72. An electronic device, comprising:

a display;

a touch-sensitive surface;

one or more sensors to detect intensity of contacts with the touch-sensitive surface;

one or more processors;

memory; and

one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors, the one or more programs including instructions for:

detecting a contact on the touch-sensitive surface;

determining a respective location of the contact on the touch-sensitive surface; wherein the respective location on the touch-sensitive surface has a respective dynamic range for detecting intensity of the contact;

determining an intensity of the contact on the touch-sensitive surface at the respective location;

detecting a change in intensity of the contact; and

in response to detecting the change in intensity of the contact at the respective location on the touch-sensitive surface, adjusting an output of the device, wherein:

in accordance with a determination that the respective location has a first dynamic range, the output is adjusted in accordance with:

the change in the intensity of the contact at the respective location; and

a first input-output mapping of intensity to response that corresponds to the first dynamic range; and

in accordance with a determination that the respective location has a second dynamic range that is different from the first dynamic range, the output is adjusted in accordance with:

the change in the intensity of the contact at the respective location; and

a second input-output mapping of intensity to response that corresponds to the second dynamic range, wherein the second input-output mapping is different from the first input-output mapping.

73. A computer readable storage medium storing one or more programs, the one or more programs comprising instructions, which when executed by an electronic device with a



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display, a touch-sensitive surface and one or more sensors to detect intensity of contacts with the touch-sensitive surface, cause the device to:

detect a contact on the touch-sensitive surface;

determine a respective location of the contact on the touch-sensitive surface; wherein the respective location on the touch-sensitive surface has a respective dynamic range for detecting intensity of the contact;

determine an intensity of the contact on the touch-sensitive surface at the respective location;

detect a change in intensity of the contact; and

in response to detecting the change in intensity of the contact at the respective location on the touch-sensitive surface, adjust an output of the device, wherein:

in accordance with a determination that the respective location has a first dynamic range, the output is adjusted in accordance with:

the change in the intensity of the contact at the respective location; and

a first input-output mapping of intensity to response that corresponds to the first dynamic range; and

in accordance with a determination that the respective location has a second dynamic range that is different from the first dynamic range, the output is adjusted in accordance with:

the change in the intensity of the contact at the respective location; and

a second input-output mapping of intensity to response that corresponds to the second dynamic range, wherein the second input-output mapping is different from the first input-output mapping.

74. A graphical user interface on an electronic device with a display, a touch-sensitive surface and one or more sensors to detect intensity of contacts with the touch-sensitive surface, a memory, and one or more processors to execute one or more programs stored in the memory, the graphical user interface comprising:

one or more user interface objects;

wherein:

in response to a contact being detected on the touch-sensitive surface:

a respective location of the contact on the touch-sensitive surface is determined; wherein the respective location on the touch-sensitive surface has a respective dynamic range for detecting intensity of the contact;



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an intensity of the contact on the touch-sensitive surface at the respective location is determined;

a change in intensity of the contact is detected; and

an output of the device is adjusted , corresponding to a change in one or more user interface objects that are displayed as part of the graphical user interface, in response to detecting the change in intensity of the contact at the respective location on the touch-sensitive surface, wherein:

in accordance with a determination that the respective location has a first dynamic range, the output is adjusted in accordance with:

the change in the intensity of the contact at the respective location; and

a first input-output mapping of intensity to response that corresponds to the first dynamic range; and

in accordance with a determination that the respective location has a second dynamic range that is different from the first dynamic range, the output is adjusted in accordance with:

the change in the intensity of the contact at the respective location; and

a second input-output mapping of intensity to response that corresponds to the second dynamic range, wherein the second input-output mapping is different from the first input-output mapping.

75. An electronic device, comprising:

a display;

a touch-sensitive surface;

one or more sensors to detect intensity of contacts with the touch-sensitive surface; and

means for detecting a contact on the touch-sensitive surface;

means for determining a respective location of the contact on the touch-sensitive surface; wherein the respective location on the touch-sensitive surface has a respective dynamic range for detecting intensity of the contact;

means for determining an intensity of the contact on the touch-sensitive surface at the respective location;

means for detecting a change in intensity of the contact; and

means for adjusting an output of the device in response to detecting the change in intensity of the contact at the respective location on the touch-sensitive surface, wherein:



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in accordance with a determination that the respective location has a first dynamic range, the output is adjusted in accordance with:

the change in the intensity of the contact at the respective location; and

a first input-output mapping of intensity to response that corresponds to the first dynamic range; and

in accordance with a determination that the respective location has a second dynamic range that is different from the first dynamic range, the output is adjusted in accordance with:

the change in the intensity of the contact at the respective location; and

a second input-output mapping of intensity to response that corresponds to the second dynamic range, wherein the second input-output mapping is different from the first input-output mapping.

76. An information processing apparatus for use in an electronic device with a display, a touch-sensitive surface and one or more sensors to detect intensity of contacts with the touch-sensitive surface, comprising:

means for detecting a contact on the touch-sensitive surface;

means for determining a respective location of the contact on the touch-sensitive surface; wherein the respective location on the touch-sensitive surface has a respective dynamic range for detecting intensity of the contact;

means for determining an intensity of the contact on the touch-sensitive surface at the respective location;

means for detecting a change in intensity of the contact; and

means for adjusting an output of the device in response to detecting the change in intensity of the contact at the respective location on the touch-sensitive surface, wherein:

in accordance with a determination that the respective location has a first dynamic range, the output is adjusted in accordance with:

the change in the intensity of the contact at the respective location; and

a first input-output mapping of intensity to response that corresponds to the first dynamic range; and

in accordance with a determination that the respective location has a second dynamic range that is different from the first dynamic range, the output is adjusted in accordance with:

the change in the intensity of the contact at the respective location; and



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a second input-output mapping of intensity to response that corresponds to the second dynamic range, wherein the second input-output mapping is different from the first input-output mapping.

77. An electronic device, comprising:
a display;
a touch-sensitive surface;
one or more sensors to detect intensity of contacts with the touch-sensitive surface;
one or more processors;
memory; and
one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors, the one or more programs including instructions for performing any of the methods of claims 61-71.

78. A computer readable storage medium storing one or more programs, the one or more programs comprising instructions, which when executed by an electronic device with a display, a touch-sensitive surface and one or more sensors to detect intensity of contacts with the touch-sensitive surface, cause the device to perform any of the methods of claims 61-71.

79. A graphical user interface on an electronic device with a display, a touch-sensitive surface, one or more sensors to detect intensity of contacts with the touch-sensitive surface, a memory, and one or more processors to execute one or more programs stored in the memory, the graphical user interface comprising user interfaces displayed in accordance with any of the methods of claims 61-71.

80. An electronic device, comprising:
a display;
a touch-sensitive surface;
one or more sensors to detect intensity of contacts with the touch-sensitive surface; and
means for performing any of the methods of claims 61-71.

81. An information processing apparatus for use in an electronic device with a display, a touch-sensitive surface and one or more sensors to detect intensity of contacts with the touch-sensitive surface, comprising:
means for performing any of the methods of claims 61-71.



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82. An electronic device, comprising:

a display unit;

a touch-sensitive surface unit configured to receive user contacts;

one or more sensor units configured to detect intensity of contacts with the touch-sensitive surface unit; and

a processing unit coupled to the display unit, the touch-sensitive surface unit, and the sensor units, the processing unit configured to:

detect a contact on the touch-sensitive surface unit;

determine a respective location of the contact on the touch-sensitive surface unit; wherein the respective location on the touch-sensitive surface unit has a respective dynamic range for detecting intensity of the contact;

determine an intensity of the contact on the touch-sensitive surface unit at the respective location;

detect a change in intensity of the contact; and

in response to detecting the change in intensity of the contact at the respective location on the touch-sensitive surface, adjust an output of the device, wherein:

in accordance with a determination that the respective location has a first dynamic range, the output is adjusted in accordance with:

the change in the intensity of the contact at the respective location; and

a first input-output mapping of intensity to response that corresponds to the first dynamic range; and

in accordance with a determination that the respective location has a second dynamic range that is different from the first dynamic range, the output is adjusted in accordance with:

the change in the intensity of the contact at the respective location; and

a second input-output mapping of intensity to response that corresponds to the second dynamic range, wherein the second input-output mapping is different from the first input-output mapping.

83. The electronic device of claim 82, wherein determining a respective dynamic range for the respective location includes retrieving stored information concerning the dynamic range of the device for detecting intensity of the contact at the respective location.



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84. The electronic device of any of claims 82-83, wherein:

the second dynamic range is higher than the first dynamic range; and

the second input-output mapping maps intensity to output values for one or more intensity values that are outside of the first dynamic range.

85. The electronic device of any of claims 82-84, wherein:

an upper bound of the first dynamic range is determined based on a first intensity that corresponds to a first intensity detection limit at a first location on the touch-sensitive surface unit; and

an upper bound of the second dynamic range is determined based on a second intensity, different from the first intensity, that corresponds to a second intensity detection limit at a second location, different from the first location, on the touch-sensitive surface unit.

86. The electronic device of claim 85, wherein:

the first input-output mapping asymptotically approaches a respective maximum output as the device detects intensity values close to the first intensity; and

the second input-output mapping asymptotically approaches the respective maximum output as the device detects intensity values close to the second intensity.

87. The electronic device of any of claims 82-86, wherein:

the first input-output mapping maps a first range of intensity values to a respective range of output; and

the second input-output mapping maps a second range of intensity values, different from the first range of intensity values, to the respective range of output.

88. The electronic device of any of claims 82-87, wherein:

the first input-output mapping has a first portion that corresponds to a range of intensity values below a transition intensity value and a second portion that corresponds to a range of intensity values above the transition intensity value;

the second input-output mapping has a first portion that corresponds to a range of intensity values below the transition intensity value and a second portion that corresponds to a range of intensity values above the transition intensity value;

the first portion of the first input-output mapping is the same as the first portion of the second input-output mapping; and



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the second portion of the first input-output mapping is different from the second portion of the second input-output mapping.

89. The electronic device of claim 88, wherein adjusting the output of the device includes:

in accordance with a determination that a maximum intensity of the contact is below the transition intensity value, generating a same output in accordance with the maximum intensity of the contact without regard to whether the respective location has the first dynamic range or the second dynamic range; and

in accordance with a determination that a maximum intensity of the contact is above the transition intensity value, generating different outputs in accordance with:

the maximum intensity of the contact and,

whether the respective location has the first dynamic range or the second dynamic range.

90. The electronic device of any of claims 82-89, wherein:

the sensors units configured to detect intensity of contacts with the touch-sensitive surface unit include a plurality of intensity sensors placed around a perimeter of the touch-sensitive surface unit; and

locations near the perimeter of the touch-sensitive surface unit have a lower dynamic range than locations near a center of the touch-sensitive surface unit.

91. The electronic device of any of claims 82-90, the processing unit further configured to:

while adjusting output of the device in accordance with the first input-output mapping, detect movement of the contact from a first location on the touch-sensitive surface unit with the first dynamic range to a second location on the touch-sensitive surface unit with the second dynamic range; and

in response to detecting the movement of the contact from the first location to the second location, continue to use the first input-output mapping to adjust the output of the device while the contact is at the second location.

92. The electronic device of any of claims 82-90, the processing unit further configured to:

while adjusting output of the device in accordance with the first input-output mapping, detect movement of the contact from a first location on the touch-sensitive surface



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unit with the first dynamic range to a second location on the touch-sensitive surface unit with the second dynamic range; and

in response to detecting the movement of the contact from the first location to the second location, use the second input-output mapping to adjust the output of the device while the contact is at the second location.



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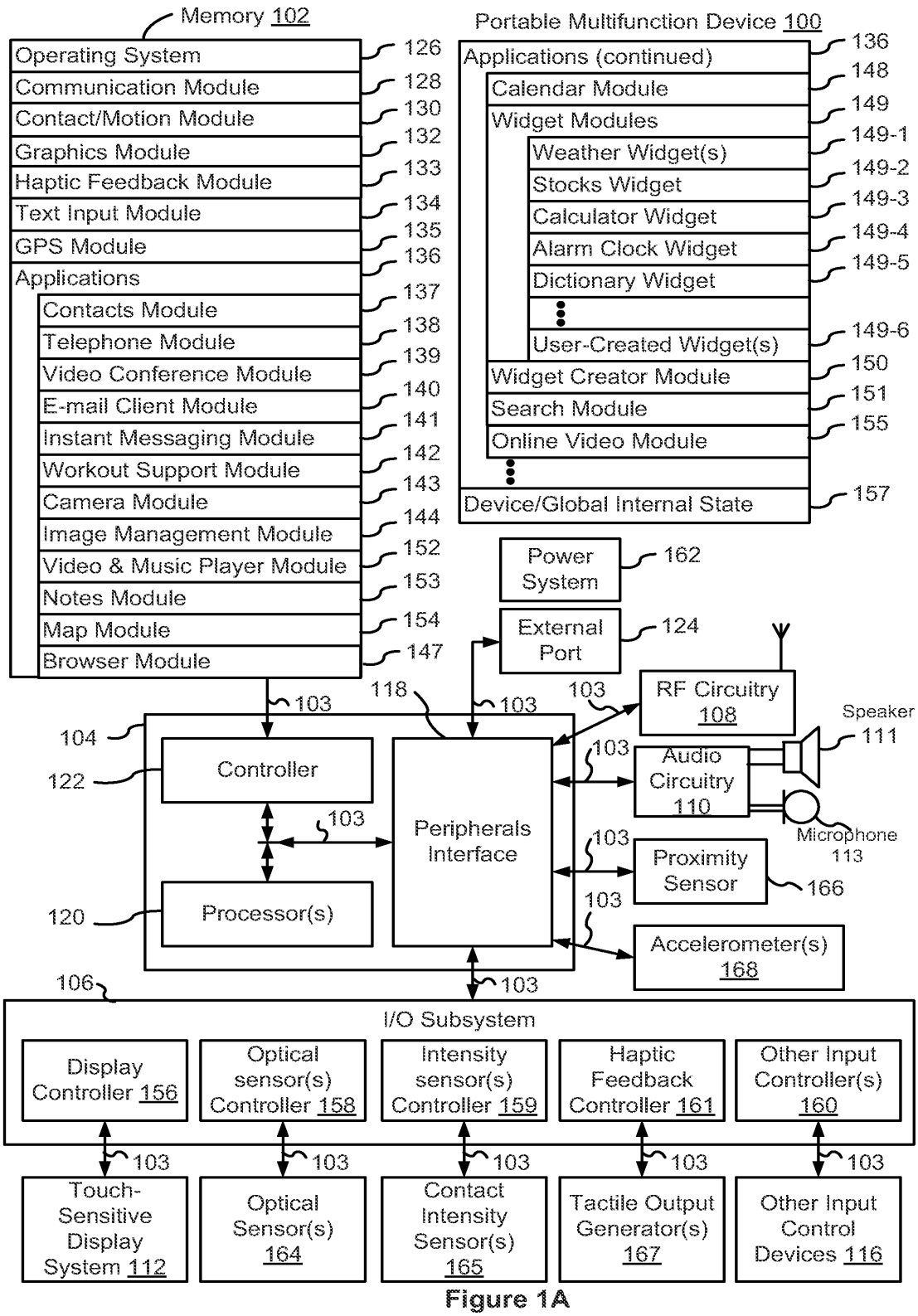

Memory 102
Operating System 126
Communication Module 128
Contact/Motion Module 130
Graphics Module 132
Haptic Feedback Module 133
Text Input Module 134
GPS Module 135
Applications 136
Contacts Module 137
Telephone Module 138
Video Conference Module 139
E-mail Client Module 140
Instant Messaging Module 141
Workout Support Module 142
Camera Module 143
Image Management Module 144
Video & Music Player Module 152
Notes Module 153
Map Module 154
Browser Module 147
Portable Multifunction Device 100
Applications (continued) 136
Calendar Module 148
Widget Modules 149
Weather Widget(s) 149-1
Stocks Widget 149-2
Calculator Widget 149-3
Alarm Clock Widget 149-4
Dictionary Widget 149-5
User-Created Widget(s) 149-6
Widget Creator Module 150
Search Module 151
Online Video Module 155
Device/Global Internal State 157
Power System 162
External Port 124
RF Circuitry 108
Speaker 111
Audio Circuitry 110
Microphone 113
Proximity Sensor 166
Accelerometer(s) 168
Peripherals Interface
Controller 122
Processor(s) 120
104
103
118
106
I/O Subsystem
Display Controller 156
Optical sensor(s) Controller 158
Intensity sensor(s) Controller 159
Haptic Feedback Controller 161
Other Input Controller(s) 160
Touch-Sensitive Display System 112
Optical Sensor(s) 164
Contact Intensity Sensor(s) 165
Tactile Output Generator(s) 167
Other Input Control Devices 116

Figure 1A

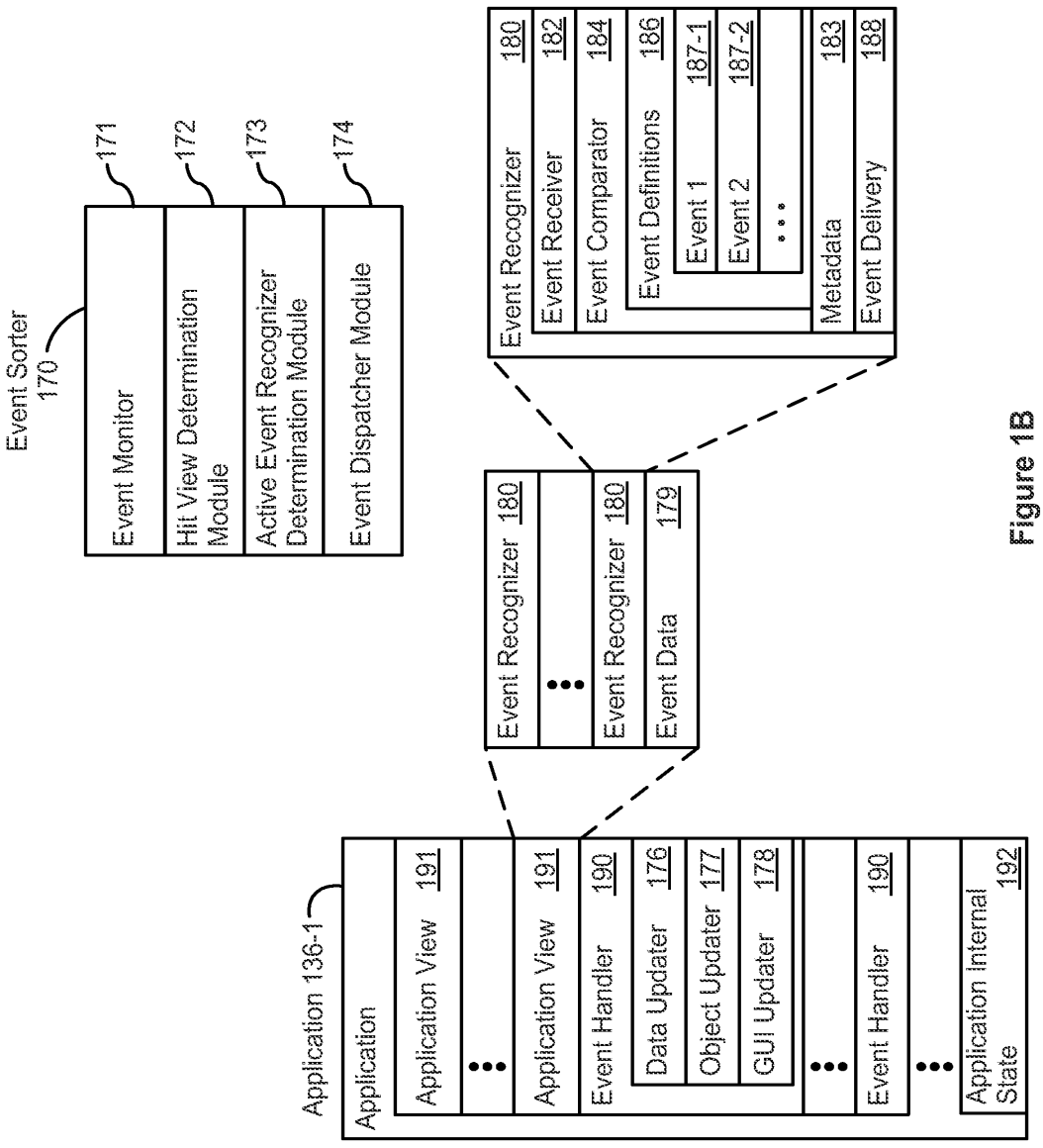

Event Sorter 170
171
Event Monitor
172
Hit View Determination Module
173
Active Event Recognizer Determination Module
174
Event Dispatcher Module
Application 136-1
Application
Application View 191
Application View 191
Event Handler 190
Data Updater 176
Object Updater 177
GUI Updater 178
Event Handler 190
Application Internal State 192
Event Recognizer 180
Event Recognizer 180
Event Data 179
Event Recognizer 180
Event Receiver 182
Event Comparator 184
Event Definitions 186
Event 1 187-1
Event 2 187-2
Metadata 183
Event Delivery 188

Figure 1B

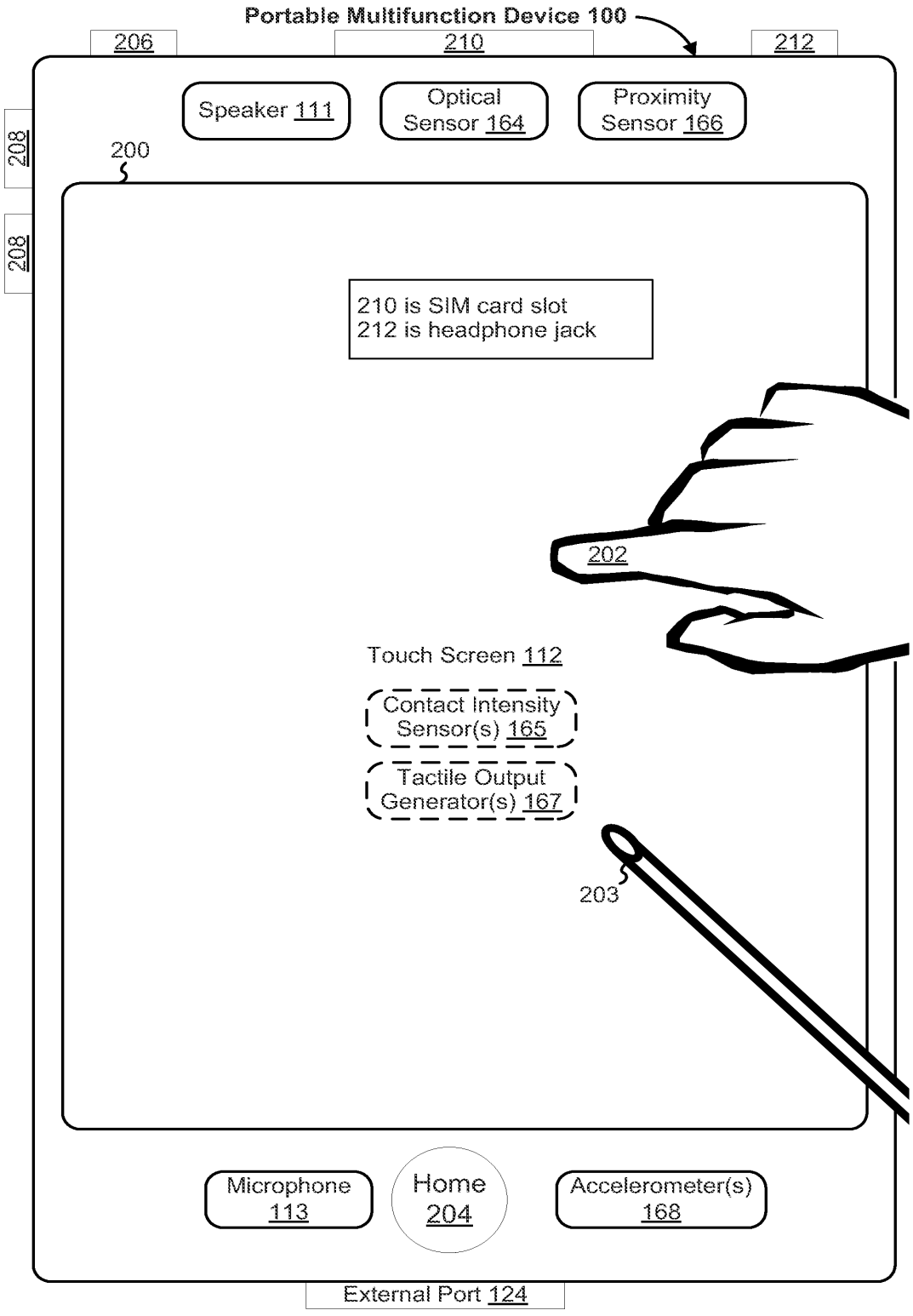

Portable Multifunction Device 100
206
210
212
Speaker 111
Optical Sensor 164
Proximity Sensor 166
208
200
208
210 is SIM card slot
212 is headphone jack
202
Touch Screen 112
Contact Intensity Sensor(s) 165
Tactile Output Generator(s) 167
203
Microphone 113
Home 204
Accelerometer(s) 168
External Port 124

Figure 2

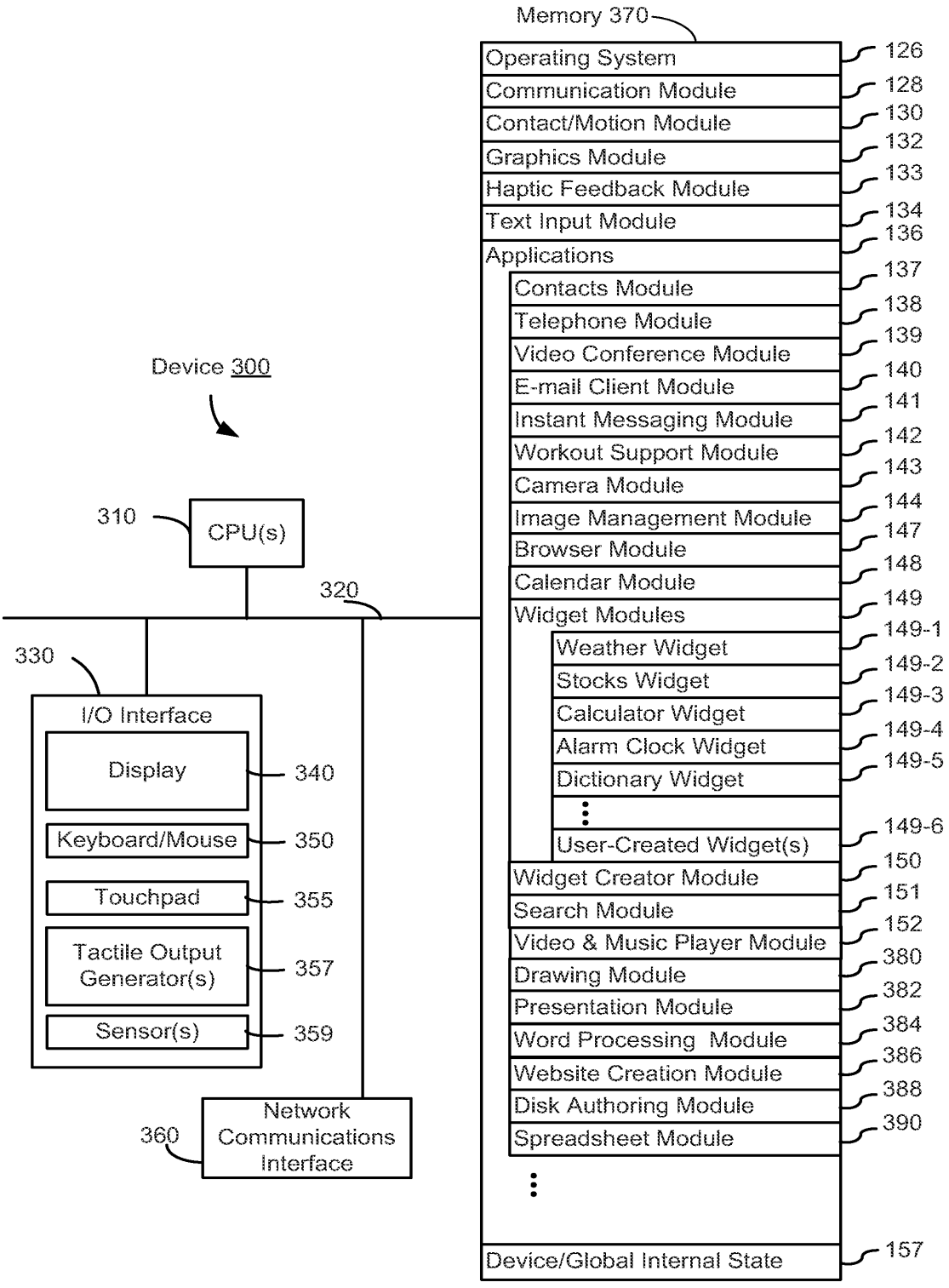

Memory 370
Operating System
126
Communication Module
128
Contact/Motion Module
130
Graphics Module
132
Haptic Feedback Module
133
Text Input Module
134
Applications
136
Contacts Module
137
Telephone Module
138
Video Conference Module
139
E-mail Client Module
140
Instant Messaging Module
141
Workout Support Module
142
Camera Module
143
Image Management Module
144
Browser Module
147
Calendar Module
148
Widget Modules
149
Weather Widget
149-1
Stocks Widget
149-2
Calculator Widget
149-3
Alarm Clock Widget
149-4
Dictionary Widget
149-5
User-Created Widget(s)
149-6
Widget Creator Module
150
Search Module
151
Video & Music Player Module
152
Drawing Module
380
Presentation Module
382
Word Processing Module
384
Website Creation Module
386
Disk Authoring Module
388
Spreadsheet Module
390
Device/Global Internal State
157
Device 300
310
CPU(s)
320
330
I/O Interface
Display
340
Keyboard/Mouse
350
Touchpad
355
Tactile Output Generator(s)
357
Sensor(s)
359
360
Network Communications Interface

Figure 3

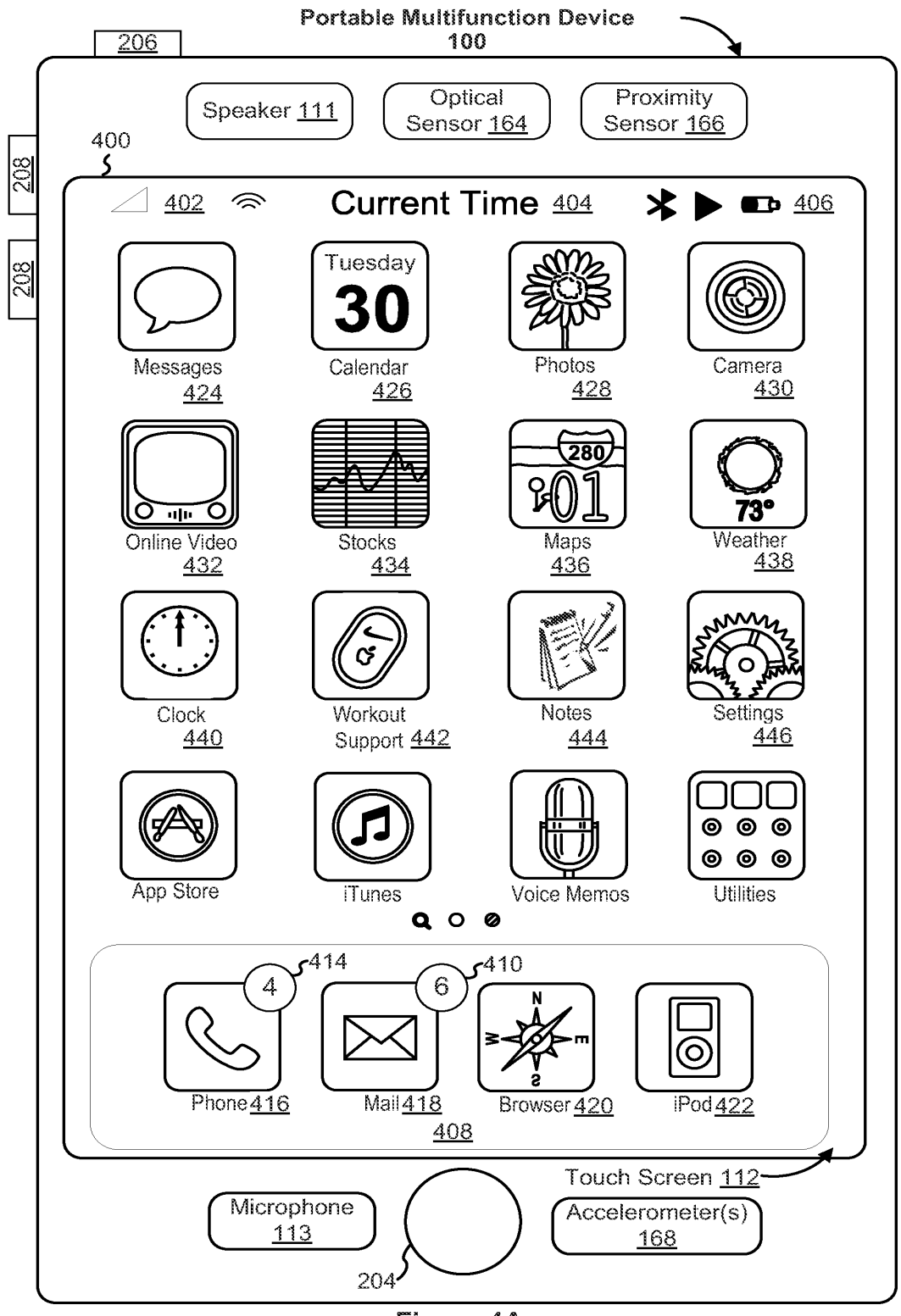
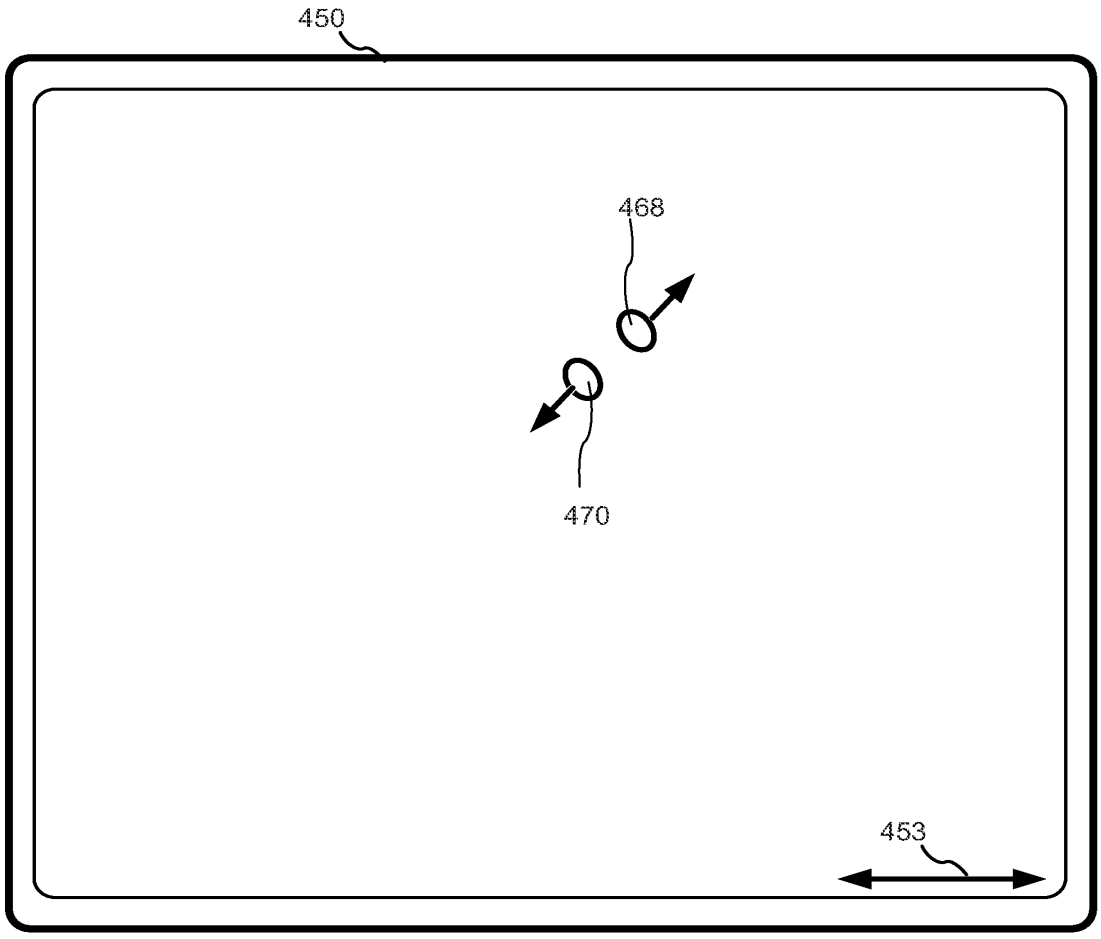

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
400
208
208
402
Current Time 404
406
Messages 424
Tuesday
30
Calendar 426
Photos 428
Camera 430
Online Video 432
Stocks 434
280
Maps 436
73°
Weather 438
Clock 440
Workout Support 442
Notes 444
Settings 446
App Store
iTunes
Voice Memos
Utilities
414
410
4
6
Phone 416
Mail 418
Browser 420
iPod 422
408
Touch Screen 112
Microphone 113
Accelerometer(s) 168
204

Figure 4A


450
468
470
453

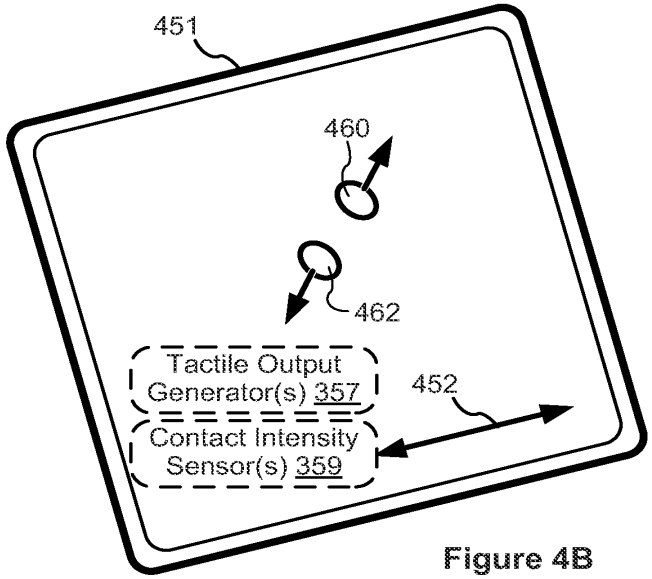

451
460
462
Tactile Output Generator(s) 357
452
Contact Intensity Sensor(s) 359

Figure 4B

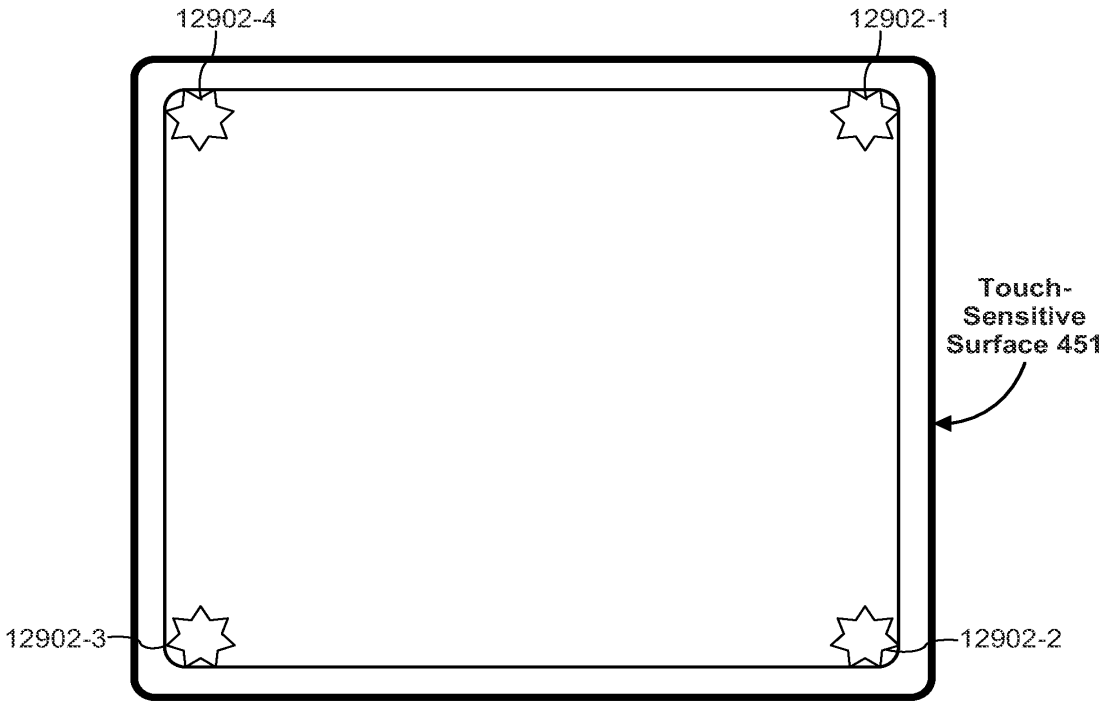



Figure 5A

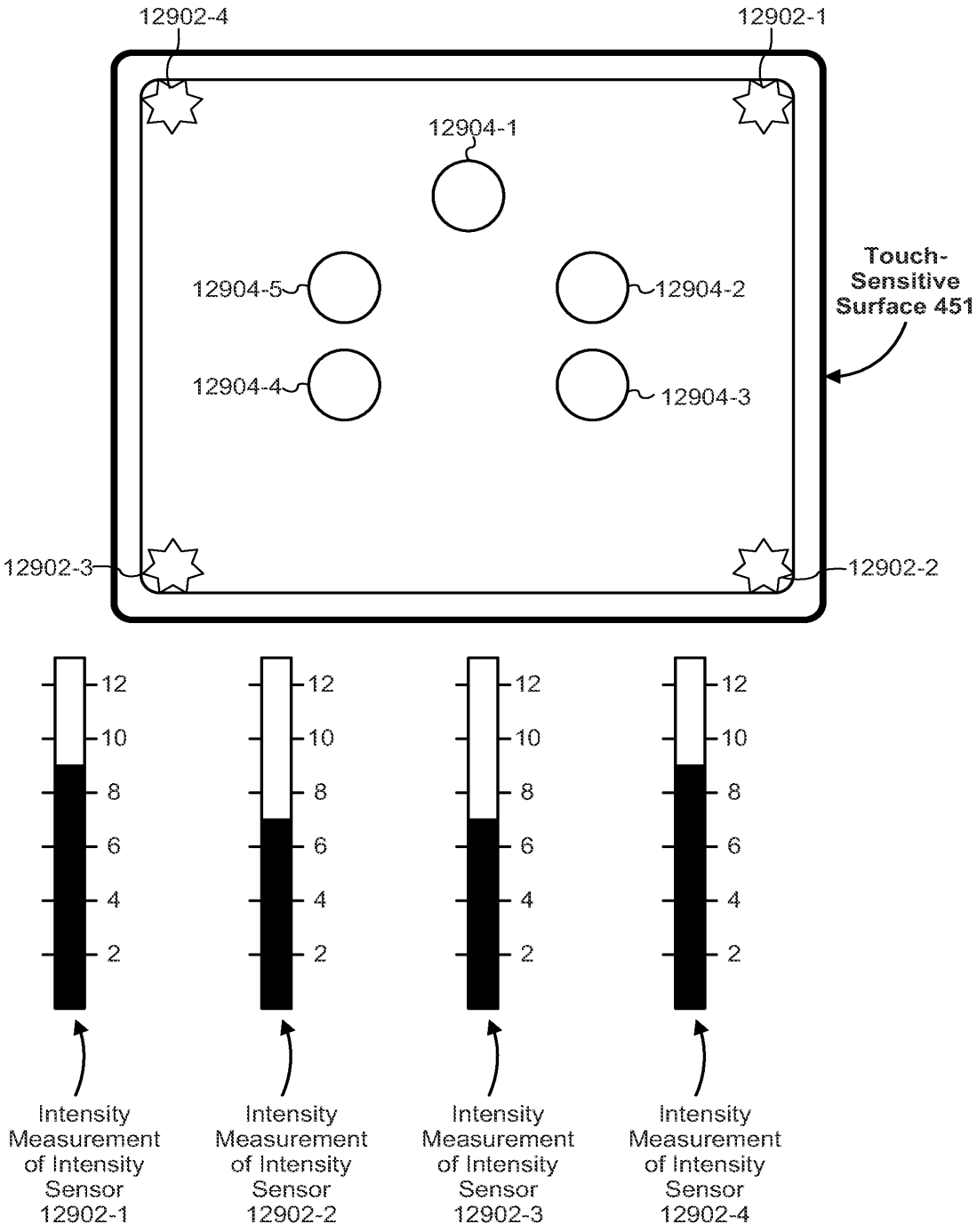

12902-4
12902-1
12904-1
12904-5
12904-2
Touch-Sensitive Surface 451
12904-4
12904-3
12902-3
12902-2
12
10
8
6
4
2
Intensity Measurement of Intensity Sensor 12902-1
Intensity Measurement of Intensity Sensor 12902-2
Intensity Measurement of Intensity Sensor 12902-3
Intensity Measurement of Intensity Sensor 12902-4

Figure 5B

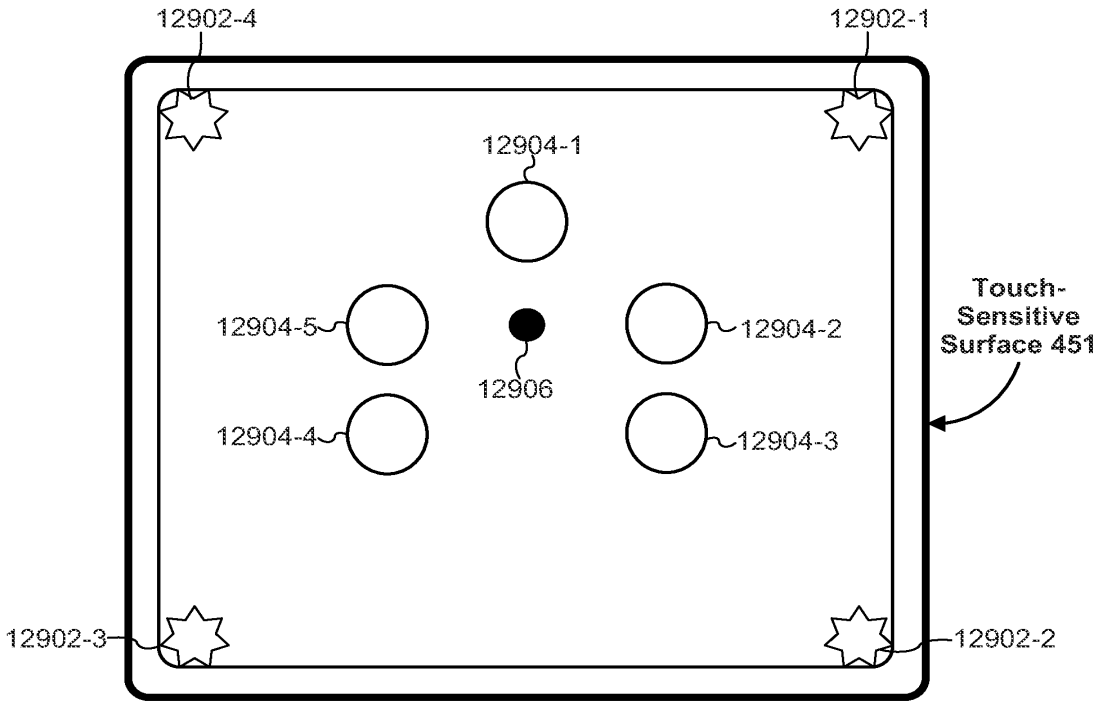

12902-4
12902-1
12904-1
12904-5
12904-2
12906
12904-4
12904-3
Touch-Sensitive Surface 451
12902-3
12902-2

Figure 5C

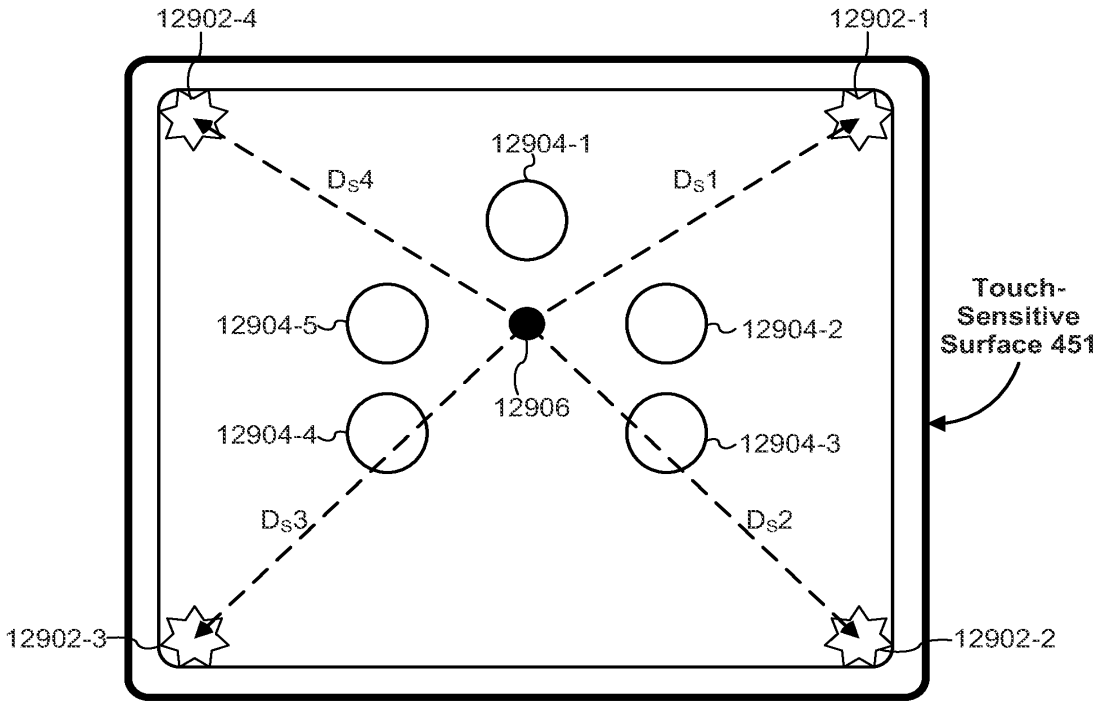

12902-4
12902-1
12904-1
$D_S4$
$D_S1$
12904-5
12904-2
Touch-Sensitive Surface 451
12906
12904-4
12904-3
$D_S3$
$D_S2$
12902-3
12902-2

Figure 5D

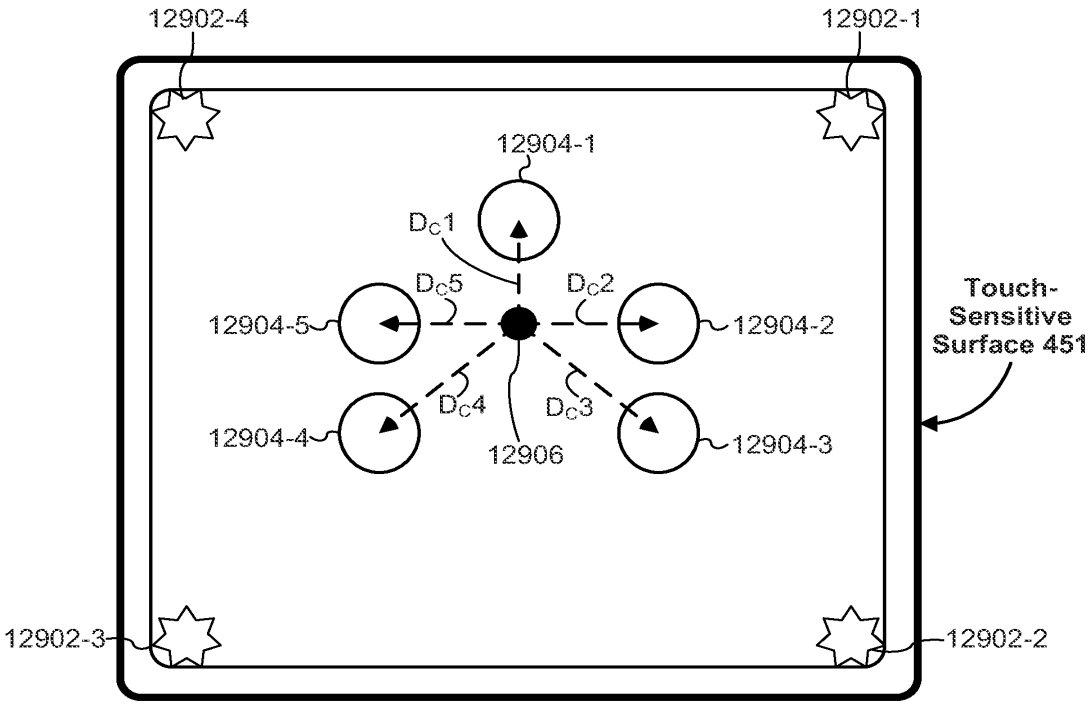

12902-4
12902-1
12904-1
$D_C1$
$D_C5$
$D_C2$
12904-5
12904-2
Touch-Sensitive Surface 451
$D_C4$
$D_C3$
12904-4
12906
12904-3
12902-3
12902-2

Figure 5E

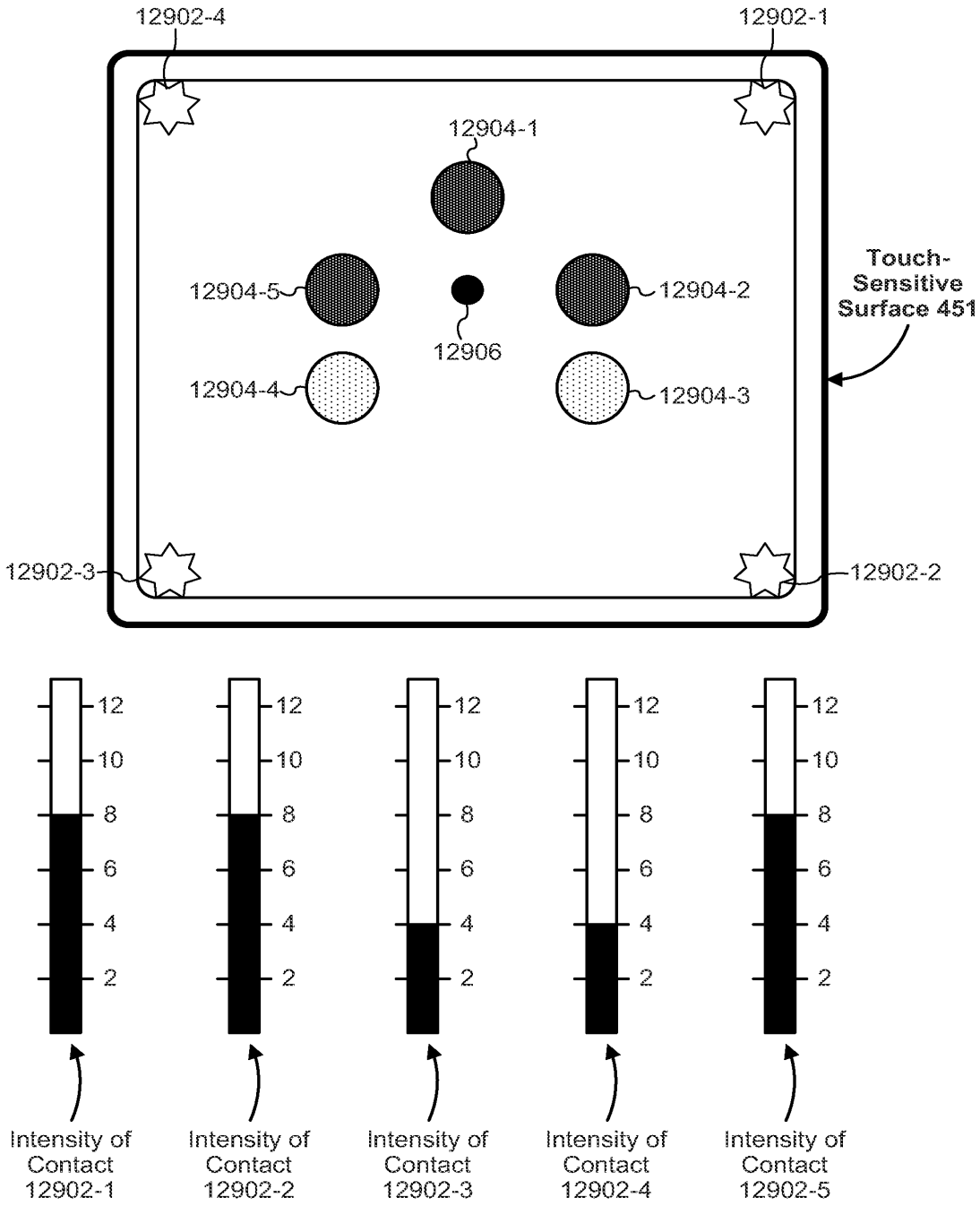

12902-4
12902-1
12904-1
12904-5
12904-2
12906
12904-4
12904-3
Touch-Sensitive Surface 451
12902-3
12902-2
12
10
8
6
4
2
Intensity of Contact 12902-1
Intensity of Contact 12902-2
Intensity of Contact 12902-3
Intensity of Contact 12902-4
Intensity of Contact 12902-5

Figure 5F

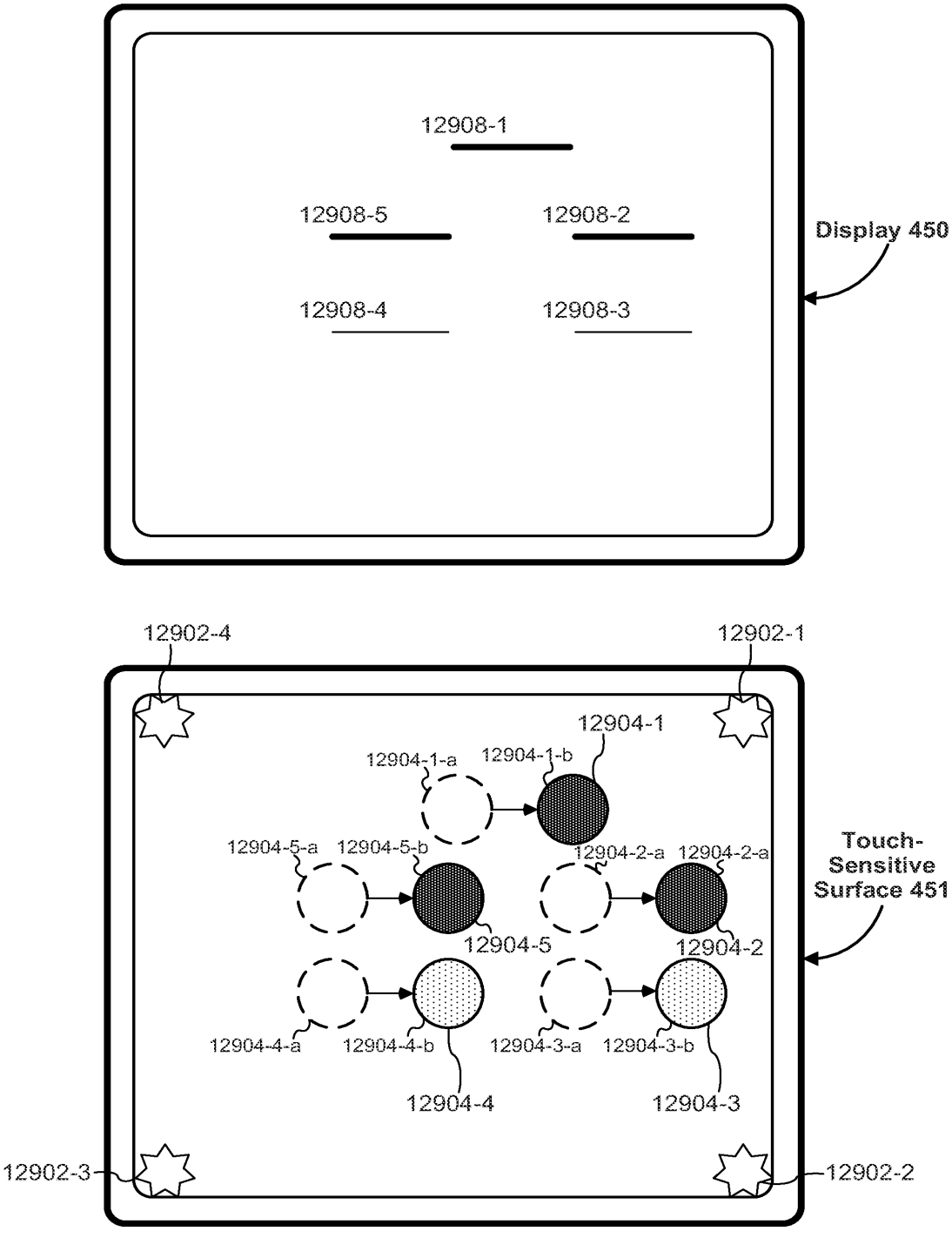

12908-1
12908-5
12908-2
12908-4
12908-3
Display 450
12902-4
12902-1
12904-1
12904-1-a
12904-1-b
12904-5-a
12904-5-b
12904-2-a
12904-2-a
12904-5
12904-2
12904-4-a
12904-4-b
12904-3-a
12904-3-b
12904-4
12904-3
Touch-Sensitive Surface 451
12902-3
12902-2

Figure 5G

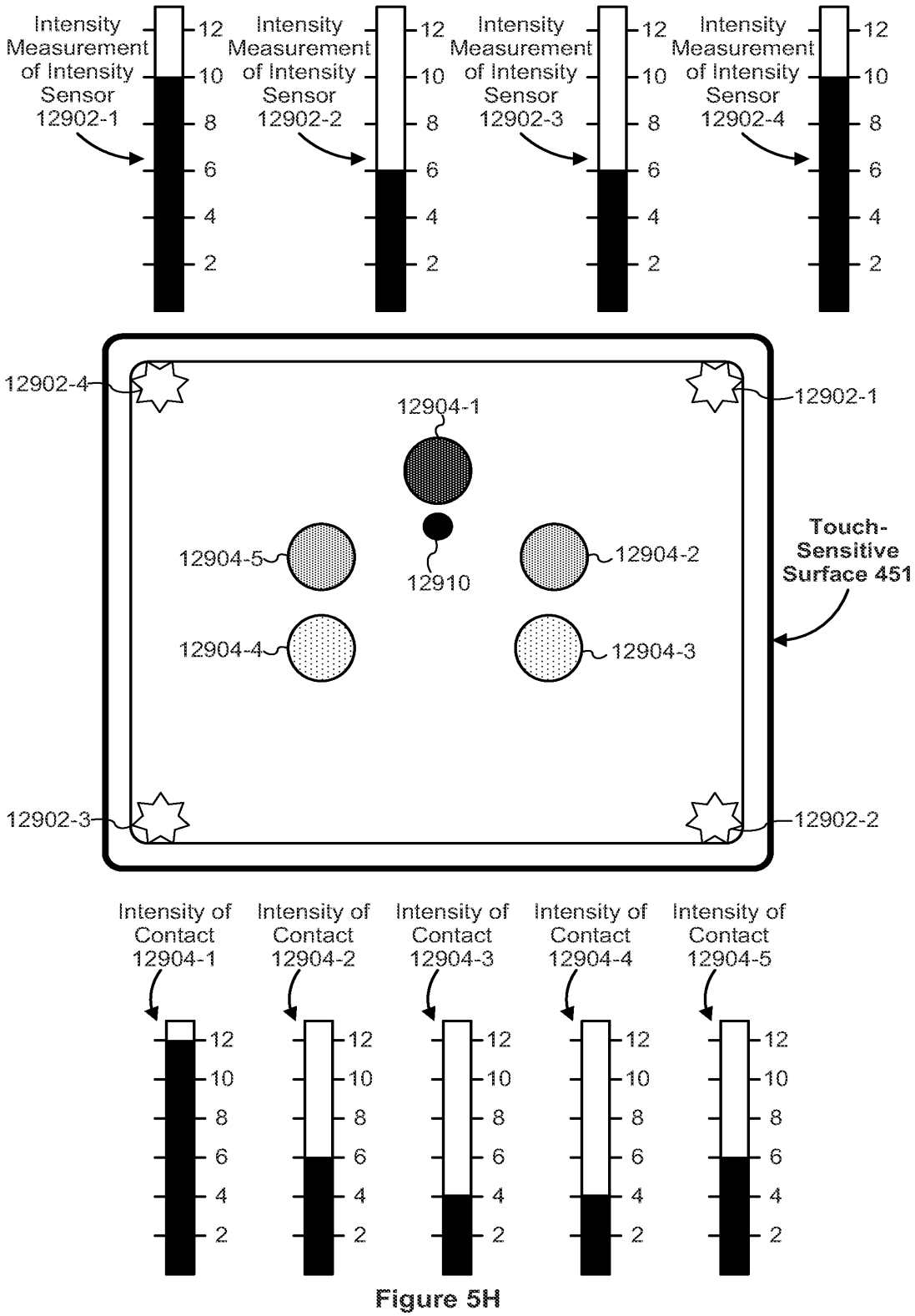

Intensity Measurement of Intensity Sensor 12902-1
Intensity Measurement of Intensity Sensor 12902-2
Intensity Measurement of Intensity Sensor 12902-3
Intensity Measurement of Intensity Sensor 12902-4
12
10
8
6
4
2
12902-4
12902-1
12904-1
12904-5
12910
12904-2
Touch-Sensitive Surface 451
12904-4
12904-3
12902-3
12902-2
Intensity of Contact 12904-1
Intensity of Contact 12904-2
Intensity of Contact 12904-3
Intensity of Contact 12904-4
Intensity of Contact 12904-5

Figure 5H

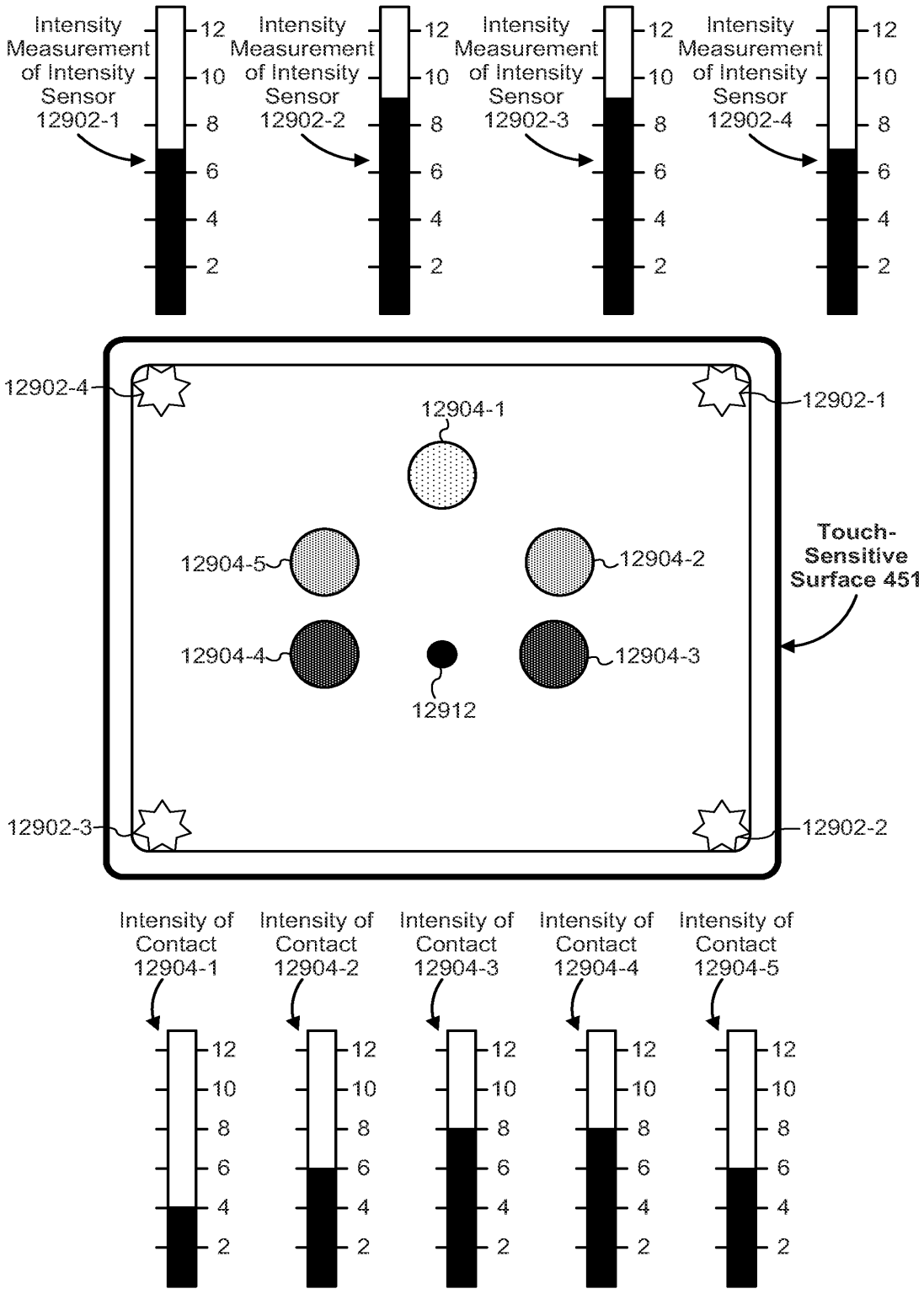

Intensity Measurement of Intensity Sensor 12902-1
Intensity Measurement of Intensity Sensor 12902-2
Intensity Measurement of Intensity Sensor 12902-3
Intensity Measurement of Intensity Sensor 12902-4
12
10
8
6
4
2
12902-4
12902-1
12904-1
12904-5
12904-2
Touch-Sensitive Surface 451
12904-4
12904-3
12912
12902-3
12902-2
Intensity of Contact 12904-1
Intensity of Contact 12904-2
Intensity of Contact 12904-3
Intensity of Contact 12904-4
Intensity of Contact 12904-5

Figure 5I

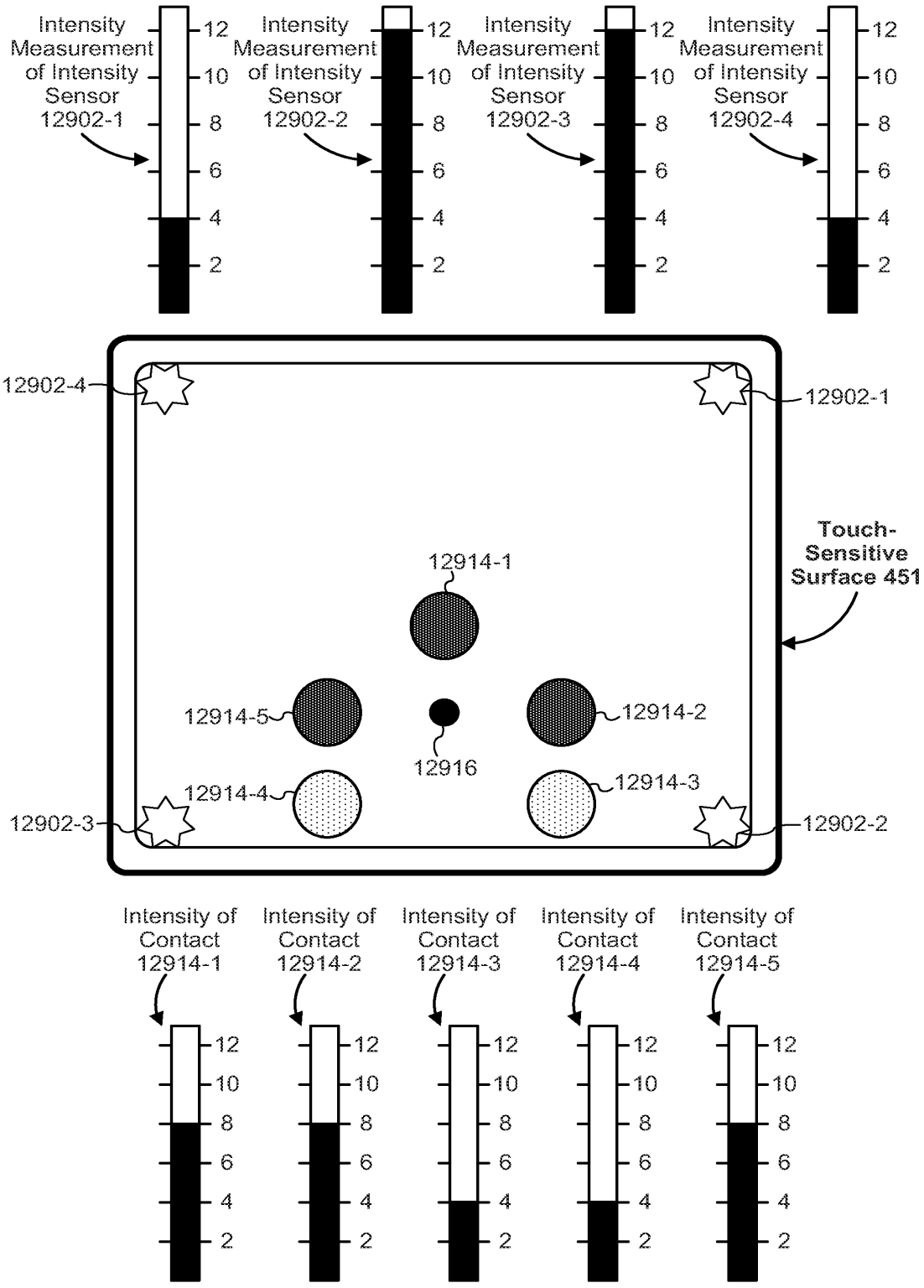

Intensity Measurement of Intensity Sensor 12902-1
Intensity Measurement of Intensity Sensor 12902-2
Intensity Measurement of Intensity Sensor 12902-3
Intensity Measurement of Intensity Sensor 12902-4
12
10
8
6
4
2
12902-4
12902-1
Touch-Sensitive Surface 451
12914-1
12914-5
12914-2
12916
12914-4
12914-3
12902-3
12902-2
Intensity of Contact 12914-1
Intensity of Contact 12914-2
Intensity of Contact 12914-3
Intensity of Contact 12914-4
Intensity of Contact 12914-5

Figure 5J

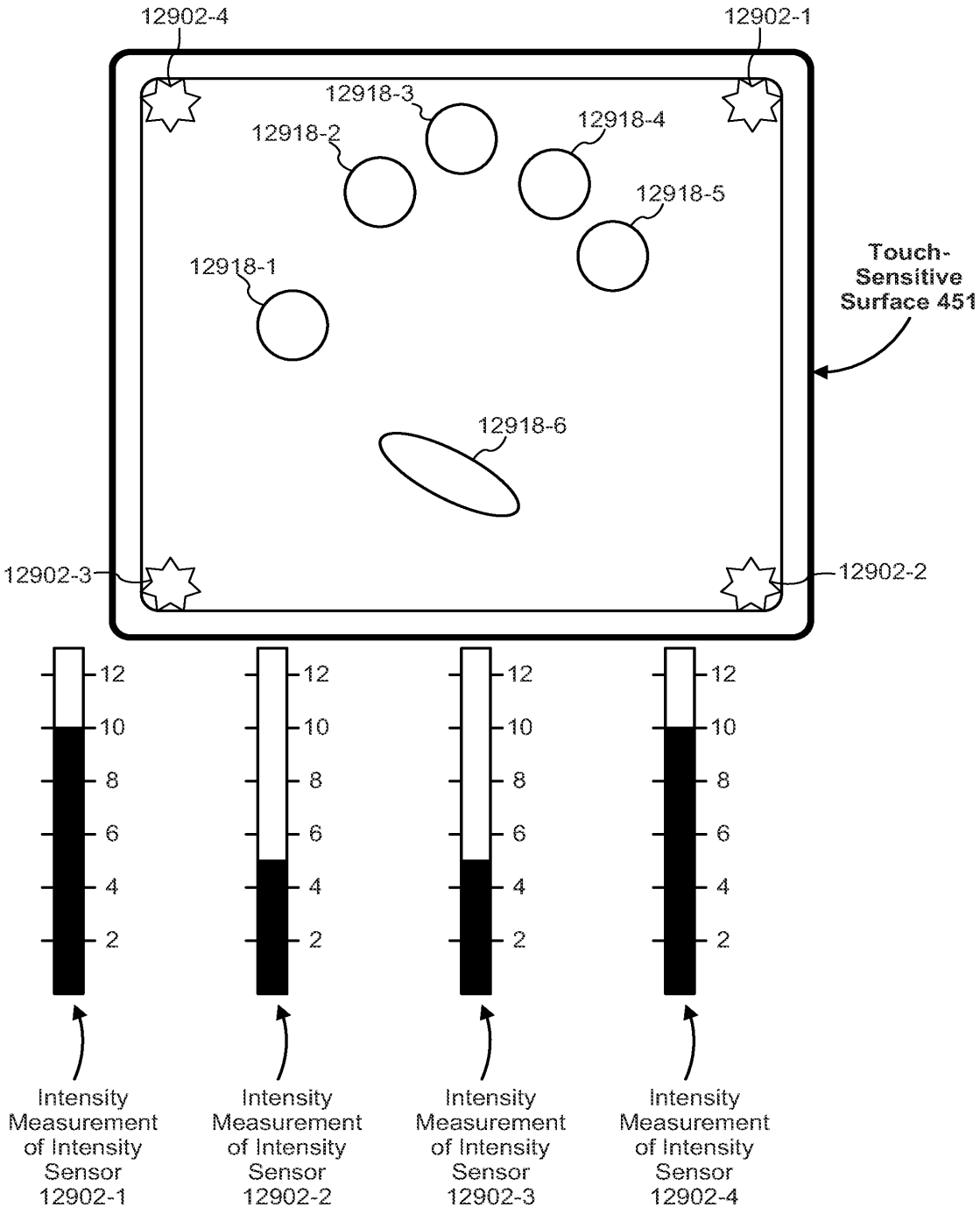

12902-4
12902-1
12918-3
12918-2
12918-4
12918-5
12918-1
Touch-Sensitive Surface 451
12918-6
12902-3
12902-2
12
10
8
6
4
2
Intensity Measurement of Intensity Sensor 12902-1
Intensity Measurement of Intensity Sensor 12902-2
Intensity Measurement of Intensity Sensor 12902-3
Intensity Measurement of Intensity Sensor 12902-4

Figure 5K

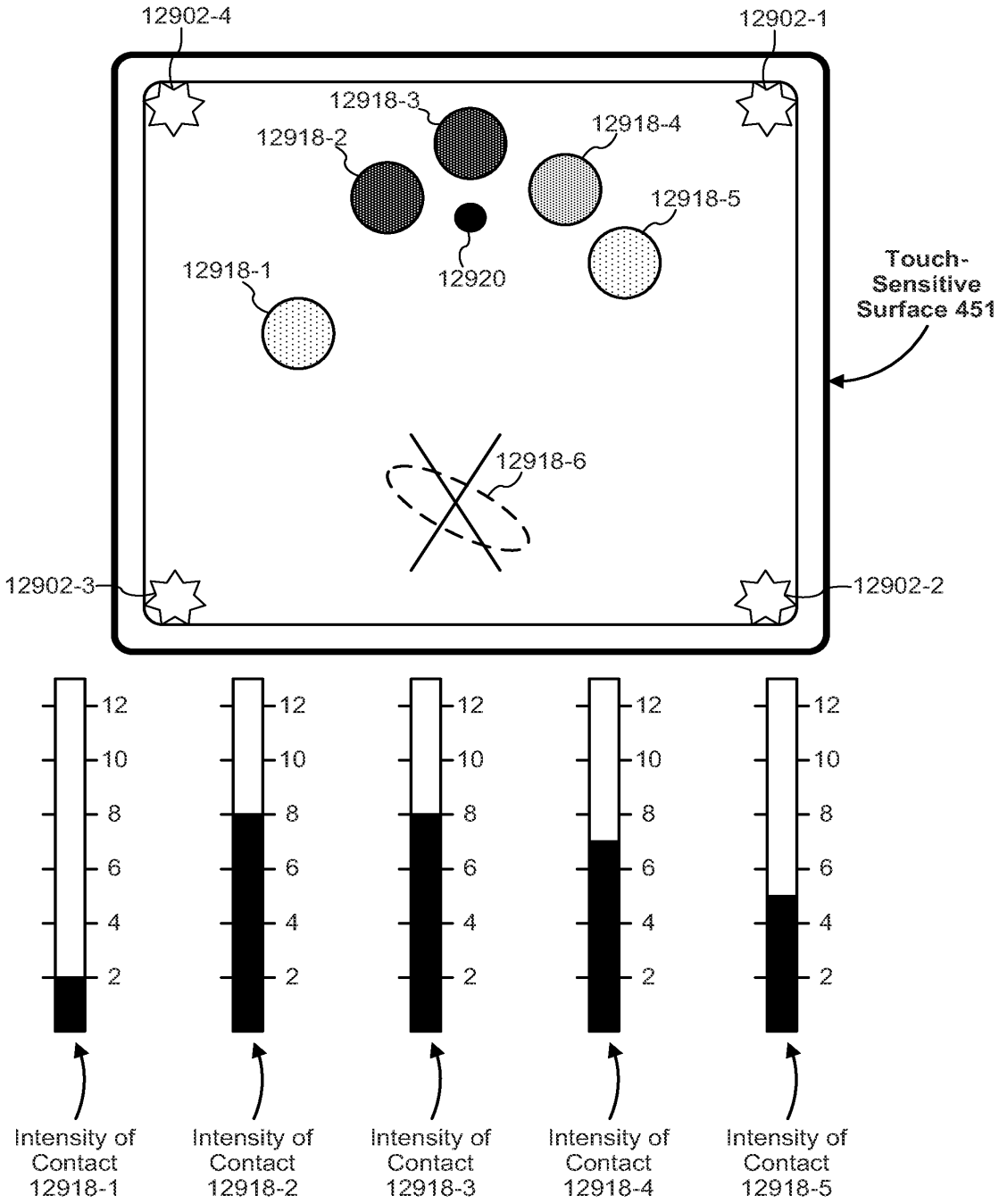

12902-4
12902-1
12918-3
12918-2
12918-4
12918-5
12920
12918-1
Touch-Sensitive Surface 451
12918-6
12902-3
12902-2
12
10
8
6
4
2
Intensity of Contact 12918-1
Intensity of Contact 12918-2
Intensity of Contact 12918-3
Intensity of Contact 12918-4
Intensity of Contact 12918-5

Figure 5L

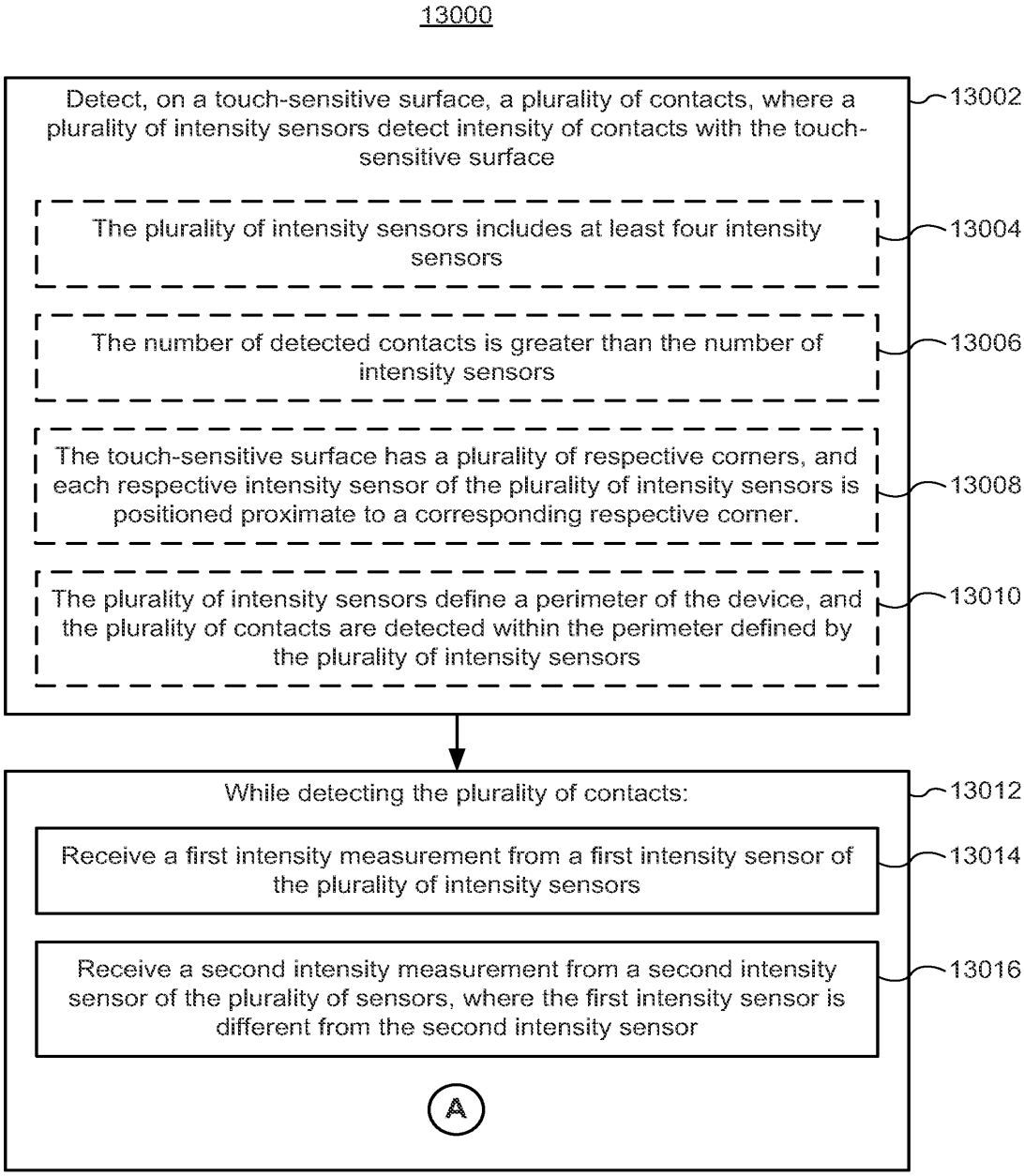

13000
Detect, on a touch-sensitive surface, a plurality of contacts, where a plurality of intensity sensors detect intensity of contacts with the touch-sensitive surface
13002
The plurality of intensity sensors includes at least four intensity sensors
13004
The number of detected contacts is greater than the number of intensity sensors
13006
The touch-sensitive surface has a plurality of respective corners, and each respective intensity sensor of the plurality of intensity sensors is positioned proximate to a corresponding respective corner.
13008
The plurality of intensity sensors define a perimeter of the device, and the plurality of contacts are detected within the perimeter defined by the plurality of intensity sensors
13010
While detecting the plurality of contacts:
13012
Receive a first intensity measurement from a first intensity sensor of the plurality of intensity sensors
13014
Receive a second intensity measurement from a second intensity sensor of the plurality of sensors, where the first intensity sensor is different from the second intensity sensor
13016
A

Figure 6A

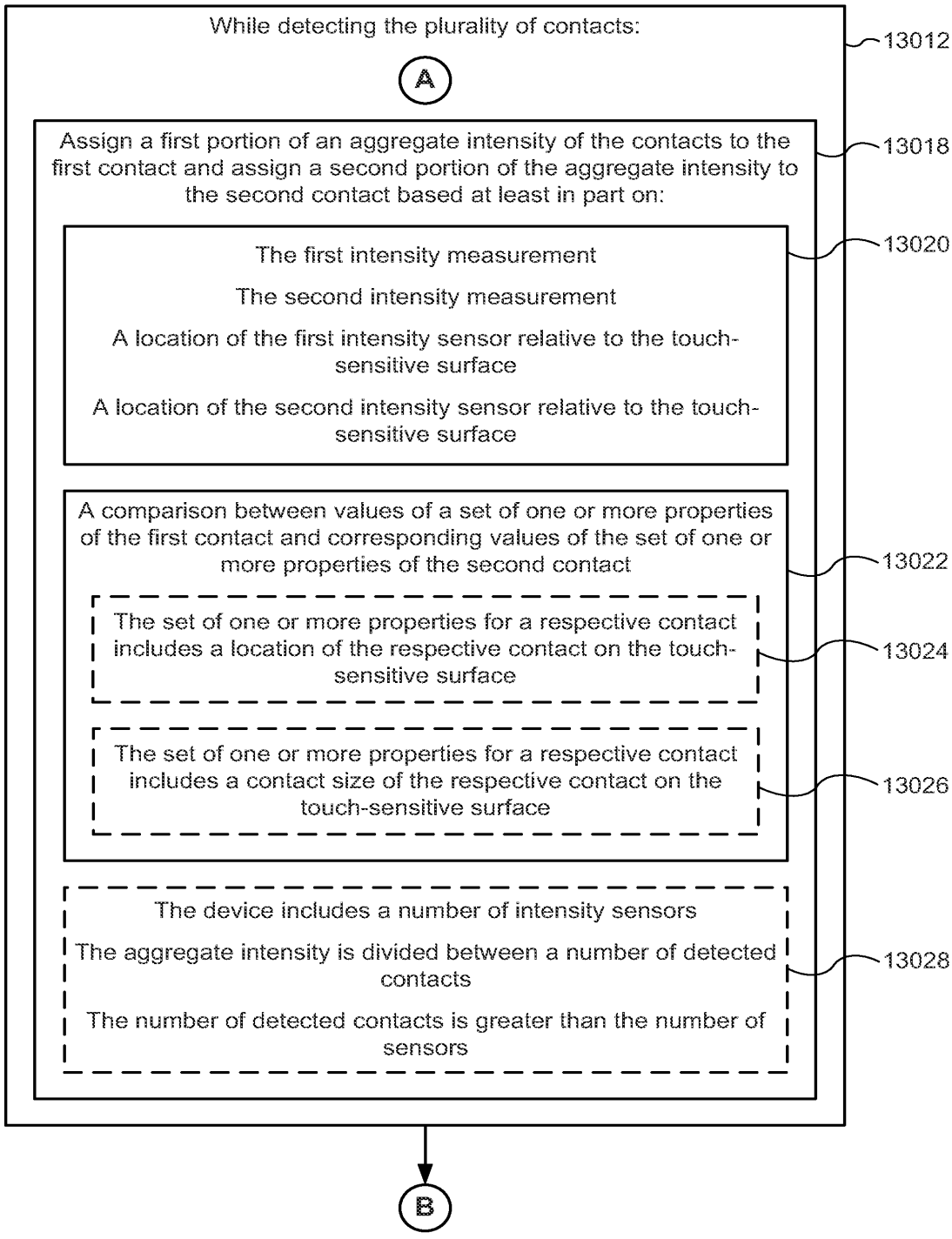

While detecting the plurality of contacts:
13012
A
Assign a first portion of an aggregate intensity of the contacts to the first contact and assign a second portion of the aggregate intensity to the second contact based at least in part on:
13018
The first intensity measurement
The second intensity measurement
A location of the first intensity sensor relative to the touch-sensitive surface
A location of the second intensity sensor relative to the touch-sensitive surface
13020
A comparison between values of a set of one or more properties of the first contact and corresponding values of the set of one or more properties of the second contact
13022
The set of one or more properties for a respective contact includes a location of the respective contact on the touch-sensitive surface
13024
The set of one or more properties for a respective contact includes a contact size of the respective contact on the touch-sensitive surface
13026
The device includes a number of intensity sensors
The aggregate intensity is divided between a number of detected contacts
The number of detected contacts is greater than the number of sensors
13028
B

