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(54) **GLANCEABLE ANIMATED NOTIFICATIONS ON A LOCKED DEVICE**

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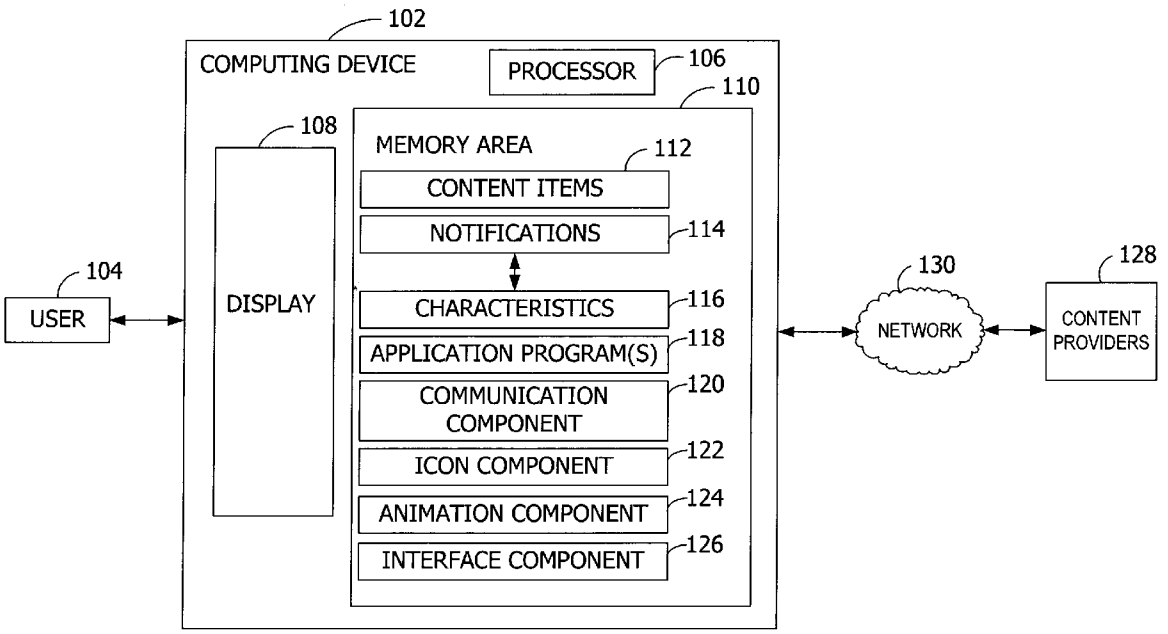
(57) **ABSTRACT**

Providing content and/or functionality through a display of a locked computing device. Configuration data defined by a user or application vendor identifies the content and/or functionality to be made available. Upon receipt of the content, the computing device modifies the received content based on the configuration data and provides the modified content to the user through the display of the locked computing device. The computing device also interacts with the user in accordance with the functionality identified by the configuration data. In some embodiments, notifications about voice mail or electronic mail messages are displayed to the user through a locked touch screen display. Responsive to a finger tap or other user input, additional yet limited information relating to the notifications is displayed.



