に係る第１ディスプレイの文書作成画面に表された文字列が第２ディスプレイの文書作成画面へドラッグ操作される場合の画面表示例を示す図である。
【図１５】変更例４に係る第１ディスプレイの詳細表示画面に表された文字列が第２ディスプレイの文書作成画面へドラッグ操作される場合の画面表示例を示す図である。
【図１６】変更例４に係る第１ディスプレイの詳細表示画面に表された文字列が第２ディスプレイのウェブ画面へドラッグ操作される場合の画面表示例を示す図である。
【図１７】変更例５に係るドラッグ操作中に電話の着信等の割り込みがあった場合の制御処理を示すフローチャートである。

【図１８】縮小画面表示処理により縮小された第１ディスプレイおよび第２ディスプレイの表示画面の変更例を示す図である。
【発明を実施するための形態】
【００２７】
以下、本発明の実施の形態について、図面を参照して説明する。
【００２８】
図１は、携帯電話機の構成を示す図（分解斜視図）である。携帯電話機は、第１キャビネット１と、第２キャビネット２と、これら第１、第２キャビネット１、２を保持する保持体３とで構成されている。
【００２９】
第１キャビネット１は、横長の直方体形状を有する。第１キャビネット１には、第１ディスプレイ１１が配されており、そのディスプレイ面が、第１キャビネット１の正面に臨んでいる。第１ディスプレイ１１は、後述のように第１液晶パネル１１ａと第１液晶パネル１１ａを照明する第１バックライト１１ｂとで構成されている。
【００３０】
第１ディスプレイ１１の前面には、第１タッチパネル１２が配されている。第１タッチパネル１２は透明なシート状を有しており、第１タッチパネル１２を透してディスプレイ１１に表示される表示画面を見ることができる。
【００３１】
第１タッチパネル１２は、マトリクス状に配された第１透明電極と第２透明電極とを備えている。第１タッチパネル１２は、これら透明電極間の静電容量の変化を検出することによって、ユーザに触られたディスプレイ面上の位置を検出し、その位置に応じた位置信号を出力する。なお、第１タッチパネル１２は、静電容量式のタッチパネルに限られず、抵抗膜方式、感圧式等のタッチパネルであってもよい。
【００３２】
第１キャビネット１の内部には、中央やや後ろ位置にカメラモジュール１３が配されている。このカメラモジュール１３における被写体像を取り込むためのレンズ窓（図示せず）が、第１キャビネット１の下面に設けられている。第１キャビネット１の内部には、また、前面近傍の中央位置に磁石１４が配されており、右前角部に磁石１５が配されている。さらに、上キャビネット１の右側面および左側面には、それぞれ、突起部１６、１７が設けられている。
【００３３】
第２キャビネット２は、横長の直方体形状を有する。すなわち、第２キャビネット２は、第１キャビネット１とほぼ同じ形状と大きさを有する。第２キャビネット２には、第２ディスプレイ２１が配されており、そのディスプレイ面が、第２キャビネット２の正面に臨んでいる。第２ディスプレイ２１は、後述のように第２液晶パネル２１ａと第２液晶パネル２１ａを照明する第２バックライト２１ｂとで構成されている。なお、第１ディスプレイ１１および第２ディスプレイ２１は、有機ＥＬ等他の表示素子により構成されてもよい。
【００３４】
第２ディスプレイ２１の前面には、第２タッチパネル２２が配されている。第２タッチパネル２２の構成は、第１タッチパネル１２と同様である。
【００３５】
第２キャビネット２の内部には、後面近傍の中央位置に磁石２３が配されている。
この磁石２３と第１キャビネット１の磁石１４とは、後述の如く大画面を構成する位置に第１キャビネット１と第２キャビネット２が位置づけられた状態（第２表示状態）にあるときに、互いに引き合うよう構成されている。なお、第１キャビネット１および第２キャビネット２において、一方の磁石の磁力が十分大きければ、他方の磁石を磁性体に代えてもよい。
【００３６】

第２キャビネット２内部において、右前角部には閉鎖センサ２４が配されており、右後角部には開放センサ２５が配されている。これらセンサ２４、２５は、たとえば、ホールＩＣなどで構成され、磁石の磁力に反応して検出信号を出力する。後述するように、第１キャビネット１と第２キャビネット２とが重なった状態になると、第１キャビネット１の磁石１５が、閉鎖センサ２４に接近するので、閉鎖センサ２４からＯＮ信号が出力される。一方、第１キャビネット１と第２キャビネット２とが前後に並んだ状態になると、第１キャビネット１の磁石１５が、開放センサ２５に接近するので、開放センサ２５からＯＮ信号が出力される。

【００３７】

さらに、第２キャビネット２の右側面には２つの軸部２６が設けられており、左側面には２つの軸部２７が設けられている。

【００３８】

保持体３は、底板部３１と、底板部３１の右端部に形成された右保持部３２と、底板部３１の左端部に形成された左保持部３３とで構成されている。底板部３１、右保持部３２および左保持部３３に囲まれた収容領域Ｒに、第１キャビネット１および第２キャビネット２が上下に重なった状態で収容される。

【００３９】

底板部３１には、３つのコイルバネ３４が左右方向に並ぶように配されている。これらコイルバネ３４は、第２キャビネット２が保持体３に取り付けられた状態において、第２キャビネット２の下面に当接し、第２キャビネット２に対して上方に押し上げる力を付与する。

【００４０】

右保持部３２の上面にはマイク３５および電源キー３６が配されている。また、右保持部３２の外側面には、操作キー群３７が配されている。操作キー群３７は、マナーモードの設定キーなど、複数のキーからなる。一定の機能については、これら操作キーを操作することにより、タッチパネル１２、２２を操作することなく実行される。左保持部３３の上面には、通話スピーカ３８が配されている。ユーザは、左保持部３３側が耳元に、右保持部３２側が口元にくるように携帯電話機を持って、通話を行う。

【００４１】

右保持部３２および左保持部３３の内側面には、案内溝３９（左保持部３３側のみ図示）が形成されている。案内溝３９は、前後方向に延びる上溝３９ａおよび下溝３９ｂと、溝の前側に形成され、上溝３９ａと下溝３９ｂとに繋がるよう上下に延びる２つの縦溝３９ｃとで構成されている。

【００４２】

携帯電話機をアセンブルする際には、軸部２６、２７をガイド溝３９の下溝３９ｂに挿入するようにして、第２キャビネット２を保持体３の収容領域Ｒ内に配置し、さらに、突起部１６、１７をガイド溝３９の上溝３９ａに挿入するようにして、第１キャビネット１を保持体３の収容領域Ｒ内であって第２キャビネット２の上に配置する。

【００４３】

こうして、第１キャビネット１は、上溝３９ａに案内されて前後にスライド可能となる。また、第２キャビネット２は、下溝３９ｂに案内されて前後にスライド可能となる。また、第２キャビネット２が前方に移動し、軸部２６、２７が縦溝３９ｃまでくると、第２キャビネット２は、縦溝３９ｃに案内されて上下にスライド可能となる。

【００４４】

図２は、第１ディスプレイ１１による第１表示状態から第１ディスプレイ１１と第２ディスプレイ２１とによる第２表示状態への切替え操作について説明するための図である。

【００４５】

初期の状態においては、同図（ａ）に示すように、第２キャビネット２が第１キャビネット１の背後に隠れた状態となっている。この状態においては、第１ディスプレイ１１のみが外部に露出している。この状態を「第１表示状態」という。切替えの操作は、ユーザ

によって手動で行われる。

【００４６】

まず、ユーザは、同図（ｂ）に示すように、第１キャビネット１を後方に移動させる。次に、第１キャビネット１の後方への移動が完了すると、同図（ｃ）に示すように、第２キャビネット２を前方へ引き出す。この引出し操作によって、第２キャビネット２が第１キャビネット１に完全に重ならない位置、すなわち第１キャビネット１の前に並ぶ位置まで移動すると、上述のように、軸部２６、２７が縦溝３９ｃにくるので、第２キャビネット２はコイルバネ３３に押されて上昇する。このとき、磁石１４と磁石２３とが引き合うことによって、さらに大きな上昇力が働く。こうして、同図（ｄ）に示すように、第１キャビネット１と第２キャビネット２とが、前後に密着するように、且つ面一となるように並ぶ。第１ディスプレイ１１と第２ディスプレイ２１とが一体化され、大画面の状態となる。この状態を「第２表示状態」という。

【００４７】

図３は、携帯電話機の全体構成を示すブロック図である。本実施の形態の携帯電話機は、上述した各構成要素の他、ＣＰＵ１００、メモリ２００、映像エンコーダ３０１、音声エンコーダ３０２、キー入力回路３０３、通信回路３０４、バックライト駆動回路３０５、映像デコーダ３０６、音声デコーダ３０７、外部スピーカ３０８を備えている。

【００４８】

カメラモジュール１３はＣＣＤ等の撮像素子を有する。カメラモジュール１３は、撮像素子から出力された撮像信号をデジタル化し、その撮像信号にガンマ補正等の各種補正を施して映像エンコーダ３０１へ出力する。映像エンコーダ３０１は、カメラモジュール１３からの撮像信号にエンコード処理を施してＣＰＵ１００へ出力する。

【００４９】

マイク３５は、集音した音声を音声信号に変換して音声エンコーダ３０２へ出力する。音声エンコーダ３０２は、マイク３５からのアナログの音声信号をデジタルの音声信号に変換するとともに、デジタルの音声信号にエンコード処理を施してＣＰＵ１００へ出力する。

【００５０】

キー入力回路３０３は、電源キー３６や操作キー群３７の各キーが操作されたときに、各キーに応じた入力信号をＣＰＵ１００へ出力する。

【００５１】

通信回路３０４は、ＣＰＵ１００からの音声信号や画像信号、テキスト信号などの送信データを無線信号に変換し、アンテナ３０４ａを介して基地局へ送信する。また、アンテナ３０４ａを介して受信した無線信号を音声信号や画像信号、テキスト信号などの受信データに変換してＣＰＵ１００へ出力する。

【００５２】

バックライト駆動回路３０５は、ＣＰＵ１００からの制御信号に応じた電圧信号を第１バックライト１１ｂおよび第２バックライト２１ｂに供給する。第１バックライト１１ｂは、バックライト駆動回路３０５からの電圧信号により点灯し、第１液晶パネル１１ａを照明する。第２バックライト２１ｂは、バックライト駆動回路３０５からの電圧信号により点灯し、第２液晶パネル２１ａを照明する。

【００５３】

映像デコーダ３０６は、ＣＰＵ１００からの映像信号を第１液晶パネル１１ａおよび第２液晶パネル２１ａで表示できるアナログ若しくはデジタルの映像信号に変換し、これら液晶パネル１１ａ、２１ａに出力する。第１液晶パネル１１ａおよび第２液晶パネル２１ａは、映像信号に応じた画像（表示画面）を各ディスプレイ面上に表示する。

【００５４】

音声デコーダ３０７は、ＣＰＵ１００からの音声信号にデコード処理を施し、さらにアナログの音声信号に変換して通話スピーカ３８に出力する。また、音声デコーダ３０７は、ＣＰＵ１００からの着信音、アラーム音等の各種報知音の音信号にデコード処理を施し

、さらにアナログの音信号に変換して外部スピーカ３０８へ出力する。通話スピーカ３８は、音声デコーダ３０７からの音声信号を音声として再生する。外部スピーカ３０８は、音声デコーダ３０７からの着信音等を再生する。

【００５５】

メモリ２００は、ＲＯＭおよびＲＡＭを含む。メモリ２００には、ＣＰＵ１００に制御機能を付与するための制御プログラムが記憶されている。また、メモリ２００には、カメラモジュール１３で撮影した画像データや通信回路３０４を介して外部から取り込んだ画像データ、テキストデータ（メールデータ）などが所定のファイル形式で保存される。

【００５６】

ＣＰＵ１００は、キー入力回路３０３およびタッチパネル１２、２２からの操作入力信号に基づき、制御プログラムに従って、カメラモジュール１３、マイク３５、通信回路３０４、液晶パネル１１ａ、２１ａ、通話スピーカ３８、外部スピーカ３０８等を動作させる。これにより、通話機能、電子メール機能等の各種機能（アプリケーション）を実行する。

【００５７】

また、ＣＰＵ１００は、メモリ２００内に用意されたワークエリア内で、各ディスプレイ１１、２１に表示する表示画面を生成し、表示画面を構成するための映像信号を出力する。

【００５８】

図４は、第１ディスプレイ１１および第２ディスプレイ２１における画面表示例を示す図である。

【００５９】

第２キャビネット２が閉じられているときには、第１ディスプレイ１１に表示画面が表示される。たとえば、第１ディスプレイ１１には、初期画面としてメニュー画面が表示される。メニュー画面には、たとえば、図４（ａ）に示すように、各種のアプリケーションを実行するためのアイコンが表示される。アプリケーションは、インターネットを通じたダウンロード等により入手可能であり、入手されたアプリケーションは、インストールにより携帯電話機に追加される。アプリケーションが増えることにより、それに対応するアイコンが増えると、１つの表示画面で全てのアイコンが表示できなくなる。この場合、図４（ｂ）に示すように、第２キャビネット２が開いて、第１ディスプレイ１１と第２ディスプレイ２１とによる第２表示状態になると、第１ディスプレイ１１に表示できなかったアイコンが、第２ディスプレイ２１に表示される。

【００６０】

各ディスプレイ１１、２１に表示されたアイコンは、ドラッグ操作により所望の位置に移動させることができる。本実施の形態では、１つのディスプレイの範囲のみならず、第１ディスプレイ１１と第２ディスプレイ２１との間でドラッグ操作によるアイコンの移動を行うことができる。たとえば、第１ディスプレイ１１には、使用頻度の高いアプリケーションのアイコンが表示され得る。そして、使用頻度が少なくなると、そのアプリケーションのアイコンが、ドラッグ操作によって第２ディスプレイ２１へ移動され得る。

【００６１】

図５は、第２表示状態においてドラッグ操作がなされた場合の表示制御処理を示すフローチャートである。また、図６は、第１ディスプレイ１１から第２ディスプレイ２１へのドラッグ操作がなされたときの画面表示例を示す図である。以下、第１ディスプレイ１１に表示されたアイコンに対してドラッグ操作がなされた場合を例にとって、その処理動作を説明する。

【００６２】

図５を参照して、ＣＰＵ１００は、各タッチパネル１２、２２からの信号を取得して（Ｓ１）、その信号が位置信号であるか否かを検出する（Ｓ２）。たとえば、ユーザが、第１ディスプレイ１１に表示されたアイコンをドラッグするため、そのアイコンに触れると、触れられた位置に基づく位置信号が第１タッチパネル１２から出力される。位置信号は

、ディスプレイにおける上下方向の位置（座標）を示す信号と、左右方向の位置（座標）を示す信号とからなる。

【００６３】

ＣＰＵ１００は、第１タッチパネル１２からの位置信号を検出すると（Ｓ２：ＹＥＳ）、検出した位置にアイコン（移動対象）があるか否かを判定する（Ｓ３）。そして、検出した位置にアイコンがあると判定すると（Ｓ３：ＹＥＳ）、第１タッチパネル１２からの信号を再び取得して（Ｓ４）、その信号が位置信号であるか否かを検出する（Ｓ５）。引き続き位置信号を検出すると（Ｓ５：ＹＥＳ）、ＣＰＵ１００は、そのアイコンに対してドラッグ操作がなされたか否を判定する（Ｓ６）。ＣＰＵ１００は、今回の検出位置と前回の検出位置とを比較し、両者が異なっていれば、ドラッグ操作がなされたと判定する。

【００６４】

ユーザによってアイコンがドラッグされることにより（図６（ａ）参照）、ＣＰＵ１００は、ドラッグ操作がなされた判定すると（Ｓ６：ＹＥＳ）、縮小画面表示処理を実行する。即ち、ＣＰＵ１００は、第１ディスプレイ１１に表示された表示画面（以下、「第１の画面」という）および第２ディスプレイ２１に表示された表示画面（以下、「第２の画面」という）の上下のサイズを半分に縮小して、１つのディスプレイに双方の表示画面が表示できるサイズとする（Ｓ７）。そして、第１の画面および第２の画面の双方を、ドラッグ操作がなされたディスプレイ、即ち第１ディスプレイ１１に表示させる（Ｓ８）。このとき、第１ディスプレイ１１には、表示画面の縮小に伴って縮小されたアイコンが表示される（図６（ｂ）参照）。なお、このように画面が切り替わっても、ドラッグ対象のアイコンは、ユーザにより接触されている位置に維持される。

【００６５】

次に、ＣＰＵ１００は、第１タッチパネル１２からの信号を再び取得して（Ｓ９）、その信号が位置信号であるか否かを検出する（Ｓ１０）。そして、引き続き位置信号を検出すると（Ｓ１０：ＹＥＳ）、ドラッグされたアイコンをその検出位置に移動させる（Ｓ１１）。これにより、その検出位置に、ドラッグされたアイコンが表示される（図６（ｂ）参照）。このとき、検出位置に表示されるアイコンは、縮小前の大きさとされ、さらに、ドラッグ操作中であることが認識できる表示形態（たとえば、半透明）で表示される。なお、図６（ｂ）には、便宜上、ドラッグ操作中のアイコンが斜線で示されている。

【００６６】

その後、ユーザによりドラッグ操作が続けられると、ＣＰＵ１００は、ステップＳ９からステップＳ１１の処理を繰り返す。これにより、ドラッグ操作に追従して、第１ディスプレイ１１上をアイコンが移動する。

【００６７】

ユーザは、ドラッグしたアイコンを第２ディスプレイ２１に移動させたい場合、図６（ｂ）に示すように、第２の画面上にアイコンを移動させる。そして、第２の画面上の所望の位置までアイコンをドラッグすると、第１ディスプレイ１１から指などを離してドラッグ操作を完了する。

【００６８】

ユーザがドラッグ操作を完了すると、第１タッチパネル１２からの位置信号が検出されなくなる。ＣＰＵ１００は、ステップＳ１０において位置信号が検出されなくなると（Ｓ１０：ＮＯ）、ドラッグ操作が完了したと判断し、第１の画面および第２の画面を元のサイズに戻す。そして、第１の画面を第１ディスプレイ１１に表示させ、第２の画面を第２ディスプレイ２１に表示させる（Ｓ１２）。このとき、図６（ｃ）に示すように、ＣＰＵ１００は、第１の画面からドラッグされたアイコンを消去する。そして、第２の画面において、ドラッグ完了時の、縮小された第２の画面上でのアイコンの位置に相当する位置に、ドラッグされたアイコンを表示させる。

【００６９】

なお、ユーザが、アイコンに一旦触れたがドラッグせずに指などを離した場合には、ステップＳ６でドラッグ操作されたと判定されないまま（Ｓ６：ＮＯ）、ステップＳ５で位

置信号が検出されなくなる（Ｓ５：ＮＯ）。こうなると、第１ディスプレイ１１の表示が変わらないまま処理が終了する。

【００７０】

また、図６（ｂ）に示すように、２つの表示画面が１つのディスプレイに移ったときの他のディスプレイの表示形態は、どのような形態であってもよい。たとえば、特定の背景画像（白一色など単色の画像を含む）が表示されてもよいし、以前の表示画面がそのまま表示されてもよい。あるいは、ディスプレイがオフされてもよい。

【００７１】

以上説明したように、本実施の形態では、第１ディスプレイ１１と第２ディスプレイ１２との間でアイコンなど移動対象のドラッグ操作が行われる場合に、ディスプレイが途切れるキャビネットの部分をドラッグ操作されることがないので、ドラッグ操作の検出を容易に行うことができる。よって、２つのディスプレイ１１、２１の間でのドラッグ操作を精度良く行うことができる。

【００７２】

また、実際にアイコンを２つディスプレイ間で移動させなくてもよく、１つのディスプレイ内で移動させればよいため、アイコンの移動距離を短くでき、ドラッグ操作を素早く行うことができる。

【００７３】

＜変更例１＞

図７は、変更例１に係る、第２表示状態においてドラッグ操作がなされた場合の表示制御処理を示すフローチャートである。また、図８は、変更例１に係る、第１ディスプレイ１１から第２ディスプレイ２１へのドラッグ操作がなされたときの画面表示例を示す図である。

【００７４】

上記実施の形態では、ドラッグ操作が開始されると、常に縮小画面表示処理（Ｓ７、Ｓ８）が実行される。このため、１つのディスプレイの範囲内でドラッグ操作がなされることが意図される場合であっても、縮小された表示画面で操作が行われることとなる。この場合、アイコンなどの画像が小さくなるため、かえって操作がやりにくくなる恐れがある。

【００７５】

そこで、変更例１の構成では、ユーザが所望する場合にのみ、縮小画面表示処理（Ｓ７、Ｓ８）が実行される。

【００７６】

以下、上記実施の形態と同様に、第１ディスプレイ１１に表示されたアイコンに対してドラッグ操作がなされた場合を例にとって、その処理動作を説明する。なお、ここでは、上記実施の形態と異なる処理についてのみ説明する。

【００７７】

ＣＰＵ１００は、ステップＳ６でドラッグ操作がなされたと判定すると、ドラッグされたアイコン（移動対象）を今回の検出位置に移動させる（Ｓ１３）。これにより、その検出位置にドラッグされたアイコンが、ドラッグ操作中を示す表示形態で表示される（図８（ａ）参照）。

【００７８】

次に、ＣＰＵ１００は、操作キー群３７の所定のキーの入力操作があったか否かを判定する（Ｓ１４）。そして、所定のキーの入力操作がなければ（Ｓ１４：ＮＯ）、ステップＳ５→Ｓ６→Ｓ１３の一連の処理を繰り返す。これにより、ドラッグ操作に追従して、第１ディスプレイ１１上をアイコンが移動する。

【００７９】

ユーザは、第１ディスプレイ１１の範囲内でドラッグ操作を完了する場合には、所定のキーを押さない。そして、所望の位置までアイコンを移動させると、アイコンから指などを離す。

【００８０】
これにより、ＣＰＵ１００は、ステップＳ５で位置検出がなされなくなると（Ｓ５：ＮＯ）、最後の検出位置にアイコンを通常の表示形態で表示させて処理を終了する。
【００８１】
一方、ユーザは、第２ディスプレイ２１へアイコンを移動させる場合には、所定のキーを押す。
【００８２】
これにより、ＣＰＵ１００は、ステップＳ１４で所定のキーの入力操作がなされたと判定すると（Ｓ１４：ＹＥＳ）、縮小画面表示処理（Ｓ７、Ｓ８）を実行する。これにより、第１ディスプレイ１１には、縮小された第１の画面および第２の画面が表示される（図８（ｂ）参照）。その後の処理は、上記実施の形態と同様である。
【００８３】
このように、変更例１の構成とすれば、ユーザは、１つのディスプレイの範囲内でドラッグ操作を行う場合には、元のサイズの状態で操作を行うことができる。よって、不要にアイコンなど移動対象の画像が小さくなることがなく、操作がやりにくくなる惧れがない。
【００８４】
＜変更例２＞
図９は、変更例２に係る、第２表示状態においてドラッグ操作がなされた場合の表示制御処理を示すフローチャートである。また、図１０は、変更例２に係る、第１ディスプレイ１１から第２ディスプレイ２１へのドラッグ操作がなされたときの画面表示例を示す図である。
【００８５】
変更例１の構成では、ユーザが、逐一、キー操作を行わなければならない。
【００８６】
そこで、変更例２の構成では、第１ディスプレイ１１と第２ディスプレイ２１との間でドラッグ操作が行われる可能性が高い状況が自動的に検出され、このような場合に、縮小画面表示処理（Ｓ７、Ｓ８）が実行される。ここでは、上記実施の形態および変更例２と異なる処理についてのみ説明する。
【００８７】
ＣＰＵ１００は、変更例２と同様、ステップＳ１３において、ドラッグされたアイコンを検出位置まで移動させると（Ｓ１３）、次に、その検出位置が予め設定された境界領域内の位置であるか否かを判定する（Ｓ１５）。境界領域は、図１０（ａ）に示すように、第１ディスプレイ１１と第２ディスプレイ２１との境界側の端部である第１ディスプレイ１１の下端部および第２ディスプレイ２１の上端部に設定される。
【００８８】
ユーザは、アイコンを第２ディスプレイ２１側へドラッグする場合、第１ディスプレイ１１の下端部へ移動させる（図１０（ａ）参照）。
【００８９】
ＣＰＵ１００は、アイコンが境界領域へ移動されることにより、検出位置が境界領域内の位置であると判定すると（Ｓ１５：ＹＥＳ）、縮小画面表示処理（Ｓ７、Ｓ８）を実行する。これにより、第１ディスプレイ１１には、縮小された第１の画面および第２の画面が表示される（図１０（ｂ）参照）。その後の処理は、上記実施の形態と同様である。
【００９０】
このように、変更例２の構成とすれば、変更例１と同様、１つのディスプレイの範囲内でドラッグ操作がなされる場合には、元のサイズの状態で操作を行うことができる。よって、不要にアイコンなど移動対象の画像が小さくなることがなく、操作がやりにくくなる惧れがない。しかも、ユーザは、逐一、キー操作を行う必要がない。
【００９１】
＜変更例３＞

図１１は、変更例３に係る、第２表示状態においてドラッグ操作がなされた場合の表示制御処理を示すフローチャートである。

【００９２】

変更例２の構成では、図１０（ｂ）に示すように、縮小画面表示処理が実行されたときには、アイコンが第１ディスプレイ１１の下端部に位置することになるので、第２の画面の所望位置にアイコンを移動させる場合には、アイコンを上方に戻すことになる。よって、アイコンの動きに無駄が生じやすい。

【００９３】

そこで、変更例３の構成では、変更例２における図９のステップＳ１５の処理に替えて図１１に示すステップＳ１６の処理が実行される

即ち、ＣＰＵ１００は、アイコンが境界方向、つまり第２ディスプレイ２１へ向かう方向に移動されたか否かを判定する（Ｓ１６）。ここでは、ＣＰＵ１００は、前回の検出位置と今回の検出位置を比較して、今回の位置が第２ディスプレイ２１に近い位置であれば、境界方向に移動されたと判定する。そして、アイコンが境界方向に移動されたと判定すると（Ｓ１６：ＹＥＳ）、縮小画面表示処理（Ｓ７、Ｓ８）を実行する。

【００９４】

このように、変更例３の構成とすれば、アイコンがディスプレイの端部まで移動されなくても、縮小画面表示処理が実行されるので、その後、アイコンをディスプレイの内側へ戻すような状況になりにくい。よって、アイコンの動きに無駄が生じにくくすることができる。

【００９５】

＜変更例４＞

上記実施の形態では、メニュー画面に表示されたアイコンに対してドラッグ操作がなされる場合を具体例として、表示制御処理について説明した。しかし、図５に示す表示制御処理は、他の移動対象、たとえば、以下に説明するように、写真のサムネイルやコピー等のために範囲指定された文字列に対するドラッグ操作においても適用することができる。

【００９６】

図１２は、第１ディスプレイ１１のサムネイル画面に表示されたサムネイルが第２ディスプレイ２１のサムネイル画面へドラッグ操作される場合の画面表示例を示す図である。第１ディスプレイ１１および第２ディスプレイ２１には、多数の写真のサムネイルが配されたサムネイル画面が表示されている。

【００９７】

第１ディスプレイ１１において、１つのサムネイルがドラッグされると（図１２（ａ）参照）、２つのサムネイル画面が縮小されて第１ディスプレイ１１に表示される（図１２（ｂ）参照）。その後、第１ディスプレイ１１において、ドラッグされたサムネイルが下のサムネイル画面の所望の位置へ移動され、ドラッグ操作が完了すると、２つのサムネイル画面が元のサイズに戻されて、各サムネイル画面が元のディスプレイ１１、２１に表示される。このとき、ドラッグされたサムネイルは、第１ディスプレイ１１から消去され、第２ディスプレイ２１に表示される（図１２（ｃ）参照）。

【００９８】

図１３は、第１ディスプレイ１１のサムネイル画面に表示されたサムネイルが第２ディスプレイ２１の電話帳画面に表示されたフォト領域へドラッグ操作される場合の画面表示例を示す図である。第１ディスプレイ１１にはサムネイル画面が表示され、第２ディスプレイ２１には、相手の氏名や電話番号が記載された電話帳画面が表示されている。

【００９９】

第１ディスプレイ１１において、１つのサムネイルがドラッグされると（図１３（ａ）参照）、サムネイル画面および電話帳画面が縮小されて第１ディスプレイ１１に表示される（図１３（ｂ）参照）。その後、第１ディスプレイ１１において、ドラッグされたサムネイルが電話帳画面のフォト領域へ移動され、ドラッグ操作が完了すると、サムネイル画面および電話帳画面が元のサイズに戻されて、元のディスプレイ１１、２１に表示される

。このとき、ドラッグされたサムネイルは、第１ディスプレイ１１の元の位置に表示されたまま、ドラッグされたサムネイルに対応する写真が、第２ディスプレイ２１に表示された電話帳画面のフォト領域に配される（図１３（ｃ）参照）。

【０１００】

図１４は、第１ディスプレイ１１の文書作成画面に表された文字列が第２ディスプレイ２１の文書作成画面へドラッグ操作される場合の画面表示例を示す図である。第１ディスプレイ１１および第２ディスプレイ２１には、送信メールの文書を作成する文書作成画面が表示されている。第１ディスプレイ１１の文書作成画面と第２ディスプレイ２１の文書作成画面は連続した画面となっており、上の文書作成画面の文章に下の文書作成画面の文章が続いている。

【０１０１】

第１ディスプレイ１１において、コピー対象として範囲指定された文字列がドラッグされると（図１４（ａ）参照）、２つの文書作成画面が縮小されて第１ディスプレイ１１に表示される（図１４（ｂ）参照）。その後、第１ディスプレイ１１において、ドラッグされた文字列が下の文書作成画面の所望の位置へ移動され、ドラッグ操作が完了すると、２つの文書作成画面が元のサイズに戻されて、各文書作成画面が元のディスプレイ１１、２１に表示される。このとき、ドラッグされた文字列は、第１ディスプレイ１１の元の位置に表示されたまま、文字列のコピーが第２ディスプレイ２１に表示される（図１４（ｃ）参照）。

【０１０２】

図１５は、第１ディスプレイ１１の詳細表示画面に表された文字列が第２ディスプレイ２１の文書作成画面へドラッグ操作される場合の画面表示例を示す図である。第１ディスプレイ１１には、受信メールの文章が記載された詳細表示画面が表示されており、第２ディスプレイ２１には、送信メールの文書を作成する文書作成画面が表示されている。

【０１０３】

第１ディスプレイ１１において、コピー対象として範囲指定された文字列がドラッグされると（図１５（ａ）参照）、詳細表示画面および文書作成画面が縮小されて第１ディスプレイ１１に表示される（図１５（ｂ）参照）。その後、第１ディスプレイ１１において、ドラッグされた文字列が文書作成画面の所望の位置へ移動され、ドラッグ操作が完了すると、詳細表示画面および文書作成画面が元のサイズに戻されて、元のディスプレイ１１、２１に表示される。このとき、ドラッグされた文字列は、第１ディスプレイ１１の元の位置に表示されたまま、文字列のコピーが第２ディスプレイ２１に表示される（図１５（ｃ）参照）。

【０１０４】

図１６は、第１ディスプレイ１１の詳細表示画面に表された文字列が第２ディスプレイ２１のウェブ画面へドラッグ操作される場合の画面表示例を示す図である。第１ディスプレイ１１には、受信メールの文章が記載された詳細表示画面が表示されており、第２ディスプレイ２１には、インターネットのウェブ画面が表示されている。

【０１０５】

たとえば、詳細表示画面に記載された用語についてウェブ画面で検索する場合を例にとる。第１ディスプレイ１１において、範囲指定された文字列（用語）がドラッグされると（図１６（ａ）参照）、詳細表示画面およびウェブ画面が縮小されて第１ディスプレイ１１に表示される（図１６（ｂ）参照）。その後、第１ディスプレイ１１において、ドラッグされた文字列がウェブ画面の検索テキストボックスへ移動され、ドラッグ操作が完了すると、詳細表示画面およびウェブ画面が元のサイズに戻されて、元のディスプレイ１１、２１に表示される。このとき、ドラッグされた文字列は、第１ディスプレイ１１の元の位置に表示されたまま、文字列のコピーが第２ディスプレイ２１に表示されたウェブ画面の検索テキストボックスに配される（図１６（ｃ）参照）。

【０１０６】

なお、図７、図９および図１１に示す表示制御処理を、図１２から図１６の例に適用す

ることもできる。

【０１０７】

＜変更例５＞

図１７は、変更例５に係る、ドラッグ操作中に電話の着信等の割り込みがあった場合の制御処理を示すフローチャートである。

【０１０８】

この制御処理は、ＣＰＵ１００により、上記図５、図７、図９および図１１の表示制御処理と並行して実行される。

【０１０９】

ＣＰＵ１００は、ドラッグ操作が開始されると（Ｓ２１：ＹＥＳ）、ドラッグ操作が完了するまで、電話の着信があったか否か、電子メールの着信があったか否か、アラームの報知時刻になったか否かを監視する（Ｓ２２→Ｓ２５→Ｓ２８→Ｓ２９）。

【０１１０】

ＣＰＵ１００は、ドラッグ操作中に電話の着信があったと判定すると（Ｓ２２：ＹＥＳ）、実行していた表示制御処理を中止する（Ｓ２３）。そして、電話の着信を報知する（Ｓ２４）。即ち、第１ディスプレイ１１や第２ディスプレイ２１に相手の名前や電話番号などからなる着信画面を表示させるとともに、外部スピーカ３０８から着信音を出力する。

【０１１１】

これにより、ユーザは、電話に素早く出ることができる。

【０１１２】

一方、ＣＰＵ１００は、電子メールの着信があると判定すると（Ｓ２５：ＹＥＳ）、あるいは、アラームの報知時刻が経過したと判定すると（Ｓ２８：ＹＥＳ）、ドラッグ操作が完了したか否かを判定し（Ｓ２６）、ドラッグ操作が完了していなければ（Ｓ２６：ＮＯ）、そのまま待機する。そして、ドラッグ操作が完了すると（Ｓ２６：ＹＥＳ）、電子メールの着信の場合は着信を報知する（Ｓ２７）。即ち、外部スピーカ３０８から着信音を出力するとともに、電子メールの着信を示すアイコンを第１ディスプレイ１１や第２ディプレイ２１に表示する。

【０１１３】

これにより、ユーザは、電子メールの着信報知やアラーム音に邪魔されることなく、ドラッグ操作を行うことができる。さらに、ドラッグ操作が完了した後には、電子メールの着信があったことやアラーム報知時刻が経過したことを知ることができる。

【０１１４】

なお、電子メールの着信を示すアイコンについては、ドラッグ操作中に、第１ディスプレイ１１や第２ディスプレイ２１の片隅に表示されてもよい。

【０１１５】

＜その他＞

上記実施の形態および変更例に示す形態以外にも、さらに種々変更が可能である。

【０１１６】

たとえば、上記実施の形態および変更例では、縮小画面表示処理において、第１ディスプレイ１１および第２ディスプレイ２１の表示画面を上下方向に縮小しているが、図１８（ａ）に示すように、上下左右方向に縮小するようにしてもよい。

【０１１７】

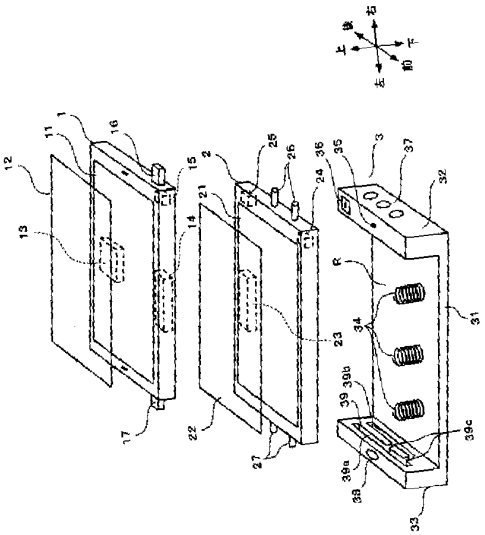
また、上記実施の形態および変更例では、縮小画面表示処理において、ドラッグ操作中のアイコンを元のサイズとしているが、図１８（ｂ）に示すように、周りの表示画面と同様、このアイコンを縮小して表示するようにしてもよい。

【０１１８】

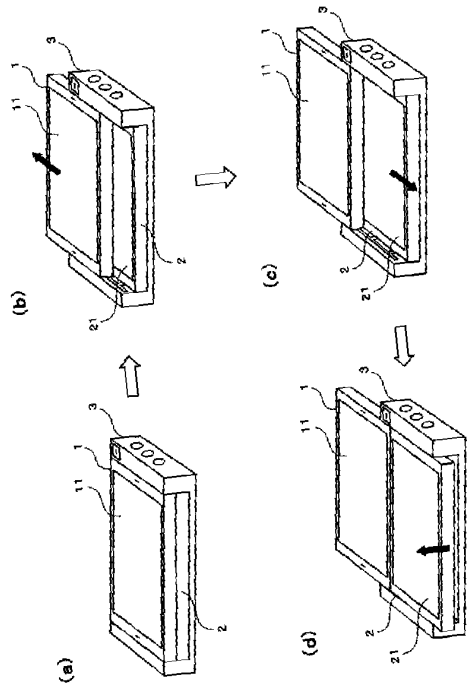
さらに、上記実施の形態では、いわゆるスライド式の携帯電話機に本発明が適用されている。しかしながら、これに限らず、いわゆる折り畳み式の携帯電話機に本発明が適用されてもよい。

【０１１９】
さらに、本発明の携帯端末装置は、携帯電話機に限られず、ＰＤＡ（Personal Digital Assistant）等であってもよい。
【０１２０】
この他、本発明の実施の形態は、特許請求の範囲に示された技術的思想の範囲内において、適宜、種々の変更が可能である。
【符号の説明】
【０１２１】
１１　第１ディスプレイ（第１の表示部）
２１　第２ディスプレイ（第２の表示部）
１２　第１タッチパネル（検出部）
２２　第２タッチパネル（検出部）
１００　ＣＰＵ（表示制御部）

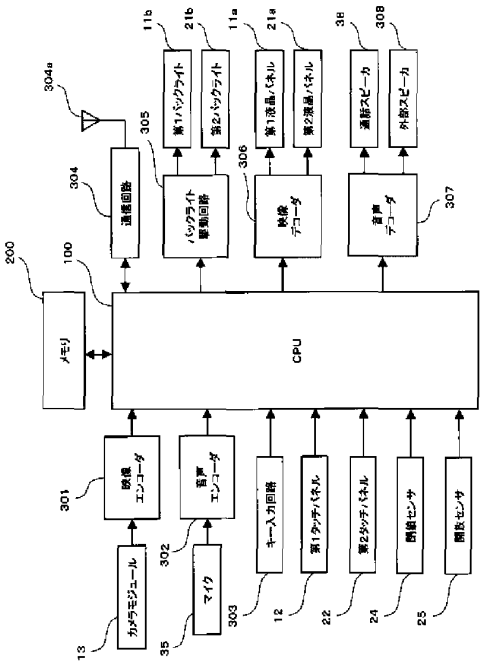
【図１】



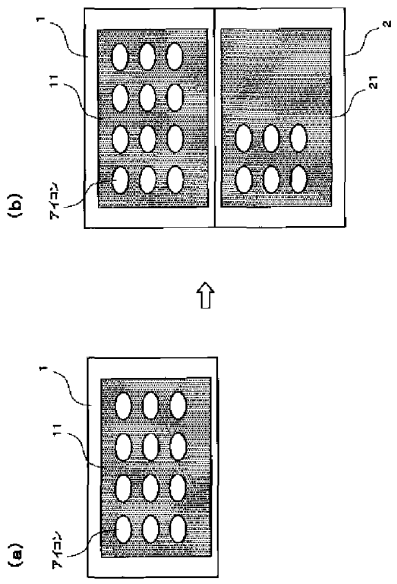
【図２】



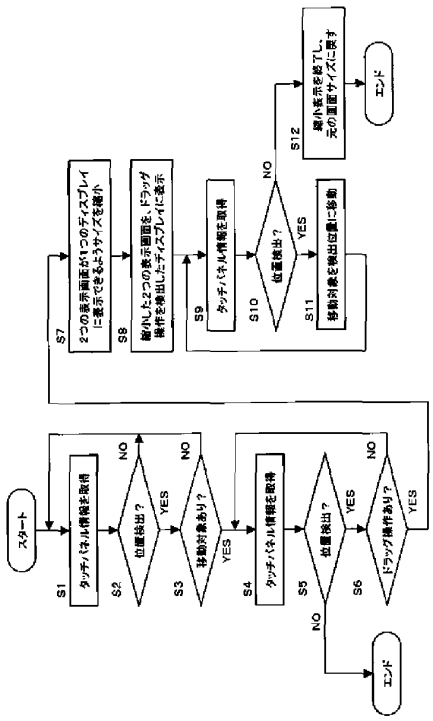
【図３】


CPU
メモリ
通信回路
バックライト駆動回路
映像デコーダ
音声デコーダ
第1バックライト
第2バックライト
第1液晶パネル
第2液晶パネル
通話スピーカ
外部スピーカ
映像エンコーダ
音声エンコーダ
カメラモジュール
マイク
キー入力回路
第1タッチパネル
第2タッチパネル
照度センサ
開閉センサ

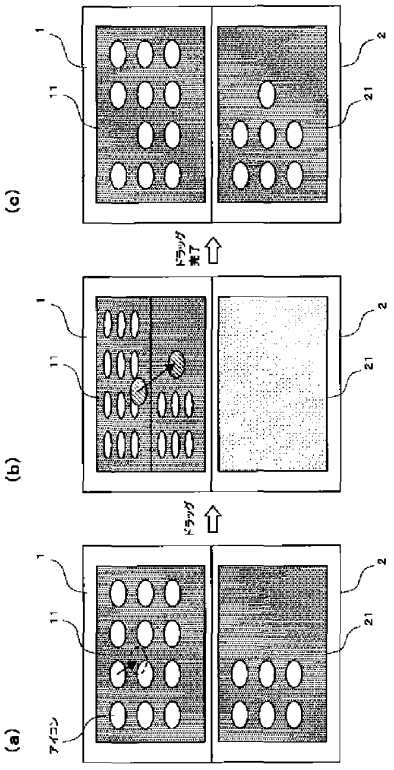
【図４】


(a)
(b)
アイコン

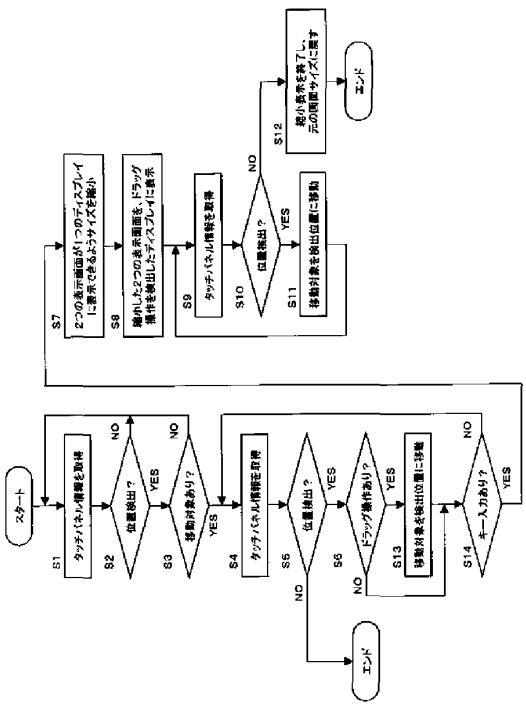
【図５】


スタート
タッチパネル情報を取得
位置検出？
移動対象あり？
ドラッグ操作あり？
エンド
2つの表示画面が1つのディスプレイに表示できるようサイズを縮小
開いた2つの表示画面を、ドラッグ操作を検出したディスプレイに表示
移動対象を検出位置に移動
最小表示を終了し、元の画面サイズに戻す
YES
NO