Figure 6B

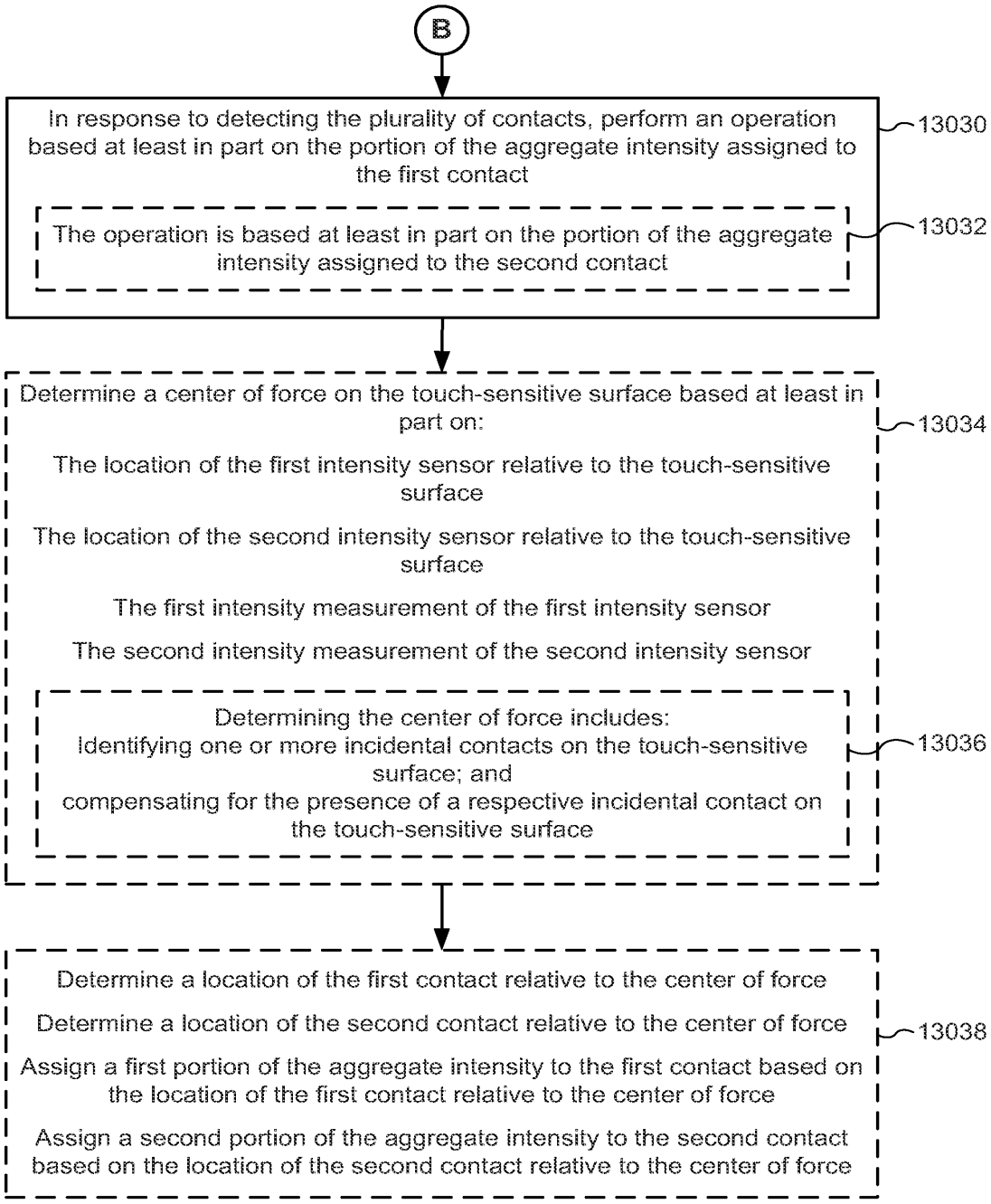

B
In response to detecting the plurality of contacts, perform an operation based at least in part on the portion of the aggregate intensity assigned to the first contact
13030
The operation is based at least in part on the portion of the aggregate intensity assigned to the second contact
13032
Determine a center of force on the touch-sensitive surface based at least in part on:
13034
The location of the first intensity sensor relative to the touch-sensitive surface
The location of the second intensity sensor relative to the touch-sensitive surface
The first intensity measurement of the first intensity sensor
The second intensity measurement of the second intensity sensor
Determining the center of force includes:
Identifying one or more incidental contacts on the touch-sensitive surface; and
compensating for the presence of a respective incidental contact on the touch-sensitive surface
13036
Determine a location of the first contact relative to the center of force
Determine a location of the second contact relative to the center of force
13038
Assign a first portion of the aggregate intensity to the first contact based on the location of the first contact relative to the center of force
Assign a second portion of the aggregate intensity to the second contact based on the location of the second contact relative to the center of force

Figure 6C

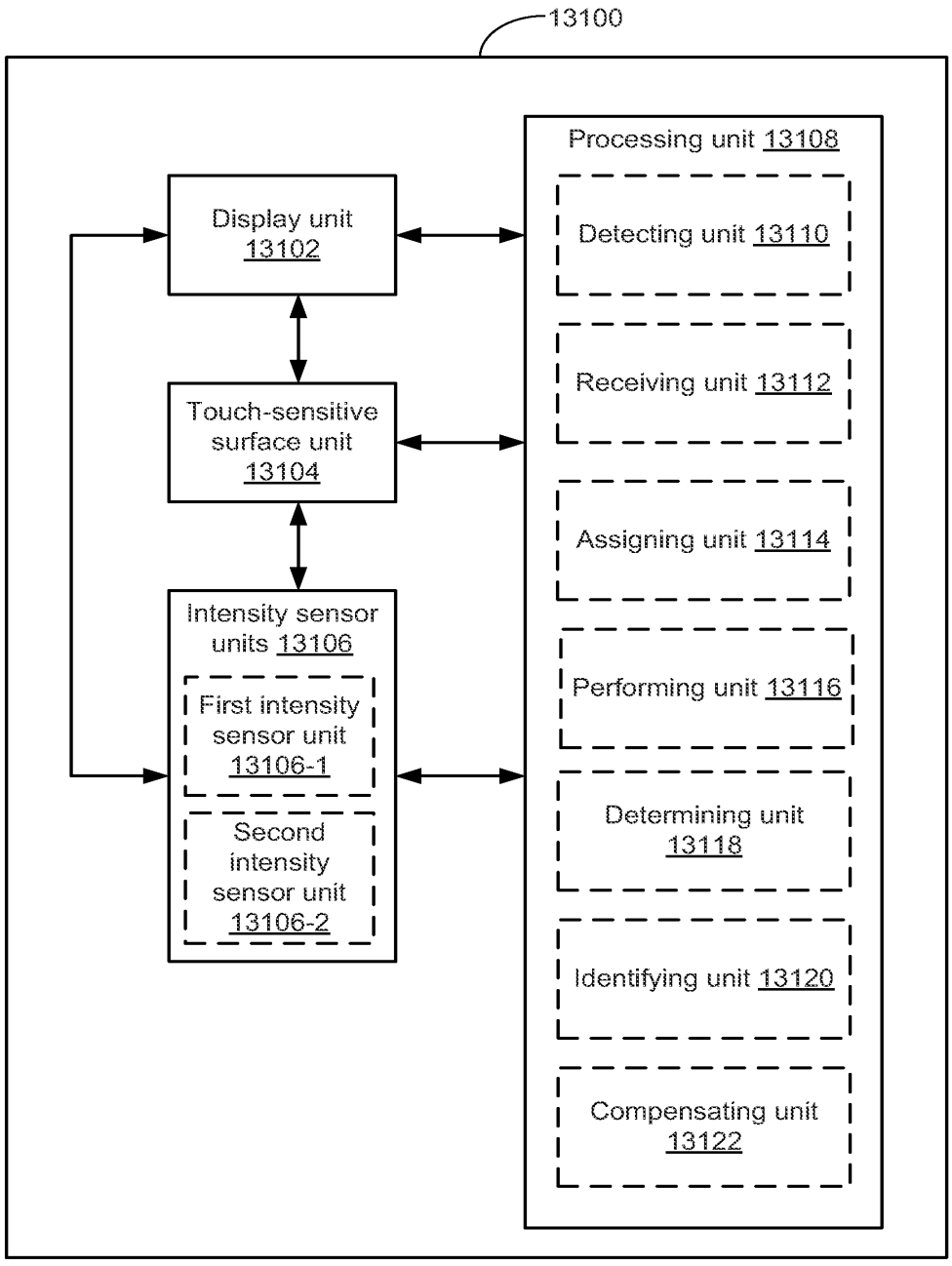

13100
Processing unit 13108
Display unit 13102
Detecting unit 13110
Receiving unit 13112
Touch-sensitive surface unit 13104
Assigning unit 13114
Intensity sensor units 13106
First intensity sensor unit 13106-1
Second intensity sensor unit 13106-2
Performing unit 13116
Determining unit 13118
Identifying unit 13120
Compensating unit 13122

Figure 7

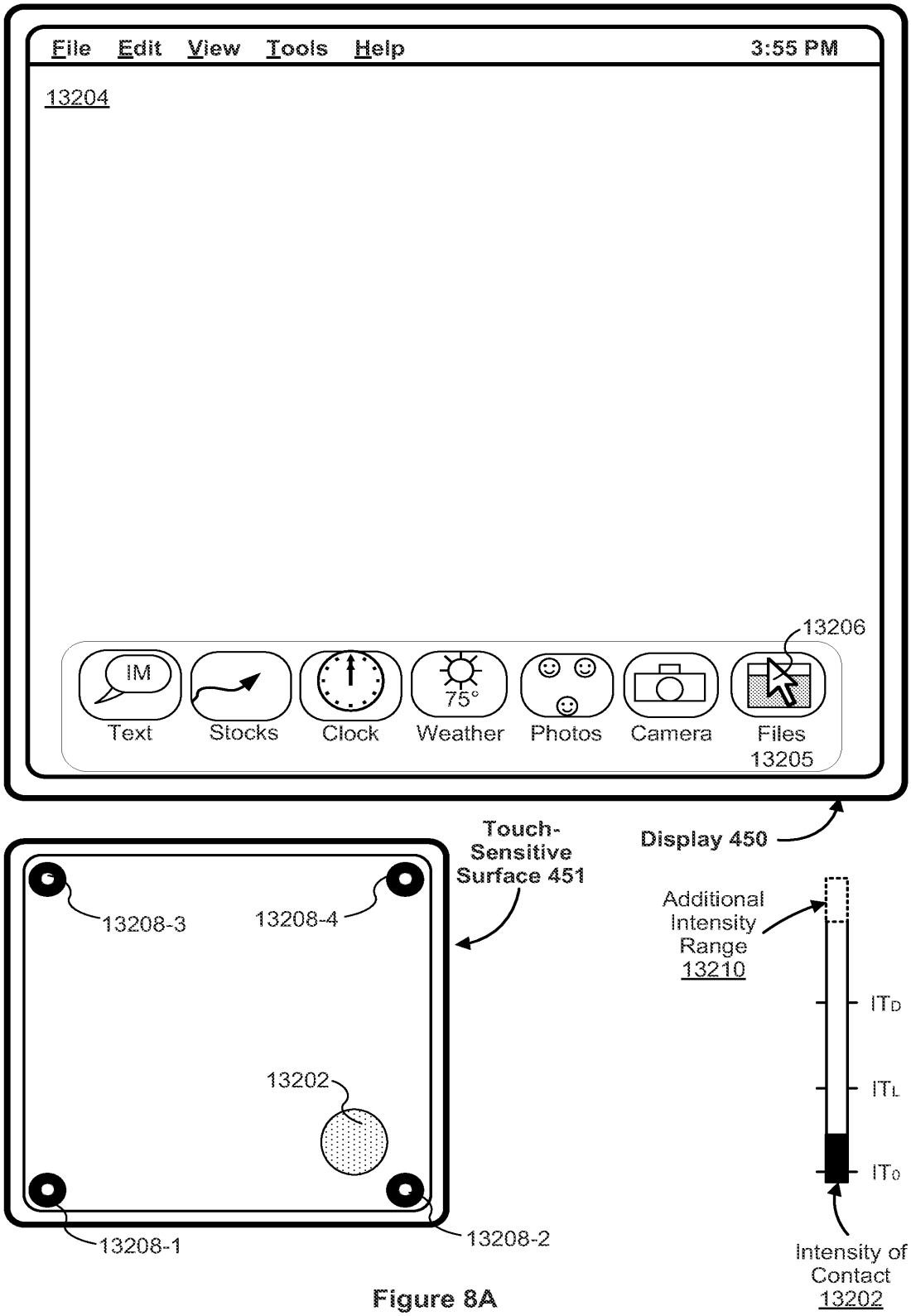

File Edit View Tools Help
3:55 PM
13204
13206
IM
Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13205
Display 450
Touch-Sensitive Surface 451
13208-3
13208-4
13202
13208-1
13208-2
Additional Intensity Range 13210
ITD
ITL
ITO
Intensity of Contact 13202

Figure 8A

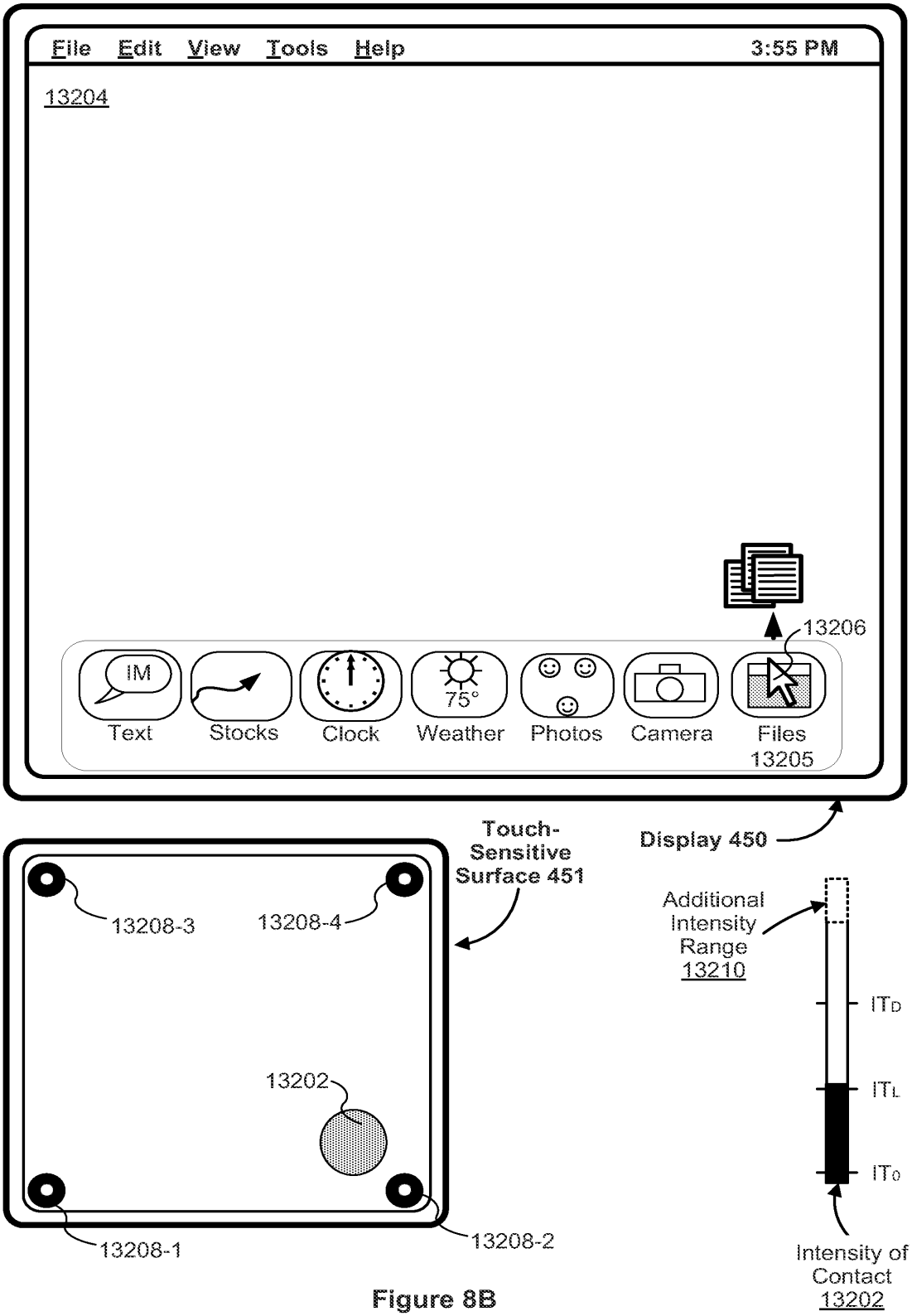

File Edit View Tools Help
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13206
IM
Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13205
Display 450
Touch-Sensitive Surface 451
13208-3
13208-4
13202
13208-1
13208-2
Additional Intensity Range 13210
ITD
ITL
ITO
Intensity of Contact 13202

Figure 8B

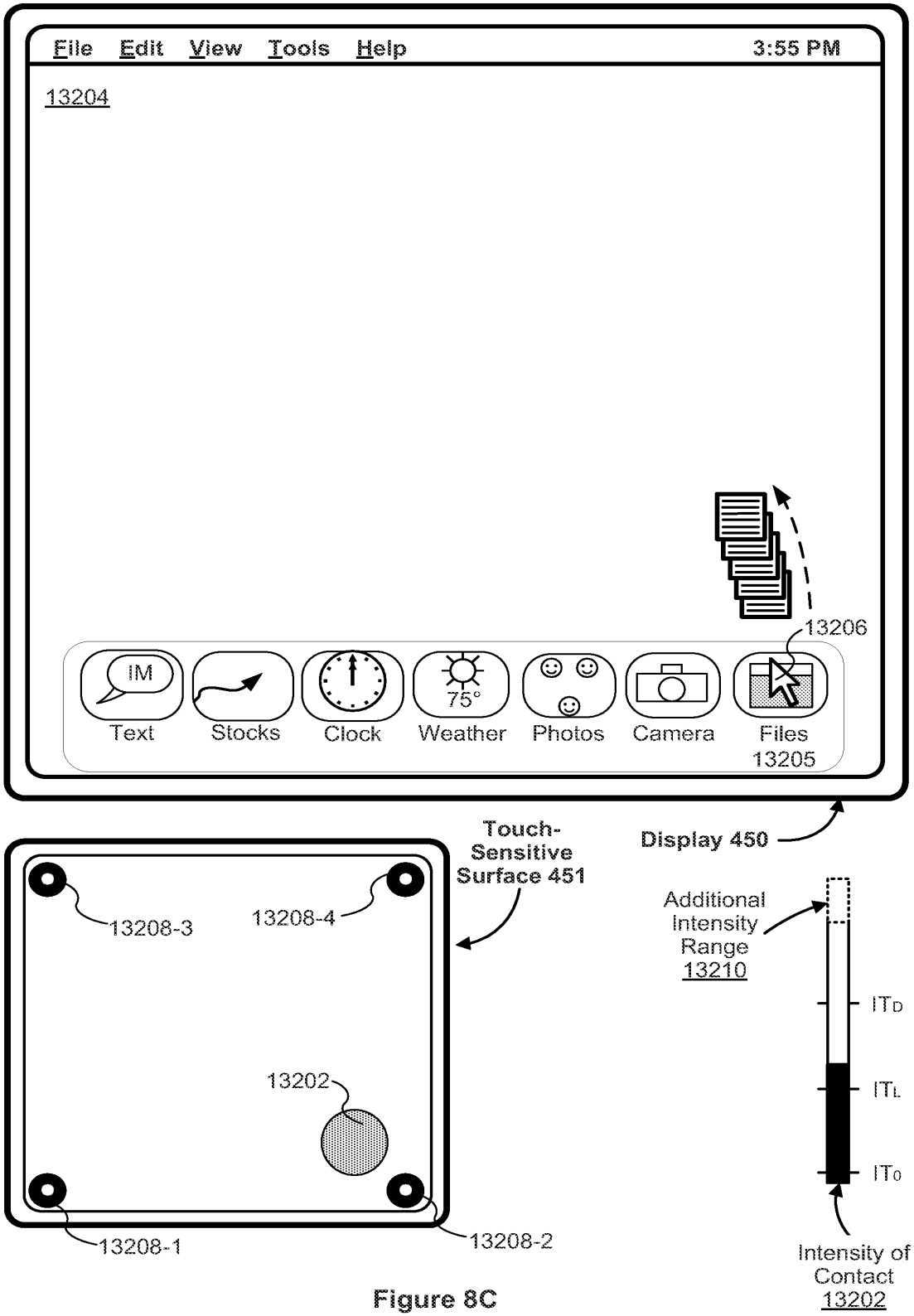

File Edit View Tools Help
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13206
IM
Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13205
Display 450
Touch-Sensitive Surface 451
13208-3
13208-4
13202
13208-1
13208-2
Additional Intensity Range 13210
ITD
ITL
ITO
Intensity of Contact 13202

Figure 8C

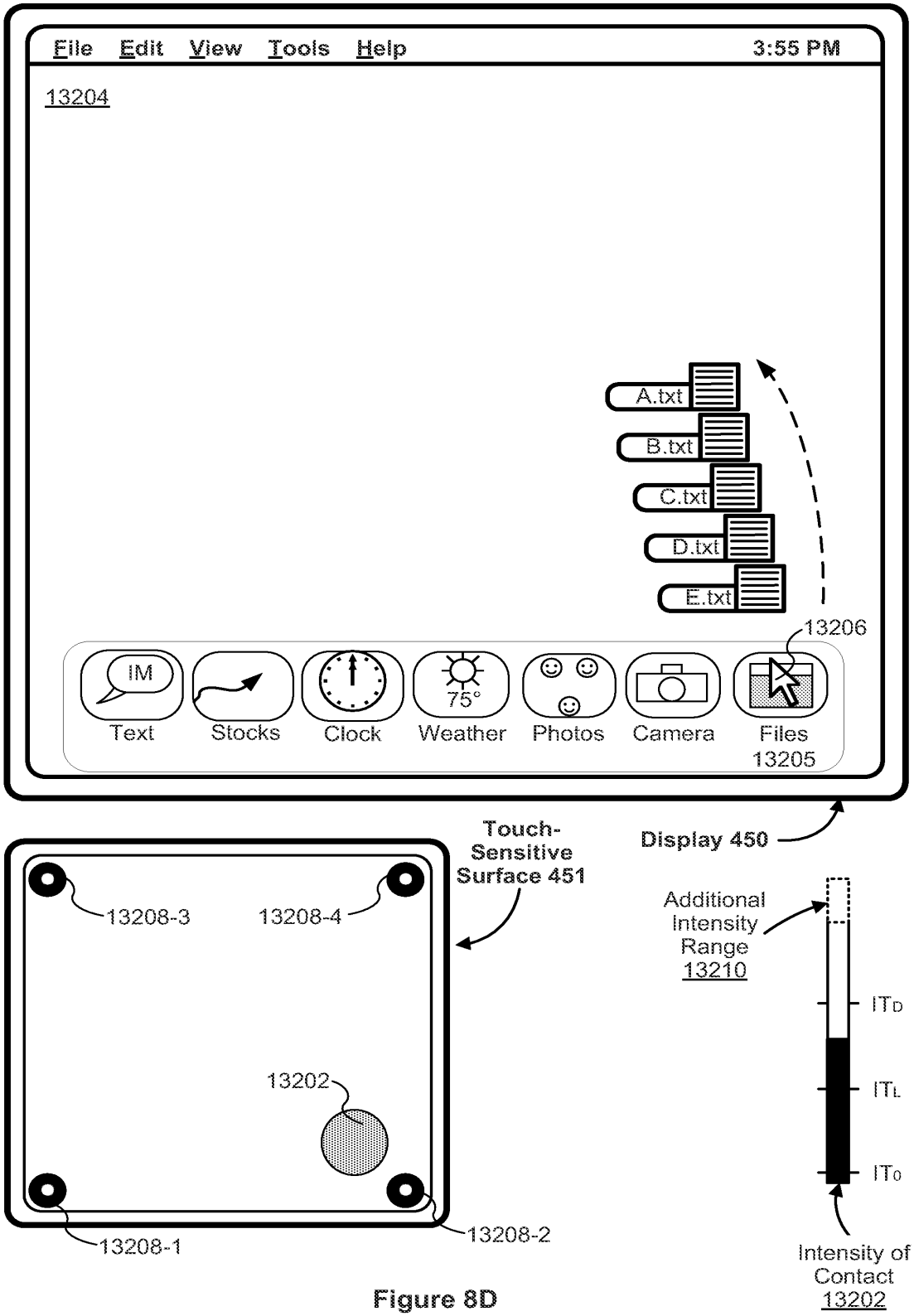

File Edit View Tools Help
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B.txt
C.txt
D.txt
E.txt
13206
IM
Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13205
Display 450
Touch-Sensitive Surface 451
13208-3
13208-4
13202
13208-1
13208-2
Additional Intensity Range 13210
ITD
ITL
IT0
Intensity of Contact 13202

Figure 8D

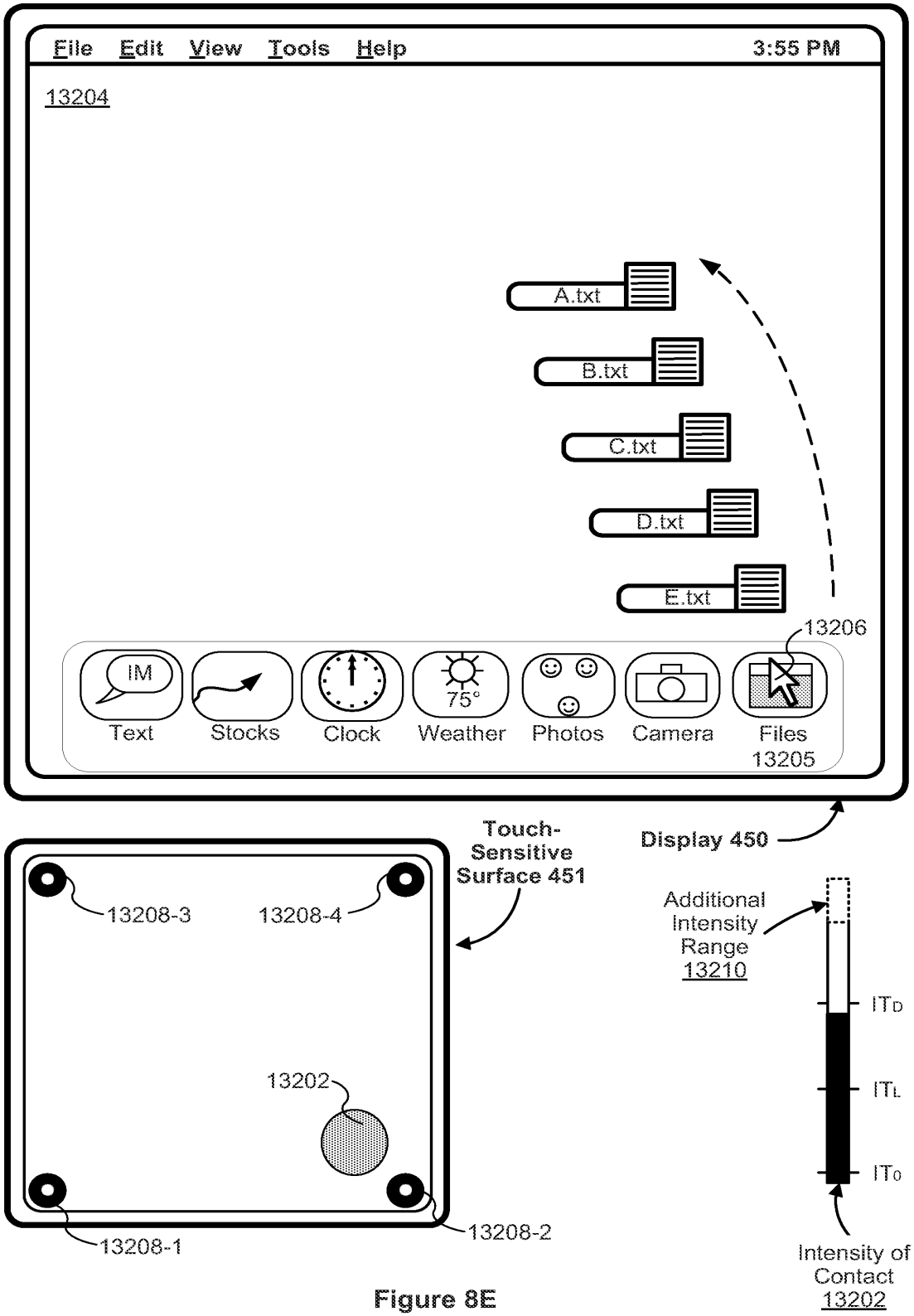

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C.txt
D.txt
E.txt
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Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13205
Display 450
Touch-Sensitive Surface 451
13208-3
13208-4
13202
13208-1
13208-2
Additional Intensity Range 13210
ITD
ITL
IT0
Intensity of Contact 13202

Figure 8E

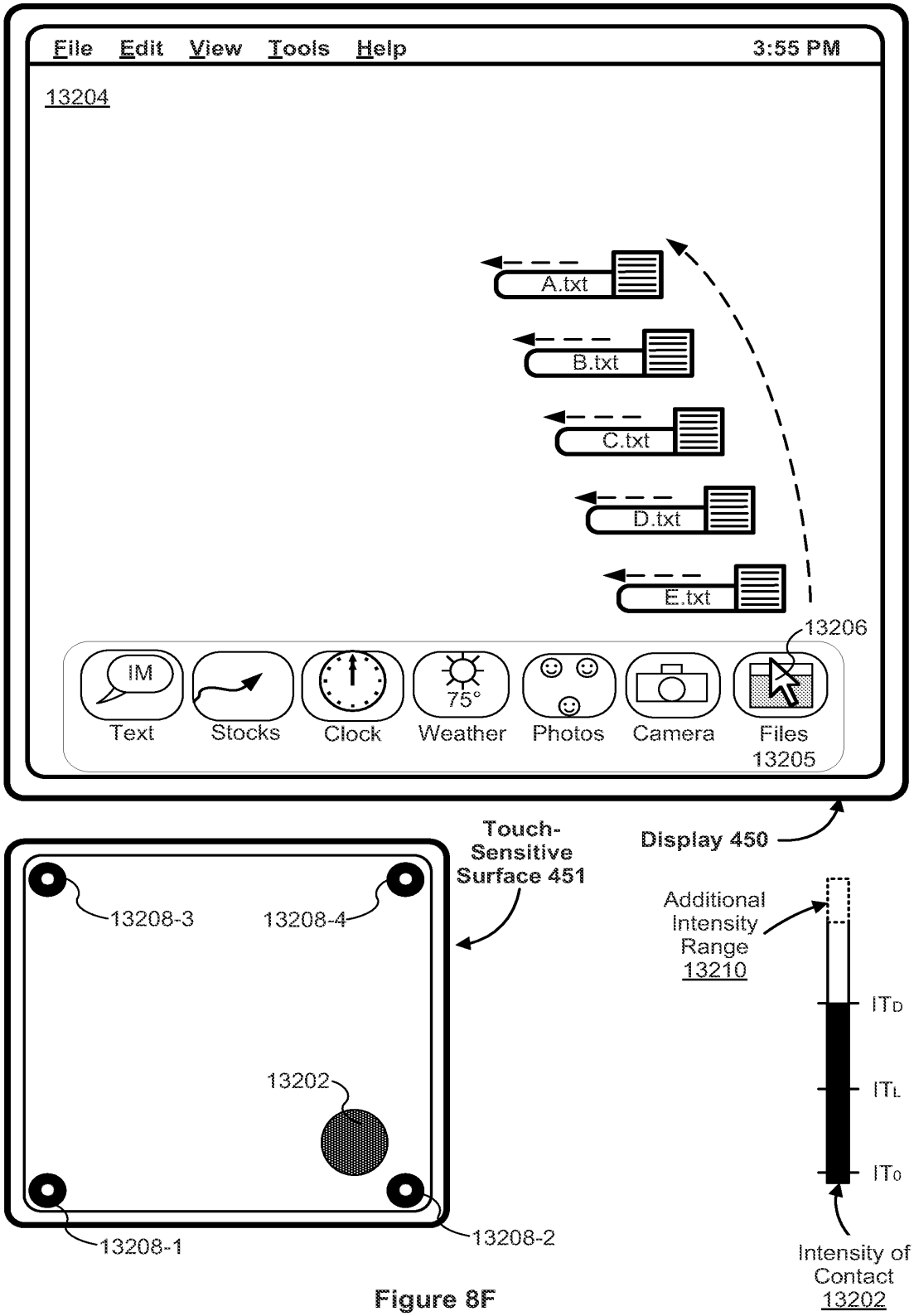

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E.txt
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IM
Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13205
Display 450
Touch-Sensitive Surface 451
13208-3
13208-4
13202
13208-1
13208-2
Additional Intensity Range 13210
ITD
ITL
ITO
Intensity of Contact 13202

Figure 8F

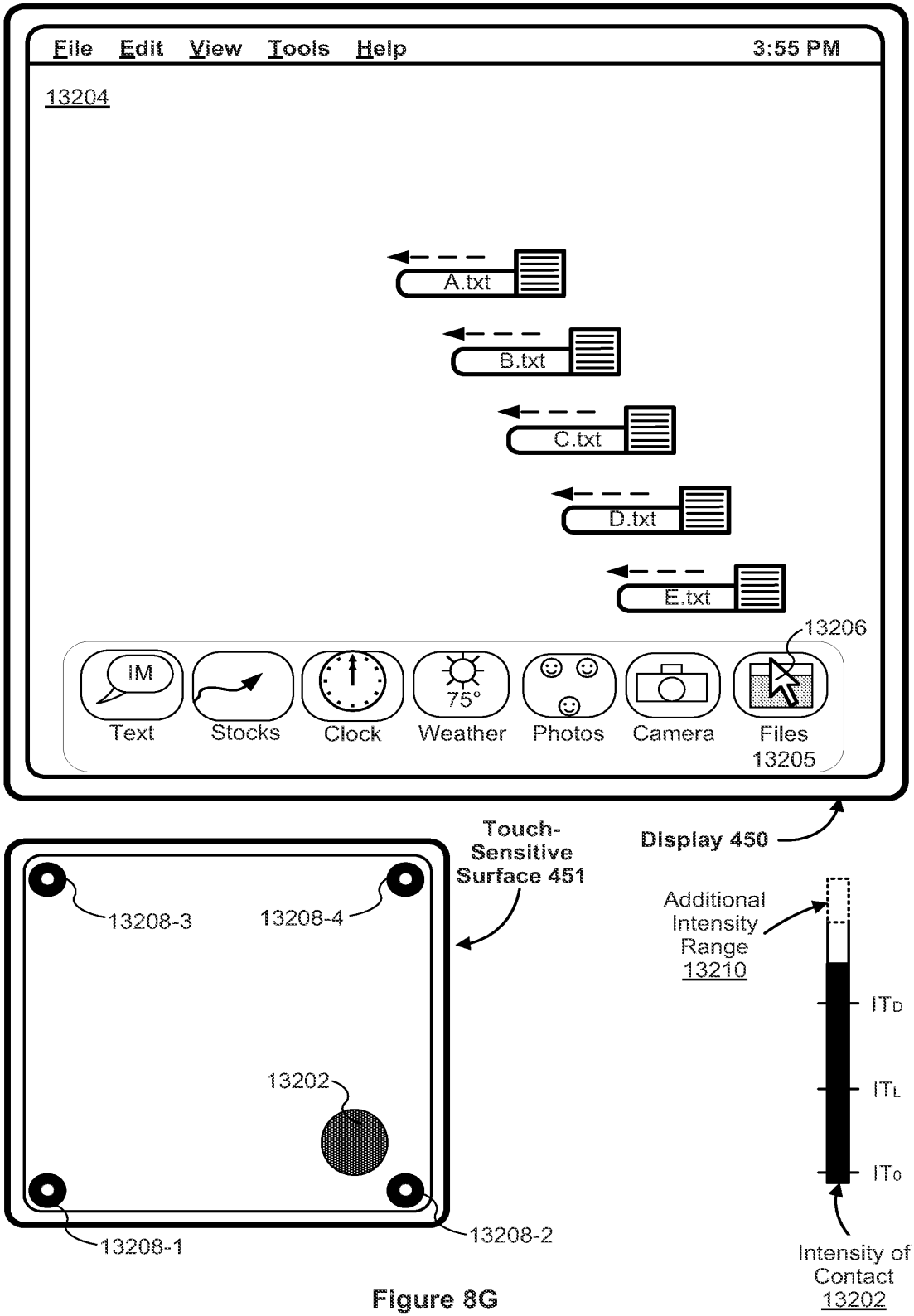

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B.txt
C.txt
D.txt
E.txt
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Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13205
Display 450
Touch-Sensitive Surface 451
13208-3
13208-4
13202
13208-1
13208-2
Additional Intensity Range 13210
ITD
ITL
ITO
Intensity of Contact 13202

Figure 8G

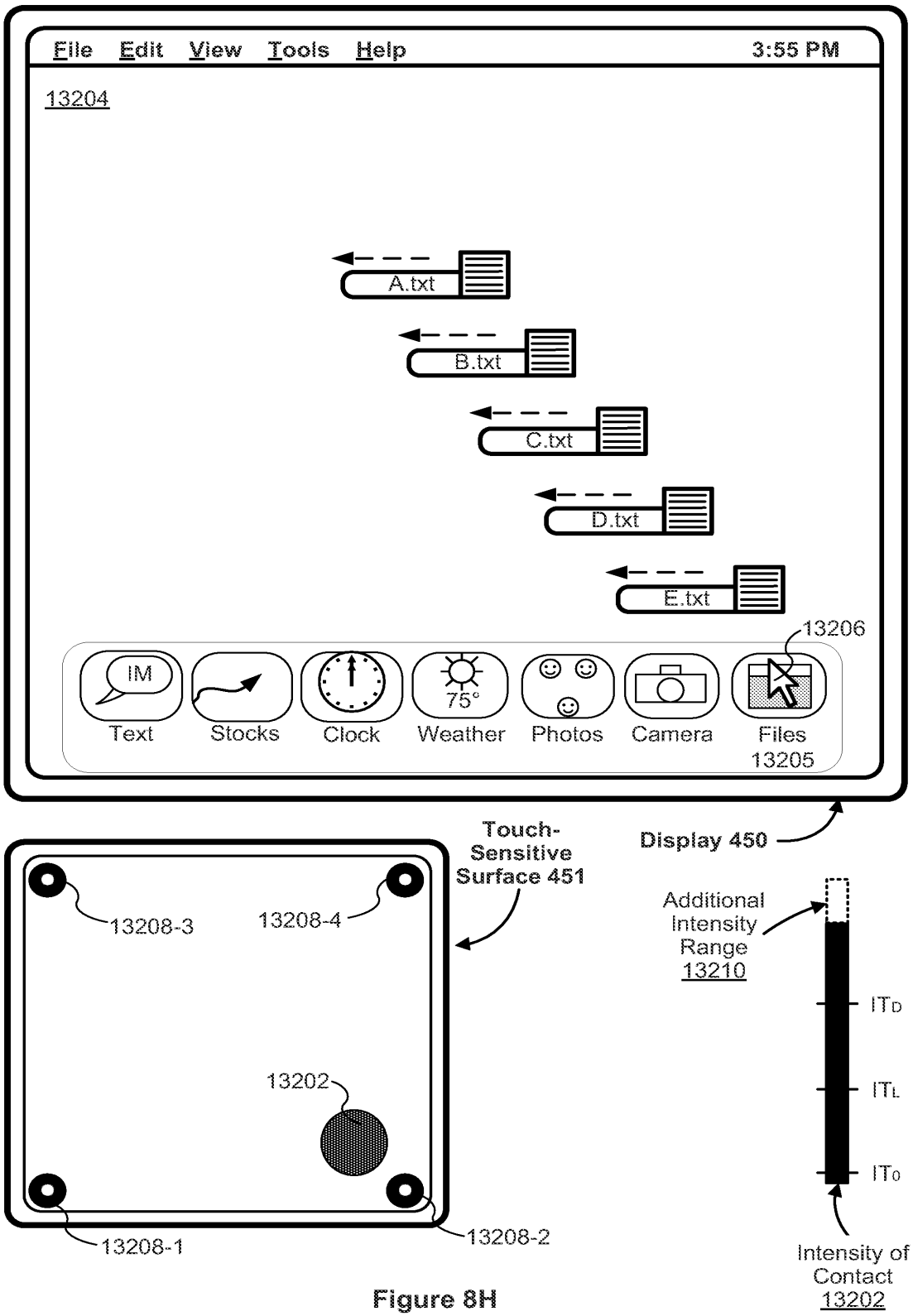

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D.txt
E.txt
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IM
Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
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Display 450
Touch-Sensitive Surface 451
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13208-1
13208-2
Additional Intensity Range 13210
ITD
ITL
IT0
Intensity of Contact 13202

Figure 8H

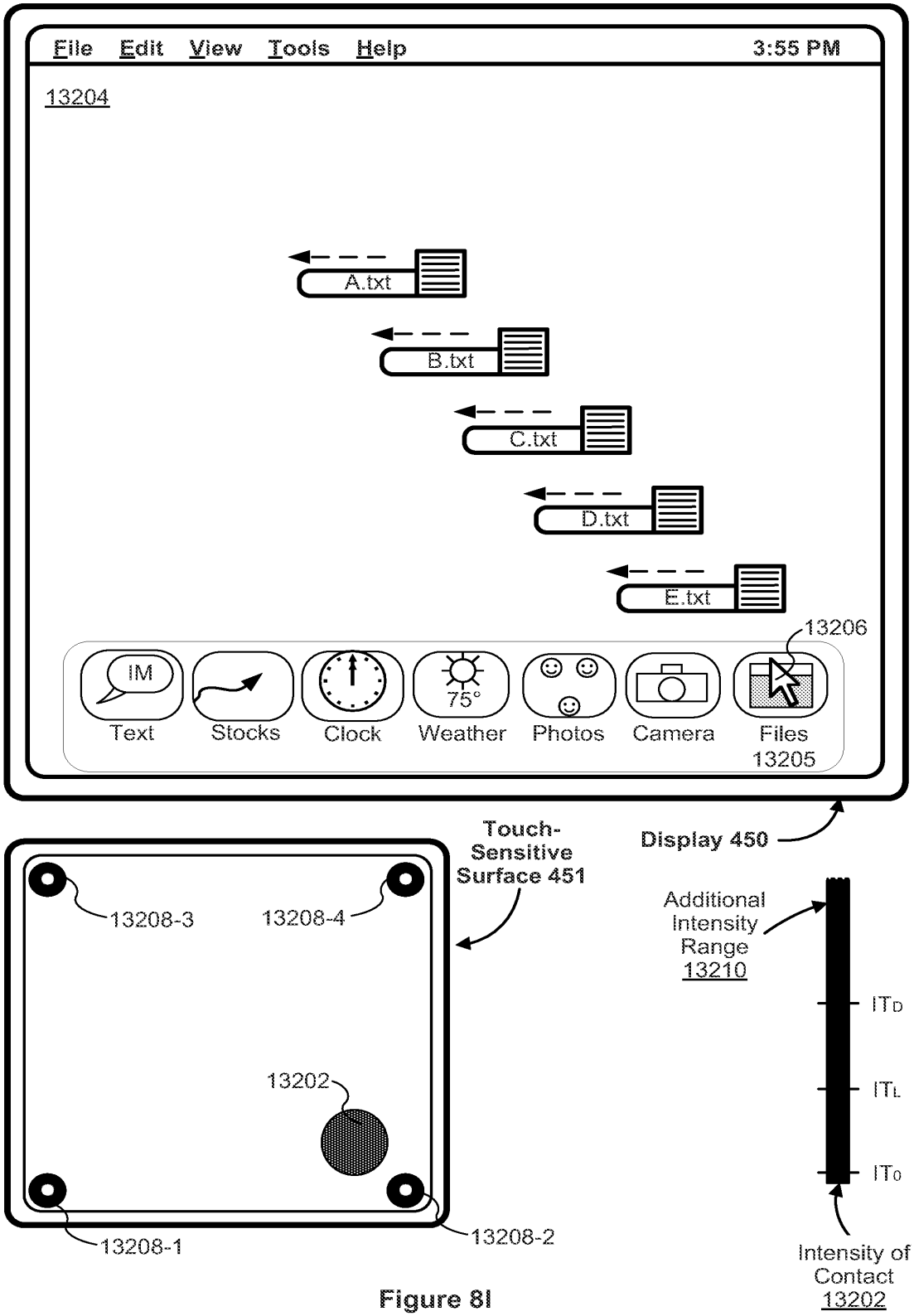

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Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13205
Display 450
Touch-Sensitive Surface 451
13208-3
13208-4
13202
13208-1
13208-2
Additional Intensity Range 13210
ITD
ITL
IT0
Intensity of Contact 13202

Figure 8I

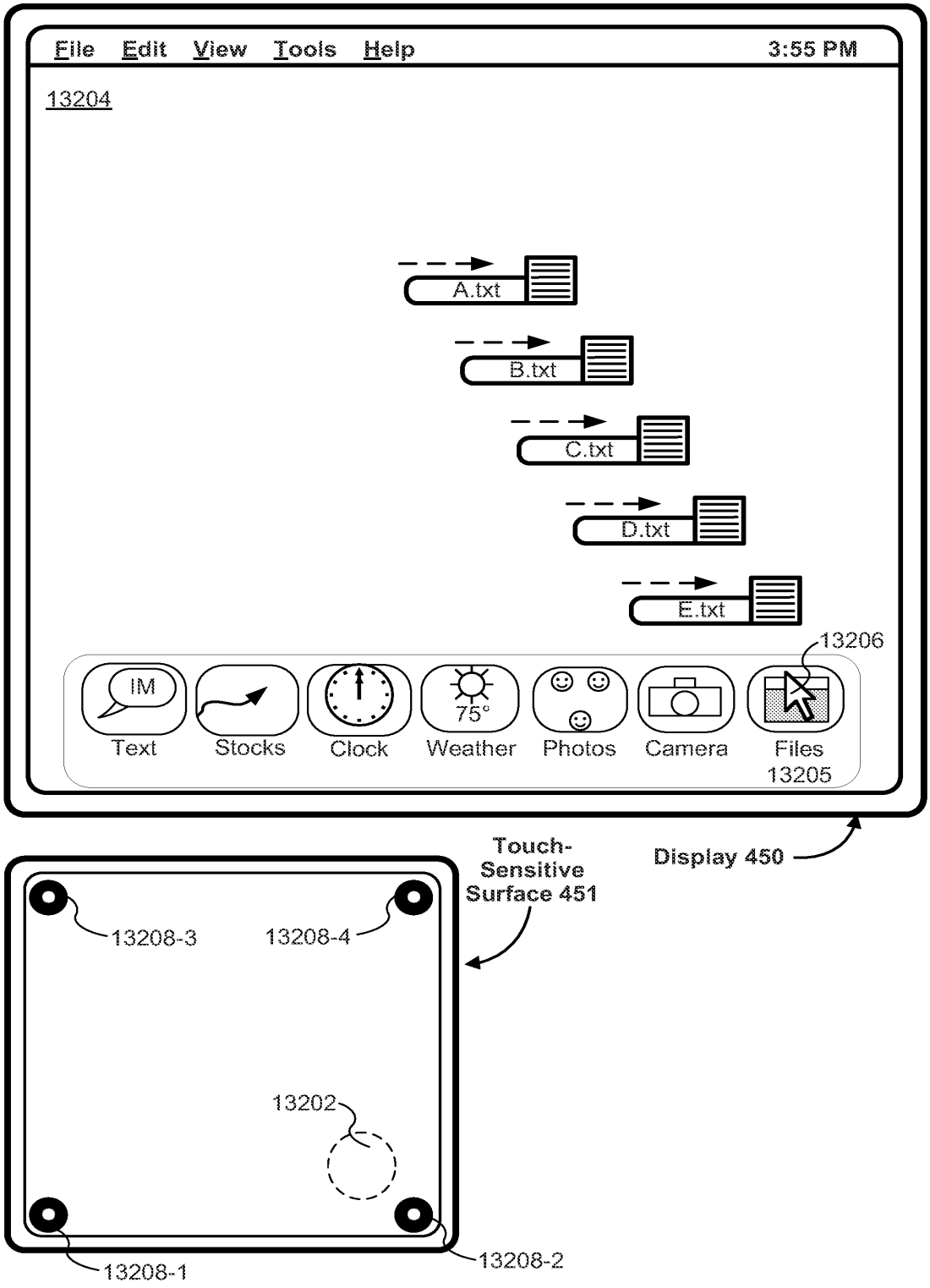

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IM
Text
Stocks
Clock
75°
Weather
Photos
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Display 450
Touch-Sensitive Surface 451
13208-3
13208-4
13202
13208-1
13208-2

Figure 8J

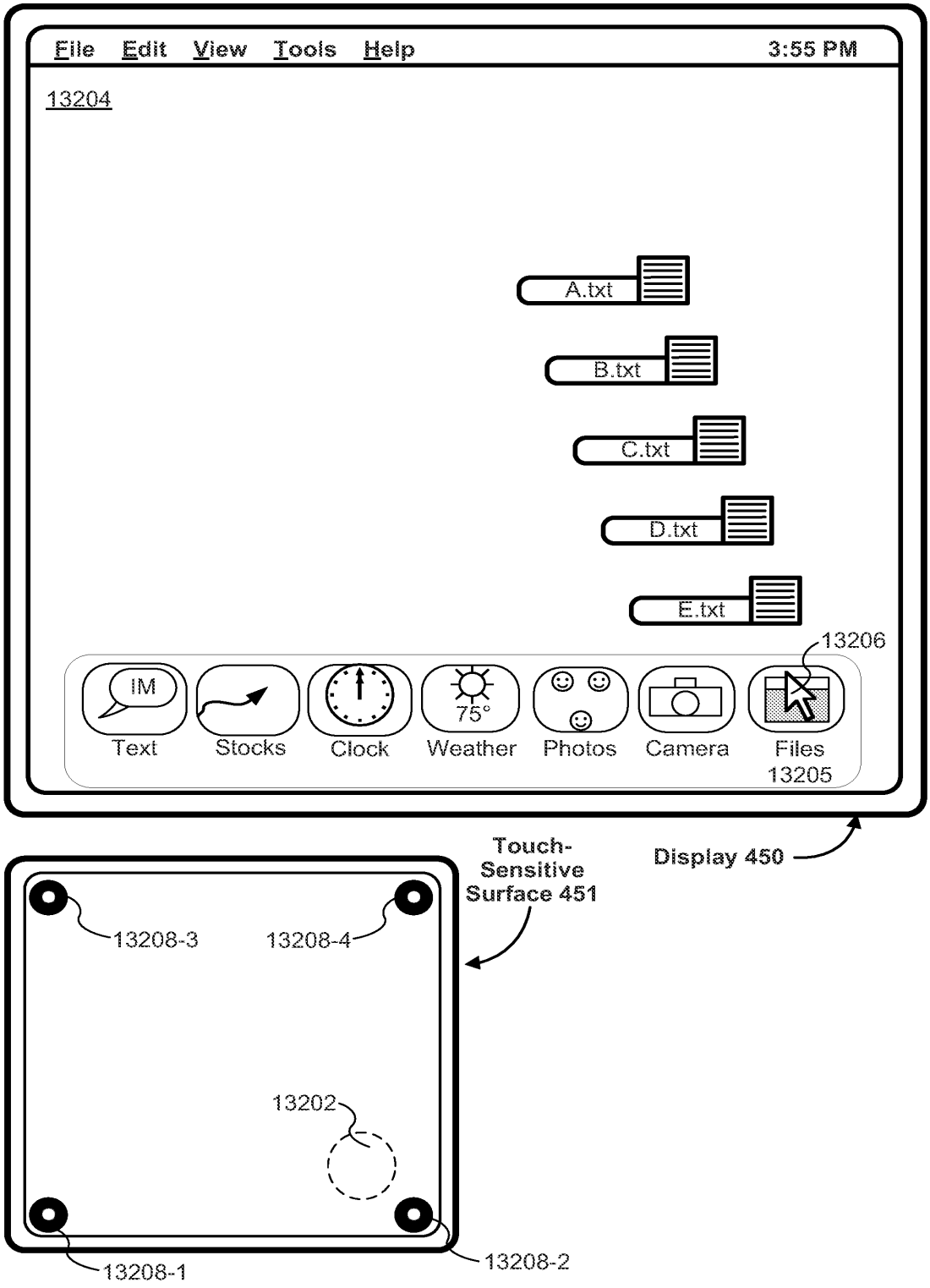

File Edit View Tools Help
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Text
Stocks
Clock
75°
Weather
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Display 450
Touch-Sensitive Surface 451
13208-3
13208-4
13202
13208-1
13208-2

Figure 8K

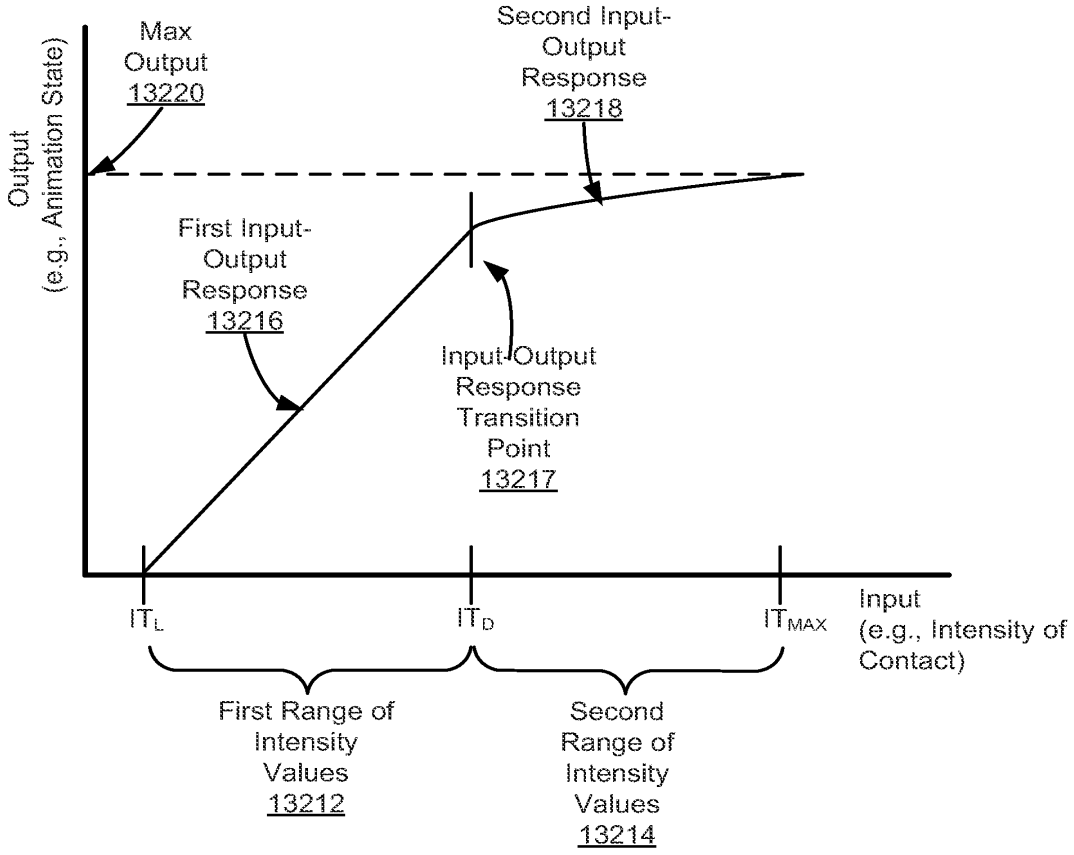

Output
(e.g., Animation State)
Max
Output
13220
Second Input-
Output
Response
13218
First Input-
Output
Response
13216
Input-Output
Response
Transition
Point
13217
IT_L
IT_D
IT_MAX
Input
(e.g., Intensity of
Contact)
First Range of
Intensity
Values
13212
Second
Range of
Intensity
Values
13214

Figure 8L

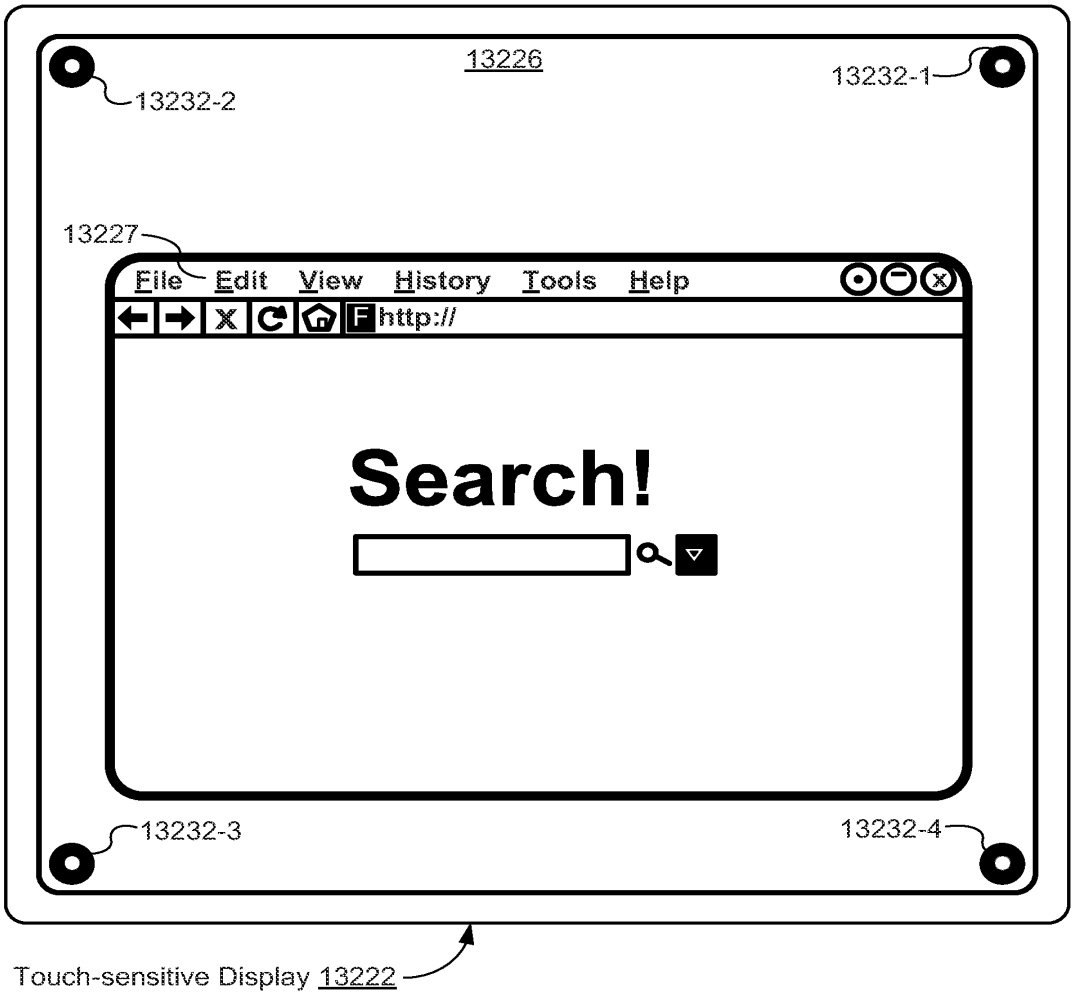

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13232-1
13232-2
13227
File Edit View History Tools Help
http://
Search!
13232-3
13232-4
Touch-sensitive Display 13222

Figure 8M

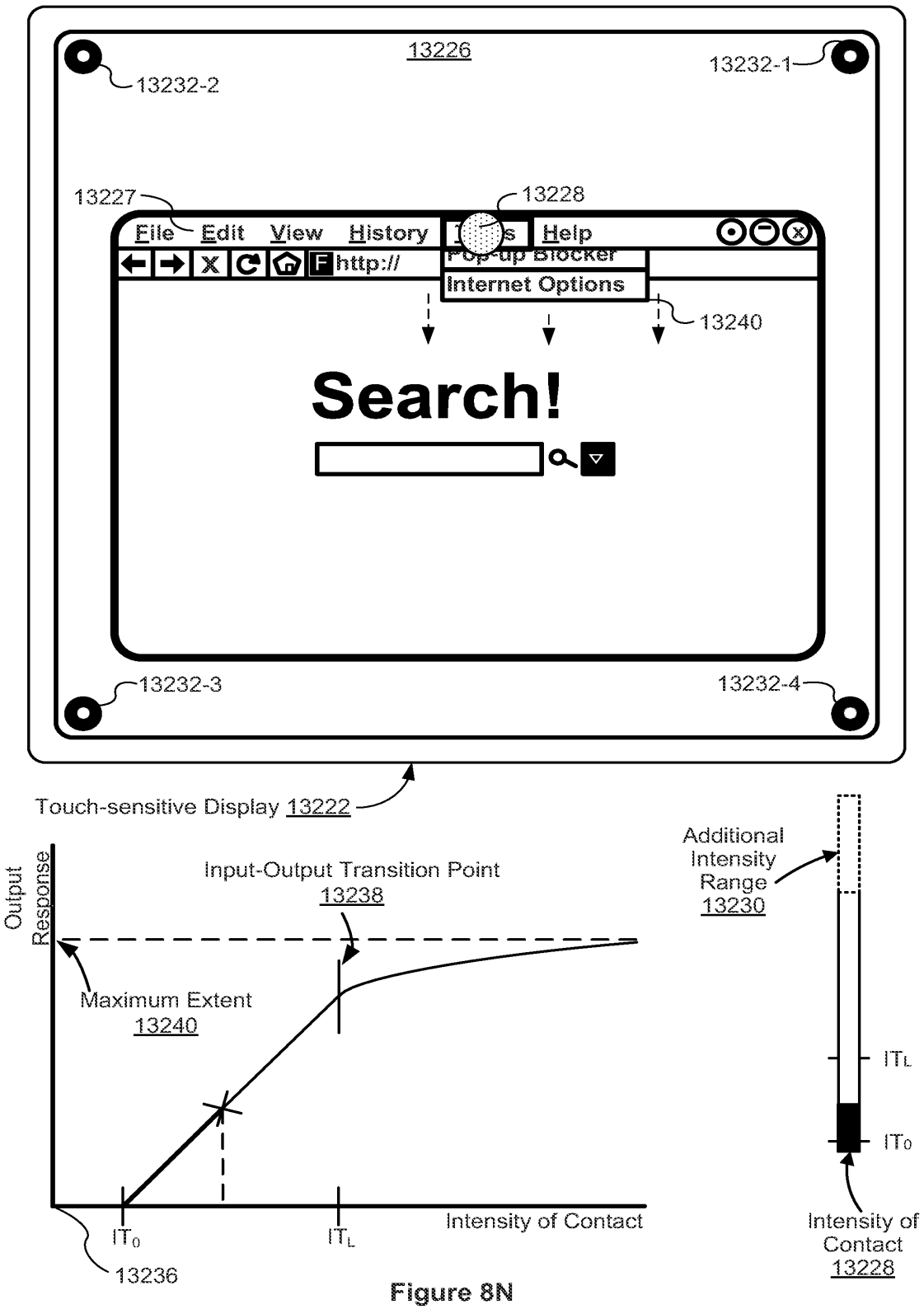

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13232-1
13232-2
13227
13228
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View
History
Help
http://
Pop-up Blocker
Internet Options
13240
Search!
13232-3
13232-4
Touch-sensitive Display 13222
Output Response
Input-Output Transition Point
13238
Maximum Extent
13240
Intensity of Contact
IT0
ITL
13236
Additional Intensity Range
13230
ITL
IT0
Intensity of Contact
13228

Figure 8N

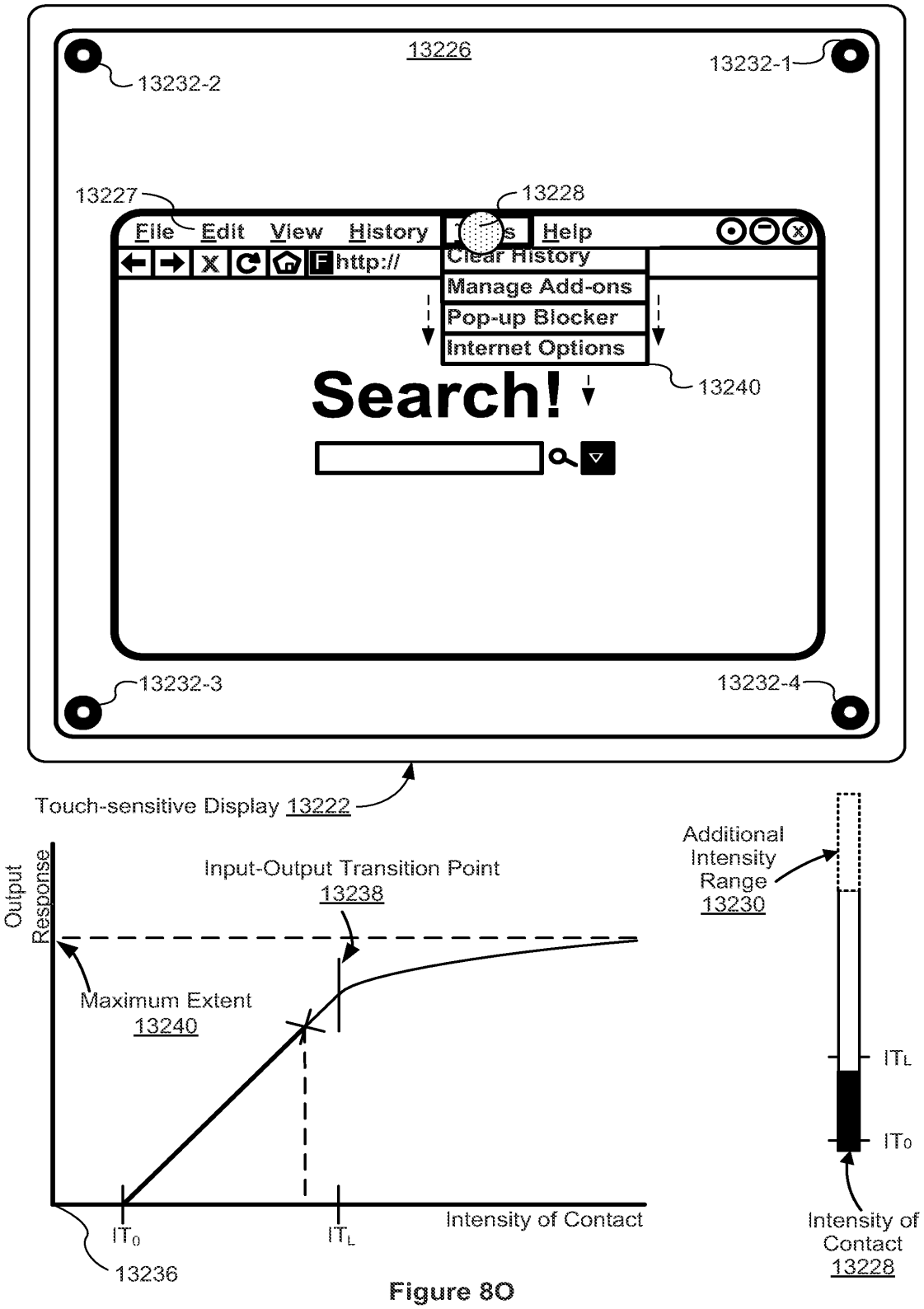

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13232-1
13227
13228
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History
Help
http://
Clear History
Manage Add-ons
Pop-up Blocker
Internet Options
13240
Search!
13232-3
13232-4
Touch-sensitive Display 13222
Output Response
Input-Output Transition Point
13238
Maximum Extent
13240
Intensity of Contact
IT0
ITL
13236
Additional Intensity Range
13230
ITL
IT0
Intensity of Contact
13228

Figure 8O

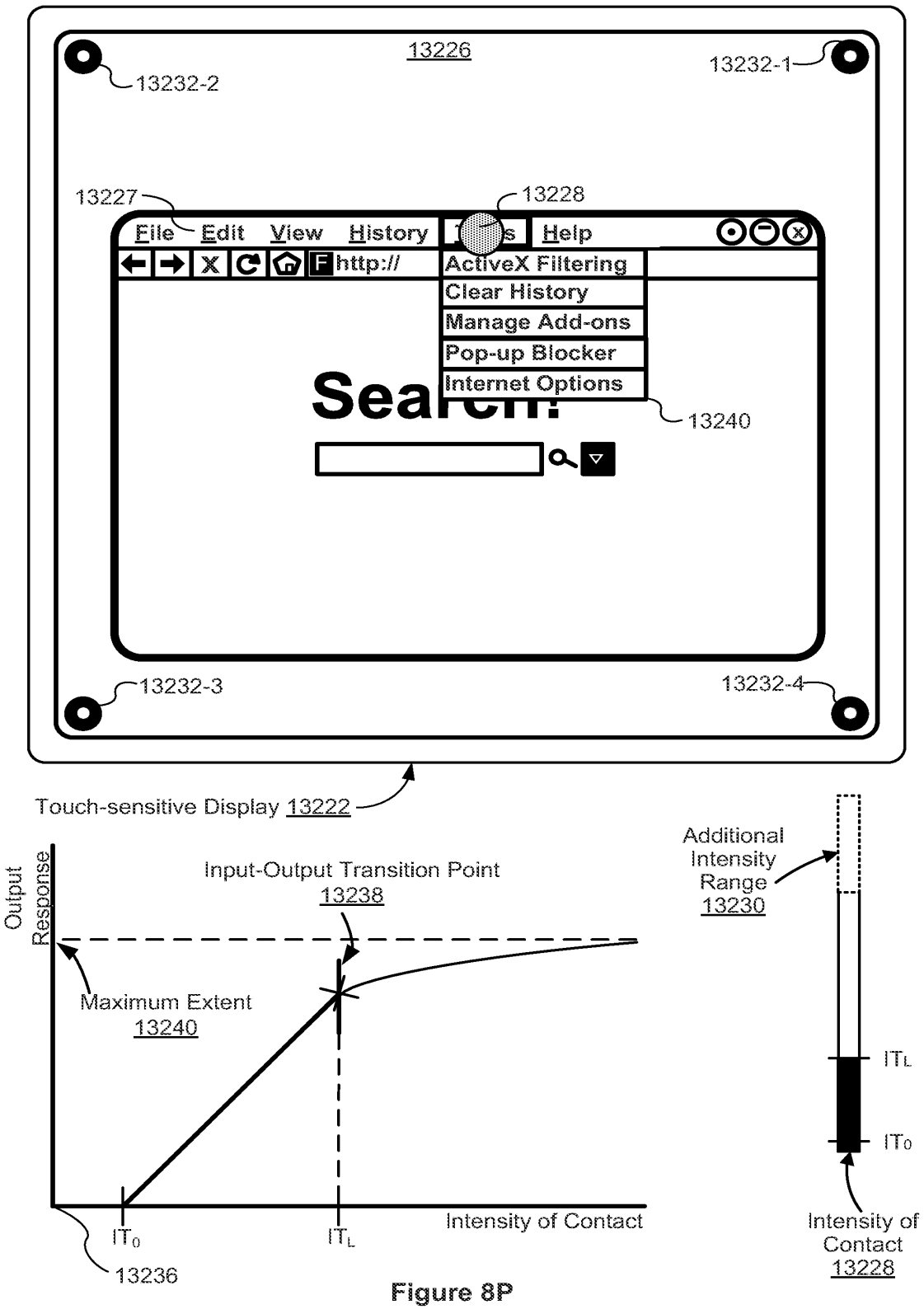

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13232-1
13232-2
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13228
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ActiveX Filtering
Clear History
Manage Add-ons
Pop-up Blocker
Internet Options
13240
13232-3
13232-4
Touch-sensitive Display 13222
Output Response
Input-Output Transition Point
13238
Maximum Extent
13240
Intensity of Contact
IT0
ITL
13236
Additional Intensity Range
13230
ITL
IT0
Intensity of Contact
13228

Figure 8P

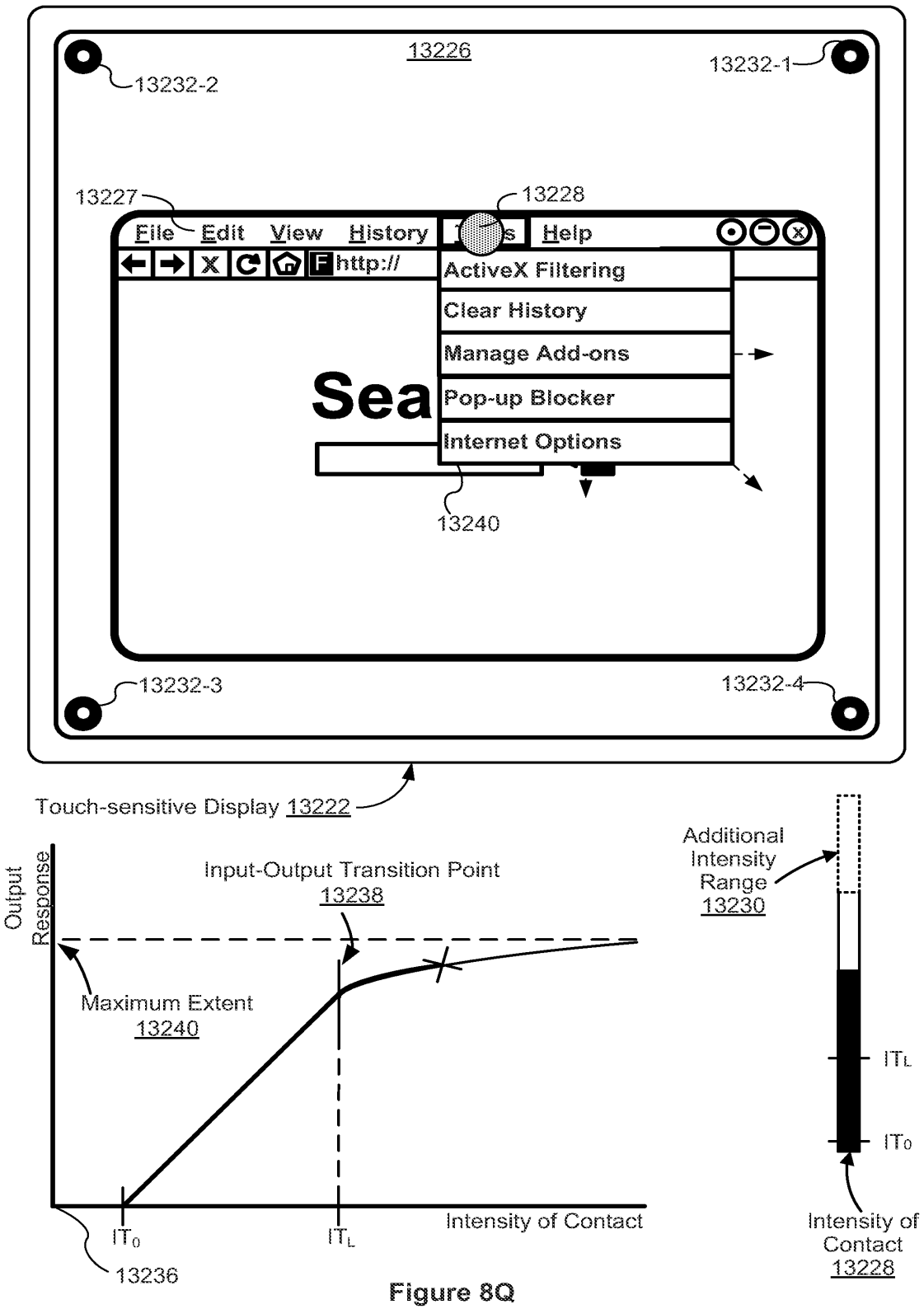

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13232-1
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ActiveX Filtering
Clear History
Manage Add-ons
Pop-up Blocker
Internet Options
Sea
13240
13232-3
13232-4
Touch-sensitive Display 13222
Output Response
Input-Output Transition Point 13238
Maximum Extent 13240
IT0
IL
Intensity of Contact
13236
Additional Intensity Range 13230
IL
IT0
Intensity of Contact 13228

Figure 8Q

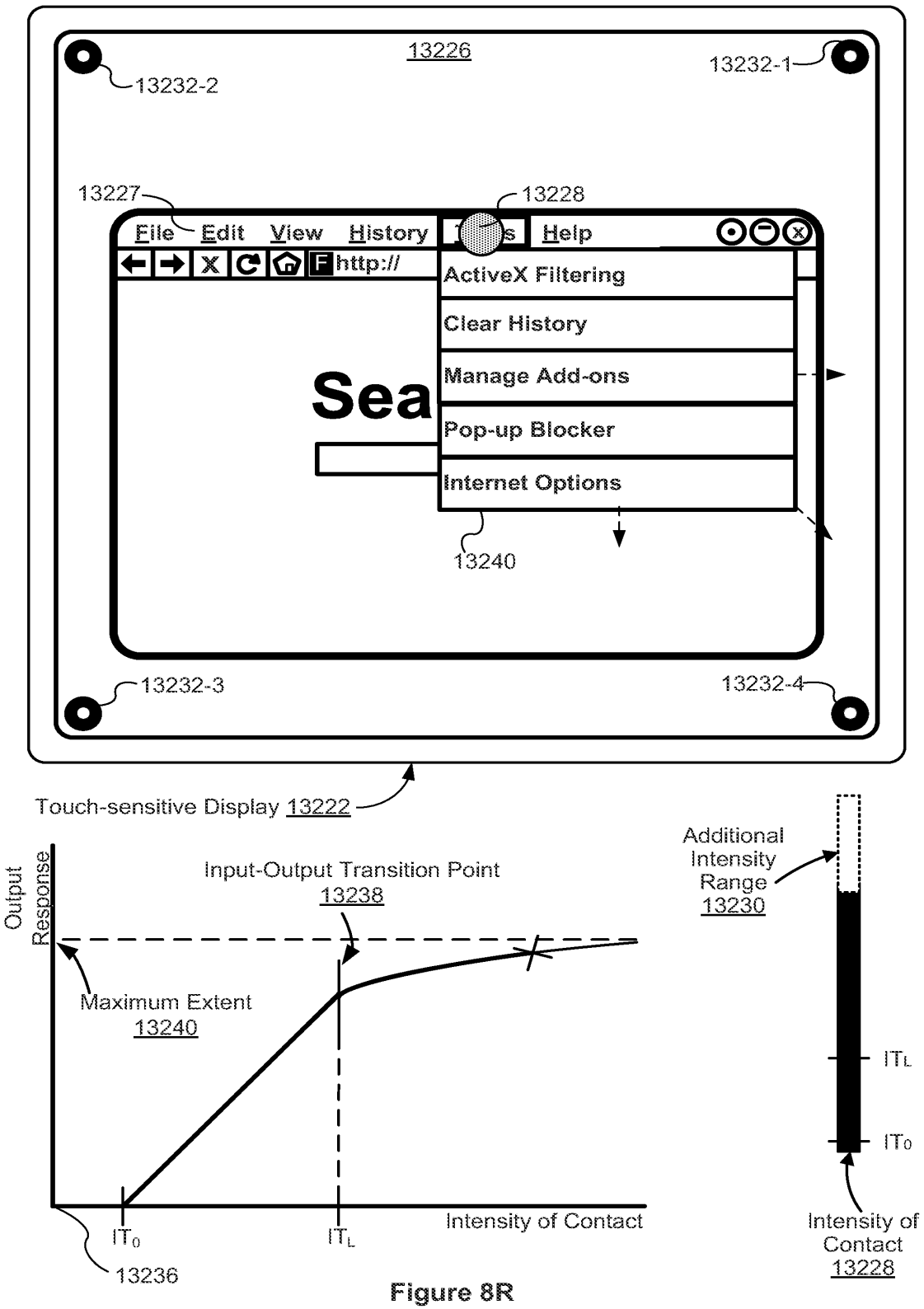

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13232-1
13232-2
13227
13228
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View
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Help
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ActiveX Filtering
Clear History
Manage Add-ons
Pop-up Blocker
Internet Options
Sea
13240
13232-3
13232-4
Touch-sensitive Display 13222
Output Response
Input-Output Transition Point 13238
Maximum Extent 13240
IT0
ITL
Intensity of Contact
13236
Additional Intensity Range 13230
ITL
IT0
Intensity of Contact 13228

Figure 8R

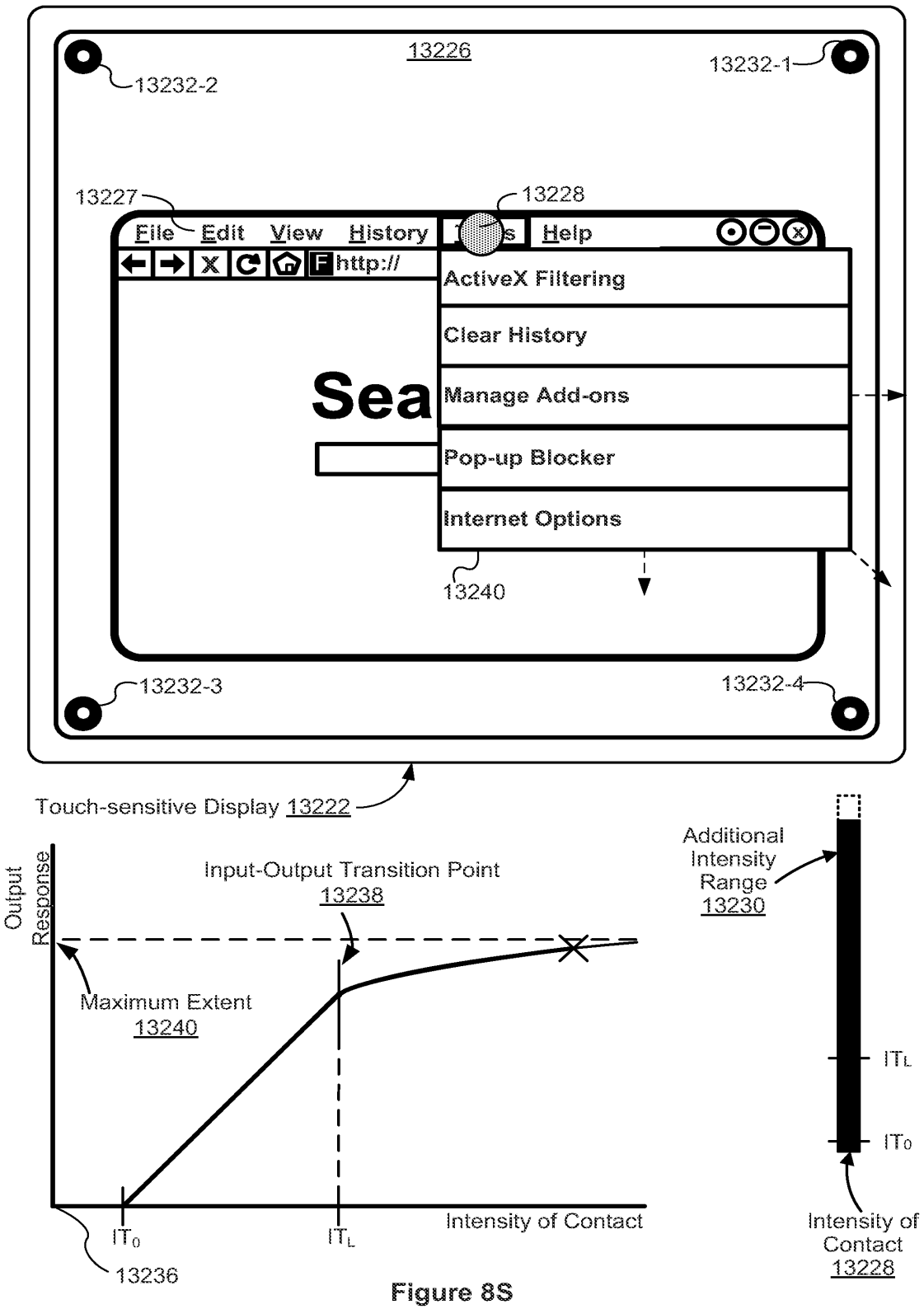

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13232-2
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13228
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ActiveX Filtering
Clear History
Manage Add-ons
Pop-up Blocker
Internet Options
13240
13232-3
13232-4
Touch-sensitive Display 13222
Output Response
Input-Output Transition Point 13238
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IL
Intensity of Contact
13236
Additional Intensity Range 13230
IL
IT0
Intensity of Contact 13228

Figure 8S

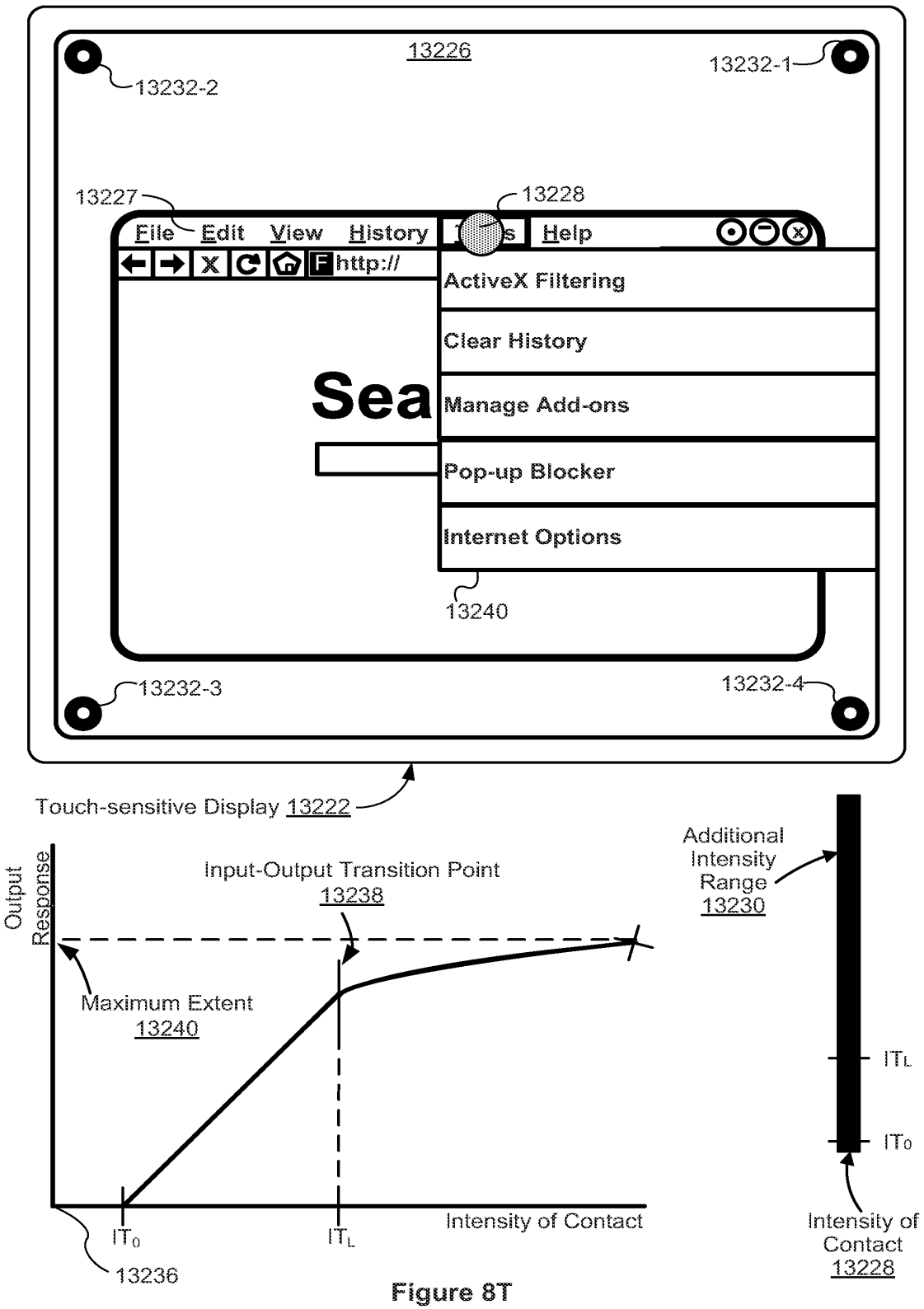

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ActiveX Filtering
Clear History
Sea
Manage Add-ons
Pop-up Blocker
Internet Options
13240
13232-3
13232-4
Touch-sensitive Display 13222
Output Response
Input-Output Transition Point
13238
Maximum Extent
13240
Intensity of Contact
IT0
IL
13236
Additional Intensity Range
13230
IL
IT0
Intensity of Contact
13228

Figure 8T

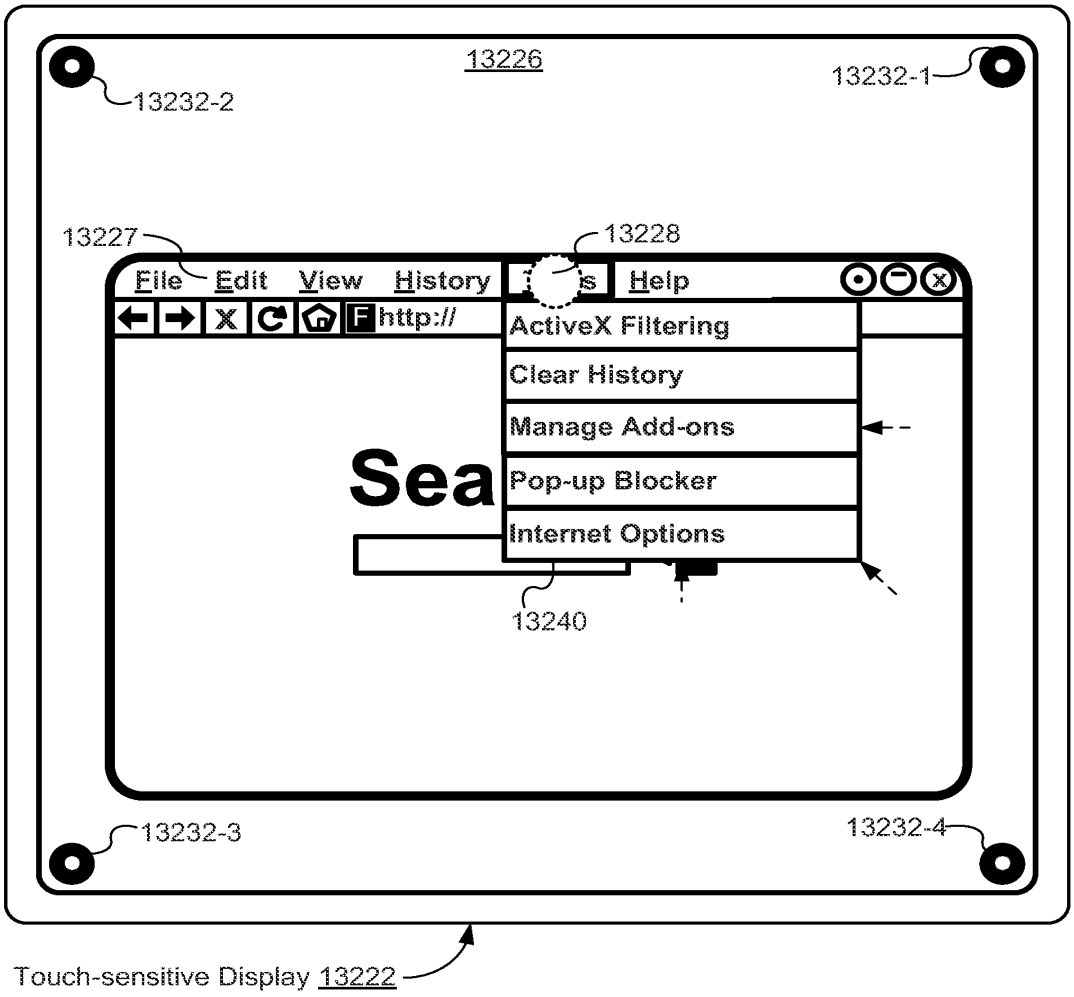

13226
13232-1
13232-2
13227
13228
File
Edit
View
History
Help
http://
ActiveX Filtering
Clear History
Manage Add-ons
Pop-up Blocker
Internet Options
Sea
13240
13232-3
13232-4
Touch-sensitive Display 13222

Figure 8U

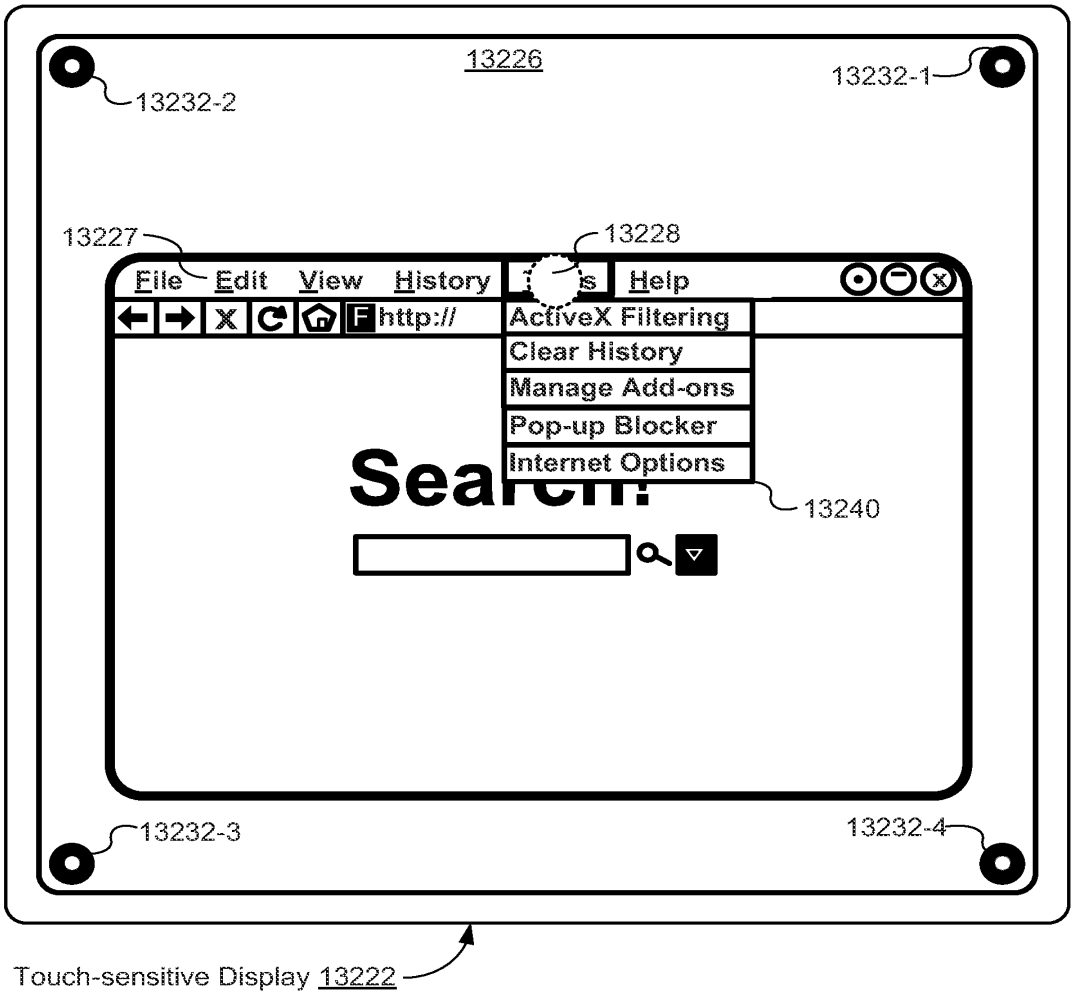

13226
13232-1
13232-2
13227
13228
File
Edit
View
History
Help
http://
ActiveX Filtering
Clear History
Manage Add-ons
Pop-up Blocker
Internet Options
13240
13232-3
13232-4
Touch-sensitive Display 13222

