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Jobs et al.

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(54) **TOUCH SCREEN DEVICE, METHOD, AND GRAPHICAL USER INTERFACE FOR DETERMINING COMMANDS BY APPLYING HEURISTICS**

(65) **Prior Publication Data**
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Related U.S. Application Data

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(63) Continuation of application No. 11/850,635, filed on Sep. 5, 2007.
(60) Provisional application No. 60/937,993, filed on Jun. 29, 2007, provisional application No. 60/937,991, filed on Jun. 29, 2007, provisional application No. 60/879,469, filed on Jan. 8, 2007, provisional application No. 60/879,253, filed on Jan. 7, 2007, provisional application No. 60/824,769, filed on Sep. 6, 2006.

(51) **Int. Cl.**
G09G 5/00 (2006.01)
G06F 3/048 (2006.01)
(52) **U.S. Cl.** **345/173; 345/169; 715/786; 715/784**
(58) **Field of Classification Search** **345/156, 345/157, 173-181**
See application file for complete search history.

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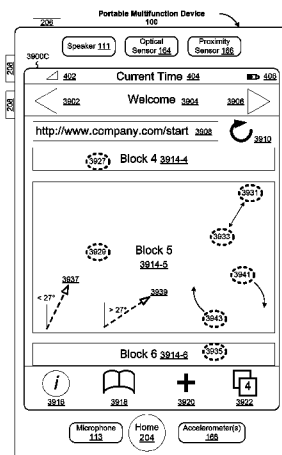
(73) Assignee: **Apple Inc.**, Cupertino, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(21) Appl. No.: **12/101,832**

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(74) Attorney, Agent, or Firm—Morgan, Lewis & Bockius LLP

(57) ABSTRACT

A computer-implemented method for use in conjunction with a computing device with a touch screen display comprises: detecting one or more finger contacts with the touch screen display, applying one or more heuristics to the one or more finger contacts to determine a command for the device, and processing the command. The one or more heuristics comprise: a heuristic for determining that the one or more finger contacts correspond to a one-dimensional vertical screen scrolling command, a heuristic for determining that the one or more finger contacts correspond to a two-dimensional screen translation command, and a heuristic for determining that the one or more finger contacts correspond to a command to transition from displaying a respective item in a set of items to displaying a next item in the set of items.

20 Claims, 293 Drawing Sheets

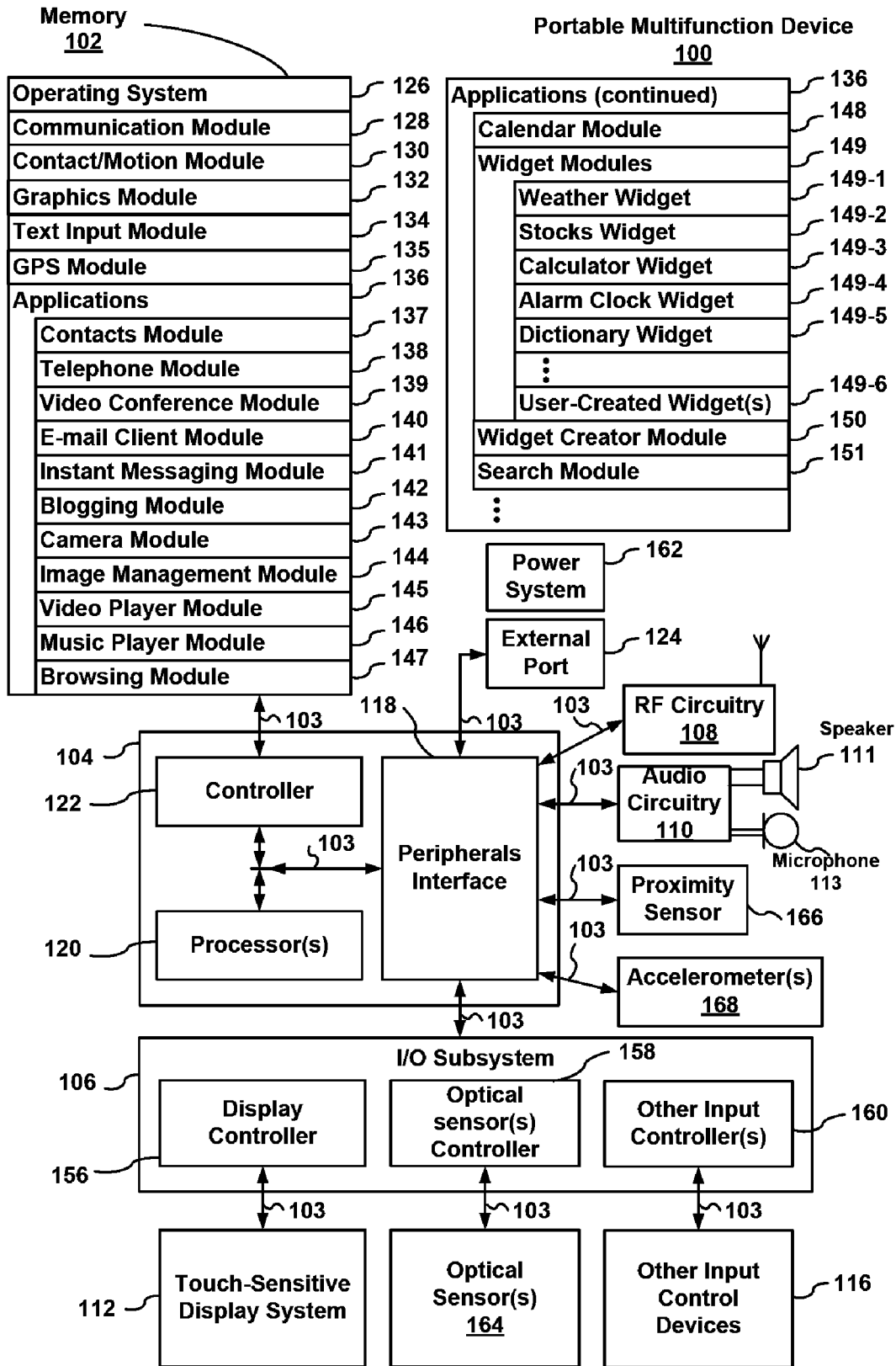


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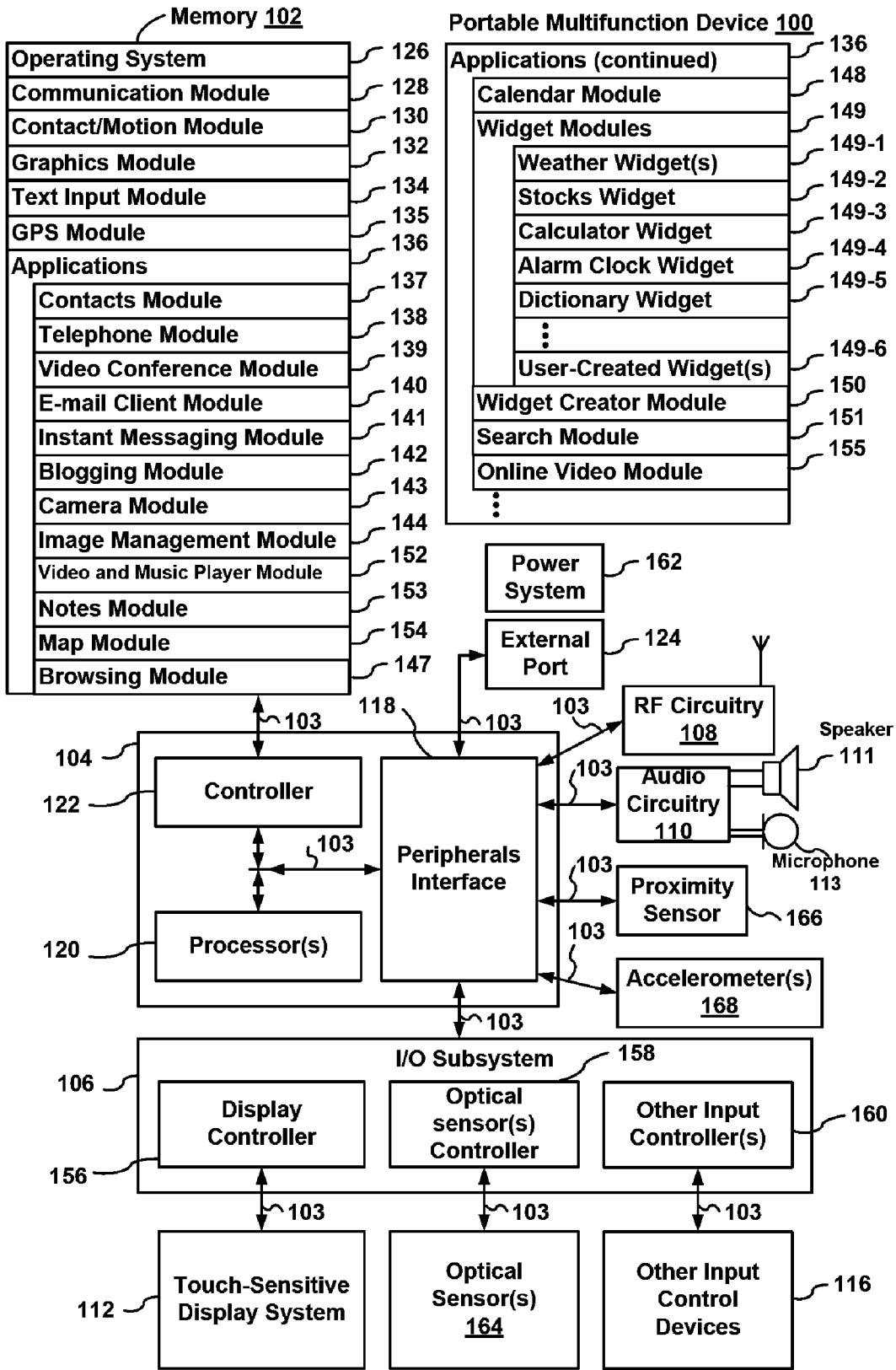


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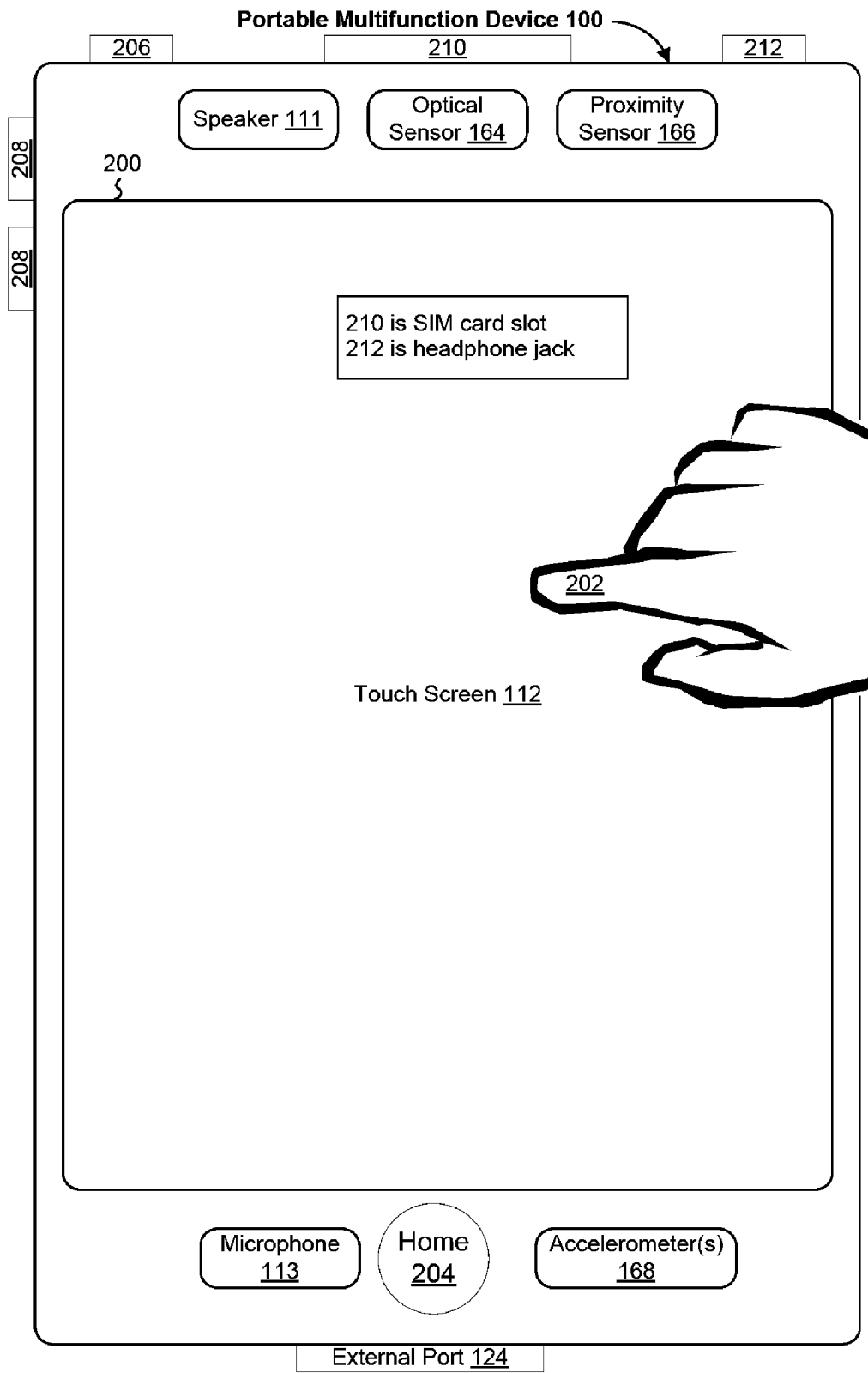


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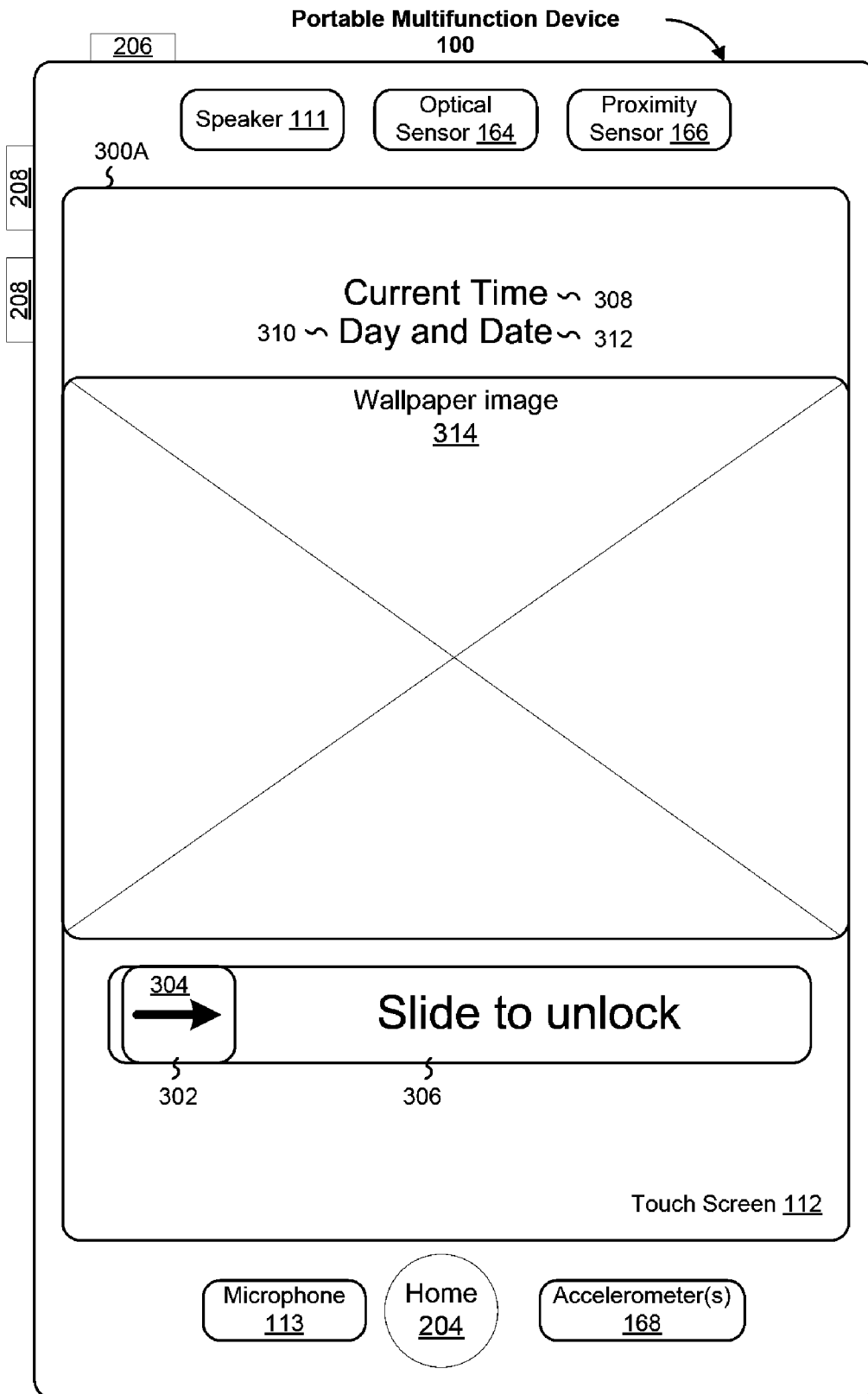


Figure 3A

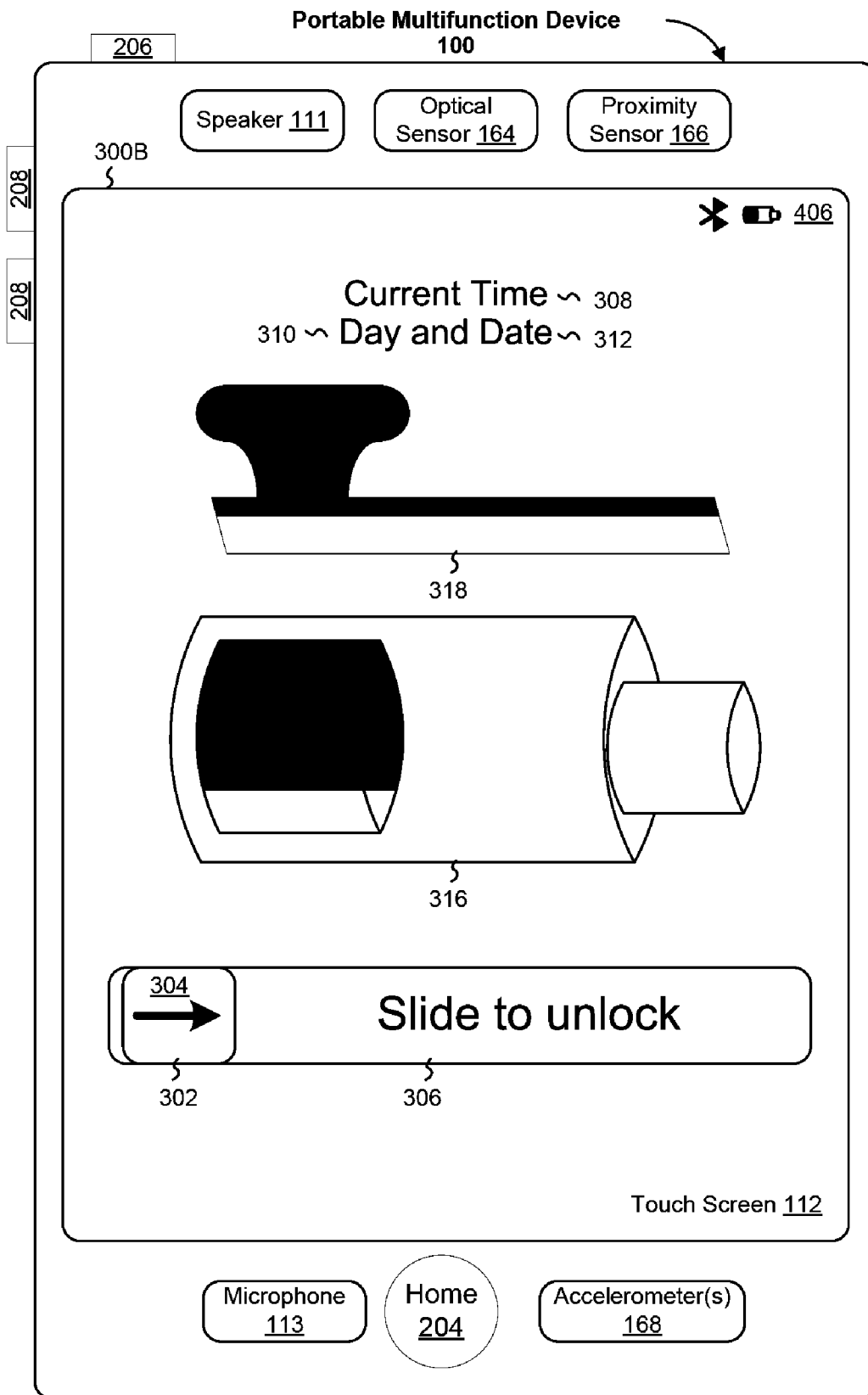


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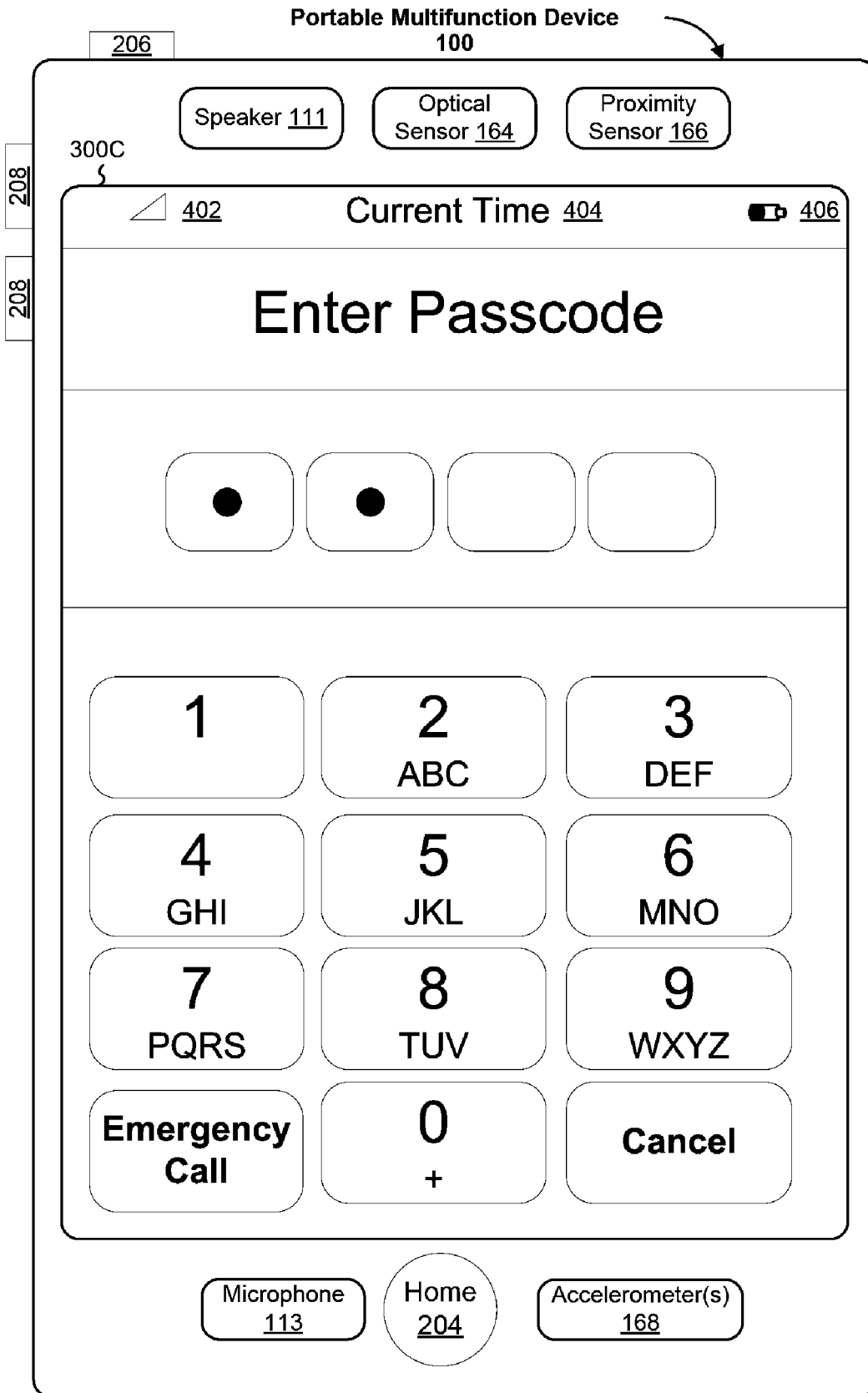


Figure 3C

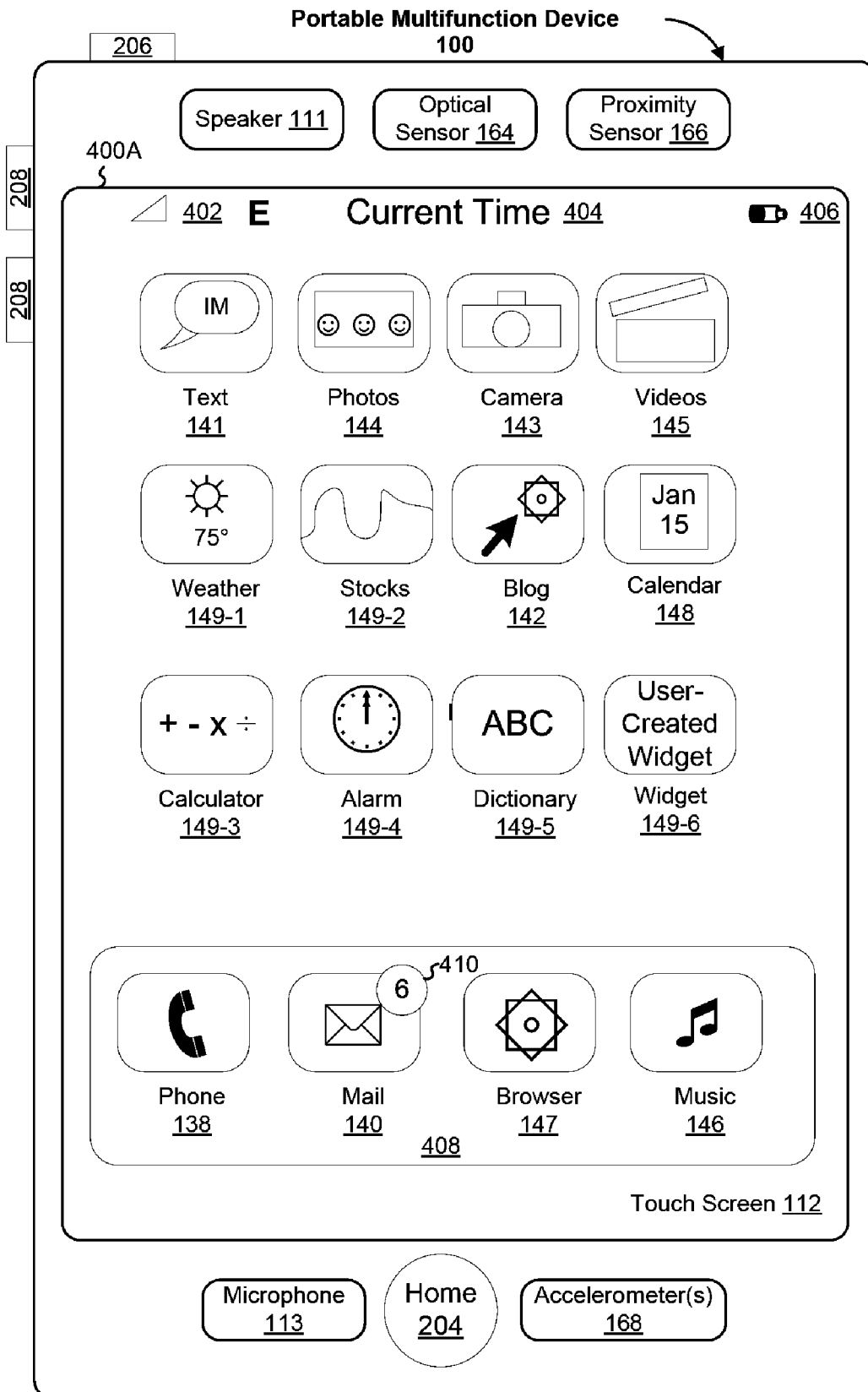


Figure 4A

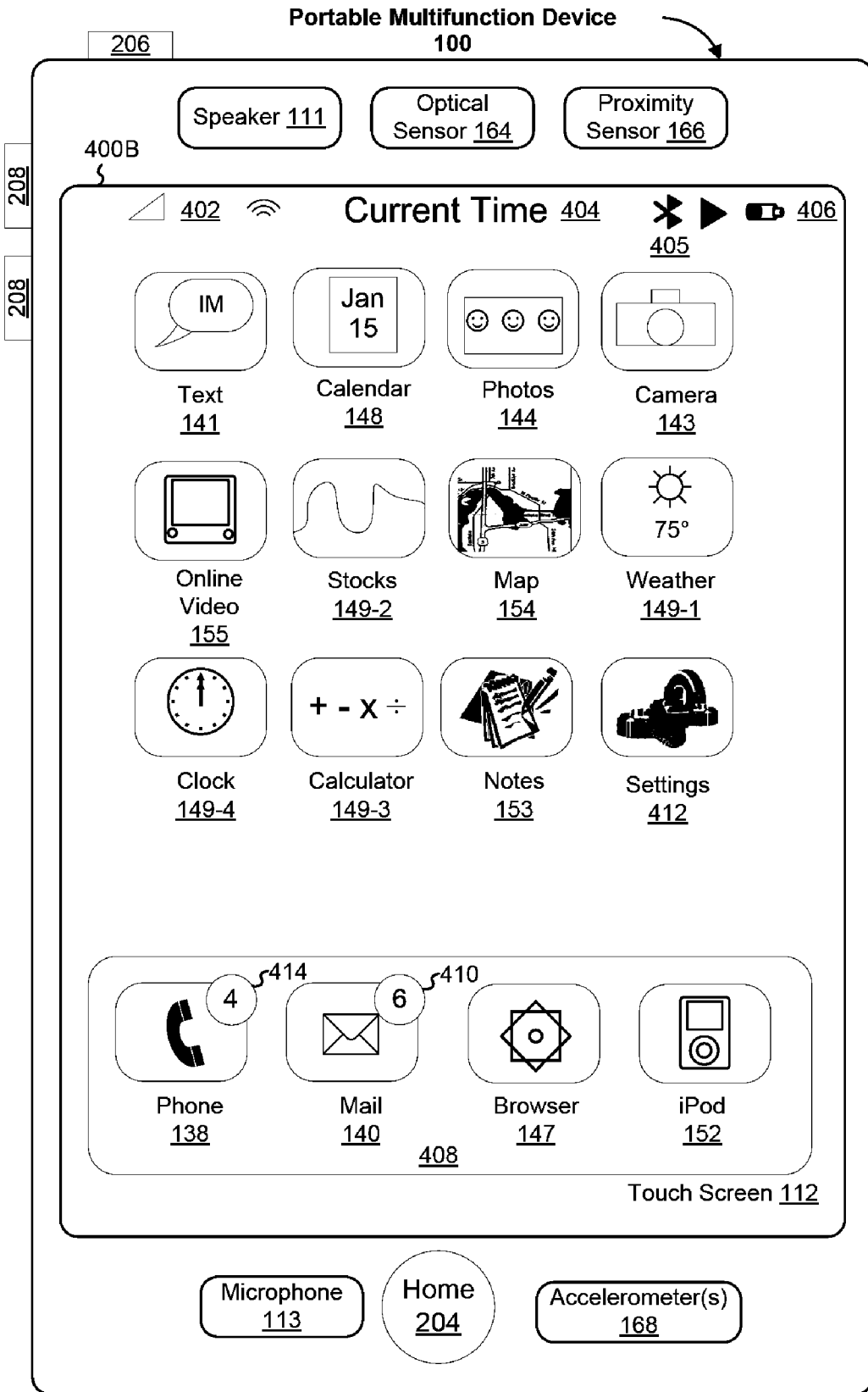


Figure 4B

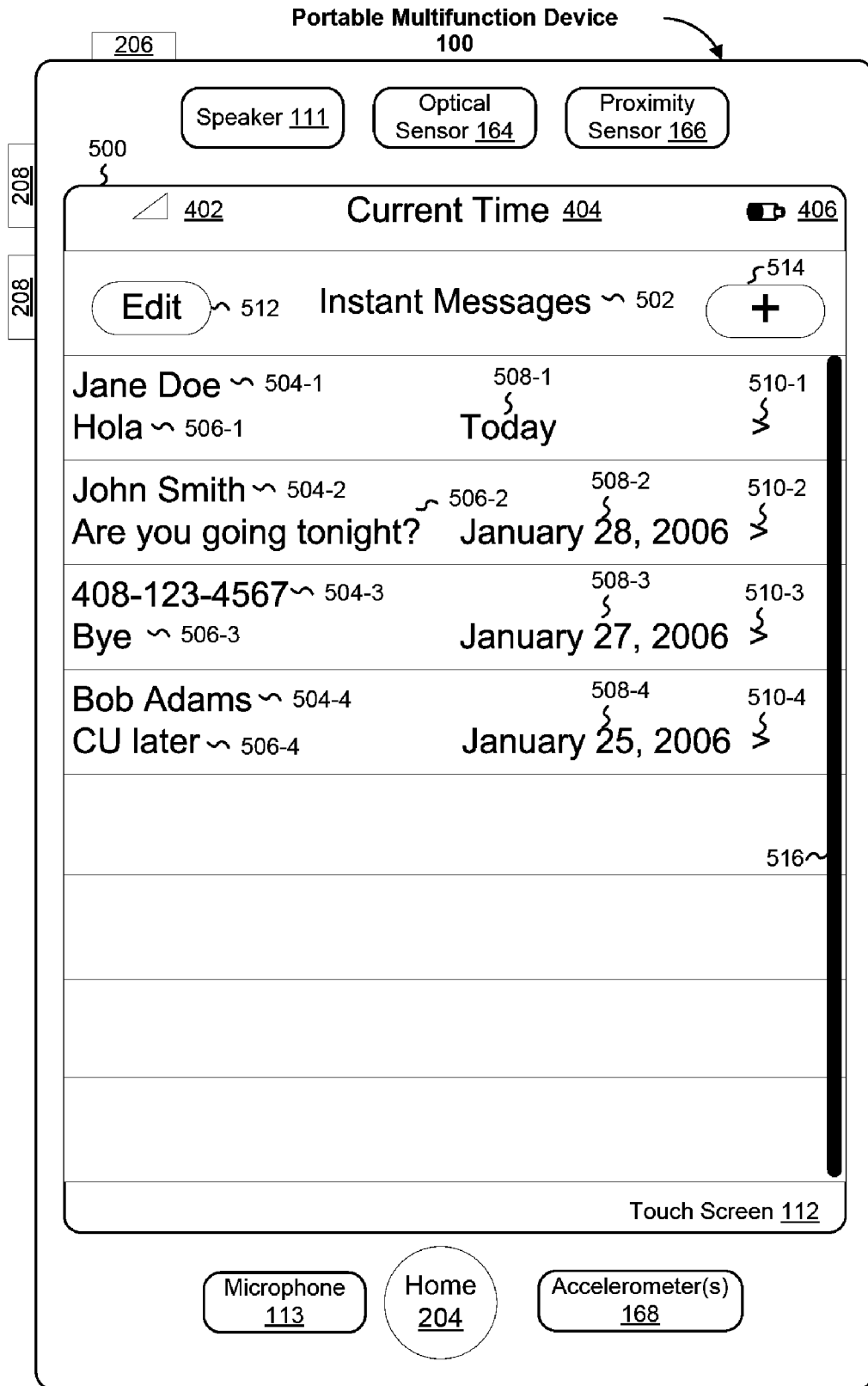


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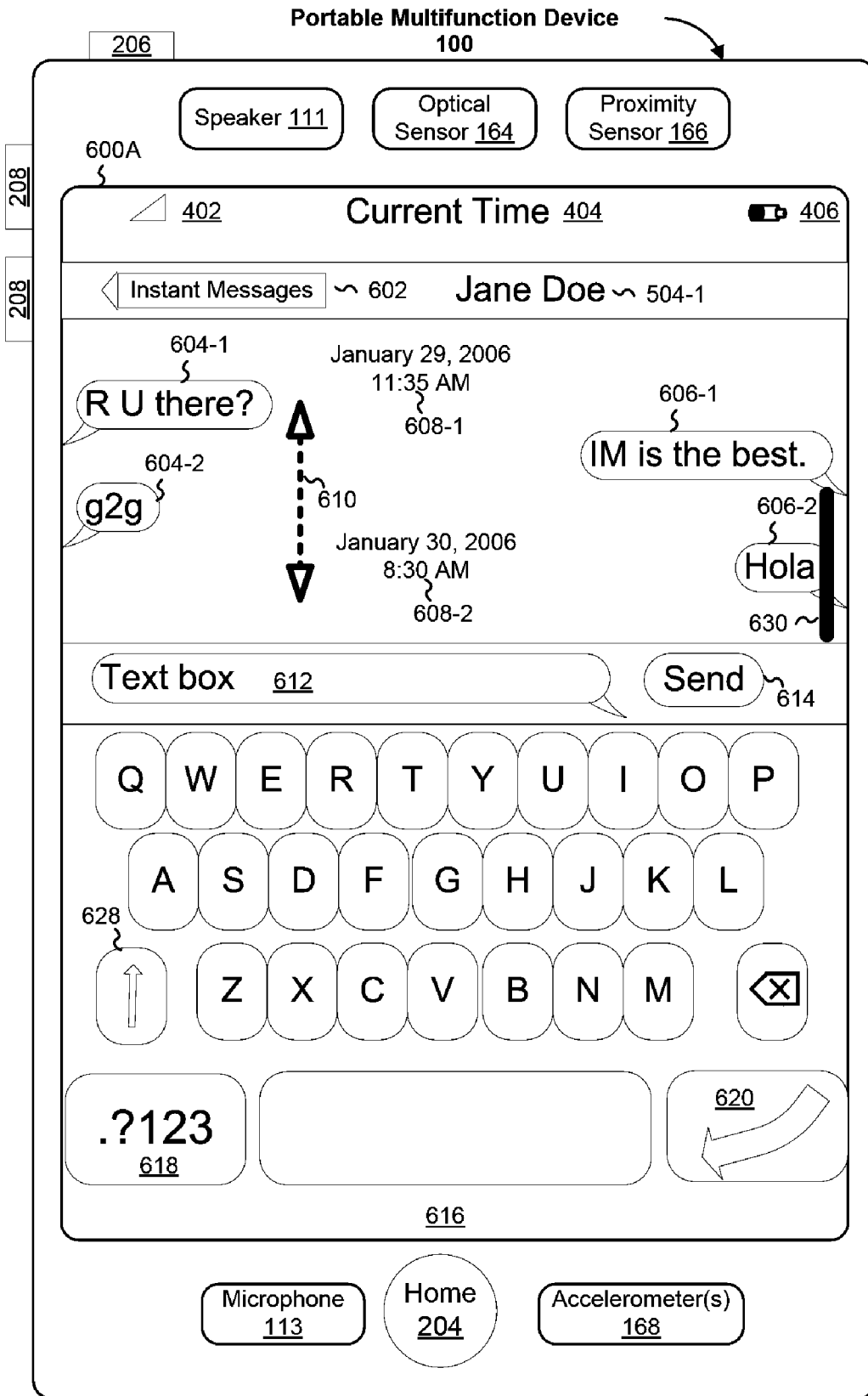


Figure 6A

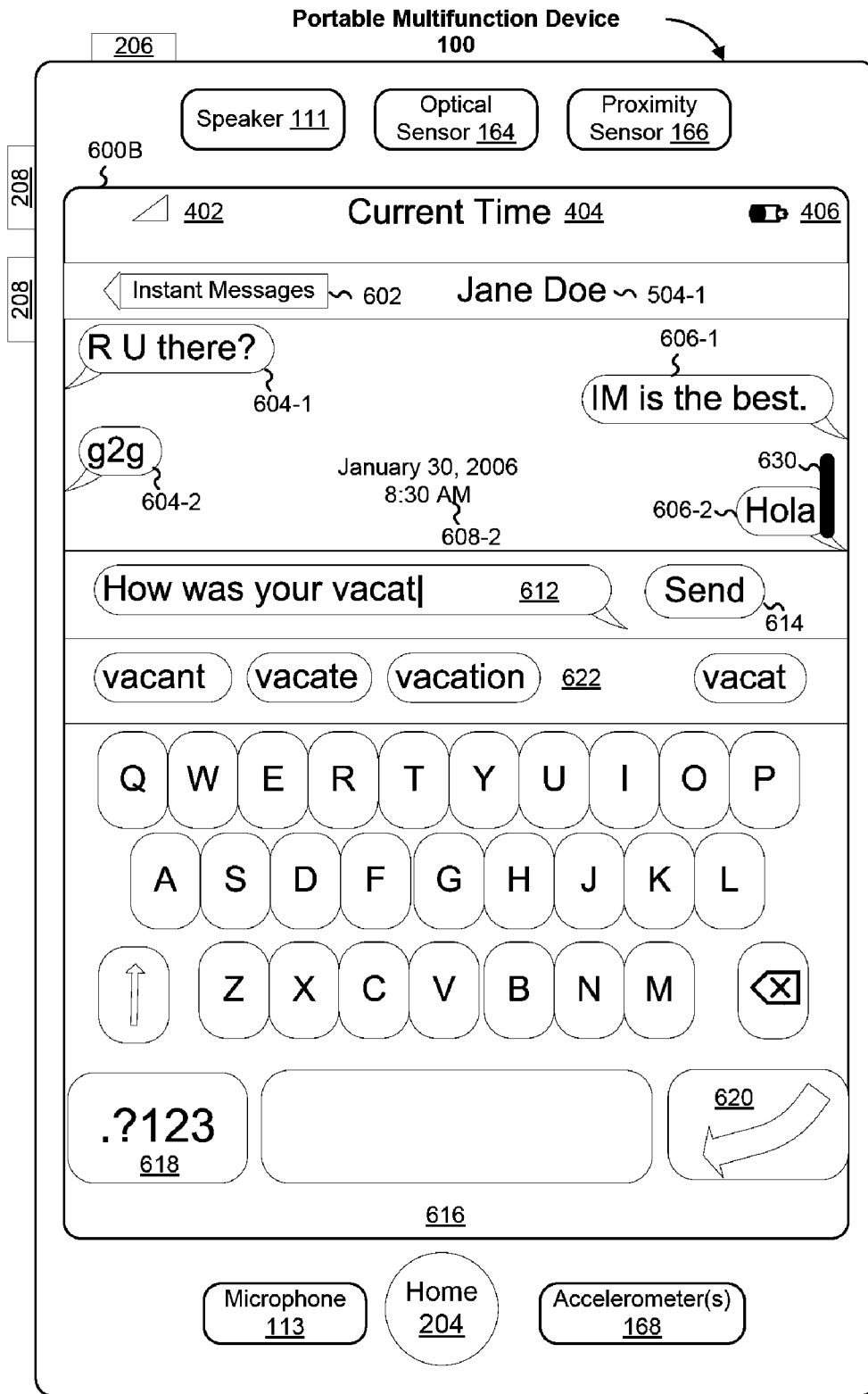


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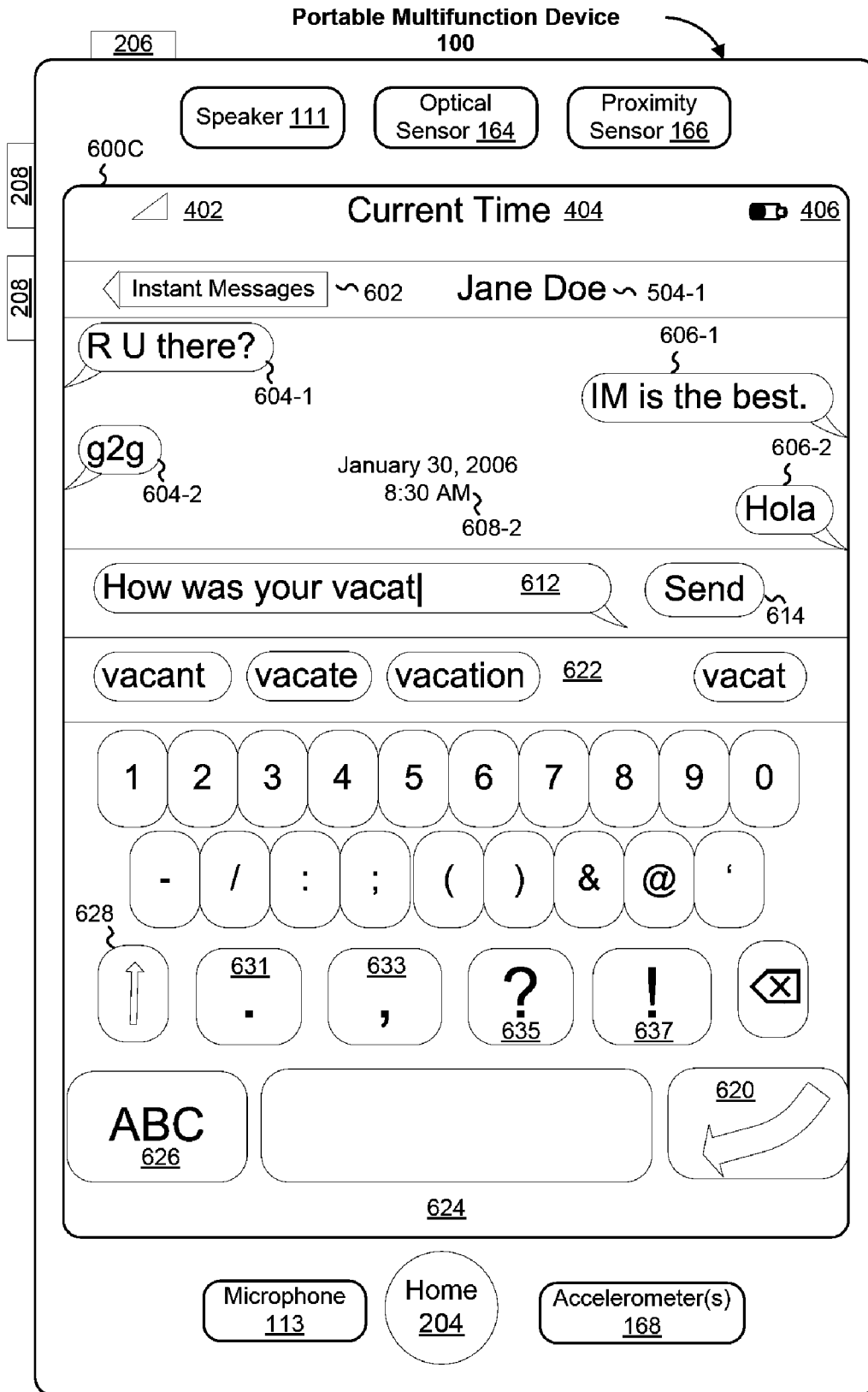


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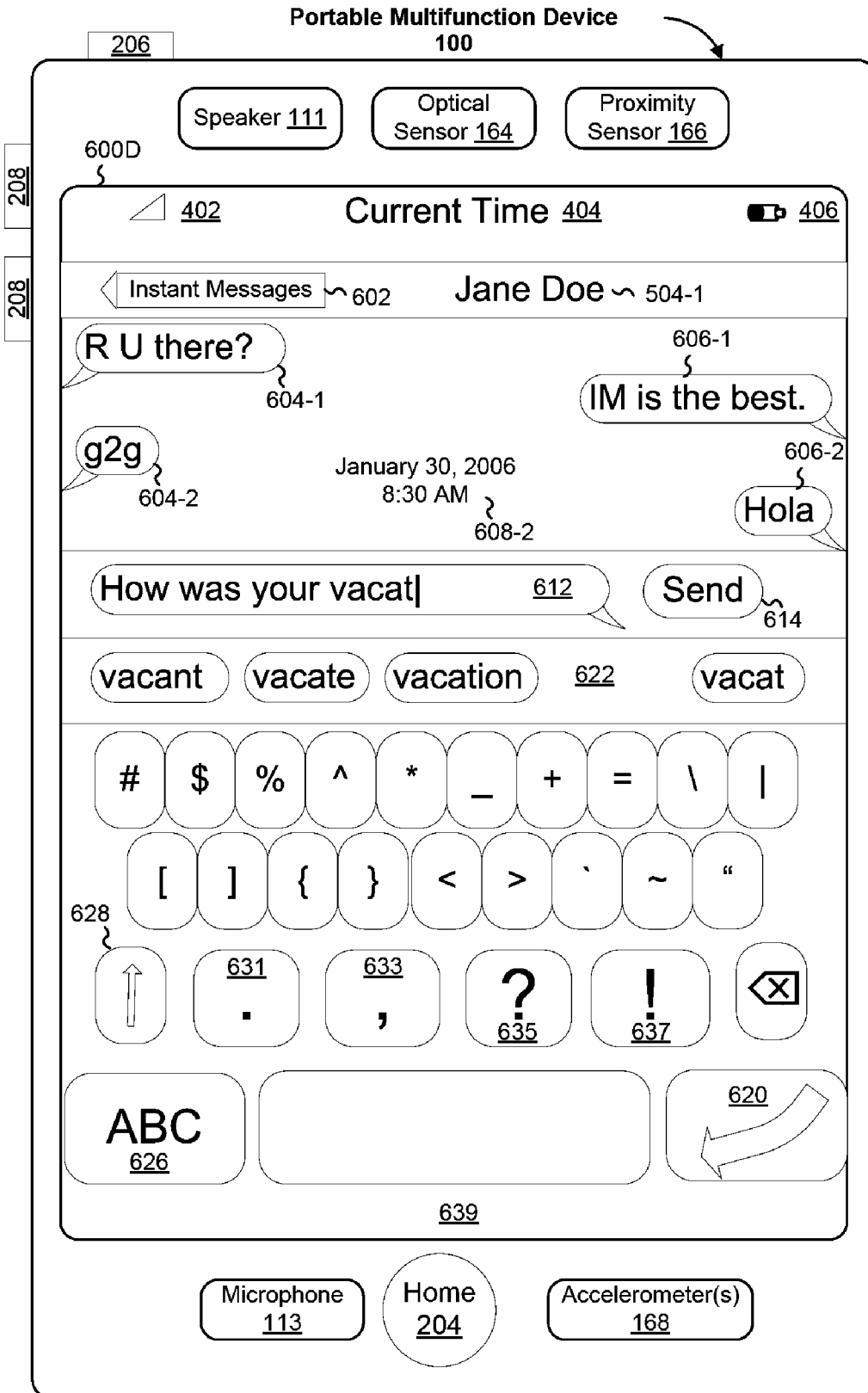


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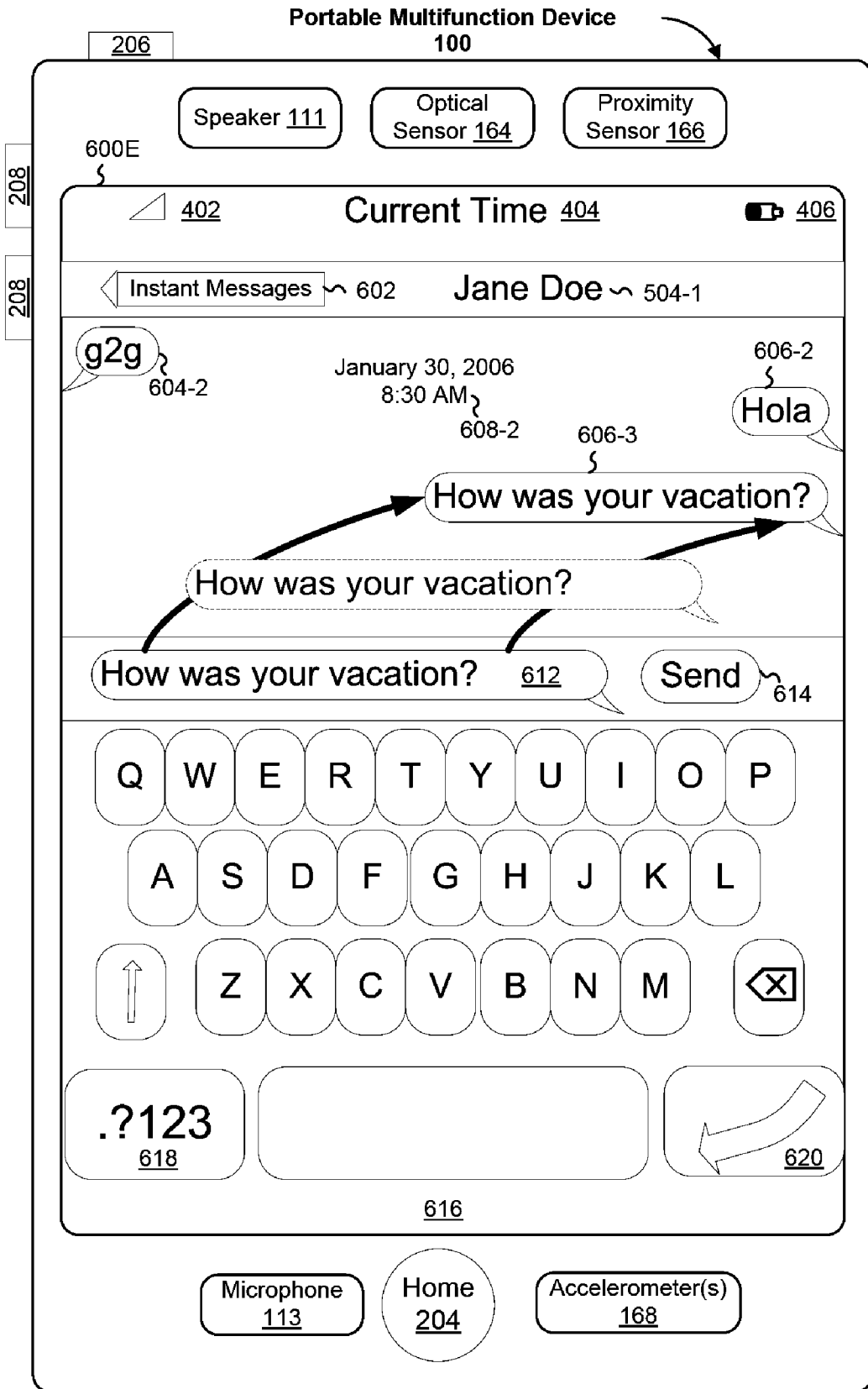


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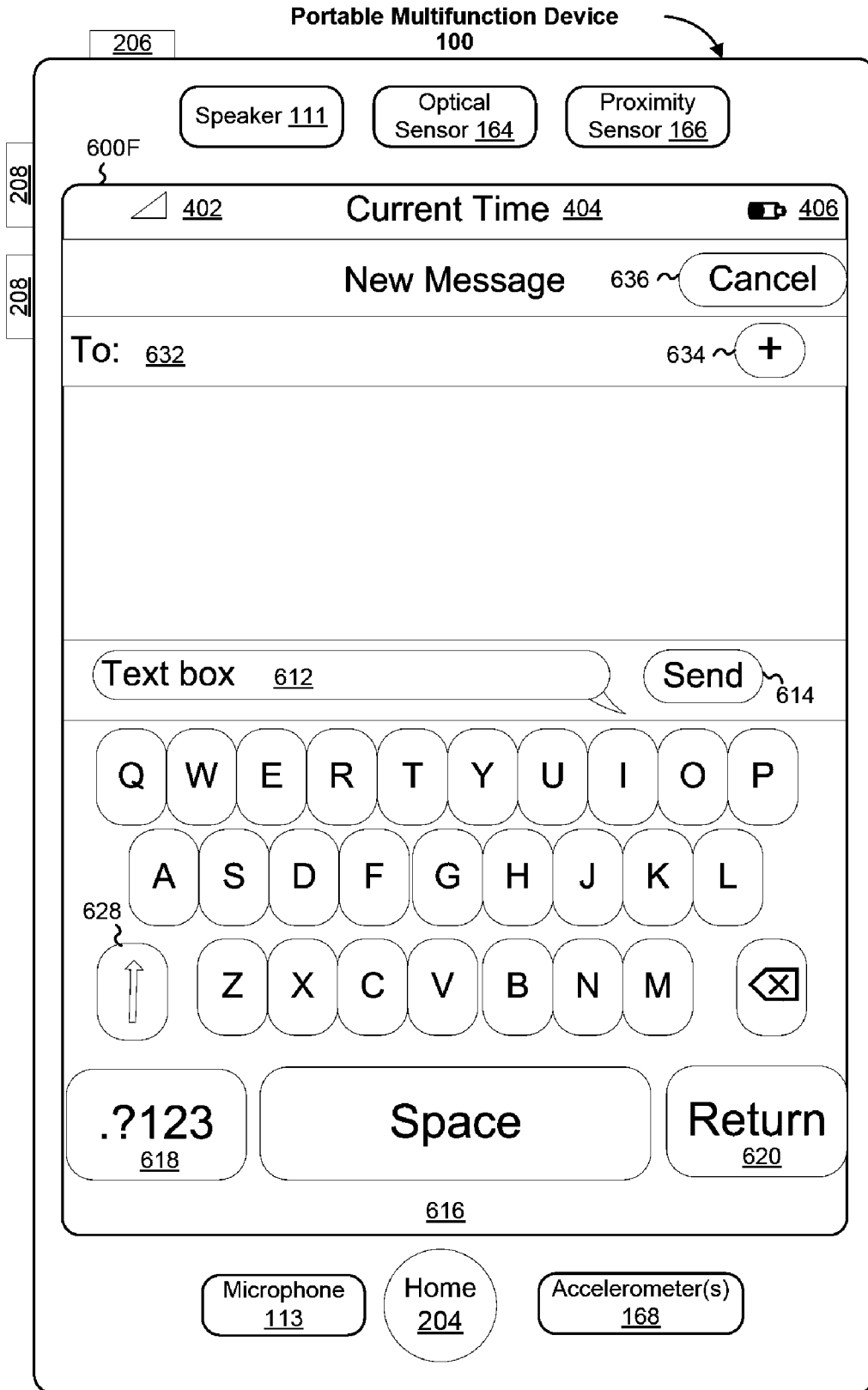