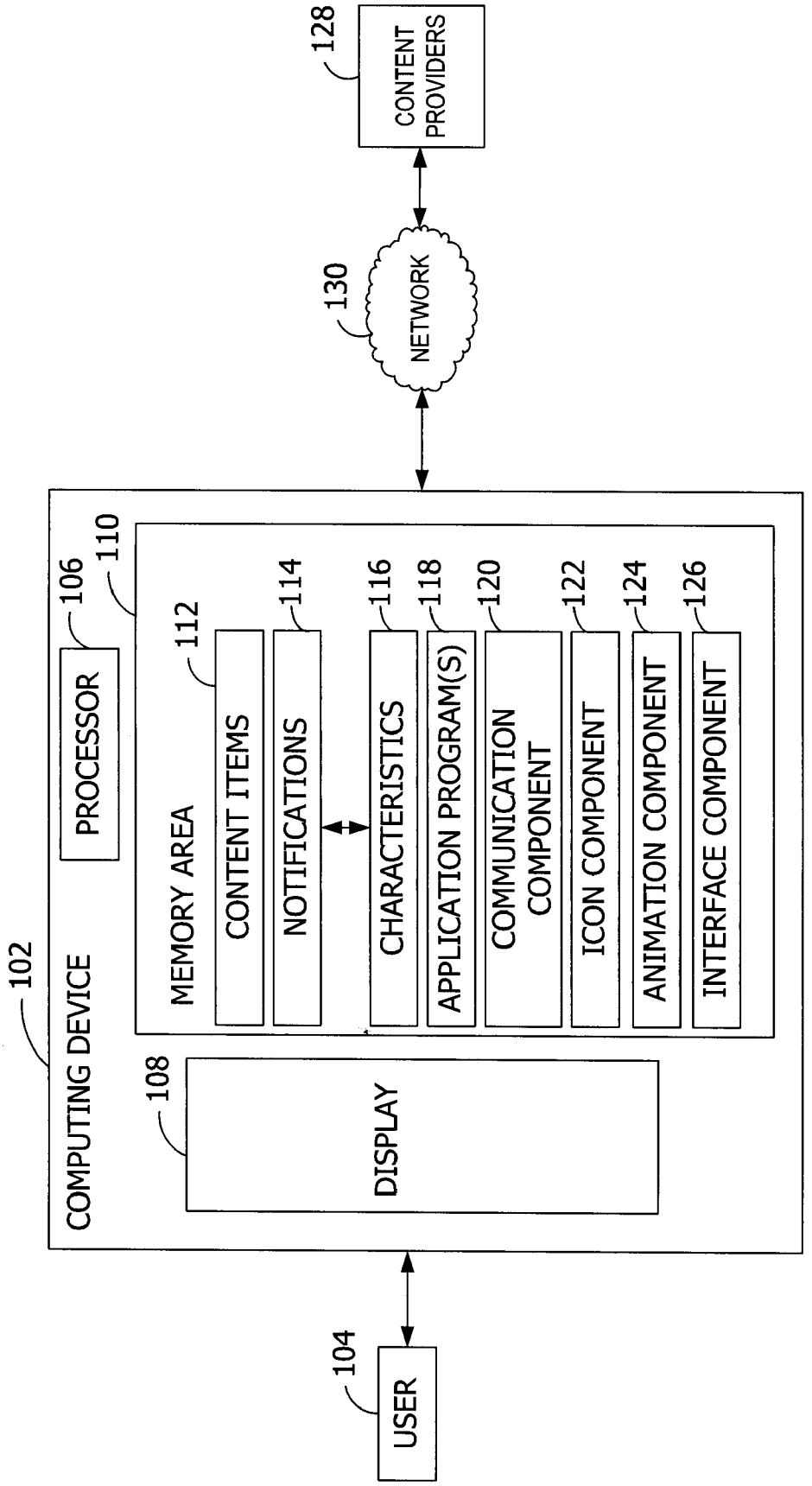

128
CONTENT PROVIDERS
130
NETWORK
102
COMPUTING DEVICE
PROCESSOR
106
110
MEMORY AREA
112
CONTENT ITEMS
114
NOTIFICATIONS
116
CHARACTERISTICS
118
APPLICATION PROGRAM(S)
120
COMMUNICATION COMPONENT
122
ICON COMPONENT
124
ANIMATION COMPONENT
126
INTERFACE COMPONENT
108
DISPLAY
104
USER

FIG. 1

FIG.2

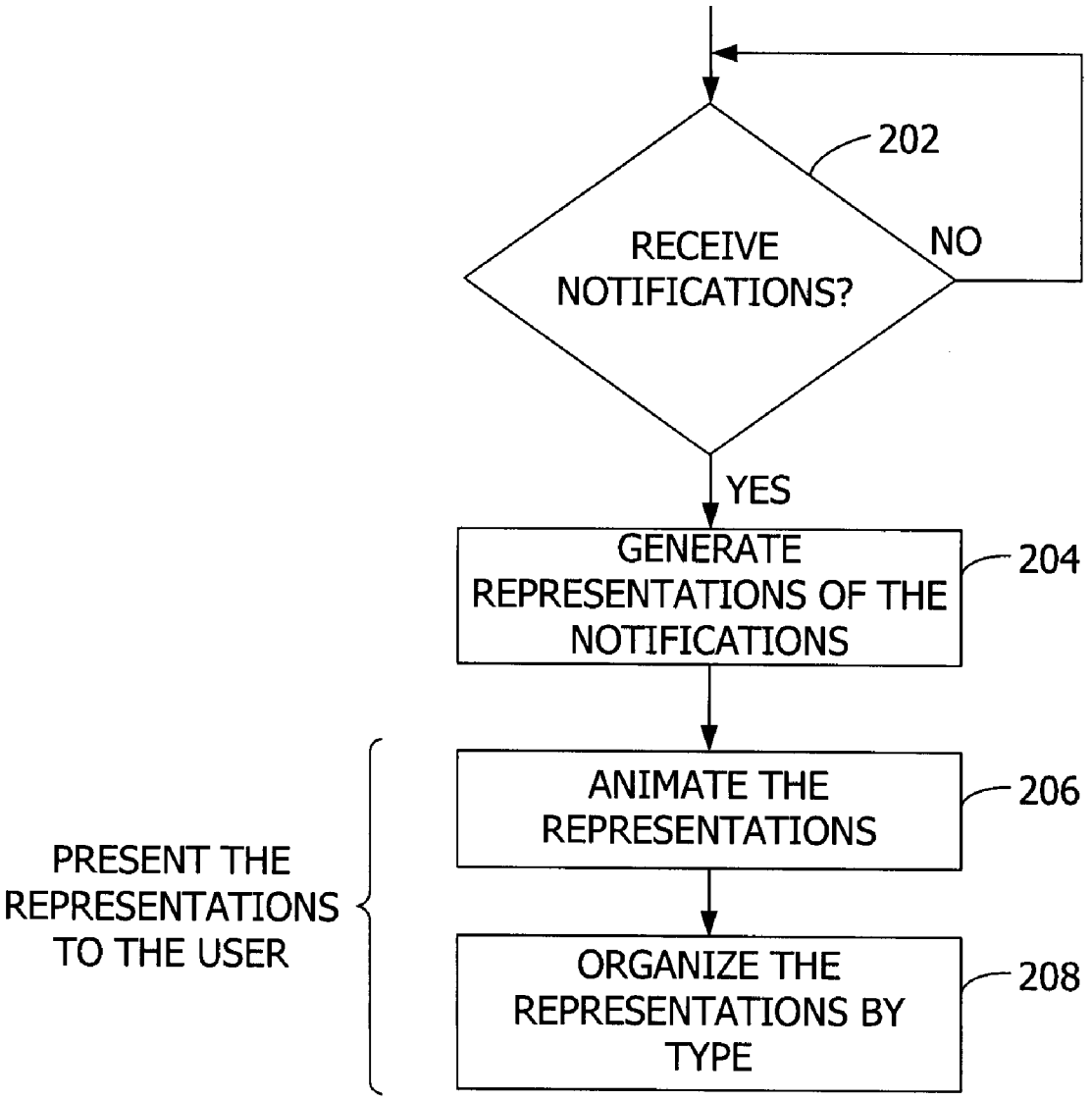

202
RECEIVE NOTIFICATIONS?
NO
YES
GENERATE REPRESENTATIONS OF THE NOTIFICATIONS
204
ANIMATE THE REPRESENTATIONS
206
ORGANIZE THE REPRESENTATIONS BY TYPE
208
PRESENT THE REPRESENTATIONS TO THE USER