Figure 8V

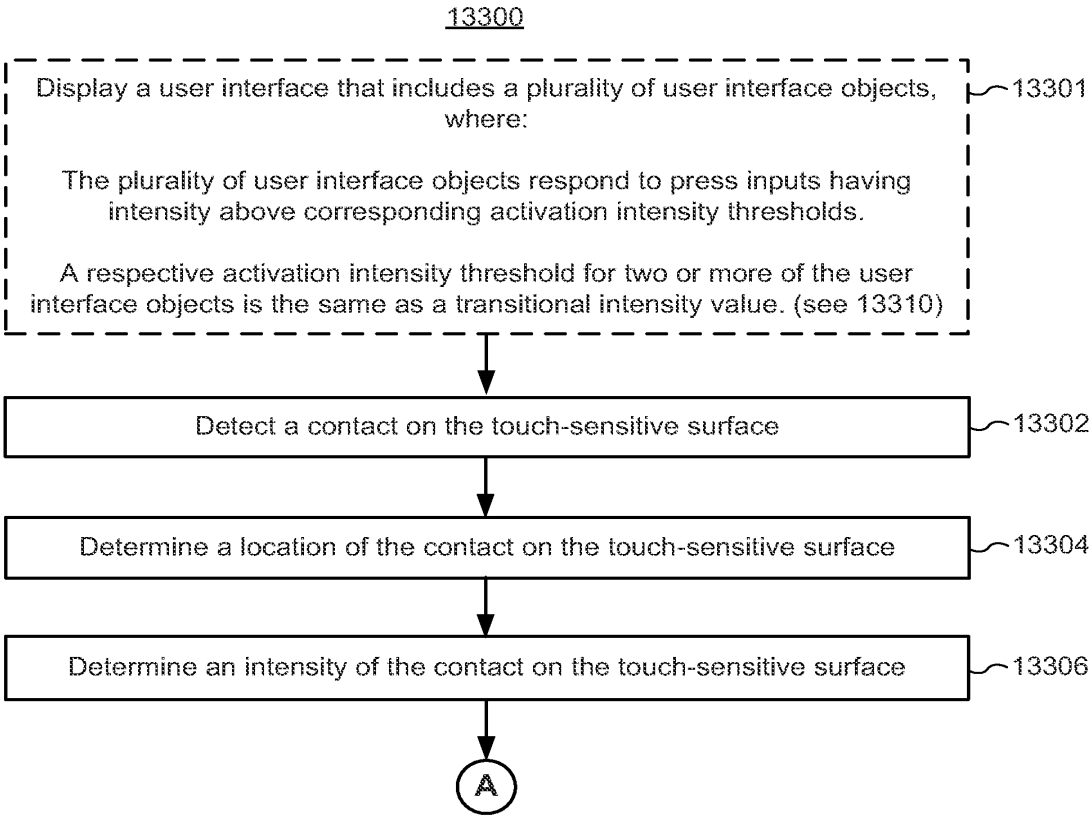

13300
Display a user interface that includes a plurality of user interface objects, where:
The plurality of user interface objects respond to press inputs having intensity above corresponding activation intensity thresholds.
A respective activation intensity threshold for two or more of the user interface objects is the same as a transitional intensity value. (see 13310)
13301
Detect a contact on the touch-sensitive surface
13302
Determine a location of the contact on the touch-sensitive surface
13304
Determine an intensity of the contact on the touch-sensitive surface
13306
A

Figure 9A

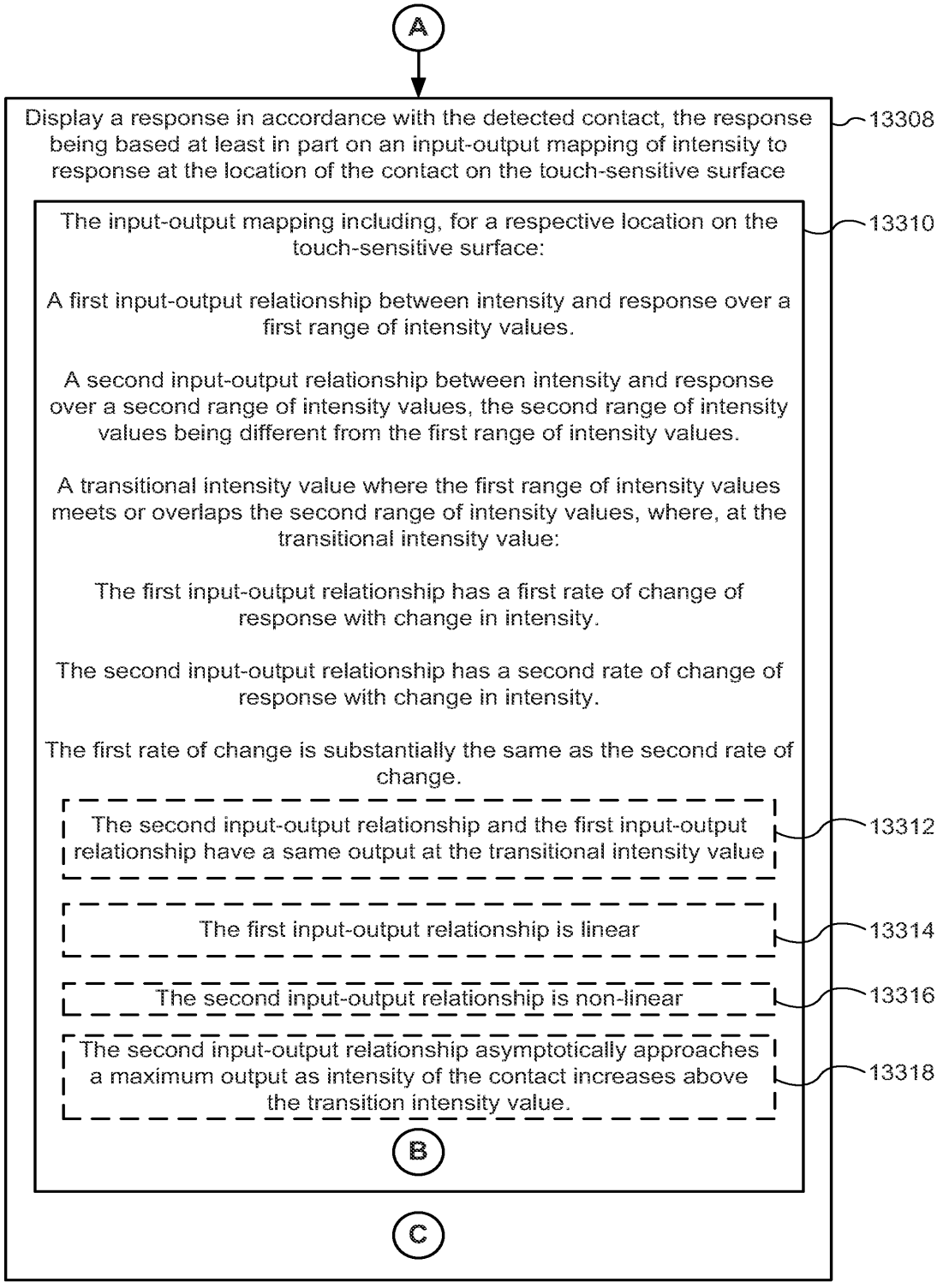

A
Display a response in accordance with the detected contact, the response being based at least in part on an input-output mapping of intensity to response at the location of the contact on the touch-sensitive surface
13308
The input-output mapping including, for a respective location on the touch-sensitive surface:
13310
A first input-output relationship between intensity and response over a first range of intensity values.
A second input-output relationship between intensity and response over a second range of intensity values, the second range of intensity values being different from the first range of intensity values.
A transitional intensity value where the first range of intensity values meets or overlaps the second range of intensity values, where, at the transitional intensity value:
The first input-output relationship has a first rate of change of response with change in intensity.
The second input-output relationship has a second rate of change of response with change in intensity.
The first rate of change is substantially the same as the second rate of change.
The second input-output relationship and the first input-output relationship have a same output at the transitional intensity value
13312
The first input-output relationship is linear
13314
The second input-output relationship is non-linear
13316
The second input-output relationship asymptotically approaches a maximum output as intensity of the contact increases above the transition intensity value.
13318
B
C

Figure 9B

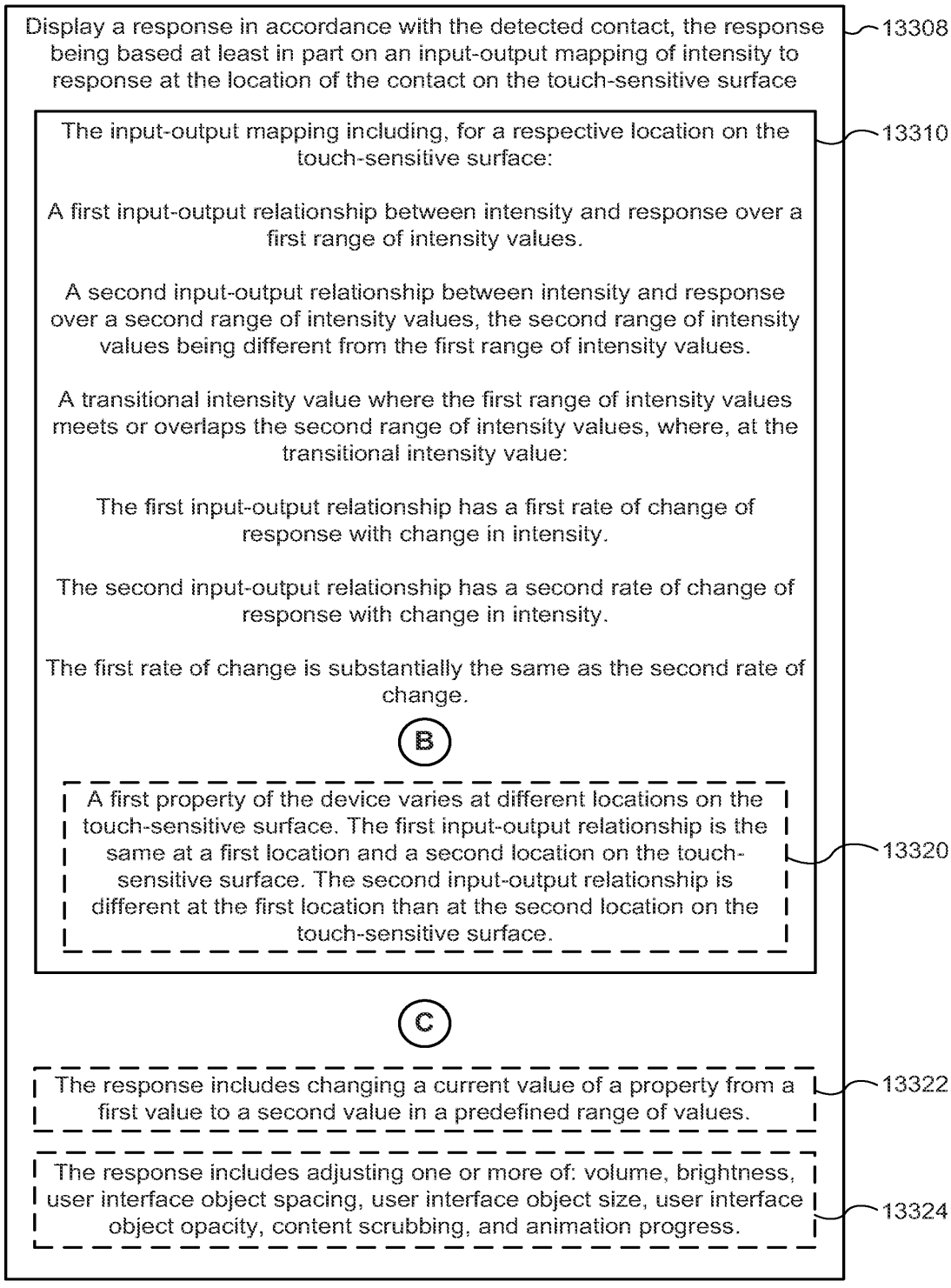

Display a response in accordance with the detected contact, the response being based at least in part on an input-output mapping of intensity to response at the location of the contact on the touch-sensitive surface
13308
The input-output mapping including, for a respective location on the touch-sensitive surface:
13310
A first input-output relationship between intensity and response over a first range of intensity values.
A second input-output relationship between intensity and response over a second range of intensity values, the second range of intensity values being different from the first range of intensity values.
A transitional intensity value where the first range of intensity values meets or overlaps the second range of intensity values, where, at the transitional intensity value:
The first input-output relationship has a first rate of change of response with change in intensity.
The second input-output relationship has a second rate of change of response with change in intensity.
The first rate of change is substantially the same as the second rate of change.
B
A first property of the device varies at different locations on the touch-sensitive surface. The first input-output relationship is the same at a first location and a second location on the touch-sensitive surface. The second input-output relationship is different at the first location than at the second location on the touch-sensitive surface.
13320
C
The response includes changing a current value of a property from a first value to a second value in a predefined range of values.
13322
The response includes adjusting one or more of: volume, brightness, user interface object spacing, user interface object size, user interface object opacity, content scrubbing, and animation progress.
13324

Figure 9C

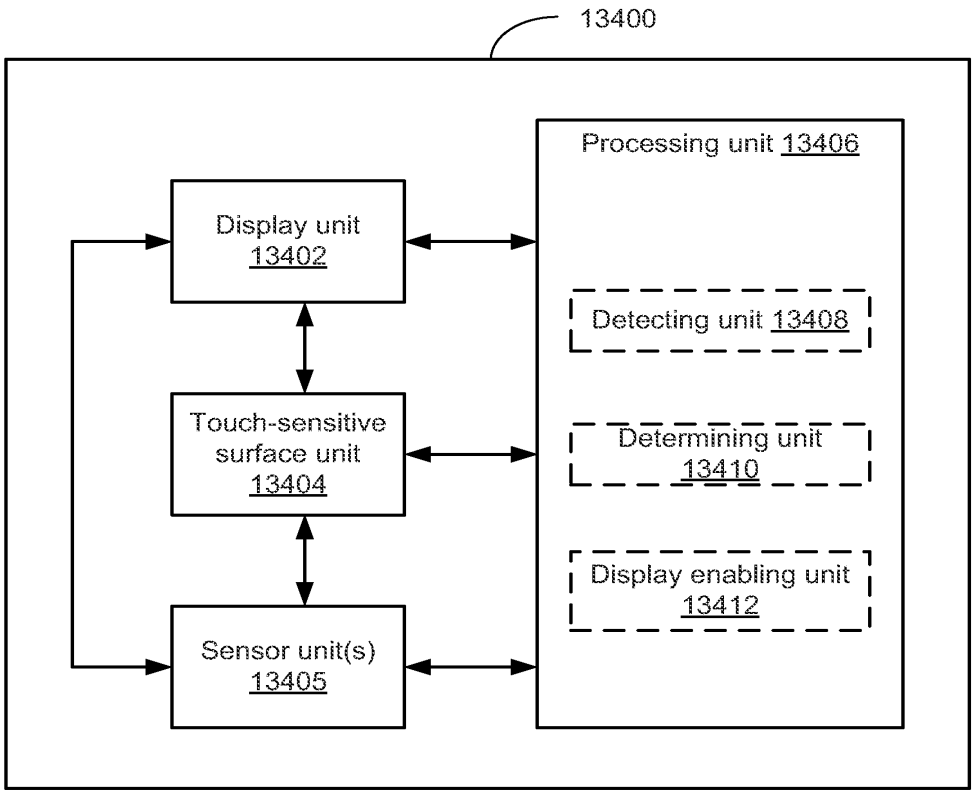
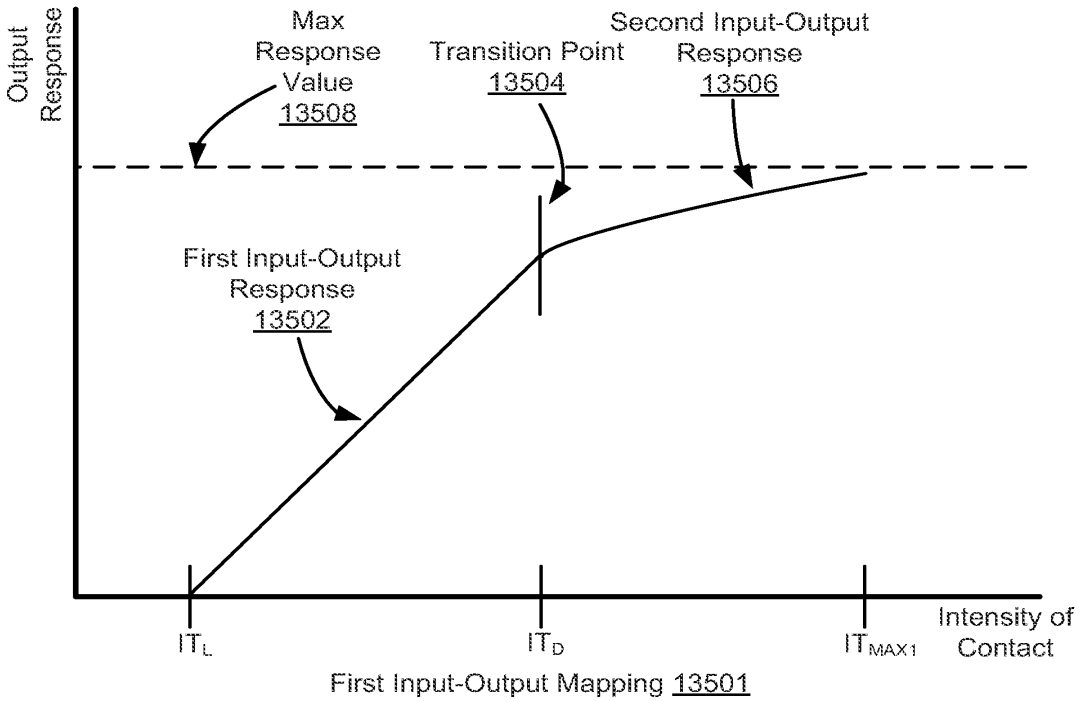

13400
Processing unit 13406
Display unit 13402
Detecting unit 13408
Touch-sensitive surface unit 13404
Determining unit 13410
Display enabling unit 13412
Sensor unit(s) 13405

Figure 10


Output Response
Max Response Value 13508
Transition Point 13504
Second Input-Output Response 13506
First Input-Output Response 13502
$IT_L$
$IT_D$
$IT_{MAX1}$
Intensity of Contact
First Input-Output Mapping 13501

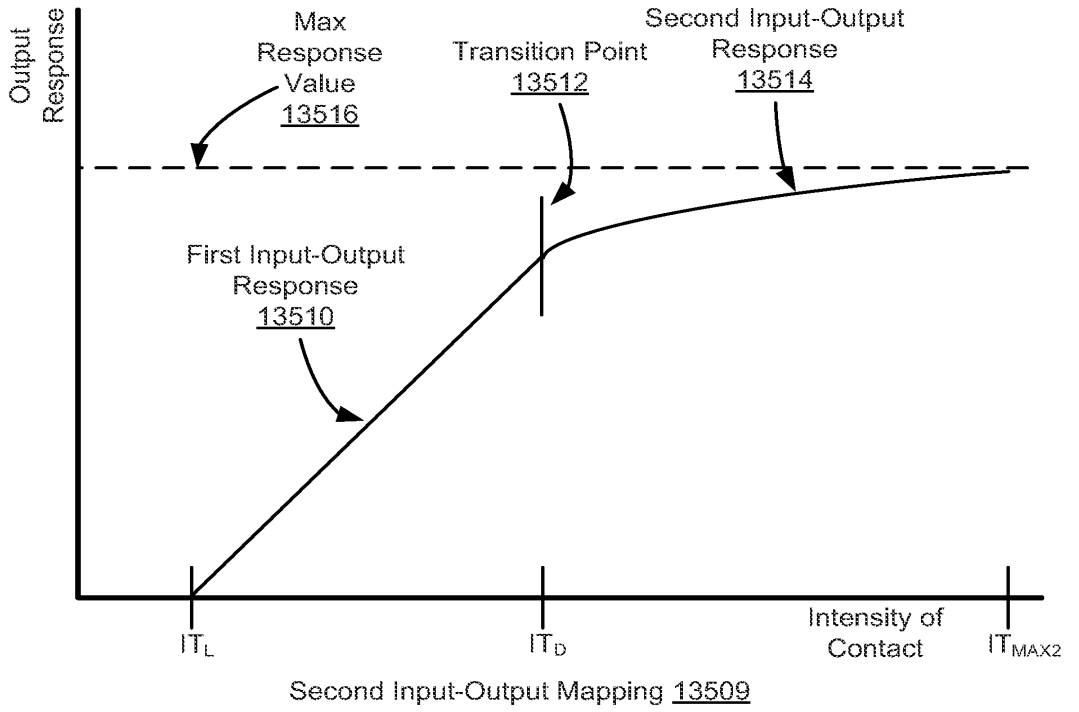
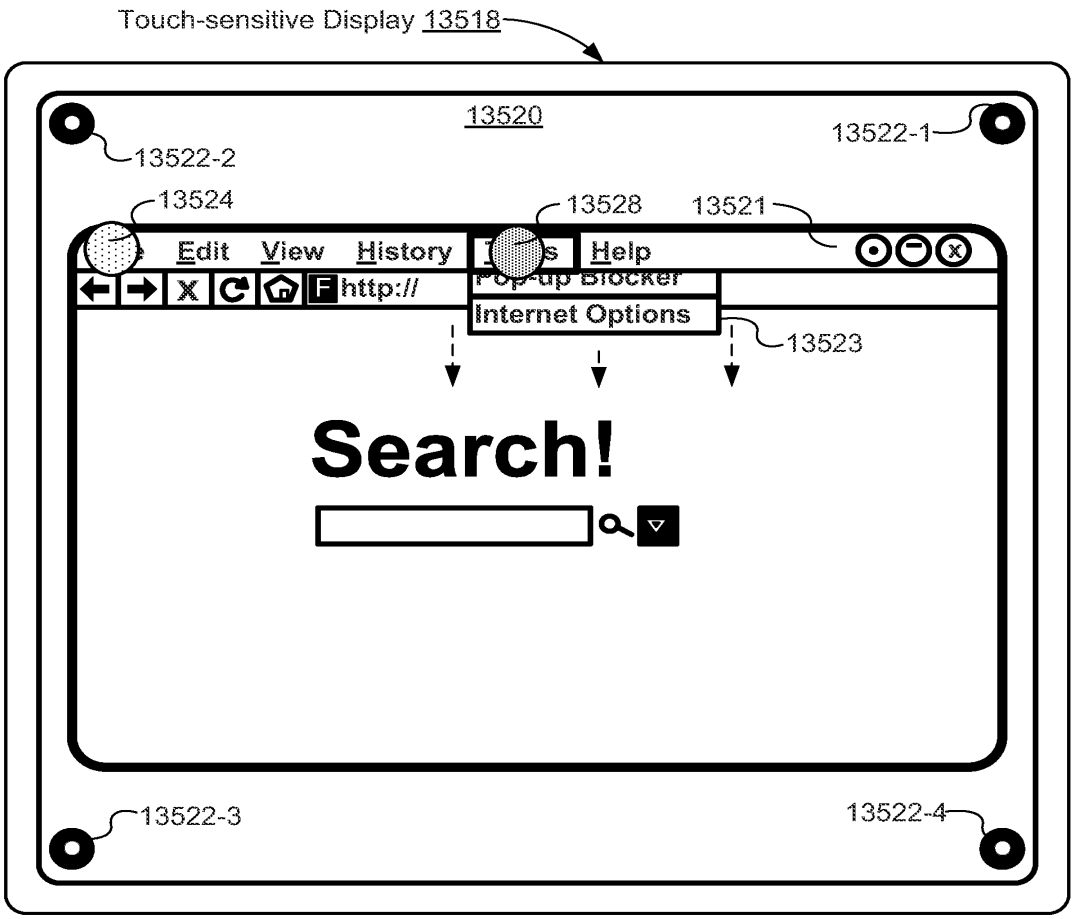

Output Response
Max Response Value 13516
Transition Point 13512
Second Input-Output Response 13514
First Input-Output Response 13510
$IT_L$
$IT_D$
Intensity of Contact
$IT_{MAX2}$
Second Input-Output Mapping 13509

Figure 11A


Touch-sensitive Display 13518
13520
13522-1
13522-2
13524
13528
13521
Edit
View
History
Help
http://
Pop-up Blocker
Internet Options
13523
Search!
13522-3
13522-4

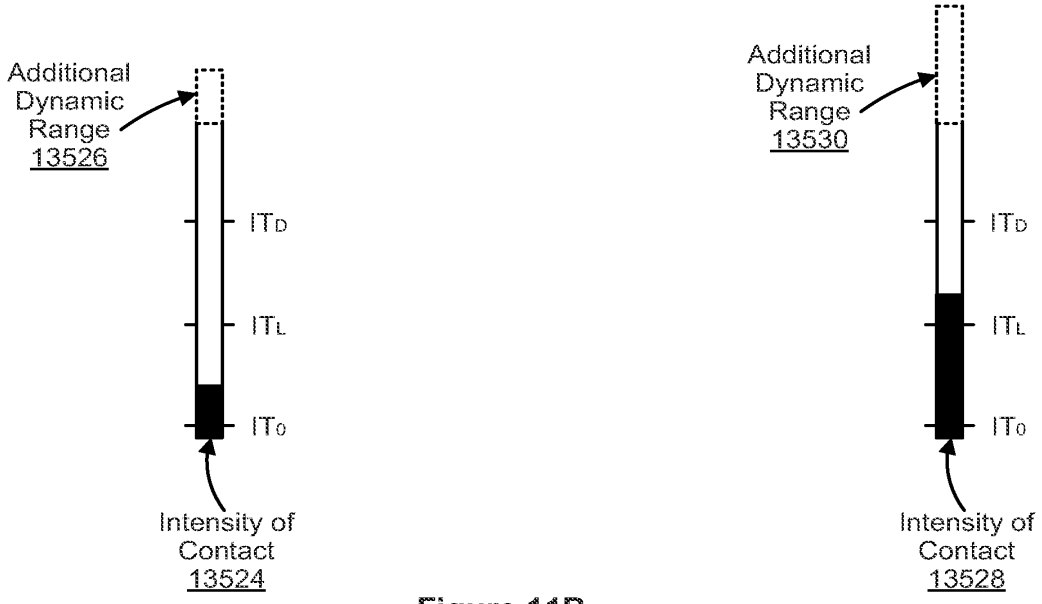

Additional Dynamic Range 13526
ITD
ITL
IT0
Intensity of Contact 13524
Additional Dynamic Range 13530
ITD
ITL
IT0
Intensity of Contact 13528

Figure 11B

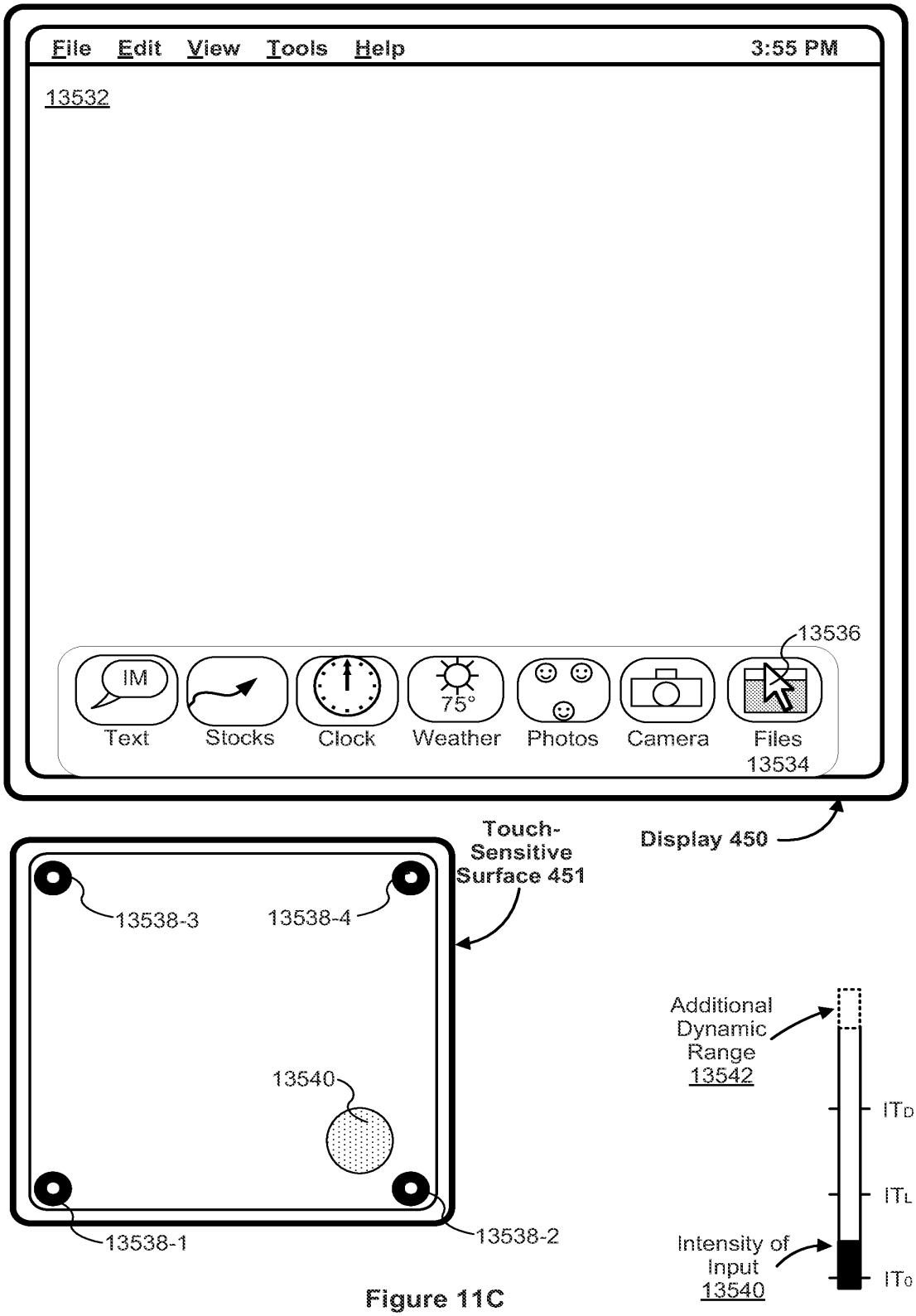

File Edit View Tools Help
3:55 PM
13532
13536
IM
Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13534
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13540
13538-1
13538-2
Additional Dynamic Range 13542
ITD
ITL
Intensity of Input 13540
ITO

Figure 11C

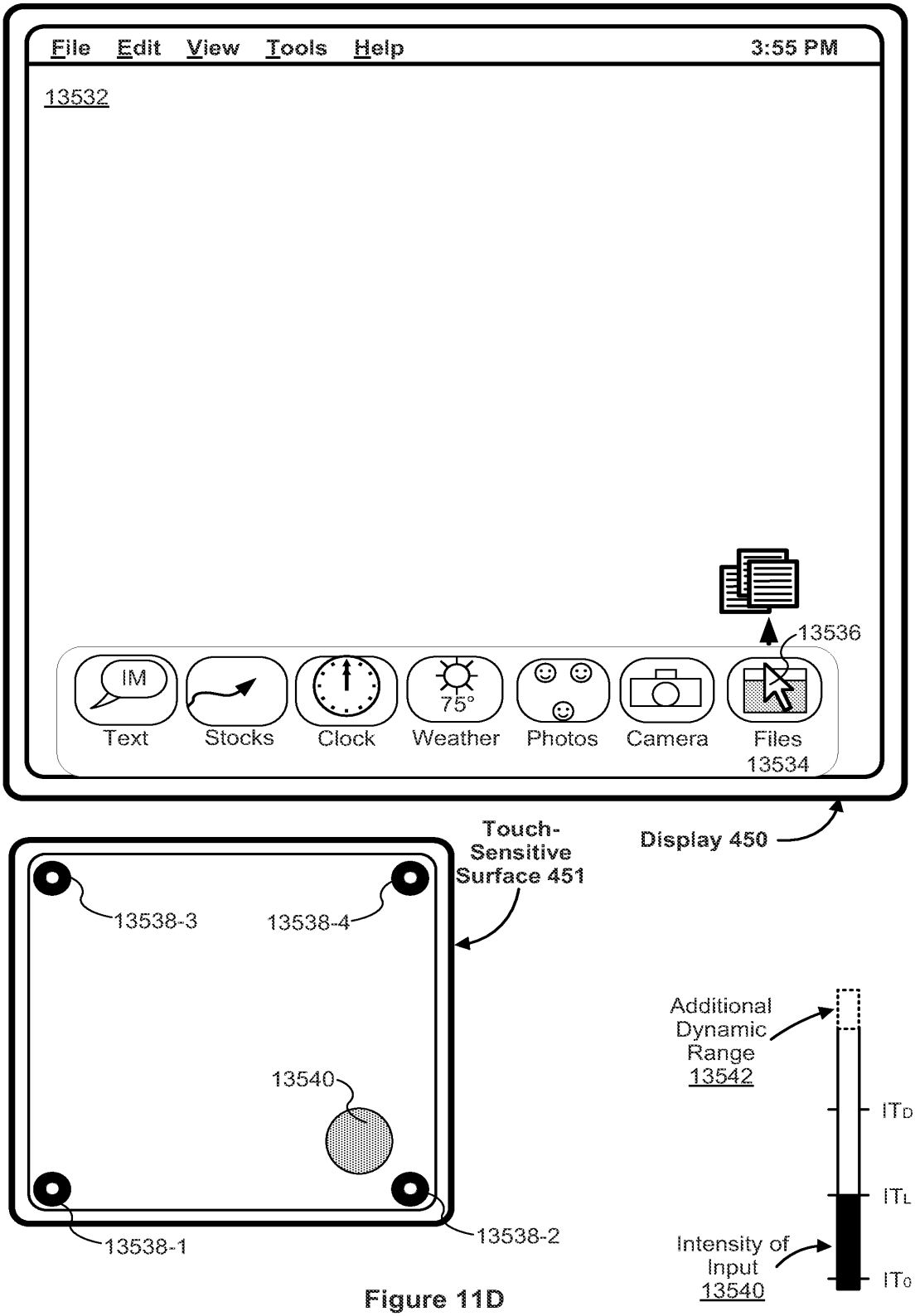

File Edit View Tools Help
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13532
13536
IM
Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13534
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13540
13538-1
13538-2
Additional Dynamic Range 13542
ITD
ITL
Intensity of Input 13540
ITO

Figure 11D

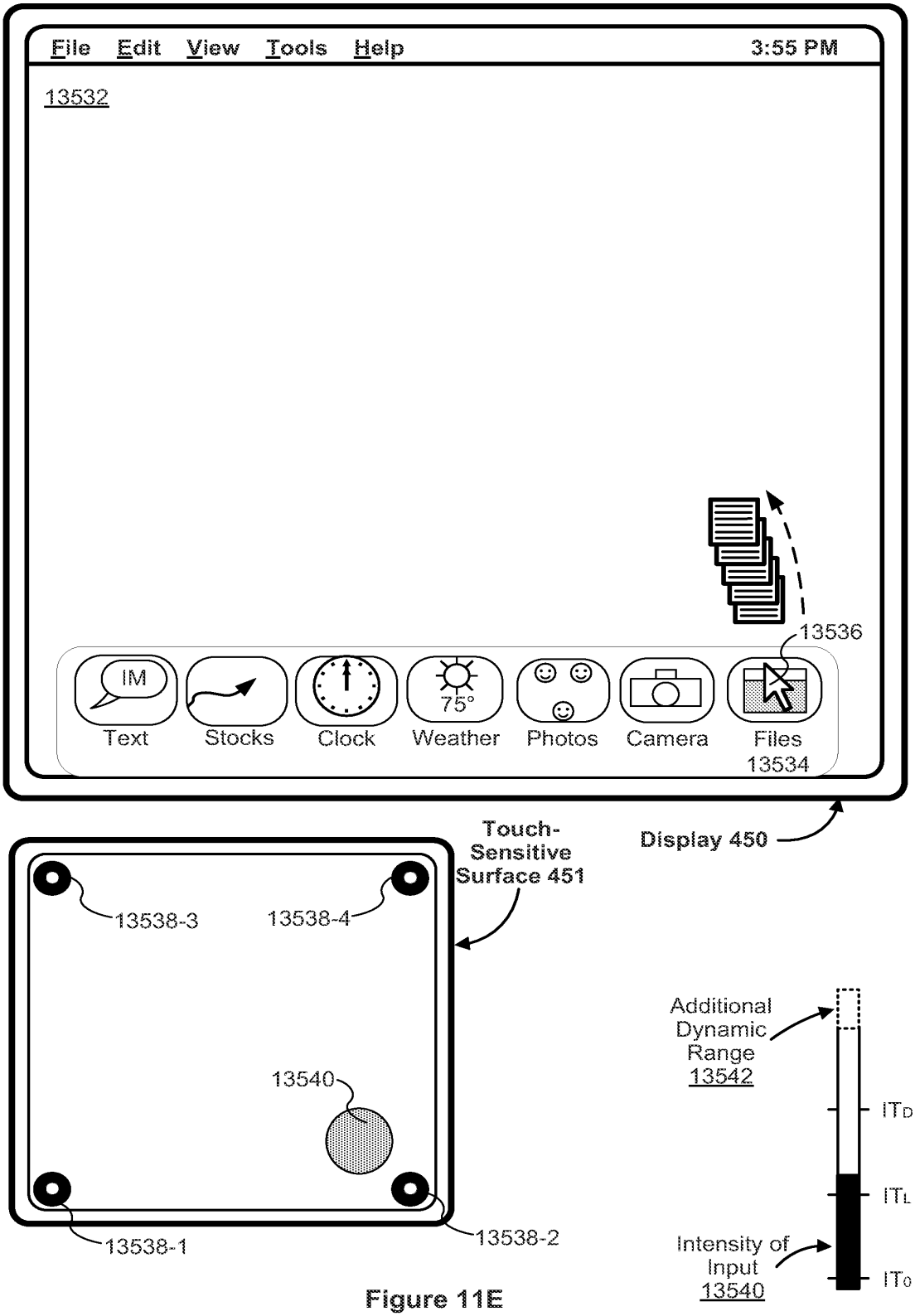

File Edit View Tools Help
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13532
13536
IM
Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13534
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13540
13538-1
13538-2
Additional Dynamic Range 13542
ITD
ITL
Intensity of Input 13540
ITO

Figure 11E

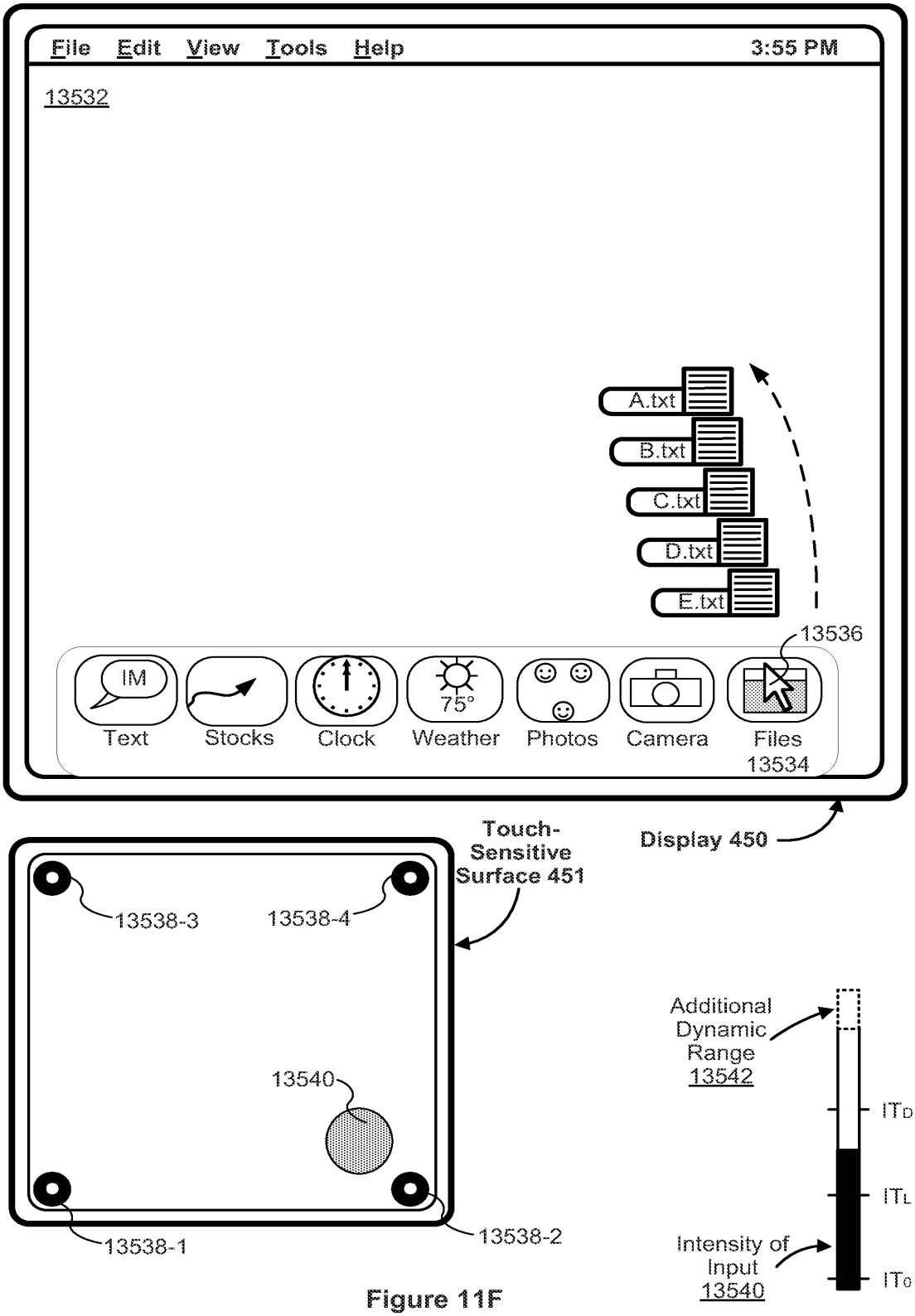

File Edit View Tools Help
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13532
A.txt
B.txt
C.txt
D.txt
E.txt
13536
IM
Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13534
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13540
13538-1
13538-2
Additional Dynamic Range 13542
ITD
ITL
Intensity of Input 13540
ITO

Figure 11F

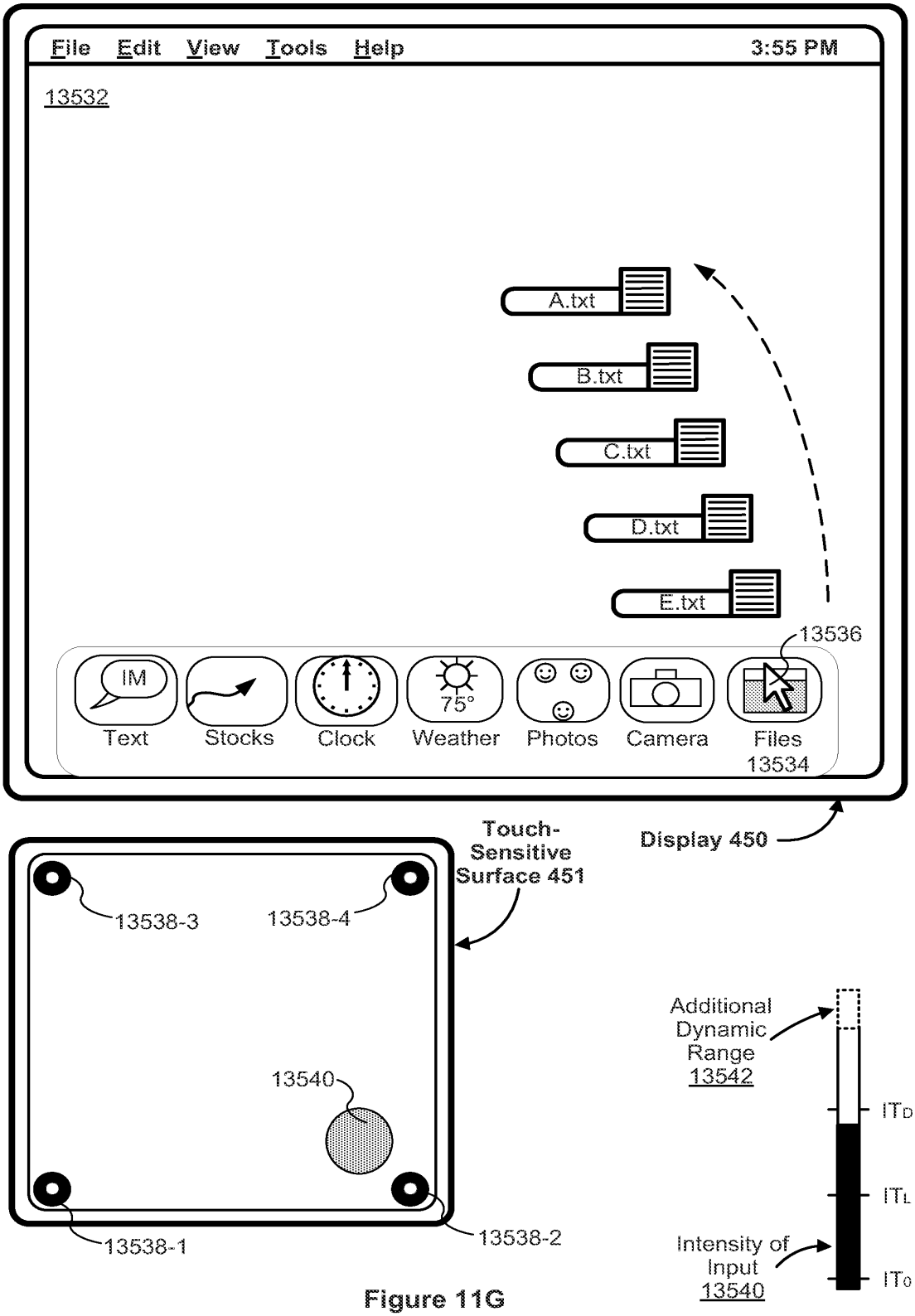

File Edit View Tools Help
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C.txt
D.txt
E.txt
13536
IM
Text
Stocks
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Weather
Photos
Camera
Files
13534
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13540
13538-1
13538-2
Additional Dynamic Range 13542
ITD
ITL
Intensity of Input 13540
ITO

Figure 11G

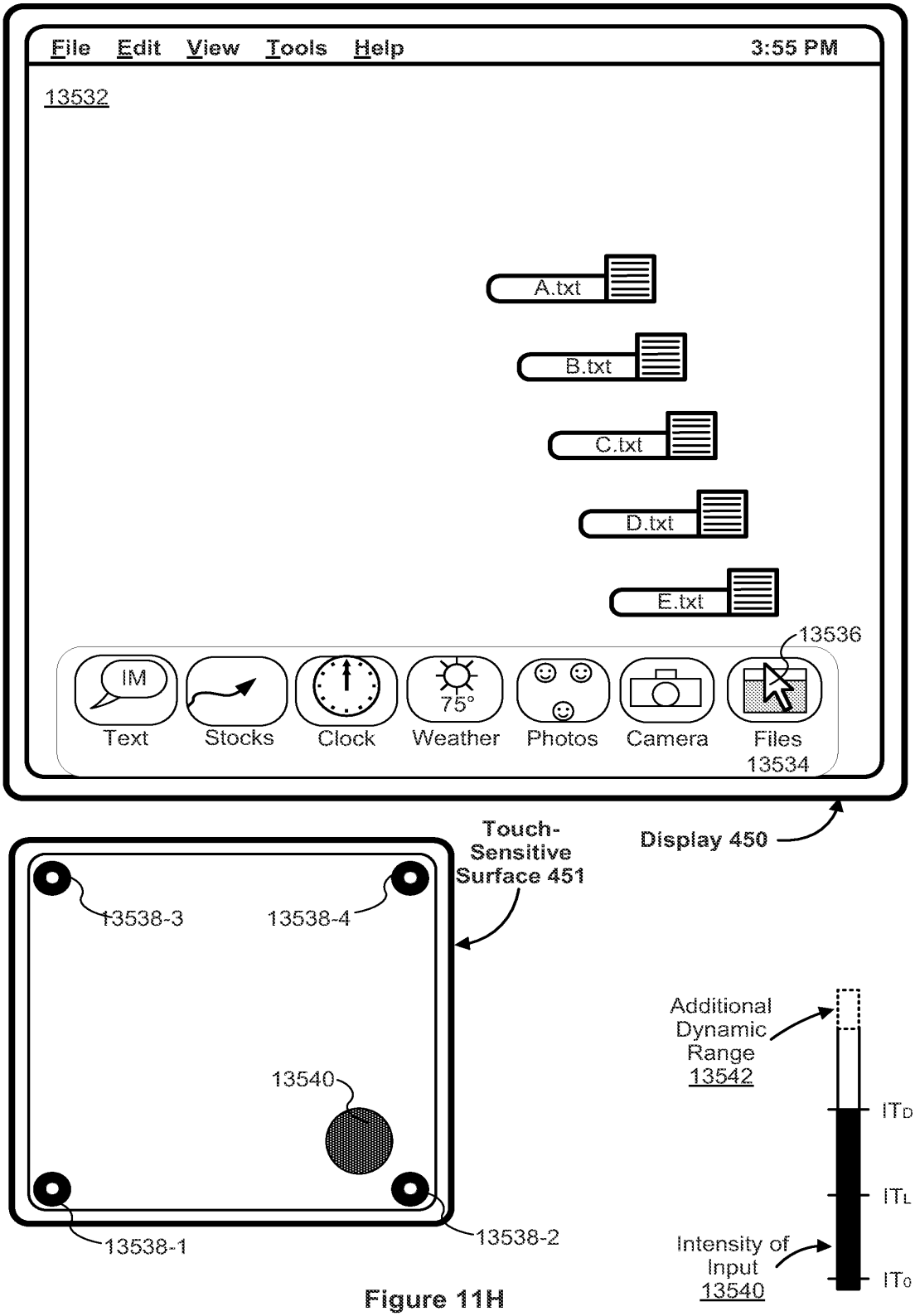

File Edit View Tools Help
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B.txt
C.txt
D.txt
E.txt
13536
IM
Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13534
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13540
13538-1
13538-2
Additional Dynamic Range 13542
ITD
ITL
Intensity of Input 13540
ITO

Figure 11H

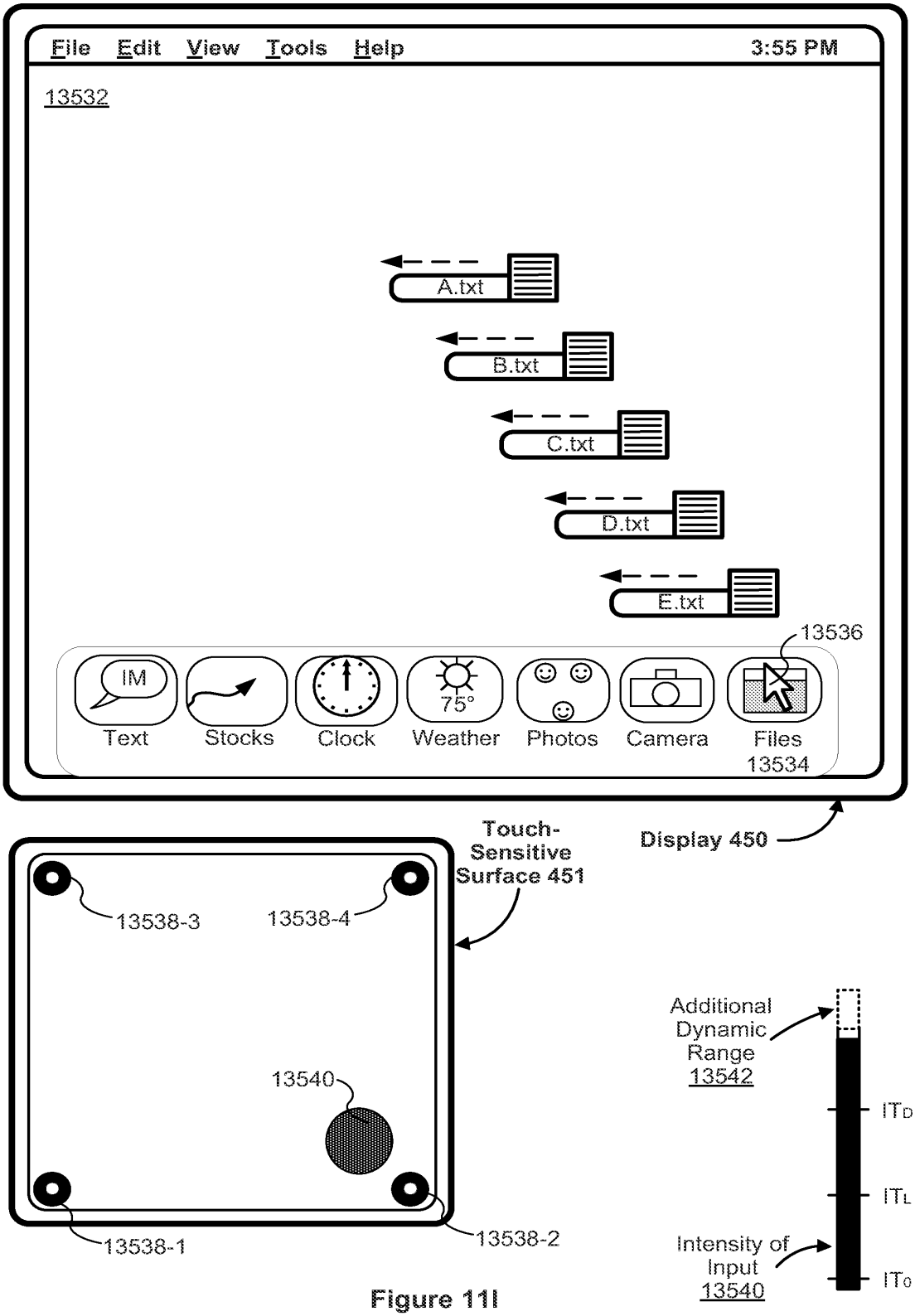

File Edit View Tools Help
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A.txt
B.txt
C.txt
D.txt
E.txt
13536
IM
Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13534
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13540
13538-1
13538-2
Additional Dynamic Range 13542
ITD
ITL
Intensity of Input 13540
ITO

Figure 11I

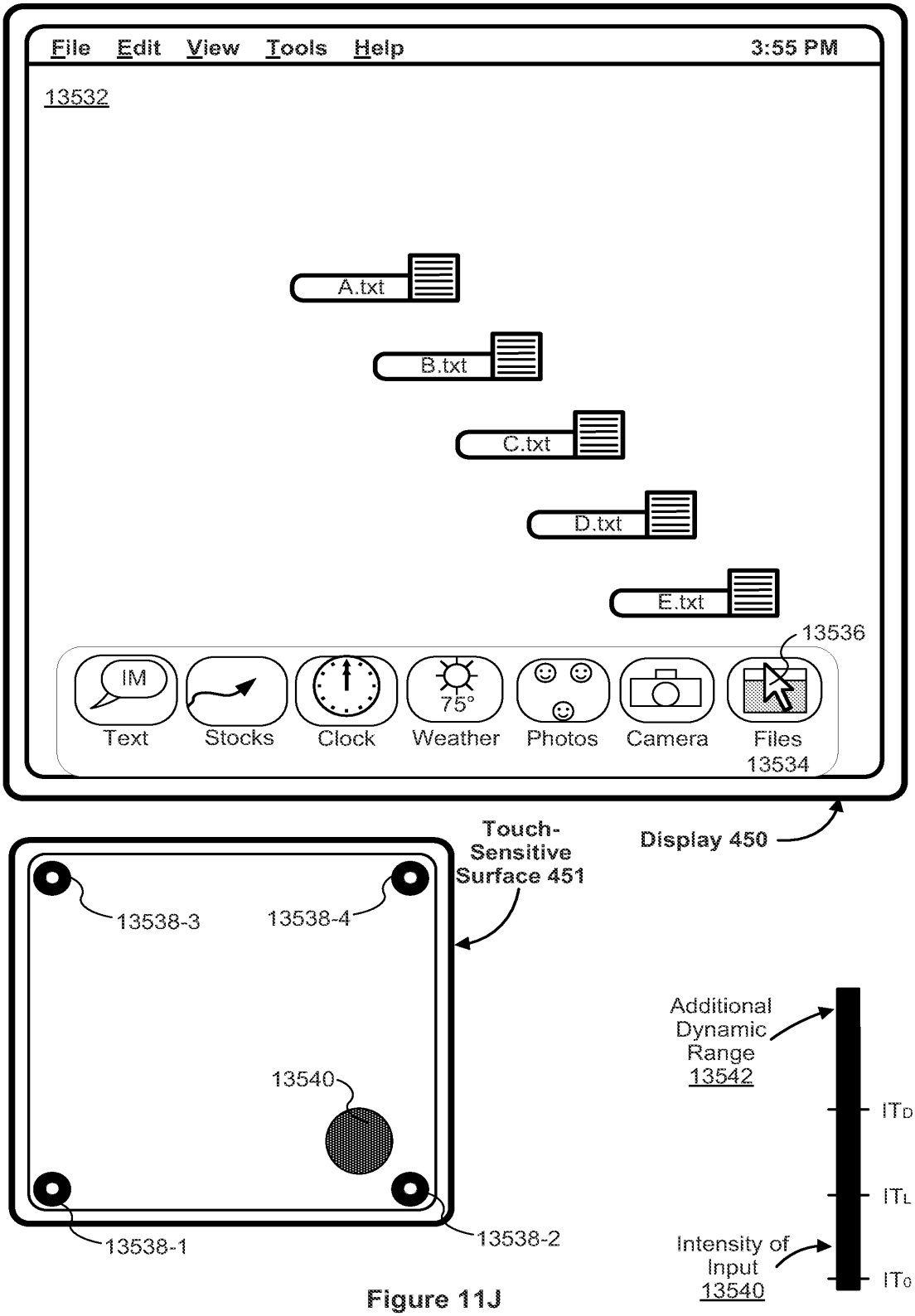

File Edit View Tools Help
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Text
Stocks
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Weather
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Camera
Files
13534
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13540
13538-1
13538-2
Additional Dynamic Range 13542
ITD
ITL
Intensity of Input 13540
ITO

Figure 11J

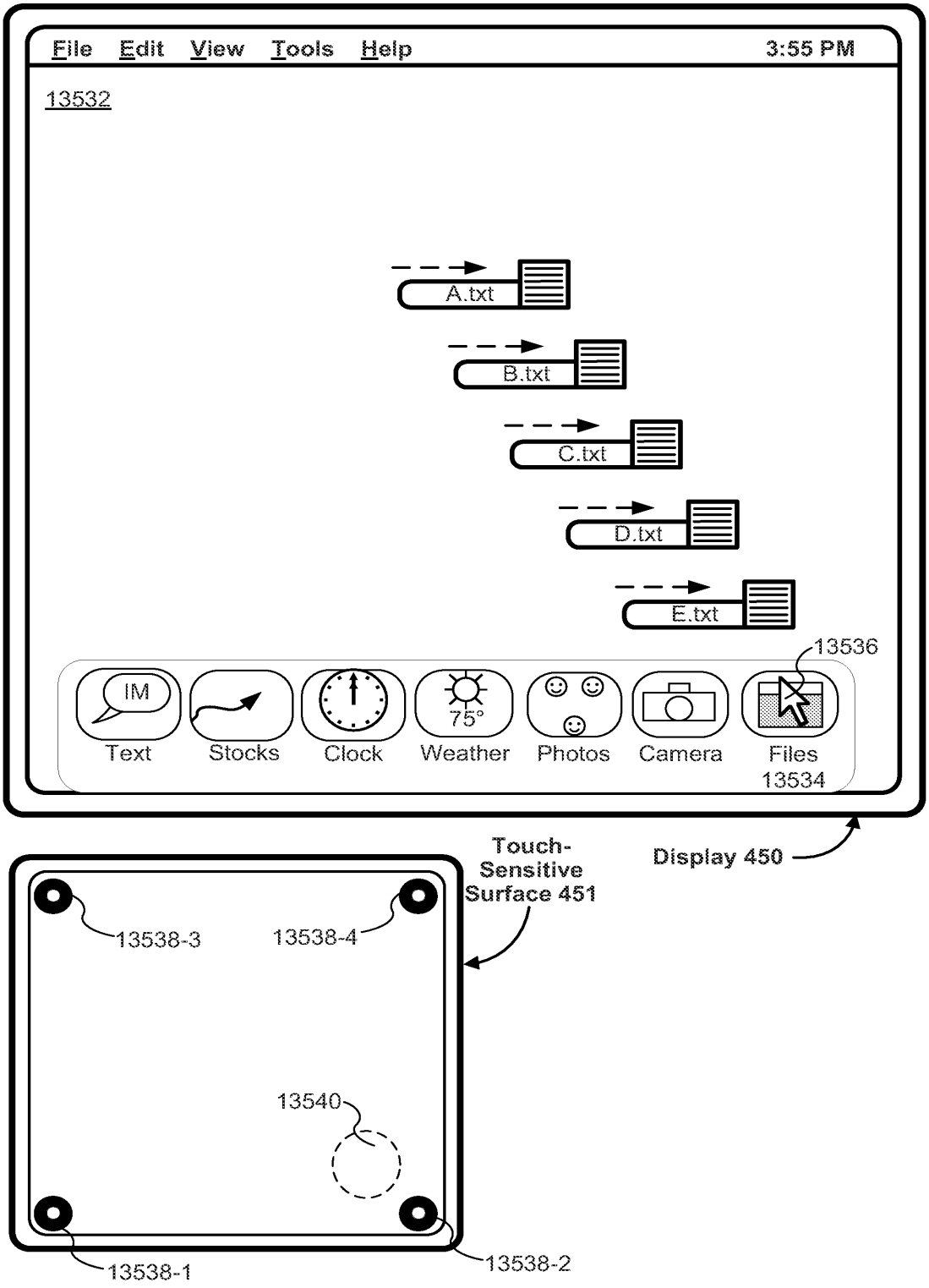

File Edit View Tools Help
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A.txt
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D.txt
E.txt
13536
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Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13534
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13540
13538-1
13538-2

Figure 11K

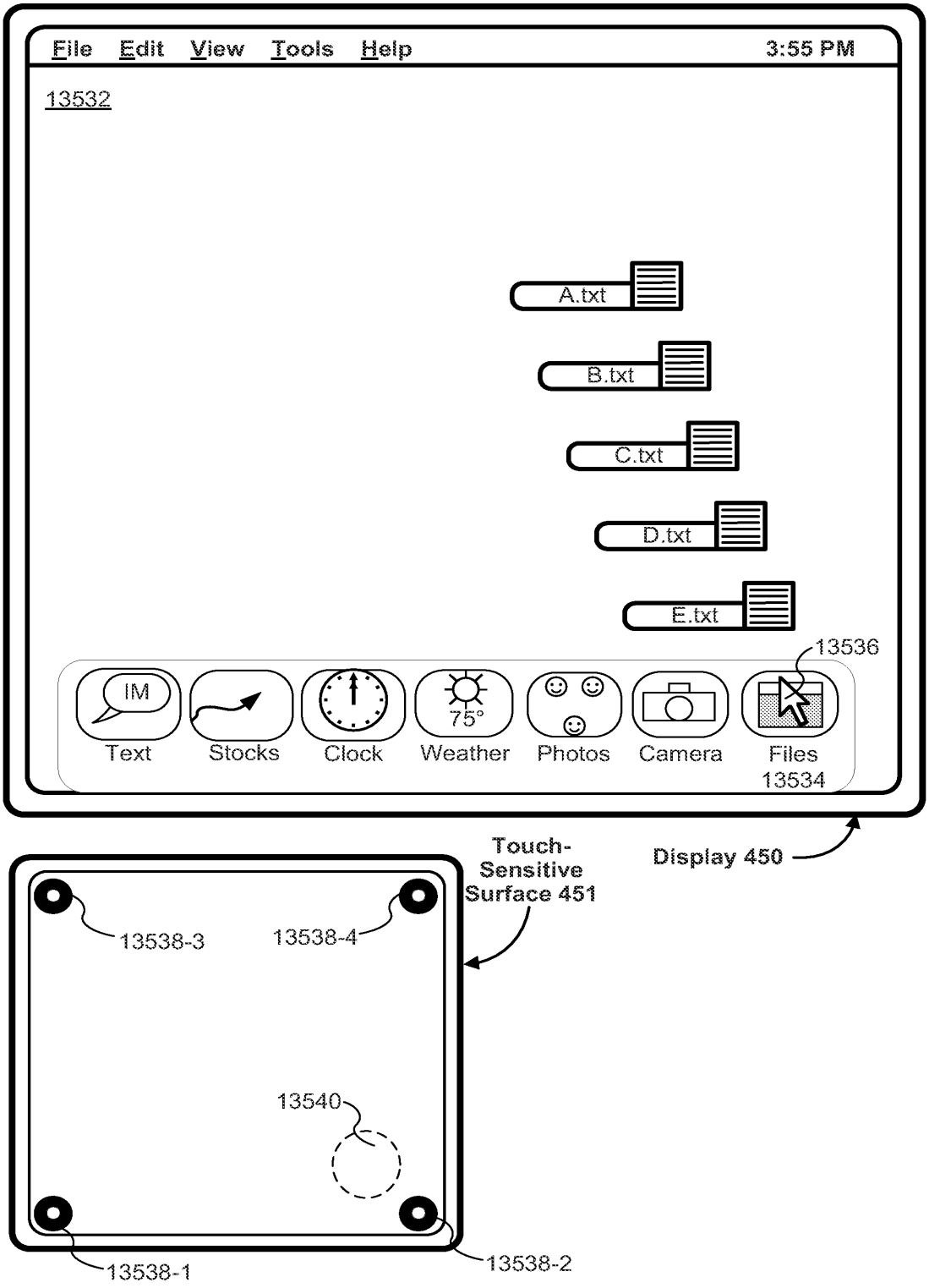

File Edit View Tools Help
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A.txt
B.txt
C.txt
D.txt
E.txt
13536
IM
Text
Stocks
Clock
75°
Weather
Photos
Camera
Files
13534
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13540
13538-1
13538-2

Figure 11L

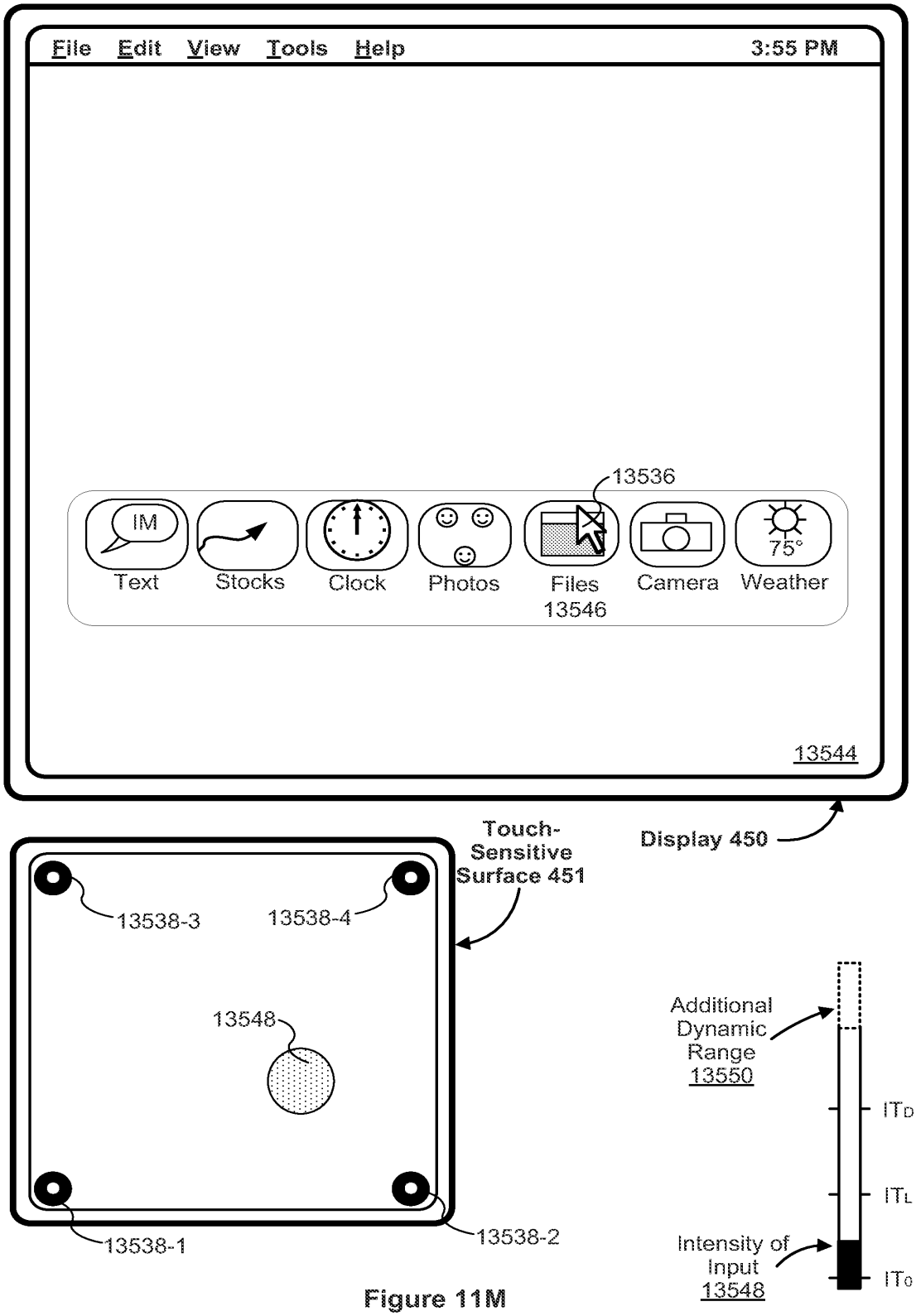

File Edit View Tools Help
3:55 PM
13536
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Text
Stocks
Clock
Photos
Files
13546
Camera
75°
Weather
13544
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13548
13538-1
13538-2
Additional Dynamic Range 13550
ITD
ITL
Intensity of Input 13548
ITO

Figure 11M

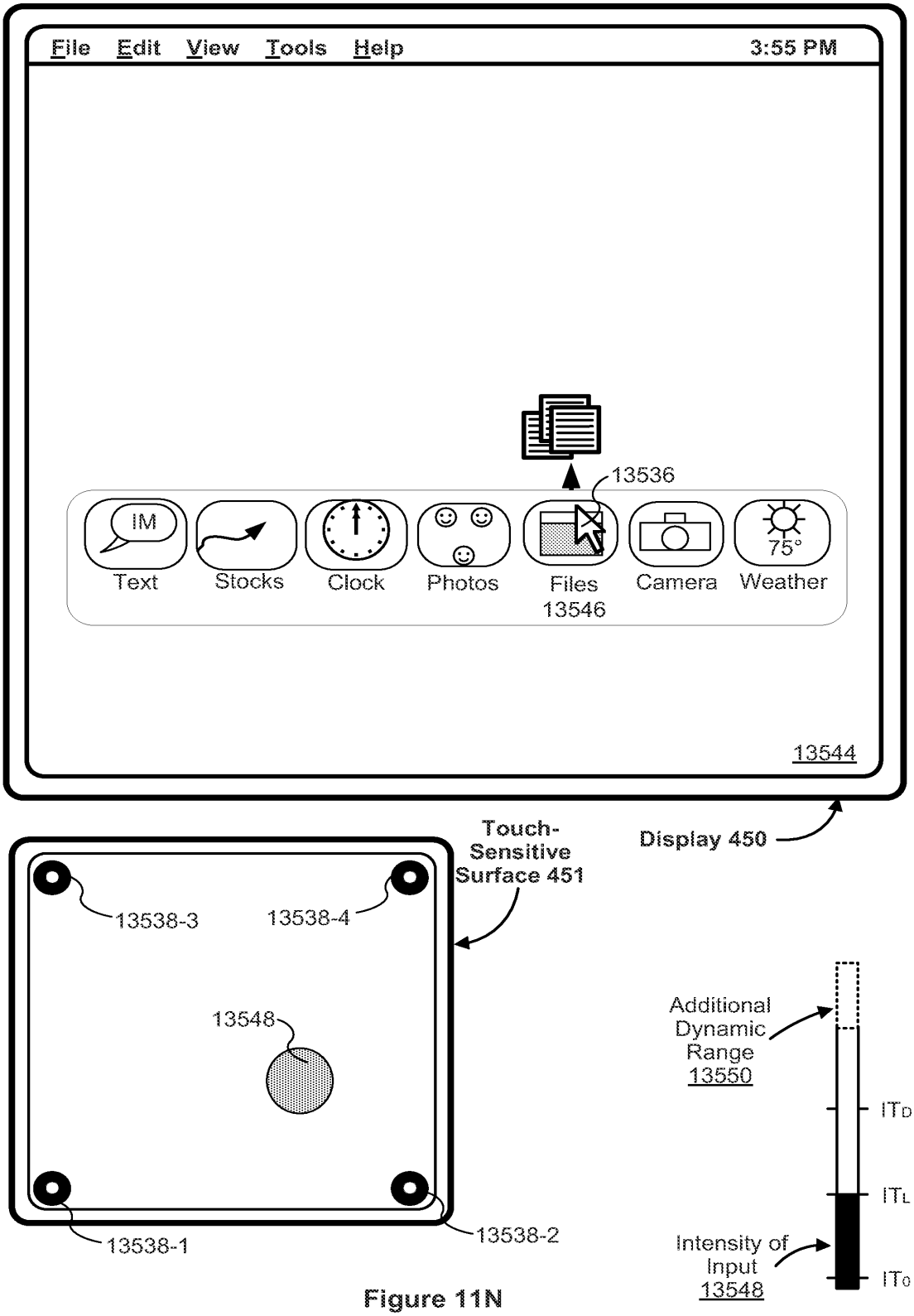

File Edit View Tools Help
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13536
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Stocks
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Photos
Files
13546
Camera
75°
Weather
13544
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13548
13538-1
13538-2
Additional Dynamic Range 13550
ITD
ITL
ITO
Intensity of Input 13548

Figure 11N

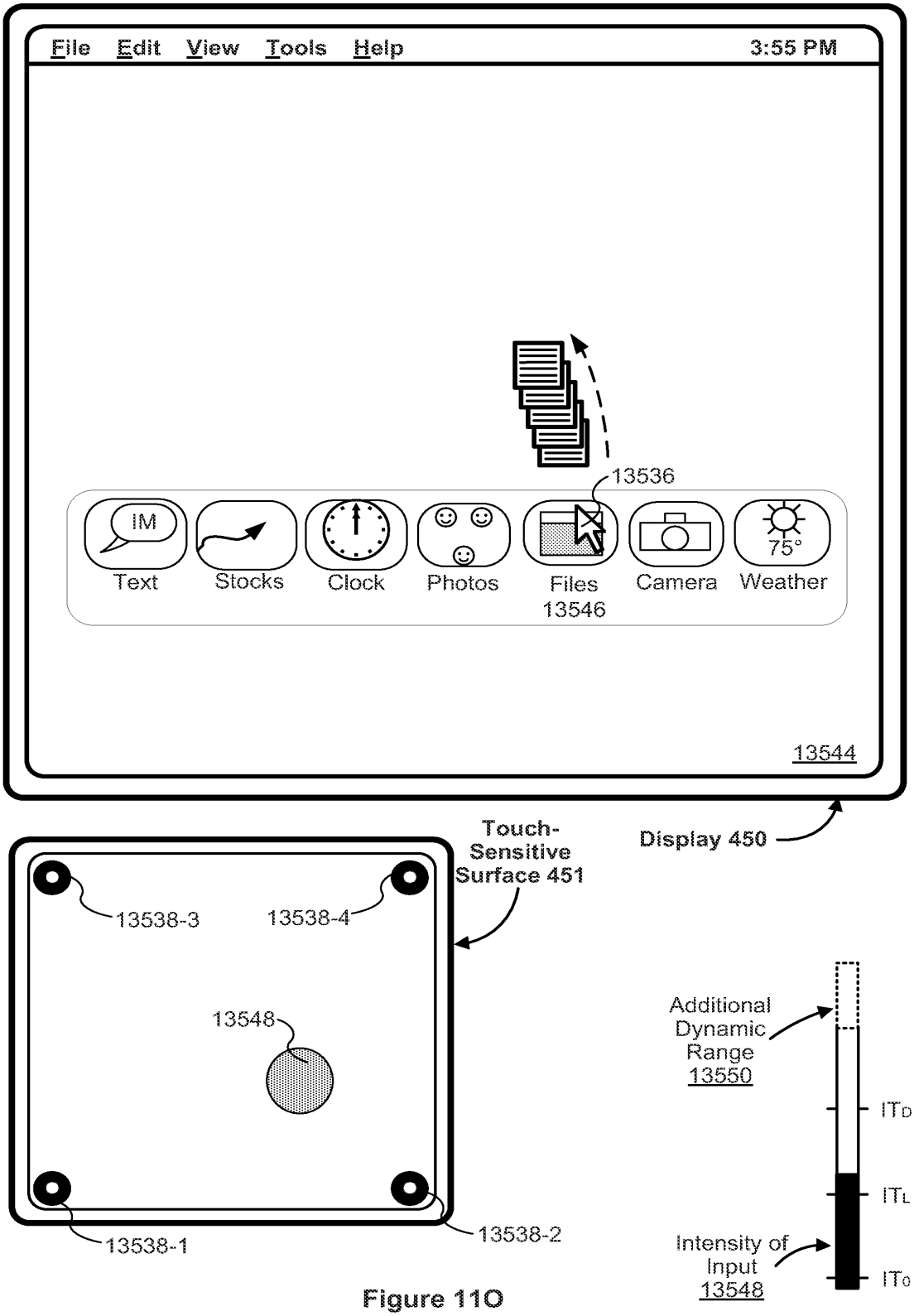

File Edit View Tools Help
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Text
Stocks
Clock
Photos
Files
13546
Camera
75°
Weather
13544
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13548
13538-1
13538-2
Additional Dynamic Range 13550
ITD
ITL
ITO
Intensity of Input 13548

Figure 11O

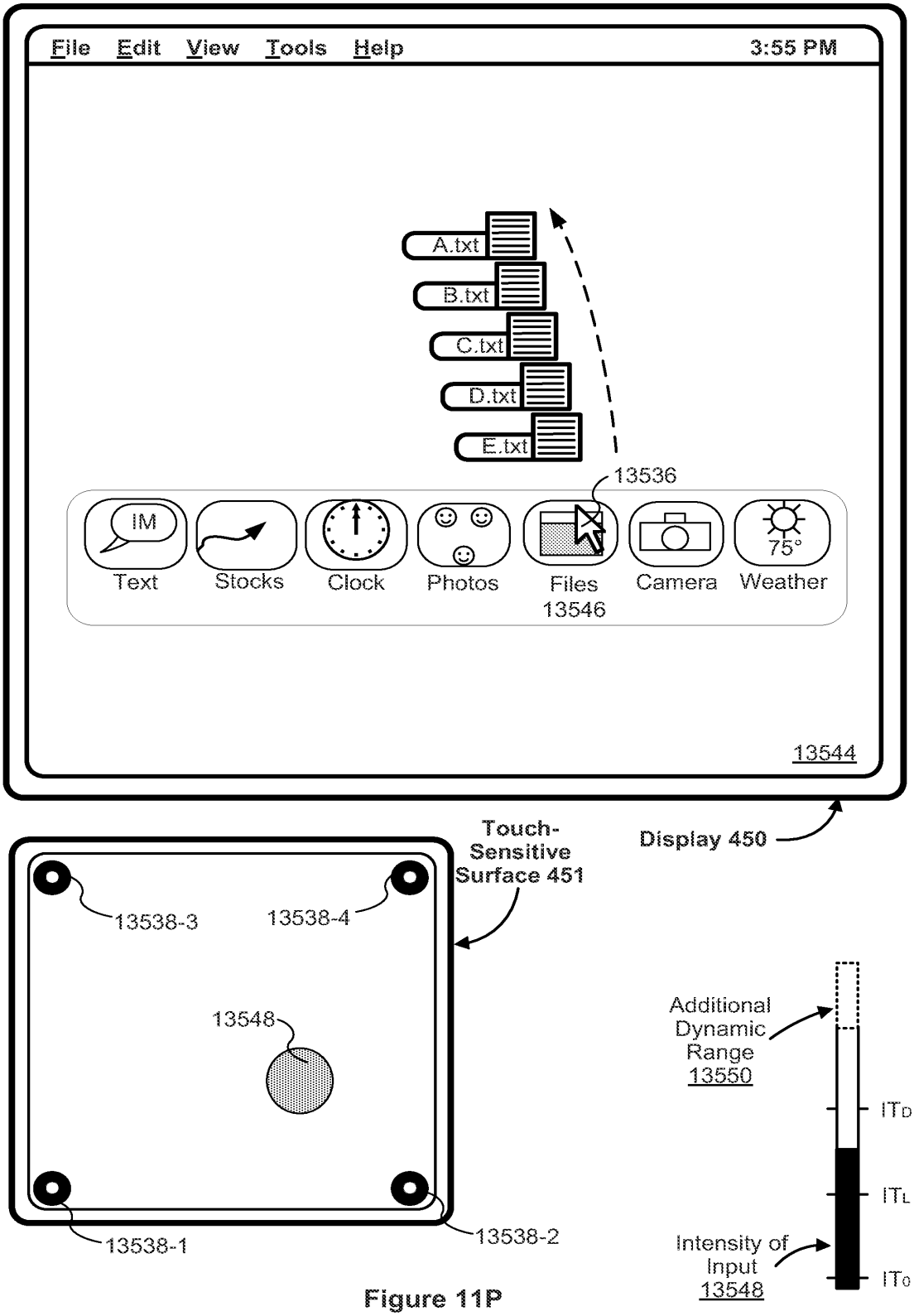

File Edit View Tools Help
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A.txt
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C.txt
D.txt
E.txt
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Text
Stocks
Clock
Photos
Files
13546
Camera
75°
Weather
13544
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13548
13538-1
13538-2
Additional Dynamic Range 13550
ITD
ITL
ITO
Intensity of Input 13548

Figure 11P

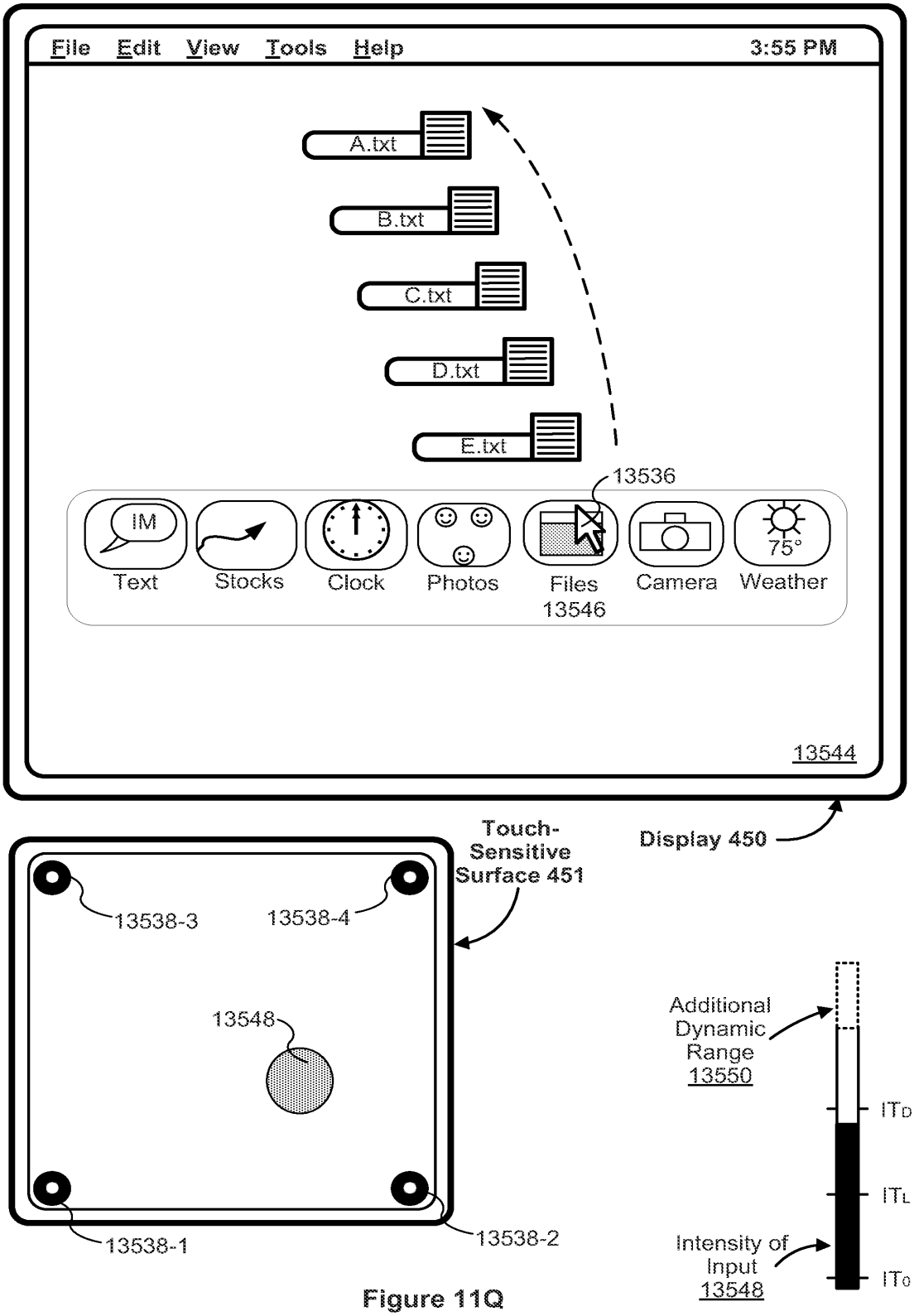

File Edit View Tools Help
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A.txt
B.txt
C.txt
D.txt
E.txt
13536
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Text
Stocks
Clock
Photos
Files
13546
Camera
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Weather
13544
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13548
13538-1
13538-2
Additional Dynamic Range 13550
ITD
ITL
Intensity of Input 13548
ITO

Figure 11Q

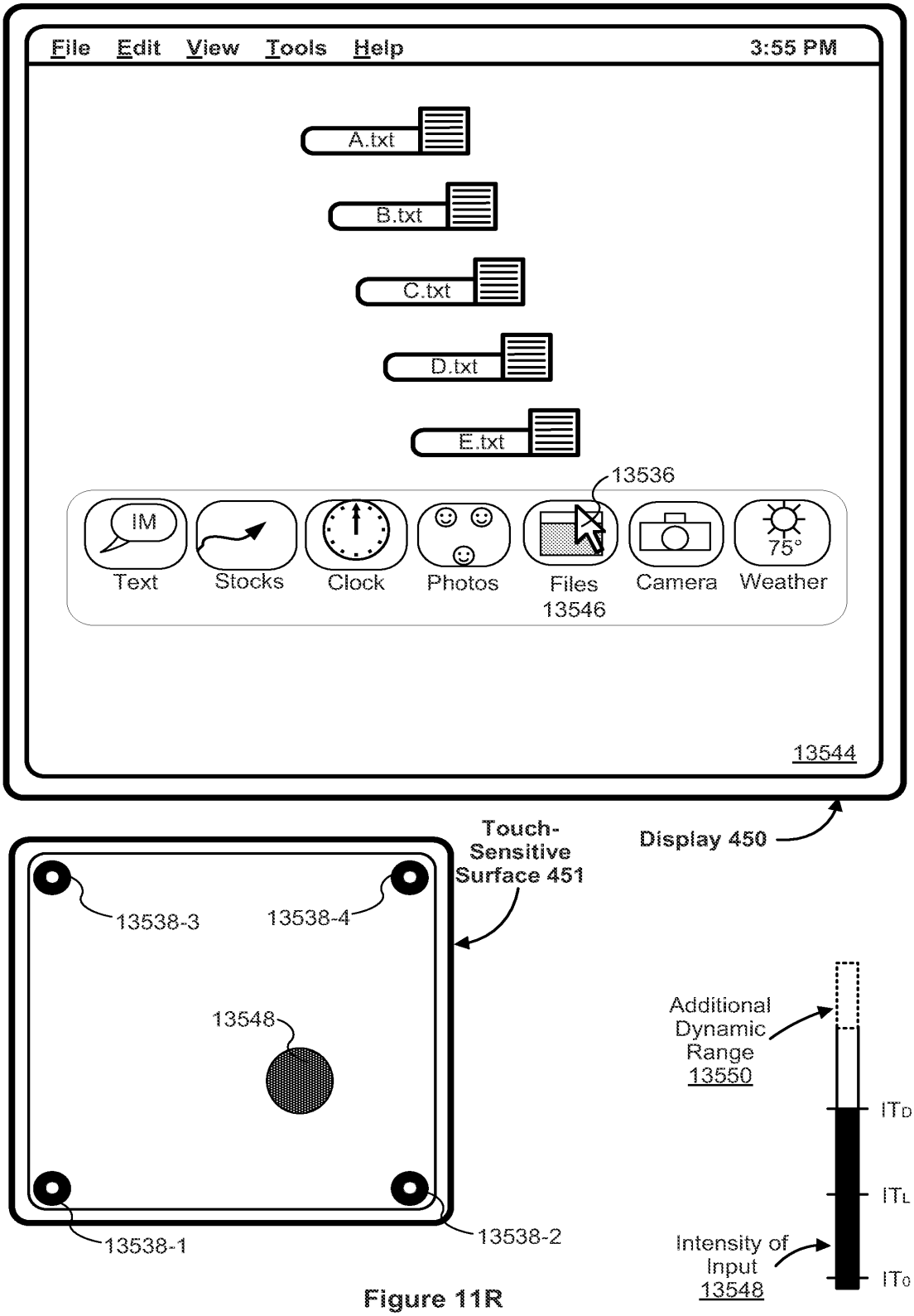

File Edit View Tools Help
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B.txt
C.txt
D.txt
E.txt
13536
IM
Text
Stocks
Clock
Photos
Files
13546
Camera
75°
Weather
13544
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13548
13538-1
13538-2
Additional Dynamic Range 13550
ITD
ITL
ITO
Intensity of Input 13548

Figure 11R

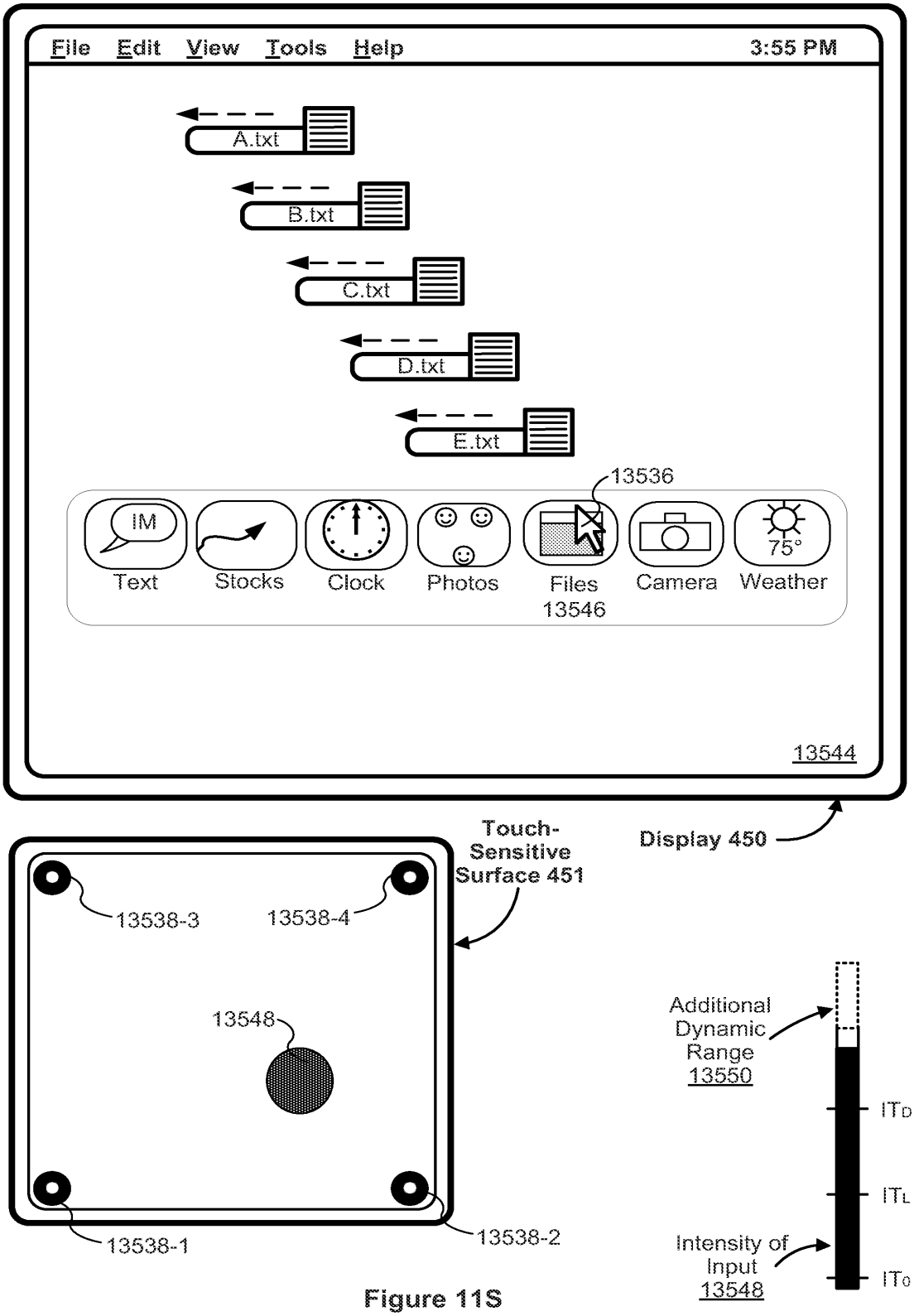

File Edit View Tools Help
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B.txt
C.txt
D.txt
E.txt
13536
IM
Text
Stocks
Clock
Photos
Files
13546
Camera
75°
Weather
13544
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13548
13538-1
13538-2
Additional Dynamic Range 13550
ITD
ITL
ITO
Intensity of Input 13548