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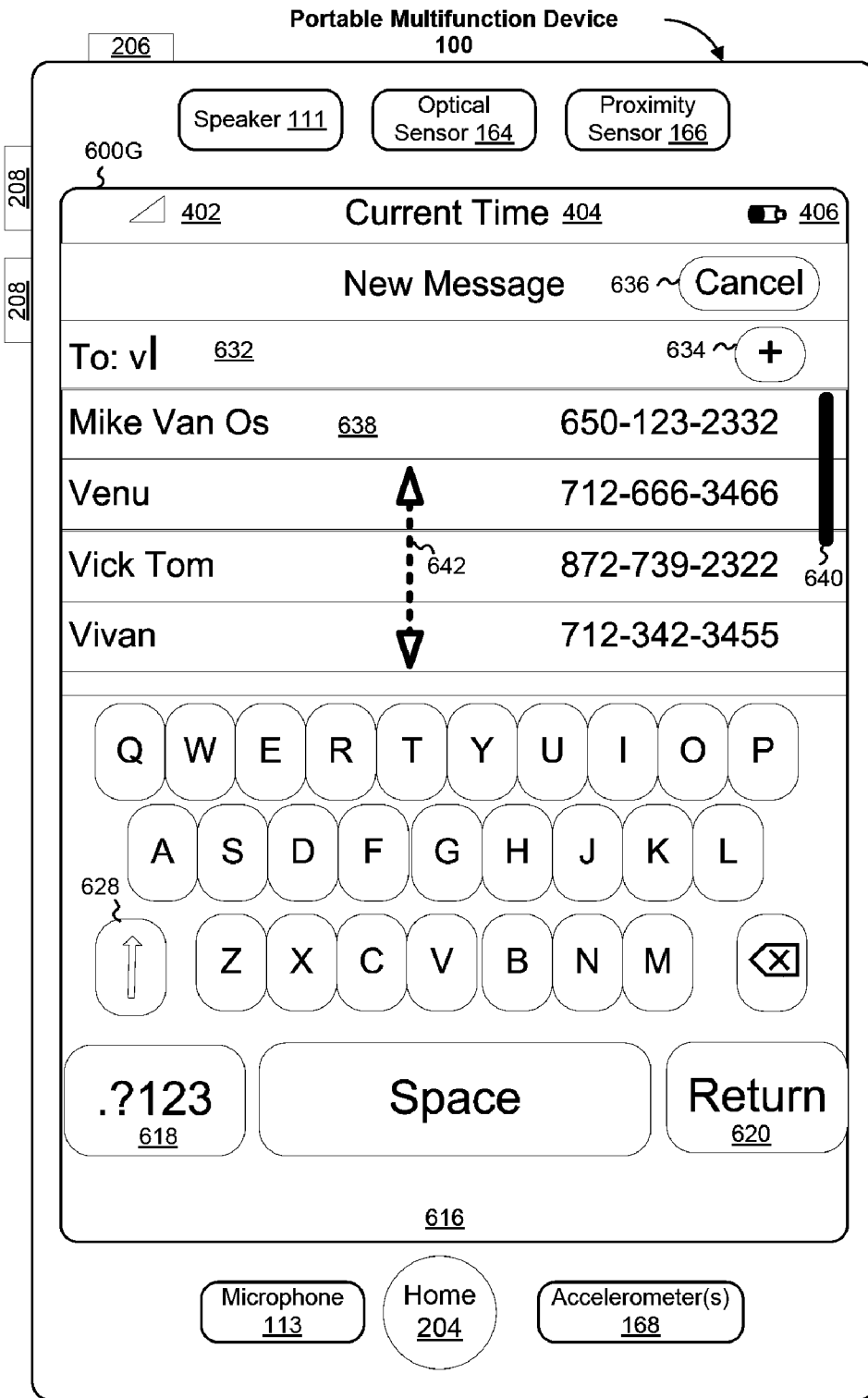


Figure 6G



Figure 6H

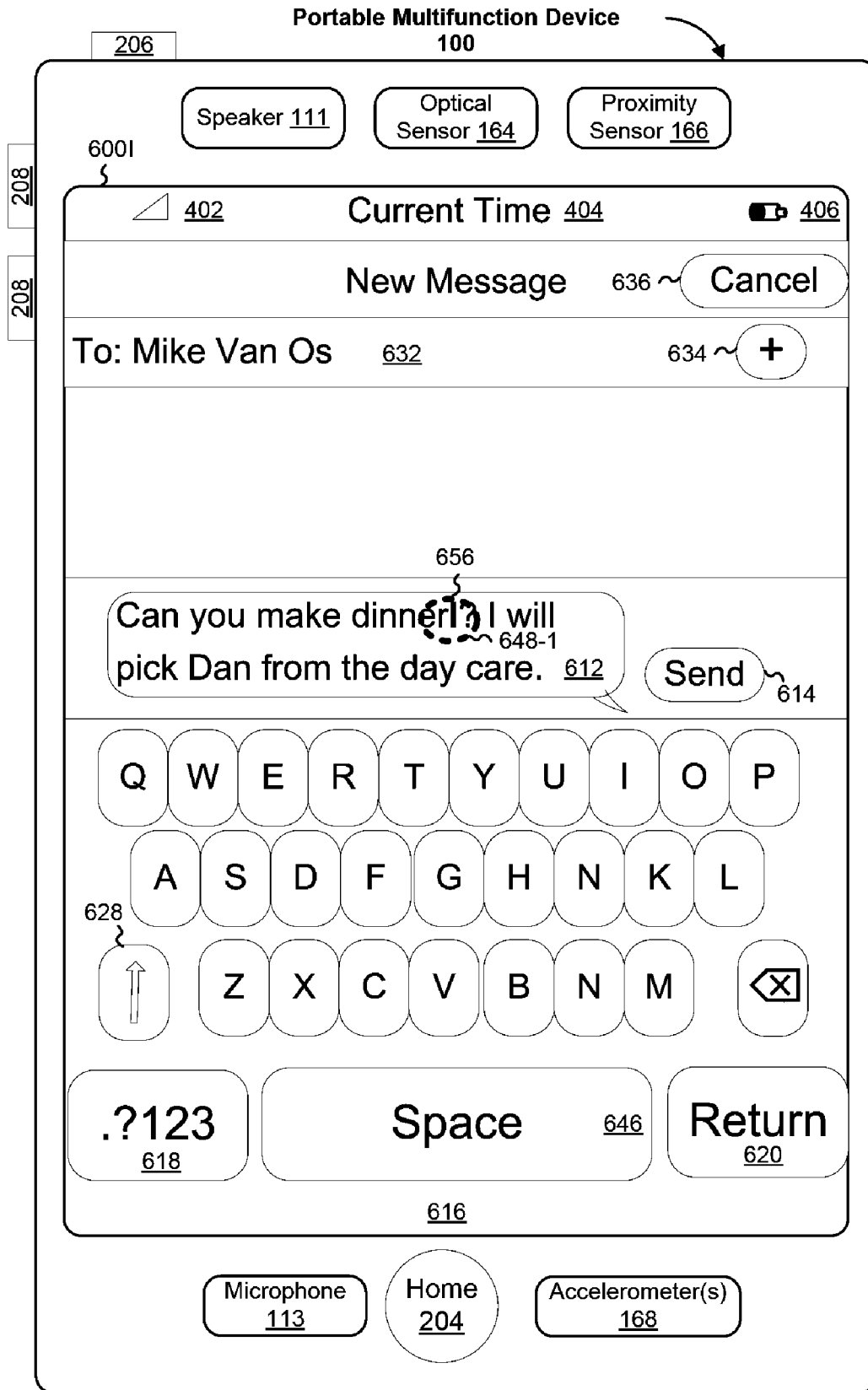


Figure 61



Figure 6J

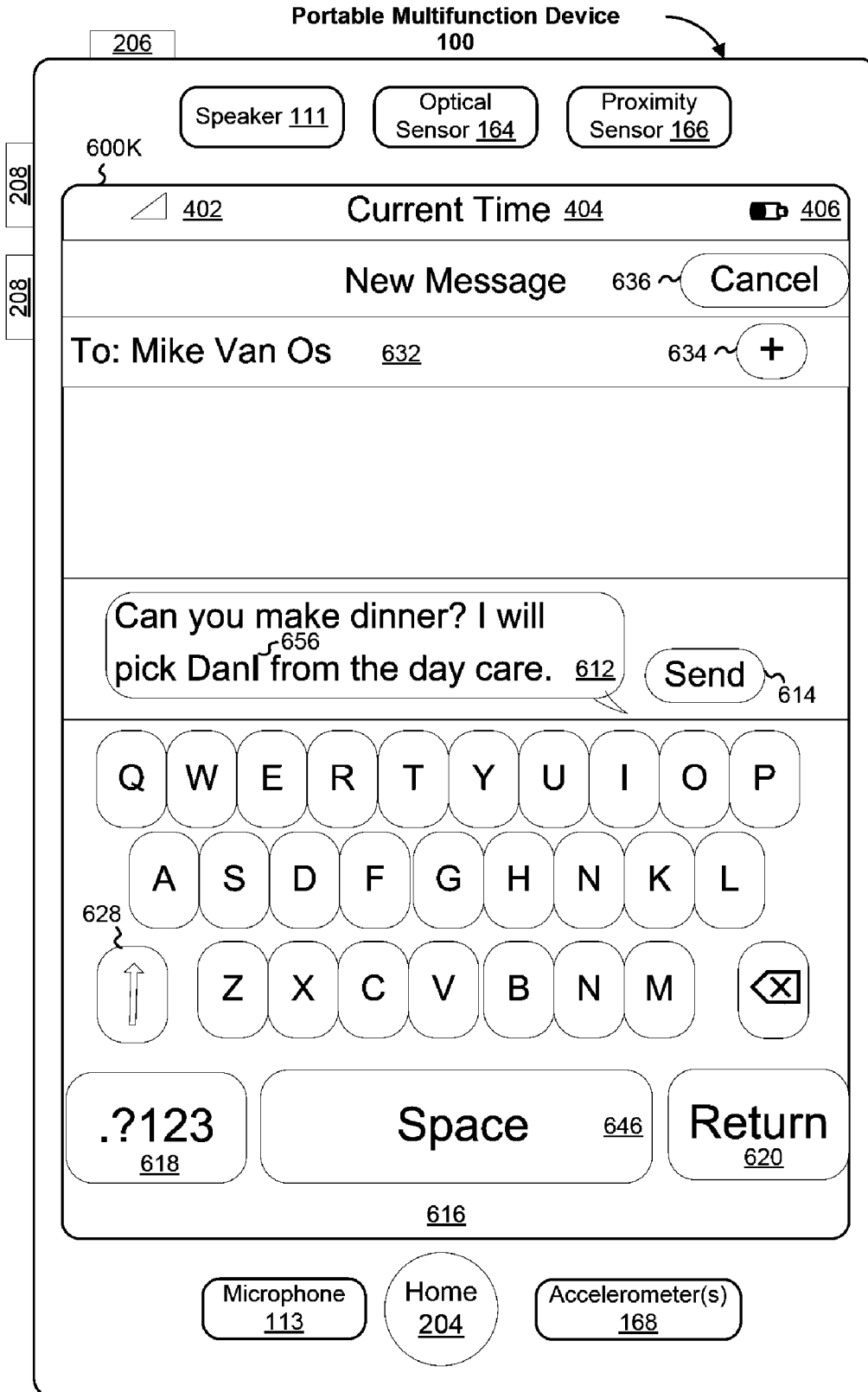


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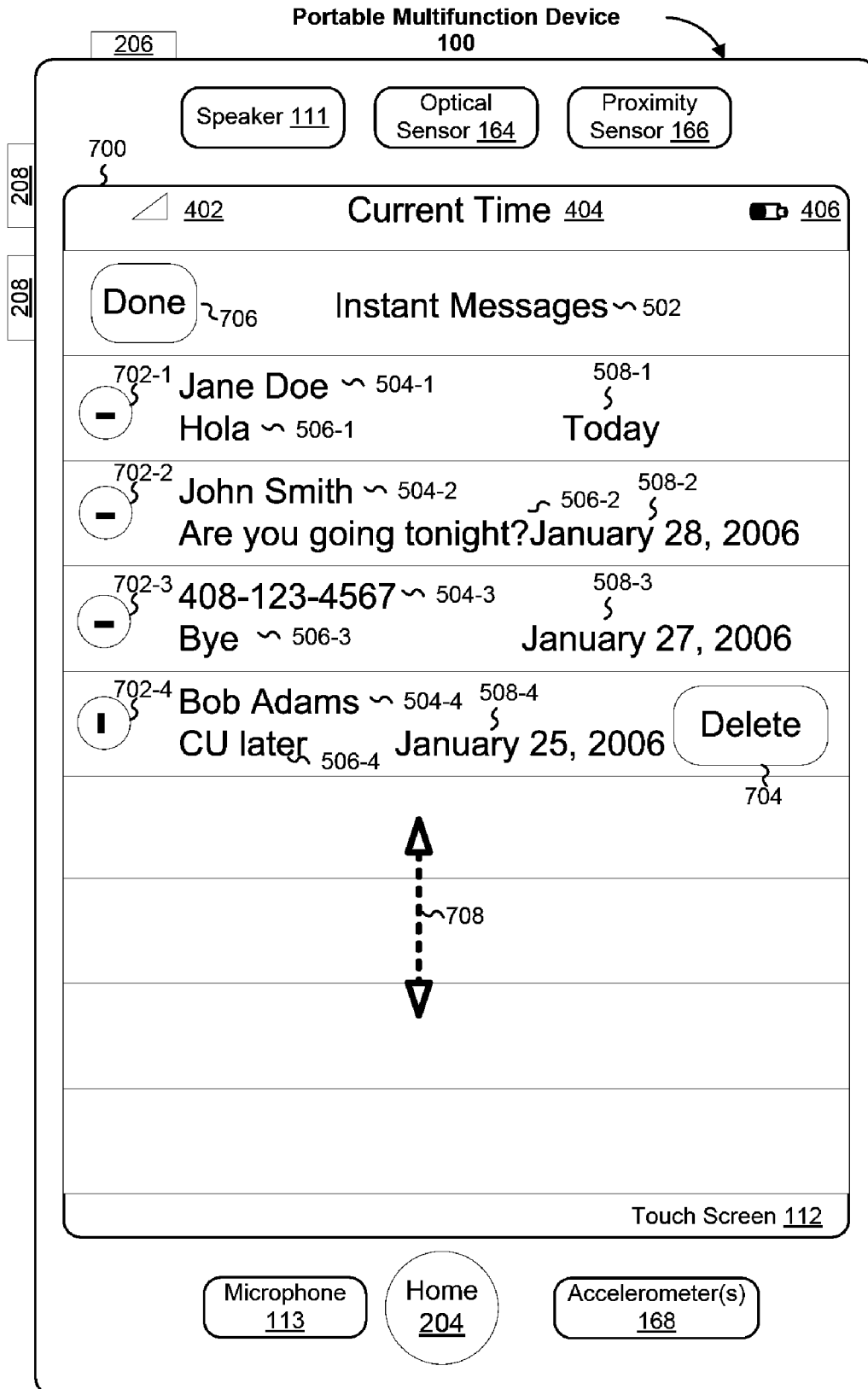


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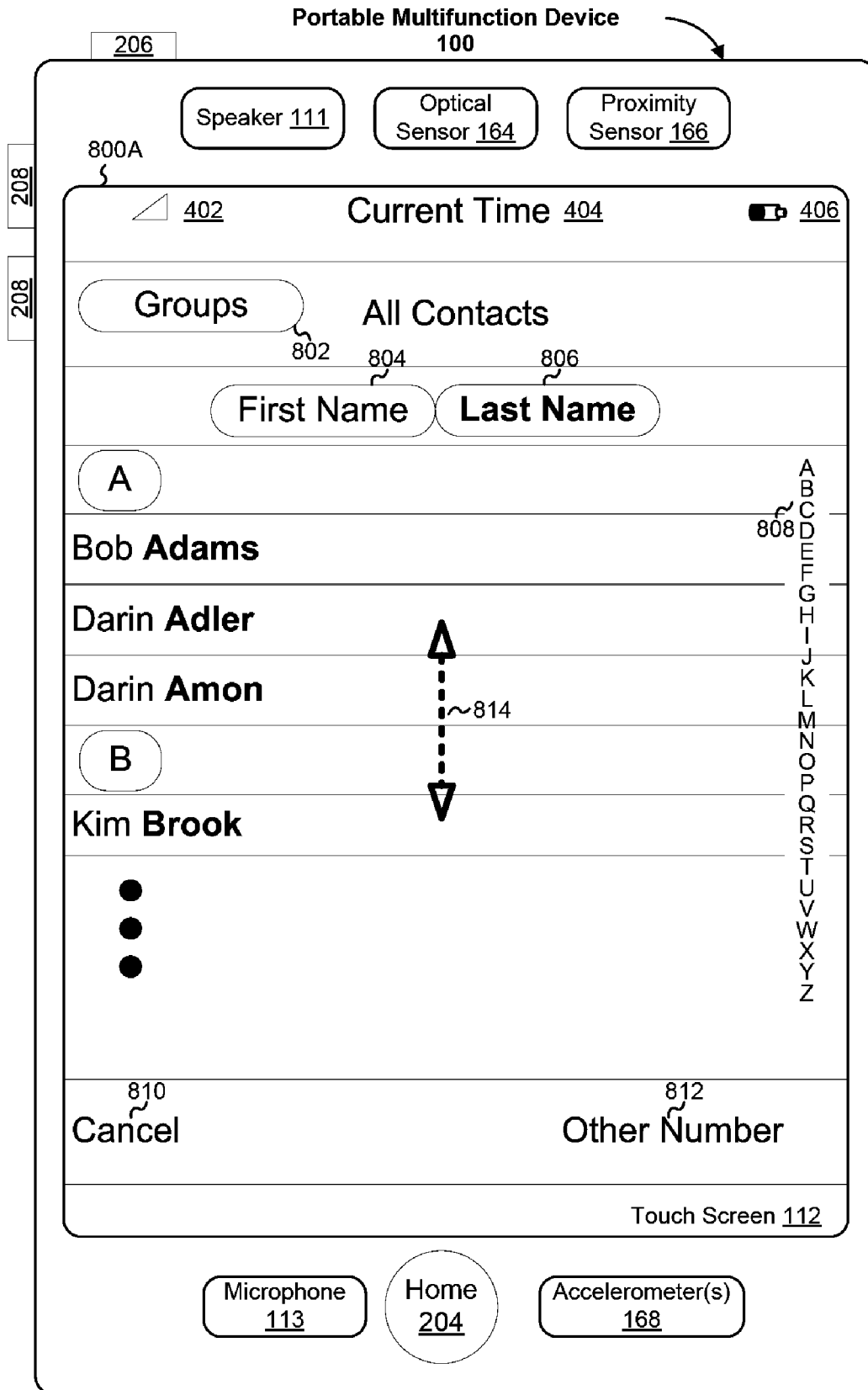


Figure 8A

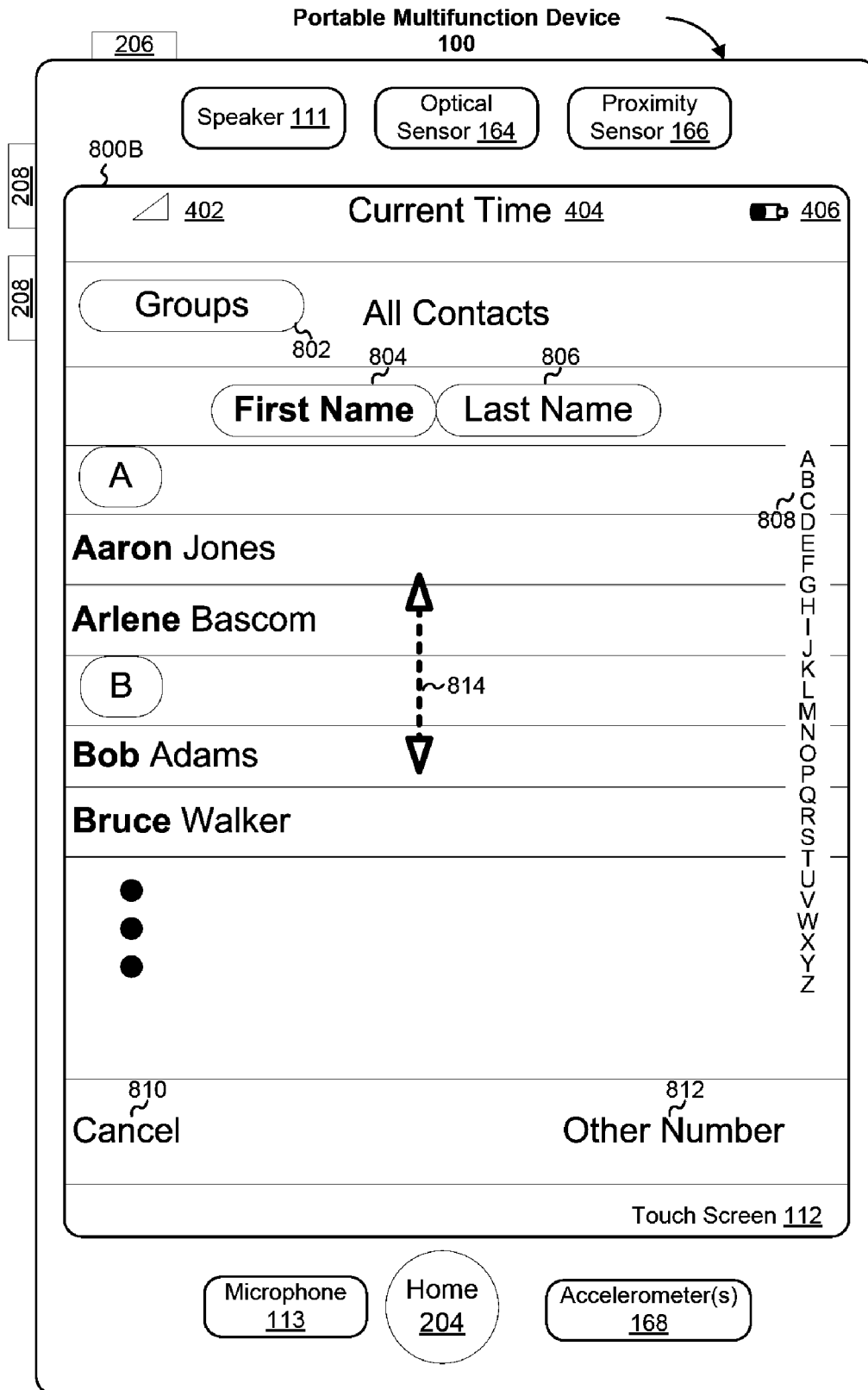


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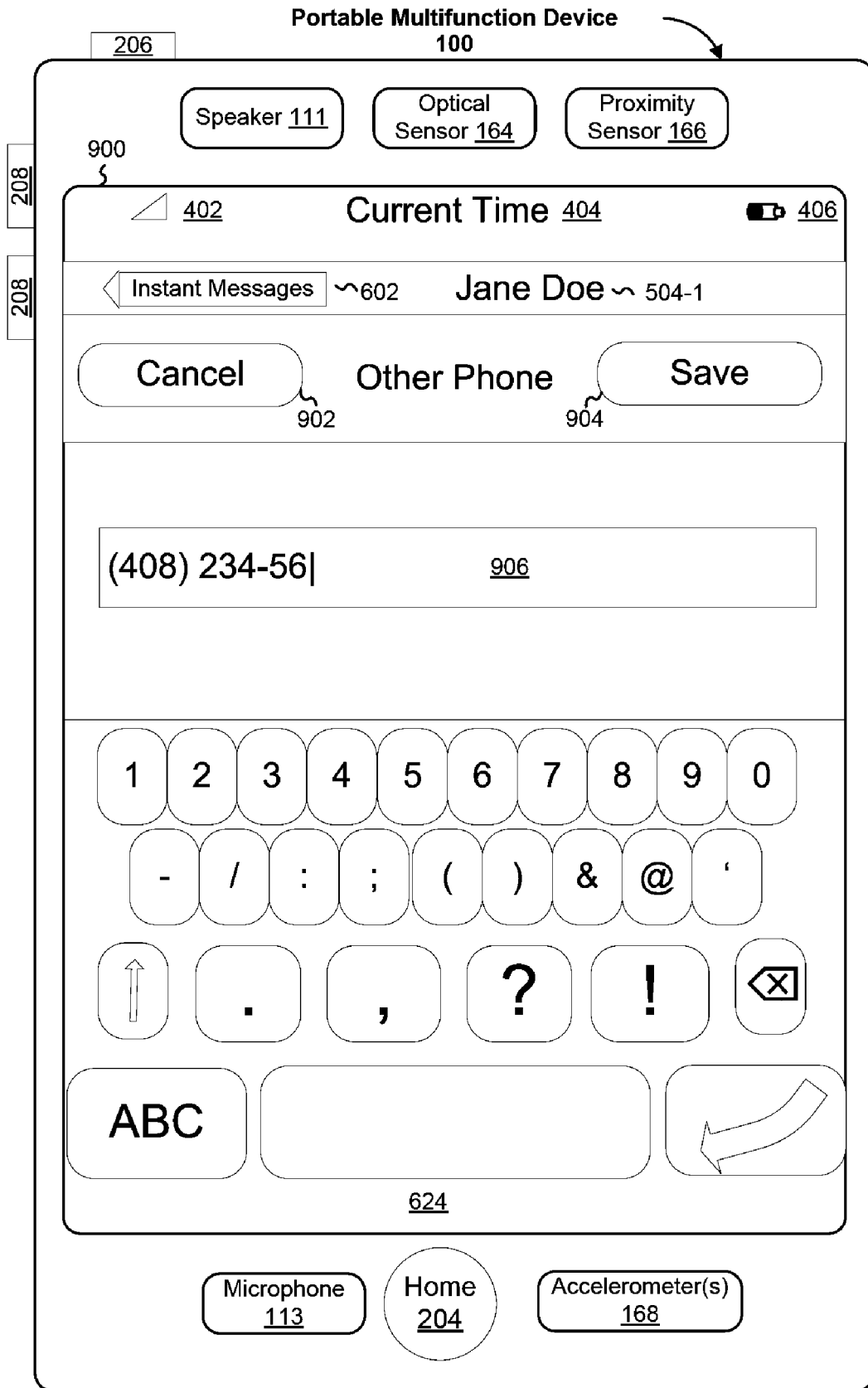


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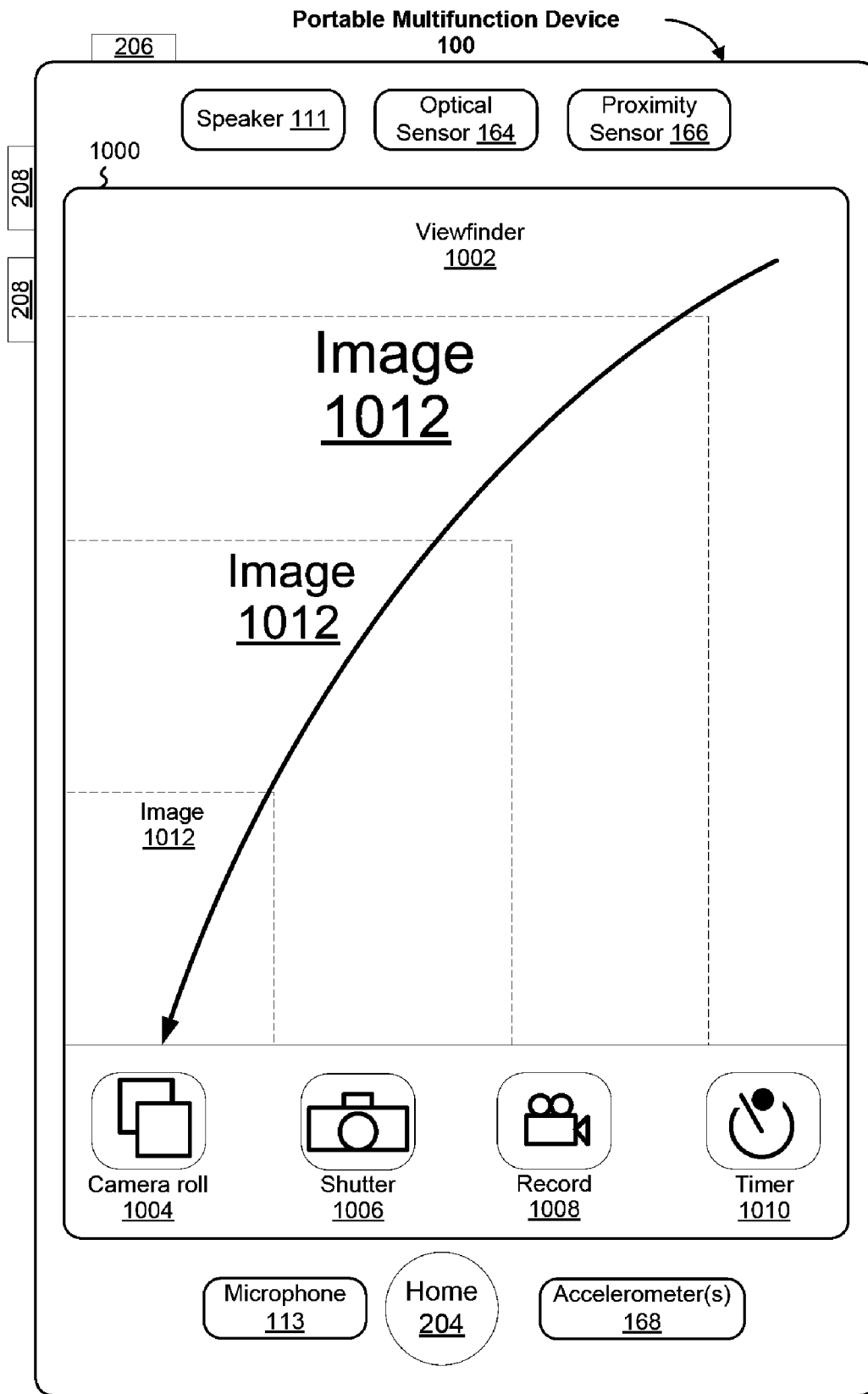


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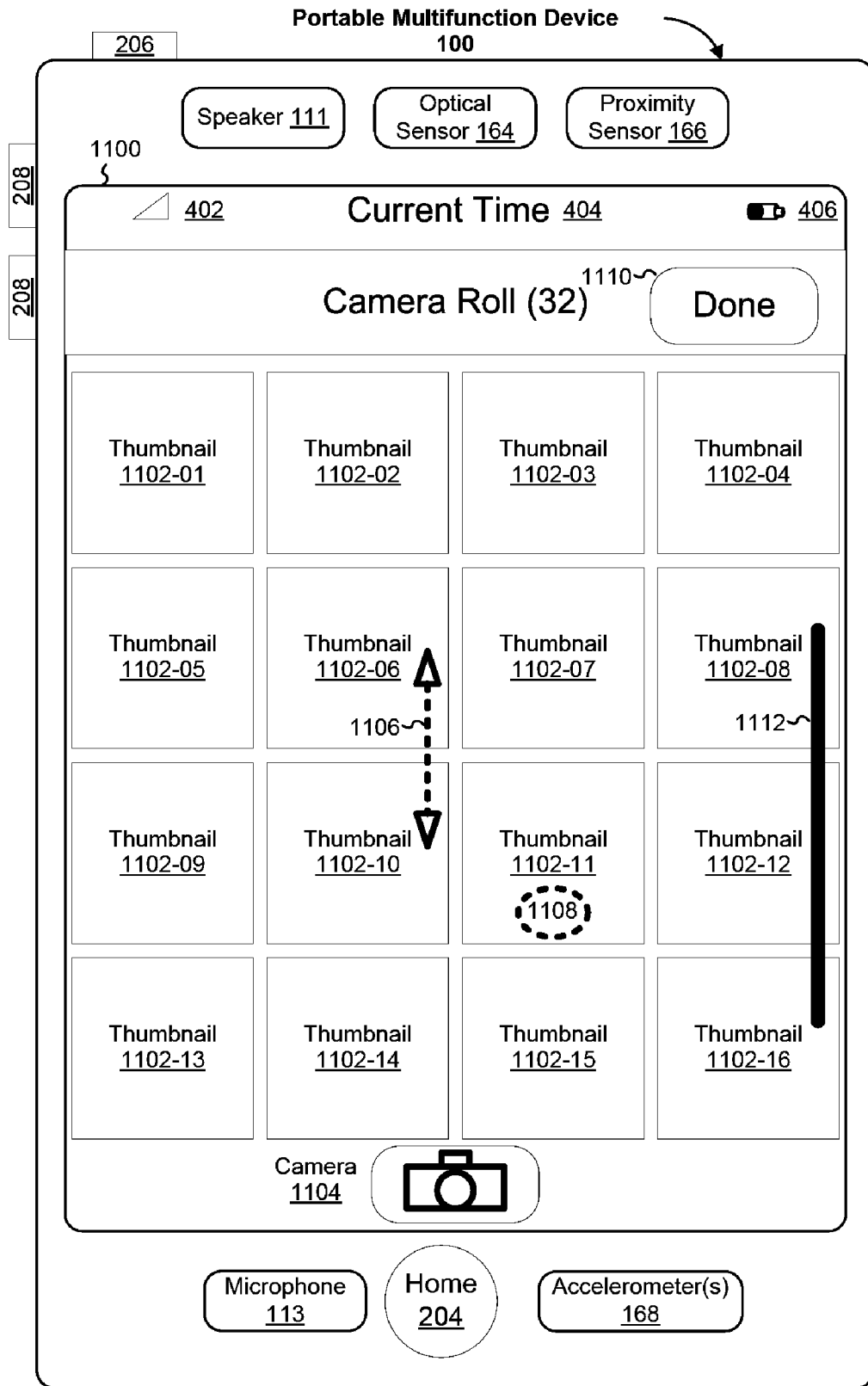


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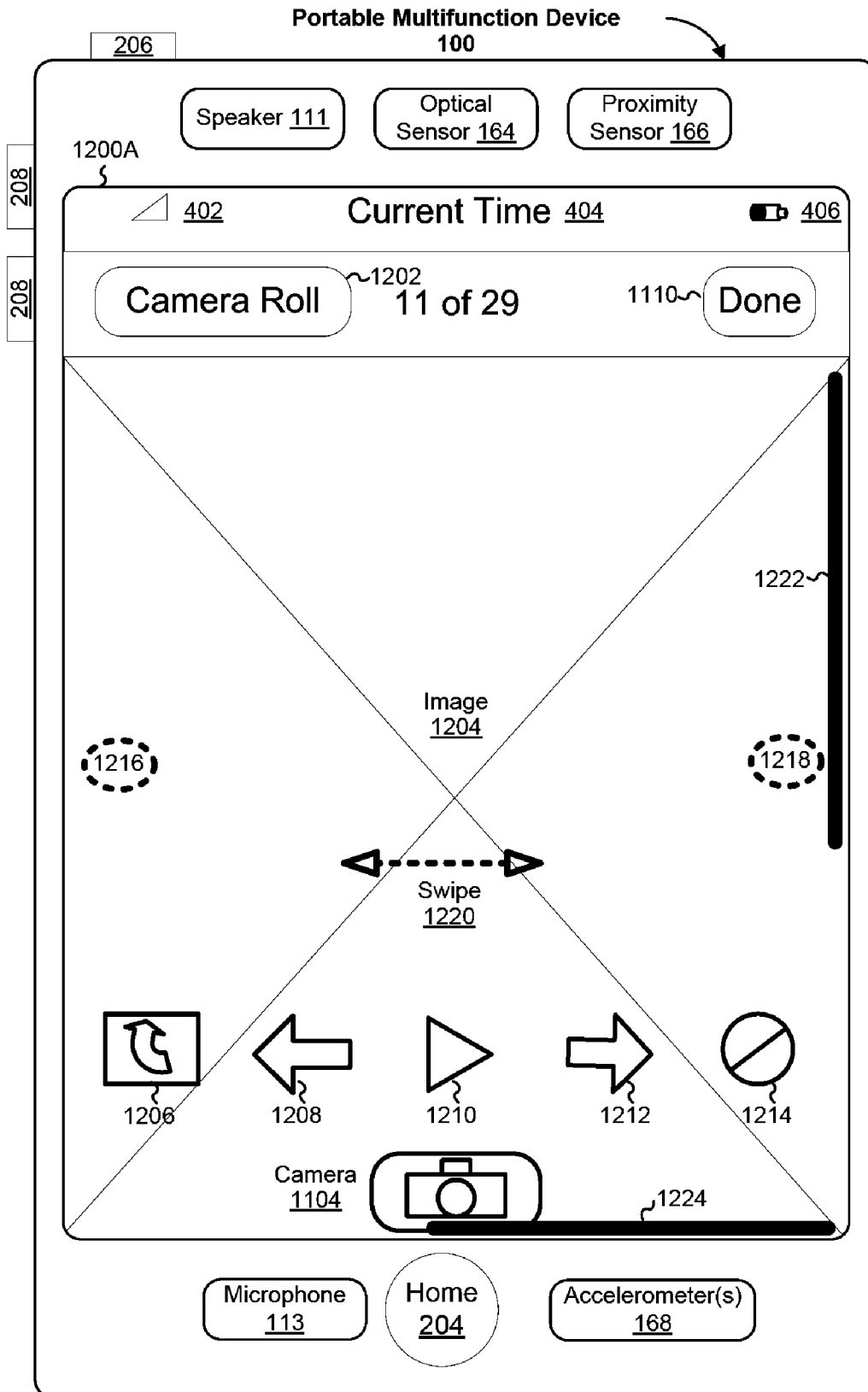


Figure 12A

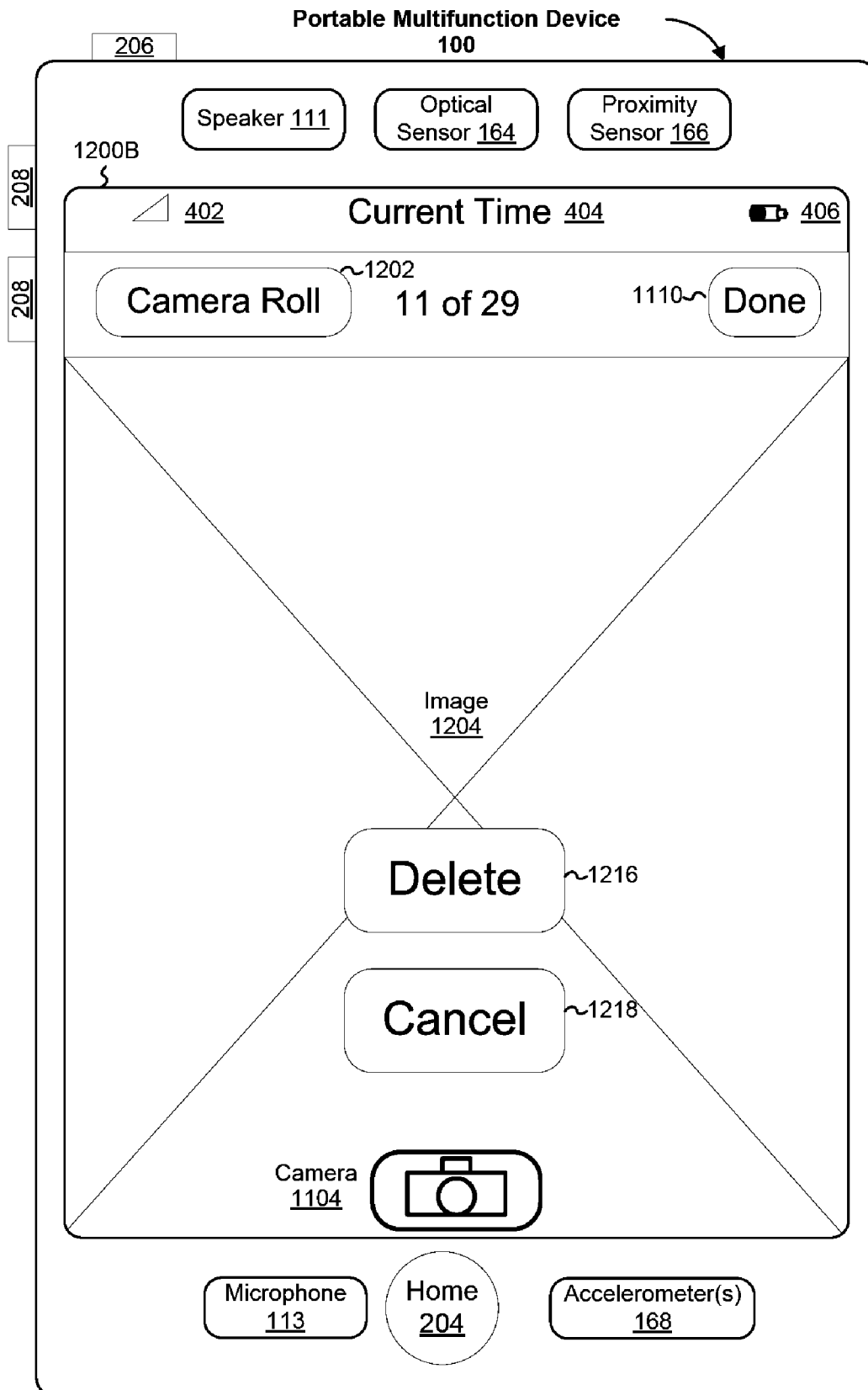


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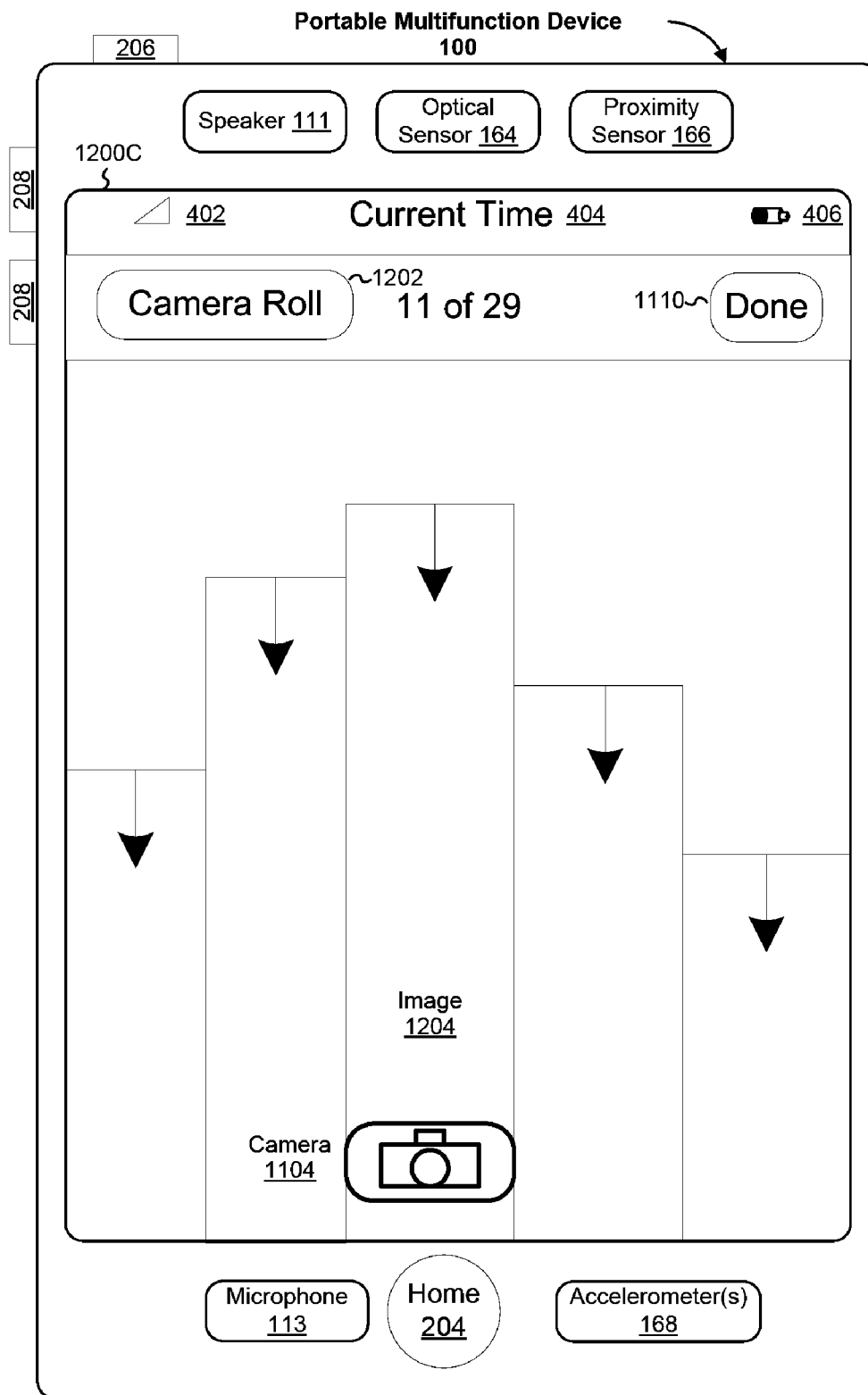


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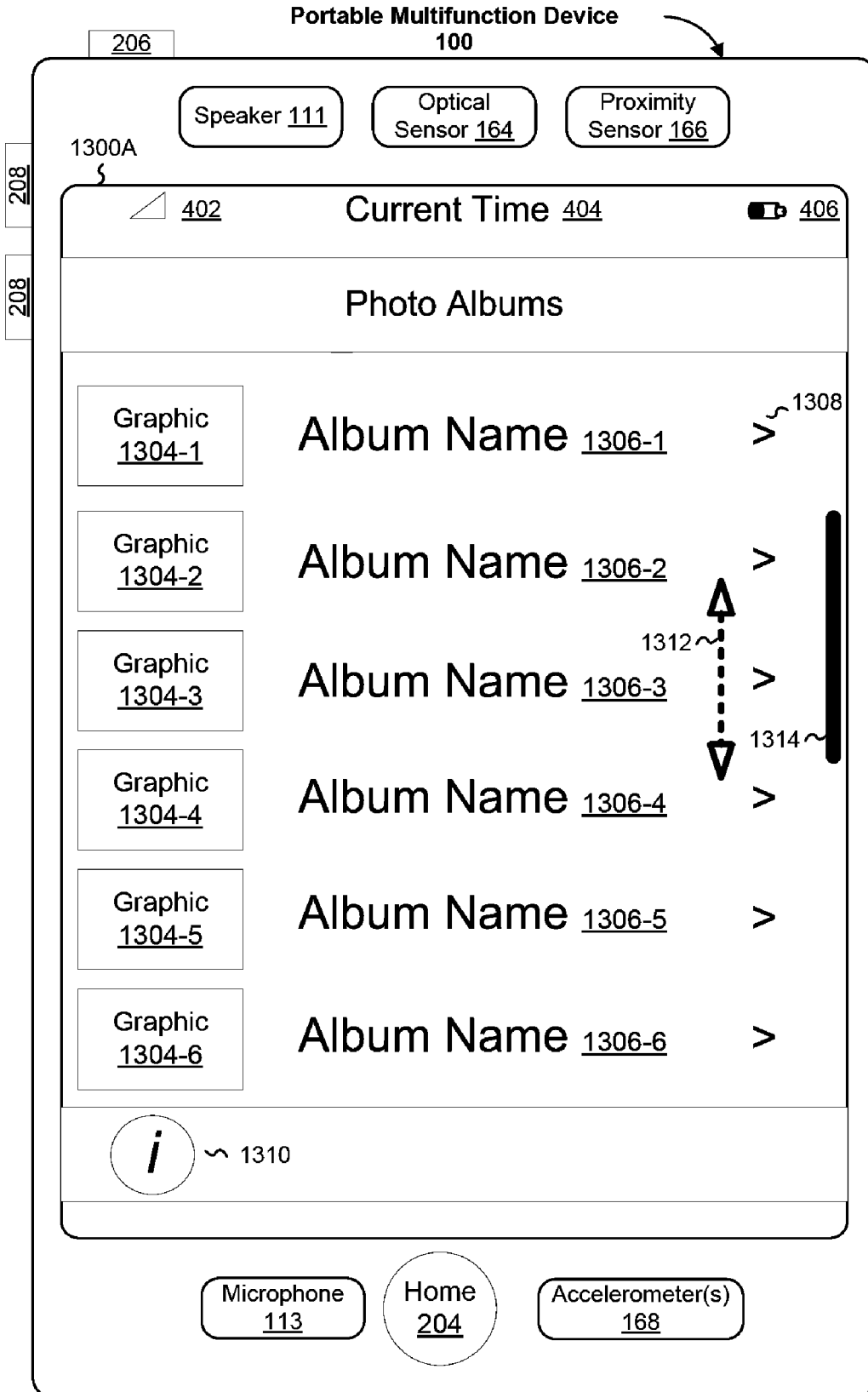


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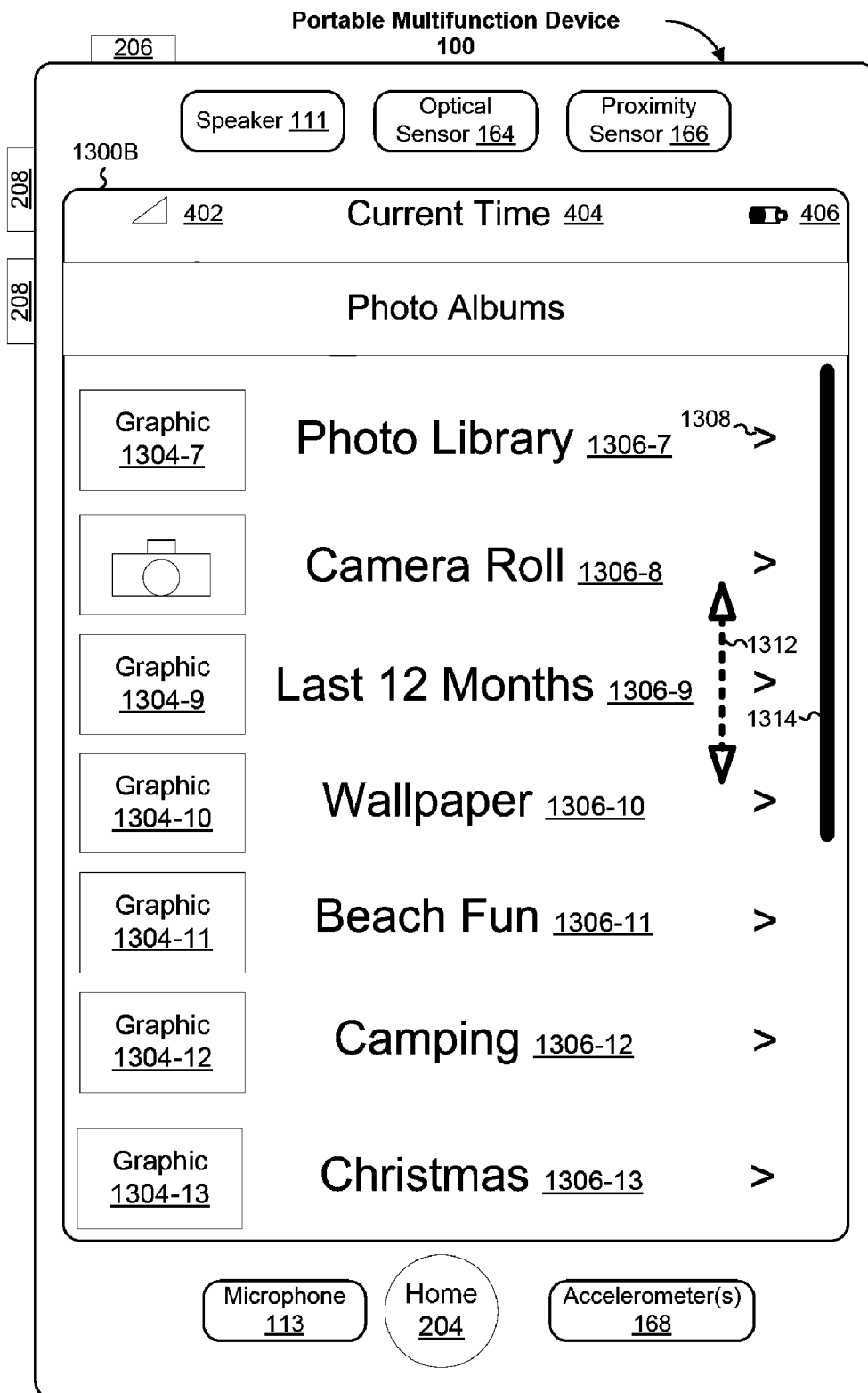


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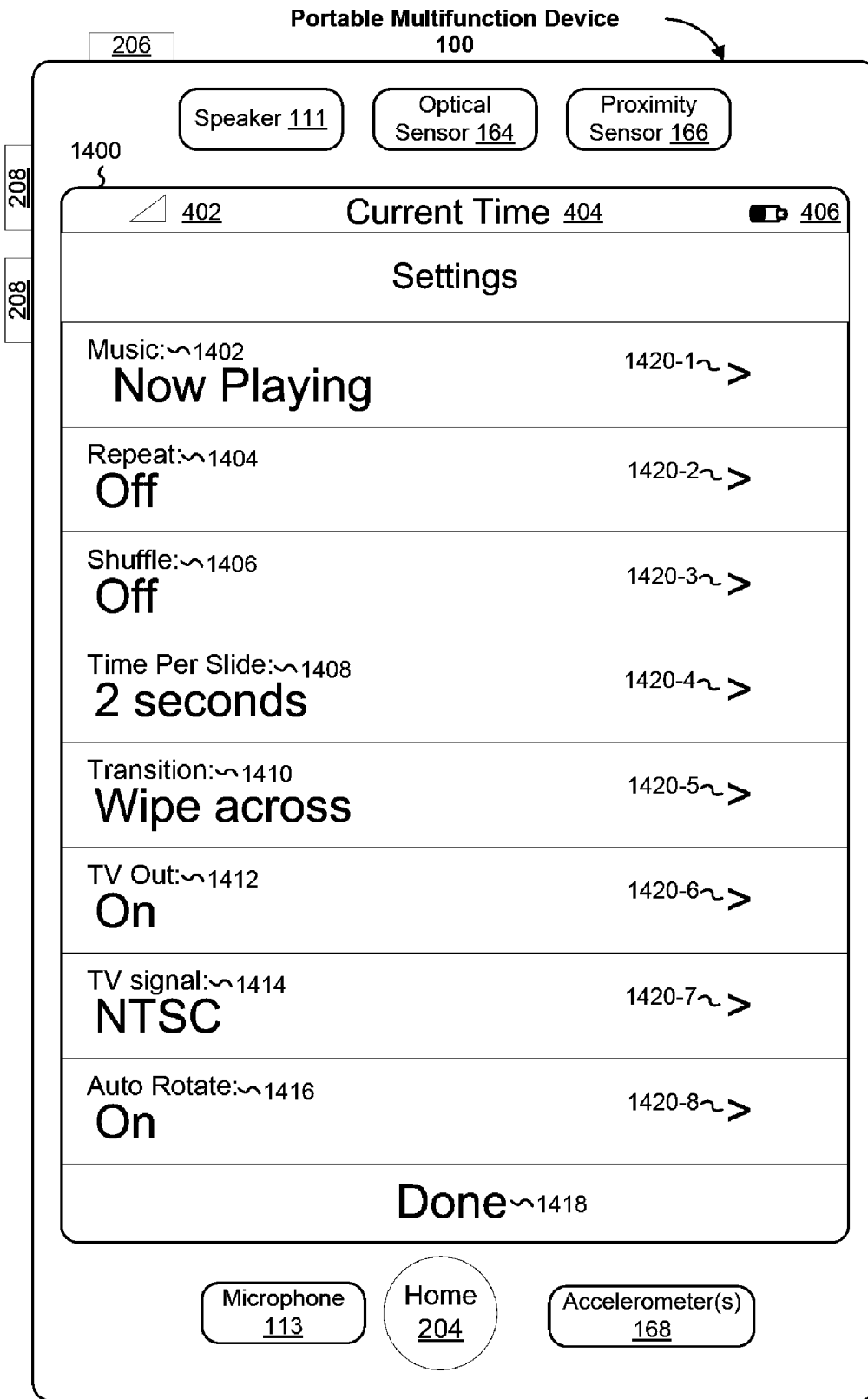