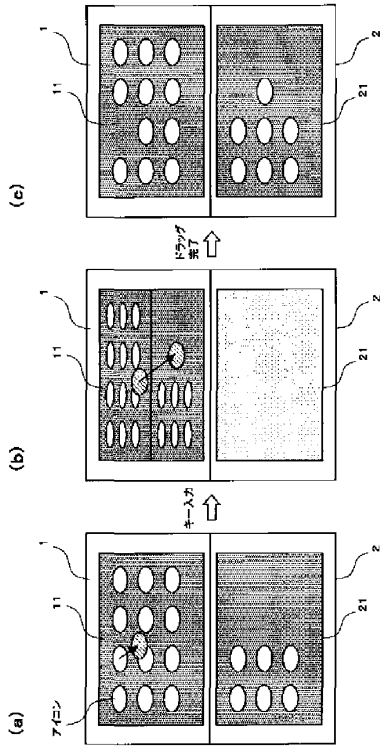
【図６】


(a)
(b)
(c)
アイコン
ドラッグ
ドラッグ終了

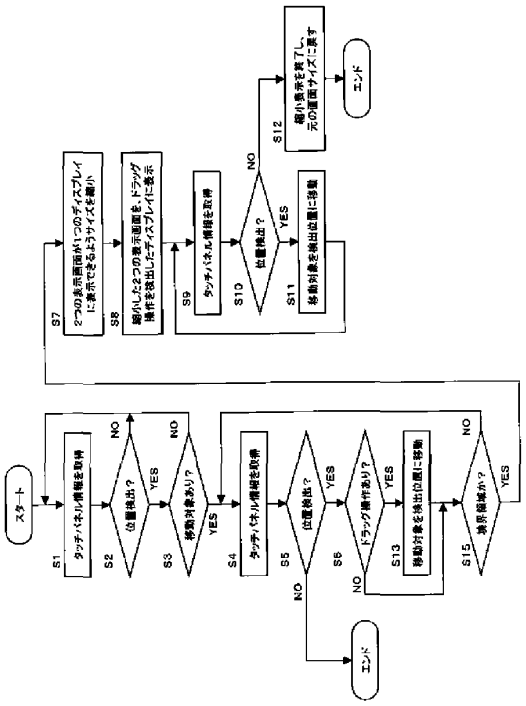
【図７】


スタート
S1
タッチパネル情報を取得
S2
位置検出？
NO
YES
S3
移動対象あり？
NO
YES
S4
タッチパネル情報を取得
S5
位置検出？
YES
NO
S6
ドラッグ操作あり？
YES
NO
S13
移動対象を検出位置に移動
S14
キー入力あり？
NO
YES
エンド
S7
2つの表示画面が1つのディスプレイに表示できるようサイズを縮小
S8
縮小した2つの表示画面上、ドラッグ操作を検出したディスプレイに表示
S9
タッチパネル情報を取得
S10
位置検出？
NO
YES
S11
移動対象を検出位置に移動
S12
縮小表示を終了し、元の画面サイズに戻す
エンド

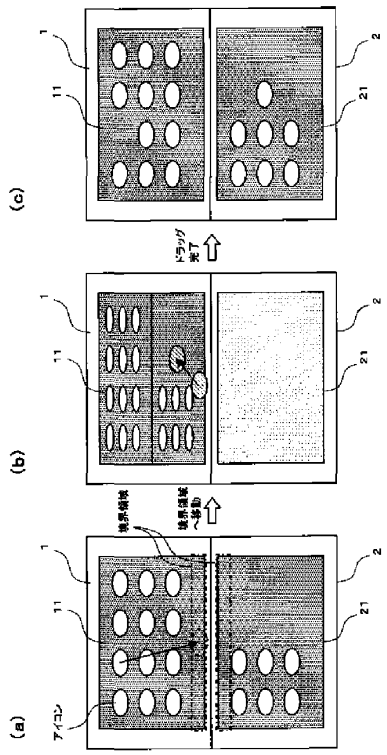
【図８】


(a)
アイコン
(b)
キー入力
(c)
ドラッグ完了
1
11
2
21

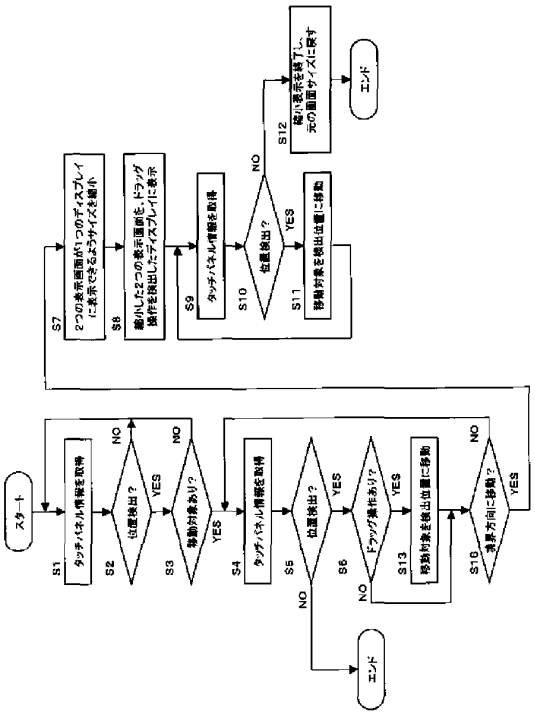
【図９】


スタート
S1
タッチパネル情報を取得
S2
位置検出？
NO
YES
S3
移動対象あり？
NO
YES
S4
タッチパネル情報を取得
S5
位置検出？
YES
NO
S6
ドラッグ操作あり？
YES
NO
S13
移動対象を検出位置に移動
S15
境界領域か？
NO
YES
エンド
S7
2つの表示画面が1つのディスプレイに表示できるようサイズを縮小
S8
縮小した2つの表示画面上、ドラッグ操作を検出したディスプレイに表示
S9
タッチパネル情報を取得
S10
位置検出？
NO
YES
S11
移動対象を検出位置に移動
S12
縮小表示を終了し、元の画面サイズに戻す
エンド

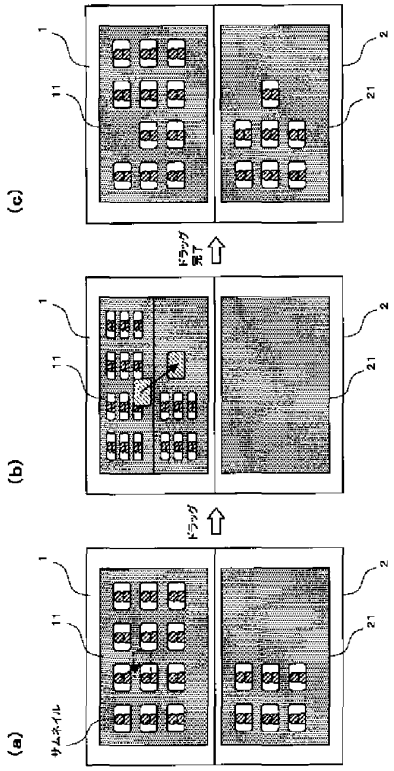
【図１０】


(a)
アイコン
境界領域
境界領域へ移動
(b)
ドラッグ完了
(c)
1
11
2
21

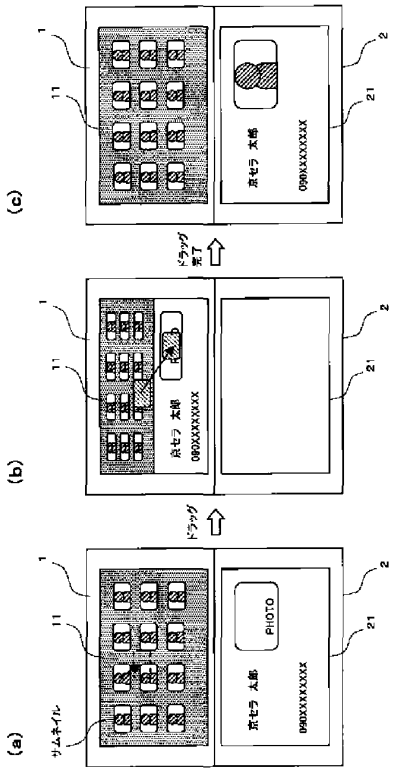
【図１１】



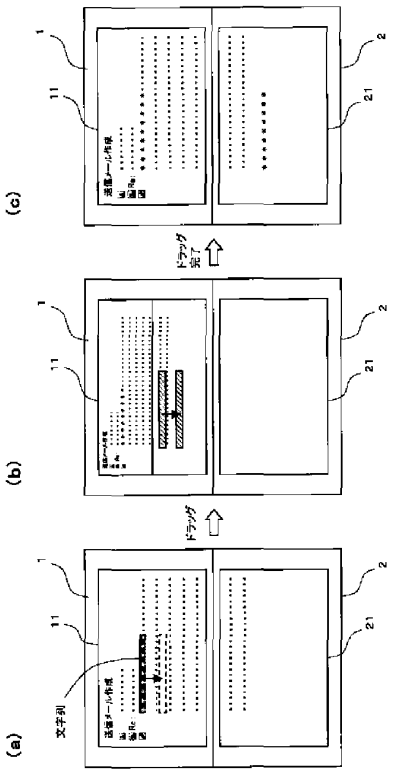
【図１２】



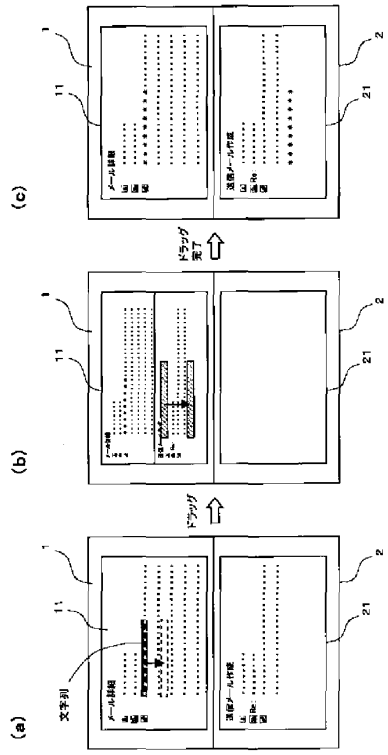
【図１３】



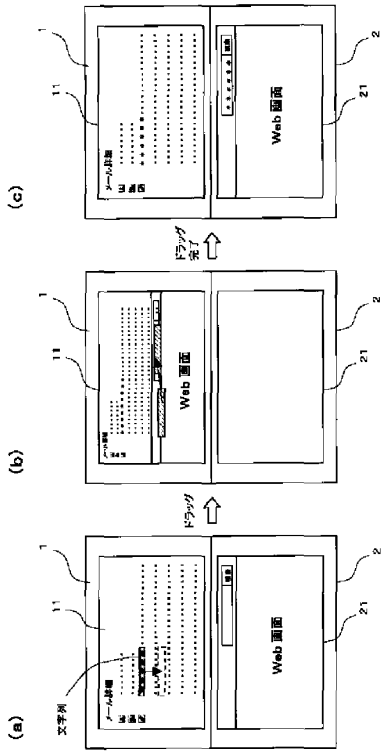
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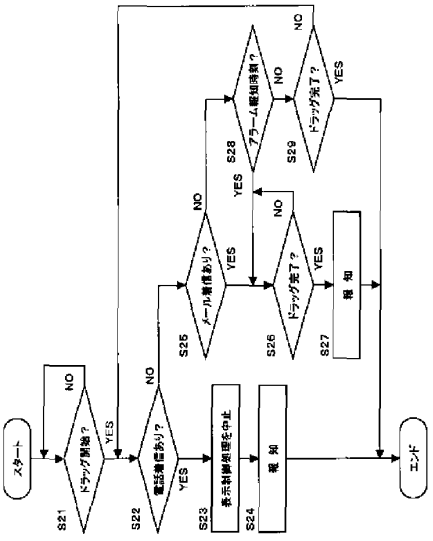
【図１５】



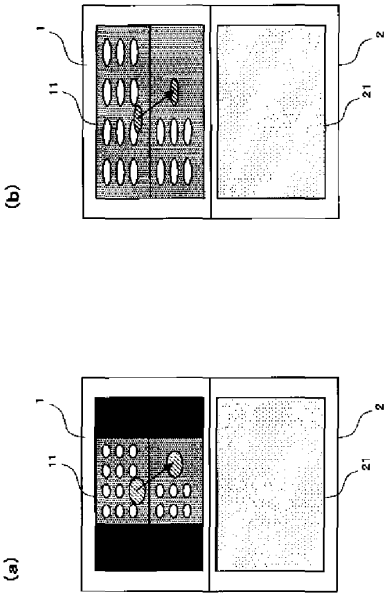
【図１６】



【図１７】



【図１８】



Electronic Acknowledgement Receipt	
EFS ID:	22787921
Application Number:	14523069
International Application Number:	
Confirmation Number:	7687
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Customer Number:	111285
Filer:	Douglas W. Swartz/Robert Roe-Pachirat
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-8-CON
Receipt Date:	30-JUN-2015
Filing Date:	24-OCT-2014
Time Stamp:	15:06:19
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		6583-8-CON_IDS_01.pdf	419563 c9c047b58b3708d7b135113f0c3eb2dbf5d6421d	yes	8

	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Transmittal Letter		1	3	
	Information Disclosure Statement (IDS) Form (SB08)		4	8	
Warnings:					
Information:					
2	Foreign Reference	JPH08-234953_with_English_translation.pdf	950135 d4bf48fb075c10a3398cfe1b9e5cba5598350bd6	no	17
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3	Foreign Reference	JP201170525_W_MachineTranslation.pdf	3078282 c56a6147a8238bce2c02c5f5f84510b1f1d156d1	no	63
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4	Non Patent Literature	6583-13-PEP_3rd_Party_Observations_07-21-2014.pdf	148397 11753cafde21fae6e3b63ae3a8c9130398e6017b	no	6
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5	Non Patent Literature	6583-13-PEP_EESR_02-10-2015.pdf	675775 711a7924ceebe74efc82dd33cba6c06d2ece4052	no	7
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6	Non Patent Literature	6583-13-PJP_NOA_12-02-2014.pdf	61832 9fd1d7783373926819f72f101fdebdded79c073e	no	2
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7	Non Patent Literature	6583-9_FOA_08-29-2014.pdf	569637 c0f3fb3ef883d2d772c10cc6bf0a14bad3c85cea	no	15
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9	Non Patent Literature	6583-10_OA_05-22-2015.pdf	764604 19de57c9d50823cdfe486dc088afd534f60c6e4d	no	22
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11	Non Patent Literature	6583-12_OA_11-28-14.pdf	572191 dccd3719e0ae6ba851c60d864304ea95cb6683bf	no	16
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12	Non Patent Literature	6583-12_OA_05-05-2015.pdf	566885 707ed94a4ef1c1057e33c98e32ef30208af5b8d2	no	16
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14	Non Patent Literature	6583-14_FOA_07-24-2014.pdf	1318284 c7883a8c2fd0f7c8e494ce515a6bab5328ff4969	no	35
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18	Non Patent Literature	6583-16_NOA_09-26-2014.pdf	454519 d508caaab521b7694d2ad86409220e14dde19fba	no	9
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19	Non Patent Literature	6583-16-CON_OA_06-23-2015.pdf	447606 5938698d9ee5c7bc65c17e50c48a9d04ecb3bf0e	no	14
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21	Non Patent Literature	6583-57_OA_02-23-2015.pdf	2039977 21533551b1af7634f9a2e7725c6f37e52f2b24fe	no	20
Warnings:					
Information:					
		Total Files Size (in bytes):	18456818		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2172
Sanjiv Sirpal	)	Confirmation No.: 7687
Serial No.: 14/523,069	)	Examiner: Boris M Pesin
Filed: October 24, 2014	)	INFORMATION DISCLOSURE STATEMENT
Atty. File No.: 6583-8-CON	)	
Entitled: "Focus Change Upon Application Launch"	)	*Electronically Submitted*

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

The references cited on attached Form PTO/SB08 are being called to the attention of the Examiner.

☒ Copies of the cited non-patent and/or foreign references 58, 59 and 92 – 109 are enclosed herewith.

☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.

☒ Copies of the cited U.S. patents/unpublished patent applications/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).

☒ Copies of the cited references 60 – 91 are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. 13/248,618 filed 09/29/2011, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

☒ To the best of applicants' belief, the pertinence of the foreign-language references is believed to be summarized in the attached English abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.

☒ Examiner's attention is drawn to the following related applications:

- Serial No. 13/248,618 filed 09/29/2011 now U.S. Patent No. 8,875,050 (Attorney's Ref. No. 6583-8)
- Serial No. 13/248,665 filed 09/29/2011 now U.S. Patent No. 9,063,694 (Attorney's Ref. No. 6583-9)
- Serial No. 13/248,578 filed 09/29/2011 (Attorney's Ref. No. 6583-10)

- Serial No. 13/249,056 filed 09/29/2011 now U.S. Patent No. 8,959,445 (Attorney's Ref. No. 6583-11)
- Serial No. 13/223,039 filed 08/31/2011 (Attorney's Ref. No. 6583-12)
- Serial No. 13/223,043 filed 08/31/2011 now U.S. Patent No. 8,866,763 (Attorney's Ref. No. 6583-13)
- Serial No. 14/476,249 filed 09/03/2014 (Attorney's Ref. No. 6583-13-CON)
- Serial No. 13/247,815 filed 09/28/2011 (Attorney's Ref. No. 6583-14)
- Serial No. 13/248,496 filed 09/29/2011 (Attorney's Ref. No. 6583-15)
- Serial No. 13/248,427 filed 09/29/2011 now U.S. Patent No. 9,026,930 (Attorney's Ref. No. 6583-16)
- Serial No. 14/703,243 filed 05/04/2015 (Attorney's Ref. No. 6583-16-CON)
- Serial No. 13/247,824 filed 09/28/2011 (Attorney's Ref. No. 6583-57)

☐ Other:_____

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☒	**37 CFR 1.97(b)**: No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfied by one of the following conditions ("X" indicates satisfaction): ☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application, or ☒ Before the mailing date of a first Office Action on the merits, or ☐ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114. Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.

☐	**37 CFR 1.97(c)**: The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of any one of the following conditions: (1) a final action under 37 C.F.R. 1.113, or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by: ☐ A Certification (below) as specified by 37 C.F.R. 1.97(e). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☐ Please charge Deposit Account 19-1970 in the amount of $180.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☐	**37 CFR 1.97(d)**: This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e) AND ☐ Applicants hereby requests consideration of the reference(s) disclosed herein. Please charge Deposit Account 19-1970 in the amount of $180.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e))
(Applicable only if checked)

☐ The undersigned certifies that:

☐ Each item of information contained in the Information Disclosure Statement submitted herewith was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(1).

☐ A copy of the communication from the foreign patent office is enclosed.

OR

☐ No item of information contained in the Information Disclosure Statement submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Douglas W. Swartz/
Douglas W. Swartz
Registration No. 37739
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: June 29, 2015

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	14/523,069
				Filing Date	October 24, 2014
(Use as many sheets as necessary)				First Named Inventor	Sanjiv Sirpal
				Art Unit	2172
				Examiner Name	GAFFIN, JEFFREY A
Sheet	1	of	1	Attorney Docket Number	6583-8-CON

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	2007/0288868	12/13/2007	Rhee et al.	

UNPUBLISHED U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Filing Date MM-DD-YYYY	Name of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	2	14/818806	08/05/2015	Cassar et al.	
	3	14/834248	08/24/2015	Sirpal et al.	
	4	14/954576	11/30/2015	Sirpal et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
	5	CN 101087459	12/12/2007	SAMSUNG ELECTRONICS CO LTD		(with English abstract)(believed to correspond to U.S. Patent Publication No. 2007/0288868)
	6	CN 101788850	07/28/2010	SAMSUNG ELECTRONICS CO LTD		(with English abstract) (believed to correspond to EP 2207076)
	7	EP 2207076	07/14/2010	SAMSUNG ELECTRONICS CO LTD		

NON-PATENT LITERATURE DOCUMENTS		
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Espacenet

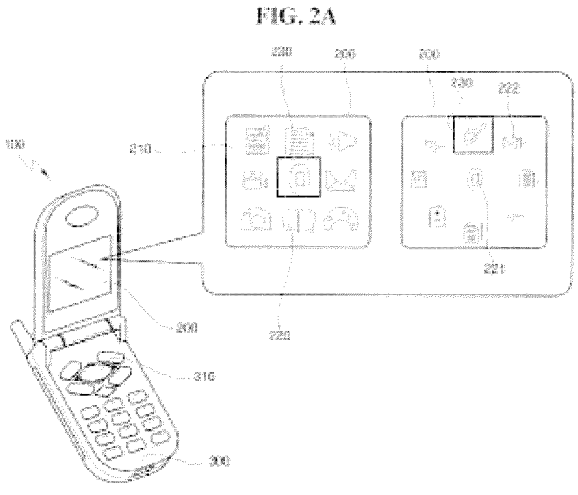
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Portable device and method of providing menu icons

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Abstract of CN101087459 (A)

A portable device and a method of providing menu icons are provided. The portable device includes a button signal determination unit, a focus location checking unit, a background screen management unit, and an icon management unit. The button signal determination unit determines whether an input button signal is the signal of a function button or the signal of a direction button when the button signal is received from a user. The focus location checking unit determines a location of a focus located on a specific menu icon. The



background screen management unit changes the view point of a background screen to a direction in which the focus is moved. The icon management unit changes the size of a menu icon based on the location of the focus.

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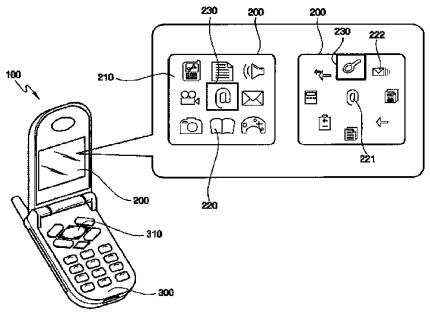
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权利要求书 2 页 说明书 10 页 附图 11 页

[54] 发明名称

提供菜单图标的便携式装置和方法

[57] 摘要

提供一种提供菜单图标的便携式装置和方法。所述便携式装置包括：按钮信号确定单元、焦点位置检查单元、背景屏幕管理单元以及图标管理单元。当从用户接收到按钮信号时，按钮信号确定单元确定输入的按钮信号是功能按钮的信号还是方向按钮的信号。焦点位置检查单元确定位于特定菜单图标上的焦点的位置。背景屏幕管理单元将背景屏幕的视点改变为焦点移动的方向。图标管理单元基于焦点的位置改变菜单图标的大小。



1、一种用于提供菜单图标的便携式装置，包括:

按钮信号确定单元，当从用户接收到输入的按钮信号时，确定输入的按钮信号是功能按钮的信号还是方向按钮的信号;

焦点位置检查单元，确定位于菜单图标上的焦点的位置;

背景屏幕管理单元，根据焦点移动的方向改变背景屏幕的视点;以及

图标管理单元，基于焦点的位置改变菜单图标的大小。

2、如权利要求1所述的便携式装置，还包括:

按钮信号输入单元，接收由用户操作按钮产生的按钮信号;以及

显示单元，显示菜单图标和位于所述菜单图标上的焦点。

3、如权利要求1所述的便携式装置，其中，

菜单图标是每一个上级图标和下级图标，其中，每个下级图标相应于上级图标;以及

当选择上级图标时，以分级方式显示选择的上级图标以及与所述上级图标相应的下级图标。

4、如权利要求3所述的便携式装置，其中，在上级图标周围以圆形显示下级图标，并沿用户选择的方向旋转下级图标。

5、如权利要求1所述的便携式装置，其中，使用移动模糊显示上级图标和下级图标的移动，在屏幕上移动所述上级图标和下级图标的位置。

6、一种控制用于提供菜单图标的便携式装置的方法，所述方法包括:

接收通过用户操作按钮产生的按钮信号;

如果输入的按钮信号是方向按钮信号，则所述信号包括输入的方向，确定位于上级图标上的焦点的位置，并且沿输入的方向移动焦点的位置;

如果移动焦点的位置，则将背景屏幕的视点改变为焦点移动的方向;以及

基于焦点的位置改变菜单图标的大小。

7、如权利要求6所述的方法，如果输入的按钮信号为功能按钮的信号，则显示在焦点的位置布置的上级图标相应的下级图标。

8、如权利要求7所述的方法，其中，以分级方式显示选择的上级图标和下级图标。

9、如权利要求 7 所述的方法，其中，在上级图标周围以圆形显示下级图标，并沿用户选择的方向旋转下级图标。

10、如权利要求 7 所述的方法，其中，使用移动模糊显示上级图标和下级图标的移动，在屏幕上移动所述上级图标和下级图标的位置。

提供菜单图标的便携式装置和方法

本申请要求于 2006 年 6 月 9 日提交到韩国知识产权局的第 10-2006-0052221 号韩国专利申请的优先权，该申请全部公开于此以资参考。

技术领域

与本发明一致的设备和方法涉及提供菜单图标，更具体地讲，涉及一种以分级方式显示菜单的上级图标和下级图标的提供菜单图标的便携式装置和方法。

背景技术

近来，随着通信技术的发展，使个人能够在移动的同时执行语音和数据通信的便携式装置已被开发，并且广泛流行。

通常，当在携带便携式装置的同时，个人与对方执行语音或视频通信或交换信息（例如，文本消息）以及访问互联网时，便携式装置是在日常生活中被频繁使用的便利的通信工具。这样的便携式装置的示例包括：移动电话、便携式电话、手持电话、蜂窝电话、个人通信服务（PCS）电话、个人便携式电话、无线通信终端、无线应用协议（WAP）电话、个人数字助理（PDA）以及国际移动通信联盟 2000（IMT2000）终端。

图 1 示出现有技术的便携式装置的菜单屏幕。

如图 1 所示，显示用于执行便携式装置的功能的各种菜单的现有的技术方法是这样的方法：将二维（2D）或三维（3D）图像对象提供给显示面板 11。

然而，为了执行特定功能，用户必须逐一地选择多个菜单图标 12，并在包括在选择的菜单图标 12 中的详细菜单项中进行搜索，这造成了不便。

也就是说，当用户不知道列出期望的功能的菜单图标时，用户必须逐一地选择显示的菜单图标 12。此外，当在选择的菜单图标中不存在将被使用的功能项时，用户必须移动到上层菜单图标，以离开该菜单到另一菜单图标。因此，用户必须多次执行按钮操作（即，按钮选择）以搜索期望的功能，这是不便的。

在名为“Portable Information Terminal Device, Display Control Device, Display Control Method and Computer-Readable Programs thereof”的第2003-88374号韩国公开专利申请中，安排显示菜单项的菜单面板，从而随沿着相应的轨迹设置的显示位置，法线朝向虚拟相机，并且基于从虚拟相机的距离将轨迹设置为较高值。如果执行滚动操作，则菜单面板沿显示位置之间的轨迹移动直到选择的菜单面板移动到显示位置。该专利公开这样的技术，虚拟相机将便携式信息终端装置的显示屏幕表示为屏幕图像，以滚动形式三维显示菜单面板。然而，当处于传统便携式信息终端装置中时，本发明具有这样的缺点：仅可调整相机的高度，并且不能将菜单屏幕连续地提供为一个屏幕。

发明内容

根据本发明的示例性方面，提供一种用于提供菜单图标的便携式装置。所述便携式装置包括：按钮信号确定单元，当从用户接收到输入的按钮信号时，确定输入的按钮信号是功能按钮的信号还是方向按钮的信号；焦点位置检查单元，确定位于菜单图标上的焦点的位置；背景屏幕管理单元，根据焦点移动的方向改变背景屏幕的视点；以及图标管理单元，基于焦点的位置改变菜单图标的大小。

根据本发明的另一方面，提供一种控制用于提供菜单图标的便携式装置的方法。所述方法包括：接收通过用户操作按钮产生的按钮信号；如果输入的按钮信号是方向按钮信号，则所述信号包括输入的方向，确定位于上级图标上的焦点的位置，并且沿输入的方向移动焦点的位置；如果移动焦点的位置，则将背景屏幕的视点改变为焦点移动的方向；以及基于焦点的位置改变菜单图标的大小。

附图说明

通过下面结合附图对本发明的示例性实施例进行的详细描述，本发明的上述和其它示例性方面和和优点将会变得更加清楚，其中：

图1是示出现有技术的便携式装置的菜单屏幕；

图2A和图2B示出根据本发明示例性实施例的提供菜单图标的便携式装置的屏幕；

图 3 是根据本发明的另一示例性实施例的用于提供菜单图标的便携式装置的内部框图;

图 4A 到图 4C 是示出根据本发明的另一示例性实施例的控制用于提供菜单图标的便携式装置的方法的流程图;

图 5A 到图 5D 是示出根据本发明的另一示例性实施例的在用于提供菜单图标的便携式装置中，通过方向按钮的操作移动菜单图标和背景屏幕的示图;以及

图 6A 到图 6C 是示出根据本发明的另一示例性实施例的当在用于提供菜单图标的便携式装置中选择菜单图标时执行的处理的示图。

具体实施方式

现在将参照附图结合示例性实施例来详细描述本发明。

图 2A 和图 2B 示出根据本发明示例性实施例的提供菜单图标的便携式装置的屏幕。在图 2A 中，便携式装置 100 是允许用户与对方通信、向对方发送文本消息以及允许用户访问互联网的装置（例如，移动电话、PDA 或有线通信终端）。

如图 2A 所示，便携式装置 100 包括：显示面板 200，显示多个菜单图标 221 和 222；以及输入装置 300，操作显示在显示面板 200 上的菜单 221 和 222。菜单图标 221 和 222 包括二维或三维显示的字符、网页、图表、运动图像等，还包括图形用户界面（GUI）组件，例如，下拉菜单和按钮。此外，菜单图标 221 和 222 被分为上级图标 221 和作为一个上级图标 221 下的子图标的下级图标 222。

在显示面板 200 上显示背景屏幕 210 和覆盖在背景屏幕 210 上的多个图标 221 和 222。当用户以使用输入装置 300 的输入按钮 310 移动焦点 230 的方式从显示的图标 221 和 222 中选择一个时，背景屏幕 210 的视点被改变为用户选择的方向按钮 310 的方向。因此，存在这样的效果，屏幕图像 210 的视点看起来被改变为用户选择的方向，并且用户的观看移动到用户选择的方向。在此情况下，术语“视点”是指根据用户的观看改变的屏幕的视点。例如，可将视点分为顶部视点、底部视点、右侧视点或左侧视点。顶部视点是指用户在屏幕上方的方向观察屏幕的视点，底部视点是指用户在屏幕下方的方向观察屏幕的视点，右侧视点是指用户在屏幕的右侧方向观察屏幕的视点，

左侧视点是用户在屏幕左侧方向观察屏幕的视点。

输入装置 300 包括：功能按钮，选择并操作显示在显示面板 200 上的图标 221 和 222；以及方向按钮 310，移动焦点 230 以选择图标 221 和 222。

例如，方向按钮 310 是指用于移动焦点 230 的位置的四方向按钮；功能按钮是指用于选择并激活焦点 230 所位于的菜单图标 221 或 222 的执行按钮；返回按钮，用于使激活的图标返回其先前的状态。在此情况下，可在便携式装置 100 中附加地配备功能按钮，或者功能按钮可以是分配了功能的普通按钮（例如，分配了数字、韩国字母、英文字母等的按钮）。

如图 2B 所示，当用户使用输入装置 300 的特定功能按钮选择特定上级图标 221 时，显示与上级图标 221 相应的下级图标 222。

例如，上级图标 221 的位置沿通过位于屏幕中心的特定上级图标（例如，互联网（@）图标）的方向（即，与相应示出的箭头的方向相反的方向）移动。以与在位于屏幕中心的特定上级图标（例如，互联网（@）图标）相反的方向（示出的箭头的方向）在区域中显示下级图标 222。将下级图标 222 以弓形排列布置在上级图标 221 的周围。同时，位于屏幕中心的特定上级图标（例如，互联网（@）图标）沿 Z 轴方向（即，深度方向）移动。将下级图标 222 以圆形排列布置在上级图标 221 的周围，然后对其进行显示。

示出的箭头的方向可包括：向上方向↑、左上方向↖、右上方向↗、左侧方向←、右侧方向→、向下方向↓、左下方向↙以及右下方向↘。

此外，当通过选择特定上级图标 221 来显示下级图标 222 时，使用移动模糊显示上级图标 221 和下级图标 222 的位置的移动。术语“移动模糊”是指调整图像的角度并模糊图像从而图像看起来移动的效果。

例如，在焦点 230 位于显示的上级图标 221 的移动电话图标 221a 上的情况下，当用户使用功能按钮（例如，执行按钮）选择移动电话图标 221a 时，移动电话图标 221a 的位置沿右下方向↘移动，并且移动电话图标 221a 的下级图标 222 在左上方向↖上显示。也就是说，选择的上级图标 221 的位置沿与相应示出的箭头的方向相反的方向移动，上级图标 221 的下级图标 222 位于箭头的方向上。使用移动模糊显示上级图标 221 和下级图标 222 的位置的移动。下面将参照图 6A 和图 6B 详细描述这样的示例：当选择焦点 230 所在的上级图标时，显示下级图标。

图 3 是根据本发明的另一示例性实施例的用于提供菜单图标的便携式装

置的内部框图。

如图 3 所示，便携式装置 100 包括：按钮信号输入单元 110、按钮信号确定单元 120、焦点位置检查单元 130、背景屏幕管理器 140、图标管理单元 150、显示单元 160 以及控制单元 170。

这里使用的术语“单元”意思是，但不限于，软件组件或硬件组件，诸如执行特定任务的现场可编程门阵列（FPGA）或专用集成电路（ASIC）。单元可被方便地配置为驻留在可寻址存储介质上或被配置为在一个或者多个处理器上执行。因此，以示例的方式，单元可包括诸如软件组件、面向对象的软件组件、类组件和任务组件的组件、进程、函数、属性、程序、子程序、程序代码段、驱动、固件、微码、电路、数据、数据库、数据结构、表、数组和变量。可将在组件和单元中提供的功能组合为较少的组件和单元，或可被分成另外的组件和单元。

按钮信号输入单元 110 接收通过用户操作按钮产生的按钮信号。由用户产生的按钮信号看包括：用于选择并执行图标 221 和 222 之一的功能按钮的信号，以及用于移动位于特定菜单图标 221 或 222 的焦点 230 的方向按钮的信号。

当通过按钮信号输入单元 110 接收用户产生的信号时，按钮信号确定单元 120 确定接收的信号是功能按钮的信号还是方向按钮的信号。在此情况下，执行接收的信号是功能按钮的信号还是方向按钮的信号的确定，以确定接收的信号请求选择并执行菜单图标 221 或 222 还是请求移动焦点 230 的位置。

焦点位置检查单元 130 检查位于用户选择的菜单图标上的焦点 230 的位置，还检查通过用户操作方向按钮移动的焦点 230 的位置。

背景屏幕管理单元 140 将背景屏幕 210 的视点改变为用户选择的方向按钮 310 的方向。因此，当背景屏幕 210 的视点被改变为用户选择的方向时，存在这样的效果：用户的观看看起来被改变为用户选择的方向。

例如，当用户选择方向按钮 310 的向上方向键时，显示具有用户在屏幕上方的方向观察屏幕的视点的背景屏幕 210。也就是说，存在这样的效果：通过改变背景屏幕 210 的视点来提供用户在屏幕上方的方向观察屏幕的视点。下面将参照图 5A 到图 5D 详细描述通过操作方向按钮来移动背景屏幕。

当焦点 230 沿用户选择的方向按钮 310 的方向移动时，图标管理单元 150 根据焦点 230 的位置改变上级图标 221 的位置。在此情况下，与其他图标相

比，焦点 230 所在的图标的大小被放大。

此外，当用户选择上级图标 221 时，显示与上级图标相应的多个下级图标，并且焦点 230 位于一个下级图标 222 上。在此情况下，将多个下级图标 222 布置在上级图标 221 的周围，并沿用户选择的方向按钮 310 的方向旋转所述多个下级图标 222。此外，焦点 230 的位置是背景屏幕 210 上的特定位置，并且当下级菜单 222 移动时所述特定位置不改变。

显示单元 160 在显示面板 200 上显示已通过用户操作按钮被激活的多个图标 221 和 222 以及图像。显示单元 160 还显示基于用户操作按钮移动的焦点 230。

控制单元 170 控制构成便携式装置 100 的各个功能块 110 到 160 的操作。

图 4A 到图 4C 是示出根据本发明的另一示例性实施例的控制用于提供菜单图标的便携式装置的方法的流程图。

参照图 4A，用户使用便携式装置 100 激活菜单屏幕。

其后，用户通过操作按钮产生信号，并且按钮信号输入单元 110 接收产生的信号（S410）。按钮信号确定单元 120 确定输入的按钮信号的类型（S420）。按钮信号包括用于执行特定功能的特定功能按钮的信号或用于移动焦点 230 的位置的方向按钮的信号。

如果在 S430 确定输入的按钮信号是方向按钮的信号，则焦点位置检查单元 130 检查屏幕上的焦点 230 的当前位置，控制单元 170 从焦点 230 的位置沿输入的方向移动焦点 230 的位置（S440）。下面将参照图 4B 进行详细描述。

其后，当用户产生按钮信号（S450）时，按钮信号输入单元 110 接收产生的信号，按钮信号确定单元 120 确定输入的按钮信号的类型。

如果在 S460 确定输入的按钮信号为功能按钮的信号，则控制单元 170 激活选择的上级图标 221，并通过显示单元 160 在屏幕上显示相应的上级图标 221 及其下级图标 222。下面将参照图 4C 详细进行描述。

同时，如果在 S460 确定输入的按钮信号为方向按钮信号，则在 S440，控制单元 170 沿输入的方向从焦点 230 的当前位置移动焦点 230 的位置。其后，以相同的方式执行步骤 S450 到 S470。

同时，如果在 S430 确定输入的按钮信号为功能按钮信号，则焦点位置检查单元 130 检查焦点 230 的当前位置（S480）。控制单元 170 激活焦点 230 所在的相应上级图标 221，并通过显示单元 160 显示相应的上级图标 221 及其

下级图标 222。

因此，以分级方式在屏幕上显示上级图标 221 和下级图标 222。因此，用户可更快速和方便地知道当前选择的图标的位置。

图 4B 是示出控制用于提供菜单图标的便携式装置的方法的流程图（S440）。

如果确定用户产生的按钮信号为方向按钮的信号，则焦点位置检查单元 130 检查焦点 230 的当前位置，控制单元 170 从焦点 230 的位置沿输入的方向移动焦点 230 的位置（S441）。

其后，当沿该方向移动焦点 230 时，还沿该方向改变背景屏幕 210 的视点，并且还改变焦点 230 所在的菜单图标（例如，上级图标）的大小。因此，存在这样的效果：背景屏幕 210 的视点被改变，并且用户的观看看起来移动到用户选择的方向。此外，与其他图标相比，焦点 230 所在的菜单图标的大小被放大。下面将参照图 5A 到图 5B 详细描述通过操作方向按钮移动的菜单图标和背景屏幕。

图 4C 是示出控制用于提供菜单图标的便携式装置的方法的流程图（S470）。

如果确定用户产生的按钮信号为功能按钮的信号，则控制单元 170 激活选择的上级图标 221。因此，通过显示单元 160 显示相应的上级图标 221 及其下级图标 222（S471）。

其后，当通过按钮信号输入单元 110 输入用户产生的按钮信号时（S472），按钮信号确定单元 120 确定输入的按钮信号的类型。

如果在 S473 确定已输入方向按钮的信号，则以预定角度沿输入的方向按钮 310 的方向旋转显示的下级图标 222（S474）。在此情况下，屏幕上的焦点 230 的位置没有改变。换句话说，以预定角度旋转下级图标 222，并且焦点 230 位于特定下级图标上。下面，将参照图 6 详细描述通过操作方向按钮来旋转下级图标。

其后，当在 S475 通过按钮信号输入单元 110 输入用户产生的按钮信号时，按钮信号确定单元 120 确定输入的按钮信号的类型。

如果在 S476 确定已输入功能按钮的信号，则激活焦点 230 所在的相应下级图标 222，然后通过显示单元 160 在显示面板 200 上显示所述下级图标 222（S477）。

同时，如果在 S476 确定还没有输入功能按钮的信号，则再次执行 S474 到 S477。此外，如果在 S473 确定还没有输入方向按钮的信号，则执行 S477。

图 5A 到图 5D 是示出根据本发明的另一示例性实施例的在用于提供菜单图标的便携式装置中，通过方向按钮的操作移动菜单图标和背景屏幕的示图。

图 5A 示出这样的示例：焦点 230 位于在便携式装置 100 的显示面板 200 上显示的并且位于屏幕的中心的上级图标上。图 5B 示出这样的示例：焦点 230 位于位于屏幕的上方区域的上级图标 221 上。图 5C 示出这样的示例：焦点 230 位于位于屏幕的左侧区域的上级图标 221 上。图 5D 示出这样的示例：焦点 230 位于屏幕的下方区域的上级图标上。

如图 5A 所示，在焦点 230 位于在显示面板 220 上显示并位于屏幕的中心的上级图标（例如，互联网（@）图标）的情况下，不改变背景屏幕 210 的视点。因此，存在这样的效果：用户从背景屏幕 210 的前方观察背景屏幕 210。

此外，与其他上级图标相比，焦点 230 所在的特定上级图标（例如，互联网（@）图标）的大小被放大，并显示放大的上级图标。

如图 5B 所示，在焦点 230 位于在显示面板 200 上显示的多个上级图标 221 的上面的一个上级图标（例如，文档图标）上的情况下，存在这样的效果：背景屏幕 210 的顶部视点被改变，因此用户看起来从背景屏幕 210 的向上方向观察背景屏幕 210。

此外，与其他上级图标相比，焦点 230 所在的特定上级图标（例如，文档图标）的大小被放大，并显示放大的上级图标。

如图 5C 所示，在焦点 230 位于在显示面板 200 上显示的多个上级图标 221 的左侧的一个上级图标（例如，消息图标）上的情况下，存在这样的效果：背景屏幕 210 的视点被改变，因此用户看起来从背景屏幕 210 的左侧方向观察背景屏幕 210。

此外，与其他上级图标相比，焦点 230 所在的上级图标（例如，消息图标）的大小被放大，并显示放大的上级图标。

如图 5D 所示，在焦点 230 位于在显示面板 200 上显示的多个上级图标 221 的下方的一个上级图标上的情况下，存在这样的效果：背景屏幕 210 的视点被改变，因此用户看起来从背景屏幕 210 的向下方向观察背景屏幕 210。此外，与其他图标相比，焦点 230 所在的上级图标的大小被放大，并且显示

放大的上级图标。

图 6A 到图 6C 是示出根据本发明的另一示例性实施例的当在用于提供菜单图标的便携式装置中选择菜单图标时执行的处理的示图。

如图 6A 所示，当用户使焦点 230 位于在显示面板 200 上显示的多个上级图标 221 的左上方的一个上级图标 221a，并且选择特定上级图标 211a 时，沿右下方向↘移动上级图标 221a 的位置。

其后，在屏幕的左上区域中在上级图标 221a 的周围显示上级图标 211a 的多个下级图标 222，并且焦点 230 位于多个下级图标 222 中的一个。

其后，当用户使用方向按钮 310 从下级图标中选择特定的一个下级图标时，沿用户选择的方向旋转下级图标 222。在此情况下，焦点 230 的位置是背景屏幕 210 上的特定位置，并且当旋转下级图标 222 时焦点 230 的特定位置不改变。

如图 6B 所示，当用户使焦点 230 位于在显示面板 200 上显示的多个上级图标 221 的中心的一个上级图标 221b，并且选择上级图标 211b 时，沿 Z 轴方向（即，深度方向，“进入”屏幕或从屏幕“出来”）移动上级图标 221b 的位置。

其后，以圆形排列在上级图标 221b 的周围显示上级图标 211b 的多个下级图标 222，并且焦点 230 位于多个下级图标 222 中的一个。

其后，当用户使用方向按钮 310 选择特定的下级图标时，沿用户选择的方向按钮 310 的方向旋转下级图标 222。在此情况下，焦点 230 的位置是背景屏幕 210 上的特定位置，并且当旋转下级图标 222 时焦点 230 的特定位置不改变。因此，下级图标 222 通过焦点 230 的固定位置旋转。

如图 6C 所示，当用户使焦点 230 位于在显示面板 200 上显示的多个上级图标 221 的右侧的一个上级图标 221c，并且选择特定的上级图标 211c 的情况下，沿左侧方向←移动上级图标 221c 的位置。

其后，在屏幕的右侧区域中在上级图标 211c 的周围显示上级图标 211c 的多个下级图标 222。

其后，当用户使用方向按钮 310 选择下级图标时，沿用户选择的方向按钮 310 的方向旋转下级图标 222。在此情况下，焦点 230 的位置是背景屏幕 210 上的特定位置，并且当旋转下级图标 222 时焦点 230 的特定位置不改变。因此，下级图标 222 通过焦点 230 的固定位置旋转。

