Apple Inc. v. Samsung Electronics Co. Ltd. et al Doc. 560

EXHIBIT 2.01

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May 09, 2011

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APPLICATION NUMBER: *11/956,969*
FILING DATE: *December 14, 2007*
PATENT NUMBER: *7,469,381*
ISSUE DATE: *December 23, 2008*

By Authority of the
Under Secretary of Commerce for Intellectual Property
and Director of the United States Patent and Trademark Office

M. Tarver

M. TARVER
Certifying Officer

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR § 1.53(b))

Attorney Docket No.	P4304US1/63266-5054-US
First Inventor	Bas Ording
Title	List Scrolling and Document Translation, Scaling, and Rotation on a Touch-Screen Display
Electronically filed	December 14, 2007

APPLICATION ELEMENTS

See MPEP Chapter 600 concerning utility patent application contents.

1. ☐ Fee Transmittal Form *(with duplicate for fee processing)*
2. ☐ Applicant claims Small Entity status, see 37 C.F.R. § 1.27
3. ☒ Specification [Total Pages 59]
4. ☒ Drawing(s) *(35 USC § 113)* [Total Sheets 38]
5. ☒ Oath or Declaration [Total Pages 2]
   a. ☒ Newly executed *(original or copy)*
   b. ☐ Copy from a prior application *(37 CFR § 1.63(d))*
   (for con/div with Box 18 completed)
   ☐ Deletion of Inventor(s)
   Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR §§ 1.63(d)(2) and 1.33(b).
6. ☒ Application Data Sheet, see 37 C.F.R. § 1.76
7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program *(Appendix)*
8. ☐ Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   a. ☐ Computer Readable Form (CRF)
   b. ☐ Specification Sequence Listing on
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ CD-ROM or CD-R (2 copies); or
      iii. ☐ Paper
   c. ☐ Statement verifying identity of above copies

Address to: **Commissioner for Patents**
P.O. Box 1450
Alexandria, VA 22313-1450

ACCOMPANYING APPLICATION PARTS

9. ☐ Assignment Papers *(cover sheet & document(s))*
10. ☒ 37 CFR § 3.73(b) Statement
    a. ☒ Power of Attorney
11. ☐ English Translation Document *(if applicable)*
12. ☒ Information Disclosure Statement and PTO-1449
    a. ☐ Copies of IDS Citations
13. ☐ Preliminary Amendment
14. ☐ Return Receipt Postcard *(MPEP 503)*
15. ☐ Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
16. ☐ Non-Publication Request under 35 U.S.C. § 122 (b)(2)(i)
17. ☒ Other:
    a. Petition to Make Special Under Accelerated Examination Program (4 pages)
    b. Pre-examination Search Statement (18 pages)
    c. Accelerated Examination Support Document (44 pages)

18. If a CONTINUING APPLICATION, *check appropriate box and supply the requisite information below and in a preliminary amendment or in an Application Data Sheet under 37 CFR 1.76:*

☐ This application is a ☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: filed .

Prior application information: Examiner: Group Art Unit:

☐ This application is a ☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: filed , which is the National Stage of International Application No. PCT/US , filed .

Prior application information: Examiner: Group Art Unit:

☒ This application claims the benefit of Provisional Application No. 60/937,993, filed June 29, 2007; 60/946,971, filed June 28, 2007; 60/945,858, filed June 22, 2007; 60/879,469, filed January 8, 2007; 60/883,801, filed January 7, 2007; and 60/879,253 filed January 7, 2007 under 35 U.S.C. § 119(e).

☐ This application claims the benefit of Application No. , filed in 35 U.S.C. § 119(a).

☒ All of the foregoing applications are incorporated by reference in this application in their entireties.

19. CORRESPONDENCE ADDRESS: Customer Number 61725

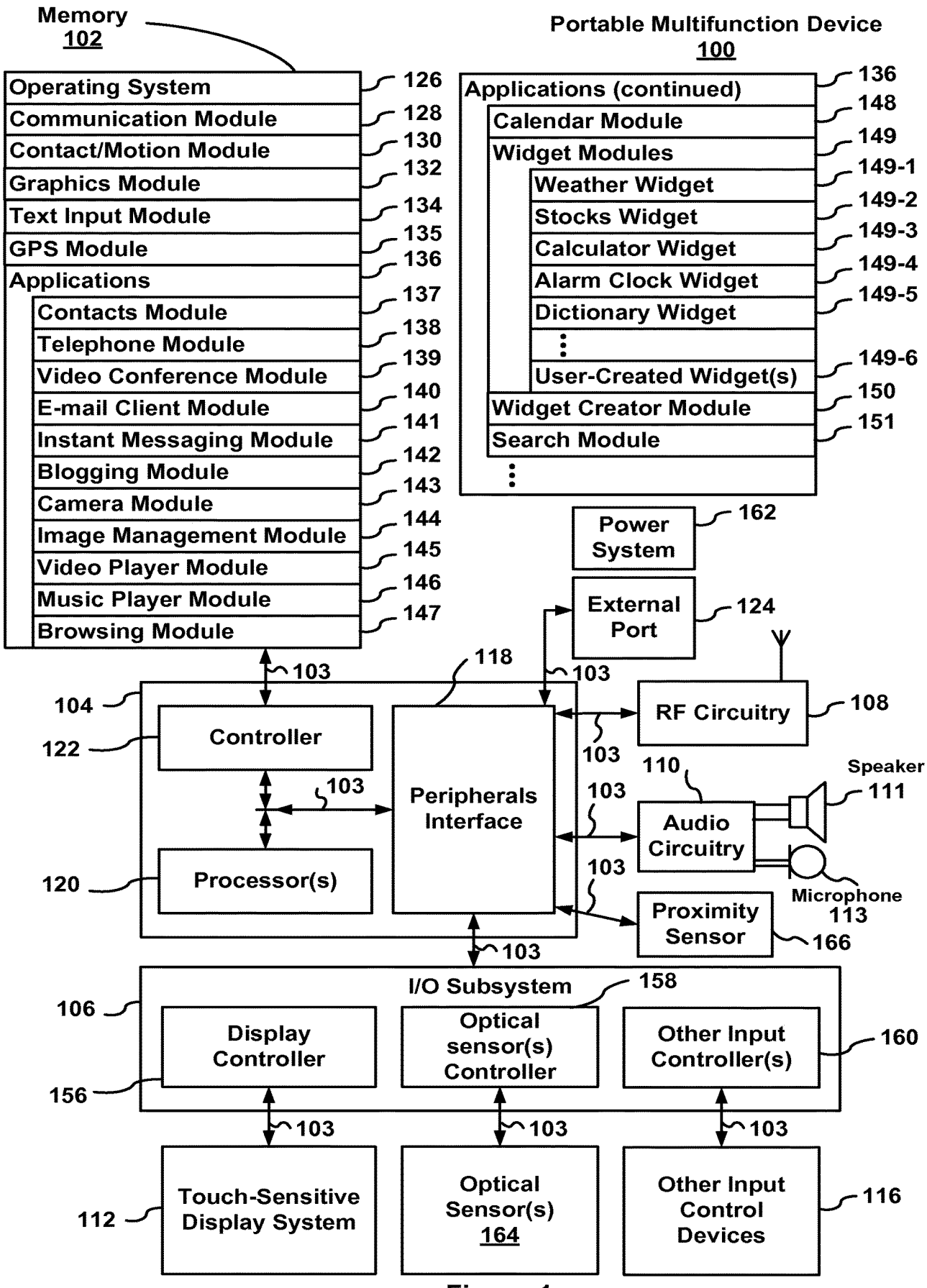
Signature	Robert Beyers	Date	December 14, 2007
Name (Print/Type)	Robert B. Beyers, Ph.D.	Registration No. (Attorney/Agent)	46,552

List Scrolling and Document Translation, Scaling, and Rotation on a Touch-Screen Display

ABSTRACT OF THE DISCLOSURE

In accordance with some embodiments, a computer-implemented method for use in conjunction with a device with a touch screen display is disclosed. In the method, a movement of an object on or near the touch screen display is detected. In response to detecting the movement, an electronic document displayed on the touch screen display is translated in a first direction. If an edge of the electronic document is reached while translating the electronic document in the first direction while the object is still detected on or near the touch screen display, an area beyond the edge of the document is displayed. After the object is no longer detected on or near the touch screen display, the document is translated in a second direction until the area beyond the edge of the document is no longer displayed.

APLNDC00024707


Memory
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Operating System
126
Communication Module
128
Contact/Motion Module
130
Graphics Module
132
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
Blogging Module
142
Camera Module
143
Image Management Module
144
Video Player Module
145
Music Player Module
146
Browsing Module
147
Portable Multifunction Device
100
Applications (continued)
136
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
Power System
162
External Port
124
103
118
104
Controller
122
Peripherals Interface
RF Circuitry
108
Speaker
111
110
Audio Circuitry
Microphone
113
Processor(s)
120
Proximity Sensor
166
I/O Subsystem
158
106
Display Controller
Optical sensor(s) Controller
Other Input Controller(s)
160
156
Touch-Sensitive Display System
112
Optical Sensor(s)
164
Other Input Control Devices
116

Figure 1

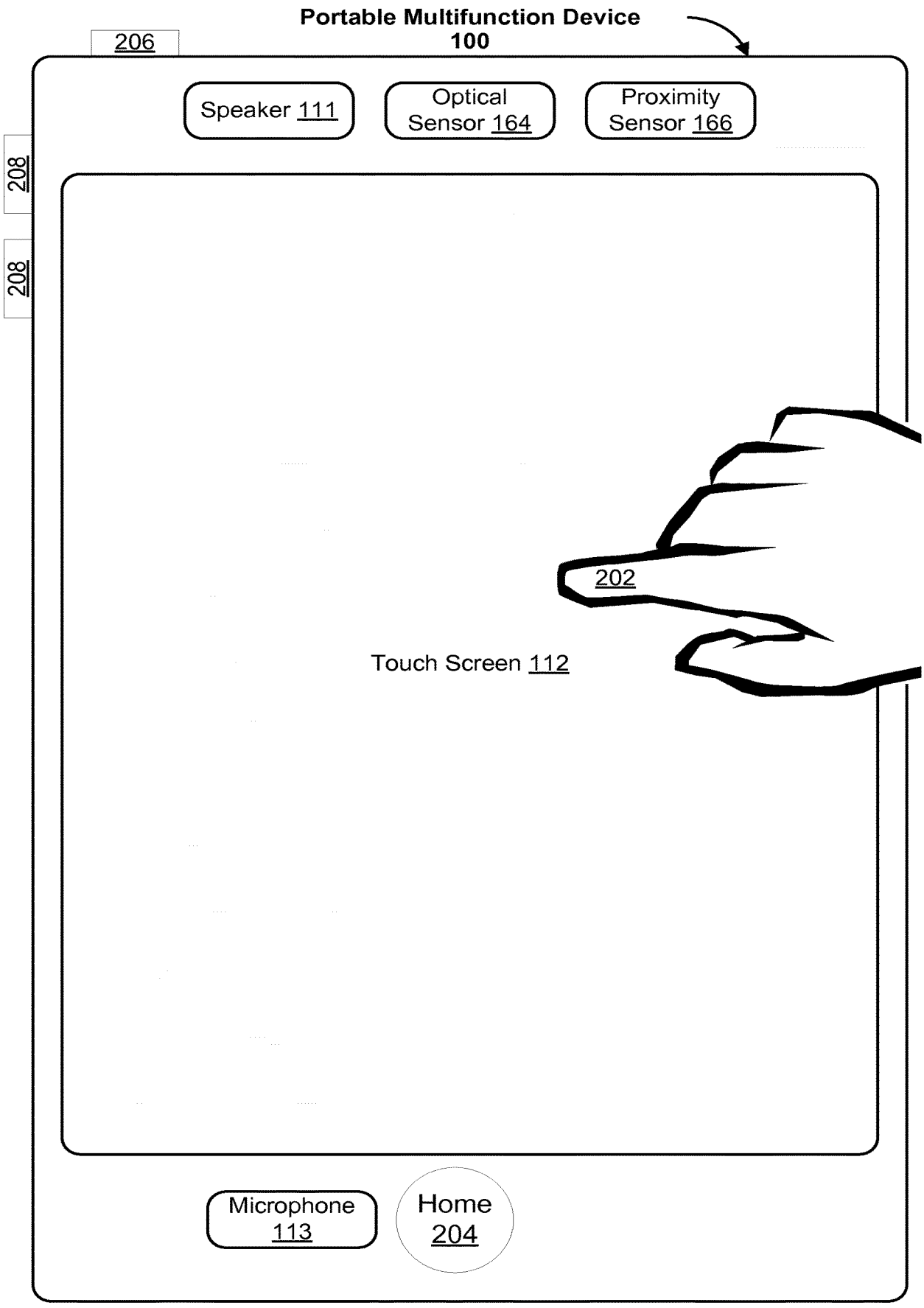

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
208
208
202
Touch Screen 112
Microphone 113
Home 204

Figure 2

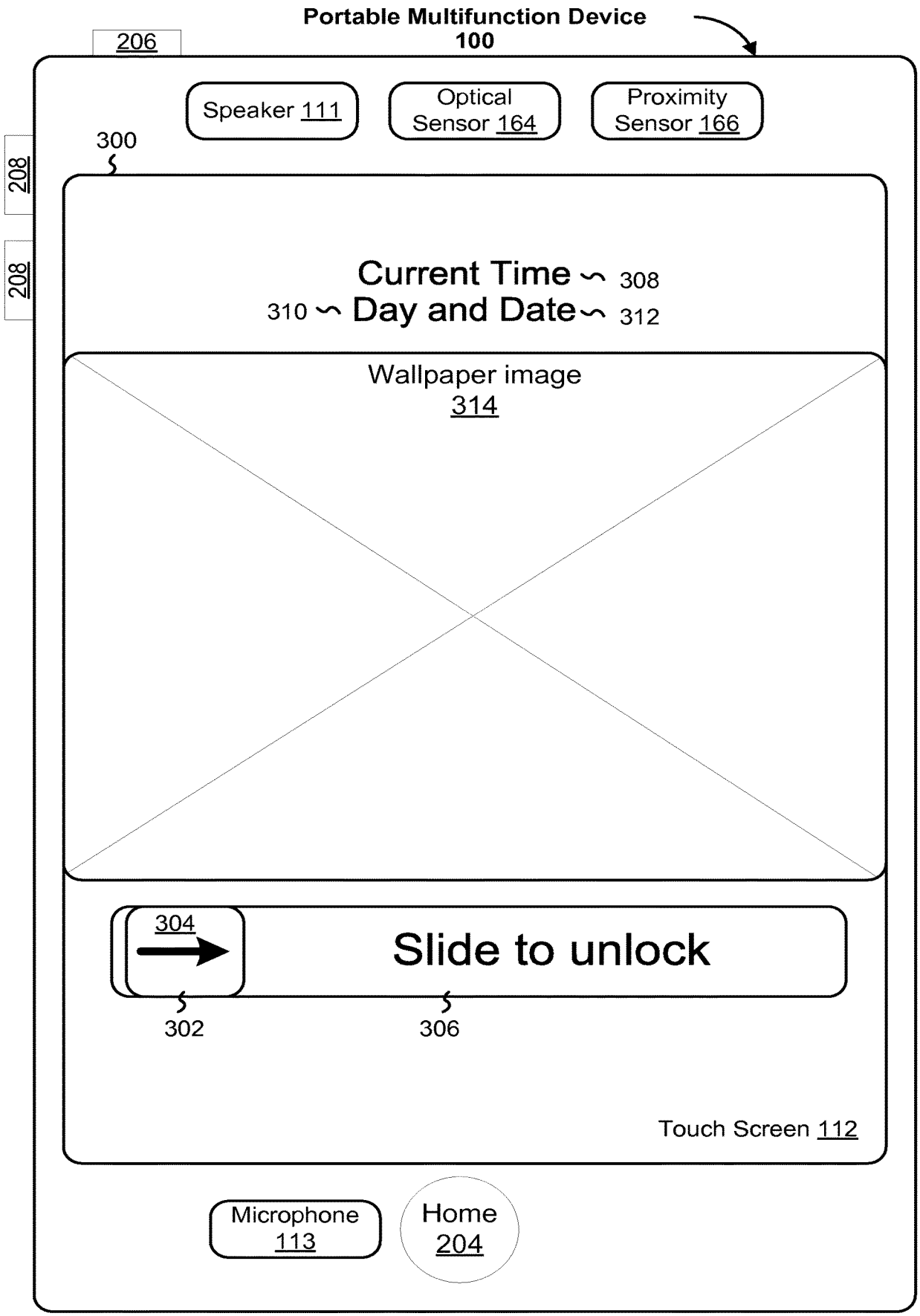

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
300
208
208
Current Time 308
310 Day and Date 312
Wallpaper image
314
304
Slide to unlock
302
306
Touch Screen 112
Microphone 113
Home 204

Figure 3

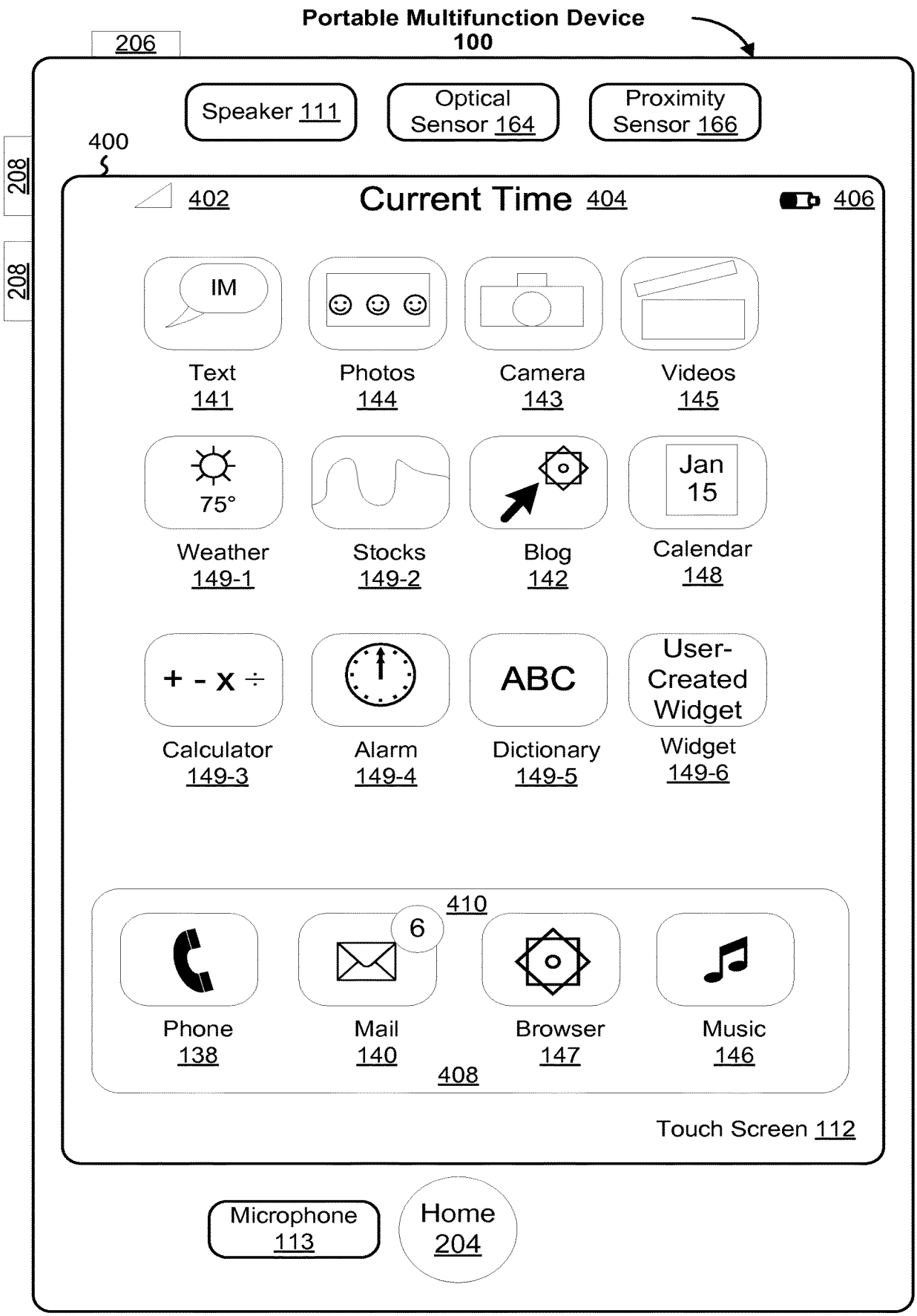

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
400
208
208
402
Current Time 404
406
IM
Text 141
Photos 144
Camera 143
Videos 145
75°
Weather 149-1
Stocks 149-2
Blog 142
Jan 15
Calendar 148
+ - x ÷
Calculator 149-3
Alarm 149-4
ABC
Dictionary 149-5
User-Created Widget
Widget 149-6
410
6
Phone 138
Mail 140
Browser 147
Music 146
408
Touch Screen 112
Microphone 113
Home 204