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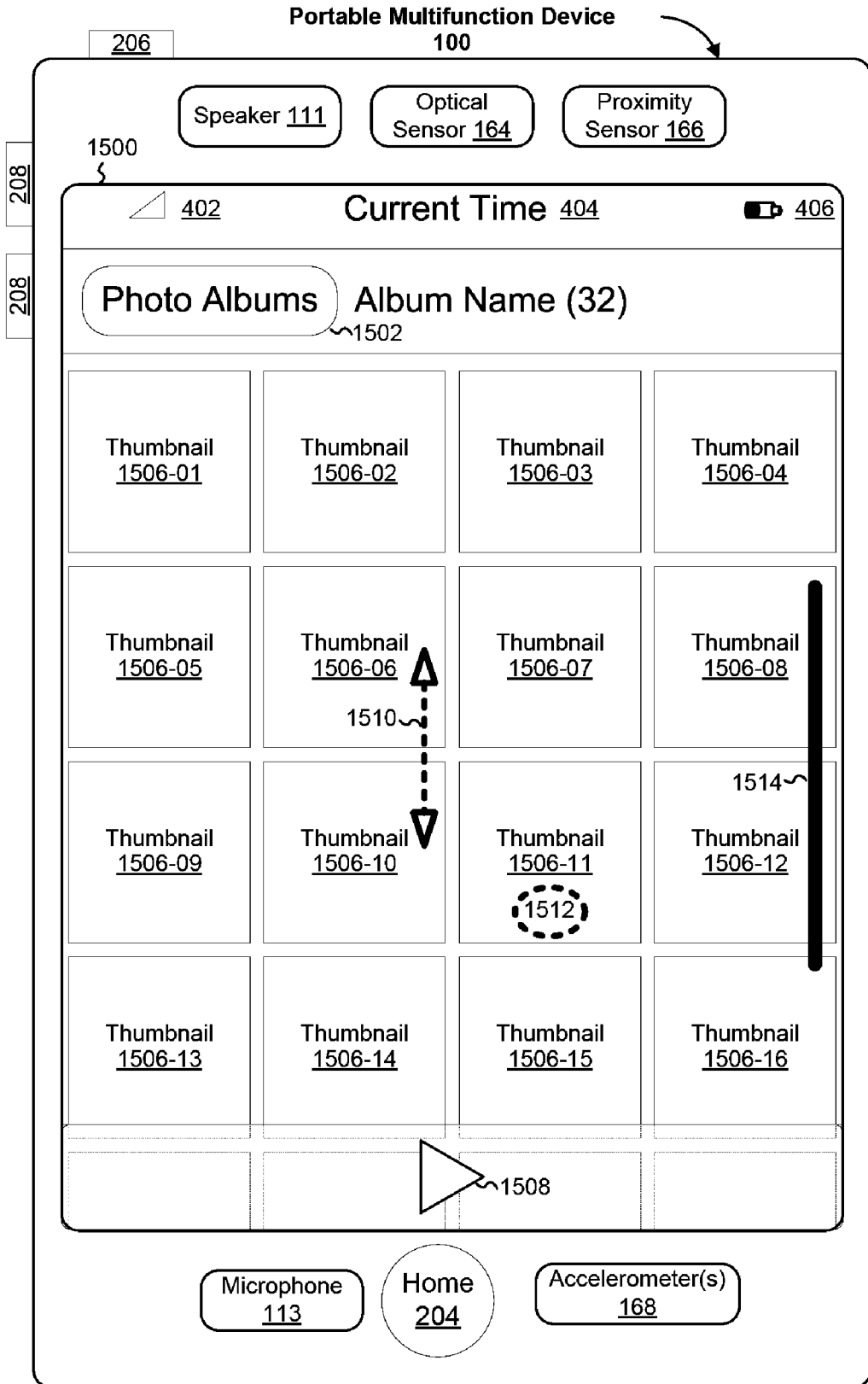


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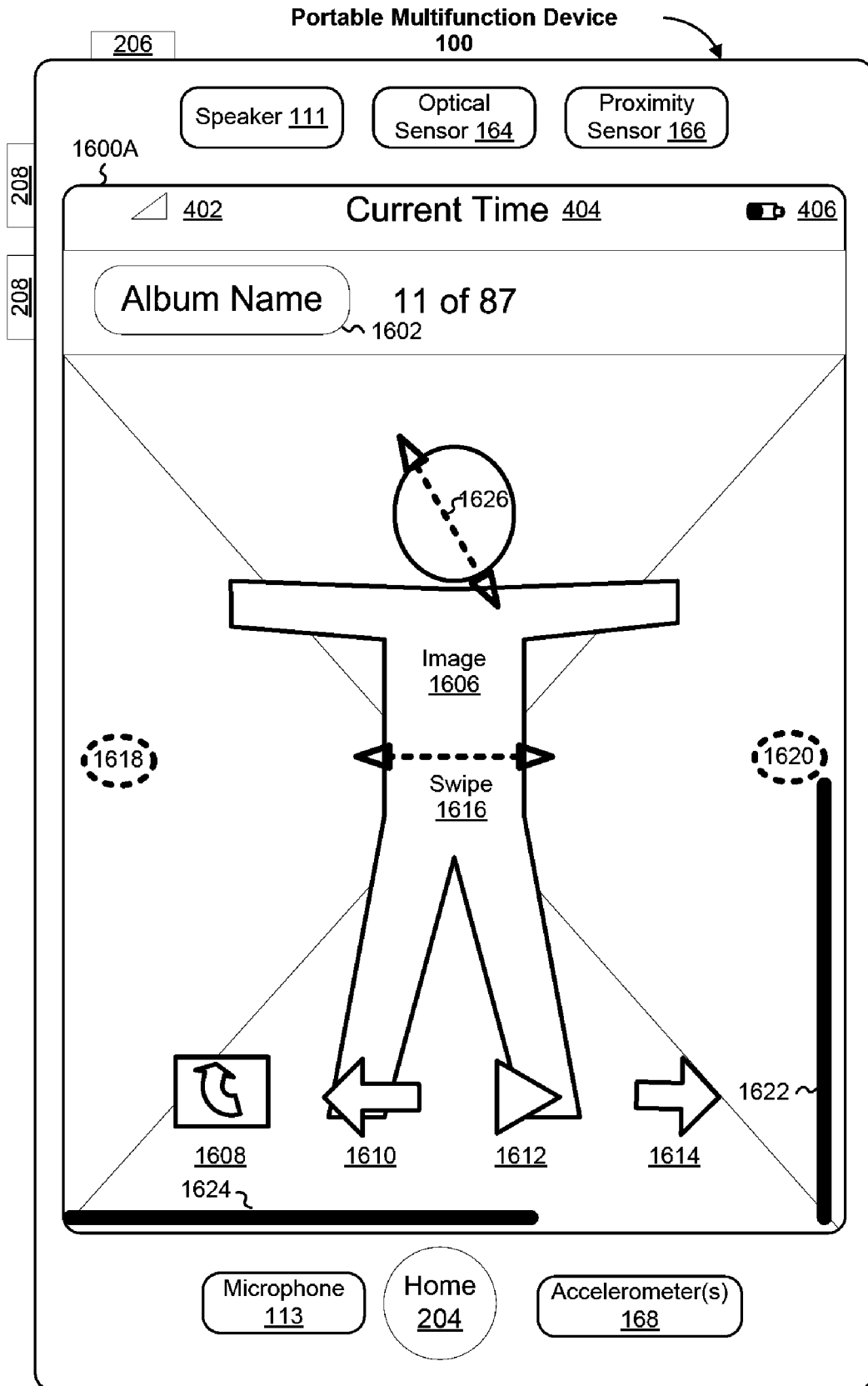


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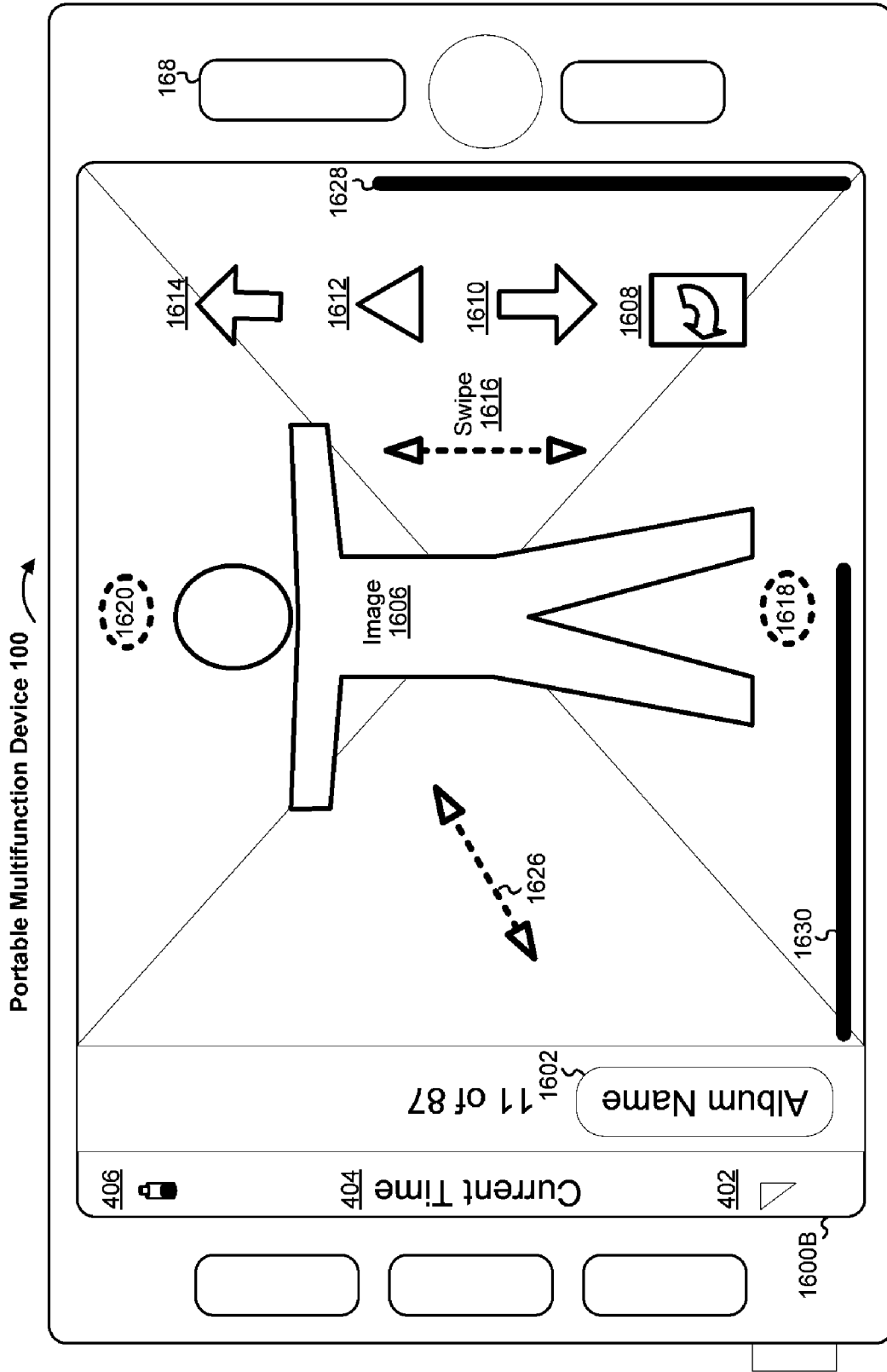


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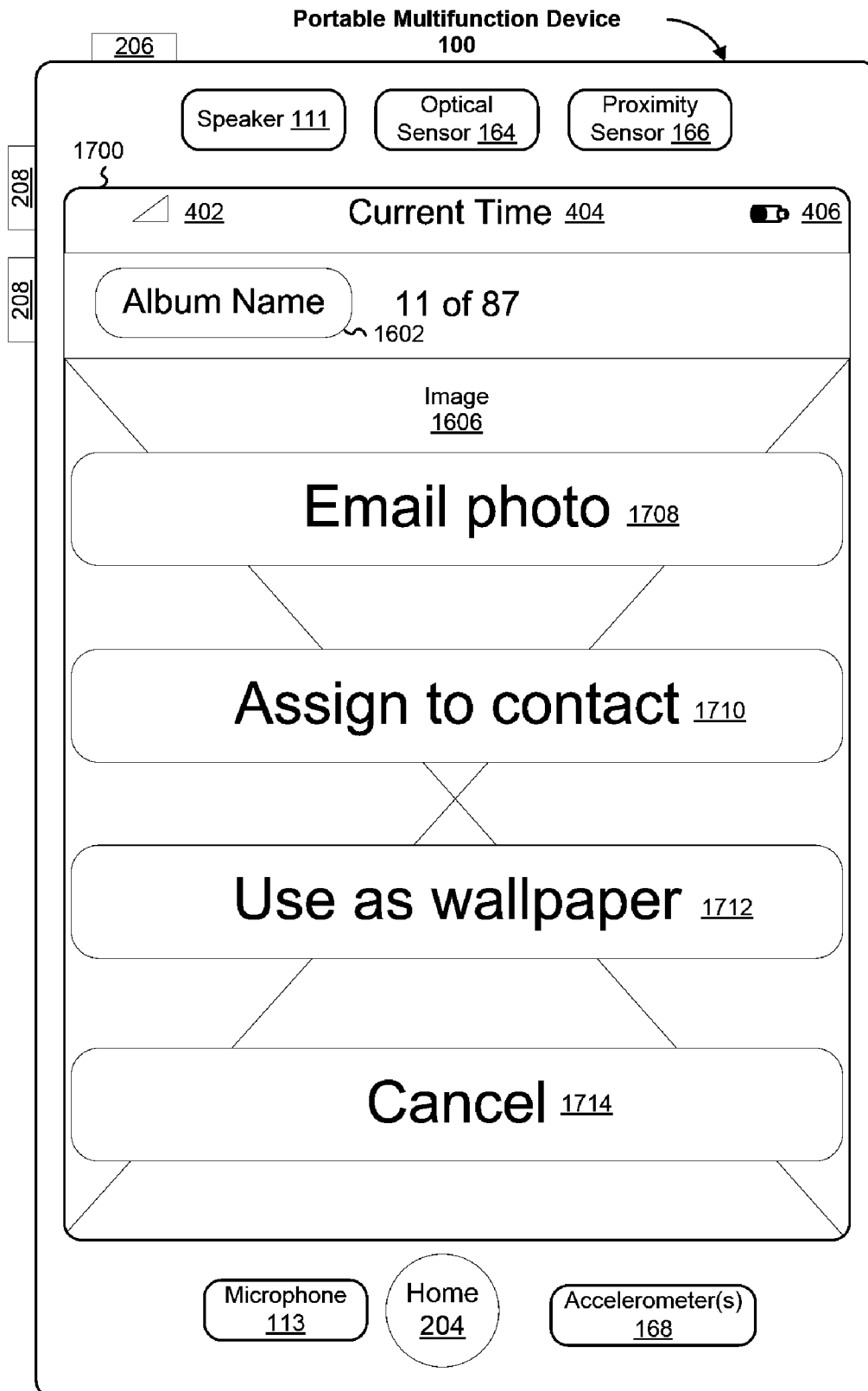


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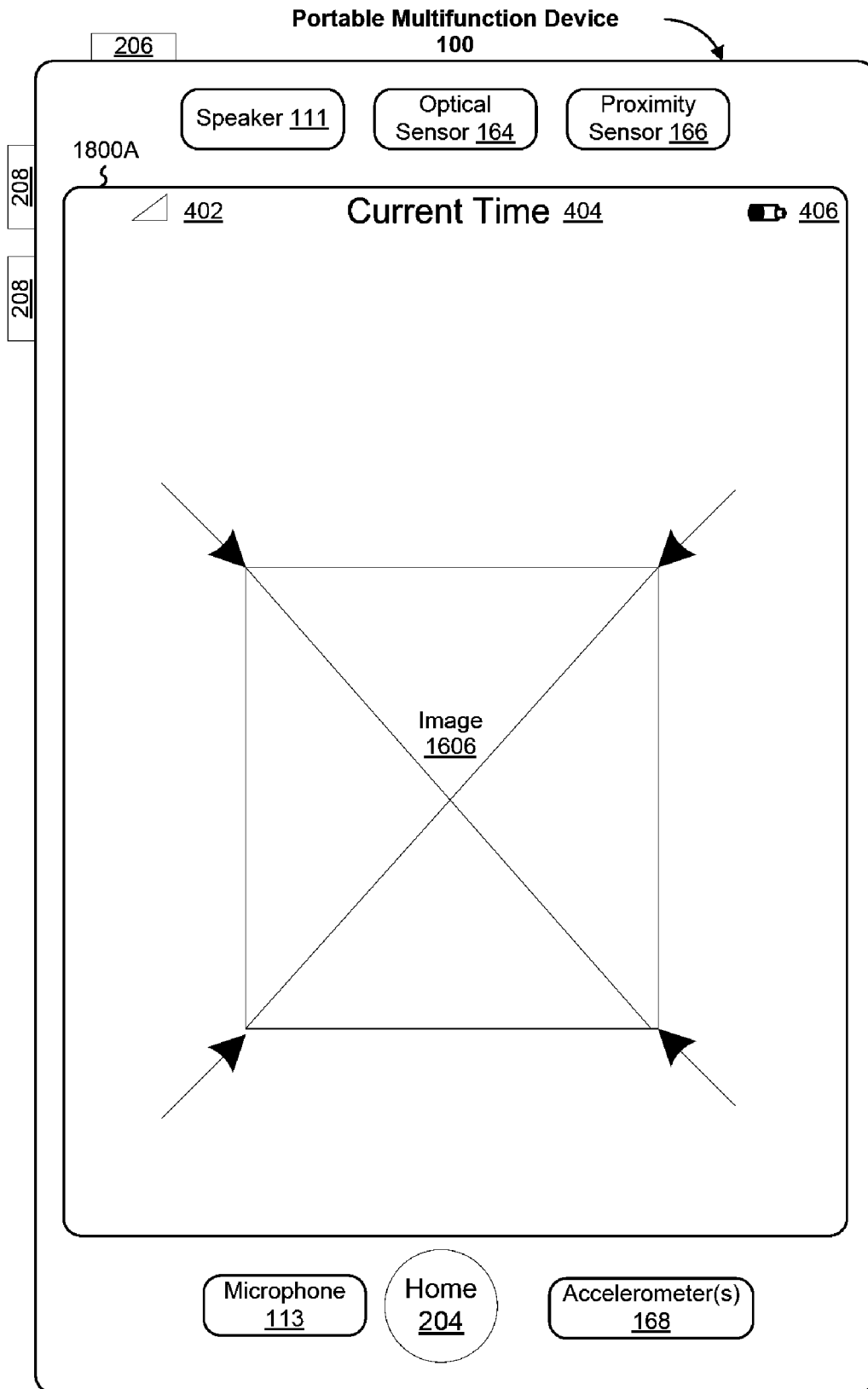


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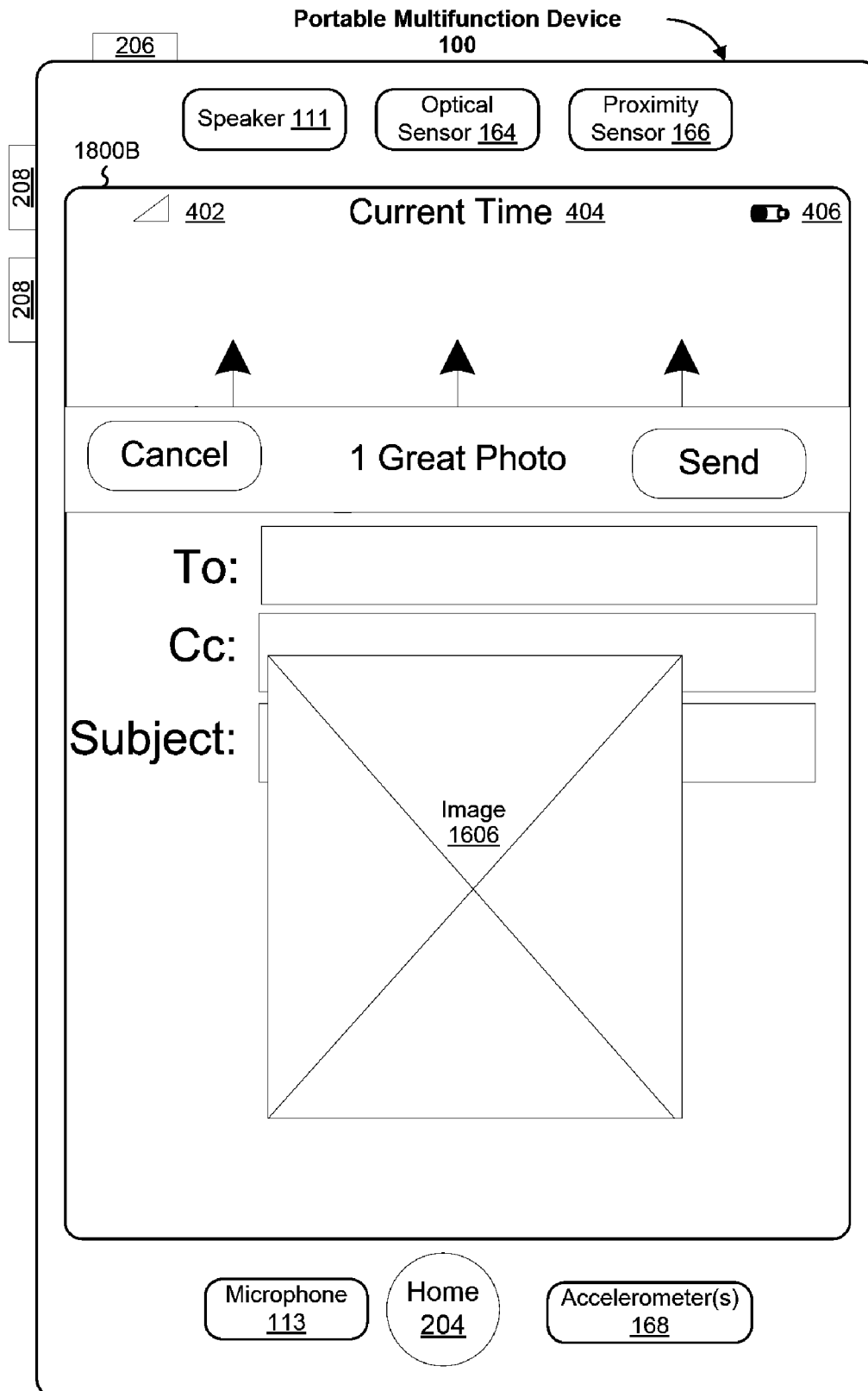


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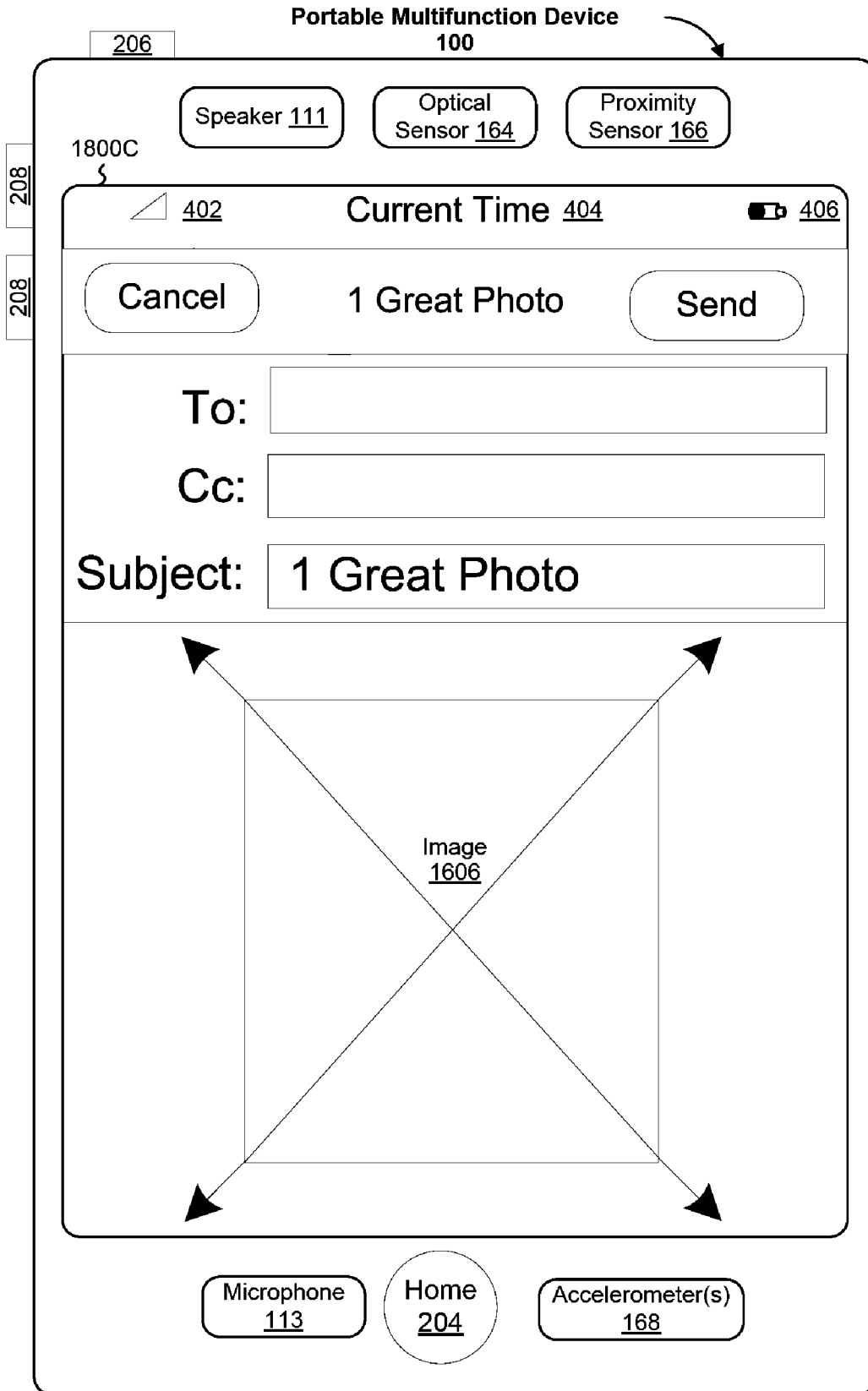


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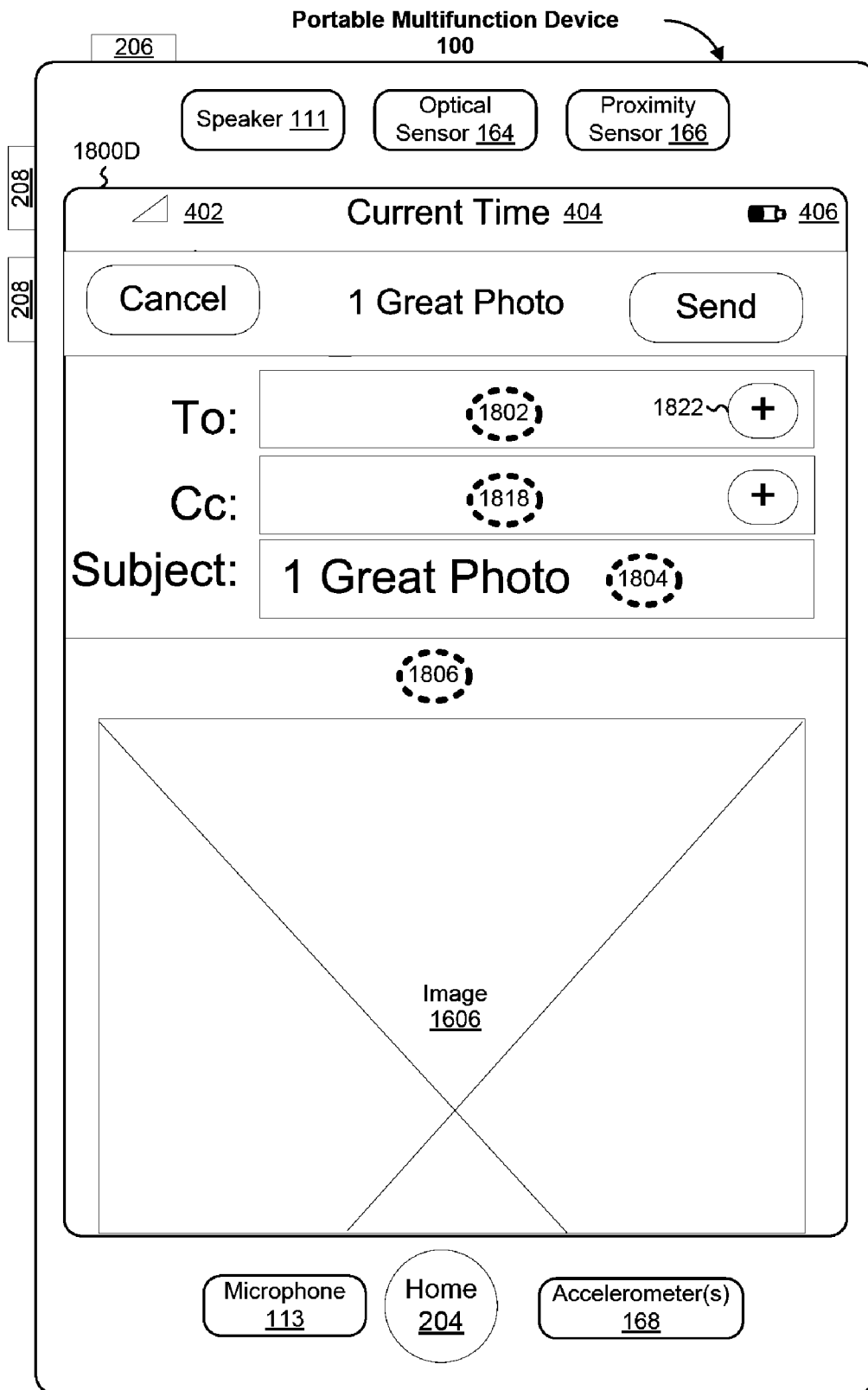


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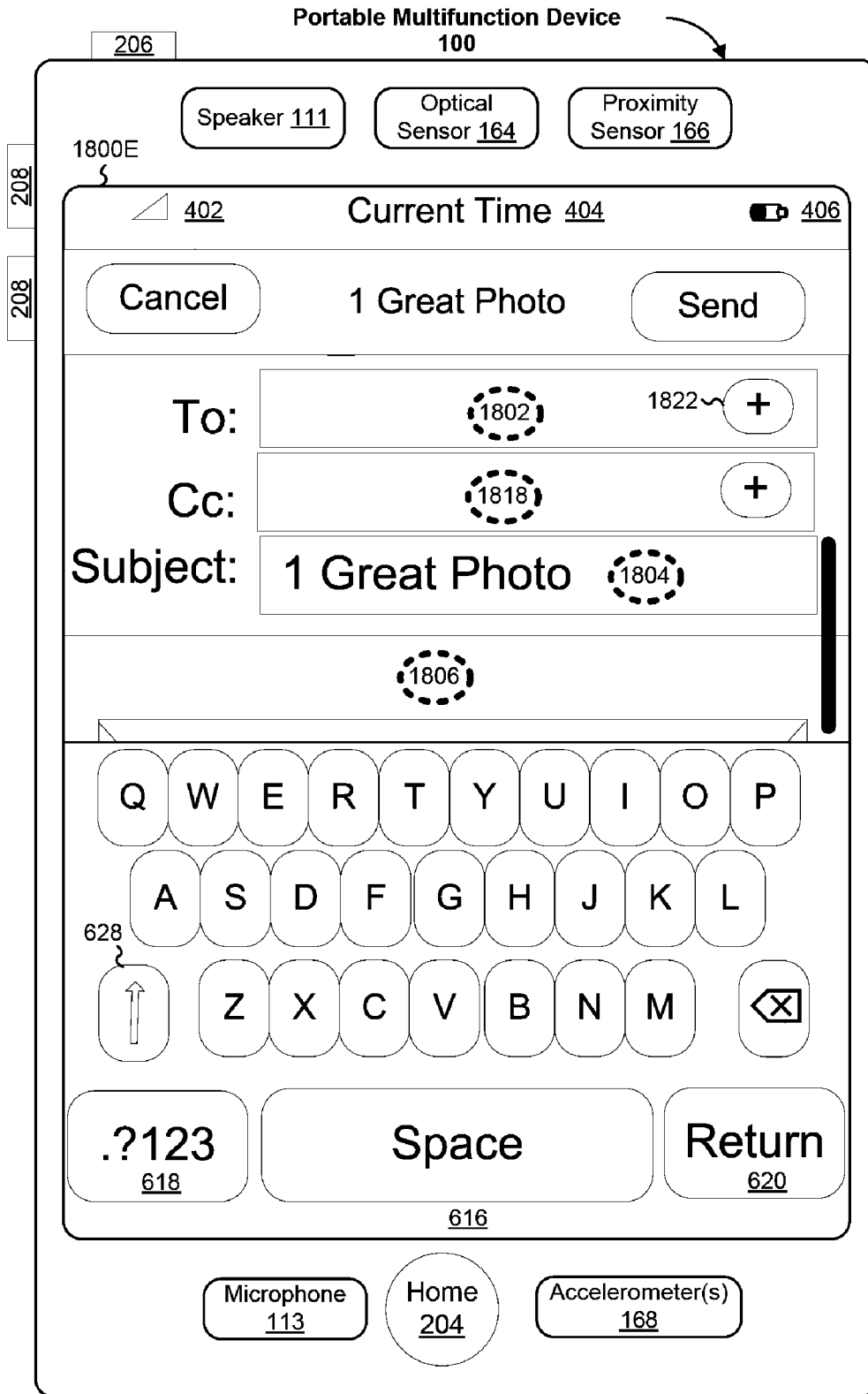


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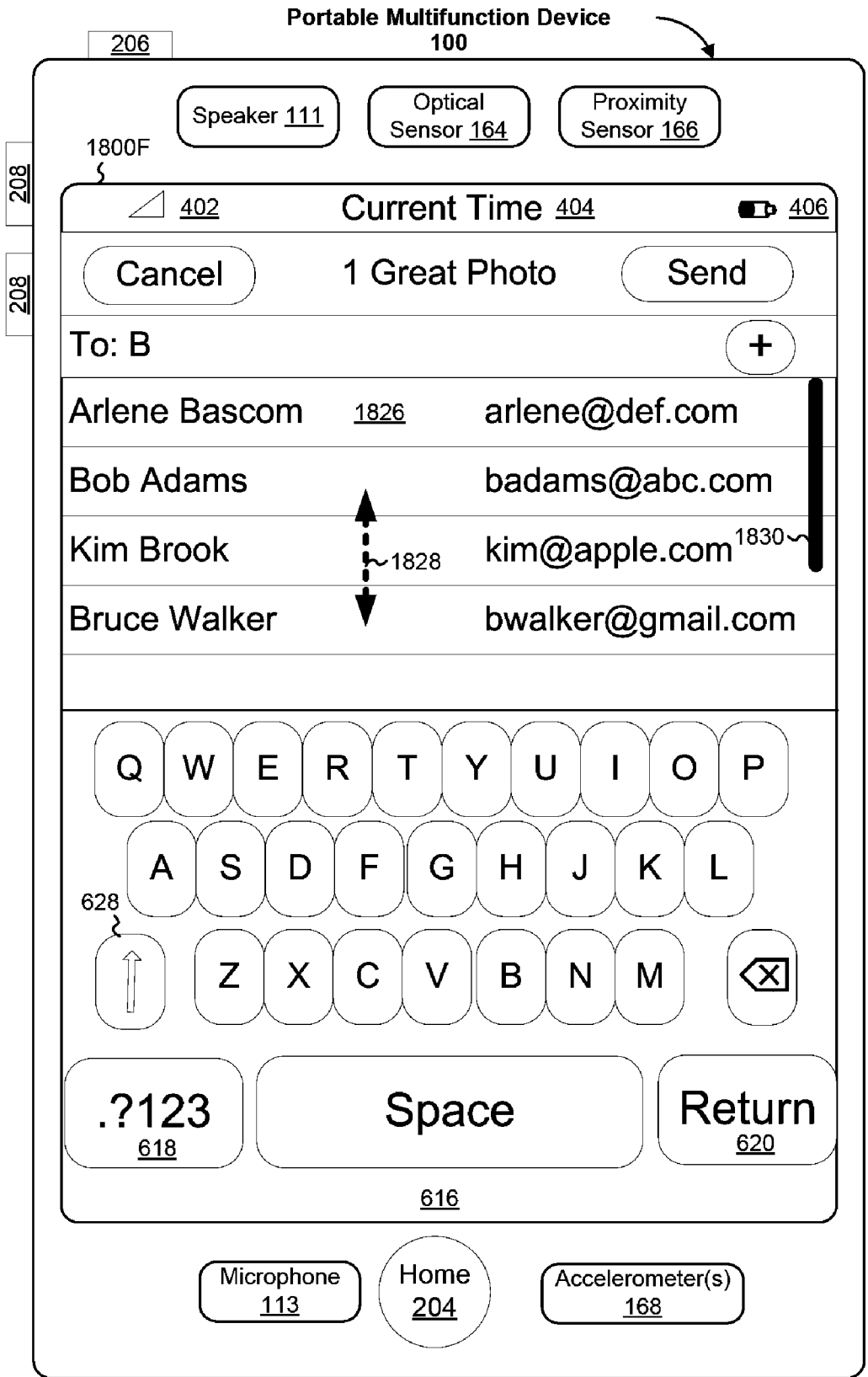


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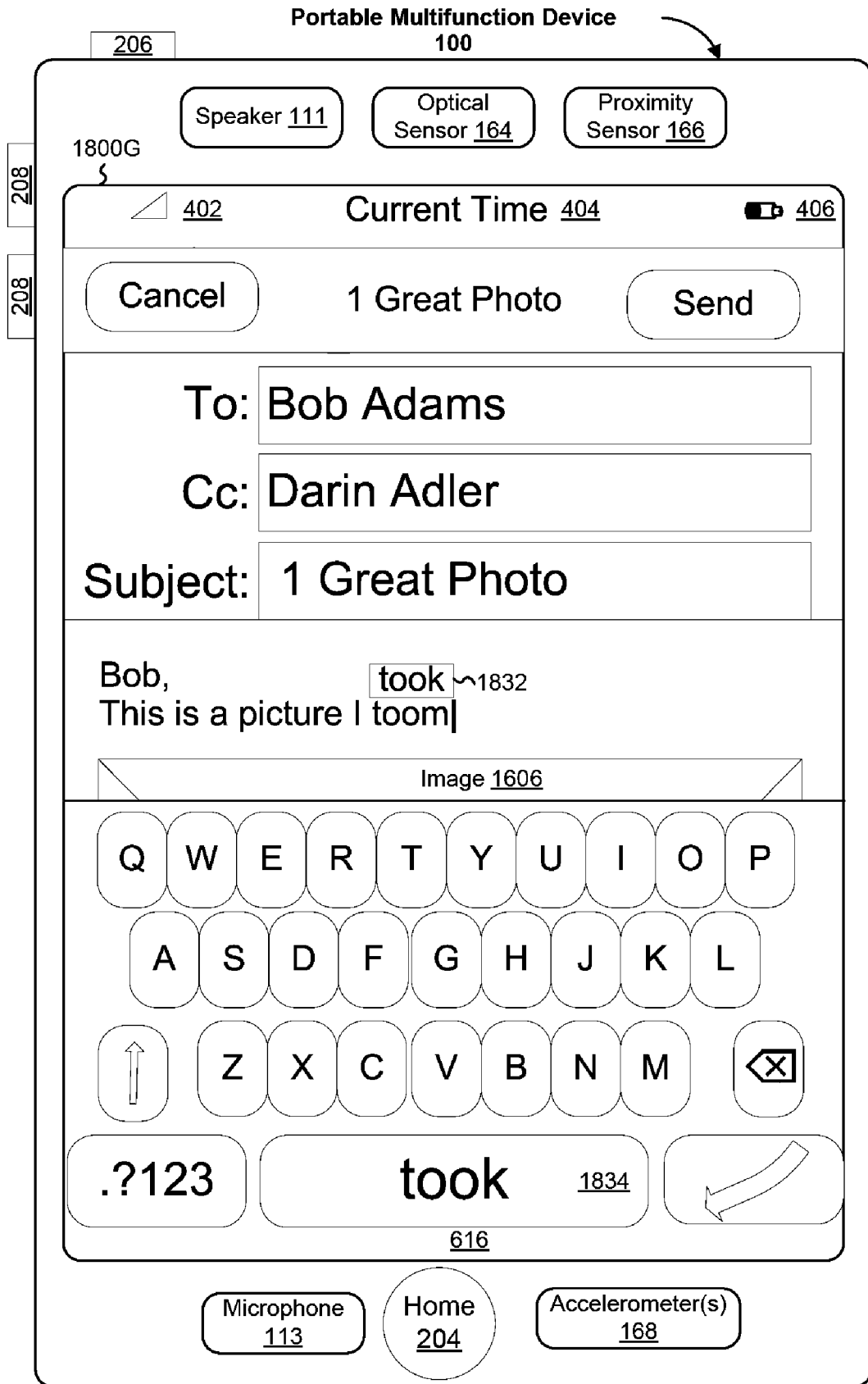


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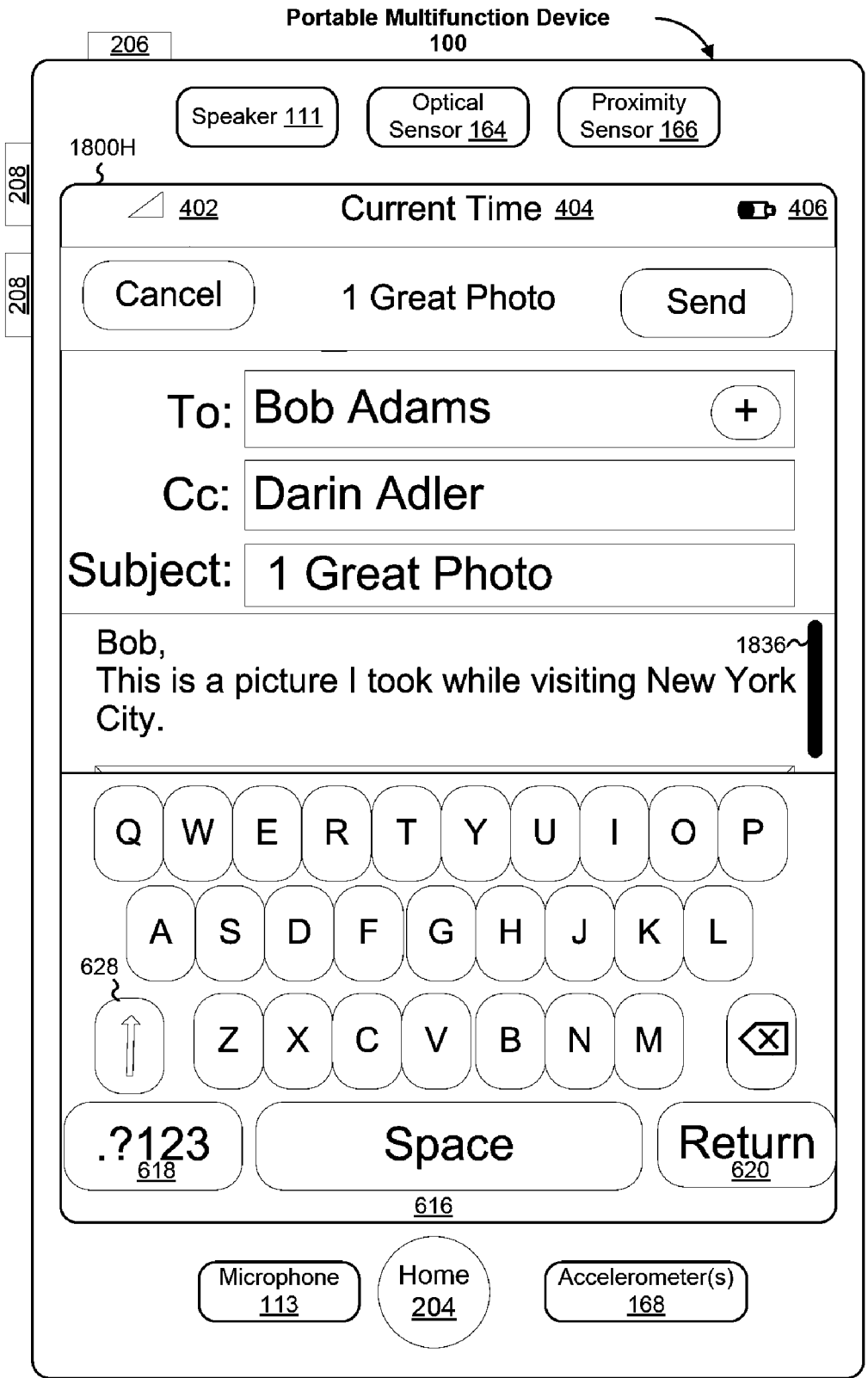


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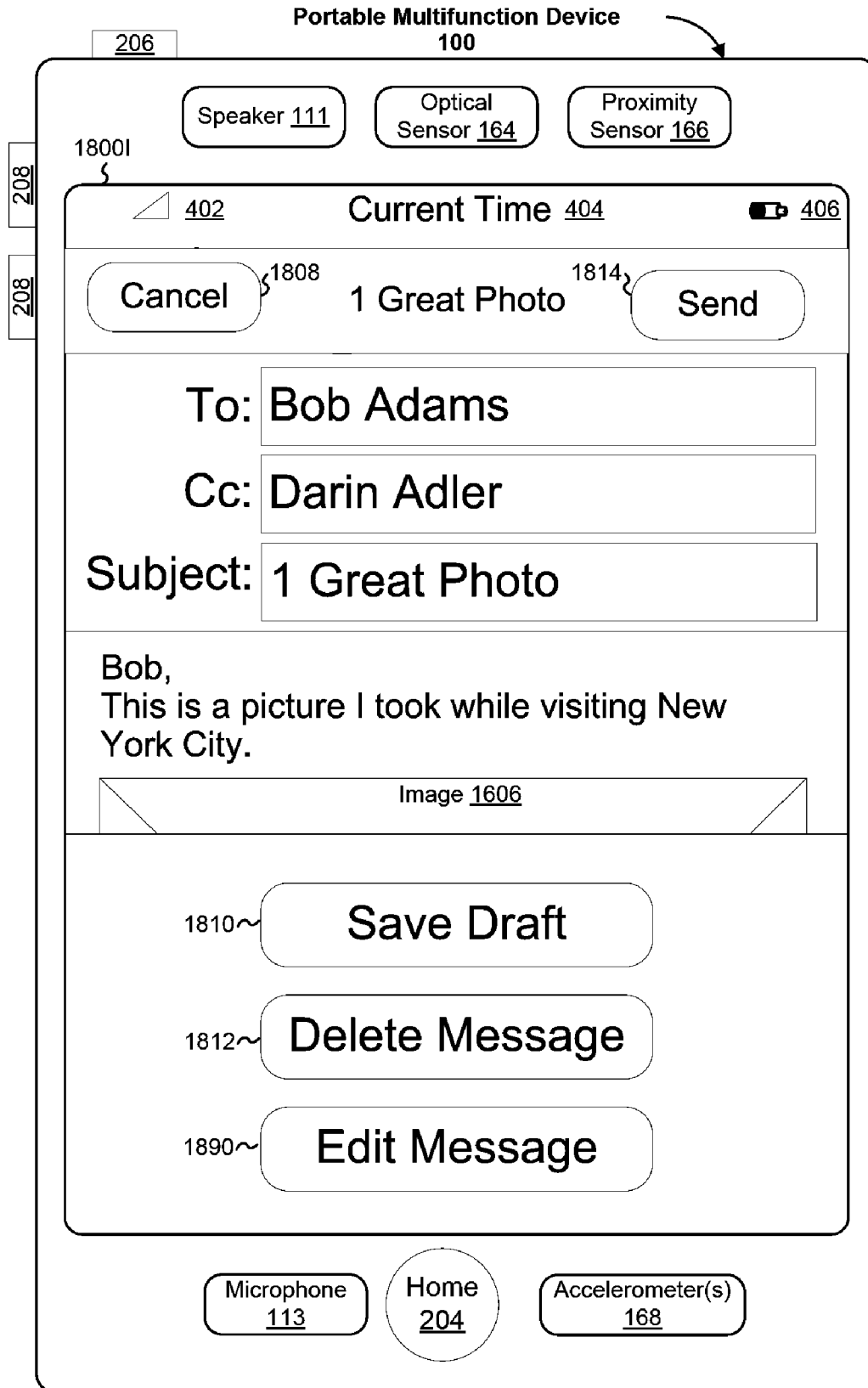


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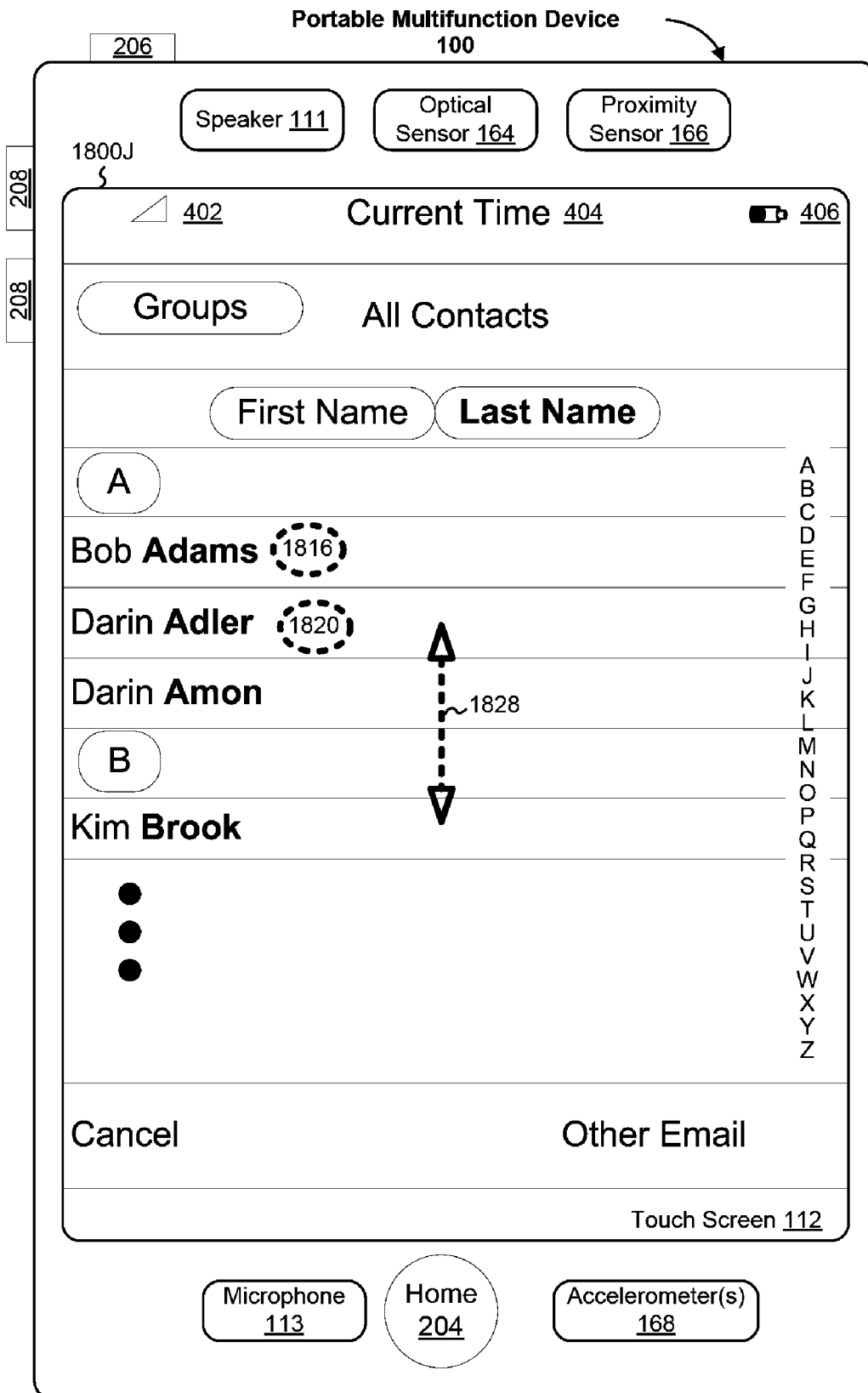


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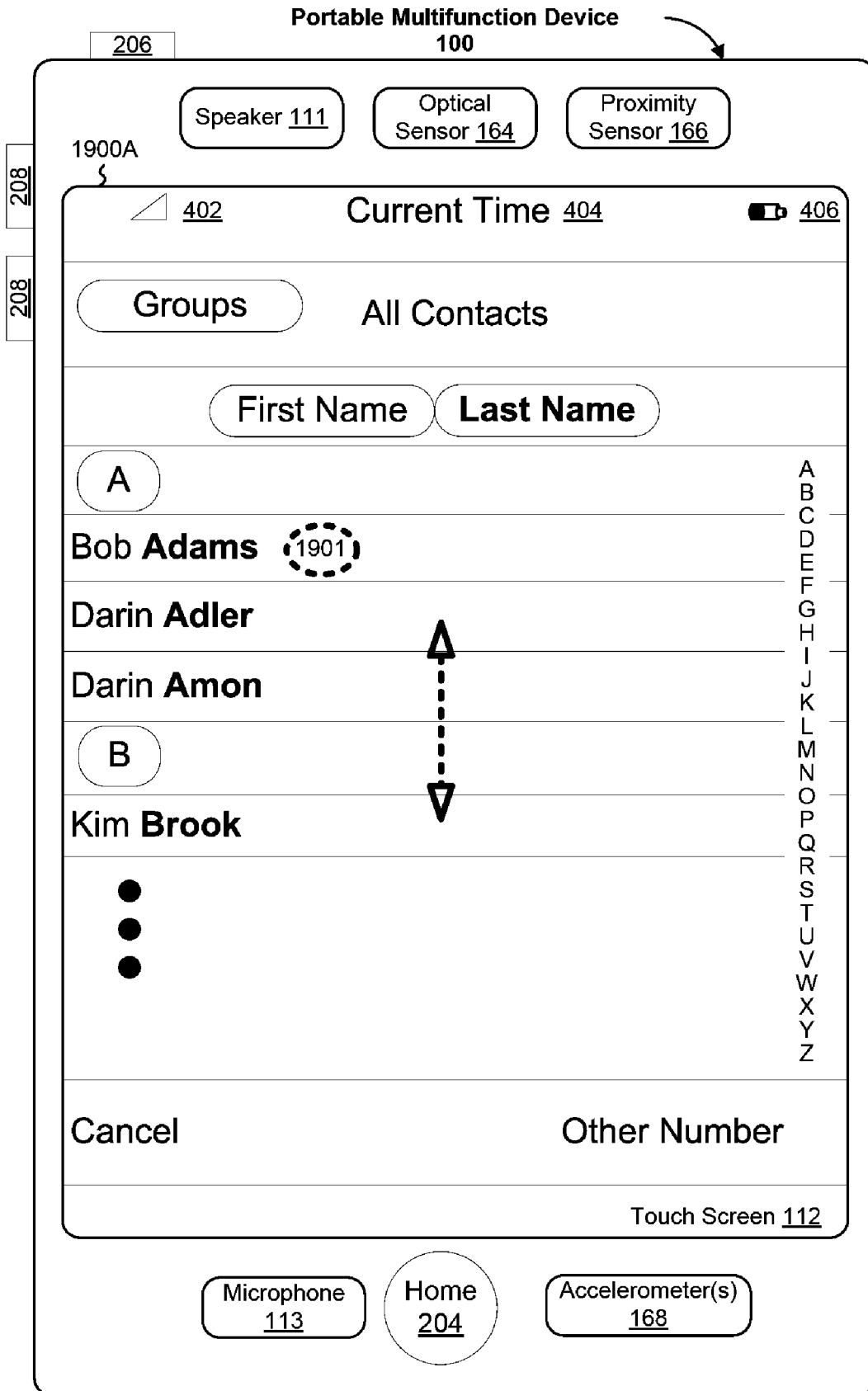