同时，当选择上级图标 221，并显示其下级图标 222 时，背景屏幕 210 的视点也被改变为显示低级图标 222 的方向。

如上所述，提供菜单图标的便携式设备和方法可具有，但不限于下面的一个或更多个示例性优点。

存在这样的优点：以分级方式在便携式终端的屏幕上显示上级图标及其下级图标。因此，用户可更容易地知道当前选择的图标的位置。

此外，可将背景屏幕的视点改变为与用户操作的方向按钮的方向相同的方向，因此，用户的观看看起来与背景屏幕的视点一起移动。

此外，当在 3D GUI 环境中改变用户的观看（即，背景屏幕的视点）时，动态地改变多面体组件和菜单图标或改变信息，从而可优化信息（例如，菜单图标），然后当用户的视点改变时将信息显示给用户。

尽管在这里描述了本发明的示例性实施例，但是本领域的技术人员应该理解，在不脱离由权利要求列举的本发明的范围和精神的情况下，可以对其进行各种改变、添加和替换。

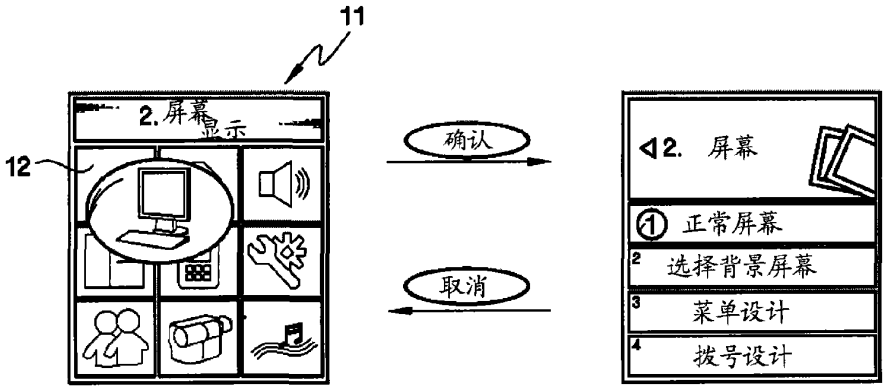


图1

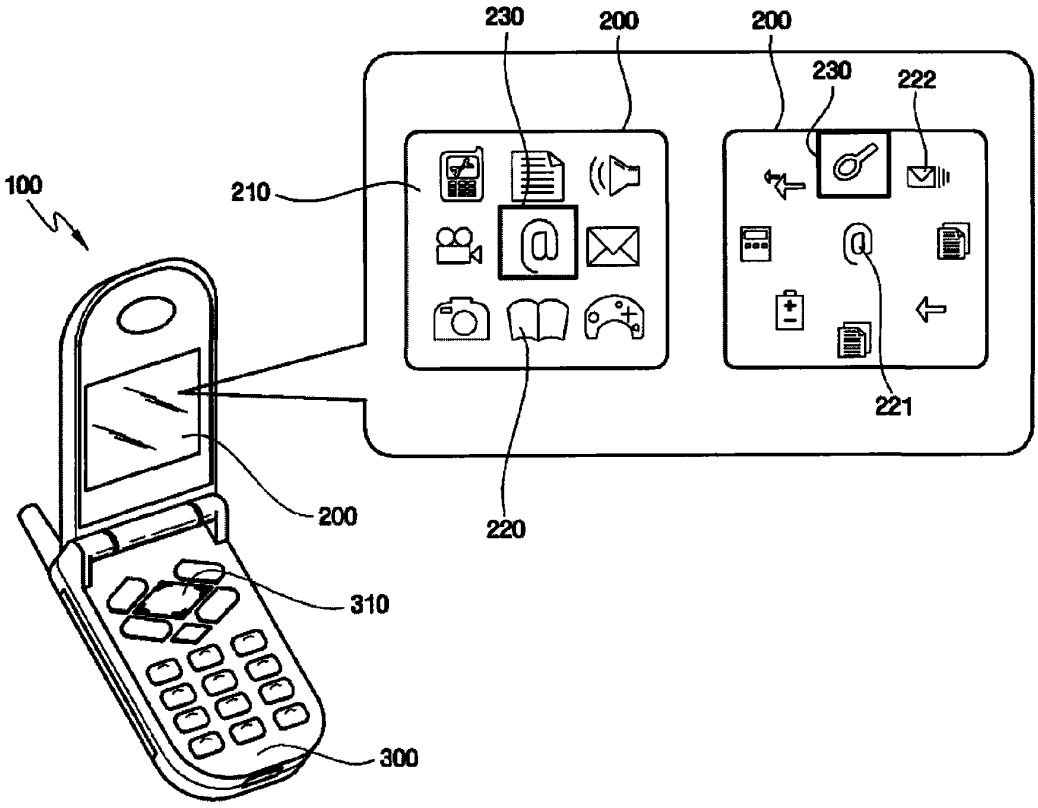


图2A

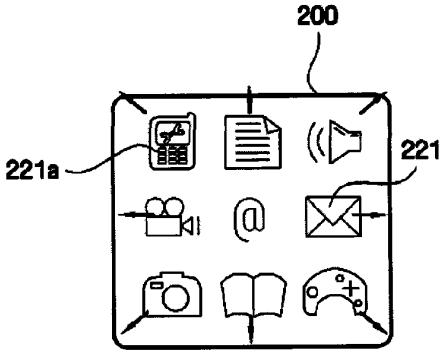


图2B

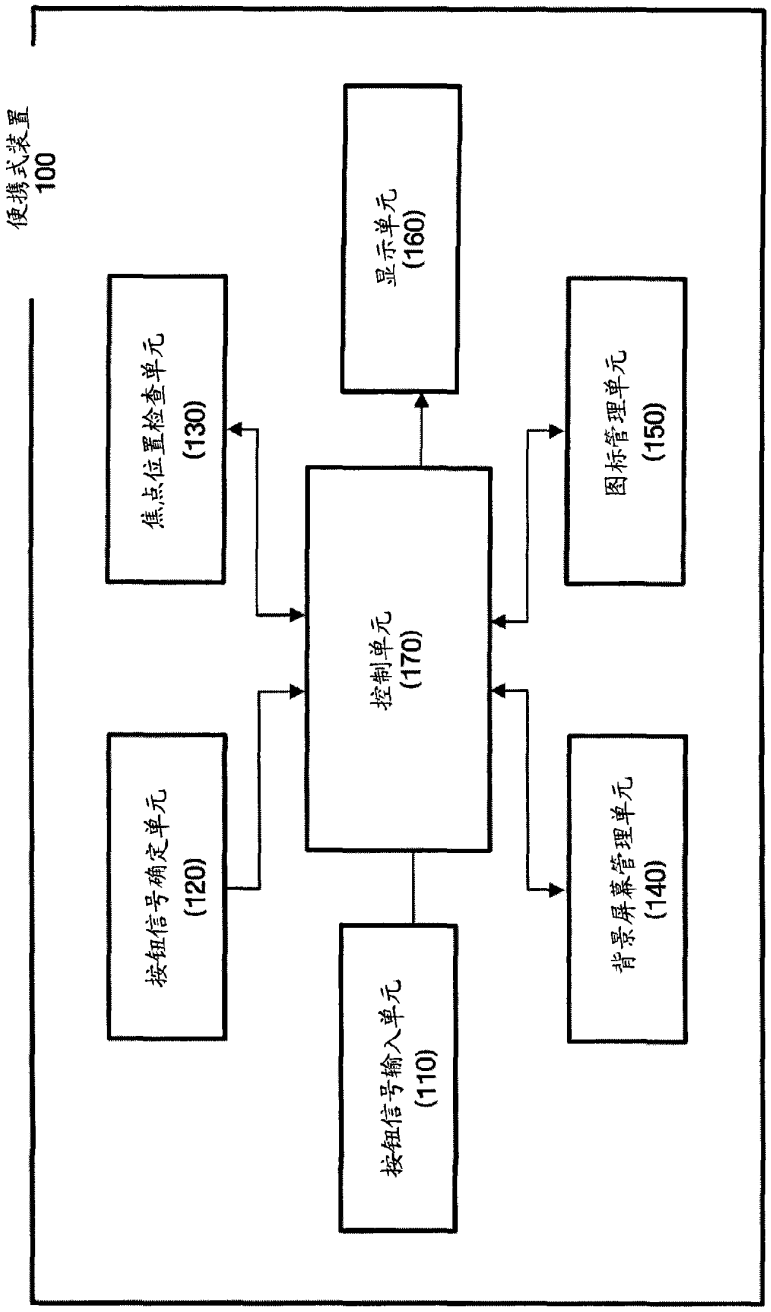

便携式装置
100
显示单元
(160)
焦点位置检查单元
(130)
图标管理单元
(150)
控制单元
(170)
按钮信号确定单元
(120)
背景屏幕管理单元
(140)
按钮信号输入单元
(110)

图3

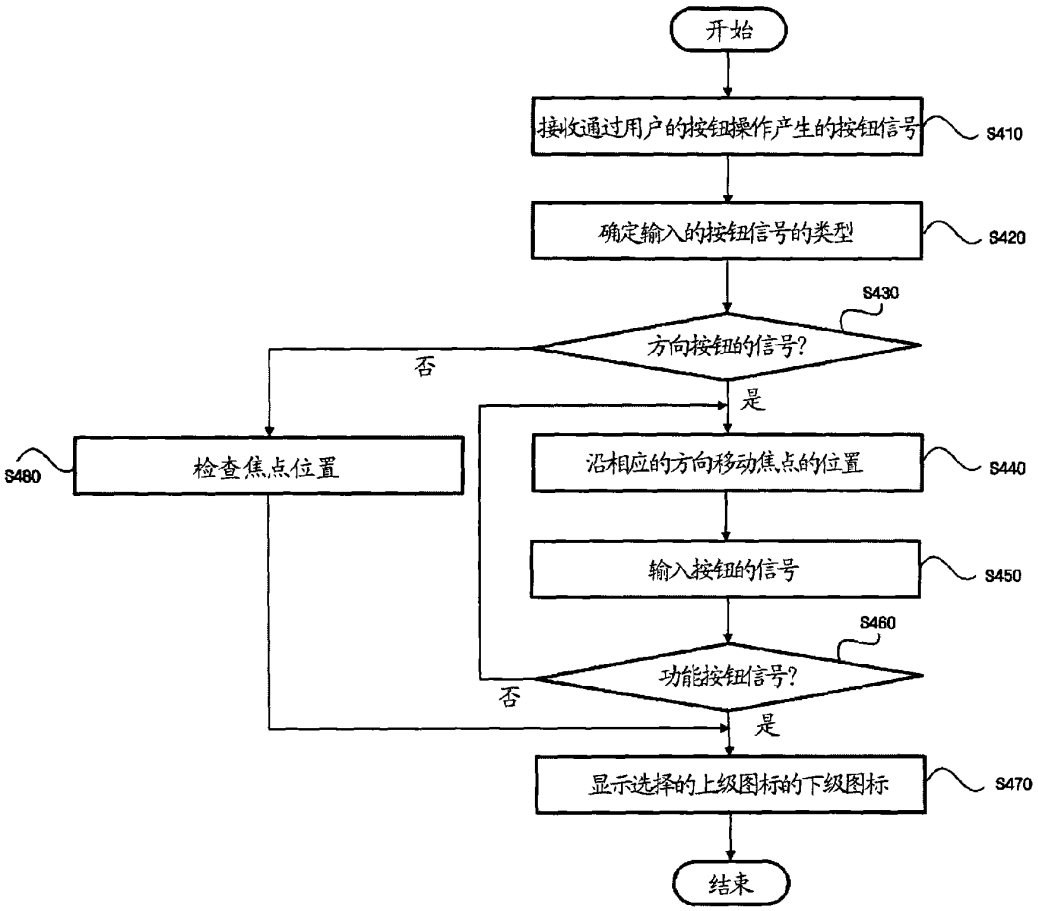

开始
接收通过用户的按钮操作产生的按钮信号
S410
确定输入的按钮信号的类型
S420
S430
方向按钮的信号?
否
是
S480
检查焦点位置
沿相应的方向移动焦点的位置
S440
输入按钮的信号
S450
S460
功能按钮信号?
否
是
显示选择的上级图标的下级图标
S470
结束

图4A

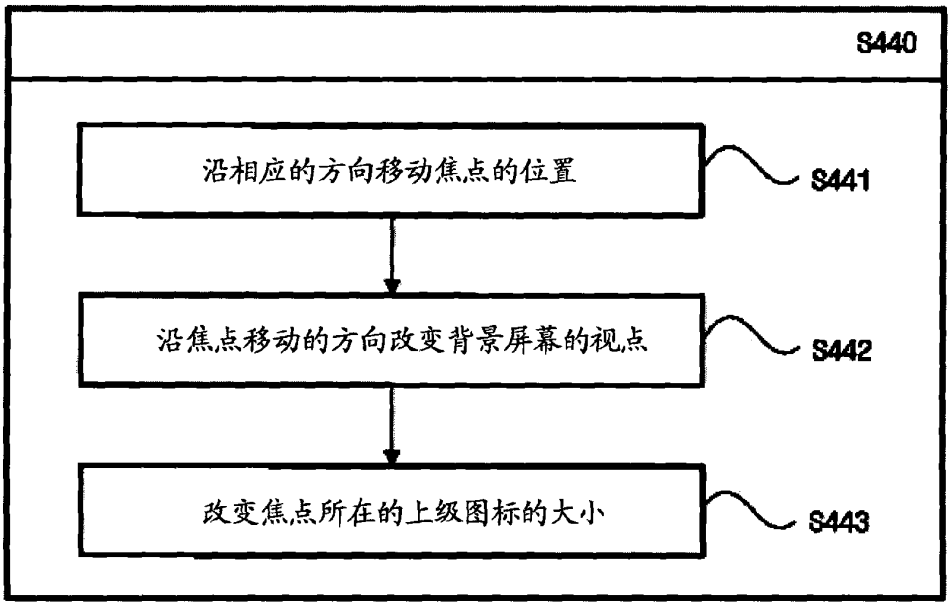

S440
沿相应的方向移动焦点的位置
S441
沿焦点移动的方向改变背景屏幕的视点
S442
改变焦点所在的上级图标的大小
S443

图4B

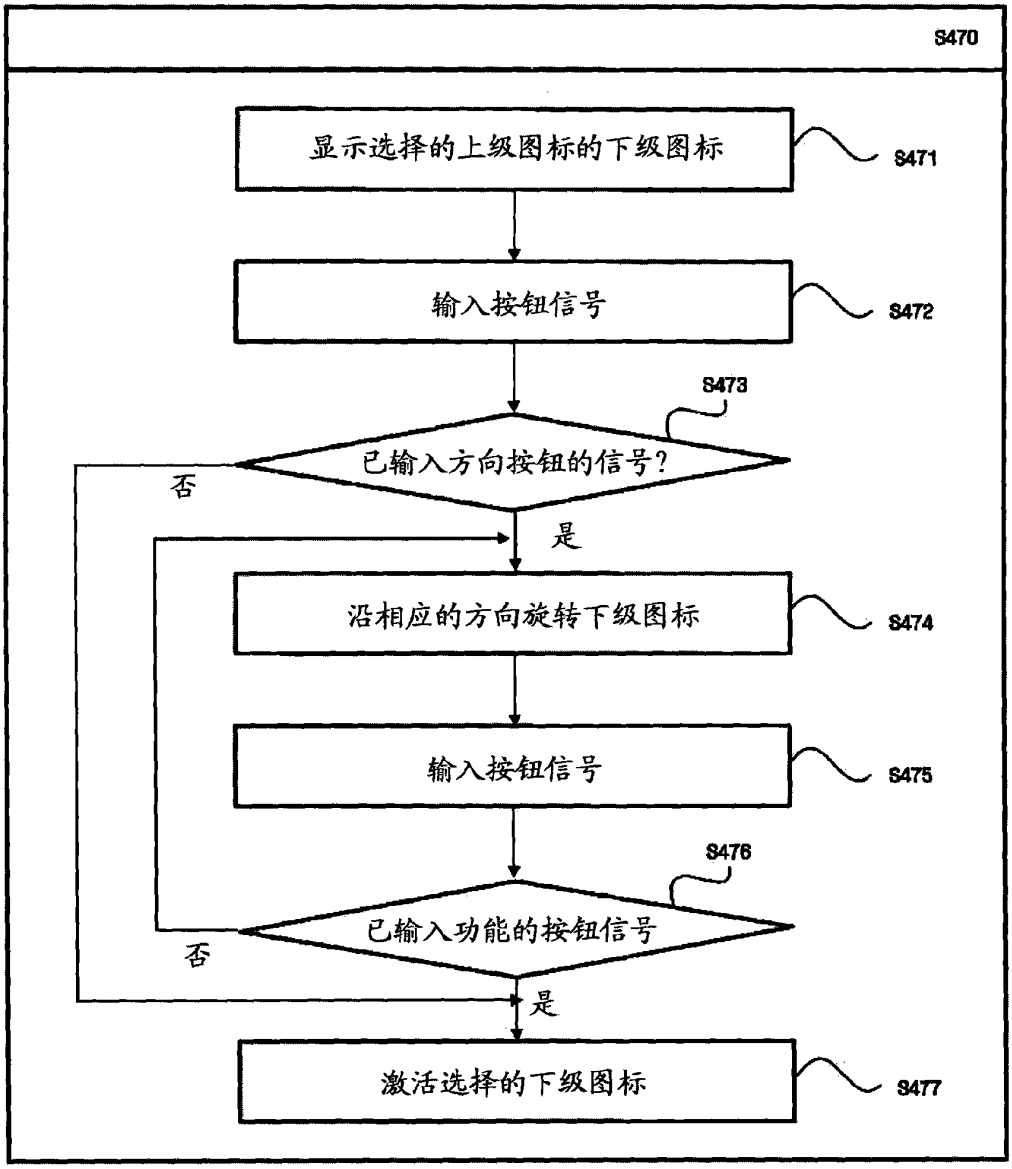

S470
显示选择的上级图标的下级图标
S471
输入按钮信号
S472
S473
已输入方向按钮的信号?
否
是
沿相应的方向旋转下级图标
S474
输入按钮信号
S475
S476
已输入功能的按钮信号
否
是
激活选择的下级图标
S477

图4C

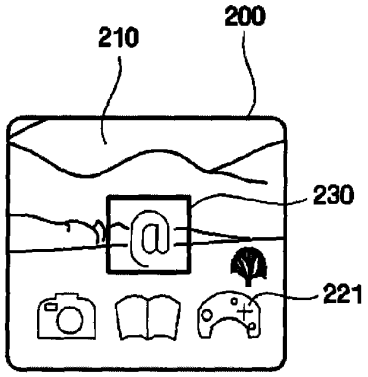


图5A

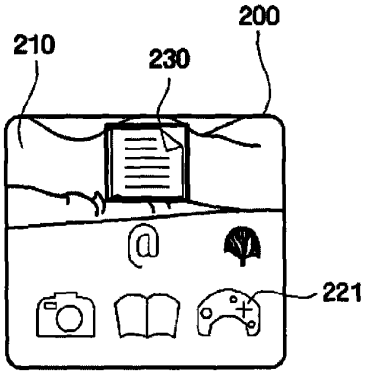


图5B

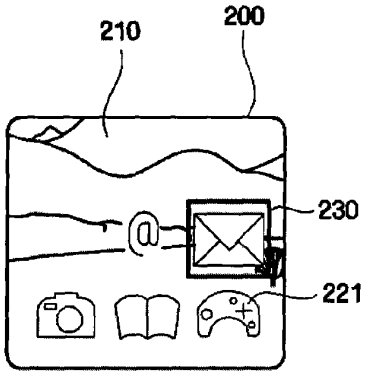


图5C

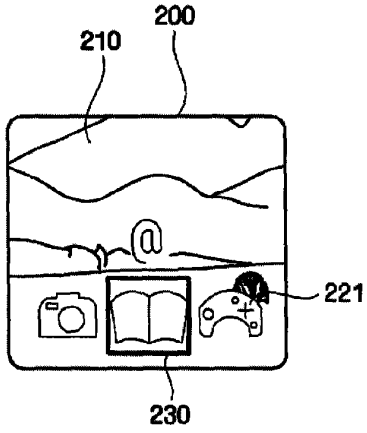


图5D

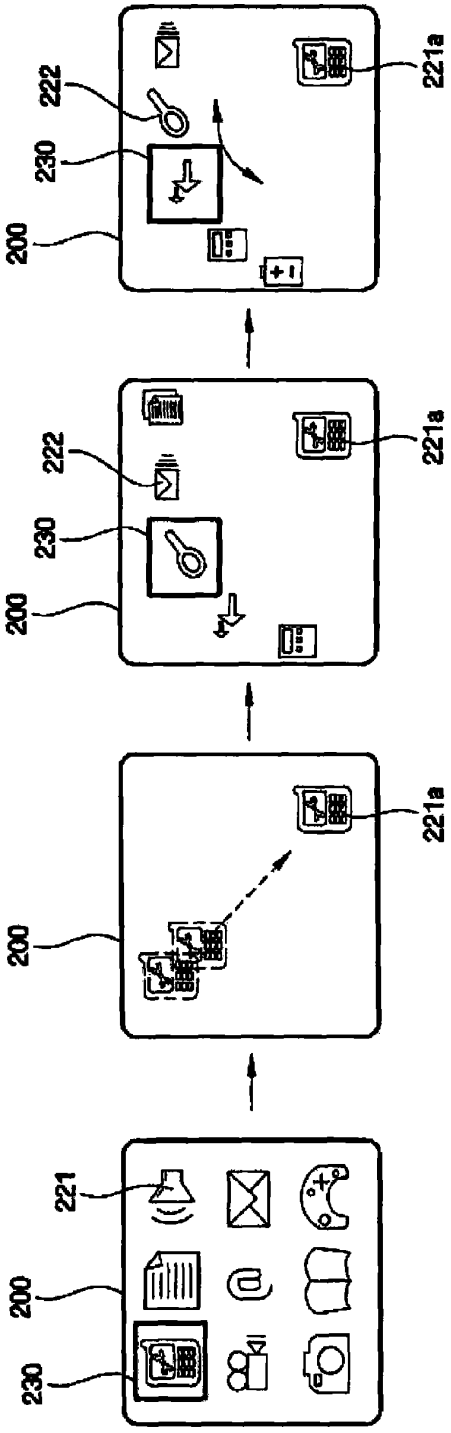


图6A

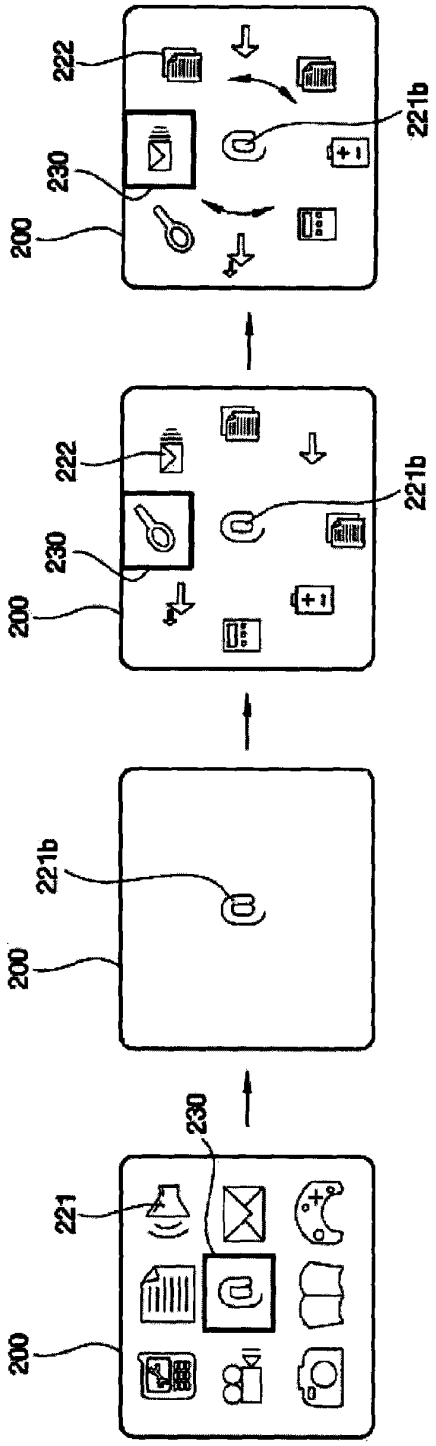


图6B

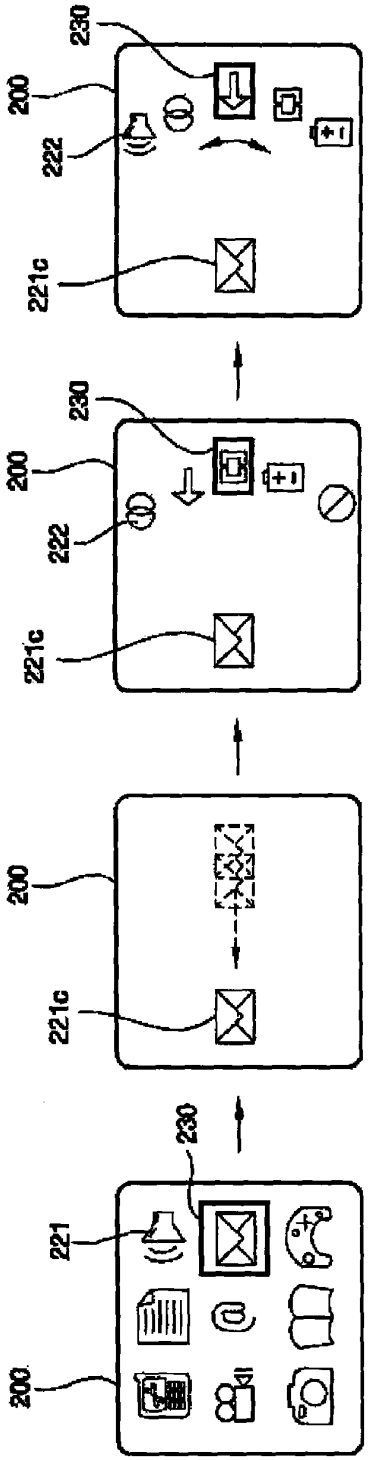


图6C

Espacenet

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Mobile terminal having foldable display and operation method for the same

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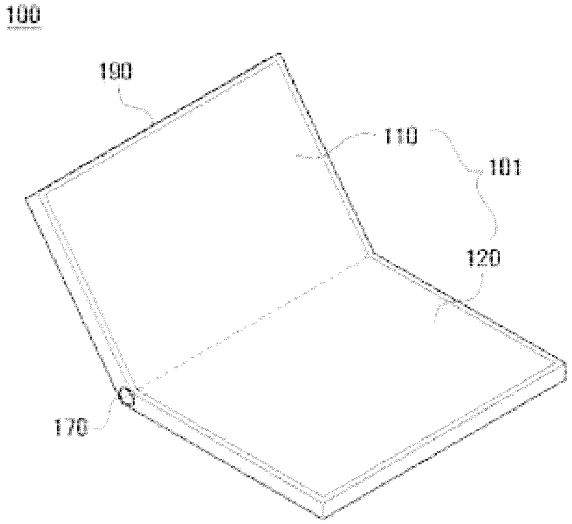
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Abstract of CN101788850 (A)

A mobile terminal having a foldable display and an operation method for the same are disclosed. The foldable display unit includes a plurality of display zones, wherein the application of program depends on the degree of folding angle of the display unit, and the display unit displays on its screen according to the folding angle. Further, variations of closing and opening motion of the foldable display unit triggers different modes of operation and displays.

FIG . 1



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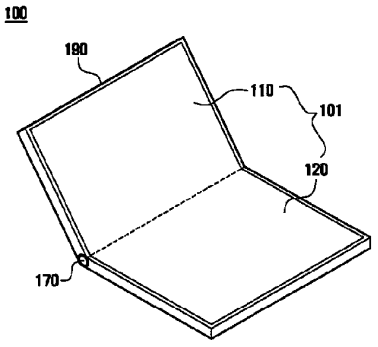
权利要求书 3 页 说明书 11 页 附图 6 页

(54)发明名称

具有可折叠显示器的移动终端及其操作方法

(57)摘要

公开了一种具有可折叠显示器的移动终端及其操作方法。可折叠显示器包括多个显示区，其中，程序的应用取决于显示单元的折叠角度，显示单元根据折叠角度在其屏幕上进行显示。此外，可折叠显示单元的关闭动作和打开动作的变化触发不同模式的操作和多种显示。



CN 101788850 A

1. 一种用于提供移动终端的不同操作模式的方法，所述移动终端具有可折叠显示单元，所述可折叠显示单元具有多个显示区，所述方法包括：

检测相邻显示区之间的折叠角度；

根据检测的折叠角度，激活应用程序或控制激活的应用程序的执行。

2. 根据权利要求 1 所述的方法，还包括：收集在所述多个显示区中的至少一个显示区上发生的触摸事件。

3. 根据权利要求 2 所述的方法，其中，激活步骤包括下列步骤中的一个：

(a) 基于功能表执行应用程序控制，所述功能表根据触摸事件和折叠事件中的至少一个指定应用程序控制操作；

(b) 当第一显示区和第二显示区之间的折叠角度大于第一预定角度并小于第二预定角度时，激活预设的第一应用程序，并在第一显示区上输出与第一应用程序相关的窗口；

(c) 当第一显示区和第二显示区之间的折叠角度大于第一预定角度并小于第二预定角度时，激活预设的第一应用程序并在第一显示区上输出与第一应用程序相关的窗口，并且激活预设的第二应用程序并在第二显示区上输出与第二应用程序相关的窗口；

(d) 当第一显示区和第二显示区之间的折叠角度等于给定角度时，在第一显示区和第二显示区两者上以全屏模式显示与第一应用程序和第二应用程序相关的窗口中的一个窗口；

(e) 当第一显示区和第二显示区之间的折叠角度等于预先指定的角度时，识别激活的应用程序的预设优先级，在第一显示区和第二显示区两者上以全屏模式输出与最高优先级的应用程序相关的窗口；

(f) 当第一显示区和第二显示区之间的折叠角度等于所述预先指定的角度时，识别显示区的预设优先级，在第一显示区和第二显示区两者上以全屏模式输出在最高优先级的显示区上显示的窗口；

(g) 当第一显示区和第二显示区之间的折叠角度小于所述预先指定的角度时，在第一显示区上输出当前以全屏模式显示在第一显示区和第二显示区两者上的窗口；

(h) 当第一显示区和第二显示区之间的折叠角度小于所述预先指定的角度时，在第一显示区上输出当前以全屏模式显示在第一显示区和第二显示区两者上的窗口，并且激活最近去激活的应用程序，在第二显示区上输出与重新激活的应用程序相关的窗口。

4. 根据权利要求 1 所述的方法，其中，激活步骤包括：当第一显示区和第二显示区之间的折叠角度从第一角度变为小于第一角度的第二角度然后返回到第一角度时，激活预设的功能。

5. 根据权利要求 4 所述的方法，其中，激活步骤还包括下列步骤中的一个：

执行特定功能，所述特定功能复制在第一显示区上列出的内容并将复制的版本移动到另一显示区；

当第一显示区和第二显示区之间的折叠角度保持大于第一角度，并且感测到用于选择在第一显示区上列出的内容的触摸事件时，复制选择的内容并将复制的版本移动到另一显示区。

6. 根据权利要求 1 所述的方法，其中，激活步骤包括下列步骤中的一个：

(a) 当第一显示区和第二显示区之间的折叠角度从第一角度变为小于第一角度的第二

角度然后返回到第一角度时，将在第一显示区上列出的内容和在第二显示区上列出的另一内容一起组合为单个内容；

(b) 当第一显示区和第二显示区之间的折叠角度保持大于第一角度时，激活预设的第一应用程序，在第一显示区上输出与第一应用程序相关的窗口，激活与第一应用程序链接的应用程序，并在第二显示区上输出与链接的应用程序相关的窗口；

(c) 根据两个相邻显示区之间的折叠角度的变化激活预设的应用程序中的至少一个应用程序，并且在所述多个显示区中的一个显示区上输出与激活的应用程序相关的窗口；

(d) 当第一显示区和第二显示区之间的折叠角度等于第二角度时，在第一显示区和第二显示区两者上以全屏模式输出与当前运行的应用程序相关的窗口；

(e) 在第一显示区上输出与第一应用程序相关的窗口，在第二显示区上输出与第二应用程序相关的窗口，并且按照协同方式处理在第一显示区和第二显示区上发生的触摸事件。

7. 根据权利要求 6 所述的方法，其中，在输出窗口的过程中按照协同方式处理触摸事件的步骤包括：当在第一显示区上列出的菜单项上发生触摸事件并在第二显示区上列出的内容上发生触摸事件以进行选择时，将在第二显示区上选择的内容朝向第一显示区上的菜单项移动。

8. 根据权利要求 1 所述的方法，还包括下列步骤中的至少一个：

根据移动终端的放置状态产生放置事件，并且根据产生的放置事件控制应用程序的激活或当前激活的应用程序的执行；

当产生放置事件时，对安装在所述显示单元上的触摸传感器去激活。

9. 一种具有可折叠显示器的移动终端，包括：

显示单元，具有多个显示区；

角度传感器，感测相邻显示区之间的折叠角度；

控制单元，根据折叠角度激活应用程序或控制激活的应用程序的执行。

10. 根据权利要求 9 所述的移动终端，还包括下列中的至少一个：

铰链单元，使得显示单元能够被折叠和展开；

触摸传感器，根据在所述多个显示区中的至少一个显示区上发生的触摸产生触摸事件；

存储单元，存储功能表，所述功能表根据触摸事件和折叠事件中的至少一个限定应用程序控制操作。

11. 根据权利要求 9 所述的移动终端，其中，控制单元包括：

感测检测器，识别用于指示第一显示区和第二显示区之间的折叠角度的折叠事件；

功能控制器，根据识别的折叠事件激活预设的应用程序中的至少一个应用程序，并且在第一显示区和第二显示区中的至少一个上输出与激活的应用程序相关的至少一个窗口。

12. 根据权利要求 11 所述的移动终端，其中，功能控制器控制下列中的至少一个：

(a) 当第一显示区和第二显示区之间的折叠角度等于预先指定的角度时，在第一显示区和第二显示区两者上以全屏模式输出与第一应用程序和第二应用程序相关的窗口中的至少一个窗口；

(b) 根据应用程序或显示区的预设优先级，以全屏模式输出与最高优先级的应用程序

或最高优先级的显示区相关的窗口；

(c) 当第一显示区和第二显示区之间的折叠角度从第一角度变为小于第一角度的第二角度然后返回到第一角度时，复制在第一显示区上列出的内容并将复制的版本移动到另一显示区；

(d) 当第一显示区和第二显示区之间的折叠角度保持大于预先指定的角度，并且在第一显示区上列出的内容上发生触摸事件以进行选择时，复制在第一显示区上选择的内容并将复制的版本移动到另一显示区；

(e) 当第一显示区和第二显示区之间的折叠角度从第一角度变为小于第一角度的第二角度然后返回到第一角度时，将在第一显示区上列出的内容与在第二显示区上列出的另一内容组合，并存储组合的内容；

(f) 当存在与预设的第一应用程序链接的第二应用程序时，在第一显示区上输出与第一应用程相关的窗口，并且在第二显示区上输出与第二应用程序相关的窗口；

(g) 根据两个相邻显示区之间的折叠角度的变化激活预设的应用程序中的一个应用程序，并且在所述多个显示区中的一个显示区上输出与激活的应用程序相关的窗口。

13. 根据权利要求 11 所述的移动终端，其中，功能控制器进行如下控制：在第一显示区上输出与第一应用程序相关的窗口，在第二显示区上输出与第二应用程序相关的窗口，并且按照协同方式处理在第一显示区和第二显示区上发生的触摸事件。

14. 根据权利要求 13 所述的移动终端，其中，功能控制器进行如下控制：当在第一显示区上列出的菜单项上发生触摸事件并在第二显示区上列出的内容上发生触摸事件以进行选择时，将在第二显示区上选择的内容朝向第一显示区上的菜单项移动。

15. 根据权利要求 9 所述的移动终端，其中，角度传感器根据移动终端的放置状态产生放置事件，其中，控制单元根据产生的放置事件控制应用程序的激活或当前激活的应用程序的执行，当产生放置事件时，控制单元对安装在所述显示单元上的触摸传感器去激活。

具有可折叠显示器的移动终端及其操作方法

技术领域

[0001] 本发明总体上涉及一种具有可折叠显示器的移动终端，更具体地讲，涉及这样一种具有可折叠显示器的移动终端及其操作方法，该可折叠显示器能够以用户友好和方便的方式提供各种功能。

背景技术

[0002] 近年来，移动终端已经被广泛使用，并且提供与例如通过 MP3 播放器重放音频文件、通过数字相机模块捕获图像以及移动游戏或街机游戏相关的各种功能。

[0003] 移动终端配备有显示单元，由于移动终端的便携性，显示单元具有有限的尺寸。为了在支持便携性的同时克服尺寸和空间限制，已经开发了具有可折叠显示单元的移动终端。

[0004] 具有可折叠显示单元的移动终端具有折叠器类型的机械结构。这样的移动终端不得不执行用于在显示单元的中部去除图像不连续并使得可折叠区域附近模糊的特定操作，从而即使在显示单元以特定角度折叠时也产生连续图像。但是，很难将单独的键区安装在具有这样的可折叠显示单元的现有移动终端中。即，为键区分配单独的安装空间会妨碍移动终端的便携性和小型化。

发明内容

[0005] 针对上述问题作出本发明，并且本发明提供一种具有可折叠显示单元的移动终端及其操作方法，其能够响应于根据折叠角度产生的输入信号按照用户友好和方便的方式执行各种功能。

[0006] 根据本发明的示例性实施例，一种具有可折叠显示器的移动终端包括：显示单元，具有多个连接的显示区；角度传感器，感测相邻显示区之间的折叠角度，并且根据折叠角度产生折叠事件；控制单元，根据来自角度传感器的折叠事件激活应用程序或控制激活的应用程序的执行。

[0007] 根据本发明的另一示例性实施例，一种移动终端的操作方法，所述移动终端具有可折叠显示单元，所述可折叠显示单元具有多个连接的显示区，所述方法包括：通过感测相邻显示区之间的折叠角度产生折叠事件；通过根据产生的折叠事件激活应用程序或控制激活的应用程序的执行，来执行应用程序控制。

[0008] 本发明的操作方法使得具有可折叠显示单元的移动终端的用户能够通过以特定角度折叠移动终端来执行期望的功能。另外，当显示单元包括触摸屏时，用户可按照更容易和直观的方式操纵移动终端。

附图说明

[0009] 从下面结合附图的详细描述中，本发明的特点和优点将更清楚，其中：

[0010] 图 1 示出了根据本发明示例性实施例的具有可折叠显示单元的移动终端；

[0011] 图 2 是图 1 中的移动终端的框图；

[0012] 图 3 是移动终端中的控制单元的详细框图；

[0013] 图 4 示出了根据折叠角度的移动终端的操作；

[0014] 图 5 示出了在移动终端上执行应用程序的示例；

[0015] 图 6 示出了在移动终端上执行应用程序的另一示例；

[0016] 图 7 示出了在移动终端上执行应用程序的又一示例；

[0017] 图 8 是根据本发明另一示例性实施例的移动终端的操作方法的流程图。

具体实施方式

[0018] 在下文中参照附图来详细描述本发明的示例性实施例。相同的标号在附图中始终用于表示相同或相似的部件。为了清楚和简明，这里所包含的公知功能和结构的详细描述会被省略，以避免使得本发明的主题内容模糊。可定义特定术语，以按照最佳方式描述本发明。因此，说明书和权利要求书中使用的特定术语或词语的含义不应限于字面或通常使用的含义，而是应该根据本发明的精神被解释。各种实施例的描述应被解释为仅仅是示例性的和示意性的，没有描述本发明的每种可能实例。因此，应该理解，可进行各种改变，可对本发明的部件进行同等物替换。

[0019] 图 1 示出了根据本发明示例性实施例的具有可折叠显示单元的移动终端 100。在本说明书中，假设显示单元包括多个显示区，相邻的显示区能够以特定角度折叠或者展开，每个显示区由触摸屏制成。但是，用于对多个显示区产生输入信号或事件的输入装置不仅限于触摸屏。即，为了产生输入信号，可为移动终端设置单独的键区，或者可使用可移除键盘或键区。

[0020] 参照图 1，移动终端 100 可包括：可折叠显示单元 101；框架 190，包围显示单元 101；铰链单元 170，使显示单元 101 能够被折叠和展开；触摸传感器（未示出），附在显示单元 101 上。

[0021] 如下文所解释的，具有上述结构的移动终端 100 可根据显示单元 101 的折叠角度执行预设功能，并且可提供方便的用户接口，所述用户接口使得在两个显示区上运行的应用程序能够系统互通。

[0022] 显示单元 101 是可折叠的，并且输出与移动终端 100 的功能相关的屏幕。例如，显示单元 101 可输出引导屏幕、空闲屏幕、菜单屏幕或程序激活屏幕。可使用柔性液晶显示器 (FLCD) 技术来实现显示单元 101，并且显示单元 101 可包括 LCD 控制器、存储数据的存储器以及 LCD 部件。具体地，显示单元 101 可相对于铰链单元 170 被部分折叠或完全折叠。即，显示单元 101 的两个相邻显示区彼此可形成 0 度到 360 度的角度。显示单元 101 可包括第一触摸屏 110 和第二触摸屏 120。第一触摸屏 110 和第二触摸屏 120 在一侧被接合在一起，并且当第一触摸屏 110 和第二触摸屏 120 以 180 度的折叠角度被完全展开时，第一触摸屏 110 和第二触摸屏 120 呈现为单个宽屏幕。第一触摸屏 110 和第二触摸屏 120 中的每个可包括显示面板以及布置在显示面板上的触摸传感器。

[0023] 框架 190 包围可折叠显示单元 101，并使用铰链单元 170 支撑显示单元 101 的折叠。除了显示单元 101 和铰链单元 170 之外，框架 190 还提供可安装印刷电路板的空间，所述印刷电路板包含控制单元、存储单元、音频处理单元和接口单元。框架 190 可由框格

(sash) 或塑料材料制成。框架 190 可包括诸如钩子的结合机构，当显示单元 101 以 0 度或 360 度的折叠角度完全折叠时，该结合机构固定显示单元 101。当第一触摸屏 110 和第二触摸屏 120 均包括 LC（液晶）显示面板时，框架 190 还可提供用于容纳背光单元和光学片 (optical sheet) 的空间，背光单元用于照亮 LC 显示面板，光学片用于使光散射和集中。

[0024] 布置在框架 190 上的铰链单元 170 使得框架 190 和可折叠显示单元 101 能够折叠。实际上，由于框架 190 容纳显示单元 101，所以框架 190 的折叠导致显示单元 101 的折叠。即，当用户相对于铰链单元 170 折叠框架 190 时，显示单元 101 被相应折叠。铰链单元 170 可支撑与显示单元 101 最大折叠角度对应的旋转。接着，给出移动终端 100 的详细描述。

[0025] 图 2 是移动终端 100 的框图。在本说明书中，假设移动终端 100 具有两个显示区，每个显示区包括触摸屏。但是，应该注意，本发明的教导可应用于具有另外数量的显示区的终端。

[0026] 参照图 2，移动终端 100 包括第一触摸屏 110、第二触摸屏 120、音频处理单元 130、接口单元 140、存储单元 150、容纳有角度传感器 180 的铰链单元 170 以及控制单元 160。

[0027] 具有上述配置的移动终端 100 可通过铰链单元 170 中的角度传感器 180 感测显示面板的折叠角度，并且基于感测的折叠角度选择性地控制应用程序的激活以及激活的应用程序的操作。

[0028] 第一触摸屏 110 可包括：显示面板，在控制单元 160 的控制下产生图像；触摸传感器，产生与用户的触摸事件相应的输入信号。第一触摸屏 110 容纳在框架 190 中，以相对于铰链单元 170 可按照预设角度旋转。第一触摸屏 110 可显示各种屏幕，诸如用于激活存储在存储单元 150 中的应用程序之一的应用程序相关屏幕、用于浏览相片的相片相关屏幕、用于合成消息或备忘录的消息屏幕以及用于与各种菜单项相关的图标的图标屏幕。第一触摸屏 110 检测在显示的屏幕中的一点处发生的触摸事件，并将检测的触摸事件发送到控制单元 160。第一触摸屏 110 与第二触摸屏 120 相邻，并与第二触摸屏 120 接合。

[0029] 第二触摸屏 120 的结构可与第一触摸屏 110 的结构相同。在用户或控制单元 160 的控制下，第二触摸屏 120 可输出与第一触摸屏 110 的屏幕相同的屏幕，或者可输出与第一触摸屏 110 的屏幕不同的屏幕。例如，当第一触摸屏 110 显示与第一应用程序的激活相关的屏幕时，第二触摸屏 120 显示与第二应用程序的激活相关的另一屏幕。或者，第一触摸屏 110 和第二触摸屏 120 可显示与同一应用程序相关的不同屏幕。例如，当第一触摸屏 110 输出与视频文件的重放相关的视频图像时，第二触摸屏 120 可显示包含用于控制视频文件的重放的按钮的屏幕。第二触摸屏 120 与第一触摸屏 110 相邻，并与第一触摸屏 110 接合。随后进一步描述第一触摸屏 110 和第二触摸屏 120 的使用。