Figure 4

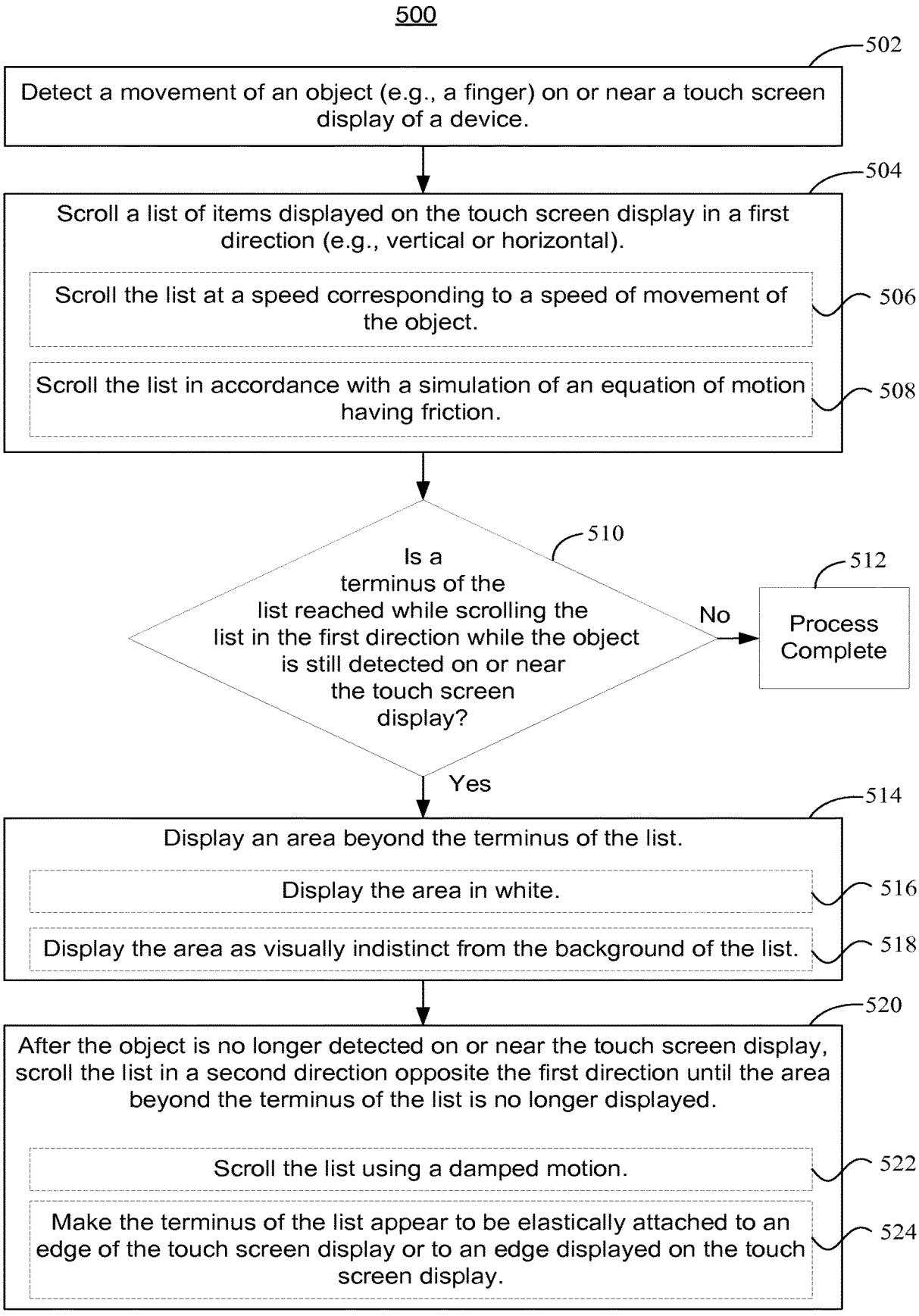

500
502
Detect a movement of an object (e.g., a finger) on or near a touch screen display of a device.
504
Scroll a list of items displayed on the touch screen display in a first direction (e.g., vertical or horizontal).
Scroll the list at a speed corresponding to a speed of movement of the object.
506
Scroll the list in accordance with a simulation of an equation of motion having friction.
508
510
Is a terminus of the list reached while scrolling the list in the first direction while the object is still detected on or near the touch screen display?
No
512
Process Complete
Yes
514
Display an area beyond the terminus of the list.
Display the area in white.
516
Display the area as visually indistinct from the background of the list.
518
520
After the object is no longer detected on or near the touch screen display, scroll the list in a second direction opposite the first direction until the area beyond the terminus of the list is no longer displayed.
Scroll the list using a damped motion.
522
Make the terminus of the list appear to be elastically attached to an edge of the touch screen display or to an edge displayed on the touch screen display.
524

Figure 5

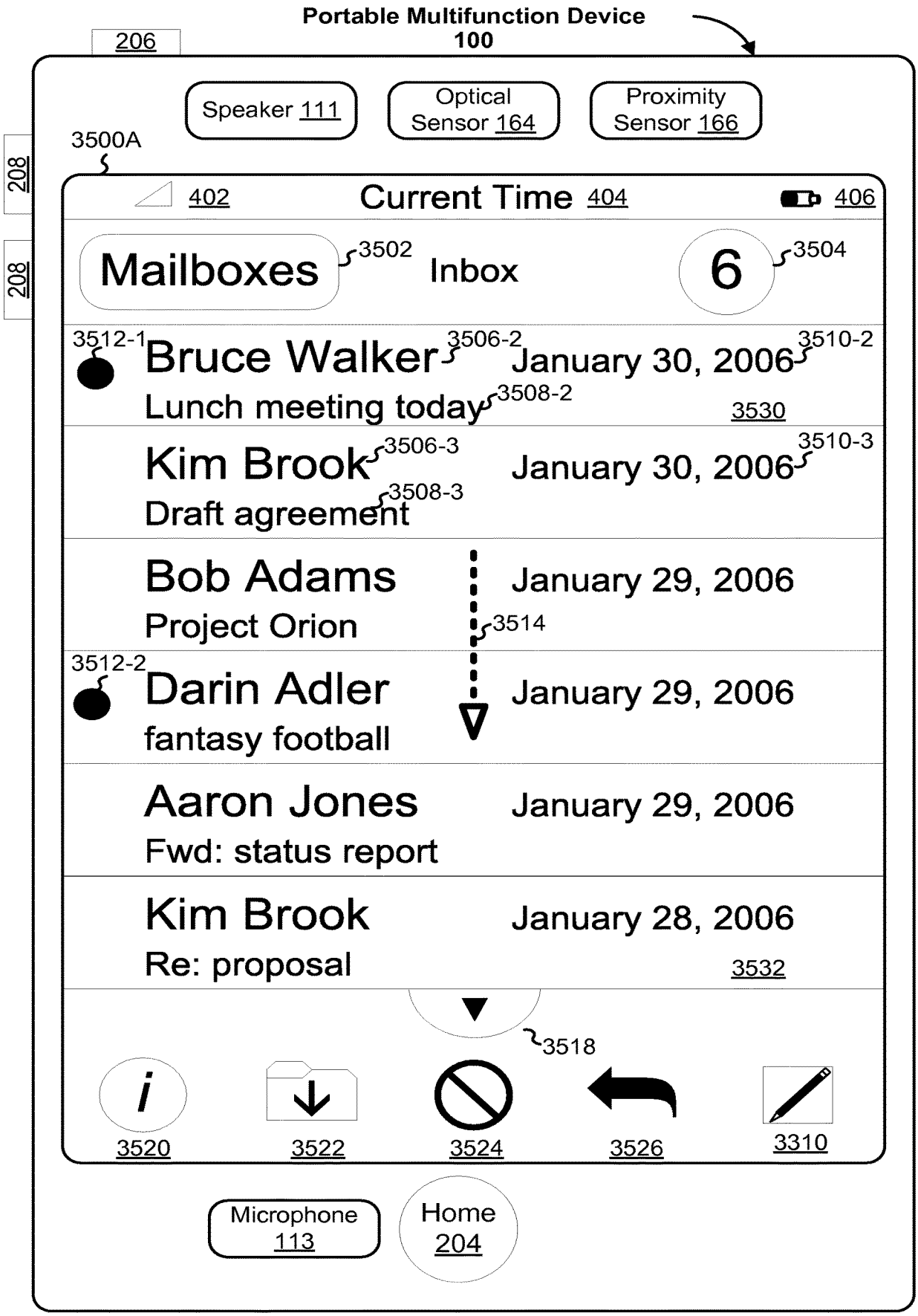

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
3500A
208
208
402
Current Time 404
406
Mailboxes
3502
Inbox
6
3504
3512-1
Bruce Walker
3506-2
January 30, 2006
3510-2
Lunch meeting today
3508-2
3530
Kim Brook
3506-3
January 30, 2006
3510-3
Draft agreement
3508-3
Bob Adams
January 29, 2006
Project Orion
3514
3512-2
Darin Adler
January 29, 2006
fantasy football
Aaron Jones
January 29, 2006
Fwd: status report
Kim Brook
January 28, 2006
Re: proposal
3532
3518
3520
3522
3524
3526
3310
Microphone 113
Home 204

Figure 6A

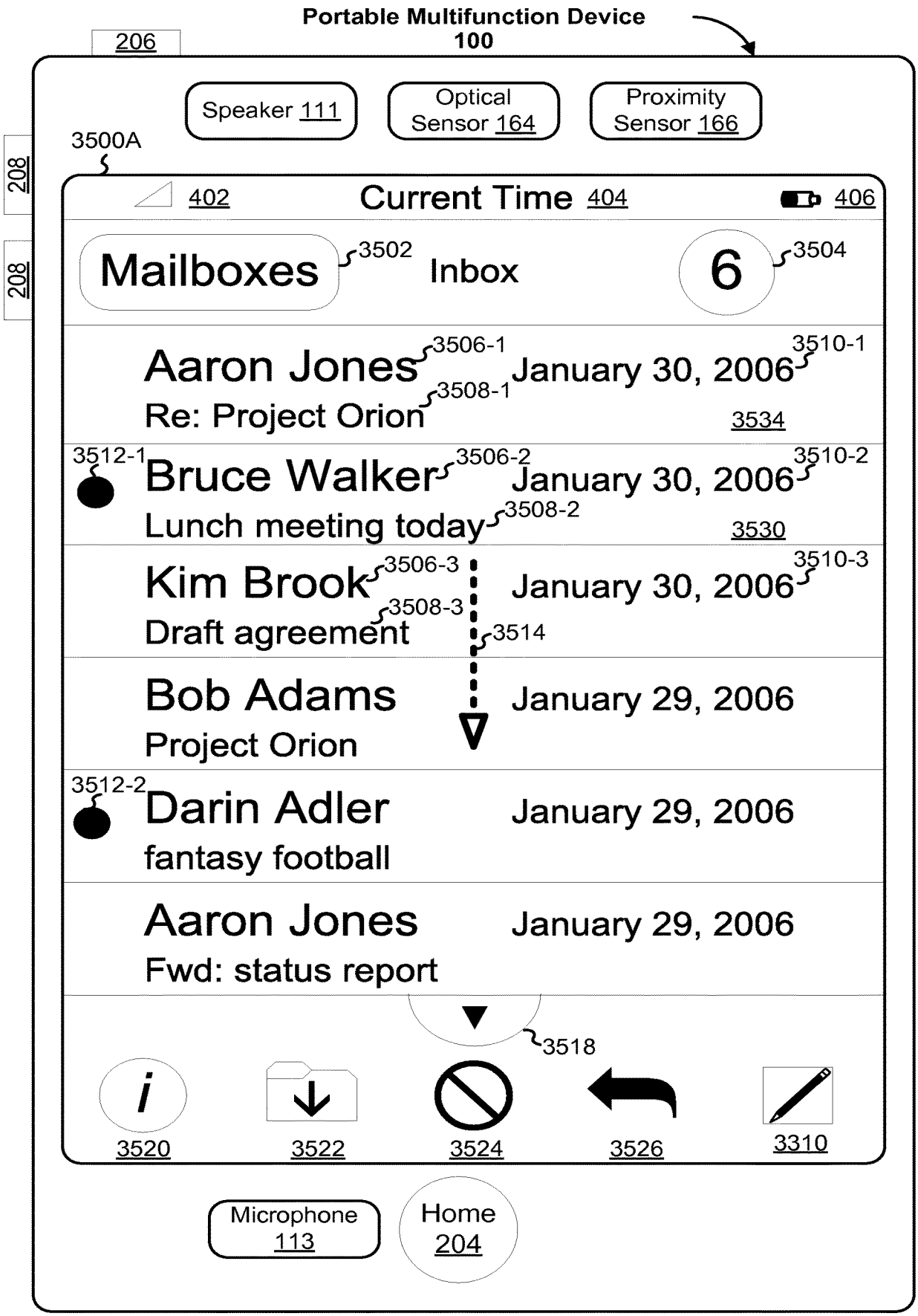

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
3500A
208
208
402
Current Time 404
406
Mailboxes
3502
Inbox
6
3504
Aaron Jones
3506-1
January 30, 2006
3510-1
3508-1
Re: Project Orion
3534
3512-1
Bruce Walker
3506-2
January 30, 2006
3510-2
Lunch meeting today
3508-2
3530
Kim Brook
3506-3
January 30, 2006
3510-3
3508-3
Draft agreement
3514
Bob Adams
January 29, 2006
Project Orion
3512-2
Darin Adler
January 29, 2006
fantasy football
Aaron Jones
January 29, 2006
Fwd: status report
3518
3520
3522
3524
3526
3310
Microphone 113
Home 204

Figure 6B

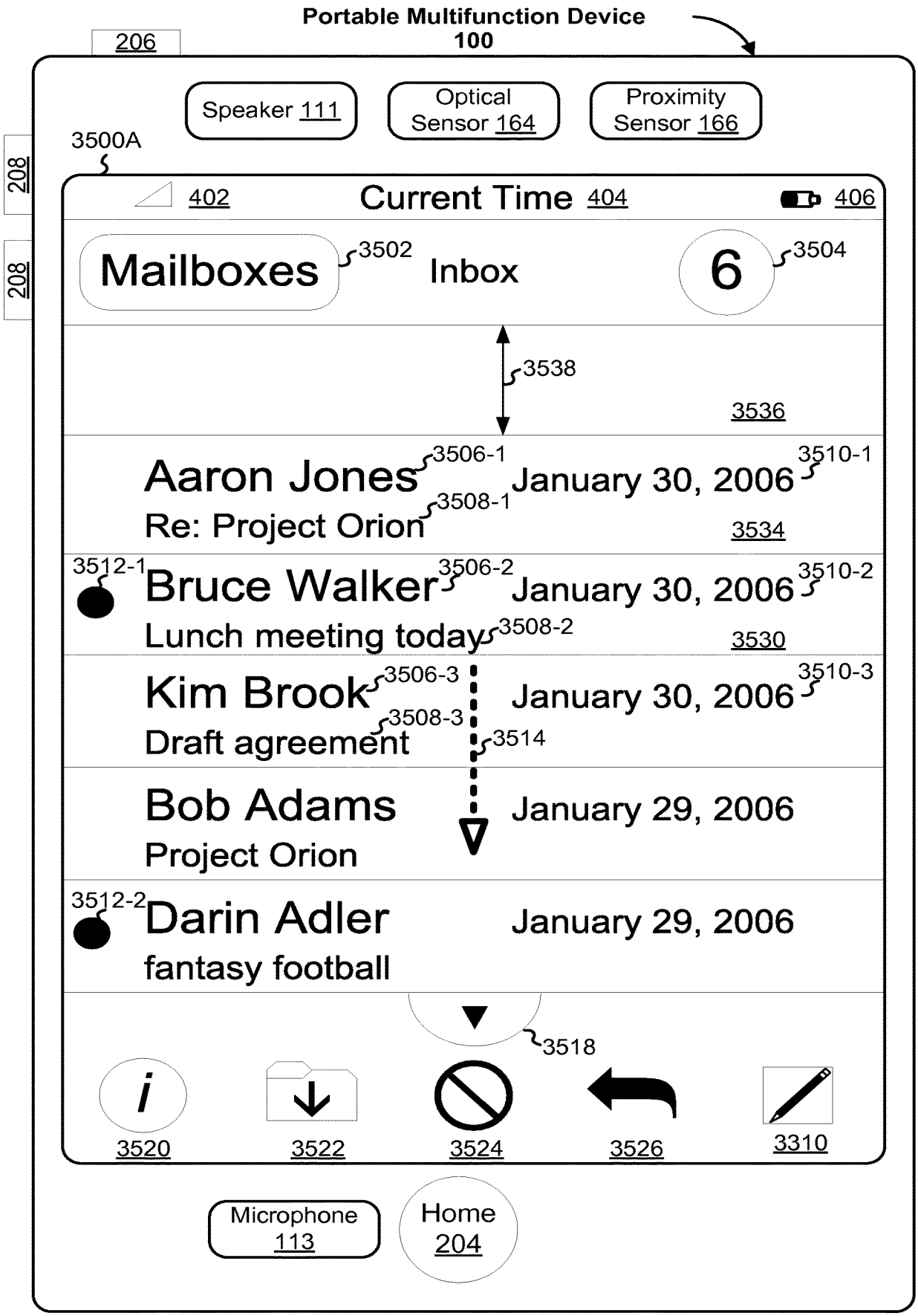

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
3500A
208
208
402
Current Time 404
406
Mailboxes
3502
Inbox
6
3504
3538
3536
Aaron Jones
3506-1
January 30, 2006
3510-1
Re: Project Orion
3508-1
3534
3512-1
Bruce Walker
3506-2
January 30, 2006
3510-2
Lunch meeting today
3508-2
3530
Kim Brook
3506-3
January 30, 2006
3510-3
Draft agreement
3508-3
3514
Bob Adams
January 29, 2006
Project Orion
3512-2
Darin Adler
January 29, 2006
fantasy football
3518
3520
3522
3524
3526
3310
Microphone 113
Home 204

Figure 6C

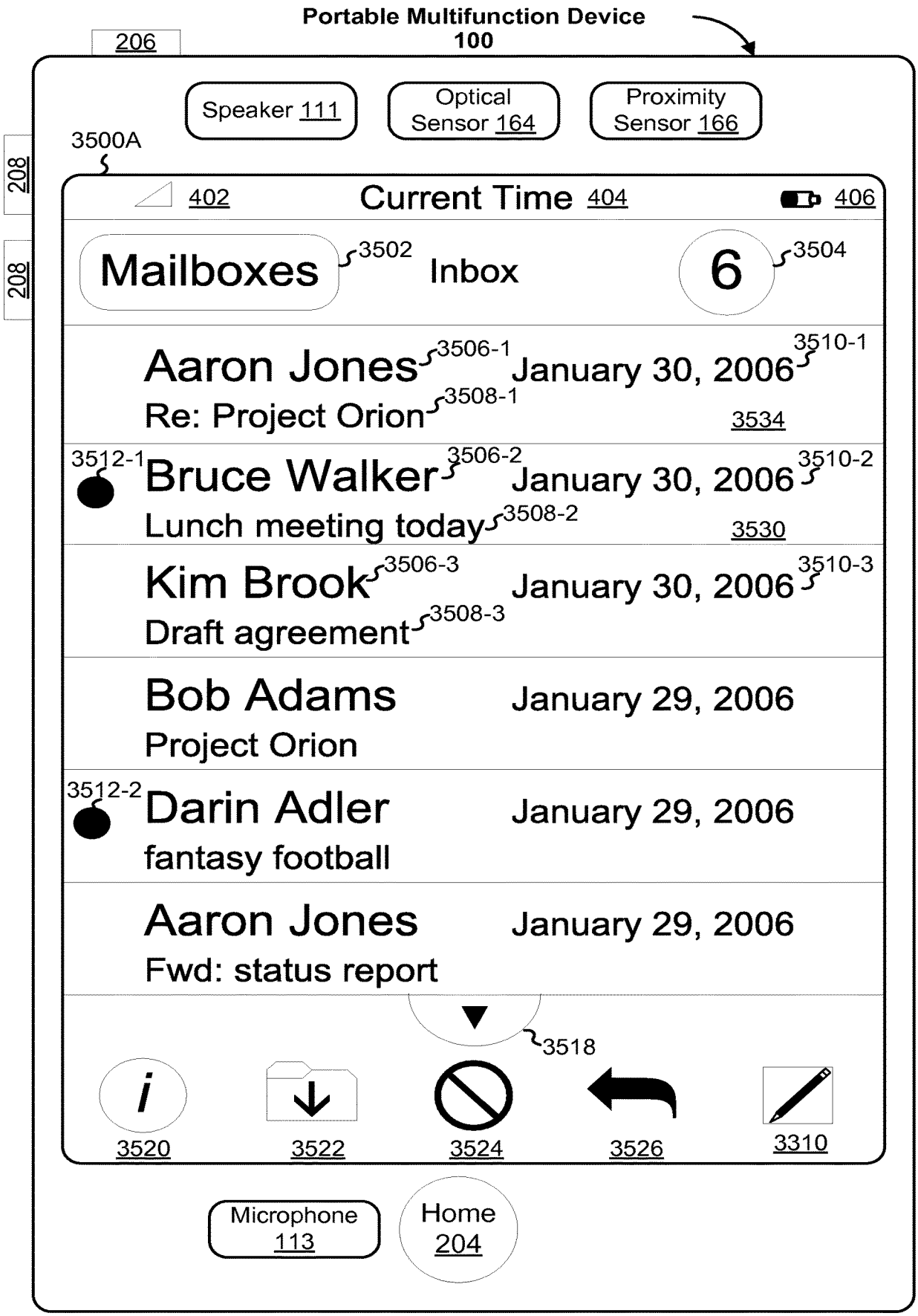

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
3500A
208
208
402
Current Time 404
406
Mailboxes
3502
Inbox
6
3504
Aaron Jones
3506-1
January 30, 2006
3510-1
Re: Project Orion
3508-1
3534
3512-1
Bruce Walker
3506-2
January 30, 2006
3510-2
Lunch meeting today
3508-2
3530
Kim Brook
3506-3
January 30, 2006
3510-3
Draft agreement
3508-3
Bob Adams
January 29, 2006
Project Orion
3512-2
Darin Adler
January 29, 2006
fantasy football
Aaron Jones
January 29, 2006
Fwd: status report
3518
3520
3522
3524
3526
3310
Microphone 113
Home 204