FIG. 3

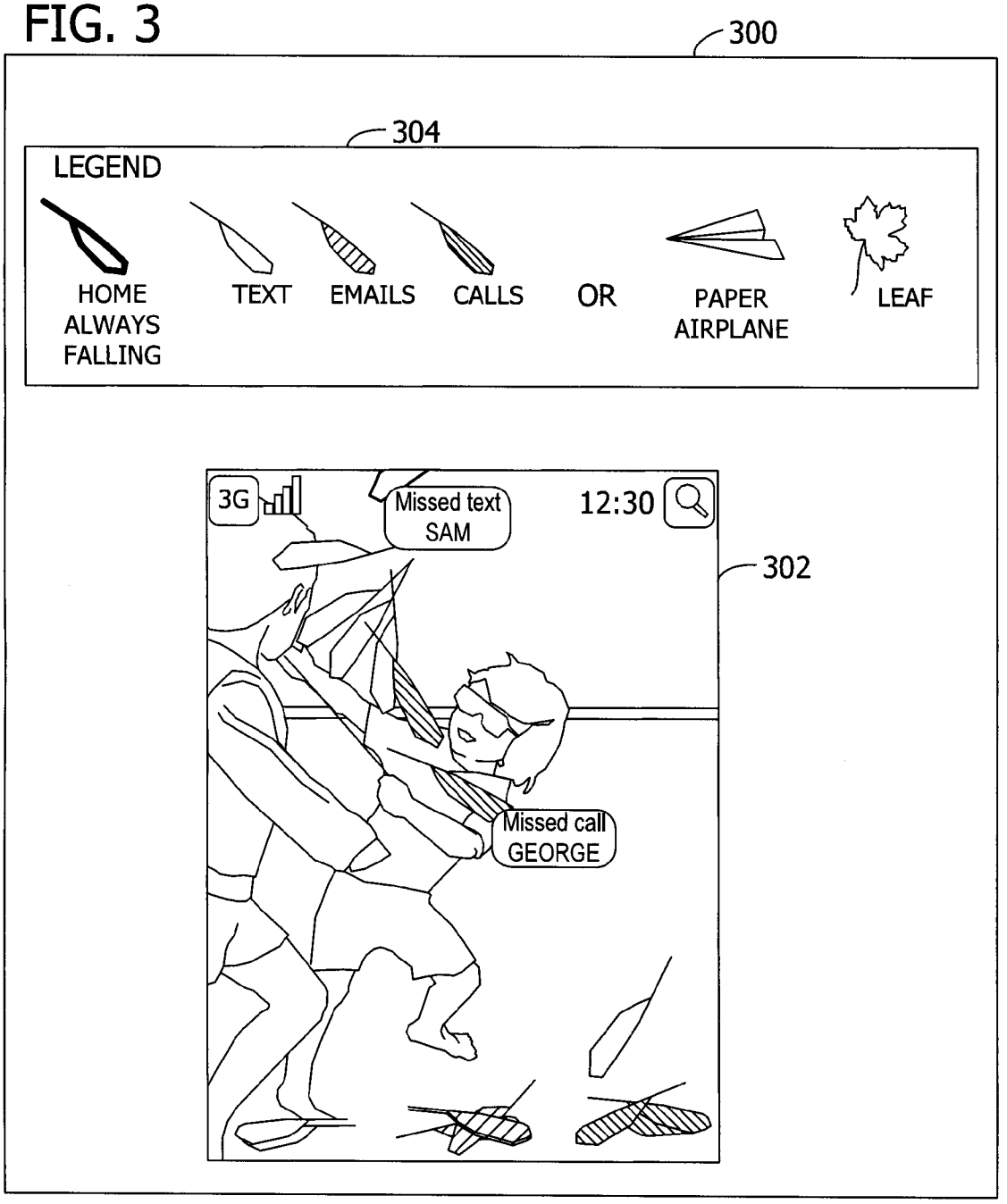

300
304
LEGEND
HOME ALWAYS FALLING
TEXT
EMAILS
CALLS
OR
PAPER AIRPLANE
LEAF
3G
Missed text SAM
12:30
302
Missed call GEORGE

FIG. 4A

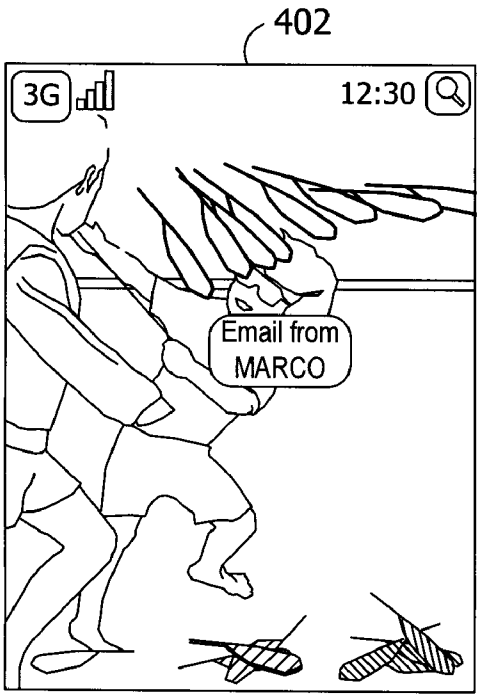

402
3G
12:30
Email from
MARCO

FIG. 4B

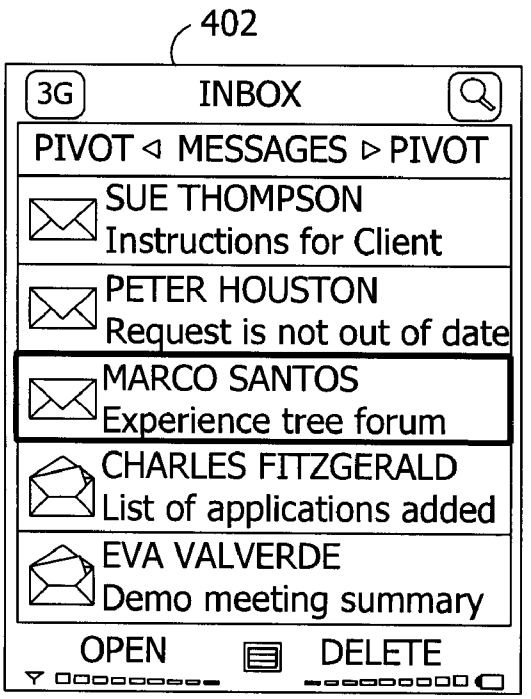

402
3G
INBOX
PIVOT ◁ MESSAGES ▷ PIVOT
SUE THOMPSON
Instructions for Client
PETER HOUSTON
Request is not out of date
MARCO SANTOS
Experience tree forum
CHARLES FITZGERALD
List of applications added
EVA VALVERDE
Demo meeting summary
OPEN
DELETE