Figure 19A

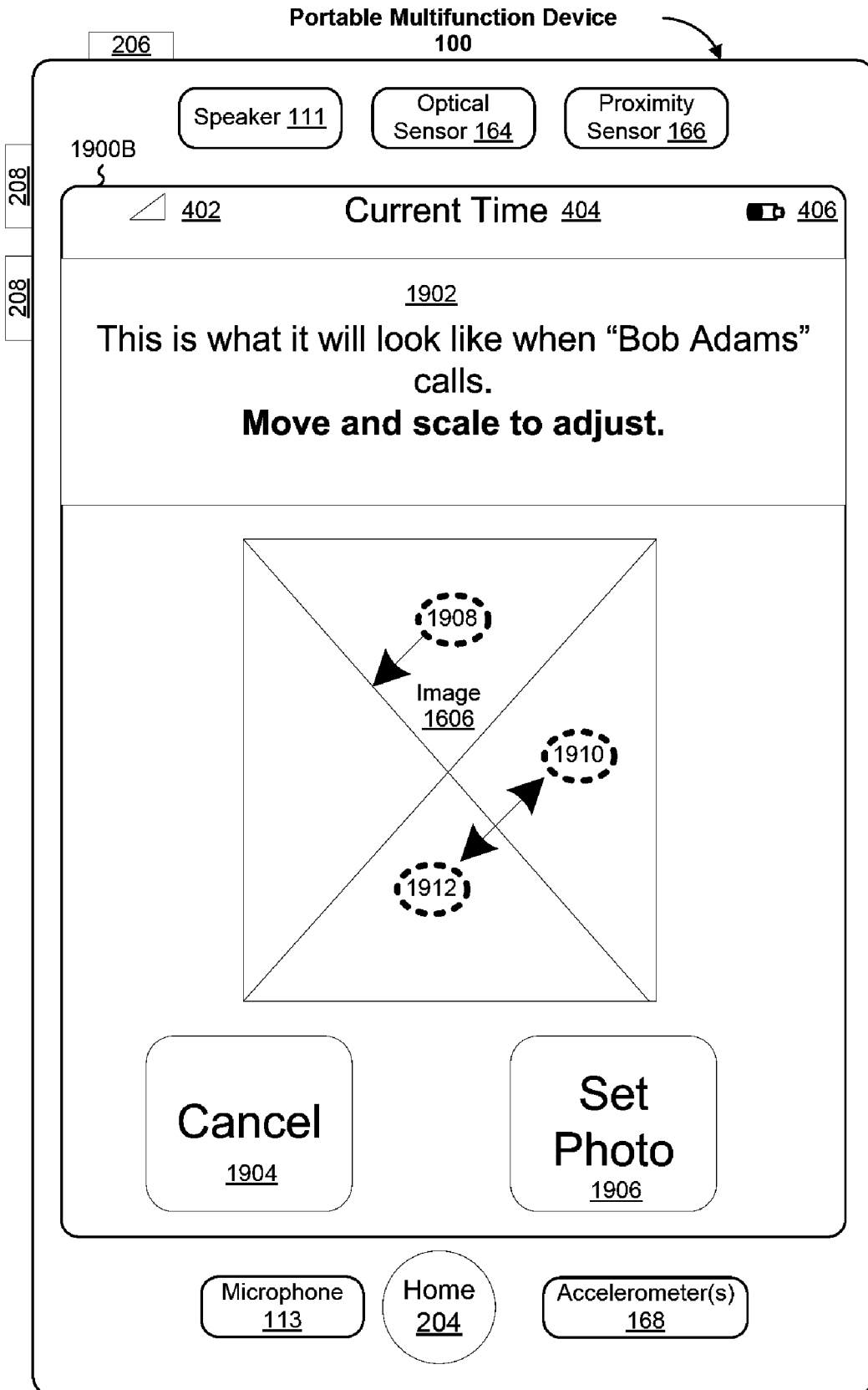


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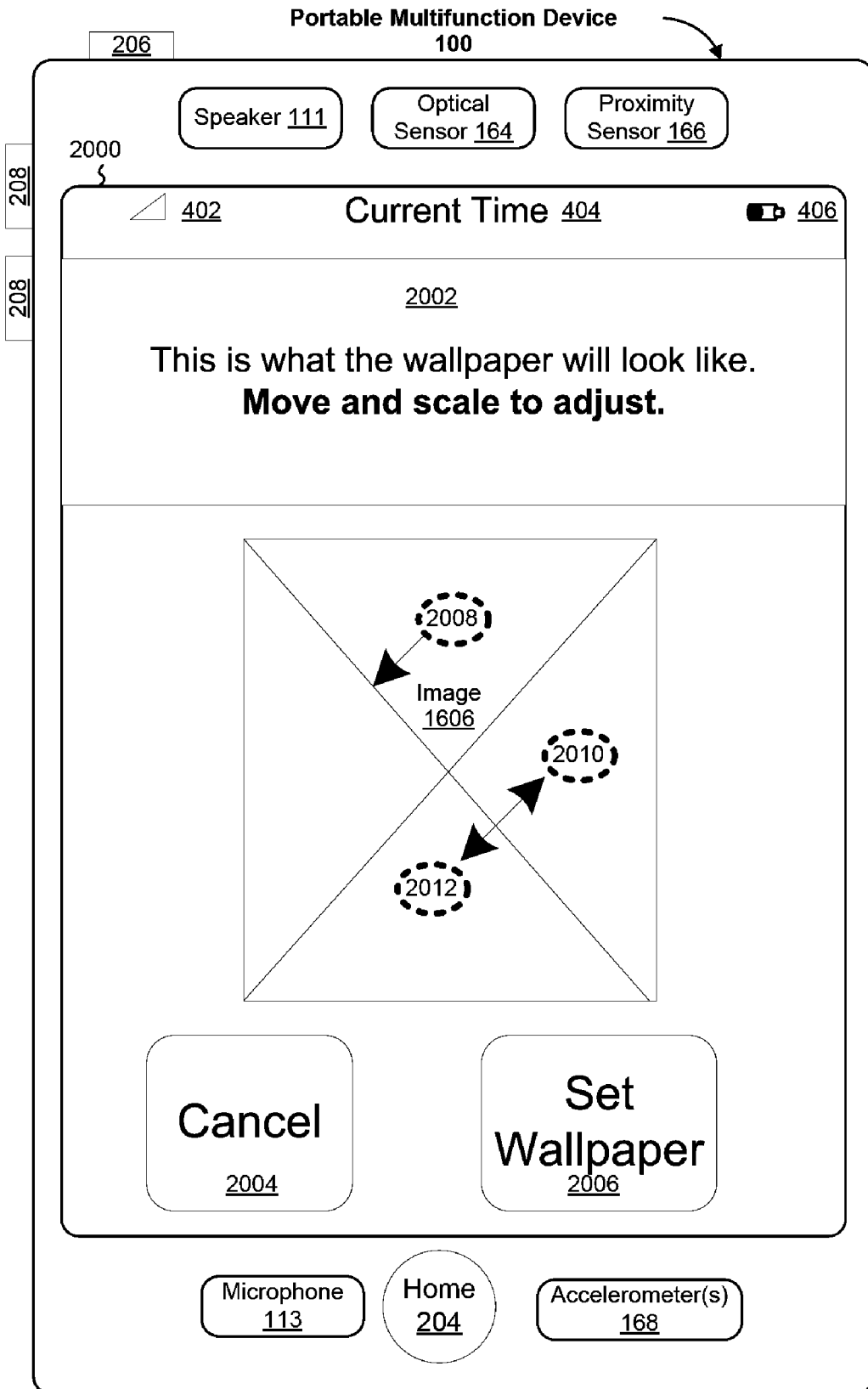


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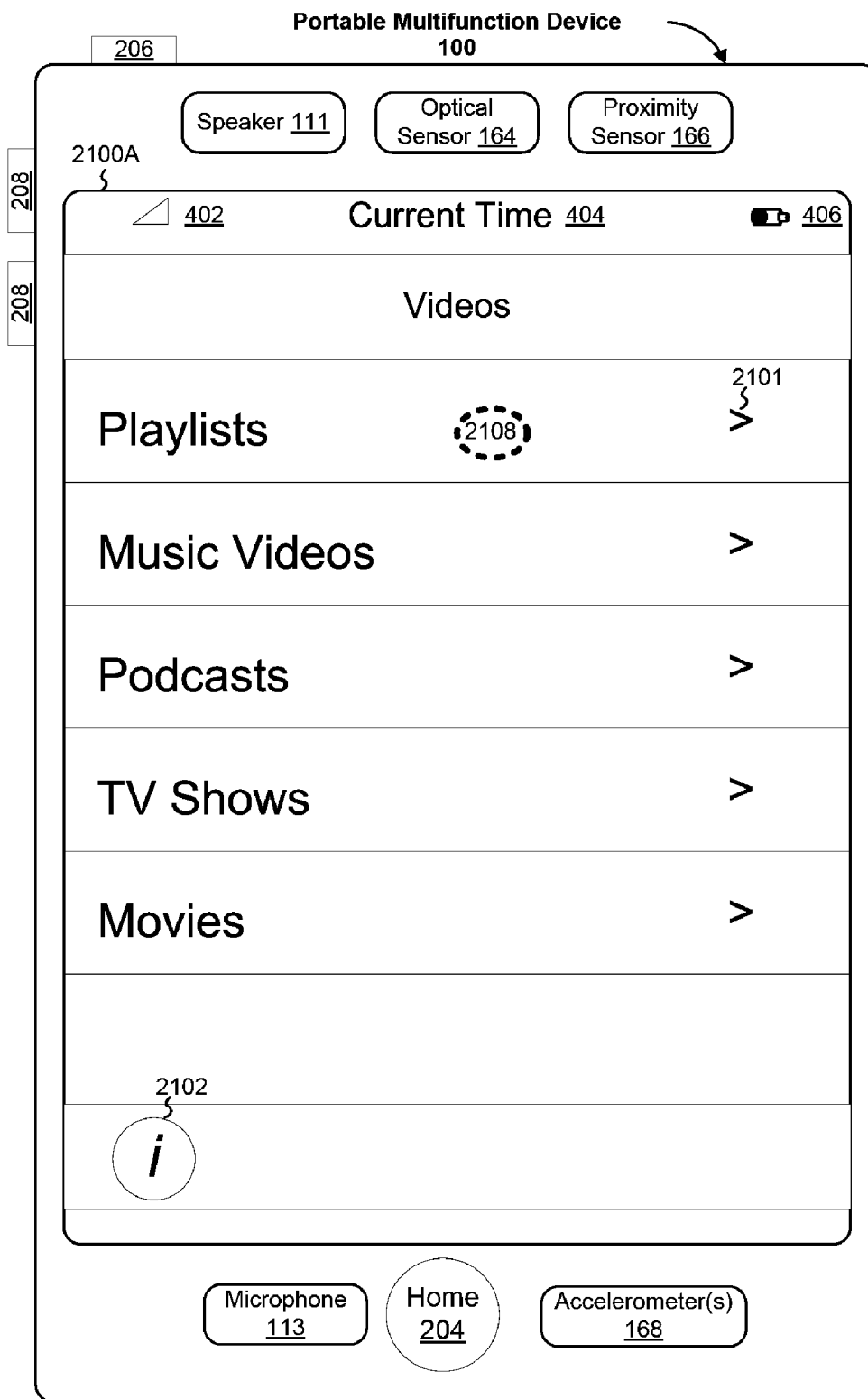


Figure 21A

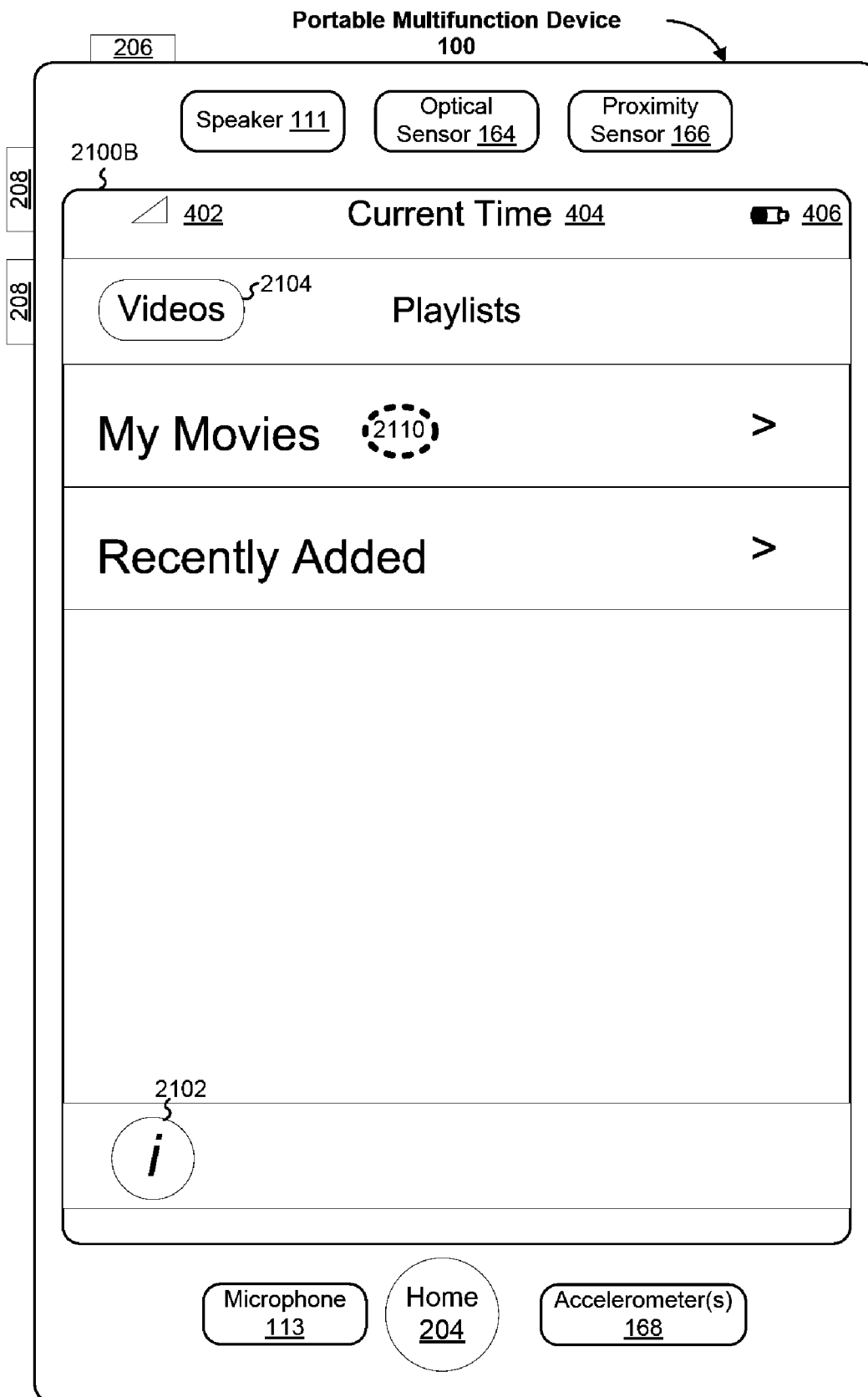


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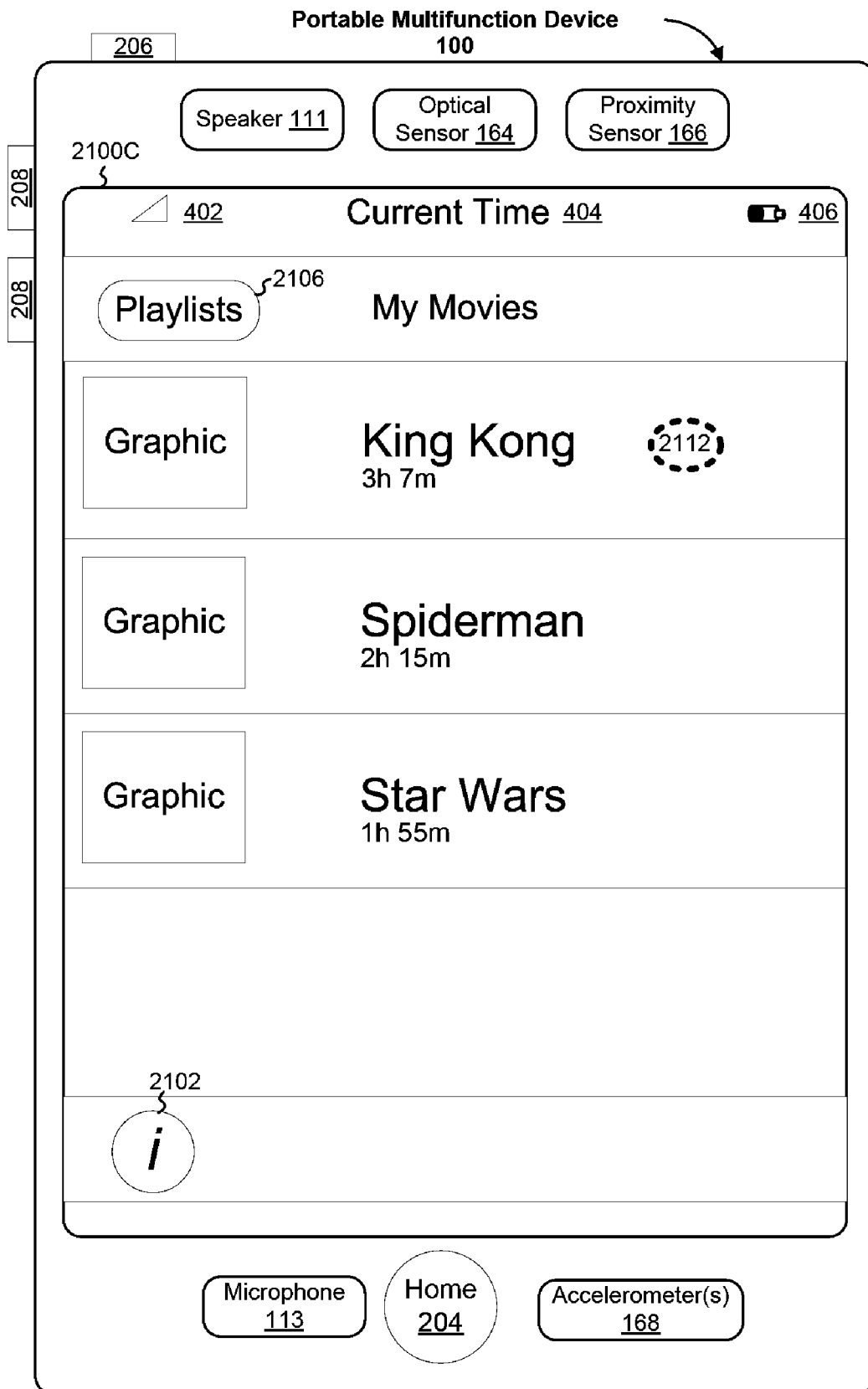


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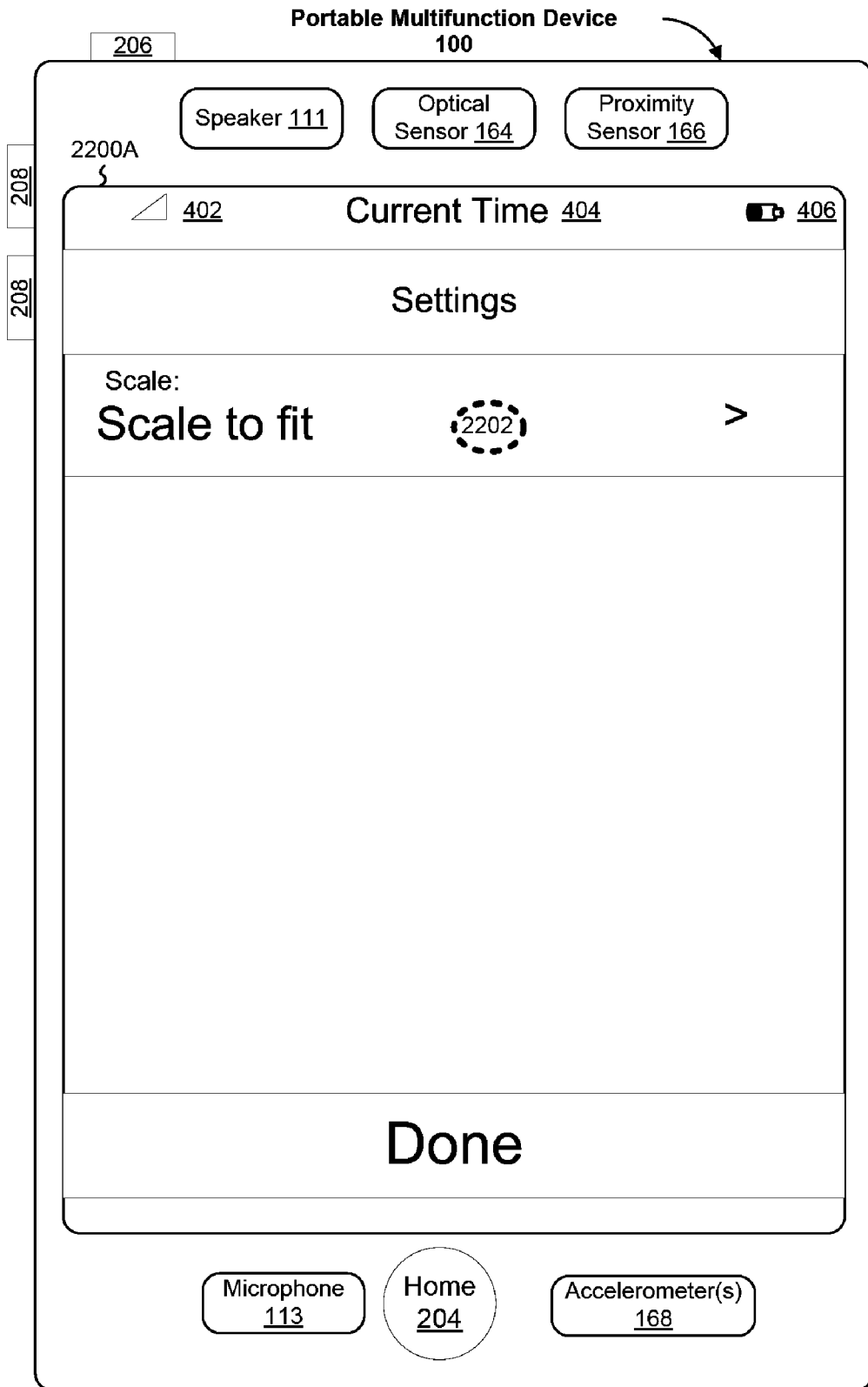


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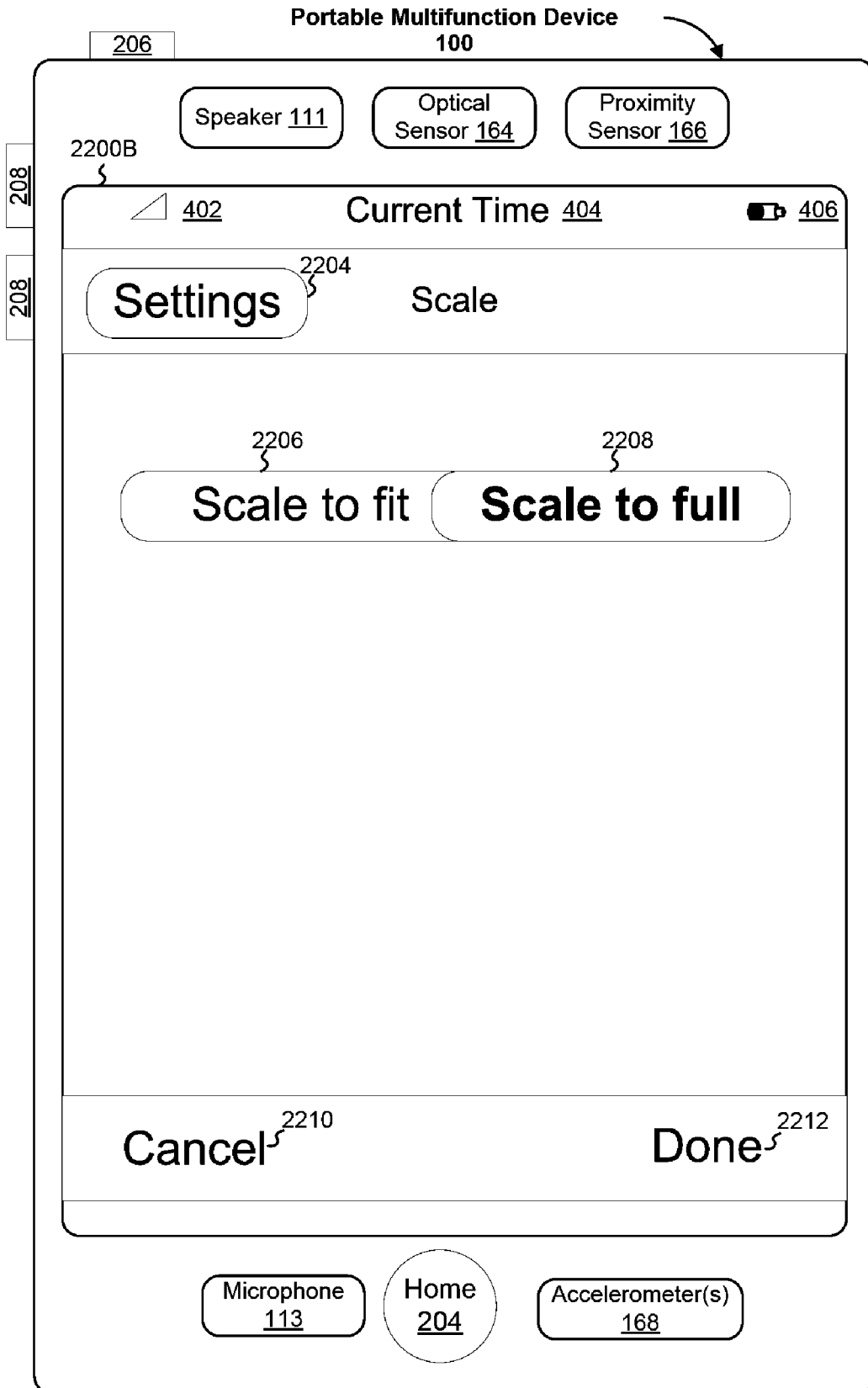


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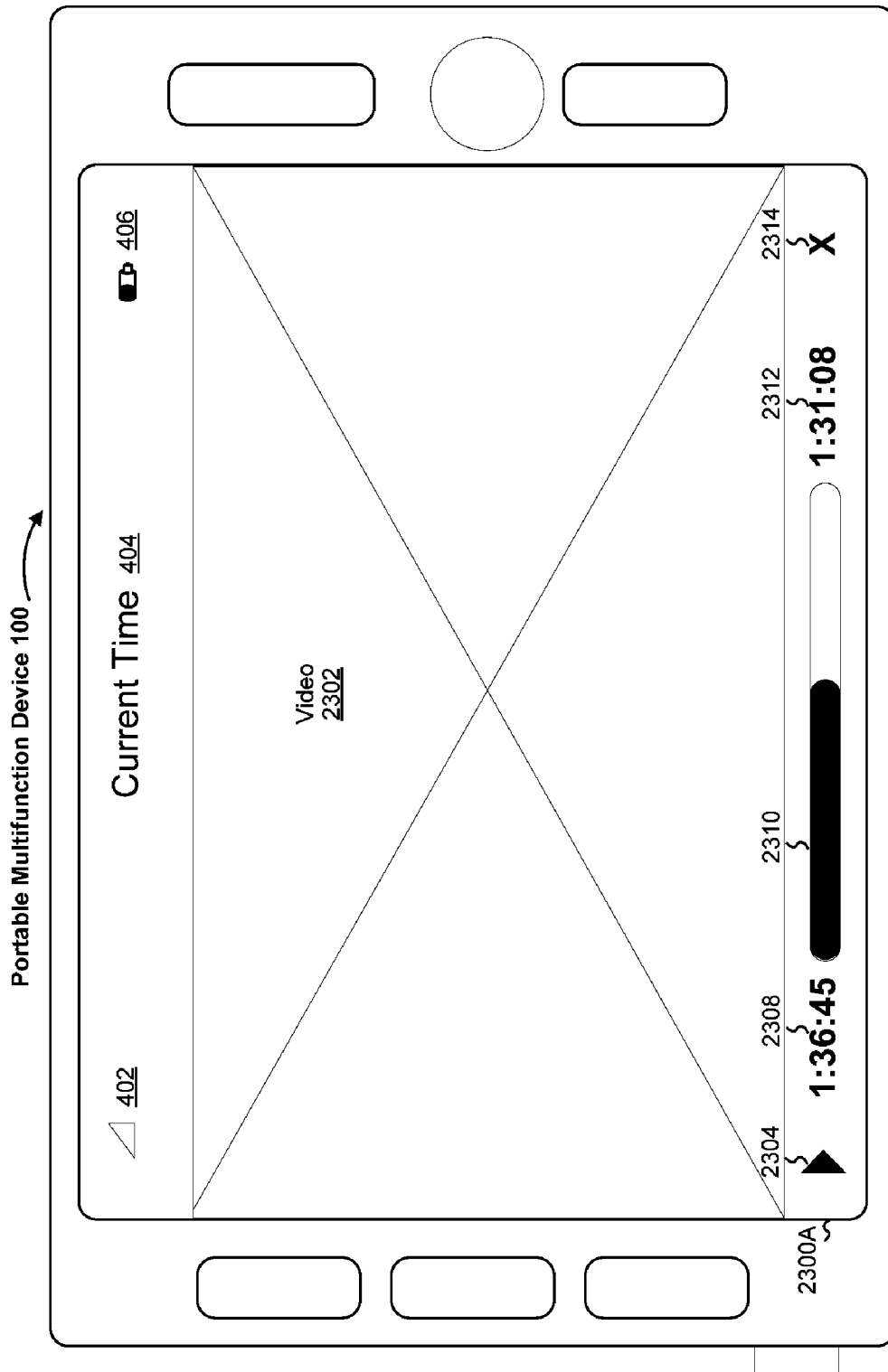


Figure 23A

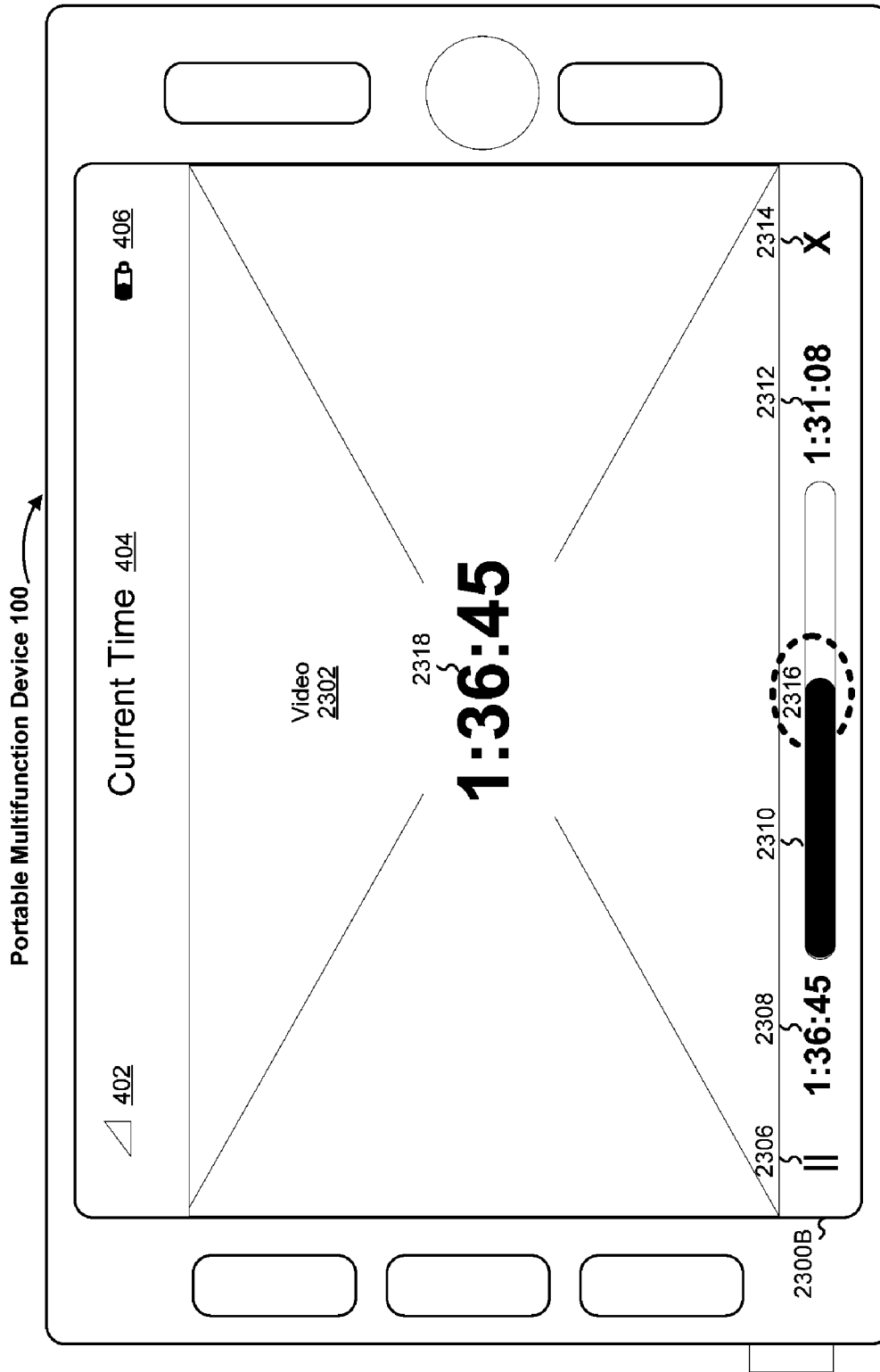


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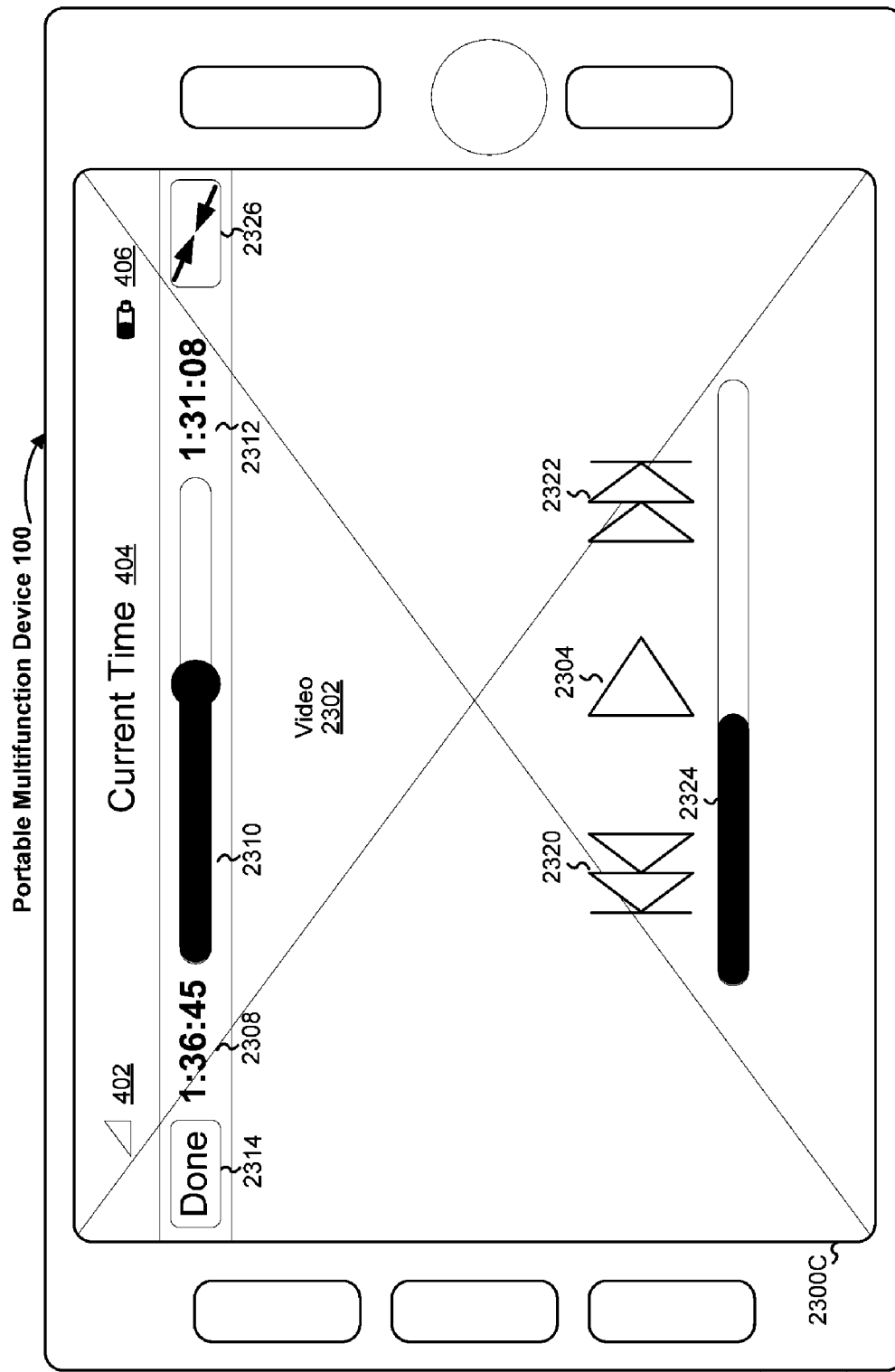


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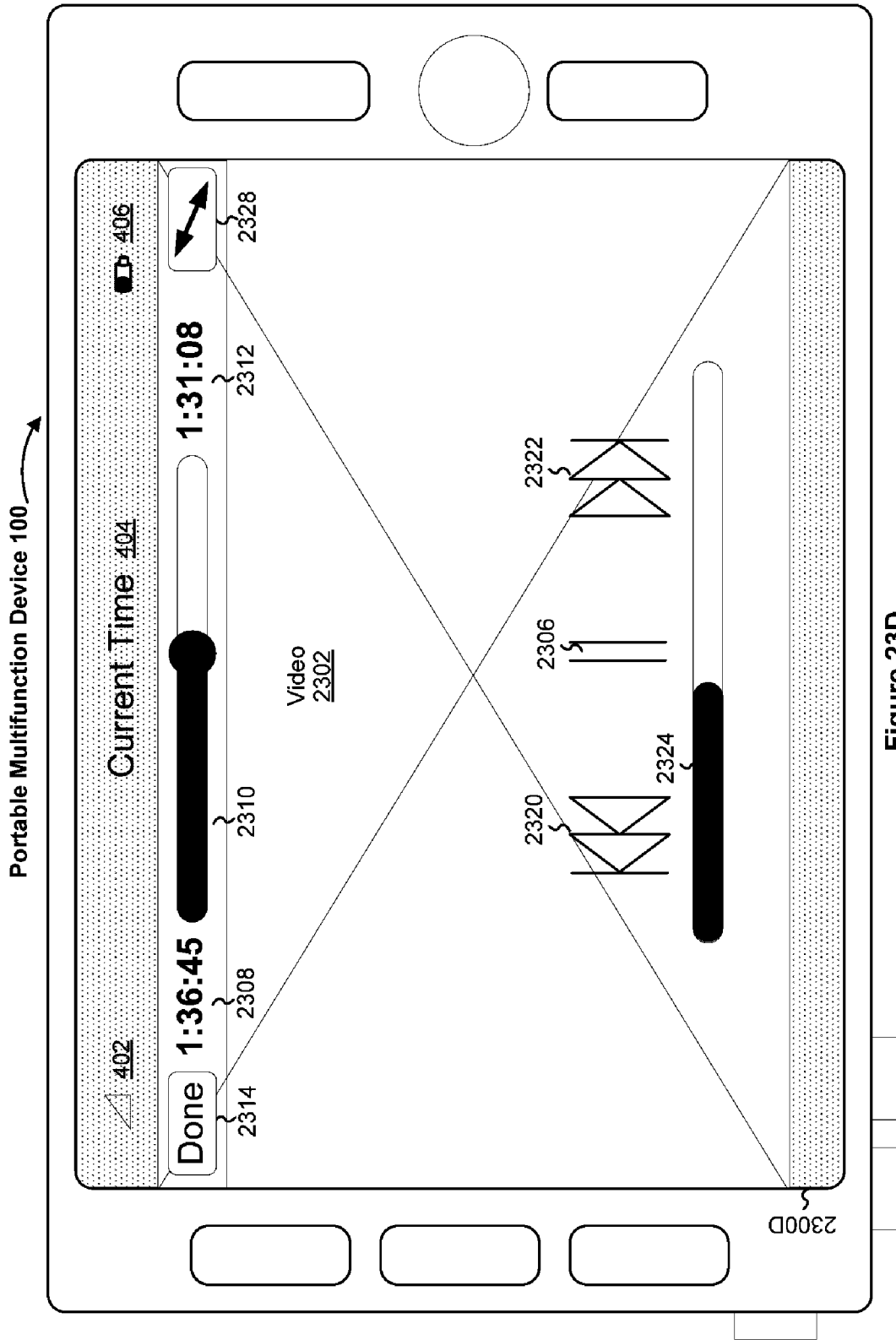