Figure 6D

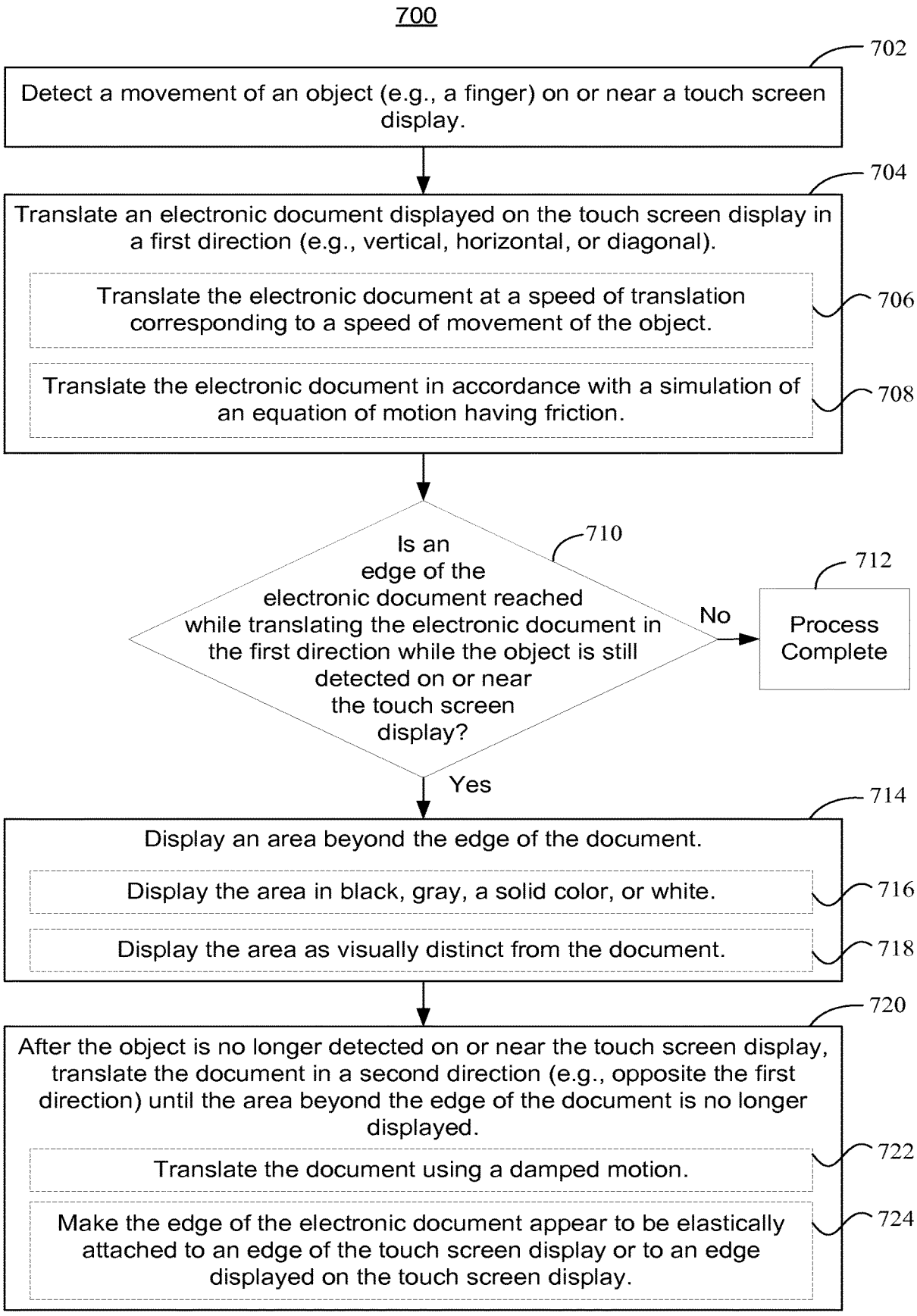

700
702
Detect a movement of an object (e.g., a finger) on or near a touch screen display.
704
Translate an electronic document displayed on the touch screen display in a first direction (e.g., vertical, horizontal, or diagonal).
Translate the electronic document at a speed of translation corresponding to a speed of movement of the object.
706
Translate the electronic document in accordance with a simulation of an equation of motion having friction.
708
710
Is an edge of the electronic document reached while translating the electronic document in the first direction while the object is still detected on or near the touch screen display?
No
712
Process Complete
Yes
714
Display an area beyond the edge of the document.
Display the area in black, gray, a solid color, or white.
716
Display the area as visually distinct from the document.
718
720
After the object is no longer detected on or near the touch screen display, translate the document in a second direction (e.g., opposite the first direction) until the area beyond the edge of the document is no longer displayed.
Translate the document using a damped motion.
722
Make the edge of the electronic document appear to be elastically attached to an edge of the touch screen display or to an edge displayed on the touch screen display.
724

Figure 7

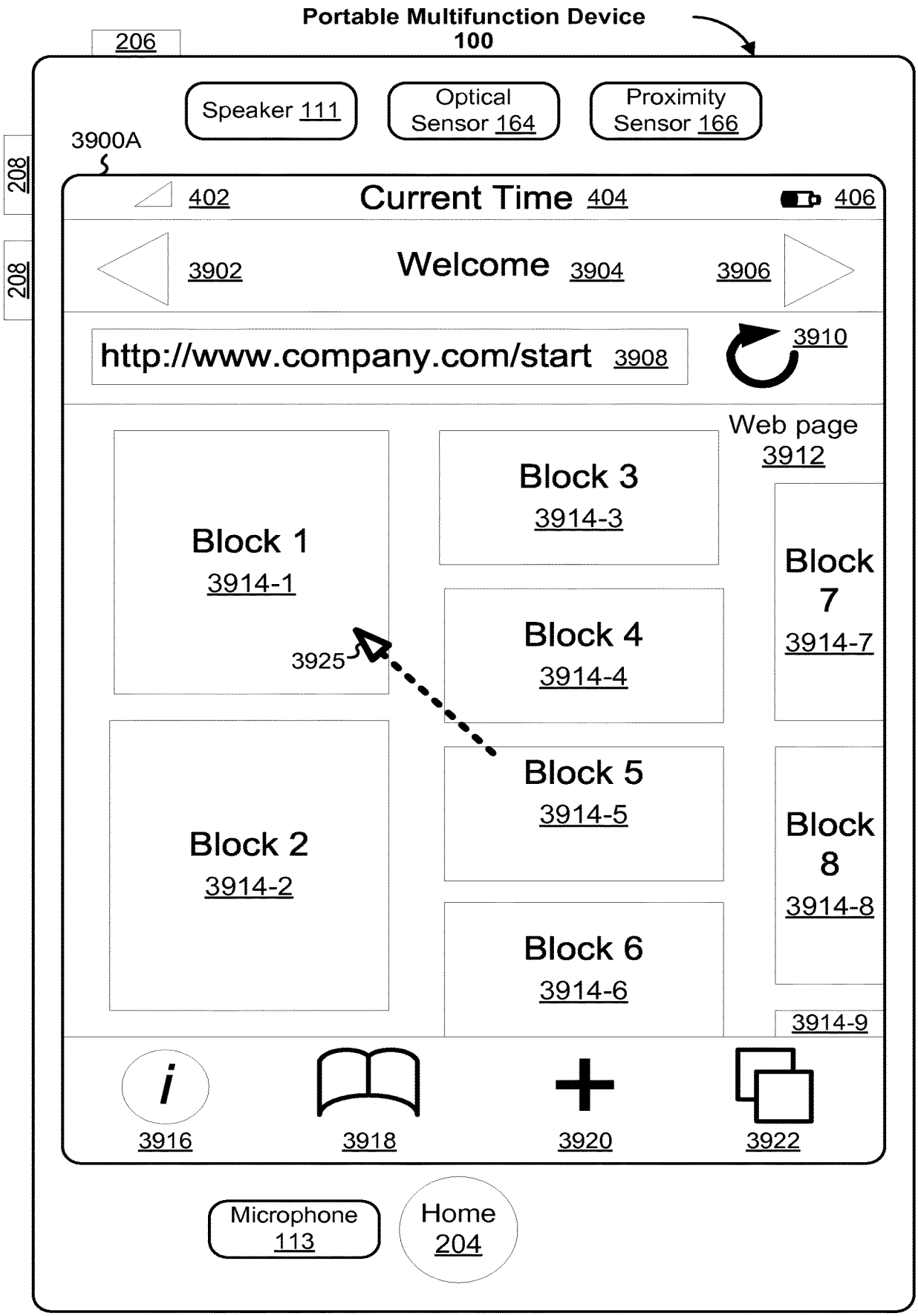

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
3900A
208
208
402
Current Time 404
406
3902
Welcome 3904
3906
http://www.company.com/start 3908
3910
Web page
3912
Block 1
3914-1
Block 3
3914-3
Block 4
3914-4
Block 5
3914-5
Block 6
3914-6
Block 2
3914-2
Block 7
3914-7
Block 8
3914-8
3914-9
3925
3916
3918
3920
3922
Microphone 113
Home 204

Figure 8A

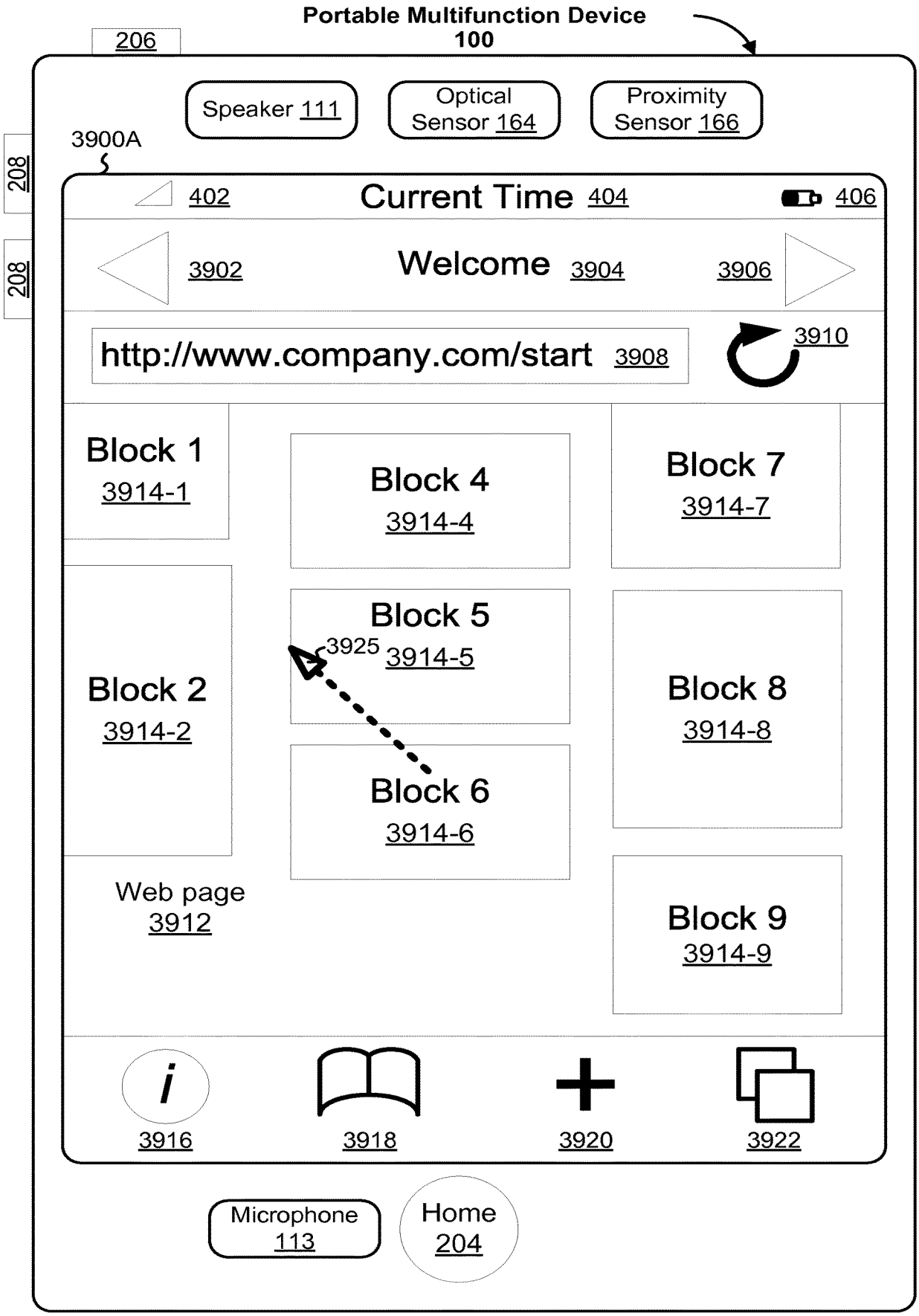
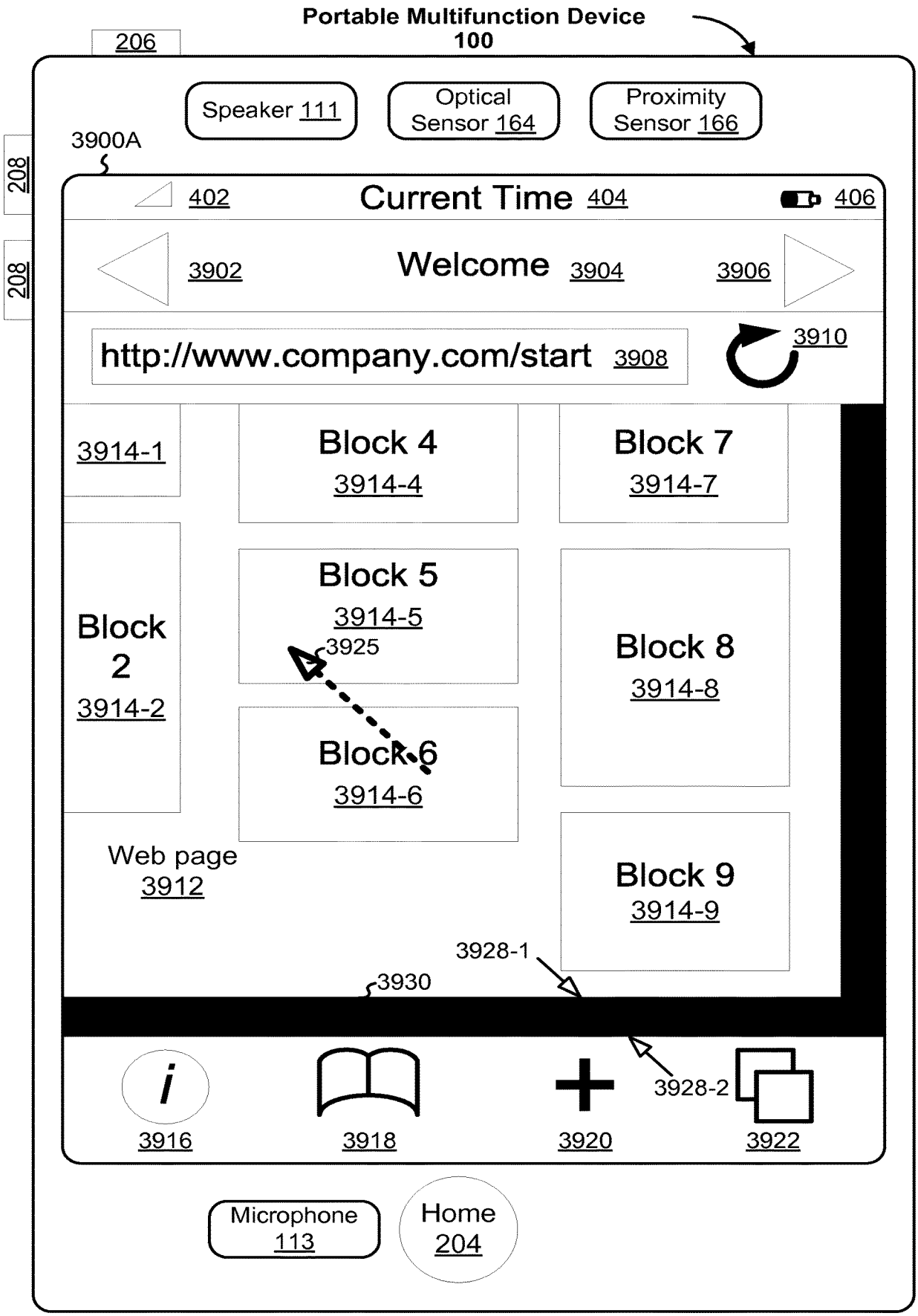

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
3900A
208
208
402
Current Time 404
406
3902
Welcome 3904
3906
http://www.company.com/start 3908
3910
Block 1
3914-1
Block 4
3914-4
Block 7
3914-7
Block 2
3914-2
Block 5
3914-5
3925
Block 8
3914-8
Block 6
3914-6
Web page
3912
Block 9
3914-9
3916
3918
3920
3922
Microphone
113
Home
204

Figure 8B


Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
3900A
208
208
402
Current Time 404
406
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Welcome 3904
3906
http://www.company.com/start 3908
3910
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Block 4
3914-4
Block 7
3914-7
Block 2
3914-2
Block 5
3914-5
3925
Block 8
3914-8
Block 6
3914-6
Web page
3912
Block 9
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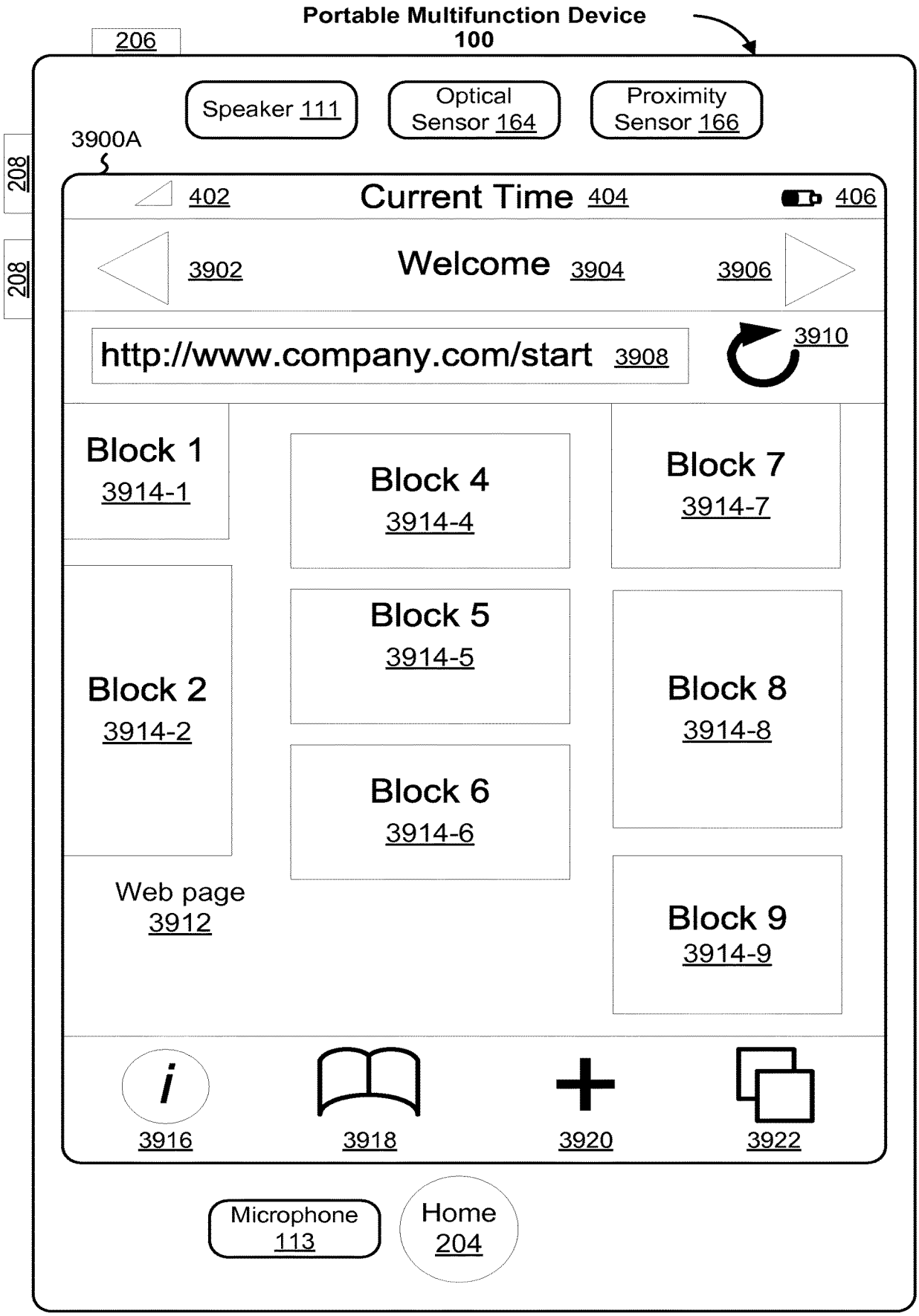
3928-1
3930
3928-2
3916
3918
3920
3922
Microphone 113
Home 204

Figure 8C


Portable Multifunction Device
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Speaker 111
Optical Sensor 164
Proximity Sensor 166
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402
Current Time 404
406
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http://www.company.com/start 3908
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Block 1
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Block 4
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Block 7
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Block 2
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Block 5
3914-5
Block 8
3914-8
Block 6
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Block 9
3914-9
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Microphone
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Home
204