FIG. 5A

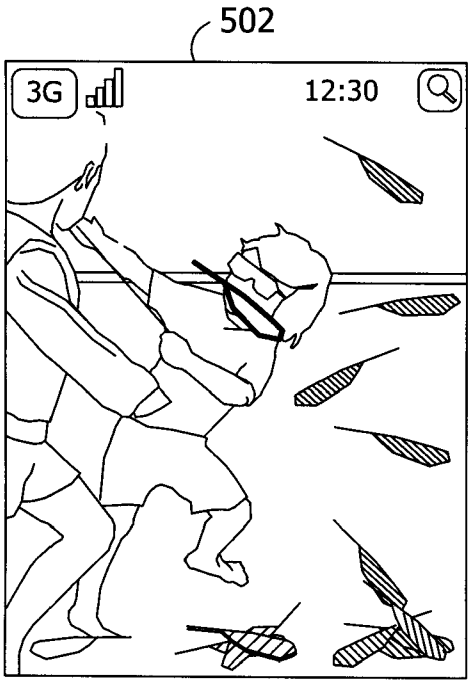


FIG. 5B

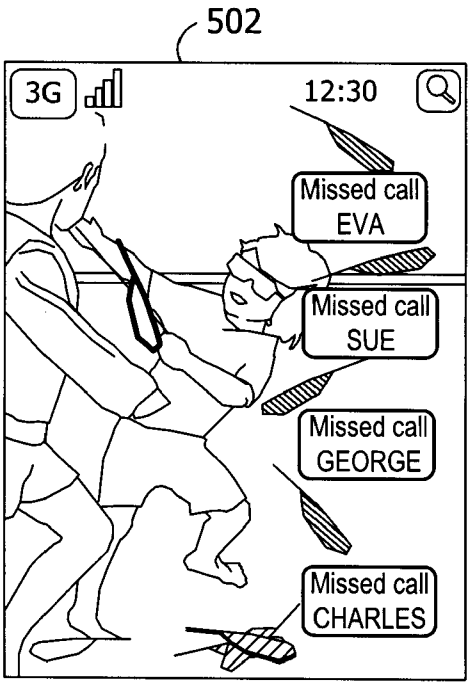


FIG. 5C

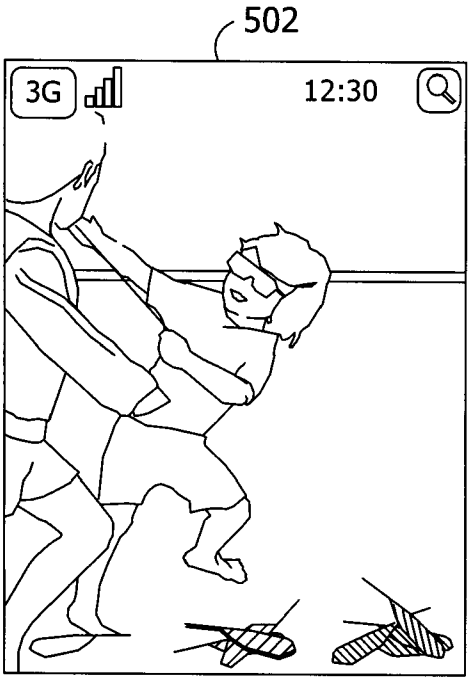
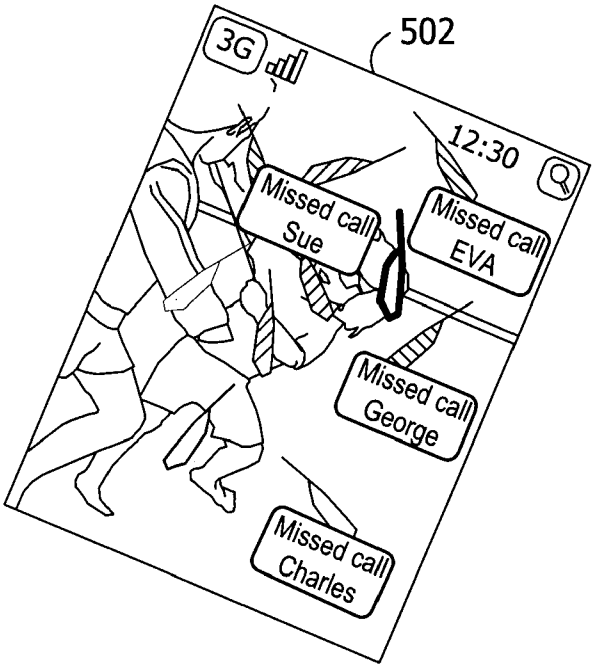


FIG. 5D



GLANCEABLE ANIMATED NOTIFICATIONS ON A LOCKED DEVICE

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of pending U.S. Provisional Application No. 61/119,806, filed Dec. 4, 2008, the entirety of which is hereby incorporated by reference herein.

BACKGROUND

[0002] Visual interfaces such as touch screens are available on most electronic devices, including mobile telephones with integrated personal digital assistant (PDA) features. The touch screens display graphics and text and enter commands to control the devices or to perform various other functions to execute operations on the device. Many screens, whether touch sensitive or not, automatically lock to prevent unintentional data entry.

[0003] However, when notifications about electronic mail messages, text messages, or the like are received by the device, the user has to unlock the device (e.g., after entering an unlock code) to view any portion of the notifications. With existing systems, the user is unable to view, let alone interact with, the notifications with the device locked.

SUMMARY

[0004] Embodiments of the invention provide information about notifications in a display of a locked computing device. A computing device receives a plurality of notifications. Each of the notifications has one or more characteristics. The characteristics for each of the notifications include a type associated with the notification. Representations of the accessed notifications are generated based at least on the associated characteristics. The generated representations are presented to a user by animating, based at least on the characteristics, the generated representations across a display of the computing device. The generated representations presented on the display are organized by the type associated with each of the generated representations.

[0005] This Summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This Summary is not intended to identify key features or essential features of the claimed subject matter, nor is it intended to be used as an aid in determining the scope of the claimed subject matter.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] FIG. **1** is an exemplary block diagram illustrating a computing device for displaying notifications to a user.

[0007] FIG. **2** is an exemplary flow chart illustrating the presentation of notifications to the user.