Figure 23D

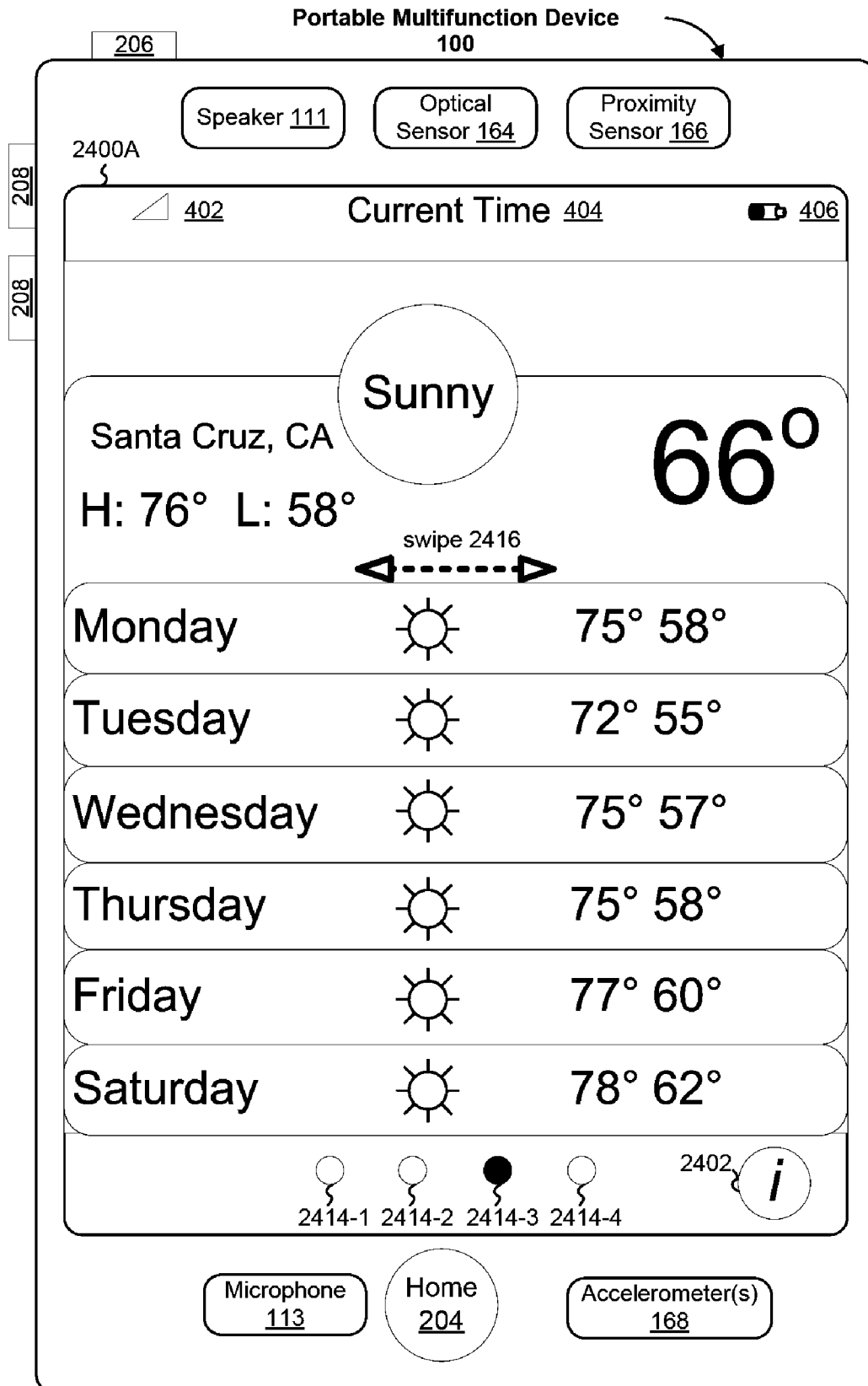


Figure 24A

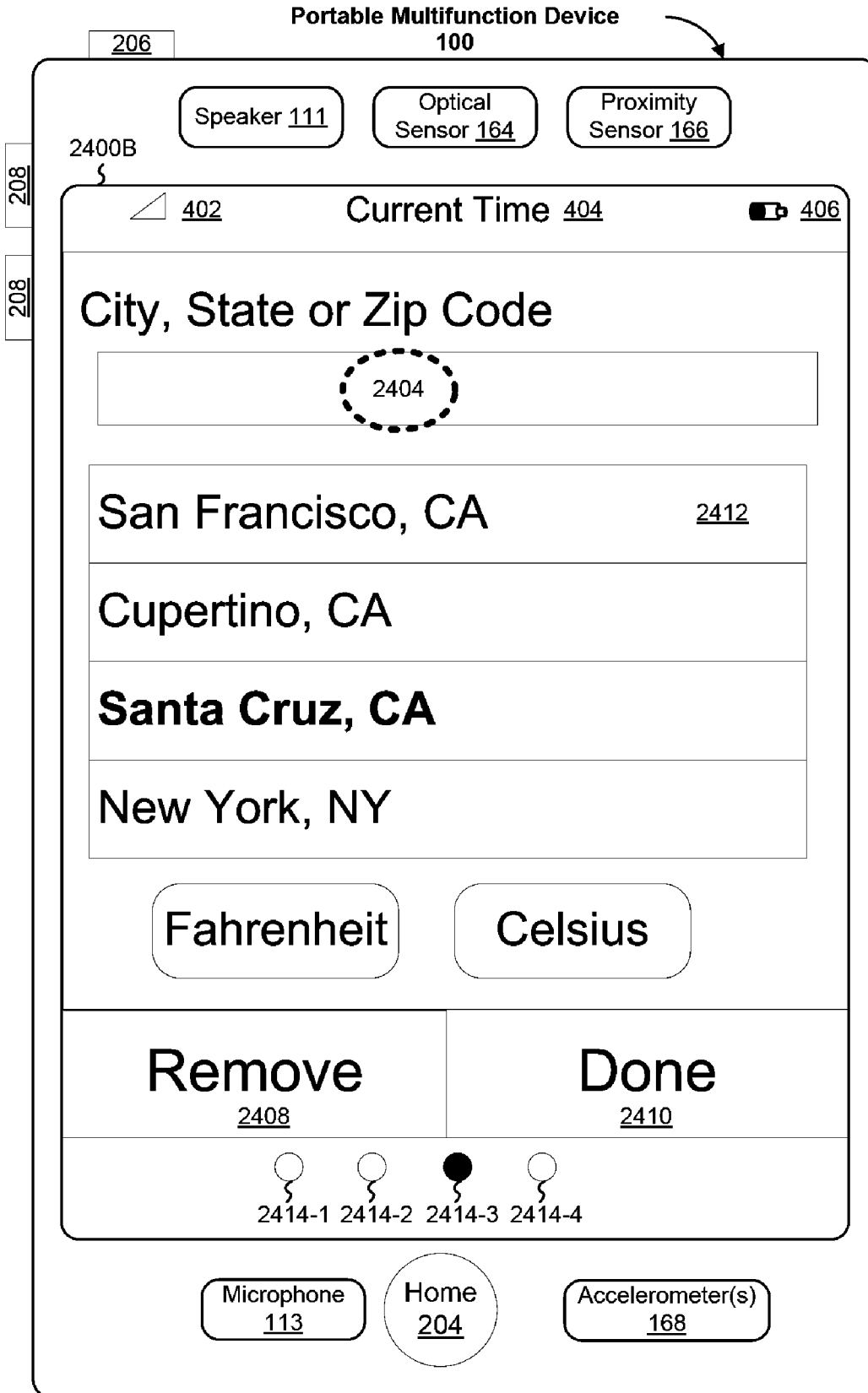


Figure 24B

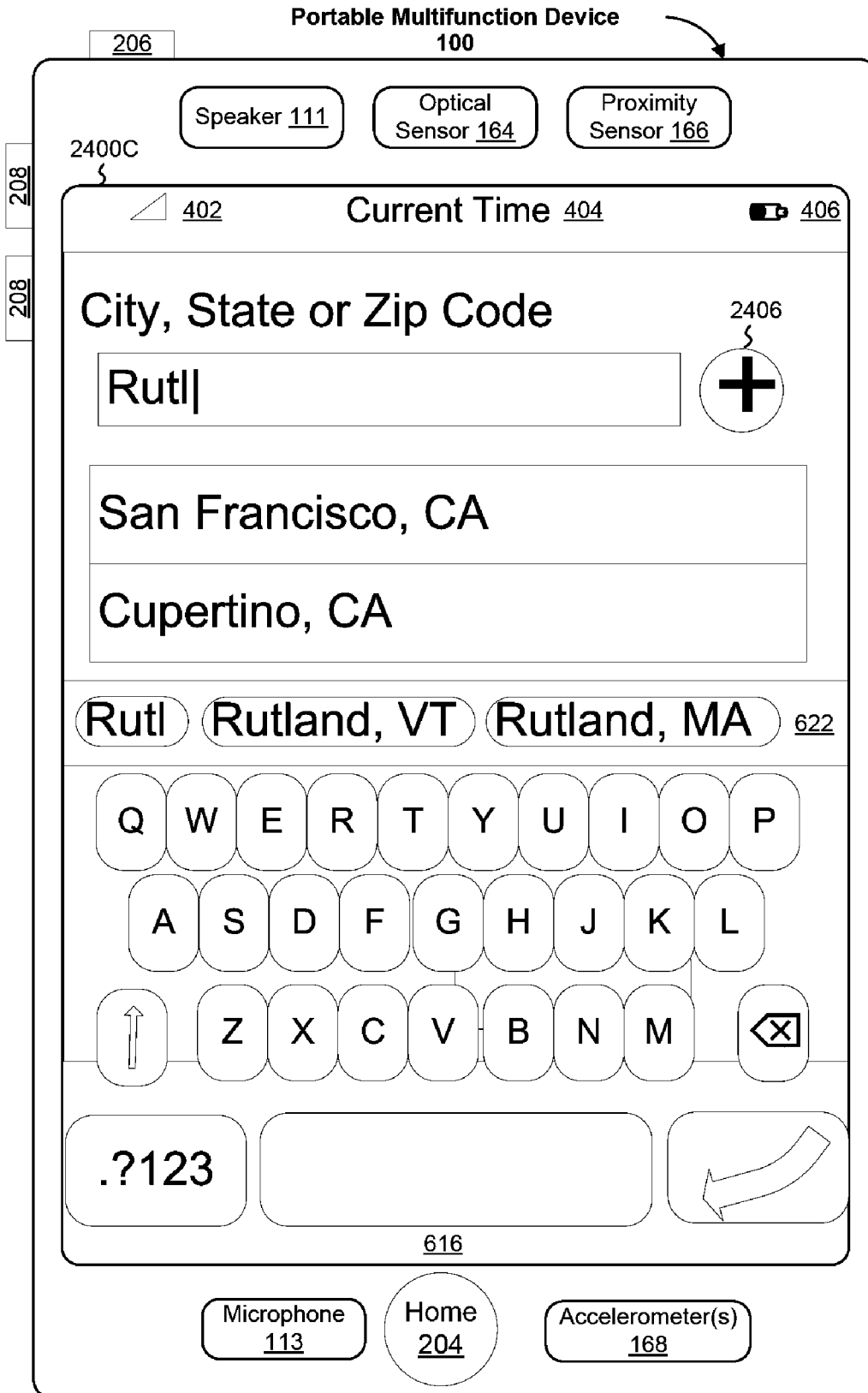


Figure 24C

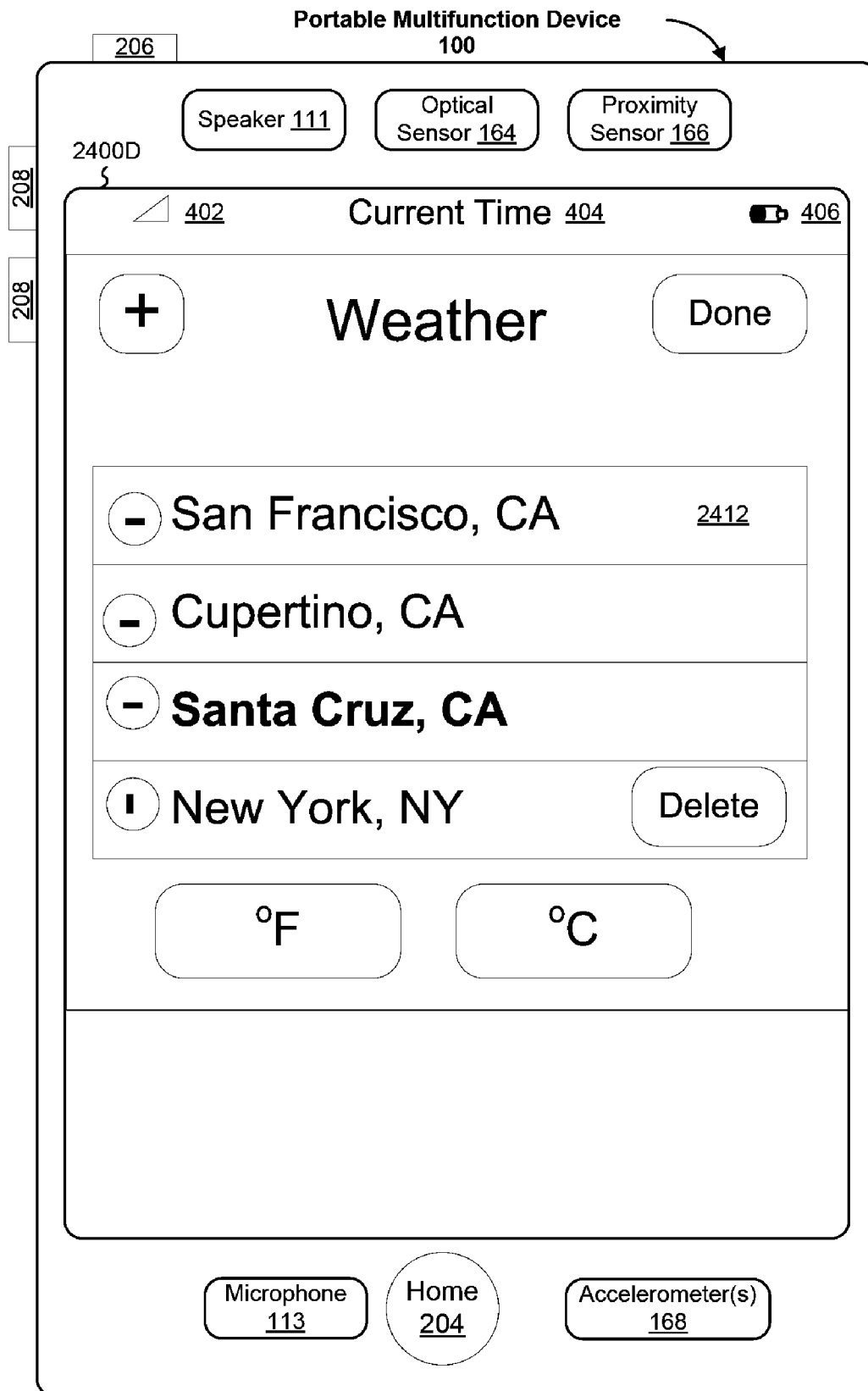


Figure 24D

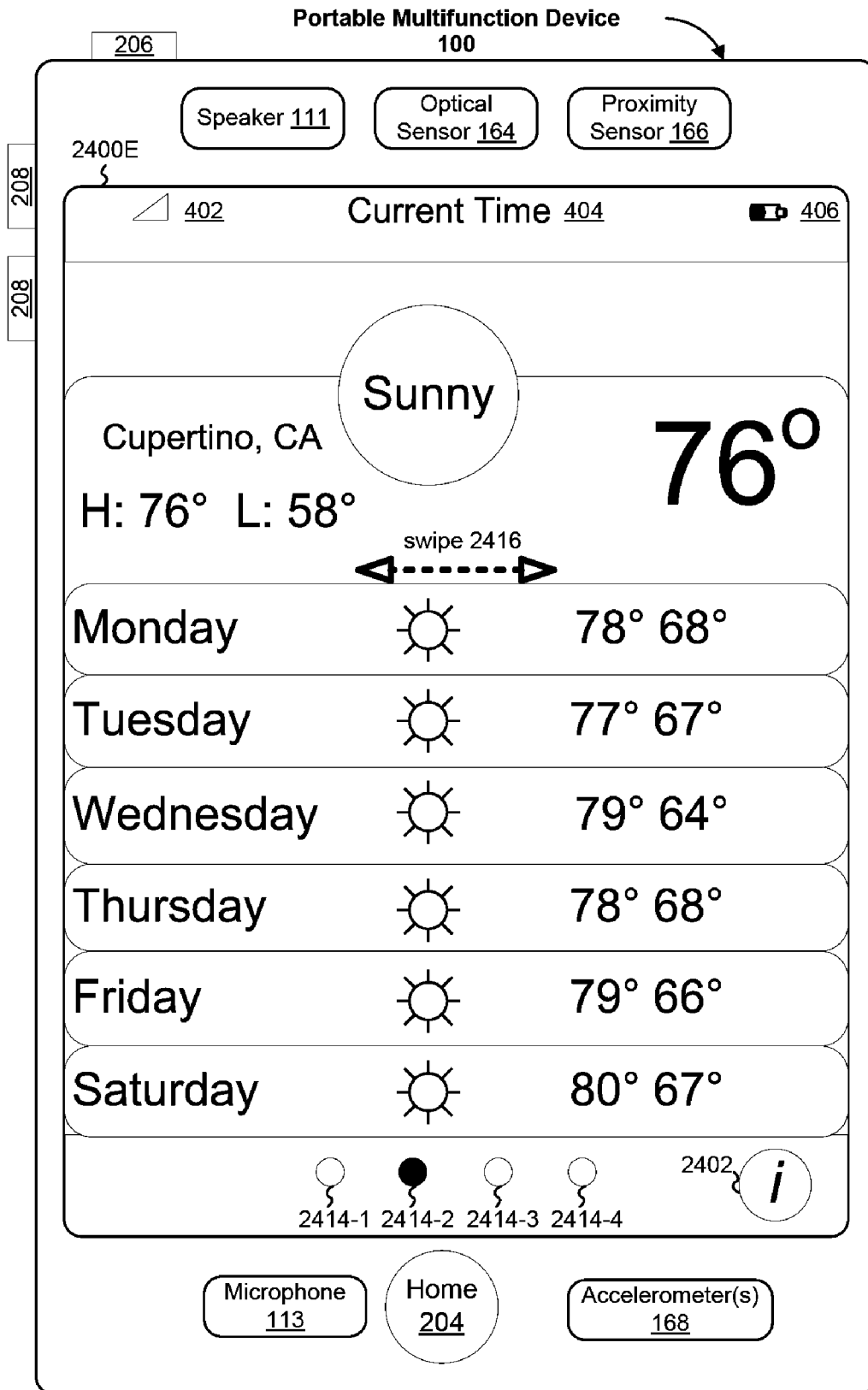


Figure 24E

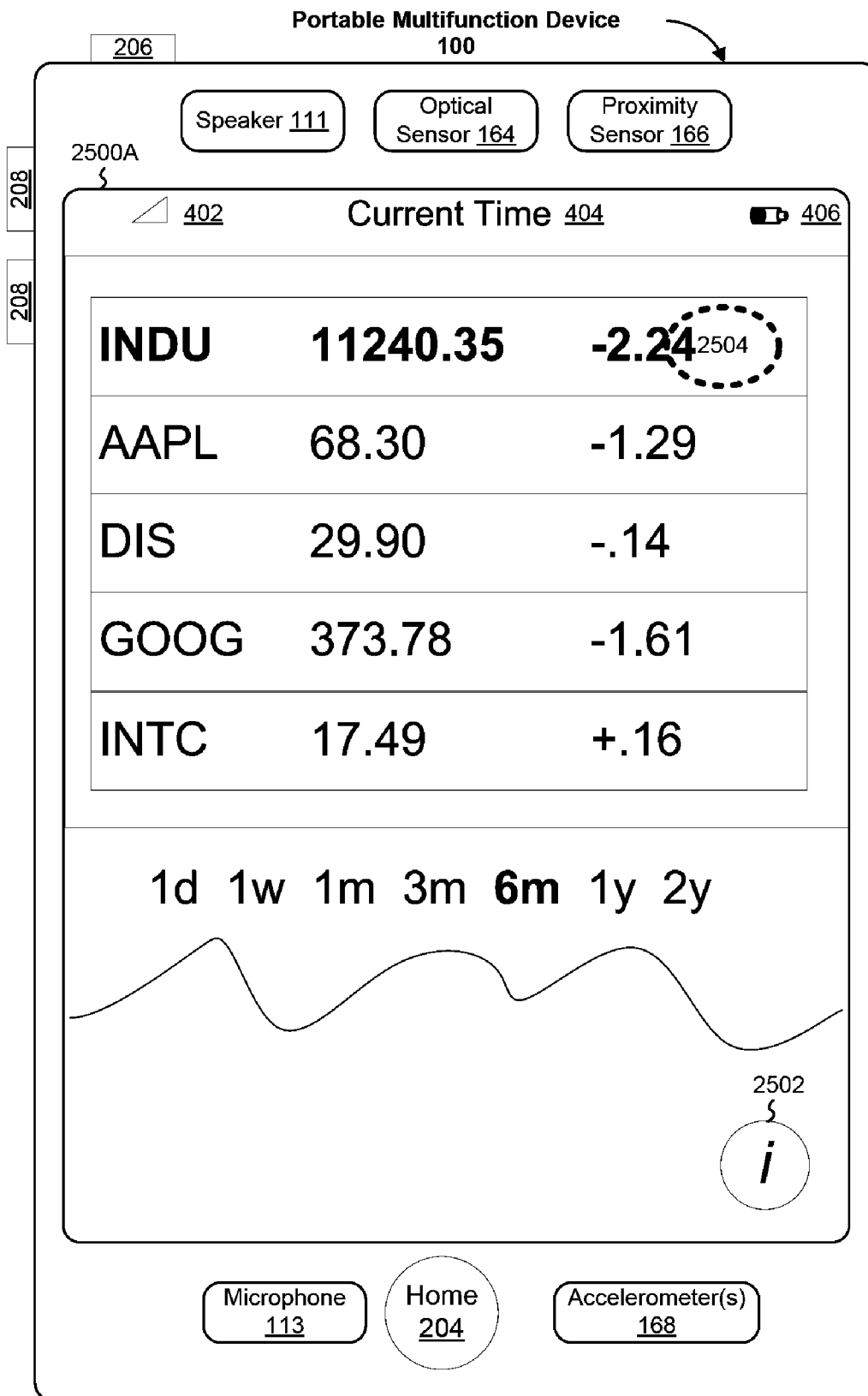


Figure 25A

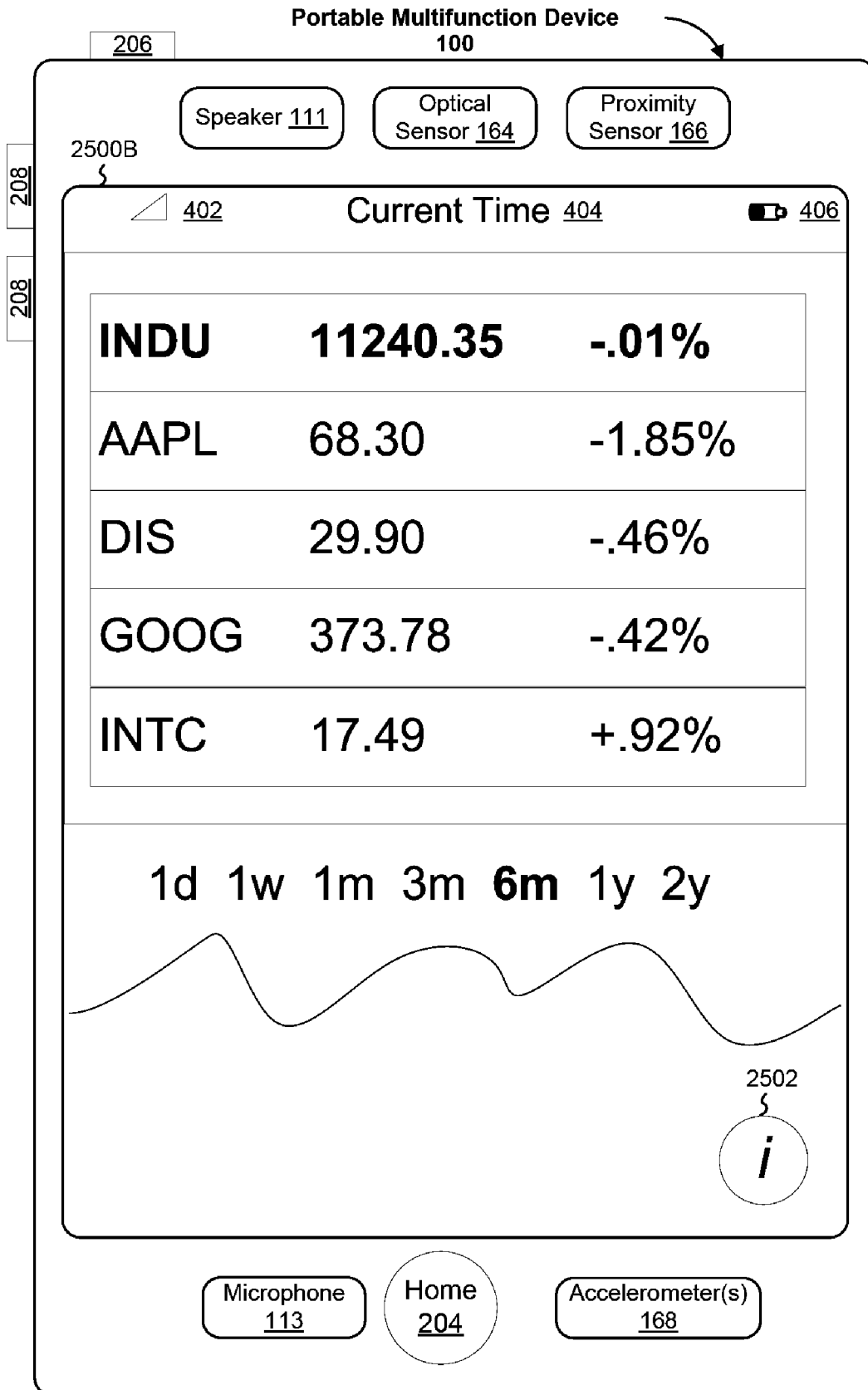


Figure 25B

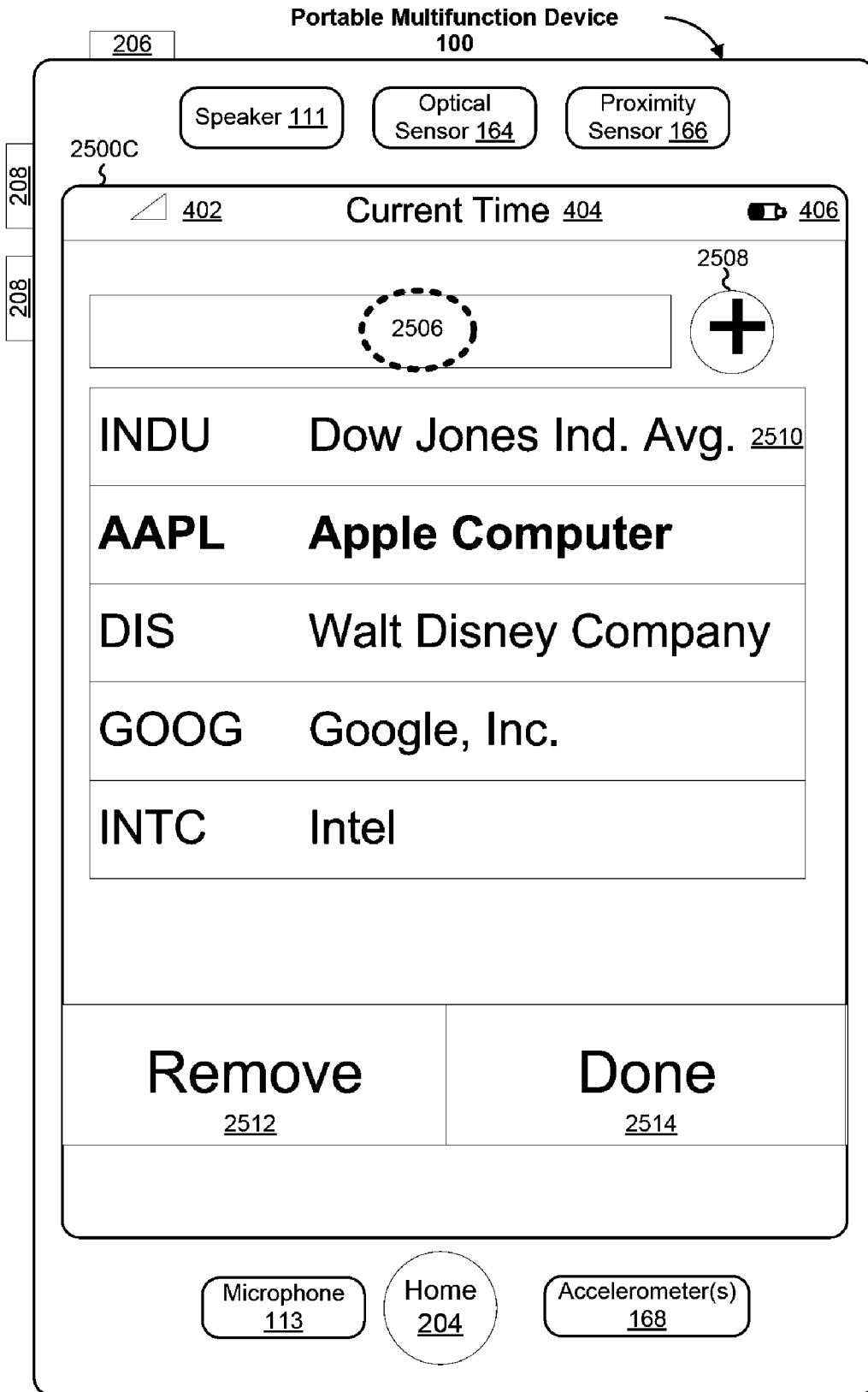


Figure 25C

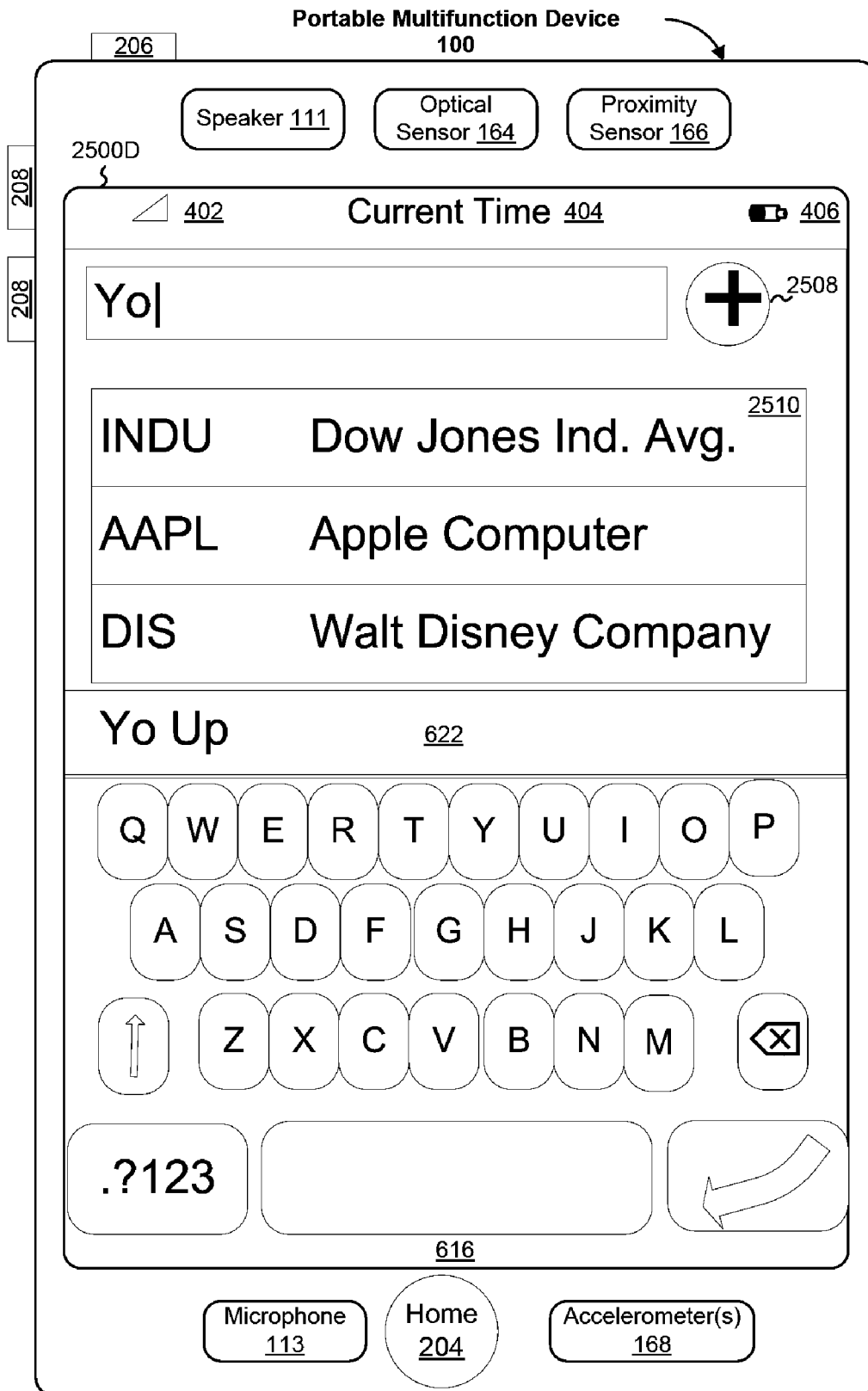


Figure 25D

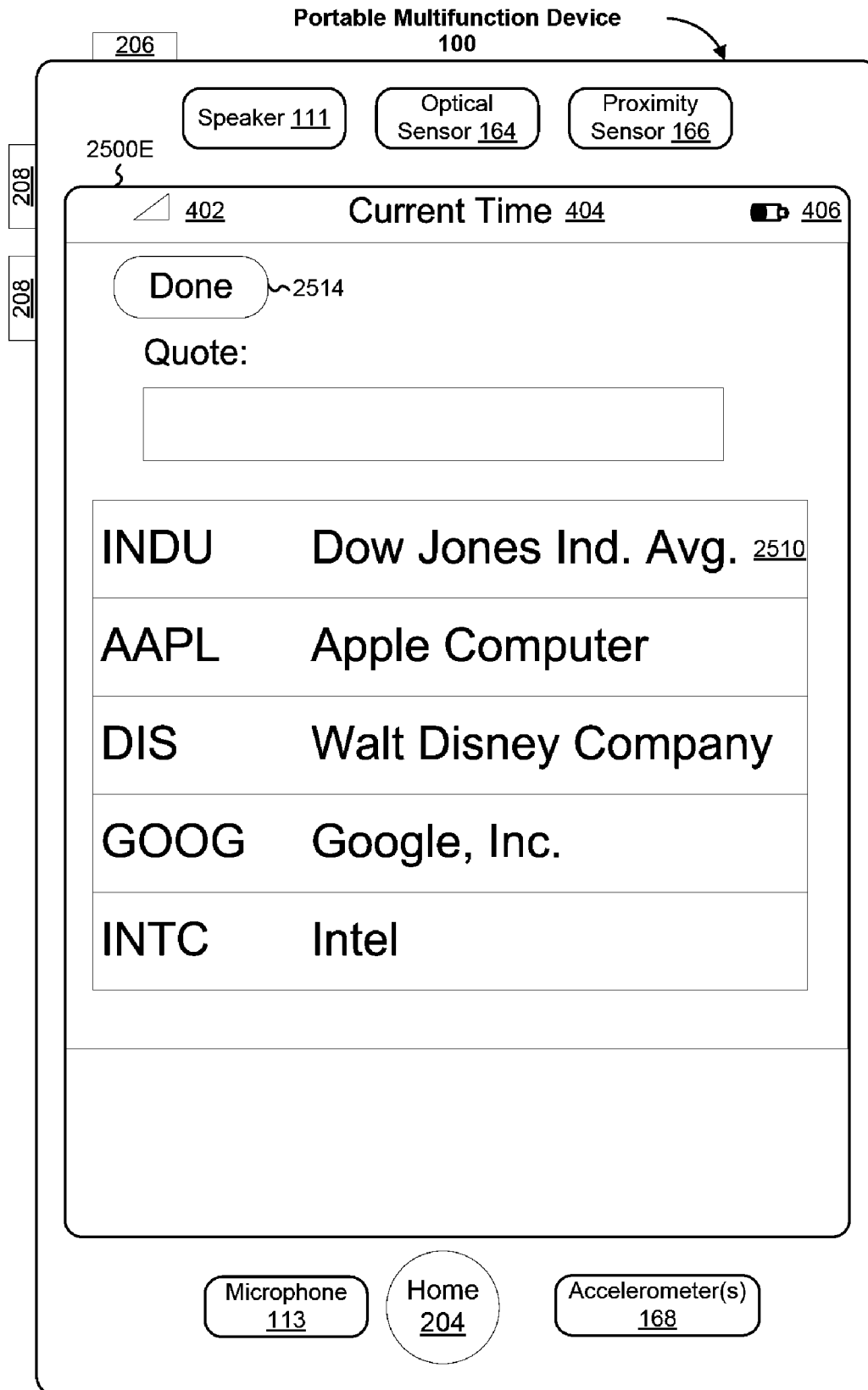


Figure 25E

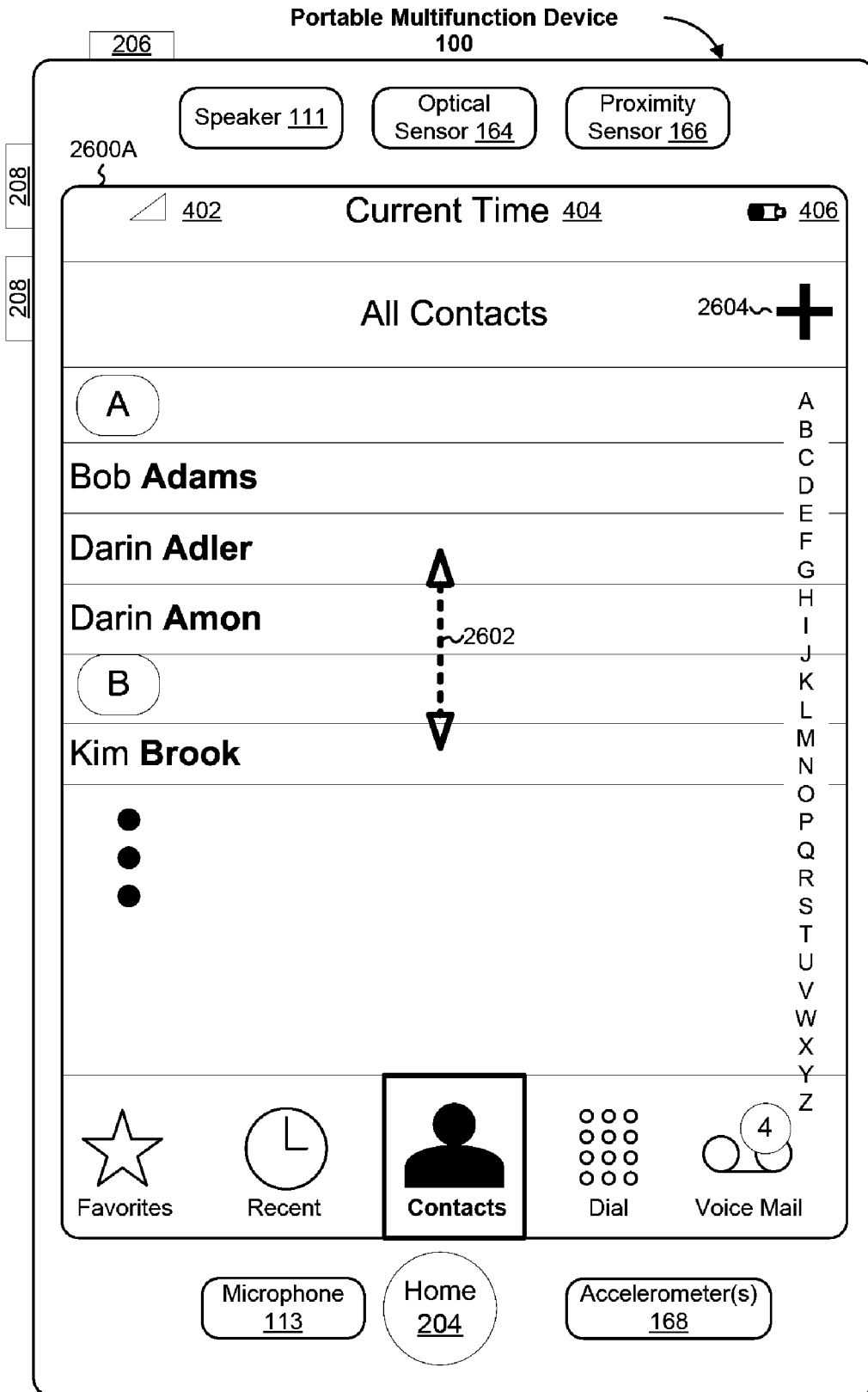


Figure 26A

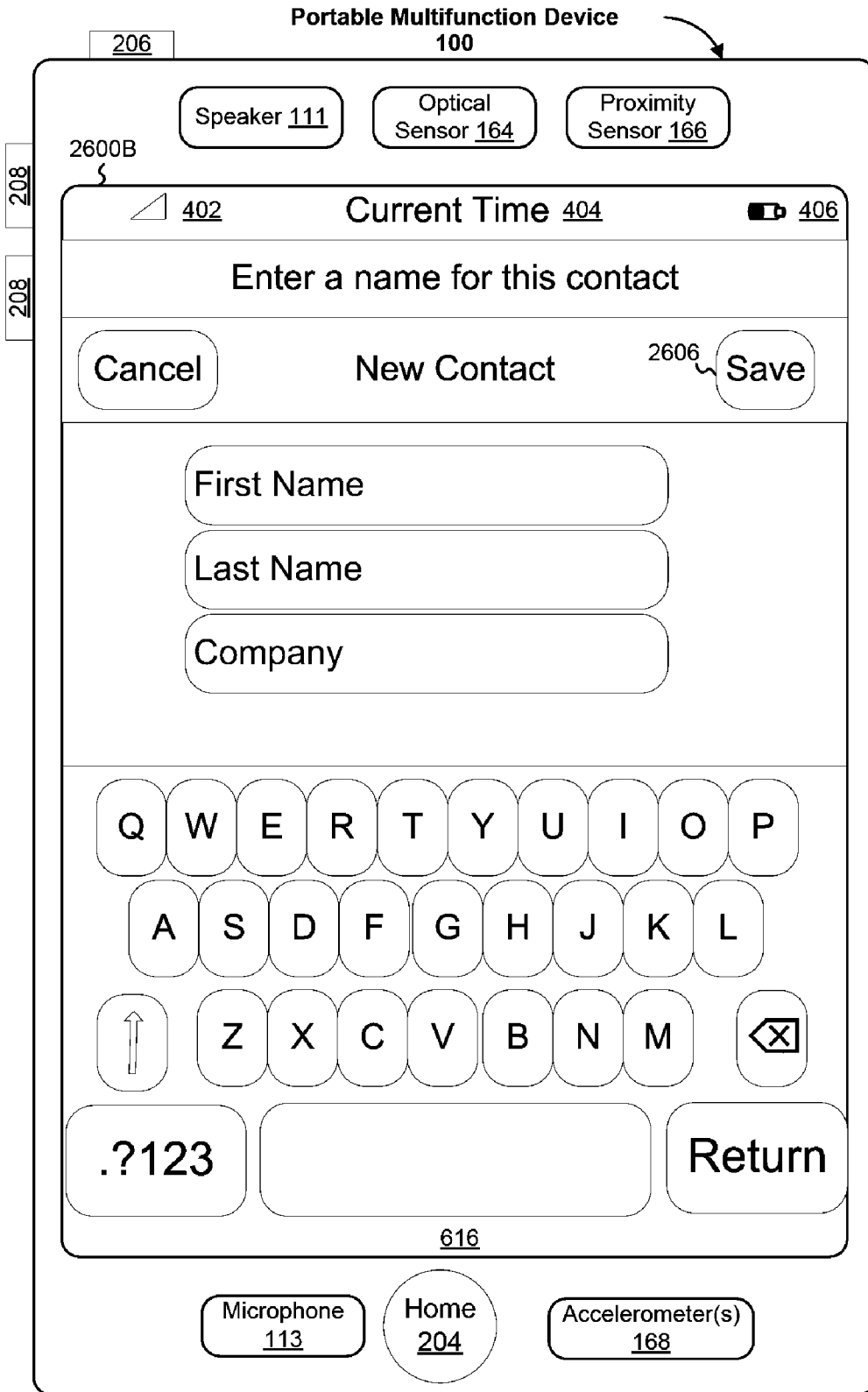


Figure 26B

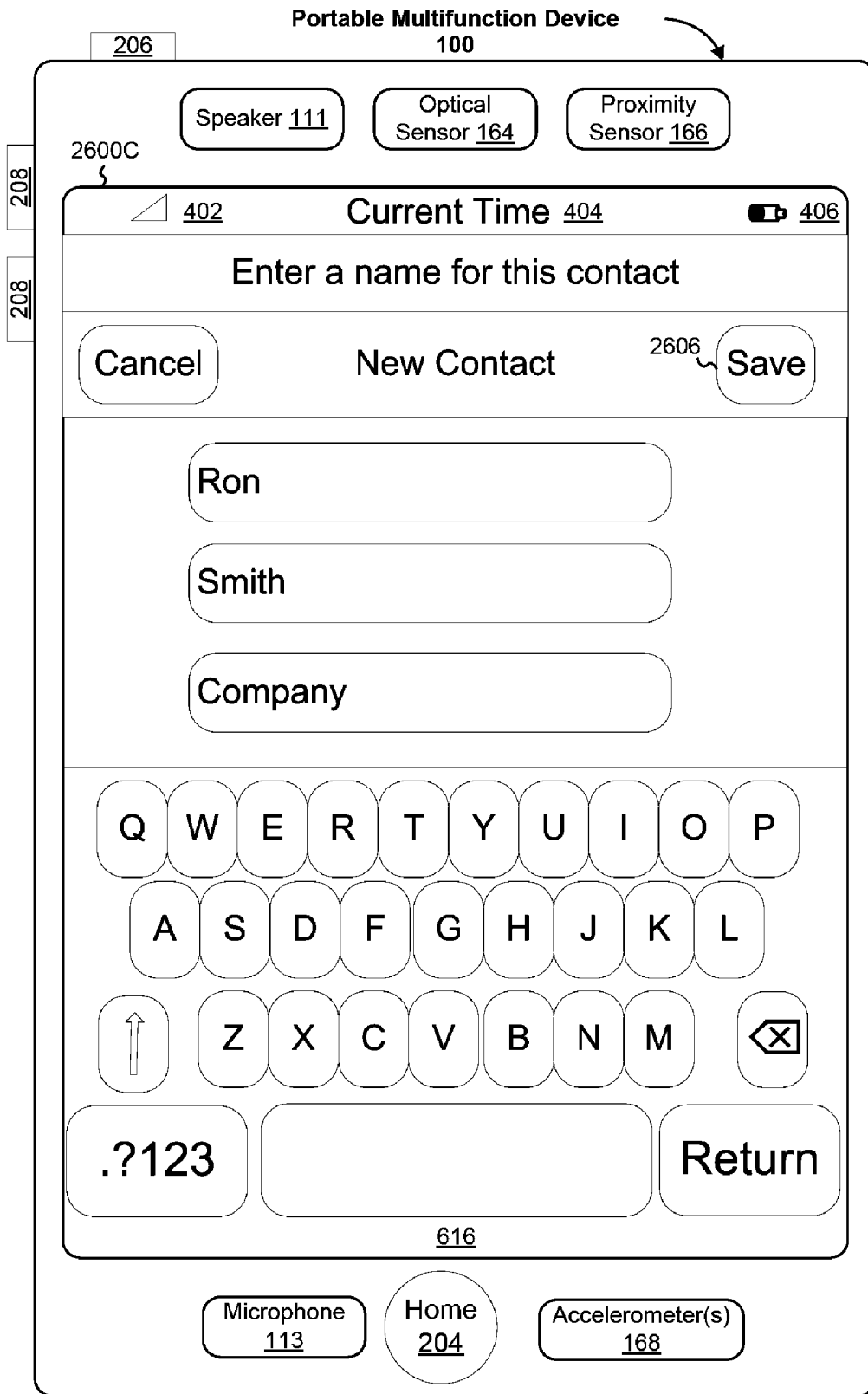


Figure 26C

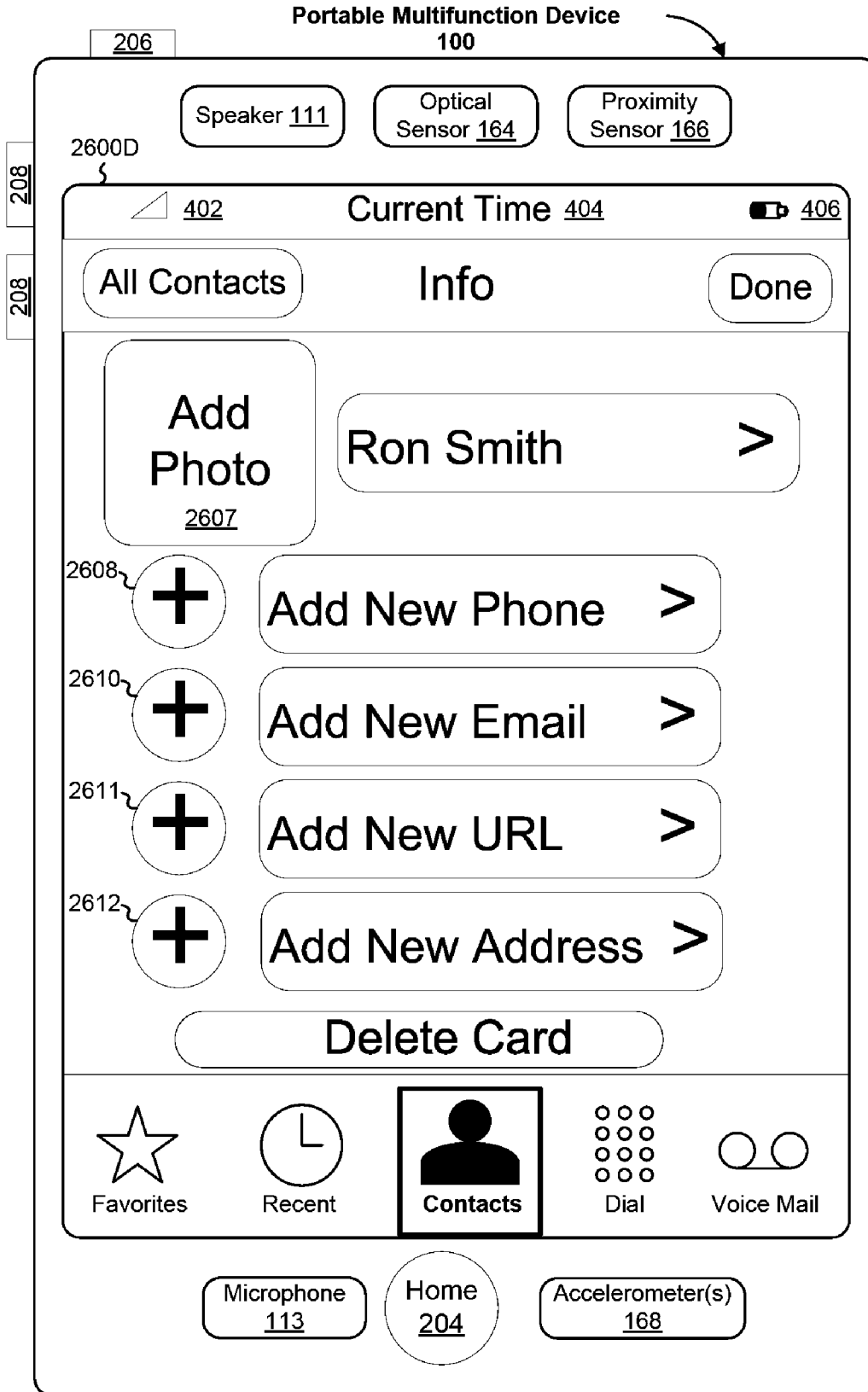


Figure 26D

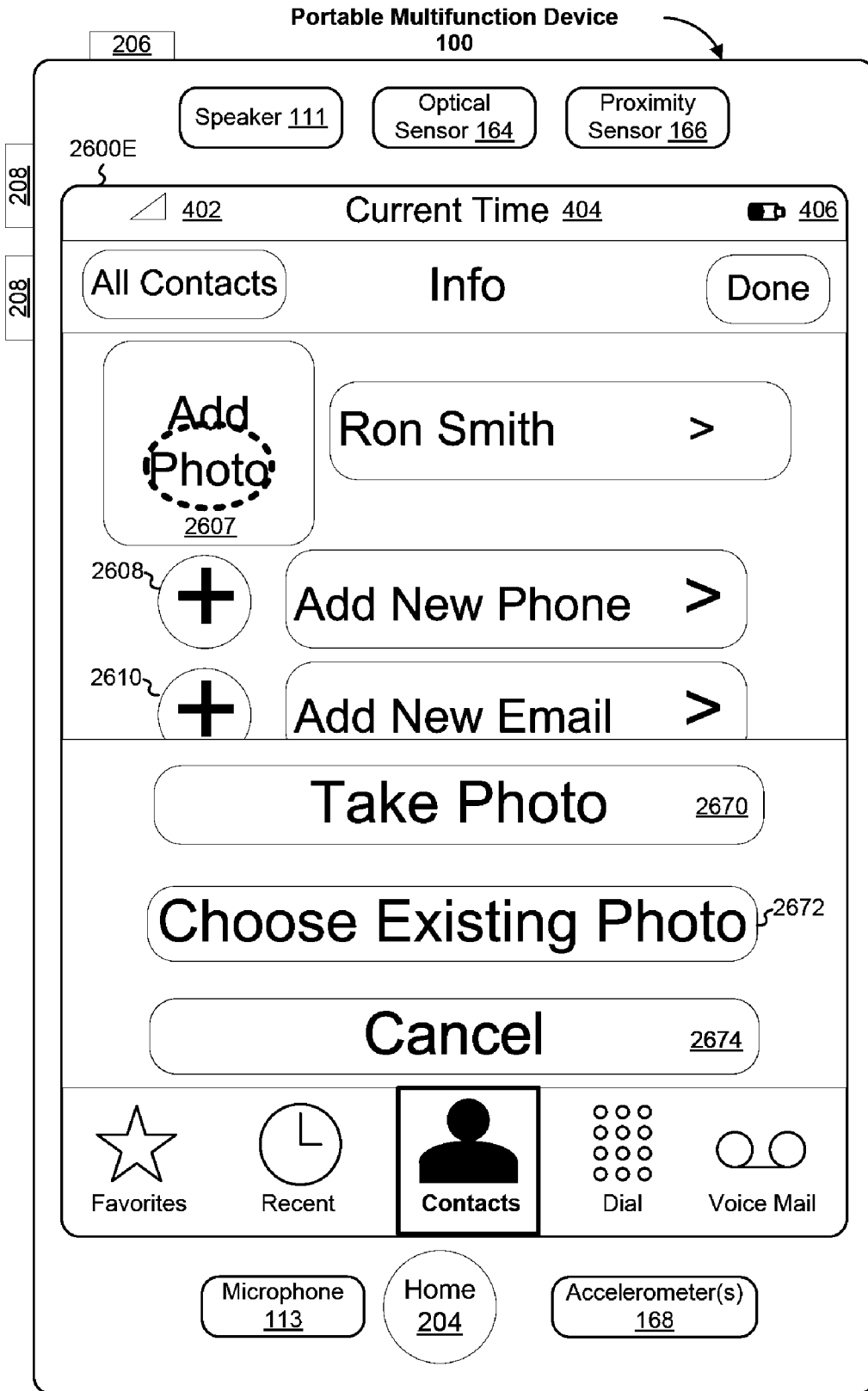


Figure 26E

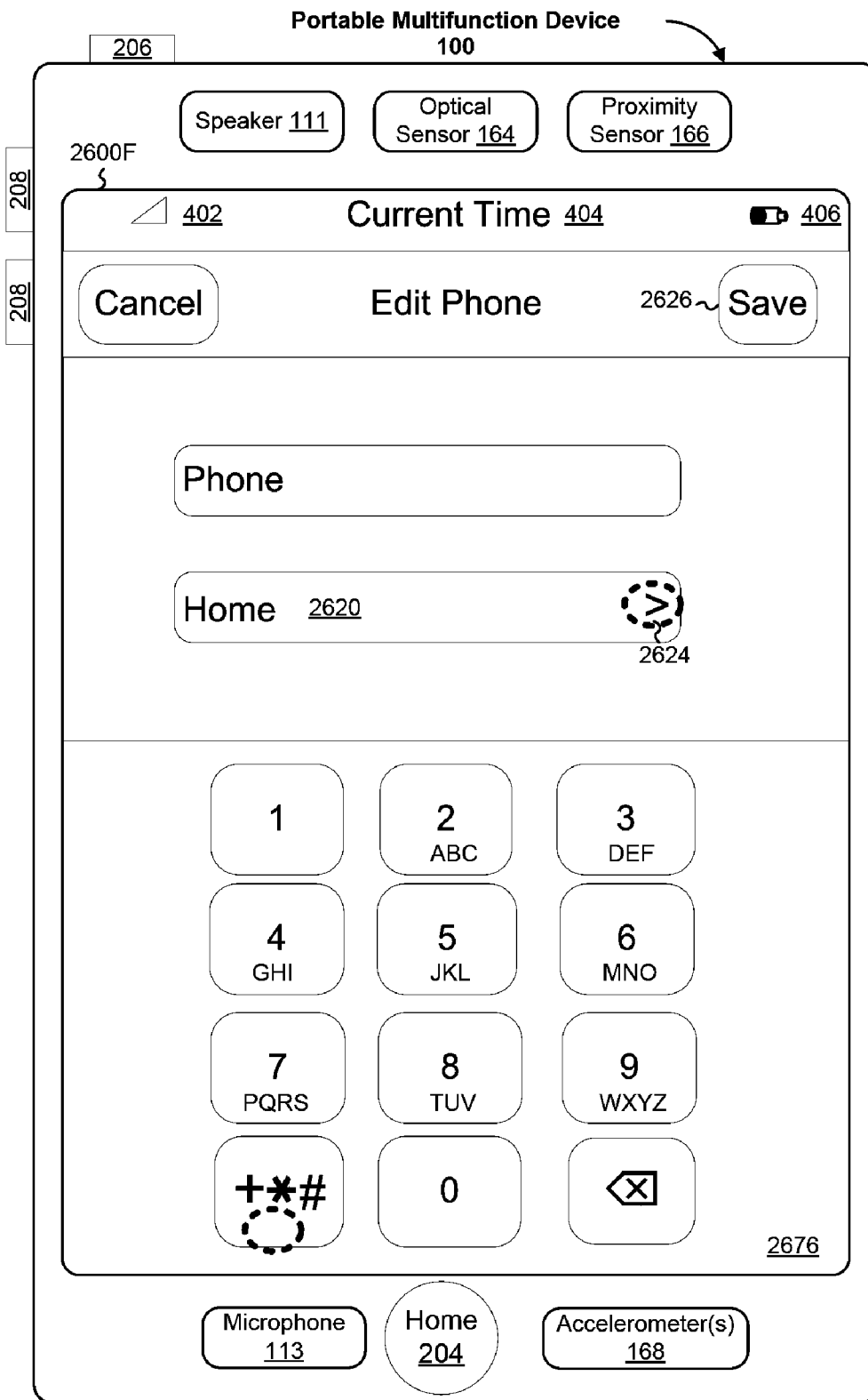


Figure 26F

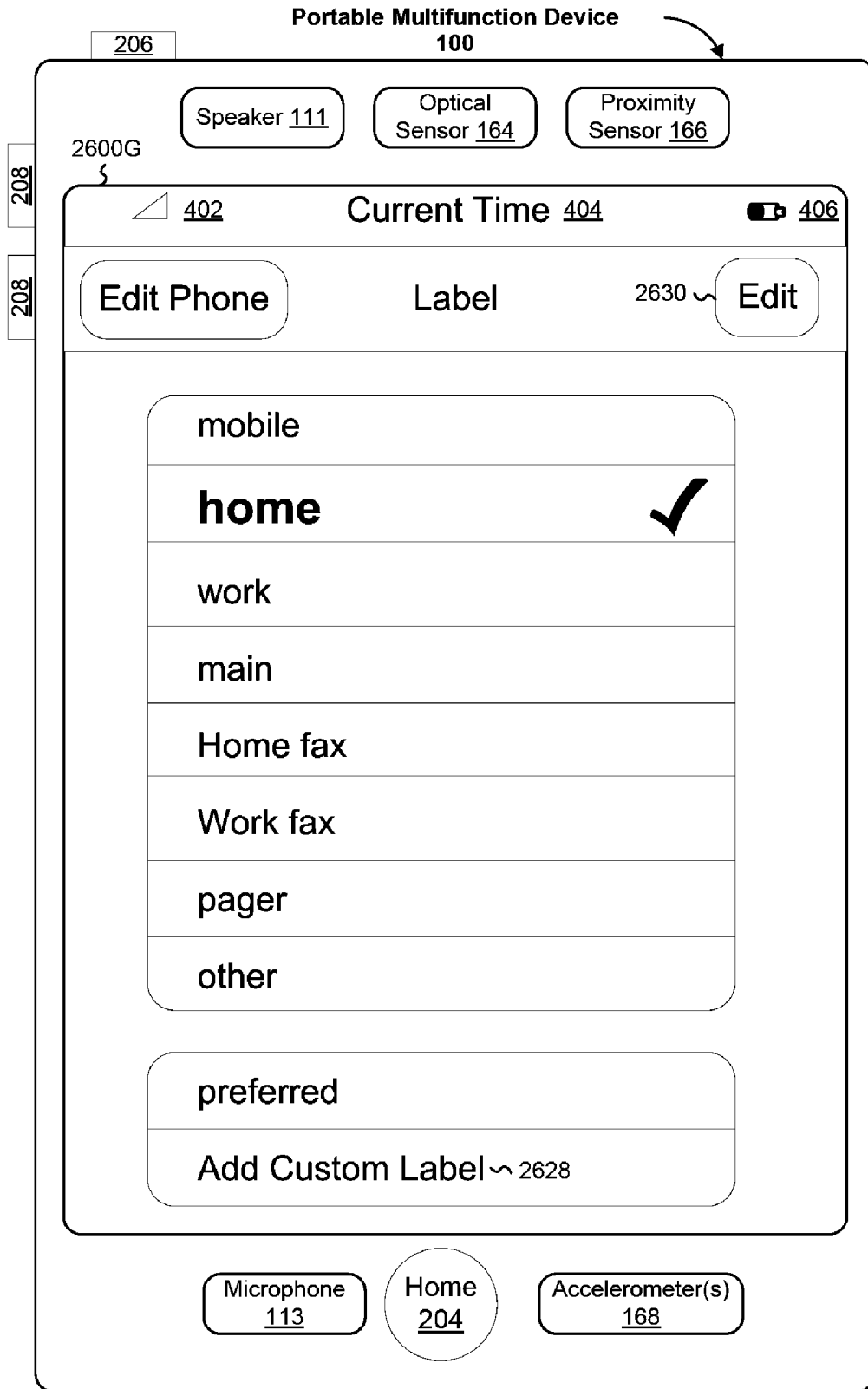