Figure 8D

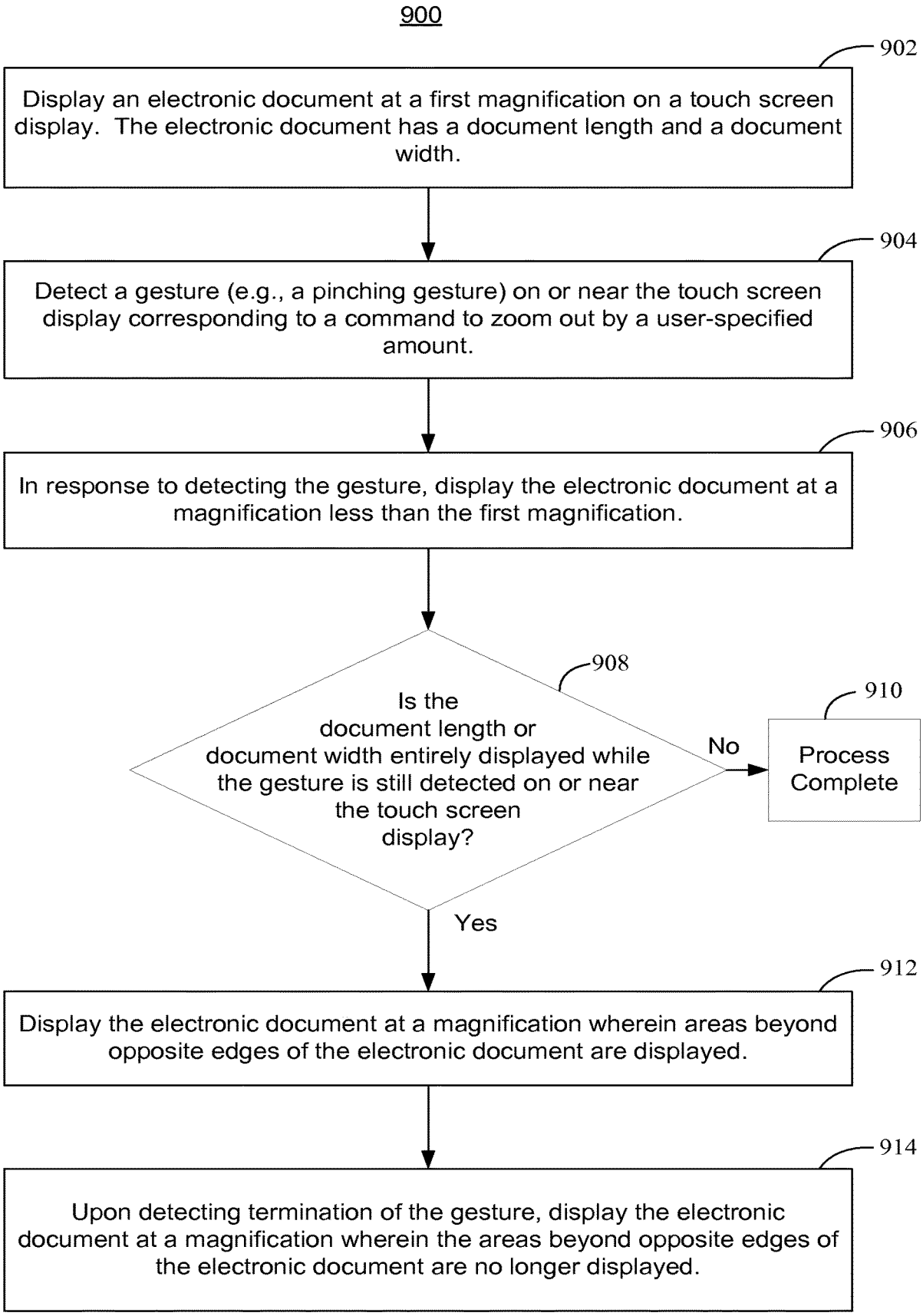
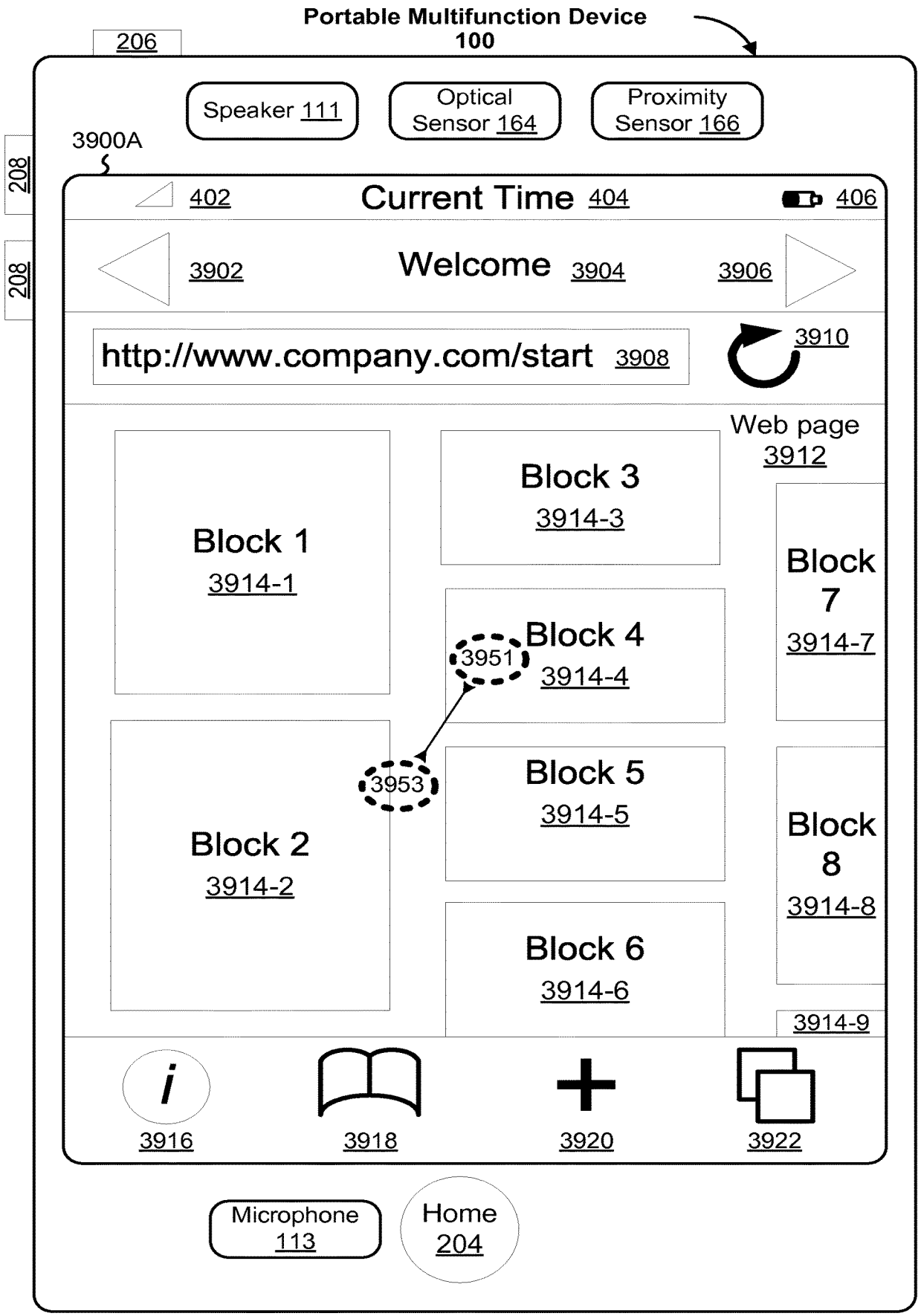

900
902
Display an electronic document at a first magnification on a touch screen display. The electronic document has a document length and a document width.
904
Detect a gesture (e.g., a pinching gesture) on or near the touch screen display corresponding to a command to zoom out by a user-specified amount.
906
In response to detecting the gesture, display the electronic document at a magnification less than the first magnification.
908
Is the document length or document width entirely displayed while the gesture is still detected on or near the touch screen display?
No
910
Process Complete
Yes
912
Display the electronic document at a magnification wherein areas beyond opposite edges of the electronic document are displayed.
914
Upon detecting termination of the gesture, display the electronic document at a magnification wherein the areas beyond opposite edges of the electronic document are no longer displayed.

Figure 9


Portable Multifunction Device
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Speaker 111
Optical Sensor 164
Proximity Sensor 166
3900A
208
208
402
Current Time 404
406
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Welcome 3904
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http://www.company.com/start 3908
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Web page
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Block 3
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Block 7
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Block 5
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Block 2
3914-2
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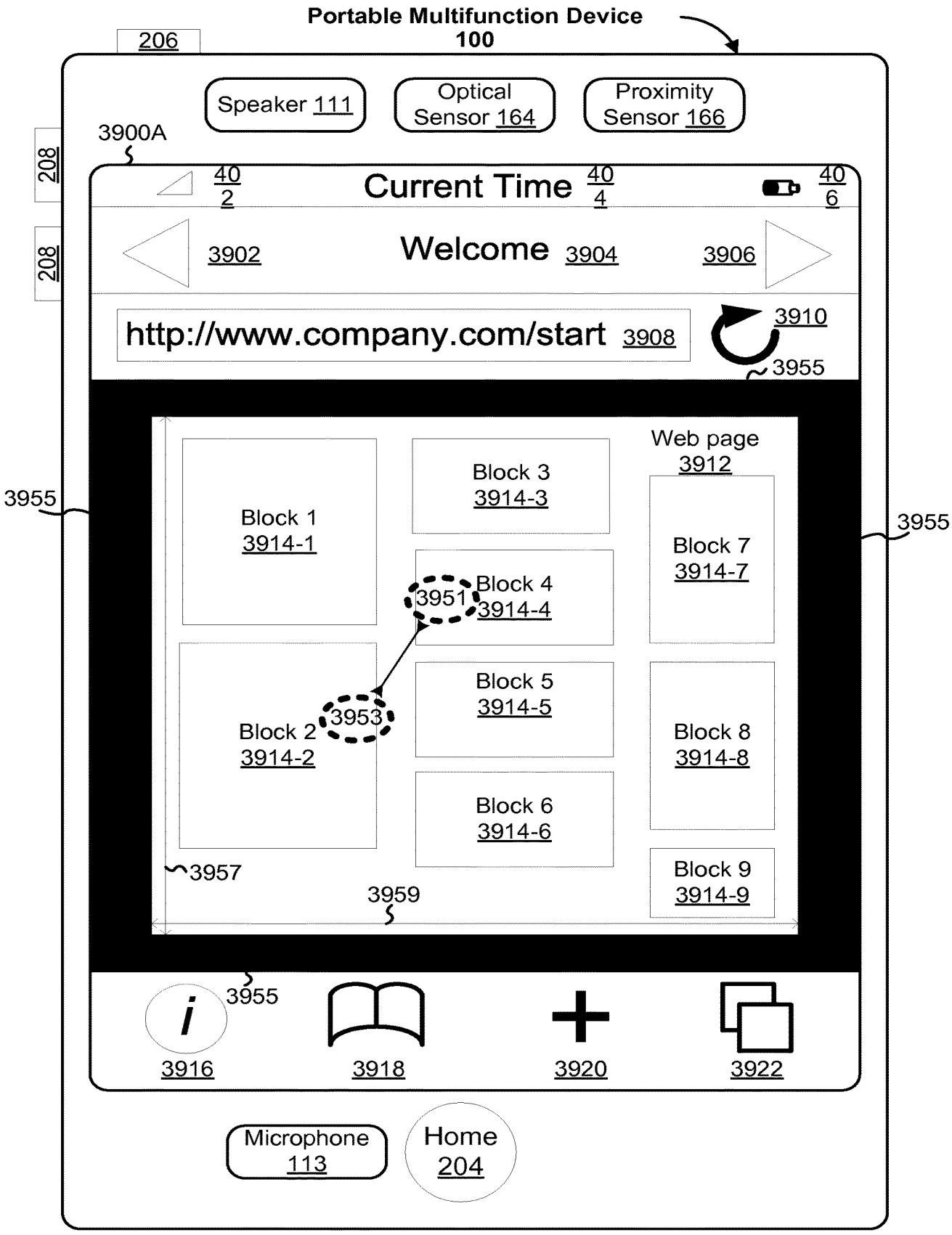
Microphone
113
Home
204

Figure 10A


Portable Multifunction Device
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Speaker 111
Optical Sensor 164
Proximity Sensor 166
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208
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Current Time 40 4
40 6
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Welcome 3904
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Block 1 3914-1
Block 3 3914-3
Block 7 3914-7
Block 4 3914-4
3951
Block 5 3914-5
Block 2 3914-2
3953
Block 8 3914-8
Block 6 3914-6
Block 9 3914-9
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Microphone 113
Home 204

Figure 10B

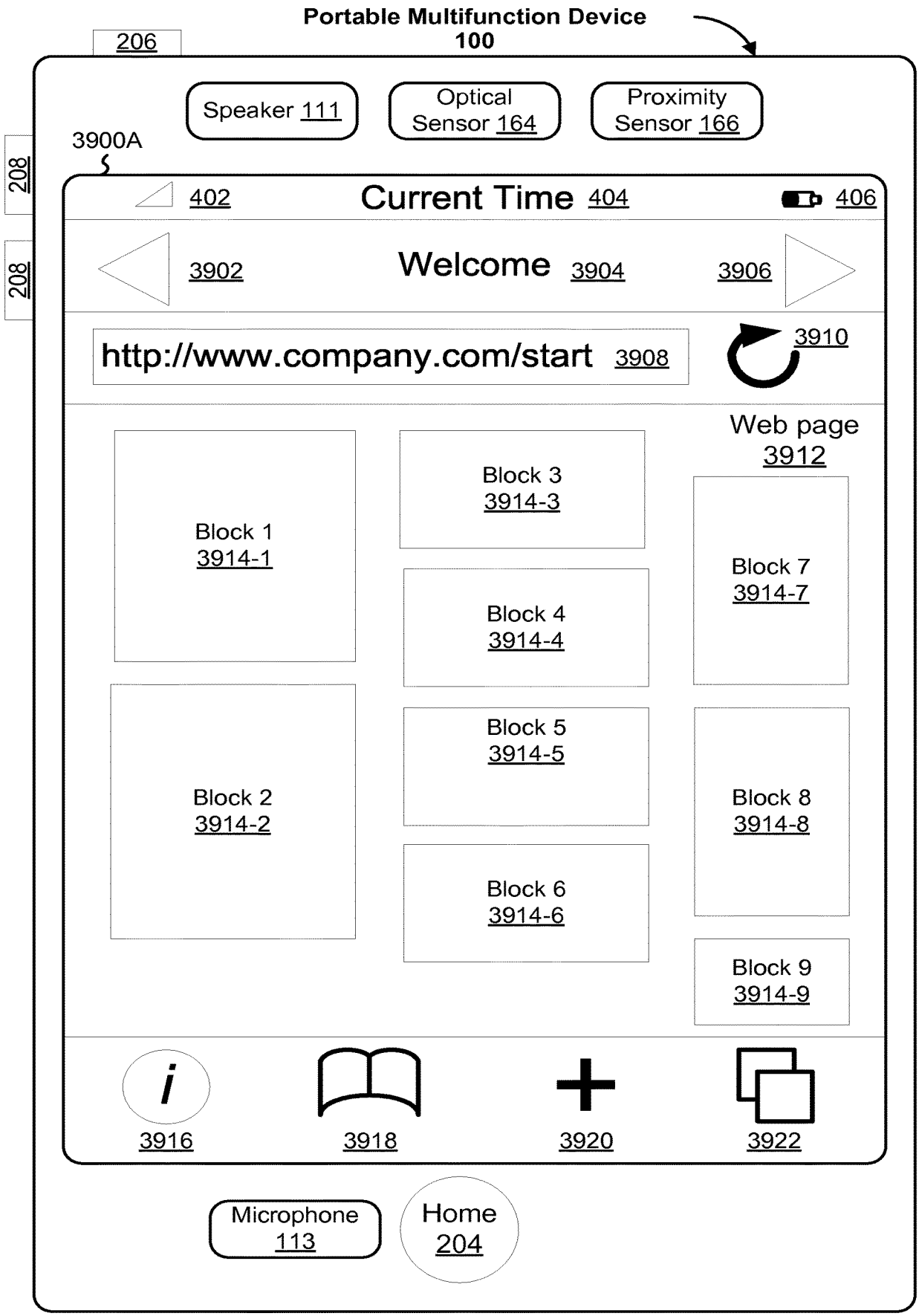

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
3900A
208
208
402
Current Time 404
406
3902
Welcome 3904
3906
http://www.company.com/start 3908
3910
Web page
3912
Block 1
3914-1
Block 2
3914-2
Block 3
3914-3
Block 4
3914-4
Block 5
3914-5
Block 6
3914-6
Block 7
3914-7
Block 8
3914-8
Block 9
3914-9
3916
3918
3920
3922
Microphone
113
Home
204

Figure 10C

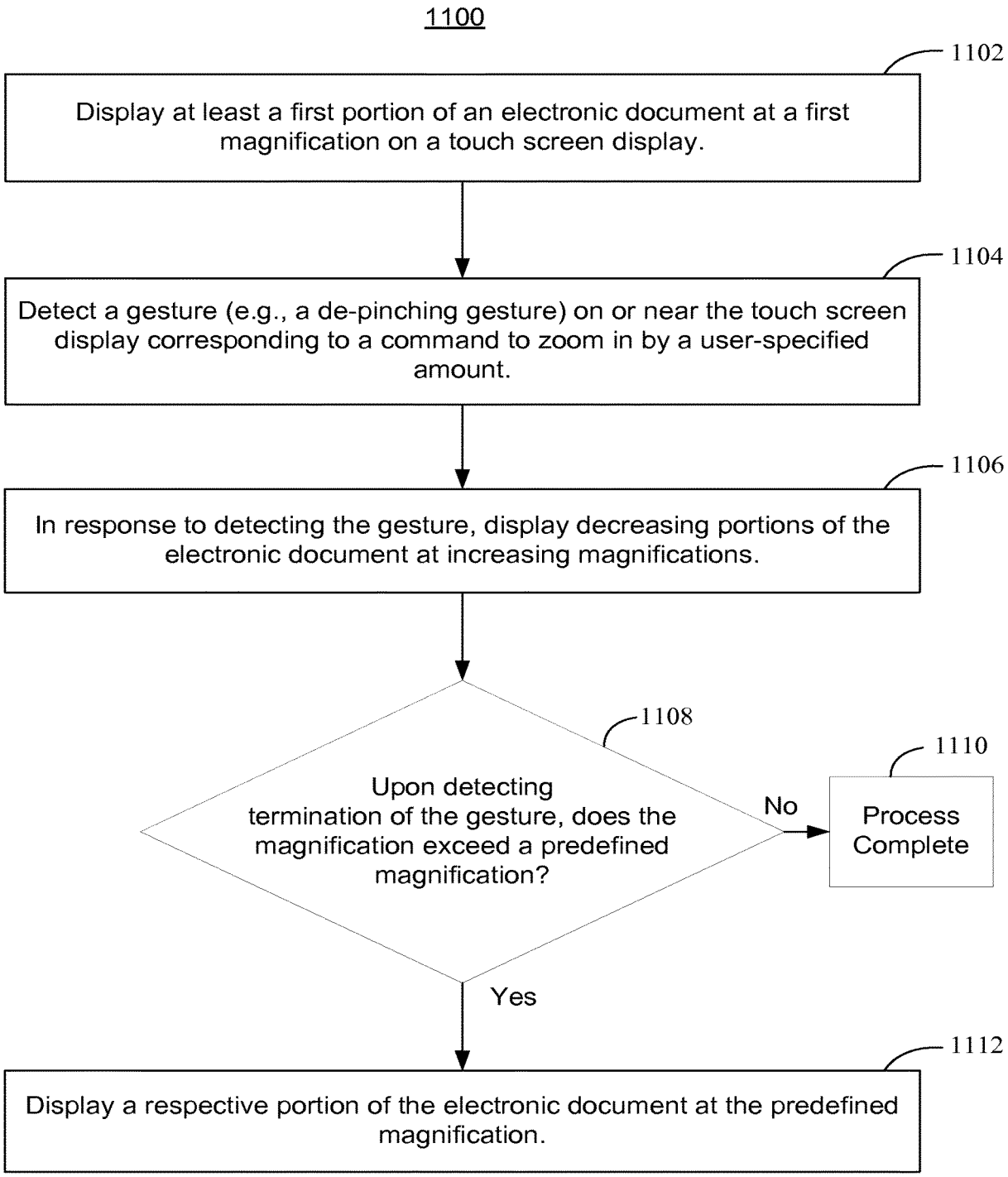

1100
1102
Display at least a first portion of an electronic document at a first magnification on a touch screen display.
1104
Detect a gesture (e.g., a de-pinching gesture) on or near the touch screen display corresponding to a command to zoom in by a user-specified amount.
1106
In response to detecting the gesture, display decreasing portions of the electronic document at increasing magnifications.
1108
Upon detecting termination of the gesture, does the magnification exceed a predefined magnification?
No
1110
Process Complete
Yes
1112
Display a respective portion of the electronic document at the predefined magnification.