[0030] 音频处理单元 130 包括：扬声器 SPK，再现在通话期间接收的音频数据；传声器 MIC，收集音频信号，诸如用户的语音信号。具体地，音频处理单元 130 可再现根据显示单元 101 的折叠角度执行的应用程序的音频信号。例如，当音频文件被映射到显示单元 101 的特定折叠角度时，按照所述折叠角度折叠显示单元 101 将导致音频文件在控制单元 160 的控制下通过音频处理单元 130 被重放。

[0031] 接口单元 140 提供通向另一移动终端或外部存储器芯片的通信路径。接口单元 140 可用作用于无线通信的射频单元，并且可用作用于串行通信的 USB（通用串行总线）接口或 UART（通用异步接收器 / 接收器）接口。接口单元 140 可建立到外部移动终端、存储

器芯片、移动通信系统和互联网网络中的一个的通信信道，并且可通过该通信信道接收诸如图像文件或音频文件的内容。接口单元 140 可用作广播接收模块，并且将从广播网络接收的广播信号发送到控制单元 160。

[0032] 存储单元 150 存储与本发明的功能相关的应用程序、用于操作角度传感器的应用程序、用于重放各种存储的文件的应用程序以及用于操作第一触摸屏 110 和第二触摸屏 120 的键映射或菜单映射。键映射可包括键盘映射、3×4 键映射、标准键盘键映射、控制键映射以及本领域技术人员已知的用于控制当前激活的应用程序的其它形式的映射。菜单映射可包括用于控制当前激活的应用程序的菜单映射以及包含移动终端的各种菜单项的菜单映射。可根据设计者给定的设置输出键映射和菜单映射，或者可根据用户设置改变键映射和菜单映射。存储单元 150 可提供缓冲器，缓冲器临时存储角度传感器和触摸屏收集的感测数据。存储单元 150 可包括程序区和数据区。

[0033] 程序区可存储用于引导和操作移动终端 100 的操作系统 (OS) 以及各种应用程序（诸如用于重放各种文件的应用程序、用于处理呼叫的应用程序、用于连接到互联网服务器的 web 浏览器、用于重放 MP3 音频资料的应用程序、用于输出照片和图像的应用程序以及用于重放运动图像的应用程序）。具体地，程序区可存储用于操作角度传感器 180 的应用程序以及用于操作触摸屏上的触摸传感器的应用程序。

[0034] 数据区可存储移动终端 100 的用户产生的数据、通过接口单元 140 接收的内容以及用过第一触摸屏 110 或第二触摸屏 120 输入的用户数据。具体地，数据区可存储功能表。功能表定义来自触摸传感器的触摸事件或来自角度传感器 180 的折叠角度与控制命令之间的映射。例如，功能表可包括 90 度的折叠角度与控制命令“将菜单图标输出到第一触摸屏和第二触摸屏中的至少一个”之间的映射。在这种情况下，当角度传感器 180 产生指示 90 度的折叠角度的感测信号时，菜单图标被输出到第一触摸屏 110 和第二触摸屏 120 中的至少一个。功能表可包括 180 度的折叠角度与控制命令“在第一触摸屏和第二触摸屏中的至少一个上重放通过触摸事件预选择或选择的视频文件”之间的映射。在这种情况下，当角度传感器 180 产生指示 180 度的折叠角度的感测信号时，选择的视频文件在第一触摸屏 110 和第二触摸屏 120 中的至少一个上被重放。功能表可包括控制命令“根据显示单元 101 的特定折叠角度输出键映射或菜单映射”。如上所述，功能表包含用于根据检测的触摸事件和角度传感器 180 感测的折叠角度激活应用程序或控制激活的应用程序的操作的控制命令。随后进一步描述基于功能表的应用激活和控制。

[0035] 角度传感器 180 安装在铰链单元 170 中，测量显示单元 101 的折叠角度，并将测量的角度值发送到控制单元 160。可使用地磁传感器、陀螺仪传感器、加速度传感器或本领域已知的能够测量相对于地面的角度的其它传感器，来实现角度传感器 180。还可使用机械结构来实现角度传感器 180。例如，可使用具有规则凹槽或突起以及凹陷的铰链形状的构件或者齿轮形状的构件来测量显示单元 101 的折叠角度。当使用地磁传感器或陀螺仪传感器实现角度传感器 180 时，角度传感器 180 不仅感测显示单元 101 的折叠角度，还感测移动终端 100 的放置角度。例如，当显示单元 101 折叠 90 度的角度时，角度传感器 180 可产生指示 90 度角度的折叠事件，并将该折叠事件发送到控制单元 160。其后，当移动终端 100 被竖直放置，使得第一触摸屏 110 的一侧和第二触摸屏 120 的一侧位于同一表面上时，角度传感器 180 可产生指示该放置角度的事件，并将产生的事件发送到控制单元 160。为了实现该目

的，角度传感器180可包括：第一感测部件，感测显示单元101的折叠角度，并产生相应的事件；第二感测部件，感测移动终端100的放置角度，并产生相应的事件。角度传感器180可包括单个感测部件，该感测部件能够感测显示单元101的折叠角度以及移动终端100的放置角度，并产生相应的事件。

[0036] 控制单元160控制对移动终端100的各个部件的供电，并控制这些部件之间的信号交换以执行必要的功能。具体地，控制单元160基于存储在存储单元150中的功能表按照各种方式控制移动终端100的操作。为了实现该目的，如图3所示，控制单元160包括感测检测器161和功能控制器163。

[0037] 感测检测器161检测由第一触摸屏110的第一触摸传感器产生的触摸事件、由第二触摸屏120的第二触摸传感器产生的触摸事件、由用于测量显示单元101的折叠角度的角度传感器180产生的折叠事件以及由用于测量移动终端100的放置角度的角度传感器180产生的放置事件，并且感测检测器161将检测的事件发送到功能控制器163。感测检测器161可控制第一触摸传感器、第二触摸传感器和角度传感器180被激活的时间点。例如，感测检测器161可在移动终端100开启后激活角度传感器180。当角度传感器180测量的显示单元101的折叠角度大于或等于预设角度时，感测检测器161可激活第一触摸传感器和第二触摸传感器。感测检测器161可响应于第一触摸传感器和第二触摸传感器（即，用户）产生的特定触摸事件对角度传感器180去激活。在激活第一触摸传感器和第二触摸传感器之后，感测检测器161可在控制单元160的控制下将键映射或菜单映射输出到显示单元101。这里，感测检测器161可通过将第一触摸传感器和第二触摸传感器之一产生的触摸事件与键映射或菜单映射进行匹配来识别选择的键或菜单项，并向功能控制器163通知选择的键或菜单项。

[0038] 功能控制器163可从感测检测器161接收各种事件，所述各种事件包括折叠事件、放置事件、由第一触摸传感器产生的触摸事件以及由第二触摸传感器产生的触摸事件，并且功能控制器163可根据接收的事件控制当前激活的应用程序或激活新的应用程序。此外，功能控制器163可参照存储在存储单元150中的功能表，并基于当前事件和功能表控制当前激活的应用程序的操作或新的应用程序的激活。下面参照附图进一步描述功能控制器163的应用程序控制。

[0039] 如上所述，具有可折叠显示单元的移动终端采用角度传感器来测量显示单元的折叠角度，并根据角度传感器测量的折叠角度控制激活的应用程序的操作或激活新的应用程序。另外，移动终端可在由两个触摸传感器分别操纵的两个显示区上以独立或统一的方式执行应用程序。

[0040] 图4示出了根据折叠角度的移动终端的操作。如在下面的描述中，选择并使用了包括0、90、120和180度的代表性折叠角度。但是，本发明不限于这样的角度，其它角度（不限于诸如30度、60度、150度、210度、240度、270度、300度和330度）也可被用作折叠角度。在移动终端中，可从0度开始以5度或10度的增量感测折叠角度，以进行应用程序控制。

[0041] 参照图4，示出了折叠状态A(120度的折叠角度)、折叠状态B(180度的折叠角度)、折叠状态C(0度的折叠角度)和折叠状态D(90度的折叠角度)。移动终端最初处于第一触摸屏和第二触摸屏彼此面对的折叠状态C。在折叠状态C下，折叠角度为0度，如果

应用程序处于执行之中，则移动终端可停止应用程序的执行。例如，假设移动终端在折叠状态 A 或 D 下正在重放视频文件。其后，当移动终端转变为折叠状态 C 时，移动终端可暂停视频文件的重放。更具体地，当移动终端从折叠状态 A 或折叠状态 D 转变时，角度传感器可检测折叠角度的变化，并将 0 度折叠事件发送到控制单元。控制单元可参照功能表，并执行与 0 度折叠角度（即，折叠状态 C）对应的应用程序控制。对于 0 度折叠事件，控制单元可将不同的控制操作应用于不同类型的应用程序。例如，响应于在视频文件的重放期间发生的 0 度折叠事件，移动终端可暂停视频文件的重放。响应于在 web 浏览期间发生的 0 度折叠事件，移动终端可根据用户的设置，终止 web 浏览器的执行，或通过将浏览器窗口最小化来暂停 web 浏览器的执行，并且可控制音频处理单元停止音频输出。其后，当移动终端从折叠状态 C 转变到折叠状态 A 或 D 时，移动终端可恢复视频文件的重放或恢复原始浏览器窗口。在没有激活的应用程序存在于先前的折叠状态（例如，空闲状态）的情况下，移动终端可自动重放用户预选择的视频或音频文件。当显示单元关闭时，响应于 90 度或 120 度折叠事件的发生，移动终端可开启显示单元并激活预设的应用程序（例如，用于访问互联网的 web 浏览器）。注意，可在功能表中指定上述应用程序控制，并且用户可改变功能表的内容。为了用户方便，移动终端可显示关于折叠事件和根据折叠角度的控制操作之间的映射的文本描述。

[0042] 当移动终端从折叠状态 A 或 D 转变到折叠状态 B 时，移动终端可按照宽屏幕模式显示视频图像。例如，假设在折叠状态 A 或 D 下，移动终端在第一触摸屏上显示视频图像，在第二触摸屏上显示用于控制视频重放的键。当移动终端转变到折叠状态 B 时，移动终端可在第一触摸屏和第二触摸屏两者（作为单个屏幕）上显示视频图像。此时，移动终端可将视频格式从用于第一触摸屏的 4 ： 3 比率调整为用于第一触摸屏和第二触摸屏两者的 16 ： 9 比率。其后，当移动终端从折叠状态 B 转变回到折叠状态 A 或 D 时，移动终端可在第一触摸屏上显示视频图像，在第二触摸屏上显示用于控制视频重放的键。

[0043] 作为另一示例，假设处于折叠状态 A 或 D 的移动终端在第一触摸屏上显示相片以进行浏览，在第二触摸屏上显示用于重放音乐文件的窗口。当移动终端从折叠状态 A 或 D 转变到折叠状态 B 时，移动终端 100 可在第一触摸屏和第二触摸屏两者上显示相片，并且可通过后台处理继续重放音乐文件。如上所述，对于从折叠状态 A 或 D 到折叠状态 B 的转变，移动终端可优先于第二触摸屏给予第一触摸屏优先级，或者优先级可被给予第二触摸屏。即，当移动终端从折叠状态 A 或 D 转变到折叠状态 B 时，移动终端可在第一触摸屏和第二触摸屏两者上以全屏模式显示已经在第一触摸屏上激活的窗口，可隐藏已经在第二触摸屏上激活的窗口，并且可暂停或终止在第二触摸屏上激活的应用程序的执行，或者在后台处理该应用程序。或者，移动终端可将优先级值分配给应用程序。即，当移动终端从折叠状态 A 或 D 转变到折叠状态 B 时，移动终端可在第一触摸屏和第二触摸屏两者上以全屏模式显示与高优先级的激活的应用程序相关的窗口，并且可暂停或终止低优先级的激活的应用程序的执行或在后台处理该应用程序。

[0044] 对于从折叠状态 B 到折叠状态 A 或 D 的转变，假设移动终端在折叠状态 B 下在第一触摸屏和第二触摸屏两者上以全屏模式显示与激活的应用程序（诸如视频播放器或 web 浏览器）相关的窗口。当移动终端转变到折叠状态 A 或 D 时，移动终端可在第一触摸屏上显示与激活的应用程序相关的重新调整了尺寸的窗口，并且可在第二触摸屏上显示包含用

于视频重放或web浏览的键映射或菜单映射的窗口。

[0045] 当移动终端从折叠状态B直接转变到折叠状态C时，移动终端可暂停或终止激活的应用程序的执行，或者可将与激活的应用程序相关的窗口最小化。当移动终端快速从折叠状态B经由折叠状态C转变回到折叠状态B时，移动终端可执行特定操作，诸如转印(decalcomania)。例如，假设在折叠状态B下特定图像显示在第一触摸屏上。当移动终端快速从折叠状态B经由折叠状态C转变回到折叠状态B时，移动终端可在第一触摸屏和第二触摸屏两者上显示同一图像（转印）。作为另一示例，假设移动终端在折叠状态B下在第一触摸屏和第二触摸屏两者上显示图标或内容。当移动终端快速从折叠状态B经由折叠状态C转变回到折叠状态B时，移动终端可在第一触摸屏和第二触摸屏两者上显示随机混合的图标或内容。这里，移动终端可将转印操作仅应用于在第一触摸屏上通过轻击选择的图像或通过拖拽选择的部分。

[0046] 当移动终端从折叠状态C转变到折叠状态A或D时，移动终端可在第一触摸屏上按照文本串或具有时针、分针、秒针的圆形钟显示当前时间，并且可在第二触摸屏上以固定形式显示单个相片或以幻灯片形式显示多个相片。此时，移动终端可对第一触摸屏和第二触摸屏的触摸传感器去激活。

[0047] 当移动终端从折叠状态A、B或D经由折叠状态C返回到原始折叠状态时，移动终端可执行激活的应用程序的特定功能（诸如内容混合）。更具体地，假设移动终端在折叠状态A、B或D下，在第一触摸屏上激活了使用图标或图像来对相片或运动图像进行搜索的功能，并且在第二触摸屏上激活了用于音乐文件的搜索功能。当移动终端从折叠状态A、B或D经由折叠状态C返回到原始折叠状态时，移动终端可通过将第一触摸屏上的相片或运动图像与第二触摸屏上的音乐文件混合来创建新内容。例如，假设在折叠状态A、B或D下，10张相片以多视角的格式在第一触摸屏上列出，3个音乐文件以图标的形式在第二触摸屏上列出。当移动终端从折叠状态A、B或D经由折叠状态C返回到原始折叠状态时，移动终端可将10张相片组合为幻灯片格式，并且将3个音乐文件编辑为用于组合的相片的背景音乐。其后，移动终端可保存由这些相片和音乐文件合成的内容。

[0048] 当移动终端从折叠状态C经由折叠状态D和折叠状态A转变到折叠状态B时，移动终端可激活用于每个折叠状态转变的应用程序。即，当移动终端从折叠状态C转变到折叠状态D时，移动终端激活第一应用程序，并在第一触摸屏上输出相应的窗口。当移动终端从折叠状态D转变到折叠状态A时，移动终端激活第二应用程序，并在第二触摸屏上输出相应的窗口。当移动终端从折叠状态A转变到折叠状态B时，移动终端激活第三应用程序，并在第一触摸屏和第二触摸屏中的一个上输出相应的窗口。这里，移动终端可继续执行第一应用程序和第二应用程序中的选择的一个，而不激活第三应用程序。

[0049] 具体地，为了抑制由折叠状态之间的转变导致的无意的折叠事件的发生，仅当特定折叠角度被移动终端保持长于或等于预设时间时，角度传感器才产生相应的折叠事件，并将该折叠事件发送到控制单元。

[0050] 移动终端可根据放置事件的发生进一步执行应用程序控制。例如，当移动终端被转变到折叠状态A或D时，移动终端可参照功能表，激活预设的应用程序，在第一触摸屏和第二触摸屏中的一个上显示相应的窗口。当用户竖直放置处于折叠状态A或D的移动终端，使得第一触摸屏的一例和第二触摸屏的一侧被放置在同一表面上时，角度传感器可产生相

应的放置事件，并将该放置事件发送到控制单元。当接收到放置事件时，控制单元可参照功能表，并控制触摸屏上的激活的应用程序的执行。这里，功能表可包含应用程序、放置事件和控制命令这三项为一组作为条目。

[0051] 当移动终端处于折叠状态 A 或 D 时，控制单元可控制第一触摸屏显示与调度程序 (scheduler) 的激活相关的窗口，并控制第二触摸屏显示相片、图像或运动图像。其后，当用户改变移动终端的放置时，控制单元可参照功能表控制触摸屏固定屏幕图像或旋转屏幕图像。例如，当调度程序窗口和图像窗口处于横向时，控制单元可根据放置事件的发生，控制触摸屏将调度程序窗口和图像窗口旋转为纵向。在发生了放置事件之后，控制单元可对触摸屏的触摸传感器去激活。由此，移动终端可用作日历或照片的电子框。在折叠状态 A 或 D 下，移动终端的折叠角度小于 180 度。上述描述也可应用于大于 180 度的折叠角度。例如，当移动终端的折叠角度固定在 270 度或 300 度时，移动终端可在与折叠状态 A 或 D 的情况相反的方向上用作电子框。具体地，为了抑制轻微运动或摇动的过度灵敏，优选地，仅当特定放置条件持续长于或等于阈值时间时，产生用于操作控制的放置事件。移动终端可提供这样的菜单，所述菜单使得用户能够设置阈值时间，以进行灵敏度调整。如果灵敏度等级为高（即，阈值时间为短），则移动终端可将摇动看作放置条件。

[0052] 如上所述，本发明的移动终端可从角度传感器接收折叠事件作为输入信号，并基于功能表和接收的折叠事件按照适合于触摸屏的各种方式执行应用程序控制。

[0053] 图 5 示出了在具有可折叠显示单元的移动终端上执行应用程序的一个示例。

[0054] 在图 5 中，移动终端在第一触摸屏 110 上显示菜单映射。第一触摸屏 110 上的菜单映射包括消息菜单 111、视频菜单 113 和文件菜单 115。本发明不限于这些菜单，还可提供其它菜单或菜单项。移动终端在第二触摸屏 120 上以图标列出了各种图像文件。在第二触摸屏 120 上列出的图像文件可与在第一触摸屏 110 上激活的文件菜单 115 相关联。移动终端的控制单元可控制应用程序分别在第一触摸屏 110 和第二触摸屏 120 上的执行。

[0055] 在操作中，用户通过使用左手手指进行轻击（标号“A”所示）来选择第一触摸屏 110 上的视频菜单 113，并且通过使用右手手指进行轻击（标号“B”所示）并朝向第一触摸屏 110 拖拽（轻拂）来选择第二触摸屏 120 上的图像图标 121。

[0056] 然后，移动终端可将第二触摸屏 120 上的选择的图像图标 121 朝向第一触摸屏 110 上的选择的视频菜单 113 移动。如图 5 所示，图像图标 121 在移动期间被连续显示，并且图像图标 121 在移动之后从第二触摸屏 120 被移除。

[0057] 更具体地，当移动终端的折叠角度保持在 180 度时，控制单元可控制第一触摸屏 110 和第二触摸屏 120 以全屏模式显示菜单映射。随后，当用户选择并激活菜单映射的文件菜单 115 时，控制单元可仅控制第一触摸屏 110 显示与菜单映射相关的应用程序的窗口，在第一触摸屏 110 上对菜单映射进行尺寸调整，并且可控制第二触摸屏 120 显示包含在文件菜单 115 中的图像图标。这里，控制单元可将来自第一触摸屏 110 的触摸传感器的感测信号与来自第二触摸屏 120 的触摸传感器的感测信号区分。

[0058] 当在触摸屏 110 或 120 上发生触摸事件时，控制单元可输出事件应用程序的指示。例如，当通过轻击第一触摸屏 110 上的“A”选择视频菜单 113 时，控制单元可通过改变视频菜单 113 的颜色或阴影来指示这种选择，使得更容易将视频菜单 113 与其它项区分。当通过轻击第二触摸屏 120 上的“B”选择图像图标 121 时，控制单元可通过改变图像图标 121

的颜色或阴影来指示这种选择。

[0059] 当轻击“B”扩展为轻拂（flick）时，控制单元可根据轻拂事件来移动选择的图像图标 121（文件移动）。这里，控制单元可将第一触摸屏 110 和第二触摸屏 120 分别产生的触摸事件应用于菜单处理程序和文件搜索程序。

[0060] 如上所述，具有带有两个相邻触摸屏的可折叠显示单元的移动终端可根据产生的触摸事件，使分别在两个触摸屏上运行的两个应用程序彼此配合。

[0061] 图 6 示出了在具有可折叠显示单元的移动终端上执行应用程序的另一示例。

[0062] 在图 6 中，移动终端在第一触摸屏 110 上显示空闲窗口，在第二触摸屏 120 上显示书 123，书 123 具有多个标有书签的页。当用户触摸标有书签的页 A 和标有书签的页 B 时，移动终端的控制单元可通过将第二触摸屏 120 上的触摸点与标有书签的页进行匹配，将触摸的标有书签的页 A 和标有书签的页 B 识别为被选择。

[0063] 然后，控制单元可控制第一触摸屏 110 显示选择的标有书签的页，并控制第二触摸屏 120 继续显示书 123。这里，控制单元可控制第一触摸屏 110 单独显示标有书签的页 A（标号 112 所示）和标有书签的页 B（标号 114 所示）。换句话说，当在第二触摸屏 120 上选择标有书签的页 A 时，控制单元可在第一触摸屏 110 上显示标有书签的页 A。当在第二触摸屏 120 上选择标有书签的页 B 时，控制单元可在第一触摸屏 110 上显示标有书签的页 B。这里，控制单元可控制第一触摸屏 110 显示标有书签的页 A 和标有书签的页 B，使得标有书签的页 A 和标有书签的页 B 彼此不重叠。或者，控制单元可控制第一触摸屏 110 显示标有书签的页 A 和标有书签的页 B，使得标有书签的页 A 和标有书签的页 B 彼此部分重叠，以使得标有书签的页 A 和标有书签的页 B 可被进一步选择。

[0064] 在上述描述中，第二触摸屏 120 显示具有多个页的书 123。该描述也可应用于具有多个标有书签的电话簿的电话目录，其中，电话簿与成员组相关联。即，当选择了显示在第二触摸屏 120 上的电话目录的标有书签的电话簿时，控制单元可控制第一触摸屏 110 显示选择的标有书签的电话簿。显示的电话簿可包含联系人的列表，诸如电话号码、相片、地址、生日、纪念日等。

[0065] 如上所述，具有可折叠显示单元的移动终端可在触摸屏中的一个上显示特定应用程序的窗口，并在另一触摸屏上显示该应用程序的辅助窗口。

[0066] 图 7 示出了在具有可折叠显示单元的移动终端上执行应用程序的又一示例。

[0067] 图 7 中，移动终端在第一触摸屏 110 上显示多个图像或与图像相关联的图标。当用户选择与图像浏览功能相关联的菜单时，可导致上述操作。或者，在图像浏览功能被设置为 180 度折叠事件的默认功能的情况下，当移动终端以 180 度展开时，移动终端可显示如图 7 所示的图像或图标。图像浏览功能也可被设置为 120 度折叠事件或 90 度折叠事件的默认功能，但是用户可改变或调整该设置。

[0068] 移动终端在第二触摸屏 120 上显示编辑区 126 和编辑工具区 128，以用于对在第一触摸屏 110 上列出的图像中的一个进行编辑。可通过菜单的选择在第二触摸屏 120 上激活图像编辑功能。也可通过根据移动终端的折叠角度产生的折叠事件在第二触摸屏 120 上激活图像编辑功能。例如，响应于 120 度折叠事件或 90 度折叠事件，可在第一触摸屏 110 上激活图像浏览功能。随后，响应于 180 度折叠事件，移动终端可在第二触摸屏 120 上激活图像编辑功能，并且显示与图像编辑功能相关的窗口。这里，功能表可包含将图像编辑功能链

接到图像浏览功能的条目。即，功能表可包含这样的控制命令，该控制命令在图像浏览功能被激活后响应于特定折叠事件的发生，使得图像编辑功能被激活。因此，移动终端可按照协同方式 (coordinated manner) 控制图像浏览功能和图像编辑功能的执行。

[0069] 其后，用户可在第一触摸屏 110 上选择将被编辑的图像或图标，并通过拖拽将选择的图像或图标移动到第二触摸屏 120 的编辑区 126。为了易于编辑，控制单元可通过尺寸调整使得图像或图标适合于编辑区 126。这种情况下，控制单元可放大图像或图标，以进行更好的观看。除了上述拖拽之外，还可通过各种方案执行图像移动。例如，控制单元可将特定图像移动到第二触摸屏 120 的预设区，所述特定图像由第一触摸屏 110 上的触摸事件（诸如双轻击、长轻击和轻拂）指示。在移动了图像之后，控制单元可从第一触摸屏 110 移除图像或图标。

[0070] 用户可使用设置在第二触摸屏 120 中的编辑工具区 128 中的各个编辑工具对第二触摸屏 120 的编辑区 126 中的图像进行编辑。在完成了编辑图像之后，响应于触摸事件（诸如轻拂或双轻击）的发生，移动终端可将编辑的图像移动到第一触摸屏 110。编辑的图像可被进行尺寸调整，以适合第一触摸屏 110。

[0071] 当折叠角度为 120 度或 90 度时，移动终端可参照功能表在第二触摸屏 120 上激活图像编辑功能。当折叠角度变为 180 度时，控制单元可在第二触摸屏 120 上对图像编辑功能去激活，并在第一触摸屏 110 和第二触摸屏 120 两者上以全屏模式显示窗口以用于图像浏览功能。控制单元可通过使用第一触摸屏 110 和第二触摸屏 120 两者或仅是使用第一触摸屏 110 来对图像或图标进行尺寸调整，以进行平滑的图像浏览。

[0072] 如上所述，移动终端可在第一触摸屏 110 和第二触摸屏 120 上激活相关的应用程序，并参照功能表根据折叠事件和用户请求，按照协同方式控制应用程序的执行。

[0073] 图 8 是根据本发明另一示例性实施例的移动终端的操作方法的流程图。

[0074] 参照图 8，当通电时，移动终端的部件被初始化 (201)。在初始化之后，移动终端激活与例如空闲屏幕、菜单窗口和休眠特征相关的预设应用程序 (203)。移动终端对角度传感器供电，并激活用于操作角度传感器的应用程序。

[0075] 控制单元感测移动终端的折叠角度 (205)。即，角度传感器测量第一触摸屏 110 和第二触摸屏 120 之间的折叠角度，并将测量的折叠角度发送到控制单元。

[0076] 当控制单元从角度传感器接收到测量的折叠角度时，控制单元从存储单元读取功能表 (207)。功能表可包含控制命令，所述控制命令根据感测的折叠角度指定将被激活的应用程序并为激活的应用程序输出屏幕（第一触摸屏和第二触摸屏）。

[0077] 控制单元基于功能表根据感测的折叠角度，来控制应用程序的激活 (209)。例如，如上所述，控制单元可激活与时钟显示、相片观看、web 浏览、键映射或菜单映射的显示、视频文件的重放、音频文件的重放、文件分类、图像浏览、图像编辑、电话簿浏览以及书阅读相关的各种应用程序。

[0078] 控制单元检查是否输入了使用结束信号 (211)。如果没有输入使用结束信号，则控制单元返回到步骤 203 以继续进行处理。

[0079] 从上面清楚的是，本发明的优点在于，折叠方式的各种角度使得能够在移动终端中激活各种模式。在本说明书中，描述了本发明的移动终端包括两个触摸屏。但是，本发明不限于此。即，本发明也可应用于具有由三个、四个或更多触摸屏组成的可折叠显示单元的

移动终端。这种情况下，功能表可包含控制命令，所述控制命令根据感测的折叠角度指定将被激活的应用程序并输出用于激活的应用程序的屏幕，并且移动终端可通过使用角度传感器和功能表激活应用程序并控制激活的应用程序的执行。移动终端显示器的形状呈现为矩形形式，但是应该注意，根据本发明的教导，也可应用其它形状的显示器。

[0080] 虽然上面详细描述了本发明的示例性实施例，但是应该理解，这里所描述的对本领域技术人员可能出现的基本发明构思的多种变化和修改仍然将落入权利要求限定的本发明的示例性实施例的精神和范围之内。

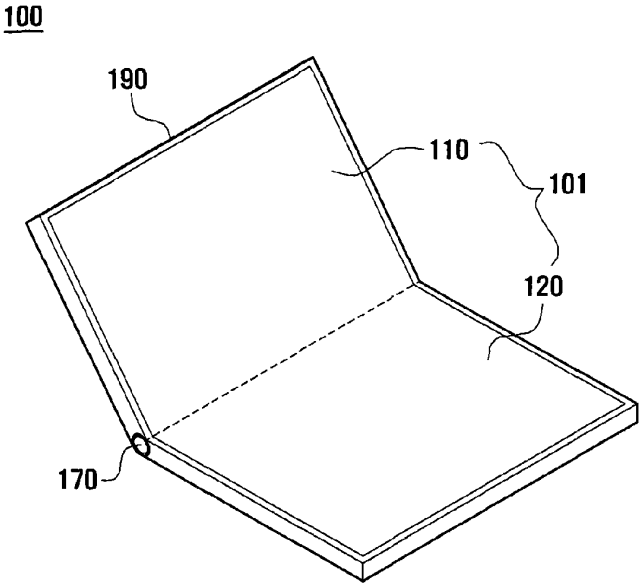

100
190
110
101
120
170

图 1

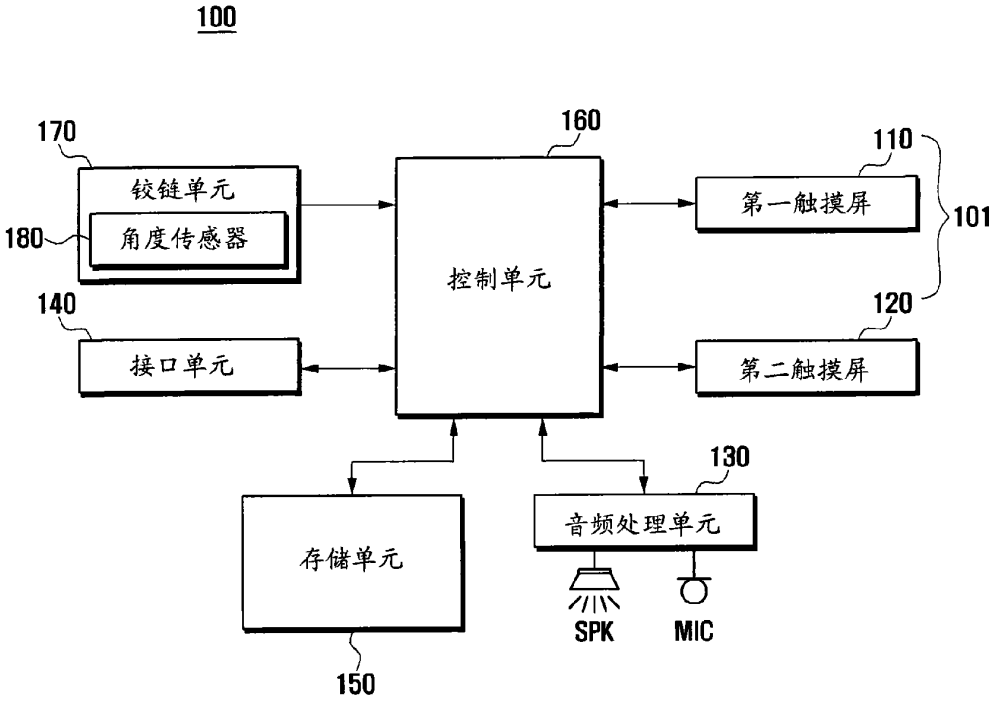

100
170
铰链单元
180
角度传感器
140
接口单元
160
控制单元
110
第一触摸屏
101
120
第二触摸屏
130
音频处理单元
SPK
MIC
存储单元
150

图 2

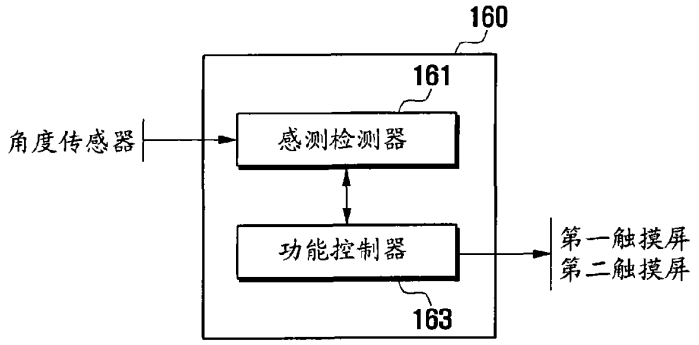


图 3

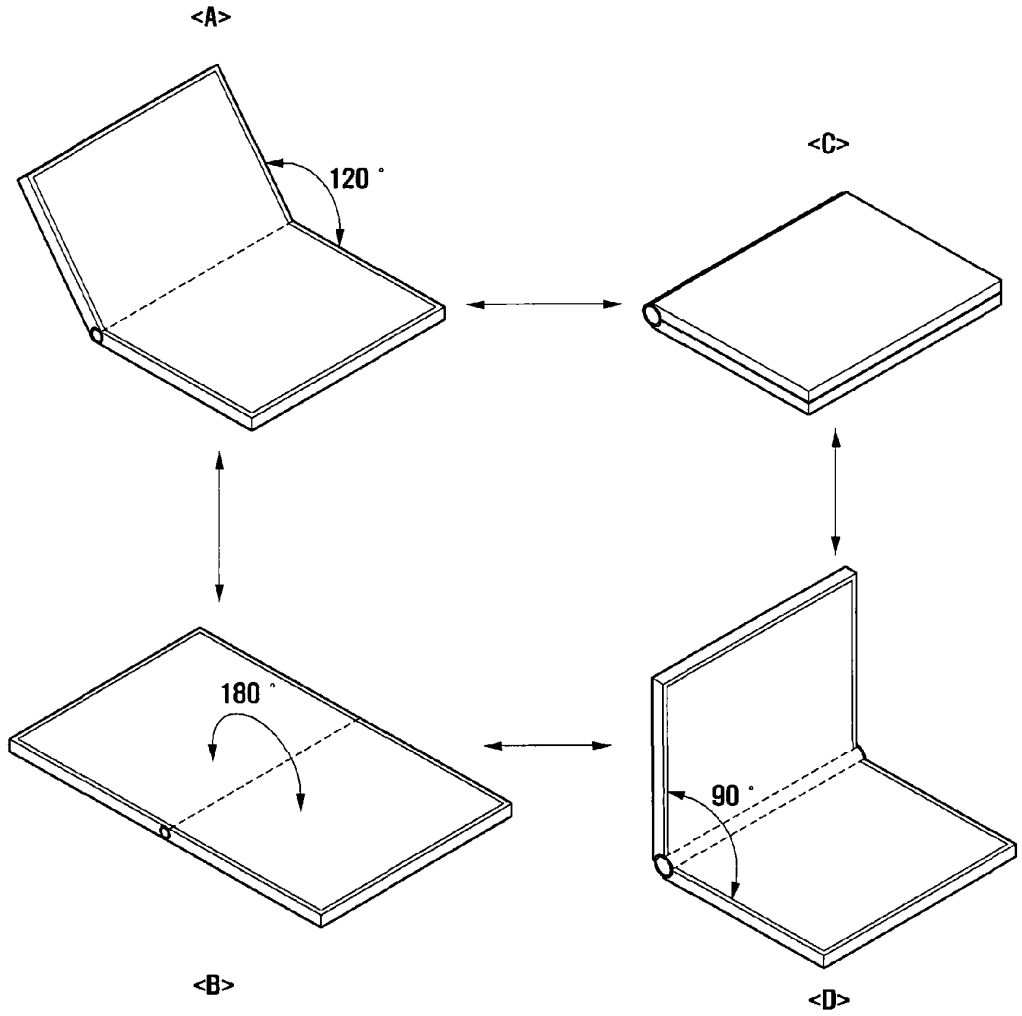


图 4

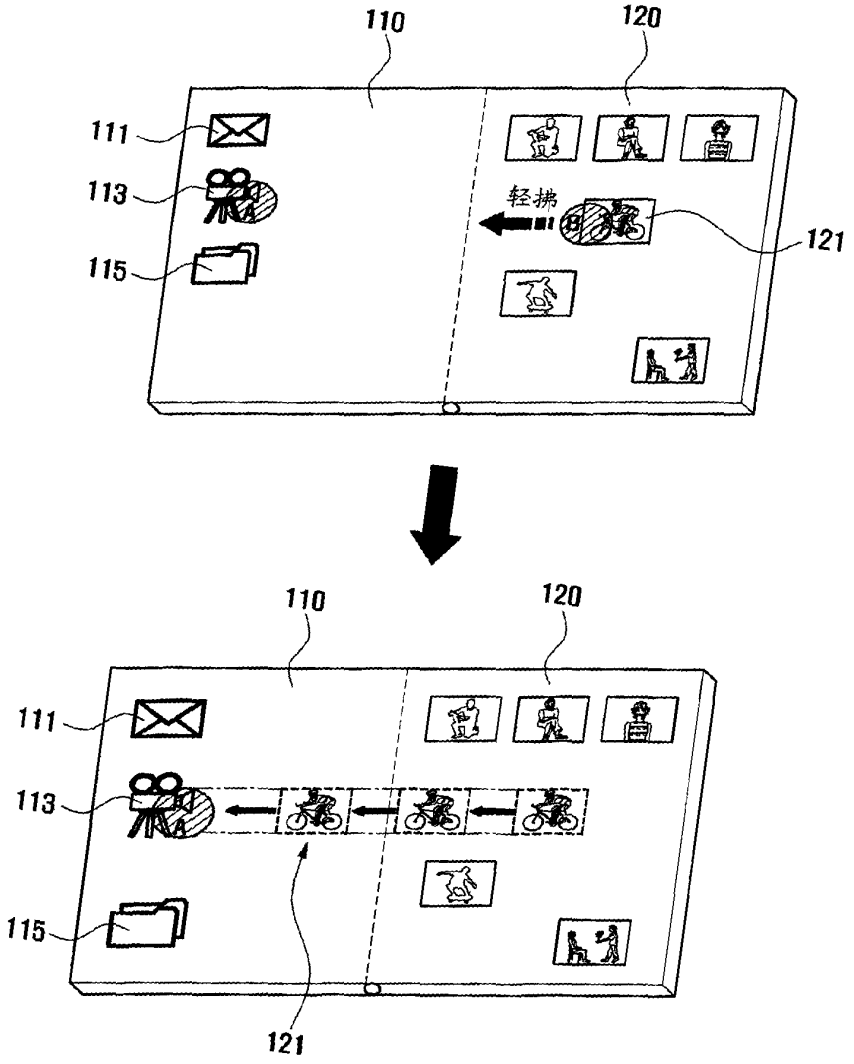


图 5

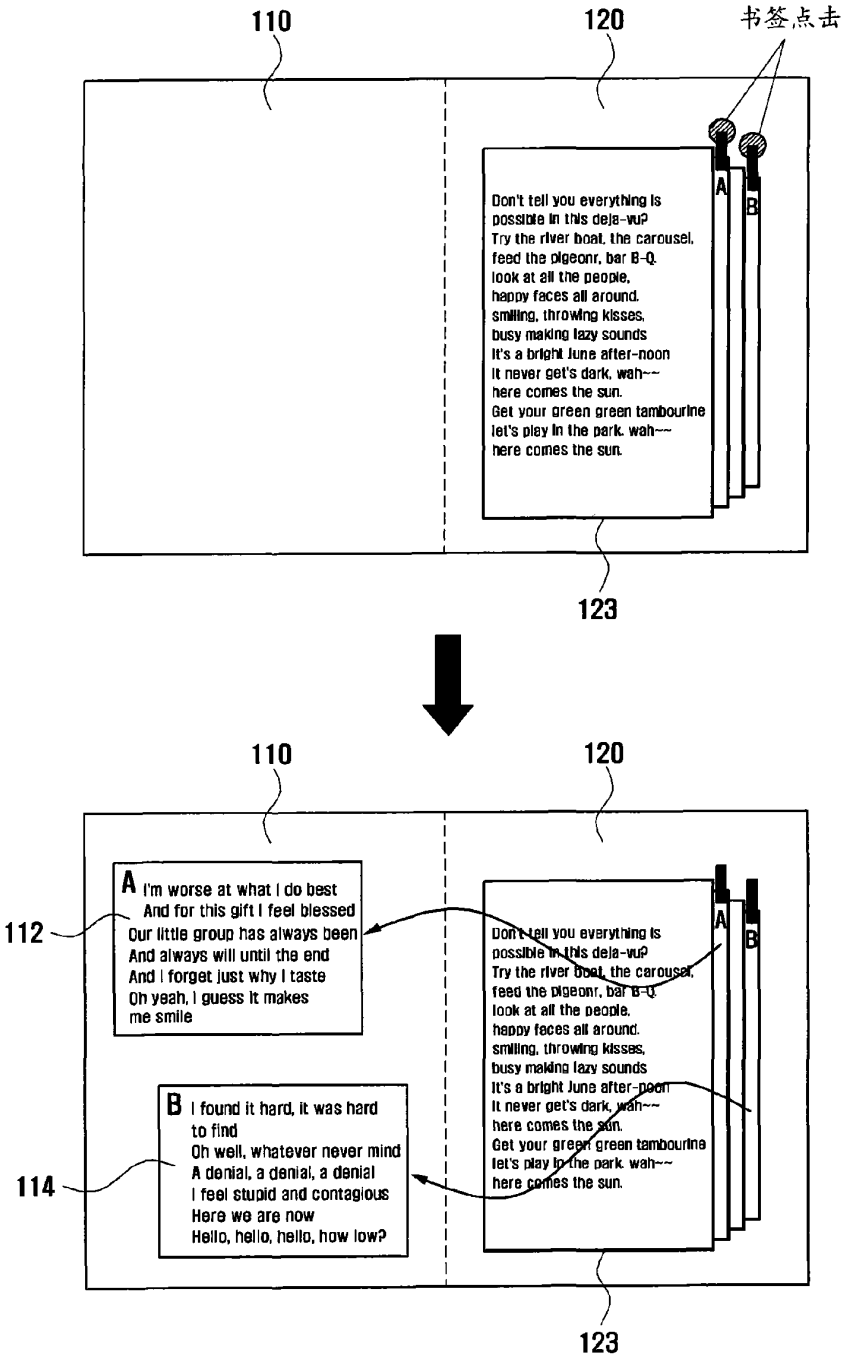

110
120
书签点击
A
B
Don't tell you everything is
possible in this deja-vu?
Try the river boat, the carousel,
feed the pigeonr, bar B-Q,
look at all the people,
happy faces all around,
smiling, throwing kisses,
busy making lazy sounds
It's a bright June after-noon
It never get's dark, wah~~
here comes the sun.
Get your green green tambourine
let's play in the park, wah~~
here comes the sun.
123
110
120
112
A I'm worse at what I do best
And for this gift I feel blessed
Our little group has always been
And always will until the end
And I forget just why I taste
Oh yeah, I guess it makes
me smile
114
B I found it hard, it was hard
to find
Oh well, whatever never mind
A denial, a denial, a denial
I feel stupid and contagious
Here we are now
Hello, hello, hello, how low?
123

图 6

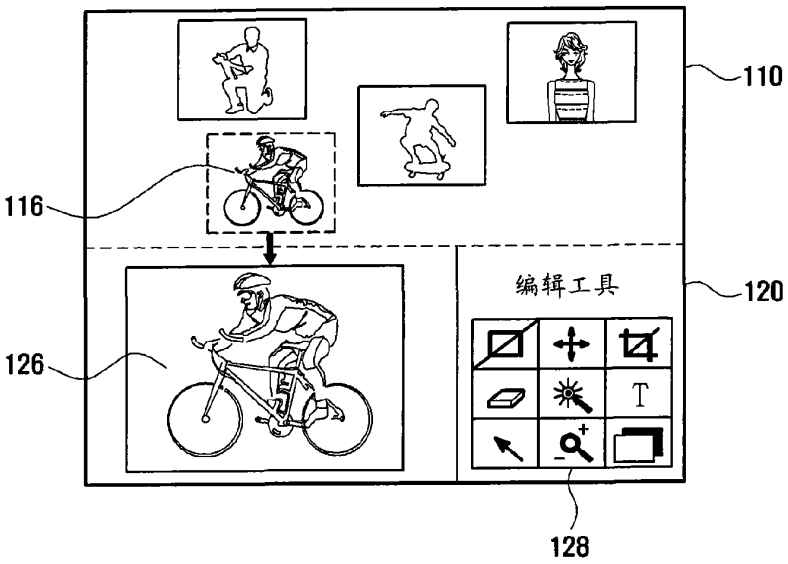


图 7

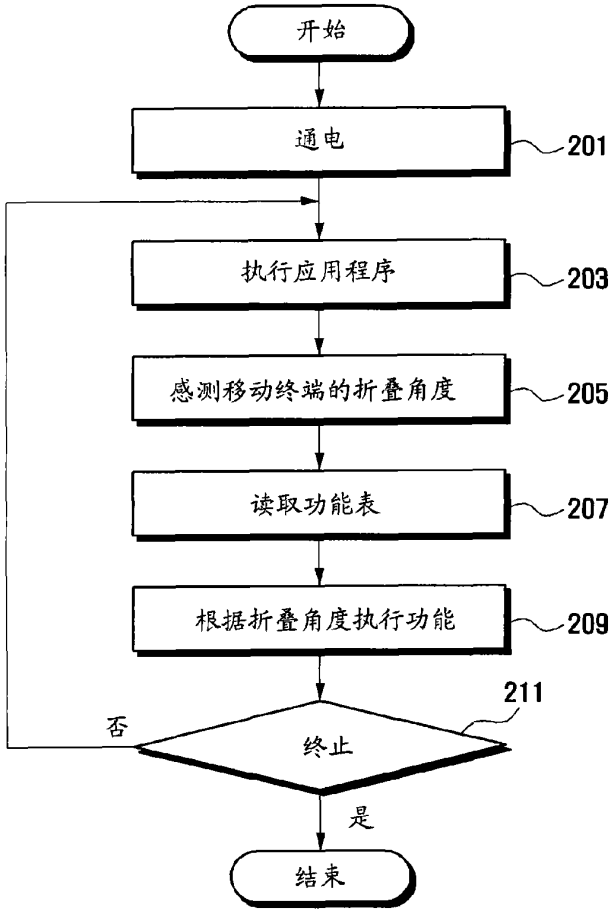

开始
通电
201
执行应用程序
203
感测移动终端的折叠角度
205
读取功能表
207
根据折叠角度执行功能
209
211
否
终止
是
结束

图 8

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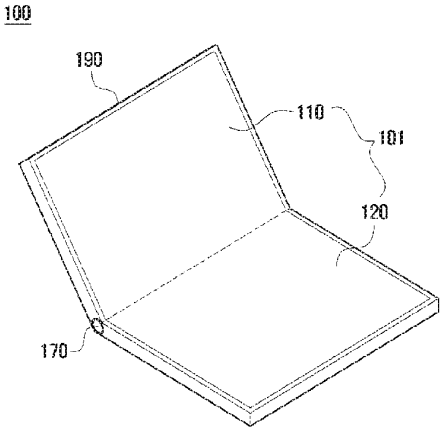
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(54) Mobile terminal having foldable display and operation method for the same

(57) A mobile terminal having a foldable display and an operation method for the same are disclosed. The foldable display unit includes a plurality of display zones, wherein the application of program depends on the degree of folding angle of the display unit, and the display unit displays on its screen according to the folding angle. Further, variations of closing and opening motion of the foldable display unit triggers different modes of operation and displays

FIG . 1



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Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates generally to a mobile terminal having a foldable display and, more particularly, to a mobile terminal having a foldable display that can provide a variety of functions in a user friendly and convenient manner, and an operation method for the same.