Figure 11S

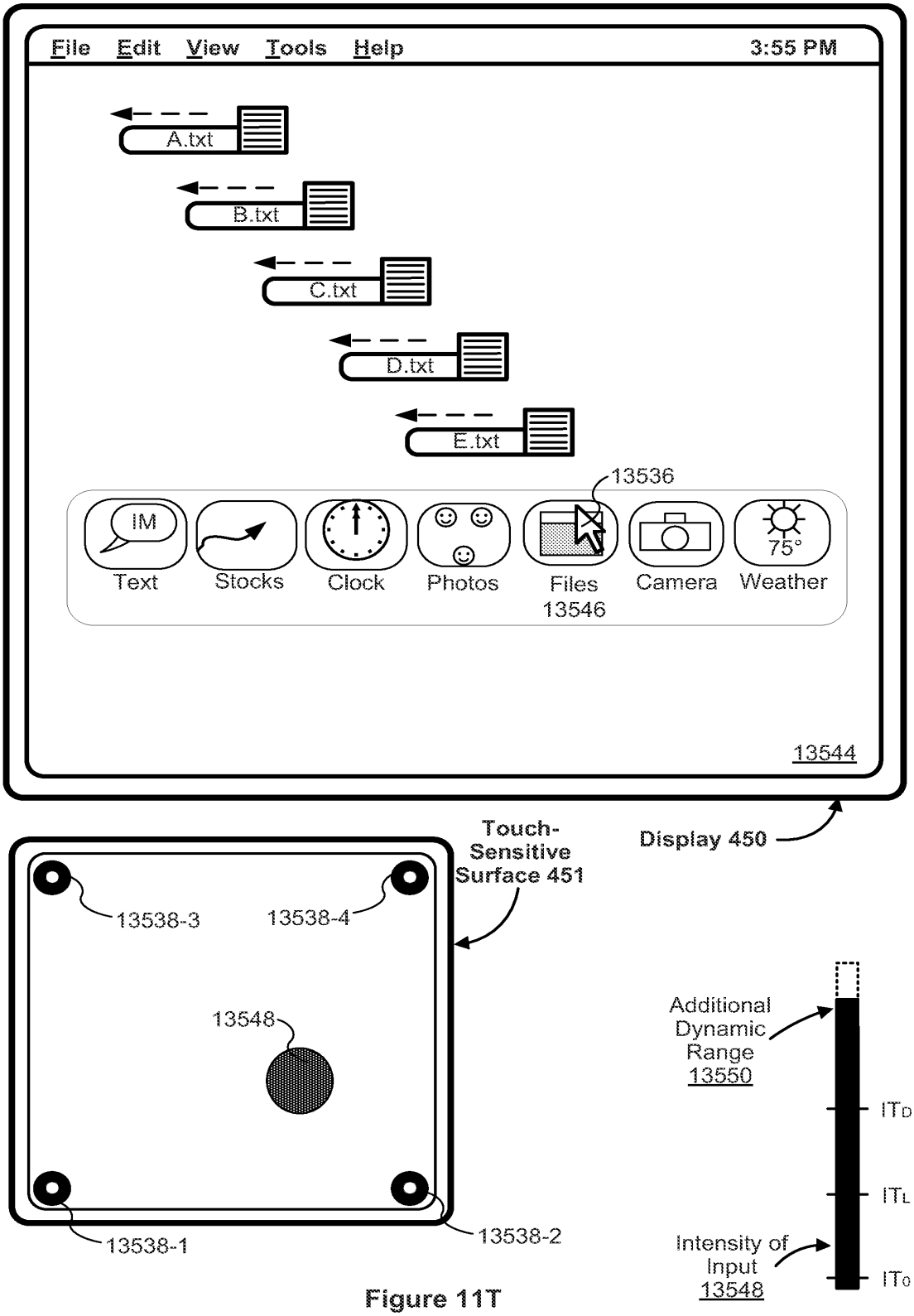

File Edit View Tools Help
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A.txt
B.txt
C.txt
D.txt
E.txt
13536
IM
Text
Stocks
Clock
Photos
Files
13546
Camera
75°
Weather
13544
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13548
13538-1
13538-2
Additional Dynamic Range 13550
ITD
ITL
Intensity of Input 13548
ITO

Figure 11T

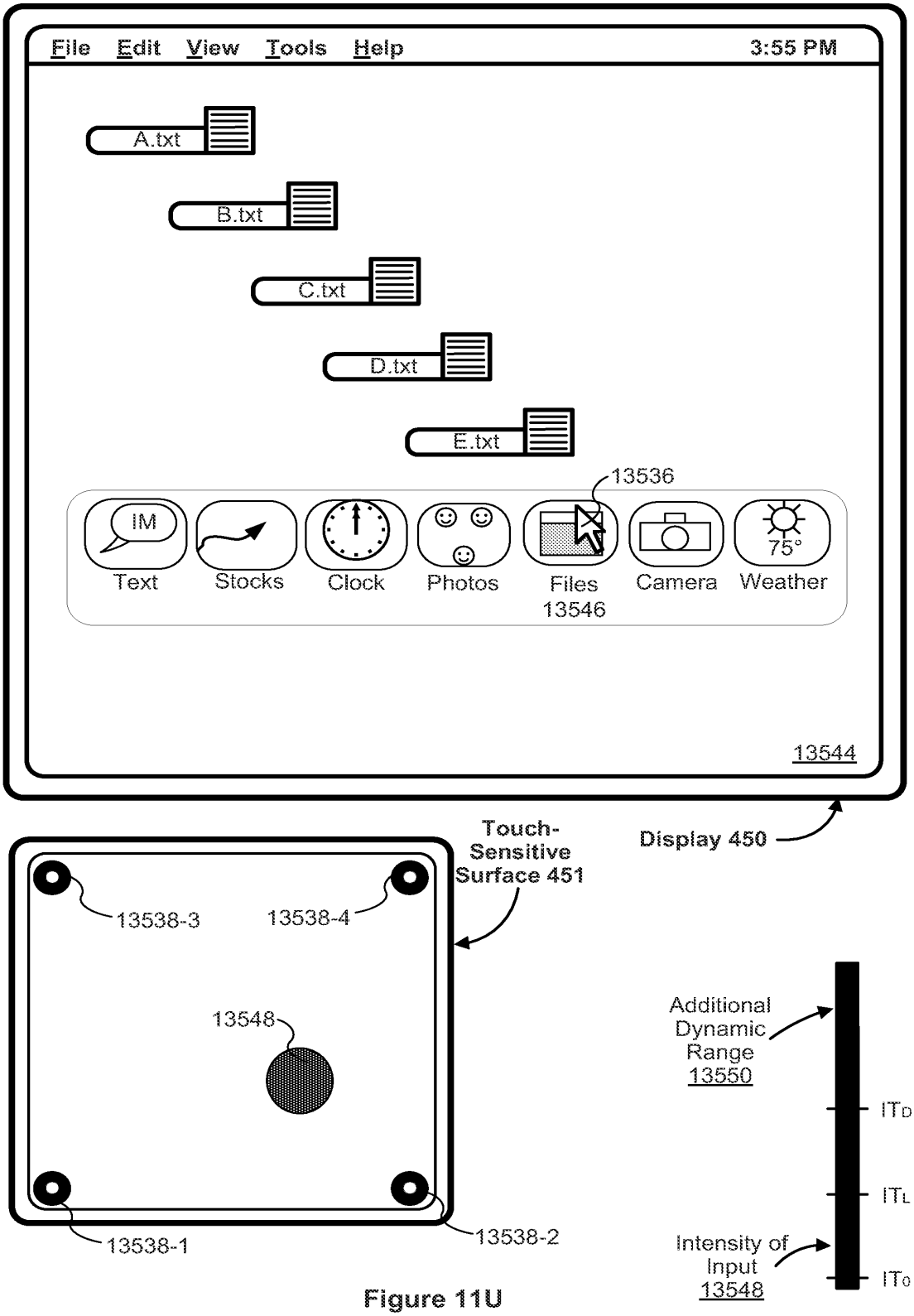

File Edit View Tools Help
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A.txt
B.txt
C.txt
D.txt
E.txt
13536
IM
Text
Stocks
Clock
Photos
Files
13546
Camera
75°
Weather
13544
Display 450
Touch-Sensitive Surface 451
13538-3
13538-4
13548
13538-1
13538-2
Additional Dynamic Range 13550
ITD
ITL
Intensity of Input 13548
ITO

Figure 11U

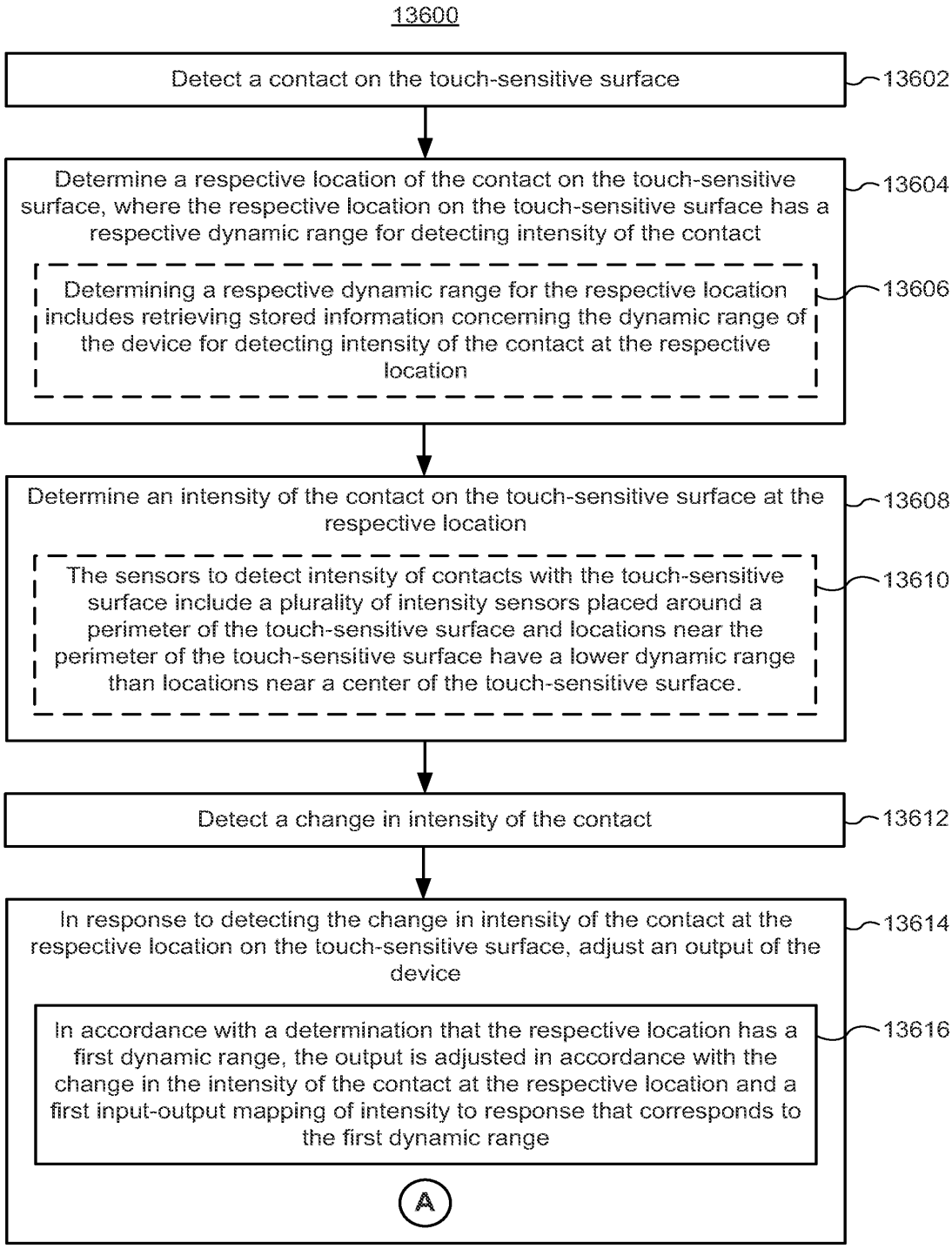

13600
Detect a contact on the touch-sensitive surface
13602
Determine a respective location of the contact on the touch-sensitive surface, where the respective location on the touch-sensitive surface has a respective dynamic range for detecting intensity of the contact
13604
Determining a respective dynamic range for the respective location includes retrieving stored information concerning the dynamic range of the device for detecting intensity of the contact at the respective location
13606
Determine an intensity of the contact on the touch-sensitive surface at the respective location
13608
The sensors to detect intensity of contacts with the touch-sensitive surface include a plurality of intensity sensors placed around a perimeter of the touch-sensitive surface and locations near the perimeter of the touch-sensitive surface have a lower dynamic range than locations near a center of the touch-sensitive surface.
13610
Detect a change in intensity of the contact
13612
In response to detecting the change in intensity of the contact at the respective location on the touch-sensitive surface, adjust an output of the device
13614
In accordance with a determination that the respective location has a first dynamic range, the output is adjusted in accordance with the change in the intensity of the contact at the respective location and a first input-output mapping of intensity to response that corresponds to the first dynamic range
13616
A

Figure 12A

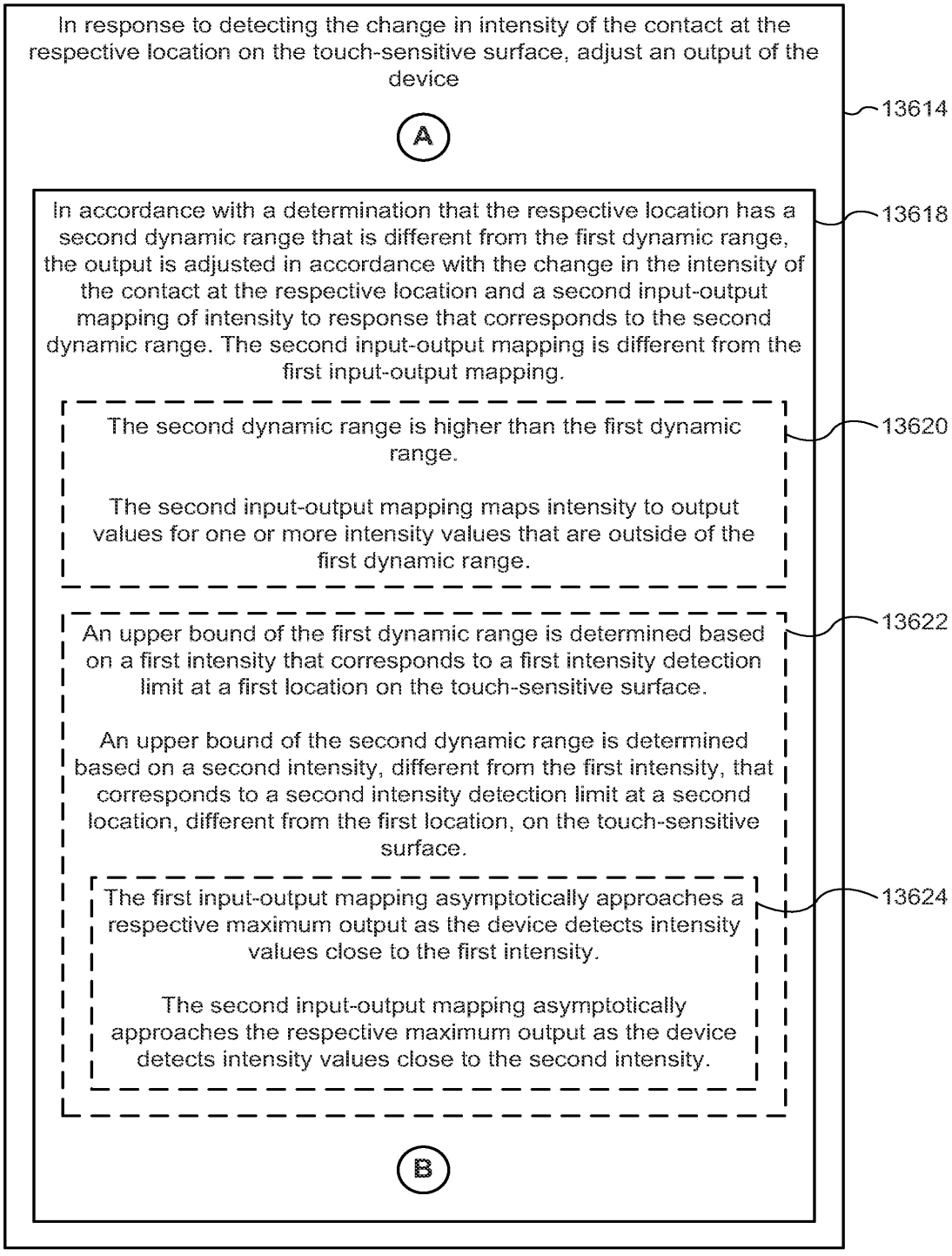

In response to detecting the change in intensity of the contact at the respective location on the touch-sensitive surface, adjust an output of the device
13614
A
In accordance with a determination that the respective location has a second dynamic range that is different from the first dynamic range, the output is adjusted in accordance with the change in the intensity of the contact at the respective location and a second input-output mapping of intensity to response that corresponds to the second dynamic range. The second input-output mapping is different from the first input-output mapping.
13618
The second dynamic range is higher than the first dynamic range.
The second input-output mapping maps intensity to output values for one or more intensity values that are outside of the first dynamic range.
13620
An upper bound of the first dynamic range is determined based on a first intensity that corresponds to a first intensity detection limit at a first location on the touch-sensitive surface.
An upper bound of the second dynamic range is determined based on a second intensity, different from the first intensity, that corresponds to a second intensity detection limit at a second location, different from the first location, on the touch-sensitive surface.
13622
The first input-output mapping asymptotically approaches a respective maximum output as the device detects intensity values close to the first intensity.
The second input-output mapping asymptotically approaches the respective maximum output as the device detects intensity values close to the second intensity.
13624
B

Figure 12B

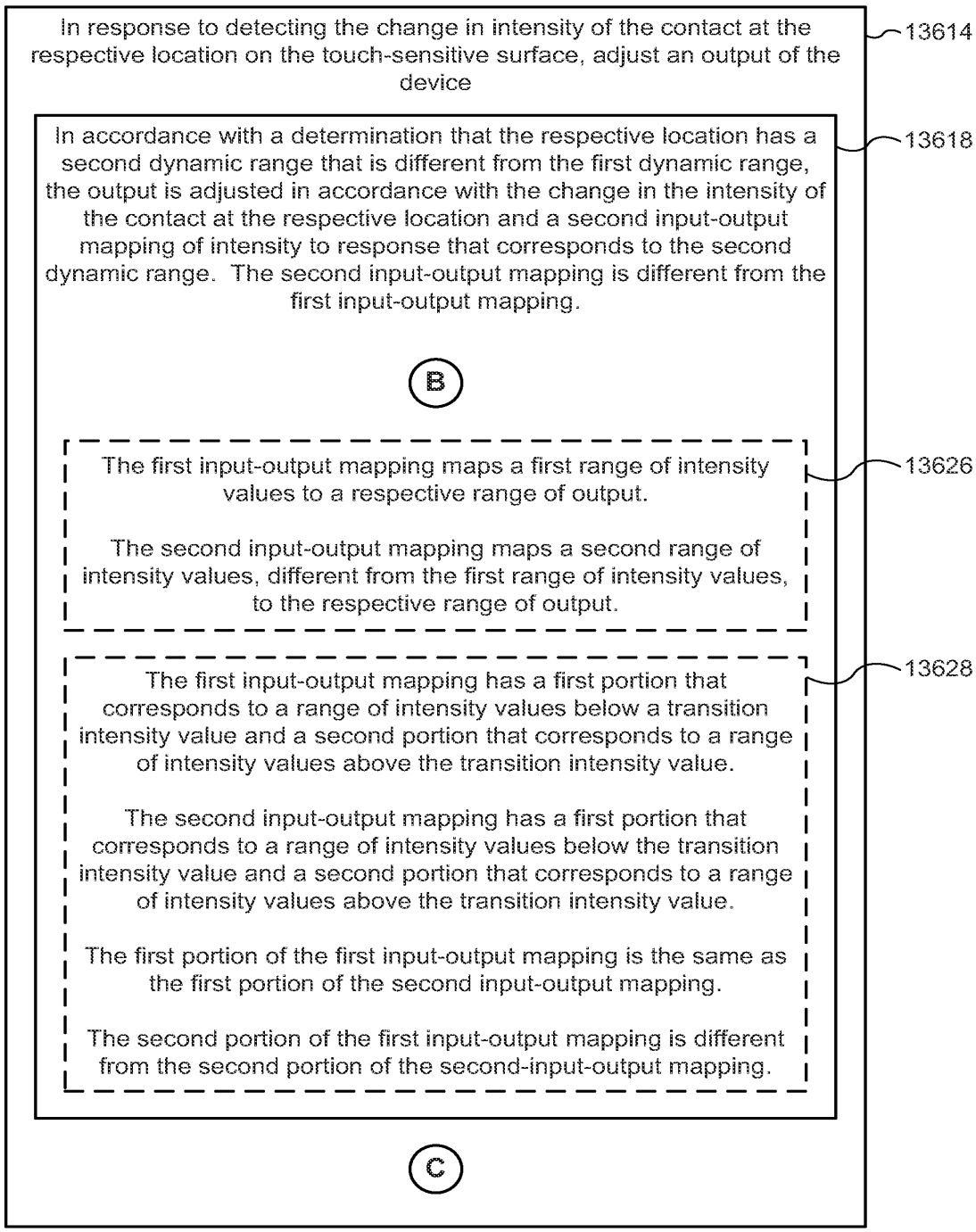

In response to detecting the change in intensity of the contact at the respective location on the touch-sensitive surface, adjust an output of the device
13614
In accordance with a determination that the respective location has a second dynamic range that is different from the first dynamic range, the output is adjusted in accordance with the change in the intensity of the contact at the respective location and a second input-output mapping of intensity to response that corresponds to the second dynamic range. The second input-output mapping is different from the first input-output mapping.
13618
B
The first input-output mapping maps a first range of intensity values to a respective range of output.
The second input-output mapping maps a second range of intensity values, different from the first range of intensity values, to the respective range of output.
13626
The first input-output mapping has a first portion that corresponds to a range of intensity values below a transition intensity value and a second portion that corresponds to a range of intensity values above the transition intensity value.
The second input-output mapping has a first portion that corresponds to a range of intensity values below the transition intensity value and a second portion that corresponds to a range of intensity values above the transition intensity value.
The first portion of the first input-output mapping is the same as the first portion of the second input-output mapping.
The second portion of the first input-output mapping is different from the second portion of the second-input-output mapping.
13628
C

Figure 12C

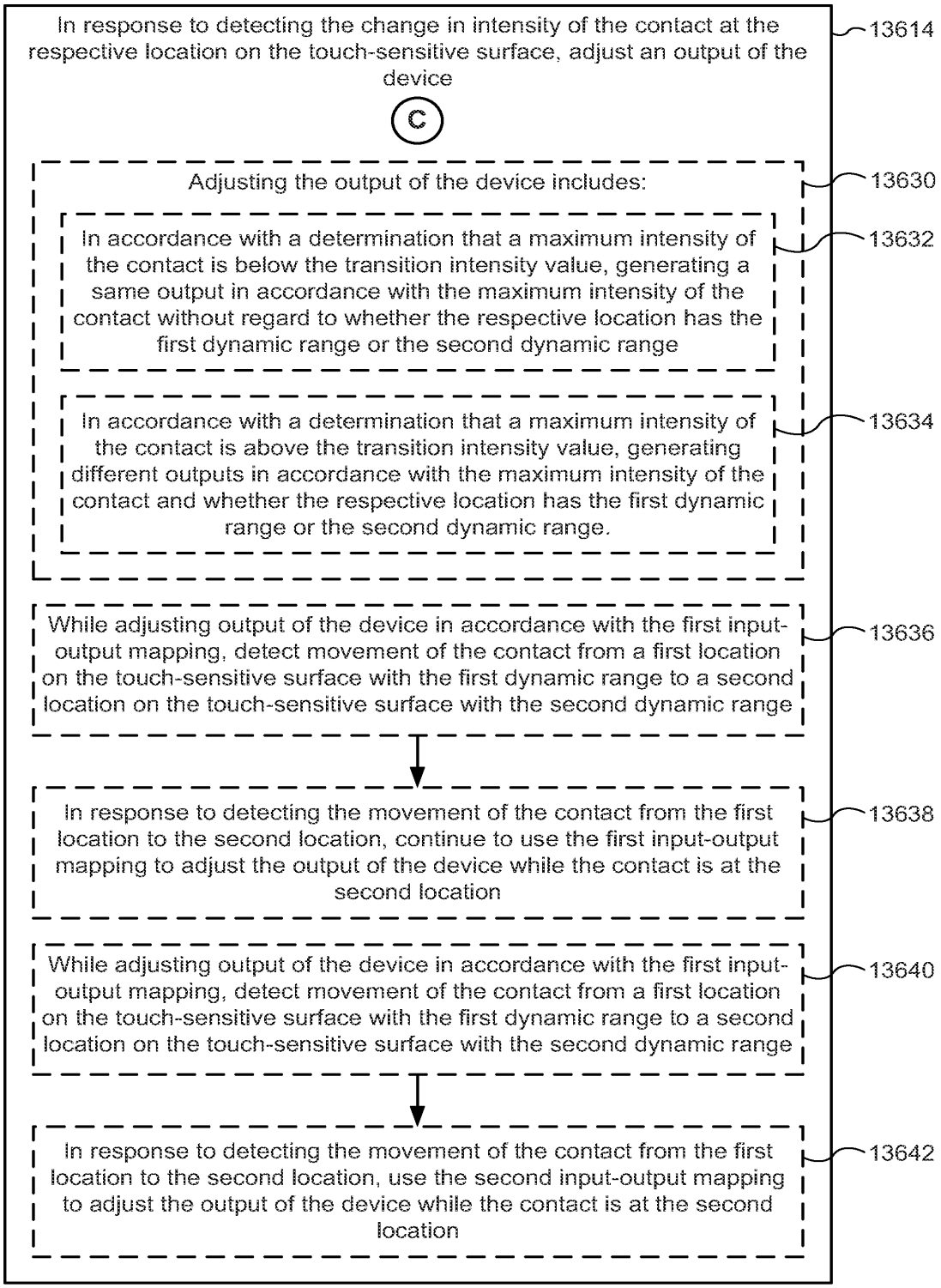

In response to detecting the change in intensity of the contact at the respective location on the touch-sensitive surface, adjust an output of the device
13614
C
Adjusting the output of the device includes:
13630
In accordance with a determination that a maximum intensity of the contact is below the transition intensity value, generating a same output in accordance with the maximum intensity of the contact without regard to whether the respective location has the first dynamic range or the second dynamic range
13632
In accordance with a determination that a maximum intensity of the contact is above the transition intensity value, generating different outputs in accordance with the maximum intensity of the contact and whether the respective location has the first dynamic range or the second dynamic range.
13634
While adjusting output of the device in accordance with the first input-output mapping, detect movement of the contact from a first location on the touch-sensitive surface with the first dynamic range to a second location on the touch-sensitive surface with the second dynamic range
13636
In response to detecting the movement of the contact from the first location to the second location, continue to use the first input-output mapping to adjust the output of the device while the contact is at the second location
13638
While adjusting output of the device in accordance with the first input-output mapping, detect movement of the contact from a first location on the touch-sensitive surface with the first dynamic range to a second location on the touch-sensitive surface with the second dynamic range
13640
In response to detecting the movement of the contact from the first location to the second location, use the second input-output mapping to adjust the output of the device while the contact is at the second location
13642

Figure 12D

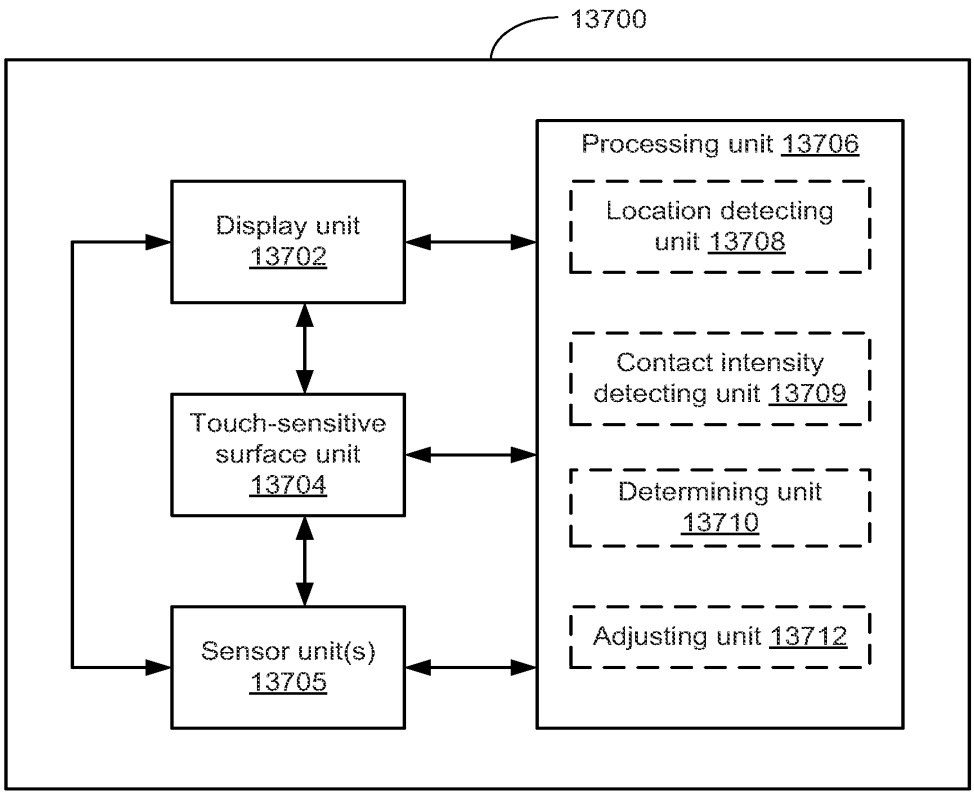

13700
Processing unit 13706
Display unit 13702
Location detecting unit 13708
Contact intensity detecting unit 13709
Touch-sensitive surface unit 13704
Determining unit 13710
Sensor unit(s) 13705
Adjusting unit 13712

Figure 13

# PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
Ho, Brian B.
MORRISON & FOERSTER LLP
425 Market Street
San Francisco, CA 94105-2482
ETATS-UNIS D'AMERIQUE

# PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

| | |
|---|---|
| Applicant's or agent's file reference<br>106842129140 | Date of mailing<br>*(day/month/year)*<br>8 December 2014 (08-12-2014) |
| | **FOR FURTHER ACTION** See paragraphs 1 and 4 below |
| International application No.<br>PCT/US2014/053951 | International filing date<br>*(day/month/year)*<br>3 September 2014 (03-09-2014) |
| Applicant<br>APPLE INC. | |

1. [X] The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   **Filing of amendments and statement under Article 19:**
   The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

   **When?** The time limit for filing such amendments is normally two months from the date of transmittal of the International Search Report.

   **How?** Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Fascimile No.: (41-22) 338.82.70

   **For more detailed instructions, see** *PCT Applicant's Guide,* International Phase, paragraphs 9.004 - 9.011.

2. [ ] The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. [ ] **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   [ ] the protest together with the decision thereon has been transmitted to the International Bureau together with any applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   [ ] no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   The applicant may **submit comments on an informal basis on the written opinion of the International Searching Authority** to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

   Shortly after the expiration of **18 months from the priority date, the international application will be published** by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90*bis*.1 and 90*bis*.3).

   Within **19 months f**rom the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for **entry into the national phase** before those designated Offices. In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

   Within **19 months from the priority date, the applicant may request that a supplementary international search be carried out** by a different International Searching Authority that offers this service (Rule 45*bis*.1). The procedure for requesting supplementary international search is described in the *PCT Applicant's Guide*, International Phase, paragraphs 8.006-8.032.

| Name and mailing address of the International Searching Authority | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk<br>Tel. (+31-70) 340-2040<br>Fax: (+31-70) 340-3016 | VIVIEN, Angélique<br>Tel: +49 (0)89 2399-8764 |

Form PCT/ISA/220 (July 2014)

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| Applicant's or agent's file reference | **FOR FURTHER ACTION** | see Form PCT/ISA/220 as well as, where applicable, item 5 below. |
|---|---|---|
| 106842129140 | | |
| International application No. | International filing date *(day/month/year)* | (Earliest) Priority Date *(day/month/year)* |
| PCT/US2014/053951 | 3 September 2014 (03-09-2014) | 3 September 2013 (03-09-2013) |
| Applicant | | |
| APPLE INC. | | |

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language,** the international search was carried out on the basis of:
      [X] the international application in the language in which it was filed
      [ ] a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
   b. [ ] This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).
   c. [ ] With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. [ ] **Certain claims were found unsearchable** (See Box No. II)

3. [ ] **Unity of invention is lacking** (see Box No III)

4. With regard to the **title,**
   [X] the text is approved as submitted by the applicant
   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**
   [X] the text is approved as submitted by the applicant
   [ ] the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings,**
   a. the figure of the **drawings** to be published with the abstract is Figure No. 9
      [X] as suggested by the applicant
      [ ] as selected by this Authority, because the applicant failed to suggest a figure
      [ ] as selected by this Authority, because this figure better characterizes the invention
   b. [ ] none of the figures is to be published with the abstract



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2478 of 2716**

# INTERNATIONAL SEARCH REPORT

International application No
PCT/US2014/053951

A. CLASSIFICATION OF SUBJECT MATTER
INV. G06F3/0362 G04G21/00
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06F G04G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | US 6 661 438 B1 (SHIRAISHI ATSUSHI [JP] ET AL) 9 December 2003 (2003-12-09)<br>column 20, line 17 - column 21, line 13<br>column 22, line 57 - column 23, line 13;<br>figures 7A-7D | 1-165 |
| A | WO 2006/037545 A2 (NOKIA CORP [FI]; ROEYKKEE MIKA [FI]; HEINO MERJA [FI]; KORHONE HANNU [)<br>13 April 2006 (2006-04-13)<br>figure 4 | 1-165 |

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the prinoiple or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 28 November 2014 | 08/12/2014 |

| Name and mailing address of the ISA/ | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040,<br>Fax: (+31-70) 340-3016 | Alonso Goicolea, L |

1

Form PCT/ISA/210 (second sheet) (April 2005)

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2014/053951

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| US 6661438 B1 | 09-12-2003 | JP 4110709 B2 | 02-07-2008 |
| | | JP 2001202178 A | 27-07-2001 |
| | | US 6661438 B1 | 09-12-2003 |
| WO 2006037545 A2 | 13-04-2006 | BR PI0516501 A | 09-09-2008 |
| | | CN 101031871 A | 05-09-2007 |
| | | EP 1803057 A2 | 04-07-2007 |
| | | JP 2008515038 A | 08-05-2008 |
| | | KR 20070049243 A | 10-05-2007 |
| | | KR 20090102880 A | 30-09-2009 |
| | | RU 2363033 C2 | 27-07-2009 |
| | | SG 140595 A1 | 28-03-2008 |
| | | TW I279720 B | 21-04-2007 |
| | | US 2006080386 A1 | 13-04-2006 |
| | | WO 2006037545 A2 | 13-04-2006 |
| | | ZA 200702853 A | 27-08-2008 |

Form PCT/ISA/210 (patent family annex) (April 2005)

# PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

# PCT

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing
*(day/month/year)* see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

**FOR FURTHER ACTION**
See paragraph 2 below

| International application No. | International filing date *(day/month/year)* | Priority date *(day/month/year)* |
|---|---|---|
| PCT/US2014/053951 | 03.09.2014 | 03.09.2013 |

International Patent Classification (IPC) or both national classification and IPC
INV. G06F3/0362 G04G21/00

Applicant
APPLE INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

| Name and mailing address of the ISA: | Date of completion of this opinion | Authorized Officer |
|---|---|---|
| European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399 - 0<br>Fax: +49 89 2399 - 4465 | see form PCT/ISA/210 | Telephone No. +49 89 2399-0 |

Form PCT/ISA/237 (Cover Sheet) (July 2009)

**Box No. I Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

      ☐ on paper

      ☐ in electronic form

   b. (time)

      ☐ in the international application as filed

      ☐ together with the international application in electronic form

      ☐ subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

| | | | |
|---|---|---|---|
| Novelty (N) | Yes: | Claims | 1-165 |
| | No: | Claims | |
| Inventive step (IS) | Yes: | Claims | |
| | No: | Claims | 1-165 |
| Industrial applicability (IA) | Yes: | Claims | 1-165 |
| | No: | Claims | |

2. Citations and explanations

**see separate sheet**



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2482 of 2716**

**Box No. VIII Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2483 of 2716**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1 Reference is made to the following document:

D1 US 6 661 438 B1 (SHIRAISHI ATSUSHI [JP] ET AL) 9 December 2003 (2003-12-09)

2 **Object of the invention**

Present description on paragraph 3 relates to *interfaces for wearable electronic devices*, and reports on paragraph 6 that *existing methods for manipulating user interface objects on reduced-size personal electronic devices can be inefficient. Further, existing methods generally provide less precision than is preferable.*

The overall content of the claimed subject matter refers in paragraph 7 to *manipulating a user interface on a wearable electronic device using a mechanical crown. [...] The direction of the scrolling or scaling and the amount of scrolling or scaling can depend on the direction and amount of rotation of the crown, respectively.*

The interaction concept considered being the arbitrary attribution of meaning to the rotation of a physical crown.

3 **Prior art**

Paragraph 5 of present description refers to the common knowledge of the layman computer user:

*Exemplary manipulations that users can perform on personal electronic devices include navigating a hierarchy, selecting a user interface object, adjusting the position, size, and zoom of user interface objects, or otherwise manipulating user interfaces. Exemplary user interface objects include digital images, video, text, icons, maps, control elements such as buttons, and other graphics.*



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2484 of 2716**

Present application starts from a technical environment which is well known within the framework of wearable devices: systems using a crown for entering user data or commands.

A common prior art is constituted by any wrist watch of mechanical or electronic nature. In these devices, the movement exercised by the user on the crown (angular displacement) is arbitrarily attributed by the designer a diversity of commands or functions (turning the needles, rotating the day of the month calendar wheel, month of the year, moon phase, etc.).

Usually the angular velocity of the physical crown of the wearable mechanical or electronic devices is mapped (mechanically or electronically) to the speed of the turning or rotating of the diverse devices or of the information displayed.

Further to this well known "framework of wearable devices: systems using a crown for entering user data or commands", which does not require of any documentary evidence, the search report refers to following documents:

D1 (US6661438) discloses a system in which the speed of rotation of the crown corresponds to the speed of the scrolling functions (see in D1: column 20, lines 18 to 38; figures 7A to 7D; column 22, line 57 to column 23, line 7).

D2 illustrates a scrolling operation on an application icon menu.

## 4 Novelty and inventive step

The present application does not meet the criteria of Article 33(3) PCT, because the subject-matter of claim 1 does not involve an inventive step.

D1 may be regarded as being the prior art closest to the subject-matter of claim 1. The procedure of D1can be used for the scrolling of any kind of data. Present claim 1 refers to the scrolling of a plurality of applications (distinguishing feature).

The adaptation of the teachings of D1 to this scenario (objective technical problem) results as an obvious design alternative. The need to scroll in different ways a plurality of application (icons) is well known (see for instance D2). No inventive step can be acknowledged.



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2485 of 2716**

4.1 The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent apparatus claim 107, and computer program product 54 which therefore are also considered not inventive.

The touch sensitive nature of the display claimed does not play any role in the inventive concept considered by the claim.

4.2 Dependent claims 2 to 11 do not contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT with respect to inventive step, since their subject matter is considered the result of routine design choices, not requiring the exercise of inventive step.

4.3 Claims 2 to 5 refer to the different sets of applications involved responding to user subjective preferences.

4.4 Claim 6 refers to a watch, and claim 11 to a mechanical crown. Both claims are also anticipated by D1 (see in D1 the references of the search report).

4.5 Claims 7 to 10 refer to the specific parameters of the rotation to be arbitrarily mapped to the scrolling function. They are also anticipated by D1 (see in D1 the references of the search report).

**5** All other independent and dependent claims do not appear to add anything new or inventive to the claims above considered (see also the lack of clarity raised due to the lack of conciseness), since the replacement in the claims of the "applications" by a "displayed view" as the items to be scrolled, or referring to its updating falls within the same category of obvious design alternatives considered above for the first set of claims.

-

**Re Item VIII**

**Certain observations on the international application**

The present set of claims comprises more than one independent claim in the same category, i.e 6 independent method claims (claims 1, 12, 23, 32, 40, 47), 6 independent apparatus claims (claims 107, 119, 131, 141, 150, 158), and 6 independent computer program product claims (claims 54, 65, 76, 85, 93, 100).



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2486 of 2716**

In the present case, however, it s considered appropriate to cover the subject matter in a single independent claim in each category. In consequence, the requirement of conciseness (Article 6 PCT) is not met.

Further to this comment, it is added that the nature of the information being scrolled or scaled is not considered essential by the application documents. The claims themselves refer to similar embodiments in which the only difference refer to the nature of the information (plurality of applications, a view displayed, etc) . For this reason no lack of unity objection is considered necessary, and only a conciseness objection is raised. The interaction concept considered being the arbitrary attribution of meaning to the rotation of a physical crown.



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2487 of 2716**

# PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
Ho, Brian B.
MORRISON & FOERSTER LLP
425 Market Street
San Francisco, CA 94105-2482
ETATS-UNIS D'AMERIQUE

# PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

| | |
|---|---|
| Applicant's or agent's file reference<br>106842129240 | Date of mailing<br>*(day/month/year)*<br>19 February 2015 (19-02-2015)<br>**FOR FURTHER ACTION** See paragraphs 1 and 4 below |
| International application No.<br>PCT/US2014/053957 | International filing date<br>*(day/month/year)*<br>3 September 2014 (03-09-2014) |
| Applicant<br>APPLE INC. | |

1. [X] The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith

**Filing of amendments and statement under Article 19:**
The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

**When?** The time limit for filing such amendments is normally two months from the date of transmittal of the International Search Report.

**How?** Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Fascimile No.: (41-22) 338.82.70

**For more detailed instructions, see** *PCT Applicant's Guide*, International Phase, paragraphs 9.004 - 9.011.

2. [ ] The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. [ ] **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

[ ] the protest together with the decision thereon has been transmitted to the International Bureau together with any applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

[ ] no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

The applicant may **submit comments on an informal basis on the written opinion of the International Searching Authority** to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

Shortly after the expiration of **18 months from the priority date, the international application will be published** by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90*bis*.1 and 90*bis*.3).

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for **entry into the national phase** before those designated Offices. In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

Within **19 months from the priority date, the applicant may request that a supplementary international search be carried out** by a different International Searching Authority that offers this service (Rule 45*bis*.1). The procedure for requesting supplementary international search is described in the *PCT Applicant's Guide*, International Phase, paragraphs 8.006-8.032.

| | |
|---|---|
| Name and mailing address of the International Searching Authority<br>European Patent Office, P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk<br>Tel. (+31-70) 340-2040<br>Fax: (+31-70) 340-3016 | Authorized officer<br>TSCHUBEL, Satu<br>Tel: +49 (0)89 2399-5894 |

Form PCT/ISA/220 (July 2014)

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| Applicant's or agent's file reference | **FOR FURTHER ACTION** | see Form PCT/ISA/220 as well as, where applicable, item 5 below. |
|---|---|---|
| 106842129240 | | |
| International application No. | International filing date *(day/month/year)* | (Earliest) Priority Date *(day/month/year)* |
| PCT/US2014/053957 | 3 September 2014 (03-09-2014) | 3 September 2013 (03-09-2013) |
| Applicant | | |
| APPLE INC. | | |

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language,** the international search was carried out on the basis of:
      [X] the international application in the language in which it was filed
      [ ] a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
   b. [ ] This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).
   c. [ ] With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. [ ] **Certain claims were found unsearchable** (See Box No. II)

3. [ ] **Unity of invention is lacking** (see Box No III)

4. With regard to the **title,**
   [X] the text is approved as submitted by the applicant
   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**
   [X] the text is approved as submitted by the applicant
   [ ] the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings,**
   a. the figure of the **drawings** to be published with the abstract is Figure No. 9
      [X] as suggested by the applicant
      [ ] as selected by this Authority, because the applicant failed to suggest a figure
      [ ] as selected by this Authority, because this figure better characterizes the invention
   b. [ ] none of the figures is to be published with the abstract



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2489 of 2716**

# INTERNATIONAL SEARCH REPORT

International application No
PCT/US2014/053957

A. CLASSIFICATION OF SUBJECT MATTER
INV. G06F3/0362 G04G21/00
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06F G04G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| Y | US 2013/097566 A1 (BERGLUND CARL FREDRIK ALEXANDER [SE]) 18 April 2013 (2013-04-18) paragraphs [0016], [0022] - [0024] | 1-67 |
| A | US 6 661 438 B1 (SHIRAISHI ATSUSHI [JP] ET AL) 9 December 2003 (2003-12-09) column 20, line 17 - column 21, line 13 column 22, line 57 - column 23, line 13; figures 7A-7D | 1-67 |
| A | WO 2006/037545 A2 (NOKIA CORP [FI]; ROEYKKEE MIKA [FI]; HEINO MERJA [FI]; KORHONE HANNU [FI]) 13 April 2006 (2006-04-13) figure 4 | 1-67 |

-/--

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 11 February 2015 | 19/02/2015 |

| Name and mailing address of the ISA/ | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040,<br>Fax: (+31-70) 340-3016 | Alonso Goicolea, L |

1

Form PCT/ISA/210 (second sheet) (April 2005)



AliveCor Exhibit 1002
AliveCor, Inc. v. Apple Inc.
IPR2023-01434, U.S. Patent No. 10,270,898
2490 of 2716

# INTERNATIONAL SEARCH REPORT

International application No
PCT/US2014/053957

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| Y | EP 2 551 784 A1 (ROCHE DIAGNOSTICS GMBH [DE]; HOFFMANN LA ROCHE [CH]) 30 January 2013 (2013-01-30) paragraph [0045] - paragraph [0055]; figures 3-7 | 1-67 |
| A | US 2012/159380 A1 (KOCIENDA KENNETH L [US] ET AL) 21 June 2012 (2012-06-21) claim 1 | 1-67 |

1

Form PCT/ISA/210 (continuation of second sheet) (April 2005)



AliveCor Exhibit 1002
AliveCor, Inc. v. Apple Inc.
IPR2023-01434, U.S. Patent No. 10,270,898
2491 of 2716

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2014/053957

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| US 2013097566 A1 | 18-04-2013 | NONE | |
| US 6661438 B1 | 09-12-2003 | JP 4110709 B2 | 02-07-2008 |
| | | JP 2001202178 A | 27-07-2001 |
| | | US 6661438 B1 | 09-12-2003 |
| WO 2006037545 A2 | 13-04-2006 | BR PI0516501 A | 09-09-2008 |
| | | CN 101031871 A | 05-09-2007 |
| | | EP 1803057 A2 | 04-07-2007 |
| | | JP 2008515038 A | 08-05-2008 |
| | | KR 20070049243 A | 10-05-2007 |
| | | KR 20090102880 A | 30-09-2009 |
| | | RU 2363033 C2 | 27-07-2009 |
| | | SG 140595 A1 | 28-03-2008 |
| | | TW I279720 B | 21-04-2007 |
| | | US 2006080386 A1 | 13-04-2006 |
| | | WO 2006037545 A2 | 13-04-2006 |
| | | ZA 200702853 A | 27-08-2008 |
| EP 2551784 A1 | 30-01-2013 | EP 2551784 A1 | 30-01-2013 |
| | | US 2013198685 A1 | 01-08-2013 |
| US 2012159380 A1 | 21-06-2012 | NONE | |

# PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

# PCT

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing
*(day/month/year)* see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

**FOR FURTHER ACTION**
See paragraph 2 below

| International application No. | International filing date *(day/month/year)* | Priority date *(day/month/year)* |
|---|---|---|
| PCT/US2014/053957 | 03.09.2014 | 03.09.2013 |

International Patent Classification (IPC) or both national classification and IPC
INV. G06F3/0362 G04G21/00

Applicant
APPLE INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

| Name and mailing address of the ISA: | Date of completion of this opinion | Authorized Officer |
|---|---|---|
| European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399 - 0<br>Fax: +49 89 2399 - 4465 | see form PCT/ISA/210 | Telephone No. +49 89 2399-0 |

Form PCT/ISA/237 (Cover Sheet) (July 2009)

**Box No. I Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

      ☐ on paper

      ☐ in electronic form

   b. (time)

      ☐ in the international application as filed

      ☐ together with the international application in electronic form

      ☐ subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

| | | | |
|---|---|---|---|
| Novelty (N) | Yes: | Claims | 1-67 |
| | No: | Claims | |
| Inventive step (IS) | Yes: | Claims | |
| | No: | Claims | 1-67 |
| Industrial applicability (IA) | Yes: | Claims | 1-67 |
| | No: | Claims | |

2. Citations and explanations

**see separate sheet**



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2494 of 2716**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Reference is made to the following documents:

D1 US 2013/097566 A1 (BERGLUND CARL FREDRIK ALEXANDER [SE]) 18 April 2013 (2013-04-18)

D2 US 6 661 438 B1 (SHIRAISHI ATSUSHI [JP] ET AL) 9 December 2003 (2003-12-09)

D3 WO 2006/037545 A2 (NOKIA CORP [FI]; ROEYKKEE MIKA [FI]; HEINO MERJA [FI]; KORHONE HANNU [) 13 April 2006 (2006-04-13)

D4 EP 2 551 784 A1 (ROCHE DIAGNOSTICS GMBH [DE]; HOFFMANN LA ROCHE [CH]) 30 January 2013 (2013-01-30)

D5 US 2012/159380 A1 (KOCIENDA KENNETH L [US] ET AL) 21 June 2012 (2012-06-21)

1 **Object of the invention**

Present description on paragraph 3 relates to *user interfaces of electronic devices including but not limited to user interfaces for electronic watches*, and reports on paragraph 6 that *existing methods for manipulating user interface objects on reduced-size personal electronic devices can be inefficient. Further, existing methods generally provide less precision than is preferable.*

The overall content of the claimed subject matter refers in the light of paragraph 7 to the *need for electronic devices with faster, more efficient, and more precise methods and interfaces for manipulating user interface objects.*

The claimed subject matter includes the mapping of a user action to a computer data presentation command and introduces two aspects:

Aspect a): the user action corresponds to the movement of a physical crown on a wearable electronic device (claim 22 refers to an alternative in which the user action of exerting a force on the touch–sensitive display replaces the movement of the physical crown).



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2495 of 2716**

Aspect b): the data presentation command corresponds on claim 1 to one page data scrolling of an icon menu (a plurality of icons).

Though not specifically claimed, the data pages are preconfigured. The icon data itself is only specified by the fact that the second page of icons is a subset of the first page.

2 **Prior art, novelty and inventive step**

**Prior art**

D1 (US20130097566) discloses that a user action on a touch screen selects the display of a second set of items which is a subset of the first one. The items are represented by visual indicators.

As a distinguishing feature, the system of D1 does not include any physical crown.

D2 (US6661438) shows an electronic watch with a crown in which the user action of producing the movement of the crown is attributed the meaning of scrolling the display data (screen updating operation) (see in D1: column 20, lines 17 to 38; column 21, line 13).

The system of D2 allows the presentation of data of different hierarchical levels (see column 22, lines 33 to 48).

D3 discloses the paging of icon menus (through a swipe gesture on a touch screen). However the second page is not a subset of the first one.

D4 (EP2551784) discloses that in response to triggering information (a user action or sensor data), a subset of data is selected from a displayed or non-displayed dataset according to a data priority scheme, and wherein the displayed dataset is replaced by the display of the selected subset of data.



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2496 of 2716**

D5 (US20120159380) discloses displaying different application views, including subsets of all available applications (concurrently opened applications, etc). Changing the display of an icon menu to the display of the subset formed by concurrently open applications icons

3 **Novelty**

No single evidence of the search report discloses all features of present claim 1. Claim 1 is therefore new.

4 **Inventive step**

The present application does not meet the criteria of Article 33(3) PCT, because the subject-matter of claim 1 does not involve an inventive step for the following reasons:

Considering D1 as the closest prior art document, the achievement of the effect produced by the mentioned distinguishing features, solving so the objective technical problem of obtaining *electronic devices with faster, more efficient, and more precise methods and interfaces for manipulating user interface objects,* will lead the skilled person into using other known devices. In this search the skilled person would find D2 and combine the teachings of both documents.

Taking into account that the mapping itself (the attribution of meaning) of user gestures to computer commands is the result of an arbitrary process (on present case, the movement of the physical crown could be arbitrarily attributed any meaning), the skilled person would reach the subject matter of present claim 1, and therefore no inventive step can be acknowledged.

5 Furthermore, and in a different line of reasoning, the zooming operation activated by the movement of the crown, as in D2, will naturally produce a screen updating operation displaying a subset of the first plurality of objects displayed.

6 The same reasoning applies, mutatis mutandis, to the subject matter of the corresponding independent claims 23 and 45, which therefore are also not considered inventive.



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2497 of 2716**

7 **Dependent claims**

Dependent claims 2 to 22 and corresponding claims 24 to 44 and 46 to 67 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step for the following reasons (see also the references of the search report for documents D1 to D6):

The subject matter of claims 2 to 8, 10 to 12 and 17 to 21 responds to a selection among routine design alternatives.

Claims 13 and 14 respond to further arbitrary mappings between actions of the user on the crown and activities of the computer using a similar interaction concept as that of claim 1 (plus the customary action of launching of an application corresponding to an icon).

Claims 15 and 16 refer to a presentation of the information regarding to "an activity in an application", by altering the appearance of the icon displayed. This kind of functionalities are also disclosed in D2 (see in D2: figure 1B; column 17, line 60 to column 18, line 6).



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2498 of 2716**

# PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
Ho, Brian B.
MORRISON & FOERSTER LLP
425 Market Street
San Francisco, CA 94105-2482
ETATS-UNIS D'AMERIQUE

**PCT**

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

| | |
|---|---|
| Applicant's or agent's file reference<br>106842129340 | Date of mailing *(day/month/year)*<br>19 February 2015 (19-02-2015)<br>**FOR FURTHER ACTION** See paragraphs 1 and 4 below |
| International application No.<br>PCT/US2014/053958 | International filing date *(day/month/year)*<br>3 September 2014 (03-09-2014) |
| Applicant<br>APPLE INC | |

1. [X] The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   **Filing of amendments and statement under Article 19:**
   The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

   **When?** The time limit for filing such amendments is normally two months from the date of transmittal of the International Search Report.

   **How?** Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Fascimile No.: (41-22) 338 82 70

   **For more detailed instructions, see** *PCT Applicant's Guide*, International Phase, paragraphs 9.004 - 9.011.

2. [ ] The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. [ ] **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   [ ] the protest together with the decision thereon has been transmitted to the International Bureau together with any applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   [ ] no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   The applicant may **submit comments on an informal basis on the written opinion of the International Searching Authority** to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

   Shortly after the expiration of **18 months from the priority date, the international application will be published** by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90*bis*.1 and 90*bis*.3).

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for **entry into the national phase** before those designated Offices. In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

   Within **19 months from the priority date, the applicant may request that a supplementary international search be carried out** by a different International Searching Authority that offers this service (Rule 45*bis*.1). The procedure for requesting supplementary international search is described in the *PCT Applicant's Guide*, International Phase, paragraphs 8.006-8.032.

| | |
|---|---|
| Name and mailing address of the International Searching Authority<br>European Patent Office, P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk<br>Tel. (+31-70) 340-2040<br>Fax: (+31-70) 340-3016 | Authorized officer<br>TSCHUBEL, Saju<br>Tel: +49 (0)89 2399-5894 |

Form PCT/ISA/220 (July 2014)

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| Applicant's or agent's file reference | **FOR FURTHER ACTION** | see Form PCT/ISA/220 as well as, where applicable, item 5 below. |
|---|---|---|
| 106842129340 | | |
| International application No. | International filing date *(day/month/year)* | (Earliest) Priority Date *(day/month/year)* |
| PCT/US2014/053958 | 3 September 2014 (03-09-2014) | 3 September 2013 (03-09-2013) |
| Applicant | | |
| APPLE INC. | | |

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language,** the international search was carried out on the basis of:
      [X] the international application in the language in which it was filed
      [ ] a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
   b. [ ] This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).
   c. [ ] With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. [ ] **Certain claims were found unsearchable** (See Box No. II)

3. [ ] **Unity of invention is lacking** (see Box No III)

4. With regard to the **title,**
   [X] the text is approved as submitted by the applicant
   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**
   [X] the text is approved as submitted by the applicant
   [ ] the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings,**
   a. the figure of the **drawings** to be published with the abstract is Figure No. 5
      [X] as suggested by the applicant
      [ ] as selected by this Authority, because the applicant failed to suggest a figure
      [ ] as selected by this Authority, because this figure better characterizes the invention
   b. [ ] none of the figures is to be published with the abstract



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2500 of 2716**

# INTERNATIONAL SEARCH REPORT

International application No
PCT/US2014/053958

A. CLASSIFICATION OF SUBJECT MATTER
INV. G06F3/0362
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06F G04G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| Y | US 6 266 098 B1 (COVE JEFFREY M [US] ET AL) 24 July 2001 (2001-07-24) column 1, line 52 - column 2, line 27 column 4, line 12 - line 59; claim 1 column 7, line 66 - column 8, line 39 | 1-42 |
| Y | US 6 661 438 B1 (SHIRAISHI ATSUSHI [JP] ET AL) 9 December 2003 (2003-12-09) column 20, line 17 - column 21, line 13 column 22, line 57 - column 23, line 13; figures 7A-7D | 1-42 |
| A | EP 1 052 566 A1 (CIT ALCATEL [FR]) 15 November 2000 (2000-11-15) paragraph [0010] - paragraph [0012]; claim 1; figures 1-7 | 1-42 |

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 12 February 2015 | 19/02/2015 |

| Name and mailing address of the ISA/ | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040,<br>Fax: (+31-70) 340-3016 | Alonso Goicolea, L |

1

Form PCT/ISA/210 (second sheet) (April 2005)

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2014/053958

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| US 6266098 B1 | 24-07-2001 | US 6266098 B1 | 24-07-2001 |
| | | US 6411337 B2 | 25-06-2002 |
| US 6661438 B1 | 09-12-2003 | JP 4110709 B2 | 02-07-2008 |
| | | JP 2001202178 A | 27-07-2001 |
| | | US 6661438 B1 | 09-12-2003 |
| EP 1052566 A1 | 15-11-2000 | NONE | |

Form PCT/ISA/210 (patent family annex) (April 2005)

# PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

# PCT

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing
*(day/month/year)* see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

**FOR FURTHER ACTION**
See paragraph 2 below

| International application No. | International filing date *(day/month/year)* | Priority date *(day/month/year)* |
|---|---|---|
| PCT/US2014/053958 | 03.09.2014 | 03.09.2013 |

International Patent Classification (IPC) or both national classification and IPC
INV. G06F3/0362

Applicant
APPLE INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

| Name and mailing address of the ISA: | Date of completion of this opinion | Authorized Officer |
|---|---|---|
| European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399 - 0<br>Fax: +49 89 2399 - 4465 | see form PCT/ISA/210 | Telephone No. +49 89 2399-0 |

Form PCT/ISA/237 (Cover Sheet) (July 2009)

**Box No. I Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

      ☐ on paper

      ☐ in electronic form

   b. (time)

      ☐ in the international application as filed

      ☐ together with the international application in electronic form

      ☐ subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

| | | | |
|---|---|---|---|
| Novelty (N) | Yes: | Claims | 1-42 |
| | No: | Claims | |
| Inventive step (IS) | Yes: | Claims | |
| | No: | Claims | 1-42 |
| Industrial applicability (IA) | Yes: | Claims | 1-42 |
| | No: | Claims | |

2. Citations and explanations

**see separate sheet**



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2504 of 2716**

**Box No. VIII Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2505 of 2716**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Reference is made to the following documents:

D1 US 6 266 098 B1 (COVE JEFFREY M [US] ET AL) 24 July 2001 (2001-07-24)

D2 US 6 661 438 B1 (SHIRAISHI ATSUSHI [JP] ET AL) 9 December 2003 (2003-12-09)

D3 EP 1 052 566 A1 (CIT ALCATEL [FR]) 15 November 2000 (2000-11-15)

1 **Object of the invention**

The overall content of the claimed subject matter refers in paragraph 7 to a process to *include receiving user input through a crown to rotate a virtual object*. *The process includes selecting a surface of the object from among the multiple surfaces of the object in response to determining that the crown rotation exceeded a speed threshold.*

The claimed subject matter includes the mapping of a user action to a computer data presentation command and introduces two aspects:

Aspect a): The user action produces the angular velocity of a physical crown with a speed over a threshold.

Aspect b) The computer command corresponds to displaying a second surface of the virtual object on a display (after an animation process).

2 **Prior art**

D1 discloses an animation on a virtual object which can rotate about an axis parallel to the display. The animation comprises displaying a second surface of the plurality of selectable surfaces of the virtual object of the display .

As distinguishing feature, D1 does not disclose aspect a).



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2506 of 2716**

D2 (US6661438) shows an electronic watch with a crown in which the user action of producing the movement of the crown is attributed the meaning of scrolling the display data (screen updating operation) (see in D1: column 20, lines 17 to 38; column 21, line 13).

The system of D2 allows the presentation of data of different hierarchical levels (see column 22, lines 33 to 48).

## 3 Novelty

No single evidence of the search report discloses all features of present claim 1. Claim 1 is therefore new.

## 4 Inventive step

The present application does not meet the criteria of Article 33(3) PCT, because the subject-matter of claim 1 does not involve an inventive step for the following reasons:

Considering D1 as the closest prior art document, the achievement of the effect produced by the mentioned distinguishing feature, and solving so the objective technical problem of obtaining *electronic devices with faster, more efficient, and more precise methods and interfaces for manipulating user interface objects* will lead the skilled person into using other known devices. In this search the skilled person would find D2 and combine the teachings of both documents. By doing so, the skilled person would reach the subject matter of present claim 1, and therefore no inventive step can be acknowledged.

An animation itself respond to a presentation of information, and as such excluded from patentability under Rule 39 (1) (v) PCT.

The use of thresholds of any kind is customary when evaluating user inputs. Furthermore the mapping itself of a certain user input to a specific computer command results from an arbitrary process of selection among all possible user actions.



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2507 of 2716**

The same reasoning applies, mutatis mutandis, to the subject matter of the corresponding independent claims 29 and 15, which therefore are also not considered inventive.

5 **Dependent claims**

Dependent claims 2 to 11 and corresponding claims 15 to 25 and 30 to 39 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step for the following reasons (see also the references of the search report for document D3):

A cube or a multi-sided rotatable dial as a virtual object (claims 7-9), the selection of claim 2, the user actions for selection (claim 10), the haptic output (claim 3) respond to selections among routine design alternatives well at the disposal of the skilled person.

The computer activity initiated when the input is below a threshold (claims 4 to 6) respond to a further delimitation arbitrary mapping between actions of the user on the rotatable input mechanism crown and activities of the computer using a similar interaction concept as that of claim 1.

-

**Re Item VIII**

**Certain observations on the international application**

The present set of claims comprises more than one independent claim in the same category, i.e 2 independent method claims (claims 1, 12), 2 independent apparatus claims (claims 29, 40), and 2 independent computer program product claims (claims 15, 26).

Claim 12 completes the content of claim 1 with that of claim 4.

In a similar way, claim 26 completes the content of claim 15 with that of claim 18, and claim 40 completes the content of claim 29 with that of claim 32.

In the present case, however, it s considered appropriate to cover the subject matter in a single independent claim in each category. In consequence, the requirement of conciseness (Article 6 PCT) is not met.



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2508 of 2716**

# PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
Ho, Brian B.
MORRISON & FOERSTER LLP
425 Market Street
San Francisco, CA 94105-2482
ETATS-UNIS D'AMERIQUE

**PCT**

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

| | |
|---|---|
| Applicant's or agent's file reference<br>106842126140 | Date of mailing<br>*(day/month/year)*<br>3 June 2015 (03-06-2015)<br>**FOR FURTHER ACTION** See paragraphs 1 and 4 below |
| International application No.<br>PCT/US2015/019321 | International filing date<br>*(day/month/year)*<br>6 March 2015 (06-03-2015) |
| Applicant<br>APPLE INC. | |

1. [X] The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   **Filing of amendments and statement under Article 19:**
   The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

   **When?** The time limit for filing such amendments is normally two months from the date of transmittal of the International Search Report.

   **How?** Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Fascimile No.: (41-22) 338.82.70

   **For more detailed instructions, see *PCT Applicant's Guide*,** International Phase, paragraphs 9.004 - 9.011.

2. [ ] The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. [ ] **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   [ ] the protest together with the decision thereon has been transmitted to the International Bureau together with any applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   [ ] no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   The applicant may **submit comments on an informal basis on the written opinion of the International Searching Authority** to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

   Shortly after the expiration of **18 months from the priority date, the international application will be published** by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90*bis*.1 and 90*bis*.3).

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for **entry into the national phase** before those designated Offices. In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

   Within **19 months from the priority date, the applicant may request that a supplementary international search be carried out** by a different International Searching Authority that offers this service (Rule 45*bis*.1). The procedure for requesting supplementary international search is described in the *PCT Applicant's Guide*, International Phase, paragraphs 8.006-8.032.

| | |
|---|---|
| Name and mailing address of the International Searching Authority<br>European Patent Office, P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk<br>Tel. (+31-70) 340-2040<br>Fax: (+31-70) 340-3016 | Authorized officer<br>VAN RIJSSEL, Debbie<br>Tel: +31 (0)70 340-4719 |

Form PCT/ISA/220 (July 2014)

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| Applicant's or agent's file reference | **FOR FURTHER ACTION** | see Form PCT/ISA/220 as well as, where applicable, item 5 below. |
|---|---|---|
| 106842126140 | | |
| International application No. | International filing date *(day/month/year)* | (Earliest) Priority Date *(day/month/year)* |
| PCT/US2015/019321 | 6 March 2015 (06-03-2015) | 2 September 2014 (02-09-2014) |
| Applicant | | |
| APPLE INC. | | |

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language,** the international search was carried out on the basis of:
      [X] the international application in the language in which it was filed
      [ ] a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
   b. [ ] This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).
   c. [ ] With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. [ ] **Certain claims were found unsearchable** (See Box No. II)

3. [ ] **Unity of invention is lacking** (see Box No III)

4. With regard to the **title,**
   [X] the text is approved as submitted by the applicant
   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**
   [X] the text is approved as submitted by the applicant
   [ ] the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings,**
   a. the figure of the **drawings** to be published with the abstract is Figure No. 6A
      [X] as suggested by the applicant
      [ ] as selected by this Authority, because the applicant failed to suggest a figure
      [ ] as selected by this Authority, because this figure better characterizes the invention
   b. [ ] none of the figures is to be published with the abstract



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2510 of 2716**

# INTERNATIONAL SEARCH REPORT

International application No
PCT/US2015/019321

A. CLASSIFICATION OF SUBJECT MATTER
INV. G06F1/16 G06F3/0488 G06F3/03
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | APPLE: "iPhone User's Guide", INTERNET CITATION, June 2007 (2007-06), XP002474183, Retrieved from the Internet: URL:http://mesnotices.fr/manuel-notice-mode-emploi/APPLE/IPHONE%2D%5FE# [retrieved on 2008-03-27] the whole document | 1-94 |
| X | US 6 809 724 B1 (SHIRAISHI ATSUSHI [JP] ET AL) 26 October 2004 (2004-10-26) column 34, line 54 - column 41, line 14; figures 23-33 | 1-94 |

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 26 May 2015 | 03/06/2015 |

| Name and mailing address of the ISA/ | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040,<br>Fax: (+31-70) 340-3016 | Russo dos Santos, C |

1

Form PCT/ISA/210 (second sheet) (April 2005)

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2015/019321

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| US 6809724 B1 | 26-10-2004 | JP 4151200 B2 | 17-09-2008 |
| | | JP 2001202181 A | 27-07-2001 |
| | | US 6809724 B1 | 26-10-2004 |

Form PCT/ISA/210 (patent family annex) (April 2005)

# PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

RECEIVED
JUN 0 8 2015
Morrison | Foerster - SF

PCT

To:

see form PCT/ISA/220

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43*bis*.1)

| | |
|---|---|
| Date of mailing *(day/month/year)* see form PCT/ISA/210 (second sheet) | |
| Applicant's or agent's file reference<br>see form PCT/ISA/220 | **FOR FURTHER ACTION**<br>See paragraph 2 below |

| International application No. | International filing date *(day/month/year)* | Priority date *(day/month/year)* |
|---|---|---|
| PCT/US2015/019321 | 06.03.2015 | 02.09.2014 |

International Patent Classification (IPC) or both national classification and IPC
INV. G06F1/16 G06F3/0488 G06F3/03

Applicant
APPLE INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

| Name and mailing address of the ISA: | Date of completion of this opinion | Authorized Officer |
|---|---|---|
| European Patent Office<br>P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk - Pays Bas<br>Tel. +31 70 340 - 2040<br>Fax: +31 70 340 - 3016 | see form PCT/ISA/210 | Telephone No. +31 70 340-0 |

Form PCT/ISA/237 (Cover Sheet) (January 2015)

**Box No. I Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:

   a. ☐ forming part of the international application as filed:

      ☐ in the form of an Annex C/ST.25 text file.

      ☐ on paper or in the form of an image file.

   b. ☐ furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.

   c. ☐ furnished subsequent to the international filing date for the purposes of international search only:

      ☐ in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).

      ☐ on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2514 of 2716**

**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

| | | | |
|---|---|---|---|
| Novelty (N) | Yes: | Claims | 1-94 |
| | No: | Claims | |
| Inventive step (IS) | Yes: | Claims | |
| | No: | Claims | 1-94 |
| Industrial applicability (IA) | Yes: | Claims | 1-94 |
| | No: | Claims | |

2. Citations and explanations

**see separate sheet**

**Box No. VIII Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2515 of 2716**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1 Reference is made to the following documents:

D1 APPLE: "iPhone User's Guide", INTERNET CITATION, June 2007 (2007-06), XP002474183, Retrieved from the Internet: URL:http://mesnotices.fr/manuel-notice-mode-emploi/APPLE/IPHONE%2D%5FE# [retrieved on 2008-03-27]

D2 US 6 809 724 B1 (SHIRAISHI ATSUSHI [JP] ET AL) 26 October 2004 (2004-10-26)

2 The present application does not meet the criteria of Article 33(3) PCT, because the subject-matter of claim 1 does not involve an inventive step.

2.1 Document D1 is regarded as being the prior art closest to the subject-matter of claim 1, and discloses - references applying to this document; striked-through features not disclosed - a method (see Chapter 4: Mail) comprising:

at an electronic device with a display, a touch-sensitive surface, and a ~~rotatable~~ input mechanism (see Chapter 4: Mail, page 43):

displaying, on the display, an affordance representing an electronic message application (see Chapter 4: Mail, page 43);

receiving user input ~~representing movement of the rotatable input mechanism~~ (see Chapter 4: Mail, page 43);

in response to receiving the user input ~~representing the movement of the rotatable input mechanism~~, displaying a landing screen of the electronic message application (see Chapter 4: Mail, page 46),

wherein the landing screen includes display of an inbox affordance and a compose affordance (see Chapter 4: Mail, page 46);

receiving user input associated with the landing screen (see Chapter 4: Mail, page 45);

determining whether the user input associated with the landing screen represents a touch associated with the displayed inbox affordance or a touch



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associated with the displayed compose affordance (see Chapter 4: Mail, pages 45-47) ;

in response to receiving the user input associated with the landing screen and in accordance with a determination that the user input associated with the landing screen represents a touch associated with the displayed inbox affordance, displaying, on the display, a list of electronic conversation objects (see Chapter 4: Mail, page 47); and

in response to receiving the user input associated with the landing screen and in accordance with a determination that the user input associated with the landing screen represents a touch associated the displayed compose affordance, displaying, on the display, an interface for composing a new electronic message (see Chapter 4: Mail, page 45).

2.2 The subject-matter of claim 1 therefore differs from this known method in that it displays a landing screen of the electronic message application in response to receiving user input representing movement of a rotatable input mechanism, and is therefore new.

2.3 The problem to be solved by the present invention may therefore be regarded as how to invoke an application in an electronic device.

2.4 The solution proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons.

2.5 The feature of using a rotatable input mechanism to invoke an (electronic message) application, as opposed to using a touch gesture as disclosed by D1, is merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, in order to solve the problem posed.

2.6 Further, this feature has already been employed for the same purpose in document D2 and is described as providing the same advantages as in the present application. The skilled person would therefore regard it as a normal design option to include this feature in the method described in D1 in order to solve the problem posed.

2.7 In view of paragraphs 2.5 and 2.6 above, the skilled person would regard it a normal design procedure to combine all the features set out in claim 1 without exercising inventive skill.



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3 The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent claims 45-51, which therefore are also considered not inventive (Article 33(3) PCT).

4 Dependent claims 2-44 and 52-94 do not contain any features which, in combination with the features of any claim to which they refers, meet the requirements of the PCT in respect of inventive step (Article 33(3) PCT) since their additional features are commonly known to the person skilled in the art at the date of filing of the application at hand. Documents D1 and D2 illustrate this.

**Re Item VIII**

**Certain observations on the international application**

5 The application does not meet the requirements of Article 6 PCT, because its claims are not concise. Indeed, although claims 1 and 45-51 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and/or in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.



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**AliveCor, Inc. v. Apple Inc.**
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XS CPRTENFRDE

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# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 22707227 |
| **Application Number:** | 14599424 |
| **International Application Number:** | |
| **Confirmation Number:** | 3136 |
| **Title of Invention:** | WELLNESS AGGREGATOR |
| **First Named Inventor/Applicant Name:** | Christopher D. Soli |
| **Customer Number:** | 119082 |
| **Filer:** | Brian B. Ho/Sonja Talley |
| **Filer Authorized By:** | Brian B. Ho |
| **Attorney Docket Number:** | 106842130031 (P23397US3) |
| **Receipt Date:** | 23-JUN-2015 |
| **Filing Date:** | 16-JAN-2015 |
| **Time Stamp:** | 09:36:20 |
| **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 | Information Disclosure Statement (IDS) Form (SB08) | 106842130031_IDS.pdf | 617780<br>fb3ef7810a8f51cd4717223b8e484b128a79f8e0 | no | 11 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |

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|---|---|---|---|---|---|
| 2 | Foreign Reference | EP1052566A1.pdf | 466112<br>9cbec93dc887ed80e7e2ecd41546302f6364b205 | no | 9 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Foreign Reference | EP_2551784_A1.pdf | 1347283<br>8695d69a1a93e0bc4b2bd3d2d07392317b94fe55 | no | 27 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Foreign Reference | WO_2006037545_A2.pdf | 1942934<br>5f2e5e95680952ec8924e7fd97749cba005b9d9f | no | 50 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 5 | Foreign Reference | WO2013169849A2.pdf | 7860049<br>e1d20068abf6e9901fe3e62f89b385c2416a4df7 | no | 184 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 6 | Foreign Reference | WO2014105276A1.pdf | 8544069<br>cfad0a1e4442d7f1278b9742643231b606aa62d8 | no | 186 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 7 | Non Patent Literature | 14503072_NFOA_01_26_2015.pdf | 414632<br>5551a029ce2d1e8ad2f14a4e88801db5dc2a59eb | no | 12 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 8 | Non Patent Literature | 14503296_NFOA_01_30_2015.pdf | 605016<br>9cf26b5641a6897170c6174a2c813bb9d2a5a79d | no | 16 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 9 | Non Patent Literature | 14503372_NFOA_12_05_2014.pdf | 377827<br>69e28d1b5d764d44435c45c3c2e846437384c2d1 | no | 11 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 10 | Non Patent Literature | 14503381_NFOA_5_13_2015.pdf | 454161<br>d8e105a7b1e2a8e9d3ea6fe606e11c6968ee80e2 | no | 13 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |

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| 11 | Non Patent Literature | 14599425_NFOA_03_17_2015.pdf | 534399<br>b9e110adb2f893651e95115ee58d19de67c48c75 | no | 16 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 12 | Non Patent Literature | Kamijo_2015_1.pdf | 136895<br>b8e15b344703f97a0ec7b604657e056f195fde3e | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 13 | Non Patent Literature | Lemay_2007_61.pdf | 821416<br>d55c5ef786b4855728ea504a3dc76f14856605a3 | no | 61 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 14 | Non Patent Literature | NDTV_2013_4.pdf | 741358<br>e2d5f235d5ddfc27bab77ab9284b2451527fcbce | no | 4 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 15 | Non Patent Literature | PCTUS2014053951_ISR_WO_12_08_2014.pdf | 564742<br>fe10b1abbbb3d5add7125304b3d1c534d0f71150 | no | 11 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 16 | Non Patent Literature | PCTUS2014053957_ISRWO_02_19_2015.pdf | 1569946<br>6d24f32e567ccd00db327bc11d49fa9dfcfa6b88 | no | 11 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 17 | Non Patent Literature | PCTUS2014053958_ISRWO_02_19_2015.pdf | 1726726<br>1342141374348a6fe346e34d995e1c74c9655d8a | no | 10 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 18 | Non Patent Literature | PCTUS2015019321_ISR_WO_06_03_2015.pdf | 557648<br>e3c0c79700c77b0977e7138d002b20467568b123 | no | 11 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 19 | Non Patent Literature | Apple_2007_1.pdf | 4965981<br>e280d46ff71bc79e9b4c82d74bf8d5e3fc6e7b92 | no | 137 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |

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| **Total Files Size (in bytes):** | 34248974 |

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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.**

## PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 14/599,424

### 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)) | 29 minus 20 = | * 9 | | | OR | x 80 = | 720 |
| 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). | | | | | | 400 |
| 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 | 2720 |

### APPLICATION AS AMENDED - PART II

| | | (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($) | OTHER THAN SMALL ENTITY ADDITIONAL FEE($) |
|---|---|---|---|---|---|---|---|---|---|---|
| AMENDMENT A | 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 | |

| | | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE($) | ADDITIONAL FEE($) | | RATE($) | ADDITIONAL FEE($) |
|---|---|---|---|---|---|---|---|---|---|---|
| AMENDMENT B | 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.

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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 |
|---|---|---|---|---|---|---|
| 14/599,424 | 01/16/2015 | 3769 | 2860 | 106842130031 (P23397US3) | 29 | 3 |

**CONFIRMATION NO. 3136**

119082
Apple c/o Morrison & Foerster LLP SF
425 Market Street
San Francisco, CA 94105-2482

**FILING RECEIPT**

*OC000000073142345*

Date Mailed: 02/02/2015

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)**

Christopher D. Soli, Mountain View, CA;
Lawrence Y. Yang, San Francisco, CA;
Dennis S. Park, San Francisco, CA;
Stephen O. Lemay, Palo Alto, CA;
Daniel S. Keen, San Jose, CA;

**Applicant(s)**

Apple Inc., Cupertino, CA

**Power of Attorney:** The patent practitioners associated with Customer Number 119082

**Domestic Priority data as claimed by applicant**

This appln claims benefit of 62/006,032 05/30/2014

**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.*

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The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/599,424**
**Projected Publication Date:** 12/03/2015



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2525 of 2716**

**Non-Publication Request:** No

**Early Publication Request:** No

**Title**

WELLNESS AGGREGATOR

**Preliminary Class**

600

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

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**IPR2023-01434, U.S. Patent No. 10,270,898**
**2526 of 2716**

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| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 14/599,424 | 01/16/2015 | Christopher D. Soli | 106842130031 (P23397US3) |

**CONFIRMATION NO. 3136**

119082
Apple c/o Morrison & Foerster LLP SF
425 Market Street
San Francisco, CA 94105-2482

**NOTICE**

*OC000000073142346*

Date Mailed: 02/02/2015

## 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 properly executed inventor's oath or declaration has not been received for the following inventor(s):
  Christopher D. Soli
  Lawrence Y. Yang
  Dennis S. Park
  Stephen O. Lemay
  Daniel S. Keen



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2528 of 2716**

PTO/AIA/15 (03-13)
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# UTILITY PATENT APPLICATION TRANSMITTAL

*(ONLY FOR NEW NONPROVISIONAL APPLICATIONS UNDER 37 CFR 1.53(B))*

| | |
|---|---|
| *Attorney Docket No.* | 106842130031 (P23397US3) |
| *First Named Inventor* | **Christopher D. SOLI** |
| *Title* | **WELLNESS AGGREGATOR** |
| ~~*Express Mail Label No.*~~ | N/A |

## APPLICATION ELEMENTS

*See MPEP chapter 600 concerning utility patent application contents.*

1. [ ] **Fee Transmittal Form** (PTO/SB/17 or equivalent)
2. [ ] **Applicant asserts small entity status.** See 37 CFR 1.27
3. [ ] **Applicant certifies micro entity status.** See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent.
4. [X] **Specification** [*Total Pages* 122 ]
   Both the claims and abstract must start on a new page.
   *(See MPEP § 608.01(a) for information on the preferred arrangement)*
5. [X] **Drawing(s)** *(35 U.S.C. 113)* [*Total Sheets* 51 ]
6. **Inventor's Oath or Declaration** [*Total Pages* ]
   *(including substitute statements under 37 CFR 1.64 and assignments serving as an oath or declaration under 37 CFR 1.63(e))*
   a. [ ] Newly executed (original or copy)
   b. [ ] A copy from a prior application (37 CFR 1.63(d))
7. [X] **Application Data Sheet (8 pages)** **See note below.*
   See 37 CFR 1.76 (PTO/AIA/14 or equivalent)
8. [ ] **CD-ROM or CD-R** In duplicate, large table, or Computer Program *(Appendix)*
   [ ] Landscape Table on CD
9. **Nucleotide and/or Amino Acid Sequence Submission** *(if applicable, items a. – c. are required)*
   a. [ ] Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. [ ] CD-ROM or CD-R (2 copies); or ii. [ ] Paper
   c. [ ] Statements verifying identity of above copies

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## ACCOMPANYING APPLICATION PARTS

10. [ ] **Assignment Papers**
    (cover sheet & document(s))
    Name of Assignee
11. [ ] **37 CFR 3.73(c) Statement** *(when there is an assignee)* [X] **Power of Attorney (1 page)**
12. [ ] **English Translation Document** *(if applicable)*
13. [ ] **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
    [ ] Copies of citations attached
14. [ ] **Preliminary Amendment**
15. [ ] **Return Receipt Postcard** *(MPEP § 503) (Should be specifically itemized)*
16. [ ] **Certified Copy of Priority Document(s)** *(if foreign priority is claimed)*
17. [ ] **Nonpublication Request** Under 35 U.S.C.122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
18. [ ] Other:

***Note:** (1) Benefit claims under 37 CFR 1.78 and foreign priority claims under 1.55 **must** be included in an Application Data Sheet (ADS).
(2) For applications filed under 35 U.S.C. 111, the application must contain an ADS specifying the applicant if the applicant is an assignee, person to whom the inventor is under an obligation to assign, or person who otherwise shows sufficient proprietary interest in the matter. See 37 CFR 1.46(b).

## 18. CORRESPONDENCE ADDRESS

[X] The address associated with Customer Number: 119082 *OR* [ ] Correspondence address below

| | | | | | |
|---|---|---|---|---|---|
| Name | | | | | |
| Address | | | | | |
| City | | State | | Zip Code | |
| Country | | Telephone | | Email | |

| | | | |
|---|---|---|---|
| Signature | /Brian B. Ho/ | Date | January 16, 2015 |
| Name (Print/Type) | Brian B. Ho | Registration No. (Attorney/Agent) | 60,199 |

I hereby certify that this paper is being transmitted via the Office electronic filing system in accordance with § 1.6(a)(4).

Dated: January 16, 2015 Electronic Signature for Alexis Perry: /Alexis Perry/

sf-3486852

# WELLNESS AGGREGATOR

## Cross-Reference to Related Applications

**[0001]** This application claims priority to U.S. Provisional Serial No. 62/006,032, filed on May 30, 2014, entitled "WELLNESS AGGREGATOR," which is hereby incorporated by reference in its entirety for all purposes. This application relates to the following co-pending provisional application: U.S. Patent Application Serial No. 62/006,031, entitled "MANAGING USER INFORMATION," filed May 30, 2014, which is hereby incorporated by reference in its entirety. This application also relates to the following co-pending non-provisional application: U.S. Patent Application Serial No. _____, entitled "WELLNESS AGGREGATOR," filed January 16, 2015, which is hereby incorporated by reference in its entirety.

## Field

**[0002]** The following disclosure relates generally to data management and, more specifically, to aggregating and sharing wellness data.

## Background

**[0003]** Approximately 133 million Americans currently suffer from at least one chronic condition. This number is expected to rise to approximately 165 million by the year 2020. As a result, the cost of healthcare in the United States is expected to increase dramatically. Attempts have been made to improve the health of individuals by providing them with tools to monitor and track their wellness data. Wellness data can generally include any type of data associated with a person's health, such as their weight, heart rate, blood pressure, blood glucose level, medication compliance, activity level, or the like. Users can monitor their wellness using devices, such as blood pressure cuffs, blood glucose monitors, electrocardiograms, step counters, and the like. Software applications (e.g., Apps) associated with each of these devices have also been developed to allow users to track their wellness data over time. While each application can be used to view useful information about a user's health, current applications are limited in their ability to allow users to store, view, and share wellness data collected by different devices.



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## Summary

**[0004]** The present disclosure relates to processes for aggregating and sharing wellness data. One example process can include causing a display of an aggregated view of a plurality of types of wellness data, wherein the aggregated view comprises a plurality of partitions, each partition of the plurality of partitions associated with a type of the plurality of types of wellness data; receiving a selection of a partition of the plurality of partitions; and causing a display of an expanded view of the selected partition of the plurality of partitions.

**[0005]** Another example process can include causing, on a device, a display of a plurality of partitions, wherein each partition of the plurality of partitions is associated with a type of wellness data of a plurality of types of wellness data; in response to detecting a change in an orientation of the device, selecting a subset of the plurality of partitions; and causing a display of the selected subset of the plurality of partitions.

**[0006]** Another example process can include causing a display of a first plurality of partitions associated with a first user, wherein each partition of the first plurality of partitions is associated with a type of wellness data of the first user; and in response to receiving a request to view a second plurality of partitions associated with a second user, causing a display of a second plurality of partitions associated with a second user, wherein each partition of the second plurality of partitions is associated with a type of wellness data of the second user.

**[0007]** Another example process can include receiving an identification of a user authorized to access a set of wellness data; in response to detecting an update to the set of wellness data, transmitting a notification to the user authorized to access the set of wellness data notifying the user authorized to access the set of wellness data that the update to the set of wellness data has been detected; and transmitting at least a portion of the set of wellness data to the user authorized to access the set of wellness data.

**[0008]** Another example process can include receiving, from a first user, a request to access wellness data associated with a second user; transmitting, to the second user, a request to authorize the first user to access the wellness data associated with the second user; and in response to receiving an authorization from the second user, transmitting the wellness data associated with the second user to the first user.



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**[0009]** Another example process can include, at an electronic device comprising a display: displaying, on the display, a graph comprising a first data-set representation of a first data set in which a first dependent variable varies as an independent variable changes and a second data-set representation of a second data set in which a second dependent variable varies as the independent variable changes, wherein the first data-set representation is associated with a first range of vertical positions within the graph and the second data-set representation is associated with a second range of vertical positions within the graph. The process can further include detecting, at a respective location on the display, a user input; in response to detecting the user input: in accordance with a determination that the respective location is within the first range of vertical positions associated with the first data-set representation, displaying, on the display, an indication that the first data-set representation has been selected; and in accordance with a determination that the respective location is within the second range of vertical positions associated with the second data-set representation, displaying, on the display, an indication that the second data-set representation has been selected.

**[0010]** Another example process can include, at an electronic device comprising a display: while the electronic device is in a locked state: detecting a request to display emergency information about a user of the device; and in response to detecting the request, displaying, on the display, an emergency information interface comprising emergency information about the user of the device without unlocking the device.

**[0011]** Another example process can include, at an electronic device: receiving, from a user, information identifying a plurality of approved sources of wellness data, wherein the information identifying the plurality of approved sources identifies one or more types of wellness data that are approved to be received from the plurality of approved sources and stored in a wellness database; and receiving, from the user, information identifying a plurality of approved destinations of wellness data, wherein the information identifying the plurality of approved destinations identifies one or more types of wellness data that are approved to be accessed from the wellness database by the plurality of approved destinations of wellness data.

**[0012]** The present disclosure also relates to methods for approving sources and destinations of wellness data with granularity. One example process can include receiving, from a user, information identifying a plurality of approved sources of wellness data, wherein the information



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identifying the plurality of approved sources identifies one or more types of wellness data that are approved to be received from the plurality of approved sources and stored in a wellness database; and receiving, from the user, information identifying a plurality of approved destinations of wellness data, wherein the information identifying the plurality of approved destinations identifies one or more types of wellness data that are approved to be accessed from the wellness database by the plurality of approved destinations of wellness data.

**[0013]** In some examples, the plurality of approved sources comprise an electronic device or software application.

**[0014]** In some examples, the plurality of approved destinations comprise an electronic device or software application.

**[0015]** In some examples, the plurality of approved sources are ranked amongst each other.

**[0016]** In some examples, the method further includes identifying a first wellness data entry in the wellness database that was received from a first approved source of the plurality of approved sources, the first wellness data entry comprising a first wellness data type and a first timestamp; and identifying a second wellness data entry in the wellness database that was received from a second approved source of the plurality of approved sources, the second wellness data entry comprising a second wellness data type and a second timestamp, wherein the first wellness data type and the second wellness data type are the same, and wherein the first timestamp is within a threshold length of time from the second timestamp.

**[0017]** In some examples, the first approved source has been identified by the user as being preferred over the second approved source, and wherein the method further comprises using the first wellness data entry instead of using the second wellness data entry.

**[0018]** In some examples, the first approved source has been identified by the user as being preferred over the second approved source, and wherein the method further comprises prioritizing the first wellness data entry over the second wellness data entry.

**[0019]** In some examples, the method further includes in accordance with a determination that the first wellness data entry is prioritized over the second wellness data entry, using the first wellness data entry instead of using the second wellness data entry.



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**[0020]** In some examples, the second approved source has been identified by the user as being preferred over the first approved source, and wherein the method further comprises prioritizing the second wellness data entry over the first wellness data entry.

**[0021]** In some examples, the method further includes in accordance with a determination that the second wellness data entry is prioritized over the first wellness data entry, using the second wellness data entry instead of using the first wellness data entry.

**[0022]** In some examples, the method further includes displaying, on the display, a plurality of categories of wellness data stored in the wellness database.

**[0023]** In some examples, the method further includes detecting a selection of a category of wellness data from the displayed plurality of categories of wellness data; and in response to detecting the selection of the category of wellness data, displaying, on the display, one or more sub-categories of the category of wellness data.

**[0024]** In some examples, the method further includes detecting a selection of a sub-category from the displayed one or more sub-categories; and in response to detecting the selection of the sub-category, displaying, on the display, a detailed view of the sub-category.

**[0025]** In some examples, the detailed view of the sub-category comprises a graph representation of the sub-category of wellness data over time and a numerical daily value of the sub-category of wellness data.

**[0026]** In some examples, the detailed view of the sub-category further comprises an input field for entering a wellness data entry, and wherein the method further comprises receiving a wellness data entry to be stored in the wellness database that was input into the input field.

**[0027]** In some examples, the detailed view of the sub-category further comprises a textual description of the sub-category.

**[0028]** In some examples, the detailed view of the sub-category further comprises an option to view wellness data entries corresponding to the sub-category, and wherein the method further comprises displaying, on the display, a plurality of wellness data entries corresponding to the sub-category stored in the wellness database.



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**[0029]** In some examples, each of the plurality of wellness data entries comprises a numerical value of the data entry, a timestamp, and an identification of a source of the data entry.

**[0030]** In some examples, the detailed view of the sub-category further comprises an option to share wellness data, and wherein the method further includes displaying, on the display, a data sharing interface comprising the plurality of approved sources and the plurality of approved destinations.

**[0031]** In some examples, the method further includes detecting a request to reorder the displayed plurality of approved sources; and in response to detecting the request to reorder the displayed plurality of approved sources, reordering the displayed plurality of approved sources in accordance with the detected request to reorder the displayed plurality of approved sources.

**[0032]** In some examples, the data sharing interface further comprises options to add an approved destination to the plurality of approved destinations and to remove an approved destination from the plurality of approved destinations.

**[0033]** In some examples, the method further includes receiving a search query; and displaying, on the display, one or more sub-categories of the plurality of categories that match the search query, wherein the displayed one or more sub-categories that match the search query are color-coded based on their respective categories.

**[0034]** In some examples, the method further includes displaying, on the display, a source interface comprising a list of known sources.

**[0035]** In some examples, the source interface further comprises a numerical indicator associated a known source of the known sources that represents a number of new types of wellness data that can be provided by the known source.