Figure 11

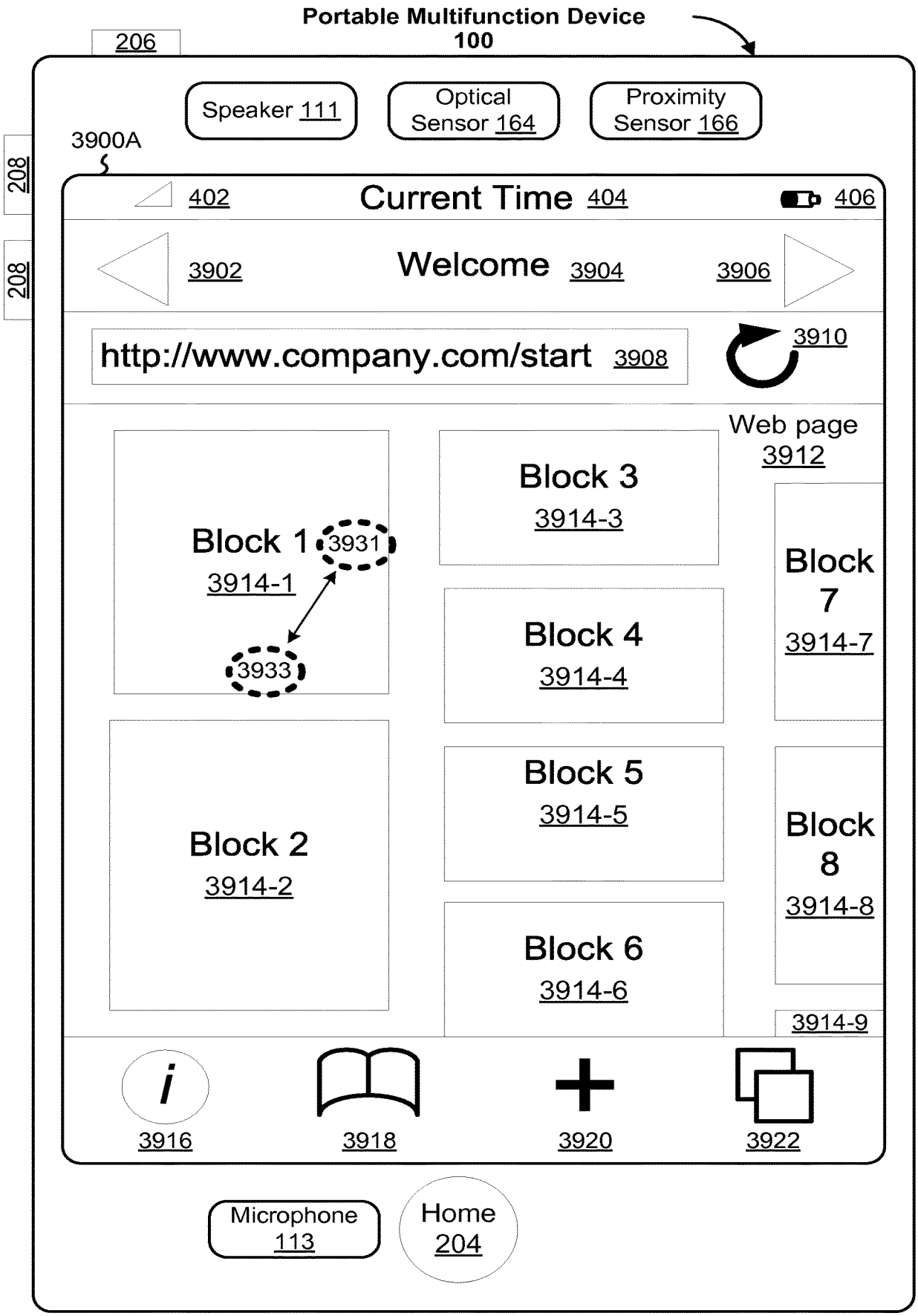

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
3900A
208
208
402
Current Time 404
406
3902
Welcome 3904
3906
http://www.company.com/start 3908
3910
Web page
3912
Block 1
3914-1
3931
3933
Block 3
3914-3
Block 4
3914-4
Block 5
3914-5
Block 6
3914-6
Block 7
3914-7
Block 8
3914-8
Block 2
3914-2
3914-9
i
3916
3918
3920
3922
Microphone
113
Home
204

Figure 12A

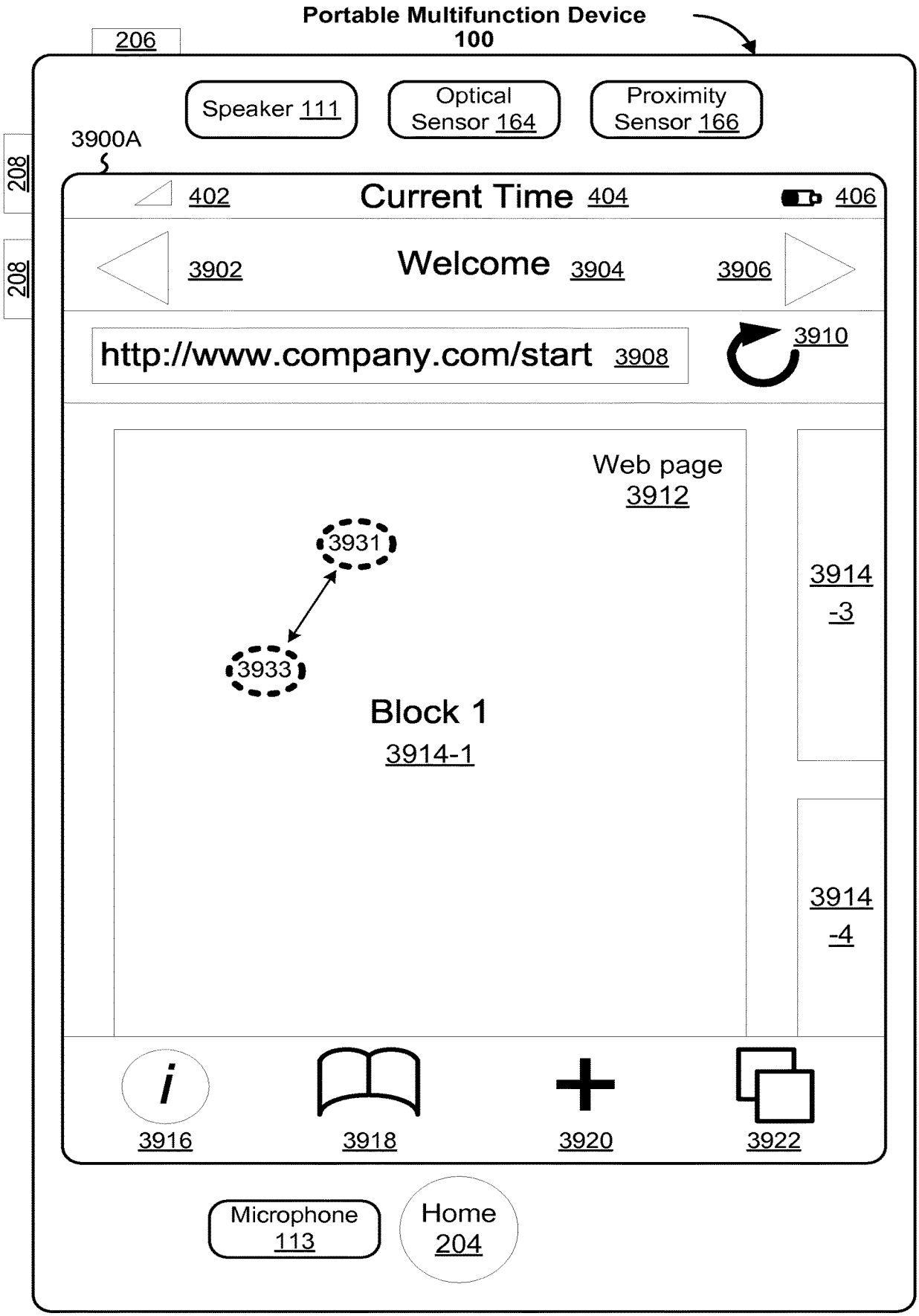

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
3900A
208
208
402
Current Time 404
406
3902
Welcome 3904
3906
http://www.company.com/start 3908
3910
Web page
3912
3931
3933
Block 1
3914-1
3914
-3
3914
-4
3916
3918
3920
3922
Microphone
113
Home
204

Figure 12B

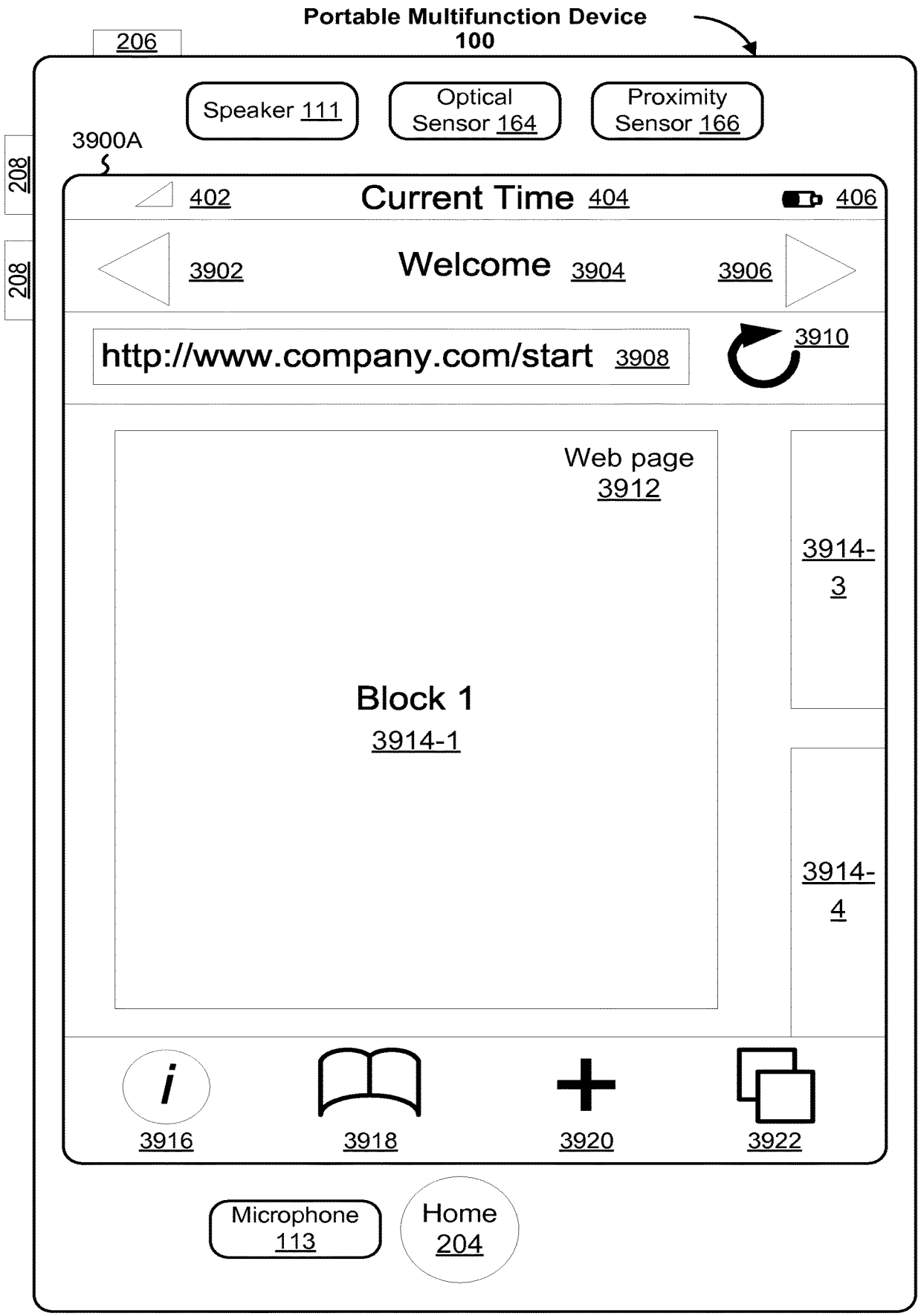

Portable Multifunction Device
100
206
Speaker 111
Optical Sensor 164
Proximity Sensor 166
3900A
208
208
402
Current Time 404
406
3902
Welcome 3904
3906
http://www.company.com/start 3908
3910
Web page
3912
3914-3
Block 1
3914-1
3914-4
3916
3918
3920
3922
Microphone 113
Home 204

Figure 12C

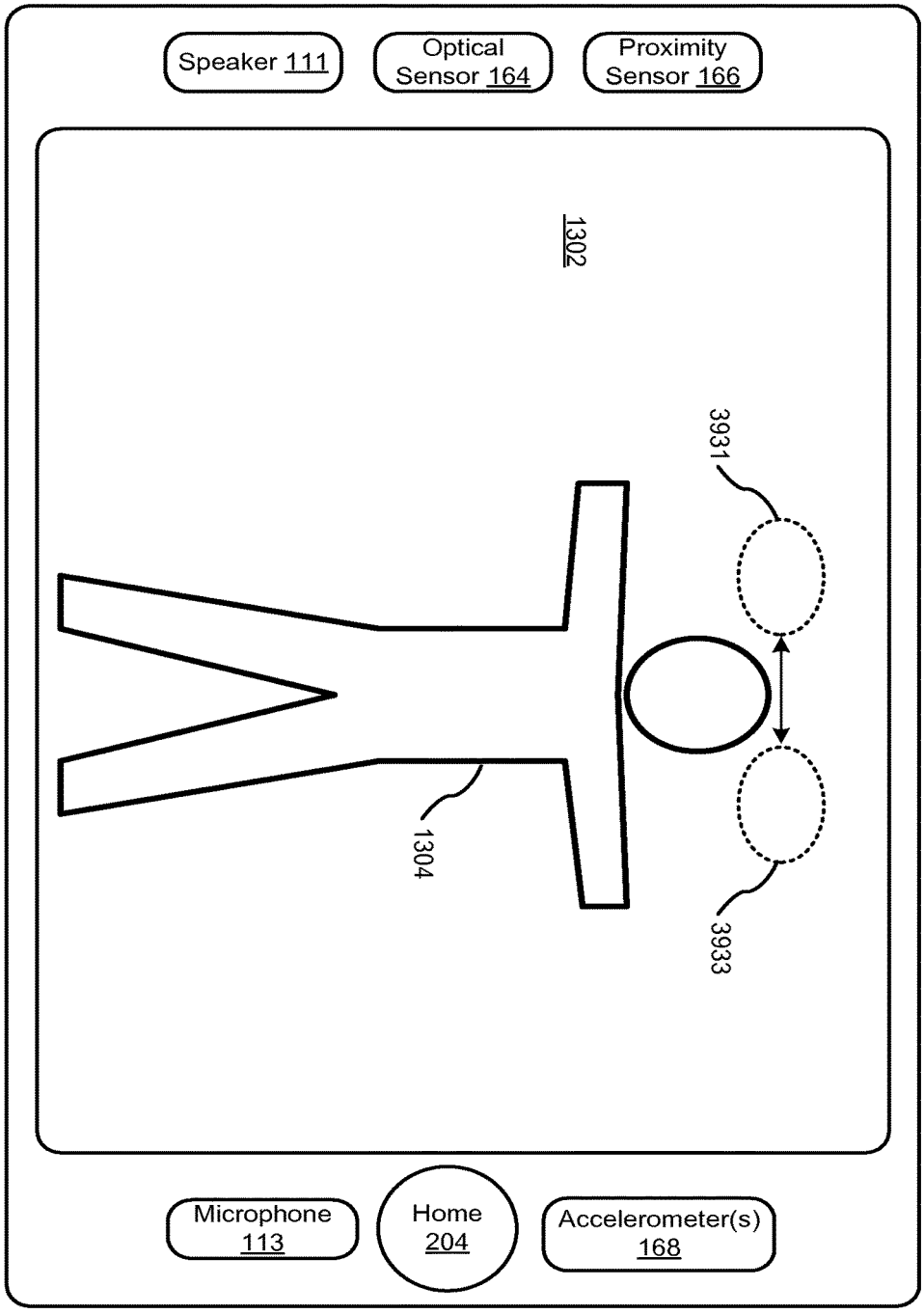


Figure 13A

To Figure 13B

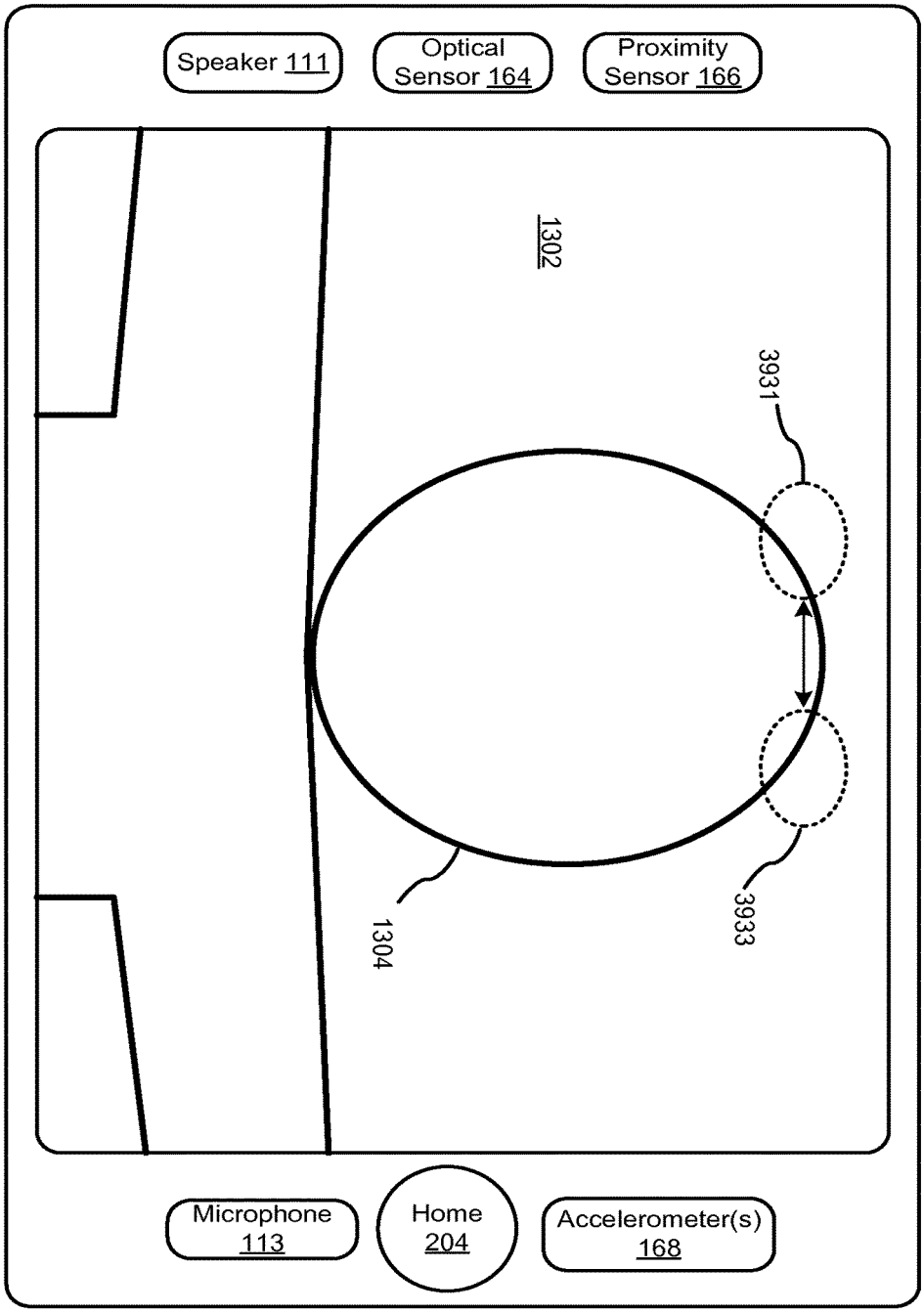


Figure 13B

To Figure 13C

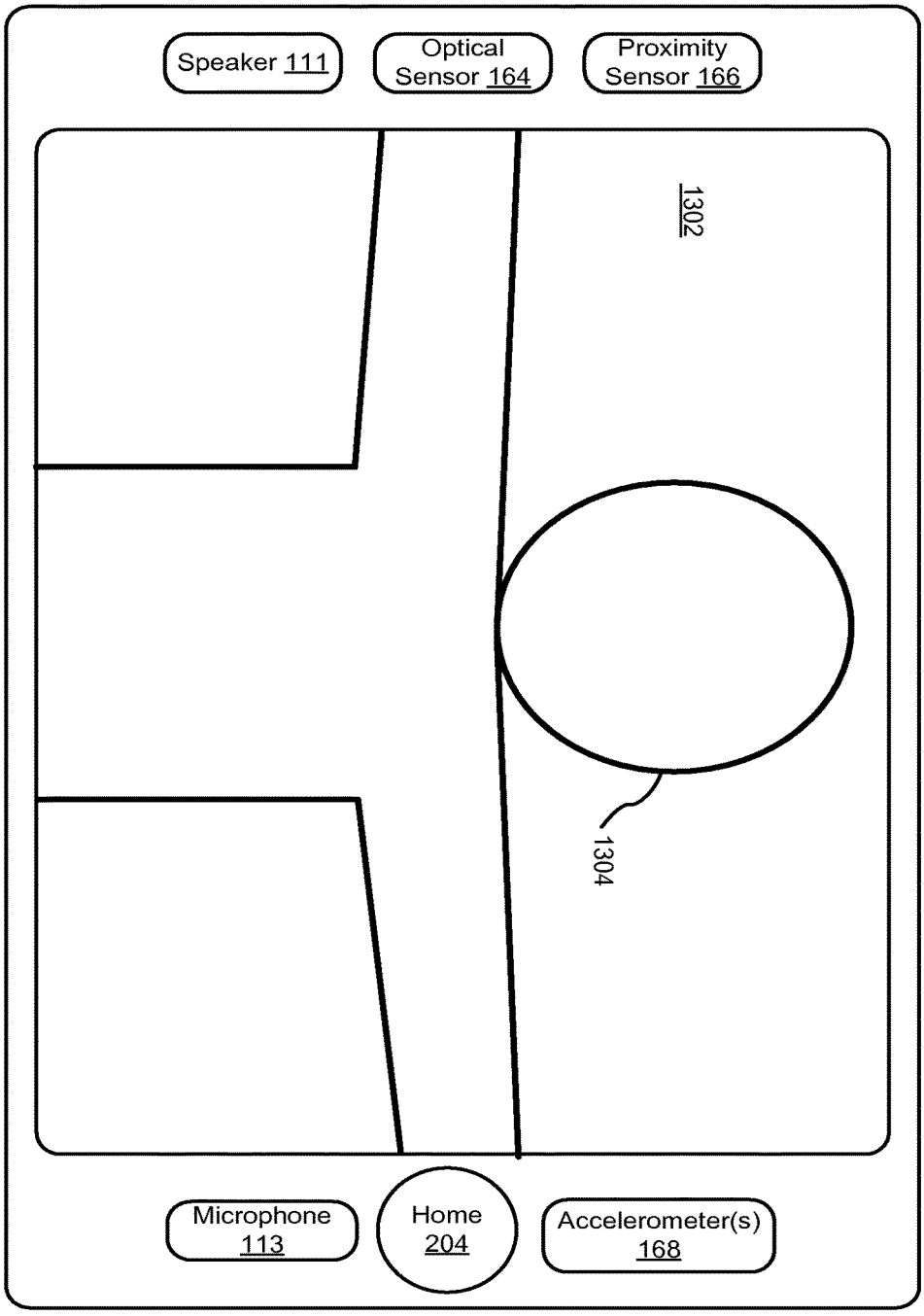

Speaker 111
Optical Sensor 164
Proximity Sensor 166
1302
1304
Microphone 113
Home 204
Accelerometer(s) 168