Description of the Related Art

[0002] Recently, mobile terminals have been widely used and provide various functions related to, for example, audio file playback through an MP3 player, image capture through a digital camera module, and mobile gaming or arcade gaming.

[0003] A mobile terminal is equipped with a display unit, which has a limited size owing to portability of the mobile terminal. To overcome the size and space limitations while supporting portability, mobile terminals having a foldable display unit have been developed.

[0004] A mobile terminal having a foldable display unit has a mechanical structure of a folder type. Such a mobile terminal may have to perform a special operation for removing image discontinuity and blurring near the foldable zone at the middle of the display unit to produce continuous images even when the display unit is folded at a particular angle. However, it is very difficult to install a separate keypad in an existing mobile terminal having such a foldable display unit. That is, allocating separate installation space to the keypad may hinder portability and miniaturization of the mobile terminal.

SUMMARY OF THE INVENTION

[0005] The present invention has been made in view of the above problems, and the present invention provides a mobile terminal having a foldable display unit and an operation method for the same that can perform a variety of functions in a user friendly and convenient manner in response to input signals generated according to the folding angle.

[0006] In accordance with an exemplary embodiment of the present invention, a mobile terminal having a foldable display, includes: a display unit having multiple linked display zones; an angle sensor sensing the folding angle between adjacent display zones and generating a folding event according to the folding angle; and a control unit activating an application program or controlling execution of an activated application program according to a folding event from the angle sensor.

[0007] In accordance with another exemplary embodiment of the present invention, an operation method for a mobile terminal having a foldable display unit having multiple linked display zones, includes: generating a folding event by sensing the folding angle between adjacent display zones; and performing application control by activating an application program or controlling execution of an activated application program according to a generated folding event.

[0008] The inventive operation method enables the user of a mobile terminal having a foldable display unit to execute a desired function by folding the mobile terminal at a specific angle. In addition, when the display unit includes a touch screen, the user can manipulate the mobile terminal in much easier and intuitive manner.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The features and advantages of the present invention will be more apparent from the following detailed description in conjunction with the accompanying drawings, in which:

FIG. 1 shows a mobile terminal having a foldable display unit according to an exemplary embodiment of the present invention;
FIG. 2 is a block diagram of the mobile terminal in FIG. 1;
FIG. 3 is a detailed diagram of a control unit in the mobile terminal;
FIG. 4 illustrates operation of the mobile terminal according to folding angles;
FIG. 5 shows an example of executing an application program on the mobile terminal;
FIG. 6 shows another example of executing an application program on the mobile terminal;
FIG. 7 shows yet another example of executing an application program on the mobile terminal; and
FIG. 8 is a flow chart of an operation method for the mobile terminal according to another exemplary embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0010] Hereinafter, exemplary embodiments of the present invention are described in detail with reference to the accompanying drawings. The same reference symbols are used throughout the drawings to refer to the same or like parts. For the purposes of clarity and simplicity, detailed descriptions of well-known functions and structures incorporated herein may be omitted to avoid obscuring the subject matter of the present invention. Particular terms may be defined to describe the invention in the best manner. Accordingly, the meaning of specific terms or words used in the specification and the claims should not be limited to the literal or commonly employed sense, but should be construed in accordance with the spirit of the invention. The description of the various embodiments is to be construed as exemplary and illustrative purposes only and does not describe every possible instance of the invention. Therefore, it should be under-

stood that various changes may be made and equivalents may be substituted for elements of the invention.

[0011] FIG. 1 shows a mobile terminal 100 having a foldable display unit according to an exemplary embodiment of the present invention. In the description, it is assumed that the display unit includes multiple display zones, adjacent display zones can be folded at a specific angle or unfolded, and each display zone is made of a touch screen. However, the input means generating input signals or events for the multiple display zones is not limited only to the touch screen. That is, to generate input signals, a separate keypad may be provided to the mobile terminal or a removable keyboard or keypad may be utilized.

[0012] Referring to FIG. 1, the mobile terminal 100 may include a foldable display unit 101, a frame 190 enclosing the display unit 101, a hinge unit 170 enabling the display unit 101 to be folded and unfolded, and a touch sensor (not shown) attached on the display unit 101.

[0013] As explained hereinafter, the mobile terminal 100 having the above configuration may perform a preset function according to the folding angle of the display unit 101, and may provide a convenient user interface that enables systematic interworking of application programs running on two display zones.

[0014] The display unit 101 is foldable, and outputs a screen related to a function of the mobile terminal 100. For example, the display unit 101 may output a boot screen, an idle screen, a menu screen, or a program activation screen. The display unit 101 may be realized using flexible liquid crystal display (FLCD) technology, and may include an LCD controller, a memory storing data, and LCD elements. In particular, the display unit 101 may be partially or completely folded relative to the hinge unit 170. That is, two adjacent display zones of the display unit 101 may form an angle of zero to 360 degrees with each other. The display unit 101 may include a first touch screen 110 and a second touch screen 120. The first touch screen 110 and the second touch screen 120 are joined together at one side, and they appear as a single wide screen when completely unfolded at a folding angle of 180 degrees. Each of the first touch screen 110 and the second touch screen 120 may be composed of a display panel and a touch sensor arranged on the display panel.

[0015] The frame 190 encloses the foldable display unit 101, and supports folding of the display unit 101 utilizing the hinge unit 170. In addition to the display unit 101 and the hinge unit 170, the frame 190 provides a space in which a printed circuit board containing a control unit, storage unit, audio processing unit and interface unit can be mounted. The frame 190 may be made of a sash or plastic material. The frame 190 may include a coupling mechanism such as a hook that fixes the display unit 101 when the display unit 101 is completely folded at a folding angle of 0 or 360 degrees. When the first touch screen 110 and the second touch screen 120 each include an LC display panel, the frame 190 may further provide a space to accommodate a backlight unit for lighting the LC display panel and optical sheets for diffusing and concentrating light.

[0016] The hinge unit 170 placed on the frame 190 enables folding of the frame 190 and the foldable display unit 101. In fact, as the frame 190 accommodates the display unit 101, folding of the frame 190 results in folding of the display unit 101. That is, when the user folds the frame 190 with respect to the hinge unit 170, the display unit 101 is folded accordingly. The hinge unit 170 may support a rotation corresponding to the maximum folding angle of the display unit 101. Next, a detailed description is given of the mobile terminal 100.

[0017] FIG. 2 is a block diagram of the mobile terminal 10. In the description, it is assumed that the mobile terminal 100 has two display zones, each of which is composed of a touch screen. However, it should be noted that the teachings of the present invention may apply to a terminal having additional number of display zones.

[0018] Referring to FIG. 2, the mobile terminal 100 includes a first touch screen 110, a second touch screen 120, an audio processing unit 130, an interface unit 140, a storage unit 150, a hinge unit 170 accommodating an angle sensor 180, and a control unit 160.

[0019] The mobile terminal 100 having the above configuration may sense the folding angle of the display panel through the angle sensor 180 in the hinge unit 170, and selectively control the activation of application programs and the operation of an activated application program on the basis of the sensed folding angle.

[0020] The first touch screen 110 may include a display panel to produce images under the control of the control unit 160, and a touch sensor to generate input signals corresponding to touch events of the user. The first touch screen 110 is accommodated in the frame so as to be rotatable at a preset angle relative to the hinge unit. The first touch screen 110 may display various screens, such as an application related screen for activating one of application programs stored in the storage unit 150, a photograph related screen for browsing photographs, a message screen for composing a message or memo, and an icon screen for icons associated with various menu items. The first touch screen 110 detects a touch event occurring at a point in a displayed screen and sends the detected touch event to the control unit 160. The first touch screen 110 is adjacent to the second touch screen 120 and is joined thereto.

[0021] The second touch screen 120 may have the same structure as that of the first touch screen 110. Under the control of the user or the control unit 160, the second touch screen 120 may output the same screen as that of the first touch screen 110 or may output a screen different from that of the first touch screen 110. For example, while the first touch screen 110 displays a screen related to an activation of a first application program, the second touch screen 120 displays another screen related to an activation of a second application program. Alternatively, the first touch screen 110 and the second touch screen 120

may display different screens related to the same application program. For example, when the first touch screen 110 outputs video images related to playback of a video file, the second touch screen 120 may display a screen containing buttons for controlling playback of the video file. The second touch screen 120 is adjacent to the first touch screen 110 and is joined thereto. Utilization of the first touch screen 110 and the second touch screen 120 is further detailed later.

[0022] The audio processing unit 130 includes a speaker SPK to reproduce audio data received during a call, and a microphone MIC to collect an audio signal such as a voice signal of the user. In particular, the audio processing unit 130 may reproduce an audio signal of an application program executed according to the folding angle of the display unit 101. For example, when an audio file is mapped to a specific folding angle of the display unit 101, folding the display unit 101 at the folding angle may cause the audio file to be played back through the audio processing unit 130 under the control of the control unit 160.

[0023] The interface unit 140 provides a communication path leading to another mobile terminal or an external memory chip. The interface unit 140 may act as a radio frequency unit for wireless communication, and may act as an USB (universal serial bus) interface or UART (universal asynchronous receiver/transmitter) interface for serial communication. The interface unit 140 may establish a communication channel to one of an external mobile terminal, a memory chip, a mobile communication system and an Internet network, and may receive a content such as an image file or an audio file through the communication channel. The interface unit 140 may act as a broadcast receiving module, and send a broadcast signal received from a broadcast network to the control unit 160.

[0024] The storage unit 150 stores application programs related to functions of the present invention, an application program for operating the angle sensor, application programs for playing back various stored files, and key maps or menu maps for operating the first touch screen 110 and second touch screen 120. The key maps may include a keyboard map, a 3*4 key map, a qwerty key map, a control key map, and other form of map know to artisians for controlling a currently active application program. The menu maps may include a menu map for controlling a currently active application program, and a menu map containing various menu items of the mobile terminal. The key maps and menu maps may be output according to settings given by the designer or may be changed according to user settings. The storage unit 150 may provide a buffer temporarily storing sensing data collected by the angle sensor and touch screens. The storage unit 150 may include a program area and a data area.

[0025] The program area may store an operating system (OS) for booting and operating the mobile terminal 100, and various application programs, such as an application program for playing back various files, an application program for handling calls, a web browser for connecting to an Internet server, an application program for playing back MP3 audio materials, an application program for outputting photographs and images, and an application program for playing back moving images. In particular, the program area may store an application program for operating the angle sensor 180, and an application program for operating the touch sensor on the touch screen.

[0026] The data area may store data generated by the user of the mobile terminal 100, contents received through the interface unit 140, and user data input through the first touch screen 110 or the second touch screen 120. In particular, the data area may store a function table. The function table defines mappings between touch events from the touch sensor or folding angles from the angle sensor 180 and control commands. For example, the function table may include a mapping between a folding angle of 90 degrees and a control command "output the menu icon to at least one of the first touch screen and the second touch screen". In this case, when the angle sensor 180 generates a sensing signal indicating a folding angle of 90 degrees, the menu icon is output to at least one of the first touch screen 110 and the second touch screen 120. The function table may include a mapping between a folding angle of 180 degrees and a control command "play back a video file pre-selected or selected through a touch event on at least one of the first touch screen and the second touch screen". In this case, when the angle sensor 180 generates a sensing signal indicating a folding angle of 180 degrees, the selected video file is played back on at least one of the first touch screen 110 and the second touch screen 120. The function table may include a control command "output the key map or menu map according to a specific folding angle of the display unit 101". As described above, the function table contains control commands for activating application programs or controlling operation of an activated application program according to detected touch events and folding angles sensed by the angle sensor 180. Application activations and controls based on the function table are further described later.

[0027] The angle sensor 180 is installed in the hinge unit 170, and measures the folding angle of the display unit 101 and sends the measured angle value to the control unit 160. The angle sensor 180 may be realized using a geomagnetic sensor, a gyro sensor, an acceleration sensor, or other sensors know by artisians that can measure an angle relative to the ground. The angle sensor 180 may also be realized using a mechanical structure. For example, a hinge-shaped member with regular grooves or prominences and depressions, or a gear-shaped member may be used to measure the folding angle of the display unit 101. When the angle sensor 180 is realized using a geomagnetic sensor or a gyro sensor, it can sense not only the folding angle of the display unit 101 but also the placement angle of the mobile terminal

100. For example, when the display unit 101 is folded at an angle of 90 degrees, the angle sensor 180 may generate a folding event indicating a 90-degree angle and send the folding event to the control unit 160. Thereafter, when the mobile terminal 100 is placed vertically upright so that a side of the first touch screen 110 and a side of the second touch screen 120 are placed on the same surface, the angle sensor 180 may generate an event indicating the placement angle and send the generated event to the control unit 160. To achieve this, the angle sensor 180 may include a first sensing element for sensing the folding angle of the display unit 101 and generating a corresponding event, and a second sensing element for sensing the placement angle of the mobile terminal 100 and generating a corresponding event. The angle sensor 180 may include a single sensing element capable of sensing both the folding angle of the display unit 101 and the placement angle of the mobile terminal 100, and generating corresponding events.

[0028] The control unit 160 controls supply of power to the individual components of the mobile terminal 100, and controls signal exchange between the components thereof to carry out necessary functions. In particular, the control unit 160 controls the operation of the mobile terminal 100 in various ways on the basis of the function table stored in the storage unit 150. To achieve this, as shown in FIG. 3, the control unit 160 includes a sensing detector 161 and a function controller 163.

[0029] The sensing detector 161 detects a touch event generated by a first touch sensor of the first touch screen 110, a touch event generated by a second touch sensor of the second touch screen 120, a folding event generated by the angle sensor 180 measuring the folding angle of the display unit 101, and a placement event generated by the angle sensor 180 measuring the placement angle of the mobile terminal 100, and sends the detected event to the function controller 163. The sensing detector 161 may control the time points at which the first touch sensor, the second touch sensor and the angle sensor 180 are activated. For example, the sensing detector 161 may activate the angle sensor 180 after turning on of the mobile terminal 100. The sensing detector 161 may activate the first touch sensor and the second touch sensor when the folding angle of the display unit 101 measured by the angle sensor 180 is greater than or equal to a preset angle. The sensing detector 161 may deactivate the angle sensor 180 in response to a particular touch event generated by the first touch sensor and the second touch sensor (i.e. by the user). The sensing detector 161 may output a key map or menu map to the display unit 101 under the control of the control unit 160 after an activation of the first touch sensor and the second touch sensor. Hence, the sensing detector 161 may identify a selected key or menu item by matching a touch event generated by one of the first touch sensor and the second touch sensor with the key map or menu map, and notify the function controller 163 of the selected key or menu item.

[0030] The function controller 163 may receive various events including a folding event, a placement event, a touch event generated by the first touch sensor and a touch event generated the second touch sensor from the sensing detector 161, and may control a currently active application program or activate a new application program according to the received events. Thereto, the function controller 163 may refer to the function table stored in the storage unit 150, and control the operation of a currently active application program or activation of a new application program on the basis of the current event and the function table. Application control of the function controller 163 is further described below with reference to the drawings.

[0031] As described above, the mobile terminal having a foldable display unit employs an angle sensor to measure the folding angle of the display unit, and controls the operation of an active application program or activates a new application program according to folding angles measured by the angle sensor. In addition, the mobile terminal may execute application programs in an independent or unified way on two display zones that are manipulated respectively by two touch sensors.

[0032] FIG. 4 illustrates the operation of a mobile terminal according to folding angles. As the following description, representative folding angles including 0, 90, 120 and 180 degrees are selected and utilized. However, the present invention is not limited to such angles, and other angles, not limited to, such as 30, 60, 150, 210, 240, 270, 300 and 330 degrees may also be utilized as folding angles. In the mobile terminal, the folding angle may be sensed at an increment of 5 or 10 degrees from zero degrees for application control.

[0033] Referring to FIG. 4, folding state A (folding angle of 120 degrees), folding state B (180 degrees), folding state C (0 degrees) and folding state D (90 degrees) are depicted. The mobile terminal is initially in folding state C where the first touch screen and the second touch screen face each other. In folding state C, the folding angle is zero degrees, and, if an application program is in execution, the mobile terminal may stop execution of the application program. For example, it is assumed that the mobile terminal is playing back a video file in folding state A or D. Thereafter, when the mobile terminal is transitioned to folding state C, it may pause the playback of the video file. To be more specific, when the mobile terminal is transitioned from folding state A or folding state D, the angle sensor may detect a change in the folding angle and send a zero-degree folding event to the control unit. The control unit may refer to the function table and perform the application control corresponding to a folding angle of zero degrees, i.e. folding state C. For a zero-degree folding event, the control unit may apply different control operations to application programs of different types. For example, in response to occurrence of a zero-degree folding event during playback of a video file, the mobile terminal may pause a playback of the video file. In response to occurrence of a zero-degree folding event during web browsing, the mobile terminal may terminate

an execution of the web browser or pause execution thereof with browser window minimization according to the user's settings, and may control the audio processing unit to stop audio output. Thereafter, when the mobile terminal is transitioned from folding state C back to folding state A or D, it may resume a playback of the video file or restore the original browser window. In the case when no active application program was present at the previous folding state (for example, idle state), the mobile terminal may automatically play back a video or audio file pre-selected by the user. In response to occurrence of a 90 or 120-degree folding event when the display unit is turned off, the mobile terminal may turn on the display unit and activate a preset application program, for example, a web browser for accessing the Internet. Note that application control described above may be specified in the function table, and the contents of the function table may be changed by the user. For user convenience, the mobile terminal may display a textual description regarding mappings between folding events and control operations according to the folding angle.

[0034] Upon being transitioned from folding state A or D to folding state B, the mobile terminal may display video images in a wide screen mode. For example, it is assumed that the mobile terminal displays video images on the first touch screen and displays keys for controlling video playback on the second touch screen in folding state A or D. When transitioned to folding state B, the mobile terminal may display video images on both the first touch screen and the second touch screen as a single screen. At this time, the mobile terminal may adjust the video format from a 4:3 ratio for the first touch screen to a 16:9 ratio for the first and second touch screens. Thereafter, upon being transitioned from folding state B back to folding state A or D, the mobile terminal displays video images on the first touch screen and displays keys for controlling video playback on the second touch screen.

[0035] As another example, it is assumed that the mobile terminal in folding state A or D displays photographs on the first touch screen for browsing and displays a window for playing back a music file on the second touch screen. Upon being transitioned from folding state A or D to folding state B, the mobile terminal 100 may display photographs on both the first touch screen and second touch screen, and may continue playing back the music file through background processing. As described above, for a transition from folding state A or D to folding state B, the mobile terminal may give a priority to the first touch screen over the second touch screen, or the priority can be given to the second touch screen. That is, when being transitioned from folding state A or D to folding state B, the mobile terminal may display a window that was activated on the first touch screen in a full screen mode on both the first touch screen and second touch screen, may hide a window that was activated on the second touch screen, and may pause or end execution of an application activated on the second touch screen or process the same in the background. Alternatively, the mobile terminal may assign priority values to application programs. That is, when being transitioned from folding state A or D to folding state B, the mobile terminal may display a window related to a high-priority active application program in a full screen mode on both the first touch screen and second touch screen, and may pause or end execution of a low-priority active application program or process the same in the background.

[0036] For a transition from folding state B to folding state A or D, it is assumed that the mobile terminal displays a window related to an active application program such as a video player or web browser in a full screen mode on both the first touch screen and second touch screen in folding state B. When being transitioned to folding state A or D, the mobile terminal may display a resized window related to the active application program on the first touch screen, and may display a window containing a key map or menu map for video playback or web browsing on the second touch screen.

[0037] When being transitioned from folding state B directly to folding state C, the mobile terminal may pause or end execution of an active application program, or minimize the window related to the same. When being transitioned rapidly from folding state B via folding state C back to folding state B, the mobile terminal may perform a special operation such as decalcomania. For example, it is assumed that a particular image is displayed on the first touch screen in folding state B. Upon being transitioned from folding state B via folding state C back to folding state B, the mobile terminal may display the same image on both the first touch screen and the second touch screen (a decalcomania). For another example, it is assumed that the mobile terminal displays icons or contents on the first touch screen and the second touch screen in folding state B. Upon being transitioned from folding state B via folding state C back to folding state B, the mobile terminal may display randomly mixed icons or contents on the first touch screen and the second touch screen. Here, the mobile terminal may apply the decalcomania operation only to an image selected by a tap or to a section selected by a drag on the first touch screen.

[0038] When being transitioned from folding state C to folding state A or D, the mobile terminal may display the current time as a text string or as a round clock with hour, minute and second hands on the first touch screen, and may display a single photograph in a fixed form or many photographs in a slide form on the second touch screen. At this time, the mobile terminal may deactivate the touch sensors of the first touch screen and second touch screen.

[0039] When being transitioned from folding state A, B or D via folding state C back to the original folding state, the mobile terminal may perform a special function (such as content mixing) of an active application program. To be more specific, it is assumed that the mobile terminal activates a search function for photographs or moving images using icons or images on the first touch screen, and activates a search function for music files on the

second touch screen in folding state A, B or D. Upon being transitioned from folding state A, B or D via folding state C back to the original folding state, the mobile terminal may create a new content by mixing a photograph or moving image on the first touch screen with a music file on the second touch screen. For example, it is assumed that ten photographs are listed in a multi-view format on the first touch screen, and three music files are listed as icons on the second touch screen in folding state A, B or D. Upon being transitioned from folding state A, B or D via folding state C back to the original folding state, the mobile terminal may combine the ten photographs into a slide format and edit the three music files into a background music file for the combined photographs. Thereafter, the mobile terminal may save the content composed of the photographs and music files.

[0040] When the mobile terminal is transitioned from folding state C via folding state D and folding state A to folding state B, it may activate an application program for each folding state transition. That is, upon being transitioned from folding state C to folding state D, the mobile terminal activates a first application program and outputs a corresponding window on the first touch screen. Upon being transitioned from folding state D to folding state A, the mobile terminal activates a second application program and outputs a corresponding window on the second touch screen. Upon being transitioned from folding state A to folding state B, the mobile terminal activates a third application program and outputs a corresponding window on one of the first touch screen and the second touch screen. Here, the mobile terminal may continue the execution of a selected one of the first application program and the second application program without activating a third application program.

[0041] In particular, to suppress the generation of inadvertent folding events caused by transitions between folding states, only when a specific folding angle is sustained by the mobile terminal for longer than or equal to a preset time, the angle sensor may generate a corresponding folding event and send the folding event to the control unit.

[0042] The mobile terminal may perform further application control according to occurrence of a placement event. For example, when being transitioned to folding state A or D, the mobile terminal may refers to the function table, activate a preset application program, and display a corresponding window on one of the first touch screen and the second touch screen. When the user places the mobile terminal in folding state A or D vertically upright so that a side of the first touch screen and a side of the second touch screen are placed on the same surface, the angle sensor may generate a corresponding placement event and send the placement event to the control unit. Upon reception of the placement event, the control unit may refer to the function table and control execution of the activated application program on the touch screen. Here, the function table may contain triples of application program, placement event, and control command as entries.

[0043] When the mobile terminal is in folding state A or D, the control unit may control the first touch screen to display a window related to the activation of a scheduler and control the second touch screen to display a photograph, image or moving image. Thereafter, when the user changes the placement of the mobile terminal, the control unit may control the touch screens to fix screen images or to rotate screen images with reference to the function table. For example, when the scheduler window and the image window are in a landscape orientation, the control unit may control the touch screens to rotate the scheduler window and the image window in portrait orientation according to the occurrence of a placement event. After occurrence of the placement event, the control unit may deactivate the touch sensors of the touch screens. Thereby, the mobile terminal may act as an electronic frame for a calendar or photograph. In folding state A or D, the folding angle of the mobile terminal is less than 180 degrees. The above description is also applicable to a folding angle greater than 180 degrees. For example, when the folding angle of the mobile terminal is fixed at 270 or 300 degrees, the mobile terminal may act an electronic frame in a direction opposite to the case of folding state A or D. In particular, to suppress an excessive sensitivity to minor movement or shaking, it is preferable to generate a placement event for operation control only when a specific placement condition is sustained for longer than or equal to a threshold time. The mobile terminal may provide a menu enabling the user to set the threshold time for sensitivity adjustment. If the sensitivity level is high (i.e. the threshold time is short), the mobile terminal may regard shaking as a placement condition.

[0044] As described above, the mobile terminal of the present invention may receive a folding event as an input signal from the angle sensor, and perform application control in various ways conformable to the touch screens on the basis of the function table and received folding events.

[0045] FIG. 5 shows one example of executing an application program on the mobile terminal having a foldable display unit.

[0046] In FIG. 5, the mobile terminal displays a menu map on the first touch screen 110. The menu map on the first touch screen 110 includes a message menu 111, a video menu 113, and a file menu 115. The present invention is not limited to theses menus, and may further provide other menus or menu items. The mobile terminal lists various image files as icons on the second touch screen 120. The image files listed on the second touch screen 120 may be associated with the file menu 115 activated on the first touch screen 110. The control unit of the mobile terminal may control the execution of application programs separately on the first touch screen 110 and the second touch screen 120.

[0047] In operation, the user selects the video menu 113 on the first touch screen 110 by tapping (denoted by

'A') with a left hand finger, and selects an image icon 121 on the second touch screen 120 by tapping (denoted by 'B') and dragging (flick) toward the first touch screen 110 with a right hand finger.

[0048] Then, the mobile terminal may move the selected image icon 121 on the second touch screen 120 toward the selected video menu 113 on the first touch screen 110. As shown in FIG. 5, the image icon 121 is continuously displayed during the movement, and is removed from the second touch screen 120 after the movement.

[0049] To be more specific, when the folding angle of the mobile terminal is sustained at 180 degrees, the control unit may control the first touch screen 110 and the second touch screen 120 to display a menu map in full screen mode. Later, when the user selects and activates a file menu 115 of the menu map, the control unit may control only the first touch screen 110 to display a window for an application program related to the menu map and to resize the menu map on the first touch screen 110, and may control the second touch screen 120 to display image icons contained in the file menu 115. Here, the control unit may distinguish a sensing signal from the touch sensor of the first touch screen 110 from a sensing signal from the touch sensor of the second touch screen 120.

[0050] When a touch event occurs on the touch screen 110 or 120, the control unit may output an indication of event application. For example, when the video menu 113 is selected through tap 'A' on the first touch screen 110, the control unit may indicate the selection by changing the video menu 113 in color or shading so that the video menu 113 is easily distinguished from other items. When the image icon 121 is selected through tap 'B' on the second touch screen 120, the control unit may indicate the selection by changing the image icon 121 in color or shading.

[0051] When tap 'B' is extended to a flick, the control unit may move the selected image icon 121 according to the flick event (file moving). Hence, the control unit may apply touch events generated by the first touch screen 110 and the second touch screen 120 respectively to a menu handling program and a file search program.

[0052] As described above, the mobile terminal, having a foldable display unit with two adjacent touch screens, may cause two application programs separately running on the two touch screens to cooperate with each other according to generated touch events.

[0053] FIG. 6 shows another example of executing an application program on the mobile terminal having a foldable display unit.

[0054] In FIG. 6, the mobile terminal displays an idle window on the first touch screen 110 and displays a book 123 with multiple bookmarked pages on the second touch screen 120. When the user touches a bookmarked page A and a bookmarked page B, the control unit of the mobile terminal may recognize the touched bookmarked page A and bookmarked page B as being selected by matching touch points on the second touch screen 120 with the bookmarked pages.

[0055] Then, the control unit may control the first touch screen 110 to display the selected bookmarked pages, and control the second touch screen 120 to continue the display of the book 123. Here, the control unit may control the first touch screen 110 to separately display the bookmarked page A (denoted by 112) and the bookmarked page B (denoted by 114). In other words, upon selection of a bookmarked page A on the second touch screen 120, the control unit may display the bookmarked page A on the first touch screen 110. Upon selection of a bookmarked page B on the second touch screen 120, the control unit may display the bookmarked page B on the first touch screen 110. Here, the control unit may control the first touch screen 110 to display the bookmarked page A and bookmarked page B so that the bookmarked page A and bookmarked page B do not overlap with each other. Alternatively, the control unit may control the first touch screen 110 to display the bookmarked page A and bookmarked page B so that the bookmarked page A and bookmarked page B partially overlap with each other to make them further selectable.

[0056] In the above description, the second touch screen 120 displays a book 123 with multiple pages. This description may also be applied to a phone directory with multiple bookmarked phonebooks, where the phonebooks are associated with groups of members. That is, upon selection of a bookmarked phonebook of a phone directory displayed on the second touch screen 120, the control unit may control the first touch screen 110 to display the selected bookmarked phonebook. The displayed phonebook may contain a list of contacts such as a telephone number, photograph, address, birth date, anniversary, and so forth.

[0057] As described above, the mobile terminal having a foldable display unit may display a window for a particular application program on one of the touch screens, and display an auxiliary window for the application program on the other touch screen.

[0058] FIG. 7 shows yet another example of executing an application program on the mobile terminal having a foldable display unit.

[0059] In FIG. 7, the mobile terminal displays a plurality of images or icons associated with images on the first touch screen 110. This may be caused when the user selects a menu associated with an image browsing function. Alternatively, in the case where the image browsing function is set as a default function for a 180-degree folding event, the mobile terminal may display images or icons as shown in FIG. 7 when unfolded at 180 degrees. The image browsing function may also be set as a default function for a 120-degree folding event or a 90-degree folding event, and but this setting may be changed or adjusted by the user.

[0060] The mobile terminal displays an edit area 126 and an edit tool area 128 on the second touch screen 120 for editing one of the images listed on the first touch

screen 110. An image editing function may be activated on the second touch screen 120 by selection of a menu. The image editing function may also be activated on the second touch screen 120 by a folding event generated according to the folding angle of the mobile terminal. For example, in response to occurrence of a 120-degree folding event or a 90-degree folding event, the image browsing function may be activated on the first touch screen 110. Later, in response to occurrence of a 180-degree folding event, the mobile terminal may activates the image editing function on the second touch screen 120 and display windows related to the image editing function. Here, the function table may contain an entry linking the image editing function to the image browsing function. That is, the function table may contain a control command that causes an activation of the image editing function in response to occurrence of a particular folding event after the image browsing function is activated. Hence, the mobile terminal may control execution of the image browsing function and image editing function in a coordinated manner.

[0061] Thereafter, the user may select an image or icon to be edited on the first touch screen 110, and move the selected image or icon to the edit area 126 of the second touch screen 120 through dragging. For easy editing, the control unit may fit the image or icon into the edit area 126 by resizing. In this case, the control unit may enlarge the image or icon for better view. In addition to dragging as described above, image movement may be performed through various schemes. For example, the control unit may move a particular image, which is indicated by a touch event such as a double tap, long tap and flick on the first touch screen 110, to a preset area of the second touch screen 120. After moving the image, the control unit may remove the image or icon from the first touch screen 110.

[0062] The user may edit the image in the edit area 126 of the second touch screen 120 using individual editing tools in the edit tool area 128 provided therein. In response to occurrence of a touch event such as a flick or double tap after the completion of editing the image, the mobile terminal may move the edited image to the first touch screen 110. The edited image may be resized for the first touch screen 110.

[0063] When the folding angle is 120 degrees or 90 degrees, the mobile terminal may activate the image editing function on the second touch screen 120 with reference to the function table. When the folding angle becomes 180 degrees, the control unit may deactivate the image editing function on the second touch screen 120 and display a window in full screen mode for the image browsing function on both the first touch screen 110 and the second touch screen 120. The control unit may resize the images or icons for smooth image browsing by the use of both the first touch screen 110 and the second touch screen 120 or only the first touch screen 110.

[0064] As described above, the mobile terminal may activate related application programs on the first touch screen and the second touch screen 120, and control execution of the application programs in a coordinated manner according to folding events and user requests with reference to the function table.

[0065] FIG. 8 is a flow chart of an operation method for the mobile terminal having a foldable display unit according to another exemplary embodiment of the present invention.

[0066] Referring to FIG. 8, upon power on, the components of the mobile terminal are initialized (201). After initialization, the mobile terminal activates preset application programs related to, for example, the idle screen, a menu window, and a sleep feature (203). The mobile terminal supplies power to the angle sensor and activates an application program for operating the angle sensor.

[0067] The control unit senses the folding angle of the mobile terminal (205). That is, the angle sensor measures the folding angle between the first touch screen 110 and the second touch screen 120, and sends the measured folding angle to the control unit.

[0068] When the measured folding angle is received from the angle sensor, the control unit reads the function table from the storage unit (207). The function table may contain control commands that specify application programs to be activated according to sensed folding angles and output screens (first touch screen or second touch screen) for activated application programs.

[0069] The control unit controls the activation of an application program according to the sensed folding angle on the basis of the function table (209). For example, as described before, the control unit may activate various application programs related to clock display, viewing of photographs, web browsing, display of a key map or menu map, playback of a video file, playback of an audio file, file classification, image browsing, image editing, phonebook browsing, and book reading.

[0070] The control unit checks whether an end-of-use signal is input (211). If an end-of-use signal is not input, the control unit returns to step 203 for continued processing.

[0071] As is apparent from the foregoing, the present invention has an advantage in that various angle of folding manner enable activation of various modes in the mobile terminal. In the description, it is depicted that the mobile terminal of the present invention includes two touch screens. However, the present invention is not limited thereto. That is, the present invention is also applicable to a mobile terminal having a foldable display unit composed of three, four or more touch screens. In this case, the function table may contain control commands that specify application programs to be activated according to sensed folding angles and output screens for activated application programs, and the mobile terminal may activate application programs and control execution of activated application programs by use of the angle sensor and the function table. Further the shape of mobile display is represented in a rectangular form, but it should be noted that other shapes of display can be applied ac-

cording to the teachings of the present invention.

[0072] Although exemplary embodiments of the present invention have been described in detail hereinabove, it should be understood that many variations and modifications of the basic inventive concept herein described, which may appear to those skilled in the art, will still fall within the spirit and scope of the exemplary embodiments of the present invention as defined in the appended claims.

Claims

1. A method for providing different operation modes of a mobile terminal having a foldable display unit with a plurality of display zones, comprising:

   detecting a folding folding angle between adjacent display zones; and
   activating an application program or controlling an execution of an activated application program according to the detected folding angle.

2. The method of claim 1, further comprising collecting a touch event occurring on at least one of the display zones.

3. The method of claim 2, wherein the activating comprises one of:

   (a) carrying out application control on the basis of a function table specifying application control operations according to at least one of a touch event and a folding event;
   (b) when the folding angle between a first display zone and a second display zone is greater than a first predetermined angle and less than a second predetermined angle, activating a first preset application program and outputting a window related to the first application program on the first display zone;
   (c) when the folding angle between the first display zone and the second display zone is greater than the first predetermined angle and less than the second predetermined angle, activating a first preset application program and outputting a window related to the first application program on the first display zone, and activating a second preset application program and outputting a window related to the second application program on the second display zone;
   (d) when the folding angle between the first display zone and the second display zone becomes equal to a given angle, displaying one of windows related to a first application program and a second application program in a full screen mode on both the first display zone and the second display zone;
   (e) when the folding angle between the first display zone and the second display zone becomes equal to a predefined angle, identifying preset priorities of activated application programs, and outputting a window related to the highest-priority application program in a full screen mode on both the first display zone and the second display zone;
   (f) when the folding angle between the first display zone and the second display zone becomes equal to the predefined angle, identifying preset priorities of the display zones, and outputting a window displayed on the highest-priority display zone in a full screen mode on both the first display zone and the second display zone;
   (g) outputting, when the folding angle between the first display zone and the second display zone becomes less than the predefined angle, a window, which is currently displayed in a full screen mode on both the first display zone and the second display zone, on the first display zone; and
   (h) outputting, when the folding angle between the first display zone and the second display zone becomes less than the predefined angle, a window, which is currently displayed in full screen mode on both the first display zone and the second display zone, on the first display zone, and activating the most recently deactivated application program and outputting a window related to the newly activated application program on the second display zone.

4. The method of claim 1, wherein the activating comprises activating a preset function when the folding angle between the first display zone and the second display zone is changed from a first angle to a second angle less than the first angle and then changed back to the first angle.

5. The method of claim 4, wherein the activating further comprises one of:

   executing a particular function that copies a content listed on the first display zone and moves the copied version to another display zone; and
   copying, when the folding angle between the first display zone and the second display zone remains greater than the first angle and a touch event for selecting a content listed on the first is sensed, the selected content and moving the copied version to another display zone.

6. The method of claim 1, wherein the activating comprises one of:

   (a) combining, when the folding angle between the first display zone and the second display

zone is changed from a first angle to a second angle less than the first angle and then changed back to the first angle, a content listed on the first display zone and another content listed on the second display zone together into a single content;

(b) activating, when the folding angle between the first display zone and the second display zone remains greater than the first angle, a preset first application program and outputting a window related to the first application program on the first display zone, and activating an application program linked with the first application program and outputting a window related to the linked application program on the second display zone;

(c) activating one of preset application programs according to a change in the folding angle between two adjacent display zones, and outputting a window related to the activated application program on one of the display zones;

(d) outputting, when the folding angle between the first display zone and the second display zone is equal to a second angle, the window related to a currently running application program in full screen mode on both the first display zone and the second display zone; and

(e) outputting a window related to a first application program on the first display zone, outputting a window related to a second application program on the second display zone, and handling touch events occurring on the first display zone and the second display zone in a coordinated way.

7. The method of claim 6, wherein handling touch events in a coordinated way in outputting a window comprises moving, when a touch and hold event occurs on a menu item listed on the first display zone and a touch event occurs on a content listed on the second display zone for selection, the content selected on the second display zone to the menu item on the first display zone.

8. The method of claim 1, further comprising at least one of:

generating a placement event according to the placement state of the mobile terminal, and controlling the activation of an application program or execution of a currently active application program according to a generated placement event; and

deactivating, when a placement event is generated, a touch sensor installed on the display unit.

9. A mobile terminal having a foldable display, comprising:

a display unit having a plurality of display zones;

an angle sensor sensing a folding angle between adjacent display zones; and

a control unit activating an application program or controlling an execution of an activated application program according to the folding angle.

10. The mobile terminal of claim 9, further comprising at least one of:

a hinge unit enabling the display unit to be folded and unfolded;

a touch sensor generating a touch event according to a touch occurring on at least one of the display zones; and

a storage unit storing a function table defining application control operations according to at least one of a touch event and a folding event.

11. The mobile terminal of claim 9, wherein the control unit comprises:

a sensing detector identifying a folding event indicating the folding angle between a first display zone and a second display zone; and

a function controller activating at least one of preset application programs according to an identified folding event, and outputting at least one window related to the activated application program on at least one of the first display zone and second display zone.

12. The mobile terminal of claim 11, wherein the function controller controls one of:

(a) outputting, when the folding angle between the first display zone and the second display zone is equal to a predefined angle, one of windows related to a first application program and a second application program in a full screen mode on both the first display zone and the second display zone;

(b) outputting, according to preset priorities of application programs or the display zones, a window related to the highest-priority application program or highest-priority display zone in full screen mode;

(c) copying, when the folding angle between the first display zone and the second display zone is changed from a first angle to a second angle less than the first angle and then changed back to the first angle, a content listed on the first display zone and moving the copied version to another display zone;

(d) copying, when the folding angle between the first display zone and the second display zone remains greater than a predefined angle and a touch event occurs on a content listed on the

first display zone for selection, the content selected on the first display zone and moving the copied version to another display zone;

(e) combining, when the folding angle between the first display zone and the second display zone is changed from the first angle to the second angle less than the first angle and then changed back to the first angle, a content listed on the first display zone and another content listed on the second display zone together and storing the combined content;

(f) outputting, when a second application program linked to a preset first application program is present, a window related to the first application program on the first display zone, and activating the second application program and outputting a window related to the second application program on the second display zone; and

(g) activating one of preset application programs according to a change in the folding angle between two adjacent display zones, and outputting a window related to the activated application program on one of the display zones.

13. The mobile terminal of claim 11, wherein the function controller controls outputting a window related to a first application program on the first display zone, outputting a window related to a second application program on the second display zone, and handling touch events occurring on the first display zone and the second display zone in a coordinated way.

14. The mobile terminal of claim 13, wherein the function controller controls moving, when a touch and hold event occurs on a menu item listed on the first display zone and a touch event occurs on a content listed on the second display zone for selection, the content selected on the second display zone to the menu item on the first display zone.

15. The mobile terminal of claim 9, wherein the angle sensor generates a placement event according to the placement state of the mobile terminal, and wherein the control unit controls the activation of an application program or execution of a currently active application program according to the generated placement event, and deactivates, when the placement event is generated, a touch sensor installed on the display unit.