**[0036]** In some examples, the method further includes detecting a selection of a known source from the displayed list of known sources; and in response to detecting the selection of the known source, displaying, on the display, a list of types of wellness data that the known source can provide.



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**[0037]** In some examples, the list of types of wellness data that the known source can provide comprises a selectable option for each of the types of wellness data that the known source can provide to approve or reject the associated type of wellness data.

**[0038]** In some examples, the method further includes detecting a selection of the selectable option for a type of wellness data that the known source can provide; and in response to detecting the selection of the selectable option, approving or rejecting the type of wellness data that the known source can provide in accordance with the detected selection of the selectable option.

**[0039]** Devices and non-transitory computer-readable storage media for performing these processes are also provided.

## Brief Description of the Drawings

**[0040]** FIG. 1A is a block diagram illustrating a portable multifunction device with a display in accordance with some examples.

**[0041]** FIG. 1B is a block diagram illustrating exemplary components for event handling in accordance with some examples.

**[0042]** FIG. 2 illustrates a portable multifunction device having a touch screen in accordance with some examples.

**[0043]** FIG. 3 is a block diagram of an exemplary multifunction device with a display in accordance with some examples.

**[0044]** FIG. 4A illustrates an exemplary user interface for a menu of applications on a portable multifunction device in accordance with some embodiments.

**[0045]** FIG. 4B illustrates an exemplary user interface for a multifunction device with a touch-sensitive surface that is separate from the display in accordance with some embodiments.

**[0046]** FIG. 5 illustrates a block diagram of an example system for aggregating wellness data according to various examples.



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**[0047]** FIG. 6 illustrates a block diagram of an example system for sharing wellness data according to various examples.

**[0048]** FIG. 7 illustrates an example process for authorizing and pushing wellness data to authorized other users according to various examples.

**[0049]** FIG. 8 illustrates an example process for authorizing users to pull wellness data according to various examples.

**[0050]** FIGs. 9-14 illustrate example interfaces for displaying aggregated wellness data according to various examples.

**[0051]** FIG. 15 illustrates an example process for displaying aggregated wellness data according to various examples.

**[0052]** FIG. 16 illustrates an example interface for displaying aggregated wellness data according to various examples.

**[0053]** FIG. 17 illustrates an example process for displaying aggregated wellness data according to various examples.

**[0054]** FIG. 18 illustrates an example interface for displaying aggregated wellness data of other users according to various examples.

**[0055]** FIG. 19 illustrates another example interface for displaying aggregated wellness data of other users according to various examples.

**[0056]** FIG. 20 illustrates an example process for displaying aggregated wellness data of other users according to various examples.

**[0057]** FIGs. 21-25 illustrate example interfaces for displaying wellness or non-wellness data according to various examples.

**[0058]** FIG. 26 illustrates an example process for displaying wellness or non-wellness data according to various examples.



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**[0059]** FIGs. 27-36 illustrate example interfaces for displaying wellness or non-wellness data according to various examples.

**[0060]** FIGs. 37A and 37B illustrate an example process for managing and displaying wellness or non-wellness data according to various examples.

**[0061]** FIGs. 38-43 illustrate example interfaces for displaying emergency medical information according to various examples.

**[0062]** FIG. 44 illustrates an example process for displaying emergency medical information according to various examples.

**[0063]** FIG. 45 illustrates an example computing system for aggregating and sharing wellness data according to various examples.

**[0064]** FIG. 46 illustrates a functional block diagram of an electronic device configured to display wellness or non-wellness data according to various examples.

**[0065]** FIG. 47 illustrates a functional block diagram of an electronic device configured to manage and display wellness or non-wellness data according to various examples.

**[0066]** FIG. 48 illustrates a functional block diagram of an electronic device configured to display emergency medical information according to various examples.

## Detailed Description

**[0067]** In the following description of the disclosure and examples, reference is made to the accompanying drawings in which it is shown by way of illustration specific examples that can be practiced. It is to be understood that other examples can be practiced and structural changes can be made without departing from the scope of the disclosure.

**[0068]** The present disclosure relates to aggregating and sharing wellness data. The wellness data can be received by a user device from any number of sensors external or internal to the user device, from a user manually entering the wellness data, or from other users or entities. The user device can securely store the wellness data on the user device and transmit the wellness data to be stored on a remote database. A user of the device can share some or all of the wellness data



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with friends, relatives, caregivers, healthcare providers, or the like. The user device can further display a user's wellness data in an aggregated view of different types of wellness data. For example, the aggregated view can include a set of partitions, where each partition corresponds to a different type of wellness data. Wellness data of other users can also be viewed if authorizations from those users have been received. In some examples, the partitions can be displayed as having the appearance and associated animations of a stack of cards, where each card corresponds to a different partition (and thus, a different type of wellness data). In this view of stacked cards, each card can display a partial view of a portion of its corresponding wellness data. When the user selects one of the cards, a first expanded view of the selected card including at least one of first reconfigured data, additional data, or an expanded view of the original data can be displayed. A second expanded view of the selected card can be displayed in response to a change in the orientation of the user device. The second expanded view can include at least one of second reconfigured data, additional data, or an expanded view of the original data can be displayed. In one example, the second expanded view can include a graph of the wellness data over time.

EXEMPLARY DEVICES

**[0069]** Examples of electronic devices, user interfaces for such devices, and associated processes for using such devices are described. In some examples, the device includes portable communications device, such as a mobile telephone, that also contains other functions, such as PDA and/or music player functions. Examples of portable multifunction devices include, without limitation, the iPhone®, iPod Touch®, and iPad® devices from Apple Inc. of Cupertino, California. Other portable electronic devices, such as laptops or tablet computers with touch-sensitive surfaces (e.g., touch screen displays and/or touch pads), are, optionally, used. It should also be understood that, in some examples, the device is not a portable communications device, but is a desktop computer or a television with a touch-sensitive surface (e.g., a touch screen display and/or a touch pad). In some examples, the device does not have a touch screen display and/or a touch pad, but rather is capable of outputting display information (such as the user interfaces of the disclosure) for display on a separate display device, and capable of receiving input information from a separate input device having one or more input mechanisms (such as one or more buttons, a touch screen display and/or a touch pad). In some examples, the device



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has a display, but is capable of receiving input information from a separate input device having one or more input mechanisms (such as one or more buttons, a touch screen display and/or a touch pad).

**[0070]** In the discussion that follows, an electronic device that includes a display and a touch-sensitive surface is described. It should be understood, however, that the electronic device optionally includes one or more other physical user-interface devices, such as a physical keyboard, a mouse and/or a joystick. Further, as described above, it should be understood that the described electronic device, display and touch-sensitive surface are optionally distributed amongst two or more devices. Therefore, as used in this disclosure, information displayed on the electronic device or by the electronic device is optionally used to describe information outputted by the electronic device for display on a separate display device (touch-sensitive or not). Similarly, as used in this disclosure, input received on the electronic device (e.g., touch input received on a touch-sensitive surface of the electronic device) is optionally used to describe input received on a separate input device, from which the electronic device receives input information.

**[0071]** The device typically supports a variety of applications, such as one or more of the following: a drawing application, a presentation application, a word processing application, a website creation application, a disk authoring application, a spreadsheet application, a gaming application, a telephone application, a video conferencing application, an e-mail application, an instant messaging application, a workout support application, a photo management application, a digital camera application, a digital video camera application, a web browsing application, a digital music player application, a television channel browsing application, and/or a digital video player application.

**[0072]** The various applications that are executed on the device optionally use at least one common physical user-interface device, such as the touch-sensitive surface. One or more functions of the touch-sensitive surface as well as corresponding information displayed on the device are, optionally, adjusted and/or varied from one application to the next and/or within a respective application. In this way, a common physical architecture (such as the touch-sensitive surface) of the device optionally supports the variety of applications with user interfaces that are intuitive and transparent to the user.



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**[0073]** Below, FIGS. 1A-1B, 2, 3, and 4A-4B provide a description of exemplary devices for approving sources and destinations of wellness data with granularity.

**[0074]** Although the following description uses terms "first," "second," etc. to describe various elements, these elements should not be limited by the terms. These terms are only used to distinguish one element from another. For example, a first touch could be termed a second touch, and, similarly, a second touch could be termed a first touch, without departing from the scope of the various described embodiments. The first touch and the second touch are both touches, but they are not the same touch.

**[0075]** The terminology used in the description of the various described embodiments herein is for the purpose of describing particular embodiments only and is not intended to be limiting. As used in the description of the various described embodiments and the appended claims, the singular forms "a", "an," and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will also be understood that the term "and/or" as used herein refers to and encompasses any and all possible combinations of one or more of the associated listed items. It will be further understood that the terms "includes," "including," "comprises," and/or "comprising," when used in this specification, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

**[0076]** The terminology used in the description of the various described embodiments herein is for the purpose of describing particular embodiments only and is not intended to be limiting. As used in the description of the various described embodiments and the appended claims, the singular forms "a", "an," and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will also be understood that the term "and/or" as used herein refers to and encompasses any and all possible combinations of one or more of the associated listed items. It will be further understood that the terms "includes," "including," "comprises," and/or "comprising," when used in this specification, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.



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**[0077]** The term "if" may be construed to mean "when" or "upon" or "in response to determining" or "in response to detecting," depending on the context. Similarly, the phrase "if it is determined" or "if [a stated condition or event] is detected" may be construed to mean "upon determining" or "in response to determining" or "upon detecting [the stated condition or event]" or "in response to detecting [the stated condition or event]," depending on the context.

**[0078]** Embodiments of electronic devices, user interfaces for such devices, and associated processes for using such devices are described. In some embodiments, the device is a portable communications device, such as a mobile telephone, that also contains other functions, such as PDA and/or music player functions. Exemplary embodiments of portable multifunction devices include, without limitation, the iPhone®, iPod Touch®, and iPad® devices from Apple Inc. of Cupertino, California. Other portable electronic devices, such as laptops or tablet computers with touch-sensitive surfaces (e.g., touch screen displays and/or touchpads), are, optionally, used. It should also be understood that, in some embodiments, the device is not a portable communications device, but is a desktop computer with a touch-sensitive surface (e.g., a touch screen display and/or a touchpad).

**[0079]** In the discussion that follows, an electronic device that includes a display and a touch-sensitive surface is described. It should be understood, however, that the electronic device optionally includes one or more other physical user-interface devices, such as a physical keyboard, a mouse, and/or a joystick.

**[0080]** The device may support a variety of applications, such as one or more of the following: a drawing application, a presentation application, a word processing application, a website creation application, a disk authoring application, a spreadsheet application, a gaming application, a telephone application, a video conferencing application, an e-mail application, an instant messaging application, a workout support application, a photo management application, a digital camera application, a digital video camera application, a web browsing application, a digital music player application, and/or a digital video player application.

**[0081]** The various applications that are executed on the device optionally use at least one common physical user-interface device, such as the touch-sensitive surface. One or more functions of the touch-sensitive surface as well as corresponding information displayed on the



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device are, optionally, adjusted and/or varied from one application to the next and/or within a respective application. In this way, a common physical architecture (such as the touch-sensitive surface) of the device optionally supports the variety of applications with user interfaces that are intuitive and transparent to the user.

**[0082]** Attention is now directed toward embodiments of portable devices with touch-sensitive displays. FIG. 1A is a block diagram illustrating portable multifunction device 100 with touch-sensitive display system 112 in accordance with some embodiments. Touch-sensitive display 112 is sometimes called a "touch screen" for convenience and is sometimes known as or called a "touch-sensitive display system." Device 100 includes memory 102 (which optionally includes one or more computer-readable storage mediums), memory controller 122, one or more processing units (CPUs) 120, peripherals interface 118, RF circuitry 108, audio circuitry 110, speaker 111, microphone 113, input/output (I/O) subsystem 106, other input control devices 116, and external port 124. Device 100 optionally includes one or more optical sensors 164. Device 100 optionally includes one or more contact intensity sensors 165 for detecting intensity of contacts on device 100 (e.g., a touch-sensitive surface such as touch-sensitive display system 112 of device 100). Device 100 optionally includes one or more tactile output generators 167 for generating tactile outputs on device 100 (e.g., generating tactile outputs on a touch-sensitive surface such as touch-sensitive display system 112 of device 100 or touchpad 355 of device 300). These components optionally communicate over one or more communication buses or signal lines 103.

**[0083]** As used in the specification and claims, the term "intensity" of a contact on a touch-sensitive surface refers to the force or pressure (force per unit area) of a contact (e.g., a finger contact) on the touch-sensitive surface, or to a substitute (proxy) for the force or pressure of a contact on the touch-sensitive surface. The intensity of a contact has a range of values that includes at least four distinct values and more typically includes hundreds of distinct values (e.g., at least 256). Intensity of a contact is, optionally, determined (or measured) using various approaches and various sensors or combinations of sensors. For example, one or more force sensors underneath or adjacent to the touch-sensitive surface are, optionally, used to measure force at various points on the touch-sensitive surface. In some implementations, force measurements from multiple force sensors are combined (e.g., a weighted average) to determine



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an estimated force of a contact. Similarly, a pressure-sensitive tip of a stylus is, optionally, used to determine a pressure of the stylus on the touch-sensitive surface. Alternatively, the size of the contact area detected on the touch-sensitive surface and/or changes thereto, the capacitance of the touch-sensitive surface proximate to the contact and/or changes thereto, and/or the resistance of the touch-sensitive surface proximate to the contact and/or changes thereto are, optionally, used as a substitute for the force or pressure of the contact on the touch-sensitive surface. In some implementations, the substitute measurements for contact force or pressure are used directly to determine whether an intensity threshold has been exceeded (e.g., the intensity threshold is described in units corresponding to the substitute measurements). In some implementations, the substitute measurements for contact force or pressure are converted to an estimated force or pressure, and the estimated force or pressure is used to determine whether an intensity threshold has been exceeded (e.g., the intensity threshold is a pressure threshold measured in units of pressure). Using the intensity of a contact as an attribute of a user input allows for user access to additional device functionality that may otherwise not be accessible by the user on a reduced-size device with limited real estate for displaying affordances (e.g., on a touch-sensitive display) and/or receiving user input (e.g., via a touch-sensitive display, a touch-sensitive surface, or a physical/mechanical control such as a knob or a button).

**[0084]** As used in the specification and claims, the term "tactile output" refers to physical displacement of a device relative to a previous position of the device, physical displacement of a component (e.g., a touch-sensitive surface) of a device relative to another component (e.g., housing) of the device, or displacement of the component relative to a center of mass of the device that will be detected by a user with the user's sense of touch. For example, in situations where the device or the component of the device is in contact with a surface of a user that is sensitive to touch (e.g., a finger, palm, or other part of a user's hand), the tactile output generated by the physical displacement will be interpreted by the user as a tactile sensation corresponding to a perceived change in physical characteristics of the device or the component of the device. For example, movement of a touch-sensitive surface (e.g., a touch-sensitive display or trackpad) is, optionally, interpreted by the user as a "down click" or "up click" of a physical actuator button. In some cases, a user will feel a tactile sensation such as an "down click" or "up click" even when there is no movement of a physical actuator button associated with the touch-sensitive surface that is physically pressed (e.g., displaced) by the user's movements. As



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another example, movement of the touch-sensitive surface is, optionally, interpreted or sensed by the user as "roughness" of the touch-sensitive surface, even when there is no change in smoothness of the touch-sensitive surface. While such interpretations of touch by a user will be subject to the individualized sensory perceptions of the user, there are many sensory perceptions of touch that are common to a large majority of users. Thus, when a tactile output is described as corresponding to a particular sensory perception of a user (e.g., an "up click," a "down click," "roughness"), unless otherwise stated, the generated tactile output corresponds to physical displacement of the device or a component thereof that will generate the described sensory perception for a typical (or average) user.

**[0085]** It should be appreciated that device 100 is only one example of a portable multifunction device, and that device 100 optionally has more or fewer components than shown, optionally combines two or more components, or optionally has a different configuration or arrangement of the components. The various components shown in FIG. 1A are implemented in hardware, software, or a combination of both hardware and software, including one or more signal processing and/or application-specific integrated circuits.

**[0086]** Memory 102 may include one or more computer-readable storage mediums. The computer-readable storage mediums may be tangible and non-transitory. Memory 102 may include high-speed random access memory and may also include non-volatile memory, such as one or more magnetic disk storage devices, flash memory devices, or other non-volatile solid-state memory devices. Memory controller 122 may control access to memory 102 by other components of device 100.

**[0087]** Peripherals interface 118 can be used to couple input and output peripherals of the device to CPU 120 and memory 102. The one or more processors 120 run or execute various software programs and/or sets of instructions stored in memory 102 to perform various functions for device 100 and to process data. In some embodiments, peripherals interface 118, CPU 120, and memory controller 122 may be implemented on a single chip, such as chip 104. In some other embodiments, they may be implemented on separate chips.

**[0088]** RF (radio frequency) circuitry 108 receives and sends RF signals, also called electromagnetic signals. RF circuitry 108 converts electrical signals to/from electromagnetic



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signals and communicates with communications networks and other communications devices via the electromagnetic signals. RF circuitry 108 optionally includes well-known circuitry for performing these functions, including but not limited to an antenna system, an RF transceiver, one or more amplifiers, a tuner, one or more oscillators, a digital signal processor, a CODEC chipset, a subscriber identity module (SIM) card, memory, and so forth. RF circuitry 108 optionally communicates with networks, such as the Internet, also referred to as the World Wide Web (WWW), an intranet and/or a wireless network, such as a cellular telephone network, a wireless local area network (LAN) and/or a metropolitan area network (MAN), and other devices by wireless communication. The RF circuitry 108 optionally includes well-known circuitry for detecting near field communication (NFC) fields, such as by a short-range communication radio. The wireless communication optionally uses any of a plurality of communications standards, protocols, and technologies, including but not limited to Global System for Mobile Communications (GSM), Enhanced Data GSM Environment (EDGE), high-speed downlink packet access (HSDPA), high-speed uplink packet access (HSUPA), Evolution, Data-Only (EV-DO), HSPA, HSPA+, Dual-Cell HSPA (DC-HSPDA), long term evolution (LTE), near field communication (NFC), wideband code division multiple access (W-CDMA), code division multiple access (CDMA), time division multiple access (TDMA), Bluetooth, Bluetooth Low Energy (BTLE), Wireless Fidelity (Wi-Fi) (e.g., IEEE 802.11a, IEEE 802.11b, IEEE 802.11g, IEEE 802.11n, and/or IEEE 802.11ac), voice over Internet Protocol (VoIP), Wi-MAX, a protocol for e-mail (e.g., Internet message access protocol (IMAP) and/or post office protocol (POP)), instant messaging (e.g., extensible messaging and presence protocol (XMPP), Session Initiation Protocol for Instant Messaging and Presence Leveraging Extensions (SIMPLE), Instant Messaging and Presence Service (IMPS)), and/or Short Message Service (SMS), or any other suitable communication protocol, including communication protocols not yet developed as of the filing date of this document.

**[0089]** Audio circuitry 110, speaker 111, and microphone 113 provide an audio interface between a user and device 100. Audio circuitry 110 receives audio data from peripherals interface 118, converts the audio data to an electrical signal, and transmits the electrical signal to speaker 111. Speaker 111 converts the electrical signal to human-audible sound waves. Audio circuitry 110 also receives electrical signals converted by microphone 113 from sound waves. Audio circuitry 110 converts the electrical signal to audio data and transmits the audio data to



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peripherals interface 118 for processing. Audio data may be retrieved from and/or transmitted to memory 102 and/or RF circuitry 108 by peripherals interface 118. In some embodiments, audio circuitry 110 also includes a headset jack (e.g., 212, FIG. 2). The headset jack provides an interface between audio circuitry 110 and removable audio input/output peripherals, such as output-only headphones or a headset with both output (e.g., a headphone for one or both ears) and input (e.g., a microphone).

**[0090]** I/O subsystem 106 couples input/output peripherals on device 100, such as touch screen 112 and other input control devices 116, to peripherals interface 118. I/O subsystem 106 optionally includes display controller 156, optical sensor controller 158, intensity sensor controller 159, haptic feedback controller 161, and one or more input controllers 160 for other input or control devices. The one or more input controllers 160 receive/send electrical signals from/to other input control devices 116. The other input control devices 116 optionally include physical buttons (e.g., push buttons, rocker buttons, etc.), dials, slider switches, joysticks, click wheels, and so forth. In some alternate embodiments, input controller(s) 160 are, optionally, coupled to any (or none) of the following: a keyboard, an infrared port, a USB port, and a pointer device such as a mouse. The one or more buttons (e.g., 208, FIG. 2) optionally include an up/down button for volume control of speaker 111 and/or microphone 113. The one or more buttons optionally include a push button (e.g., 206, FIG. 2).

**[0091]** A quick press of the push button may disengage a lock of touch screen 112 or begin a process that uses gestures on the touch screen to unlock the device, as described in U.S. Patent Application 11/322,549, "Unlocking a Device by Performing Gestures on an Unlock Image," filed December 23, 2005, U.S. Pat. No. 7,657,849, which is hereby incorporated by reference in its entirety. A longer press of the push button (e.g., 206) may turn power to device 100 on or off. The user may be able to customize a functionality of one or more of the buttons. Touch screen 112 is used to implement virtual or soft buttons and one or more soft keyboards.

**[0092]** Touch-sensitive display 112 provides an input interface and an output interface between the device and a user. Display controller 156 receives and/or sends electrical signals from/to touch screen 112. Touch screen 112 displays visual output to the user. The visual output may include graphics, text, icons, video, and any combination thereof (collectively



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termed "graphics"). In some embodiments, some or all of the visual output may correspond to user-interface objects.

**[0093]** Touch screen 112 has a touch-sensitive surface, sensor, or set of sensors that accepts input from the user based on haptic and/or tactile contact. Touch screen 112 and display controller 156 (along with any associated modules and/or sets of instructions in memory 102) detect contact (and any movement or breaking of the contact) on touch screen 112 and convert the detected contact into interaction with user-interface objects (e.g., one or more soft keys, icons, web pages, or images) that are displayed on touch screen 112. In an exemplary embodiment, a point of contact between touch screen 112 and the user corresponds to a finger of the user.

**[0094]** Touch screen 112 may use LCD (liquid crystal display) technology, LPD (light emitting polymer display) technology, or LED (light emitting diode) technology, although other display technologies may be used in other embodiments. Touch screen 112 and display controller 156 may detect contact and any movement or breaking thereof using any of a plurality of touch sensing technologies now known or later developed, including but not limited to capacitive, resistive, infrared, and surface acoustic wave technologies, as well as other proximity sensor arrays or other elements for determining one or more points of contact with touch screen 112. In an exemplary embodiment, projected mutual capacitance sensing technology is used, such as that found in the iPhone® and iPod Touch® from Apple Inc. of Cupertino, California.

**[0095]** A touch-sensitive display in some embodiments of touch screen 112 may be analogous to the multi-touch sensitive touchpads described in the following U.S. Patents: 6,323,846 (Westerman et al.), 6,570,557 (Westerman et al.), and/or 6,677,932 (Westerman), and/or U.S. Patent Publication 2002/0015024A1, each of which is hereby incorporated by reference in its entirety. However, touch screen 112 displays visual output from device 100, whereas touch-sensitive touchpads do not provide visual output.

**[0096]** A touch-sensitive display in some embodiments of touch screen 112 may be as described in the following applications: (1) U.S. Patent Application No. 11/381,313, "Multipoint Touch Surface Controller," filed May 2, 2006; (2) U.S. Patent Application No. 10/840,862, "Multipoint Touchscreen," filed May 6, 2004; (3) U.S. Patent Application No. 10/903,964,



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"Gestures For Touch Sensitive Input Devices," filed July 30, 2004; (4) U.S. Patent Application No. 11/048,264, "Gestures For Touch Sensitive Input Devices," filed January 31, 2005; (5) U.S. Patent Application No. 11/038,590, "Mode-Based Graphical User Interfaces For Touch Sensitive Input Devices," filed January 18, 2005; (6) U.S. Patent Application No. 11/228,758, "Virtual Input Device Placement On A Touch Screen User Interface," filed September 16, 2005; (7) U.S. Patent Application No. 11/228,700, "Operation Of A Computer With A Touch Screen Interface," filed September 16, 2005; (8) U.S. Patent Application No. 11/228,737, "Activating Virtual Keys Of A Touch-Screen Virtual Keyboard," filed September 16, 2005; and (9) U.S. Patent Application No. 11/367,749, "Multi-Functional Hand-Held Device," filed March 3, 2006. All of these applications are incorporated by reference herein in their entirety.

**[0097]** Touch screen 112 may have a video resolution in excess of 100 dpi. In some embodiments, the touch screen has a video resolution of approximately 160 dpi. The user may make contact with touch screen 112 using any suitable object or appendage, such as a stylus, a finger, and so forth. In some embodiments, the user interface is designed to work primarily with finger-based contacts and gestures, which can be less precise than stylus-based input due to the larger area of contact of a finger on the touch screen. In some embodiments, the device translates the rough finger-based input into a precise pointer/cursor position or command for performing the actions desired by the user.

**[0098]** In some embodiments, in addition to the touch screen, device 100 may include a touchpad (not shown) for activating or deactivating particular functions. In some embodiments, the touchpad is a touch-sensitive area of the device that, unlike the touch screen, does not display visual output. The touchpad may be a touch-sensitive surface that is separate from touch screen 112 or an extension of the touch-sensitive surface formed by the touch screen.

**[0099]** Device 100 also includes power system 162 for powering the various components. Power system 162 may include a power management system, one or more power sources (e.g., battery, alternating current (AC)), a recharging system, a power failure detection circuit, a power converter or inverter, a power status indicator (e.g., a light-emitting diode (LED)) and any other components associated with the generation, management and distribution of power in portable devices.



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**[00100]** Device 100 may also include one or more optical sensors 164. FIG. 1A shows an optical sensor coupled to optical sensor controller 158 in I/O subsystem 106. Optical sensor 164 may include charge-coupled device (CCD) or complementary metal-oxide semiconductor (CMOS) phototransistors. Optical sensor 164 receives light from the environment, projected through one or more lenses, and converts the light to data representing an image. In conjunction with imaging module 143 (also called a camera module), optical sensor 164 may capture still images or video. In some embodiments, an optical sensor is located on the back of device 100, opposite touch screen display 112 on the front of the device so that the touch screen display may be used as a viewfinder for still and/or video image acquisition. In some embodiments, an optical sensor is located on the front of the device so that the user's image may be obtained for video conferencing while the user views the other video conference participants on the touch screen display. In some embodiments, the position of optical sensor 164 can be changed by the user (e.g., by rotating the lens and the sensor in the device housing) so that a single optical sensor 164 may be used along with the touch screen display for both video conferencing and still and/or video image acquisition.

**[00101]** Device 100 optionally also includes one or more contact intensity sensors 165. FIG. 1A shows a contact intensity sensor coupled to intensity sensor controller 159 in I/O subsystem 106. Contact intensity sensor 165 optionally includes one or more piezoresistive strain gauges, capacitive force sensors, electric force sensors, piezoelectric force sensors, optical force sensors, capacitive touch-sensitive surfaces, or other intensity sensors (e.g., sensors used to measure the force (or pressure) of a contact on a touch-sensitive surface). Contact intensity sensor 165 receives contact intensity information (e.g., pressure information or a proxy for pressure information) from the environment. In some embodiments, at least one contact intensity sensor is collocated with, or proximate to, a touch-sensitive surface (e.g., touch-sensitive display system 112). In some embodiments, at least one contact intensity sensor is located on the back of device 100, opposite touch screen display 112, which is located on the front of device 100.

**[00102]** Device 100 may also include one or more proximity sensors 166. FIG. 1A shows proximity sensor 166 coupled to peripherals interface 118. Alternately, proximity sensor 166 may be coupled to input controller 160 in I/O subsystem 106. Proximity sensor 166 may



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perform as described in U.S. Patent Application Nos. 11/241,839, "Proximity Detector In Handheld Device"; 11/240,788, "Proximity Detector In Handheld Device"; 11/620,702, "Using Ambient Light Sensor To Augment Proximity Sensor Output"; 11/586,862, "Automated Response To And Sensing Of User Activity In Portable Devices"; and 11/638,251, "Methods And Systems For Automatic Configuration Of Peripherals," which are hereby incorporated by reference in their entirety. In some embodiments, the proximity sensor turns off and disables touch screen 112 when the multifunction device is placed near the user's ear (e.g., when the user is making a phone call).

**[00103]** Device 100 optionally also includes one or more tactile output generators 167. FIG. 1A shows a tactile output generator coupled to haptic feedback controller 161 in I/O subsystem 106. Tactile output generator 167 optionally includes one or more electroacoustic devices such as speakers or other audio components and/or electromechanical devices that convert energy into linear motion such as a motor, solenoid, electroactive polymer, piezoelectric actuator, electrostatic actuator, or other tactile output generating component (e.g., a component that converts electrical signals into tactile outputs on the device). Contact intensity sensor 165 receives tactile feedback generation instructions from haptic feedback module 133 and generates tactile outputs on device 100 that are capable of being sensed by a user of device 100. In some embodiments, at least one tactile output generator is collocated with, or proximate to, a touch-sensitive surface (e.g., touch-sensitive display system 112) and, optionally, generates a tactile output by moving the touch-sensitive surface vertically (e.g., in/out of a surface of device 100) or laterally (e.g., back and forth in the same plane as a surface of device 100). In some embodiments, at least one tactile output generator sensor is located on the back of device 100, opposite touch screen display 112, which is located on the front of device 100.

**[00104]** Device 100 may also include one or more accelerometers 168. FIG. 1A shows accelerometer 168 coupled to peripherals interface 118. Alternately, accelerometer 168 may be coupled to an input controller 160 in I/O subsystem 106. Accelerometer 168 may perform as described in U.S. Patent Publication No. 20050190059, "Acceleration-based Theft Detection System for Portable Electronic Devices," and U.S. Patent Publication No. 20060017692, "Methods And Apparatuses For Operating A Portable Device Based On An Accelerometer," both of which are incorporated by reference herein in their entirety. In some embodiments,



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information is displayed on the touch screen display in a portrait view or a landscape view based on an analysis of data received from the one or more accelerometers. Device 100 optionally includes, in addition to accelerometer(s) 168, a magnetometer (not shown) and a GPS (or GLONASS or other global navigation system) receiver (not shown) for obtaining information concerning the location and orientation (e.g., portrait or landscape) of device 100.

**[00105]** In some embodiments, the software components stored in memory 102 include operating system 126, communication module (or set of instructions) 128, contact/motion module (or set of instructions) 130, graphics module (or set of instructions) 132, text input module (or set of instructions) 134, Global Positioning System (GPS) module (or set of instructions) 135, and applications (or sets of instructions) 136. Furthermore, in some embodiments, memory 102 (FIG. 1A) or 370 (FIG. 3) stores device/global internal state 157, as shown in FIGS. 1A and 3. Device/global internal state 157 includes one or more of: active application state, indicating which applications, if any, are currently active; display state, indicating what applications, views or other information occupy various regions of touch screen display 112; sensor state, including information obtained from the device's various sensors and input control devices 116; and location information concerning the device's location and/or attitude.

**[00106]** Operating system 126 (e.g., Darwin, RTXC, LINUX, UNIX, OS X, iOS, WINDOWS, or an embedded operating system such as VxWorks) includes various software components and/or drivers for controlling and managing general system tasks (e.g., memory management, storage device control, power management, etc.) and facilitates communication between various hardware and software components.

**[00107]** Communication module 128 facilitates communication with other devices over one or more external ports 124 and also includes various software components for handling data received by RF circuitry 108 and/or external port 124. External port 124 (e.g., Universal Serial Bus (USB), FIREWIRE, etc.) is adapted for coupling directly to other devices or indirectly over a network (e.g., the Internet, wireless LAN, etc.). In some embodiments, the external port is a multi-pin (e.g., 30-pin) connector that is the same as, or similar to and/or compatible with, the 30-pin connector used on iPod® (trademark of Apple Inc.) devices.



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**[00108]** Contact/motion module 130 optionally detects contact with touch screen 112 (in conjunction with display controller 156) and other touch-sensitive devices (e.g., a touchpad or physical click wheel). Contact/motion module 130 includes various software components for performing various operations related to detection of contact, such as determining if contact has occurred (e.g., detecting a finger-down event), determining an intensity of the contact (e.g., the force or pressure of the contact or a substitute for the force or pressure of the contact), determining if there is movement of the contact and tracking the movement across the touch-sensitive surface (e.g., detecting one or more finger-dragging events), and determining if the contact has ceased (e.g., detecting a finger-up event or a break in contact). Contact/motion module 130 receives contact data from the touch-sensitive surface. Determining movement of the point of contact, which is represented by a series of contact data, optionally includes determining speed (magnitude), velocity (magnitude and direction), and/or an acceleration (a change in magnitude and/or direction) of the point of contact. These operations are, optionally, applied to single contacts (e.g., one finger contacts) or to multiple simultaneous contacts (e.g., "multitouch"/multiple finger contacts). In some embodiments, contact/motion module 130 and display controller 156 detect contact on a touchpad.

**[00109]** In some embodiments, contact/motion module 130 uses a set of one or more intensity thresholds to determine whether an operation has been performed by a user (e.g., to determine whether a user has "clicked" on an icon). In some embodiments, at least a subset of the intensity thresholds are determined in accordance with software parameters (e.g., the intensity thresholds are not determined by the activation thresholds of particular physical actuators and can be adjusted without changing the physical hardware of device 100). For example, a mouse "click" threshold of a trackpad or touch screen display can be set to any of a large range of predefined threshold values without changing the trackpad or touch screen display hardware. Additionally, in some implementations, a user of the device is provided with software settings for adjusting one or more of the set of intensity thresholds (e.g., by adjusting individual intensity thresholds and/or by adjusting a plurality of intensity thresholds at once with a system-level click "intensity" parameter).

**[00110]** Contact/motion module 130 optionally detects a gesture input by a user. Different gestures on the touch-sensitive surface have different contact patterns (e.g., different motions,



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timings, and/or intensities of detected contacts). Thus, a gesture is, optionally, detected by detecting a particular contact pattern. For example, detecting a finger tap gesture includes detecting a finger-down event followed by detecting a finger-up (liftoff) event at the same position (or substantially the same position) as the finger-down event (e.g., at the position of an icon). As another example, detecting a finger swipe gesture on the touch-sensitive surface includes detecting a finger-down event followed by detecting one or more finger-dragging events, and subsequently followed by detecting a finger-up (liftoff) event.

**[00111]** Graphics module 132 includes various known software components for rendering and displaying graphics on touch screen 112 or other display, including components for changing the visual impact (e.g., brightness, transparency, saturation, contrast, or other visual property) of graphics that are displayed. As used herein, the term "graphics" includes any object that can be displayed to a user, including ,without limitation, text, web pages, icons (such as user-interface objects including soft keys), digital images, videos, animations, and the like.

**[00112]** In some embodiments, graphics module 132 stores data representing graphics to be used. Each graphic is, optionally, assigned a corresponding code. Graphics module 132 receives, from applications etc., one or more codes specifying graphics to be displayed along with, if necessary, coordinate data and other graphic property data, and then generates screen image data to output to display controller 156.

**[00113]** Haptic feedback module 133 includes various software components for generating instructions used by tactile output generator(s) 167 to produce tactile outputs at one or more locations on device 100 in response to user interactions with device 100.

**[00114]** Text input module 134, which may be a component of graphics module 132, provides soft keyboards for entering text in various applications (e.g., contacts 137, e-mail 140, IM 141, browser 147, and any other application that needs text input).

**[00115]** GPS module 135 determines the location of the device and provides this information for use in various applications (e.g., to telephone 138 for use in location-based dialing; to camera 143 as picture/video metadata; and to applications that provide location-based services such as weather widgets, local yellow page widgets, and map/navigation widgets).



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**[00116]** Applications 136 may include the following modules (or sets of instructions), or a subset or superset thereof:

- Contacts module 137 (sometimes called an address book or contact list);
- Telephone module 138;
- Video conferencing module 139;
- E-mail client module 140;
- Instant messaging (IM) module 141;
- Workout support module 142;
- Camera module 143 for still and/or video images;
- Image management module 144;
- Video player module;
- Music player module;
- Browser module 147;
- Calendar module 148;
- Widget modules 149, which may include one or more of: weather widget 149-1, stocks widget 149-2, calculator widget 149-3, alarm clock widget 149-4, dictionary widget 149-5, and other widgets obtained by the user, as well as user-created widgets 149-6;
- Widget creator module 150 for making user-created widgets 149-6;
- Search module 151;
- Video and music player module 152, which merges video player module and music player module;



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- Notes module 153;
- Map module 154; and/or
- Online video module 155.

**[00117]** Examples of other applications 136 that may be stored in memory 102 include other word processing applications, other image editing applications, drawing applications, presentation applications, JAVA-enabled applications, encryption, digital rights management, voice recognition, and voice replication.

**[00118]** In conjunction with touch screen 112, display controller 156, contact/motion module 130, graphics module 132, and text input module 134, contacts module 137 may be used to manage an address book or contact list (e.g., stored in application internal state 192 of contacts module 137 in memory 102 or memory 370), including: adding name(s) to the address book; deleting name(s) from the address book; associating telephone number(s), e-mail address(es), physical address(es) or other information with a name; associating an image with a name; categorizing and sorting names; providing telephone numbers or e-mail addresses to initiate and/or facilitate communications by telephone 138, video conference 139, e-mail 140, or IM 141; and so forth.

**[00119]** In conjunction with RF circuitry 108, audio circuitry 110, speaker 111, microphone 113, touch screen 112, display controller 156, contact/motion module 130, graphics module 132, and text input module 134, telephone module 138 may be used to enter a sequence of characters corresponding to a telephone number, access one or more telephone numbers in contacts module 137, modify a telephone number that has been entered, dial a respective telephone number, conduct a conversation, and disconnect or hang up when the conversation is completed. As noted above, the wireless communication may use any of a plurality of communications standards, protocols, and technologies.

**[00120]** In conjunction with RF circuitry 108, audio circuitry 110, speaker 111, microphone 113, touch screen 112, display controller 156, optical sensor 164, optical sensor controller 158, contact/motion module 130, graphics module 132, text input module 134, contacts module 137, and telephone module 138, video conference module 139 includes executable instructions to

initiate, conduct, and terminate a video conference between a user and one or more other participants in accordance with user instructions.

**[00121]** In conjunction with RF circuitry 108, touch screen 112, display controller 156, contact/motion module 130, graphics module 132, and text input module 134, e-mail client module 140 includes executable instructions to create, send, receive, and manage e-mail in response to user instructions. In conjunction with image management module 144, e-mail client module 140 makes it very easy to create and send e-mails with still or video images taken with camera module 143.

**[00122]** In conjunction with RF circuitry 108, touch screen 112, display controller 156, contact/motion module 130, graphics module 132, and text input module 134, the instant messaging module 141 includes executable instructions to enter a sequence of characters corresponding to an instant message, to modify previously entered characters, to transmit a respective instant message (for example, using a Short Message Service (SMS) or Multimedia Message Service (MMS) protocol for telephony-based instant messages or using XMPP, SIMPLE, or IMPS for Internet-based instant messages), to receive instant messages, and to view received instant messages. In some embodiments, transmitted and/or received instant messages may include graphics, photos, audio files, video files and/or other attachments as are supported in an MMS and/or an Enhanced Messaging Service (EMS). As used herein, "instant messaging" refers to both telephony-based messages (e.g., messages sent using SMS or MMS) and Internet-based messages (e.g., messages sent using XMPP, SIMPLE, or IMPS).

**[00123]** In conjunction with RF circuitry 108, touch screen 112, display controller 156, contact/motion module 130, graphics module 132, text input module 134, GPS module 135, map module 154, and music player module, workout support module 142 includes executable instructions to create workouts (e.g., with time, distance, and/or calorie burning goals); communicate with workout sensors (sports devices); receive workout sensor data; calibrate sensors used to monitor a workout; select and play music for a workout; and display, store, and transmit workout data.

**[00124]** In conjunction with touch screen 112, display controller 156, optical sensor(s) 164, optical sensor controller 158, contact/motion module 130, graphics module 132, and image



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management module 144, camera module 143 includes executable instructions to capture still images or video (including a video stream) and store them into memory 102, modify characteristics of a still image or video, or delete a still image or video from memory 102.

**[00125]** In conjunction with touch screen 112, display controller 156, contact/motion module 130, graphics module 132, text input module 134, and camera module 143, image management module 144 includes executable instructions to arrange, modify (e.g., edit), or otherwise manipulate, label, delete, present (e.g., in a digital slide show or album), and store still and/or video images.

**[00126]** In conjunction with RF circuitry 108, touch screen 112, display controller 156, contact/motion module 130, graphics module 132, and text input module 134, browser module 147 includes executable instructions to browse the Internet in accordance with user instructions, including searching, linking to, receiving, and displaying web pages or portions thereof, as well as attachments and other files linked to web pages.

**[00127]** In conjunction with RF circuitry 108, touch screen 112, display controller 156, contact/motion module 130, graphics module 132, text input module 134, e-mail client module 140, and browser module 147, calendar module 148 includes executable instructions to create, display, modify, and store calendars and data associated with calendars (e.g., calendar entries, to-do lists, etc.) in accordance with user instructions.

**[00128]** In conjunction with RF circuitry 108, touch screen 112, display controller 156, contact/motion module 130, graphics module 132, text input module 134, and browser module 147, widget modules 149 are mini-applications that may be downloaded and used by a user (e.g., weather widget 149-1, stocks widget 149-2, calculator widget 149-3, alarm clock widget 149-4, and dictionary widget 149-5) or created by the user (e.g., user-created widget 149-6). In some embodiments, a widget includes an HTML (Hypertext Markup Language) file, a CSS (Cascading Style Sheets) file, and a JavaScript file. In some embodiments, a widget includes an XML (Extensible Markup Language) file and a JavaScript file (e.g., Yahoo! Widgets).

**[00129]** In conjunction with RF circuitry 108, touch screen 112, display controller 156, contact/motion module 130, graphics module 132, text input module 134, and browser module



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147, the widget creator module 150 may be used by a user to create widgets (e.g., turning a user-specified portion of a web page into a widget).

**[00130]** In conjunction with touch screen 112, display controller 156, contact/motion module 130, graphics module 132, and text input module 134, search module 151 includes executable instructions to search for text, music, sound, image, video, and/or other files in memory 102 that match one or more search criteria (e.g., one or more user-specified search terms) in accordance with user instructions.

**[00131]** In conjunction with touch screen 112, display controller 156, contact/motion module 130, graphics module 132, audio circuitry 110, speaker 111, RF circuitry 108, and browser module 147, video and music player module 152 includes executable instructions that allow the user to download and play back recorded music and other sound files stored in one or more file formats, such as MP3 or AAC files, and executable instructions to display, present, or otherwise play back videos (e.g., on touch screen 112 or on an external, connected display via external port 124). In some embodiments, device 100 optionally includes the functionality of an MP3 player, such as an iPod (trademark of Apple Inc.).

**[00132]** In conjunction with touch screen 112, display controller 156, contact/motion module 130, graphics module 132, and text input module 134, notes module 153 includes executable instructions to create and manage notes, to-do lists, and the like in accordance with user instructions.

**[00133]** In conjunction with RF circuitry 108, touch screen 112, display controller 156, contact module 130, graphics module 132, text input module 134, GPS module 135, and browser module 147, map module 154 may be used to receive, display, modify, and store maps and data associated with maps (e.g., driving directions, data on stores and other points of interest at or near a particular location, and other location-based data) in accordance with user instructions.

**[00134]** In conjunction with touch screen 112, display controller 156, contact module 130, graphics module 132, audio circuitry 110, speaker 111, RF circuitry 108, text input module 134, e-mail client module 140, and browser module 147, online video module 155 includes instructions that allow the user to access, browse, receive (e.g., by streaming and/or download), play back (e.g., on the touch screen or on an external, connected display via external port 124),



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send an e-mail with a link to a particular online video, and otherwise manage online videos in one or more file formats, such as H.264. In some embodiments, instant messaging module 141, rather than e-mail client module 140, is used to send a link to a particular online video. Additional description of the online video application can be found in U.S. Provisional Patent Application No. 60/936,562, "Portable Multifunction Device, Method, and Graphical User Interface for Playing Online Videos," filed June 20, 2007, and U.S. Patent Application No. 11/968,067, "Portable Multifunction Device, Method, and Graphical User Interface for Playing Online Videos," filed December 31, 2007, the contents of which are hereby incorporated by reference in their entirety.

**[00135]** Each of the above-identified modules and applications corresponds to a set of executable instructions for performing one or more functions described above and the methods described in this application (e.g., the computer-implemented methods and other information processing methods described herein). These modules (e.g., sets of instructions) need not be implemented as separate software programs, procedures, or modules, and thus various subsets of these modules may be combined or otherwise rearranged in various embodiments. For example, video player module may be combined with music player module into a single module (e.g., video and music player module 152, FIG. 1A). In some embodiments, memory 102 may store a subset of the modules and data structures identified above. Furthermore, memory 102 may store additional modules and data structures not described above.

**[00136]** In some embodiments, device 100 is a device where operation of a predefined set of functions on the device is performed exclusively through a touch screen and/or a touchpad. By using a touch screen and/or a touchpad as the primary input control device for operation of device 100, the number of physical input control devices (such as push buttons, dials, and the like) on device 100 may be reduced.

**[00137]** The predefined set of functions that are performed exclusively through a touch screen and/or a touchpad optionally include navigation between user interfaces. In some embodiments, the touchpad, when touched by the user, navigates device 100 to a main, home, or root menu from any user interface that is displayed on device 100. In such embodiments, a "menu button" is implemented using a touchpad. In some other embodiments, the menu button is a physical push button or other physical input control device instead of a touchpad.



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**[00138]** FIG. 1B is a block diagram illustrating exemplary components for event handling in accordance with some embodiments. In some embodiments, memory 102 (FIG. 1A) or 370 (FIG. 3) includes event sorter 170 (e.g., in operating system 126) and a respective application 136-1 (e.g., any of the aforementioned applications 137-151, 155, 380-390).

**[00139]** Event sorter 170 receives event information and determines the application 136-1 and application view 191 of application 136-1 to which to deliver the event information. Event sorter 170 includes event monitor 171 and event dispatcher module 174. In some embodiments, application 136-1 includes application internal state 192, which indicates the current application view(s) displayed on touch-sensitive display 112 when the application is active or executing. In some embodiments, device/global internal state 157 is used by event sorter 170 to determine which application(s) is (are) currently active, and application internal state 192 is used by event sorter 170 to determine application views 191 to which to deliver event information.

**[00140]** In some embodiments, application internal state 192 includes additional information, such as one or more of: resume information to be used when application 136-1 resumes execution, user interface state information that indicates information being displayed or that is ready for display by application 136-1, a state queue for enabling the user to go back to a prior state or view of application 136-1, and a redo/undo queue of previous actions taken by the user.

**[00141]** Event monitor 171 receives event information from peripherals interface 118. Event information includes information about a sub-event (e.g., a user touch on touch-sensitive display 112, as part of a multi-touch gesture). Peripherals interface 118 transmits information it receives from I/O subsystem 106 or a sensor, such as proximity sensor 166, accelerometer(s) 168, and/or microphone 113 (through audio circuitry 110). Information that peripherals interface 118 receives from I/O subsystem 106 includes information from touch-sensitive display 112 or a touch-sensitive surface.

**[00142]** In some embodiments, event monitor 171 sends requests to the peripherals interface 118 at predetermined intervals. In response, peripherals interface 118 transmits event information. In other embodiments, peripherals interface 118 transmits event information only when there is a significant event (e.g., receiving an input above a predetermined noise threshold and/or for more than a predetermined duration).



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**[00143]** In some embodiments, event sorter 170 also includes a hit view determination module 172 and/or an active event recognizer determination module 173.

**[00144]** Hit view determination module 172 provides software procedures for determining where a sub-event has taken place within one or more views when touch-sensitive display 112 displays more than one view. Views are made up of controls and other elements that a user can see on the display.

**[00145]** Another aspect of the user interface associated with an application is a set of views, sometimes herein called application views or user interface windows, in which information is displayed and touch-based gestures occur. The application views (of a respective application) in which a touch is detected may correspond to programmatic levels within a programmatic or view hierarchy of the application. For example, the lowest level view in which a touch is detected may be called the hit view, and the set of events that are recognized as proper inputs may be determined based, at least in part, on the hit view of the initial touch that begins a touch-based gesture.

**[00146]** Hit view determination module 172 receives information related to sub-events of a touch-based gesture. When an application has multiple views organized in a hierarchy, hit view determination module 172 identifies a hit view as the lowest view in the hierarchy which should handle the sub-event. In most circumstances, the hit view is the lowest level view in which an initiating sub-event occurs (e.g., the first sub-event in the sequence of sub-events that form an event or potential event). Once the hit view is identified by the hit view determination module 172, the hit view typically receives all sub-events related to the same touch or input source for which it was identified as the hit view.

**[00147]** Active event recognizer determination module 173 determines which view or views within a view hierarchy should receive a particular sequence of sub-events. In some embodiments, active event recognizer determination module 173 determines that only the hit view should receive a particular sequence of sub-events. In other embodiments, active event recognizer determination module 173 determines that all views that include the physical location of a sub-event are actively involved views, and therefore determines that all actively involved views should receive a particular sequence of sub-events. In other embodiments, even if touch



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sub-events were entirely confined to the area associated with one particular view, views higher in the hierarchy would still remain as actively involved views.

**[00148]** Event dispatcher module 174 dispatches the event information to an event recognizer (e.g., event recognizer 180). In embodiments including active event recognizer determination module 173, event dispatcher module 174 delivers the event information to an event recognizer determined by active event recognizer determination module 173. In some embodiments, event dispatcher module 174 stores in an event queue the event information, which is retrieved by a respective event receiver 182.

**[00149]** In some embodiments, operating system 126 includes event sorter 170. Alternatively, application 136-1 includes event sorter 170. In yet other embodiments, event sorter 170 is a stand-alone module, or a part of another module stored in memory 102, such as contact/motion module 130.

**[00150]** In some embodiments, application 136-1 includes a plurality of event handlers 190 and one or more application views 191, each of which includes instructions for handling touch events that occur within a respective view of the application's user interface. Each application view 191 of the application 136-1 includes one or more event recognizers 180. Typically, a respective application view 191 includes a plurality of event recognizers 180. In other embodiments, one or more of event recognizers 180 are part of a separate module, such as a user interface kit (not shown) or a higher level object from which application 136-1 inherits methods and other properties. In some embodiments, a respective event handler 190 includes one or more of: data updater 176, object updater 177, GUI updater 178, and/or event data 179 received from event sorter 170. Event handler 190 may utilize or call data updater 176, object updater 177, or GUI updater 178 to update the application internal state 192. Alternatively, one or more of the application views 191 include one or more respective event handlers 190. Also, in some embodiments, one or more of data updater 176, object updater 177, and GUI updater 178 are included in a respective application view 191.

**[00151]** A respective event recognizer 180 receives event information (e.g., event data 179) from event sorter 170 and identifies an event from the event information. Event recognizer 180 includes event receiver 182 and event comparator 184. In some embodiments, event recognizer



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180 also includes at least a subset of: metadata 183, and event delivery instructions 188 (which may include sub-event delivery instructions).

**[00152]** Event receiver 182 receives event information from event sorter 170. The event information includes information about a sub-event, for example, a touch or a touch movement. Depending on the sub-event, the event information also includes additional information, such as location of the sub-event. When the sub-event concerns motion of a touch, the event information may also include speed and direction of the sub-event. In some embodiments, events include rotation of the device from one orientation to another (e.g., from a portrait orientation to a landscape orientation, or vice versa), and the event information includes corresponding information about the current orientation (also called device attitude) of the device.

**[00153]** Event comparator 184 compares the event information to predefined event or sub-event definitions and, based on the comparison, determines an event or sub-event, or determines or updates the state of an event or sub-event. In some embodiments, event comparator 184 includes event definitions 186. Event definitions 186 contain definitions of events (e.g., predefined sequences of sub-events), for example, event 1 (187-1), event 2 (187-2), and others. In some embodiments, sub-events in an event (187) include, for example, touch begin, touch end, touch movement, touch cancellation, and multiple touching. In one example, the definition for event 1 (187-1) is a double tap on a displayed object. The double tap, for example, comprises a first touch (touch begin) on the displayed object for a predetermined phase, a first liftoff (touch end) for a predetermined phase, a second touch (touch begin) on the displayed object for a predetermined phase, and a second liftoff (touch end) for a predetermined phase. In another example, the definition for event 2 (187-2) is a dragging on a displayed object. The dragging, for example, comprises a touch (or contact) on the displayed object for a predetermined phase, a movement of the touch across touch-sensitive display 112, and liftoff of the touch (touch end). In some embodiments, the event also includes information for one or more associated event handlers 190.

**[00154]** In some embodiments, event definition 187 includes a definition of an event for a respective user-interface object. In some embodiments, event comparator 184 performs a hit test to determine which user-interface object is associated with a sub-event. For example, in an



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application view in which three user-interface objects are displayed on touch-sensitive display 112, when a touch is detected on touch-sensitive display 112, event comparator 184 performs a hit test to determine which of the three user-interface objects is associated with the touch (sub-event). If each displayed object is associated with a respective event handler 190, the event comparator uses the result of the hit test to determine which event handler 190 should be activated. For example, event comparator 184 selects an event handler associated with the sub-event and the object triggering the hit test.

**[00155]** In some embodiments, the definition for a respective event (187) also includes delayed actions that delay delivery of the event information until after it has been determined whether the sequence of sub-events does or does not correspond to the event recognizer's event type.

**[00156]** When a respective event recognizer 180 determines that the series of sub-events do not match any of the events in event definitions 186, the respective event recognizer 180 enters an event impossible, event failed, or event ended state, after which it disregards subsequent sub-events of the touch-based gesture. In this situation, other event recognizers, if any, that remain active for the hit view continue to track and process sub-events of an ongoing touch-based gesture.

**[00157]** In some embodiments, a respective event recognizer 180 includes metadata 183 with configurable properties, flags, and/or lists that indicate how the event delivery system should perform sub-event delivery to actively involved event recognizers. In some embodiments, metadata 183 includes configurable properties, flags, and/or lists that indicate how event recognizers may interact, or are enabled to interact, with one another. In some embodiments, metadata 183 includes configurable properties, flags, and/or lists that indicate whether sub-events are delivered to varying levels in the view or programmatic hierarchy.

**[00158]** In some embodiments, a respective event recognizer 180 activates event handler 190 associated with an event when one or more particular sub-events of an event are recognized. In some embodiments, a respective event recognizer 180 delivers event information associated with the event to event handler 190. Activating an event handler 190 is distinct from sending (and deferred sending) sub-events to a respective hit view. In some embodiments, event recognizer



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180 throws a flag associated with the recognized event, and event handler 190 associated with the flag catches the flag and performs a predefined process.

**[00159]** In some embodiments, event delivery instructions 188 include sub-event delivery instructions that deliver event information about a sub-event without activating an event handler. Instead, the sub-event delivery instructions deliver event information to event handlers associated with the series of sub-events or to actively involved views. Event handlers associated with the series of sub-events or with actively involved views receive the event information and perform a predetermined process.

**[00160]** In some embodiments, data updater 176 creates and updates data used in application 136-1. For example, data updater 176 updates the telephone number used in contacts module 137, or stores a video file used in video player module. In some embodiments, object updater 177 creates and updates objects used in application 136-1. For example, object updater 177 creates a new user-interface object or updates the position of a user-interface object. GUI updater 178 updates the GUI. For example, GUI updater 178 prepares display information and sends it to graphics module 132 for display on a touch-sensitive display.

**[00161]** In some embodiments, event handler(s) 190 includes or has access to data updater 176, object updater 177, and GUI updater 178. In some embodiments, data updater 176, object updater 177, and GUI updater 178 are included in a single module of a respective application 136-1 or application view 191. In other embodiments, they are included in two or more software modules.

**[00162]** It shall be understood that the foregoing discussion regarding event handling of user touches on touch-sensitive displays also applies to other forms of user inputs to operate multifunction devices 100 with input devices, not all of which are initiated on touch screens. For example, mouse movement and mouse button presses, optionally coordinated with single or multiple keyboard presses or holds; contact movements such as taps, drags, scrolls, etc. on touchpads; pen stylus inputs; movement of the device; oral instructions; detected eye movements; biometric inputs; and/or any combination thereof are optionally utilized as inputs corresponding to sub-events which define an event to be recognized.



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**[00163]** FIG. 2 illustrates a portable multifunction device 100 having a touch screen 112 in accordance with some embodiments. The touch screen optionally displays one or more graphics within user interface (UI) 200. In this embodiment, as well as others described below, a user is enabled to select one or more of the graphics by making a gesture on the graphics, for example, with one or more fingers 202 (not drawn to scale in the figure) or one or more styluses 203 (not drawn to scale in the figure). In some embodiments, selection of one or more graphics occurs when the user breaks contact with the one or more graphics. In some embodiments, the gesture optionally includes one or more taps, one or more swipes (from left to right, right to left, upward and/or downward), and/or a rolling of a finger (from right to left, left to right, upward and/or downward) that has made contact with device 100. In some implementations or circumstances, inadvertent contact with a graphic does not select the graphic. For example, a swipe gesture that sweeps over an application icon optionally does not select the corresponding application when the gesture corresponding to selection is a tap.

**[00164]** Device 100 may also include one or more physical buttons, such as "home" or menu button 204. As described previously, menu button 204 may be used to navigate to any application 136 in a set of applications that may be executed on device 100. Alternatively, in some embodiments, the menu button is implemented as a soft key in a GUI displayed on touch screen 112.

**[00165]** In one embodiment, device 100 includes touch screen 112, menu button 204, push button 206 for powering the device on/off and locking the device, volume adjustment button(s) 208, subscriber identity module (SIM) card slot 210, headset jack 212, and docking/charging external port 124. Push button 206 is, optionally, used to turn the power on/off on the device by depressing the button and holding the button in the depressed state for a predefined time interval; to lock the device by depressing the button and releasing the button before the predefined time interval has elapsed; and/or to unlock the device or initiate an unlock process. In an alternative embodiment, device 100 also accepts verbal input for activation or deactivation of some functions through microphone 113. Device 100 also, optionally, includes one or more contact intensity sensors 165 for detecting intensity of contacts on touch screen 112 and/or one or more tactile output generators 167 for generating tactile outputs for a user of device 100.



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**[00166]** FIG. 3 is a block diagram of an exemplary multifunction device with a display and a touch-sensitive surface in accordance with some embodiments. Device 300 need not be portable. In some embodiments, device 300 is a laptop computer, a desktop computer, a tablet computer, a multimedia player device, a navigation device, an educational device (such as a child's learning toy), a gaming system, or a control device (e.g., a home or industrial controller). Device 300 typically includes one or more processing units (CPUs) 310, one or more network or other communications interfaces 360, memory 370, and one or more communication buses 320 for interconnecting these components. Communication buses 320 optionally include circuitry (sometimes called a chipset) that interconnects and controls communications between system components. Device 300 includes input/output (I/O) interface 330 comprising display 340, which is typically a touch screen display. I/O interface 330 also optionally includes a keyboard and/or mouse (or other pointing device) 350 and touchpad 355, tactile output generator 357 for generating tactile outputs on device 300 (e.g., similar to tactile output generator(s) 167 described above with reference to FIG. 1A), sensors 359 (e.g., optical, acceleration, proximity, touch-sensitive, and/or contact intensity sensors similar to contact intensity sensor(s) 165 described above with reference to FIG. 1A). Memory 370 includes high-speed random access memory, such as DRAM, SRAM, DDR RAM, or other random access solid state memory devices; and optionally includes non-volatile memory, such as one or more magnetic disk storage devices, optical disk storage devices, flash memory devices, or other non-volatile solid state storage devices. Memory 370 optionally includes one or more storage devices remotely located from CPU(s) 310. In some embodiments, memory 370 stores programs, modules, and data structures analogous to the programs, modules, and data structures stored in memory 102 of portable multifunction device 100 (FIG. 1A), or a subset thereof. Furthermore, memory 370 optionally stores additional programs, modules, and data structures not present in memory 102 of portable multifunction device 100. For example, memory 370 of device 300 optionally stores drawing module 380, presentation module 382, word processing module 384, website creation module 386, disk authoring module 388, and/or spreadsheet module 390, while memory 102 of portable multifunction device 100 (FIG. 1A) optionally does not store these modules.

**[00167]** Each of the above-identified elements in FIG. 3 may be stored in one or more of the previously mentioned memory devices. Each of the above-identified modules corresponds to a set of instructions for performing a function described above. The above-identified modules or



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programs (e.g., sets of instructions) need not be implemented as separate software programs, procedures ,or modules, and thus various subsets of these modules may be combined or otherwise rearranged in various embodiments. In some embodiments, memory 370 may store a subset of the modules and data structures identified above. Furthermore, memory 370 may store additional modules and data structures not described above.

**[00168]** Attention is now directed towards embodiments of user interfaces that may be implemented on, for example, portable multifunction device 100.

**[00169]** FIG. 4A illustrates an exemplary user interface for a menu of applications on portable multifunction device 100 in accordance with some embodiments. Similar user interfaces may be implemented on device 300. In some embodiments, user interface 400 includes the following elements, or a subset or superset thereof:

- Signal strength indicator(s) 402 for wireless communication(s), such as cellular and Wi-Fi signals;
- Time 404;
- Bluetooth indicator 405;
- Battery status indicator 406;
- Tray 408 with icons for frequently used applications, such as:
    - Icon 416 for telephone module 138, labeled “Phone,” which optionally includes an indicator 414 of the number of missed calls or voicemail messages;
    - Icon 418 for e-mail client module 140, labeled “Mail,” which optionally includes an indicator 410 of the number of unread e-mails;
    - Icon 420 for browser module 147, labeled “Browser;” and
    - Icon 422 for video and music player module 152, also referred to as iPod (trademark of Apple Inc.) module 152, labeled “iPod;” and



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- Icons for other applications, such as:
    - Icon 424 for IM module 141, labeled "Messages;"
    - Icon 426 for calendar module 148, labeled "Calendar;"
    - Icon 428 for image management module 144, labeled "Photos;"
    - Icon 430 for camera module 143, labeled "Camera;"
    - Icon 432 for online video module 155, labeled "Online Video;"
    - Icon 434 for stocks widget 149-2, labeled "Stocks;"
    - Icon 436 for map module 154, labeled "Maps;"
    - Icon 438 for weather widget 149-1, labeled "Weather;"
    - Icon 440 for alarm clock widget 149-4, labeled "Clock;"
    - Icon 442 for workout support module 142, labeled "Workout Support;"
    - Icon 444 for notes module 153, labeled "Notes;" and
    - Icon 446 for a settings application or module, labeled "Settings," which provides access to settings for device 100 and its various applications 136.

**[00170]** It should be noted that the icon labels illustrated in FIG. 4A are merely exemplary. For example, icon 422 for video and music player module 152 may optionally be labeled "Music" or "Music Player." Other labels are, optionally, used for various application icons. In some embodiments, a label for a respective application icon includes a name of an application corresponding to the respective application icon. In some embodiments, a label for a particular application icon is distinct from a name of an application corresponding to the particular application icon.

**[00171]** FIG. 4B illustrates an exemplary user interface on a device (e.g., device 300, FIG. 3) with a touch-sensitive surface 451 (e.g., a tablet or touchpad 355, FIG. 3) that is separate from



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the display 450 (e.g., touch screen display 112). Device 300 also, optionally, includes one or more contact intensity sensors (e.g., one or more of sensors 357) for detecting intensity of contacts on touch-sensitive surface 451 and/or one or more tactile output generators 359 for generating tactile outputs for a user of device 300.

**[00172]** Although some of the examples which follow will be given with reference to inputs on touch screen display 112 (where the touch-sensitive surface and the display are combined), in some embodiments, the device detects inputs on a touch-sensitive surface that is separate from the display, as shown in FIG. 4B. In some embodiments, the touch-sensitive surface (e.g., 451 in FIG. 4B) has a primary axis (e.g., 452 in FIG. 4B) that corresponds to a primary axis (e.g., 453 in FIG. 4B) on the display (e.g., 450). In accordance with these embodiments, the device detects contacts (e.g., 460 and 462 in FIG. 4B) with the touch-sensitive surface 451 at locations that correspond to respective locations on the display (e.g., in FIG. 4B, 460 corresponds to 468 and 462 corresponds to 470). In this way, user inputs (e.g., contacts 460 and 462, and movements thereof) detected by the device on the touch-sensitive surface (e.g., 451 in FIG. 4B) are used by the device to manipulate the user interface on the display (e.g., 450 in FIG. 4B) of the multifunction device when the touch-sensitive surface is separate from the display. It should be understood that similar methods are, optionally, used for other user interfaces described herein.

**[00173]** Additionally, while the following examples are given primarily with reference to finger inputs (e.g., finger contacts, finger tap gestures, finger swipe gestures), it should be understood that, in some embodiments, one or more of the finger inputs are replaced with input from another input device (e.g., a mouse-based input or stylus input). For example, a swipe gesture is, optionally, replaced with a mouse click (e.g., instead of a contact) followed by movement of the cursor along the path of the swipe (e.g., instead of movement of the contact). As another example, a tap gesture is, optionally, replaced with a mouse click while the cursor is located over the location of the tap gesture (e.g., instead of detection of the contact followed by ceasing to detect the contact). Similarly, when multiple user inputs are simultaneously detected, it should be understood that multiple computer mice are, optionally, used simultaneously, or a mouse and finger contacts are, optionally, used simultaneously.



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**[00174]** As used here, the term "affordance" refers to a user-interactive graphical user interface object that may be displayed on the display screen of devices 100 and/or 300 (FIGS. 1 and 3). For example, an image (e.g., icon), a button, and text (e.g., hyperlink) may each constitute an affordance.

**[00175]** As used herein, the term "focus selector" refers to an input element that indicates a current part of a user interface with which a user is interacting. In some implementations that include a cursor or other location marker, the cursor acts as a "focus selector" so that when an input (e.g., a press input) is detected on a touch-sensitive surface (e.g., touchpad 355 in FIG. 3 or touch-sensitive surface 451 in FIG. 4B) while the cursor is over a particular user interface element (e.g., a button, window, slider or other user interface element), the particular user interface element is adjusted in accordance with the detected input. In some implementations that include a touch screen display (e.g., touch-sensitive display system 112 in FIG. 1A or touch screen 112 in FIG. 4A) that enables direct interaction with user interface elements on the touch screen display, a detected contact on the touch screen acts as a "focus selector" so that when an input (e.g., a press input by the contact) is detected on the touch screen display at a location of a particular user interface element (e.g., a button, window, slider, or other user interface element), the particular user interface element is adjusted in accordance with the detected input. In some implementations, focus is moved from one region of a user interface to another region of the user interface without corresponding movement of a cursor or movement of a contact on a touch screen display (e.g., by using a tab key or arrow keys to move focus from one button to another button); in these implementations, the focus selector moves in accordance with movement of focus between different regions of the user interface. Without regard to the specific form taken by the focus selector, the focus selector is generally the user interface element (or contact on a touch screen display) that is controlled by the user so as to communicate the user's intended interaction with the user interface (e.g., by indicating, to the device, the element of the user interface with which the user is intending to interact). For example, the location of a focus selector (e.g., a cursor, a contact, or a selection box) over a respective button while a press input is detected on the touch-sensitive surface (e.g., a touchpad or touch screen) will indicate that the user is intending to activate the respective button (as opposed to other user interface elements shown on a display of the device).



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**[00176]** As used in the specification and claims, the term "characteristic intensity" of a contact refers to a characteristic of the contact based on one or more intensities of the contact. In some embodiments, the characteristic intensity is based on multiple intensity samples. The characteristic intensity is, optionally, based on a predefined number of intensity samples, or a set of intensity samples collected during a predetermined time period (e.g., 0.05, 0.1, 0.2, 0.5, 1, 2, 5, 10 seconds) relative to a predefined event (e.g., after detecting the contact, prior to detecting liftoff of the contact, before or after detecting a start of movement of the contact, prior to detecting an end of the contact, before or after detecting an increase in intensity of the contact, and/or before or after detecting a decrease in intensity of the contact). A characteristic intensity of a contact is, optionally based on one or more of: a maximum value of the intensities of the contact, a mean value of the intensities of the contact, an average value of the intensities of the contact, a top 10 percentile value of the intensities of the contact, a value at the half maximum of the intensities of the contact, a value at the 90 percent maximum of the intensities of the contact, or the like. In some embodiments, the duration of the contact is used in determining the characteristic intensity (e.g., when the characteristic intensity is an average of the intensity of the contact over time). In some embodiments, the characteristic intensity is compared to a set of one or more intensity thresholds to determine whether an operation has been performed by a user. For example, the set of one or more intensity thresholds may include a first intensity threshold and a second intensity threshold. In this example, a contact with a characteristic intensity that does not exceed the first threshold results in a first operation, a contact with a characteristic intensity that exceeds the first intensity threshold and does not exceed the second intensity threshold results in a second operation, and a contact with a characteristic intensity that exceeds the second threshold results in a third operation. In some embodiments, a comparison between the characteristic intensity and one or more thresholds is used to determine whether or not to perform one or more operations (e.g., whether to perform a respective operation or forgo performing the respective operation) rather than being used to determine whether to perform a first operation or a second operation.

**[00177]** In some embodiments, a portion of a gesture is identified for purposes of determining a characteristic intensity. For example, a touch-sensitive surface may receive a continuous swipe contact transitioning from a start location and reaching an end location, at which point the intensity of the contact increases. In this example, the characteristic intensity of the contact at



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the end location may be based on only a portion of the continuous swipe contact, and not the entire swipe contact (e.g., only the portion of the swipe contact at the end location). In some embodiments, a smoothing algorithm may be applied to the intensities of the swipe contact prior to determining the characteristic intensity of the contact. For example, the smoothing algorithm optionally includes one or more of: an unweighted sliding-average smoothing algorithm, a triangular smoothing algorithm, a median filter smoothing algorithm, and/or an exponential smoothing algorithm. In some circumstances, these smoothing algorithms eliminate narrow spikes or dips in the intensities of the swipe contact for purposes of determining a characteristic intensity.

**[00178]** The intensity of a contact on the touch-sensitive surface may be characterized relative to one or more intensity thresholds, such as a contact-detection intensity threshold, a light press intensity threshold, a deep press intensity threshold, and/or one or more other intensity thresholds. In some embodiments, the light press intensity threshold corresponds to an intensity at which the device will perform operations typically associated with clicking a button of a physical mouse or a trackpad. In some embodiments, the deep press intensity threshold corresponds to an intensity at which the device will perform operations that are different from operations typically associated with clicking a button of a physical mouse or a trackpad. In some embodiments, when a contact is detected with a characteristic intensity below the light press intensity threshold (e.g., and above a nominal contact-detection intensity threshold below which the contact is no longer detected), the device will move a focus selector in accordance with movement of the contact on the touch-sensitive surface without performing an operation associated with the light press intensity threshold or the deep press intensity threshold. Generally, unless otherwise stated, these intensity thresholds are consistent between different sets of user interface figures.

**[00179]** An increase of characteristic intensity of the contact from an intensity below the light press intensity threshold to an intensity between the light press intensity threshold and the deep press intensity threshold is sometimes referred to as a "light press" input. An increase of characteristic intensity of the contact from an intensity below the deep press intensity threshold to an intensity above the deep press intensity threshold is sometimes referred to as a "deep press" input. An increase of characteristic intensity of the contact from an intensity below the



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contact-detection intensity threshold to an intensity between the contact-detection intensity threshold and the light press intensity threshold is sometimes referred to as detecting the contact on the touch-surface. A decrease of characteristic intensity of the contact from an intensity above the contact-detection intensity threshold to an intensity below the contact-detection intensity threshold is sometimes referred to as detecting liftoff of the contact from the touch-surface. In some embodiments the contact-detection intensity threshold is zero. In some embodiments, the contact-detection intensity threshold is greater than zero.

**[00180]** In some embodiments described herein, one or more operations are performed in response to detecting a gesture that includes a respective press input or in response to detecting the respective press input performed with a respective contact (or a plurality of contacts), where the respective press input is detected based at least in part on detecting an increase in intensity of the contact (or plurality of contacts) above a press-input intensity threshold. In some embodiments, the respective operation is performed in response to detecting the increase in intensity of the respective contact above the press-input intensity threshold (e.g., a "down stroke" of the respective press input). In some embodiments, the press input includes an increase in intensity of the respective contact above the press-input intensity threshold and a subsequent decrease in intensity of the contact below the press-input intensity threshold, and the respective operation is performed in response to detecting the subsequent decrease in intensity of the respective contact below the press-input threshold (e.g., an "up stroke" of the respective press input).

**[00181]** In some embodiments, the device employs intensity hysteresis to avoid accidental inputs sometimes termed "jitter," where the device defines or selects a hysteresis intensity threshold with a predefined relationship to the press-input intensity threshold (e.g., the hysteresis intensity threshold is X intensity units lower than the press-input intensity threshold or the hysteresis intensity threshold is 75%, 90%, or some reasonable proportion of the press-input intensity threshold). Thus, in some embodiments, the press input includes an increase in intensity of the respective contact above the press-input intensity threshold and a subsequent decrease in intensity of the contact below the hysteresis intensity threshold that corresponds to the press-input intensity threshold, and the respective operation is performed in response to detecting the subsequent decrease in intensity of the respective contact below the hysteresis



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intensity threshold (e.g., an "up stroke" of the respective press input). Similarly, in some embodiments, the press input is detected only when the device detects an increase in intensity of the contact from an intensity at or below the hysteresis intensity threshold to an intensity at or above the press-input intensity threshold and, optionally, a subsequent decrease in intensity of the contact to an intensity at or below the hysteresis intensity, and the respective operation is performed in response to detecting the press input (e.g., the increase in intensity of the contact or the decrease in intensity of the contact, depending on the circumstances).

**[00182]** For ease of explanation, the descriptions of operations performed in response to a press input associated with a press-input intensity threshold or in response to a gesture including the press input are, optionally, triggered in response to detecting either: an increase in intensity of a contact above the press-input intensity threshold, an increase in intensity of a contact from an intensity below the hysteresis intensity threshold to an intensity above the press-input intensity threshold, a decrease in intensity of the contact below the press-input intensity threshold, and/or a decrease in intensity of the contact below the hysteresis intensity threshold corresponding to the press-input intensity threshold. Additionally, in examples where an operation is described as being performed in response to detecting a decrease in intensity of a contact below the press-input intensity threshold, the operation is, optionally, performed in response to detecting a decrease in intensity of the contact below a hysteresis intensity threshold corresponding to, and lower than, the press-input intensity threshold.

SYSTEM OVERVIEW

**[00183]** FIG. 5 illustrates an example system 500 for aggregating and sharing wellness data. As mentioned above, wellness data can include, but is not limited to, any type of data associated with a person's health, such as their weight, heart rate, blood pressure, blood glucose level, medication compliance, activity level, or the like. System 500 can be used to collect wellness data associated with a user, store the wellness data, present the wellness data to the user in useful ways, and selectively share the user's wellness data with other users or entities based on permissions set by the user. In addition, in some examples, system 500 can further be used to collect non-wellness data along with wellness data, correlate the non-wellness data with the wellness data, and display the non-wellness data with the wellness data.



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**[00184]** System 500 can include one or more user devices 510 including any electronic device, such as a mobile phone, tablet computer, desktop computer, laptop computer, PDA, or the like. In some examples, user device 510 can include a device similar or identical to those shown in FIGs. 1A and 3 and described above. For example, user device 510 can include an operating system and a wellness database 511 for securely storing wellness or non-wellness data along with associated metadata, such as the time the data was recorded, type of data, device used to record the data, user associated with the data, and the like. User device 510 can further include application programming interfaces (APIs) with access controls for storing data in the wellness database 511 and for accessing data stored in the wellness database 511.

**[00185]** User device 510 can be configured to receive wellness or non-wellness data from various sources and can store the received data in the wellness database 511. For example, user device 510 can be configured to receive wellness or non-wellness data from sensors 502, 504, 506, and 508. These sensors can include any type of sensor capable of obtaining wellness data, such as a biometric sensor, activity tracker, or the like. For example, sensors 502, 504, 506, and 508 can include, but are not limited to, a scale, blood pressure cuff, blood glucose monitor, electrocardiogram, step counter, gyroscope, accelerometer, SpO2 sensor, respiration sensor, posture sensor, stress sensor, photoplethysmogram, galvanic skin response sensor, temperature sensor, asthma inhaler, or the like. Sensors 502, 504, 506, and 508 can also include other types of sensors, such as audio sensors, ambient light sensors, electromagnetic sensors, touch sensors, capacitive sensors, and the like, for obtaining non-wellness data, such as situational data, temporal data, personal data, contact data, and the like data. In some examples, each sensor can be a separate device, while, in other examples, any combination of two or more of the sensors can be included within a single device. For example, the gyroscope, accelerometer, photoplethysmogram, galvanic skin response sensor, and temperature sensor can be included within a wearable electronic device, such as a smart watch, while the scale, blood pressure cuff, blood glucose monitor, SpO2 sensor, respiration sensor, posture sensor, stress sensor, and asthma inhaler can each be separate devices. While specific examples are provided, it should be appreciated that other sensors can be used and other combinations of sensors can be combined into a single device.



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**[00186]** Sensors 502, 504, 506, and 508 can be used to measure wellness or non-wellness data continuously, intermittently, periodically, or at any other desired frequency or interval of time. For example, sensors 502, 504, 506, and 508 can be used to obtain a single measurement or multiple measurements over a length of time. Sensors 502, 504, 506, and 508 can be configured to measure wellness or non-wellness data at the same intervals of time, or can be configured to measure wellness or non-wellness data at different intervals of time. These intervals may be set by a user or may be a default setting for each sensor. Additionally, sensors 502, 504, 506, 508 can be used to measure wellness or non-wellness data at any time or location desired by the user. Moreover, sensors 502, 504, 506, and 508 can be used with or without the supervision of a healthcare provider. For example, a user can use sensors 502, 504, 506, and 508 to obtain sensor measurements at home without the supervision of a medical professional.

**[00187]** In some examples, user device 510 can include software sensor applications 513 (e.g., third party applications) associated with each of sensors 502, 504, 506, and 508 for interfacing with the sensors to allow user device 510 to receive the wellness or non-wellness data. In these examples, the applications 513 can use the device's APIs to store the wellness or non-wellness data in the wellness database 511 of user device 510. In some examples, the software sensor applications 513 can be Apps and device 510 can be a smart phone, tablet computer, or the like. It should be understood that "third party" can correspond to an entity different than the manufacturer of device 510 and/or the entity that created and/or maintains the operating system of device 510. In these instances, third party applications and their corresponding sensors can communicate and function within the operating system of device 510 according to a predefined device protocol associated with device 510.

**[00188]** The applications 513 can similarly use the device's APIs to access data stored in the wellness database 511. In other examples, user device 510 can be configured to share one or more communication formats with sensors 502, 504, 506, and 508 to allow user device 510 to receive and interpret the wellness or non-wellness data from the sensors. The received data can then be stored in the wellness database 511 of user device 510.

**[00189]** User device 510 can further receive wellness or non-wellness data from its own wellness or non-wellness data sensors 515, such as a GPS sensor, clock, gyroscope, accelerometer, or the like, from a user interacting with user device 510, from another entity, such



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as a physician, or from other non-sensor sources. For example, using the device's APIs, wellness or non-wellness data can be received from applications 517 on user device 510, such as a clock application, a calendaring application, a gaming application, an application from a healthcare provider, a messaging application, or the like. The wellness or non-wellness data from the applications 517 can originate from a user interacting with the applications, a remote database (e.g., database for a medical website), a healthcare provider institution (e.g., via the institution's App), or the like. In these examples, the usage of the application 517 (e.g., how long you play a video game application, when you play the video game, number of times interacting with a stock application, number of times interacting with a social networking application, length of time interacting with a social networking application, etc.), usage of user device 510 (e.g., length of time on the phone or number of text messages sent as determined from a phone payment application, time spent browsing the Internet as determined from the device's browser, etc.), time spent listening to music as determined from a music or streaming radio application, time spent using a remote application for controlling a television, amount of time or money spent on shopping websites, time spent on pornographic websites (e.g., to identify addictions), weather data from a weather application (e.g., to determine how weather affects a user's health), type of events occurring in the user's life as determined from a calendar (e.g., meetings, birthdays, holidays, etc.), interactions with certain people as determined from a contact list and/or calendar application and/or a messaging application and/or phone of user device 510, or the like, can be received by user device 510 and stored in the wellness database 511.

**[00190]** In some examples, default or user-selected settings can be provided to restrict the access that at least one application (e.g., at least one of applications 513 and 517) on user device 510 has to the wellness database 511 of user device 510 (for both storage and retrieval purposes) and to the sensor data generated by sensors 515 within user device 510 and/or sensor data generated by sensors 502, 504, 506, and 508. For example, an application for tracking a user's running sessions can be granted access to the data generated by the GPS sensor of user device 510, but can be prevented from accessing the user's blood pressure data stored in the wellness database 511. In some examples, an entity other than the owner of user device 510 can set the authorization settings for various applications on user device 510. For example, the manufacturer of user device 510 and/or the entity that created and/or maintains the operating



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system of user device 510 can evaluate the applications to determine if they should be given access to the user's wellness data and/or sensor data generated or received by user device 510. In some examples, these settings can be overridden by the user.

**[00191]** User device 510 can further include a display for displaying the stored wellness data or non-wellness data. A more detailed description of the interface of the display of user device 510 is described below with respect to FIGs. 11-17.

**[00192]** FIG. 6 illustrates system 600 for sharing user wellness data. Referring to FIG. 6, user server 514 can be communicatively coupled to user device 510 via network 512, which can include the Internet, an intranet, or any other wired or wireless public or private network. User device 510 can be configured to securely transmit the aggregated wellness or non-wellness data and associated metadata stored on the device to user server 514 for storage in user database 516. In some examples, the wellness or non-wellness data and associated metadata can be transmitted to user server 514 for storage in user database 516 in response to an explicit request for such a transfer by the user of device 510, while, in other examples, the wellness or non-wellness data can be synced with the data in user database 516 continuously, periodically, intermittently, or at any desired frequency. In yet other examples, the user's wellness or non-wellness data can be stored only on user device 510 and may not be stored in an external database.

**[00193]** In some examples, user server 514 and user database 516 can be configured to securely store a user's wellness or non-wellness data using a public/private key system that only allows the owner of the wellness or non-wellness data to decrypt the data. Additionally, the wellness or non-wellness data stored in user database 516 can be stored anonymously (e.g., without identifying and/or personal information about the user, such as a legal name, username, time and location data, or the like). In this way, other users, hackers, and the owner/operator of user database 516 cannot determine the identity of the user associated with the data stored in database 516. In some examples, a user can access their wellness or non-wellness data stored in user database 516 from a user device that is different than the one used to upload the wellness or non-wellness data to user server 514. In these instances, the user can be required to provide login credentials to access their wellness or non-wellness data. User server 514 can be configured to perform the authorization process to restrict access to the data within user database 516.



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**[00194]** System 600 can further include any number of other user devices 522 and 524 coupled to network 512. In some examples, user devices 522 and 524 can be operated by the same user as user device 510. In these instances, the user can access their wellness or non-wellness data stored in user database 516 by providing user server 514 with the appropriate credentials. In some examples, wellness and non-wellness data can be synced between user database 516 and one or more of user device 510, 522, and 524. In other examples, the user of user devices 522 and 524 can be a person that is different than the user of user device 510. In these examples, the users of devices 522 and 524 cannot access the wellness or non-wellness data of the user of user device 510 without the authorization of the user of user device 510. If authorization is given, wellness or non-wellness data can be shared with the users of user devices 522 and 524. The sharing of this data will be discussed in greater detail below with respect to FIGs. 7-8.

**[00195]** In some examples, any of the above described sources of wellness or non-wellness data can be configured to measure, generate, or receive wellness or non-wellness data continuously, intermittently, periodically, or at any other desired frequency or interval of time. As such, the wellness or non-wellness data can similarly be stored or updated in wellness database 511 or user database 516 continuously, intermittently, periodically, or at any other desired frequency or interval of time. The frequencies and intervals of time used for measuring, generating, receiving, or storing wellness or non-wellness can be the same or they can be different. Additionally, these frequencies and intervals can be default values or they can be set by a user to provide the user with wellness or non-wellness data that has been updated within a desired length of time.

**[00196]** While not shown, it should be appreciated that many other user devices can be coupled to user server 514 through network 512 to collect and store wellness or non-wellness data for other users in a manner similar to that described above.

USER DATABASE

**[00197]** As discussed above, a user's wellness or non-wellness data can be stored in user database 516 and can be shared with other users with the owning user's authorization. The other users can be any type of user, such as a friend, family member, caregiver, physician, social



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media provider, or the like. Different types and levels of authorization can be granted for the wellness or non-wellness data contained in wellness database 516.

**[00198]** In some examples, the shared wellness or non-wellness data can be pushed to the user device (e.g., user device 522 or 524) of the authorized other user. FIG. 7 illustrates an example process 700 for authorizing and pushing wellness or non-wellness data to authorized other users. At block 702, an identification of an authorized other user can be received. This can be received by a user device (e.g., user device 510) from the user associated with the shared wellness or non-wellness data. The identification can include a username, legal name, contact information, or any other identifier or credential for the other user, along with a level of access, such as access to all of the wellness or non-wellness data or a subset of the wellness or non-wellness data. In some examples, the authorized other user can be grouped into categories of users (e.g., family, friends, other, etc.), where each category is associated with a particular set of wellness data types that those authorized other users are allowed to view. For example, users in the family category can be allowed to view all types of wellness data, while users in the friend category can only view activity data.

**[00199]** At block 704, the user's wellness or non-wellness data can be monitored by the user's device to determine if any updates to the data have been made. If no update has been made, the process can repeat block 704. If, however, an addition or change to the user's wellness or non-wellness data has been identified, the process can proceed to block 706. In some examples, any change to the user's wellness or non-wellness data can cause process 700 to proceed to block 706, while, in other examples, only changes to certain types of the user's wellness or non-wellness data can cause process 700 to proceed to block 706.

**[00200]** At block 706, a notification can be transmitted to one or more authorized other users. For example, a notification can be transmitted from the user's device (e.g., user device 510) to the device of the authorized other user (e.g., user device 522 or 524). The notification can include a message indicating that an update has been made to the user's wellness or non-wellness data. The process can then proceed to block 708.

**[00201]** At block 708, the updated wellness or non-wellness data can be transmitted to the authorized other user. For example, the updated wellness or non-wellness data can be



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transmitted from the user's device (e.g., user device 510) to the device of the authorized other user (e.g., user device 522 or 524). In some examples, this data can only be transmitted if the authorized other user indicated a desire to view the updated wellness or non-wellness data, while, in other examples, the updated wellness or non-wellness data can be transmitted to the user device of the authorized other user without receiving a request from the authorized other user to view the data.

**[00202]** The pushing of wellness or non-wellness data performed using process 700 can be useful in situations in which a user wants to keep a caregiver or family member (or other user) updated with his/her wellness or non-wellness data. For instance, an elderly parent can grant authorization to push his/her wellness or non-wellness data to a child to allow the child to easily monitor the elderly user's health or medication compliance without having to constantly request this information from the parent.

**[00203]** In other examples, a user's wellness or non-wellness data can be shared with other users by allowing other users to pull the wellness or non-wellness data. FIG. 8 illustrates an example process 800 for authorizing other users to pull wellness or non-wellness data. At block 802, a request to access a particular user's wellness or non-wellness data can be received. The request can identify the user associated with the requested wellness or non-wellness data and, optionally, the portion of the wellness or non-wellness data to be accessed. The identification can include a username, legal name, contact information, or any other identifier or credential for the user. The request can be received by a user device (e.g., user device 510) of the user associated with the requested data from a user device (e.g., user device 522 or 524) of the requesting user.

**[00204]** At block 804, a request for authorization can be transmitted to the user associated with the requested wellness or non-wellness data. In some examples, the request can be transmitted from the user device (e.g., user device 522 or 524) of the requesting user to the user device (e.g., user device 510) of the user associated with the requested data. The request can then be displayed to the user associated with the requested data by the user's device (e.g., user device 510).



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**[00205]** At block 806, it can be determined if an authorization has been received from the user associated with the requested wellness or non-wellness data. The authorization can be received in any manner. For example, a prompt can be displayed to the user associated with the requested data on their user device 510. If authorization is denied, the process can return to block 802. If, however, authorization is granted, the process can proceed to block 808.

**[00206]** At block 808, the requested wellness or non-wellness data can be transmitted to the entity that requested access to the wellness or non-wellness data at block 802. The requested wellness or non-wellness data can be transmitted from the user's device (e.g., user device 510) to the requesting entity's device (e.g., user device 522 or 524).

**[00207]** In some examples, if authorization to access a user's wellness or non-wellness data is granted before a request is made at block 802, process 800 can proceed from block 802 to block 808 without performing blocks 804 or 806. For example, if a parent grants access to their wellness or non-wellness data to their child, a request by the child for the parent's wellness or non-wellness data can be received at block 802 and the requested wellness or non-wellness data can be transmitted to the child at block 808 without any intervening action by the parent.

**[00208]** The pulling of wellness or non-wellness data using process 800 can be useful in situations where an authorized other user does not want to be constantly updated with updates to a user's wellness or non-wellness data, but would like occasional access to the data. For example, a physician may want access to a patient's medical records and wellness or non-wellness data just prior to meeting with the patient. In this situation, the physician can request the patient's wellness or non-wellness data and can either receive the requested data or cause a request to be sent to the user device 510 of the patient. In response to receiving an authorization from the patient, the requested data can be sent from user device 510 to the physician's computing device (e.g., user device 522 or 524). In some examples, the received wellness or non-wellness data can be added to an electronic medical record (EMR) associated with the user.

**[00209]** In some examples, whether using a push or pull sharing model, the wellness or non-wellness data of a user may not be permanently stored on the user device of authorized other users. In this way, authorization to these other users can be revoked, causing the user's wellness data to be inaccessible by the formerly authorized other users. Additionally, in some examples,



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reports detailing or summarizing a user's wellness or non-wellness data can be generated. These reports can then be transmitted via email, secure transfer, or the like, to any desired recipient. In yet other examples, user device 510 can be configured to communicate some or all of the user's wellness or non-wellness data, such as medical insurance information, blood type, medical history, etc., to medical personnel using near field communication or another communication protocol. This can be useful when checking in to a hospital or during medical emergencies when relevant medical data is needed.

AGGREGATED DATA VIEW

**[00210]** As discussed above, user device 510 can be configured to aggregate wellness or non-wellness data associated with a user that was received from the user, from one or more sensors 502, 504, 506, and 508, or from a non-sensor source. User device 510 can also be configured to display the user's aggregated wellness or non-wellness data in various ways using various interfaces.

**[00211]** FIG. 9 illustrates one example interface 900 that can be used by user device 510 to display a user's aggregated wellness or non-wellness data. Interface 900 can include any number of partitions 902, 904, 906, 908, 910, and 912, each containing a different type of wellness data associated with the user. In the aggregated view of FIG. 9, the partitions can be used to display a partial view of a portion of the different types of wellness data. In the examples shown in FIGs. 9-14, 16, and 18-19, the partitions are illustrated as having the appearance and associated animations of a stack of cards, where each card corresponds to a different partition (and thus, a different type of wellness data). It should be appreciated, however, that the partitions can be displayed in any other desired manner.

**[00212]** Interface 900 can include a first partition 902 displayed at the top of the interface that can include an identifier (e.g., name) of the user. As shown, the name "John Smith" of the user of user device 510 is displayed on partition 902. Interface 900 can further include button 901 for viewing wellness data associated with other users. This feature is described in greater detail below with respect to FIGs. 14 and 15.

**[00213]** Interface 900 can further include another partition 904 displayed adjacent to partition 902 such that it appears to be overlapping partition 902 like a stacked card. This partition can



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include an indication of the type of wellness data contained on the partition as well as a partial view (e.g., summary, example, or the like) of a portion the partition's wellness data. Specifically, partition 904 includes the word "Weight" to indicate that the partition contains weight data associated with the user "John Smith." Partition 904 can further include the most recent weight "185 lbs" of "John Smith."

**[00214]** Interface 900 can further include another partition 906 displayed adjacent to partition 904 such that it appears to be overlapping partition 904 like a stacked card. This partition can include an indication of the type of wellness data contained on the partition as well as a partial view (e.g., summary, example, or the like) of a portion the partition's wellness data. Specifically, partition 906 includes the words "Blood Sugar" to indicate that the partition contains blood sugar data associated with the user "John Smith." Partition 906 can further include the most recent blood sugar level "164 mg/dL" of "John Smith."

**[00215]** Interface 900 can further include another partition 908 displayed adjacent to partition 906 such that it appears to be overlapping partition 906 like a stacked card. This partition can include an indication of the type of wellness data contained on the partition as well as a partial view (e.g., summary, example, or the like) of a portion the partition's wellness data. Specifically, partition 908 includes the words "Blood Pressure" to indicate that the partition contains blood pressure data associated with the user "John Smith." Partition 908 can further include the most recent blood pressure measurement "117/67 mmHg" of "John Smith."

**[00216]** Interface 900 can further include another partition 910 displayed adjacent to partition 908 such that it appears to be overlapping partition 908 like a stacked card. This partition can include an indication of the type of wellness data contained on the partition as well as a partial view (e.g., summary, example, or the like) of a portion of the partition's wellness data. Specifically, partition 910 includes the word "Activity" to indicate that the partition contains activity data (e.g., calories burned) associated with the user "John Smith." Partition 910 can further include the current daily number of calories burned "467 kcal" by "John Smith."