Figure 26G

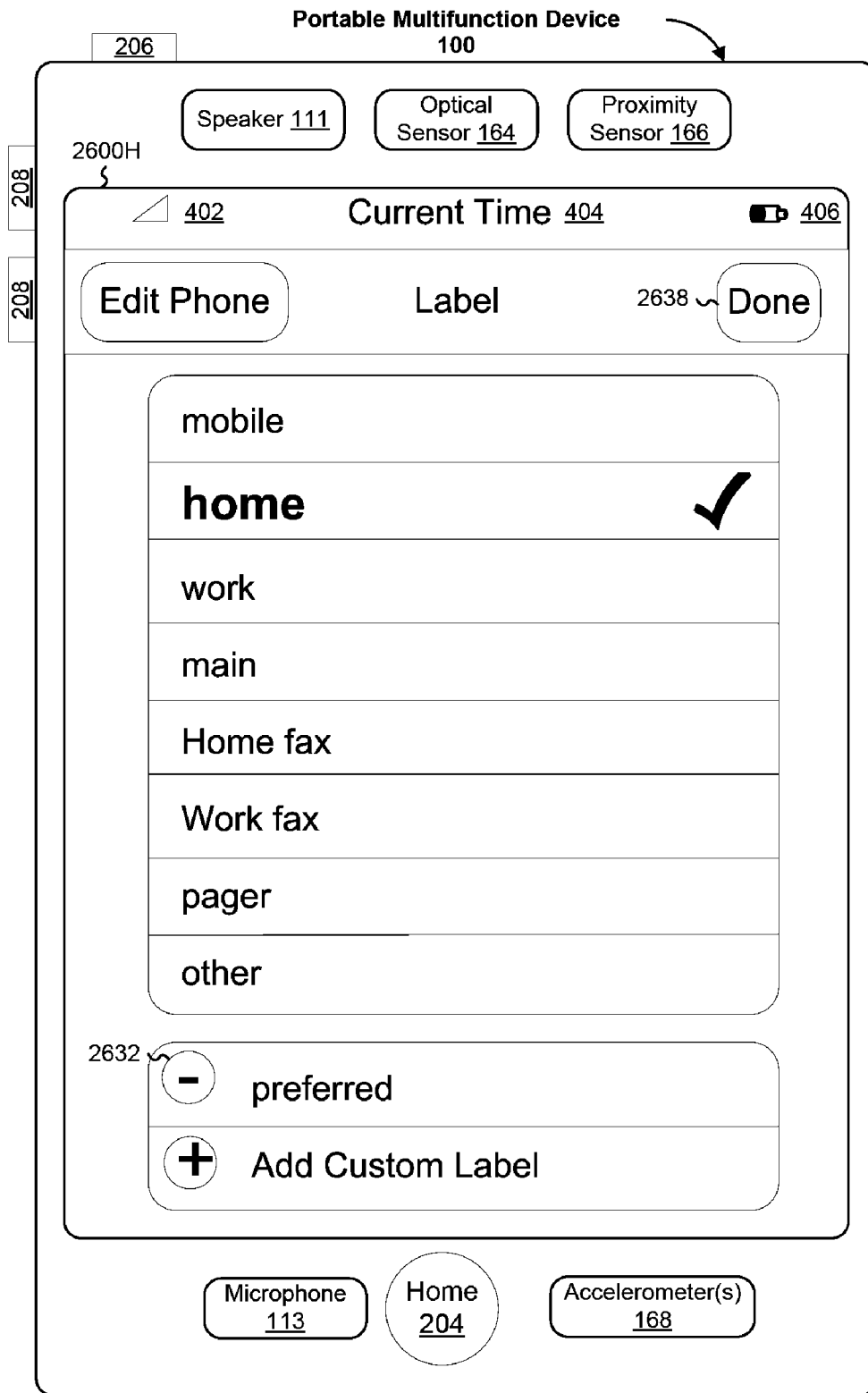


Figure 26H

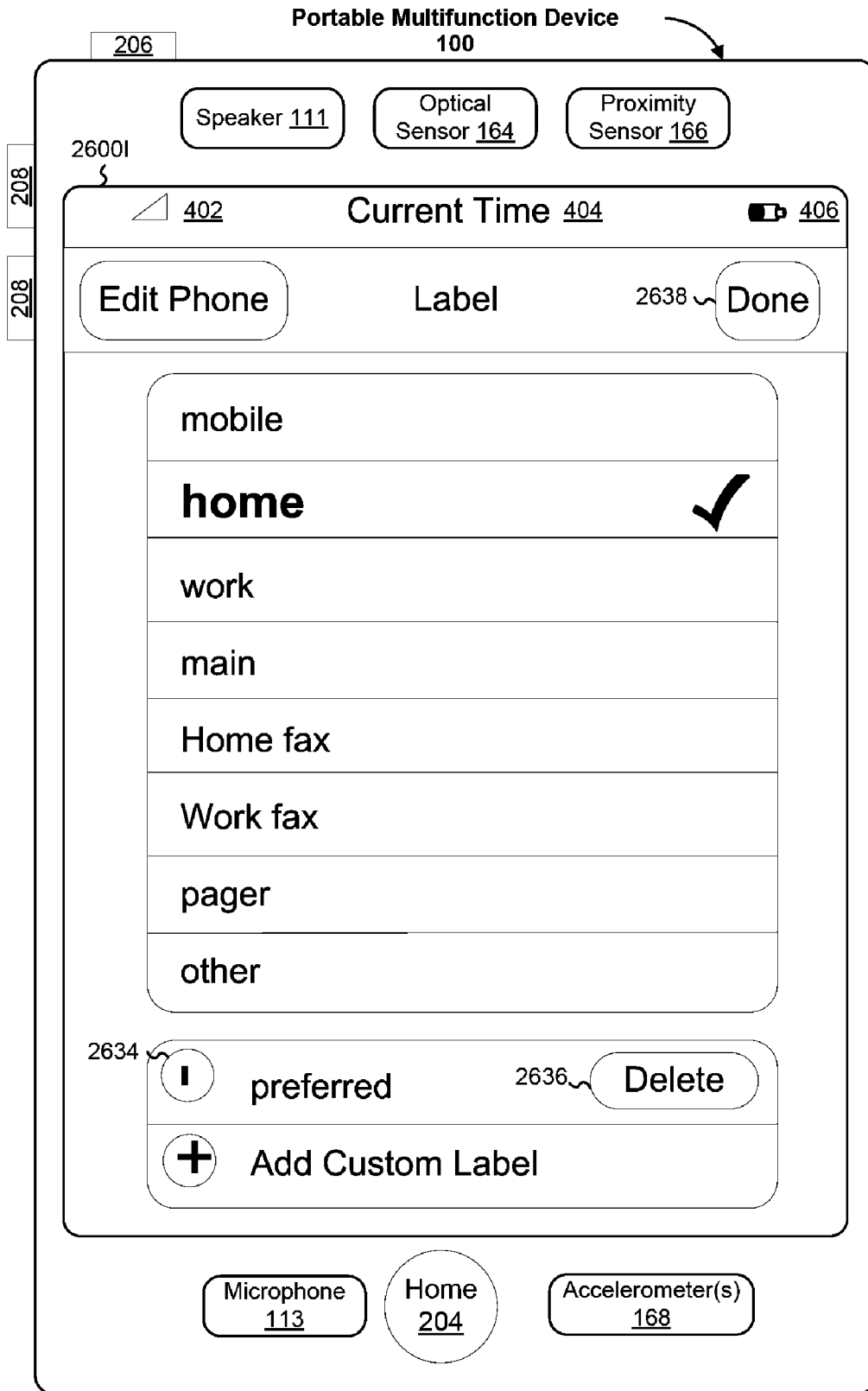


Figure 26I

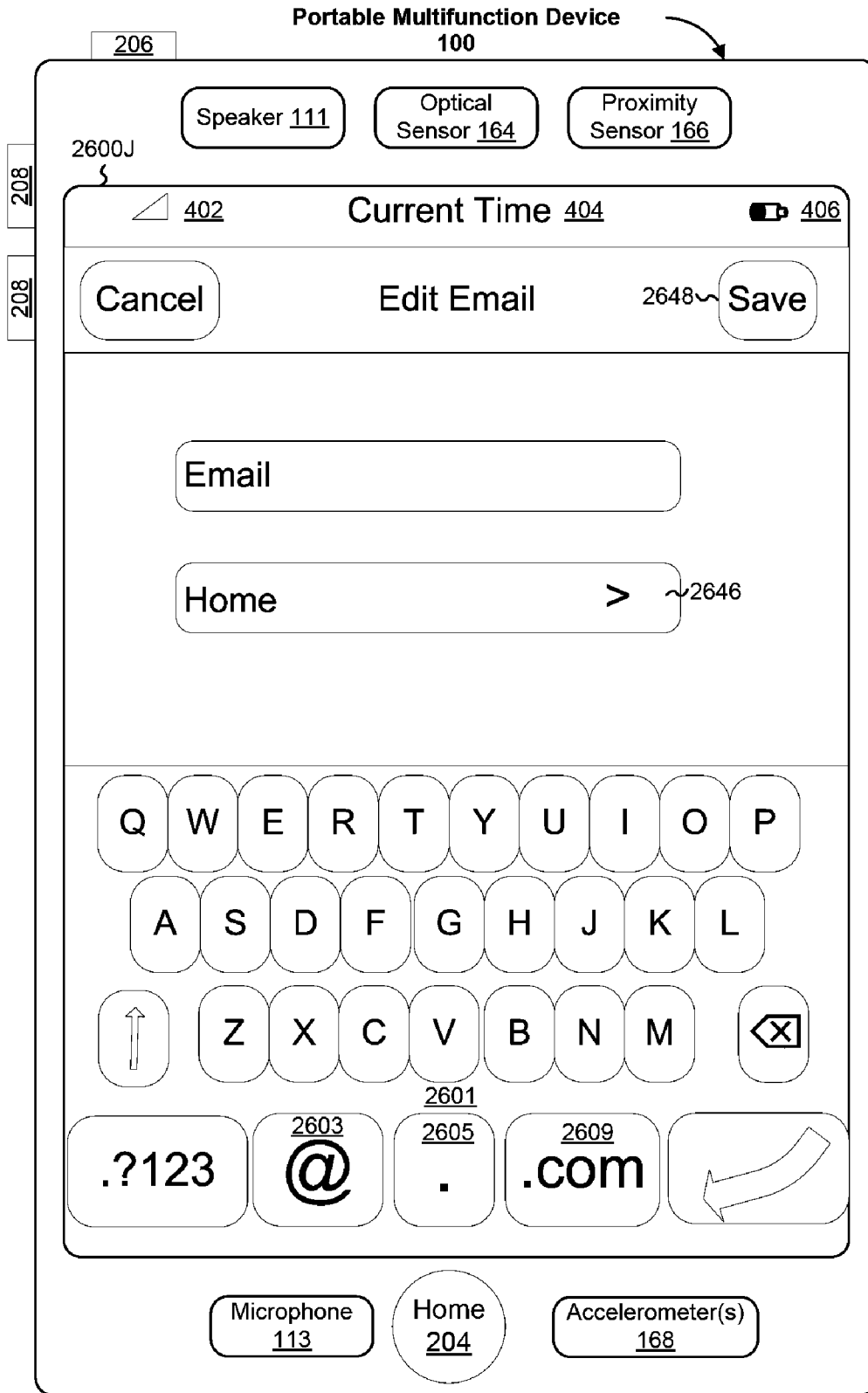


Figure 26J

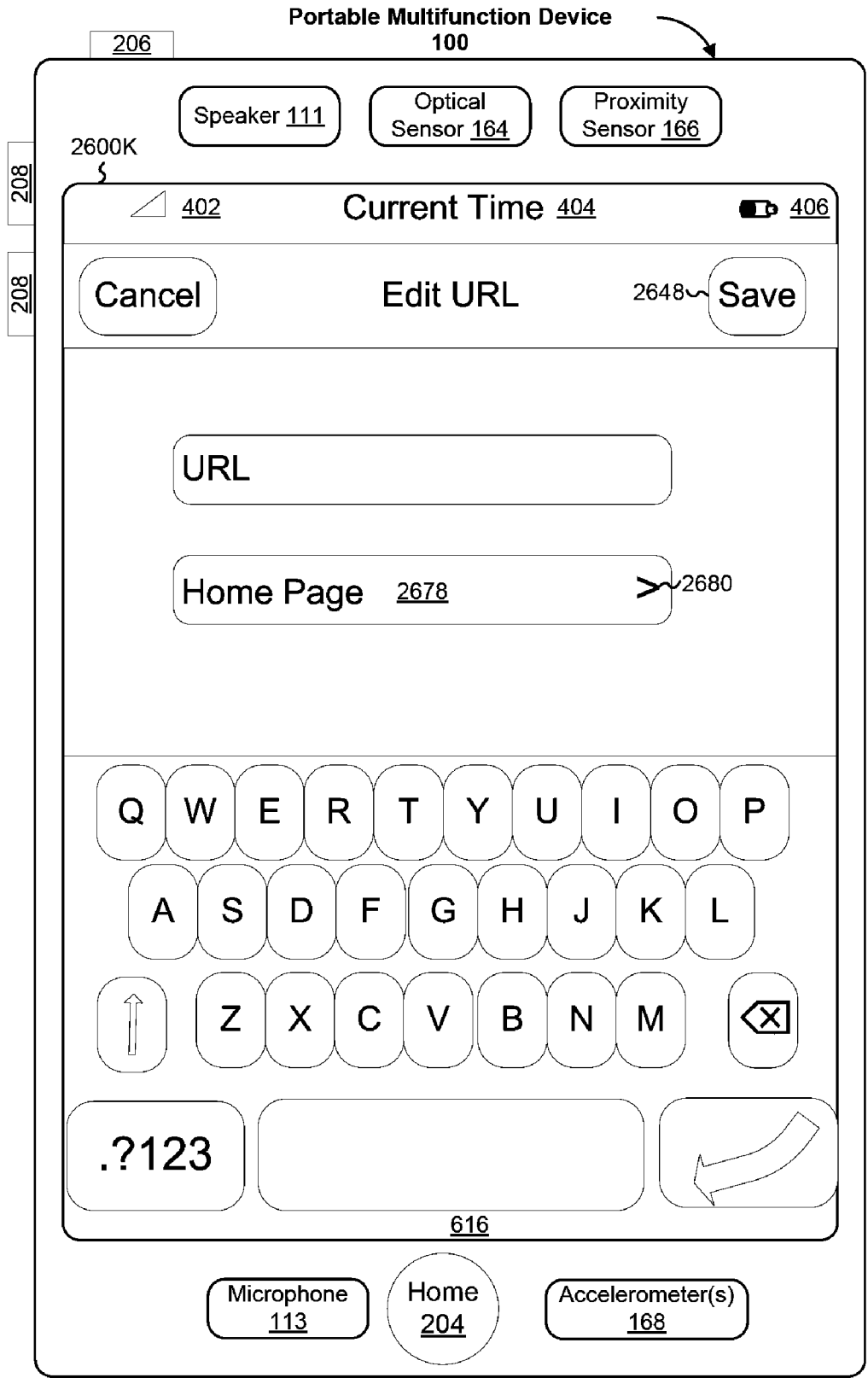


Figure 26K

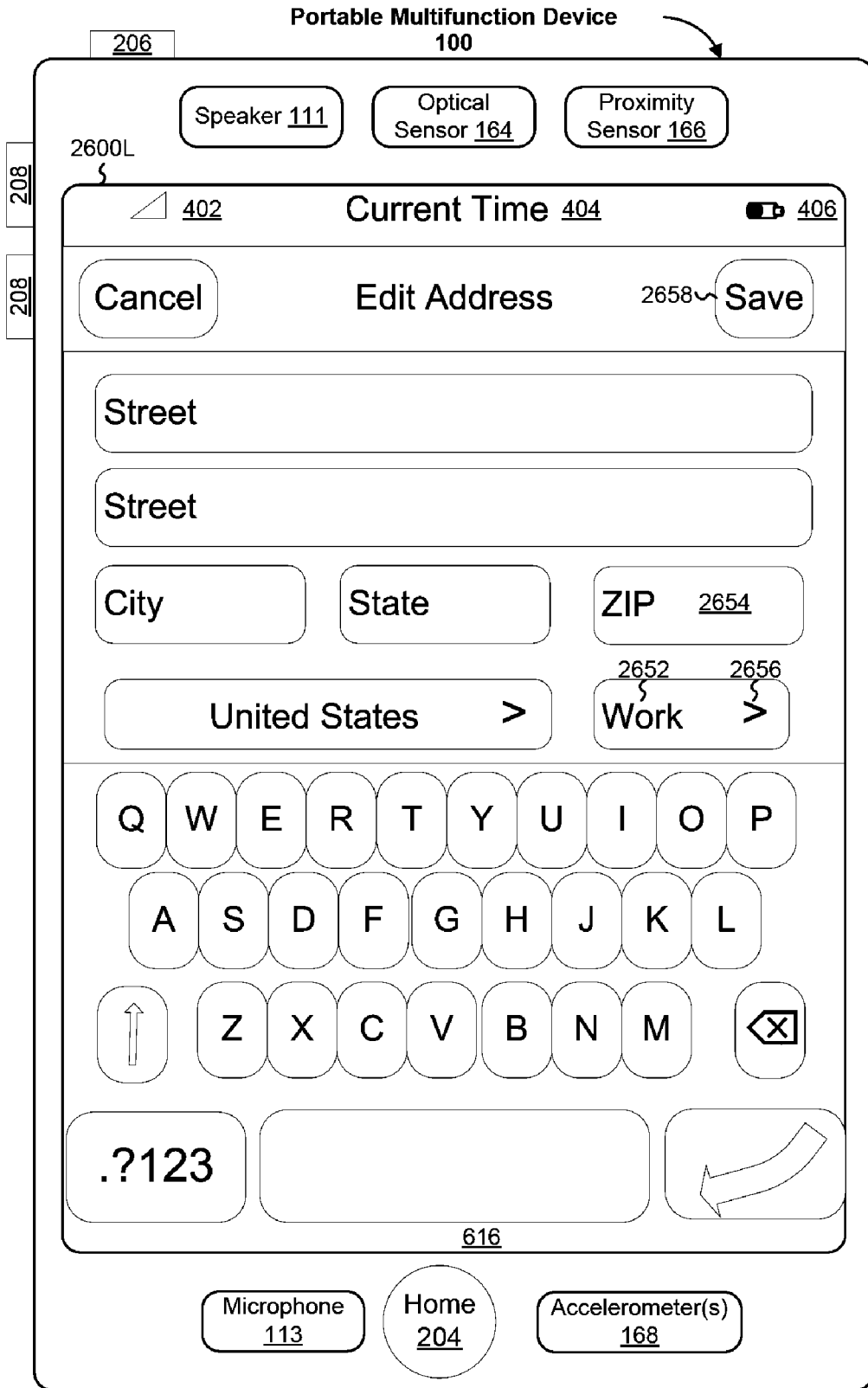


Figure 26L

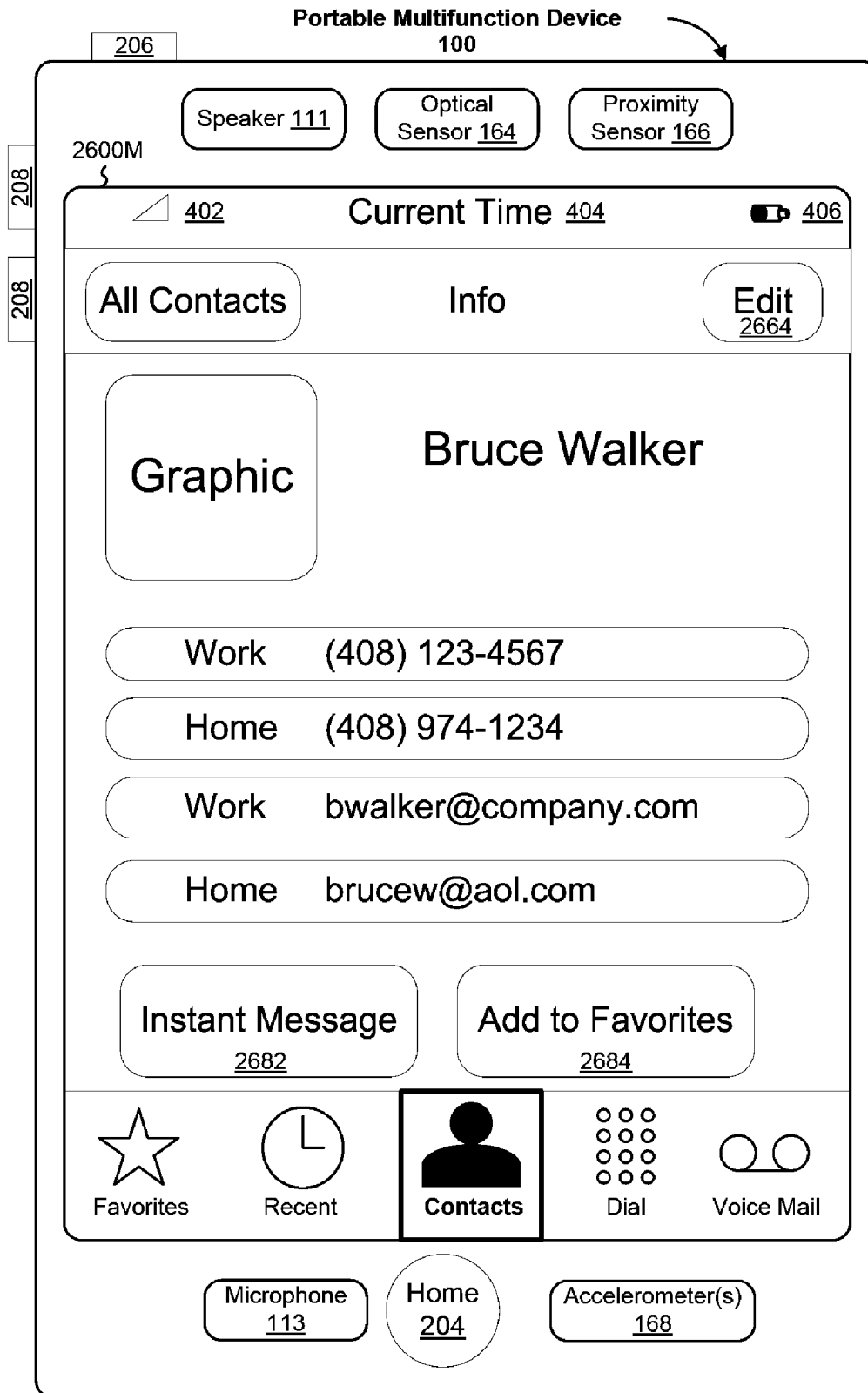


Figure 26M

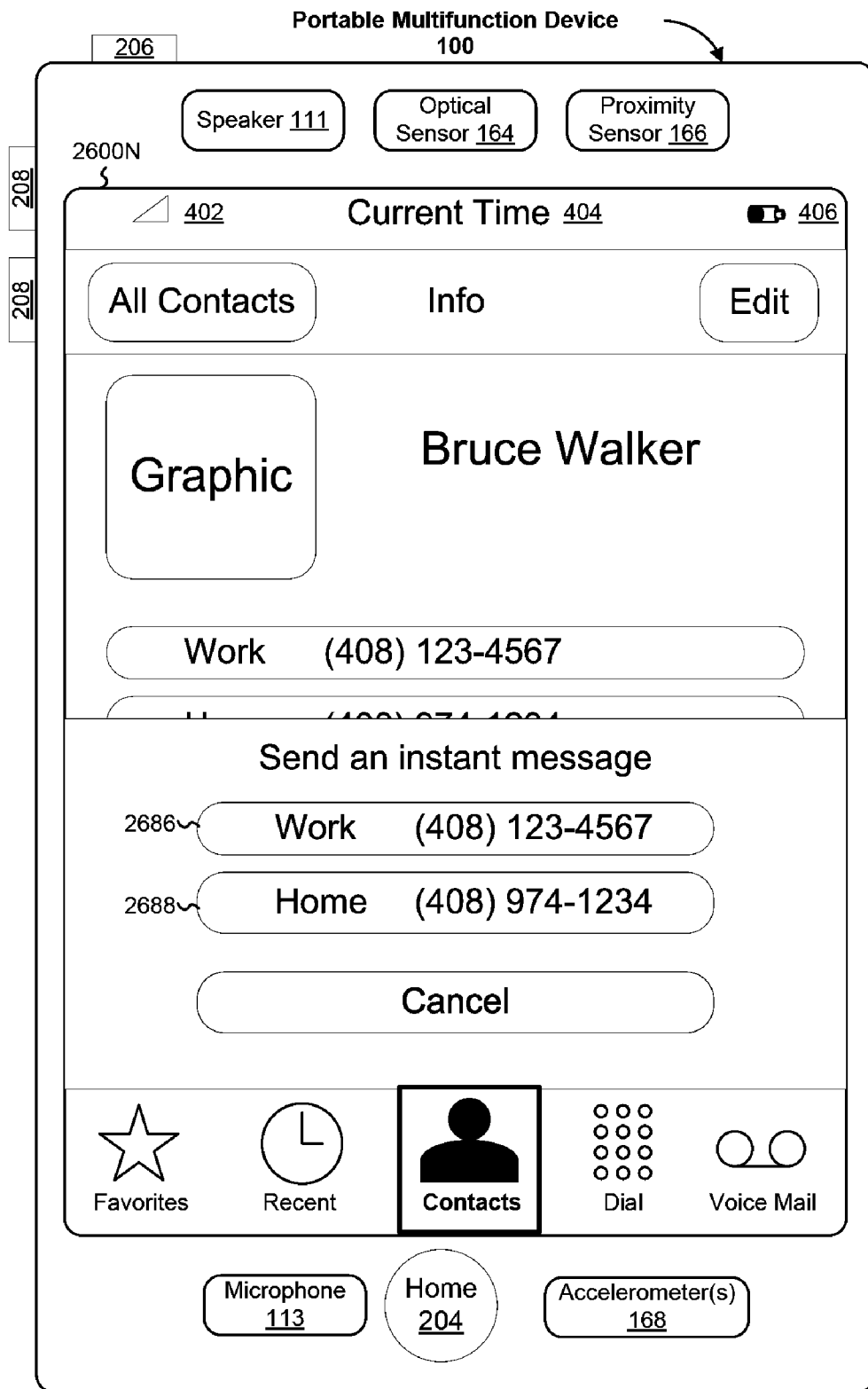


Figure 26N

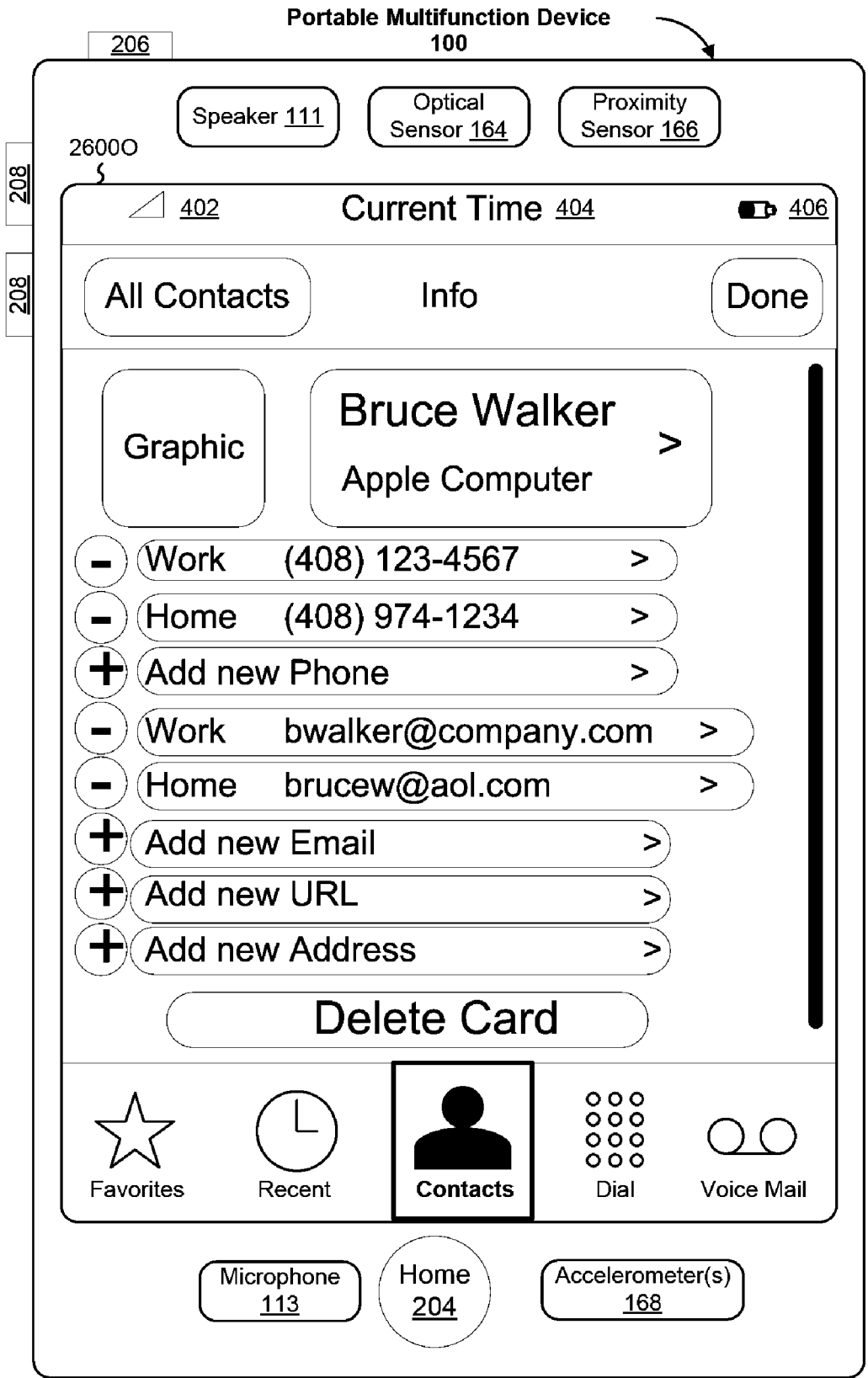


Figure 260

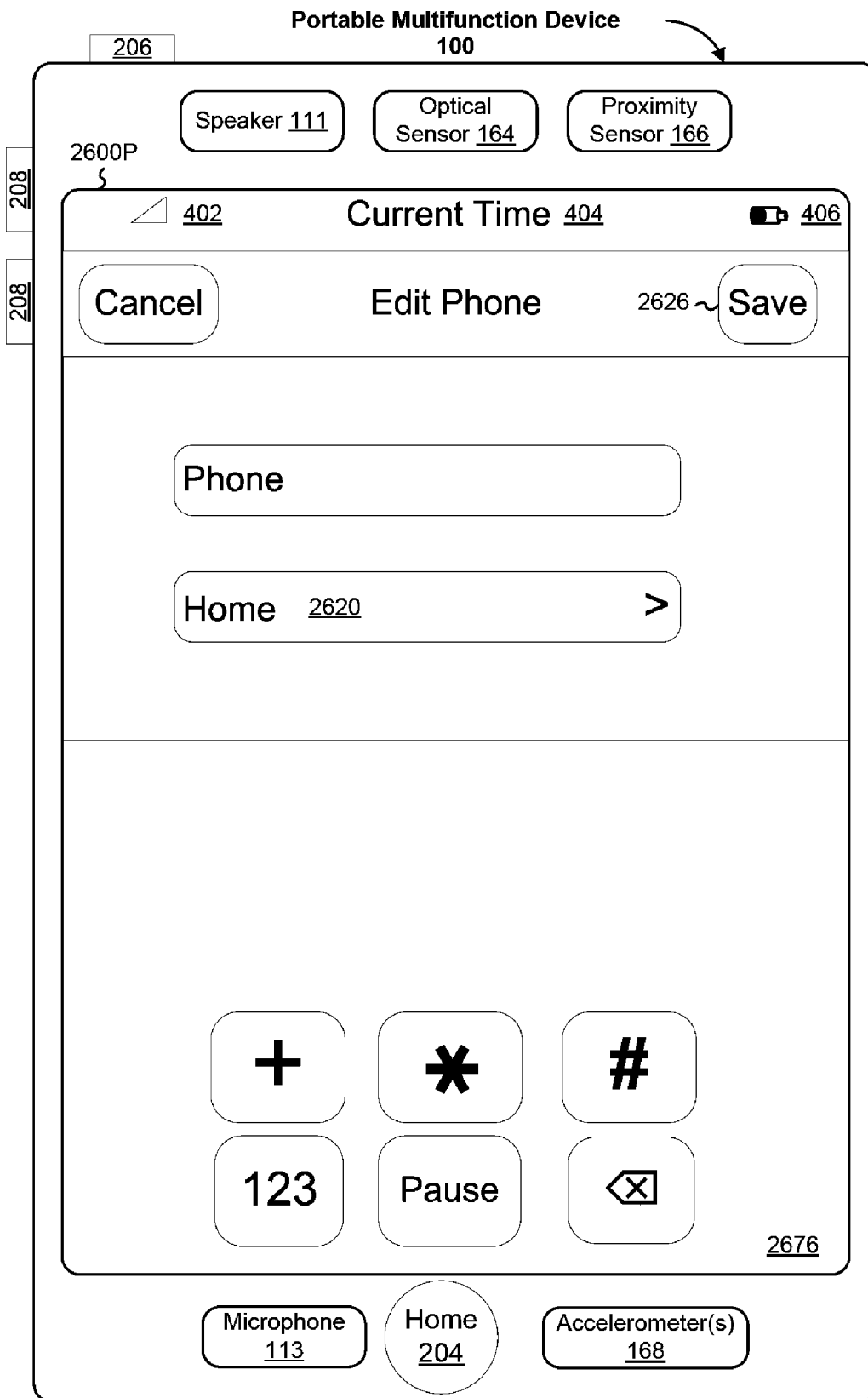


Figure 26P

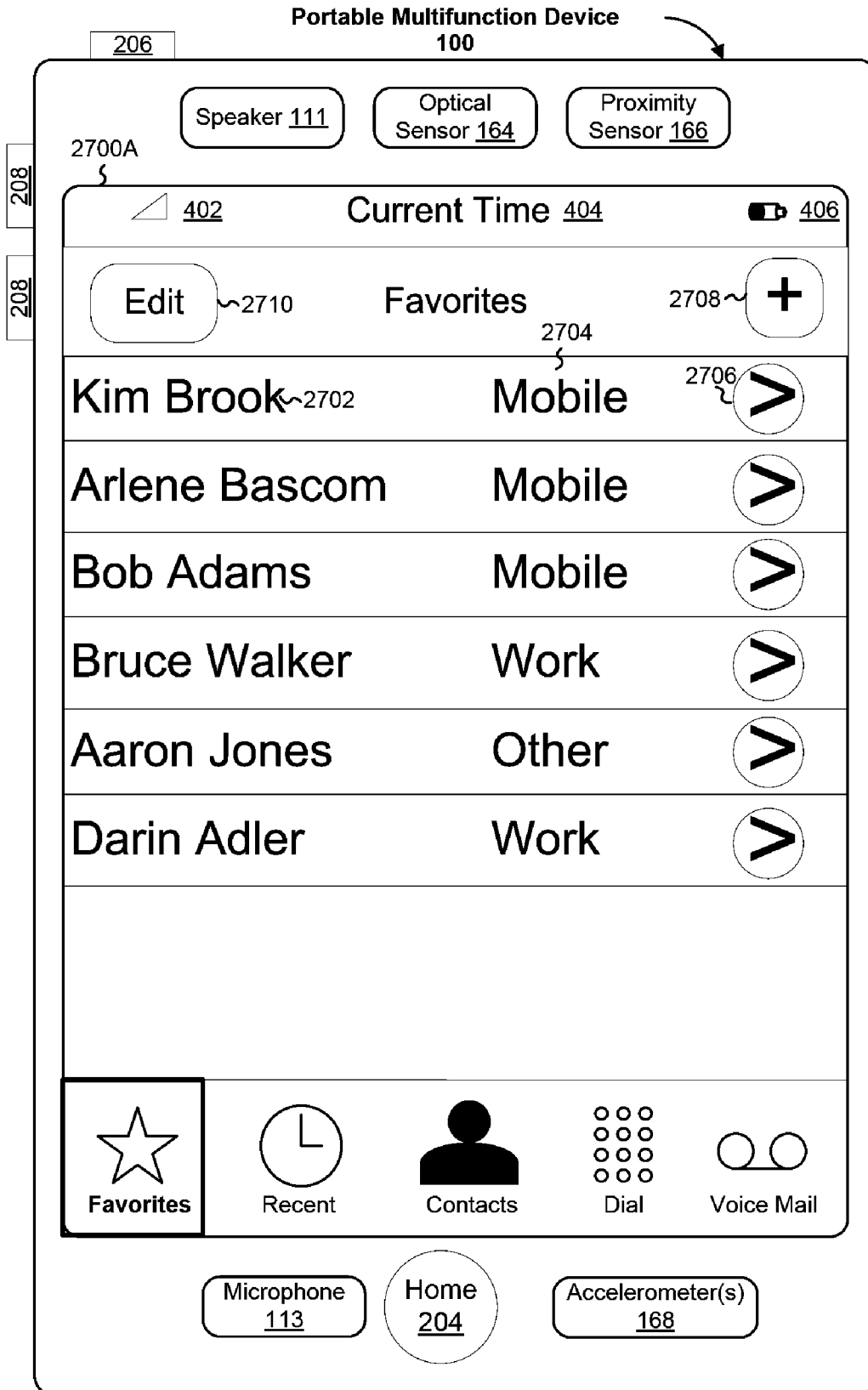


Figure 27A

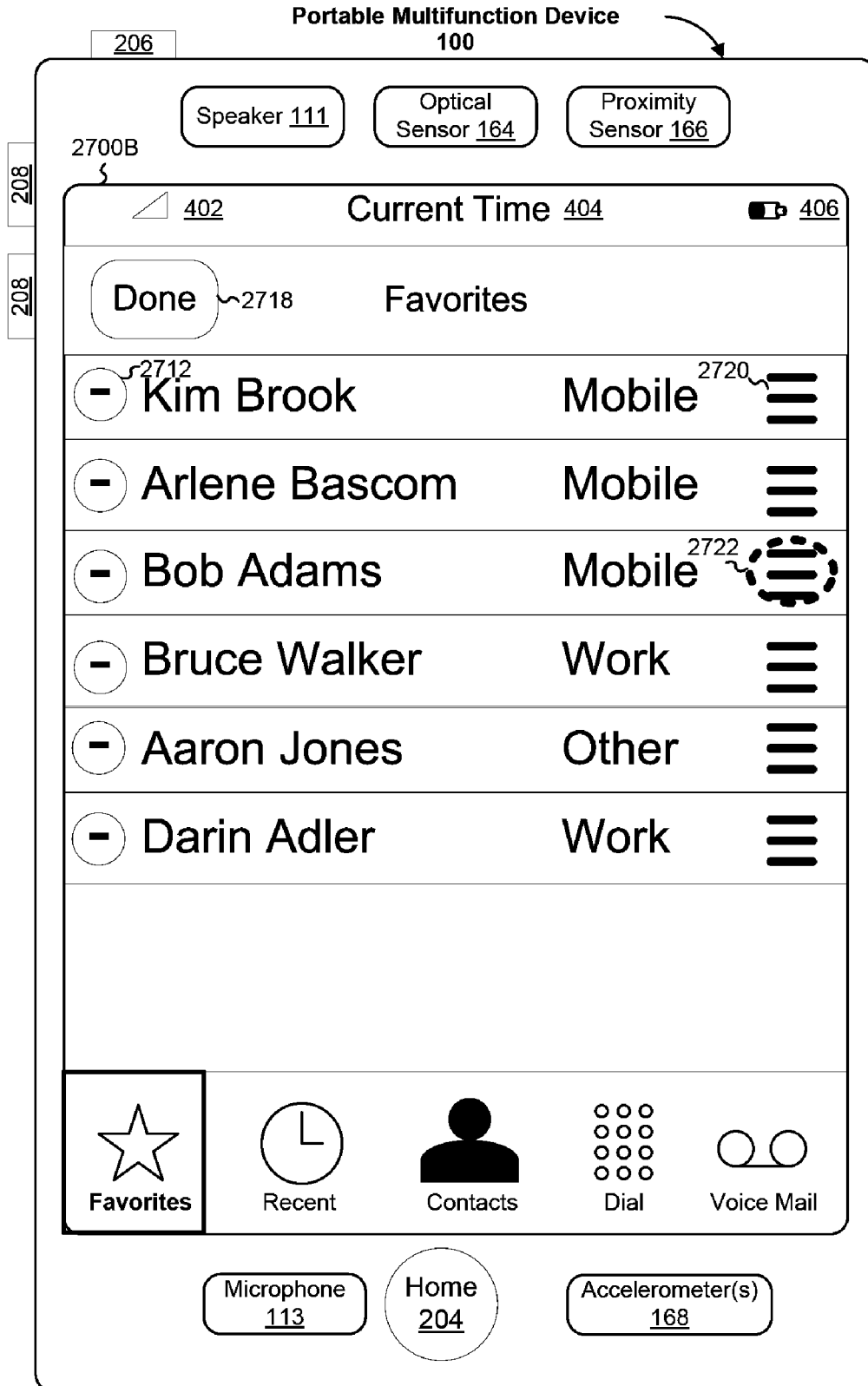


Figure 27B

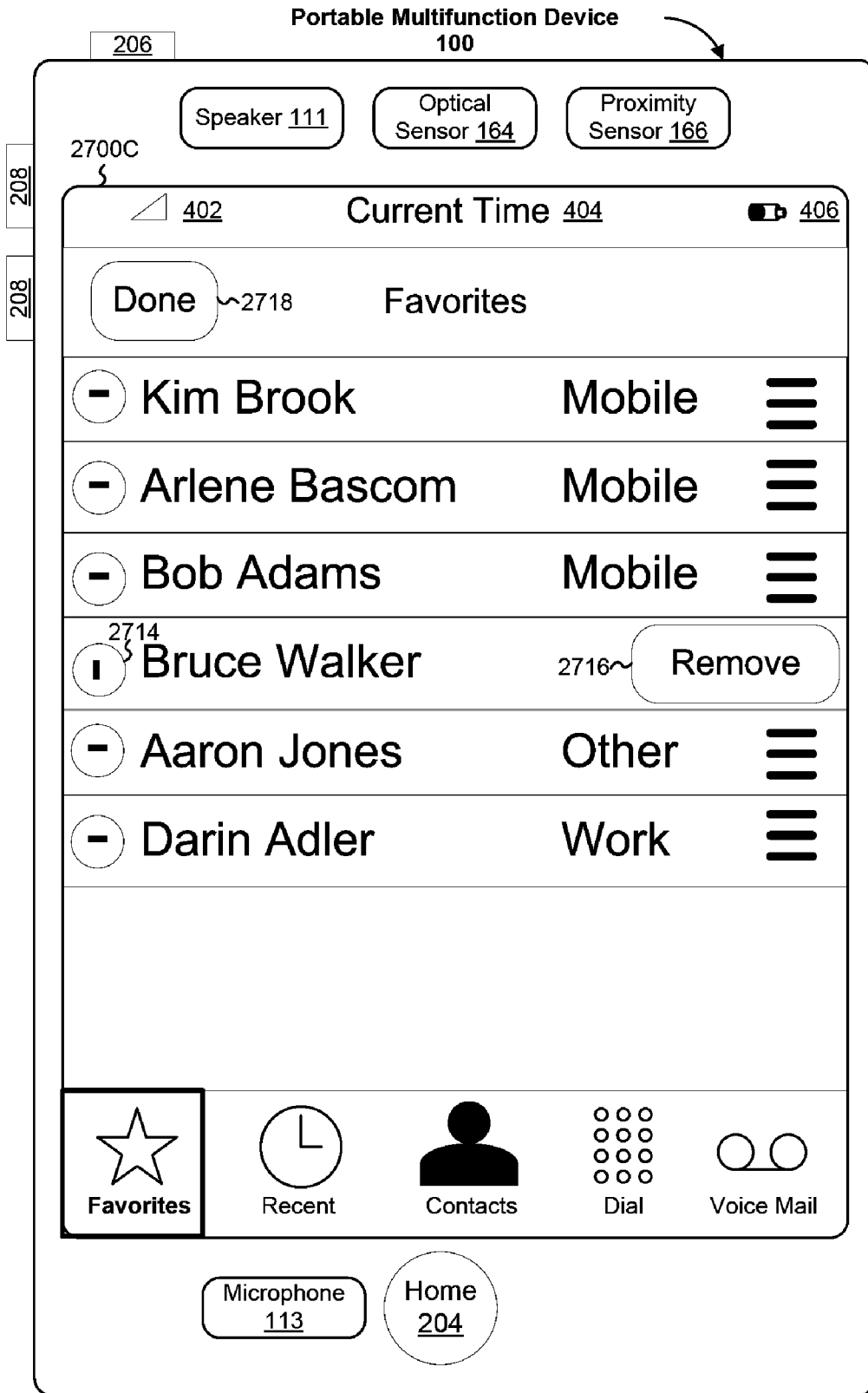


Figure 27C

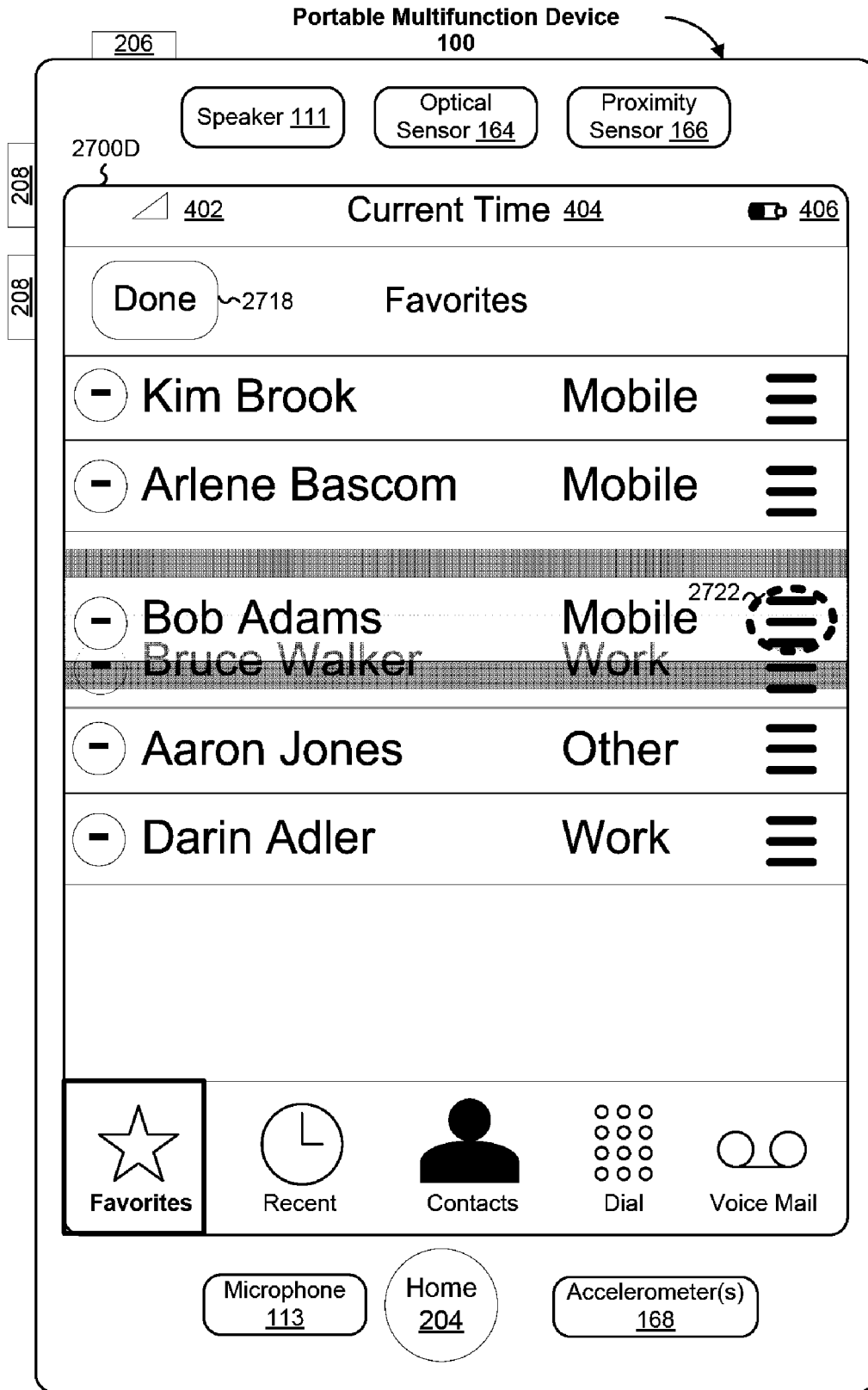


Figure 27D

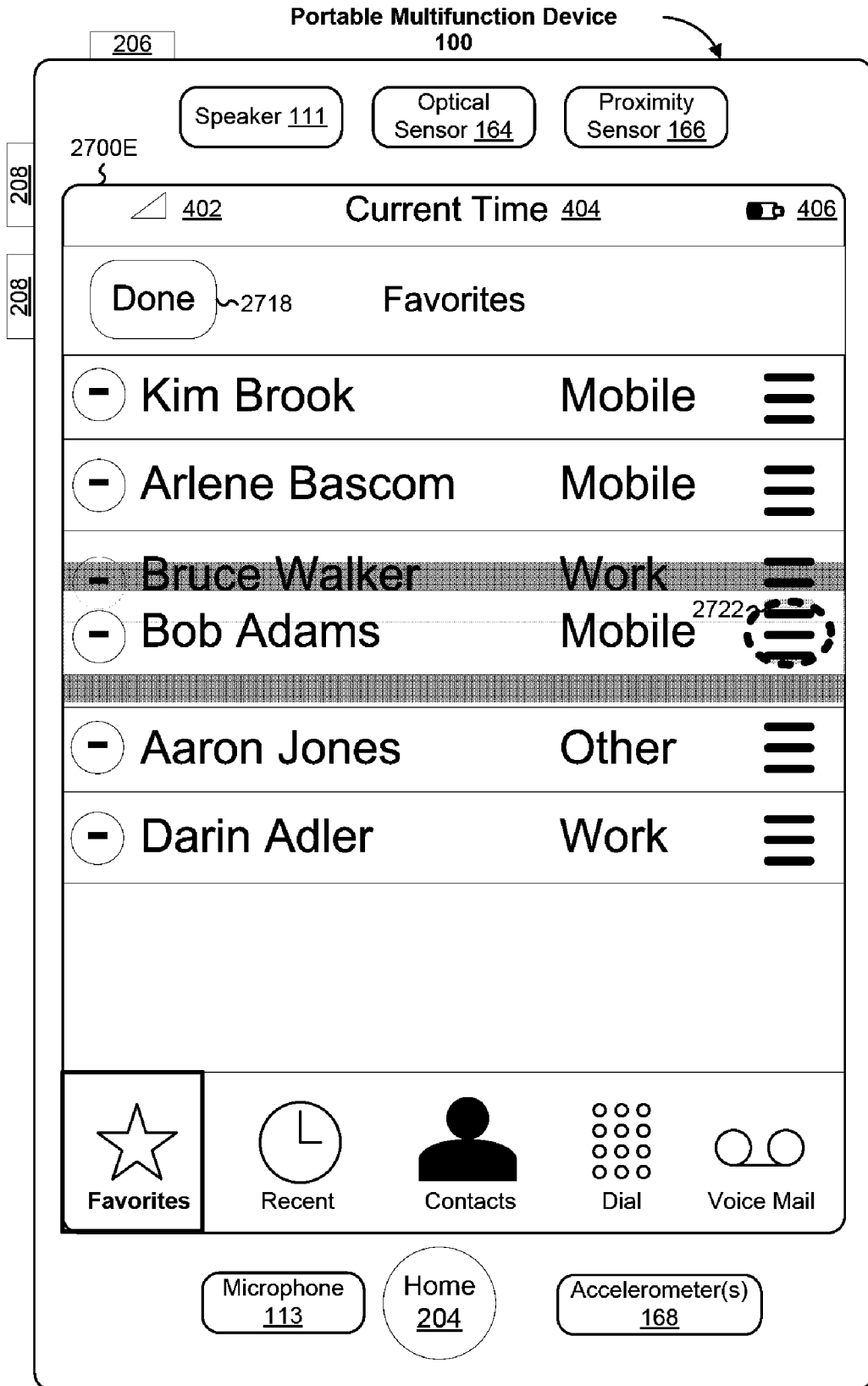


Figure 27E

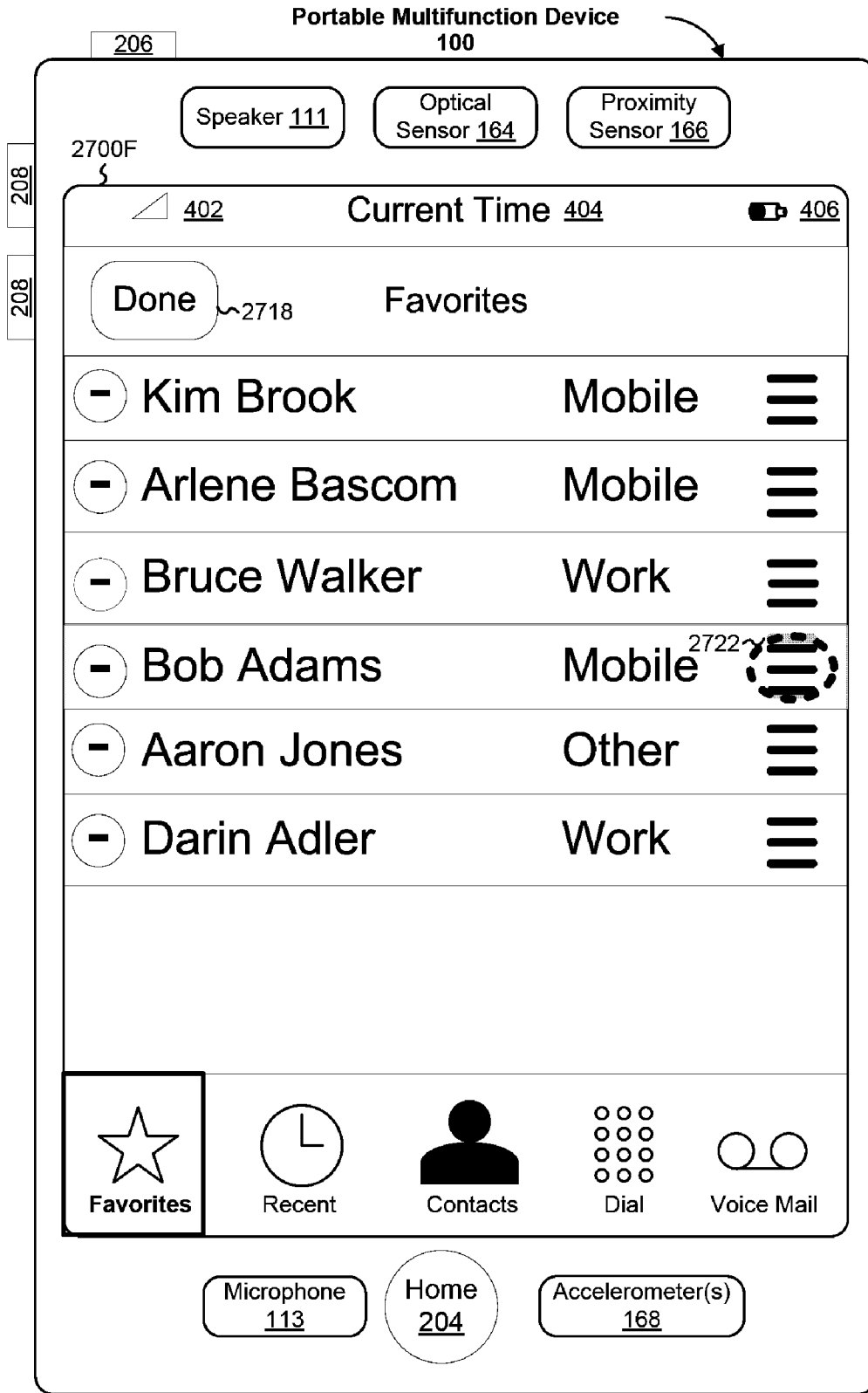


Figure 27F

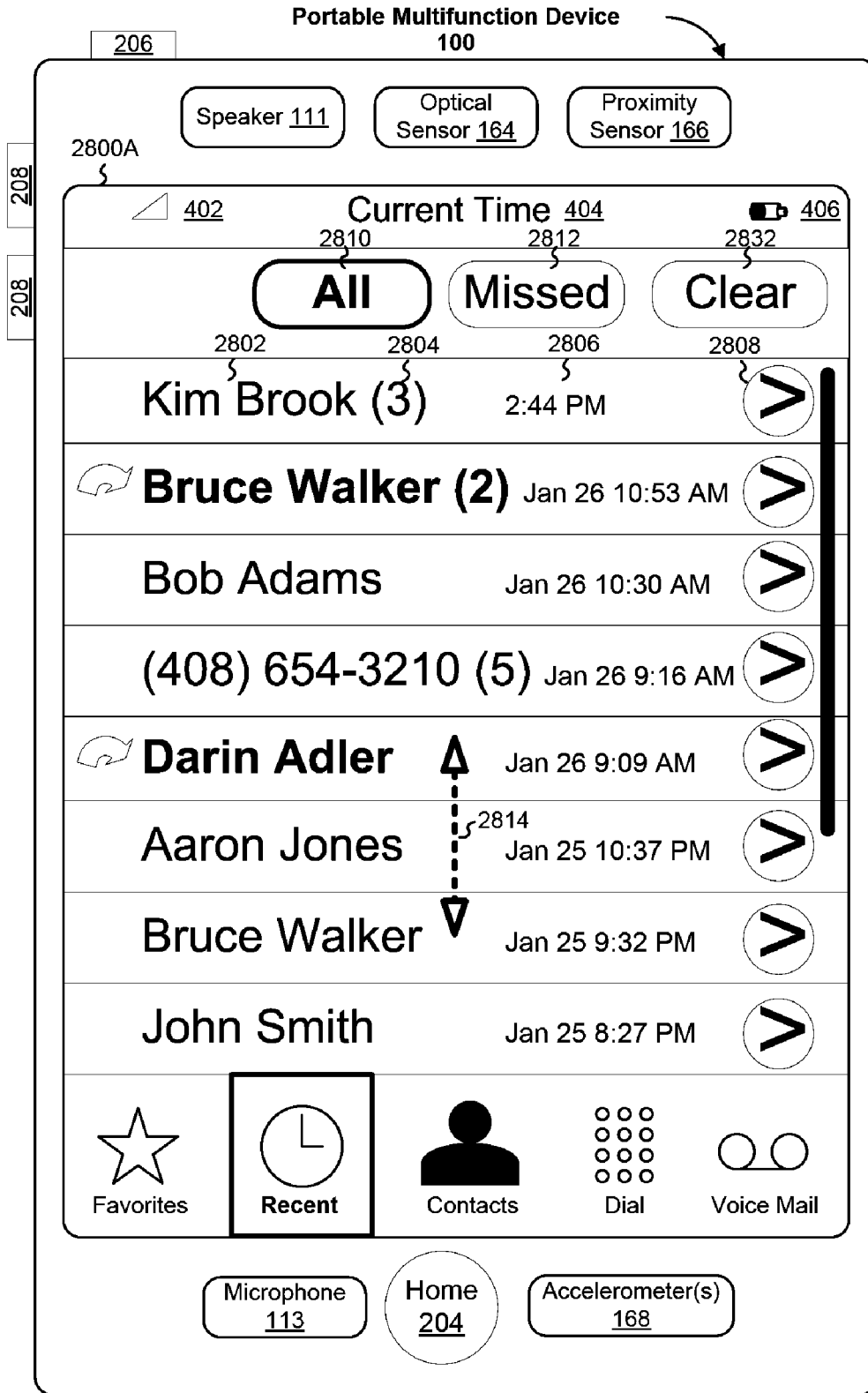


Figure 28A