[0008] FIG. **3** is an exemplary user interface illustrating the animation of incoming notifications to the user.

[0009] FIG. **4**A and FIG. **4**B are exemplary user interfaces illustrating the user selecting one of the notifications to unlock the computing device and execute an application program.

[0010] FIG. **5**A through FIG. **5**D are exemplary user interfaces illustrating the display of detailed information about incoming notifications.

[0011] Corresponding reference characters indicate corresponding parts throughout the drawings.

DETAILED DESCRIPTION

[0012] Referring to the figures, embodiments of the disclosure enable, at least, the display of notifications **114** to a user **104** on a computing device **102** while the computing device **102** is in a locked state. In some embodiments, the notifications **114** are displayed in real-time and provide information about received electronic mail messages, text messages, voice mail messages, and the like. The notifications **114** are displayed as interactive representations that convey different levels of the information at a glance (e.g., from detailed information to summary information). Further embodiments enable the user **104** to provide a command (e.g., a pre-defined gesture) that automatically unlocks the computing device **102** and performs additional actions (e.g., execute one or more application programs **118**).

[0013] While aspects of the invention are described with reference to the computing device **102** being a mobile computing device such as a mobile telephone or a mobile netbook, embodiments of the invention are operable with any computing device. For example, aspects of the invention are operable with devices such as digital cameras, digital video cameras, laptop computers, gaming consoles (including handheld gaming consoles), portable music players, a personal digital assistant, an information appliance, and a personal communicator.

[0014] Further, the computing device **102** may be locked such that access to the full capabilities of the computing device **102** is unavailable, user data entry is disabled, or interaction by the user **104** with the computing device **102** is otherwise limited. In some embodiments, the locked computing device **102** may be unlocked through entry of one or more of the following: a code, a gesture, and a button press.

[0015] Referring again to FIG. **1**, an exemplary block diagram illustrates the computing device **102** for displaying (e.g., animating) notifications **114** to the user **104**. The computing device **102** includes at least a memory area **110**, a display **108**, and a processor **106**. The memory area **110** stores one or more application programs **118** executing on the computing device **102**. The memory area **110**, or other computer-readable media, further stores one or more content items **112** received by the computing device **102** while the computing device **102** is locked. The content items **112** include any data received by the computing device **102** from, for example, content providers **128**. In some embodiments, the content items **112** include notifications **114** relating to one or more of the following: an electronic mail message, a voice mail message, a text message, a missed telephone call, a Really Simple Syndication (RSS) feed, and an update from a social networking web site. In other embodiments, the content items **112** include news alerts, weather alerts, sports score updates, stock price alerts, transportation schedules (e.g., airline delays or train schedules), instant or chat messages, social networking updates, network connectivity and availability, battery strength of a device associated with the user **104**, and the like. In still other embodiments, the notifications **114** extend beyond communications and alert the user **104** to contextual information. For example, the user **104** may be alerted that a friend is nearby (e.g., proximity), that a geo-planted image exists at the present location of the user **104**, or that a nearby store is selling an item on a to-do list of the user **104**.

[0016] Each of the notifications **114** has one or more characteristics **116** associated therewith. The characteristics **116** are represented by, for example, metadata and describe a type, category, classification, quantity, time stamp, priority, importance level, or other descriptor of the notifications **114**. The characteristics **116** may be stored in one or more data structures and may be stored as plain text, encrypted, binary, or any other form. Additionally, the characteristics **116** may be organized into a hierarchy, with some characteristics **116** applying to one or more of the notifications **114**.

[0017] The characteristics **116** may be defined by the user **104** or by the content providers **128**. For example, the characteristics **116** may accompany each of the notifications **114** received from the content providers **128**. The characteristics **116** may represent a default setting, and may be overridden by the user **104** in some embodiments.

[0018] The memory area **110**, or one or more computer-readable media, further stores computer-executable components for implementing aspects of the disclosure. Exemplary components include a communication component **120**, an icon component **122**, an animation component **124**, and an interface component **126**. These components are described below with reference to FIG. **2**.

[0019] In general, the memory area **110** is associated with the computing device **102**. For example, in FIG. **1**, the memory area **110** is within the computing device **102**. However, the memory area **110** or any of the data stored thereon may be associated with any server or other computer, local or remote from the computing device **102** (e.g., accessible via a network).

[0020] The display **108** includes any component for providing information to the user **104**. For example, the display **108** includes any capacitive display capable of sensing touch input from the user **104** or another object such as a stylus. While aspects of the invention are described with reference to the display **108** being a touch sensitive or touch screen display, embodiments of the invention are operable with any display. For example, aspects of the invention are operable with non-touch sensitive displays such as found on devices that have a full or partial keyboard available for data entry. In such examples, the computing device **102** locks by disabling the keyboard from being used as a user input selection device for the computing device **102**.

[0021] The processor **106** includes any quantity of processing units, and is programmed to execute computer-executable instructions for implementing aspects of the disclosure. The instructions may be performed by the processor **106** or by multiple processors executing within the computing device **102**, or performed by a processor external to the computing device **102** (e.g., by a cloud service). In some embodiments, the processor **106** is programmed to execute instructions such as those illustrated in the figures (e.g., FIG. **2**).

[0022] Some embodiments include the computing device **102** disconnected from a network **130**. In such an embodiment, the content items **112** may include notifications **114** such as alarm alerts originating from the computing device **102** (e.g., not received from the content providers **128**).

[0023] Referring next to FIG. **2**, an exemplary flow chart illustrates the presentation of notifications **114** to the user **104** while the computing device **102** is locked. At **202**, one or more notifications **114** are received. Alternatively or in addition, the notifications **114** are received (e.g., asynchronously) into the memory area **110** and then subsequently accessed at regular intervals for processing by the computing device **102**. Representations of the notifications **114** are generated at **204** based at least on the characteristics **116** associated with the notifications **114**. For example, icons or other graphic elements are selected or generated (e.g., feathers, rocks, balloons, etc.). If the characteristics **116** indicate that a particular notification **114** is of high importance, the representation is selected accordingly. For example, the important notification **114** may be represented as a large rocket ship, while a less important notification **114** may be represented as a small feather.