**[00217]** Interface 900 can further include another partition 912 displayed adjacent to partition 910 such that it appears to be overlapping partition 910 like a stacked card. This partition can include an indication of the type of wellness data contained on the partition as well as a partial



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view (e.g., summary, example, or the like) of a portion of the partition's wellness data. Specifically, partition 912 includes the words "Heart Rate" to indicate that the partition contains heart rate data associated with the user "John Smith." Partition 912 can further include the most recent heart rate measurement "122 bpm" of "John Smith." Additionally, since partition 912 is at the top of the stack of partitions, additional information 914 and/or options 916 can be displayed on the face of the partition. In the illustrated example, the additional information includes the minimum, maximum, and resting heart rate of "John Smith" over the span of a week, which was selected using options 916.

**[00218]** The ordering of some or all of the partitions can be static or dynamic. For example, partition 902 containing the user's name can remain at the top of the display, while the remaining partitions can be ordered based on the time of day, how recently the wellness data associated with the partition is updated, the frequency that the wellness data associated with the partition is updated, whether a notable event is approaching (e.g., medication that should be taken, a sensor measurement that should be performed, etc.), or the like. The ordering can also be manually changed by the user. If interface 900 includes more partitions than can be displayed on a single screen, a vertical scrolling can be performed to display the remaining partitions. Alternatively, a 3D scrolling of the partitions may be performed to give the appearance of flipping through a stack of cards.

**[00219]** While specific example partition types have been provided above, it should be appreciated that partitions containing different types of wellness data can be included within interface 900. Additionally, users can generate customized partitions that can be used to display any desired type of user-entered data. For example, a partition can be created to track the medication compliance of a user. The user can enter the time, amount, and type of medicine taken and this data can be displayed on the created partition. Other custom partitions for different wellness data types, such as nutrition, sleep, smoking, or the like can also be generated.

**[00220]** Additionally, while specific examples of partial views (e.g., summary, example, or the like) of a portion of the partitions' wellness data have been provided above, it should be appreciated that the partial views can summarize or provide examples of the wellness data in different ways. For example, rather than display the most recent value of a particular wellness data type, a mean, mode, median, another single data point, or the like of the wellness data over



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all or a portion of time (e.g., a week, month, year, etc.) can be displayed on the partitions in the aggregated view. Alternatively, in other examples, a current and average value can be displayed on the partitions in the aggregated view. In yet other examples, the partitions in the aggregated view can include a display of a current value and a goal value for the type of wellness data.

**[00221]** The partitions 902, 904, 906, 908, 910, and 912 can be selected to display an expanded view of the partition containing reconfigured data, additional data, or an enlarged view of the original data contained on the partition. For example, a user can select a partition by tapping on the desired partition displayed on a touch sensitive display, can highlight and click on the partition using a mouse or other input device, or select the desired partition using any other input means. In response to a selection of a partition, user device 510 can hide the contents of the other partitions and display the selected partition on all or most of the display of user device 510.

**[00222]** For example, FIG. 10 illustrates an example interface 1000 that can be displayed in response to a user selecting partition 904 in interface 900. In interface 1000, expanded view 905 of partition 904 can be displayed prominently within the display of user device 510, while the remaining partitions can be animated as being collapsed off the display into the stack of partitions 1002 displayed at the bottom of the display. In the illustrated example, expanded view 905 can include additional weight-related data, such as the user's weight, body mass index (BMI), and fat percentage, that were not shown in interface 900. Expanded view 905 can further include summaries of the user's weight data, such as a sliding scale 1040 indicating the user's weight relative to a range of weights and a graph 1041 tracking the user's weight throughout the day, week, month, or year. Interface 1000 can further include button 1004 that can cause user device 510 to display options for sharing some or all of their wellness data using any desired communication medium, such as text message, email, social media provider, or the like. In these examples, the wellness data can be encrypted and sent from the user device 510 directly to the user device of the recipient (rather than from user server 514), where the wellness data can be decrypted. To return to the aggregated view of partitions shown in interface 900, the user can select (e.g., tap, click, or otherwise select) the stack of partitions 1002. It should be appreciated that the contents of interface 1000 and expanded view 905 are provided as examples, and that expanded view 905 can instead include any type or summary of weight-related data.



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**[00223]** FIG. 11 illustrates an example interface 1100 that can be displayed in response to a user selecting partition 906 in interface 900. In interface 1100, expanded view 907 of partition 906 can be displayed prominently within the display of user device 510, while the remaining partitions can be animated as being collapsed off the display into the stack of partitions 1002 displayed at the bottom of the display. In the illustrated example, expanded view 907 can include additional blood sugar-related data, such as the user's blood sugar and units that were not shown in interface 900. Expanded view 907 can further include summaries of the user's blood sugar data, such as a sliding scale 1042 indicating the user's blood sugar after a meal relative to a range of typical blood sugar level and a graph 1043 tracking the user's blood sugar throughout the day, week, month, or year. Interface 1100 can also include button 1004, described above. To return to the aggregated view of partitions shown in interface 900, the user can select (e.g., tap, click, or otherwise select) the stack of partitions 1002. It should be appreciated that the contents of interface 1100 and expanded view 907 are provided as examples, and that expanded view 907 can instead include any type or summary of blood sugar-related data.

**[00224]** FIG. 12 illustrates an example interface 1200 that can be displayed in response to a user selecting partition 908 in interface 900. In interface 1200, expanded view 909 of partition 908 can be displayed prominently within the display of user device 510, while the remaining partitions can be animated as being collapsed off the display into the stack of partitions 1002 displayed at the bottom of the display. In the illustrated example, expanded view 909 can include additional blood pressure-related data, such as the user's blood pressure and beats per minute (bpm) that were not shown in interface 900. Expanded view 909 can further include summaries of the user's blood pressure data, such as a sliding scale 1044 indicating the user's blood pressure relative to typical blood pressure values and a graph 1045 tracking the user's blood pressure throughout the day, week, month, or year. Interface 1200 can also include button 1004, described above. To return to the aggregated view of partitions shown in interface 900, the user can select (e.g., tap, click, or otherwise select) the stack of partitions 1002. It should be appreciated that the contents of interface 1200 and expanded view 909 are provided as examples, and that expanded view 909 can instead include any type or summary of blood pressure-related data.



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**[00225]** FIG. 13 illustrates an example interface 1300 that can be displayed in response to a user selecting partition 910 in interface 900. In interface 1300, expanded view 911 of partition 910 can be displayed prominently within the display of user device 510, while the remaining partitions can be animated as being collapsed off the display into the stack of partitions 1002 displayed at the bottom of the display. In the illustrated example, expanded view 911 can include additional activity-related data, such as the calories burned, steps taken, and miles traveled by the user that were not shown in interface 900. Expanded view 911 can further include summaries of the user's blood pressure data, such as a graph 1046 tracking the intensity of their activity throughout the day, week, month, or year, and summaries 1047 showing the total time spent active, idle, and exercising. Interface 1300 can also include button 1004, described above. To return to the aggregated view of partitions shown in interface 900, the user can select (e.g., tap, click, or otherwise select) the stack of partitions 1002. It should be appreciated that the contents of interface 1300 and expanded view 911 are provided as examples, and that expanded view 911 can instead include any type or summary of activity-related data.

**[00226]** FIG. 14 illustrates an example interface 1400 that can be displayed in response to a user selecting partition 912 in interface 900. In interface 1400, expanded view 913 of partition 912 can be displayed prominently within the display of user device 510, while the remaining partitions can be animated as being collapsed off the display into the stack of partitions 1002 displayed at the bottom of the display. In the illustrated example, expanded view 913 can include additional heart rate-related data, such as minimum, maximum, and resting heart rate of the user over a day, week, month, or year. However, unlike partitions 904, 906, 908, and 910, this data was previously displayed within interface 900 since partition 912 was displayed in the aggregated view as being located at the top of the stack of partitions. Expanded view 913 can further include a summary of the user's heart rate data, such as a graph 1048 tracking the user's heart rate throughout the day, week, month, or year. Interface 1400 can also include button 1004, described above. To return to the aggregated view of partitions shown in interface 900, the user can select (e.g., tap, click, or otherwise select) the stack of partitions 1002. It should be appreciated that the contents of interface 1400 and expanded view 913 are provided as examples, and that expanded view 913 can instead include any type or summary of heart rate-related data.



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**[00227]** In some examples, a user's wellness data used to generate the interfaces shown in FIGs. 9-14 may have been received from one or more sensor devices and/or applications. In these examples, the wellness data of the same type from different devices may be combined and displayed on a single partition. For example, the weight data shown in interface 1000 in FIG. 10 can be obtained from repeated measurements taken using the same scale. Alternatively, some of the measurements could have been obtained from one scale, while the remaining measurements could have been obtained from one or more different scales. As a result, some points in graph 1041 could have been generated using weight data from one scale, while other points in graph 1041 could have been generated using weight data from one or more other scales. In another example, the activity data shown in interface 1300 in FIG. 13 may have been obtained from a single step counting device. Alternatively, the data may be aggregated from a step counting device, a first GPS-enabled watch used to record a user's running session, and a second GPS-enabled watch used to record a user's rowing session. In these examples, graph 1046 showing the intensity of the user's activity can be a segmented graph generated from a combination of the data obtained from the step tracking device and the first and second GPS-enabled watches, with each segment coming from one of the devices. In particular, graph 1046 can include a first segment 1050 generated from data from the step counting device, a second segment 1052 generated from data from the first GPS-enabled watch, and a third segment 1054 generated from data from the second GPS-enabled watch. Aggregating data in this way advantageously allows a user to record and view wellness data in a manner that does not directly tie the wellness data to a particular device or application (e.g., smartphone applications). While three segments are shown in FIG. 13, it should be appreciated that the segmented graph can include any number of segments corresponding to different sensors and/or applications.

**[00228]** FIG. 15 illustrates an example process 1500 for displaying wellness data according to various examples. At block 1502, an aggregated view of wellness data containing a plurality of partitions similar or identical to partitions 902, 904, 906, 908, 910, and 912 can be displayed on a user device similar or identical to user device 510. The partitions can include an identifier for the type of wellness data displayed on the partition and a partial view (e.g., summary, example, or the like) of a portion of the type of wellness data associated with the partition. For example, an interface similar or identical to interface 900 can be displayed containing various wellness data partitions 902, 904, 906, 908, 910, and 912.



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**[00229]** At block 1504, a selection of one of the displayed partitions can be received. The selection can be received by the user device, and can be in the form of a mouse click, tap on a touch sensitive display, or the like. In response to a selection of the partition, an expanded view of the selected partition can be displayed at block 1506. The expanded view can include a view showing a larger portion of the selected partition and at least one of reconfigured wellness data (e.g., a rearranged view of the wellness data displayed on the selected partition in the aggregated view displayed at block 1502), additional wellness data (e.g., wellness data that was not previously displayed on the selected partition in the aggregated view displayed at block 1502), or an enlarged view of the wellness data displayed in the aggregated view displayed at block 1502 (e.g., a larger view of the same wellness data displayed on the selected partition in the aggregated view displayed at block 1502). Additionally, partitions that were not selected can be reduced in size or removed from the display. For example, any of interfaces 1000, 1100, 1200, 1300, or 1400 can be displayed in response to a selection of partition 904, 906, 908, 910, or 912 of interface 900, respectively.

**[00230]** In some examples, the display presented at block 1506 can include a selectable option (e.g., button 1004) to share wellness data. In other examples, the display presented at block 1506 can further include a selectable option (e.g., partitions 1002) to cause the aggregated view containing partitions displayed at block 1502 to again be displayed. The process can then return to block 1504, where a selection of another partition can be received.

**[00231]** FIG. 16 illustrates an example interface 1600 that can be displayed in response to a user rotating user device 510 to a landscape view. In this orientation, user device 510 can display expanded views of a smaller subset of partitions than displayed in the aggregated view of interface 900. For example, interface 1600 can include expanded view 1602 of partition 908, expanded view 1604 of partition 906, and expanded view 1606 of partition 912. In the illustrated example, the expanded views of the partitions can include graph representations of the wellness data over various lengths of time. This can allow a user to view the displayed types of wellness data and see how they change relative to each other over time and to evaluate how a change in one type of wellness data relates to a change (or lack thereof) in another type of wellness data. For example, one type of wellness data that can be displayed can include medications taken over time. This data can be compared to a user's blood pressure and heart



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rate to determine if the medication is having a beneficial or detrimental effect. In some examples, user device 510 can select the types of wellness data to be displayed when user device 510 is rotated into landscape orientation. The selection can be made based on predetermined combinations of wellness data types that are often associated with each other or can be made based on an analysis of the various types of wellness data. In the latter example, wellness data types that are identified as potentially being correlated can be displayed. Wellness data types not shown in the initial display of interface 1600 can be viewed by scrolling through the partitions. Additionally, the partitions can be selected to display more detailed information in the same way as performed in interface 900.

**[00232]** FIG. 17 illustrates an example process 1700 for displaying wellness data based on an orientation of the device according to various examples. At block 1702, an aggregated view containing a plurality of partitions similar or identical to partitions 902, 904, 906, 908, 910, and 912 can be displayed by a user device similar or identical to user device 510. The partitions can include an identifier for the type of wellness data displayed on the partition and a partial view (e.g., summary, example, or the like) of a portion the type of wellness data associated with the partition. For example, an interface similar or identical to interface 900 can be displayed containing various wellness data partitions 902, 904, 906, 908, 910, and 912.

**[00233]** At block 1704, a change in orientation of the user device can be detected. For example, a gyroscope and/or an accelerometer within the user device can indicate that the orientation of the device has been changed from portrait to landscape. In response to a detected change in orientation by a threshold amount, the process can proceed to block 1706.

**[00234]** At block 1706, a subset of the plurality of partitions displayed at block 1702 can be selected for display. In some examples, the subset can be a predetermined subset of the plurality of partitions. In other examples, the subset can be selected based on user-defined preferences for display. In yet other examples, the subset of the plurality of partitions can be selected based on an analysis of the wellness data sets associated with each partition to determine if any of the types of wellness data are potentially correlated. If a potential correlation is identified, the partitions associated with the potentially correlated data can be selected at block 1706.



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**[00235]** At block 1708, expanded views of the subset of partitions selected at block 1706 can be displayed. In some examples, the identifier for the type of wellness data displayed on the expanded view of the partition and/or the summary, example, or other view of the type of wellness data associated with the partition can be different than that shown on the partitions at block 1702. For example, the summary or example data on each expanded view can be replaced with a graph representation of the wellness data over time, as shown in FIG. 16. In this way, relationships between the displayed types of wellness data can be observed. In some examples, in response to detecting a change in the orientation of the user device to a portrait orientation, the process can return to block 1702.

**[00236]** As discussed above, in some examples, the user of user device 510 can be granted access to the wellness data of other users. In these examples, user device 510 can allow the user to view the wellness data of other users in a similar format as discussed above with respect to FIGs. 9-17. For example, as shown by interface 1800 in FIG. 18, to view the wellness data of other users, the user can laterally scroll the contents of the interface in direction 1806 to cause a first set of partitions 1804 from a first user to be displayed in place of the second set of partitions 1802 from a second user. In particular, the second set of partitions 1802 for the second user can be translated off the display in the direction 1806 of the scroll, while the first plurality of partitions 1804 can be translated onto the display in the same direction 1806 but from the opposite side of the display. It should be appreciated that FIG. 18 illustrates a transitional state in which partitions 1802 are being removed from the display and partitions 1804 are being scrolled in direction 1806 onto the display. As such, only the left side of partitions 1802 and the right side of partitions 1804 are visible. As partitions 1802 and 1804 continue to be scrolled in direction 1806, a smaller portion of partitions 1802 may be visible while a larger portion of partitions 1804 may be visible until partitions 1802 are completely removed from the display and partitions 1804 occupy all or most of the display. While not shown, the top partition of partitions 1804 can include the first user's name and can be displayed as the screen continues to be scrolled in direction 1806. This scrolling operation can be performed any number of times (and in any direction) to scroll through the partitions for all users that the user of device 510 is authorized to access.



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**[00237]** FIG. 19 illustrates another example interface 1900 for viewing the wellness data of other users. In some examples, interface 1900 can be displayed in response to a selection of button 901 of interface 900. As shown, interface 1900 can include a list of users 1902, 1904, 1906, and 1908 that have authorized the user of user device 510 to access their wellness data. In some examples, the circles next to each user's name can be replaced with an image associated with the user. These images can be the same image as used in device 510's contact list or can include another image. In the illustrated example, users 1902, 1904, 1906, and 1908 have been grouped into different categories (e.g., self, family, and friends). The categories can be used to logically group users together or, as discussed above, can indicate a level of authorization to view the wellness data of the other users. For example, users in the "family" category may have authorized a larger set of their wellness data to be viewed, while users in the "friend" category may have authorized a smaller set of their wellness data to be viewed. In response to a selection of one of users 1902, 1904, 1906, and 1908, partitions 1910 can be updated to reflect the wellness data of the selected user. This can include updating the types of wellness data displayed on the partitions (e.g., based on the types of wellness data the other user has authorized the user of user device 510 to view) as well as the associated partial views (e.g., summary, example, or the like) of portions the wellness data. In other examples, the list of users 1902, 1904, 1906, and 1908 can be displayed in response to vertically scrolling interface 900 up or down to expose the list of users.

**[00238]** FIG. 20 illustrates an exemplary process 2000 for displaying wellness data associated with two or more users according to various examples. At block 2002, a display of a first plurality of partitions associated with a first user can be displayed. The partitions can be similar or identical to partitions 902, 904, 906, 908, 910, and 912 and can be displayed by a user device similar or identical to user device 510. The partitions can include an identifier for the type of wellness data displayed on the partition and a partial view (e.g., summary, example, or the like) of a portion the type of wellness data associated with the partition. For example, an interface similar or identical to interface 900 can be displayed containing various wellness data partitions 902, 904, 906, 908, 910, and 912.

**[00239]** At block 2004, a request to view a second plurality of partitions of a second user can be received. The second user can be a user that has authorized the first user to view their wellness

data as described above. In some examples, the request can include a user input to scroll the display of the first plurality of partitions displayed at block 2002 and can be received by the user device in the form of rotation of a mouse wheel, an arrow key on a keyboard, a touch and/or swipe on a touch sensitive display, or the like. Similar to the example shown in FIG. 18, the scroll direction can be in a horizontal direction relative to the contents of the display and can be perpendicular to a scroll direction that causes additional partitions associated with the first user to be displayed. However, it should be appreciated that other scroll directions can be used. In other examples, the request to view the second plurality of partitions can be received in the form of a selection of the second user from a list of users. For example, the second user can be selected from a list of users similar to that shown in FIG. 19. The list can be displayed in response to a selection of a button (e.g., button 901) or other selection mechanism, such as vertically scrolling the first plurality of partitions displayed at block 2002 to expose the list of users. In response to receiving the request to view the second plurality of partitions at block 2004, the process can proceed to block 2006.

**[00240]** At block 2006, a display of the second plurality of partitions associated with the second user can be displayed. In some examples, when the request to view the second plurality of partitions received at block 2004 included a request to scroll the display of the first plurality of partitions, the first plurality of partitions can be translated off the display in the direction of the scroll, while the second plurality of partitions can be translated onto the display in the same direction but from the opposite side of the display, as shown in FIG. 18. In other examples, when the request to view the second plurality of partitions received at block 2004 included a selection of the second user from a list of users, the first plurality of partitions can be replaced with a display of the second plurality of partitions, as shown in FIG. 19. Additional requests to view wellness data partitions of other users can be received and blocks 2004 and 2006 can be repeated to display some or all of the sets of partitions associated with users that have authorized the user of device 510 to view their wellness data.

**[00241]** It should be appreciated that the processes described above can be combined. For example, process 1700 can be combined with process 1500 such that after the plurality of partitions are displayed at block 1502, a change in orientation of the user device can cause blocks 1704, 1706, and 1708 to be performed. Similarly, process 2000 can be combined with



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process 1500 such that after the plurality of partitions are displayed at block 1502, the receipt of a request to view partitions associated with other users can cause blocks 2004 and 2006 to be performed to display a plurality of partitions associated with another user.

**[00242]** As mentioned above, systems 500 and 600 can be configured to measure, generate, receive, or store wellness or non-wellness data continuously, intermittently, periodically, or at any other desired frequency or interval of time. Processes 1500, 1700, and 2000 can similarly be performed to update the display of wellness or non-wellness data continuously, intermittently, periodically, or at any other desired frequency or interval of time. For example, the device performing process 1500, 1700, or 2000 can receive updated wellness or non-wellness data from wellness database 511 or user database 516 continuously, intermittently, periodically, or at any other desired frequency or interval of time. In some examples, the device performing process 1500, 1700, or 2000 can receive updates to all wellness or non-wellness data at the same frequency or interval of time. In other examples, the device performing process 1500, 1700, or 2000 can be configured to receive updates to different types of data at different frequencies or intervals of time. For example, heart rate data can be updated every second, while weight data can be updated daily. These intervals and frequencies can be default values or can be selected by the user.

DASHBOARD VIEW

**[00243]** FIG. 21 illustrates one example interface 2100 that can be displayed by user device 510 to display a detailed view of a user's wellness or non-wellness data. Interface 2100 can include any number of partitions 2102, 2104, and 2106, each representing a different type of wellness or non-wellness data associated with the user (e.g., data stored in wellness database 511). In some examples, the partitions can be displayed in a color based on the type of wellness or non-wellness data that it represents. For example, a partition representing nutrition data can be displayed in one color, and a partition representing of fitness data can be displayed in another.

**[00244]** In some examples, a partition can include an identification of the type of wellness or non-wellness data that the partition represents (e.g., calories, steps, weight, or the like), a numerical daily value of the represented type of wellness or non-wellness data, and a graph representation of the represented type of wellness or non-wellness data. For example, partition



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2102 can include the text "Calories" to indicate that it represents Calorie data, a current daily value 2110 of 1250 Calories burned, and a graph representation 2108 of the Calorie data over time throughout the day. Similarly, partition 2104 can include the text "Steps" to indicate that it represents step data, a current daily value 2111 of 3000 steps, and a graph representation 2109 of the step data over time throughout the day. Interface 2100 can further include a partial view of partition 2106 showing the text "Weight" to indicate that it represents weight data, as well as a daily value 2112 of 160 lbs. In the illustrated example, the graphs of each partition are non-overlapping with each other.

**[00245]** In some examples, the detailed view of the user's wellness or non-wellness data can include partitions not shown in interface 2100. In these examples, a user can initiate a scroll request by swiping up or down on a touch sensitive display, by clicking and dragging on a display using a mouse or other input device, by manipulating a scroll-wheel, by performing a swiping gesture on a touch pad, or the like. In response to detecting the scroll request, user device 510 can scroll the view of interface 2100 to display other partitions that were not previously displayed (or were partially displayed, such as partition 2106).

**[00246]** For example, FIG. 22 illustrates an example interface 2200 that can be displayed in response to a user initiating a scroll request to scroll the view of interface 2100 in an upward direction. In interface 2200, the remainder of partition 2106 can be displayed to show a graph representation 2114 of the weight data over time throughout the week. Another partition 2116 can also be displayed below partition 2106 in interface 2200. Partition 2216 can include the text "Blood Pressure" to indicate that it represents blood pressure data, a current daily value 2110 of 117/67 mmHg, and a graph representation 2118 of the blood pressure data over time throughout the week. In the example shown in FIG. 22, graph 2118 includes two vertical bars for each day. The top and bottom of the upper vertical bar for each day can represent the high and low diastolic blood pressure values, respectively, for the day. Similarly, the top and bottom of the lower vertical bar for each day can represent the high and low systolic blood pressure values, respectively, for that day.

**[00247]** In some examples, the order of partitions within interface 2100 or 2200 can be changed in response to detecting a user request to reorder the partitions. In some examples, the request to reorder can include a selecting and holding of one of the partitions for greater than a threshold

length of time. After detecting that the threshold length of time has elapsed, user device 510 can animate the partitions in a way that indicates that the partitions can be reordered. In some examples, the partitions can be reordered by dragging a selected partition to a desired location. However, in other examples, the partitions can be reordered in any other desired manner.

**[00248]** While only four partitions 2102, 2104, 2106, and 2116 are shown in the detailed view illustrated by interfaces 2100 and 2200, it should be appreciated that the detailed view can include additional partitions representing any number and any type of wellness or non-wellness data. Similar to partitions 2102, 2104, 2106, and 2116, these additional partitions can include identifications of the type of wellness or non-wellness data that the partitions represent, numerical daily values of the represented types of wellness or non-wellness data, and graph representations of the represented types of wellness or non-wellness data.

**[00249]** In some examples, a graph view of some or all of the wellness or non-wellness data displayed in the detailed view can be displayed in response to a graph-view input. In some examples, the graph-view input can include a detected change in orientation of user device 510. For example, FIG. 23 illustrates an example interface 2300 that can be displayed in response detecting a rotation of user device 510 to a landscape view. The graph view of interface 2300 can include data-set representations 2302, 2304, 2306, and 2308, each representing a different set of wellness or non-wellness data. In the illustrated example, the y-axis of the graph can represent a dependent variable of the various data sets, and the x-axis of the graph can represent an independent variable. For example, if data-set representation 2302 represents a set of Calorie data, then the y-axis dependent variable can be Calories, and the x-axis independent variable can be time. Similarly, if data-set representation 2304 represents step data, then the y-axis dependent variable can be a number of steps, and the x-axis independent variable can be time.

**[00250]** In some examples, the data-set representations can be displayed in a color based on the type of wellness or non-wellness data that it represents. For example, a data-set representation representing nutrition data can be displayed in one color, and a data-set representation of fitness data can be displayed in another. In some examples, the colors used for the different types of wellness or non-wellness data can correspond to the colors used to display the partitions in the detailed views of interfaces 2100 and 2200. For example, a partition representing a set of



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nutrition data can be displayed in the same color as a data-set representation representing the same set of nutrition data.

**[00251]** In some examples, the independent variable of the x-axis can be the same for all data-set representations shown in the graph view. For example, the time represented by the x-axis can be the same for each data-set representation.

**[00252]** In some examples, the dependent variable of the y-axis can be measured in a different unit for some or all of the data-set representations. For example, the dependent variable for data-set representation 2302 can be expressed in Calories, the dependent variable for data-set representation 2304 can be expressed in a number of steps, the dependent variable for data-set representation 2306 can be expressed in pounds (representing weight data), and the dependent variable for data-set representation 2308 can be expressed in mmHg (representing blood pressure data). Since these data-set representations having different units of measurement can be shown overlaid on the same display, a different vertical y-axis scaling can be used to display the various data-set representations. In some examples, to determine a vertical scale for one of the data-set representations, the minimum and maximum value of the represented data set that are to be displayed within the graph can be determined. For example, to determine the scaling factor for data-set representation 2302 representing Calorie data, the maximum and minimum values of the Calorie data can be determined over the span of time represented by the x-axis of the display. In the example shown in FIG. 23, this can include determining the maximum and minimum values of the Calorie data over a week. The determined maximum value can be multiplied by a first scaling factor that can have any value (e.g., a value greater than or equal to 1, such as 1.1), and the determined minimum value can be multiplied by a second scaling factor that can be the same or different from the first scaling factor (e.g., a value less than or equal to 1, such as 0.9). The products of the maximum and minimum values multiplied by the first and second scaling factors can be assigned to the maximum vertical position (e.g., highest position on the y-axis) and the minimum vertical position within the graph (e.g., lowest position on the y-axis), respectively. This allows the data-set representation to be fully displayed within the graph. For example, if the maximum and minimum values of the Calorie data represented by data-set representation 2302 is 1000 Calories and 300 Calories, respectively, and if a first scaling factor of 1.1 and a second scaling factor of 0.9 are used, then the maximum vertical position of



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the y-axis can represent 1100 Calories and the minimum vertical position of the y-axis can represent 270 Calories for data-set representation 2302. This process can be repeated for each of the displayed data-set representations, resulting in a different scale for each of the data-set representations. This advantageously allows the data-set representations to be clearly displayed overlaid on the same graph. For example, if the same scaling factor were instead used for all sets of data, it is possible that the values for one data-set representation can be substantially larger than another, causing the other data-set representation to appear as a flat line.

**[00253]** In some examples, one or more of the displayed data-set representations can be selected to display additional data associated with the selected data-set representation. In some examples, for the purpose of selecting a particular data-set representation by a user, the data-set representations of the graph view shown in interface 2300 can be associated with a range (e.g., a unique range) of vertical positions within the graph. For example, the graph shown in interface 2300 can be divided into four ranges of vertical positions 2310, 2312, 2314, and 2316 separated by the dashed lines. In this example, data-set representation 2302 can be associated with first range of vertical positions 2310, data-set representation 2304 can be associated with second range of vertical positions 2312, data-set representation 2306 can be associated with third range of vertical positions 2314, and data-set representation 2308 can be associated with fourth range of vertical positions 2316. A selection of one of the data-set representations can be made by entering a user input within a range of vertical positions corresponding to the desired data-set representation, regardless of the horizontal position of the user input. For example, to select data-set representation 2302, a user input in the form of a touch event by a finger or other device on a touch sensitive display, a click of a mouse or other device, a touch event on a touch pad, or the like, can be made at location 2318 having a vertical position located within the first range of vertical positions 2310. In response to detecting the user input at location 2318 having a vertical position within first range 2310, user device 510 can display an indication that data-set representation 2302 was selected. For example, FIG. 24 shows interface 2400 that can be displayed in response to detecting the input received at location 2318 in interface 2300. As shown, a circle marker can be displayed overlaid on data-set representation 2310 at a horizontal position corresponding to the horizontal position of location 2318. Additionally, a numerical value of 480 kcal can be displayed, indicating that the value of the data set represented by data-set representation 2302 has a value of 480 at the horizontal position of the user input (e.g.,

horizontal position of location 2318). As shown, data-set representation 2302 can be selected by a user input at location 2318 even though the line of data-set representation 2302 is not located near location 2318. This can advantageously allow a user to select a desired data-set representation without having to select a particular portion of the data-set representation, which can be difficult at locations where multiple data-set representations overlap.

**[00254]** In some examples, one of the data-set representations 2302, 2304, 2306, or 2308 can represent blood pressure data. In these examples, for purposes of generating the line of the data-set representation, the dependent variable for the blood pressure data can include an average of the diastolic and the systolic blood pressure. However, the numerical value displayed in response to a selection of the data-set representation for blood pressure data can include a high value for diastolic blood pressure, a low value for diastolic blood pressure, a high value for systolic blood pressure, and a low value for systolic blood pressure associated with the time corresponding to the horizontal position of the user input.

**[00255]** In some examples, one of the data-set representations 2302, 2304, 2306, or 2308 can represent heart rate data. In these examples, the numerical value displayed in response to a selection of the data-set representation for heart rate data can include a high value for heart rate and a low value for heart rate associated with the time corresponding to the horizontal position of the user input.

**[00256]** In some examples, the indication of a selection displayed in response to detecting a user input can further include highlighting an area below the line of the selected data-set representation. For example, the area below the line of the selected data-set representation can be darkened, brightened, displayed with a different color, or otherwise highlighted relative to other portions of the graph to change the line graph into an area graph of the selected data set. In some examples, the data-set representations that are not currently selected can be removed from the display, greyed out, or otherwise made less visible within the graph.

**[00257]** In some examples, a user input can be continuously applied to the displayed graph and moved in a horizontal direction within one of the range of vertical positions to scrub through values of the selected data-set representation. For example, in response to detecting that the user input received at location 2318 is moved in the left direction, the circle marker displayed over



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data-set representation 2302 can be animated such that it appears to move along the line of data-set representation 2302 at horizontal positions corresponding to the current horizontal position of the user input. Similarly, the displayed value can change to reflect the value of the data set represented by data-set representation 2302 at the horizontal position of the user input.

**[00258]** In some examples, the vertical ranges of values within the graph associated with the data-set representations can be static. In other examples, the vertical ranges of values within the graph associated with the data-set representations can change. For example, in response to detecting a user input at a location within first range 2310, the size of first range 2310 can expand based on a length of time that the detected user input remains within first range 2310. As a result, the other vertical ranges can contract, or decrease in size. In some examples, the size of first range 2310 can expand to cover the entire graph. In other examples, the size of first range 2310 can expand to a predefined limit. Expanding the size of a selected range of vertical positions advantageously provides the user with a greater tolerance for vertical deviation as the user moves their user input in a horizontal direction to select different portions of a data-set representation.

**[00259]** In some examples, interface 2300 or 2400 can include a compare option 2320 to select the sets of wellness or non-wellness data that are to be displayed within the graph view. For example, FIG. 25 illustrates an example interface 2500 that can be displayed in response to a user selection of compare option 2320 in interface 2300 or 2400. As shown, interface 2500 includes a list of types of wellness or non-wellness data that can be displayed within the graph view. Each type of wellness or non-wellness data can be associated with a selectable option, such as option 2502, to allow the user to add or remove the associated type of wellness or non-wellness data from the graph view. In the illustrated example, the data sets corresponding to Calorie data, step data, blood pressure data, and heart rate data are selected to be displayed within the graph view, while weight data is not. In some examples, the list of wellness or non-wellness data displayed within interface 2500 can include the types of wellness or non-wellness represented by the partitions of interfaces 2100 and 2200.

**[00260]** In some examples, the detailed view of the wellness or non-wellness data can be displayed in response to a detailed-view input received while any of interfaces 2300, 2400, or 2500 are being displayed. In some examples, the detailed-view input can include a detected



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change in orientation of user device 510. For example, interface 2100 or 2200 can be displayed in response to detecting a rotation of user device 510 to a portrait view.

**[00261]** While the graph view shown in interfaces 2300 and 2400 include four data-set representations, it should be appreciated that the graph can include any number of data-set representations. Additionally, the number of ranges of vertical positions can change based on the number of displayed data-set representations (e.g., to be equal to the number of displayed data-set representations). For example, if six data-set representations are displayed within the graph, then six discrete ranges of vertical positions can be associated with the data-set representations to allow a user to select the desired data-set representation.

**[00262]** FIG. 26 illustrates an example process 2600 for displaying wellness or non-wellness data according to various examples. Process 2600 can be performed at an electronic device (e.g., device 510) with a display. In some examples, the display can include a touch-sensitive display. In other examples, the display can be separate from a touch-sensitive surface. Some blocks of process 2600 can be combined and/or the order of some blocks can be changed.

**[00263]** As described below, process 2600 provides an intuitive way to select overlapping data-set representations in a graph view. The process allows a user to select a particular data-set representation without having to target a specific location on the data-set representation, which can be difficult at locations where multiple data-set representations overlap.

**[00264]** At block 2602, a graph view of wellness or non-wellness data can be displayed on a display of a user device (e.g., user device 510). For example, an interface similar or identical to interface 2300 or 2400 can be displayed. The graph view can include a first data-set representation (e.g., data set representation 2302) of a first data set in which a first dependent variable varies as an independent variable changes and a second data-set representation (e.g., data set representation 2304) of a second data set in which a second dependent variable varies as the independent variable changes. The first data-set representation can be associated with a first range of vertical positions within the graph (e.g., first range 2310) and the second data-set representation can be associated with a second range of vertical positions within the graph (e.g., first range 2312).



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**[00265]** In some examples, the first data-set representation can be displayed in the graph overlapping the second data-set representation. For example, data-set representations 2302, 2304, 2306, and 2308 are shown as overlapping in interfaces 2300 and 2400. In some examples, the first data-set representation and the second data-set representation can be colored-coded based on a type of data that they represent.

**[00266]** In some examples, the first data set can include a first set of wellness data, and the second data set can include a second set of wellness data. In some examples, the dependent variable for the first data set can be measured in different units from the dependent variable for the second data set.

**[00267]** In some examples, the first range of vertical positions can be uniquely associated with the first data-set representation, and the second range of vertical positions can be uniquely associated with the second data-set representation. For example, first range 2310 is uniquely associated with data-set representation 2302 and second range 2312 is uniquely associated with data-set representation 2304 in interfaces 2300 and 2400.

**[00268]** In some examples, a vertical scale for displaying the first data-set representation can be different from a vertical scale for displaying the second data-set representation. In these examples, displaying the graph can include determining a vertical scale for the first data-set representation based on the maximum and minimum values of the first dependent variable of the first data-set representation that are to be displayed in the graph. Displaying the graph can further include determining a vertical scale for the second data-set representation based on the maximum and minimum values of the second dependent variable of the second data-set representation that are to be displayed in the graph. In some examples, the vertical scale for the first data-set representation can be defined by a maximum vertical position within the graph corresponding to a first multiplying factor multiplied by the maximum value of the first dependent variable of the first data-set representation that are to be displayed in the graph, and a minimum vertical position within the graph corresponding to a second multiplying factor multiplied by the minimum value of the first dependent variable of the first data-set representation that are to be displayed in the graph. In some examples, the vertical scale for the second data-set representation can be defined by a maximum vertical position within the graph corresponding to a third multiplying factor multiplied by the maximum value of the second

dependent variable of the second data-set representation that are to be displayed in the graph, and a minimum vertical position within the graph corresponding to a fourth multiplying factor multiplied by the minimum value of the second dependent variable of the second data-set representation that are to be displayed in the graph.

**[00269]** At block 2604, a user input can be detected at a location on the display. Detecting the user input can include detecting a touch or hover event by a finger or other device on a touch sensitive display, a click of a mouse or other device, a touch or hover event on a touch pad, or the like.

**[00270]** At block 2606, a location of the user input can be determined. For example, the vertical and horizontal positions (e.g., y and x-axis coordinates) of the user input can be determined. In response to determining that the location of the user input on the display detected at block 2604 has a vertical position associated with the first range of vertical positions, an indication of a selection of the first data-set representation can be displayed. Alternatively, in response to determining that the location of the user input on the display detected at block 2604 has a vertical position associated with the second range of vertical positions, an indication of a selection of the second data-set representation can be displayed.

**[00271]** In some examples, displaying the indication of a selection can include displaying a marker overlaid on the selected data-set representation at a horizontal position corresponding to the horizontal position of the location of the user input. For example, a circle marker can be displayed over data-set representation 2302 in interface 2400 of FIG. 24 in response to detecting a user input at location 2318 in interface 2300. In some examples, displaying the indication of a selection can further include displaying a numerical value of a data entry of the data set represented by the selected data-set representation. The data entry can be associated with a value of the independent variable corresponding to the horizontal position of the location of the detected user input. For example, a numerical value of 480 kcal can be displayed in response to receiving a user input at location 2318.

**[00272]** In some examples, the first data set or the second data set can include blood pressure data. In these examples, the displayed numerical value of the data entry can include a high value for diastolic blood pressure, a low value for diastolic blood pressure, a high value for systolic

blood pressure, and a low value for systolic blood pressure. In some examples, the dependent variable of the first data-set representation or the second data-set representation can include average of blood pressure values.

**[00273]** In other examples, the first data set or the second data set can include heart rate data. In these examples, the displayed numerical value of the data entry can include a high value for heart rate and a low value for heart rate.

**[00274]** In some examples, the first data-set representation can include a first line in the graph. In these examples, displaying the indication that the first data-set representation has been selected can include highlighting an area below the first line. For example, the area below the line of the selected data-set representation can be darkened, brightened, displayed with a different color, or otherwise highlighted relative to other portions of the graph to change the line graph into an area graph of the selected data set. In some examples, the data-set representations that are not currently selected can be removed from the display, greyed out, or otherwise made less visible within the graph.

**[00275]** In some examples, the first range of vertical positions within the graph can expand based on a length of time that the user input is detected while a vertical position of the location of the user input is within the first range of vertical positions. In other examples, the second range of vertical positions within the graph can expand based on a length of time that the user input is detected while the vertical position of the location of the user input is within the second range of vertical positions.

**[00276]** At block 2608, a detailed-view input can be detected at the electronic device. In some examples, detecting the detailed-view input can include detecting a change in orientation of the electronic device while displaying the graph. For example, detecting the detailed-view input can include detecting a change in orientation of the electronic device from a landscape view (e.g., shown in FIGs. 23-25) to a portrait view (e.g., shown in FIGs. 21-22). In other examples, the detailed-view input can include other types of inputs.

**[00277]** At block 2610, in response to detecting the detailed-view input, a detailed view of the first data set and the second data set can be displayed. For example, a detailed view similar or identical to those shown in interfaces 2100 and 2200 can be displayed. The detailed view can



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include a first partition associated with the first data set (e.g., partition 2102) and a second partition associated with the second data set (e.g., partition 2104).

**[00278]** In some examples, the first partition can include a first graph representation of the first data set (e.g., graph 2108), and the second partition can include a second graph representation of the second data set (e.g., graph 2110). In some examples, unlike the first and second data-set representation of the graph view, the first graph representation can be non-overlapping with the second graph representation in the detailed view.

**[00279]** In some examples, the first partition can be displayed in a color matching a color of the first data-set representation, and the second partition can be displayed in a color matching a color of the second data-set representation. For example, partition 2102 can be displayed in a color matching a color of data-set representation 2302, and partition 2104 can be displayed in a color matching a color of data-set representation 2304.

**[00280]** In some examples, process 2600 can further include detecting a request to scroll the detailed view and, in response to detecting the request to scroll the detailed view, scrolling the detailed view. For example, the detailed view shown in interface 2100 can be scrolled in the upward direction to display interface 2200 containing other partitions that were not previously displayed.

**[00281]** In some examples, process 2600 can further include detecting a request to reorder the first partition and the second partition and, in response to detecting the request to reorder the first partition and the second partition, reordering the first partition and the second partition within the detailed view. In some examples, detecting the request to reorder can include detecting a selection of one of the partitions for greater than a threshold length of time. After detecting the selection for the threshold length of time, user device 510 can animate the partitions in a way that indicates that the partitions can be reordered. The partitions can be displayed reordered in response to detecting that a selected partition is dragged to a new location within the detailed view.

**[00282]** In some examples, process 2600 can further include detecting a graph-view input at the electronic device and, in response to detecting the graph-view input, displaying the graph comprising the first data-set representation of the first data set and the second data-set

representation of the second data set. In some examples, detecting the graph-view input can include detecting a change in orientation of the electronic device. For example, interface 2300 can be displayed in response to detecting a change in orientation of the electronic device from a portrait view to a landscape view.

**[00283]** It should be understood that the particular order in which the operations in FIG. 26 have been described is merely exemplary and is not intended to indicate that the described order is the only order in which the operations could be performed. One of ordinary skill in the art would recognize various ways to reorder the operations described herein. Additionally, it should be noted that details of other processes described herein with respect to other processes described herein (e.g., processes 800, 1500, 1700, 2000, 2600, 3700, or 4400) are also applicable in an analogous manner to process 2600 described above with respect to FIG. 26. For brevity, these details are not repeated here.

INPUT AND OUTPUT OF HEATH DATA WITH GRANULARITY

**[00284]** FIG. 27 illustrates one example interface 2700 that can be displayed by user device 510 to display a user's wellness or non-wellness data. Interface 2700 can include a list 2702 of categories of wellness or non-wellness data. The categories can include one or more sub-categories of wellness or non-wellness data. The sub-categories can further include any number of additional sub-categories. For example, the category "Fitness" can include sub-categories "Body Mass Index," "Body Fat Percentage," "Height," "Body Mass," "Lean Body Mass," "Steps," "Distance," "Calories Burned," "Active Hours," and "Flights of Stairs." The category "Vital Signs" can include sub-categories "Heart Rate," "Systolic Blood Pressure," "Diastolic Blood Pressure," "Oxygen Saturation," "Respiratory Rate," and "Body Temperature." The category "Lab Results" can include sub-categories "Blood Glucose" and "Blood Alcohol Content." The category "Nutrition" can include sub-categories "Total Fat," "Polyunsaturated Fat," "Monounsaturated Fat," "Saturated Fat," "Cholesterol," "Sodium," "Potassium," "Carbohydrates from Sugar," "Dietary Fiber," "Sugars," "Dietary Calories," "Calories from Fat," "Protein," "Vitamin A," "Vitamin B6," "Vitamin B12," "Vitamin C," "Vitamin D," "Vitamin E," "Vitamin K," "Calcium," "Iron," "Thiamin," "Riboflavin," "Niacin," "Folic Acid," "Biotin," "Pantothenic Acid," "Phosphorus," "Iodine," "Magnesium," "Zinc," "Selenium," "Copper," "Manganese," "Chromium," "Molybdenum," and "Chloride." The



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category "Diagnostics" can include sub-categories "Number of Time Fallen," "Galvanic Skin Response," and "Body Heat Flux." The category "Medications" can include sub-category "Inhaler Use." The category "Sleep" can include subcategories "Hours Slept." The category "Me" can include sub-categories "Name," "Birthdate," "Gender," "Blood Type." It should be appreciated that the lists above are provided only as examples, and that additional or fewer categories can be included within interface 2700. Additionally, it should be appreciated that the categories of interface 2700 can include additional or fewer sub-categories.

**[00285]** In some examples, each item in list 2702 can include an indicator 2704 that can be color-coded based on the type of wellness or non-wellness data of the associated item in list 2702. For example, the indicator 2704 associated with "Fitness" can have a different color than the indicator 2704 associated with "Vital Signs." In some examples, the items in list 2702 can further include a selectable option 2706 that can be used to expand the associated category.

**[00286]** For example, FIG. 28 illustrates interface 2800 that can be displayed in response to a selection of option 2706 associated with "Fitness." As shown, interface 2800 can include a list 2802 of sub-categories that fall under the broader category of "Fitness" that was selected in interface 2700. The list 2802 of sub-categories can be displayed in place of the previously displayed list 2702. Similar to list 2702, the items in list 2802 can include an indicator 2804 that can be color-cored based on the type of wellness or non-wellness data of the associated item in list 2802. In this example, since all of the sub-categories displayed within list 2802 fall under the same category or type of wellness or non-wellness data, the indicators 2804 associated with each item can be the same color. In some examples, the color of indicators 2804 associated with the items in list 2802 can be the same color as indicator 2704 associated with "Fitness." In other examples, the color of indicators 2804 associated with the items in list 2802 can be a different shade of the color of indicator 2704 associated with "Fitness." For example, indicators 2804 can be light green, while indicator 2704 associated with "Fitness" can be dark green.

**[00287]** Referring back to FIG. 27, interface 2700 (and interface 2800) can further include search box 2708 for performing keyword searches within the categories listed in list 2702. For example, FIG. 29 illustrates interface 2900 that can be displayed in response to a user entering the search query "Calories" in search box 2708. As shown, interface 2900 can include a list 2902 of sub-categories that match the search query "Calories." The sub-categories can be sub-



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categories of any of the categories of list 2702. For "Calories Burned" can be a sub-category of "Fitness," "Dietary Calories" can be a sub-category of "Nutrition," and "Calories From Fat" can be a sub-category of "Nutrition." Interface 2900 can further include indicators 2904 associated with the items in list 2902. Similar to indicators 2704 and 2804, indicators 2904 can be color-coded based on the type of wellness or non-wellness data of the associated item in list 2902. In this example, indicator 2904 of "Dietary Calories" can be the same color as indicator 2904 of "Calories From Fat" since they both fall within the broader category of "Nutrition." In some examples, the color of indicators 2904 of "Dietary Calories" and "Calories From Fat" can be the same color as indicator 2704 for "Nutrition." In other examples, the color of indicators 2904 of "Dietary Calories" and "Calories From Fat" can be a different shade of the color of indicator 2704 for "Nutrition." The indicator 2904 for "Calories Burned" can be a different color from indicators 2904 of "Dietary Calories" and "Calories From Fat" since "Calories Burned" falls within a different category (e.g., "Fitness"). In some examples, the color of indicator 2904 of "Calories Burned" can be the same color as indicator 2704 for "Fitness." In other examples, the color of indicator 2904 of "Calories Burned" can be a different shade of the color of indicator 2704 for "Fitness."

**[00288]** In some examples, any of the sub-categories shown in interfaces 2800 and 2900 can be selected to display a detailed view of the sub-category. For example, FIG. 30 illustrates an example interface 3000 that can be displayed in response to a selection of "Calories Burned" from either interface 2800 or 2900. As shown, interface 3000 can include a text indication of the type of wellness or non-wellness data being displayed in the detailed view. For example, interface 3000 include the text "Calories Burned" to indicate that the information displayed within interface 3000 represents information associated with Calories burned.

**[00289]** In some examples, interface 3000 can further include a current daily value 3004 of 1250 kcal and a graph representation 3002 showing the number of Calories burned over time throughout the day. Interface 3000 can further include "Show All Data" option 3006 that can be used to display all data that falls within the sub-category of "Calories Burned." For example, FIG. 32 illustrates an example interface 3200 that can be displayed in response to a selection of option 3006 in interface 3000. As shown, interface 3200 can include a list 3202 of all data entries that represent calories burned (e.g., stored in wellness database 511). As shown, the data



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entries in list 3202 can include a numerical value of the data entry and an associated date (and can also include a time) that the corresponding data entry was recorded. For example, the first data entry in list 3202 can include the number 860 associated with date 3/1/2014, indicating that 860 Calories were burned on 3/1/2014. The data entries in list 3202 can further include an indicator 3204. Indicator 3204 can include a graphic, text, or other image that represents the source of the data entry. For example, if the first data entry was obtained from a wearable electronic Device 1, indicator 3204 associated with that data entry can include an image of the logo of the company that manufactured Device 1 or some other image associated with Device 1. Similarly, if the second data entry in list 3202 was obtained from a software application App 1, indicator 3204 associated with the second data entry can include an image associated with a logo of the company that created App 1 or some other image associated with App 1.

**[00290]** While shown for Calories burned, it should be appreciated that a list of data entries associated with any type of sub-category of wellness or non-wellness data can be displayed in a similar manner.

**[00291]** Referring back to FIG. 30, interface 3000 can further include "Add Data Point" option 3008 that can be used to display an interface for manually entering a data entry within the sub-category of "Calories Burned." For example, FIG. 33 illustrates an example interface 3300 that can be displayed in response to a selection of option 3008 in interface 3000. As shown, interface 3300 can include fields 3302, 3304, and 3306 for entering the date, time, and number of Calories burned, respectively, for the data entry being input. Interface 3300 can further include numerical input pad 3308 for populating fields 3302, 3304, and 3306. Interface 3300 can further include "Add" button 3310 that can be selected to add the information contained in interface 3300 as a data entry within the Calories burned sub-category (e.g., to be stored in wellness database 511). Interface 3300 can further include "Cancel" button 3312 for canceling entry of the data entry.

**[00292]** Referring back to FIG. 30, interface 3000 (and interface 3100) can further include "Show On Dashboard" option 3012 having option 3020 for selectively causing the associated sub-category of data (e.g., Calories Burned) to be displayed in the detailed view of interfaces 2100 and 2200. When the switch of option 3020 is placed in the on position, the associated sub-category of data can be included within the detailed view of interfaces 2100 and 2200.



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However, when the switch of option 3020 is placed in the off position, the associated sub-category of data may not be included within the detailed view of interfaces 2100 and 2200.

**[00293]** As shown in FIG. 30, interface 3000 can further include graphic 3014. Graphic 3014 can include any image or other graphical representation of the wellness or non-wellness data represented displayed in interface 3000. For example, graphic 3014 can include a balance showing the relative values of Calories consumed and Calories expended by the user. However, it should be appreciated that any other graphic or image can be shown.

**[00294]** In some examples, the detailed view of the sub-category can further include additional information not shown in interface 3000. In these examples, a user can initiate a scroll request by swiping up or down on a touch sensitive display, by clicking and dragging on a display using a mouse or other input device, by manipulating a scroll-wheel, by performing a swiping gesture on a touch pad, or the like. In response to detecting the scroll request, user device 510 can scroll the view of interface 3000 to display information that was not previously displayed (or was partially displayed).

**[00295]** For example, FIG. 31 illustrates an example interface 3100 that can be displayed in response to a user initiating a scroll request to scroll the view of interface 3000 in an upward direction. In interface 3100, graphic 3014 and options 3006, 3008, 3010, and 3012 can still be displayed, but can be located closer to the top of the display. Interface 3100 can further include text description 3022 below graphic 3014. Text description 3022 can include a text describing what the wellness or non-wellness data shown in interface 3100 represents. For example, text description 3022 can provide an explanation about what "Calories Burned" represents, such as how it is calculated, what an average daily value is for a typical person, how to increase the amount of Calories burned, or the like.

**[00296]** Referring back to FIG. 30, interface 3000 can further include "Share Data" option 3010 having option 3016 for turning data sharing on or off. Data sharing can represent the ability for other devices or applications to access a user's wellness or non-wellness data (e.g., stored in wellness database 511). For example, FIG. 34 illustrates an example interface 3400 that can be displayed in response to a selection of option 3010 in interface 3000. As shown, interface 3400 can include share option 3402 having selectable option 3412. The position of the switch of



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option 3412 can be used to turn data sharing on or off. For example, when moved to the right, as shown in FIG. 34, the switch of option 3412 can turn on sharing option 3402. However, when moved to the left, the switch of option 3412 can turn off sharing option 3402.

**[00297]** Interface 3400 can further include a list 3404 of known possible destinations of wellness or non-wellness data. This list can include known devices or software applications that can potentially receive a user's wellness or non-wellness data (e.g., stored in wellness database 511). When option 3412 of share option 3402 is moved to the off position, data sharing for all listed devices and applications can be turned off. As such, selectable options 3414, 3416, and 3418 can be removed from interface 3400 or otherwise made inactive. When option 3412 of share option 3402 is moved to the on position, selectable options 3414, 3416, and 3418 associated with the destinations in list 3404 can be displayed or made selectable. Similar to option 3412, the position of the switches of options 3414, 3416, and 3418 can be changed to turn data sharing on or off for the associated destination. For example, option 3414 for Device 1 is in the off position, indicating that data sharing is not turned on for Device 1. Options 3416 and 3418, however, are in the on position, indicating that data sharing is turned on for App 1 and App 2. When data sharing is turned on, the associated device or application can access the user's wellness or non-wellness data (e.g., stored in wellness database 511). For example, App 1, which can represent a weight tracking application, can access a user's fitness and nutrition data to track the user's caloric intake and outtake. When data sharing is turned off, the associated device or application may be prevented from accessing the user's wellness or non-wellness data (e.g., stored in wellness database 511). For example, Device 1 may be unable to access data stored in wellness database 511.

**[00298]** Interface 3400 can further include source list 3406 containing a list of known devices and applications that can potentially provide wellness or non-wellness data (e.g., to be stored in wellness database 511). The devices and applications in source list 3406 can be arranged in an order based on their priority. For example, as shown, Device 1 has priority over Device 2, which has priority over App 3. These relative priorities can be used to de-duplicate wellness or non-wellness data generated by two or more of the sources. For example, if Device 1 represents a fitness-tracking watch, and Device 2 represents a mobile phone, it is possible that both devices can provide step data associated with the user. Thus, by prioritizing the different sources, data



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from a higher ranked source can be used in place of data from a lower ranked source, or otherwise prioritized over data from the lower ranked source. This can be advantageous when one device is more likely to produce more accurate results than another. In some examples, duplicate data entries can be detected by identifying two or more data entries having metadata indicating that they are of the same type (e.g., step data, Calories burned, etc.) and having an associated timestamp that is within a threshold length of time from each other.

**[00299]** In some examples, interface 3400 can further include edit option 3408 for changing the order of the sources of source list 3406. For example, in response to a selection of option 3408, each item in source list 3406 can be moved (e.g., by clicking and dragging, etc.) relative to each other. The new order of sources within source list 3406 can define a new prioritization between sources.

**[00300]** In some examples, the "Sources" option of source list 3406 can be selected to display a more detailed view of the sources. For example, FIG. 35 illustrates an example interface 3500 that can be displayed in response to a selection of the "Sources" option of source list 3406. As shown, interface 3500 can include a source list 3506 similar to source list 3406. However, source list 3506 can further include sources App 2 and App 1, which were not displayed within interface 3400 because they were unable to be fit within the display. Interface 3500 can further include a numerical indicator associated with a source (e.g., Device 1) that indicates a number of new types of wellness or non-wellness data that the associated source can provide. For example, since the last time the user viewed interface 3500, Device 1 is now able to provide two new types of data (e.g., Calories burned and flights of stairs climbed). Interface 3500 can further include option 3510 associated with the sources in source list 3506 to provide more detailed control over the types of data that each source can provide.

**[00301]** For example, FIG. 36 illustrates an example interface 3600 that can be displayed in response to a selection of option 3510 in interface 3500 or option 3410 in interface 3400 associated with Device 1. As shown, interface 3600 can include upload option 3602 having selectable option 3604. The position of the switch of option 3604 can be used to turn data uploading from the device or application on or off (e.g., to be stored in wellness data base 511). For example, when moved to the right, as shown in FIG. 36, the switch of option 3604 can turn



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on data uploading by Device 1. However, when moved to the left, the switch of option 3604 can turn off data uploading by Device 1.

**[00302]** Interface 3600 can further include a list 3606 of data types that can be provided by Device 1. When option 3412 of share option 3604 is moved in the off position, data uploading for all listed types of data can be turned off. As such, selectable options 3608, 3610, 3612, and 3614 can be removed from interface 3600 or otherwise made inactive. When option 3604 of upload data option 3602 is moved to the on position, selectable options 3608, 3610, 3612, and 3614 associated with the list 3606 of data types can be displayed or made selectable. Similar to option 3604, the position of the switches of options 3608, 3610, 3612, and 3614 can be changed to turn data uploading on or off for the associated types of data. For example, option 3608 for Blood Pressure is in the off position, indicating that data uploading is not turned on for Blood Pressure data from Device 1. Options 3610, 3612, and 3614, however, are in the on position, indicating that data uploading is turned on for Calorie, Step, and Stairs Climbed data. When data uploading is turned on, the associated type of data can be provided by the device or application to be stored by user device 510 (e.g., in wellness database 511). For example, Calorie data generated by Device 1 can be received by user device 510 from Device 1 and stored in wellness database 511. When data uploading is turned off, the associated type of data may not be provided by the device or application to be stored by user device 510 (e.g., in wellness database 511). For example, blood pressure data generated by Device 1 may not be received by user device 510 from Device 1 and stored in wellness database 511. The options of interface 3600 advantageously allow a user to specifically define what types of data can be provided by a particular device or application.

**[00303]** While the examples shown in FIGs. 30-34 were for Calories burned, it should be appreciated that similar interfaces can also be displayed for other types of wellness or non-wellness data.

**[00304]** FIG. 37A illustrates an example process 3700 for managing and displaying wellness or non-wellness data according to various examples. Process 3700 can be performed at an electronic device (e.g., device 510) with a display. In some examples, the display can include a touch-sensitive display. In other examples, the display can be separate from a touch-sensitive



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surface. Some blocks of process 2700 can be combined and/or the order of some blocks can be changed.

**[00305]** As described below, process 3700 provides an intuitive way to manage sources and destinations of data stored in wellness database 511. The process allows a user to specify which devices and applications can access data in wellness database 511, as well as to specify the devices and applications that can serve as sources for data to be stored in wellness database 511. Additionally, for the sources, the user can specify what types of data those sources can provide and which sources take priority over others. This can be advantageous when one device is more likely to produce more accurate results than another.

**[00306]** At block 3702, information identifying a plurality of approved sources of wellness data can be received by a user device (e.g., user device 510) from a user. In some examples, the information identifying the plurality of approved sources can identify one or more types of wellness or non-wellness data that are approved to be received from the plurality of approved sources and stored in a wellness database (e.g., wellness database 511). For example, the information identifying the plurality of approved sources can be received via an interface similar or identical to interfaces 3400, 3500, and 3600. In these examples, a user can specify which types of data can be provided by each of the plurality of approved sources to be stored in the wellness database.

**[00307]** At block 3704, information identifying a plurality of approved destinations of wellness or non-wellness data can be received by a user device (e.g., user device 510) from the user. For example, the information identifying the plurality of approved destinations can be received via an interface similar or identical to interface 3400. In these examples, a user can specify which destinations are approved to access data from the wellness database.

**[00308]** In some examples, the plurality of approved sources can include an electronic device or a software application. For example, an approved electronic device, such as a watch, a mobile phone, or the like, can provide wellness or non-wellness data to user device 510 to be stored in wellness database 511. Similarly, an approved software application on or otherwise associated with user device 510 can provide wellness or non-wellness data to user device 511 to be stored in wellness database 511. In some examples, the approved software application can be a



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software application associated with an electronic device and is capable of communicating with the electronic device.

**[00309]** Similarly, in some examples, the plurality of approved destinations can include an electronic device or a software application. For example, an approved electronic device, such as a watch, a mobile phone, or the like, can access wellness or non-wellness data stored in wellness database 511. Similarly, an approved software application on or otherwise associated with user device 510 can access wellness or non-wellness data stored in wellness database 511. In some examples, the approved software application can be a software application associated with an electronic device and is capable of communicating with the electronic device.

**[00310]** In some examples, the plurality of approved sources can be ranked amongst each other. In some examples, an interface similar or identical to interface 3400 can be used to display and adjust the relative ranking of the approved sources. For example, as shown in interface 3400, Device 1 can be ranked higher than Device 2 to prioritize data from Device 1 over data from Device 2, and Device 2 can be ranked higher than App 3 to prioritize data from Device 1 and Device 2 over data from App 3.

**[00311]** In some examples, process 3700 can further include, at block 3706, identifying a first wellness data entry and a second wellness data entry that are duplicates of one another. In some examples, this can include identifying a first wellness data entry in the wellness database that was received from a first approved source of the plurality of approved sources, the first wellness data entry comprising a first wellness data type and a first timestamp, and identifying a second wellness data entry in the wellness database that was received from a second approved source of the plurality of approved sources, the second wellness data entry comprising a second wellness data type and a second timestamp, wherein the first wellness data type and the second wellness data type are the same, and wherein the first timestamp is within a threshold length of time from the second timestamp. For example, a first data entry can have a type of "step data" and an associated timestamp of 2:30 p.m. on 3/1/2014. The second data entry can have a type of "step data" and an associated timestamp of 2:31 p.m. on 3/1/2014. If the threshold length of time used at block 3706 is 5 minutes, it can be determined that the first data entry and the second data entry are of the same data type and include timestamps that are within a threshold length of time



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from each other. This can indicate that the first data entry and the second data entry are likely duplicate entries representing the same actions performed by the user.

**[00312]** At block 3708, one of the first data entry and the second data entry can be prioritized or otherwise identified as being preferred over the other based on a ranking of the plurality of sources. For example, as discussed above, the plurality of approved sources can be ranked amongst each other (e.g., as shown in interface 3400). In some examples, if the first approved source providing the first data entry is identified by the user as being preferred over the second approved source, block 3708 can include using the first wellness data entry instead of using the second wellness data entry. For example, this can include deleting the second data entry from wellness database 511 or otherwise ignoring the second data entry for purposes of being displayed or presented to the user. In other examples, if the first approved source has been identified by the user as being preferred over the second approved source, then block 3706 can include prioritizing the first wellness data entry over the second wellness data entry. A data entry that is prioritized over another can be used in place of the other (e.g., displayed, used in calculations, or the like in favor of the other data entry).

**[00313]** In other examples, if the second approved source has been identified by the user as being preferred over the first approved source, then block 3706 can include prioritizing the second wellness data entry over the first wellness data entry. A data entry that is prioritized over another can be used in place of the other (e.g., displayed, used in calculations, or the like in favor of the other data entry).

**[00314]** In some examples, as shown in FIG. 37B, process 3700 can further include, at block 3710, displaying, by the electronic device on the display, a plurality of categories of wellness data stored in the wellness database. For example, an interface similar or identical to interface 2700 can be displayed. The interface can include any amount or any type of categories of wellness or non-wellness data.

**[00315]** At block 3712, a selection of a category of wellness data from the displayed plurality of categories of wellness data can be detected at the electronic device. For example, a selection of one of the categories displayed in an interface similar or identical to interface 2700 made via a touch event by a finger or other device on a touch sensitive display, a click of a mouse or other

device, a touch event on a touch pad, or the like, can be detected. In some examples, each of the displayed plurality of categories can include an indicator (e.g., indicator 2704) that can be color-coded based on the type of wellness or non-wellness data of the category. For example, the indicator associated with "Fitness" can have a different color than the indicator associated with "Vital Signs."

**[00316]** At block 3714, one or more sub-categories of the category of wellness data can be displayed in response to detecting the selection of the category of wellness data. For example, an interface similar or identical to interface 2800 containing a list of sub-categories falling within the category selected at block 3712 can be displayed. In some examples, the displayed interface can include indicators that can be color-cored based on the type of wellness or non-wellness data that it represents.

**[00317]** At block 3716 a selection of a sub-category from the displayed one or more sub-categories can be detected. For example, a selection of one of the sub-categories displayed in an interface similar or identical to interface 2800 made via a touch event by a finger or other device on a touch sensitive display, a click of a mouse or other device, a touch event on a touch pad, or the like, can be detected.

**[00318]** At block 3718, a detailed view of the selected sub-category can be displayed in response to detecting the selection of the sub-category at block 3716. For example, an interface similar or identical to interface 3100 can be displayed. The detailed view of the sub-category can include a graphical representation of the sub-category of data (e.g., graph 3002) and a numerical daily value (e.g., daily value 3004). The detailed view can further include options to show all data (e.g., option 3006), add a data point (e.g., option 3008), share data (e.g., option 3010), and show on dashboard (e.g., option 3012). The detailed view can further include a graphic representation of the sub-category (e.g., graphic 3014) and a text description of the sub-category (e.g., description 3022),

**[00319]** In some examples, process 3700 can include displaying an interface similar or identical to interface 3300 in response to a selection of the add a data point option (e.g., option 3008). The interface can include one or more input fields (e.g., fields 3302, 3304, and 3306) for entering information associated with the wellness data entry. In some examples, process 3700

can further include receiving a wellness data entry to be stored in the wellness database that was input into the input field (e.g., input into fields 3302, 3304, and 3306).

**[00320]** In some examples, process 3700 can further include displaying an interface similar or identical to interface 3200 in response to a selection of the show all data option (e.g., option 3006). The interface can include a plurality of wellness data entries corresponding to the sub-category stored in the wellness database (e.g., entries in list 3202) In some examples, each of the plurality of wellness data entries can include a numerical value of the data entry, a timestamp, and an identification of a source of the data entry (e.g., indicator 3204).

**[00321]** In some examples, process 3700 can further include displaying a data sharing interface similar or identical to interface 3400 in response to a selection of the share data option (e.g., option 3010). The interface can include the plurality of approved sources (e.g., source list 3406) and the plurality of approved destinations (e.g., list 3404). In some examples, a request to reorder the displayed plurality of approved sources can be detected by the electronic device. For example, a selection of edit button 3408 can be received and movement of one or more of the sources in source list 3406 can be detected. In response to detecting the request to reorder the displayed plurality of approved sources, the displayed plurality of approved sources can be reordered in accordance with the detected request to reorder the displayed plurality of approved sources

**[00322]** In some examples, the data sharing interface (e.g., interface 3400) can further include options to add an approved destination to the plurality of approved destinations and to remove an approved destination from the plurality of approved destinations (e.g., options 3412, 3414, 3416, and 3418).

**[00323]** In some examples, process 3700 can further include receiving, at the electronic device, a search query. In response, one or more sub-categories of the plurality of categories that match the search query can be displayed. The displayed one or more sub-categories that match the search query can be color-coded based on their respective categories. For example, a search query can be received from a search box (e.g., search box 2708) displayed within an interface similar or identical to interface 2700 or 2800. A search results interface similar or identical to



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interface 2900 can be displayed in response to the search query. The search results interface can include the one or more sub-categories that match the search query.

**[00324]** In some examples, process 3700 can further include displaying, on the display, a source interface comprising a list of known sources. For example, an interface similar or identical to interface 3500 can be displayed having a list of known sources (e.g., list 3506). The source interface can further include a numerical indicator associated a known source of the known sources that represents a number of new types of wellness data that can be provided by the known source. For example, the number "2" is shown for Device 1, indicating the two new types of data (e.g., Calories burned and flights of stairs climbed) are available.

**[00325]** In some examples, process 3700 can further include detecting a selection of a known source from the list of displayed sources. In response to detecting the selection of the known source, a list of types of wellness data that the known source can provide can be displayed. For example, a source from source list 3506 of interface 3500 can be received by a user selecting an option 3510 associated with the source. In response, an interface similar or identical to interface 3600 can be displayed. The displayed interface can include a list (e.g., list 3606) of known types of data that the source can provide. In some examples, the list of types of wellness data that the known source can provide can include a selectable option (e.g., options 3604, 3608, 3610, 3612, and 3614) for each of the types of wellness data that the known source can provide to approve or reject the associated type of wellness data.

**[00326]** In some examples, process 3700 can further include detecting a selection of the selectable option for a type of wellness data that the known source can provide at the electronic device. In response to detecting the selection of the selectable option, process 3700 can further include approving or rejecting the type of wellness data that the known source can provide in accordance with the detected selection of the selectable option. For example, user device 510 can accept or reject the types of wellness data shown in interface 3600 based on the positions of the switches of options 3604, 3608, 3610, 3612, and 3614.

**[00327]** It should be understood that the particular order in which the operations in FIGs. 37A and 37B have been described is merely exemplary and is not intended to indicate that the described order is the only order in which the operations could be performed. One of ordinary



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skill in the art would recognize various ways to reorder the operations described herein. Additionally, it should be noted that details of other processes described herein with respect to other processes described herein (e.g., processes 800, 1500, 1700, 2000, 2600, or 4400) are also applicable in an analogous manner to process 3700 described above with respect to FIGs. 37A and 37B. For brevity, these details are not repeated here.

MEDICAL IDENTIFICATION INFORMATION

**[00328]** FIG. 38 illustrates one example lock screen interface 3800 that can be displayed by user device 510 while the user device is in a locked state. In some examples, the locked state can represent a state in which user device 510 restricts one or more functions from being performed. For example, user device 510 can prevent a user from running applications, changing settings, or the like, while in the locked state. In other examples, the locked state can represent a state in which user device 510 additionally or alternatively prevents access at least a subset of data stored on the device. For example, user device 510 can prevent a user from viewing photos or videos, accessing documents, or the like, while in the locked state. In other examples, the locked state can represent a state in which user device 510 additionally or alternatively restricts communications from the electronic device. For example, user device 510 can prevent a user from sending SMS messages or emails, or making calls to non-emergency phone numbers.

**[00329]** As shown in FIG. 38, lock screen interface 3800 can include the current date and time. Lock screen interface 3800 can further be responsive to user input to allow a user to unlock the device. For example, a swiping gesture can cause user device 510 to display a numerical input pad to allow the user to enter a passcode to unlock the device. Lock screen interface 3800 can further include emergency option 3802 for accessing emergency features of user device 510. For example, FIG. 39 illustrates an example emergency dialing interface 3900 that can be displayed in response to a selection of emergency option 3802. As shown, emergency dialing interface 3900 can include numerical input pad 3904 for allowing a temporary user to enter an emergency phone number to dial while the device is in the locked state. In some examples, user device 510 can call a number entered using input pad 3904 if the entered number is predefined phone number (e.g., 9-1-1). In some examples, the temporary user can be a first responder or other person that encounters the primary user of the device when the primary user of the device



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is unable to operate user device 510 (e.g., because the primary user is unconscious or injured). Thus, emergency dialing interface 3900 allows the temporary user to place calls to predetermined emergency phone numbers without requiring the temporary user to unlock user device 510.

**[00330]** Interface 3900 can further include Medical ID or emergency information option 3902 for viewing medical information associated with a user by the temporary user. In this example, the user can be a primary user or owner of user device 510 that has customized the device by installing applications and/or entering personal information to user device 510. Thus, Medical ID or emergency information option 3902 can be selected by the temporary user to view emergency information associated with the primary user without requiring the temporary user to unlock user device 510.

**[00331]** For example, FIG. 40 illustrates an example emergency information interface 4000 that can be displayed in response to a selection of Medical ID or emergency information option 3902 in interface 3900. As shown, interface 4000 can include user information 4002 including the user's name and birthdate. Interface 4000 can further include a free-form field 4004 that can be used to store and display a description of any medical conditions that the user may have. Interface 4000 can further include a free-form field 4006 that can be used to store and display any other relevant medical notes about the user. Interface 4000 can further include free-form field 4008 that can be used to store and display a description of any allergies or reactions that the user may have to drugs or any other substance. Interface 4000 can further include free-form field 4010 that can be used to store and display a description of any medications that the user may be taking or that the user may require.

**[00332]** Interface 4000 can further include emergency contacts 4012. Emergency contacts 4012 can include a list of one or more people that the user has designated as being his/her emergency contact. Emergency contacts 4012 can include a name of each emergency contact and a relationship between the user and the emergency contact. For example, one entry for an emergency contact can include the name "Jane Smith" having a relationship with the user of "mother." In some examples, emergency contacts 4012 can further include contact information for the emergency contact, such as a phone number, email address, or the like. In other examples, emergency contact 4012 can exclude contact information for the emergency contact,



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such as a phone number, email address, or the like. This can be done to protect the privacy of the emergency contact. In either example, user device 510 can allow a temporary user to select one of the displayed emergency contacts to initiate communication with that contact (even if the phone number of the emergency contact is not displayed) while user device 510 remains in the locked state. For example, in response to a selection of one of the emergency contacts, user device 510 can initiate a phone call to the contact, send an SMS message to the contact, send an email to the emergency contact, or the like, while the device remains in the locked state. In some examples, when user device 510 initiates a call to an emergency contact in response to a selection of that emergency contact, user device 510 can flag the call as being an emergency call. In some examples, emergency calls can be accepted by a receiving device in any state of operation. For example, a call flagged as being an emergency call can cause the receiving device to ring while in a do-not-disturb mode, a silent mode, or the like. Additionally, an indicator can be displayed on the receiving device notifying the recipient that the call is an emergency call.

**[00333]** In some examples, a primary user can create their medical identification from the contact list of user device 510. For example, FIG. 41 illustrates an example interface 4100 that can be displayed to display the user's contact list. As shown, interface 4100 can include a "Create Medical ID" button 4102 for creating a medical identification. FIG. 42 illustrates an example interface 4200 that can be displayed in response to a selection of button 4102. As shown, interface 4200 includes a text description 4202 that can provide information about the medical identification, such as the purpose of the medical identification, the privacy settings for information contained in the medical identification, and the like.

**[00334]** FIG. 43 illustrates an example interface 4300 that can be displayed in response to a user accepting or acknowledging the contents of description 4202 in interface 4200. As shown, interface 4300 can include user information 4302 that can correspond to user information 4002 in interface 4000. In some examples, this information can be auto-populated by user device 510 based on information previously known about the user. In other examples, the user can enter this information manually. Interface 4300 can further include free-form text fields 4304, 4306, 4308, and 4310 that can correspond to fields 4004, 4006, 4008, and 4010 of interface 4000. Thus, information entered into fields 4304, 4306, 4308, and 4310 can be displayed in fields



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4004, 4006, 4008, and 4010 of interface 4000. Interface 4300 can further include contacts 4312 to allow a user to enter one or more emergency contacts. In some examples, the one or more emergency contacts can be selected from the user's contact list on user device 510. In other examples, the one or more emergency contacts can be entered manually by the user. In yet other examples, the emergency contact can be selected from the user's contact list on user device 510 and additional information (e.g., relationship information) can be manually added by the user. Interface 4300 can further include "Show Medical ID" option 4314 having selectable option 4316. The position of the switch of option 4316 can be used to turn on or off the showing of the user's medical information while the device is in the locked state. For example, when moved to the right, as shown in FIG. 43, the switch of option 4316 can cause user device 510 to display option 3902 in the emergency dialing interface 3900 and to display interface 4000 in response to a selection of option 3902. However, when moved to the left, the switch of option 4316 can prevent user device 510 from displaying option 3902 in the emergency dialing interface 3900 and can prevent user device 510 from displaying interface 4000 in response to a selection of option 3902.

**[00335]** FIG. 44 illustrates an exemplary process 4400 for displaying medical information on a locked device. Process 4400 can be performed at an electronic device (e.g., device 510) with a display. In some examples, the display can include a touch-sensitive display. In other examples, the display can be separate from a touch-sensitive surface. Some blocks of process 4400 can be combined and/or the order of some blocks can be changed.

**[00336]** As described below, process 4400 provides a way for a temporary user to view medical information associated with a primary user or owner of an electronic device while the device remains in a locked state. Process 4400 also allows a temporary user to initiate communication with the primary user's emergency contacts while the device remains in the locked state. This advantageously allows a temporary user that finds the primary user (e.g., in a state in which the primary user is unable to operate the electronic device or communicate) to assist the primary user in getting the appropriate medical care.

**[00337]** At block 4402, at an electronic device (e.g., user device 510) while the electronic device is in a locked state, a request to display emergency information about a user of the device can be detected. For example, the request to display the emergency information can be received



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while an emergency dialing interface similar or identical to interface 3900 is being displayed, and the request can include a selection of an emergency information option similar or identical to option 3902. The emergency information about the user of the device can include the user's name, birthday, medical conditions, allergies and reactions, medications, and one or more emergency contacts of the user. As discussed above, the user can be a primary user or owner of user device 510 that has customized the device by installing applications and/or entering personal information to user device 510. The request to display the medical information can be made by a temporary user, such as a first responder or other person that encounters the primary user of the device when the primary user of the device is unable to operate user device 510 (e.g., because the primary user is unconscious or injured).

**[00338]** At block 4404, in response to detecting the request, an emergency information interface comprising emergency information about the user of the device can be displayed without unlocking the device. For example, an interface similar or identical to interface 4000 can be displayed.

**[00339]** In some examples, the emergency information about the user can include information associated with an emergency contact. The information associated with the emergency contact can include a name of the emergency contact and a relationship between the user and the emergency contact. For example, information about an emergency contact can be displayed in a manner similar or identical to emergency contact 4012 in interface 4000. One example emergency contact can include the contact's name "Jane Smith," and the relationship "mother" between the user and the contact.

**[00340]** At block 4406, user device 510 can detect a request to communicate with an emergency contact while the electronic device is in the locked state. For example, a selection of a contact 4012 from interface 4000 can be detected.

**[00341]** At block 4408, user device 510 can initiate communication with the emergency contact in response to detecting the request to communicate. In some examples, initiating communication with the emergency contact includes sending an SMS message or email to the emergency contact. In other examples, initiating communication with the emergency contact can include calling a phone number associated with the emergency contact. In some examples,



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calling the phone number associated with the emergency contact can include flagging the call to the phone number as an emergency call. In some examples, the phone number associated with the emergency contact can be included in the information associated with the emergency contact displayed within the emergency information interface (e.g., interface 4000). In other examples, the phone number associated with the emergency contact may not be included in the information associated with the emergency contact displayed within the emergency information interface (e.g., interface 4000). However, a call or other communication can still be made to this emergency contact. This can be done to protect the privacy of the emergency contact.

**[00342]** In some examples, process 4400 can include displaying an emergency dialing interface prior to displaying the emergency information interface. The emergency dialing interface can include a numerical input pad and an emergency information option. For example, an emergency dialing interface similar or identical to interface 3900 can be displayed prior to displaying emergency information interface 4000. The emergency dialing interface 3900 can include a numerical input pad similar or identical to input pad 3904 and an emergency information option similar or identical to option 3902. In some examples, the emergency information interface (e.g., interface 4000) can be displayed in response to a selection of the emergency information option (e.g., option 3902).

**[00343]** In some examples, process 4400 can further include detecting a predefined phone number entered using the numerical input pad while the electronic device is in the locked state. In response to detecting the predefined phone number, process 4400 can further include calling the predefined phone number. For example, user device 510 can detect a predefined number (e.g., 9-1-1) entered in the numerical input pad (e.g., input pad 3904). In response to detecting the predefined phone number, user device 510 can call the predefined number while still in the locked state. In some examples, calling the predefined phone number can include flagging the call to the predefined phone number as an emergency call.

**[00344]** In some examples, calls flagged as being emergency calls can be accepted by a receiving electronic device in any state of operation. For example, a call flagged as being an emergency call can cause the receiving device to ring while in a do-not-disturb mode, a silent mode, or the like. Additionally, an indicator can be displayed on the receiving device notifying the recipient that the call is an emergency call.

**[00345]** In some examples, process 4400 can further include displaying a lock screen interface comprising an emergency option prior to displaying the emergency dialing interface. For example, an interface similar or identical to interface 3800 can be displayed having an emergency option similar or identical to option 3802. The lock screen interface can further include one or more controls for unlocking the device. For example, a numerical input pad can be displayed to allow a user to enter a passcode, or user device 510 can be configured to detect predefined gestures to unlock the device. In these examples process 4400 can further include detecting a selection of the emergency option and displaying the emergency dialing interface in response to detecting the selection of the emergency option. For example, user device 510 can detect a selection of option 3802 and display interface 3900 in response to detecting the selection of option 3802.

**[00346]** It should be understood that the particular order in which the operations in FIG. 44 have been described is merely exemplary and is not intended to indicate that the described order is the only order in which the operations could be performed. One of ordinary skill in the art would recognize various ways to reorder the operations described herein. Additionally, it should be noted that details of other processes described herein with respect to other processes described herein (e.g., processes 800, 1500, 1700, 2000, 2600, or 3700) are also applicable in an analogous manner to process 4400 described above with respect to FIG. 44. For brevity, these details are not repeated here.

**[00347]** In some examples, the interfaces shown in FIGs. 21-22, 27-36, and 40-43 can include menu bar 2150 for navigating between the various interfaces. For example, in response to a selection of "Dashboard" in menu 2150, interface 2100 or 2200 can be displayed. In response to a selection of "My Health" in menu 2150, interface 2700 can be displayed. In response to a selection of "Medical ID" in menu 2150, interface 4300 can be displayed. In response to a selection of "Settings" in menu 2150, interface 3500 can be displayed.

**[00348]** One or more of the functions relating to aggregating and sharing wellness data can be performed by a system similar or identical to system 4500 shown in FIG. 45. System 4500 can include instructions stored in a non-transitory computer readable storage medium, such as memory 4504 or storage device 4502, and executed by processor 4506. The instructions can also be stored and/or transported within any non-transitory computer readable storage medium for



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use by or in connection with an instruction execution system, apparatus, or device, such as a computer-based system, processor-containing system, or other system that can fetch the instructions from the instruction execution system, apparatus, or device and execute the instructions. In the context of this document, a "non-transitory computer readable storage medium" can be any medium that can contain or store the program for use by or in connection with the instruction execution system, apparatus, or device. The non-transitory computer readable storage medium can include, but is not limited to, an electronic, magnetic, optical, electromagnetic, infrared, or semiconductor system, apparatus or device, a portable computer diskette (magnetic), a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory (EPROM) (magnetic), a portable optical disc such a CD, CD-R, CD-RW, DVD, DVD-R, or DVD-RW, or flash memory such as compact flash cards, secured digital cards, USB memory devices, memory sticks, and the like.

**[00349]** The instructions can also be propagated within any transport medium for use by or in connection with an instruction execution system, apparatus, or device, such as a computer-based system, processor-containing system, or other system that can fetch the instructions from the instruction execution system, apparatus, or device and execute the instructions. In the context of this document, a "transport medium" can be any medium that can communicate, propagate or transport the program for use by or in connection with the instruction execution system, apparatus, or device. The transport medium can include, but is not limited to, an electronic, magnetic, optical, electromagnetic or infrared wired or wireless propagation medium.

**[00350]** In some examples, system 4500 can be included within user device 510 or user server 514. Processor 4506 can be configured to perform processes 700, 800, 1500, 1700, 2000, 2600, 3700, or 4400. It is to be understood that the system is not limited to the components and configuration of FIG. 45, but can include other or additional components in multiple configurations according to various examples.

***ELECTRONIC DEVICE***

**[00351]** In accordance with some examples, FIG. 46 shows a functional block diagram of an electronic device 4600 configured in accordance with the principles of the various described examples. The functional blocks of the device can be implemented by hardware, software, or a combination of hardware and software to carry out the principles of the various described



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examples. It is understood by persons of skill in the art that the functional blocks described in FIG. 46 can be combined or separated into sub-blocks to implement the principles of the various described examples. Therefore, the description herein optionally supports any possible combination or separation or further definition of the functional blocks described herein.

**[00352]** As shown in FIG. 46, electronic device 4600 can include a touch sensitive surface unit 4602 configured to receive touch input, and a display unit for displaying a user interface. Electronic device 4600 can further include a processing unit 4608 coupled to touch sensitive surface unit 4602 and display unit 4608. In some examples, processing unit 4608 can include a graph displaying unit 4610, a user input detecting unit 4612, a first indication displaying unit 4614, a second indication displaying unit 4616, and a detailed view displaying unit 4618.

**[00353]** Processing unit 4608 can be configured to display (e.g., using graph displaying unit 4610) a graph comprising a first data-set representation of a first data set in which a first dependent variable varies as an independent variable changes and a second data-set representation of a second data set in which a second dependent variable varies as the independent variable changes, wherein the first data-set representation is associated with a first range of vertical positions within the graph and the second data-set representation is associated with a second range of vertical positions within the graph. Processing unit 4608 can be further configured to detect (e.g., using detecting unit 4612) a user input at a respective location on the display. Processing unit 4608 can be further configured to, in response to detecting the user input and in accordance with a determination that the respective location is within the first range of vertical positions associated with the first data-set representation, display (e.g., using first indication displaying unit 4614) an indication that the first data-set representation has been selected. Processing unit 4608 can be further configured to, in response to detecting the user input and in accordance with a determination that the respective location is within the second range of vertical positions associated with the second data-set representation display (e.g., using second indication displaying unit 4616) an indication that the second data-set representation has been selected.

**[00354]** In some examples, processing unit 4608 can be further configured to display (e.g., using graph displaying unit 4610) the first data-set representation in the graph overlapping the second data-set representation.



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**[00355]** In some examples, the first data set comprises a first set of wellness data and the second data set comprises a second set of wellness data.

**[00356]** In some examples, the first range of vertical positions is uniquely associated with the first data-set representation, and the second range of vertical positions is uniquely associated with the second data-set representation.

**[00357]** In some examples, the first data-set representation and the second data-set representation are colored-coded based on a type of data that they represent.

**[00358]** In some examples, processing unit 4608 can be further configured to display (e.g., using first indication displaying unit 4614) the indication that the first data-set representation has been selected by displaying, on the display, a marker overlaid on the first data-set representation at a horizontal position corresponding to a horizontal position of the respective location on the display.

**[00359]** In some examples, processing unit 4608 can be further configured to display (e.g., using second indication displaying unit 4616) the indication that the second data-set representation has been selected by displaying, on the display, a marker overlaid on the second data-set representation at a horizontal position corresponding to a horizontal position of the respective location on the display.

**[00360]** In some examples, processing unit 4608 can be further configured to display (e.g., using first indication displaying unit 4614) the indication that the first data-set representation has been selected by displaying, on the display, a numerical value of a first data entry of the first data set associated with a value of the independent variable corresponding to a horizontal position of the respective location on the display.

**[00361]** In some examples, processing unit 4608 can be further configured to display (e.g., using second indication displaying unit 4616) the indication that the second data-set representation has been selected by displaying, on the display, a numerical value of a second data entry of the second data set associated with a value of the independent variable corresponding to a horizontal position of the respective location on the display.



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**[00362]** In some examples, the first data set or the second data set comprises blood pressure data, and wherein the numerical value of the first data entry or the second data entry comprises a high value for diastolic blood pressure, a low value for diastolic blood pressure, a high value for systolic blood pressure, and a low value for systolic blood pressure.

**[00363]** In some examples, processing unit 4608 can be further configured to generate (e.g., using graph displaying unit 4610) the first data-set representation or the second data-set representation based on an average of blood pressure values.

**[00364]** In some examples, the first data set or the second data set comprises heart rate data, and the numerical value of the first data entry or the second data entry comprises a high value for heart rate and a low value for heart rate.

**[00365]** In some examples, the first data-set representation comprises a first line in the graph, and processing unit 4608 can be further configured to display (e.g., using first indication displaying unit 4614) the indication that the first data-set representation has been selected by highlighting an area below the first line.

**[00366]** In some examples, the second data-set representation comprises a second line in the graph, and processing unit 4608 can be further configured to display (e.g., using first indication displaying unit 4614) the indication that the second data-set representation has been selected by highlighting an area below the second line.

**[00367]** In some examples, processing unit 4608 can be further configured to expand (e.g., using detecting unit 4614) the first range of vertical positions within the graph based on a length of time that the user input is detected while a vertical position of the respective location on the display is within the first range of vertical positions, and to expand (e.g., using detecting unit 4614) the second range of vertical positions within the graph based on a length of time that the user input is detected while the vertical position of the respective location on the display is within the second range of vertical positions.

**[00368]** In some examples, the dependent variable for the first data set is measured in different units from the dependent variable for the second data set.



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**[00369]** In some examples, a vertical scale for displaying the first data-set representation is different from a vertical scale for displaying the second data-set representation.

**[00370]** In some examples, processing unit 4608 can be further configured to determine (e.g., using graph displaying unit 4610) the vertical scale for the first data-set representation based on the maximum and minimum values of the first dependent variable of the first data-set representation that are to be displayed in the graph, and to determine (e.g., using graph displaying unit 4610) the vertical scale for the second data-set representation based on the maximum and minimum values of the second dependent variable of the second data-set representation that are to be displayed in the graph.

**[00371]** In some examples, the vertical scale for the first data-set representation of the plurality of sets of wellness data is defined by: a maximum vertical position within the graph corresponding to a first multiplying factor multiplied by the maximum value of the first dependent variable of the first data-set representation that are to be displayed in the graph; and a minimum vertical position within the graph corresponding to a second multiplying factor multiplied by the minimum value of the first dependent variable of the first data-set representation that are to be displayed in the graph.

**[00372]** In some examples, the vertical scale for the second data-set representation of the plurality of sets of wellness data is defined by: a maximum vertical position within the graph corresponding to a third multiplying factor multiplied by the maximum value of the second dependent variable of the second data-set representation that are to be displayed in the graph; and a minimum vertical position within the graph corresponding to a fourth multiplying factor multiplied by the minimum value of the second dependent variable of the second data-set representation that are to be displayed in the graph.

**[00373]** In some examples, processing unit 4608 can be further configured to detect (e.g., using detecting unit 4612) a detailed-view input and display (e.g., using detailed view displaying unit 4618) a detailed view of the first data set and the second data set in response to detecting the detailed-view input, wherein the detailed view comprises a first partition associated with the first data set and a second partition associated with the second data set.



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**[00374]** In some examples, processing unit 4608 can be further configured to detect (e.g., using detecting unit 4612) the detailed-view input by detecting a change in orientation of the electronic device while displaying the graph.

**[00375]** In some examples, processing unit 4608 can be further configured to detect (e.g., using detecting unit 4612) a request to scroll the detailed view and scroll (e.g., using detailed view displaying unit 4618) the detailed view in response to detecting the request to scroll the detailed view.

**[00376]** In some examples, the first partition comprises a first graph representation of the first data set, and the second partition comprises a second graph representation of the second data set.

**[00377]** In some examples, the first graph representation is non-overlapping with the second graph representation.

**[00378]** In some examples, the first partition is displayed in a color matching a color of the first data-set representation, and the second partition is displayed in a color matching a color of the second data-set representation.

**[00379]** In some examples, the first partition is displayed in a color matching a color of the first data-set representation, and the second partition is displayed in a color matching a color of the second data-set representation.

**[00380]** In some examples, processing unit 4608 can be further configured to detect (e.g., using detecting unit 4612) a request to reorder the first partition and the second partition and to reorder (e.g., using detailed view displaying unit 4618) the first partition and the second partition within the detailed view in response to detecting the request to reorder the first partition and the second partition.

**[00381]** In some examples, processing unit 4608 can be further configured to detect (e.g., using detecting unit 4612) graph-view input and display (e.g., using graph displaying unit 4610) the graph comprising the first data-set representation of the first data set and the second data-set representation of the second data set in response to detecting the graph-view input.



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**[00382]** In accordance with some examples, FIG. 47 shows a functional block diagram of an electronic device 4700 configured in accordance with the principles of the various described examples. The functional blocks of the device can be implemented by hardware, software, or a combination of hardware and software to carry out the principles of the various described examples. It is understood by persons of skill in the art that the functional blocks described in FIG. 47 can be combined or separated into sub-blocks to implement the principles of the various described examples. Therefore, the description herein optionally supports any possible combination or separation or further definition of the functional blocks described herein.

**[00383]** As shown in FIG. 47, electronic device 4700 can include a touch sensitive surface unit 4702 configured to receive touch input, and a display unit for displaying a user interface. Electronic device 4700 can further include a processing unit 4708 coupled to touch sensitive surface unit 4702 and display unit 4708. In some examples, processing unit 4708 can include a detecting unit 4710, a displaying unit 4712, a communication unit 4714, a displaying unit 4716, and a displaying unit 4718.

**[00384]** Processing unit 4708 can be configured to detect (e.g., using detecting unit 4710) a request to display emergency information about a user of the device while the electronic device is in a locked state. Processing unit 4708 can be further configured to display (e.g., using displaying unit 4712), while the electronic device is in the locked state, an emergency information interface comprising emergency information about the user of the device without unlocking the device in response to detecting the request.

**[00385]** In some examples, processing unit 4708 can be configured to restrict one or more functions of the electronic device from being used while electronic device 4700 is in the locked state.

**[00386]** In some examples, processing unit 4708 can be configured to prevent access to at least a subset of data stored on the electronic device while electronic device 4700 is in the locked state.

**[00387]** In some examples, processing unit 4708 can be configured to restrict communications from the electronic device while electronic device 4700 is in the locked state.

**[00388]** In some examples, the emergency information about the user comprises information associated with an emergency contact, and the information associated with the emergency contacts comprises a name of the emergency contact and a relationship between the user and the emergency contact.

**[00389]** In some examples, processing unit 4708 can be further configured to detect (e.g., using detecting unit 4710) a request to communicate while the electronic device is in the locked state and to initiate (e.g., using communication unit 4714) communication with the emergency contact in response to detecting the request to communicate.

**[00390]** In some examples, initiating communication with the emergency contact comprises sending an SMS message or email to the emergency contact.

**[00391]** In some examples, initiating communication with the emergency contact comprises calling a phone number associated with the emergency contact. In some examples, calling the phone number associated with the emergency contact comprises flagging the call to the phone number as an emergency call.

**[00392]** In some examples, the information associated with the emergency contacts further comprises the phone number associated with the emergency contact.