FIG . 1

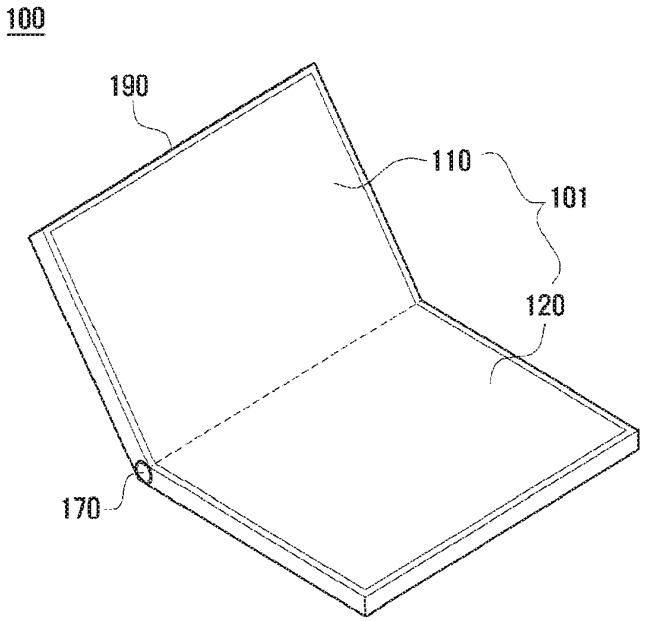


FIG . 2

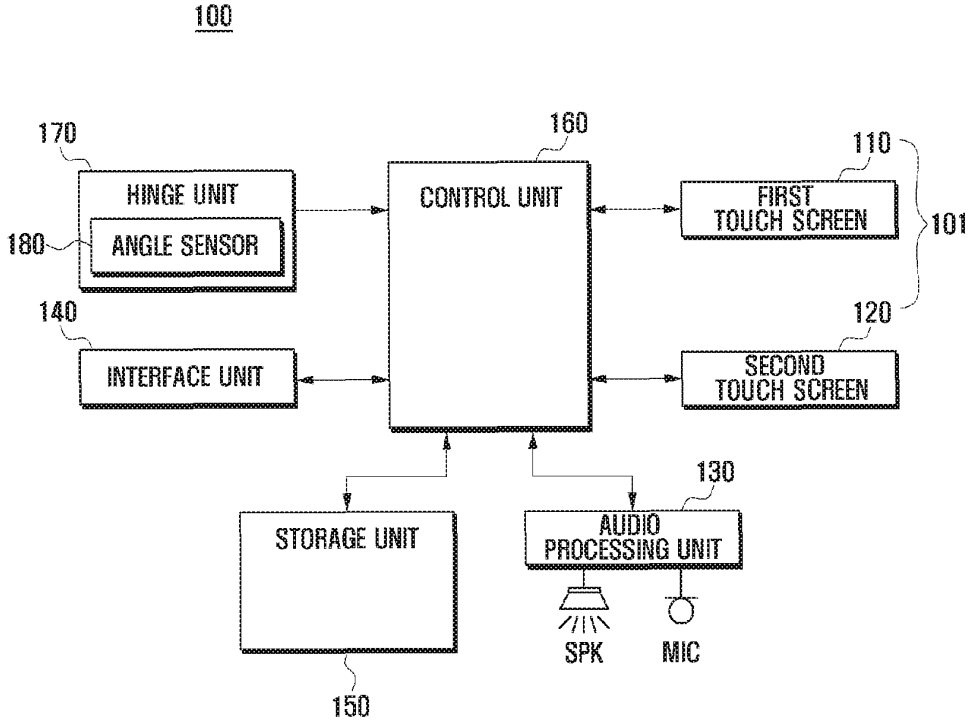

100
170
HINGE UNIT
180
ANGLE SENSOR
140
INTERFACE UNIT
160
CONTROL UNIT
110
FIRST TOUCH SCREEN
101
120
SECOND TOUCH SCREEN
130
AUDIO PROCESSING UNIT
SPK
MIC
STORAGE UNIT
150

FIG . 3

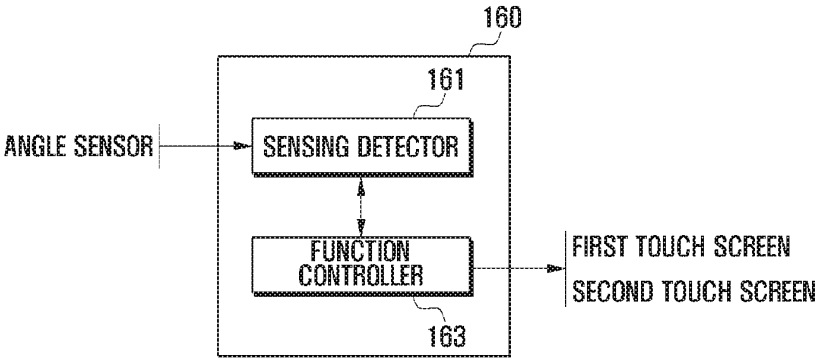

160
161
ANGLE SENSOR
SENSING DETECTOR
FUNCTION CONTROLLER
163
FIRST TOUCH SCREEN
SECOND TOUCH SCREEN

FIG . 4

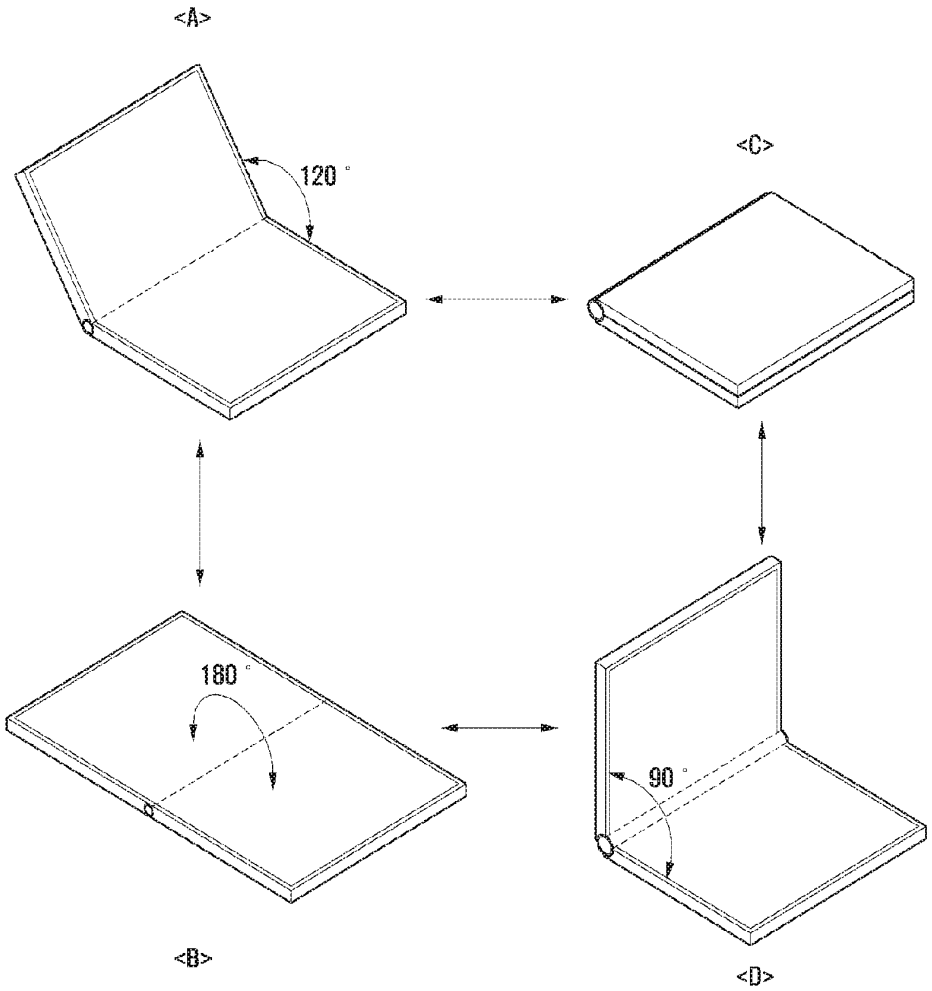


FIG . 5

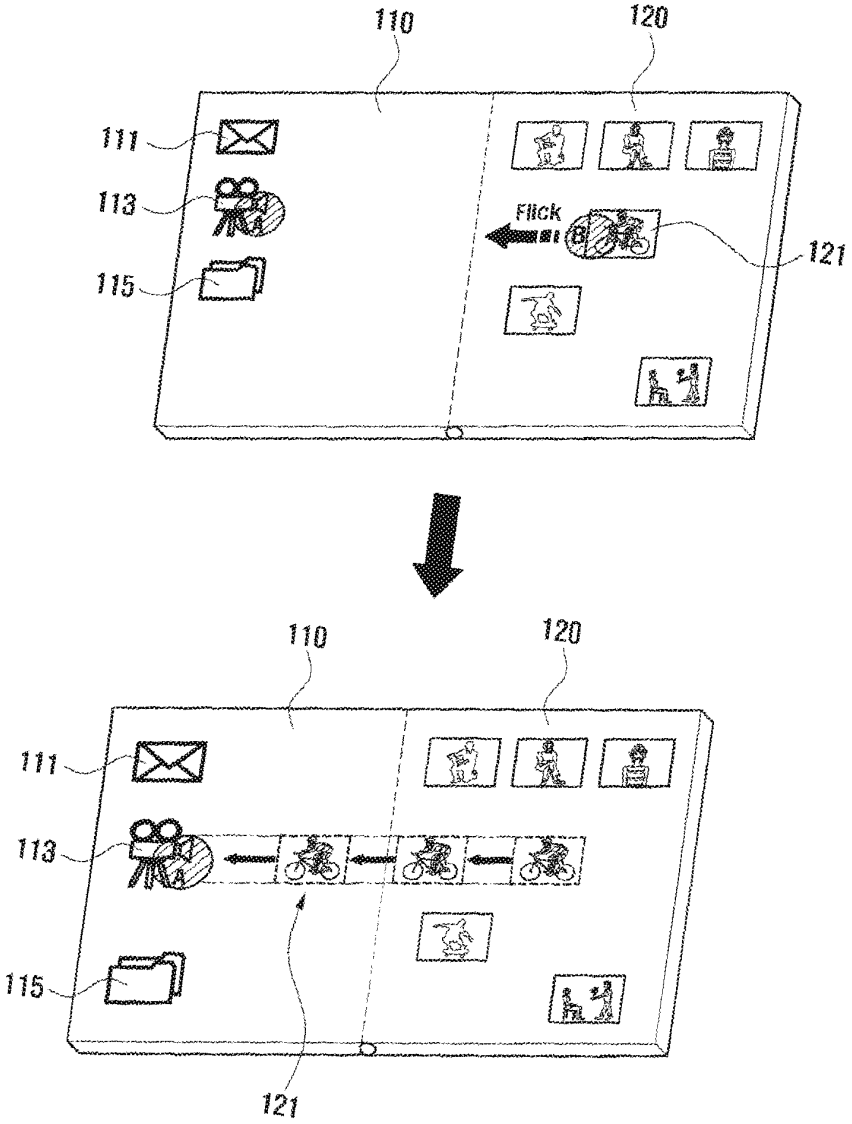


FIG . 6

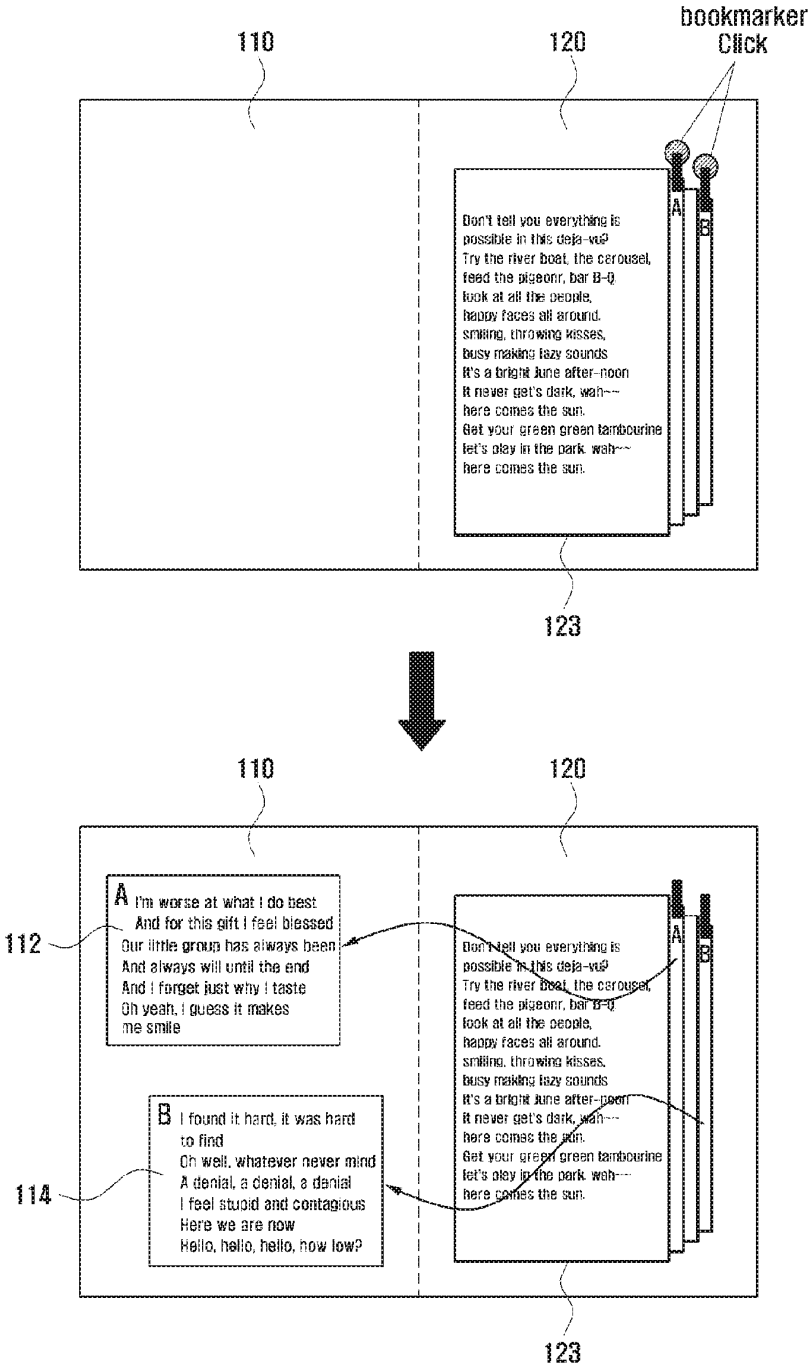

bookmarker Click
110
120
Don't tell you everything is possible in this deja-vu?
Try the river boat, the carousel,
feed the pigeonr, bar B-Q
look at all the people,
happy faces all around.
smiling, throwing kisses,
busy making lazy sounds
It's a bright June after-noon
It never get's dark, wah~~
here comes the sun.
Get your green green tambourine
let's play in the park, wah~~
here comes the sun.
123
110
120
A I'm worse at what I do best
And for this gift I feel blessed
Our little group has always been
And always will until the end
And I forget just why I taste
Oh yeah, I guess it makes
me smile
112
B I found it hard, it was hard
to find
Oh well, whatever never mind
A denial, a denial, a denial
I feel stupid and contagious
Here we are now
Hello, hello, hello, how low?
114
Don't tell you everything is possible in this deja-vu?
Try the river boat, the carousel,
feed the pigeonr, bar B-Q
look at all the people,
happy faces all around.
smiling, throwing kisses,
busy making lazy sounds
It's a bright June after-noon
It never get's dark, wah~~
here comes the sun.
Get your green green tambourine
let's play in the park, wah~~
here comes the sun.
123

FIG . 7

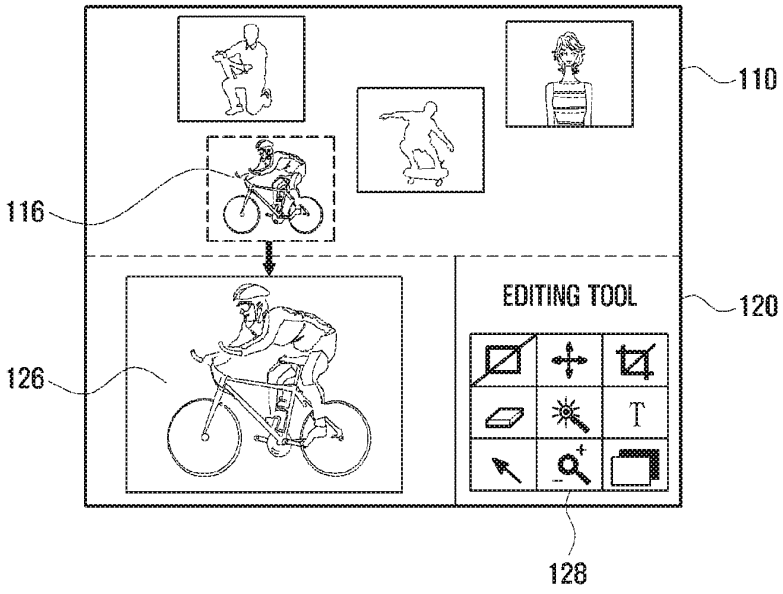
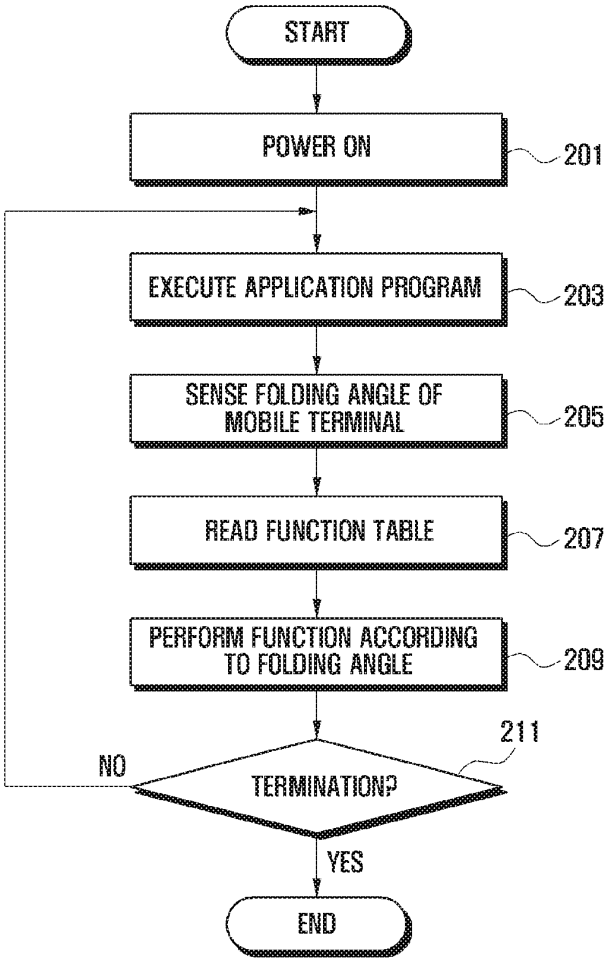


FIG .8


START
POWER ON
201
EXECUTE APPLICATION PROGRAM
203
SENSE FOLDING ANGLE OF MOBILE TERMINAL
205
READ FUNCTION TABLE
207
PERFORM FUNCTION ACCORDING TO FOLDING ANGLE
209
211
NO
TERMINATION?
YES
END

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2172
Sanjiv Sirpal	)	Confirmation No.: 7687
Serial No.: 14/523,069	)	Examiner: GAFFIN, JEFFREY A
Filed: October 24, 2014	)	SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Atty. File No.: 6583-8-CON	)	
Entitled: "Focus Change Upon Application Launch"	)	*Electronically Submitted*

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

The references cited on attached Form PTO/SB08 are being called to the attention of the Examiner.

☒ Copies of the cited non-patent and/or foreign references are enclosed herewith.

☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.

☒ Copies of the cited U.S. patents/unpublished patent applications/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).

☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

☒ To the best of applicants' belief, the pertinence of the foreign-language references is believed to be summarized in the attached English abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.

☒ Examiner's attention is drawn to the following related applications:

- Serial No. 14/834248 filed 08/24/2015 (Attorney Ref. No. 6583-10-CON)
- Serial No. 14/818806 filed 08/05/2015 (Attorney Ref. No. 6583-12-CON)
- Serial No. 14/954576 filed 11/30/2015 (Attorney Ref. No. 6583-57-CON)

☐ Other:_____

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any

reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☒	**37 CFR 1.97(b)**: No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfied by one of the following conditions ("X" indicates satisfaction): ☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application, or ☒ Before the mailing date of a first Office Action on the merits, or ☐ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114. Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.
☐	**37 CFR 1.97(c)**: The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of any one of the following conditions: (1) a final action under 37 C.F.R. 1.113, or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by: ☐ A Certification (below) as specified by 37 C.F.R. 1.97(e). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☐ Please charge Deposit Account 19-1970 in the amount of $180.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☐	**37 CFR 1.97(d)**: This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e) AND ☐ Applicants hereby requests consideration of the reference(s) disclosed herein. Please charge Deposit Account 19-1970 in the amount of $ under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e))
(Applicable only if checked)

☐ The undersigned certifies that:

☐ Each item of information contained in the Information Disclosure Statement submitted herewith was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(1).

☐ A copy of the communication from the foreign patent office is enclosed.

OR

☐ No item of information contained in the Information Disclosure Statement submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Douglas W. Swartz/
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Registration No. 37739
1560 Broadway, Suite 1200
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(303) 863-9700

Date: January 19, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/523,069	10/24/2014	Sanjiv Sirpal	6583-8-CON	7687

111285 7590 11/16/2016

Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
WEBER, JOY M	

ART UNIT	PAPER NUMBER
2173	

NOTIFICATION DATE	DELIVERY MODE
11/16/2016	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

edocket@sheridanross.com
flexpatents-sr@sheridanross.com

Office Action Summary	Application No. 14/523,069	Applicant(s) SIRPAL ET AL.	
	Examiner Joy M. Weber	Art Unit 2173	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/24/2014*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *21-40* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *21-40* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *10/24/2014* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date *1/19/2016, 6/30/2015*.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is sent in response to Applicant's Communication filed 24 October 2014, for the above referenced application number. The Office hereby acknowledges receipt of the following and placed of record in file: Specification, Drawings, Abstract, Oath/Declaration, and claims.

2. The present application is being examined under the pre-AIA first to invent provisions.

3. Claims 21-40 are presented for examination. Claims 1-20 were canceled by Applicant.

Priority

4. Acknowledgment is made of applicant's claim for priority based on U.S. Patent Application No. 13/248,618, filed September 29, 2011, U.S. Provisional Application Serial Nos. 61/389,000, filed October 1, 2010, entitled "Dual Display Windowing System;" 61/389,117, filed October 1, 2010, entitled "Multi- Operating System Portable Docketing Device;" 61/389,087, filed October 1,2010, entitled "Tablet Computing User Interface;"61/458,150, filed November 17, 2010, entitled "Dual Screen Email Client; 61/539,884, filed September 27, 2011, entitled "Mobile Device."

Drawings

5. The drawings filed 10/24/2014 are deemed acceptable for examination proceedings.

Claim Objections

6. Claims 31, 33 and 34 are objected to because of the following informalities:

7. Regarding claims 31, 33 and 34, contain the limitations directed to "…**the first configurable area**…," and "…**the second configurable area**…," but these limitations were not previously introduced.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428,46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046,29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438,164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528,163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321 (c) or 1.321 (d) may be used to overcome an actual or provisional rejection based on a nonstatutory

double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 21-40 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim(s) 1-20 of U.S. Patent No. 8,875,050. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the reasons set forth below and in the table.

This is a non-provisional obviousness-type double patenting rejection because the conflicting claims have been patented.

Claim 21 (Instant Application)	Claim 1 ('050 Patent)	Remarks
A method, comprising: displaying a first image of a first application on a first display, wherein the first image is in focus, wherein input options for the first application are displayed in a first configurable area, wherein input is allowed from the first configurable area	A method, comprising: displaying a first image of a first application on a first display **of a first screen,** wherein the first image is in focus, wherein input options for the first application are displayed in a first configurable area **of the first screen**, wherein input is allowed from the first configurable area	Claim 21 of the Instant Application is broader than Claim 1 of the '050 Patent and includes the limitations of the '050 Patent. The wording differences are bolded between the two Applications.

and the first display, wherein no input options are displayed in a second configurable area, wherein input is not allowed from the second configurable area, and wherein input is allowed from a second display;	and the first display **of the first screen**, wherein no input options are displayed in a second configurable area **of a second screen**, wherein input is not allowed from the second configurable area, and wherein input is allowed from a second display **of the second screen**;	
receiving first input indicating a request to launch a second application; launching the second application;	receiving first input **on the first screen or the second screen** indicating a request to launch a second application; launching the second application;	
displaying, by the second application, a second image on the second display; and	displaying, by the second application, a second image on the second display **of the second screen**; and	
changing the focus from the first image to the second display, wherein no input options are displayed in the first configurable area, wherein input is not allowed from the first configurable	changing the focus from the first image to the second display, wherein no input options are displayed in the first configurable area, wherein input is not allowed from the first configurable	

area, wherein input is allowed from the first display, wherein input options for the second application are displayed in the second configurable area, and wherein input is allowed from the second configurable area and the second display.	area, wherein input is allowed from the first display, wherein input options for the second application are displayed in the second configurable area **of the second screen**, and wherein input is allowed from the second configurable area and the second display **of the second screen**.	

10. Claims 22-40 are rejected on the ground of nonstatutory obviousness-type double patenting for the reasons set forth both below in the claims and above in the double patenting rejection. The claims of the Instant Application are broader than claims of the '050 Patent and anticipate the limitations of the '050 Patent with minor phrase changes. Therefore, the claims in the Instant Application are obvious over the '050 Patent. This is a non-provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 102

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 30, 33 and 36 are rejected under pre-AIA 35 U.S.C. 102(e) as being anticipated by Kim et al. (hereinafter, as Kim), United States Patent Application Publication 2010/0182265 (as cited by Applicant in IDS).

12. Regarding Claim 30, Kim discloses a non-transitory computer readable medium storing computer executable instructions (application programs running on the device, Para 24, and memory storing data, Para 25, and a storage unit stores application programs for the functions of the device, Para 35) that when executed by at least one processor (the control unit processes signals, Para 81) perform a method comprising:

displaying a first image of a first application on a first display, wherein the first image is in focus (the first touch screen 110 displays a screen related to an activation of a first application program, Para 32, and the first touch screen 110 may display various screens, such as an application, a photograph, a message, or an icon, Para 31, Figure 2, and when a touch event occurs or a selection event on the touch screen, the control unit may output an indication of event application, such as changing the color or shading of the selected item or image on the display on the first touch screen, and tap 'A' on the first image on the first display, Para 61, Figure 5), wherein input is allowed from the first display (The first touch screen 110 detects a touch event occurring at a point in a displayed screen, Para 31), and wherein input is allowed from a second display (a second touch screen 120, Figure 2), and wherein input is allowed from a second display;

receiving first input (each display zone of the display unit, is made of a touch screen and input signals are received through the display, Para 22) indicating a request to launch a second application (the first touch screen 110 detects a touch event occurring at a point in a displayed screen and sends the detected touch event to the control unit, Para 31, Figure 1, and a user may activate an application program, Para

32), the input is received by one of the first display and the second display (a user may activate an application program on either the first or second touch screen, Para 32);

in response to receiving the first input, launching the second application (activate an application program, Para 32);

displaying, by the second application, a second image on the second display (the second touch screen 120 displays another screen related to an activation of a second application program, Para 32); and

changing focus from the first image to the second display, wherein input is allowed from the first display, and wherein input is allowed from the second display (the color or shading of the selected item or image on the first touch screen display changes focus to the selected image or item on the second display, Para 61, Figure 5).

13. Regarding Claim 33, Kim discloses claim 30, wherein the tap requires contact with the second display for a predetermined period of time, wherein the first display and the first configurable area are on a first screen, and wherein the second display and the second configurable area are on a different second screen (The sensing detector 161 may control the time points at which the first touch sensor, the second touch sensor and the angle sensor 180 are activated, to determine a touch event gesture, Para 40, and selections are matched to control the operation of a currently active application program or activation of a new application program on the basis of the current event and the function table, Para 41, and different touch gestures between the two touch screens, Para 45).

14. Regarding Claim 36, Kim discloses the non-transitory computer readable medium of claim 30, wherein the method further comprises: receiving second input indicating that in response to the first input, the focus should be changed to the second display (a second touch event may occur after the first touch event to activate a new application, Para 41).

Claim Rejections - 35 USC § 103

15. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claims 21-26, 28, 34, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim, and in view of Rapp et al. (hereinafter, as Rapp), United States Patent No. 8,421,762.

17. Regarding Claim 21, Kim discloses a method, comprising:

displaying a first image on a first display of a first screen, wherein the first image is in focus (the first touch screen 110 displays a screen related to an activation of a first application program, Para 32, and the first touch screen 110 may display various screens, such as an application, a photograph, a message, or an icon, Para 31, Figure 2), wherein input options for the first application are displayed in a first configurable area (and when a touch event occurs or a selection event on the touch screen, the control unit may output an indication of event application, such as changing the color or shading of the selected item or image on the display on the first touch screen, and tap

'A' on the first image on the first display, Para 61, Figure 5), wherein input is allowed from the first configurable area and the first display (The first touch screen 110 detects a touch event occurring at a point in a displayed screen, Para 31), and wherein input is allowed from a second display (a second touch screen 120, Figure 2);

receiving first input (each display zone of the display unit, is made of a touch screen and input signals are received through the display, Para 22) indicating a request to launch a second application (the first touch screen 110 detects a touch event occurring at a point in a displayed screen and sends the detected touch event to the control unit, Para 31, Figure 1, and a user may activate a second application program on the second touch screen, Para 32, and the second touch screen has the same touch detection structure for receiving user inputs, Para 32);

launching the second application (activation or launching of a second program, Para 32);

displaying, by the second application, a second image on a second display (the second touch screen 120 displays another screen related to an activation of a second application program, Para 32); and

changing the focus from the first image to the second display (when a touch event occurs or a selection event on the touch screen, the control unit may output an indication of event application, such as changing the color or shading of the selected item or image on the display on the second touch screen, and tap 'B' on the second image on the second display, Para 61, Figure 5), wherein input is allowed from the first display (The first touch screen 110 detects a touch event occurring at a point in a

displayed screen, Para 31), wherein input options for the second application are displayed in the second configurable area (menu items are displayed on the screen, Para 57, Figure 5), and wherein input is allowed from the second configurable area and the second display (a second touch screen 120, Figures 2 and 5).

Kim does not appear to explicitly disclose: wherein **no input options are displayed in a second configurable area**, wherein **input is not allowed from the second** configurable **area**; and changing the focus, wherein **no input options are displayed in the first configurable area**, wherein **input is not allowed from the first** configurable **area**.

Rapp teaches manipulation of user interface objects with activation regions, wherein no input options are displayed in a second configurable area (no input options are displayed for the second interface object 5004-a, Figure 5B), wherein input is not allowed from a second configurable area (upon input detection provided by the user, the currently selected interface object will provide activation regions for manipulation of the object 5008-a, Column 26, Lines 57-67, and Column 27, Lines 1-6, Figure 5B, and Figures 5C-5D and 8A-8D; the second interface object does not have the current focus and therefore, the activation regions around the second interface object are not enabled and cannot be manipulated while the second object is not selected); and

changing focus, wherein no input options are displayed in the first configurable area (the user selects the second interface object, and no input options are displayed for the first interface object 5002-c, Figure 5E), wherein input is not allowed from a first configurable area (the activation region is only provided around the second interface

object 5004-a and not the first interface object 5002-c Figure 5E; the first interface object does not have the current focus and therefore, the activation regions around the first interface object are not enabled and cannot be manipulated while the first object is not selected).

It would have been obvious to one of ordinary skill in art, having the teachings of Kim and Rapp before him at the time of invention was made, to modify the activation regions of an image that is in focus as disclosed by Kim to include not providing input options for the particular area of the image object that is not in focus as taught by Rapp.

One of ordinary skill in the art would be motivated to do so for providing more efficient interfaces for more accurately manipulating user interface objects, while minimizing the number of user inputs for manipulation tasks (Rapp, Column 1, Lines 64-67 and Column 2, Lines 10-12).

18. Regarding Claim 22, Kim and Rapp teach the method of claim 21. Kim further teaches, wherein the first image is displayed in portrait mode on the first display and the second image is displayed in portrait mode on the second display (the control unit may control the first touch screen to display a window related to the activation of a scheduler and control the second touch screen to display a photograph, image or moving image, and the scheduler window and the image window displayed in portrait orientation for folding states A or D, Para 54, Figure 4).

Rapp further teaches, wherein the first display, the first configurable area, the second display, and the second configurable area are on a common first screen (Figures 5A-5B, 5C-5D and 8A-8D).

19. Regarding Claim 23, Kim and Rapp teach the method of claim 21. Kim further teaches, wherein the first image is displayed in landscape mode on the first display and the second image is displayed in landscape mode on the second display (the control unit may control the first touch screen to display a window related to the activation of a scheduler and control the second touch screen to display a photograph, image or moving image, and the scheduler window and the image window are in a landscape orientation, Para 54, Figure 7), wherein the first display and the first configurable area are on a first screen, and wherein the second display and the second configurable area are on a different second screen (Figure 5).

20. Regarding Claim 24, Kim and Rapp teach the method of claim 21. Kim further teaches, further comprising: wherein the first image is a first open window of a first application and the second image is a second open window of the second application (the first image on the first display is the image of pages within an electronic book and the user selects a bookmark ‘A’ or ‘B’ and the second image of the corresponding bookmarked page is displayed on the second display, Paras 64-66, Figure 6).

21. Regarding Claim 25, Kim and Rapp teach the method of claim 21. Kim further teaches, further comprising: receiving second input indicating that in response to receiving the first input, the second application should be launched and the focus should be placed on the second image displayed by the second application (while the first touch screen displays a screen related to an activation of a first application program, the second touch screen displays another screen related to an activation of a second application program, Para 32, and the first screen displays a plurality of images or icons

located in the first screen folder location for an image browsing application, Para 70, and the user activates an image editing application on the second screen, Para 71, and the focus is shown in the editing application with a box around the selected image 126, Para 72, Figure 7).

22. Regarding Claim 26, Kim and Rapp teach the method of claim 21. Rapp further teaches, highlighting an first configurable area when the focus is on the first image in the first display (a visual confirmation to indicate an action on the selected object is being performed, and may include highlighting a perimeter of the currently selected user interface object, displaying a resizing handle, Column 39, Lines 18-23).

Kim further teaches, further comprising: changing the highlighting to the second configurable area when the focus is on the second image in the second display (the user activates the image editing function, when the menu icons display, the area is lighted according to the assigned color scheme of the icons, Para 71, and the menu for the edit tool area is displayed 128, Para 73, Figure 7; in Para 72).

23. Regarding Claim 28, Kim and Rapp teach the method of claim 21. Kim further teaches, further comprising: in response to receiving the first input, highlighting at least one of the second image or the second display (the user activates the image editing function, and when the menu icons display, the area is lighted according to the assigned color scheme of the icons, Para 71, and the menu for the edit tool area is displayed 128, Para 73, Figure 7; in Para 72, the Instant Application's Specification describes a configurable area as an area that has been configured for specific inputs, such as a menu).

24. Regarding Claim 34, Kim discloses the non-transitory computer readable medium of claim 33, wherein the method further comprises: highlighting a first configurable area on a first screen when the focus is on the first image in the first display, wherein input options for the first application are displayed in the first configurable area when the focus is on the first image (the user activates the image editing function, and when the menu icons display, the area is lighted according to the assigned color scheme of the icons, Para 71, and the menu for the edit tool area is displayed 128, Para 73, Figure 7; in Para 72), wherein input is allowed from the first configurable area when the focus is on the first image, when the focus is on the first image (The first touch screen 110 detects a touch event occurring at a point in a displayed screen, Para 31); and

changing the highlighting to the second configurable area when the focus is on the second image in the second display, wherein input options for the second application are displayed in the second configurable area when the focus is on the second image, wherein input is allowed from the second configurable area when the focus is on the second image, when the focus is on the second image (when a touch event occurs or a selection event on the touch screen, the control unit may output an indication of event application, such as changing the color or shading of the selected item or image on the display on the second touch screen, and tap ‘B’ on the second image on the second display, Para 61, Figure 5, and the user activates the image editing function, Para 71, and the menu for the edit tool area is displayed 128, Para 73,

Figure 7, and the editing tool menu displays 9 different buttons, Figure 7, the second screen contains buttons for controlling playback of a video file, Para 32).

Kim does not appear to explicitly disclose: wherein **no input options are displayed in a second configurable area**, wherein **input is not allowed from the second** configurable **area**; and changing the focus, wherein **no input options are displayed in the first configurable area**, wherein **input is not allowed from the first** configurable **area**.

Rapp teaches manipulation of user interface objects with activation regions, wherein no input options are displayed in a second configurable area (no input options are displayed for the second interface object 5004-a, Figure 5B), wherein input is not allowed from a second configurable area (upon input detection provided by the user, the currently selected interface object will provide activation regions for manipulation of the object 5008-a, Column 26, Lines 57-67, and Column 27, Lines 1-6, Figure 5B, and Figures 5C-5D and 8A-8D; the second interface object does not have the current focus and therefore, the activation regions around the second interface object are not enabled and cannot be manipulated while the second object is not selected); and

changing focus, wherein no input options are displayed in the first configurable area (the user selects the second interface object, and no input options are displayed for the first interface object 5002-c, Figure 5E), wherein input is not allowed from a first configurable area (the activation region is only provided around the second interface object 5004-a and not the first interface object 5002-c Figure 5E; the first interface object does not have the current focus and therefore, the activation regions around the

first interface object are not enabled and cannot be manipulated while the first object is not selected).

It would have been obvious to one of ordinary skill in art, having the teachings of Kim and Rapp before him at the time of invention was made, to modify the activation regions of an image that is in focus as disclosed by Kim to include not providing input options for the particular area of the image object that is not in focus as taught by Rapp.

One of ordinary skill in the art would be motivated to do so for providing more efficient interfaces for more accurately manipulating user interface objects, while minimizing the number of user inputs for manipulation tasks (Rapp, Column 1, Lines 64-67 and Column 2, Lines 10-12).

25. Regarding Claim 37, Kim discloses a communication device (a mobile terminal having a foldable display with a plurality of display zones, Abstract, Figure 1), comprising:

a first touch sensitive display and a first configurable area (first touch screen 110, Para 25, Figure 1);

a second touch sensitive display a second configurable area (second touch screen 120, Para 25, Figure 1);

a computer readable medium that stores computer executable instructions (application programs running on the device, Para 24, and memory storing data, Para 25, and a storage unit stores application programs for the functions of the device, Para 35) that when executed by at least one processor (the control unit processes signals, Para 81) perform a method comprising:

displaying a first image of a first application on the first touch sensitive display (the first touch screen 110 displays a screen related to an activation of a first application program, Para 32, and the first touch screen 110 may display various screens, such as an application, a photograph, a message, or an icon, Para 31, Figure 2), wherein the first image is in focus, wherein input options for the first application are displayed in the first configurable area (when a touch event occurs or a selection event on the touch screen, the control unit may output an indication of event application, such as changing the color or shading of the selected item or image on the display on the first touch screen, and tap 'A' on the first image on the first display, Para 61, Figure 5), wherein input is allowed from the first configurable area and the first touch sensitive display (The first touch screen 110 detects a touch event occurring at a point in a displayed screen, Para 31), and wherein input is allowed from the second touch sensitive display (a second touch screen 120, Figure 2)

receiving first input on the first touch sensitive display or the second touch sensitive display indicating a request to launch a second application (a touch sensor generates input signals corresponding to touch events of the user, Para 31, and the user makes a selection on the touch screen by tapping with a finger, Para 58, and the first touch screen 110 detects a touch event occurring at a point in a displayed screen and sends the detected touch event to the control unit, Para 31, Figure 1, and a user may activate an application program, Para 32, and

a user may activate an application program on either the first or second touch screen, Para 32);

launching the application (activation or launching of a second program, Para 32, and executing an application, Paras 17-19, Figures 5-7);

displaying, by the second application, a second image on the second touch sensitive display (the second touch screen 120 displays another screen related to an activation of a second application program, Para 32);

changing the focus from the first touch sensitive display to the second touch sensitive display, wherein input is allowed from the first touch sensitive display, wherein input options for the second application are displayed in the second configurable area, and wherein input is allowed from the second configurable area and the second touch sensitive display (when a touch event occurs or a selection event on the touch screen, the control unit may output an indication of event application, such as changing the color or shading of the selected item or image on the display on the second touch screen, and tap 'B' on the second image on the second display, Para 61, Figure 5, and the user activates the image editing function, Para 71, and the menu for the edit tool area is displayed 128, Para 73, Figure 7, and the editing tool menu displays different buttons, Figure 7, the second screen contains buttons for controlling playback of a video file, Para 32).

Kim does not appear to explicitly disclose: wherein **no input options are displayed in a second configurable area**, wherein **input is not allowed from the**

second configurable **area**; and changing the focus, wherein **no input options are displayed in the first configurable area**, wherein **input is not allowed from the first** configurable **area**.

Rapp teaches manipulation of user interface objects with activation regions, wherein no input options are displayed in a second configurable area (no input options are displayed for the second interface object 5004-a, Figure 5B), wherein input is not allowed from a second configurable area (upon input detection provided by the user, the currently selected interface object will provide activation regions for manipulation of the object 5008-a, Column 26, Lines 57-67, and Column 27, Lines 1-6, Figure 5B, and Figures 5C-5D and 8A-8D; the second interface object does not have the current focus and therefore, the activation regions around the second interface object are not enabled and cannot be manipulated while the second object is not selected); and

changing focus, wherein no input options are displayed in the first configurable area (the user selects the second interface object, and no input options are displayed for the first interface object 5002-c, Figure 5E), wherein input is not allowed from a first configurable area (the activation region is only provided around the second interface object 5004-a and not the first interface object 5002-c Figure 5E; the first interface object does not have the current focus and therefore, the activation regions around the first interface object are not enabled and cannot be manipulated while the first object is not selected).

It would have been obvious to one of ordinary skill in art, having the teachings of Kim and Rapp before him at the time of invention was made, to modify the activation

regions of an image that is in focus as disclosed by Kim to include not providing input options for the particular area of the image object that is not in focus as taught by Rapp.

One of ordinary skill in the art would be motivated to do so for providing more efficient interfaces for more accurately manipulating user interface objects, while minimizing the number of user inputs for manipulation tasks (Rapp, Column 1, Lines 64-67 and Column 2, Lines 10-12).

26. Regarding Claim 38, Kim and Rapp teach the device of claim 37. Rapp further teaches, wherein the first display, the first configurable area, the second display, and the second configurable area are on a common first screen (Figures 5A-5B, 5C-5D and 8A-8D) and wherein the method further comprises:

providing a visual indication that focus is on the first image in the first touch sensitive display, wherein the indication identifies which display or application has the focus (a visual confirmation to indicate an action on the selected object is being performed, and may include highlighting a perimeter of the currently selected user interface object, displaying a resizing handle, Column 39, Lines 18-23); and

changing the visual indication when the focus is on the second image in the second touch sensitive display (the user selects a different object and a visual confirmation to indicate an action on the selected object is being performed, and may include highlighting a perimeter of the currently selected user interface object, displaying a resizing handle, Column 39, Lines 18-23).

27. Claims 27, 29, 31, 32, 35, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim and Rapp, and in view of Kondo et al. (hereinafter, as Kondo), United States Patent No. 6512497 (as cited by Applicant in IDS).

28. Regarding Claim 27, Kim and Rapp teach the method of claim 26. Kim and Rapp do not appear to explicitly disclose: wherein **the first configuration area is separate from the first display and the second configurable area is separate from the second display**.

Kondo teaches in the same field of endeavor, wherein the first configuration area is separate from the first display and the second configurable area is separate from the second display (controls for page forward buttons 13 and 14, and the screen selection button 15, are located below the display screens 11 and 12, Column 2, Lines 39-42).

It would have been obvious to one of ordinary skill in art, having the teachings of Kim, Rapp and Kondo before him at the time of invention was made, to modify the locations of the configuration areas as disclosed by Kim to include locating the configuration areas separate from the display area as taught by Kondo.

One of ordinary skill in the art would be motivated to do so to provide controls to drive a device while reducing the amount of power consumed by the display screens that display two-page information (Kondo, Column 1, Lines 26-32, Figure 1).

29. Regarding Claim 29, Kim and Rapp teach the method of claim 21. Kim further teaches, wherein the first input is a tap gesture received by one of the first display, the second display, a first gesture capture region, or a second gesture capture region (a touch sensor generates input signals corresponding to touch events of the user, Para

31, and the user makes a selection on the touch screen by tapping with a finger, Para 58).

Kim and Rapp do not appear to explicitly disclose: wherein **the first gesture capture region is separate from the first display and the second gesture capture region is separate from the second display, and wherein the first and second gesture capture regions are not capable of displaying images of applications**.