[0024] The representations of the notifications **114** may be homogenous and behave differently to help distinguish importance. For example, a small balloon representation conveys less importance than a large balloon representation. Further, a feather falling slowly conveys less importance than a feather that continually floats until the user **104** selects the feather.

[0025] The representations are presented to the user **104**. For example, the representations are animated at **206** across the display **108** based at least on the characteristics **116** of the notifications **114** associated with the representations. In the previous example, the rocket ship may be shown blasting across the display **108** of the locked computing device **102**, while the feather may be shown floating gently down the display **108** of the locked computing device **102**.

[0026] At **208**, the representations are organized or sorted by type. The type is determined from the characteristics **116** associated with the notifications **114** associated with the representations. For example, voice mail notifications are collected into one pile, while another pile represents received electronic mail message notifications. The organization operation at **208** may elsewhere in the flow illustrated in FIG. **2**. For example, the organization may occur anytime after **202**.

[0027] In some embodiments, the representations are organized into groups sized according to a quantity of the representations in each of the groups. For example, a large pile of representations of a first type indicates that many notifications **114** of that first type have been received, while a small pile of representations of a second type indicate that only a few notifications **114** of that second type have been received.

[0028] In some embodiments, input is received from the user **104** while the computing device **102** is locked. The input is associated with one or more of the presented representations. The input corresponds to one or more actions to perform on the associated representation, while the computing device **102** is locked. For example, the user **104** may select one of the displayed notifications **114** (e.g., an electronic mail message). The selection may occur via buttons or other input selection means on the computing device **102** (e.g., with a non-touch screen display) or via a gesture (e.g., with a touch screen display). The gesture indicates the action to perform, and different gestures provide different levels of information about the notification **114**. Exemplary gestures include single- or multi-touch gestures including a double-tap, slide left, slide right, flick, or any other input gesture via a finger, stylus, or the like. Alternatively or in addition, the notification **114** may be selected when the user **104** drags or slides one of the representations across and/or off the display **108**.

[0029] In embodiments in which the computing device **102** is a mobile computing device having one or more accelerometers, the input from the user **104** includes movement of the mobile computing device by the user **104** (e.g., shake, flick, flip, tilt, roll, etc.). In such embodiments, data indicating the

movement of the mobile computing device is received from the accelerometer. The data is used to identify the action to perform (e.g., shake corresponds to one action, while flick corresponds to another). In addition, the received data indicating the movement of the mobile computing device causes the re-animation of the displayed notifications **114**, such as shown in FIG. **5**D.

[0030] The action corresponding to the selected notification **114** is performed responsive to the received input while the computing device **102** is locked. For example, a subject line, recipient name, and possibly a portion of content from a body of the message are displayed to the user **104** responsive to the selection of the notification **114**, while the computing device **102** is still locked. The additional information displayed to the user **104** may be specified by the characteristics **116** associated with each of the notifications **114**. For example, if the received notifications **114** have one or more data fields associated therewith, one or more of the data fields may be selected for presentation based on the characteristics **116** of the notifications **114**.

[0031] In other embodiments, the actions corresponding to the selected notification **114** include unlocking the computing device **102** and executing a particular application program **118**. In an email example, the actions include executing a mailbox program to display a message corresponding to one of the displayed representations.

[0032] In some embodiments, the operations illustrated in FIG. **2** are performed by the components stored in the memory area **110** (e.g., see FIG. **1**). For example, the communication component **120** receives the notifications **114** while the computing device **102** is locked. The icon component **122** generates representations of the notifications **114** received by the communication component **120** based at least on the associated characteristics **116**. The animation component **124** presents, to the user **104**, the representations generated by the icon component **122**. For example, the animation component **124** animates, based at least on the characteristics **116**, the representations across the display **108** of the locked computing device **102** and groups the generated representations presented on the display **108** based at least on the associated characteristics **116**. The grouped representations are sized visually based on a quantity of representations associated with each of the groups. The interface component **126** receives, from the user **104**, input associated with one or more of the representations presented by the animation component **124**. The received input is used to identify the actions to perform with respect to the representations. The computing device **102** performs the actions while the computing device **102** is locked.

[0033] Alternatively or in addition, some of the operations in FIG. **2** are performed by a cloud service. For example, the cloud service receives the content items **112** (e.g., from the content providers **128**), identifies the representations, and instructs the computing device **102** to display the identified representations. Such an embodiment offloads the processing from the computing device **102** to the cloud service to enable the computing device **102** to reduce the computational burden on the computing device **102** (e.g., improve response time, reduce power consumption, reduce heat generation) or reduce the hardware needs of the computing device **102** (e.g., less processing capability, less memory space, etc.).

[0034] Referring next to FIG. **3**, a system **300** includes an exemplary user interface **302** illustrating the animation of incoming notifications **114** to the user **104**, and a legend **304** showing the available notification representations. The user interface **302** is associated with, for example, a mobile computing device. In this example, the mobile computing device includes a touch sensitive display and the mobile computing device has been locked. The mobile computing device may have been locked, for example, after an explicit command from the user **104** or after expiration of a predefined period of inactivity by the user **104**. When the user **104** presses the power button or performs another input to wake up the mobile computing device, the interface in FIG. **3** is displayed.

[0035] The legend **304** identifies a plurality of representations and their corresponding notification types. For example, a thick-edged feather corresponds to notifications **114** received from a contact designated as "home" by the user **104**. This representation is visually striking and noticeable because of the importance placed on notifications **114** from home. Other representations include feathers of varying colors, patterns, or styles that each correspond to different notifications **114** (e.g., text, emails, and calls). For example, email notifications are represented by blue feathers, whereas phone-related notifications are shown as red feathers. Representations other than feathers include paper airplanes, leaves, or snowflakes. For example, different color airplanes or types of airplane correspond to the different notification types. In another example, large oak leaves correspond to important notifications **114**, while small ficus leaves correspond to less important notifications **114**. In some embodiments, the falling objects are animated with proper physics (e.g., physical properties) to convey realistic motion of the object. For example, light objects fall slowly while heavy objects fall quickly to show importance. In general, the representations provide the user **104** with information about the notifications **114** at a glance while the computing device **102** is locked.

[0036] In the user interface **302** of FIG. **3**, a feather indicating that a text message has been received from Sam is falling or floating down the user interface **302** into a pile. Another feather indicating that a voice call from George was missed is also floating down the user interface **302** into a separate pile.