Figure 13C

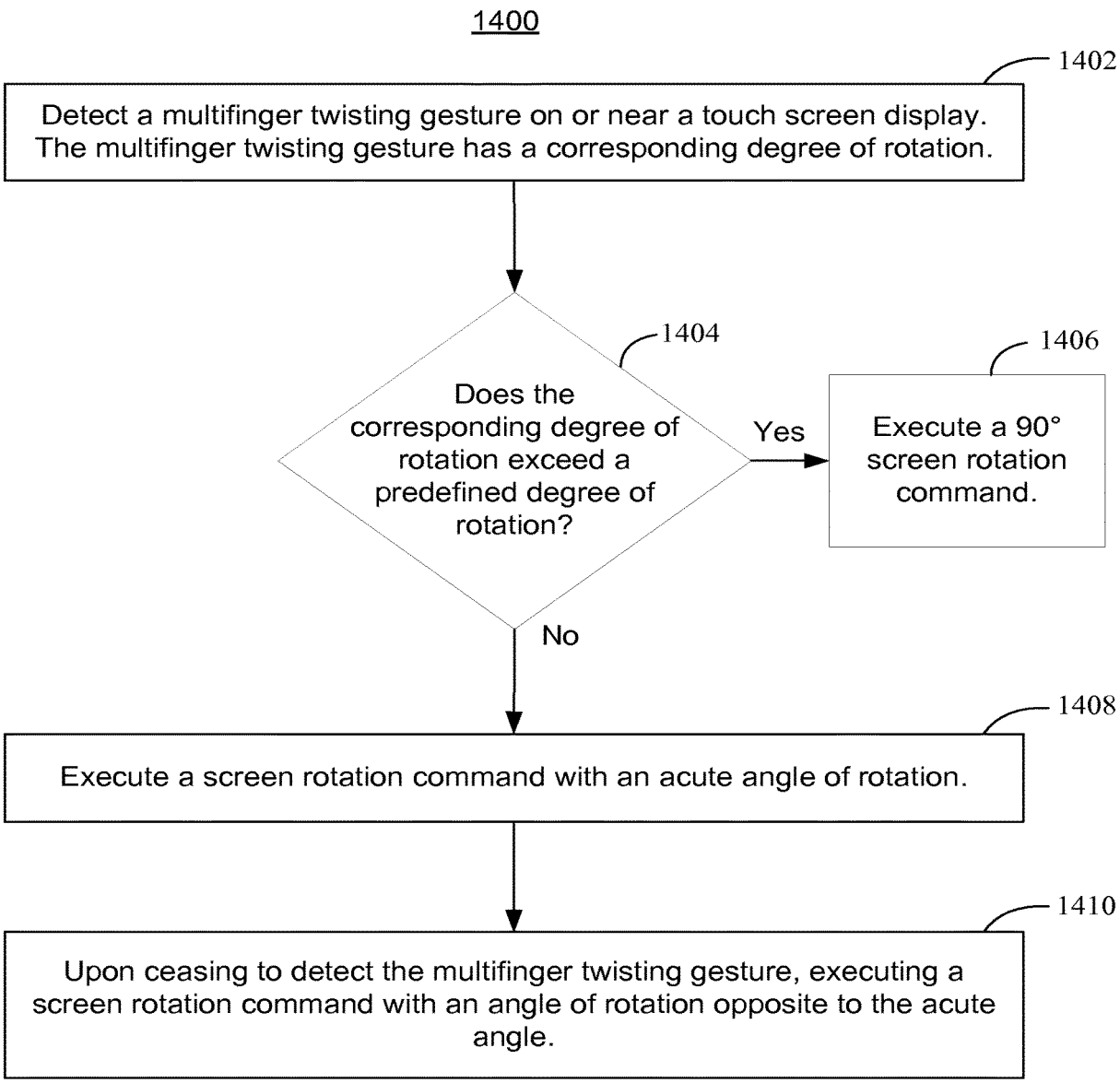
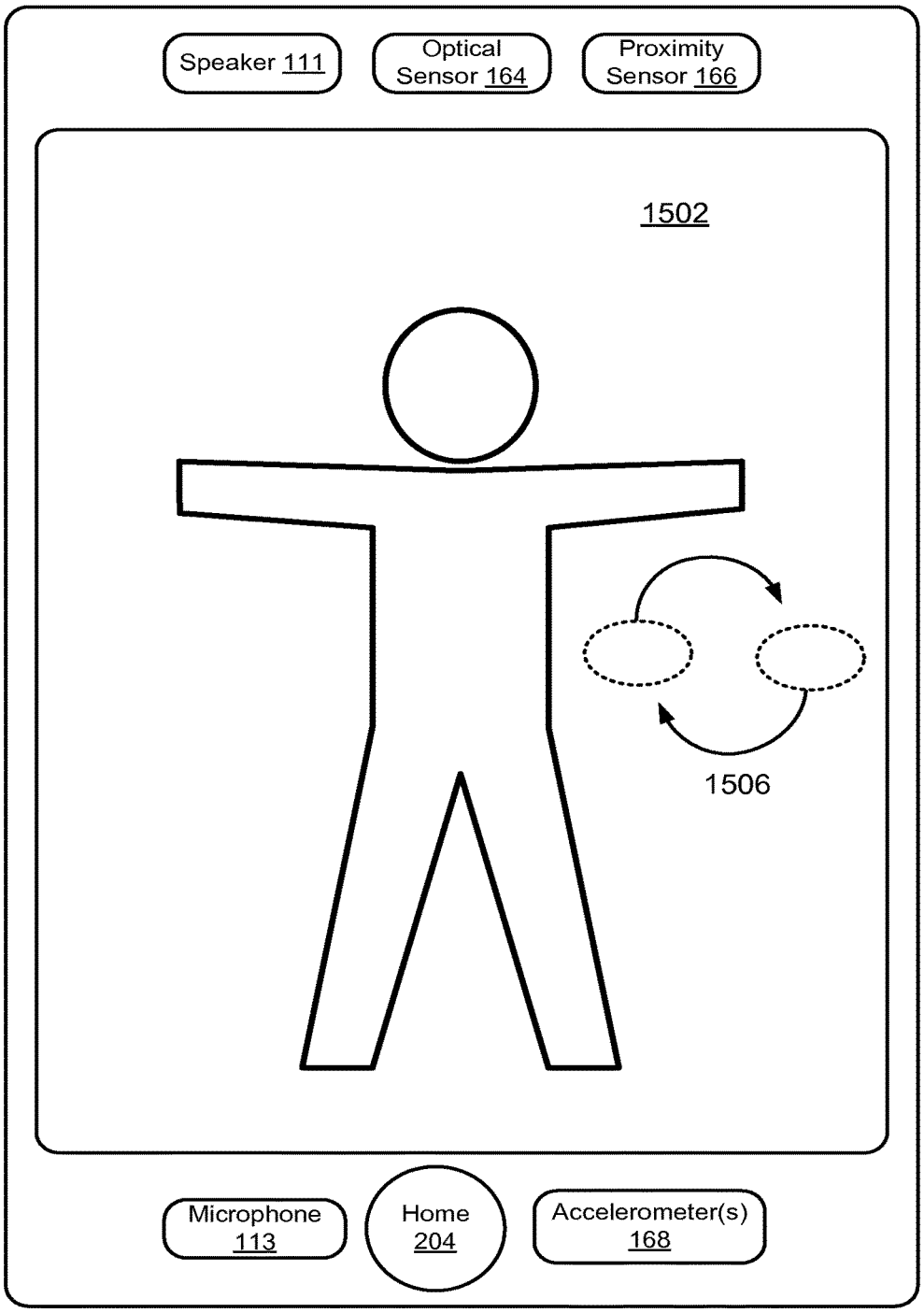

1400
1402
Detect a multifinger twisting gesture on or near a touch screen display. The multifinger twisting gesture has a corresponding degree of rotation.
1404
Does the corresponding degree of rotation exceed a predefined degree of rotation?
Yes
1406
Execute a 90° screen rotation command.
No
1408
Execute a screen rotation command with an acute angle of rotation.
1410
Upon ceasing to detect the multifinger twisting gesture, executing a screen rotation command with an angle of rotation opposite to the acute angle.

Figure 14



To Figure 15B

Figure 15A

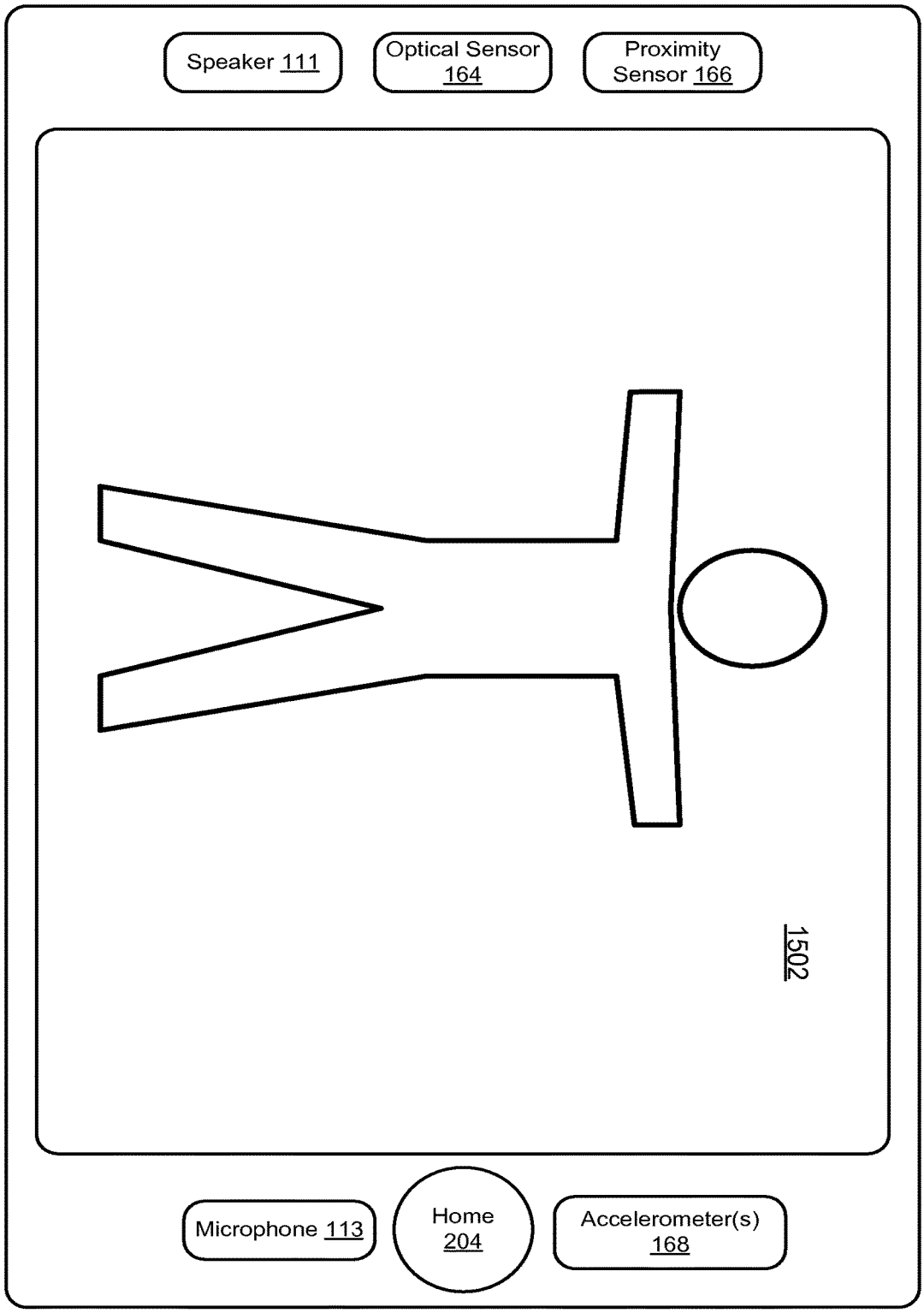

Speaker 111
Optical Sensor 164
Proximity Sensor 166
1502
Microphone 113
Home 204
Accelerometer(s) 168

Figure 15B

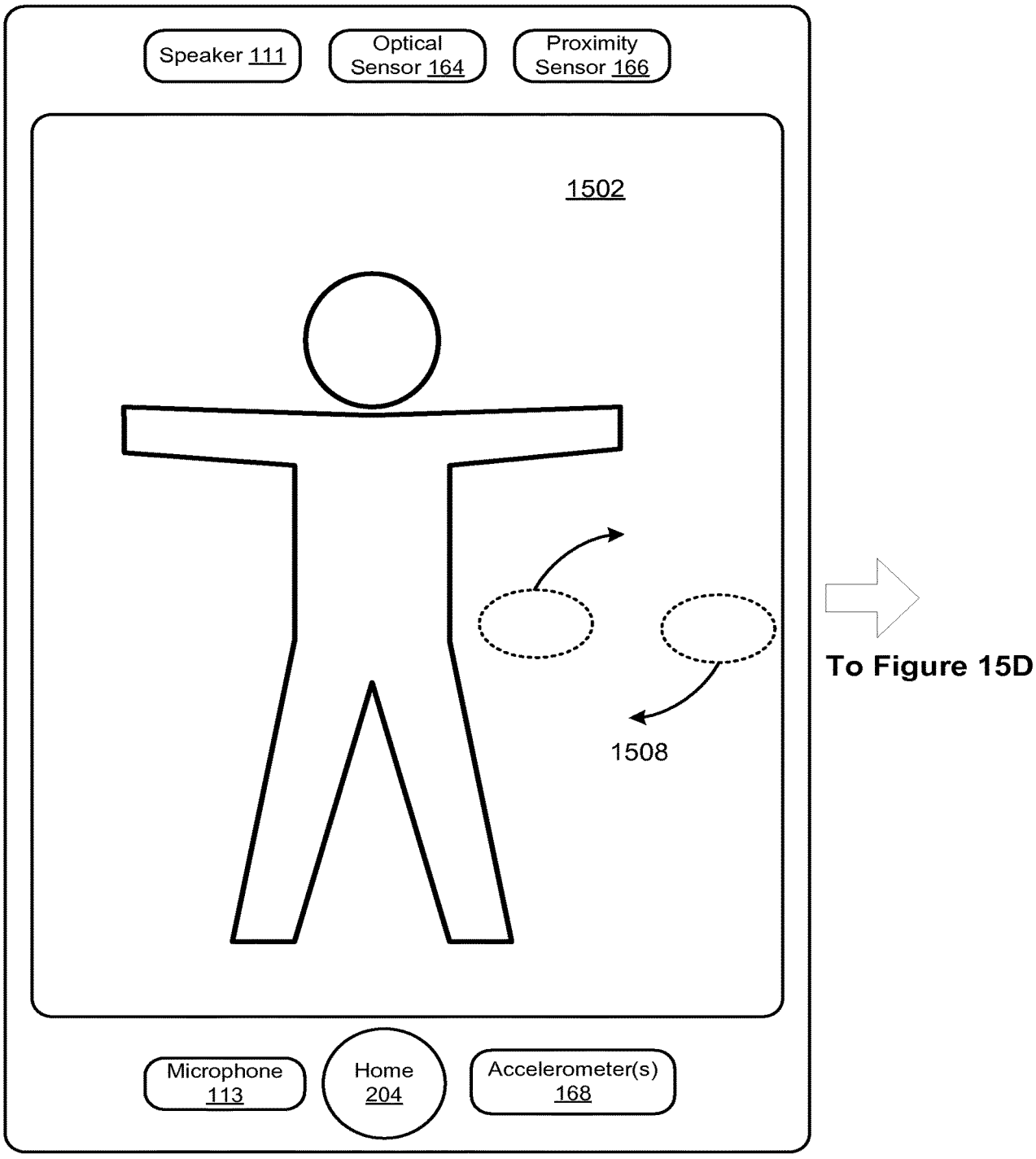
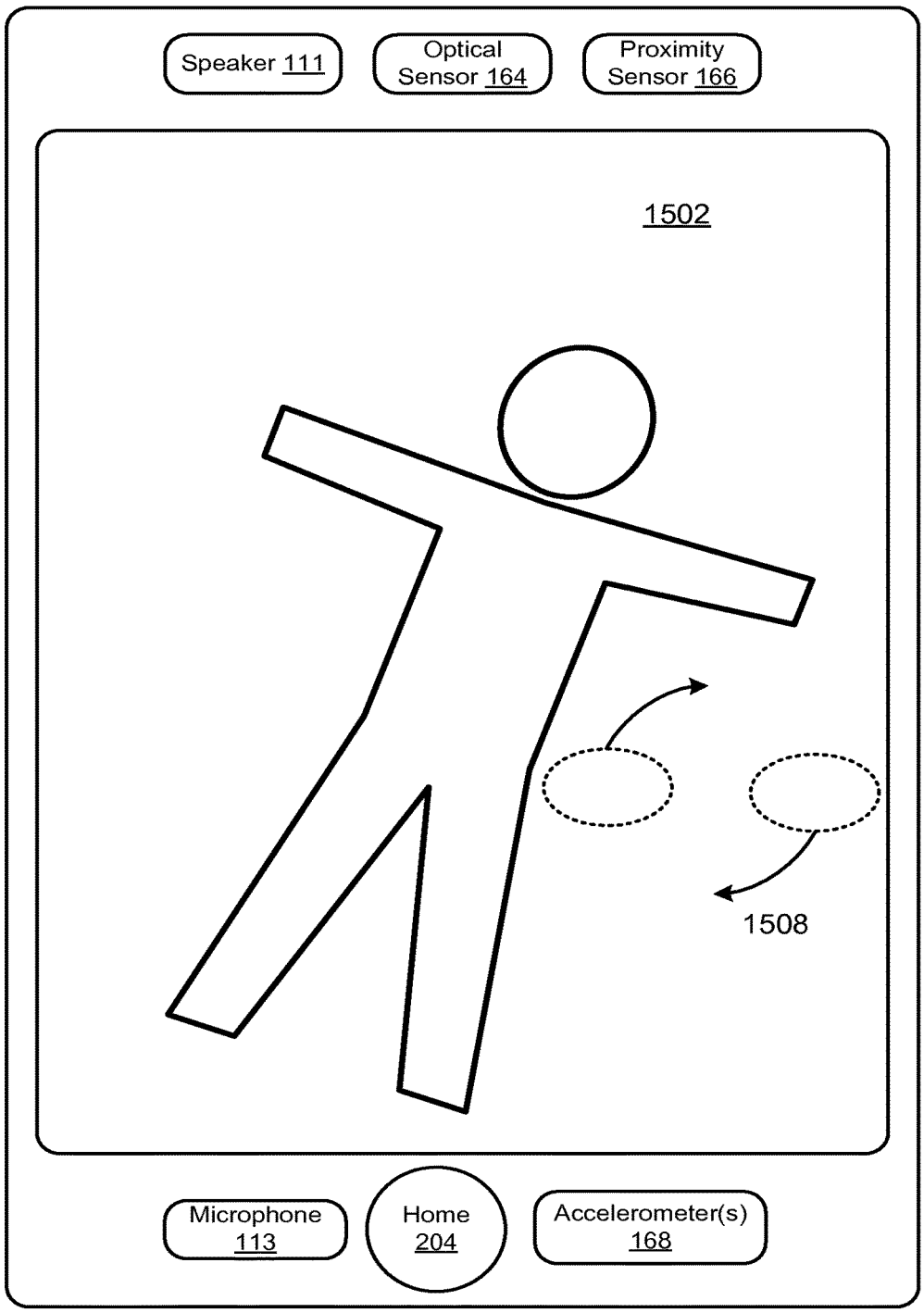

