

Unlocking a Device by Performing Gestures on an Unlock Image

RELATED APPLICATIONS

[0001] This application is related to U.S. Patent Application No. 11/322,550, titled "Indication of Progress Towards Satisfaction of a User Input Condition," filed December 23, 2005, which application is incorporated by reference herein in its entirety.

TECHNICAL FIELD

[0002] The disclosed embodiments relate generally to user interfaces that employ touch-sensitive displays, and more particularly, to the unlocking of user interfaces on portable electronic devices.

BACKGROUND

[0003] Touch-sensitive displays (also known as "touch screens" or "touchscreens") are well known in the art. Touch screens are used in many electronic devices to display graphics and text, and to provide a user interface through which a user may interact with the devices. A touch screen detects and responds to contact on the touch screen. A device may display one or more soft keys, menus, and other user-interface objects on the touch screen. A user may interact with the device by contacting the touch screen at locations corresponding to the user-interface objects with which she wishes to interact.

[0004] Touch screens are becoming more popular for use as displays and as user input devices on portable devices, such as mobile telephones and personal digital assistants (PDAs). One problem associated with using touch screens on portable devices is the unintentional activation or deactivation of functions due to unintentional contact with the touch screen. Thus, portable devices, touch screens on such devices, and/or applications running on such devices may be locked upon satisfaction of predefined lock conditions, such as upon entering an active call, after a predetermined time of idleness has elapsed, or upon manual locking by a user.

[0005] Devices with touch screens and/or applications running on such devices may be unlocked by any of several well-known unlocking procedures, such as pressing a predefined set of buttons (simultaneously or sequentially) or entering a code or password. These unlock procedures, however, have drawbacks. The button combinations may be hard to perform. Creating, memorizing, and recalling passwords, codes, and the like can be quite

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For example, international patent application WO 2004/001560 A1 discloses a method of deactivating a touch screen lock in a portable electronic device which comprises detecting touches on predetermined contact areas on a touch screen in a given order during touch screen lock and deactivating the touch screen lock once the touches on the predetermined contact areas are detected.

US patent 5,821,933 discloses accessing a restricted function on a computer by entering an iconic password that is defined by selecting two or more visual icons, called code icons, in a sequence called iconic password sequence. Code icons can be selected by touch input. The entered sequence is compared to a target sequence that represents the restricted function. If the entered sequence matches the target sequence, the user is permitted to access the restricted function.