[0037] Referring next to FIG. **4**A and FIG. **4**B, an exemplary user interface **402** illustrates the user **104** selecting one of the representations to unlock the computing device **102** and execute one of the application programs **118**. In the example of FIG. **4**A, the representation corresponding to an email message from Marco is floating down the user interface **402**. While the computing device **102** is locked, the user **104** selects this representation (e.g., via a press-and-hold finger gesture on the touch screen) and then slides or drags the selected representation off the display **108**. In some embodiments, such a gesture corresponds to an action to execute the application program **118** (e.g., an email program) associated with the selected representation. However, any recognized gesture may be associated with this functionality (e.g., slide the representation in a pre-defined direction or pattern). As shown in FIG. **4**B, responsive to the received input gesture and representation selection, the computing device **102** automatically unlocks and executes the email program to display the contents of the email message from Marco. In other embodiments, the user **104** is directed to an unlock screen (e.g., a PIN input screen) responsive to the input gesture from the user **104** to receive the unlock PIN from the user **104** before allowing the user **104** to fully access the application program **118**.

[0038] In other embodiments, the computing device **102** remains locked while a subset of the functionality of the application program **118** is made available to the user **104** through the locked display **108**. For example, the user **104** may interactively select the fields of the email message to view (e.g., sender, time stamp, subject line, list of attachments, etc.).

[0039] Referring next to FIG. **5**A through FIG. **5**D, exemplary user interfaces **502** illustrate the display of detailed information about incoming notifications **114**. In FIG. **5**A, representations of notifications **114** fall down the user interface **502** of the computing device **102**. In FIG. **5**B, additional information for each of the representations is shown. The additional information may be displayed based on a user preference or setting, or a setting from the content providers **128** providing the notifications **114** corresponding to the representations.

[0040] In FIG. **5**C, the representations have fallen into piles and no longer display any detailed information about their respective notifications **114**. At a glance, the user **104** can view the piles to see a rough quantity of missed notifications **114**, organized by type. With a shake or flip of the computing device **102** as shown in FIG. **5**D, the notifications **114** are tossed out of the piles. Alternatively or in addition, the user **104** may flick up one or more of the piles by touching the pile and making a gesture upwards on the display **108**. These actions disperse the contents of the piles. As the representations float around the user interface **502** of the display **108** responsive to these actions, additional information about some of the notifications **114** is displayed (e.g., a summary of each notification **114**). The user **104** views this additional information and is able to select one or more of the floating representations (e.g., by grabbing the representations with a finger or stylus). Responsive to the selection, more detailed information about the notification **114** corresponding to the representation is displayed, or the application program **118** associated with the selected representation is executed after the computing device **102** is automatically unlocked. Aspects of the disclosure enable the user **104** to selectively view the notifications **114** in a particular category or of a particular type.

ADDITIONAL EXAMPLES

[0041] The user **104**, the application developers, or other entities may customize various aspects of the representations of the notifications **114**. Such customization may be stored as, for example, part of the characteristics **116** associated with the notifications **114**. The customization includes, but is not limited to, one or more of the following: shapes, symbols, sizes, colors, animation, or other artwork. For example, the icons may be displayed as fish, rocks, or other objects, and there may be different layouts depending on whether the computing device **102** is being held by the user **104** in a portrait or landscape orientation.

[0042] In some embodiments, the notifications **114** are received by the computing device **102** and processed as next described. The received notifications **114** are routed internally in the computing device **102** to a router designated for handling incoming notifications **114**. A database or other data structure is updated with information describing the receipt of the notifications **114**. A service listens for updates to the database. Upon detection of the notifications **114**, a device registry is updated. A component implementing the lock screen listens for the updates to the device registry. Upon detection of an update to the device registry, the component updates the display **108** of the locked computing device **102** with the received notifications **114**, as described herein.

[0043] Aspects of the invention are operable when the computing device **102** is unlocked. For example, the feathers falling across the display **108** are displayed as a background or wallpaper animation while the user **104** is working in another application. In this manner, the user **104** is able to quickly determine the amount of missed notifications **114** that have accumulated.

[0044] In some embodiments, blank, uncolored feathers or other objects or representations continually fall down the display **108** of the computing device **102**. Dragging one of these feathers to the edge of the display **108** navigates the user **104** to a home screen, executes one of the application programs **118**, or performs some other predefined functionality.

[0045] In an advertising embodiment, the received content items **112** include advertisements. The advertisements are displayed similar to the display **108** of the representations as described herein. The user **104** interacts or "plays" with the displayed advertisements by flicking, shaking, grabbing, or manipulating the displayed advertisements. Such embodiments may occur while the computing device **102** is locked, or while unlocked. The length of time and frequency of interaction by the user **104** is tracked to determine, for example, the cost that can be charged to advertisers.

[0046] In another advertising embodiment, the received content items **112** include coupons. The coupons are displayed as objects or representations with various properties. For example, the representations are visually distinguishable based on their expiration date (e.g., a heavy rock falling across the display **108** corresponds to a coupon that is about to expire, while a feather floating across the display **108** corresponds to a coupon that has a farther out expiration date).

Exemplary Operating Environment

[0047] By way of example and not limitation, computer readable media comprise computer storage media and communication media. Computer storage media store information such as computer readable instructions, data structures, program modules or other data. Communication media typically embody computer readable instructions, data structures, program modules, or other data in a modulated data signal such as a carrier wave or other transport mechanism and include any information delivery media. Combinations of any of the above are also included within the scope of computer readable media.

[0048] Although described in connection with an exemplary computing system environment, embodiments of the invention are operational with numerous other general purpose or special purpose computing system environments or configurations. Examples of well known computing systems, environments, and/or configurations that may be suitable for use with aspects of the invention include, but are not limited to, mobile computing devices, personal computers, server computers, hand-held or laptop devices, multiprocessor systems, gaming consoles, microprocessor-based systems, set top boxes, programmable consumer electronics, mobile telephones, network PCs, minicomputers, mainframe computers, distributed computing environments that include any of the above systems or devices, and the like.