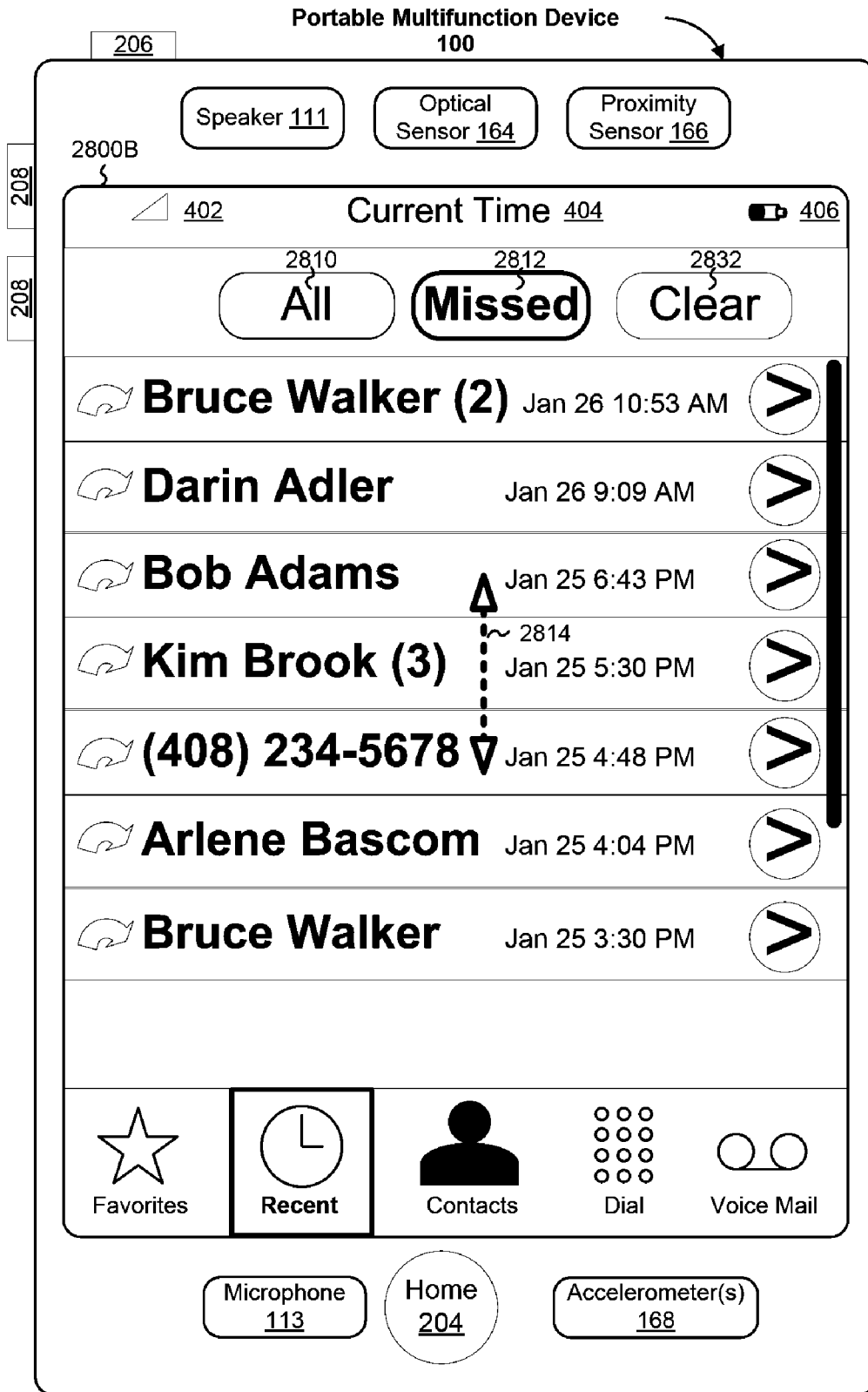


Figure 28B

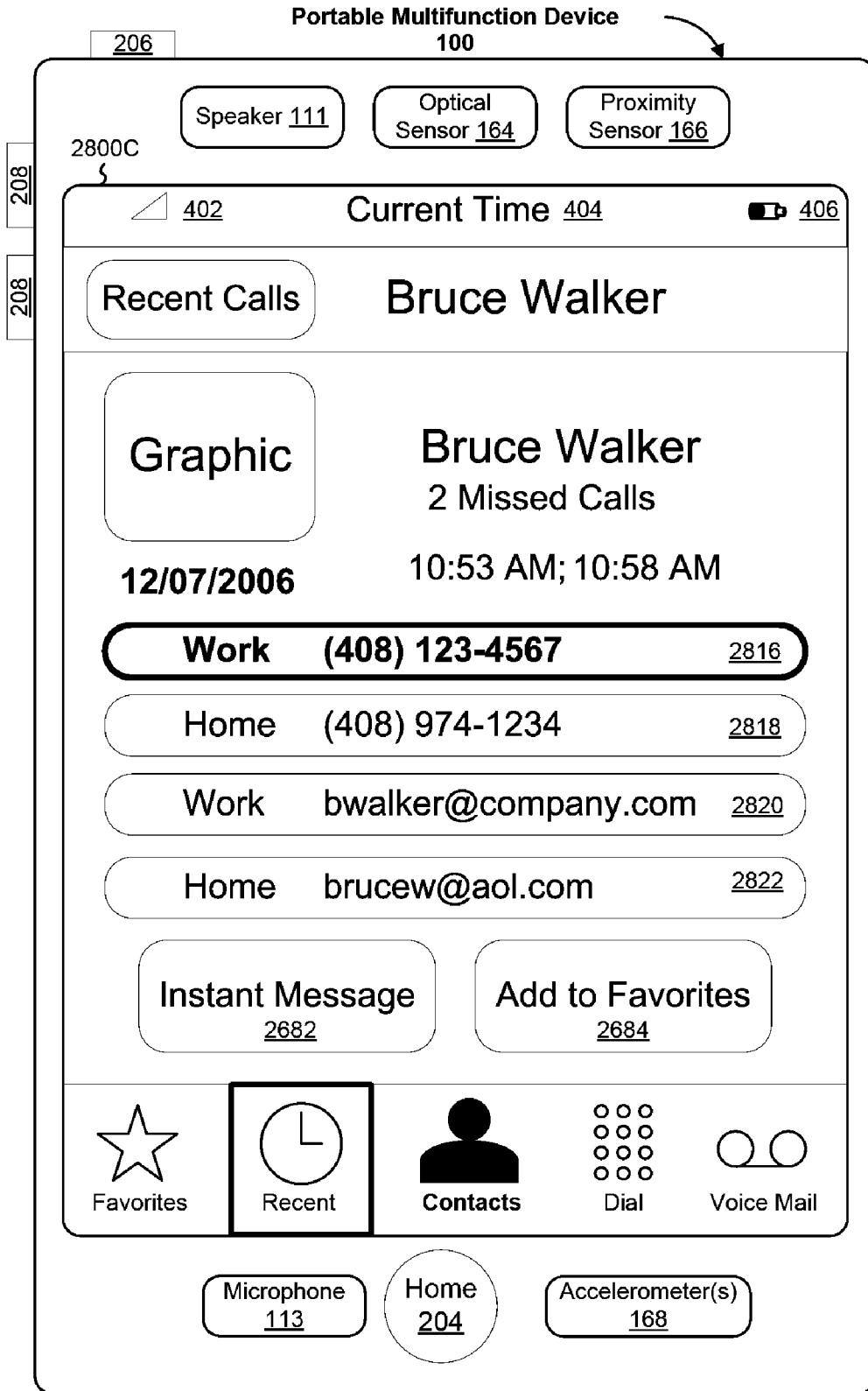


Figure 28C

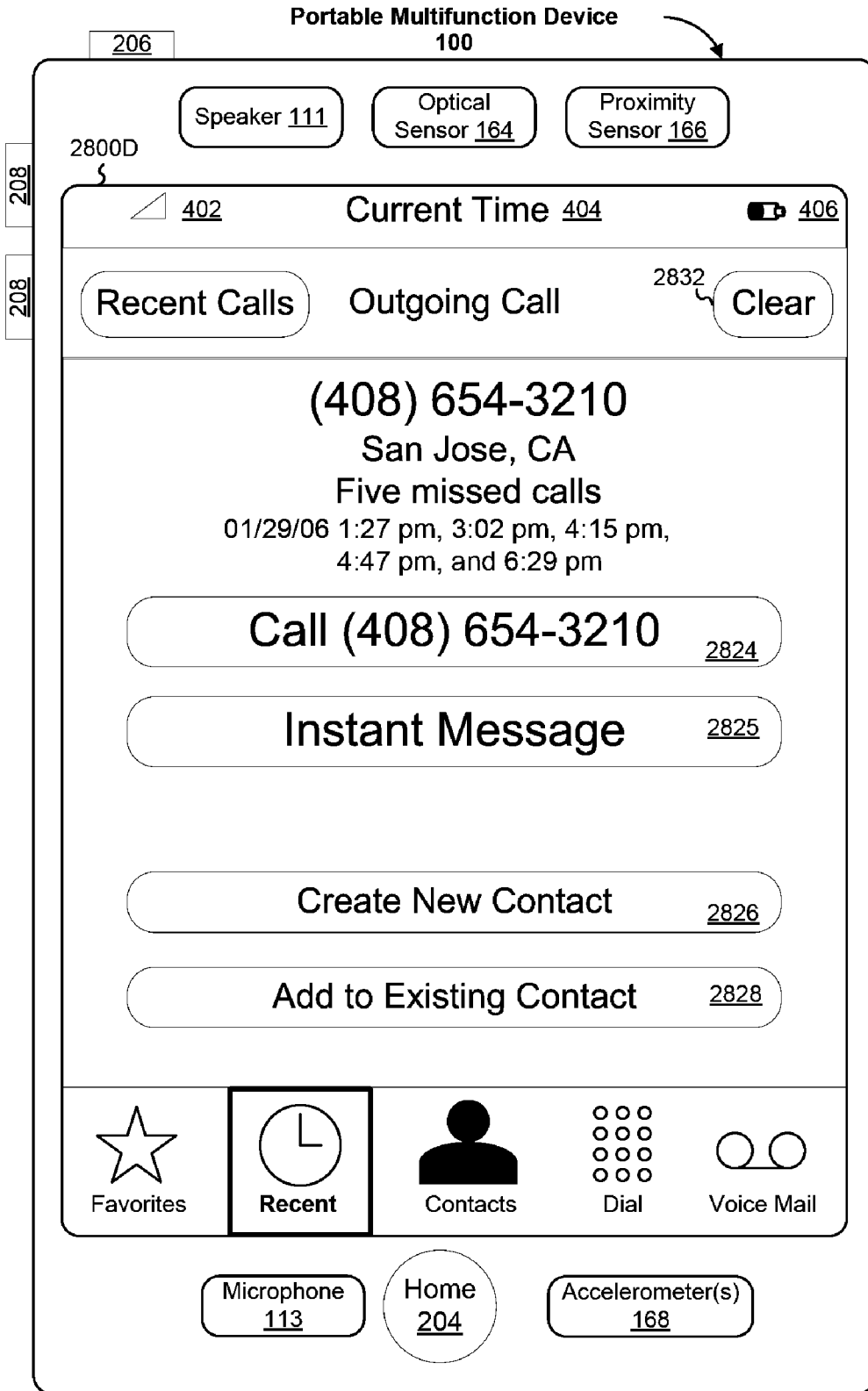


Figure 28D

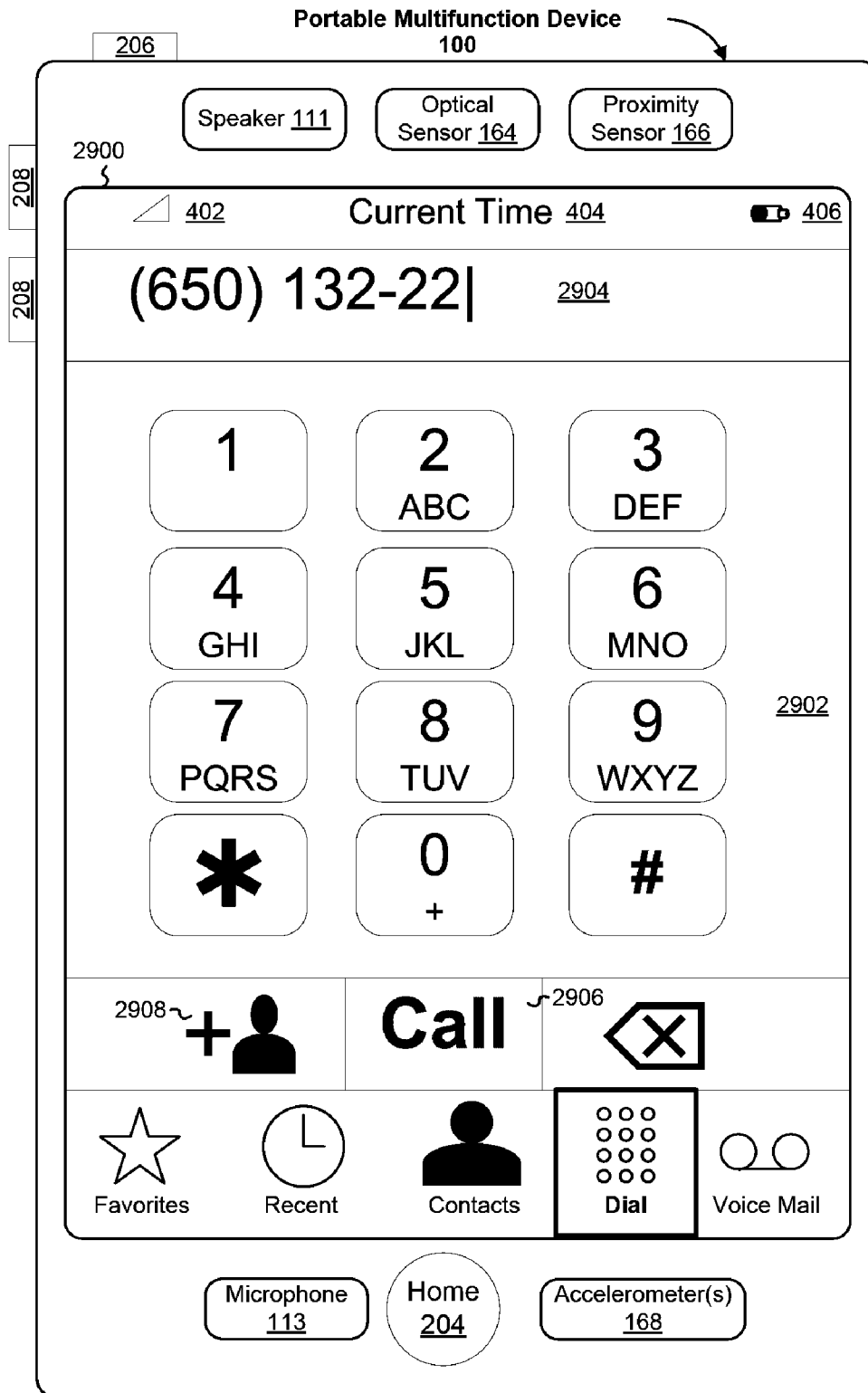


Figure 29

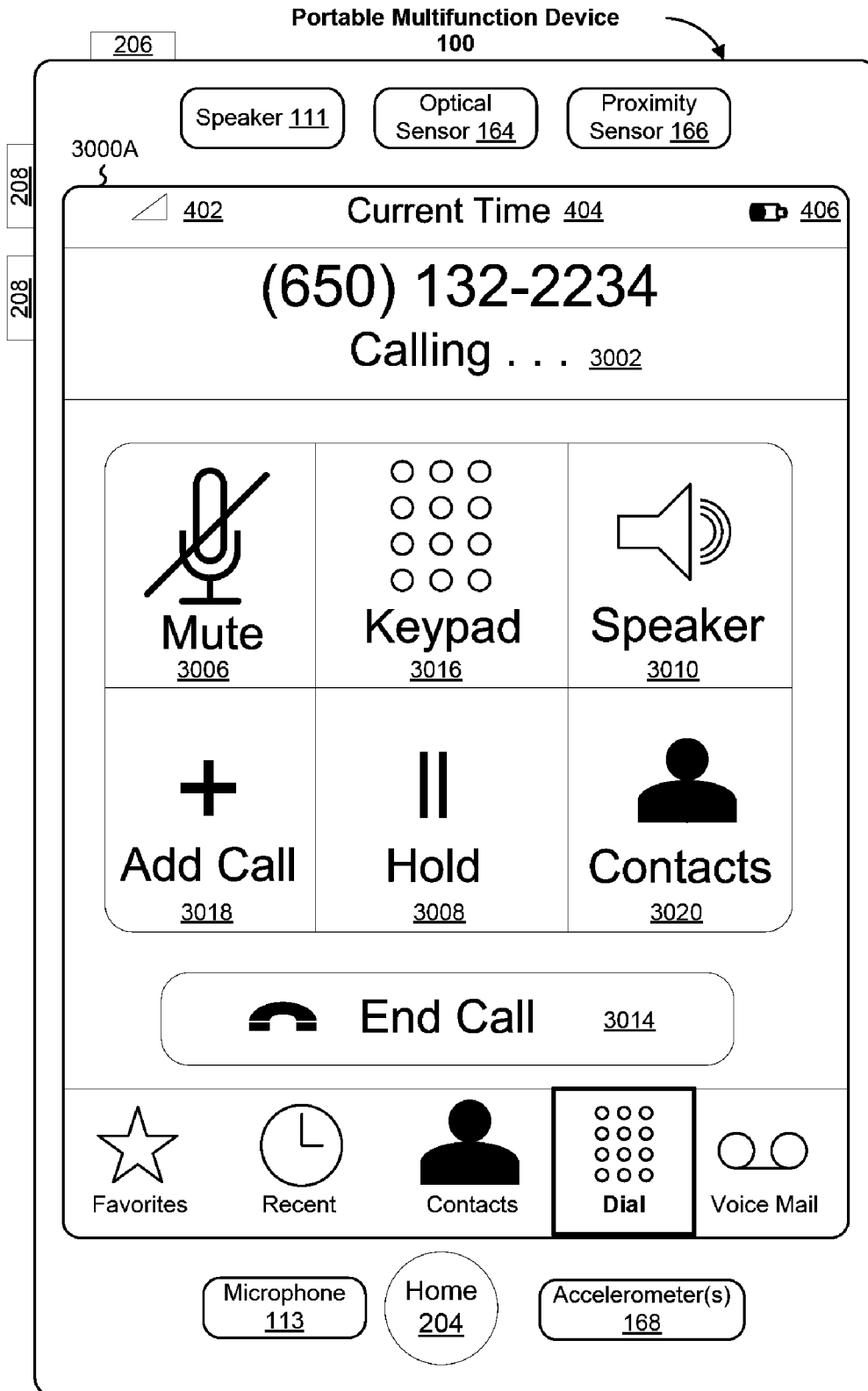


Figure 30A

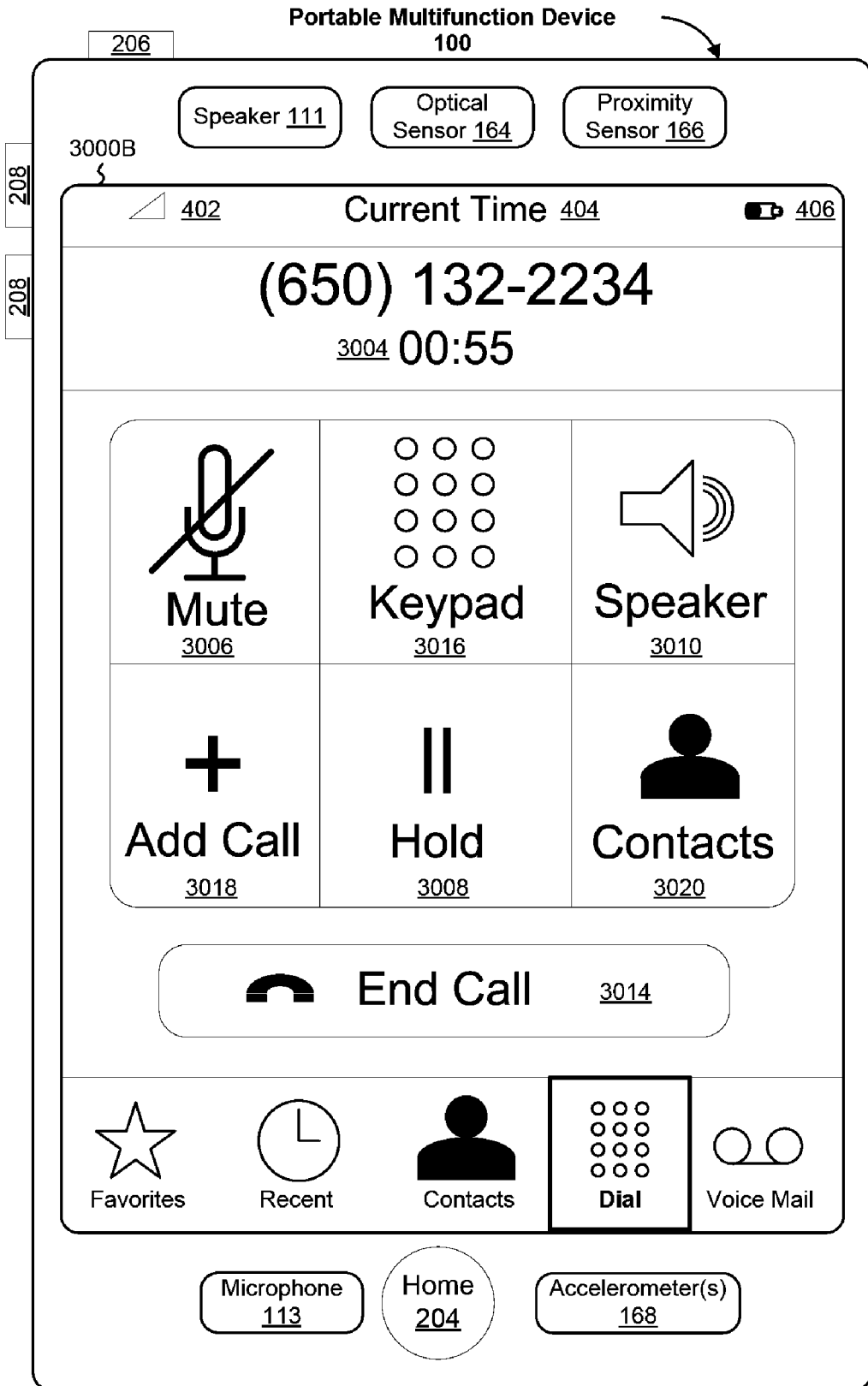


Figure 30B

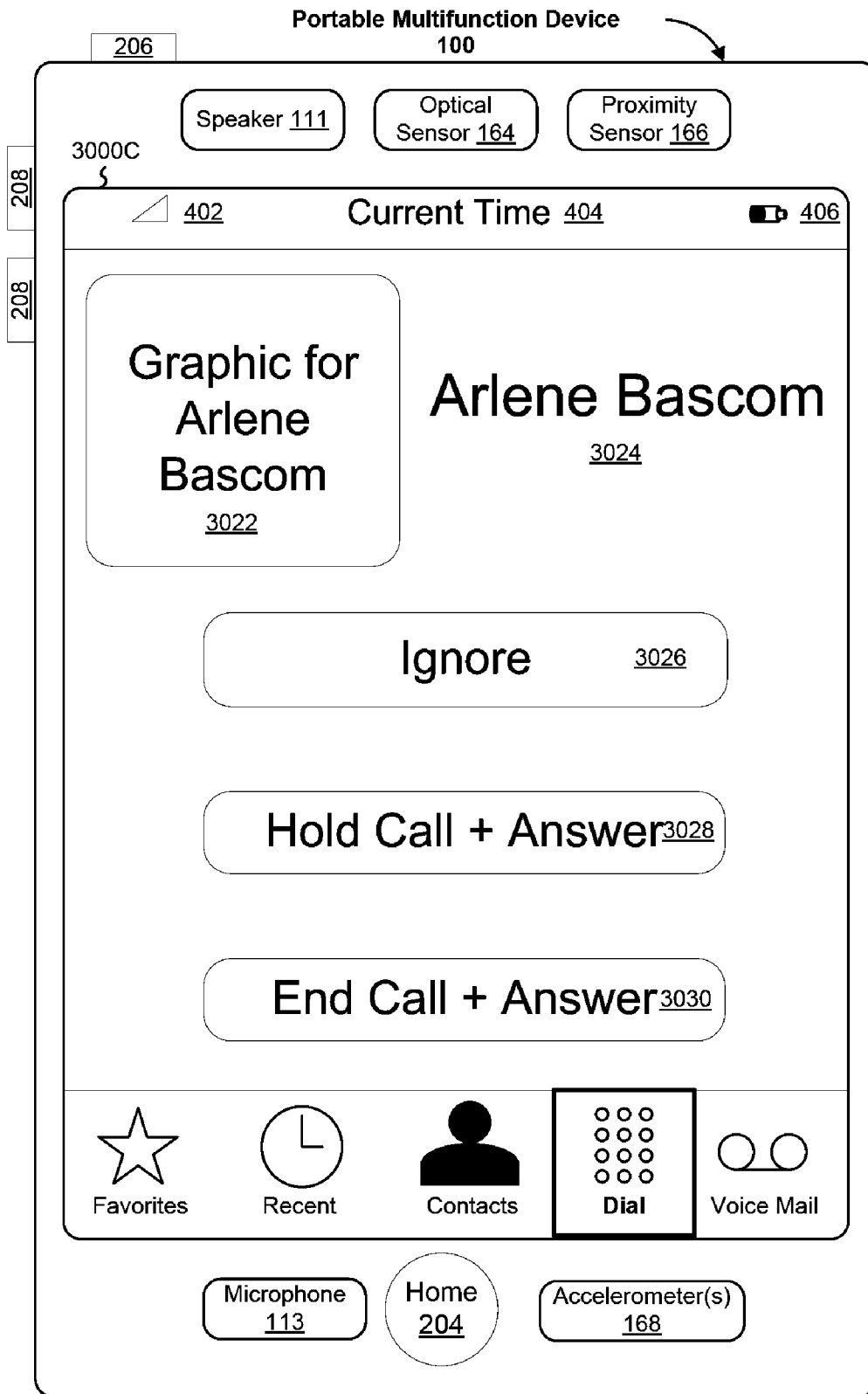


Figure 30C

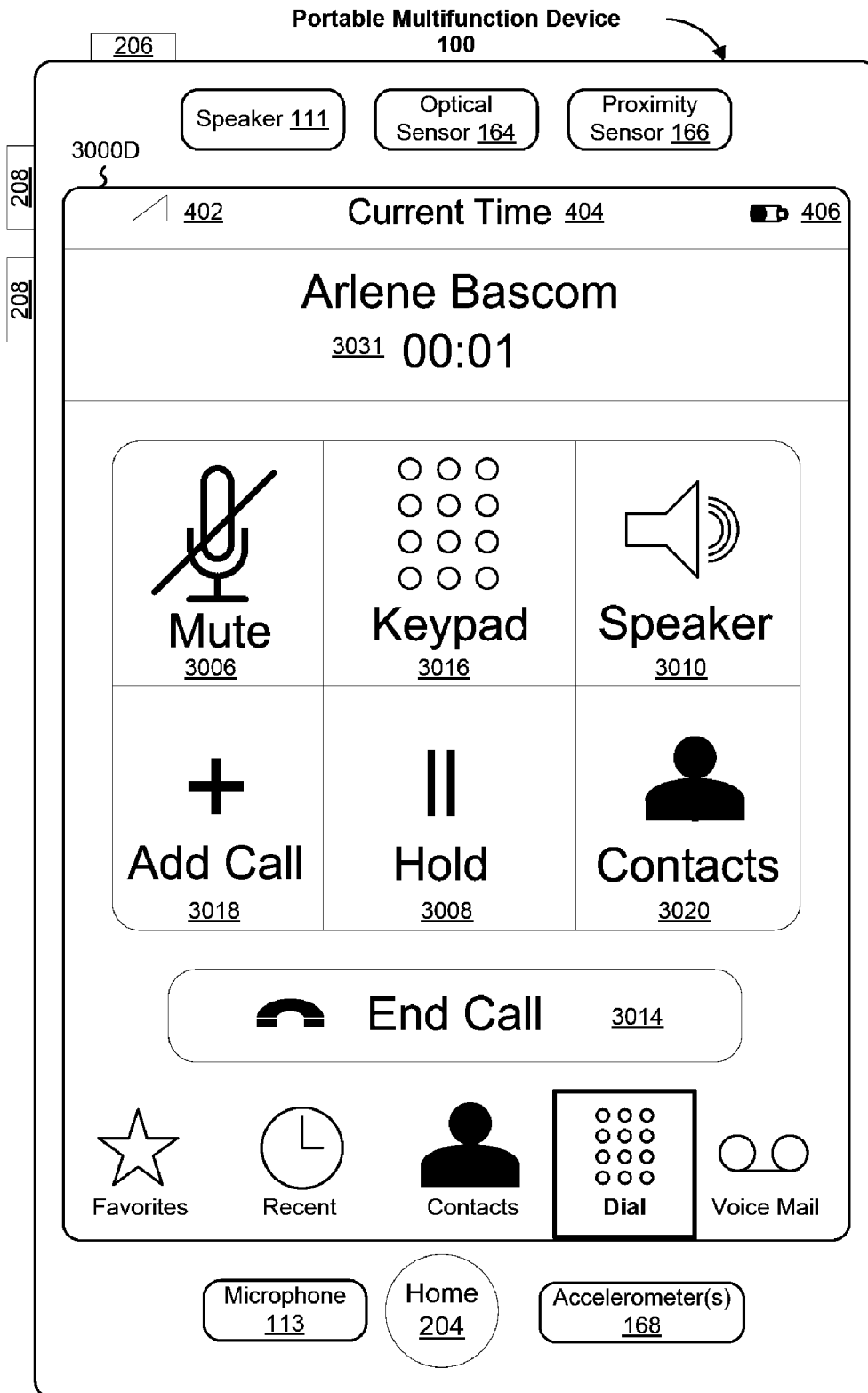


Figure 30D

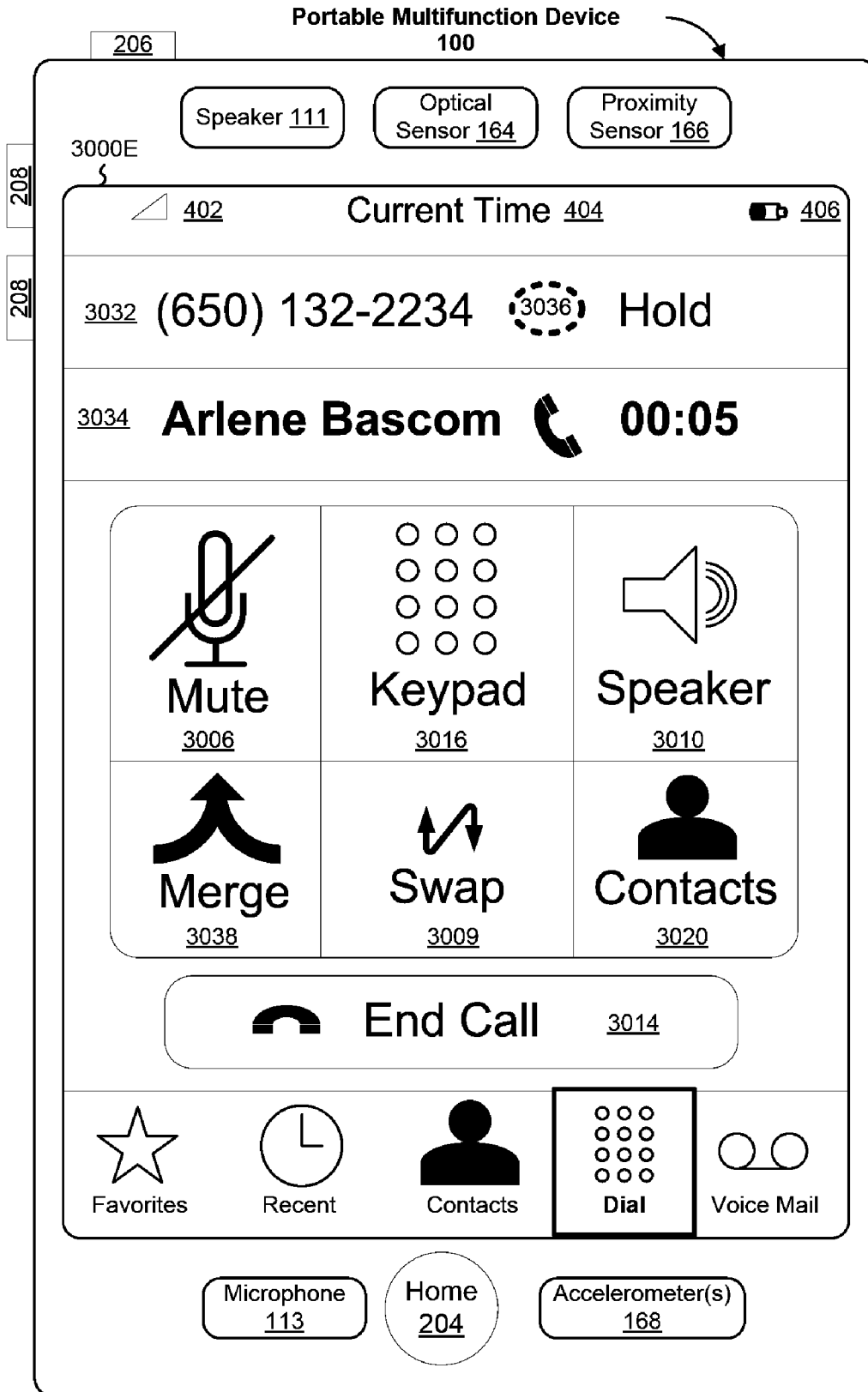


Figure 30E

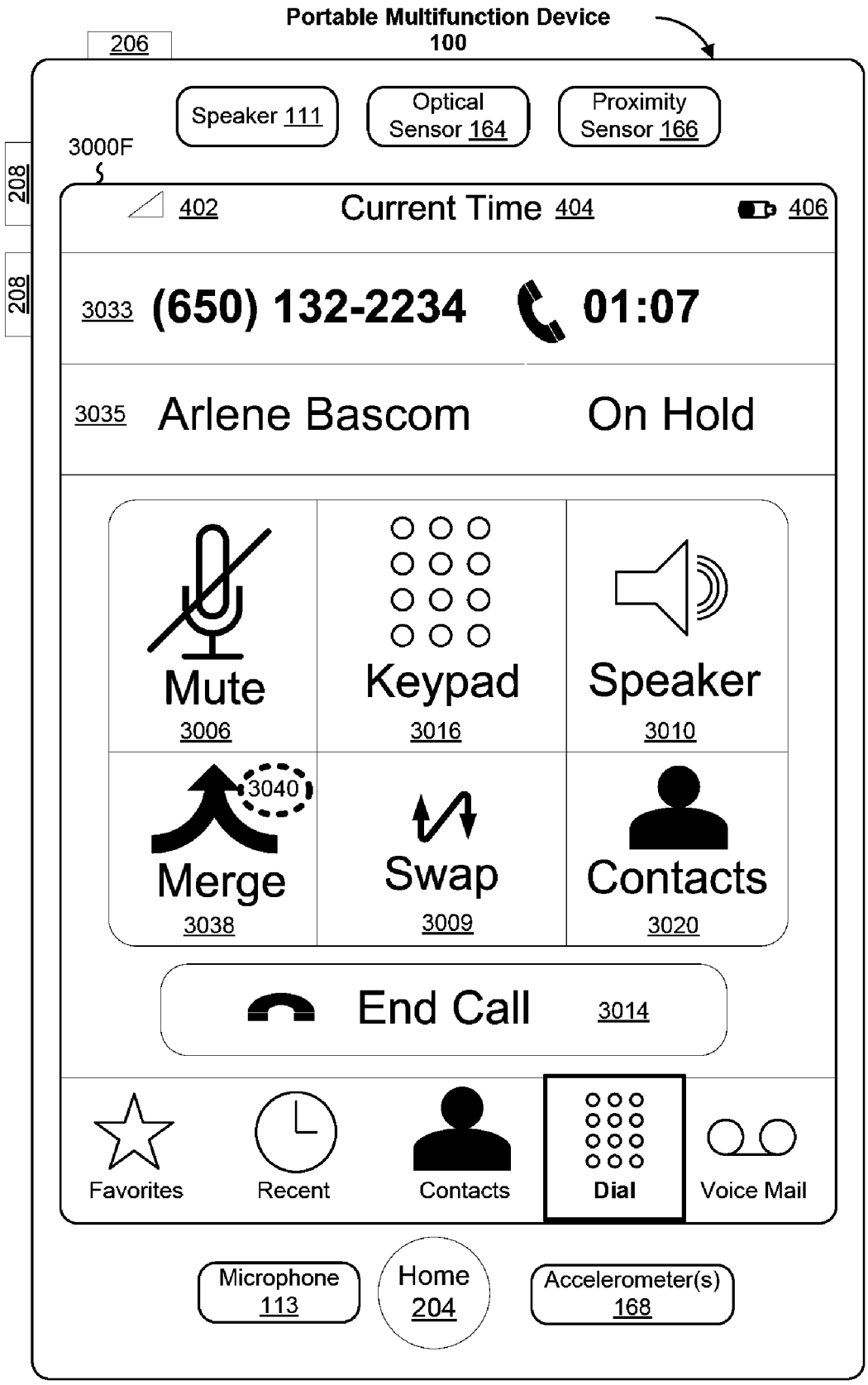


Figure 30F

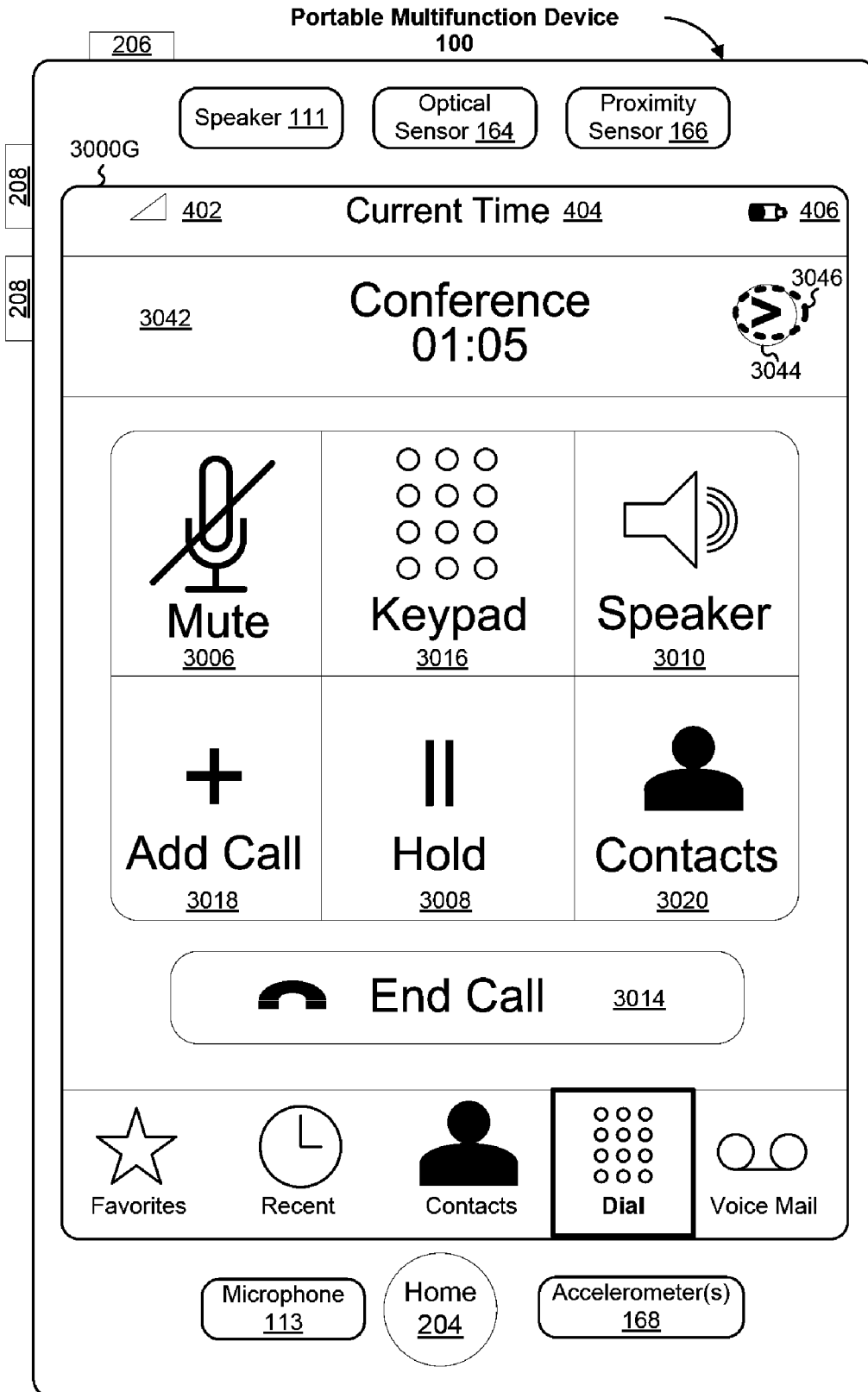


Figure 30G

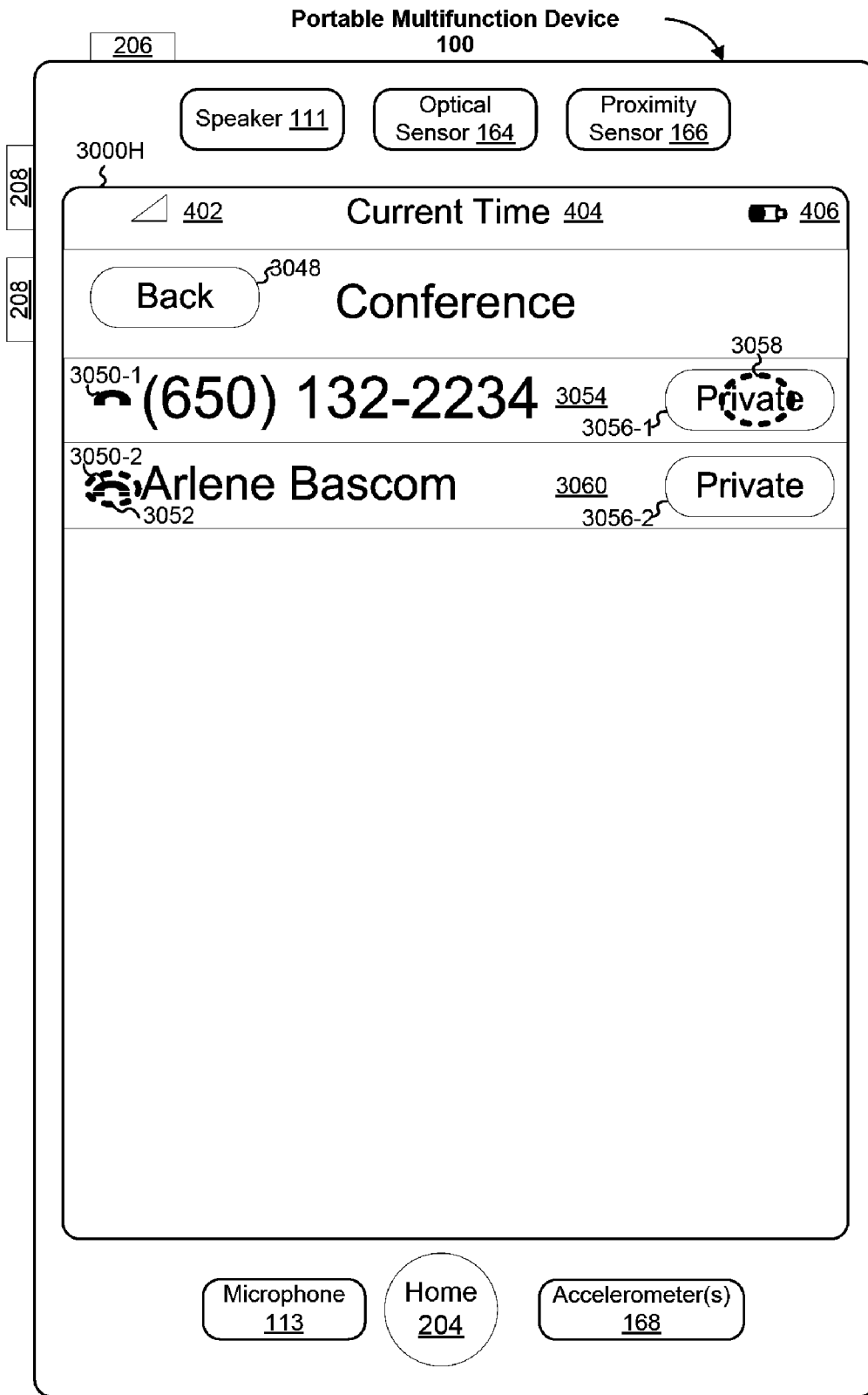


Figure 30H

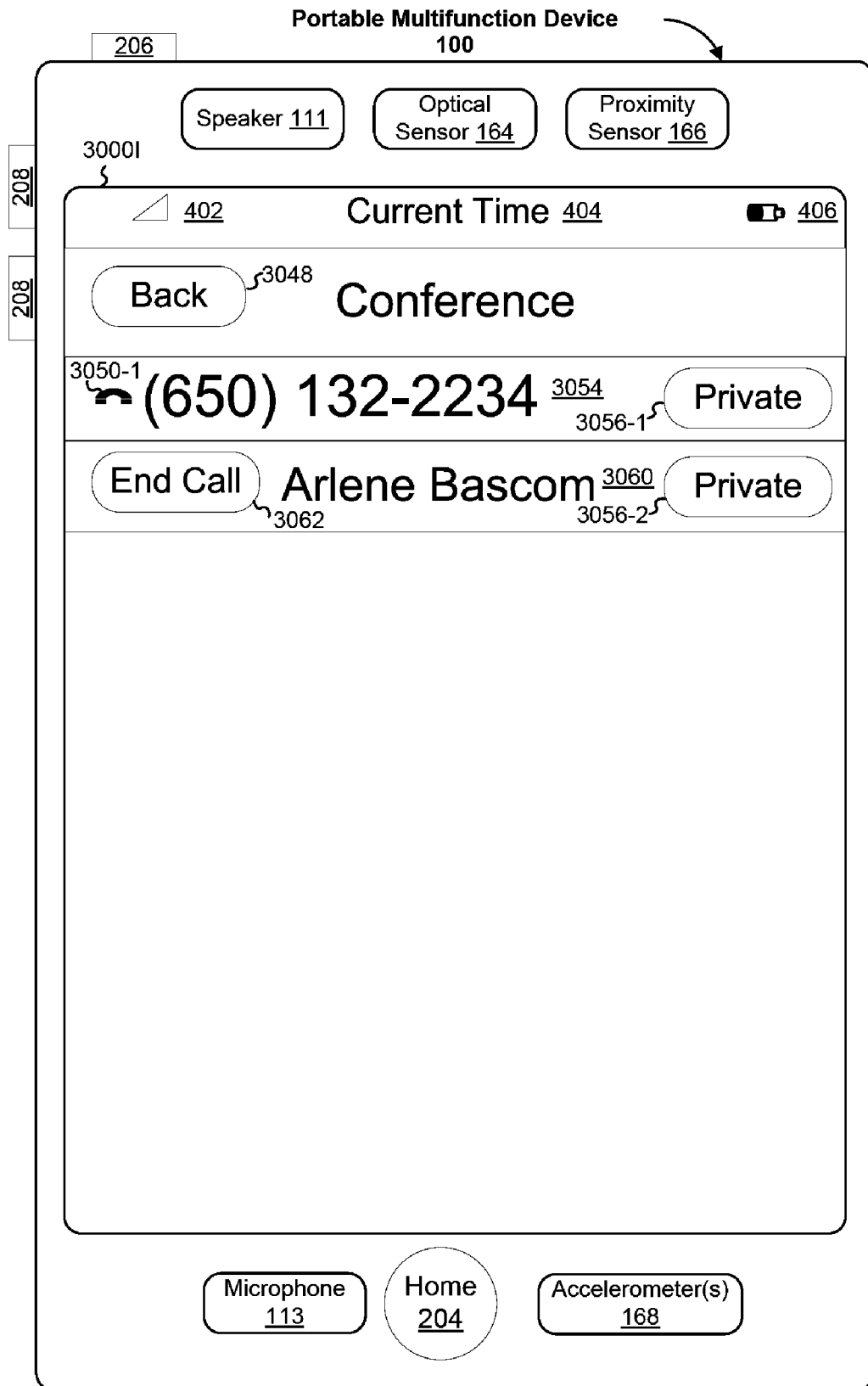


Figure 30I

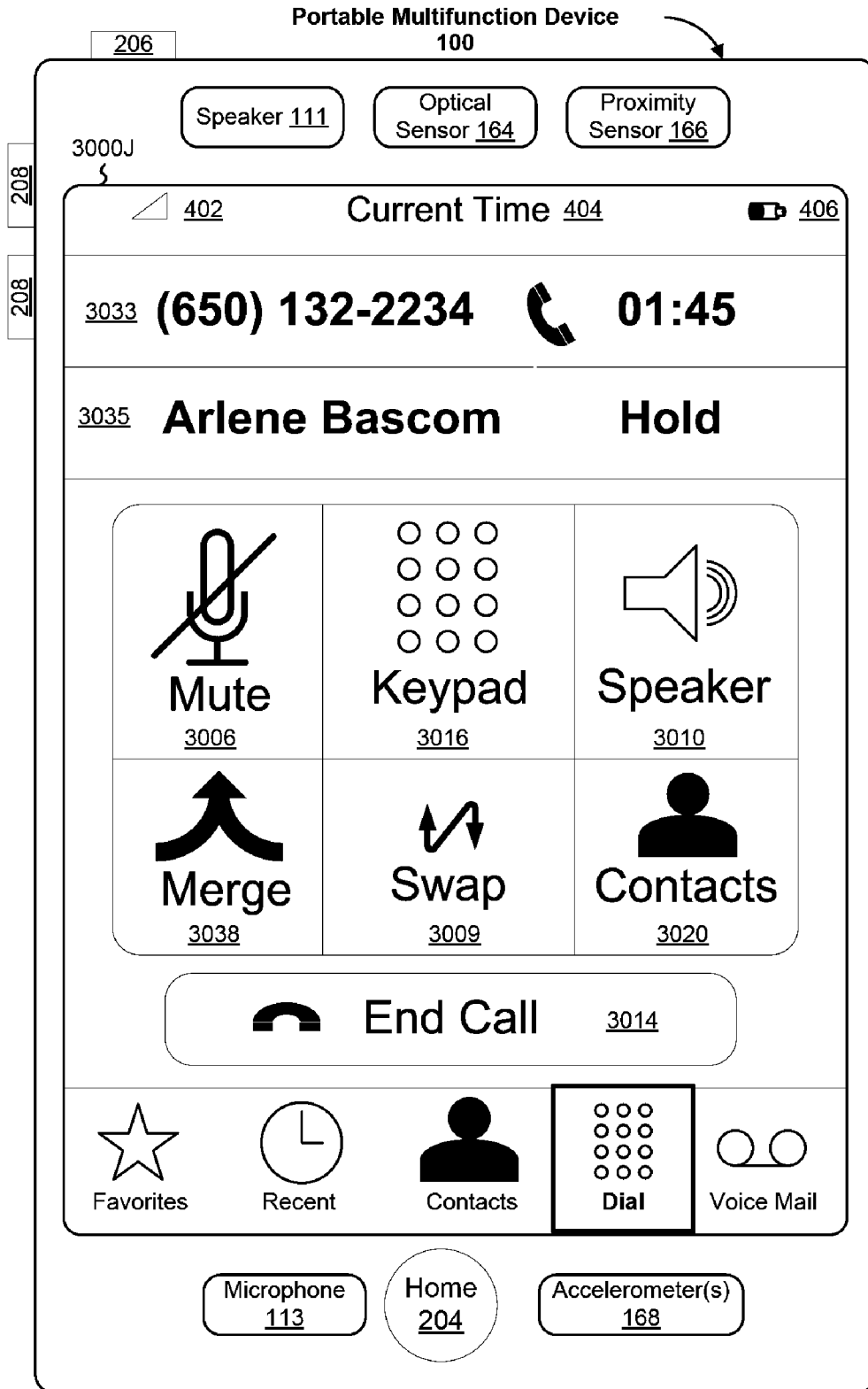


Figure 30J

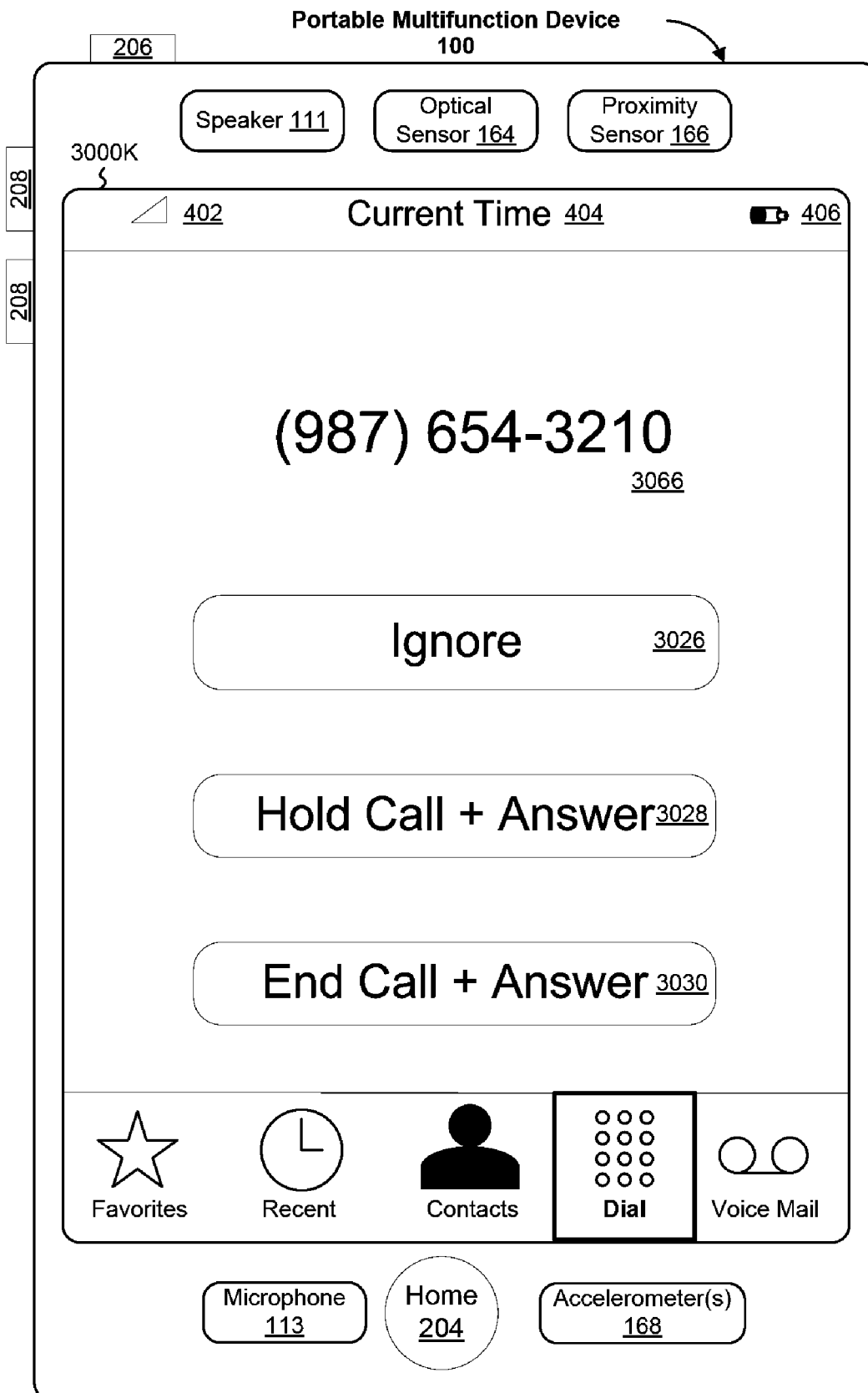


Figure 30K

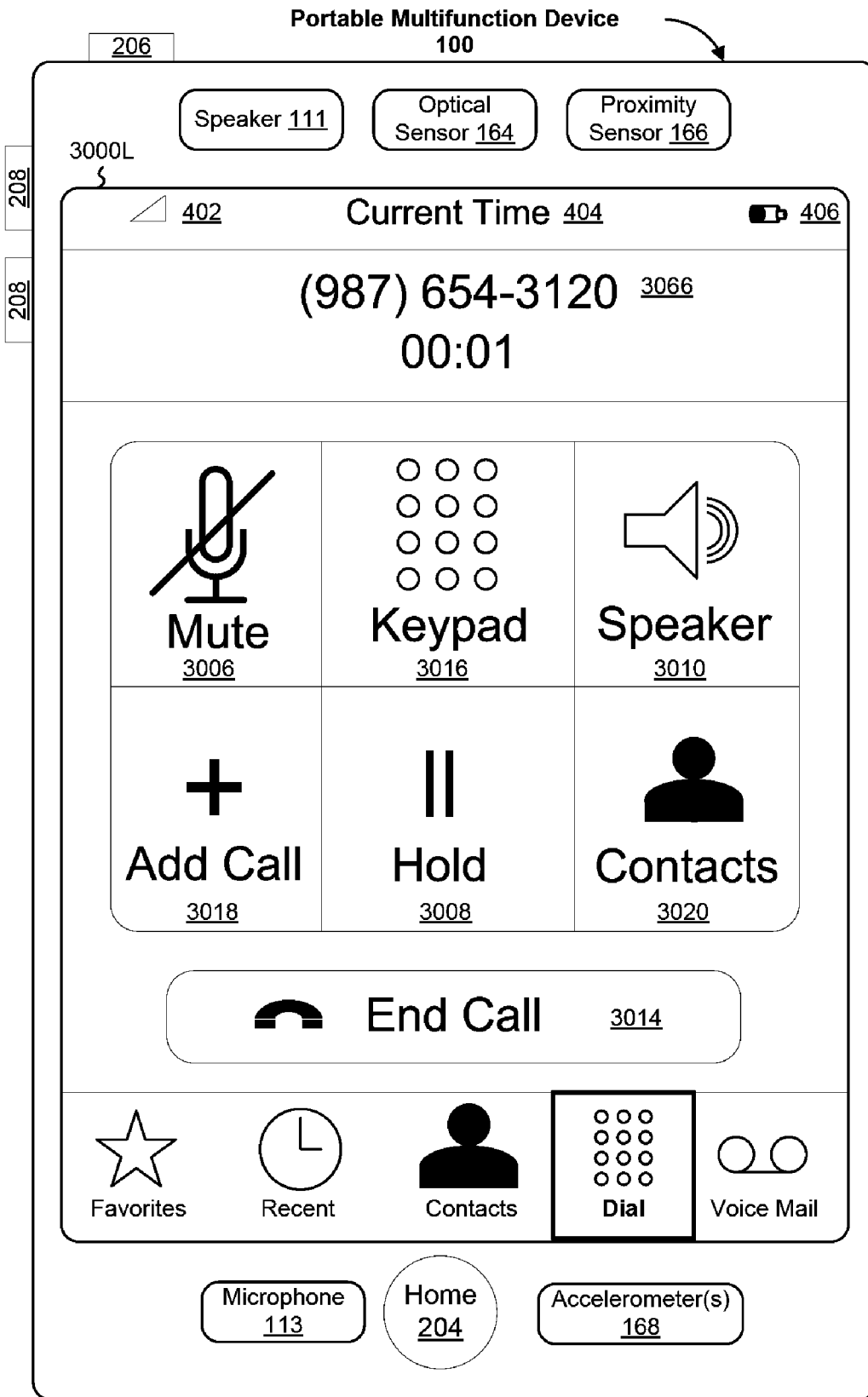


Figure 30L

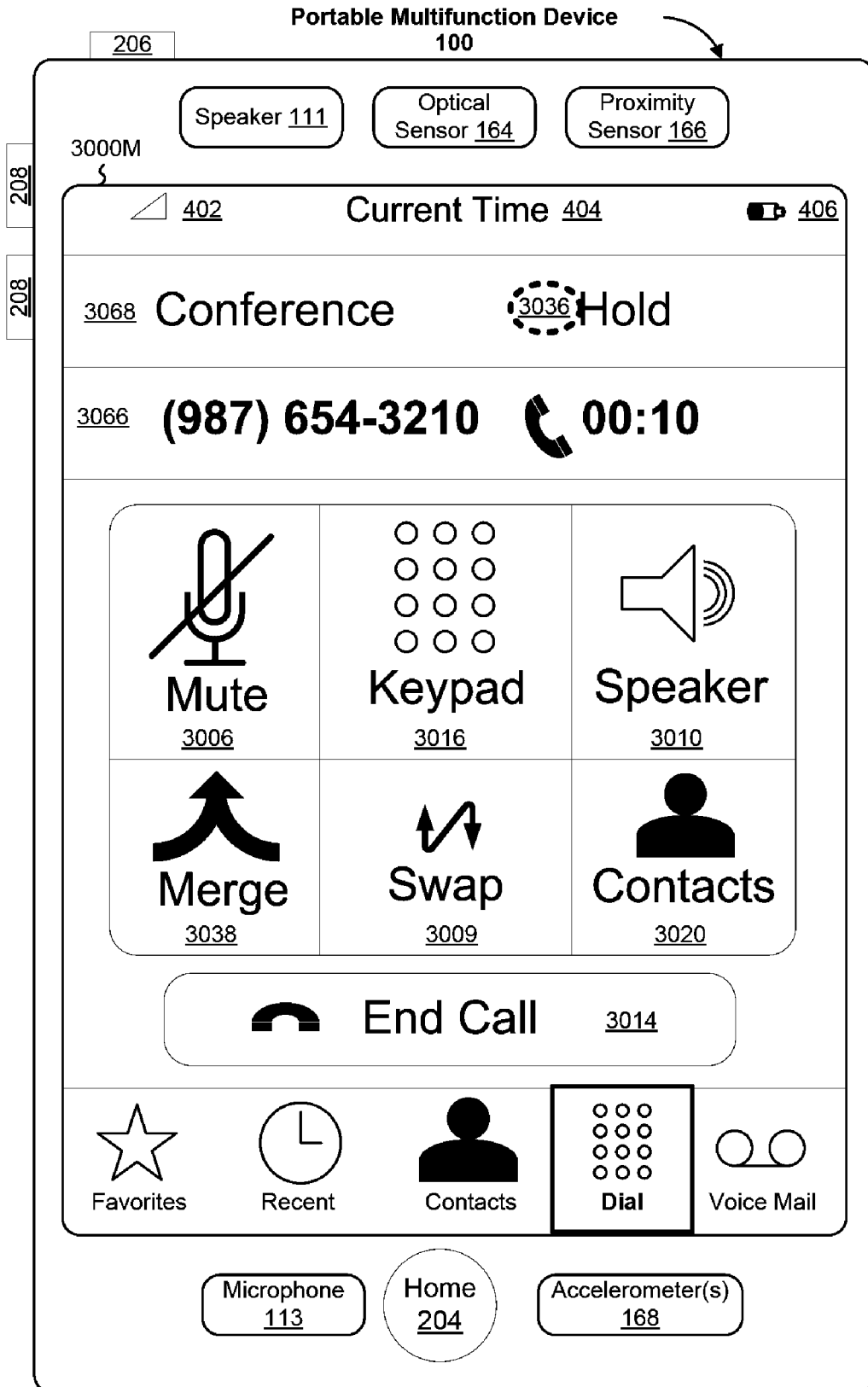


Figure 30M