**[00393]** In some examples, the information associated with the emergency contacts excludes the phone number associated with the emergency contact.

**[00394]** In some examples, processing unit 4708 can be further configured to display (e.g., using displaying unit 4716), prior to displaying the emergency information interface an emergency dialing interface comprising a numerical input pad and an emergency information option. Processing unit 4708 can be further configured to detect (e.g., using detecting unit 4712), while displaying the emergency dialing interface, a selection of the emergency information option and to display (e.g., using displaying unit 4712) the emergency information interface in response to detecting selection of the emergency information option.

**[00395]** In some examples, processing unit 4708 can be further configured to detect (e.g., using detecting unit 4710) a predefined phone number entered using the numerical input pad while the electronic device is in the locked state and to call (e.g., using communication unit 4714) the



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predefined phone number in response to detecting the predefined phone number. In some examples, calling the predefined phone number comprises flagging the call to the predefined phone number as an emergency call. In some examples, calls flagged as an emergency call are to be accepted by a receiving electronic device in any state of operation.

**[00396]** In some examples, processing unit 4708 can be further configured to display (e.g., using displaying unit 4718), prior to displaying the emergency dialing interface, a lock screen interface comprising an emergency option and to detect (e.g., using detecting unit 4710) a selection of the emergency option. Processing unit 4708 can be further configured to display (e.g., using displaying unit 4716) and the emergency dialing interface in response to detecting the selection of the emergency option.

**[00397]** In some examples, the emergency information about the user comprises one or more of: the user's name, birthday, medical conditions, allergies and reactions, medications, and one or more emergency contacts of the user.

**[00398]** In accordance with some examples, FIG. 48 shows a functional block diagram of an electronic device 4800 configured in accordance with the principles of the various described examples. The functional blocks of the device can be implemented by hardware, software, or a combination of hardware and software to carry out the principles of the various described examples. It is understood by persons of skill in the art that the functional blocks described in FIG. 48 can be combined or separated into sub-blocks to implement the principles of the various described examples. Therefore, the description herein optionally supports any possible combination or separation or further definition of the functional blocks described herein.

**[00399]** As shown in FIG. 48, electronic device 4800 can include a touch sensitive surface unit 4802 configured to receive touch input, and a display unit for displaying a user interface. Electronic device 4800 can further include a processing unit 4808 coupled to touch sensitive surface unit 4802 and display unit 4808. In some examples, processing unit 4808 can include a source receiving unit 4810, a destination receiving unit 4812, a first identifying unit 4814, a second identifying unit 4816, a prioritizing unit 4818, a displaying unit 4820, a detecting unit 4822, and a receiving unit 4824.



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**[00400]** Processing unit 4808 can be configured to receive (e.g., using source receiving unit 4810), from a user, information identifying a plurality of approved sources of wellness data, wherein the information identifying the plurality of approved sources identifies one or more types of wellness data that are approved to be received from the plurality of approved sources and stored in a wellness database. Processing unit 4808 can be further configured to receive (e.g., using destination receiving unit 4812), from the user, information identifying a plurality of approved destinations of wellness data, wherein the information identifying the plurality of approved destinations identifies one or more types of wellness data that are approved to be accessed from the wellness database by the plurality of approved destinations of wellness data.

**[00401]** In some examples, the plurality of approved sources comprise an electronic device or software application.

**[00402]** In some examples, the plurality of approved destinations comprise an electronic device or software application.

**[00403]** In some examples, the plurality of approved sources are ranked amongst each other.

**[00404]** In some examples, processing unit 4808 can be further configured to identify (e.g., using first identifying unit 4814) a first wellness data entry in the wellness database that was received from a first approved source of the plurality of approved sources, the first wellness data entry comprising a first wellness data type and a first timestamp and to identify (e.g., using second identifying unit 4816) a second wellness data entry in the wellness database that was received from a second approved source of the plurality of approved sources, the second wellness data entry comprising a second wellness data type and a second timestamp, wherein the first wellness data type and the second wellness data type are the same, and wherein the first timestamp is within a threshold length of time from the second timestamp.

**[00405]** In some examples, the first approved source has been identified by the user as being preferred over the second approved source, and wherein processing unit 4808 can be further configured to use (e.g., using prioritizing unit 4818) the first wellness data entry instead of using the second wellness data entry.



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**[00406]** In some examples, the first approved source has been identified by the user as being preferred over the second approved source, and processing unit 4808 can be further configured to prioritize (e.g., using prioritizing unit 4818) the first wellness data entry over the second wellness data entry.

**[00407]** In some examples, in accordance with a determination that the first wellness data entry is prioritized over the second wellness data entry, processing unit 4808 can be further configured to use (e.g., using prioritizing unit 4818) the first wellness data entry instead of using the second wellness data entry.

**[00408]** In some examples, the second approved source has been identified by the user as being preferred over the first approved source, and processing unit 4808 can be further configured to prioritize (e.g., using prioritizing unit 4818) the second wellness data entry over the first wellness data entry.

**[00409]** In some examples, in accordance with a determination that the second wellness data entry is prioritized over the first wellness data entry, processing unit 4808 can be further configured to use (e.g., using prioritizing unit 4818) the second wellness data entry instead of using the first wellness data entry.

**[00410]** In some examples, processing unit 4808 can be further configured to display (e.g., using displaying unit 4820) a plurality of categories of wellness data stored in the wellness database.

**[00411]** In some examples, processing unit 4808 can be further configured to detect (e.g., using detecting unit 4822) a selection of a category of wellness data from the displayed plurality of categories of wellness data and to display (e.g., using displaying unit 4820) one or more sub-categories of the category of wellness data in response to detecting the selection of the category of wellness data.

**[00412]** In some examples, processing unit 4808 can be further configured to detect (e.g., using detecting unit 4822) a selection of a sub-category from the displayed one or more sub-categories and to display (e.g., using displaying unit 4820) a detailed view of the sub-category in response to detecting the selection of the sub-category.



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**[00413]** In some examples, the detailed view of the sub-category comprises a graph representation of the sub-category of wellness data over time and a numerical daily value of the sub-category of wellness data.

**[00414]** In some examples, the detailed view of the sub-category further comprises an input field for entering a wellness data entry, and wherein processing unit 4808 can be further configured to receive (e.g., using receiving unit 4824) a wellness data entry to be stored in the wellness database that was input into the input field.

**[00415]** In some examples, the detailed view of the sub-category further comprises a textual description of the sub-category.

**[00416]** In some examples, the detailed view of the sub-category further comprises an option to view wellness data entries corresponding to the sub-category, and processing unit 4808 can be further configured to display (e.g., using displaying unit 4820) a plurality of wellness data entries corresponding to the sub-category stored in the wellness database.

**[00417]** In some examples, each of the plurality of wellness data entries comprises a numerical value of the data entry, a timestamp, and an identification of a source of the data entry.

**[00418]** In some examples, the detailed view of the sub-category further comprises an option to share wellness data, and processing unit 4808 can be further configured to reorder (e.g., using displaying unit 4820) the displayed plurality of approved sources in accordance with the detected request to reorder the displayed plurality of approved sources in response to detecting the request to reorder the displayed plurality of approved sources.

**[00419]** In some examples, the data sharing interface further comprises options to add an approved destination to the plurality of approved destinations and to remove an approved destination from the plurality of approved destinations.

**[00420]** In some examples, processing unit 4808 can be further configured to receive (e.g., using receiving unit 4824) a search query and to display (e.g., using displaying unit 4820) one or more sub-categories of the plurality of categories that match the search query, wherein the displayed one or more sub-categories that match the search query are color-coded based on their respective categories.

**[00421]** In some examples, processing unit 4808 can be further configured to display (e.g., using displaying unit 4820) a source interface comprising a list of known sources.

**[00422]** In some examples, the source interface further comprises a numerical indicator associated a known source of the known sources that represents a number of new types of wellness data that can be provided by the known source.

**[00423]** In some examples, processing unit 4808 can be further configured to detect (e.g., using detecting unit 4822) a selection of a known source from the displayed list of known sources and to display (e.g., using displaying unit 4820) a list of types of wellness data that the known source can provide in response to detecting the selection of the known source.

**[00424]** In some examples, the list of types of wellness data that the known source can provide comprises a selectable option for each of the types of wellness data that the known source can provide to approve or reject the associated type of wellness data.

**[00425]** In some examples, processing unit 4808 can be further configured to detect (e.g., using detecting unit 4822) a selection of the selectable option for a type of wellness data that the known source can provide and to approve or reject the type of wellness data that the known source can provide in accordance with the detected selection of the selectable option in response to detecting the selection of the selectable option

**[00426]** As described above, one aspect of the present technology is the gathering and use of data available from various sources to improve the delivery to users of invitational content or any other content that may be of interest to them. The present disclosure contemplates that in some instances, this gathered data can include personal information data that uniquely identifies or can be used to contact or locate a specific person. Such personal information data can include demographic data, location-based data, telephone numbers, email addresses, home addresses, or any other identifying information.

**[00427]** The present disclosure recognizes that the use of such personal information data, in the present technology, can be used to the benefit of users. For example, the personal information data can be used to deliver targeted content that is of greater interest to the user. Accordingly, use of such personal information data enables calculated control of the delivered



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content. Further, other uses for personal information data that benefit the user are also contemplated by the present disclosure.

**[00428]** The present disclosure further contemplates that the entities responsible for the collection, analysis, disclosure, transfer, storage, or other use of such personal information data will comply with well-established privacy policies and/or privacy practices. In particular, such entities should implement and consistently use privacy policies and practices that are generally recognized as meeting or exceeding industry or governmental requirements for maintaining personal information data private and secure. For example, personal information from users should be collected for legitimate and reasonable uses of the entity and not shared or sold outside of those legitimate uses. Further, such collection should occur only after receiving the informed consent of the users. Additionally, such entities would take any needed steps for safeguarding and securing access to such personal information data and ensuring that others with access to the personal information data adhere to their privacy policies and procedures. Further, such entities can subject themselves to evaluation by third parties to certify their adherence to widely accepted privacy policies and practices.

**[00429]** Despite the foregoing, the present disclosure also contemplates examples in which users selectively block the use of, or access to, personal information data. That is, the present disclosure contemplates that hardware and/or software elements can be provided to prevent or block access to such personal information data. For example, in the case of advertisement delivery services, the present technology can be configured to allow users to select to "opt in" or "opt out" of participation in the collection of personal information data during registration for services. In another example, users can select not to provide location information for targeted content delivery services. In yet another example, users can select to not provide precise location information, but permit the transfer of location zone information.

**[00430]** Therefore, although the present disclosure broadly covers use of personal information data to implement one or more various disclosed examples, the present disclosure also contemplates that the various examples can also be implemented without the need for accessing such personal information data. That is, the various examples of the present technology are not rendered inoperable due to the lack of all or a portion of such personal information data. For example, content can be selected and delivered to users by inferring preferences based on non-



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personal information data or a bare minimum amount of personal information, such as the content being requested by the device associated with a user, other non-personal information available to the content delivery services, or publicly available information.

**[00431]** Although examples have been fully described with reference to the accompanying drawings, it is to be noted that various changes and modifications will become apparent to those skilled in the art. Such changes and modifications are to be understood as being included within the scope of the various examples as defined by the appended claims.



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CLAIMS

WHAT IS CLAIMED IS:

1. A non-transitory computer-readable storage medium storing one or more programs, the one or more programs comprising instructions, which when executed by an electronic device with a display, cause the device to:

receive, from a user, information identifying a plurality of approved sources of wellness data, wherein the information identifying the plurality of approved sources identifies one or more types of wellness data that are approved to be received from the plurality of approved sources and stored in a wellness database; and

receive, from the user, information identifying a plurality of approved destinations of wellness data, wherein the information identifying the plurality of approved destinations identifies one or more types of wellness data that are approved to be accessed from the wellness database by the plurality of approved destinations of wellness data.

2. The non-transitory computer-readable storage medium of claim 1, wherein the plurality of approved sources comprise an electronic device or software application.

3. The non-transitory computer-readable storage medium of claim 1, wherein the plurality of approved destinations comprise an electronic device or software application.

4. The non-transitory computer-readable storage medium of claim 1, wherein the plurality of approved sources are ranked amongst each other.

5. The non-transitory computer-readable storage medium of claim 1, further comprising instructions to cause the electronic device to:

identify a first wellness data entry in the wellness database that was received from a first approved source of the plurality of approved sources, the first wellness data entry comprising a first wellness data type and a first timestamp; and

identify a second wellness data entry in the wellness database that was received from a second approved source of the plurality of approved sources, the second wellness data entry



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comprising a second wellness data type and a second timestamp, wherein the first wellness data type and the second wellness data type are the same, and wherein the first timestamp is within a threshold length of time from the second timestamp.

6. The non-transitory computer-readable storage medium of claim 5, wherein the first approved source has been identified by the user as being preferred over the second approved source, and wherein the non-transitory computer-readable storage medium further comprises instructions to cause the electronic device to use the first wellness data entry instead of using the second wellness data entry.

7. The non-transitory computer-readable storage medium of claim 5, wherein the first approved source has been identified by the user as being preferred over the second approved source, and wherein the non-transitory computer-readable storage medium further comprises instructions to cause the electronic device to prioritize the first wellness data entry over the second wellness data entry.

8. The non-transitory computer-readable storage medium of claim 7, further comprising instructions to cause the electronic device to: in accordance with a determination that the first wellness data entry is prioritized over the second wellness data entry, use the first wellness data entry instead of using the second wellness data entry.

9. The non-transitory computer-readable storage medium of claim 5, wherein the second approved source has been identified by the user as being preferred over the first approved source, and wherein the non-transitory computer-readable storage medium further comprises instructions to cause the electronic device to prioritize the second wellness data entry over the first wellness data entry.

10. The non-transitory computer-readable storage medium of claim 9, further comprising instructions to cause the electronic device to: in accordance with a determination that the second wellness data entry is prioritized over the first wellness data entry, use the second wellness data entry instead of using the first wellness data entry.



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11. The non-transitory computer-readable storage medium of claim 1, further comprising instructions to cause the electronic device to:

display, on the display, a plurality of categories of wellness data stored in the wellness database.

12. The non-transitory computer-readable storage medium of claim 11, further comprising instructions to cause the electronic device to:

detect a selection of a category of wellness data from the displayed plurality of categories of wellness data; and

in response to detecting the selection of the category of wellness data, display, on the display, one or more sub-categories of the category of wellness data.

13. The non-transitory computer-readable storage medium of claim 12, further comprising instructions to cause the electronic device to:

detect a selection of a sub-category from the displayed one or more sub-categories; and

in response to detecting the selection of the sub-category, display, on the display, a detailed view of the sub-category.

14. The non-transitory computer-readable storage medium of claim 13, wherein the detailed view of the sub-category comprises a graph representation of the sub-category of wellness data over time and a numerical daily value of the sub-category of wellness data.

15. The non-transitory computer-readable storage medium of claim 13, wherein the detailed view of the sub-category further comprises an input field for entering a wellness data entry, and wherein the non-transitory computer-readable storage medium further comprises instructions to cause the electronic device to:

receive a wellness data entry to be stored in the wellness database that was input into the input field.

16. The non-transitory computer-readable storage medium of claim 13, wherein the detailed view of the sub-category further comprises a textual description of the sub-category.



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17. The non-transitory computer-readable storage medium of claim 13, wherein the detailed view of the sub-category further comprises an option to view wellness data entries corresponding to the sub-category, and wherein the non-transitory computer-readable storage medium further comprises instructions to cause the electronic device to:

display, on the display, a plurality of wellness data entries corresponding to the sub-category stored in the wellness database.

18. The non-transitory computer-readable storage medium of claim 17, wherein each of the plurality of wellness data entries comprises a numerical value of the data entry, a timestamp, and an identification of a source of the data entry.

19. The non-transitory computer-readable storage medium of claim 13, wherein the detailed view of the sub-category further comprises an option to share wellness data, and wherein the non-transitory computer-readable storage medium further comprises instructions to cause the electronic device to:

display, on the display, a data sharing interface comprising the plurality of approved sources and the plurality of approved destinations.

20. The non-transitory computer-readable storage medium of claim 19, further comprising instructions to cause the electronic device to:

detect a request to reorder the displayed plurality of approved sources; and

in response to detecting the request to reorder the displayed plurality of approved sources, reorder the displayed plurality of approved sources in accordance with the detected request to reorder the displayed plurality of approved sources

21. The non-transitory computer-readable storage medium of claim 19, wherein the data sharing interface further comprises options to add an approved destination to the plurality of approved destinations and to remove an approved destination from the plurality of approved destinations.

22. The non-transitory computer-readable storage medium of claim 11, further comprising instructions to cause the electronic device to:



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receive a search query; and

display, on the display, one or more sub-categories of the plurality of categories that match the search query, wherein the displayed one or more sub-categories that match the search query are color-coded based on their respective categories.

23. The non-transitory computer-readable storage medium of claim 11, further comprising instructions to cause the electronic device to:

display, on the display, a source interface comprising a list of known sources.

24. The non-transitory computer-readable storage medium of claim 23, wherein the source interface further comprises a numerical indicator associated a known source of the known sources that represents a number of new types of wellness data that can be provided by the known source.

25. The non-transitory computer-readable storage medium of claim 23, further comprising instructions to cause the electronic device to:

detect a selection of a known source from the displayed list of known sources; and

in response to detecting the selection of the known source, display, on the display, a list of types of wellness data that the known source can provide.

26. The non-transitory computer-readable storage medium of claim 25, wherein the list of types of wellness data that the known source can provide comprises a selectable option for each of the types of wellness data that the known source can provide to approve or reject the associated type of wellness data.

27. The non-transitory computer-readable storage medium of claim 26, further comprising instructions to cause the electronic device to:

detect a selection of the selectable option for a type of wellness data that the known source can provide; and

in response to detecting the selection of the selectable option, approve or reject the type of wellness data that the known source can provide in accordance with the detected selection of the selectable option.

28. A computer-implemented method comprising:

at an electronic device:

receiving, from a user, information identifying a plurality of approved sources of wellness data, wherein the information identifying the plurality of approved sources identifies one or more types of wellness data that are approved to be received from the plurality of approved sources and stored in a wellness database; and

receiving, from the user, information identifying a plurality of approved destinations of wellness data, wherein the information identifying the plurality of approved destinations identifies one or more types of wellness data that are approved to be accessed from the wellness database by the plurality of approved destinations of wellness data.

29. An electronic device comprising:

a display;

a memory; and

a processor coupled to the display and the memory, the processor configured to:

receive, from a user, information identifying a plurality of approved sources of wellness data, wherein the information identifying the plurality of approved sources identifies one or more types of wellness data that are approved to be received from the plurality of approved sources and stored in a wellness database; and

receive, from the user, information identifying a plurality of approved destinations of wellness data, wherein the information identifying the plurality of approved destinations identifies one or more types of wellness data that are approved to be accessed from the wellness database by the plurality of approved destinations of wellness data.



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ABSTRACT

The present disclosure relates to aggregating and sharing wellness data. The wellness data can be received by a user device from any number of sensors external or internal to the user device, from a user manually entering the wellness data, or from other users or entities. The user device can securely store the wellness data on the user device and transmit the wellness data to be stored on a remote database. A user of the device can share some or all of the wellness data with friends, relatives, caregivers, healthcare providers, or the like. The user device can further display a user's wellness data in an aggregated view of different types of wellness data. Wellness data of other users can also be viewed if authorizations from those users have been received.



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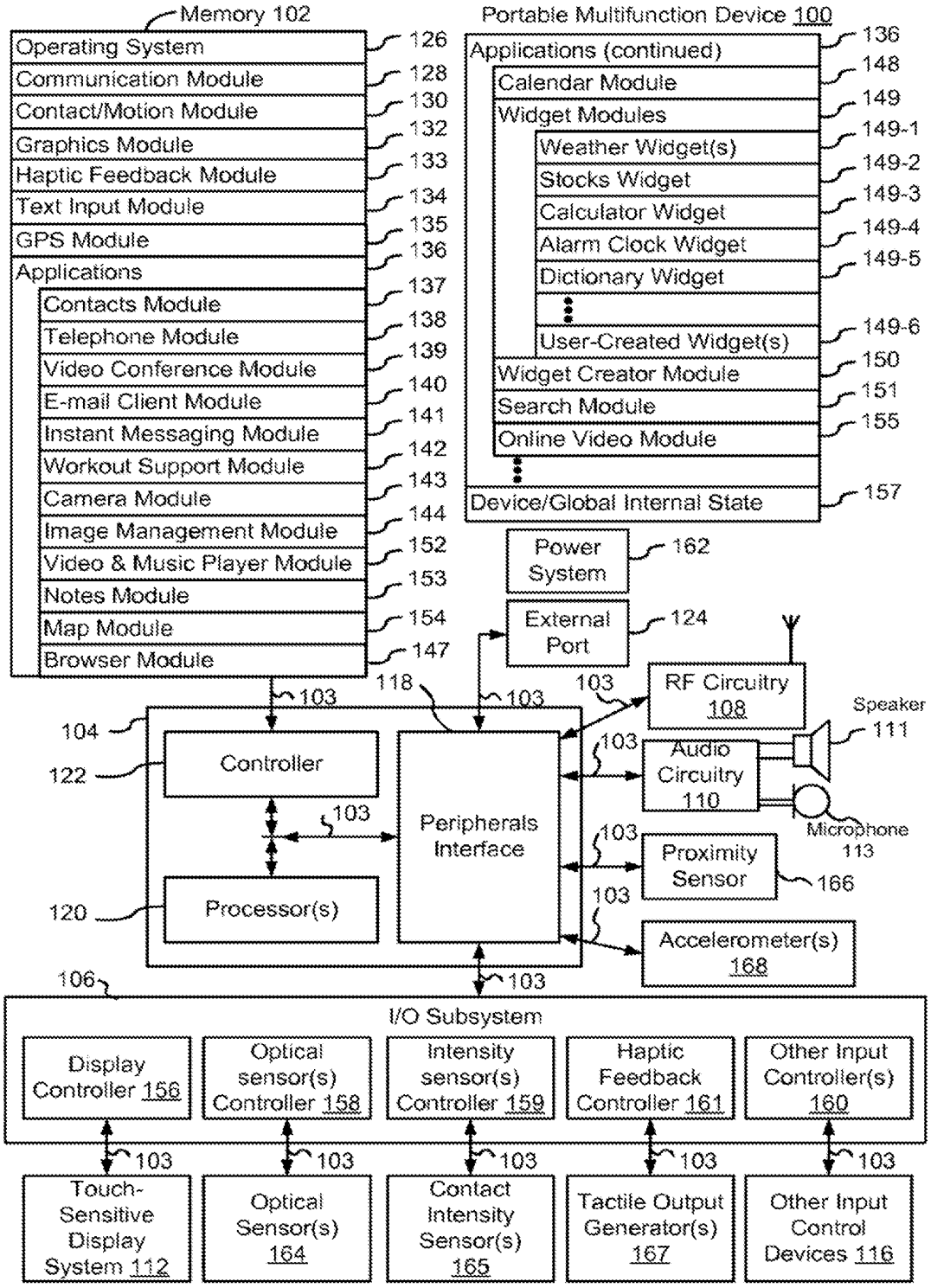

Memory 102
Operating System
126
Communication Module
128
Contact/Motion Module
130
Graphics Module
132
Haptic Feedback Module
133
Text Input Module
134
GPS Module
135
Applications
136
Contacts Module
137
Telephone Module
138
Video Conference Module
139
E-mail Client Module
140
Instant Messaging Module
141
Workout Support Module
142
Camera Module
143
Image Management Module
144
Video & Music Player Module
152
Notes Module
153
Map Module
154
Browser Module
147
Portable Multifunction Device 100
Applications (continued)
136
Calendar Module
148
Widget Modules
149
Weather Widget(s)
149-1
Stocks Widget
149-2
Calculator Widget
149-3
Alarm Clock Widget
149-4
Dictionary Widget
149-5
User-Created Widget(s)
149-6
Widget Creator Module
150
Search Module
151
Online Video Module
155
Device/Global Internal State
157
Power System
162
External Port
124
RF Circuitry 108
Speaker 111
Audio Circuitry 110
Microphone 113
Peripherals Interface
Proximity Sensor
166
Accelerometer(s) 168
Controller
Processor(s)
104
122
120
118
103
106
I/O Subsystem
Display Controller 156
Optical sensor(s) Controller 158
Intensity sensor(s) Controller 159
Haptic Feedback Controller 161
Other Input Controller(s) 160
Touch-Sensitive Display System 112
Optical Sensor(s) 164
Contact Intensity Sensor(s) 165
Tactile Output Generator(s) 167
Other Input Control Devices 116

**FIG. 1A**

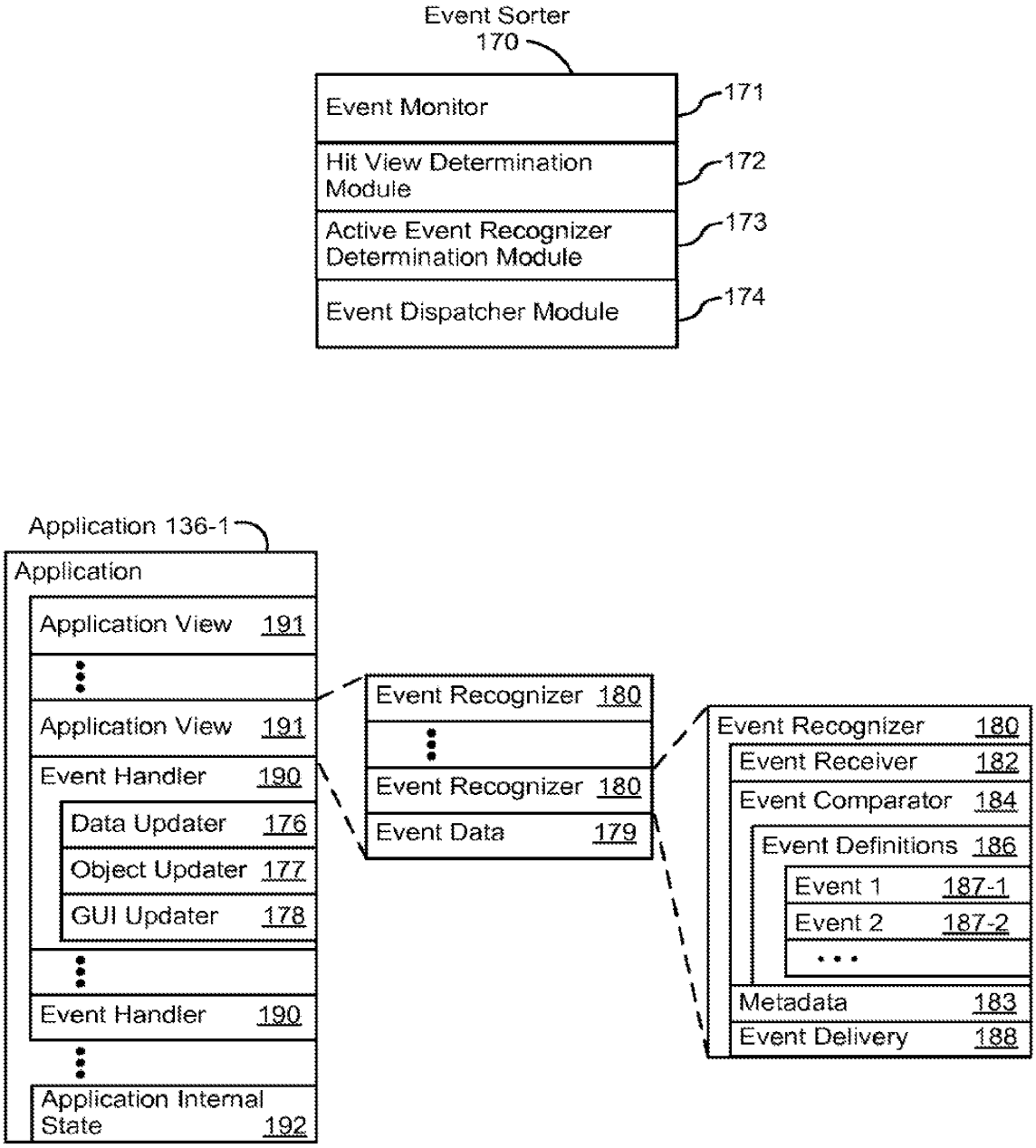

Event Sorter
170
Event Monitor
171
Hit View Determination Module
172
Active Event Recognizer Determination Module
173
Event Dispatcher Module
174
Application 136-1
Application
Application View 191
Application View 191
Event Handler 190
Data Updater 176
Object Updater 177
GUI Updater 178
Event Handler 190
Application Internal State 192
Event Recognizer 180
Event Recognizer 180
Event Data 179
Event Recognizer 180
Event Receiver 182
Event Comparator 184
Event Definitions 186
Event 1 187-1
Event 2 187-2
Metadata 183
Event Delivery 188

FIG. 1B

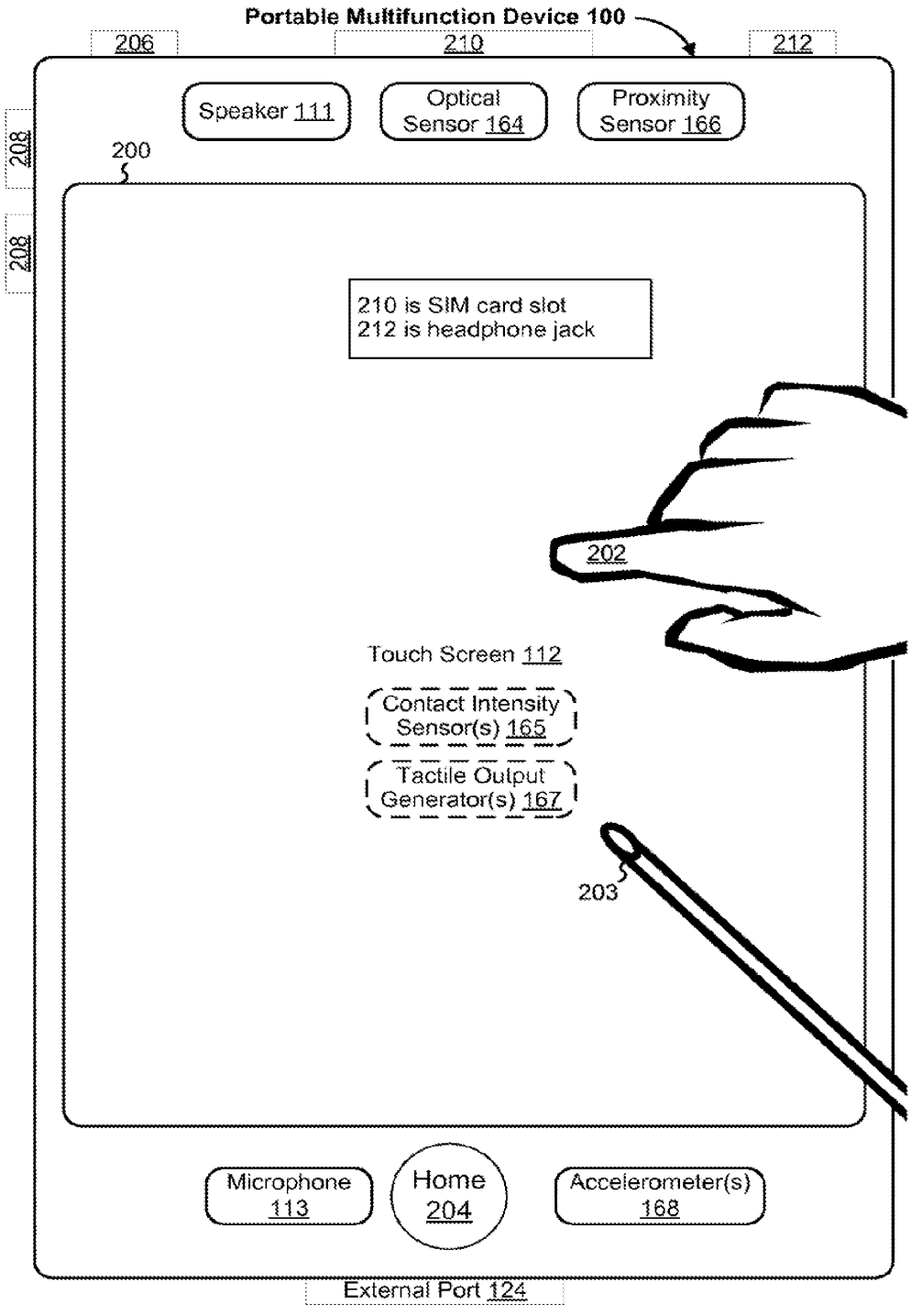

Portable Multifunction Device 100
206
210
212
Speaker 111
Optical Sensor 164
Proximity Sensor 166
208
208
200
210 is SIM card slot
212 is headphone jack
202
Touch Screen 112
Contact Intensity Sensor(s) 165
Tactile Output Generator(s) 167
203
Microphone 113
Home 204
Accelerometer(s) 168
External Port 124

FIG. 2

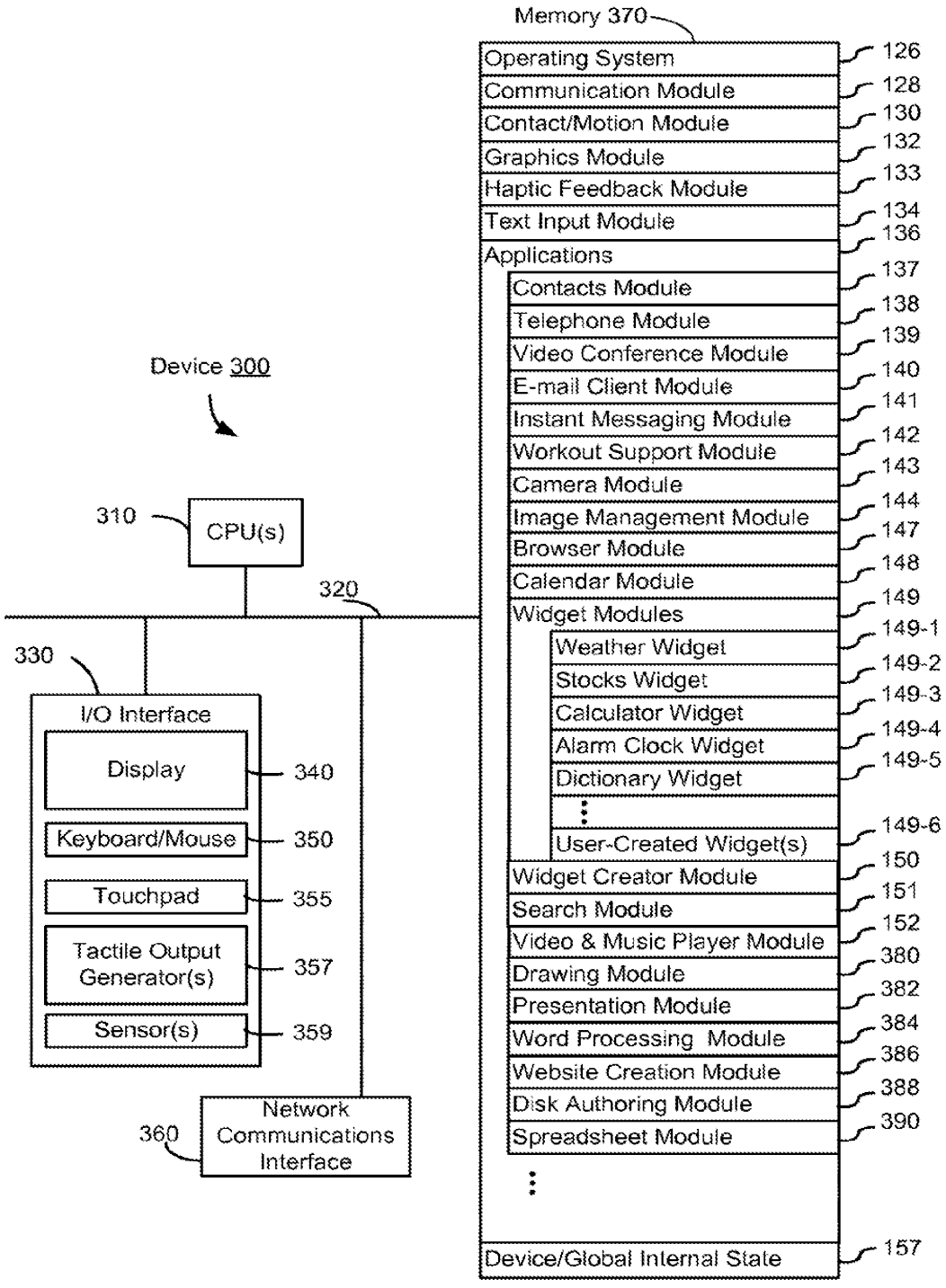

Memory 370
Operating System
126
Communication Module
128
Contact/Motion Module
130
Graphics Module
132
Haptic Feedback Module
133
Text Input Module
134
Applications
136
Contacts Module
137
Telephone Module
138
Video Conference Module
139
E-mail Client Module
140
Instant Messaging Module
141
Workout Support Module
142
Camera Module
143
Image Management Module
144
Browser Module
147
Calendar Module
148
Widget Modules
149
Weather Widget
149-1
Stocks Widget
149-2
Calculator Widget
149-3
Alarm Clock Widget
149-4
Dictionary Widget
149-5
User-Created Widget(s)
149-6
Widget Creator Module
150
Search Module
151
Video & Music Player Module
152
Drawing Module
380
Presentation Module
382
Word Processing Module
384
Website Creation Module
386
Disk Authoring Module
388
Spreadsheet Module
390
Device/Global Internal State
157
Device 300
310
CPU(s)
320
330
I/O Interface
Display
340
Keyboard/Mouse
350
Touchpad
355
Tactile Output Generator(s)
357
Sensor(s)
359
360
Network Communications Interface

FIG. 3

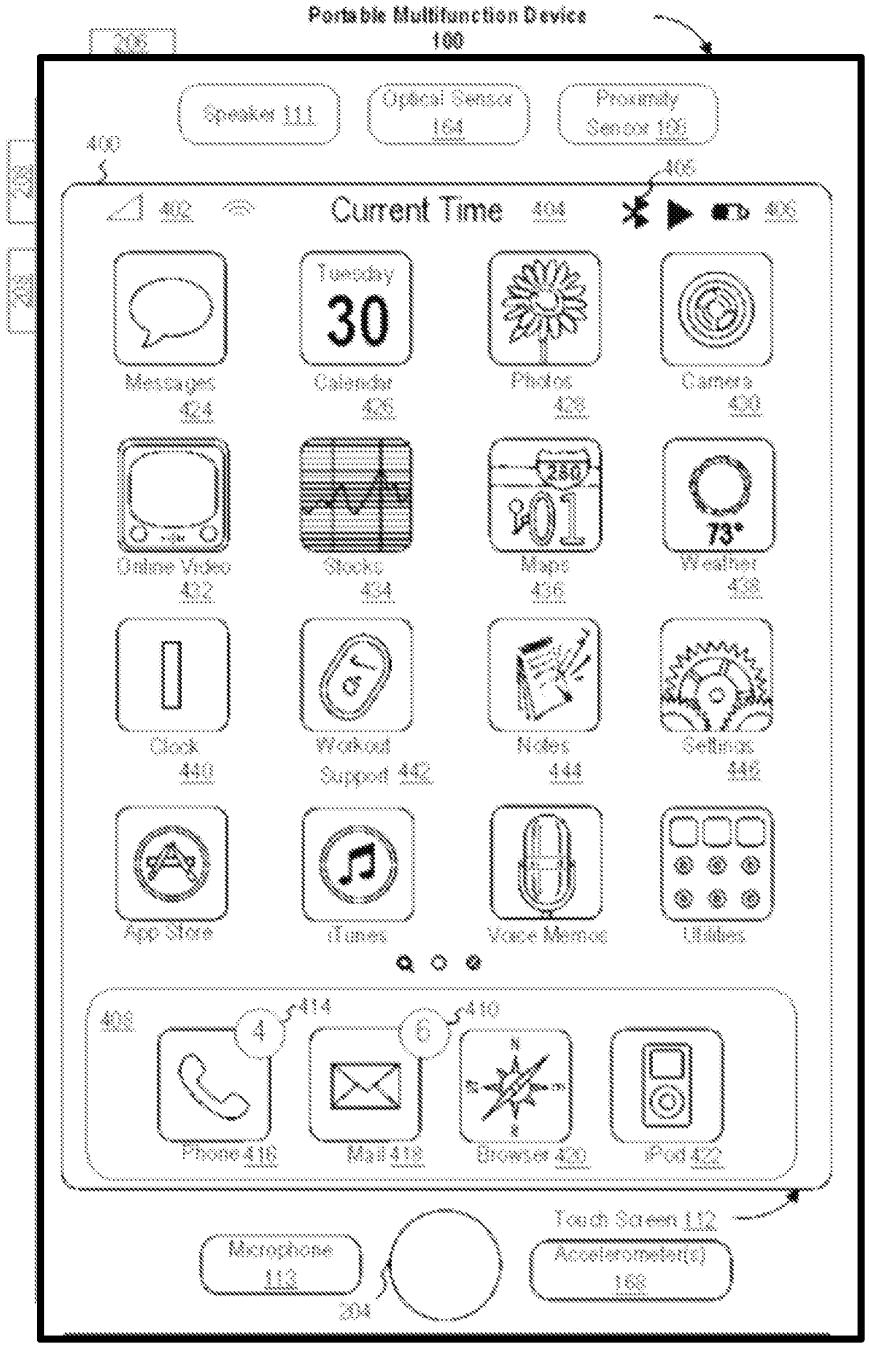

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor
164
Proximity
Sensor 166
400
202
204
406
Current Time 404
402
Tuesday
30
Messages
424
Calendar
426
Photos
428
Camera
430
Online Video
432
Stocks
434
Maps
436
Weather
438
Clock
440
Workout
Support 442
Notes
444
Settings
446
App Store
iTunes
Voice Memos
Utilities
408
414
410
Phone 416
Mail 418
Browser 420
iPod 422
Touch Screen 112
Microphone
113
Accelerometer(s)
168

FIG. 4A

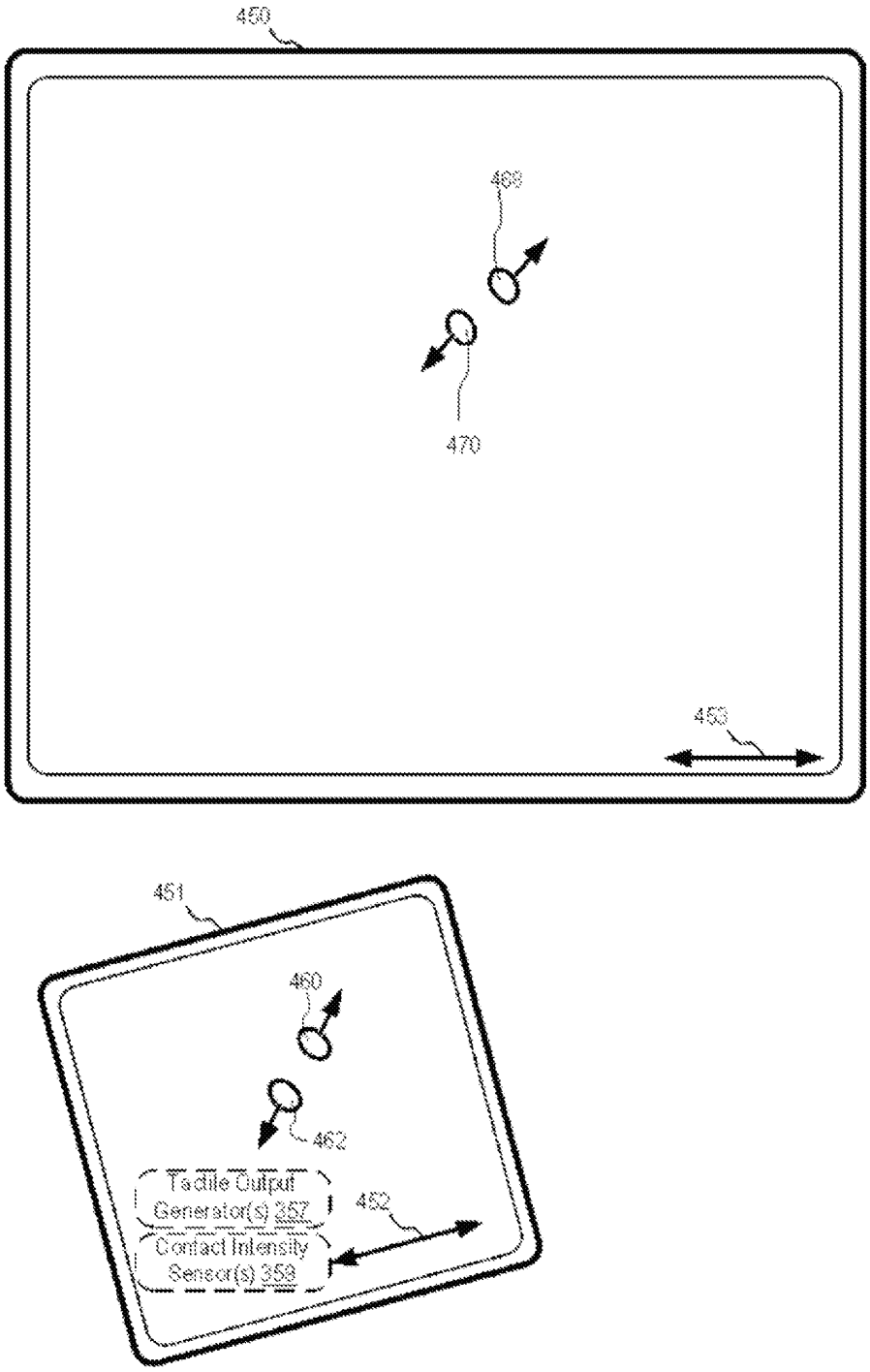

450
468
470
453
451
460
462
Tactile Output Generator(s) 357
452
Contact Intensity Sensor(s) 359

FIG. 4B

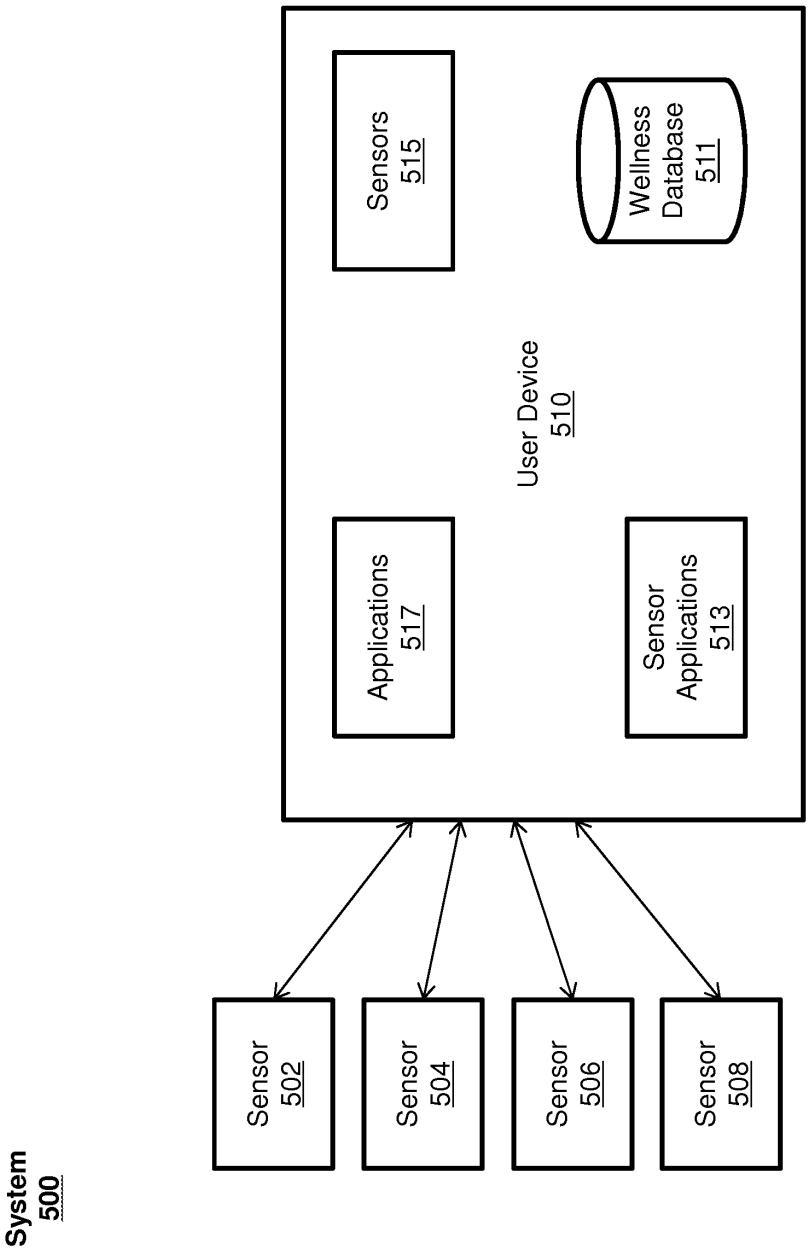

System
500
Sensor
502
Sensor
504
Sensor
506
Sensor
508
User Device
510
Sensors
515
Wellness
Database
511
Applications
517
Sensor
Applications
513

FIG. 5

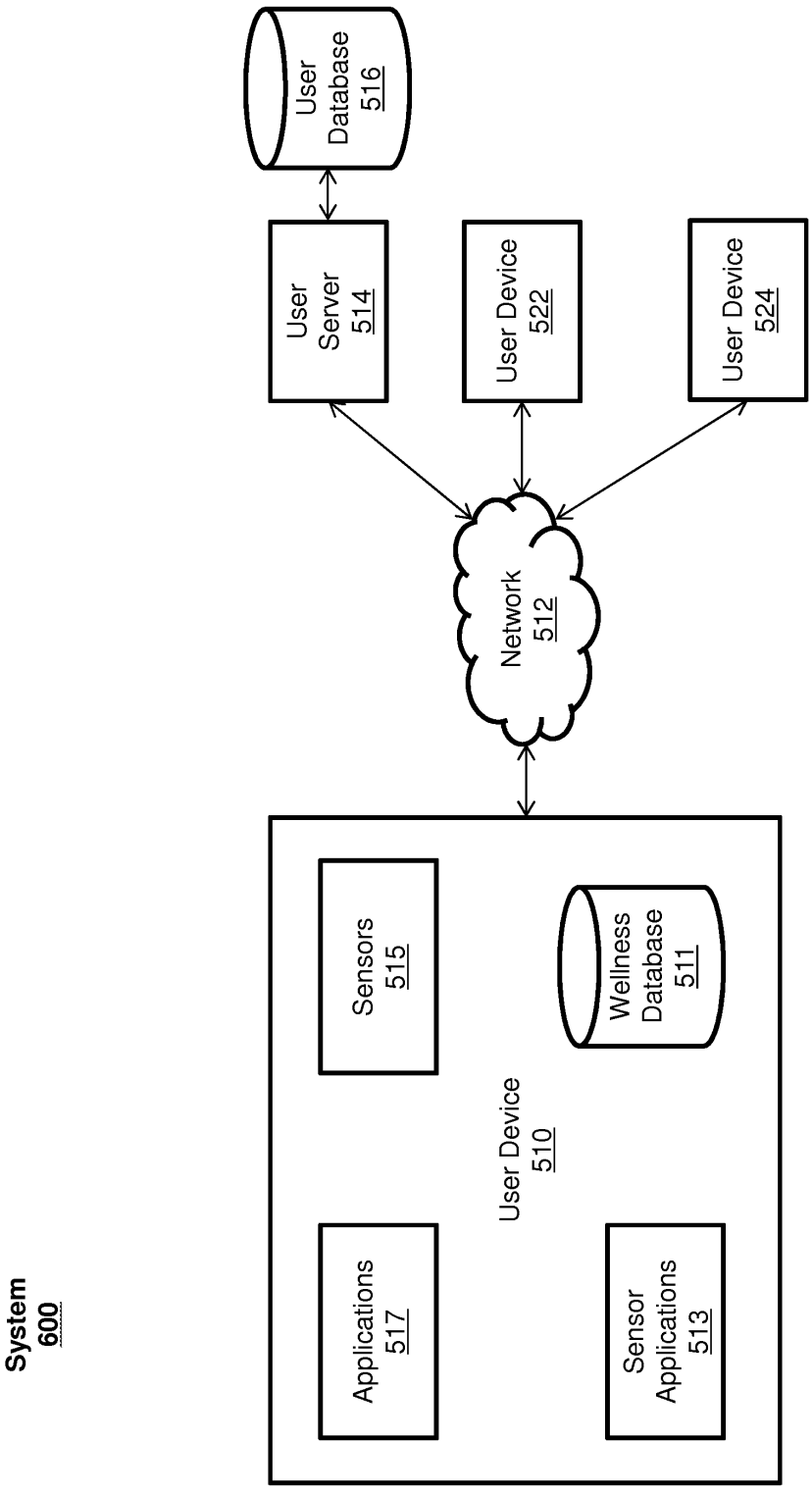

System
600
User Database
516
User Server
514
User Device
522
User Device
524
Network
512
Sensors
515
Wellness Database
511
User Device
510
Applications
517
Sensor Applications
513

FIG. 6

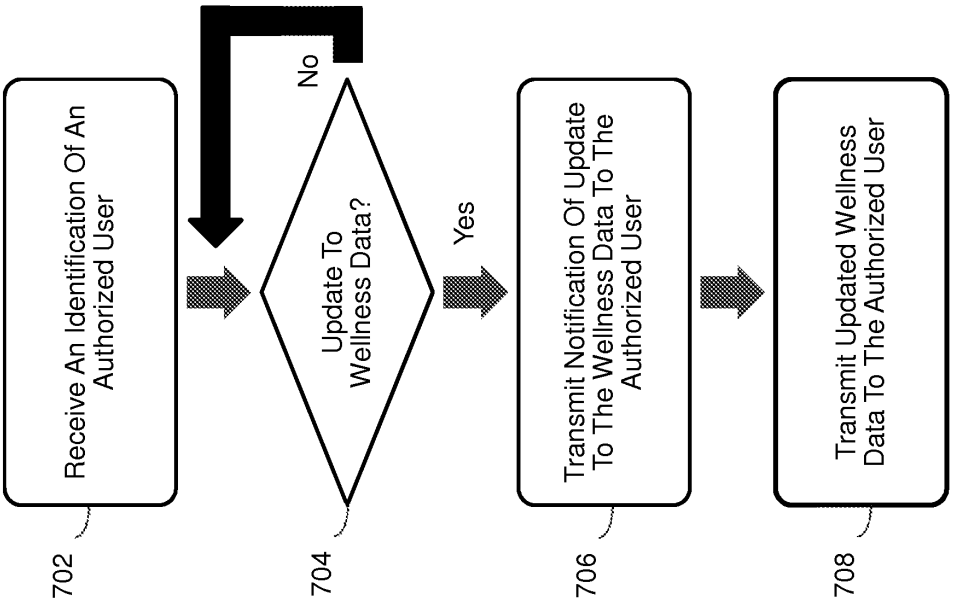

Process
700
Receive An Identification Of An Authorized User
Update To Wellness Data?
No
Yes
Transmit Notification Of Update To The Wellness Data To The Authorized User
Transmit Updated Wellness Data To The Authorized User
702
704
706
708

FIG. 7

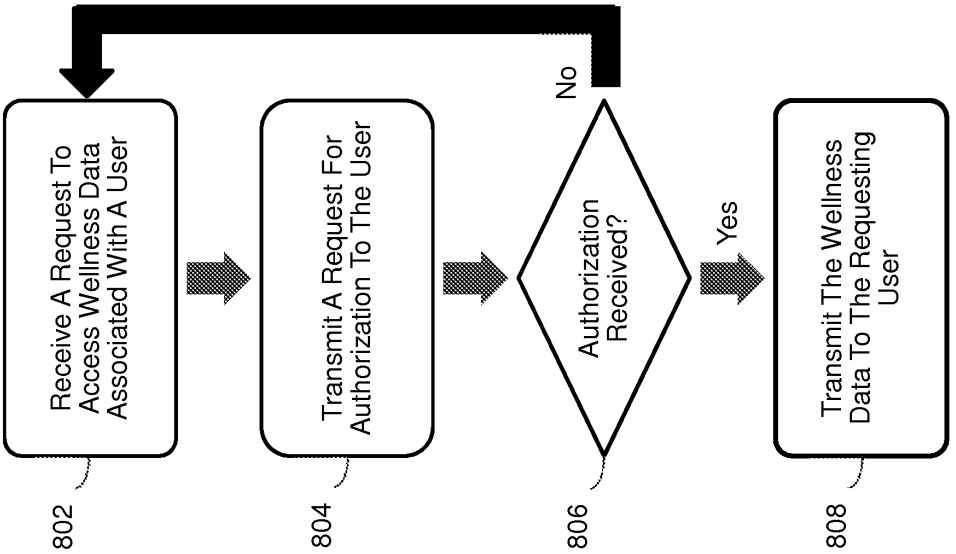

Receive A Request To Access Wellness Data Associated With A User
Transmit A Request For Authorization To The User
Authorization Received?
No
Yes
Transmit The Wellness Data To The Requesting User
802
804
806
808
Process 800

FIG. 8

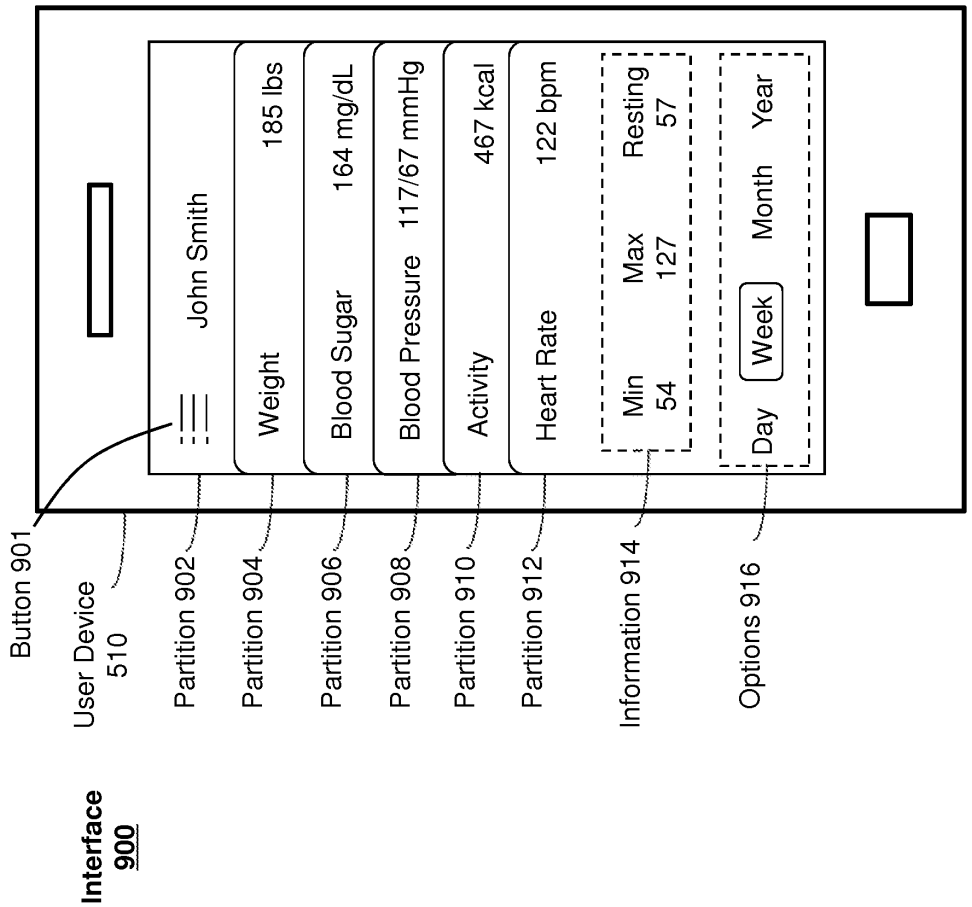

Interface 900
User Device 510
Button 901
Partition 902
Partition 904
Partition 906
Partition 908
Partition 910
Partition 912
Information 914
Options 916
John Smith
Weight 185 lbs
Blood Sugar 164 mg/dL
Blood Pressure 117/67 mmHg
Activity 467 kcal
Heart Rate 122 bpm
Min 54
Max 127
Resting 57
Day
Week
Month
Year

FIG. 9

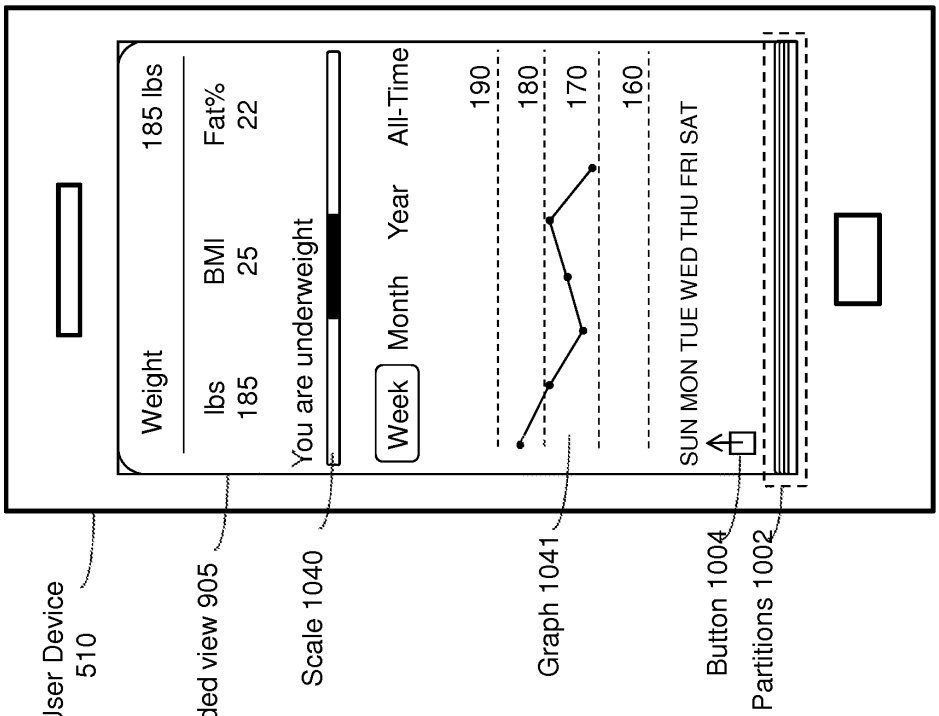

Interface
1000
User Device
510
Expanded view 905
Scale 1040
Graph 1041
Button 1004
Partitions 1002
Weight
185 lbs
lbs
185
BMI
25
Fat%
22
You are underweight
Week
Month
Year
All-Time
190
180
170
160
SUN MON TUE WED THU FRI SAT

FIG. 10

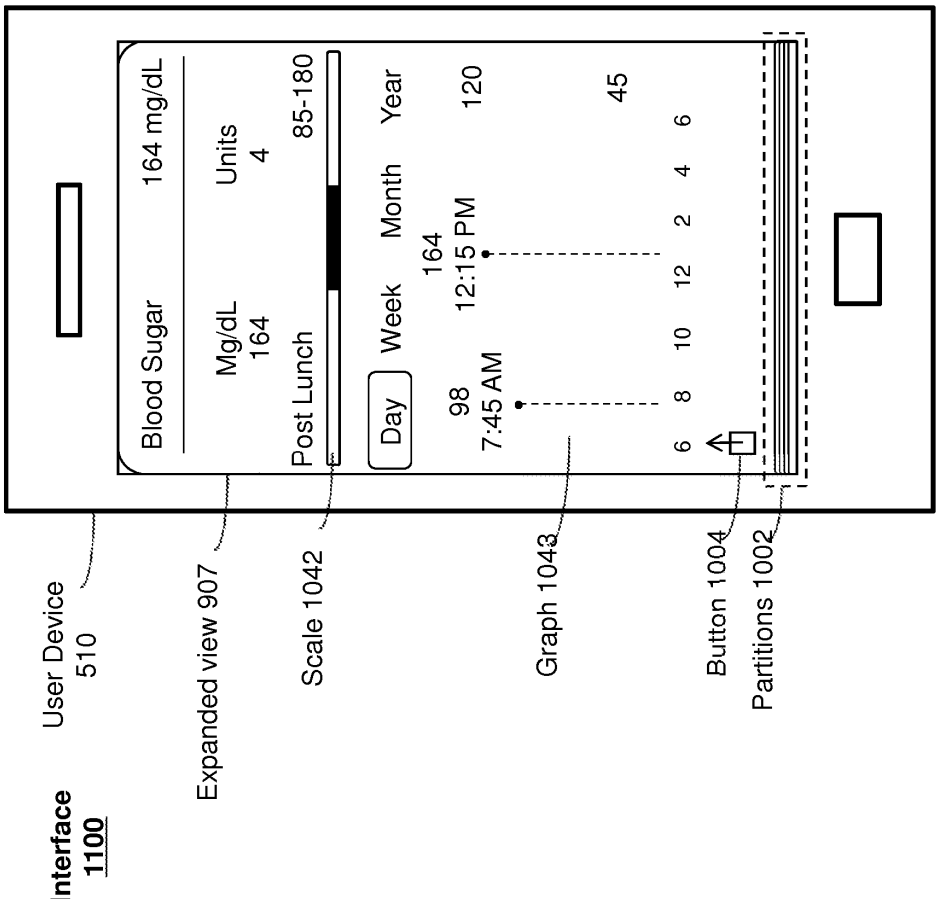

Interface
1100
User Device
510
Expanded view 907
Scale 1042
Graph 1043
Button 1004
Partitions 1002
Blood Sugar
164 mg/dL
Mg/dL
164
Units
4
Post Lunch
85-180
Day
Week
Month
Year
98
7:45 AM
164
12:15 PM
120
45
6
8
10
12
2
4
6

FIG. 11

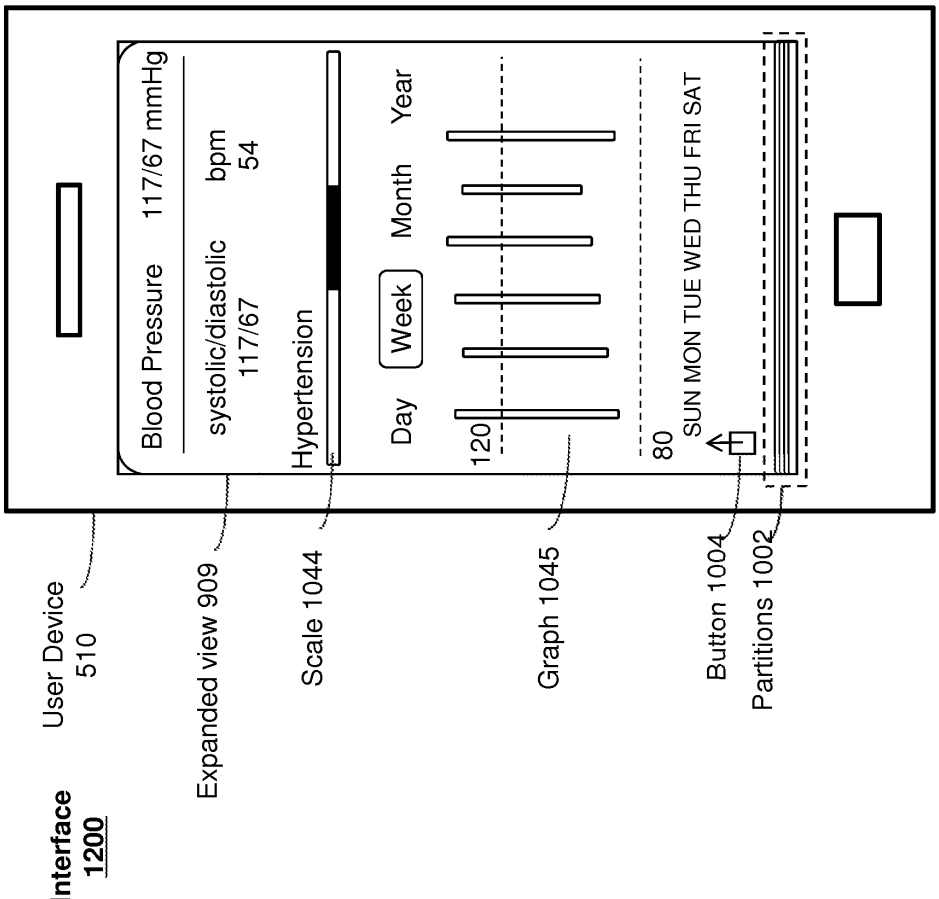

Interface
1200
User Device
510
Expanded view 909
Scale 1044
Graph 1045
Button 1004
Partitions 1002
Blood Pressure 117/67 mmHg
systolic/diastolic
117/67
bpm
54
Hypertension
Day
Week
Month
Year
120
80
SUN MON TUE WED THU FRI SAT

FIG. 12

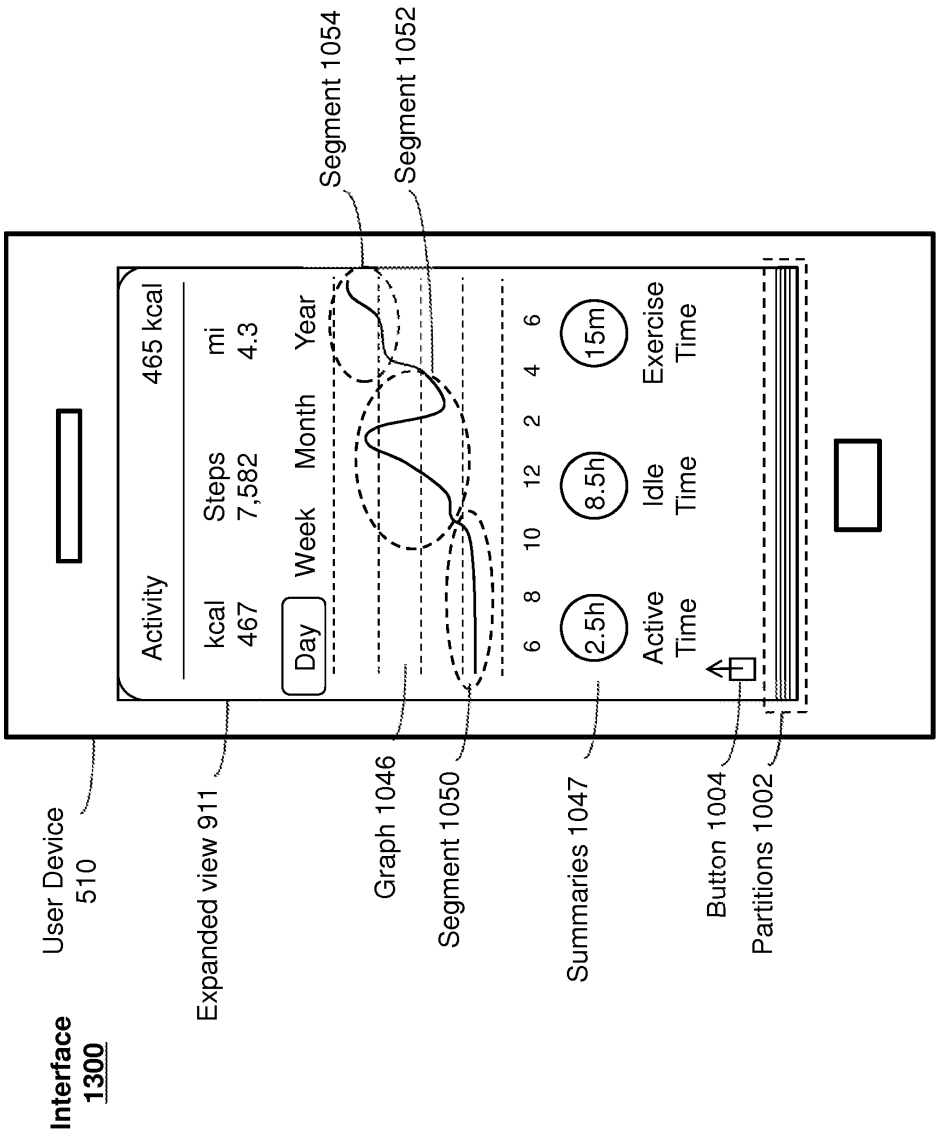

Interface
1300
User Device
510
Expanded view 911
Graph 1046
Segment 1050
Summaries 1047
Button 1004
Partitions 1002
Segment 1054
Segment 1052
Activity
465 kcal
kcal
467
Steps
7,582
mi
4.3
Day
Week
Month
Year
6 8 10 12 2 4 6
2.5h
8.5h
15m
Active Time
Idle Time
Exercise Time

FIG. 13

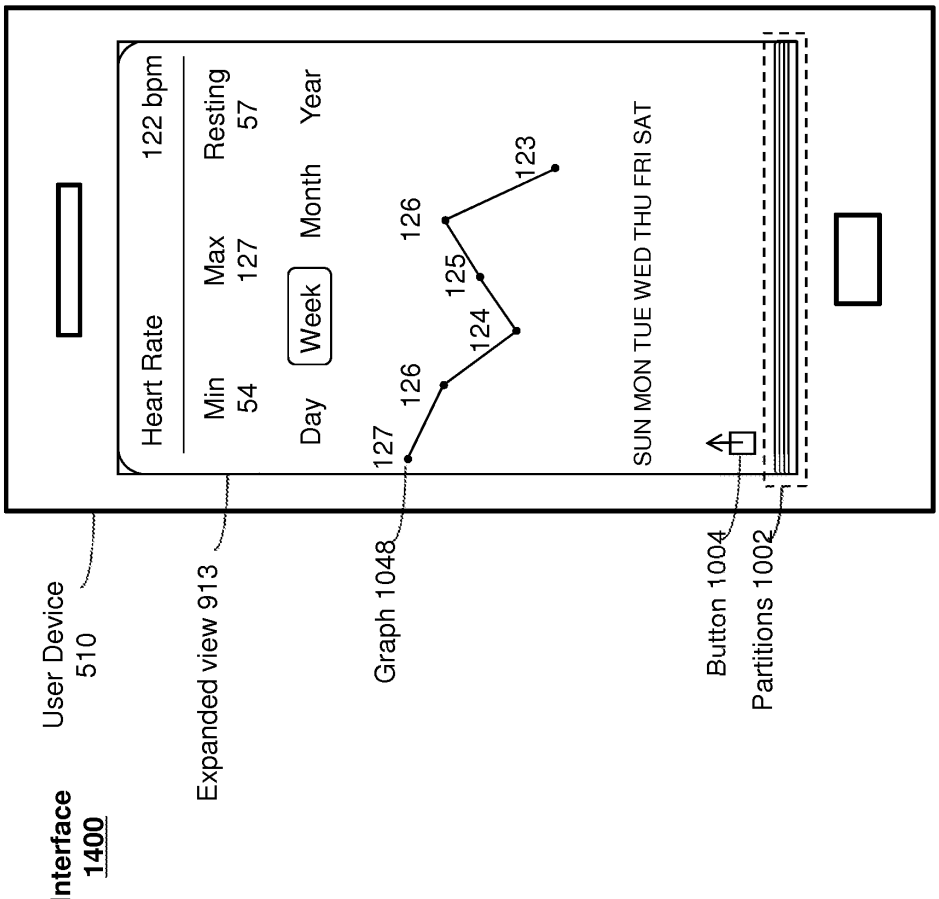

Interface
1400
User Device
510
Expanded view 913
Graph 1048
Button 1004
Partitions 1002
Heart Rate
122 bpm
Min
54
Max
127
Resting
57
Day
Week
Month
Year
127
126
124
125
126
123
SUN MON TUE WED THU FRI SAT

FIG. 14

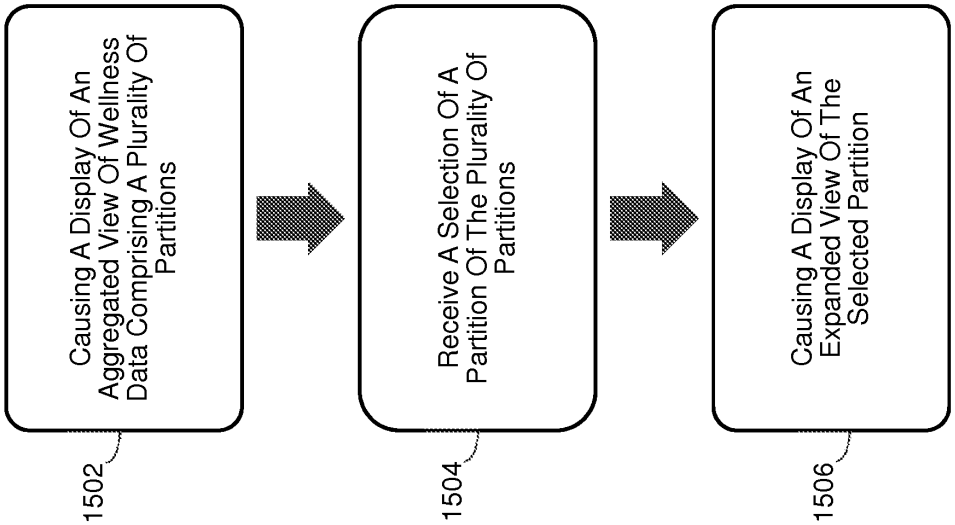

Process
1500
Causing A Display Of An Aggregated View Of Wellness Data Comprising A Plurality Of Partitions
1502
Receive A Selection Of A Partition Of The Plurality Of Partitions
1504
Causing A Display Of An Expanded View Of The Selected Partition
1506

FIG. 15

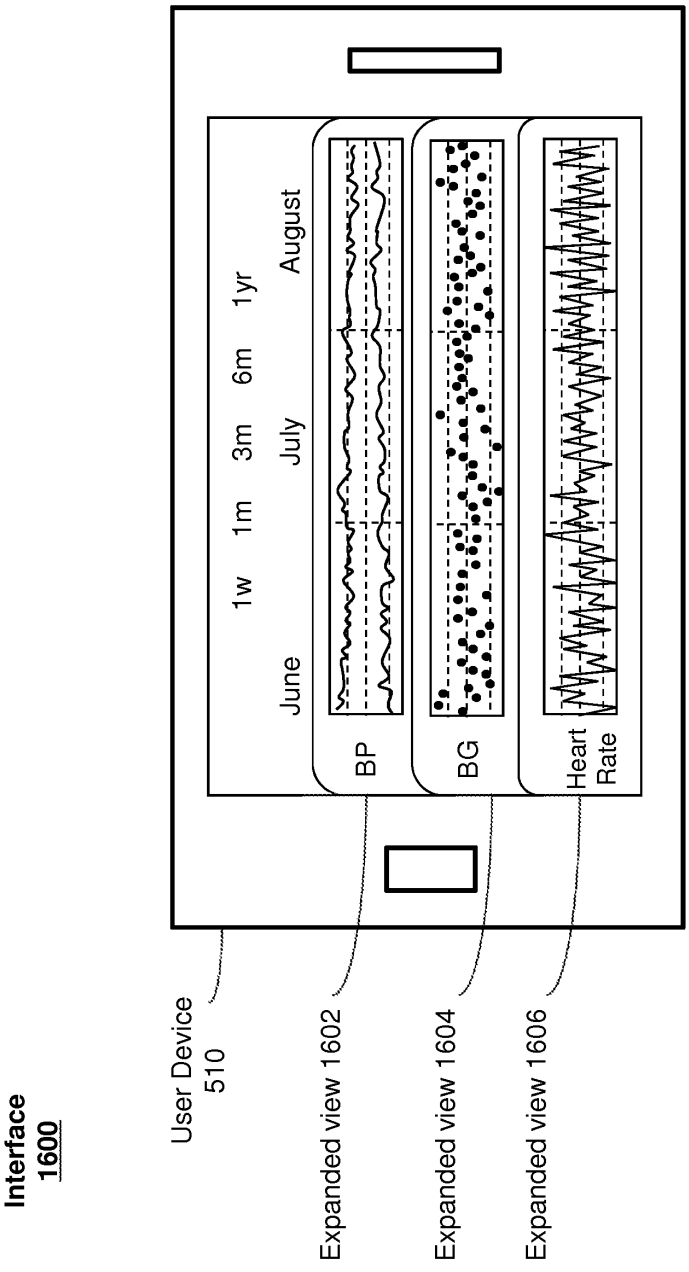

Interface
1600
User Device
510
Expanded view 1602
Expanded view 1604
Expanded view 1606
1w
1m
3m
6m
1yr
June
July
August
BP
BG
Heart
Rate

FIG. 16

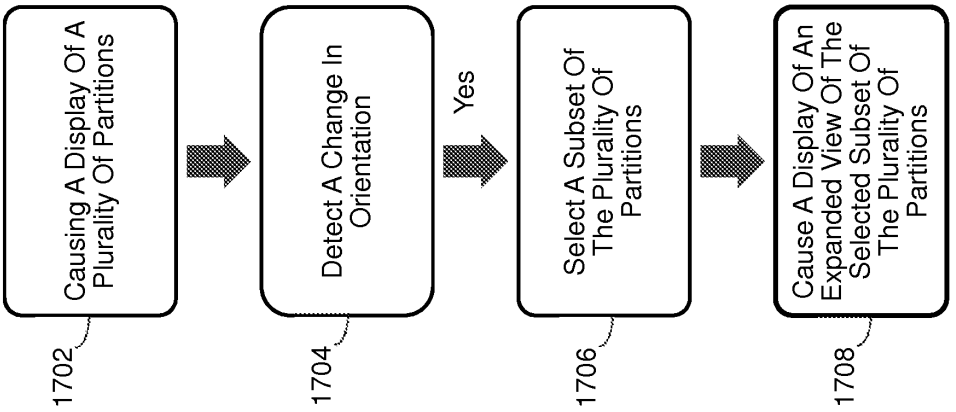

Process
1700
Causing A Display Of A Plurality Of Partitions
1702
Detect A Change In Orientation
1704
Yes
Select A Subset Of The Plurality Of Partitions
1706
Cause A Display Of An Expanded View Of The Selected Subset Of The Plurality Of Partitions
1708

FIG. 17

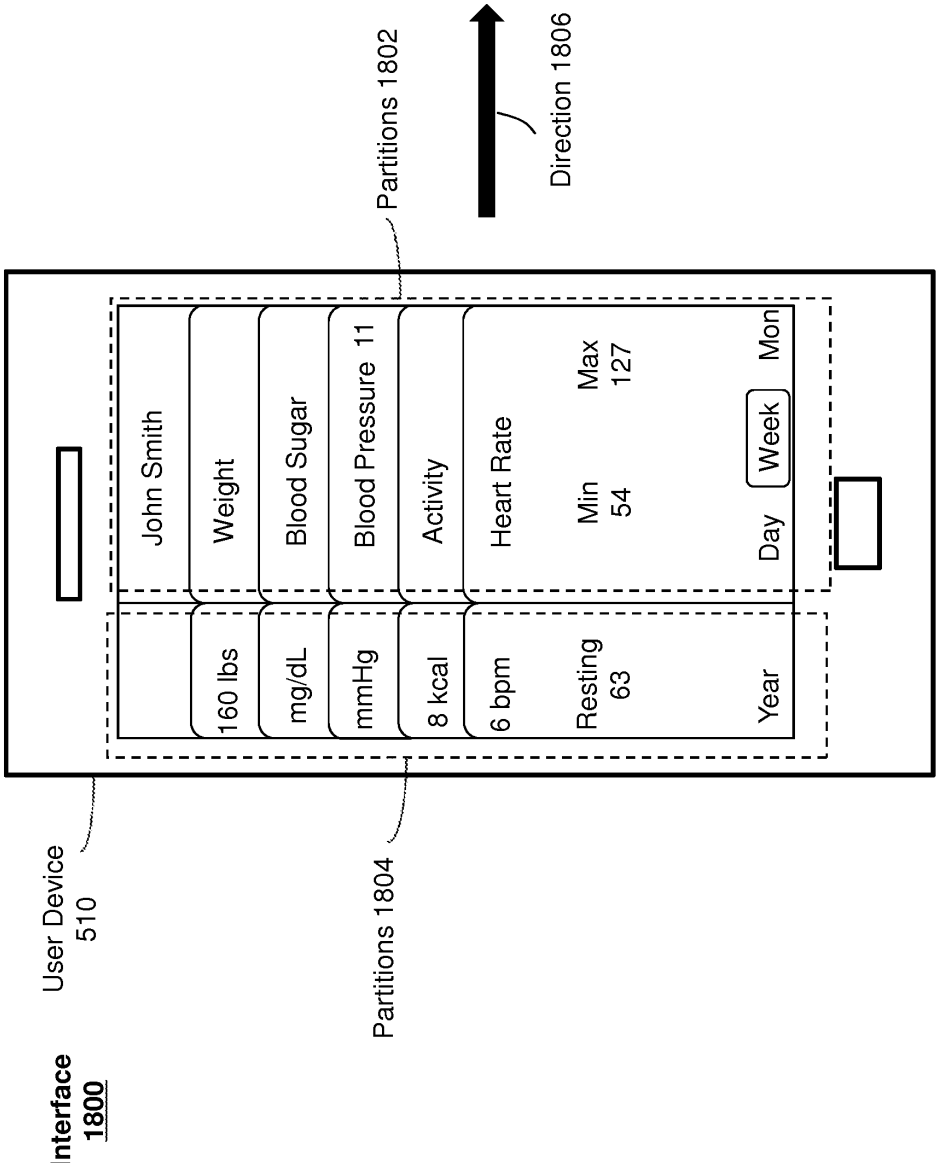

Interface
1800
User Device
510
Partitions 1804
Partitions 1802
Direction 1806
John Smith
Weight
Blood Sugar
Blood Pressure 11
Activity
Heart Rate
Min
54
Max
127
Day
Week
Mon
160 lbs
mg/dL
mmHg
8 kcal
6 bpm
Resting
63
Year

FIG. 18

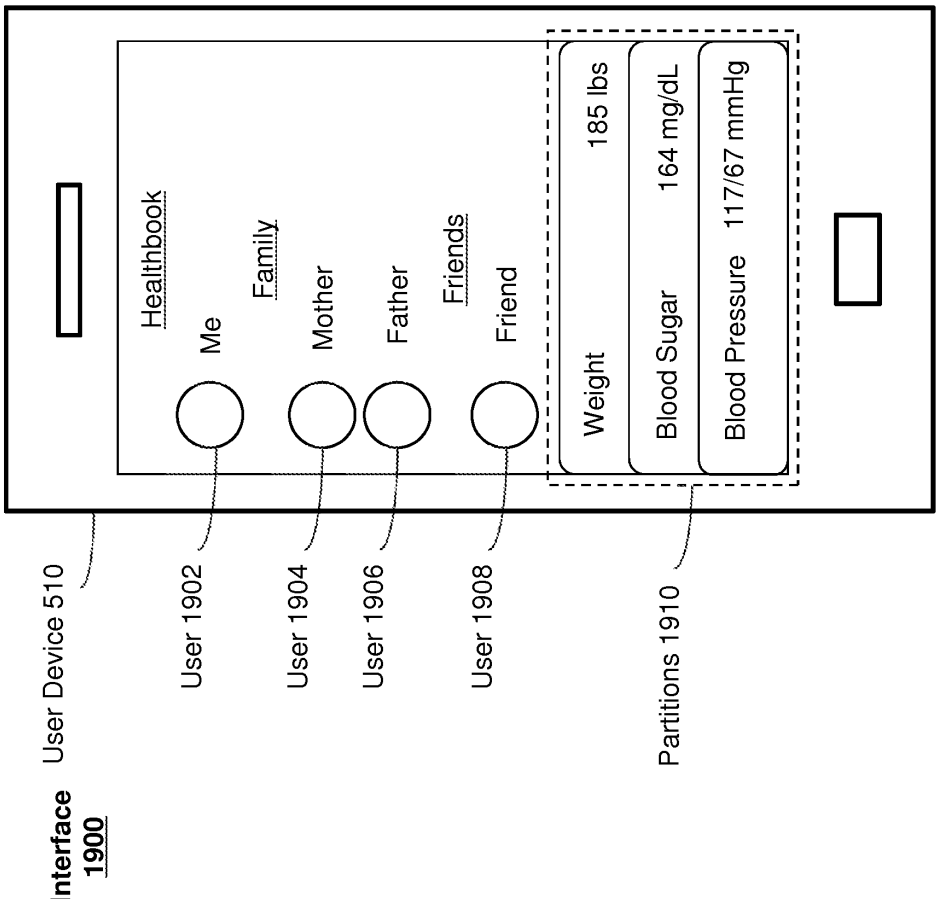

Interface 1900
User Device 510
Healthbook
Me
Family
Mother
Father
Friends
Friend
Weight 185 lbs
Blood Sugar 164 mg/dL
Blood Pressure 117/67 mmHg
User 1902
User 1904
User 1906
User 1908
Partitions 1910

FIG. 19

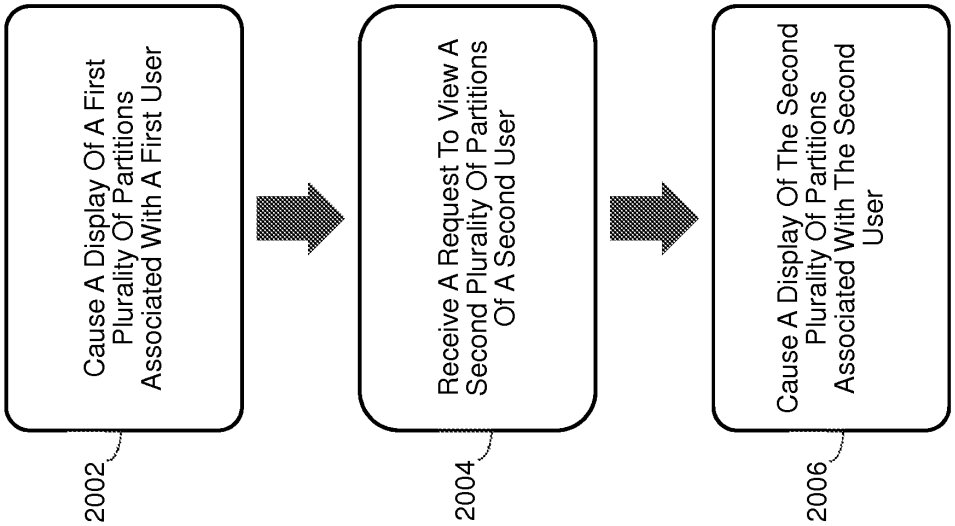

Process
2000
Cause A Display Of A First Plurality Of Partitions Associated With A First User
2002
Receive A Request To View A Second Plurality Of Partitions Of A Second User
2004
Cause A Display Of The Second Plurality Of Partitions Associated With The Second User
2006

FIG. 20

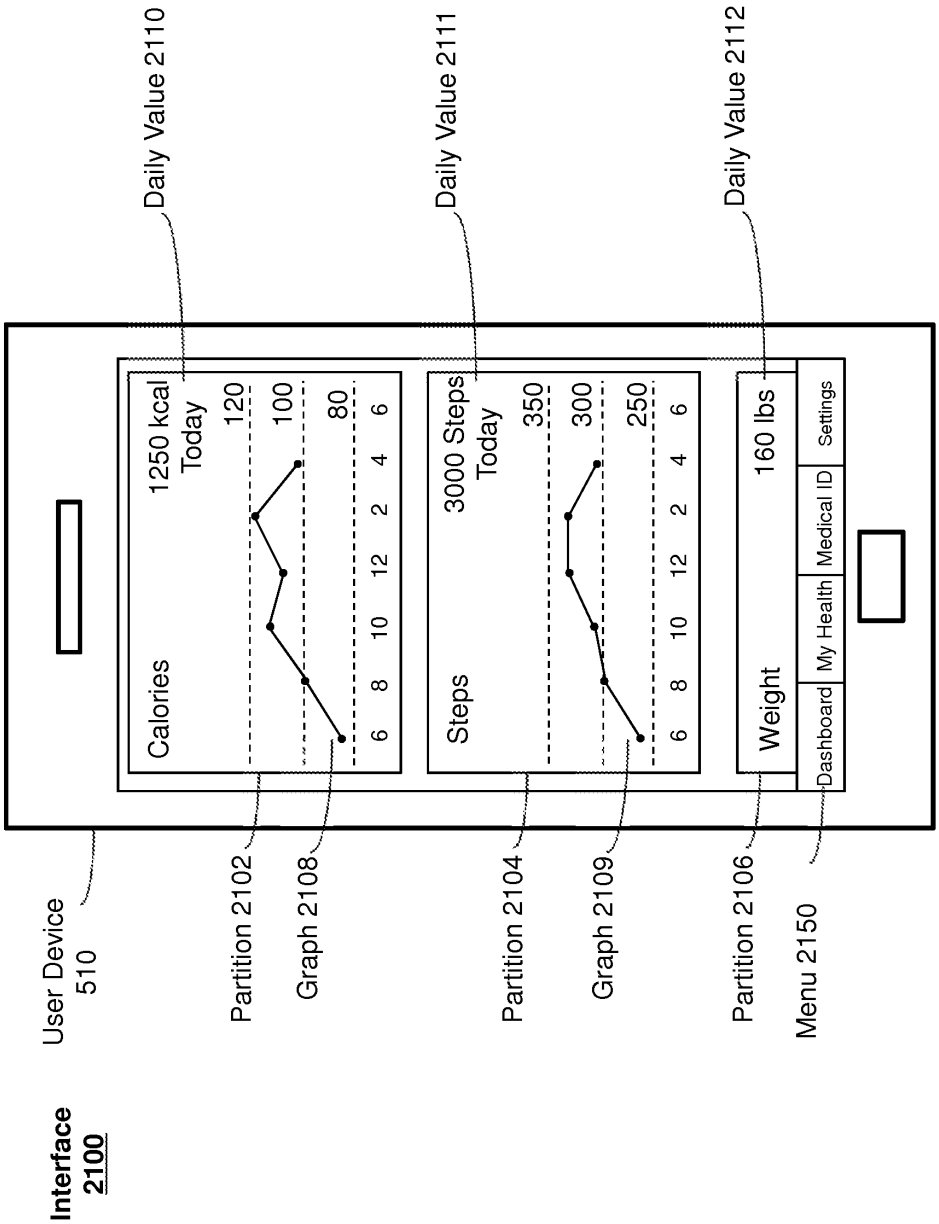

Interface 2100
User Device 510
Daily Value 2110
Daily Value 2111
Daily Value 2112
Partition 2102
Graph 2108
Partition 2104
Graph 2109
Partition 2106
Menu 2150
Calories
1250 kcal
Today
120
100
80
6 8 10 12 2 4 6
Steps
3000 Steps
Today
350
300
250
6 8 10 12 2 4 6
Weight
160 lbs
Dashboard
My Health
Medical ID
Settings