Kondo teaches in the same field of endeavor, wherein the first gesture capture region is separate from the first display and the second gesture capture region is separate from the second display, and wherein the first and second gesture capture regions are not capable of displaying images of applications (controls for page forward buttons 13 and 14, and the screen selection button 15, are located below the display screens 11 and 12, Column 2, Lines 39-42).

It would have been obvious to one of ordinary skill in art, having the teachings of Kim, Rapp and Kondo before him at the time of invention was made, to modify the locations of the configuration areas as disclosed by Kim to include locating the configuration areas separate from the display area as taught by Kondo.

One of ordinary skill in the art would be motivated to do so to provide controls to drive a device while reducing the amount of power consumed by the display screens that display two-page information (Kondo, Column 1, Lines 26-32, Figure 1).

30. Regarding Claim 31, Kim discloses the non-transitory computer readable medium of claim 30. Kim further teaches, wherein the first display, the first configurable area, the second display, and the second configurable area (screens 110 and 120,

Figure 5), wherein the first input is a tap gesture received by one of the first display, the second display, a first gesture capture region, or a second gesture capture region (a touch sensor generates input signals corresponding to touch events of the user, Para 31, and the user makes a selection on the touch screen by tapping with a finger, Para 58), wherein the tap requires contact with the second display for a predetermined period of time (The sensing detector 161 may control the time points at which the first touch sensor, the second touch sensor and the angle sensor 180 are activated, to determine a touch event gesture, Para 40, and selections are matched to control the operation of a currently active application program or activation of a new application program on the basis of the current event and the function table, Para 41, and different touch gestures between the two touch screens, Para 45).

Kim does not appear to explicitly disclose: wherein the first display, the first configurable area, the second display, and the second configurable area **are on a common first screen**.

Rapp teaches manipulation of user interface objects with activation regions, a first display, a first configurable area, a second display, and a second configurable area are on a common first screen (no input options are displayed for the selected interface object, upon input detection provided by the user, and the currently selected interface object will provide activation regions for manipulation of the selected object and provide an updated display, Column 26, Lines 57-67, and Column 27, Lines 1-6, Figure 5B, and Figures 5B-5D and 8A-8D).

It would have been obvious to one of ordinary skill in art, having the teachings of Kim and Rapp before him at the time of invention was made, to modify the activation regions of a selected image object in each display as disclosed by Kim to include providing input options for the particular area of the image object that is in focus in a common screen as taught by Rapp.

One of ordinary skill in the art would be motivated to do so for providing more efficient interfaces for more accurately manipulating user interface objects, while minimizing the number of user inputs for manipulation tasks (Rapp, Column 1, Lines 64-67 and Column 2, Lines 10-12).

Kim and Rapp do not appear to explicitly disclose: **wherein the first gesture capture region is separate from the first display and the second gesture capture region is separate from the second display, and wherein the first and second gesture capture regions are not capable of displaying images of applications**.

Kondo teaches in the same field of endeavor, wherein the first gesture capture region is separate from the first display and the second gesture capture region is separate from the second display, and wherein the first and second gesture capture regions are not capable of displaying images of applications (controls for page forward buttons 13 and 14, and the screen selection button 15, are located below the display screens 11 and 12, Column 2, Lines 39-42).

It would have been obvious to one of ordinary skill in art, having the teachings of Kim, Rapp and Kondo before him at the time of invention was made, to modify the

locations of the configuration areas as disclosed by Kim to include locating the configuration areas separate from the display area as taught by Kondo.

One of ordinary skill in the art would be motivated to do so to provide controls to drive a device while reducing the amount of power consumed by the display screens that display two-page information (Kondo, Column 1, Lines 26-32, Figure 1).

31. Regarding Claim 32, Kim, Rapp and Kondo teach the non-transitory computer readable medium of claim 31. Kondo further teaches, wherein in response to changing focus to the second display, allowing input from the second gesture capture region, and allowing input from the first gesture capture region (the user selects a two-screen mode by hitting the screen selection button 15 and the user may operate the page forward buttons 13 and 14 below corresponding screens, Column 2, Lines 56-58 and Column 3, Lines 3-4, Figure 1).

32. Regarding Claim 35, Kim and Rapp teach the non-transitory computer readable medium of claim 34.

Kim and Rapp do not appear to explicitly disclose: **wherein the first configurable area is separate from the first display and the second configurable area is separate from the second display**.

Kondo teaches in the same field of endeavor, wherein a first configurable area is separate from a first display and a second configurable area is separate from a second display (controls for page forward buttons 13 and 14, and the screen selection button 15, are located below the display screens 11 and 12, Column 2, Lines 39-42).

It would have been obvious to one of ordinary skill in art, having the teachings of Kim, Rapp and Kondo before him at the time of invention was made, to modify the locations of the configuration areas as disclosed by Kim to include locating the configuration areas separate from the display area as taught by Kondo.

One of ordinary skill in the art would be motivated to do so to provide controls to drive a device while reducing the amount of power consumed by the display screens that display two-page information (Kondo, Column 1, Lines 26-32, Figure 1).

33. Regarding Claim 39, Kim and Rapp teach the device of claim 37. Kim further teaches, wherein the first display and the first configurable area are on a first screen, and wherein the second display and the second configurable area are on a different second screen (110 and 120, Figure 5).

Kim and Rapp do not appear to explicitly disclose: wherein **the first configurable area is separate from the first touch sensitive display and the second configurable area is separate from the second touch sensitive display**.

Kondo teaches in the same field of endeavor, wherein a first configurable area is separate from a first touch sensitive display and a second configurable area is separate from a second touch sensitive display (controls for page forward buttons 13 and 14, and the screen selection button 15, are located below the display screens 11 and 12, Column 2, Lines 39-42).

It would have been obvious to one of ordinary skill in art, having the teachings of Kim, Rapp and Kondo before him at the time of invention was made, to modify the

locations of the configuration areas as disclosed by Kim to include locating the configuration areas separate from the display area as taught by Kondo.

One of ordinary skill in the art would be motivated to do so to provide controls to drive a device while reducing the amount of power consumed by the display screens that display two-page information (Kondo, Column 1, Lines 26-32, Figure 1).

34. Regarding Claim 40, Kim and Rapp teach the device of claim 37. Kim further teaches, wherein the first input is a tap gesture received by one of the first touch sensitive display, the second touch sensitive display, a first gesture capture region, or a second gesture capture region (a touch sensor generates input signals corresponding to touch events of the user, Para 31, and the user makes a selection on the touch screen by tapping with a finger, Para 58).

Kim and Rapp do not appear to explicitly disclose: **wherein the first gesture capture region is separate from the first touch sensitive display and the second gesture capture region is separate from the second touch sensitive display, and wherein the first and second gesture capture regions are not capable of displaying images of applications**.

Kondo teaches in the same field of endeavor, wherein a first gesture capture region is separate from a first display and a second gesture capture region is separate from a second display, and wherein the first and second gesture capture regions are not capable of displaying images of applications (controls for page forward buttons 13 and 14, and the screen selection button 15, are located below the display screens 11 and 12, Column 2, Lines 39-42).

It would have been obvious to one of ordinary skill in art, having the teachings of Kim, Rapp and Kondo before him at the time of invention was made, to modify the locations of the configuration areas as disclosed by Kim to include locating the configuration areas separate from the display area as taught by Kondo.

One of ordinary skill in the art would be motivated to do so to provide controls to drive a device while reducing the amount of power consumed by the display screens that display two-page information (Kondo, Column 1, Lines 26-32, Figure 1).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joy Weber whose telephone number is (571)270-5699. The examiner can normally be reached on Monday-Thursday 8AM-5PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kieu Vu can be reached on 571-272-4057. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joy M. Weber/
Examiner, Art Unit 2173

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	Examiner Joy M. Weber	Art Unit 2173	Page 1 of 1

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-8,421,762 B2	04-2013	Rapp; Peter William	G06F3/0481	345/173
	B	US-				
	C	US-				
	D	US-				
	E	US-				
	F	US-				
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	H	US-				
	I	US-				
	J	US-				
	K	US-				
	L	US-				
	M	US-				

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	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	14/523,069
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				First Named Inventor	Sanjiv Sirpal
(Use as many sheets as necessary)				Art Unit	~~2172~~ 2173
				Examiner Name	~~Boris M Pesin~~ Joy Weber
Sheet	1	of	5	Attorney Docket Number	6583-8-CON

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Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	5227771	07/13/2019	Kerr et al.	
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Examiner Signature	/JOY M WEBER/	Date Considered	11/11/2016

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.M.W/

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	14/523,069
				Filing Date	October 24, 2014
				First Named Inventor	Sanjiv Sirpal
(Use as many sheets as necessary)				Art Unit	~~2172~~ 2173
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Examiner Signature	/JOY M WEBER/	Date Considered	11/11/2016

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				Application Number	14/523,069
				Filing Date	October 24, 2014
				First Named Inventor	Sanjiv Sirpal
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	73	Official Action for U.S. Patent Application No. 13/248,665, mailed May 14, 2013 (Attorney Ref. No. 6583-9), 13 pages
	74	Official Action for U.S. Patent Application No. 13/248,665, mailed Nov. 07, 2013 (Attorney's Ref. No. 6583-9) 14 pages
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	78	Official Action for U.S. Patent Application No. 13/223,039, mailed Nov. 19, 2013 (Attorney's Ref. No. 6583-12) 15 pages
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				Examiner Name	~~Boris M Pesin~~ Joy Weber
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(Use as many sheets as necessary)				First Named Inventor	Sanjiv Sirpal
				Art Unit	~~2172~~ 2173
				Examiner Name	~~GAFFIN, JEFFREY A~~ Joy Weber
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U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	2007/0288868	12/13/2007	Rhee et al.	

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	2	14/818806	08/05/2015	Cassar et al.	
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	5	CN 101087459	12/12/2007	SAMSUNG ELECTRONICS CO LTD		(with English abstract)(believed to correspond to U.S. Patent Publication No. 2007/0288868)
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	7	EP 2207076	07/14/2010	SAMSUNG ELECTRONICS CO LTD		

NON-PATENT LITERATURE DOCUMENTS		
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	113	("20070288868" | "20120084687" | "20030020754" | "20100245275" | "20030146897" | "20090244016" | "20090293007" | "20100188352" | "20100302179" | "20110296333" | "20110191701" | "20090278806" | "8046701" | "20070285533" | "20120084712" | "20070198948" | "20100085274" | "20110090155" | "20120092233" | "RE40821" | "20110209058" | "20090231233" | "20120081304" | "20110239142" | "20120050177" | "20100245267" | "20050052341" | "20120084678" | "20120084682" | "20110099512" | "20120084686" | "20100245106" | "20030229731" | "20100182265" | "20120081303" | "20120084739" | "20100298032" | "5467102" | "5847698" | "7289084" | "20110187655" | "20120081401" | "20100194705" | "20100229089" | "5227771").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/11/11 11:40
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S3	4	(US-20120236035-$ or US-20110006971-$ or US-20100081475-$).did. or (US-6512497-$).did.	US-PGPUB; USPAT	OR	ON	2016/11/11 12:18
S4	9	(S1 S2) and (activat$3 with ((button control menu item) and (current$3 focus$3)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/11/11 12:20
S5	26	("2012/0081304").URPN.	USPAT	OR	ON	2016/11/11 12:21
S6	3	(US-20110239142-$ or US-20100182265-$ or US-20090293007-$).did.	US-PGPUB	OR	ON	2016/11/11 14:13
S7	722	@AD<"20100110" and (715/802.ccls. (G06F3/04$3 G09G5/14 G06F9/4443 G06F17/241).cpc.) and (activat$3 with ((button control menu item) and (current$3 focus$3))) and ((multiple dual plurality two)	USPAT	OR	ON	2016/11/11 14:16

		with (screen display))				
S8	552	S7 and (switch$3 chang$3) with (screen display)	USPAT	OR	ON	2016/11/11 14:19
S10	552	S7 and (switch$3 chang$3) with (screen display) not (S3 S6)	USPAT	OR	ON	2016/11/11 14:22
S11	166	S10 and (activat$3 launch$3) with (application program resource) same (chang$3 switch$3)	USPAT	OR	ON	2016/11/11 14:23
S12	68	S11 and (("not" with allow$3) unactivat$3 inactivat$3 disabl$3)	USPAT	OR	ON	2016/11/11 14:26

11/11/2016 9:32:37 PM
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14523069	SIRPAL ET AL.
	Examiner	Art Unit
	JOY M WEBER	2173

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	11/11/2016								
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	36	✓								

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	14523069	SIRPAL ET AL.
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✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	11/11/2016								
	37	✓								
	38	✓								
	39	✓								
	40	✓								

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14523069	SIRPAL ET AL.
	Examiner	Art Unit
	JOY M WEBER	2173

CPC- SEARCHED		
Symbol	Date	Examiner
G06F3/04$3, G09G5/14, G06F9/4443, G06F17/241	11/11/2016	JW

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
715	802	11/11/2016	JW

SEARCH NOTES		
Search Notes	Date	Examiner
PALM Inventor Search	11/11/2016	JW
EAST Text Search	11/11/2016	JW

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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Alexandria, Virginia 22313-1450
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BIB DATA SHEET

CONFIRMATION NO. 7687

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
14/523,069	10/24/2014	715	2173	6583-8-CON

APPLICANTS
Z124, George Town, CAYMAN ISLANDS;

INVENTORS
Sanjiv Sirpal, Oakville, CANADA;
Paul Edward Reeves, Oakville, CANADA;
Alexander de Paz, Burlington, CANADA;
Rodney Wayne Schrock, San Diego, CA;

**** CONTINUING DATA ***************************
This application is a CON of 13/248,618 09/29/2011 PAT 8875050
which claims benefit of 61/539,884 09/27/2011
and claims benefit of 61/458,150 11/17/2010
and claims benefit of 61/389,000 10/01/2010
and claims benefit of 61/389,117 10/01/2010
and claims benefit of 61/389,087 10/01/2010

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****
11/03/2014

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /JOY M WEBER/ Examiner's Signature	☐ Met after Allowance JW Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		CANADA	20	20	3

ADDRESS
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202
UNITED STATES

TITLE
FOCUS CHANGE UPON APPLICATION LAUNCH

FILING FEE RECEIVED		
1600	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

BIB (Rev. 05/07).

Doc Code: DIST.E.FILE **Document Description: Electronic Terminal Disclaimer - Filed**	PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce

Electronic Petition Request	**TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT**
Application Number	14523069
Filing Date	24-Oct-2014
First Named Inventor	Sanjiv Sirpal
Attorney Docket Number	6583-8-CON
Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH

☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent Interest
Z124	100%

The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

8875050

as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:
- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

◉ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

○ I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.	
Applicant claims the following fee status: ○ Small Entity ○ Micro Entity ◉ Regular Undiscounted I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.	
THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES I certify, in accordance with 37 CFR 1.4(d)(4) that I am: ◉ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application Registration Number 54544 ○ A sole inventor ○ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application ○ A joint inventor; all of whom are signing this request	
Signature	/Tadd Wilson/
Name	Tadd Wilson

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	14523069
Filing Date:	24-Oct-2014
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Filer:	Tadd Fjelp Wilson/Shawn Markham
Attorney Docket Number:	6583-8-CON

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
STATUTORY OR TERMINAL DISCLAIMER	1814	1	160	160
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**160**

Doc Code: DISQ.E.FILE
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 14523069

Filing Date: 24-Oct-2014

Applicant/Patent under Reexamination: Sirpal

Electronic Terminal Disclaimer filed on February 16, 2017

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt	
EFS ID:	28383680
Application Number:	14523069
International Application Number:	
Confirmation Number:	7687
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Customer Number:	111285
Filer:	Tadd Fjelp Wilson/Shawn Markham
Filer Authorized By:	Tadd Fjelp Wilson
Attorney Docket Number:	6583-8-CON
Receipt Date:	16-FEB-2017
Filing Date:	24-OCT-2014
Time Stamp:	18:16:39
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$160
RAM confirmation Number	021717INTEFSW00005322191970
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Electronic Terminal Disclaimer-Filed	eTerminal-Disclaimer.pdf	33486 f42bc4cfbbdac6270ba3b6abbf59649d0dd7a33f	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30748 354e344e762f956056c8846b52e2ce8defe26051	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	64234		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: Sanjiv Sirpal et al.	)	Group Art Unit: 2173
Application No.: 14/523,069	)	Examiner: WEBER JOY M
Filed: October 24, 2014	)	Confirmation No.: 7687
Atty. File No.: 6583-8-CON	)	

For: "FOCUS CHANGE UPON APPLIATION LAUNCH"

AMENDMENT AND RESPONSE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Applicants submit this Amendment and Response to address the Office Action having a mailing date of November 16, 2016. Please credit any overpayment or charge any underpayment to Deposit Account No. 19-1970.

Please amend the above-identified patent application as follows:

Amendments to the Claims are shown in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 7 of this paper.

Electronic Acknowledgement Receipt	
EFS ID:	28383822
Application Number:	14523069
International Application Number:	
Confirmation Number:	7687
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Customer Number:	111285
Filer:	Tadd Fjelp Wilson/Shawn Markham
Filer Authorized By:	Tadd Fjelp Wilson
Attorney Docket Number:	6583-8-CON
Receipt Date:	16-FEB-2017
Filing Date:	24-OCT-2014
Time Stamp:	18:21:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		20170216_AMEND_01_6583-8-CON.pdf	460228 37b4533b1d37e0b85884ad834206a6657f270f72	yes	11

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Applicant Arguments/Remarks Made in an Amendment	7	11
	Claims	2	6
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Warnings:			
Information:			
	Total Files Size (in bytes):	460228	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

REMARKS/ARGUMENTS

Status of the Claims

In the Office Action mailed November 16, 2016, claims 21-40 were pending in the application. Claims 21, 30, and 37 are amended. No claims have been added or canceled. Therefore, claims 1-20 are present for examination. No new matter has been added by these amendments. Claims 21, 30, and 37 are independent claims. Applicants respectfully request reconsideration of this application as amended.

Double Patenting

Claims 21-40 of this application are provisionally rejected on the ground on nonstatutory double patenting over claims 1-20 of Application No. 8,875,050. A terminal disclaimer is filed herwith, which obviates the rejection.

Claim Objections

Claims 31, 33, and 34 are objected to because they contain the limitations direction to ". . . **the first configurable area**. . . ," and ". . . **the second configurable area** . . . ,", but these limitations were not previously introduced. Claim amendments to claim 30 obviate these objections.

Rejections Under 35 U.S.C. §103

Claims 21-26, 28, 34, 37 and 38 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kim in view of U.S. Patent No. 8,421,762 to Rapp et al. ("Rapp"). Claims 27, 29, 31, 32, 35, 39, and 40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kim and Rapp, and in view of U.S. Patent No. 6,512,497 to Kondo et al. ("Kondo"). Applicants respectfully traverse the obviousness rejection. To establish a ~~prima facie~~*prima facie* case of obviousness, all claim limitations must first be taught or suggested by the prior art. *See, e.g., DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006). "All words in a claim must be considered in judging the patentability of that claim against the prior art." M.P.E.P. § 2143.03 (citing *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)). The Examiner must then provide an explicit analysis of the motivation for combining the references. *See KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) ("a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art . . ."). While the Examiner can choose one of several exemplary rationales from the

MPEP to support an obviousness rejection, all the rationales in the MPEP still require the Examiner to demonstrate that all the claim elements are shown in the prior art. *See* MPEP § 2143. It should be noted that claim 30 was amended to include similar elements to claim 21 and rejections of claim 30 are addressed below.

Claim 21:

Claim 21 includes elements not taught in the cited art. Notably, at least the elements italicized below are not taught:

21. A method, comprising:

displaying a first image of a first application on a first display, wherein the first image is in focus, wherein input options for the first application are displayed in a first configurable area, wherein input is allowed from the first configurable area and the first display, wherein no input options are displayed in a second configurable area, wherein input is not allowed from the second configurable area, and wherein input is allowed from a second display, wherein the first configurable area does not display content from an application, wherein the second configurable area does not display content from an application;

receiving first input indicating a request to launch a second application;

launching the second application;

in response to launching the second application:

displaying, by the second application, a second image on the second display; and

changing the focus from the first image to the second image;

stopping display of input options in the first configurable area, wherein input is not allowed from the first configurable area, wherein input is allowed from the first display;

displaying input options for the second application in the second configurable area, and wherein input is allowed from the second configurable area and the second display.

At Least First Missing Limitation: "displaying a first image of a first application on a first display, wherein the first image is in focus, wherein input options for the first application are displayed in a first configurable area, wherein input is allowed from the first configurable area and the first display, wherein no input options are displayed in a second configurable area, wherein input is not allowed from the second configurable area, and wherein input is allowed from a second display, wherein the first configurable area does not display content from an application, wherein the second configurable area does not display content from an

application… displaying input options for the second application in the second configurable area, and wherein input is allowed from the second configurable area and the second display"

Claim 1 includes displaying a first image of a first application on a first display, wherein the first image is in focus, wherein input options for the first application are displayed in a first configurable area, wherein input is allowed from the first configurable area and the first display, wherein no input options are displayed in a second configurable area, wherein input is not allowed from the second configurable area, and wherein input is allowed from a second display, wherein the first configurable area does not display content from an application, wherein the second configurable area does not display content from an application… displaying input options for the second application in the second configurable area, and wherein input is allowed from the second configurable area and the second display. The cited art at least does not teach this element.

The Office Action states that Kim does not teach elements associated with the configurable area but relies on the following sections of Rapp as teaching these elements of the claims: (*See Office Action*, pp. 11-12)

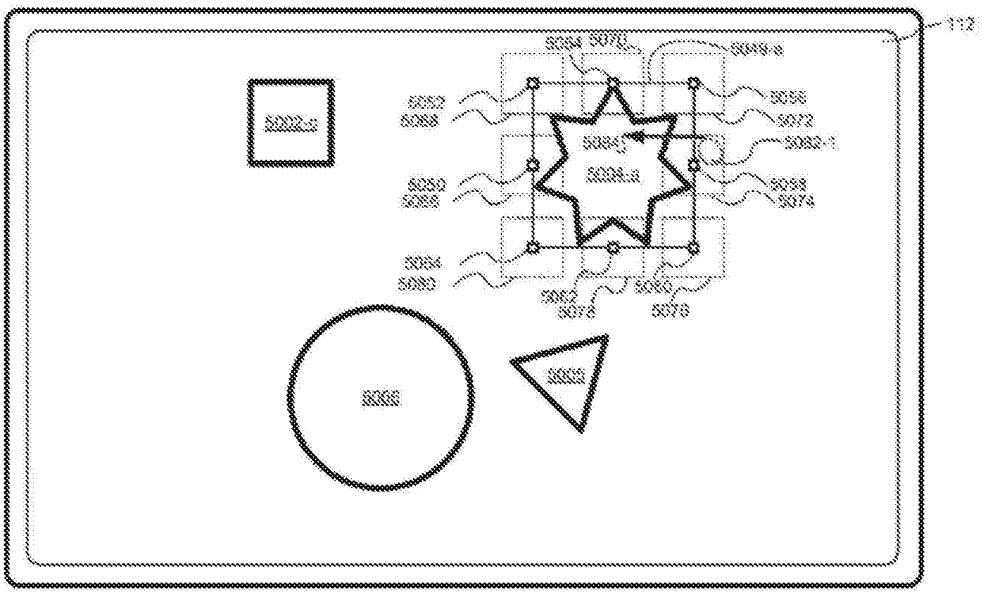


Figure 5E

Rapp, Fig. 5E.

The Examiner states: "(the activation region is only provided around the second interface object 5004-a and not the first interface object 5002-c Figure 5E; the first interface object does not have the current focus and therefore, the activation regions around the first interface object are not enabled and cannot be manipulated while the first object is not selected…" The handles shown on the object is contained in a display where content is provided. The configurable area of the claim is not part of the display of content. Indeed, the configurable areas 112 and 116 below are not part of displays 11 and 114 that provide content.

FIG. 1A

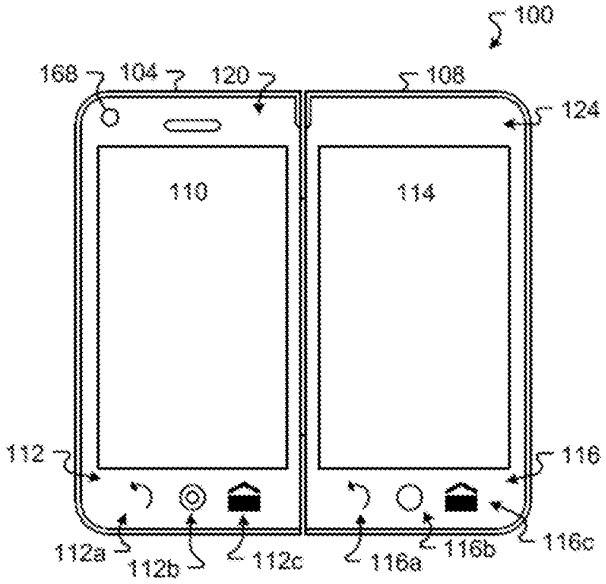


FIG. 1B

Thus, Rapp is describing a function and device that is completely different from what is claimed. If there are other ways to describe the configurable areas to overcome the art, applicants welcome Examiner's suggestions, as it appears Rapp does not show what applicant is attempting to claim.

For at least these reasons, the combination of Kim and *Rapp* fails to teach all the claim elements of the present claim. Therefore, the Office Action has failed to show a *prima facie* case of obviousness, and the claim should be allowed.

Claim 30:

Claim 30 includes elements that are the same as or similar to claim 21. As such, for the same or similar reasons, claim 30 is also allowable over the cited art.

Claim 37:

Claim 37 includes elements that are the same as or similar to claim 21. As such, for the same or similar reasons, claim 37 is also allowable over the cited art.

Claims 22-29, 31-36, and 38-40:

Claims 22-29, 31-36, and 38-40 each depend, either directly or indirectly, from allowable base claims 21, 30, or 37. Due, at least in part, to this dependence on an allowable base claim, claims 22-29, 31-36, and 38-40 are also allowable over the cited art.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in a condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. Applicants do not acquiesce to any objection, rejection, or argument not specifically addressed herein. Rather, the Applicants believe the amendments and arguments contained herein overcome all objections, rejections, or arguments.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (303) 863-2987.

The Commissioner is hereby authorized to charge to deposit account number 19-1970 any fees under 37 CFR § 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby petitioned.

Respectfully submitted,

SHERIDAN ROSS P.C.

Date: February 16, 2017

By: /Tadd Wilson/

Tadd Wilson
Reg. No. 54,544
1560 Broadway, Suite 1200
Denver, Colorado 80202
Telephone: 303-863-9700

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-20. (Canceled)

21. (Currently Amended) A method, comprising:

displaying a first image of a first application on a first display, wherein the first image is in focus, wherein input options for the first application are displayed in a first configurable area, wherein input is allowed from the first configurable area and the first display, wherein no input options are displayed in a second configurable area, wherein input is not allowed from the second configurable area, and wherein input is allowed from a second display, wherein the first configurable area does not display content from an application, wherein the second configurable area does not display content from an application;

receiving first input indicating a request to launch a second application;

launching the second application;

in response to launching the second application:

displaying, by the second application, a second image on the second display; and

changing the focus from the first image to the second ~~display~~image[[,]];

stopping display ~~wherein no~~ of input options ~~are displayed~~ in the first configurable area, wherein input is not allowed from the first configurable area, wherein input is allowed from the first display[[,]];

displaying ~~wherein~~ input options for the second application ~~are displayed~~ in the second configurable area, and wherein input is allowed from the second configurable area and the second display.

22. (Previously Presented) The method of claim 21, wherein the first image is displayed in portrait mode on the first display and the second image is displayed in portrait mode on the second display, and wherein the first display, the first configurable area, the second display, and the second configurable area are on a common first screen.

23. (Previously Presented) The method of claim 21, wherein the first image is displayed in landscape mode on the first display and the second image is displayed in landscape

mode on the second display, and wherein the first display and the first configurable area are on a first screen, and wherein the second display and the second configurable area are on a different second screen.

24. (Previously Presented) The method of claim 21, further comprising:

wherein the first image is a first open window of the first application and the second image is a second open window of the second application.

25. (Previously Presented) The method of claim 21, further comprising:

receiving second input indicating that in response to receiving the first input, the second application should be launched and the focus should be placed on the second image displayed by the second application.

26. (Previously Presented) The method of claim 21, further comprising:

highlighting the first configurable area when the focus is on the first image in the first display; and

changing the highlighting to the second configurable area when the focus is on the second image in the second display.

27. (Previously Presented) The method of claim 26, wherein the first configuration area is separate from the first display and the second configurable area is separate from the second display.

28. (Previously Presented) The method of claim 21, further comprising: in response to receiving the first input, highlighting at least one of the second image or the second display.

29. (Previously Presented) The method of claim 21, wherein the first input is a tap gesture received by one of the first display, the second display, a first gesture capture region, or a second gesture capture region, wherein the first gesture capture region is separate from the first display and the second gesture capture region is separate from the second display, and wherein the first and second gesture capture regions are not capable of displaying images of applications.

30. (Currently Amended) A non-transitory computer readable medium storing computer executable instructions that when executed by at least one processor perform a method, comprising:

displaying a first image of a first application on a first display, wherein the first image is in focus[[,]] wherein input is allowed from the first display, and wherein input is allowed from a second display;

receiving first input indicating a request to launch a second application, the input is received by one of the first display and the second display;

in response to receiving the first input, launching the second application;

displaying, by the second application, a second image on the second display; and

changing focus from the first image to the second display, wherein input is allowed from the first display, and wherein input is allowed from the second display;

in response changing focus, stopping display of input options in a first configurable area, wherein input is not allowed from the first configurable area, wherein input is allowed from the first display;

in response changing focus, displaying input options for the second application in a second configurable area, and wherein input is allowed from the second configurable area and the second display, wherein the first configurable area does not display content from an application, wherein the second configurable area does not display content from an application.

31. (Previously Presented) The non-transitory computer readable medium of claim 30, wherein the first display, the first configurable area, the second display, and the second configurable area are on a common first screen, wherein the first input is a tap gesture received by one of the first display, the second display, a first gesture capture region, or a second gesture capture region, wherein the tap requires contact with the second display for a predetermined period of time, wherein the first gesture capture region is separate from the first display and the second gesture capture region is separate from the second display, and wherein the first and second gesture capture regions are not capable of displaying images of applications.

32. (Previously Presented) The non-transitory computer readable medium of claim 31, wherein in response to changing focus to the second display, allowing input from the second gesture capture region, and allowing input from the first gesture capture region.

33. (Previously Presented) The non-transitory computer readable medium of claim 30, wherein the tap requires contact with the second display for a predetermined period of time, wherein the first display and the first configurable area are on a first screen, and wherein the second display and the second configurable area are on a different second screen.

34. (Previously Presented) The non-transitory computer readable medium of claim 30, wherein the method further comprises:

highlighting a first configurable area on a first screen when the focus is on the first image in the first display, wherein input options for the first application are displayed in the first configurable area when the focus is on the first image, wherein input is allowed from the first configurable area when the focus is on the first image, wherein no input options are displayed in a second configurable area of the first screen and input is not allowed from the second configurable area when the focus is on the first image; and

changing the highlighting to the second configurable area when the focus is on the second image in the second display, wherein input options for the second application are displayed in the second configurable area when the focus is on the second image, wherein input is allowed from the second configurable area when the focus is on the second image, and wherein no input options are displayed in the first configurable area and input is not allowed from the first configurable area when the focus is on the second image.

35. (Previously Presented) The non-transitory computer readable medium of claim 34, wherein the first configurable area is separate from the first display and the second configurable area is separate from the second display.

36. (Previously Presented) The non-transitory computer readable medium of claim 30, wherein the method further comprises: receiving second input indicating that in response to the first input, the focus should be changed to the second display.

37. (Currently Amended) A communication device, comprising:

a first touch sensitive display and a first configurable area;

a second touch sensitive display and a second configurable area;

a computer readable medium that stores computer executable instructions that, when executed by at least one processor, perform a method comprising:

displaying a first image of a first application on the first touch sensitive display, wherein the first image is in focus, wherein input options for the first application are displayed in the first configurable area, wherein input is allowed from the first configurable area and the first touch sensitive display, wherein no input options are displayed in the second configurable area, wherein input is not allowed from the second configurable area, and wherein input is allowed from the second touch sensitive display, wherein the first configurable area does not display content from an application, wherein the second configurable area does not display content from an application;

receiving first input on the first touch sensitive display or the second touch sensitive display indicating a request to launch a second application;

launching the second application;

displaying, by the second application, a second image on the second touch sensitive display; and

changing the focus from the first touch sensitive display to the second touch sensitive display wherein no input options are displayed in the first configurable area, wherein input is not allowed from the first configurable area, wherein input is allowed from the first touch sensitive display, wherein input options for the second application are displayed in the second configurable area, and wherein input is allowed from the second configurable area and the second touch sensitive display.

38. (Previously Presented) The device of claim 37, wherein the first display, the first configurable area, the second display, and the second configurable area are on a common first screen and wherein the method further comprises:

providing a visual indication that focus is on the first image in the first touch sensitive display, wherein the indication identifies which display or application has the focus; and

changing the visual indication when the focus is on the second image in the second touch sensitive display.

39. (Previously Presented) The device of claim 37, wherein the first configurable area is separate from the first touch sensitive display and the second configurable area is separate from the second touch sensitive display, wherein the first display and the first configurable area are on a first screen, and wherein the second display and the second configurable area are on a different second screen.

40. (Previously Presented) The device of claim 37, wherein the first input is a tap gesture received by one of the first touch sensitive display, the second touch sensitive display, a first gesture capture region, or a second gesture capture region, wherein the first gesture capture region is separate from the first touch sensitive display and the second gesture capture region is separate from the second touch sensitive display, and wherein the first and second gesture capture regions are not capable of displaying images of applications.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/523,069	Filing Date 10/24/2014	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	02/16/2017	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $80 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $420 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
RAMONA WILSON

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(Use as many sheets as necessary)*				Application Number	14/523,069
				Filing Date	October 24, 2014
				First Named Inventor	Sanjiv Sirpal
				Art Unit	2173
				Examiner Name	WEBER, JOY M
Sheet	1	of	1	Attorney Docket Number	6583-8-CON

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code [2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	1	Official Action for U.S. Patent Application No. 14/476,249, mailed Aug. 11, 2016 (Attorney Ref. No. 6583-13-CON), 6 pages

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

Electronic Acknowledgement Receipt	
EFS ID:	28580461
Application Number:	14523069
International Application Number:	
Confirmation Number:	7687
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Customer Number:	111285
Filer:	Douglas W. Swartz/Theresa Brown
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-8-CON
Receipt Date:	09-MAR-2017
Filing Date:	24-OCT-2014
Time Stamp:	12:31:20
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		6583-8-CON_IDS_03.pdf	181332 85a3e07b118ac4da0d01d16c15c9ba943cad3fd6	yes	4

	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Transmittal Letter		1	3	
	Information Disclosure Statement (IDS) Form (SB08)		4	4	
Warnings:					
Information:					
2	Other Reference-Patent/App/Search documents	6583-13-CON_OA_08-11-2016.pdf	433355 97f5d8aedaf9cb4ef79f52ea38322fd789631e6b	no	6
Warnings:					
Information:					
		Total Files Size (in bytes):	614687		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2173
Sanjiv Sirpal	)	Confirmation No.: 7687
Serial No.: 14/523,069	)	Examiner: WEBER, JOY M
Filed: October 24, 2014	)	SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Atty. File No.: 6583-8-CON	)	
Entitled: "Focus Change Upon Application Launch"	)	*Electronically Submitted*

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

The references cited on attached Form PTO/SB08 are being called to the attention of the Examiner.

☒ Copies of the cited non-patent and/or foreign references are enclosed herewith.

☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.

☐ Copies of the cited U.S. patents/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).

☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

☐ To the best of applicants' belief, the pertinence of the foreign-language references is believed to be summarized in the attached English abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.

☐ Examiner's attention is drawn to the following related applications:

Serial No. _____ filed _____ (Attorney Ref. No. _____)

Serial No. _____ filed _____ (Attorney Ref. No. _____)

☐ Other:_____

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence

of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☐	**37 CFR 1.97(b)**: No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfied by one of the following conditions ("X" indicates satisfaction): ☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application, or ☐ Before the mailing date of a first Office Action on the merits, or ☐ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114. Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.
☒	**37 CFR 1.97(c)**: The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of any one of the following conditions: (1) a final action under 37 C.F.R. 1.113, or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by: ☒ A Certification (below) as specified by 37 C.F.R. 1.97(e). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☐ Please charge Deposit Account 19-1970 in the amount of $180.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☐	**37 CFR 1.97(d)**: This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e) AND ☐ Applicants hereby requests consideration of the reference(s) disclosed herein. Please charge Deposit Account 19-1970 in the amount of $ under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e))
(Applicable only if checked)

☒ The undersigned certifies that:

☐ Each item of information contained in the Information Disclosure Statement submitted herewith was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(1).

☐ A copy of the communication from the foreign patent office is enclosed.

OR

☒ No item of information contained in the Information Disclosure Statement submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Douglas W. Swartz/
Douglas W. Swartz
Registration No. 37739
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: March 9, 2017

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(Use as many sheets as necessary)*				Application Number	14/523,069
				Filing Date	October 24, 2014
				First Named Inventor	Sanjiv Sirpal
				Art Unit	2173
				Examiner Name	WEBER, JOY M
Sheet	1	of	1	Attorney Docket Number	6583-8-CON

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code [2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	1	Notice of Allowance for U.S. Patent Application No. 14/476,249, mailed Dec. 9, 2016 (Attorney Ref. No. 6583-13-CON), 8 pages

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

Electronic Acknowledgement Receipt

EFS ID:	28580726
Application Number:	14523069
International Application Number:	
Confirmation Number:	7687
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Customer Number:	111285
Filer:	Douglas W. Swartz/Theresa Brown
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-8-CON
Receipt Date:	09-MAR-2017
Filing Date:	24-OCT-2014
Time Stamp:	12:45:50
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Other Reference-Patent/App/Search documents	6583-13-CON_NOA_12-09-2016.pdf	864255 a10907b448265a14151c1827ffba239e05a56452	no	8
Warnings:					

Information:					
2		6583-8-CON_IDS_04.pdf	181939 8be499709739135459fd07a49583b1541d60ff09	yes	4

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Transmittal Letter	1	3
	Information Disclosure Statement (IDS) Form (SB08)	4	4

Warnings:	
Information:	
Total Files Size (in bytes):	1046194

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
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New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2173
Sanjiv Sirpal	)	Confirmation No.: 7687
Serial No.: 14/523,069	)	Examiner: WEBER, JOY M
Filed: October 24, 2014	)	SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Atty. File No.: 6583-8-CON	)	
Entitled: "Focus Change Upon Application Launch"	)	*Electronically Submitted*

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

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☒ Copies of the cited non-patent and/or foreign references are enclosed herewith.

☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.

☐ Copies of the cited U.S. patents/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).

☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

☐ To the best of applicants' belief, the pertinence of the foreign-language references is believed to be summarized in the attached English abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.

☐ Examiner's attention is drawn to the following related applications:

Serial No. _____ filed _____ (Attorney Ref. No. _____)

Serial No. _____ filed _____ (Attorney Ref. No. _____)

☒ Other: A certification was inadvertently made in error in connection with the disclosure of the Office Action for U.S. Patent Application No. 14/476,249, mailed on Aug. 11, 2016 (Attorney Ref. No. 6583-8-CON) disclosed in the document identified as 6583-8-CON_IDS03 submitted on 3/9/2017. Please disregard the certification and consider the disclosure made without a certification.

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☐	**37 CFR 1.97(b)**: No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfied by one of the following conditions ("X" indicates satisfaction): ☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application, or ☐ Before the mailing date of a first Office Action on the merits, or ☐ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114. Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.
☒	**37 CFR 1.97(c)**: The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of any one of the following conditions: (1) a final action under 37 C.F.R. 1.113, or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by: ☒ A Certification (below) as specified by 37 C.F.R. 1.97(e). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☐ Please charge Deposit Account 19-1970 in the amount of $180.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☐	**37 CFR 1.97(d)**: This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e) AND ☐ Applicants hereby requests consideration of the reference(s) disclosed herein. Please charge Deposit Account 19-1970 in the amount of $ under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e))
(Applicable only if checked)

☒ The undersigned certifies that:

☐ Each item of information contained in the Information Disclosure Statement submitted herewith was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(1).

☐ A copy of the communication from the foreign patent office is enclosed.

OR

☒ No item of information contained in the Information Disclosure Statement submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Douglas W. Swartz/
Douglas W. Swartz
Registration No. 37739
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: March 9, 2017

Doc Code: DIST.E.FILE **Document Description: Electronic Terminal Disclaimer - Filed**	PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce

Electronic Petition Request	**TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT**
Application Number	14523069
Filing Date	24-Oct-2014
First Named Inventor	Sanjiv Sirpal
Attorney Docket Number	6583-8-CON
Title of Invention	FOCUS CHANGE UPON APPLICATION LAUNCH

☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent Interest
IMERJ LLC	100%

The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

9632674

as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:
- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

◉ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

○ I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.	
Applicant claims the following fee status: ○ Small Entity ○ Micro Entity ◉ Regular Undiscounted I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.	
THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES I certify, in accordance with 37 CFR 1.4(d)(4) that I am: ◉ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application Registration Number 54544 ○ A sole inventor ○ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application ○ A joint inventor; all of whom are signing this request	
Signature	/Tadd F. Wilson/
Name	Tadd F. Wilson

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	14523069
Filing Date:	24-Oct-2014
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Filer:	Tadd Fjelp Wilson/Kathy Johnston
Attorney Docket Number:	6583-8-CON

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
STATUTORY OR TERMINAL DISCLAIMER	1814	1	160	160
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**160**

Doc Code: DISQ.E.FILE
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 14523069

Filing Date: 24-Oct-2014

Applicant/Patent under Reexamination: Sirpal

Electronic Terminal Disclaimer filed on May 25, 2017

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt	
EFS ID:	29315907
Application Number:	14523069
International Application Number:	
Confirmation Number:	7687
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Customer Number:	111285
Filer:	Tadd Fjelp Wilson/Kathy Johnston
Filer Authorized By:	Tadd Fjelp Wilson
Attorney Docket Number:	6583-8-CON
Receipt Date:	25-MAY-2017
Filing Date:	24-OCT-2014
Time Stamp:	15:53:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$160
RAM confirmation Number	052617INTEFSW00002415191970
Deposit Account	191970
Authorized User	Kathy Johnston
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Electronic Terminal Disclaimer-Filed	eTerminal-Disclaimer.pdf	33451 3a0b3bf4816e5d0982f4808759a1c82c2298568e	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30586 92983d83e60822ea98f1102d274ea764926b229f	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	64037		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

111285 7590 06/05/2017

Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER
WEBER, JOY M

ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 06/05/2017

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/523,069	10/24/2014	Sanjiv Sirpal	6583-8-CON	7687

TITLE OF INVENTION: FOCUS CHANGE UPON APPLICATION LAUNCH

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	09/05/2017

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

111285 7590 06/05/2017
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/523,069	10/24/2014	Sanjiv Sirpal	6583-8-CON	7687

TITLE OF INVENTION: FOCUS CHANGE UPON APPLICATION LAUNCH

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	09/05/2017

EXAMINER	ART UNIT	CLASS-SUBCLASS
WEBER, JOY M	2173	715-802000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ❑ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ❑ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/523,069	10/24/2014	Sanjiv Sirpal	6583-8-CON	7687

111285 7590 06/05/2017

Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
WEBER, JOY M	
ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 06/05/2017

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 14/523,069	Applicant(s) SIRPAL ET AL.	
	Examiner JOY WEBER	Art Unit 2173	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *2/16/2017*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *21-40*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date See Continuation Sheet
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/JOY WEBER/
Examiner, Art Unit 2173

Continuation of Attachment(s) 2. Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date: 3/9/2017 and 3/9/2017.

DETAILED ACTION

1. The present application is being examined under the pre-AIA first to invent provisions.

2. This action is responsive to the Amendments filed on 02/16/2017 and the two Information Disclosure Statements filed 03/09/2017. Claims 21-40 are pending in the case. Claims 21, 30 and 37 are independent claims.

Allowable Subject Matter

3. Claims 21-40 are allowed.

The following is an examiner's statement of reasons for allowance:

Examiner has carefully considered the independent claims 21, 30 and 37.

In claims 21, 30 and 37, the prior art of record: Kim, Rapp, Kondo, alone or in combination, do not teach or fairly suggests "wherein the first configurable area does not display content from an application, wherein the second configurable area does not display content from an application."

These limitations, in specific combination as recited in claims 21, 30 and 37, define the patentability of the claims.