[0049] Embodiments of the invention may be described in the general context of computer-executable instructions, such as program modules, executed by one or more computers or

other devices. The computer-executable instructions may be organized into one or more computer-executable components or modules. Generally, program modules include, but are not limited to, routines, programs, objects, components, and data structures that perform particular tasks or implement particular abstract data types. Aspects of the invention may be implemented with any number and organization of such components or modules. For example, aspects of the invention are not limited to the specific computer-executable instructions or the specific components or modules illustrated in the figures and described herein. Other embodiments of the invention may include different computer-executable instructions or components having more or less functionality than illustrated and described herein.

[0050] Aspects of the invention transform a general-purpose computer into a special-purpose computing device when configured to execute the instructions described herein.

[0051] The embodiments illustrated and described herein as well as embodiments not specifically described herein but within the scope of aspects of the invention constitute exemplary means for identifying to the user **104** the notifications **114** and one or more of the characteristics **116** while the mobile computing device is locked, and exemplary means for interacting with the user **104** to present detail data associated with the notifications **114**.

[0052] The order of execution or performance of the operations in embodiments of the invention illustrated and described herein is not essential, unless otherwise specified. That is, the operations may be performed in any order, unless otherwise specified, and embodiments of the invention may include additional or fewer operations than those disclosed herein. For example, it is contemplated that executing or performing a particular operation before, contemporaneously with, or after another operation is within the scope of aspects of the invention.

[0053] When introducing elements of aspects of the invention or the embodiments thereof, the articles "a," "an," "the," and "said" are intended to mean that there are one or more of the elements. The terms "comprising," "including," and "having" are intended to be inclusive and mean that there may be additional elements other than the listed elements.

[0054] Having described aspects of the invention in detail, it will be apparent that modifications and variations are possible without departing from the scope of aspects of the invention as defined in the appended claims. As various changes could be made in the above constructions, products, and methods without departing from the scope of aspects of the invention, it is intended that all matter contained in the above description and shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. A system for animating notifications in a display of a locked mobile computing device, said system comprising:

a memory area for storing one or more notifications received by a mobile computing device while the mobile computing device is locked, each of the notifications having one or more characteristics associated therewith; and

a processor programmed to:

access a plurality of the notifications stored in the memory area;

generate representations of the accessed notifications based at least on the characteristics associated therewith;

sort the generated representations based at least on the characteristics associated therewith;

present the sorted representations to a user by animating, based at least on the characteristics, the sorted representations across a display of the locked mobile computing device;

receive, from the user, input associated with one or more of the presented representations, said input corresponding to an action to perform on said one or more of the presented representation; and

perform said corresponding action while the mobile computing device is locked.

2. The system of claim **1**, wherein the mobile computing device comprises at least one accelerometer, and wherein the processor is further programmed to:

receive, via the accelerometer, data indicating movement of the mobile computing device; and

identify said action based on the received data.

3. The system of claim **2**, wherein the received data indicates a flip or shake of the mobile computing device, and wherein the processor is further programmed to re-animate the presented notification based on the flip or shake.

4. The system of claim **1**, wherein the display comprises a touch-sensitive display, and wherein the processor is programmed to receive the input from the user by detecting said one of the presented notifications being dragged across the display by the user.

5. The system of claim **1**, wherein the display is touch-sensitive, and wherein the processor is further programmed to:

receive a gesture via the touch-sensitive display; and

identify said action based on the received gesture.

6. The system of claim **1**, wherein the notifications relate to one or more of the following: an electronic mail message, a voice mail message, a text message, and a missed telephone call.

7. The system of claim **1**, further comprising means for identifying to the user the notifications and one or more of the characteristics while the mobile computing device is locked.

8. The system of claim **1**, wherein the notifications have detail data associated therewith, and further comprising means for interacting with the user to present the detail data to the user.

9. The system of claim **1**, wherein the characteristics include one or more of the following: a type, a quantity, a time stamp, and a priority.

10. A method comprising:

accessing a plurality of notifications received by a computing device, each of the notifications having one or more characteristics associated therewith, said characteristics including a type associated with the notification;

generating representations of the accessed notifications based at least on the characteristics associated therewith; and

presenting the generated representations to a user by:

animating, based at least on the characteristics, the generated representations across a display of the computing device; and

organizing the generated representations presented on the display by the type associated with each of the generated representations.

11. The method of claim **10**, further comprising:

receiving, from the user while the computing device is locked, input associated with one or more of the pre-

sented representations, said input corresponding to an action to perform on said one or more of the presented representation; and

performing said corresponding action while the computing device is locked.

12. The method of claim **10**, wherein organizing the generated representations comprises organizing the representations into groups sized according to a quantity of the representations associated therewith.

13. The method of claim **10**, further comprising:

receiving from the user a selection of one of the presented notifications while the device is locked; and

unlocking the locked computing device and executing an application program associated with the selected one of the presented notifications.

14. The method of claim **13**, wherein receiving the selection from the user comprises detecting said one of the presented notifications being dragged across the display by the user.

15. The method of claim **10**, wherein accessing the plurality of notifications comprises accessing the plurality of notifications while the computing device is locked.

16. The method of claim **10**, wherein generating the representations comprises generating representations that have physical properties corresponding to the associated characteristics.

17. One or more computer-readable media having computer-executable components, said components comprising:

a communication component for receiving a plurality of notifications by a computing device while the computing device is locked, each of the notifications having one or more characteristics associated therewith;

an icon component for generating representations of the notifications received by the communication component based at least on the characteristics associated therewith; and

an animation component for presenting to a user the representations generated by the icon component by:

animating, based at least on the characteristics, the representations across a display of the locked computing device; and

grouping the generated representations presented on the display based at least on the characteristics associated therewith, said grouped representations being sized visually based on a quantity of representations associated therewith;

an interface component for receiving, from the user, input associated with one or more of the representations presented by the animation component, said received input corresponding to an action to perform with respect to said one or more of the representation, wherein the computing device performs said corresponding action while the computing device is locked.

18. The computer-readable media of claim **17**, wherein the icon component generates the representations by generating representations having physical properties based on the associated characteristics.

19. The computer-readable media of claim **18**, wherein the animation component animates the representations based on the physical properties.

20. The computer-readable media of claim **17**, wherein the interface component receives the input by receiving a gesture from the user.

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