Speaker 111
Optical Sensor 164
Proximity Sensor 166
1502
1508
Microphone 113
Home 204
Accelerometer(s) 168
To Figure 15D

Figure 15C



To Figure 15E

Figure 15D

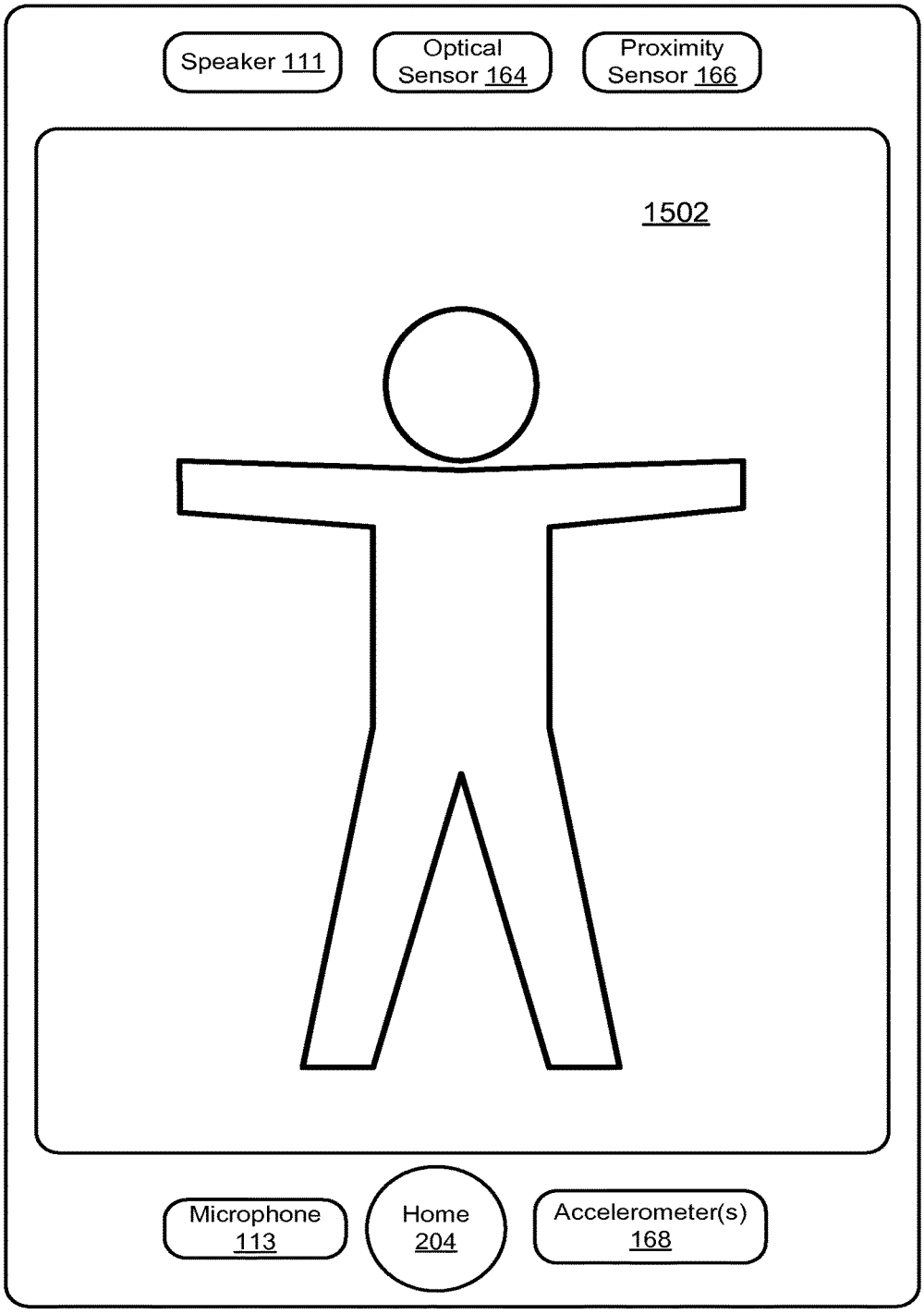

Speaker 111
Optical Sensor 164
Proximity Sensor 166
1502
Microphone 113
Home 204
Accelerometer(s) 168

Figure 15E

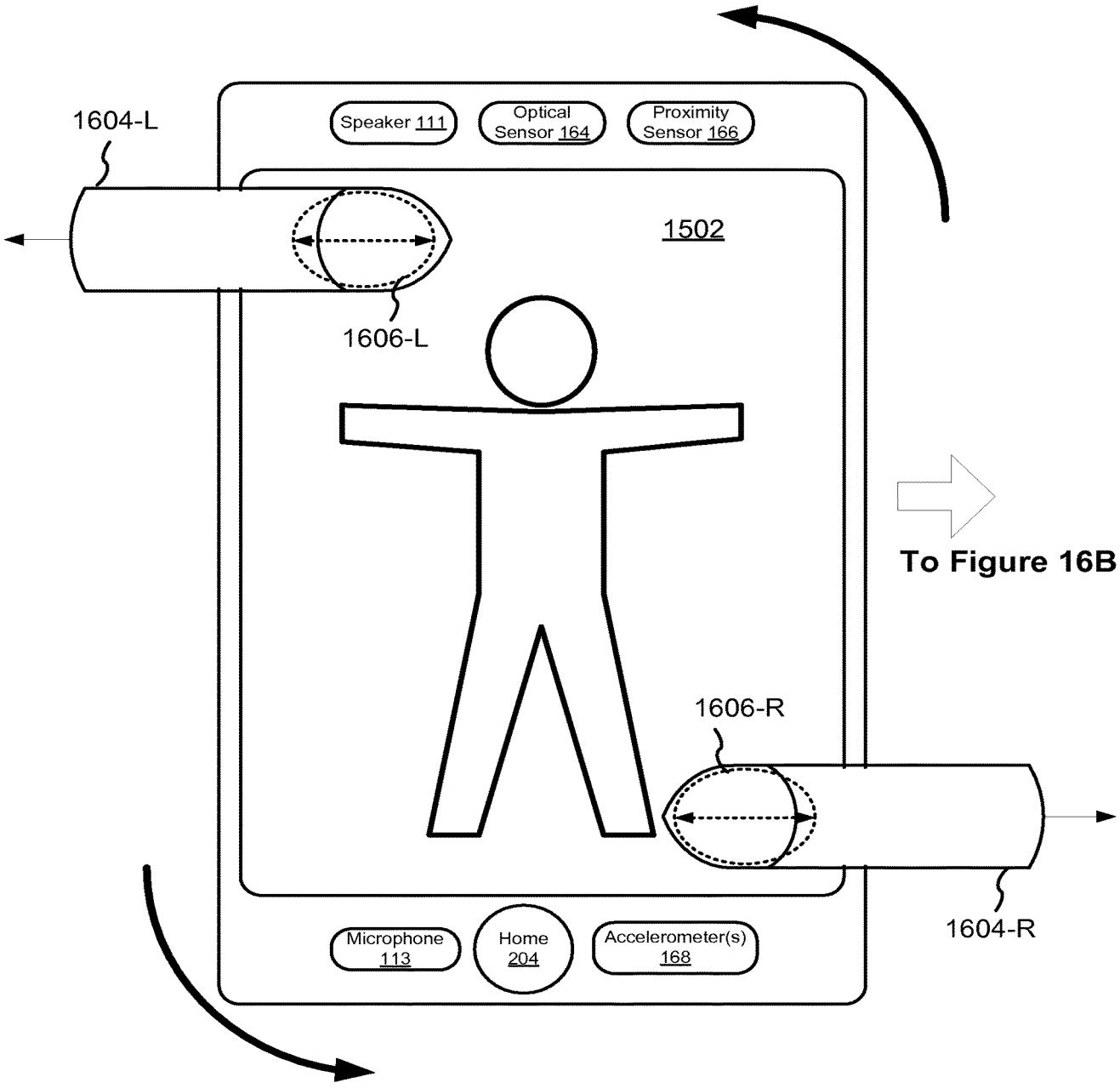

1604-L
Speaker 111
Optical Sensor 164
Proximity Sensor 166
1502
1606-L
To Figure 16B
1606-R
1604-R
Microphone 113
Home 204
Accelerometer(s) 168

Figure 16A

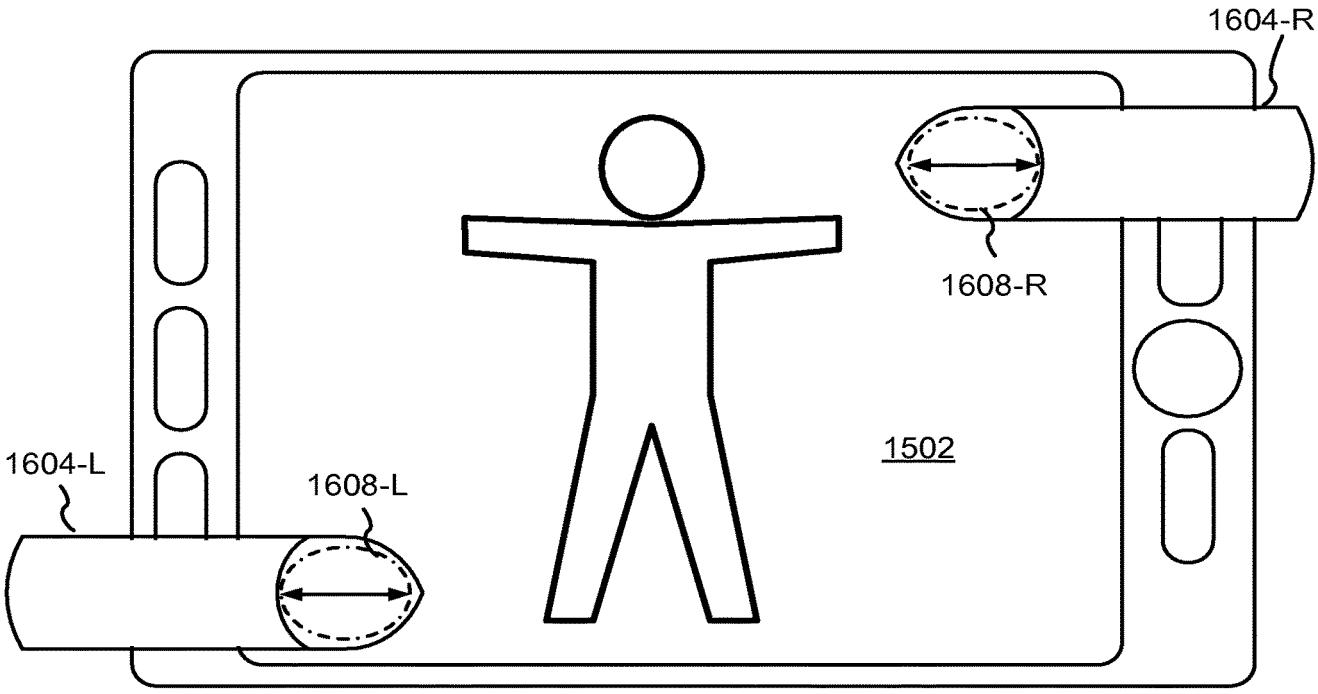


Figure 16B

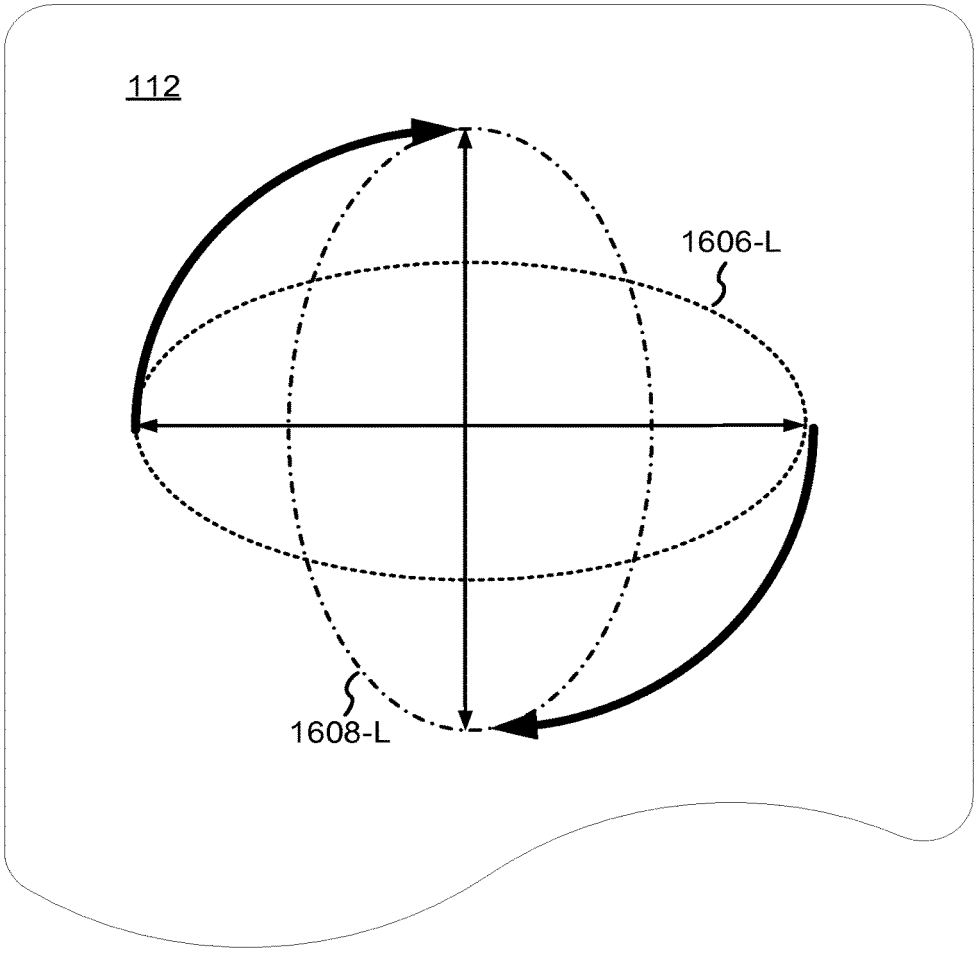


Figure 16C

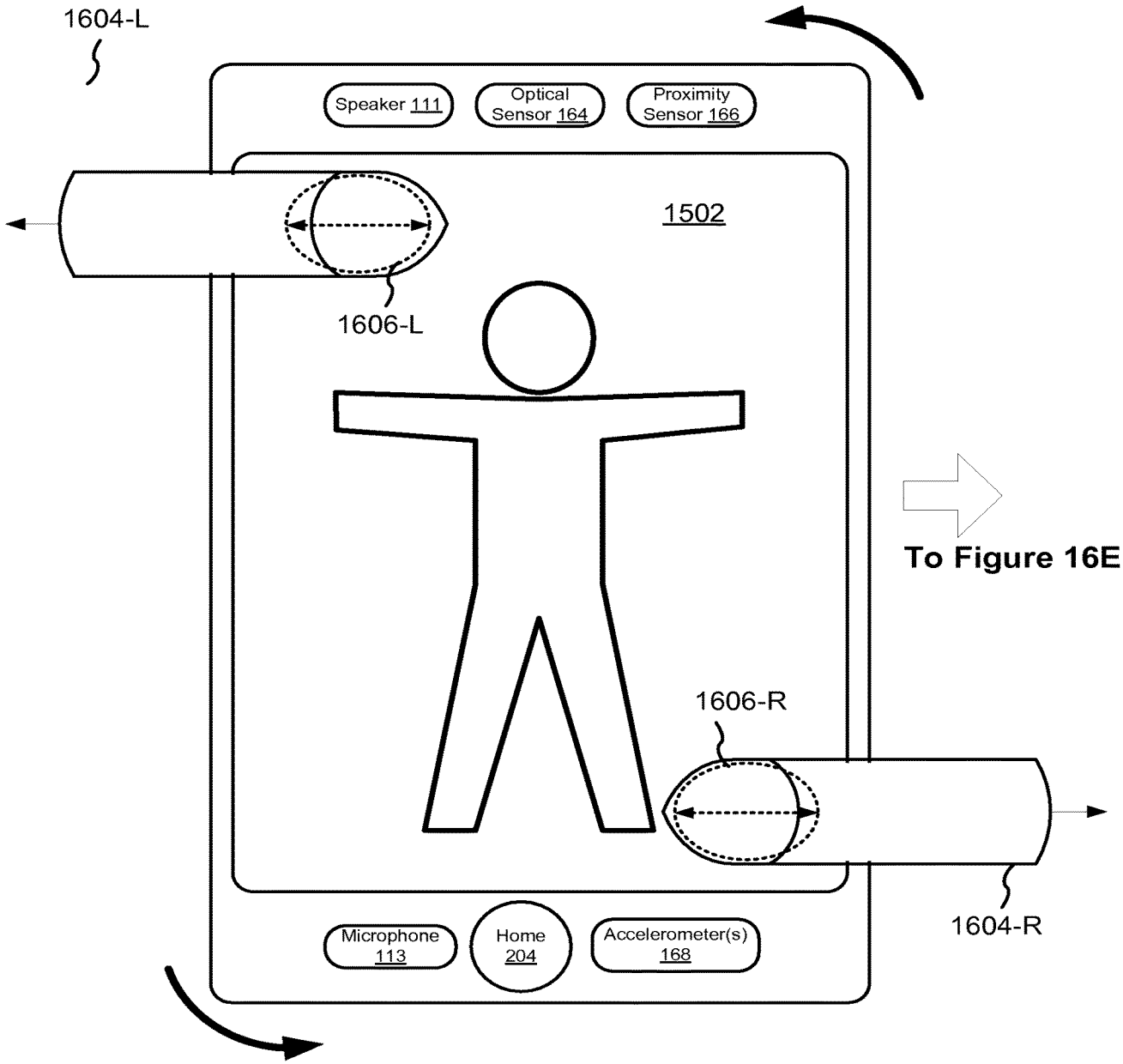

1604-L
Speaker 111
Optical Sensor 164
Proximity Sensor 166
1502
1606-L
To Figure 16E
1606-R
1604-R
Microphone 113
Home 204
Accelerometer(s) 168

Figure 16D

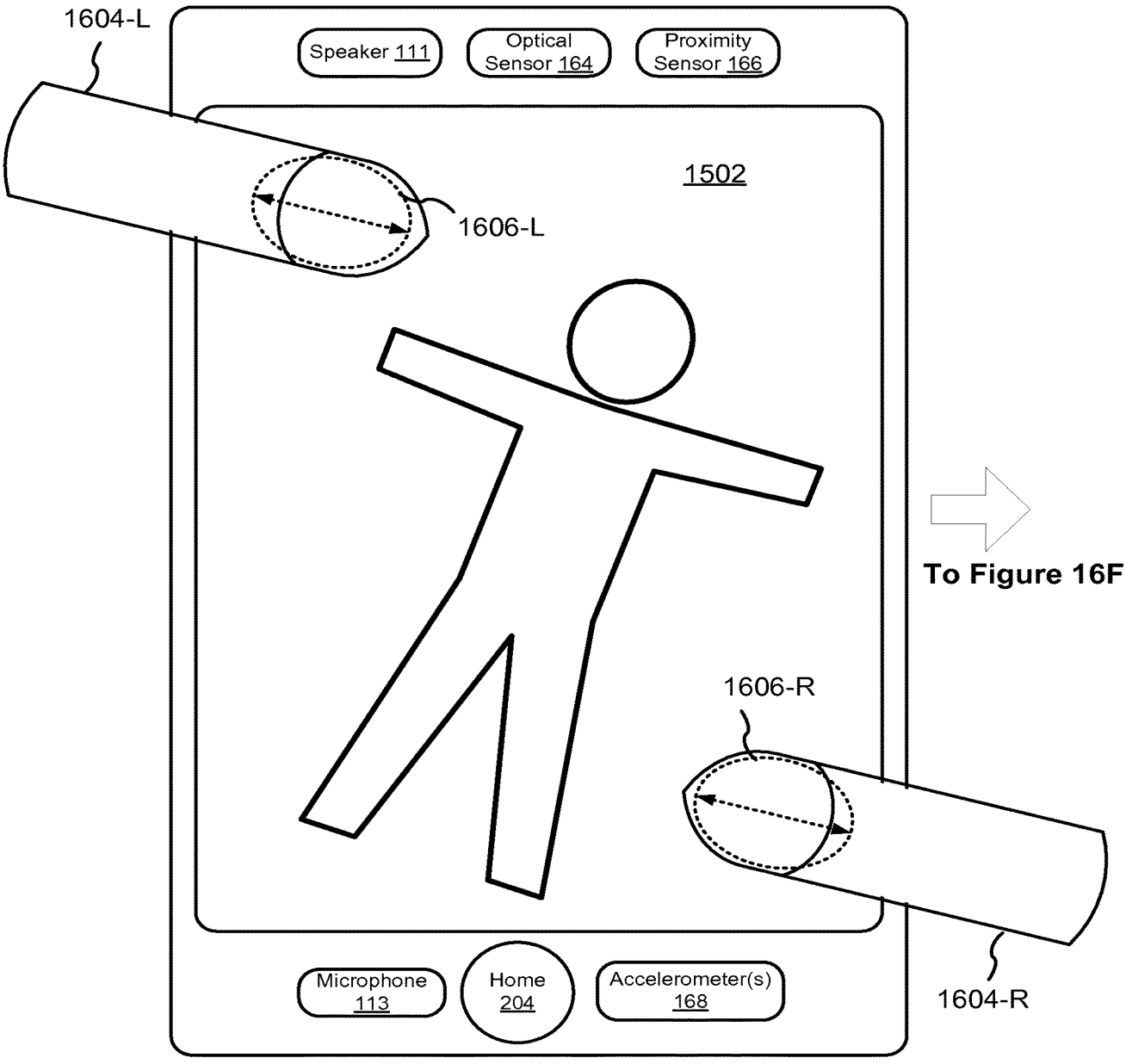

1604-L
Speaker 111
Optical Sensor 164
Proximity Sensor 166
1502
1606-L
To Figure 16F
1606-R
Microphone 113
Home 204
Accelerometer(s) 168
1604-R