FIG. 21

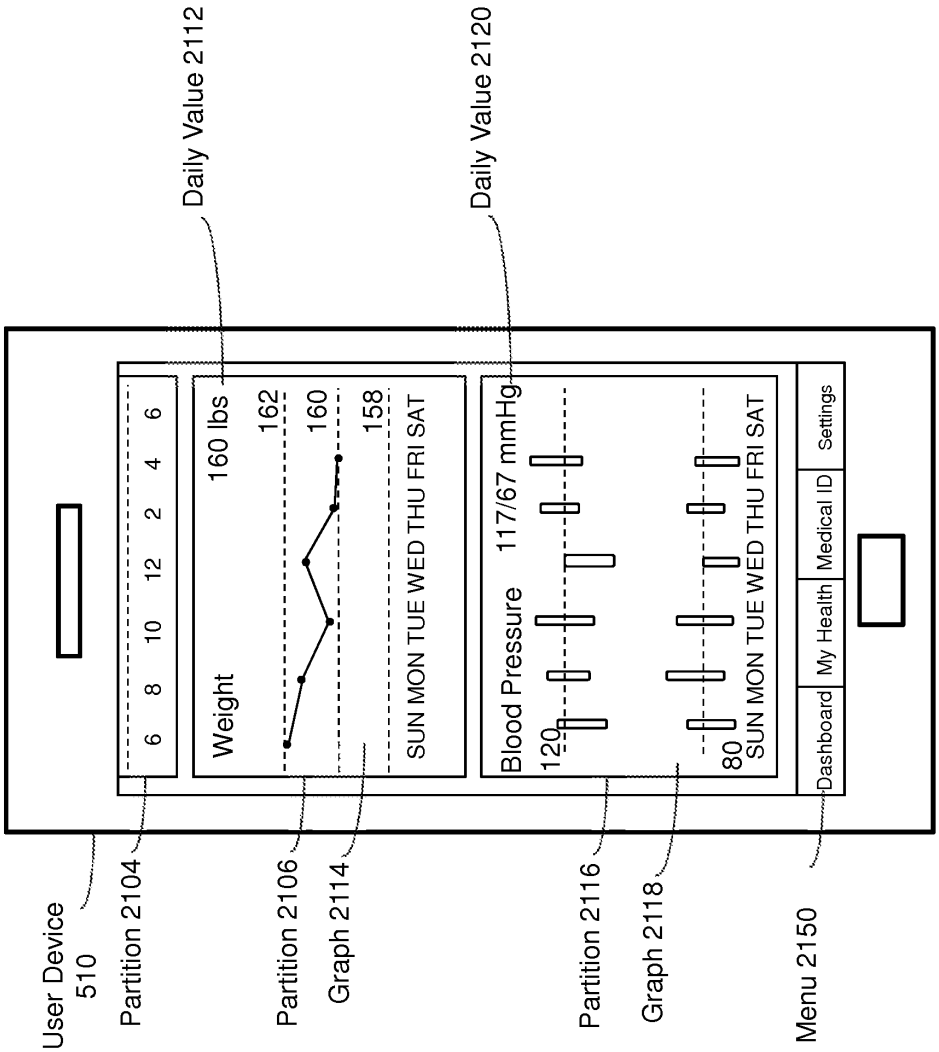

Interface
2200
User Device
510
Partition 2104
Partition 2106
Graph 2114
Partition 2116
Graph 2118
Menu 2150
Daily Value 2112
Daily Value 2120
6 8 10 12 2 4 6
Weight
160 lbs
162
160
158
SUN MON TUE WED THU FRI SAT
Blood Pressure
117/67 mmHg
120
80
SUN MON TUE WED THU FRI SAT
Dashboard
My Health
Medical ID
Settings

FIG. 22

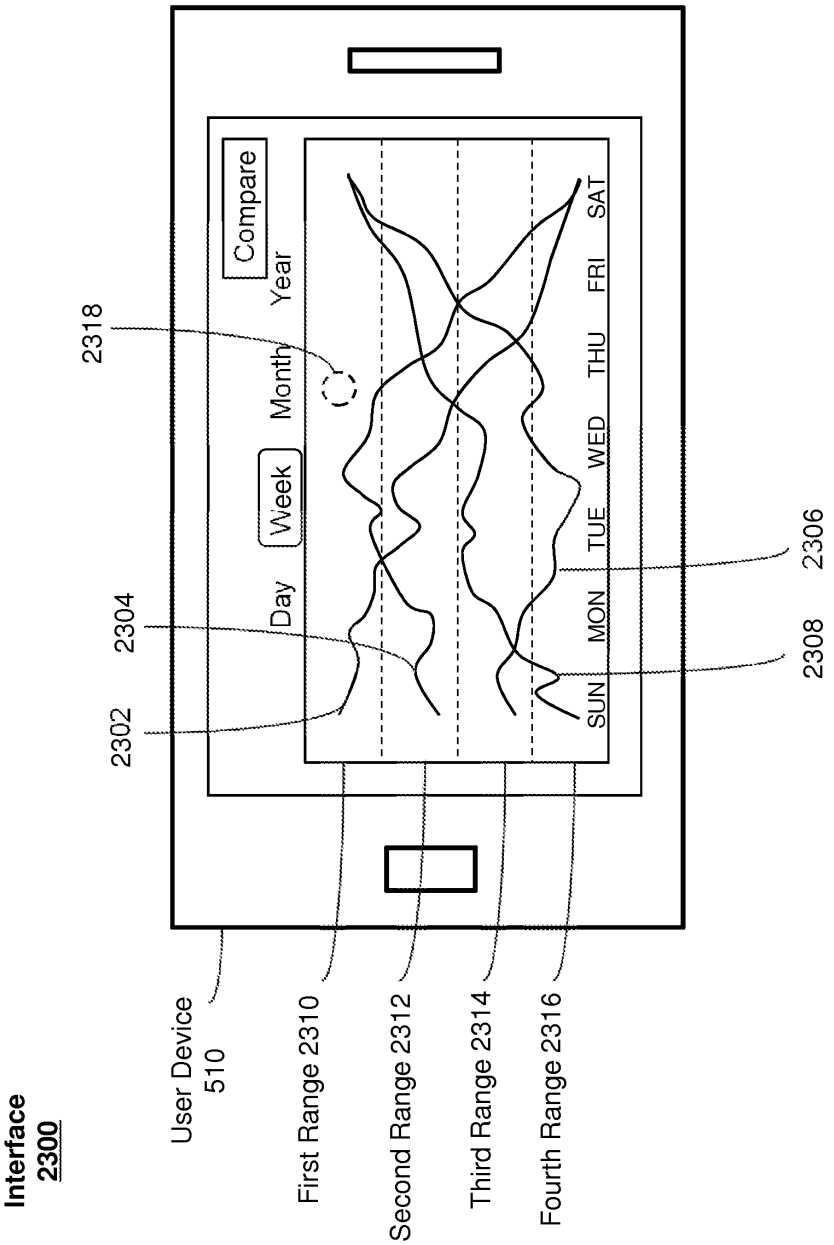

Interface
2300
User Device
510
First Range 2310
Second Range 2312
Third Range 2314
Fourth Range 2316
2318
2304
2302
2306
2308
Compare
Year
Month
Week
Day
SUN
MON
TUE
WED
THU
FRI
SAT

FIG. 23

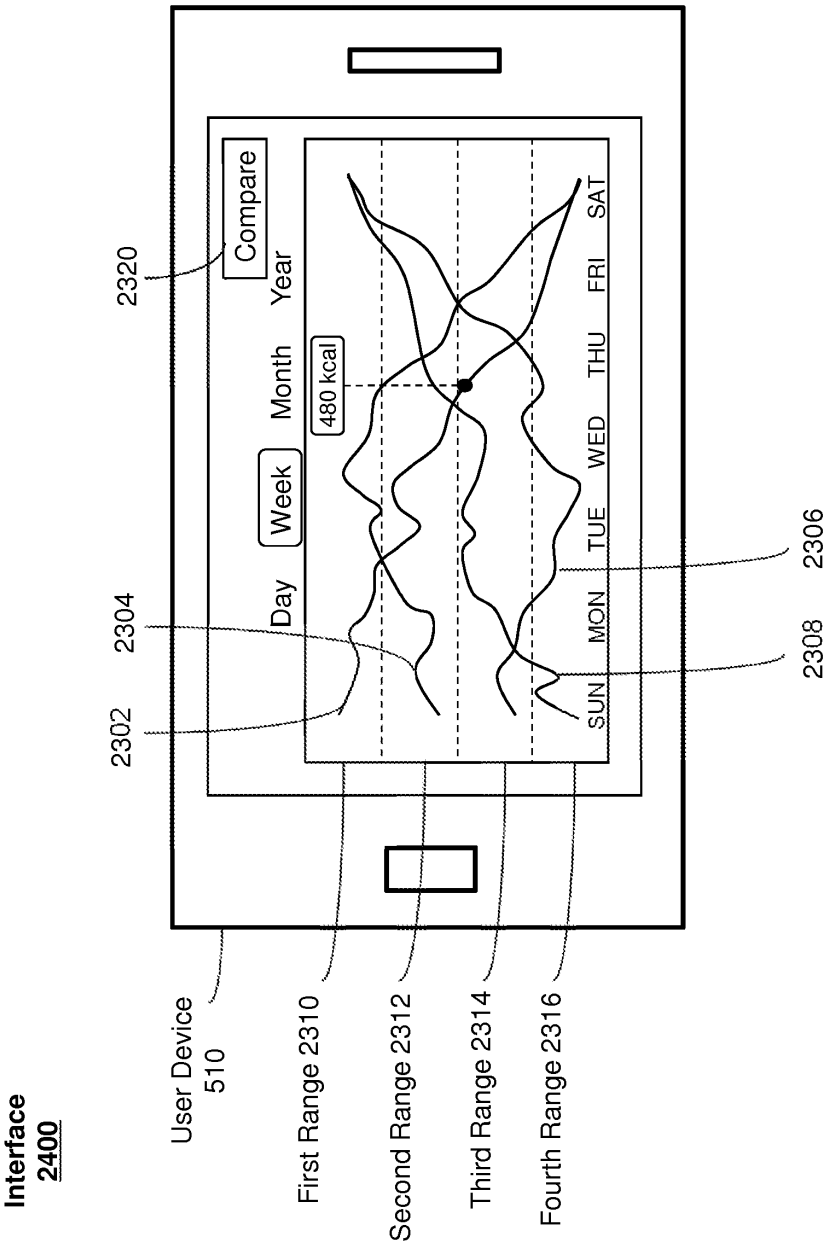

Interface
2400
User Device
510
First Range 2310
Second Range 2312
Third Range 2314
Fourth Range 2316
2302
2304
2306
2308
2320
Compare
Year
Month
Week
Day
480 kcal
SUN
MON
TUE
WED
THU
FRI
SAT

FIG. 24

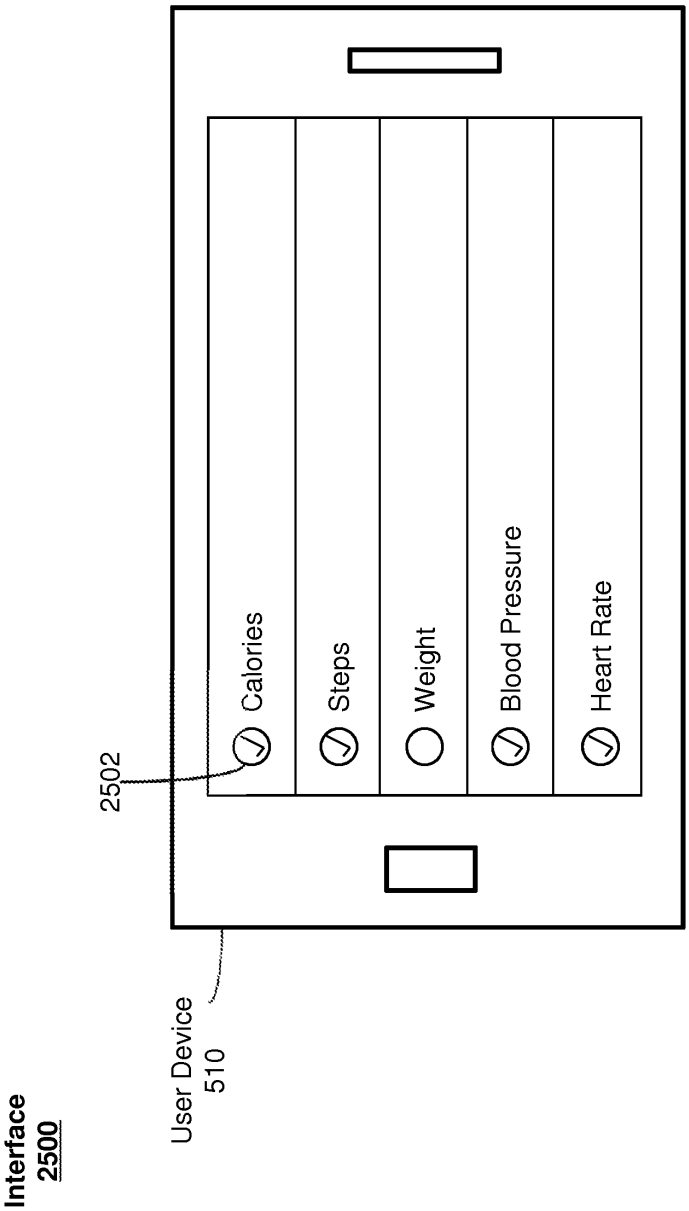

Interface
2500
User Device
510
2502
Calories
Steps
Weight
Blood Pressure
Heart Rate

FIG. 25

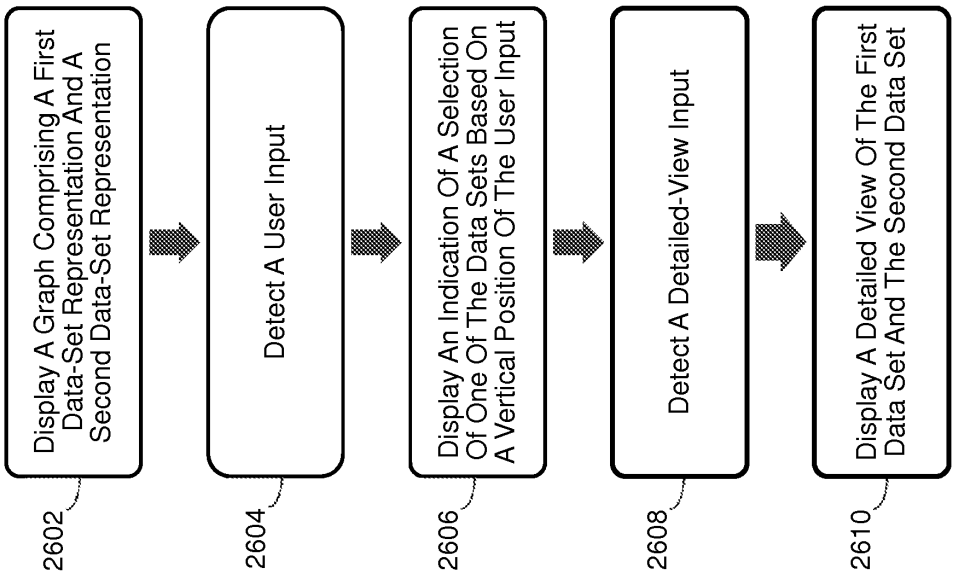

Process
2600
Display A Graph Comprising A First Data-Set Representation And A Second Data-Set Representation
2602
Detect A User Input
2604
Display An Indication Of A Selection Of One Of The Data Sets Based On A Vertical Position Of The User Input
2606
Detect A Detailed-View Input
2608
Display A Detailed View Of The First Data Set And The Second Data Set
2610

FIG. 26

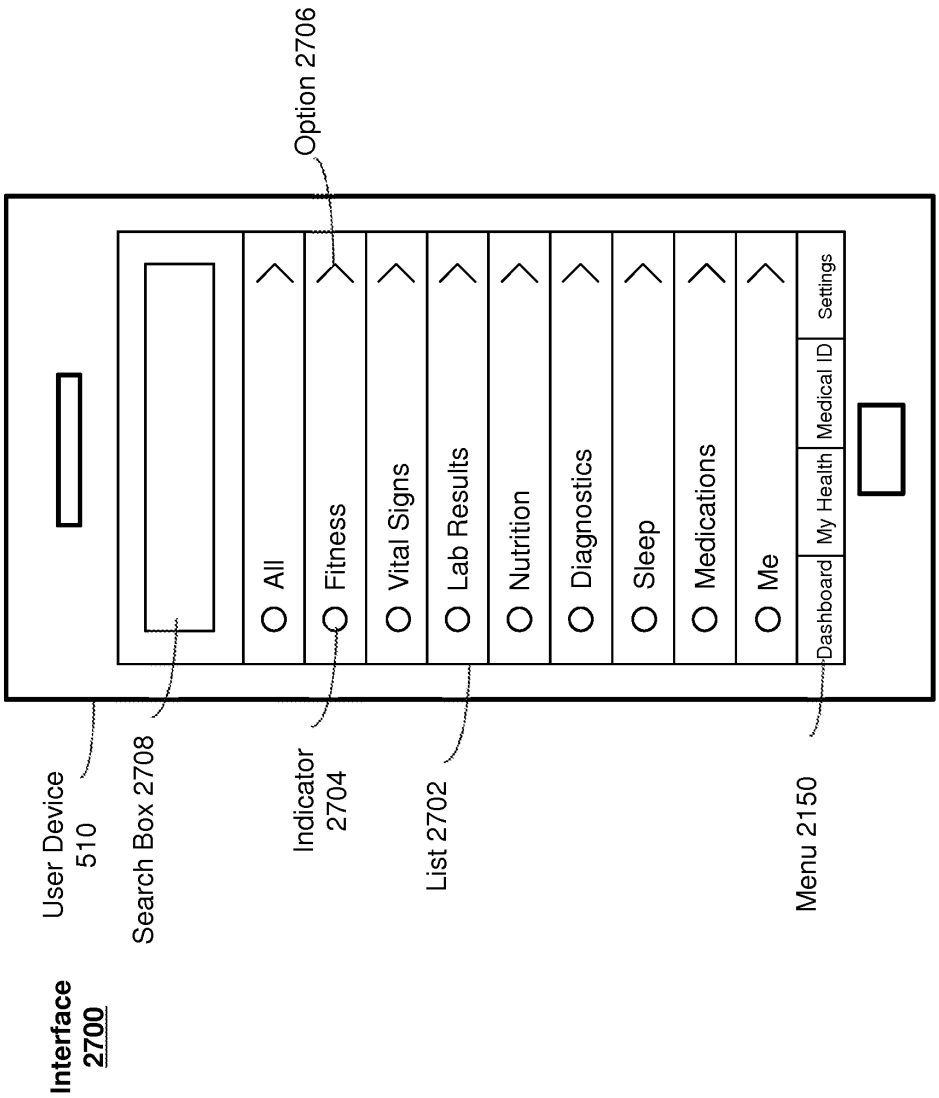

Interface 2700
User Device 510
Search Box 2708
Indicator 2704
Option 2706
List 2702
Menu 2150
All
Fitness
Vital Signs
Lab Results
Nutrition
Diagnostics
Sleep
Medications
Me
Dashboard
My Health
Medical ID
Settings

FIG. 27

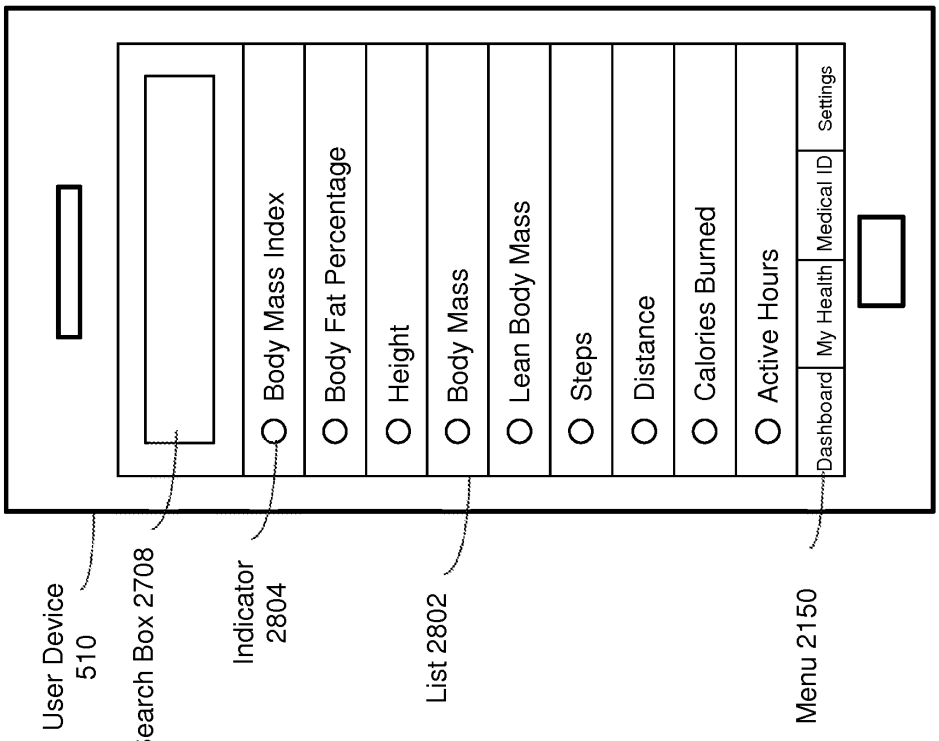

Interface
2800
User Device
510
Search Box 2708
Indicator
2804
List 2802
Menu 2150
Body Mass Index
Body Fat Percentage
Height
Body Mass
Lean Body Mass
Steps
Distance
Calories Burned
Active Hours
Dashboard
My Health
Medical ID
Settings

FIG. 28

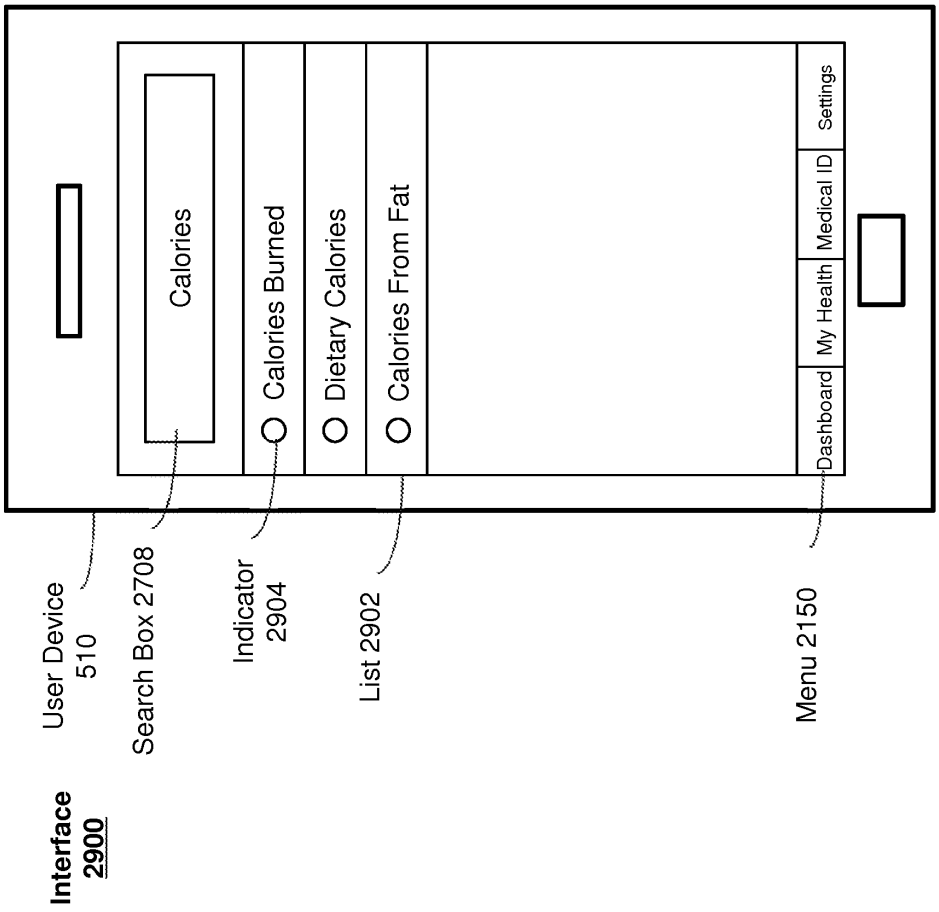

Interface
2900
User Device
510
Search Box 2708
Indicator
2904
List 2902
Menu 2150
Calories
Calories Burned
Dietary Calories
Calories From Fat
Dashboard
My Health
Medical ID
Settings

FIG. 29

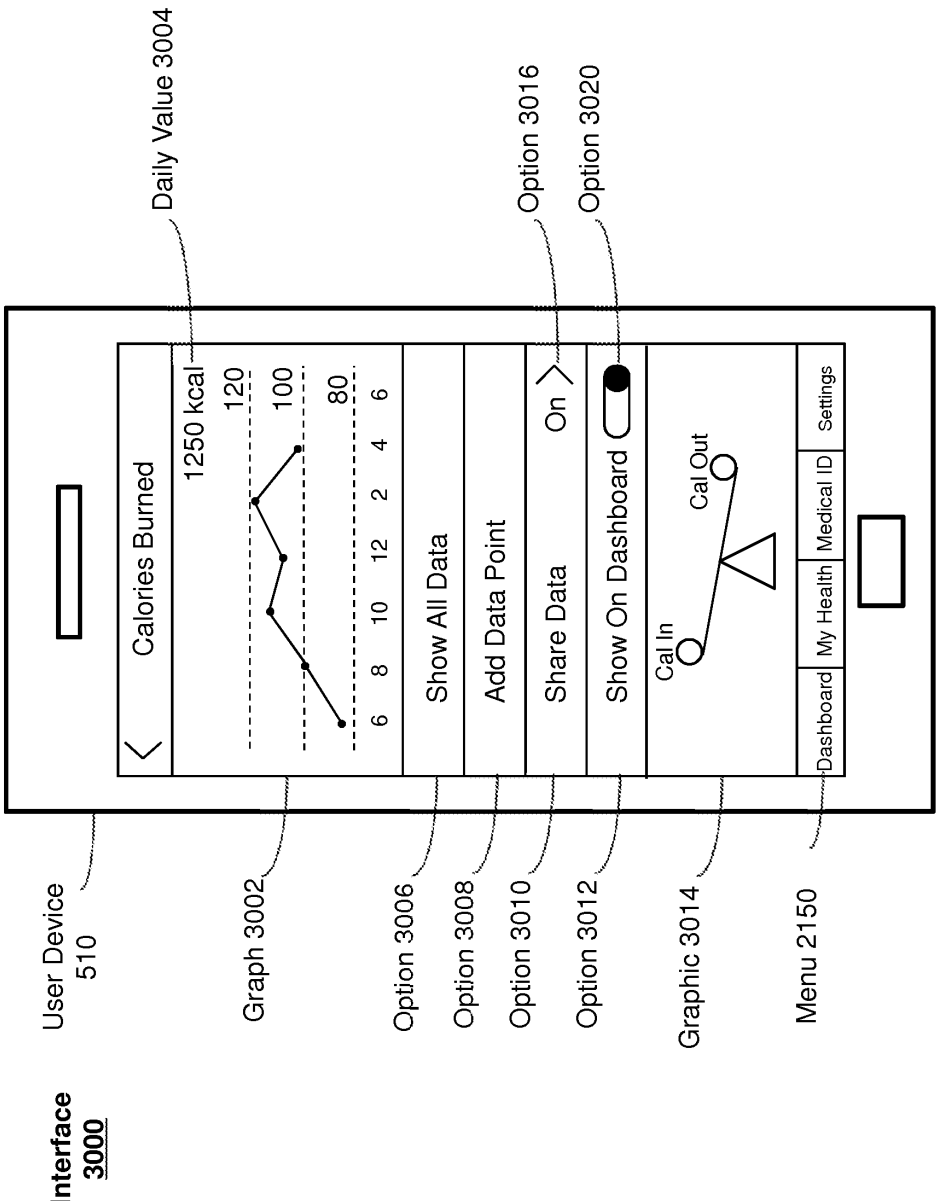

Interface 3000
User Device 510
Graph 3002
Option 3006
Option 3008
Option 3010
Option 3012
Graphic 3014
Menu 2150
Daily Value 3004
Option 3016
Option 3020
Calories Burned
1250 kcal
120
100
80
6 8 10 12 2 4 6
Show All Data
Add Data Point
Share Data
On
Show On Dashboard
Cal In
Cal Out
Dashboard
My Health
Medical ID
Settings

FIG. 30

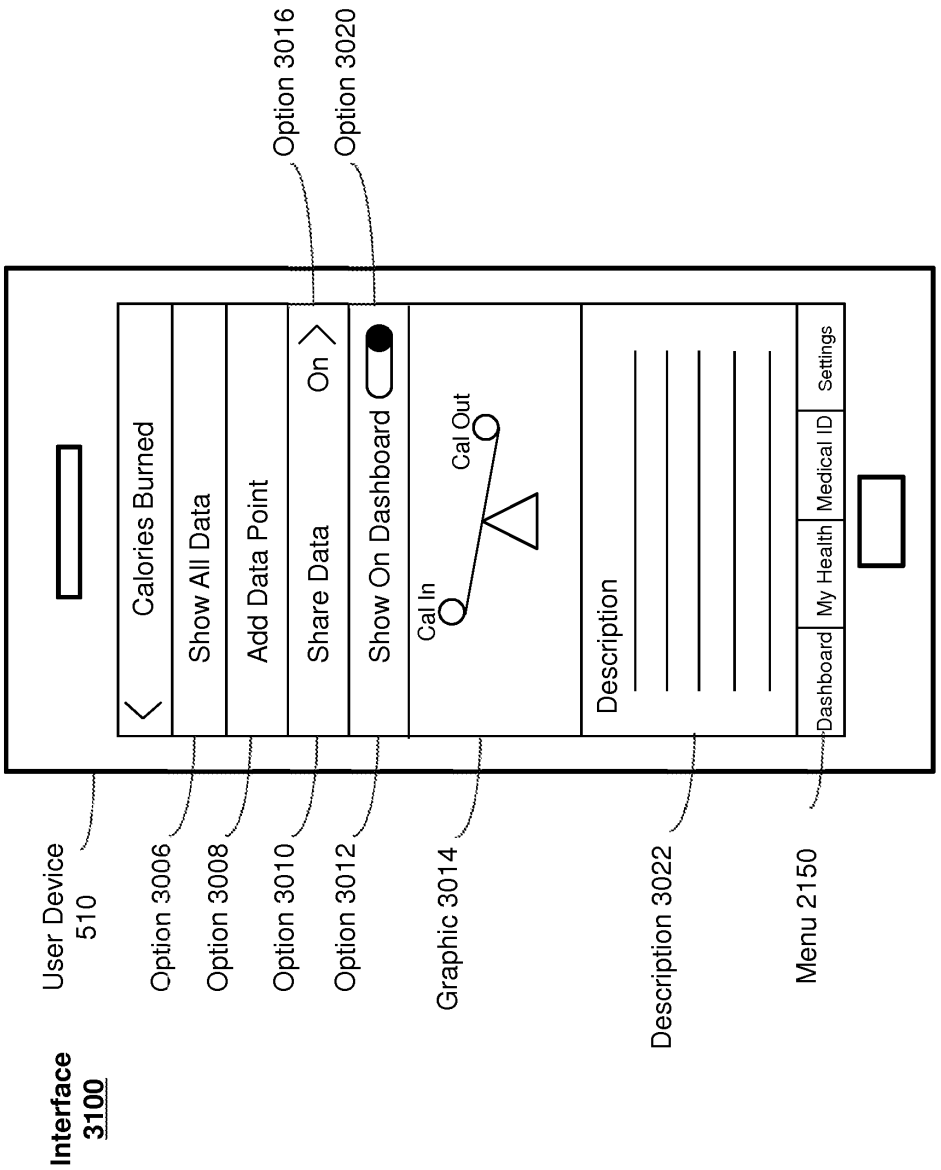

Option 3016
Option 3020
Calories Burned
Show All Data
Add Data Point
Share Data
On
Show On Dashboard
Cal In
Cal Out
Description
Dashboard
My Health
Medical ID
Settings
User Device 510
Option 3006
Option 3008
Option 3010
Option 3012
Graphic 3014
Description 3022
Menu 2150
Interface 3100

FIG. 31

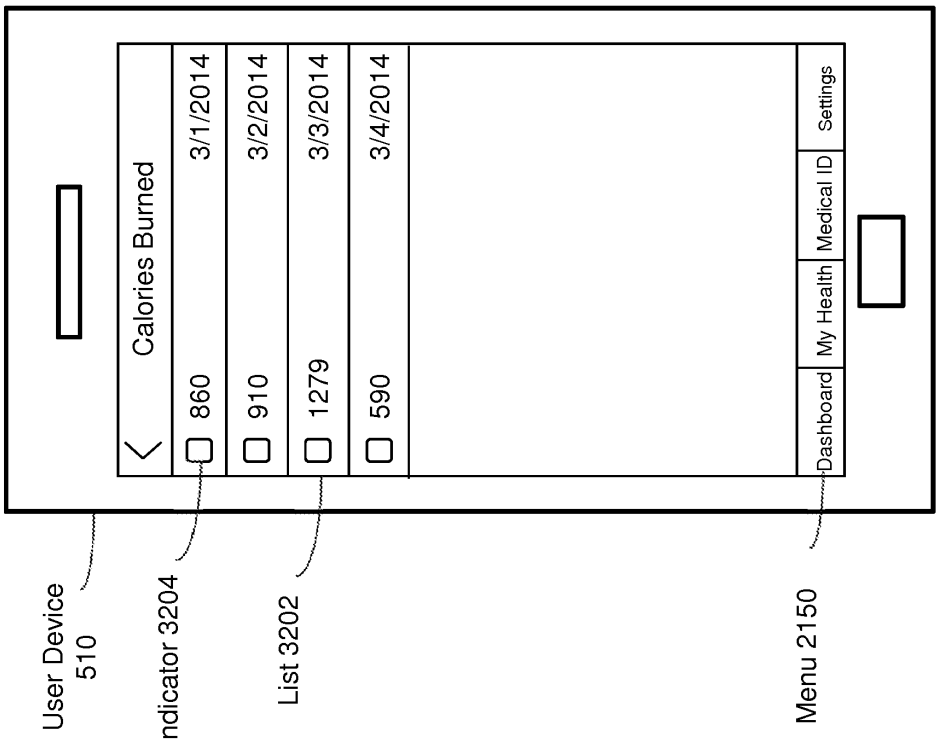

Interface
3200
User Device
510
Indicator 3204
List 3202
Menu 2150
Calories Burned
3/1/2014
860
3/2/2014
910
3/3/2014
1279
3/4/2014
590
Dashboard
My Health
Medical ID
Settings

FIG. 32

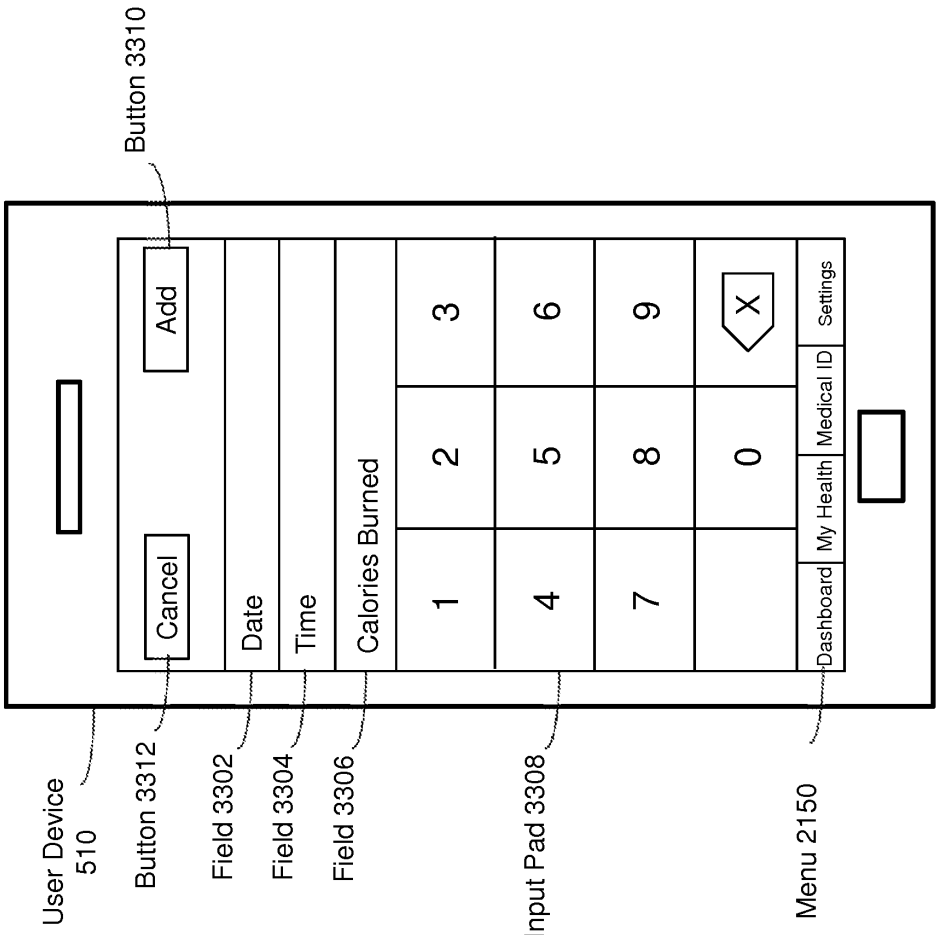

Interface 3300
User Device 510
Button 3312
Field 3302
Field 3304
Field 3306
Input Pad 3308
Menu 2150
Button 3310
Cancel
Add
Date
Time
Calories Burned
1
2
3
4
5
6
7
8
9
0
X
Dashboard
My Health
Medical ID
Settings

FIG. 33

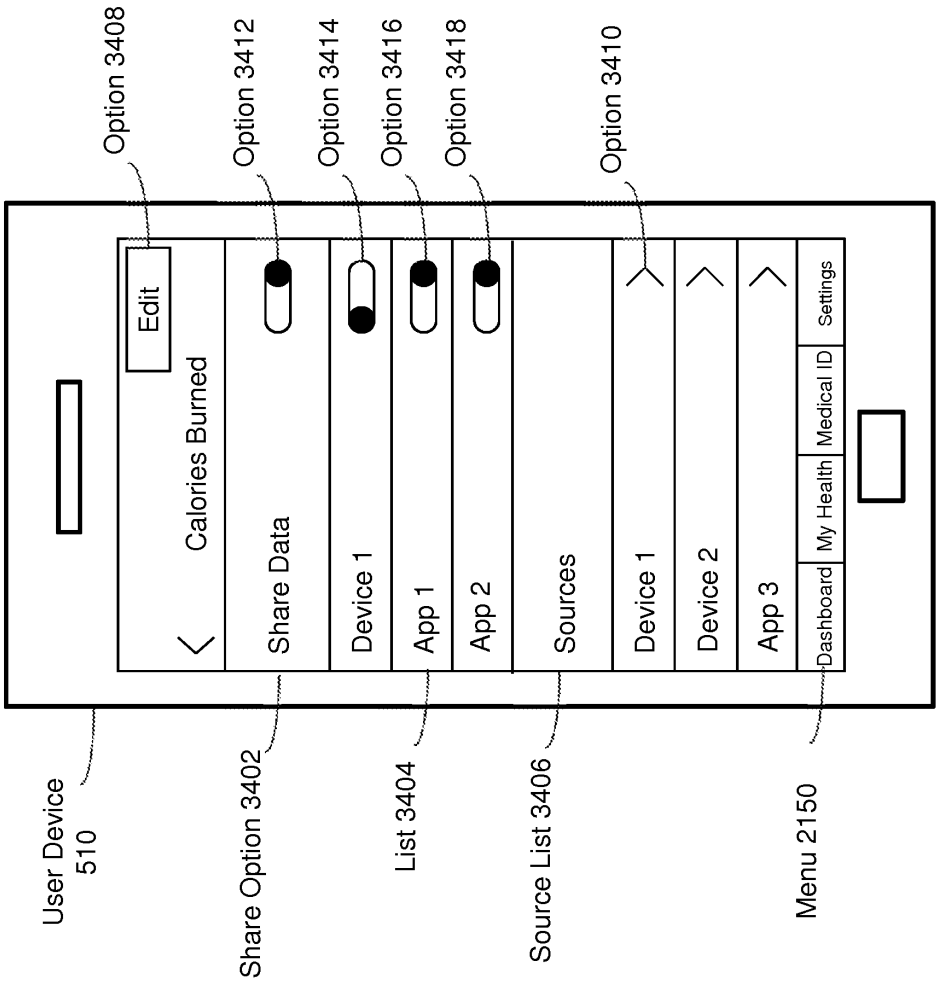

Option 3408
Option 3412
Option 3414
Option 3416
Option 3418
Option 3410
Edit
Calories Burned
Share Data
Device 1
App 1
App 2
Sources
Device 1
Device 2
App 3
Dashboard
My Health
Medical ID
Settings
User Device 510
Share Option 3402
List 3404
Source List 3406
Menu 2150
Interface 3400

FIG. 34

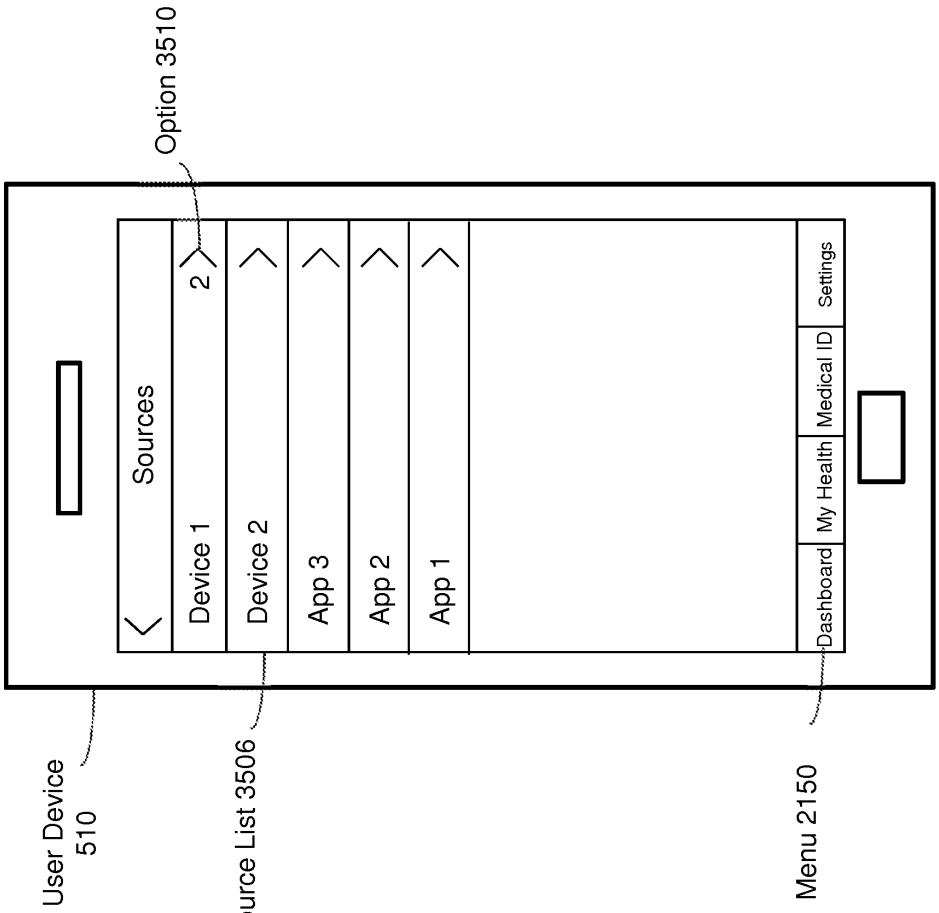

Option 3510
Sources
Device 1
2
Device 2
App 3
App 2
App 1
Dashboard
My Health
Medical ID
Settings
User Device 510
Source List 3506
Menu 2150
Interface 3500

FIG. 35

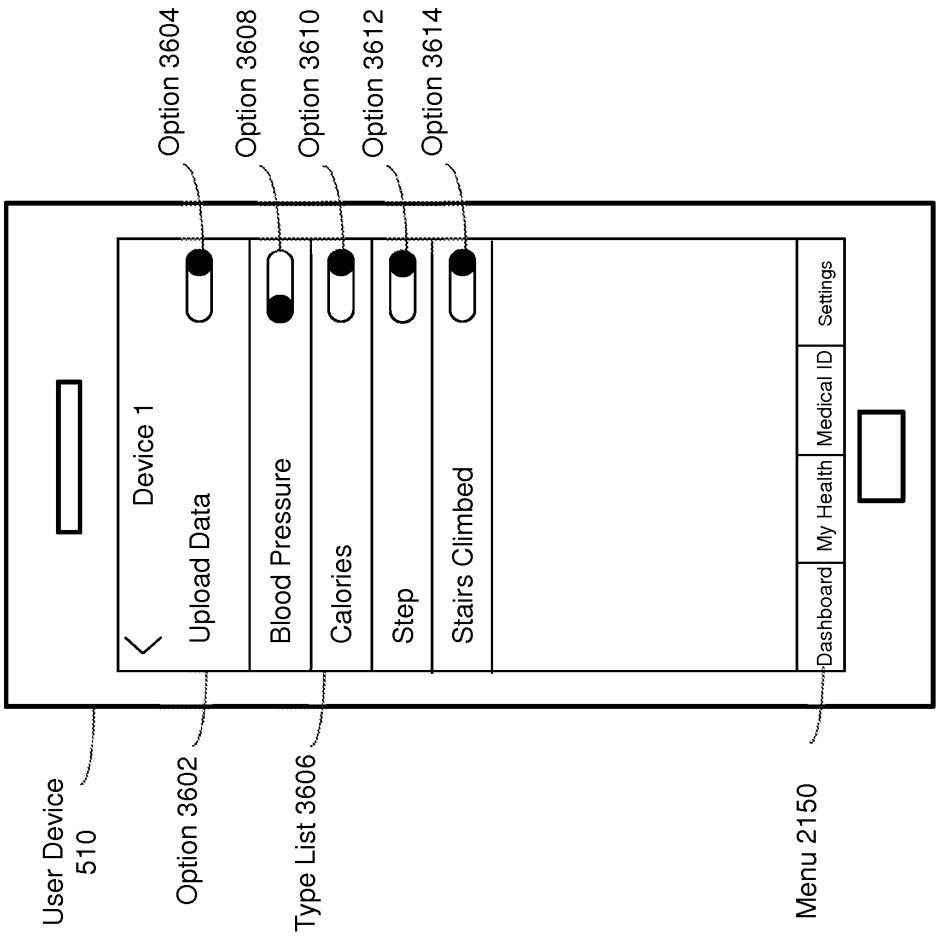

Option 3604
Option 3608
Option 3610
Option 3612
Option 3614
Device 1
Upload Data
Blood Pressure
Calories
Step
Stairs Climbed
Dashboard
My Health
Medical ID
Settings
User Device 510
Option 3602
Data Type List 3606
Menu 2150
Interface 3600

FIG. 36

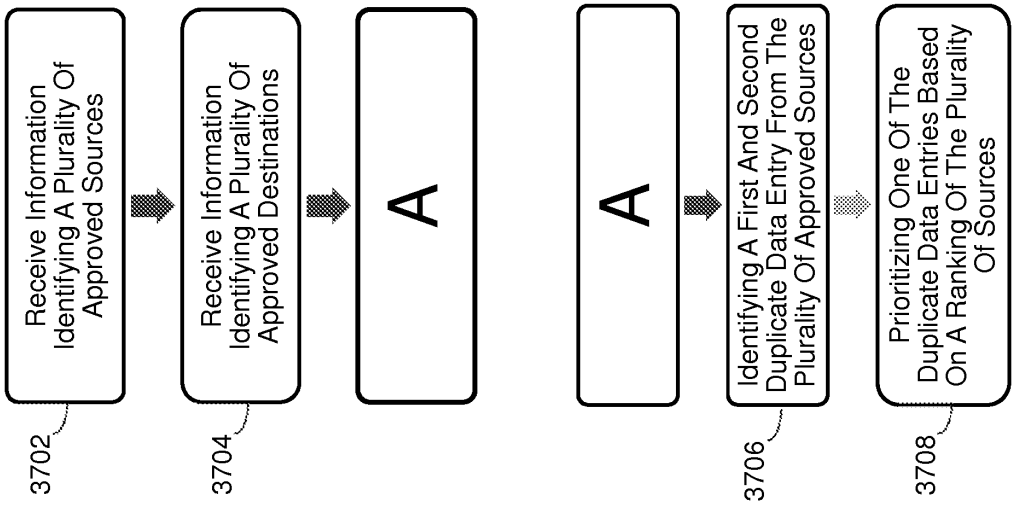

Process
3700
Receive Information Identifying A Plurality Of Approved Sources
3702
Receive Information Identifying A Plurality Of Approved Destinations
3704
A
A
Identifying A First And Second Duplicate Data Entry From The Plurality Of Approved Sources
3706
Prioritizing One Of The Duplicate Data Entries Based On A Ranking Of The Plurality Of Sources
3708

FIG. 37A

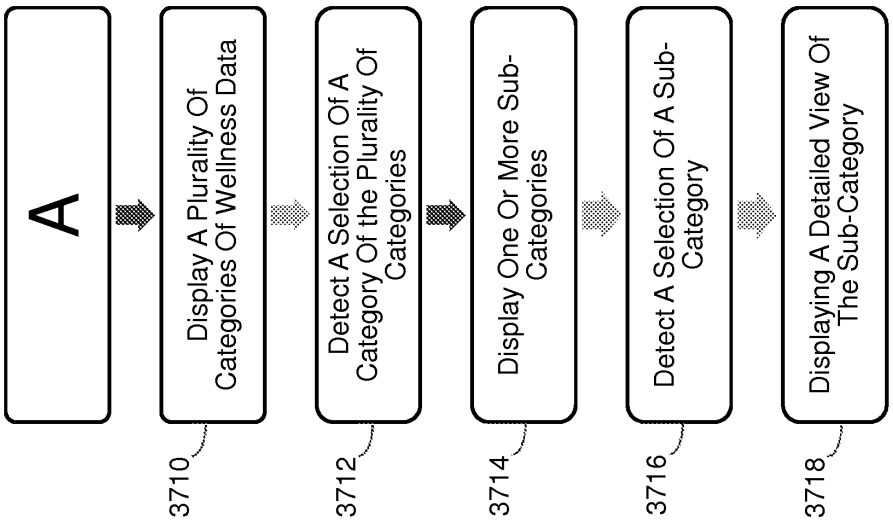

Process
3700
A
Display A Plurality Of Categories Of Wellness Data
3710
Detect A Selection Of A Category Of the Plurality Of Categories
3712
Display One Or More Sub-Categories
3714
Detect A Selection Of A Sub-Category
3716
Displaying A Detailed View Of The Sub-Category
3718

FIG. 37B

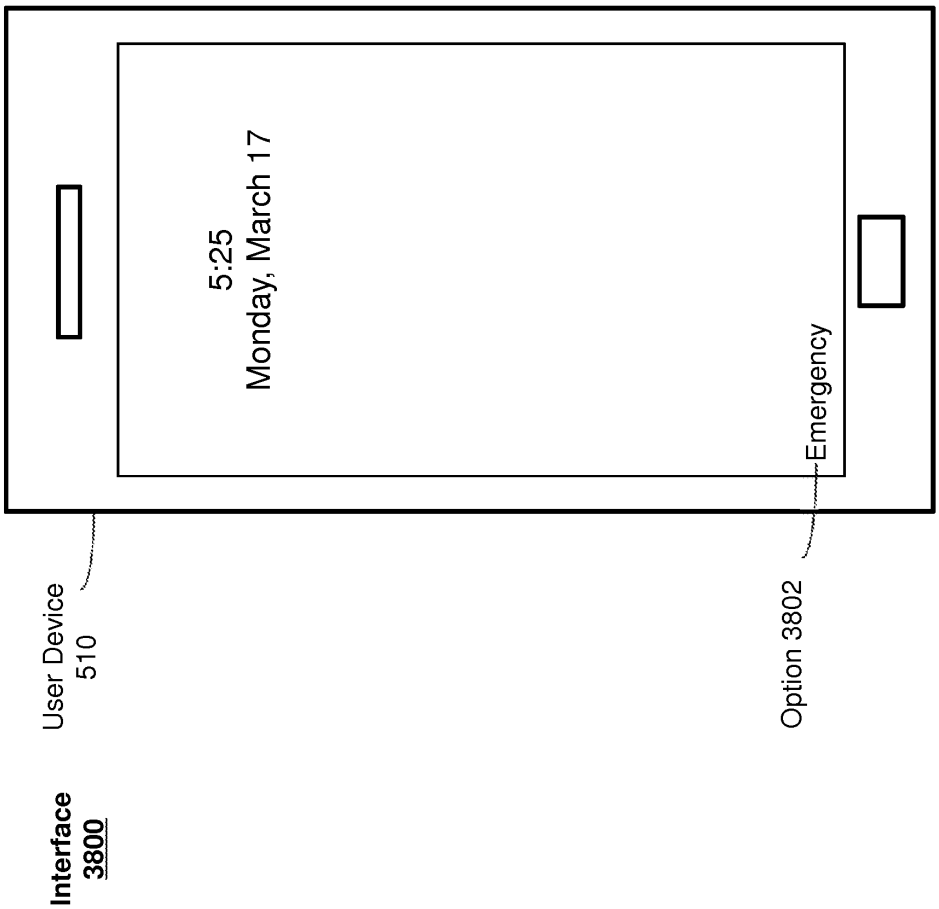

5:25
Monday, March 17
Emergency
User Device
510
Option 3802
Interface
3800

FIG. 38

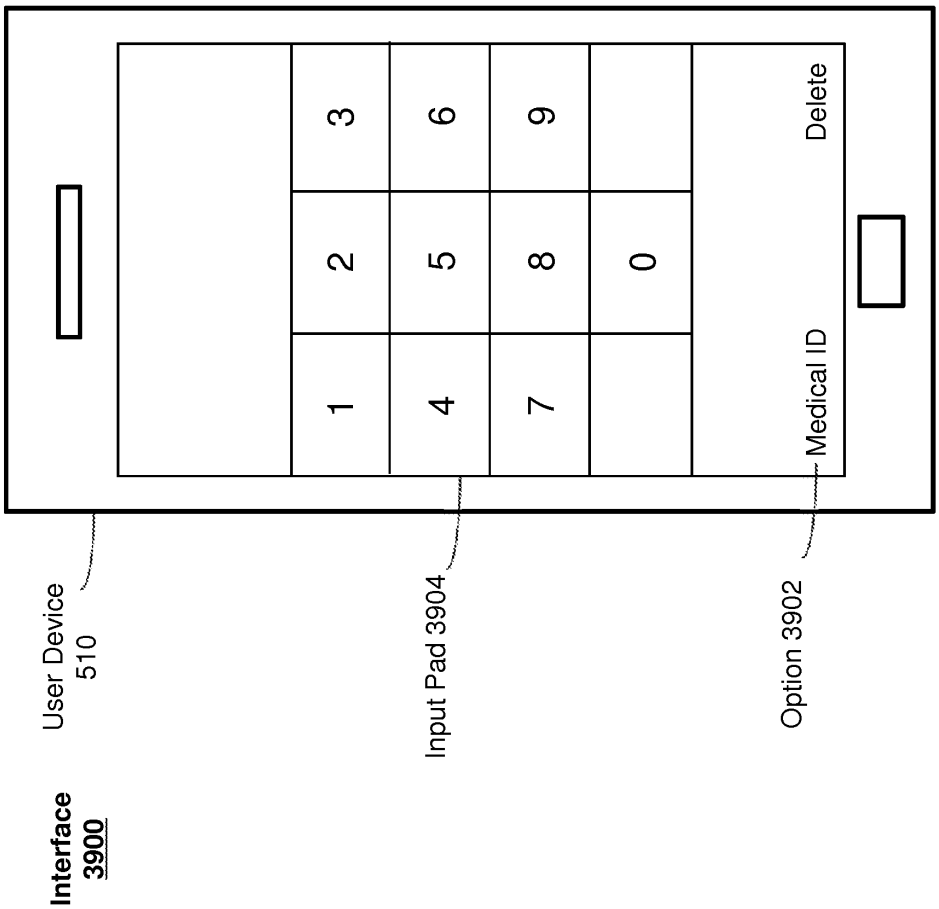

Interface
3900
User Device
510
Input Pad 3904
Option 3902
1
2
3
4
5
6
7
8
9
0
Medical ID
Delete

FIG. 39

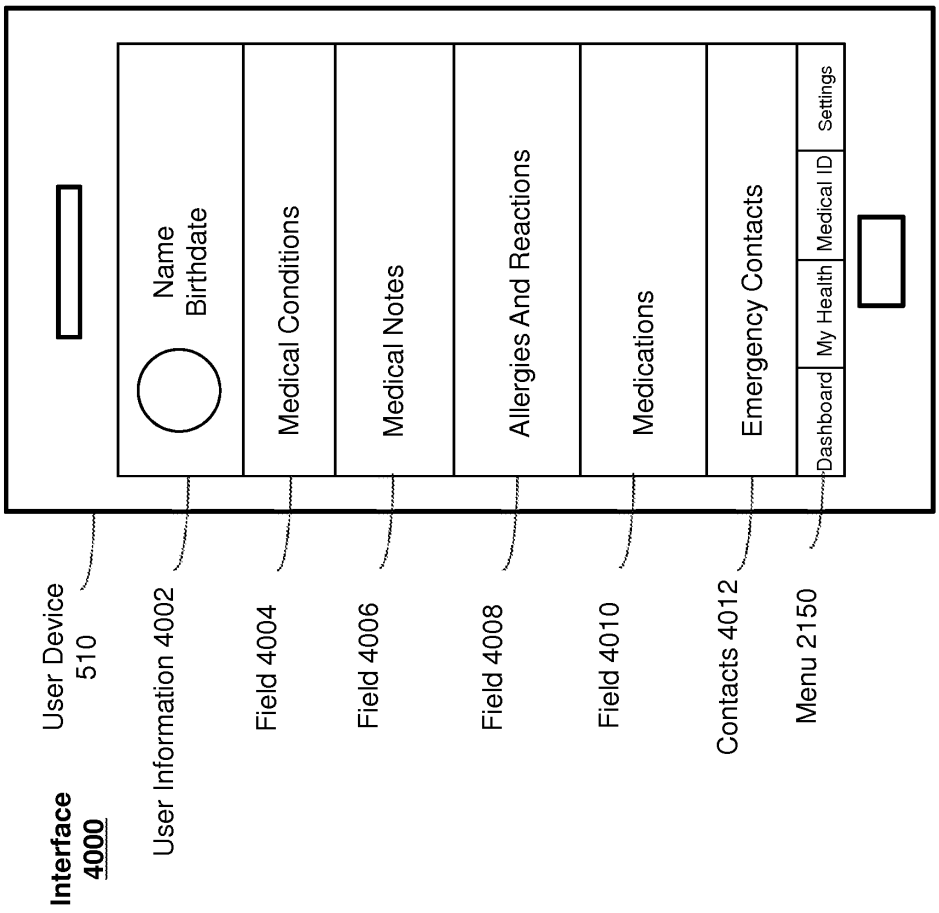

Interface 4000
User Device 510
User Information 4002
Field 4004
Field 4006
Field 4008
Field 4010
Contacts 4012
Menu 2150
Name
Birthdate
Medical Conditions
Medical Notes
Allergies And Reactions
Medications
Emergency Contacts
Dashboard
My Health
Medical ID
Settings

FIG. 40

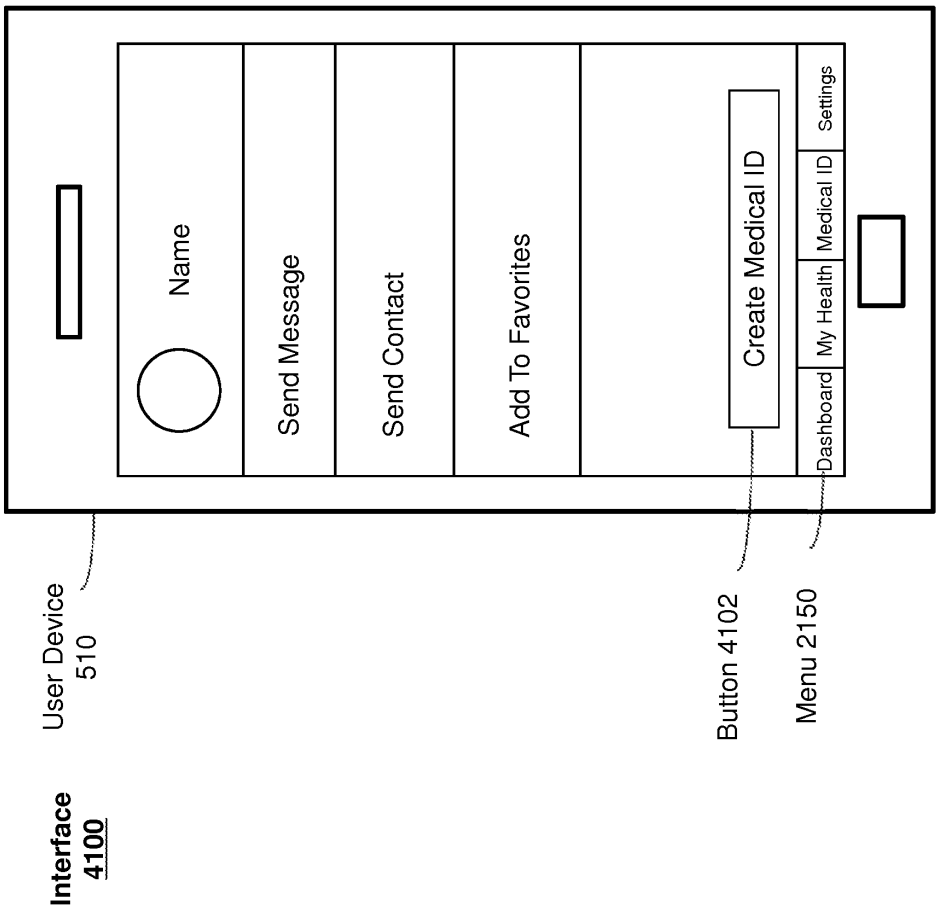

Interface
4100
User Device
510
Name
Send Message
Send Contact
Add To Favorites
Create Medical ID
Button 4102
Dashboard
My Health
Medical ID
Settings
Menu 2150

FIG. 41

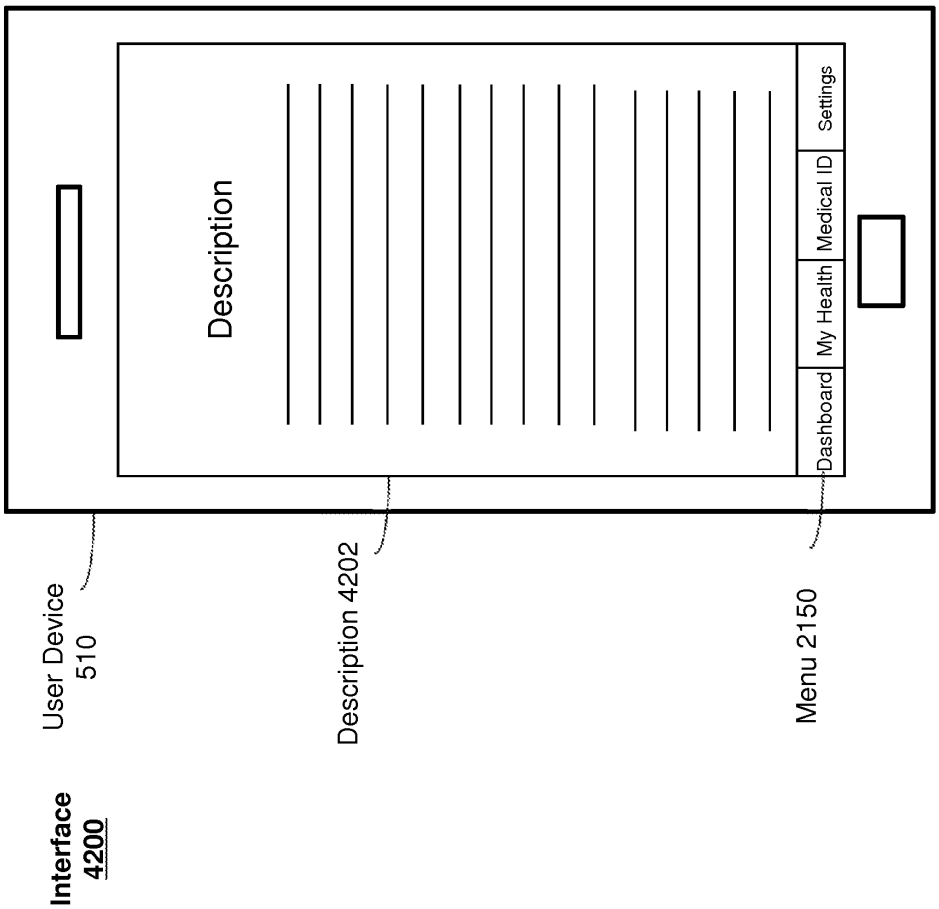

Description
Dashboard
My Health
Medical ID
Settings
User Device
510
Description 4202
Menu 2150
Interface
4200

FIG. 42

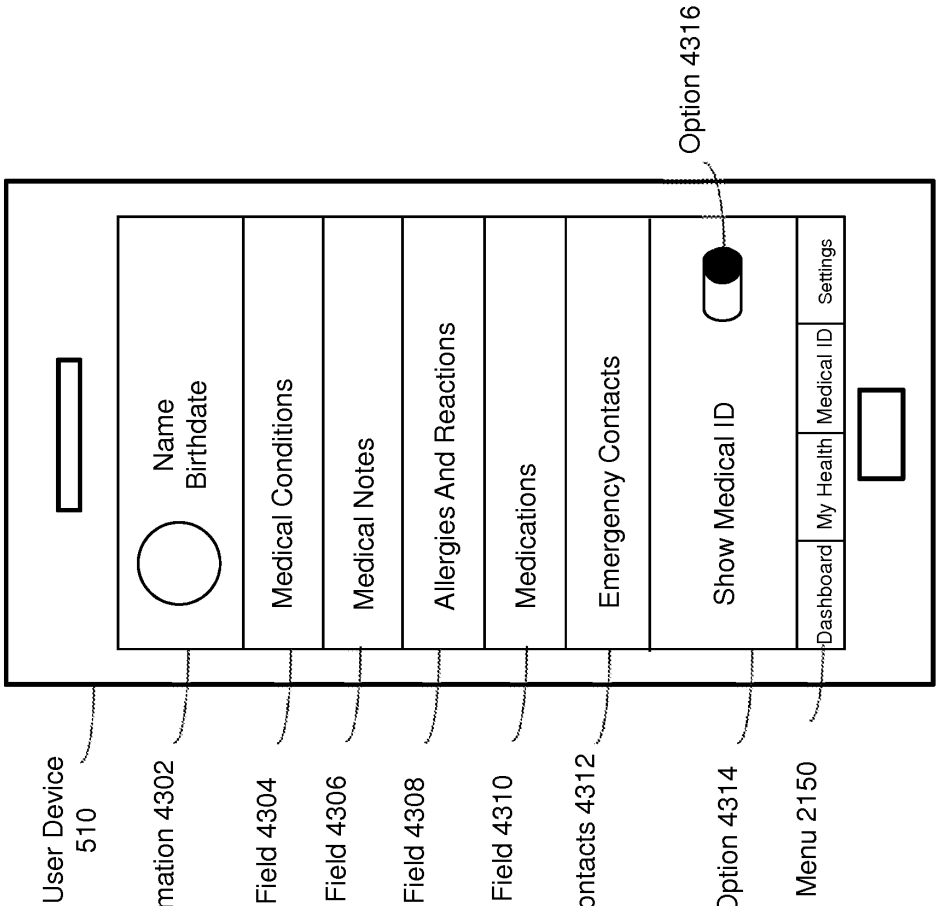

Interface 4300
User Device 510
User Information 4302
Field 4304
Field 4306
Field 4308
Field 4310
Contacts 4312
Option 4314
Menu 2150
Option 4316
Name
Birthdate
Medical Conditions
Medical Notes
Allergies And Reactions
Medications
Emergency Contacts
Show Medical ID
Dashboard
My Health
Medical ID
Settings

FIG. 43

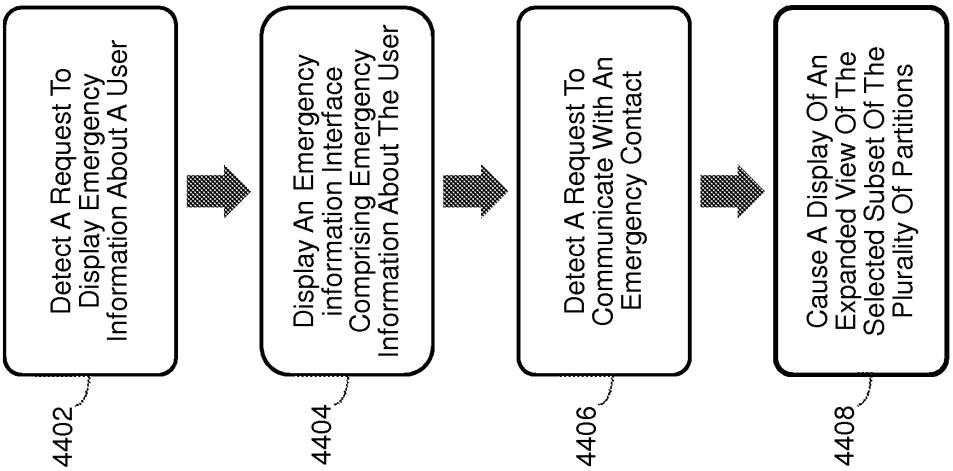

Process
4400
Detect A Request To Display Emergency Information About A User
4402
Display An Emergency information Interface Comprising Emergency Information About The User
4404
Detect A Request To Communicate With An Emergency Contact
4406
Cause A Display Of An Expanded View Of The Selected Subset Of The Plurality Of Partitions
4408

FIG. 44

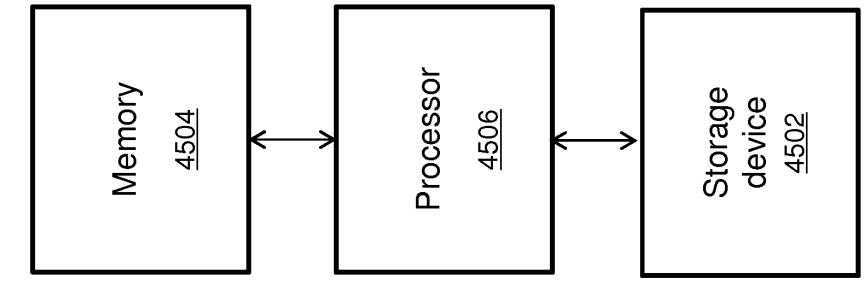

Memory
4504
Processor
4506
Storage device
4502
System
4500

FIG. 45

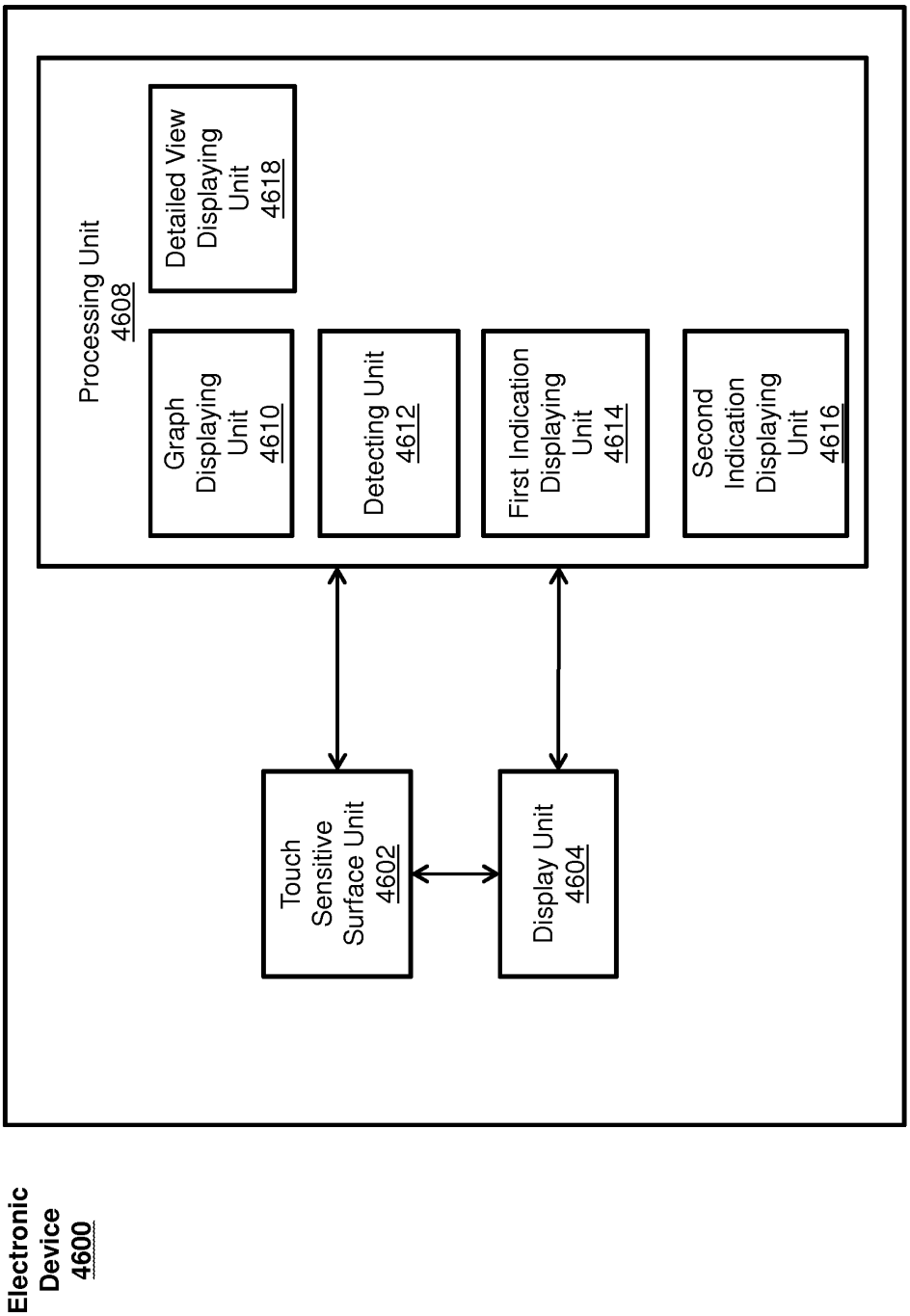

Electronic Device 4600
Processing Unit 4608
Detailed View Displaying Unit 4618
Graph Displaying Unit 4610
Detecting Unit 4612
First Indication Displaying Unit 4614
Second Indication Displaying Unit 4616
Touch Sensitive Surface Unit 4602
Display Unit 4604

FIG. 46

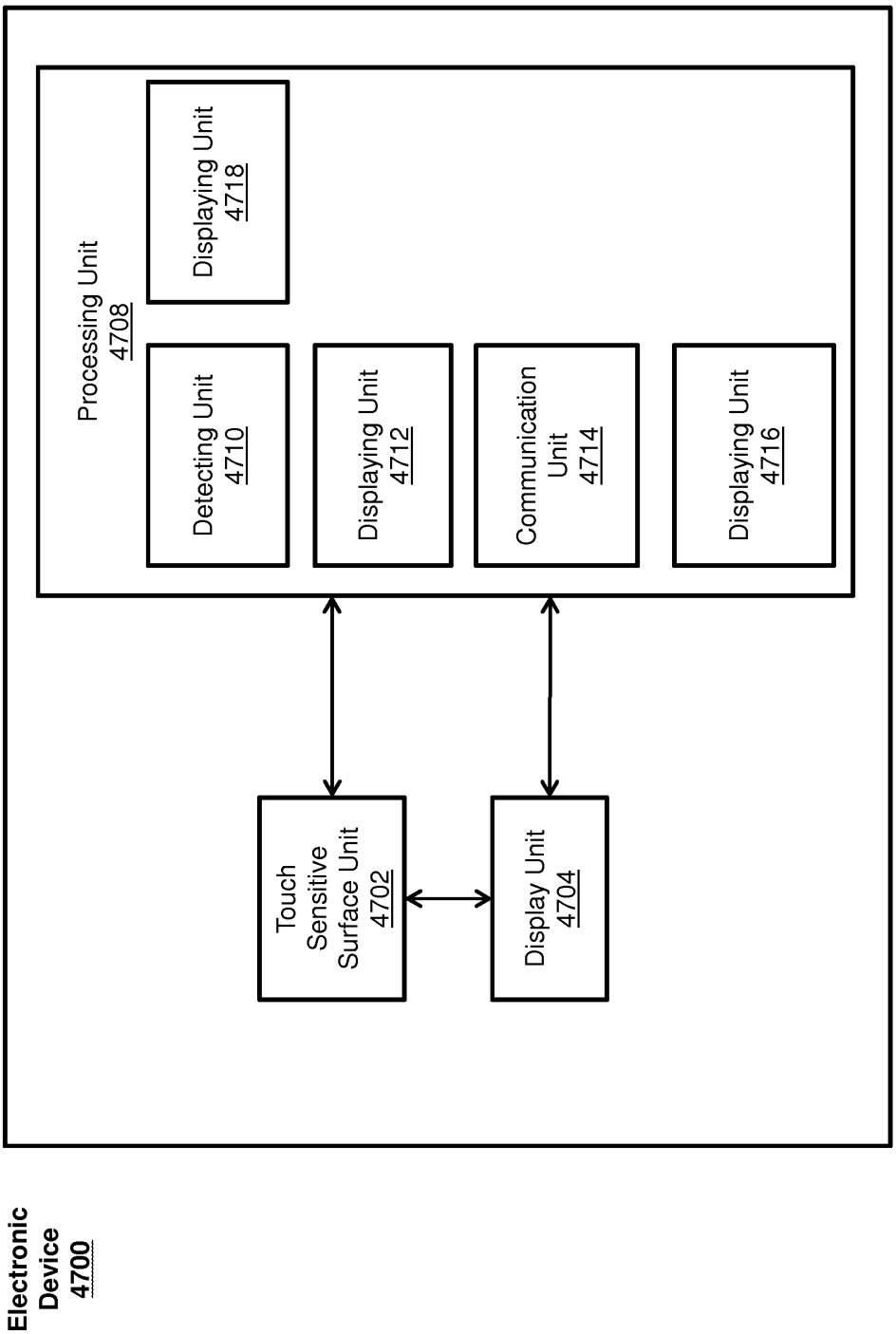

Electronic Device 4700
Processing Unit 4708
Displaying Unit 4718
Detecting Unit 4710
Displaying Unit 4712
Communication Unit 4714
Displaying Unit 4716
Touch Sensitive Surface Unit 4702
Display Unit 4704

FIG. 47

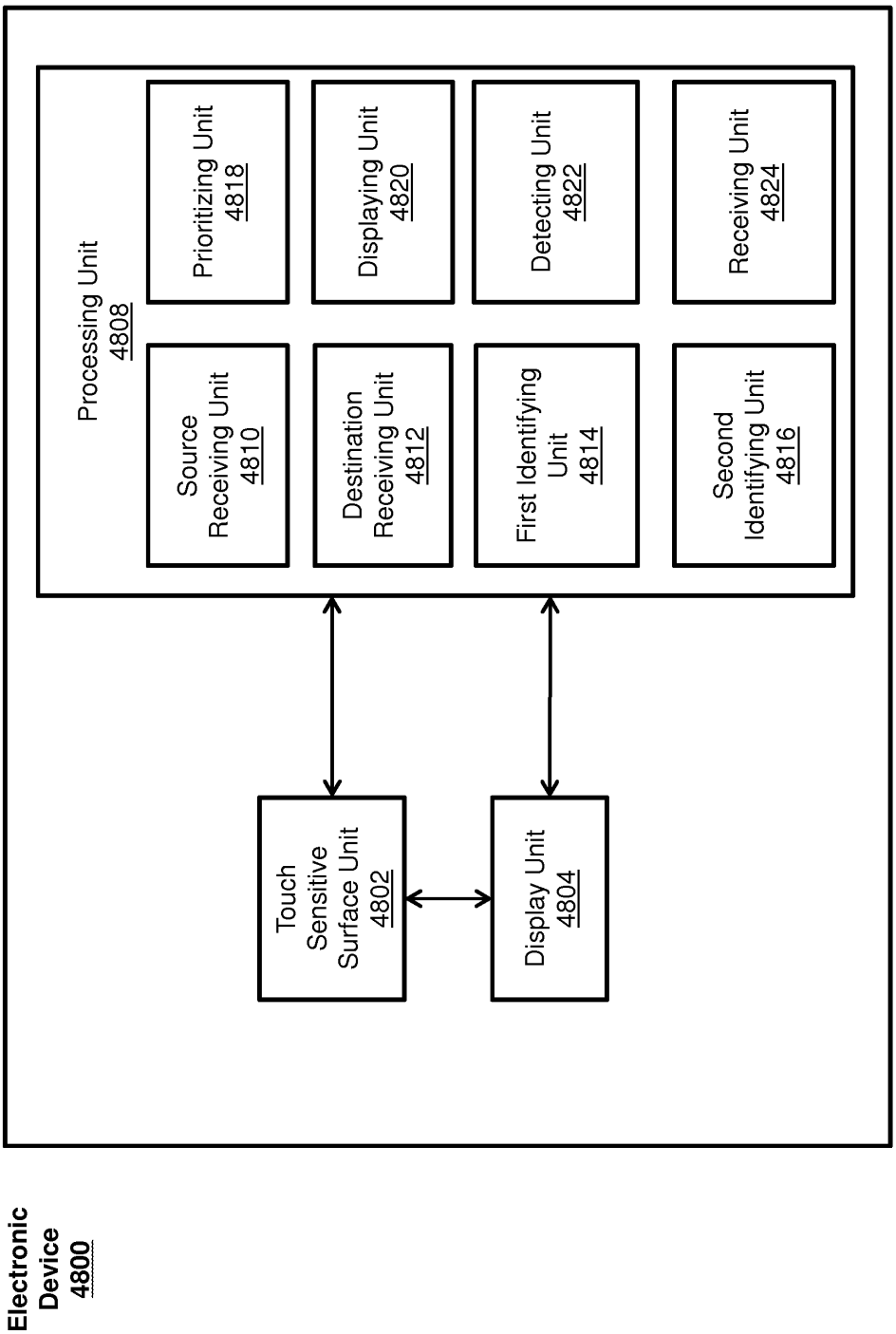

Electronic Device 4800
Processing Unit 4808
Prioritizing Unit 4818
Displaying Unit 4820
Detecting Unit 4822
Receiving Unit 4824
Source Receiving Unit 4810
Destination Receiving Unit 4812
First Identifying Unit 4814
Second Identifying Unit 4816
Touch Sensitive Surface Unit 4802
Display Unit 4804

FIG. 48

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

PTO/AIA/82B (07-12)
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# POWER OF ATTORNEY BY APPLICANT

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

[X] I hereby appoint 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 equivalent): 119082

**OR**

[ ] I hereby appoint Practitioner(s) named below 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 equivalent):

| Name | Registration Number | Name | Registration Number |
|---|---|---|---|
| | | | |

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

[X] The address associated with the above-mentioned Customer Number:

**OR**

[ ] The address associated with Customer Number: 119082

**OR**

| | | | | | |
|---|---|---|---|---|---|
| [ ] Firm or Individual Name | | | | | |
| Address | | | | | |
| City | | State | | Zip | |
| Country | | | | | |
| Telephone | | Email | | | |

I am the Applicant:

[ ] Inventor or Joint Inventor

[ ] Legal Representative of a Deceased or Legally Incapacitated Inventor

[X] Assignee or Person to Whom the Inventor is Under an Obligation to Assign

[ ] Person Who Otherwise Shows a 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)

**SIGNATURE of Applicant for Patent**

| | | | |
|---|---|---|---|
| Signature | | Date | 10/31/13 |
| Name | BJ Watrous | Telephone | 408-974-0015 |
| Title and Company | Vice President and Chief IP Counsel, Apple Inc. | | |

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. Submit multiple forms if more than one signature, see below *.

[ ] *Total of _____ forms are submitted.

la-1227015

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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 106842130031 (P23397US3) |
|---|---|---|
| | Application Number | |
| Title of Invention | WELLNESS AGGREGATOR | |

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 |
|---|---|---|---|---|
| | Christopher | D. | SOLI | |

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

| City | Mountain View | State/Province | CA | Country of Residence | US |
|---|---|---|---|---|---|

**Mailing Address of Inventor:**

| Address 1 | c/o Apple Inc. | | |
|---|---|---|---|
| Address 2 | 1 Infinite Loop | | |
| City | Cupertino | State/Province | CA |
| Postal Code | 95014 | Country | US |

**Inventor 2** Remove

**Legal Name**

| Prefix | Given Name | Middle Name | Family Name | Suffix |
|---|---|---|---|---|
| | Lawrence | Y. | YANG | |

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

| City | San Francisco | State/Province | CA | Country of Residence | US |
|---|---|---|---|---|---|

**Mailing Address of Inventor:**

| Address 1 | c/o Apple Inc. | | |
|---|---|---|---|
| Address 2 | 1 Infinite Loop | | |
| City | Cupertino | State/Province | CA |
| Postal Code | 95014 | Country | US |

**Inventor 3** Remove

**Legal Name**

| Prefix | Given Name | Middle Name | Family Name | Suffix |
|---|---|---|---|---|
| | Dennis | S. | PARK | |

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

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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 106842130031 (P23397US3) |
|---|---|---|
| | Application Number | |
| Title of Invention | WELLNESS AGGREGATOR | |

| City | San Francisco | State/Province | CA | Country of Residence | US |
|---|---|---|---|---|---|

**Mailing Address of Inventor:**

| Address 1 | c/o Apple Inc. | | |
|---|---|---|---|
| Address 2 | 1 Infinite Loop | | |
| City | Cupertino | State/Province | CA |
| Postal Code | 95014 | Country | US |

**Inventor 4** Remove

**Legal Name**

| Prefix | Given Name | Middle Name | Family Name | Suffix |
|---|---|---|---|---|
| | Stephen | O. | LEMAY | |

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

| City | Palo Alto | State/Province | CA | Country of Residence | US |
|---|---|---|---|---|---|

**Mailing Address of Inventor:**

| Address 1 | c/o Apple Inc. | | |
|---|---|---|---|
| Address 2 | 1 Infinite Loop | | |
| City | Cupertino | State/Province | CA |
| Postal Code | 95014 | Country | US |

**Inventor 5** Remove

**Legal Name**

| Prefix | Given Name | Middle Name | Family Name | Suffix |
|---|---|---|---|---|
| | Daniel | S. | KEEN | |

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

| City | San Jose | State/Province | CA | Country of Residence | US |
|---|---|---|---|---|---|

**Mailing Address of Inventor:**

| Address 1 | c/o Apple Inc. | | |
|---|---|---|---|
| Address 2 | 1 Infinite Loop | | |
| City | Cupertino | State/Province | CA |
| Postal Code | 95014 | Country | 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.**



**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2705 of 2716**

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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 106842130031 (P23397US3) |
|---|---|---|
| | Application Number | |
| Title of Invention | WELLNESS AGGREGATOR | |

| Customer Number | 119082 | | |
|---|---|---|---|
| Email Address | patentdocket@mofo.com | Add Email | Remove Email |

## Application Information:

| Title of the Invention | WELLNESS AGGREGATOR | | |
|---|---|---|---|
| Attorney Docket Number | 106842130031 (P23397US3) | Small Entity Status Claimed | ☐ |
| Application Type | Nonprovisional | | |
| Subject Matter | Utility | | |
| Total Number of Drawing Sheets (if any) | 51 | 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 | 119082 | | |

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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 106842130031 (P23397US3) |
|---|---|---|
| | Application Number | |
| Title of Invention | WELLNESS AGGREGATOR | |

## 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) |
| | Claims benefit of provisional | 62006032 | 2014-05-30 |

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.

## 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.

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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | 106842130031 (P23397US3) |
|---|---|---|
| | Application Number | |
| Title of Invention | WELLNESS AGGREGATOR | |

## 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.

**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 | Apple Inc. |
|---|---|

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|---|---|---|
| | Application Number | |
| Title of Invention | WELLNESS AGGREGATOR | |

| Mailing Address Information For Applicant: | | | |
|---|---|---|---|
| **Address 1** | 1 Infinite Loop | | |
| Address 2 | | | |
| **City** | Cupertino | **State/Province** | CA |
| **Country** i | US | Postal Code | 95014 |
| 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. ☐

| Prefix | **Given Name** | Middle Name | **Family Name** | Suffix |
|---|---|---|---|---|
| | | | | |

| Mailing Address Information For Assignee including Non-Applicant Assignee: | | | |
|---|---|---|---|
| **Address 1** | | | |
| Address 2 | | | |
| **City** | | **State/Province** | |
| **Country** i | | Postal Code | |
| Phone Number | | Fax Number | |
| Email Address | | | |

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

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| **Application Data Sheet 37 CFR 1.76** | Attorney Docket Number | 106842130031 (P23397US3) |
|---|---|---|
| | Application Number | |
| Title of Invention | WELLNESS AGGREGATOR | |

## 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** | /Brian B. Ho/ | | | Date (YYYY-MM-DD) | 2015-01-16 |
| First Name | Brian | Last Name | Ho | Registration Number | 60199 |
| 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.**

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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.

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**AliveCor Exhibit 1002**
**AliveCor, Inc. v. Apple Inc.**
**IPR2023-01434, U.S. Patent No. 10,270,898**
**2711 of 2716**

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | |
| **Filing Date:** | |
| **Title of Invention:** | WELLNESS AGGREGATOR |
| **First Named Inventor/Applicant Name:** | Christopher D. SOLI |
| **Filer:** | Brian B. Ho/Alexis Perry |
| **Attorney Docket Number:** | 106842130031 (P23397US3) |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| 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:** | | | | |
| Utility Appl Size fee per 50 sheets >100 | 1081 | 1 | 400 | 400 |
| **Claims:** | | | | |
| Claims in Excess of 20 | 1202 | 9 | 80 | 720 |
| **Miscellaneous-Filing:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| Late Filing Fee for Oath or Declaration | 1051 | 1 | 140 | 140 |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |
| **Miscellaneous:** | | | | |
| | | **Total in USD ($)** | | **2860** |

| Electronic Acknowledgement Receipt | |
|---|---|
| **EFS ID:** | 21229324 |
| **Application Number:** | 14599424 |
| **International Application Number:** | |
| **Confirmation Number:** | 3136 |
| **Title of Invention:** | WELLNESS AGGREGATOR |
| **First Named Inventor/Applicant Name:** | Christopher D. SOLI |
| **Customer Number:** | 119082 |
| **Filer:** | Brian B. Ho/Alexis Perry |
| **Filer Authorized By:** | Brian B. Ho |
| **Attorney Docket Number:** | 106842130031 (P23397US3) |
| **Receipt Date:** | 16-JAN-2015 |
| **Filing Date:** | |
| **Time Stamp:** | 21:12:47 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | Deposit Account |
| Payment was successfully received in RAM | $2860 |
| RAM confirmation Number | 6231 |
| Deposit Account | 031952 |
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| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:<br>Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)<br>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 | Transmittal of New Application | 106842130031_TRANS.pdf | 33736<br>a5bfc7febb749f141df51d9cdb90759f911fe17d | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | | 106842130031_SPEC.pdf | 563611<br>f014b4b6b2764d744788ac9a99557d8a950e95a3 | yes | 122 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Specification | 1 | 115 |
| | Claims | 116 | 121 |
| | Abstract | 122 | 122 |

| | | | | | |
|---|---|---|---|---|---|
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Drawings-only black and white line drawings | 106842130031_FIGS.pdf | 2976406<br>a399a364b24abab6426dc6b9fcb1efef29f1d9bd | no | 51 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Power of Attorney | 106842130031_POA.pdf | 236640<br>f3b4972cd44c3685f7b4560500a2fbec80a11769 | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 5 | Application Data Sheet | 106842130031_ADS.pdf | 106501<br>16cc4ce538a17aae9e214658f5fc8982ea71b8f6 | no | 8 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| This is not an USPTO supplied ADS fillable form | | | | | |

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|---|---|---|---|---|---|
| 6 | Fee Worksheet (SB06) | fee-info.pdf | 40382<br>2241c565bc14da47893fef47a4f31f4b13cc9609 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 3957276 | | |

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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.**