Dependent claims 22-29, 31-36 and 38-40 are allowed based on the same rationale.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joy M. Weber whose telephone number is (571)270-5699. The examiner can normally be reached on Monday-Thursday 8AM-5PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Kieu can be reached on (571) 272-4057. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joy M. Weber/
Examiner, Art Unit 2173

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14523069	SIRPAL ET AL.
	Examiner	**Art Unit**
	JOY WEBER	2173

CPC							
Symbol						**Type**	**Version**
G06F		3	/	0484		F	2013-01-01
G06F		1	/	1616		I	2013-01-01
G06F		1	/	1641		I	2013-01-01
G06F		3	/	0481		I	2013-01-01
G06F		3	/	0483		I	2013-01-01
G06F		3	/	04883		I	2013-01-01
G06F		3	/	1423		I	2013-01-01
G06F		3	/	04886		I	2013-01-01
G06F		2200	/	1614		A	2013-01-01
G06F		1	/	1677		I	2013-01-01
G06F		3	/	0412		I	2013-01-01
G06F		3	/	017		I	2013-01-01
G06F		3	/	04842		I	2013-01-01
G06F		3	/	0488		I	2013-01-01
G06F		1	/	16		I	2013-01-01
G06F		3	/	048		I	2013-01-01
G06F		3	/	04812		I	2013-01-01
G06F		3	/	04845		I	2013-01-01
G06T		3	/	40		I	2013-01-01
G06F		3	/	04817		I	2013-01-01
G06F		3	/	04847		I	2013-01-01
G06F		3	/	0482		I	2013-01-01
G06F		3	/	0486		I	2013-01-01
G06F		3	/	044		I	2013-01-01
G06T		3	/	0006		I	2013-01-01
G06F		3	/	0346		I	2013-01-01
G06F		3	/	1446		I	2013-01-01
G06F		1	/	1647		I	2013-01-01
G09G		5	/	14		I	2013-01-01
G06F		3	/	0416		I	2013-01-01
G06F		2203	/	04803		A	2013-01-01

		Total Claims Allowed:	
(Assistant Examiner)	(Date)	20	
/JOY WEBER/ Examiner.Art Unit 2173	05/25/2017	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	7C

U.S. Patent and Trademark Office

Part of Paper No. 20170525

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14523069	SIRPAL ET AL.
	Examiner	**Art Unit**
	JOY WEBER	2173

CPC Combination Sets				
Symbol	**Type**	**Set**	**Ranking**	**Version**
/				
/				

		Total Claims Allowed:	
(Assistant Examiner)	(Date)	20	
/JOY WEBER/ Examiner.Art Unit 2173	05/25/2017	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	7C

U.S. Patent and Trademark Office

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14523069	SIRPAL ET AL.
	Examiner	**Art Unit**
	JOY WEBER	2173

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION									
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED				
		G	0	6	F	3 / 048 (2013.01.01)	G	0	6	F	3 / 048 (2013.01.01)

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				

(Assistant Examiner)	(Date)	Total Claims Allowed: 20	
/JOY WEBER/ Examiner.Art Unit 2173	05/25/2017	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	7C

U.S. Patent and Trademark Office

Part of Paper No. 20170525

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14523069	SIRPAL ET AL.
	Examiner	**Art Unit**
	JOY WEBER	2173

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
-	1	-	17	13	33										
-	2	-	18	14	34										
-	3	-	19	15	35										
-	4	-	20	16	36										
-	5	1	21	17	37										
-	6	2	22	18	38										
-	7	3	23	19	39										
-	8	4	24	20	40										
-	9	5	25												
-	10	6	26												
-	11	7	27												
-	12	8	28												
-	13	9	29												
-	14	10	30												
-	15	11	31												
-	16	12	32												

		Total Claims Allowed:	
(Assistant Examiner)	(Date)	20	
/JOY WEBER/ Examiner.Art Unit 2173	05/25/2017	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	7C

U.S. Patent and Trademark Office Part of Paper No. 20170525

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14523069	SIRPAL ET AL.
	Examiner	Art Unit
	JOY M WEBER	2173

CPC- SEARCHED		
Symbol	Date	Examiner
G06F3/04$3, G09G5/14, G06F9/4443, G06F17/241	11/11/2016, 5/25/2017	JW

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
715	802	11/11/2016	JW

SEARCH NOTES		
Search Notes	Date	Examiner
PALM Inventor Search	11/11/2016	JW
EAST Text Search	11/11/2016, 5/25/2017	JW
G06F3/04$3, G09G5/14, G06F9/4443, G06F17/241, modified by text searching in EAST	5/25/2017	JW
Assignee and/or Inventor Search with Claim searching in EAST	5/25/2017	JW

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
Above	Above	5/25/2017	JW

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(Use as many sheets as necessary)*				Application Number	14/523,069
				Filing Date	October 24, 2014
				First Named Inventor	Sanjiv Sirpal
				Art Unit	2173
				Examiner Name	WEBER, JOY M
Sheet	1	of	1	Attorney Docket Number	6583-8-CON

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code [2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	1	Official Action for U.S. Patent Application No. 14/476,249, mailed Aug. 11, 2016 (Attorney Ref. No. 6583-13-CON), 6 pages

Examiner Signature	/JOY M WEBER/	Date Considered	05/25/2017

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.M.W/

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	144	("20030020754" | "20030146897" | "20100245275" | "20120084687" | "20120236035" | "20110107272" | "6512497" | "20030146897" | "20100182265" | "20090244016" | "20090278806" | "20090293007" | "20100188352" | "20100302179" | "20110191701" | "20110296333" | "8046701" | "20110239142" | "20070198948" | "20070285533" | "20100085274" | "20110090155" | "20110209058" | "20120084712" | "20120092233" | "RE40821" | "20100085274" | "20100298032" | "20050052341" | "20090231233" | "20100245267" | "20110239142" | "20120050177" | "20130021262" | "20100306669" | "20070288868" | "20090231233" | "20110099512" | "20120084678" | "20120084682" | "20060129948" | "20100188352" | "20110090155" | "8866763" | "20030229731" | "20100081475" | "20100245106" | "20120084686" | "8866763" | "20150046851" | "20070198948" | "20120092233" | "20100182265" | "20100298032" | "20110187655" | "20120081303" | "20120084739" | "5467102" | "5847698" | "7289084" | "20090315807" | "20100201712" | "20110187655" | "20100194705" | "20100229089" | "20110006971" | "20120081401" | "5227771" | "8875050" | "20110209058").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/05/25 10:42
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L4	112	L3 and (switch$3 chang$3) with ((screen display) and focus$3)	USPAT	OR	ON	2017/05/25 10:47
L5	36	L4 and (activat$3 launch$3) with (application program resource) same (chang$3 switch$3)	USPAT	OR	ON	2017/05/25 10:47
L6	51	@AD<"20100110" and (multi$3 dual) near3 ((screen display) and (device apparatus computer) and ((display$3 lighting highlight$3 activat$3 (turn$3 near2 on)) with (panel button control) and (current$3 focus$3))) and (switch$3 chang$3) with (screen display)	USPAT	OR	ON	2017/05/25 10:51
L7	4	L6 and (disabl$3 un$1activat$3 in$1activat$3 (turn$3 near2 off) hid$3) with (panel button control) same (current$3 focus$3)	USPAT	OR	ON	2017/05/25 10:53
L8	3998	@AD<"20100110" and (multi$3 dual) near3 (screen display) with (device apparatus computer) and ((display$3 lighting highlight$3 activat$3 (turn$3 near2 on)) with ((panel button control) and (current$3 focus$3))) and (switch$3 chang$3) with (screen display)	USPAT	OR	ON	2017/05/25 10:55
L9	202	L8 and (disabl$3 un$1activat$3 in$1activat$3 (turn$3 near2 off) hid$3) with (panel button control) same (current$3 focus$3)	USPAT	OR	ON	2017/05/25 10:56
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L12	565	L11 and (switch$3 chang$3) with (screen display)	USPAT	OR	ON	2017/05/25 11:00
L13	172	L12 and (activat$3 launch$3) with (application program resource) same (chang$3 switch$3)	USPAT	OR	ON	2017/05/25 11:01
L14	71	L13 and (("not" with allow$3) unactivat$3 inactivat$3 disabl$3)	USPAT	OR	ON	2017/05/25 11:01
L15	3	("Z124".as. (sirpal reeves "de Paz" schrock).in.) and (focus$3 and (configurable button control toolbar item) and (chang$3 switch$3) and (allow$3 activat$3 permit$4 enabl$3) and (stop$4 disabl$3 $1nactivat$3 ("not" near3	USPAT	OR	ON	2017/05/25 11:19

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S3	4	(US-20120236035-$ or US-20110006971-$ or US-20100081475-$).did. or (US-6512497-$).did.	US-PGPUB; USPAT	OR	ON	2016/11/11 12:18
S4	9	(S1 S2) and (activat$3 with ((button control menu item) and (current$3 focus$3)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/11/11 12:20
S5	26	("2012/0081304").URPN.	USPAT	OR	ON	2016/11/11 12:21
S6	3	(US-20110239142-$ or US-20100182265-$ or US-20090293007-$).did.	US-PGPUB	OR	ON	2016/11/11 14:13
S7	722	@AD<"20100110" and (715/802.ccls. (G06F3/04$3 G09G5/14 G06F9/4443 G06F17/241).cpc.) and (activat$3 with ((button control menu item) and (current$3 focus$3))) and ((multiple dual plurality two) with (screen display))	USPAT	OR	ON	2016/11/11 14:16
S8	552	S7 and (switch$3 chang$3) with (screen display)	USPAT	OR	ON	2016/11/11 14:19
S10	552	S7 and (switch$3 chang$3) with (screen display) not (S3 S6)	USPAT	OR	ON	2016/11/11 14:22
S11	166	S10 and (activat$3 launch$3) with (application program resource) same (chang$3 switch$3)	USPAT	OR	ON	2016/11/11 14:23

S12	68	S11 and (("not" with allow$3) unactivat$3 inactivat$3 disabl$3)	USPAT	OR	ON	2016/11/11 14:26
S13	3	("20120081322").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2016/11/13 09:36
S14	1	(13/248618).APP.	USPAT; USOCR	OR	ON	2016/11/13 09:37

5/25/2017 11:23:43 AM
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14523069	SIRPAL ET AL.
	Examiner	Art Unit
	JOY WEBER	2173

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	11/11/2016	05/25/2017							
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14523069	SIRPAL ET AL.
	Examiner	**Art Unit**
	JOY WEBER	2173

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	11/11/2016	05/25/2017							
	37	✓	=							
	38	✓	=							
	39	✓	=							
	40	✓	=							

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(Use as many sheets as necessary)*				Application Number	14/523,069
				Filing Date	October 24, 2014
				First Named Inventor	Sanjiv Sirpal
				Art Unit	2173
				Examiner Name	WEBER, JOY M
Sheet	1	of	1	Attorney Docket Number	6583-8-CON

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code [2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	1	Notice of Allowance for U.S. Patent Application No. 14/476,249, mailed Dec. 9, 2016 (Attorney Ref. No. 6583-13-CON), 8 pages

Examiner Signature	/JOY M WEBER/	Date Considered	05/25/2017

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.M.W/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	Group Art Unit: 2173
SIRPAL et al.	Confirmation No.: 7687
Serial No.: 14/523,069	Examiner: WEBER, JOY M
Filed: October 24, 2014	
Atty. File No.: 6583-8-CON	
Entitled: "FOCUS CHANGE UPON APPLICATION LAUNCH"	***Submitted Via EFS-Web***

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT AFTER ALLOWANCE PURSUANT TO 37 CFR § 1.312

Dear Sir/Madam:

Applicants submit this Amendment After Allowance pursuant to 37 CFR § 1.312 in response to the Notice of Allowance and Fee(s) Due having a mailing date of June 5, 2017. An amendment may be entered after the mailing of a Notice of Allowance but prior to payment of the issue fee upon the recommendation of the primary examiner. Therefore, it is respectfully requested that the above-referenced application be amended as follows:

Amendments to the Specification begin on page **2** of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page **4** of this paper.

Remarks/Arguments begin on page **9** of this paper.

AMENDMENTS TO THE SPECIFICATION

Please **AMEND** the specification filed on October 24, 2014, as follows:

[0001] The present application is a continuation of U.S. Patent Application Serial No. 13/248,618, filed on September 29, 2011, which claims the benefits of and priority, under 35 U.S.C. § 119(e), to U.S. Provisional Application Serial Nos. 61/389,000, filed October 1, 2010, entitled "DUAL DISPLAY WINDOWING SYSTEM;" 61/389,117, filed October 1, 2010, entitled "MULTI-OPERATING SYSTEM PORTABLE DOCKETING DEVICE;" 61/389,087, filed ~~October 1,2010~~ October 1, 2010, entitled "TABLET COMPUTING USER INTERFACE;"61/458,150, filed November 17, 2010, entitled "DUAL SCREEN EMAIL CLIENT;" 61/539,884, filed September 27, 2011, entitled "MOBILE DEVICE." Each of the aforementioned documents is incorporated herein by this reference in their entirety for all that they teach and for all purposes.

[0003] The small form factor of handheld computing devices requires a careful balancing between the displayed graphics and the area provided for receiving inputs. On the one hand, the small display constrains the display space, which may increase the difficulty of interpreting actions or results. On the other hand, a virtual keypad or other user interface scheme is superimposed on or positioned adjacent to an executing application, requiring the application to be squeezed into an even smaller portion of the display.

[0070] Primary screen 104 also includes a configurable area 112 that has been configured for specific inputs when the user touches portions of the configurable area 112. Secondary screen 108 also includes a configurable area 116 that has been configured for specific inputs. Areas 112a and 116a have been configured to receive a "back" input indicating that a user would like to view information previously displayed. Areas 112b and 116b have been configured to receive a "menu" input indicating that the user would like to view options from a menu. Areas 112c and 116c have been configured to receive a "home" input indicating that the user would like to view information associated with a "home" view. In other embodiments, areas 112a-c and 116a-c may be configured, in addition to the configurations described above, for other types of specific inputs including controlling features of device 100, some non-limiting examples including

adjusting overall system power, adjusting the volume, adjusting the brightness, adjusting the vibration, selecting of displayed items (on either of screen 104 or 108), operating a camera, operating a microphone, and initiating/terminating of telephone calls. Also, in some embodiments, areas ~~112a-C~~ 112a-c and ~~116a-C~~ 116a-c may be configured for specific inputs depending upon the application running on device 100 and/or information displayed on touch sensitive displays 110 and/or 114.

[0085] One or more display controllers 216a, 216b may be provided for controlling the operation of the touch sensitive screens 104 and 108, including input (touch sensing) and output (display) functions. In the exemplary embodiment illustrated in Fig. 2, a separate touch screen controller 216a or 216b is provided for each touch screen 104 and 108. In accordance with alternate embodiments, a common or shared touch screen controller ~~216~~ may be used to control each of the included touch sensitive screens 104 and 108. In accordance with still other embodiments, the functions of a touch screen controller ~~216~~ may be incorporated into other components, such as a processor 204.

[0106] Transition state ~~322~~ 332 illustratively shows primary screen 104 and the secondary screen 108 being closed upon one another for entry into, for example, the closed state 304.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1-20. (Canceled)

21. (Currently Amended) A method, comprising:

displaying a first image of a first application on a first display, wherein the first image is in focus, wherein input options for the first application are displayed in a first configurable area, wherein input is allowed from the first configurable area and the first display, wherein no input options are displayed in a second configurable area, wherein input is not allowed from the second configurable area, ~~and~~ wherein input is allowed from a second display, wherein the first configurable area does not display content from an application, and wherein the second configurable area does not display content from an application;

receiving first input indicating a request to launch a second application;

launching the second application; and

in response to launching the second application:

displaying, by the second application, a second image on the second display; and

changing the focus from the first image to the second image;

stopping display of input options in the first configurable area, wherein input is not allowed from the first configurable area, wherein input is allowed from the first display; and

displaying input options for the second application in the second configurable area, ~~and~~ wherein input is allowed from the second configurable area and the second display.

22. (Previously Presented) The method of claim 21, wherein the first image is displayed in portrait mode on the first display and the second image is displayed in portrait mode on the second display, and wherein the first display, the first configurable area, the second display, and the second configurable area are on a common first screen.

23. (Previously Presented) The method of claim 21, wherein the first image is displayed in landscape mode on the first display and the second image is displayed in landscape mode on the second display, and wherein the first display and the first configurable area are on a

first screen, and wherein the second display and the second configurable area are on a different second screen.

24. (Previously Presented) The method of claim 21, further comprising:

wherein the first image is a first open window of the first application and the second image is a second open window of the second application.

25. (Previously Presented) The method of claim 21, further comprising:

receiving second input indicating that in response to receiving the first input, the second application should be launched and the focus should be placed on the second image displayed by the second application.

26. (Previously Presented) The method of claim 21, further comprising:

highlighting the first configurable area when the focus is on the first image in the first display; and

changing the highlighting to the second configurable area when the focus is on the second image in the second display.

27. (Previously Presented) The method of claim 26, wherein the first configuration area is separate from the first display and the second configurable area is separate from the second display.

28. (Previously Presented) The method of claim 21, further comprising: in response to receiving the first input, highlighting at least one of the second image or the second display.

29. (Previously Presented) The method of claim 21, wherein the first input is a tap gesture received by one of the first display, the second display, a first gesture capture region, or a second gesture capture region, wherein the first gesture capture region is separate from the first display and the second gesture capture region is separate from the second display, and wherein the first and second gesture capture regions are not capable of displaying images of applications.

30. (Currently Amended) A non-transitory computer readable medium storing computer executable instructions that when executed by at least one processor perform a method, comprising:

displaying a first image of a first application on a first display, wherein the first image is in focus wherein input is allowed from the first display, and wherein input is allowed from a second display;

receiving first input indicating a request to launch a second application, the input is received by one of the first display and the second display;

in response to receiving the first input, launching the second application;

displaying, by the second application, a second image on the second display; and

changing focus from the first image to the second display, wherein input is allowed from the first display, and wherein input is allowed from the second display;

in response changing focus, stopping display of input options in a first configurable area, wherein input is not allowed from the first configurable area, wherein input is allowed from the first display; and

in response changing focus, displaying input options for the second application in a second configurable area, ~~and~~ wherein input is allowed from the second configurable area and the second display, wherein the first configurable area does not display content from an application, and wherein the second configurable area does not display content from an application.

31. (Previously Presented) The non-transitory computer readable medium of claim 30, wherein the first display, the first configurable area, the second display, and the second configurable area are on a common first screen, wherein the first input is a tap gesture received by one of the first display, the second display, a first gesture capture region, or a second gesture capture region, wherein the tap requires contact with the second display for a predetermined period of time, wherein the first gesture capture region is separate from the first display and the second gesture capture region is separate from the second display, and wherein the first and second gesture capture regions are not capable of displaying images of applications.

32. (Previously Presented) The non-transitory computer readable medium of claim 31, wherein in response to changing focus to the second display, allowing input from the second gesture capture region, and allowing input from the first gesture capture region.

33. (Previously Presented) The non-transitory computer readable medium of claim 30, wherein the tap requires contact with the second display for a predetermined period of time, wherein the first display and the first configurable area are on a first screen, and wherein the second display and the second configurable area are on a different second screen.

34. (Previously Presented) The non-transitory computer readable medium of claim 30, wherein the method further comprises:

highlighting a first configurable area on a first screen when the focus is on the first image in the first display, wherein input options for the first application are displayed in the first configurable area when the focus is on the first image, wherein input is allowed from the first

configurable area when the focus is on the first image, wherein no input options are displayed in a second configurable area of the first screen and input is not allowed from the second configurable area when the focus is on the first image; and

changing the highlighting to the second configurable area when the focus is on the second image in the second display, wherein input options for the second application are displayed in the second configurable area when the focus is on the second image, wherein input is allowed from the second configurable area when the focus is on the second image, and wherein no input options are displayed in the first configurable area and input is not allowed from the first configurable area when the focus is on the second image.

35. (Previously Presented) The non-transitory computer readable medium of claim 34, wherein the first configurable area is separate from the first display and the second configurable area is separate from the second display.

36. (Previously Presented) The non-transitory computer readable medium of claim 30, wherein the method further comprises: receiving second input indicating that in response to the first input, the focus should be changed to the second display.

37. (Currently Amended) A communication device, comprising:

a first touch sensitive display and a first configurable area;

a second touch sensitive display and a second configurable area; and

a computer readable medium that stores computer executable instructions that, when executed by at least one processor, perform a method comprising:

displaying a first image of a first application on the first touch sensitive display, wherein the first image is in focus, wherein input options for the first application are displayed in the first configurable area, wherein input is allowed from the first configurable area and the first touch sensitive display, wherein no input options are displayed in the second configurable area, wherein input is not allowed from the second configurable area, ~~and~~ wherein input is allowed from the second touch sensitive display, wherein the first configurable area does not display content from an application, and wherein the second configurable area does not display content from an application;

receiving first input on the first touch sensitive display or the second touch sensitive display indicating a request to launch a second application;

launching the second application;

displaying, by the second application, a second image on the second touch sensitive display; and

changing the focus from the first touch sensitive display to the second touch sensitive display, wherein no input options are displayed in the first configurable area, wherein input is not allowed from the first configurable area, wherein input is allowed from the first touch sensitive display, wherein input options for the second application are displayed in the second configurable area, and wherein input is allowed from the second configurable area and the second touch sensitive display.

38. (Previously Presented) The device of claim 37, wherein the first display, the first configurable area, the second display, and the second configurable area are on a common first screen and wherein the method further comprises:

providing a visual indication that focus is on the first image in the first touch sensitive display, wherein the indication identifies which display or application has the focus; and

changing the visual indication when the focus is on the second image in the second touch sensitive display.

39. (Previously Presented) The device of claim 37, wherein the first configurable area is separate from the first touch sensitive display and the second configurable area is separate from the second touch sensitive display, wherein the first display and the first configurable area are on a first screen, and wherein the second display and the second configurable area are on a different second screen.

40. (Previously Presented) The device of claim 37, wherein the first input is a tap gesture received by one of the first touch sensitive display, the second touch sensitive display, a first gesture capture region, or a second gesture capture region, wherein the first gesture capture region is separate from the first touch sensitive display and the second gesture capture region is separate from the second touch sensitive display, and wherein the first and second gesture capture regions are not capable of displaying images of applications.

REMARKS/ARGUMENTS

The amendments to the specification simply correct minor typographical errors and do not add new matter.

The amendments to claims 21, 30, and 37 do not require an additional search or examination, and the amendments are requested to further clarify any potential ambiguity in the claims.

Accordingly, Applicant believes that the requirements of 37CFR§1.312 and MPEP§714.16 have been satisfied and entry of this amendment is respectfully requested. Although no fees are believed to be due with the filing of this paper, please charge any deficiency or credit any overpayment to Deposit Account 19-1970.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Douglas W. Swartz/
Douglas W. Swartz
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Date: September 1, 2017

Electronic Acknowledgement Receipt

EFS ID:	30251663
Application Number:	14523069
International Application Number:	
Confirmation Number:	7687
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Customer Number:	111285
Filer:	Douglas W. Swartz/Amy Duarte
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-8-CON
Receipt Date:	01-SEP-2017
Filing Date:	24-OCT-2014
Time Stamp:	12:39:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		20170901_rule-312-amendment_n_6583-8-CON.pdf	179397 a35935135458a7eb57f17bf65ee23a01e662526d	yes	9

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment after Notice of Allowance (Rule 312)	1	1
	Specification	2	3
	Claims	4	8
	Applicant Arguments/Remarks Made in an Amendment	9	9
Warnings:			
Information:			
	Total Files Size (in bytes):	179397	

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<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	Group Art Unit: 2173
Sanjiv Sirpal	Confirmation No.: 7687
Serial No.: 14/523,069	Examiner: WEBER, JOY M
Filed: October 24, 2014	
Atty. File No.: 6583-8-CON	***Submitted via EFS-Web***
Entitled: "FOCUS CHANGE UPON APPLICATION LAUNCH"	

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Dear Commissioner:

Applicant submits these Comments on Statement of Reasons for Allowance to address further the Notice of Allowability ("Notice") having a mailing date of June 5, 2017.

In the Notice, the Examiner's stated reasons for allowance were that:

> Examiner has carefully considered the independent claims 21, 30 and 37.
>
> In claims 21, 30 and 37, the prior art of record: Kim, Rapp, Kondo, alone or in combination, do not teach or fairly suggests "wherein the first configurable area does not display content from an application, wherein the second configurable area does not display content from an application."
>
> These limitations, in specific combination as recited in claims 21, 30 and 37, define the patentability of the claims.
>
> Dependent claims 22-29, 31-36 and 38-40 are allowed based on the same rationale.

Based on the Notice, the patentability of all independent and dependent claims is assumed to be based upon the elements as set forth in such claims and that such claims meet all criteria for patentability under §101, §102, §103 and §112.

As is clear from MPEP 1302.14:

> The statement [of reasons for allowance] is not intended to necessarily state all the reasons for allowance or all the details why claims are allowed and should not be written to specifically or impliedly state that all the reasons for allowance are set forth.

While the above-stated may be a stated reason for allowing some claims, Applicant submits that some other claims may have a different reason for allowance and/or that some claims may have other additional reasons for allowance.

Specifically, the prior art fails to teach the following features of Claims 21, 30 and 37:

> 21. A method, comprising:
> displaying a first image of a first application on a first display, wherein the first image is in focus, wherein input options for the first application are displayed in a first configurable area, wherein input is allowed from the first configurable area and the first display, wherein no input options are displayed in a second configurable area, wherein input is not allowed from the second configurable area, and wherein input is allowed from a second display, wherein the first configurable area does not display content from an application, wherein the second configurable area does not display content from an application;
> receiving first input indicating a request to launch a second application;
> launching the second application;
> in response to launching the second application:
> displaying, by the second application, a second image on the second display; and
> changing the focus from the first image to the second image;
> stopping display of input options in the first configurable area, wherein input is not allowed from the first configurable area, wherein input is allowed from the first display;
> displaying input options for the second application in the second configurable area, and wherein input is allowed from the second configurable area and the second display.
>
> 30. A non-transitory computer readable medium storing computer executable instructions that when executed by at least one processor perform a method, comprising:

displaying a first image of a first application on a first display, wherein the first image is in focus wherein input is allowed from the first display, and wherein input is allowed from a second display;

receiving first input indicating a request to launch a second application, the input is received by one of the first display and the second display;

in response to receiving the first input, launching the second application;

displaying, by the second application, a second image on the second display; and

changing focus from the first image to the second display, wherein input is allowed from the first display, and wherein input is allowed from the second display;

in response changing focus, stopping display of input options in a first configurable area, wherein input is not allowed from the first configurable area, wherein input is allowed from the first display;

in response changing focus, displaying input options for the second application in a second configurable area, and wherein input is allowed from the second configurable area and the second display, wherein the first configurable area does not display content from an application, wherein the second configurable area does not display content from an application.

37. A communication device, comprising:

a first touch sensitive display and a first configurable area;

a second touch sensitive display and a second configurable area;

a computer readable medium that stores computer executable instructions that, when executed by at least one processor, perform a method comprising:

displaying a first image of a first application on the first touch sensitive display, wherein the first image is in focus, wherein input options for the first application are displayed in the first configurable area, wherein input is allowed from the first configurable area and the first touch sensitive display, wherein no input options are displayed in the second configurable area, wherein input is not allowed from the second configurable area, and wherein input is allowed from the second touch sensitive display, wherein the first configurable area does not display content from an application, wherein the second configurable area does not display content from an application;

receiving first input on the first touch sensitive display or the second touch sensitive display indicating a request to launch a second application;

launching the second application;

displaying, by the second application, a second image on the second touch sensitive display; and

changing the focus from the first touch sensitive display to the second touch sensitive display wherein no input options are displayed

in the first configurable area, wherein input is not allowed from the first configurable area, wherein input is allowed from the first touch sensitive display, wherein input options for the second application are displayed in the second configurable area, and wherein input is allowed from the second configurable area and the second touch sensitive display.

Although the Applicant believes that no fees are due for filing these Comments on Statement of Reasons for Allowance, please charge any fees deemed necessary to Deposit Account No. 19-1970.

Respectfully submitted,

SHERIDAN ROSS P.C.

DWS

By: /Douglas W. Swartz/

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Date: August 28, 2017

Electronic Acknowledgement Receipt	
EFS ID:	30256603
Application Number:	14523069
International Application Number:	
Confirmation Number:	7687
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Customer Number:	111285
Filer:	Douglas W. Swartz/Theresa Brown
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-8-CON
Receipt Date:	01-SEP-2017
Filing Date:	24-OCT-2014
Time Stamp:	16:23:44
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Post Allowance Communication - Incoming	Comments_on_Reasons_for_Allowance.pdf	164240 2ed0fb2c67d03dfbe727570ee66ef01bf0901d79	no	4

Warnings:

Information:	
Total Files Size (in bytes):	164240

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	14/523,069
				Filing Date	October 24, 2014
				First Named Inventor	Sanjiv Sirpal
(Use as many sheets as necessary)				Art Unit	2173
				Examiner Name	WEBER, JOY M
Sheet	1	of	1	Attorney Docket Number	6583-8-CON

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-kind Code [2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	2004/0021681	02/05/2004	Liao	
	2	2011/0047459	02/24/2011	Van Der Westhuizen	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]; Number[4]; Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON-PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	3	Official Action (with English translation) for Chinese Patent Application No. 2012104601484, dated Aug. 3, 2016 (Attorney Ref. No. 6583-12-CN), 22 pages
	4	Official Action (with English translation) for Chinese Patent Application No. 2012104601484, dated Apr. 6, 2017 (Attorney Ref. No. 6583-12-CN), 22 pages
	5	Official Action (with English translation) for Chinese Patent Application No. 201180057986.0, dated Jul. 07, 2015 (Attorney Ref. No. 6583-13-PCN), 18 pages
	6	Notice of Grant (with English translation) for Chinese Patent Application No. 201180057986.0, dated Jul. 05, 2016 (Attorney Ref. No. 6583-13-PCN), 5 pages
	7	Intent to Grant for European Patent Application No. 11829885.0, dated Apr. 3, 2017 (Attorney Ref. No. 6583-13-PEP), 8 pages
	8	Official Action for U.S. Patent Application No. 13/247,824, mailed Aug. 31, 2015 (Attorney's Ref. No. 6583-57) 14 pages
	9	Official Action for U.S. Patent Application No. 13/247,824, mailed Jun. 16, 2017 (Attorney's Ref. No. 6583-57-CON) 15 pages
	10	Official Action for U.S. Patent Application No. 13/247,824, mailed Aug. 25, 2017 (Attorney's Ref. No. 6583-57-CON) 17 pages

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

Electronic Acknowledgement Receipt	
EFS ID:	30260396
Application Number:	14523069
International Application Number:	
Confirmation Number:	7687
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Customer Number:	111285
Filer:	Douglas W. Swartz/Theresa Brown
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-8-CON
Receipt Date:	03-SEP-2017
Filing Date:	24-OCT-2014
Time Stamp:	14:51:05
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	6583-12-CN_08-03-2016.pdf	1507532 384f103eae88d38249f54e2711e1033a7eb10837	no	22
Warnings:					

Information:					
2	Non Patent Literature	6583-12-CN_04-06-2017.pdf	1711635 6fb3ef0aa131e676845d6bd34c1a156f0a4d698d	no	22
Warnings:					
Information:					
3	Non Patent Literature	6583-13-PCN_OA_07-07-2015.pdf	1102685 442d5f573f8ad46035f9af8cba442fa7564447b0	no	18
Warnings:					
Information:					
4	Non Patent Literature	6583-13-PCN_NOA_07-05-2016.pdf	438481 3203ed522bd70836f4a9b081472e0738996b9b82	no	5
Warnings:					
Information:					
5	Non Patent Literature	6583-13-PEP_NOA_04-03-2017.pdf	551636 33667b964dc2a95eb34f59ebe3d1435ce3fbe69a	no	8
Warnings:					
Information:					
6	Other Reference-Patent/App/Search documents	6583-57_FOA_08-31-2015.pdf	1218944 f62879b47e9178a87ace9e97734b7ada14f48309	no	14
Warnings:					
Information:					
7	Other Reference-Patent/App/Search documents	6583-57-CON_OA_06-16-2017.pdf	1264604 faaf011ea4a9f3ba796d3d2c3952e4faa4a01972	no	15
Warnings:					
Information:					
8	Other Reference-Patent/App/Search documents	6583-57-CON_FOA_08-25-2017.pdf	1523782 5f731653745d34a81709c2c9304d96e626a73659	no	17
Warnings:					
Information:					

9		6583-8-CON_IDS_05.pdf	168338 0cb31e3cd56e837e67baed318a5d284efce a0248	yes	3

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Transmittal Letter	1	2
Information Disclosure Statement (IDS) Form (SB08)	3	3

Warnings:	
Information:	
Total Files Size (in bytes):	9487637

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2173
Sanjiv Sirpal	)	Confirmation No.: 7687
Serial No.: 14/523,069	)	Examiner: WEBER, JOY M
Filed: October 24, 2014	)	SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Atty. File No.: 6583-8-CON	)	
Entitled: "Focus Change Upon Application Launch"	)	*Electronically Submitted*

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

The references cited on attached Form PTO/SB08 are being called to the attention of the Examiner.

☒ Copies of the cited non-patent and/or foreign references are enclosed herewith.

☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.

☒ Copies of the cited U.S. patents/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).

☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

☒ To the best of applicants' belief, the pertinence of the foreign-language references is believed to be summarized in the attached English abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.

☐ Examiner's attention is drawn to the following related applications:

Serial No. _____ filed _____ (Attorney Ref. No. _____)

Serial No. _____ filed _____ (Attorney Ref. No. _____)

☐ Other:_____

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence

of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Douglas W. Swartz/
Douglas W. Swartz
Registration No. 37739
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

Date: August 28, 2017

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

111285 7590 06/05/2017
Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/523,069	10/24/2014	Sanjiv Sirpal	6583-8-CON	7687

TITLE OF INVENTION: FOCUS CHANGE UPON APPLICATION LAUNCH

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	09/05/2017

EXAMINER	ART UNIT	CLASS-SUBCLASS
WEBER, JOY M	2173	715-802000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Sheridan Ross P.C.
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Z124

(B) RESIDENCE: (CITY and STATE OR COUNTRY): George Town, Cayman Islands

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number 19-1970 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ☐ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ☐ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ☐ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Douglas W. Swartz/ Date September 5, 2017
Typed or printed name Douglas W. Swartz Registration No. 37,739

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Electronic Patent Application Fee Transmittal

Application Number:	14523069
Filing Date:	24-Oct-2014
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Filer:	Douglas W. Swartz/Amy Duarte
Attorney Docket Number:	6583-8-CON

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	1501	1	960	960

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**960**

Electronic Acknowledgement Receipt	
EFS ID:	30272847
Application Number:	14523069
International Application Number:	
Confirmation Number:	7687
Title of Invention:	FOCUS CHANGE UPON APPLICATION LAUNCH
First Named Inventor/Applicant Name:	Sanjiv Sirpal
Customer Number:	111285
Filer:	Douglas W. Swartz/Amy Duarte
Filer Authorized By:	Douglas W. Swartz
Attorney Docket Number:	6583-8-CON
Receipt Date:	05-SEP-2017
Filing Date:	24-OCT-2014
Time Stamp:	17:02:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$960
RAM confirmation Number	090617INTEFSW00004688191970
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	20170905_issue-fee-transmittal_n_6583-8-CON.pdf	97314 c47023468f4772e5a6d57acc9d3697f32b1402b2	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30706 b43e41249971971939ce980de019f8e45d6f4fde	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	128020		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/523,069	10/24/2014	Sanjiv Sirpal	6583-8-CON	7687

7590 09/08/2017

Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
WEBER, JOY M	

ART UNIT	PAPER NUMBER
2173	

NOTIFICATION DATE	DELIVERY MODE
09/08/2017	ELECTRONIC

NOTICE OF NON-COMPLIANT INFORMATION DISCLOSURE STATEMENT

An Information Disclosure Statement (IDS) filed 9/3/2017 in the above-identified application fails to meet the requirements of 37 CFR 1.97(d) for the reason(s) specified below. Accordingly, the IDS will be placed in the file, but the information referred to therein has not been considered.

The IDS is not compliant with 37 CFR 1.97(d) because:

☒ The IDS lacks a statement as specified in 37 CFR 1.97(e).

☐ The IDS lacks the fee set forth in 37 CFR 1.17(p).

☐ The IDS was filed after the issue fee was paid. Applicant may wish to consider filing a petition to withdraw the application from issue under 37 CFR 1.313(c) to have the IDS considered. See MPEP 1308.

571-272-4200 or 1-888-786-0101
Application Assistance Unit
Office of Data Management

FORM PTOM327-B (Rev. 02/08)

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/523,069	10/24/2014	Sanjiv Sirpal	6583-8-CON	7687

111285 7590 09/14/2017

Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

EXAMINER	
WEBER, JOY M	

ART UNIT	PAPER NUMBER
2173	

NOTIFICATION DATE	DELIVERY MODE
09/14/2017	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

edocket@sheridanross.com
flexpatents-sr@sheridanross.com

Response to Rule 312 Communication	Application No.	Applicant(s)
	14/523,069	SIRPAL ET AL.
	Examiner	Art Unit
	JOY M. WEBER	2173

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

1. ☒ The amendment filed on *01 September 2017* under 37 CFR 1.312 has been considered, and has been:

a) ☒ entered.

b) ☐ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.
Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☐ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.

/JOY M WEBER/
Primary Examiner, Art Unit 2173

OK TO ENTER: /J.M.W/ 09/11/2017

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	Group Art Unit: 2173
SIRPAL et al.	Confirmation No.: 7687
Serial No.: 14/523,069	Examiner: WEBER, JOY M
Filed: October 24, 2014	
Atty. File No.: 6583-8-CON	
Entitled: "FOCUS CHANGE UPON APPLICATION LAUNCH"	***Submitted Via EFS-Web***

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT AFTER ALLOWANCE PURSUANT TO 37 CFR § 1.312

Dear Sir/Madam:

Applicants submit this Amendment After Allowance pursuant to 37 CFR § 1.312 in response to the Notice of Allowance and Fee(s) Due having a mailing date of June 5, 2017. An amendment may be entered after the mailing of a Notice of Allowance but prior to payment of the issue fee upon the recommendation of the primary examiner. Therefore, it is respectfully requested that the above-referenced application be amended as follows:

Amendments to the Specification begin on page **2** of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page **4** of this paper.

Remarks/Arguments begin on page **9** of this paper.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet	1	of	5

Complete if Known	
Application Number	14/523,069
Filing Date	October 24, 2014
First Named Inventor	Sanjiv Sirpal
Art Unit	~~2172~~ 2173
Examiner Name	~~Boris M Pesin~~ Joy Weber
Attorney Docket Number	6583-8-CON

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	5227771	07/13/2019	Kerr et al.	
	2	5467102	11/14/1995	Kuno et al.	
	3	5847698	12/08/1998	Reavey et al.	
	4	6512497	01/28/2003	Kondo et al.	
	5	7289084	10/30/2007	Lesniak	
	6	RE40821 07/2009	~~10/30/2007~~	Narayanaswamy et al.	
	7	8046701	10/25/2011	Chiu et al.	
	8	8866763	10/21/2014	Sirpal et al.	
	9	8875050	10/28/2014	Sirpal et al.	
	10	8959445	02/17/2015	Sirpal et al.	
	11	9026930	05/05/2015	Sirpal et al.	
	12	9063694	06/23/2015	Sirpal et al.	
	13	2003/0020754	01/30/2003	Berman	
	14	2003/0146897	08/07/2003	Hunter	
	15	2003/0229731	12/11/2003	Keller	
	16	2005/0052341	03/10/2005	Henriksson	
	17	2006/0129948	06/15/2006	Hamzy et al.	
	18	2007/0198948	08/23/2007	Toriyama	
	19	2007/0285533	12/13/2007	Furuya et al.	
	20	2009/0231233	09/17/2009	Liberatore	
	21	2009/0244016	10/01/2009	Casparian et al.	
	22	2009/0278806	11/12/2009	Duarte et al.	
	23	2009/0293007	11/26/2009	Duarte et al.	
	24	2009/0315807	12/24/2009	Hsu	
	25	2010/0081475	04/01/2010	Chiang et al.	
	26	2010/0085274	04/08/2010	Kilpatrick, II et al.	
	27	2010/0182265	07/22/2010	Kim et al.	
	28	2010/0188352	07/29/2010	Ikeda	
	29	2010/0194705	08/05/2010	Kim et al.	
	30	2010/0201712	08/12/2010	Grignani et al.	
	31	2010/0229089	09/09/2010	Narita	
	32	2010/0245106	09/30/2010	Miller et al.	

Change(s) applied to document, /S.H./ 7/21/2017

Examiner Signature	/JOY M WEBER/	Date Considered	11/11/2016

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.M.W/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/523,069	10/17/2017	9792007	6583-8-CON	7687

111285 7590 09/27/2017

Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 222 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Sanjiv Sirpal, Oakville, CANADA;
Z124, George Town, CAYMAN ISLANDS;
Paul Edward Reeves, Oakville, CANADA;
Alexander de Paz, Burlington, CANADA;
Rodney Wayne Schrock, San Diego, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:21-cv-371	9/29/2021	Eastern District of Texas

PLAINTIFF	DEFENDANT
MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.	SAMSUNG ELECTRONICS CO., LTD. and SAMSUNG ELECTRONICS AMERICA, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,836,842	9/16/2014	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
2	8,881,053	11/4/2014	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
3	9,134,756	9/15/2015	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
4	9,310,834	4/12/2016	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
5	8,854,834	10/7/2014	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.

see attached

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

Continued

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
6	9,665,126	05/30/2017	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
7	8,842,080	09/23/2014	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
8	9,727,205	08/08/2017	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
9	9,058,153	06/16/2015	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
10	10,203,848	02/12/2019	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
11	8,875,050	10/28/2014	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
12	9,792,007	10/17/2017	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
13	9,141,135	09/22/2015	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
14	8,832,577	09/09/2014	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
15	9,146,589	09/29/2015	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
16	9,158,494	10/13/2015	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
17	9,195,335	11/24/2015	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.

AO 120 (Rev. 08/10)

TO:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:21-cv-371	9/29/2021	Eastern District of Texas

PLAINTIFF	DEFENDANT
MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.	SAMSUNG ELECTRONICS CO., LTD. and SAMSUNG ELECTRONICS AMERICA, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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2	8,881,053	11/4/2014	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
3	9,134,756	9/15/2015	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
4	9,310,834	4/12/2016	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
5	8,854,834	10/7/2014	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.

see attached

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

ORDERED that all claims asserted by Multifold against Samsung and all claims asserted by Samsung against Multifold are DISMISSED WITH PREJUDICE.

CLERK	(BY) DEPUTY CLERK	DATE
David A. O'Toole	CH	6/2/22

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

Continued

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
6	9,665,126	05/30/2017	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
7	8,842,080	09/23/2014	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
8	9,727,205	08/08/2017	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
9	9,058,153	06/16/2015	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
10	10,203,848	02/12/2019	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
11	8,875,050	10/28/2014	MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.
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APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
14/523,069	**07/09/2024 02:50:11 AM Z ET**	**6583-8-CON**

Title of Invention

FOCUS CHANGE UPON APPLICATION LAUNCH

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	9792007
CONFIRMATION #	7687	FILED BY	Mandy Yu
PATENT CENTER #	66280573	FILING DATE	10/24/2014
CUSTOMER #	111285	FIRST NAMED INVENTOR	Sanjiv Sirpal
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Daniel Juffernbruch

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
20_9792007 - CHANGE OF CORRESPONDENCE ADDRESS Patent.pdf	2	Change of Address	429 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
20_9792007 - CHANGE OF CORRESPONDENCE ADDRESS Patent.pdf	17F6D856C4887DEA2F5E29E6C1AAA7FA3A4F43B9EE4003905FC4C28AB0F68628263F5861022B3254108954FC41E8B0B6B4726AB7BC2CBE592E2B2F2F5A299AA4

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PTO/AIA/123 (08-12)
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Patent Number	9,792,007
Issue Date	10/17/2017
Application Number	14/523,069
Filing Date	10/24/2014
First Named Inventor	Sanjiv Sirpal
Attorney Docket Number	6583-8-CON

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☑ Attorney or agent of record. Registration Number 52471.

☐ Patent practitioner acting in a representative capacity whose correspondence address is the correspondence address of record. Notice has been given to the patentee or owner. Registration Number 52471.

Signature	/William J. Daley/
Typed or Printed Name	William J. Daley
Date: July 9, 2024	Telephone: 303-863-9700

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