Figure 16E

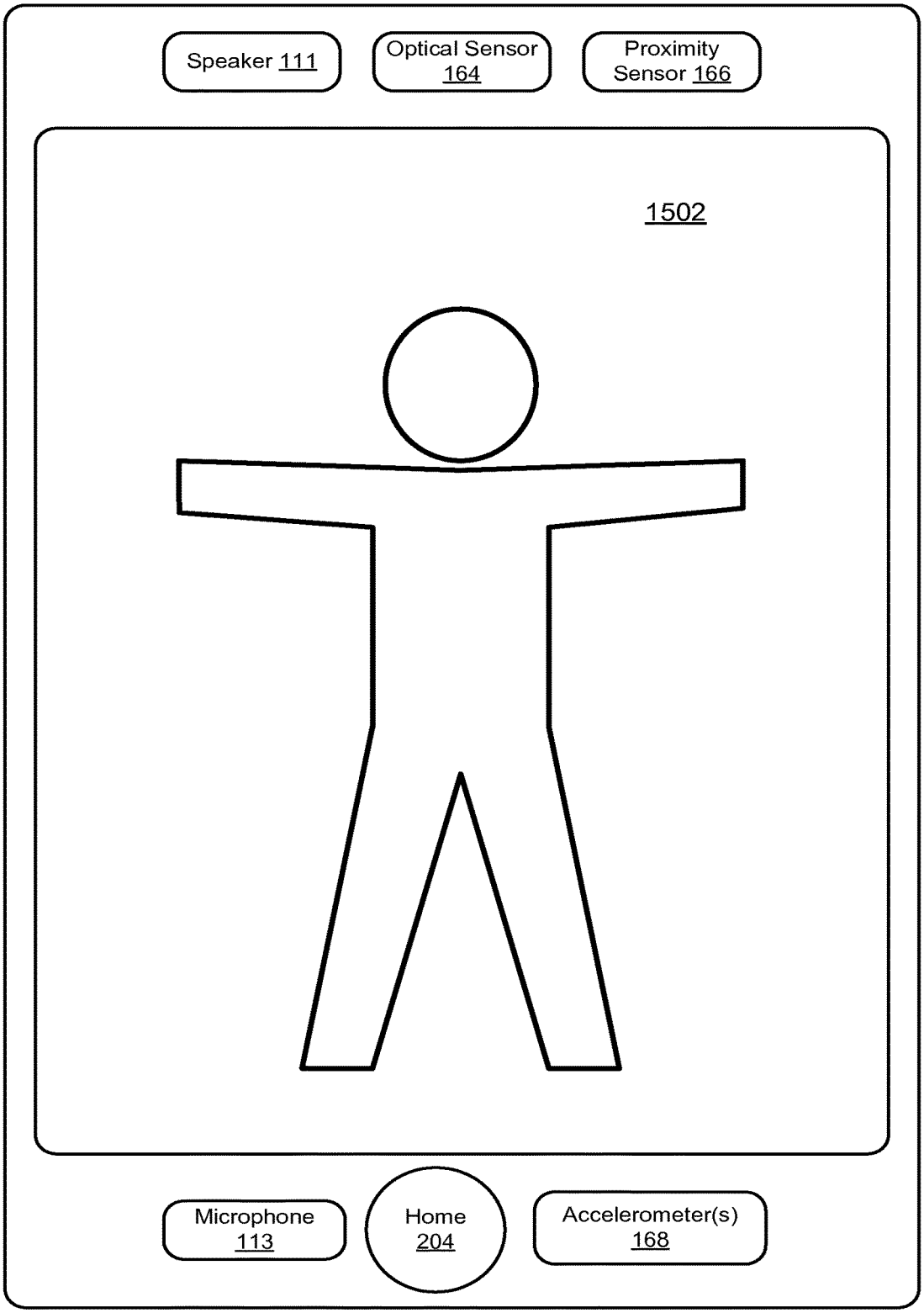

Speaker 111
Optical Sensor 164
Proximity Sensor 166
1502
Microphone 113
Home 204
Accelerometer(s) 168

Figure 16F

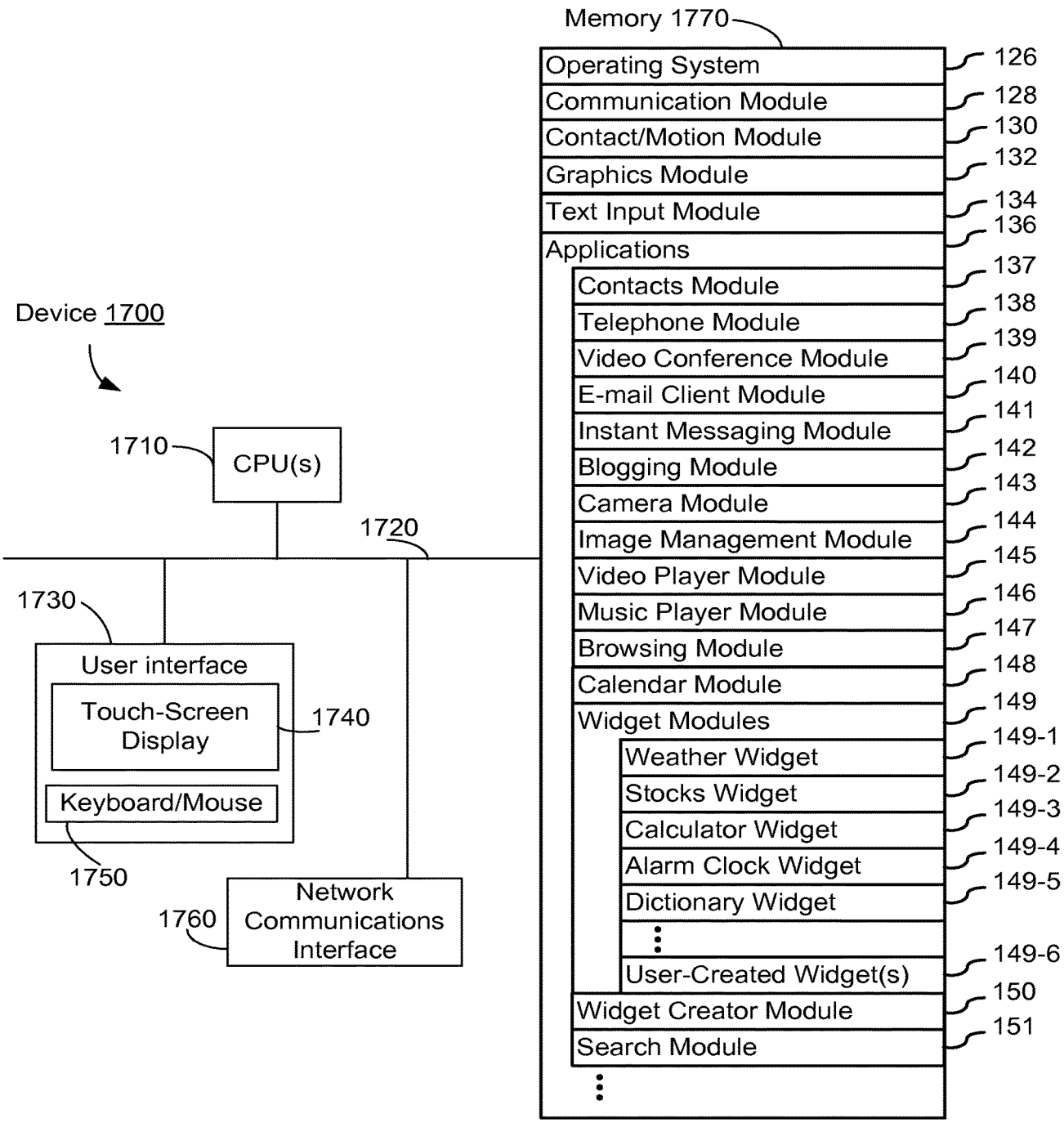

Memory 1770
Operating System
126
Communication Module
128
Contact/Motion Module
130
Graphics Module
132
Text Input Module
134
Applications
136
Contacts Module
137
Telephone Module
138
Video Conference Module
139
E-mail Client Module
140
Instant Messaging Module
141
Blogging Module
142
Camera Module
143
Image Management Module
144
Video Player Module
145
Music Player Module
146
Browsing 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
Device 1700
1710
CPU(s)
1720
1730
User interface
Touch-Screen Display
1740
Keyboard/Mouse
1750
1760
Network Communications Interface

Figure 17

What is claimed is:

1. A computer-implemented method, comprising:

at a device with a touch screen display,

detecting a movement of an object on or near the touch screen display;

in response to detecting the movement, translating an electronic document displayed on the touch screen display in a first direction;

in response to an edge of the electronic document being reached while translating the electronic document in the first direction while the object is still detected on or near the touch screen display, displaying an area beyond the edge of the document; and

after the object is no longer detected on or near the touch screen display, translating the document in a second direction until the area beyond the edge of the document is no longer displayed.

2. The computer-implemented method of claim 1, wherein the device is a portable multifunction device.

3. The computer-implemented method of claim 1, wherein the movement of the object is on the touch screen display.

4. The computer-implemented method of claim 1, wherein the object is a finger.

5. The computer-implemented method of claim 1, wherein the first direction is a vertical direction, a horizontal direction, or a diagonal direction.

6. The computer-implemented method of claim 1, wherein the electronic document is a web page.

7. The computer-implemented method of claim 1, wherein the electronic document is a digital image.

8. The computer-implemented method of claim 1, wherein the electronic document is a word processing, spreadsheet, email or presentation document.

9. The computer-implemented method of claim 1, wherein the electronic document includes a list of items.

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10. The computer-implemented method of claim 1, wherein the second direction is opposite the first direction.

11. The computer-implemented method of claim 1, wherein translating in the first direction prior to reaching an edge of the document has an associated speed of translation that corresponds to a speed of movement of the object.

12. The computer-implemented method of claim 1, wherein translating in the first direction is in accordance with a simulation of an equation of motion having friction.

13. The computer-implemented method of claim 1, wherein the area beyond the edge of the document is black, gray, a solid color, or white.

14. The computer-implemented method of claim 1, wherein the area beyond the edge of the document is visually distinct from the document.

15. The computer-implemented method of claim 1, wherein translating the document in the second direction is a damped motion.

16. The computer-implemented method of claim 1, wherein changing from translating in the first direction to translating in the second direction until the area beyond the edge of the document is no longer displayed makes the edge of the electronic document appear to be elastically attached to an edge of the touch screen display or to an edge displayed on the touch screen display.

17. The computer-implemented method of claim 1, wherein translating in the first direction prior to reaching the edge of the electronic document has a first associated translating distance that corresponds to a distance of movement of the object prior to reaching the edge of the electronic document; and wherein displaying an area beyond the edge of the electronic document comprises translating the electronic document in the first direction for a second associated translating distance, wherein the second associated translating distance is less than a distance of movement of the object after reaching the edge of the electronic document.

18. The computer-implemented method of claim 1, wherein translating in the first direction prior to reaching the edge of the electronic document has a first associated

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translating speed that corresponds to a speed of movement of the object, and wherein displaying an area beyond the edge of the electronic document comprises translating the electronic document in the first direction at a second associated translating speed, wherein the second associated translating speed is slower than the first associated translating speed.

19. A device, comprising:

a touch screen display;

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 programs including:

instructions for detecting a movement of an object on or near the touch screen display;

instructions for translating an electronic document displayed on the touch screen display in a first direction, in response to detecting the movement;

instructions for displaying an area beyond an edge of the electronic document in response to the edge of the electronic document being reached while translating the electronic document in the first direction while the object is still detected on or near the touch screen display; and

instructions for translating the document in a second direction until the area beyond the edge of the document is no longer displayed, after the object is no longer detected on or near the touch screen display.

20. A computer readable storage medium having stored therein instructions, which when executed by a device with a touch screen display, cause the device to:

detect a movement of an object on or near the touch screen display;

translate an electronic document displayed on the touch screen display in a first direction, in response to detecting the movement;

display an area beyond an edge of the electronic document if the edge of the electronic document is reached while translating the electronic document in the first direction while the object is still detected on or near the touch screen display; and

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translate the document in a second direction until the area beyond the edge of the document is no longer displayed, after the object is no longer detected on or near the touch screen display.

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List Scrolling and Document Translation, Scaling, and Rotation on a Touch-Screen Display

RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Patent Application Nos. 60/937,993, "Portable Multifunction Device," filed June 29, 2007; 60/946,971, "List Scrolling and Document Translation, Scaling, and Rotation on a Touch-Screen Display," filed June 28, 2007; 60/945,858, "List Scrolling and Document Translation on a Touch-Screen Display," filed June 22, 2007; 60/879,469, "Portable Multifunction Device," filed January 8, 2007; 60/883,801, "List Scrolling and Document Translation on a Touch-Screen Display," filed January 7, 2007; and 60/879,253, "Portable Multifunction Device," filed January 7, 2007. All of these applications are incorporated by reference herein in their entirety.

[0002] This application is related to the following applications: (1) U.S. Patent Application No. 10/188,182, "Touch Pad For Handheld Device," filed on July 1, 2002; (2) U.S. Patent Application No. 10/722,948, "Touch Pad For Handheld Device," filed on November 25, 2003; (3) U. S. Patent Application No. 10/643,256, "Movable Touch Pad With Added Functionality," filed on August 18, 2003; (4) U.S. Patent Application No. 10/654,108, "Ambidextrous Mouse," filed on September 2, 2003; (5) U.S. Patent Application No. 10/840,862, "Multipoint Touchscreen," filed on May 6, 2004; (6) U.S. Patent Application No: 10/903,964, "Gestures For Touch Sensitive Input Devices," filed on July 30,2004; (7) U.S. Patent Application No. 11/038,590, "Mode-Based Graphical User Interfaces For Touch Sensitive Input Devices" filed on January 18, 2005; (8) U.S. Patent Application No. 11/057,050, "Display Actuator," filed on February 11, 2005; (9) U.S. Provisional Patent Application No. 60/658,777, "Multi-Functional Hand-Held Device," filed March 4, 2005; (10) U.S. Patent Application No. 11/367,749, "Multi-Functional Hand-Held Device," filed March 3, 2006; and (11) U.S. Provisional Patent Application No. 60/824,769, "Portable Multifunction Device," filed September 6, 2006. All of these applications are incorporated by reference herein in their entirety.

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TECHNICAL FIELD

[0003] The disclosed embodiments relate generally to devices with touch-screen displays, and more particularly to scrolling lists and to translating, rotating, and scaling electronic documents on devices with touch-screen displays.

BACKGROUND

[0004] As portable electronic devices become more compact, and the number of functions performed by a given device increases, it has become a significant challenge to design a user interface that allows users to easily interact with a multifunction device. This challenge is particularly significant for handheld portable devices, which have much smaller screens than desktop or laptop computers. This situation is unfortunate because the user interface is the gateway through which users receive not only content but also responses to user actions or behaviors, including user attempts to access a device's features, tools, and functions. Some portable communication devices (e.g., mobile telephones, sometimes called mobile phones, cell phones, cellular telephones, and the like) have resorted to adding more pushbuttons, increasing the density of push buttons, overloading the functions of pushbuttons, or using complex menu systems to allow a user to access, store and manipulate data. These conventional user interfaces often result in complicated key sequences and menu hierarchies that must be memorized by the user.

[0005] Many conventional user interfaces, such as those that include physical pushbuttons, are also inflexible. This is unfortunate because it may prevent a user interface from being configured and/or adapted by either an application running on the portable device or by users. When coupled with the time consuming requirement to memorize multiple key sequences and menu hierarchies, and the difficulty in activating a desired pushbutton, such inflexibility is frustrating to most users.

[0006] As a result of the small size of display screens on portable electronic devices and the potentially large size of electronic files, frequently only a portion of a list or of an electronic document of interest to a user can be displayed on the screen at a given time. Users thus will frequently need to scroll displayed lists or to translate displayed electronic documents. Users also will need to rotate and to scale (i.e., magnify or de-magnify)

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displayed electronic documents. However, the limitations of conventional user interfaces can cause these actions to be awkward to perform.

[0007] Furthermore, scrolling displayed lists and translating electronic documents can be awkward on both portable and non-portable electronic devices with touch-screen displays. A user may become frustrated if the scrolling or translation does not reflect the user's intent. Similarly, a user may become frustrated if rotation and scaling of electronic documents does not reflect the user's intent.

[0008] Accordingly, there is a need for devices with touch-screen displays with more transparent and intuitive user interfaces for scrolling lists of items and for translating, rotating, and scaling electronic documents that are easy to use, configure, and/or adapt.

SUMMARY

[0009] The above deficiencies and other problems associated with user interfaces for portable devices and devices with touch-sensitive displays are reduced or eliminated by the disclosed device. In some embodiments, the device has a touch-sensitive display (also known as a "touch screen") with a graphical user interface (GUI), one or more processors, memory and one or more modules, programs or sets of instructions stored in the memory for performing multiple functions. In some embodiments, the user interacts with the GUI primarily through finger contacts and gestures on the touch-sensitive display. In some embodiments, the functions may include telephoning, video conferencing, e-mailing, instant messaging, blogging, digital photographing, digital videoing, web browsing, digital music playing, and/or digital video playing. Instructions for performing these functions may be included in a computer program product configured for execution by one or more processors.

[0010] In accordance with some embodiments, a computer-implemented method for use in conjunction with a device with a touch screen display is disclosed. In the method, a movement of an object on or near the touch screen display is detected. In response to detecting the movement, an electronic document displayed on the touch screen display is translated in a first direction. If an edge of the electronic document is reached while translating the electronic document in the first direction while the object is still detected on or near the touch screen display, an area beyond the edge of the document is displayed.

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After the object is no longer detected on or near the touch screen display, the document is translated in a second direction until the area beyond the edge of the document is no longer displayed.

[0011] In accordance with some embodiments, a graphical user interface on a device with a touch screen display is disclosed, comprising a portion of an electronic document displayed on the touch screen display and an area beyond an edge of the document. In the graphical user interface, in response to detecting a movement of an object on or near the touch screen display, the electronic document is translated in a first direction. If the edge of the electronic document is reached while translating the electronic document in the first direction while the object is still detected on or near the touch screen display, the area beyond the edge of the document is displayed. After the object is no longer detected on or near the touch screen display, the document is translated in a second direction until the area beyond the edge of the document is no longer displayed.

[0012] In accordance with some embodiments, a device is disclosed, comprising a touch screen display, one or more processors, memory, and one or more programs. 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 include instructions for detecting a movement of an object on or near the touch screen display and instructions for translating an electronic document displayed on the touch screen display in a first direction, in response to detecting the movement. The one or more programs also include instructions for displaying an area beyond an edge of the electronic document if the edge of the electronic document is reached while translating the electronic document in the first direction while the object is still detected on or near the touch screen display. The one or more programs further include instructions for translating the document in a second direction until the area beyond the edge of the document is no longer displayed, after the object is no longer detected on or near the touch screen display.

[0013] In accordance with some embodiments, a computer-program product is disclosed, comprising a computer readable storage medium and a computer program mechanism embedded therein. The computer program mechanism comprises instructions, which when executed by a device with a touch screen display, cause the device to detect a movement of an object on or near the touch screen display and to translate an electronic

document displayed on the touch screen display in a first direction, in response to detecting the movement. The instructions also cause the device to display an area beyond an edge of the electronic document if the edge of the electronic document is reached while translating the electronic document in the first direction while the object is still detected on or near the touch screen display. The instructions further cause the device to translate the document in a second direction until the area beyond the edge of the document is no longer displayed, after the object is no longer detected on or near the touch screen display.

[0014] In accordance with some embodiments, a device with a touch screen display is disclosed. The device comprises means for detecting a movement of an object on or near the touch screen display and means for translating an electronic document displayed on the touch screen display in a first direction, in response to detecting the movement. The device also comprises means for displaying an area beyond an edge of the electronic document if the edge of the electronic document is reached while translating the electronic document in the first direction while the object is still detected on or near the touch screen display. The device further comprises means for translating the document in a second direction until the area beyond the edge of the document is no longer displayed, after the object is no longer detected on or near the touch screen display.

[0015] In accordance with some embodiments, a computer-implemented method for use in conjunction with a device with a touch screen display is disclosed. In the method, a movement of an object on or near the touch screen display is detected. In response to detecting the movement, a list of items displayed on the touch screen display is scrolled in a first direction. If a terminus of the list is reached while scrolling the list in the first direction while the object is still detected on or near the touch screen display, an area beyond the terminus of the list is displayed. After the object is no longer detected on or near the touch screen display, the list is scrolled in a second direction opposite the first direction until the area beyond the terminus of the list is no longer displayed.

[0016] In accordance with some embodiments, a graphical user interface on a device with a touch screen display is disclosed, comprising a portion of a list of items displayed on the touch screen display and an area beyond a terminus of the list. In response to detecting a movement of an object on or near the touch screen display, the list is scrolled in a first direction. If the terminus of the list is reached while scrolling the list in the first direction

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