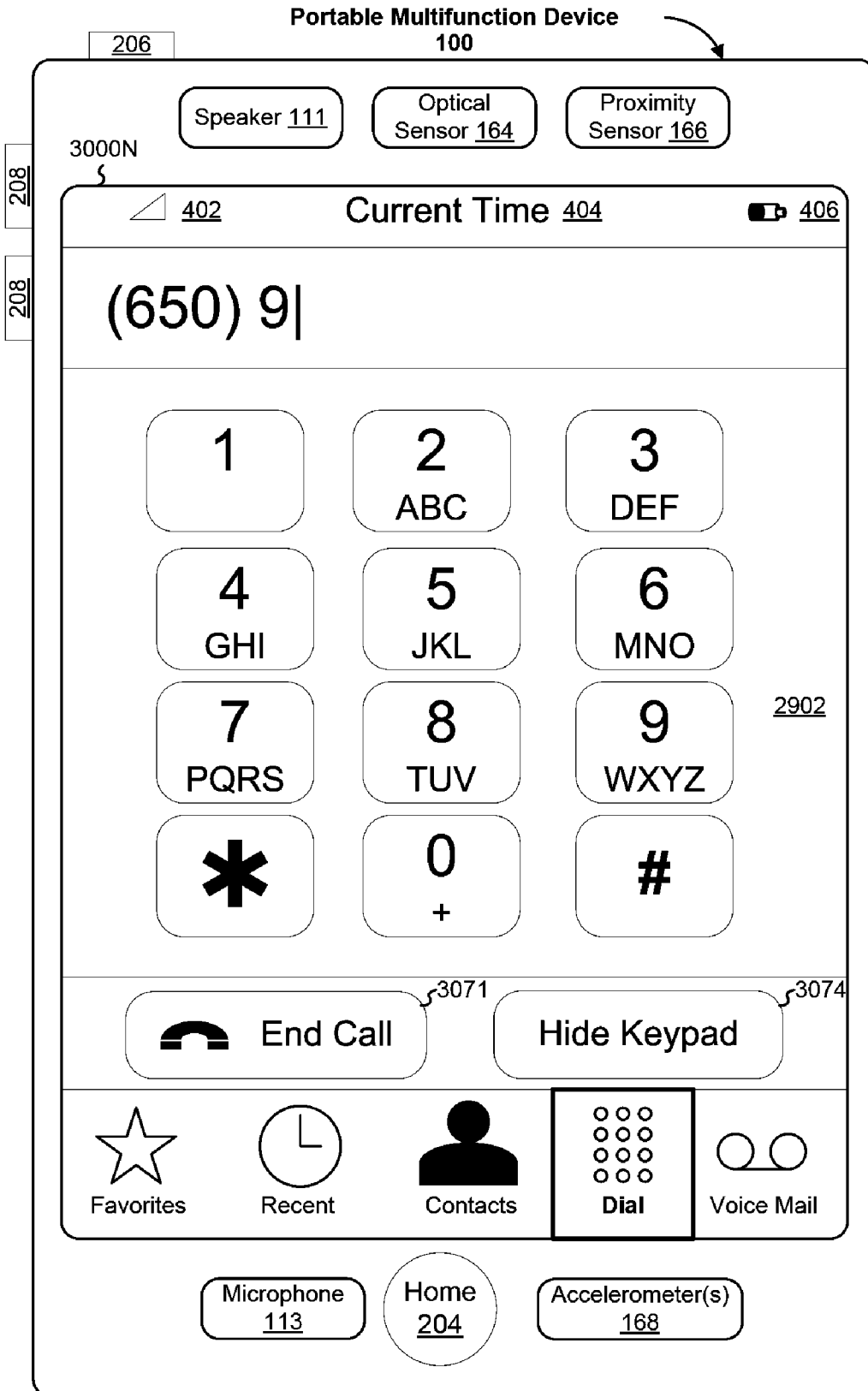


Figure 30N

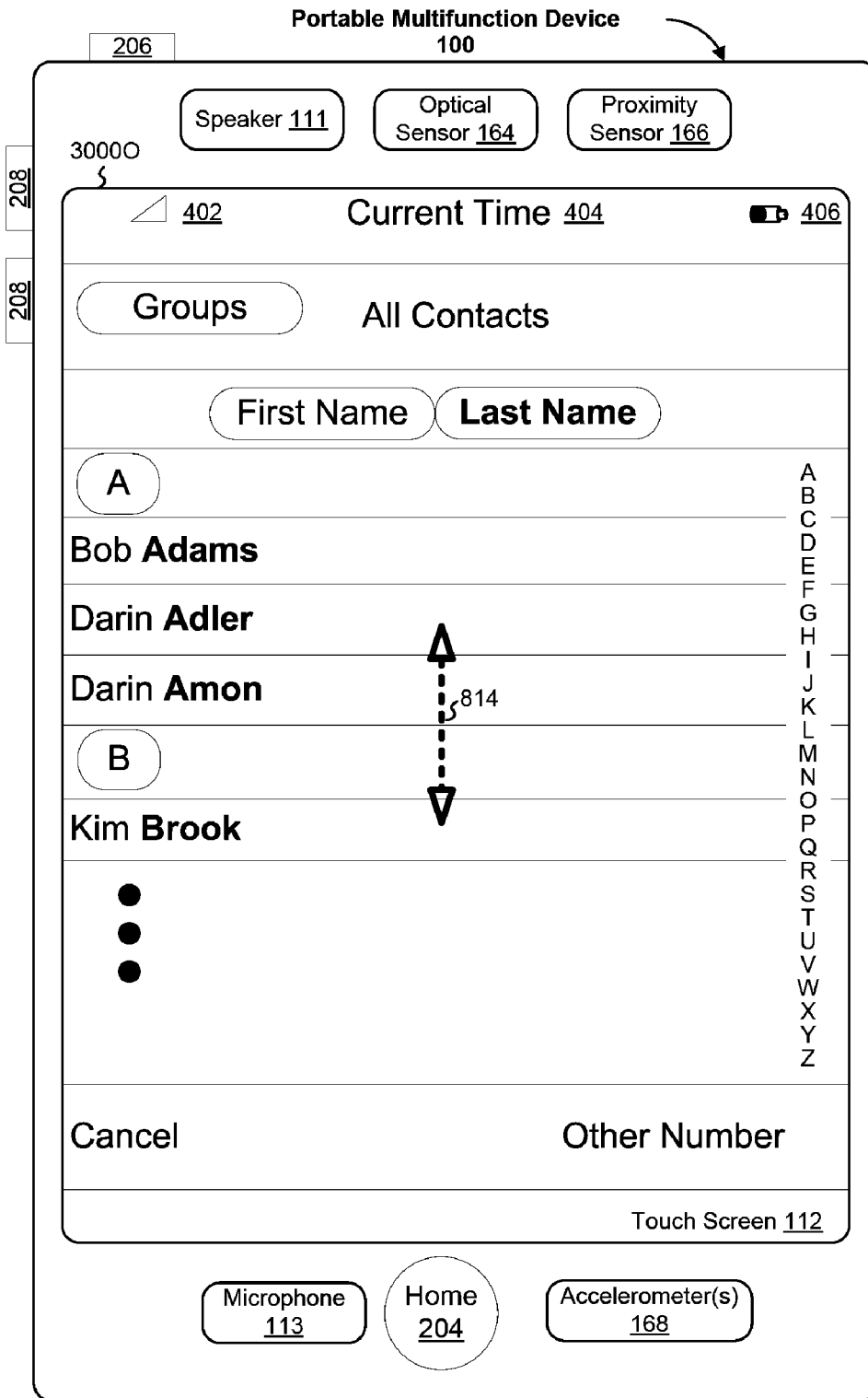


Figure 300

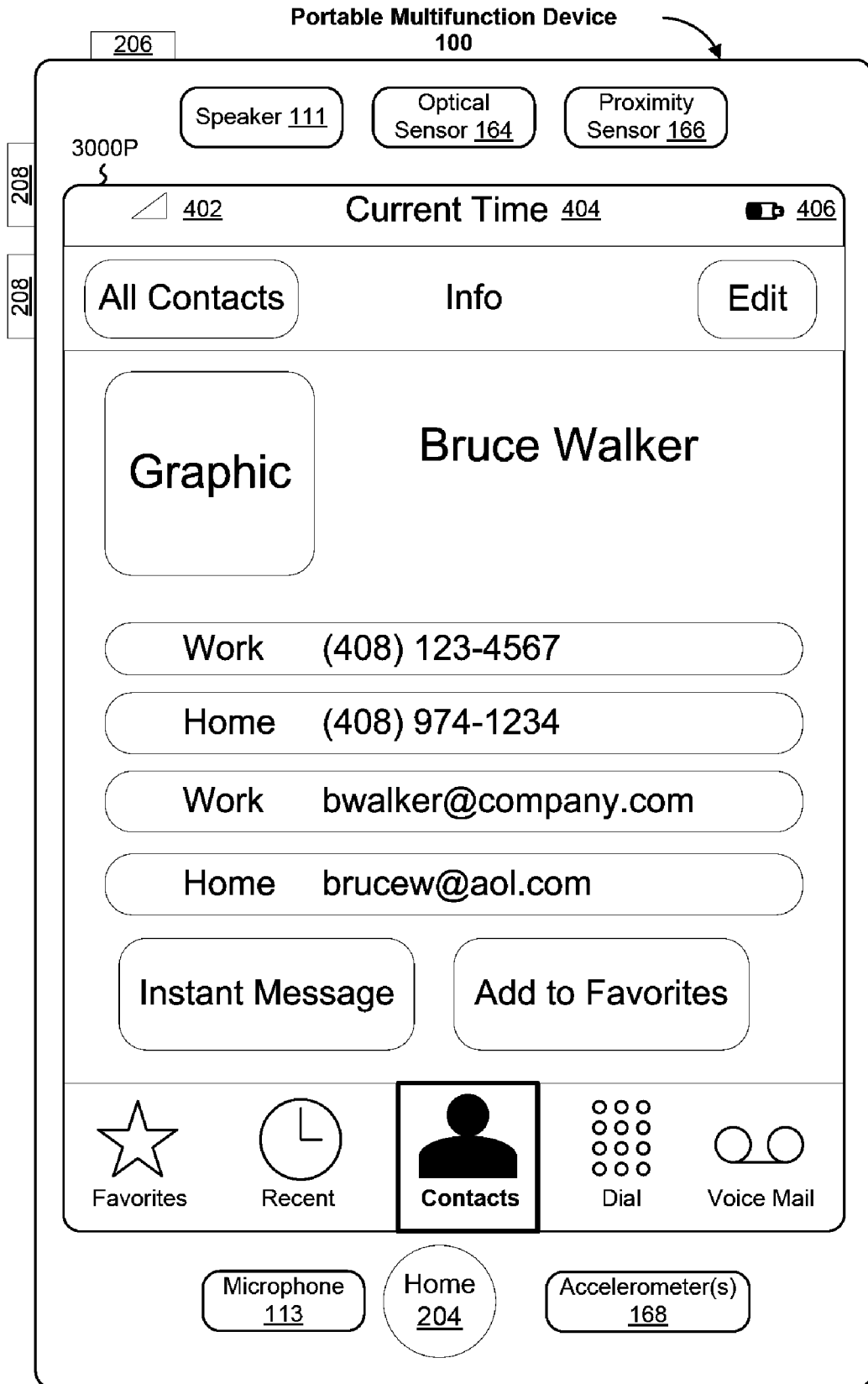


Figure 30P

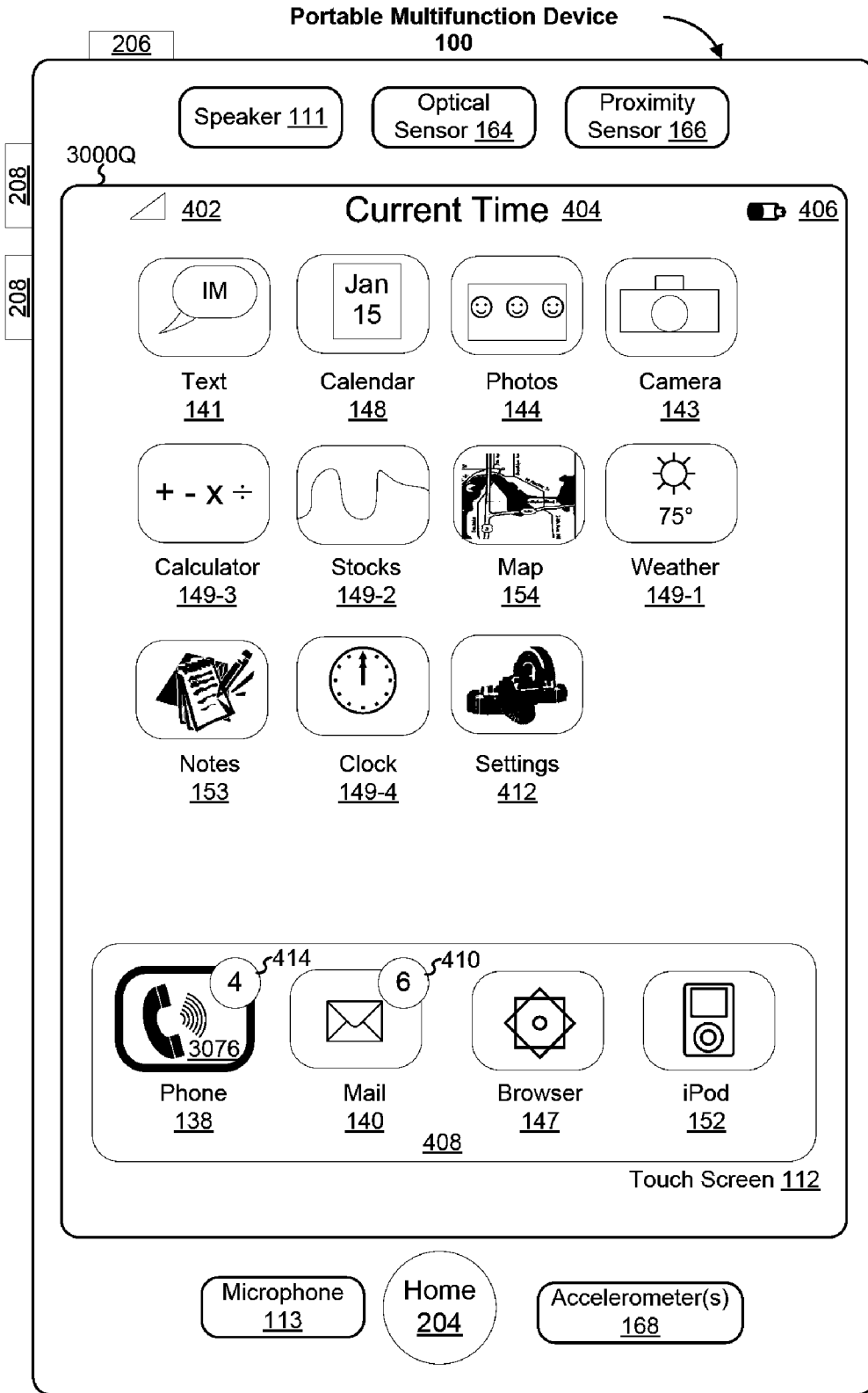


Figure 30Q

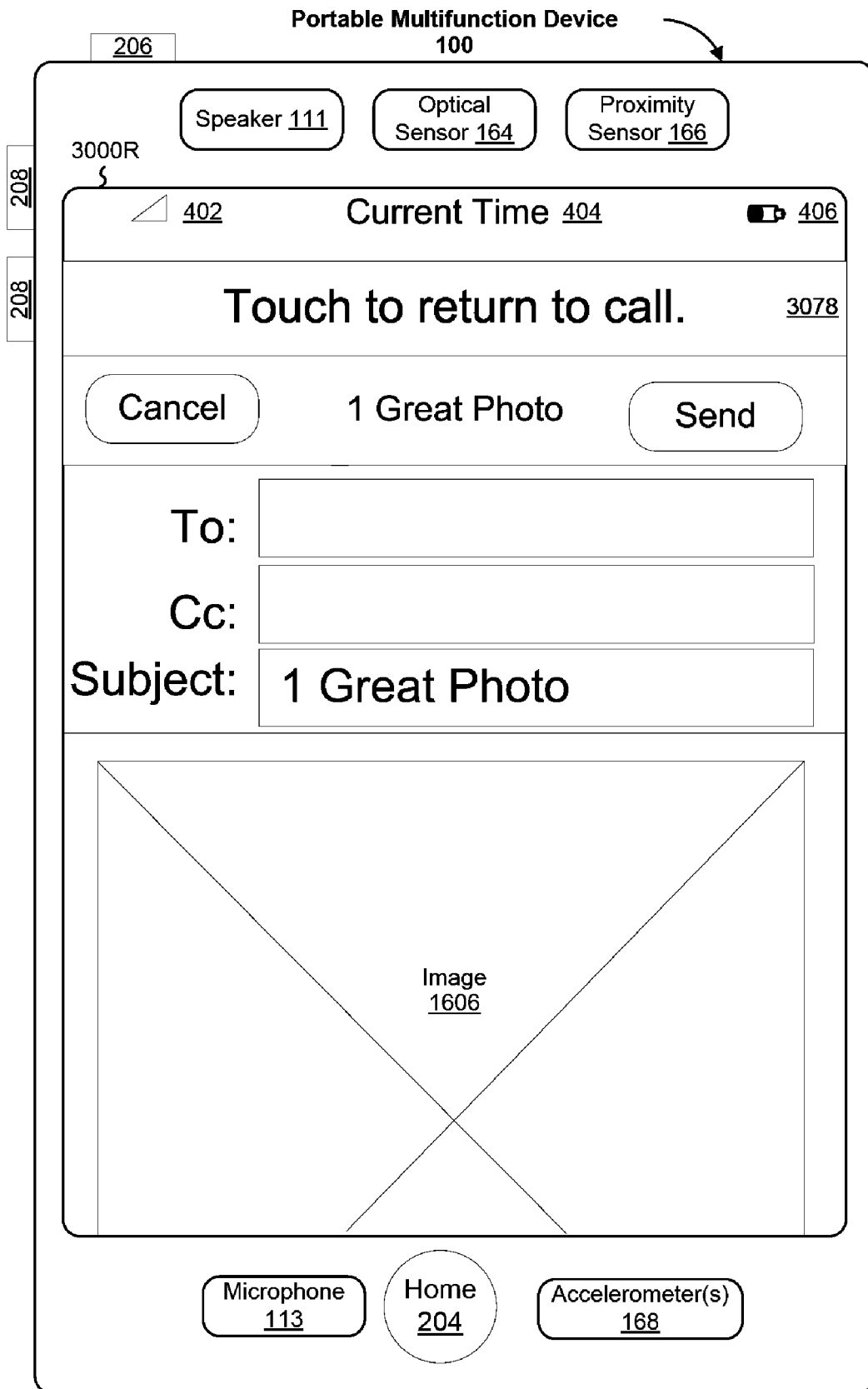


Figure 30R

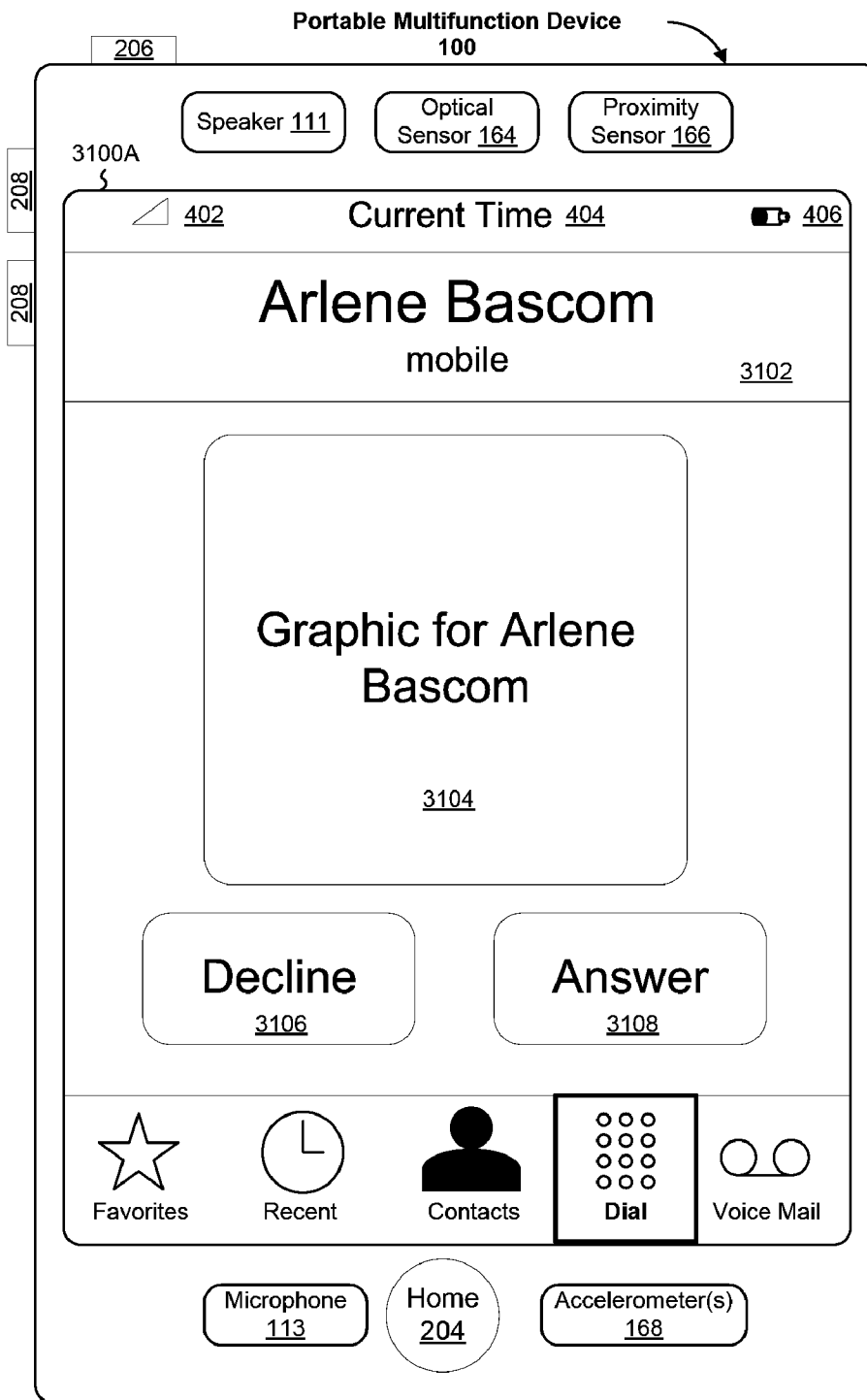


Figure 31A



Figure 31B

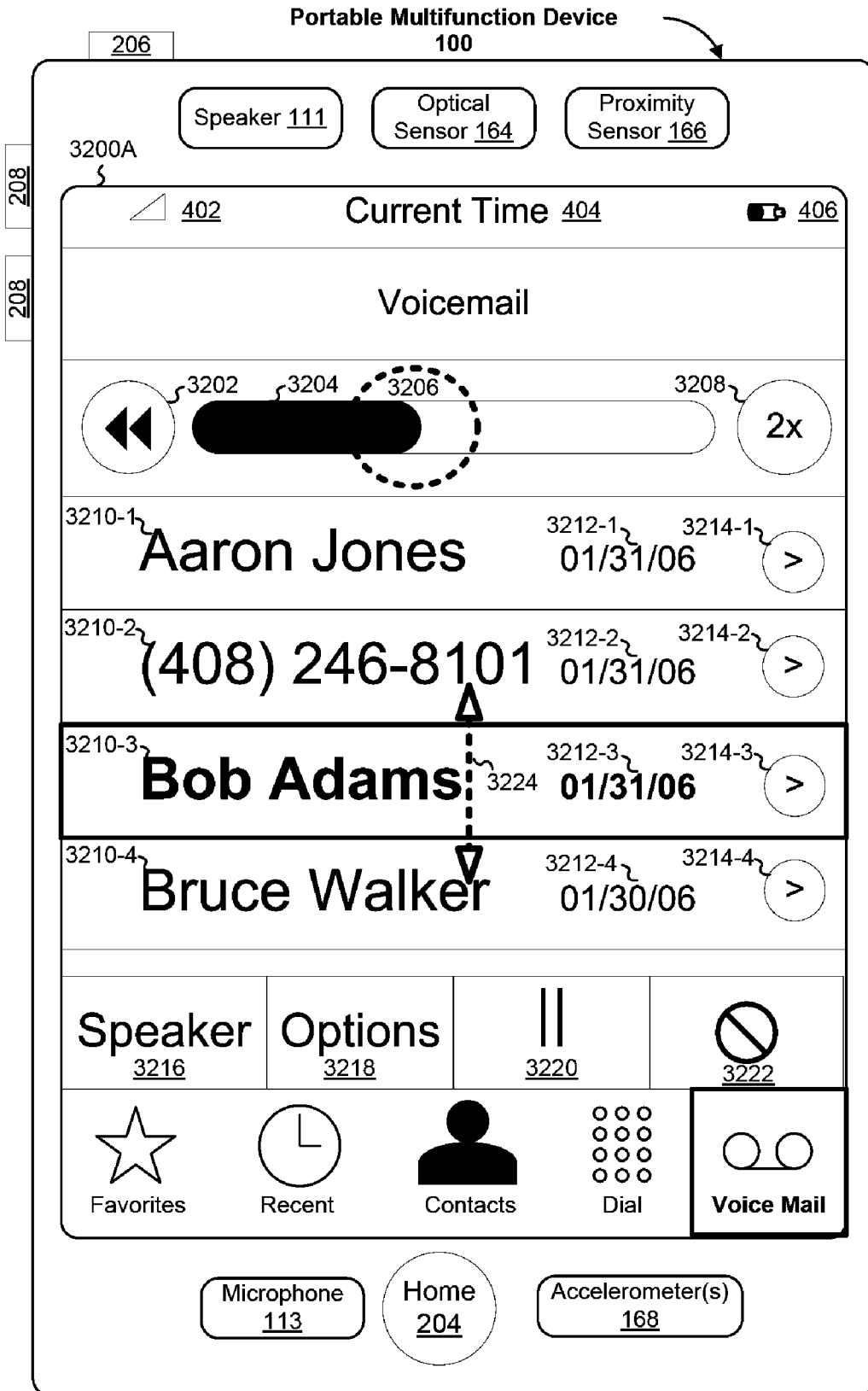


Figure 32A

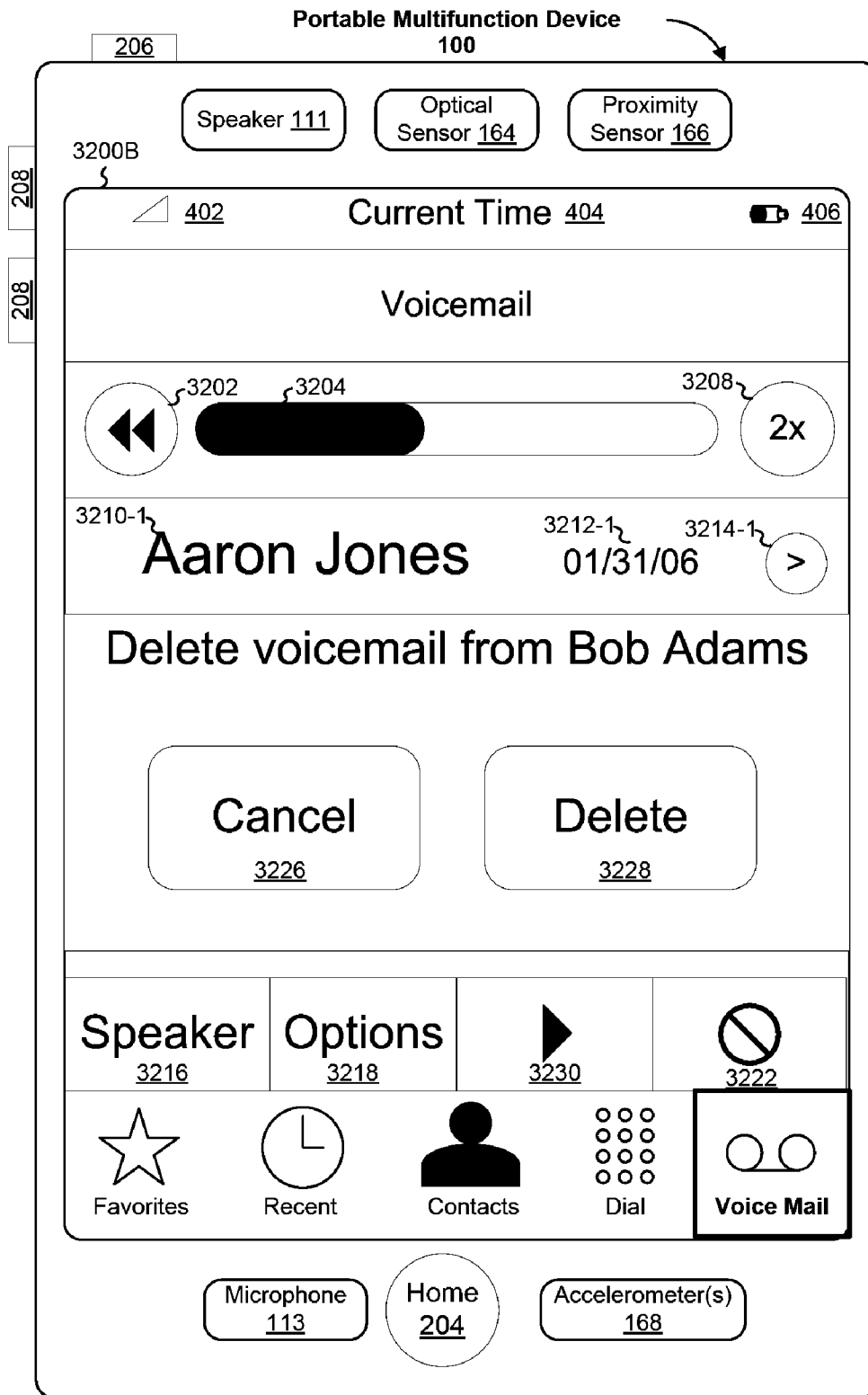


Figure 32B

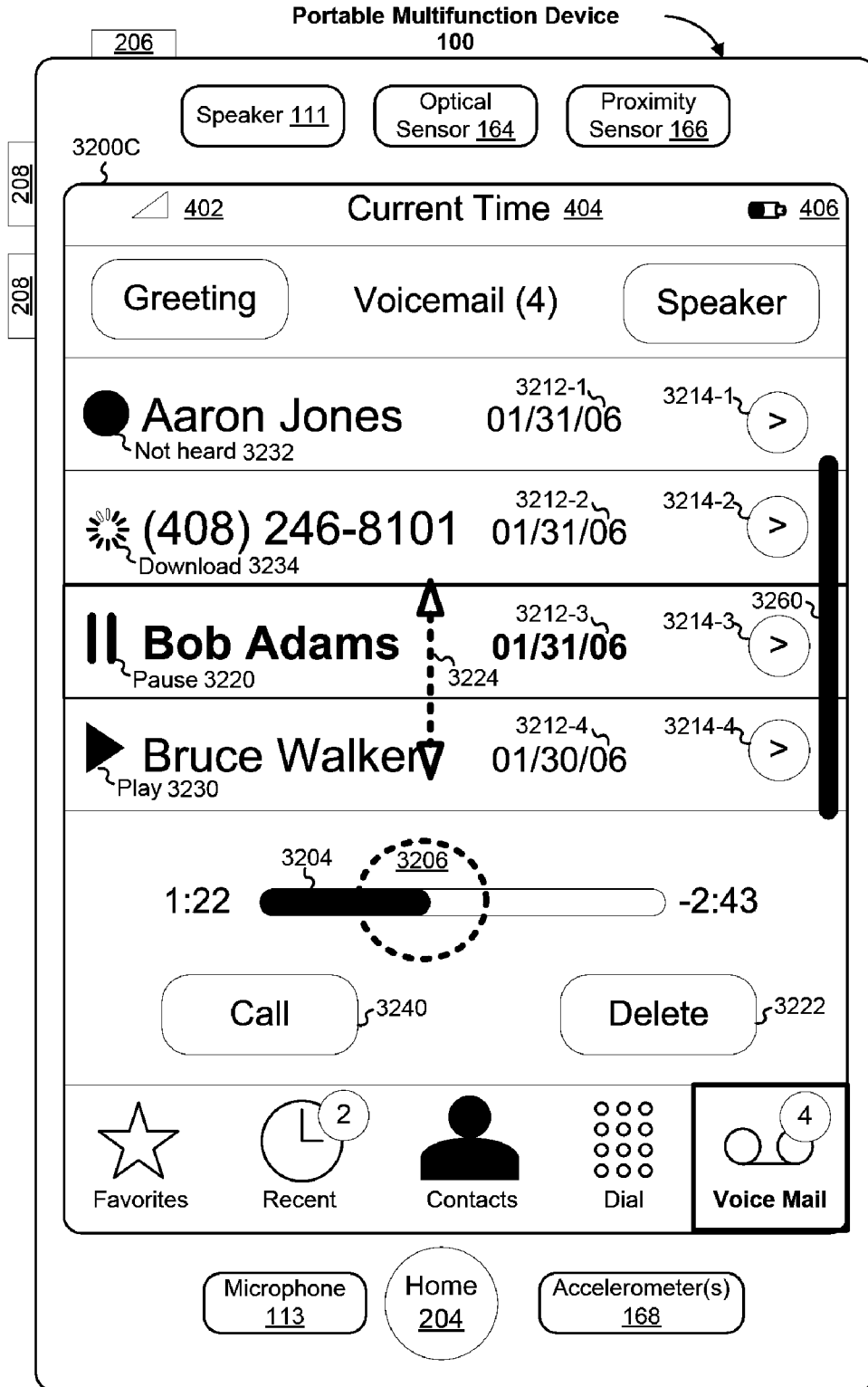


Figure 32C

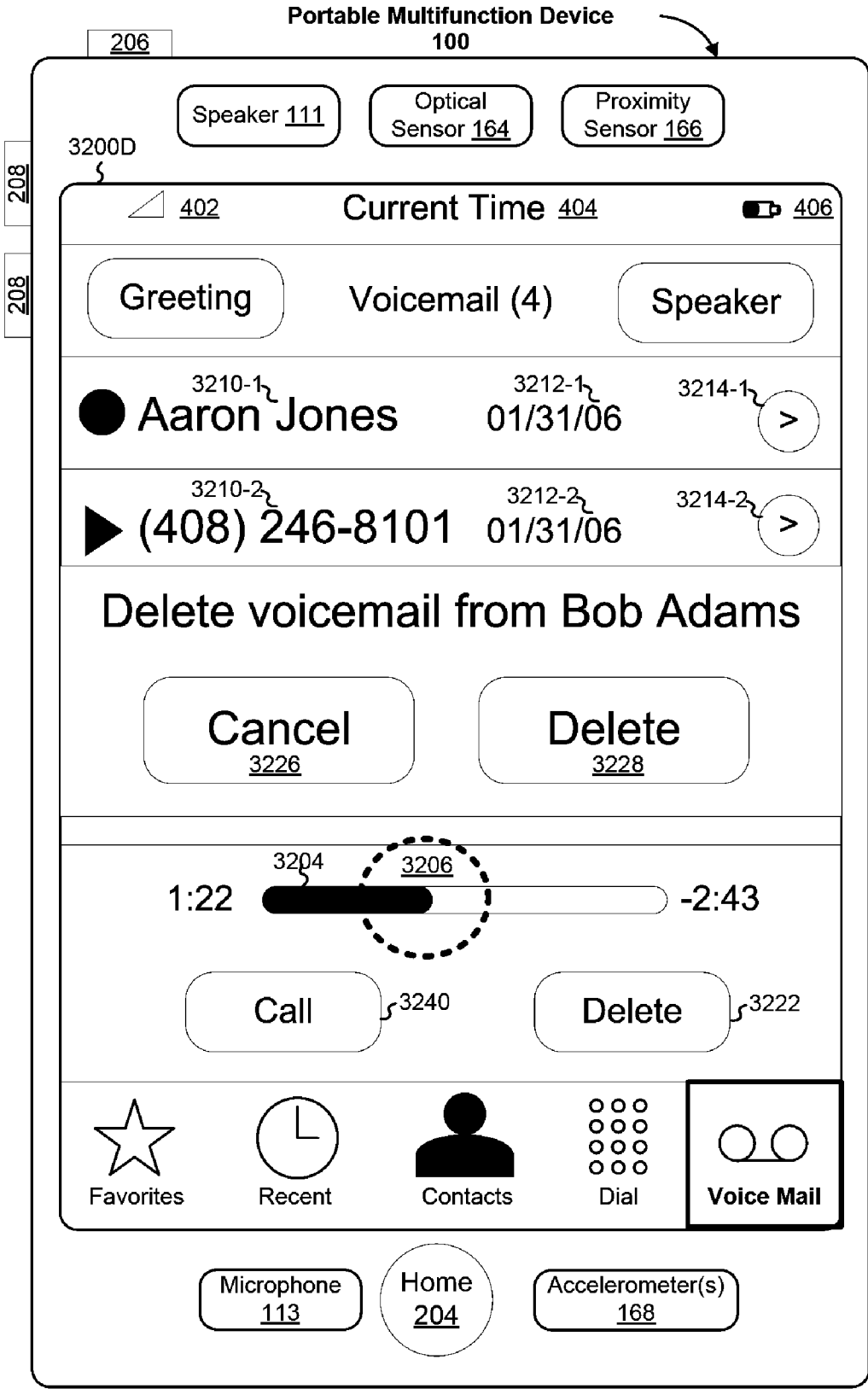


Figure 32D

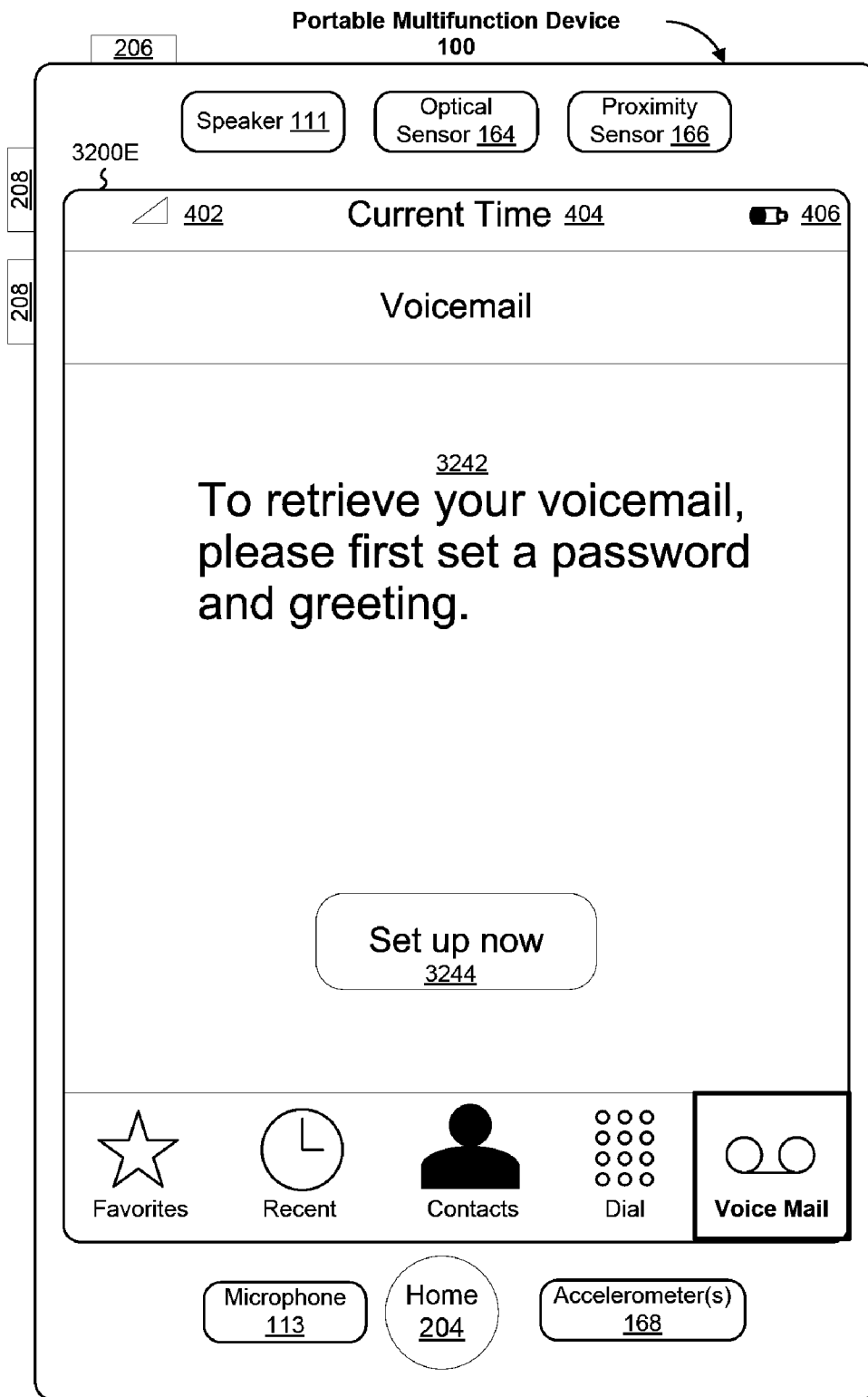


Figure 32E

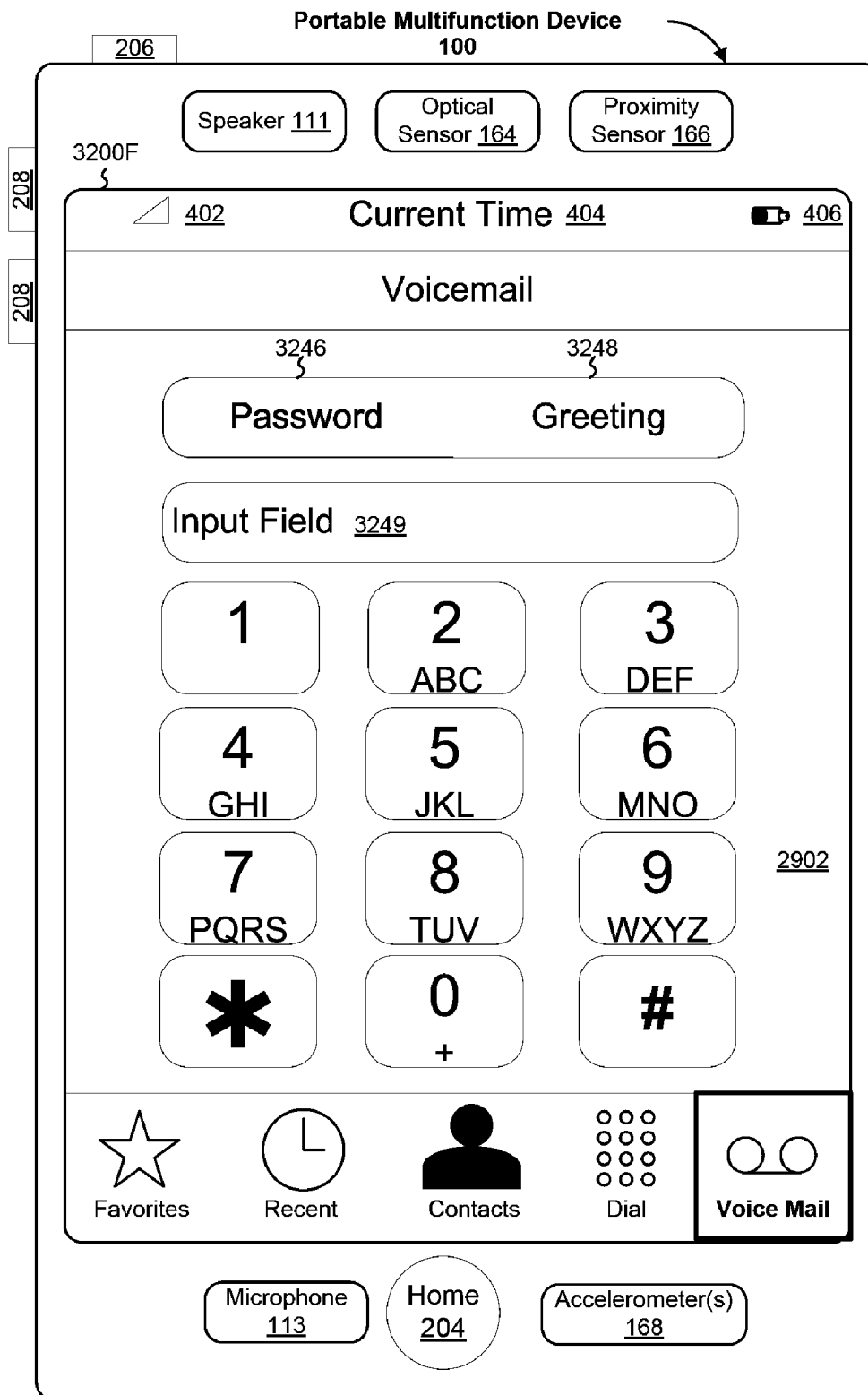


Figure 32F

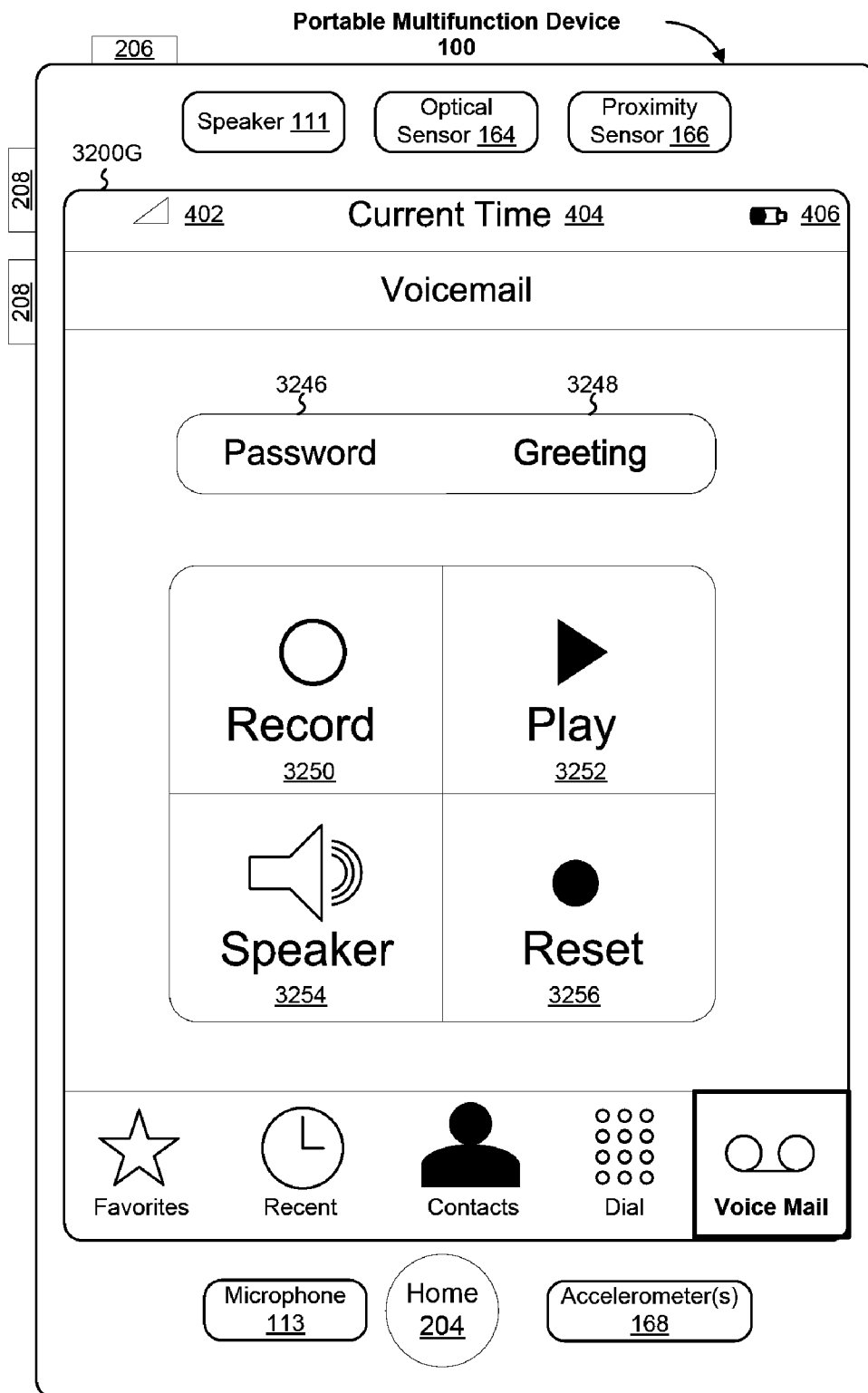


Figure 32G

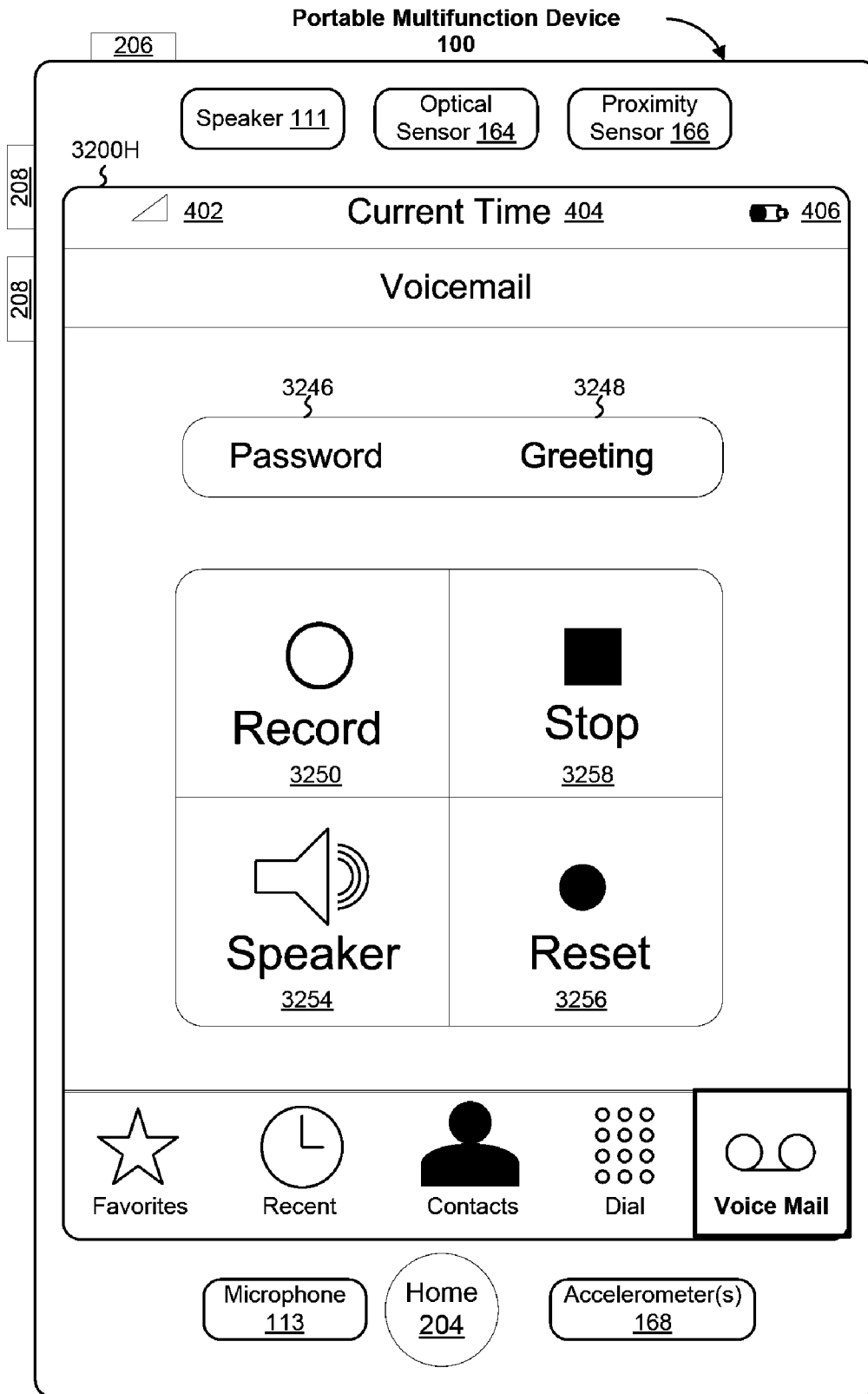


Figure 32H



Figure 33

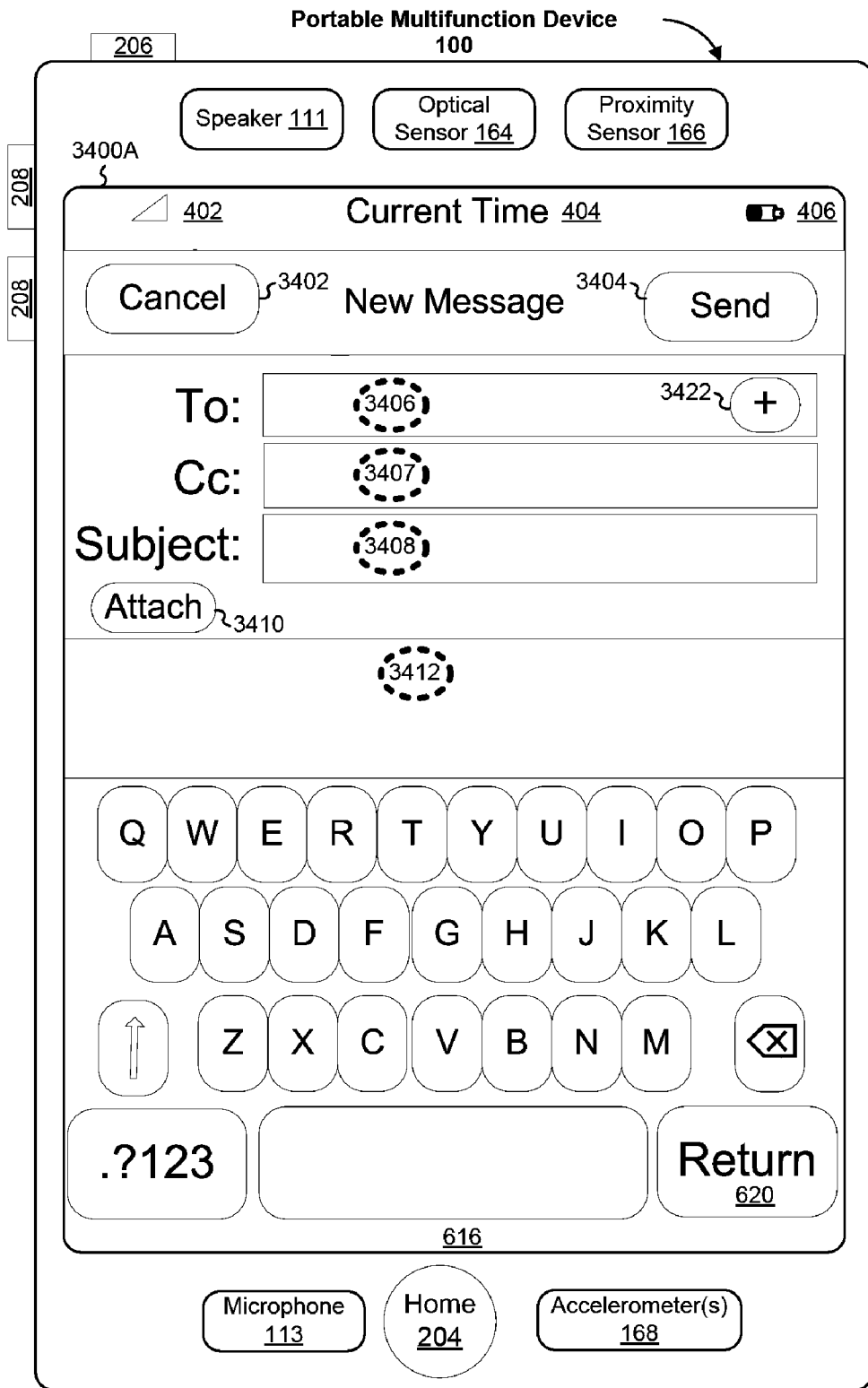


Figure 34A

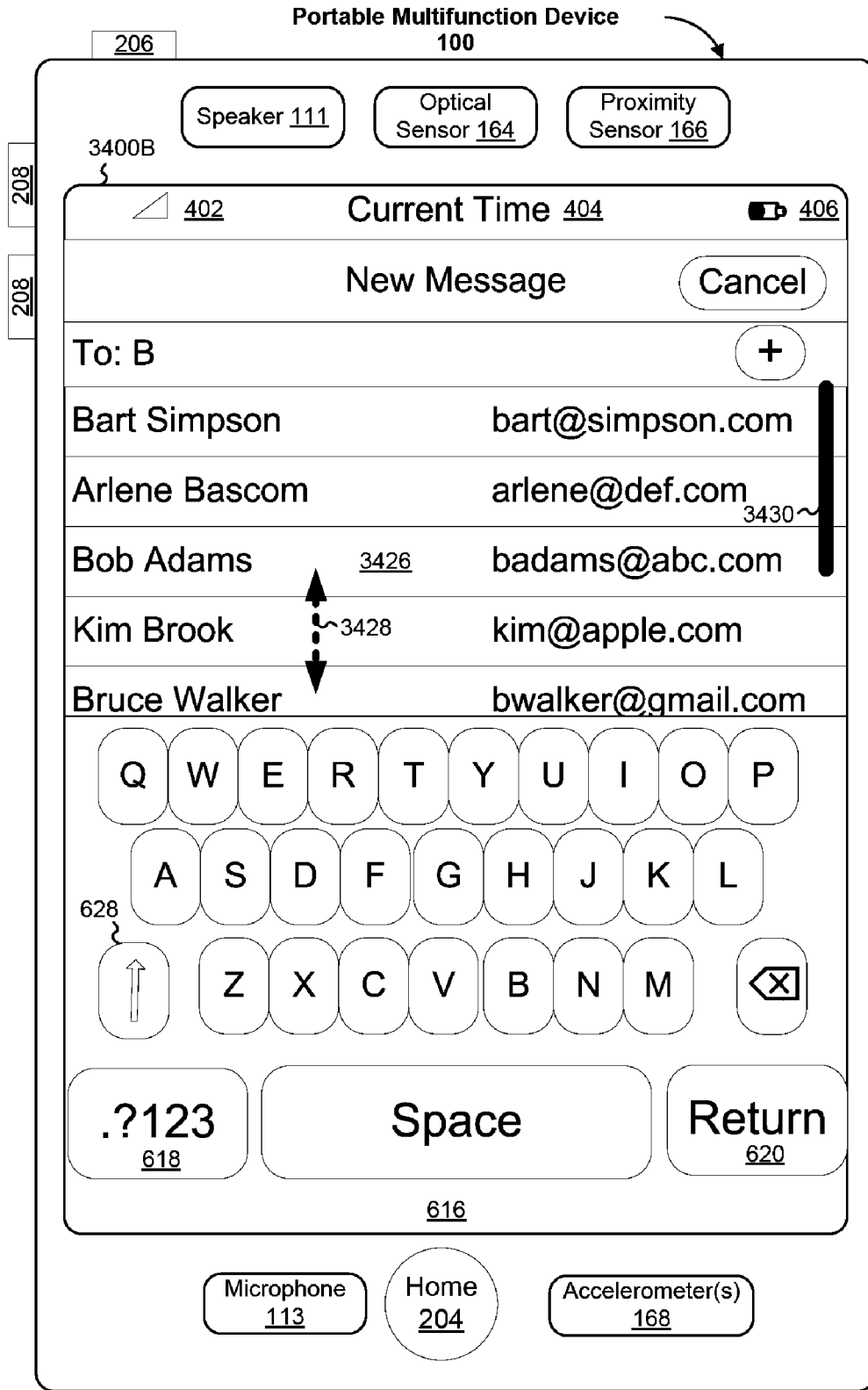


Figure 34B



Figure 34C

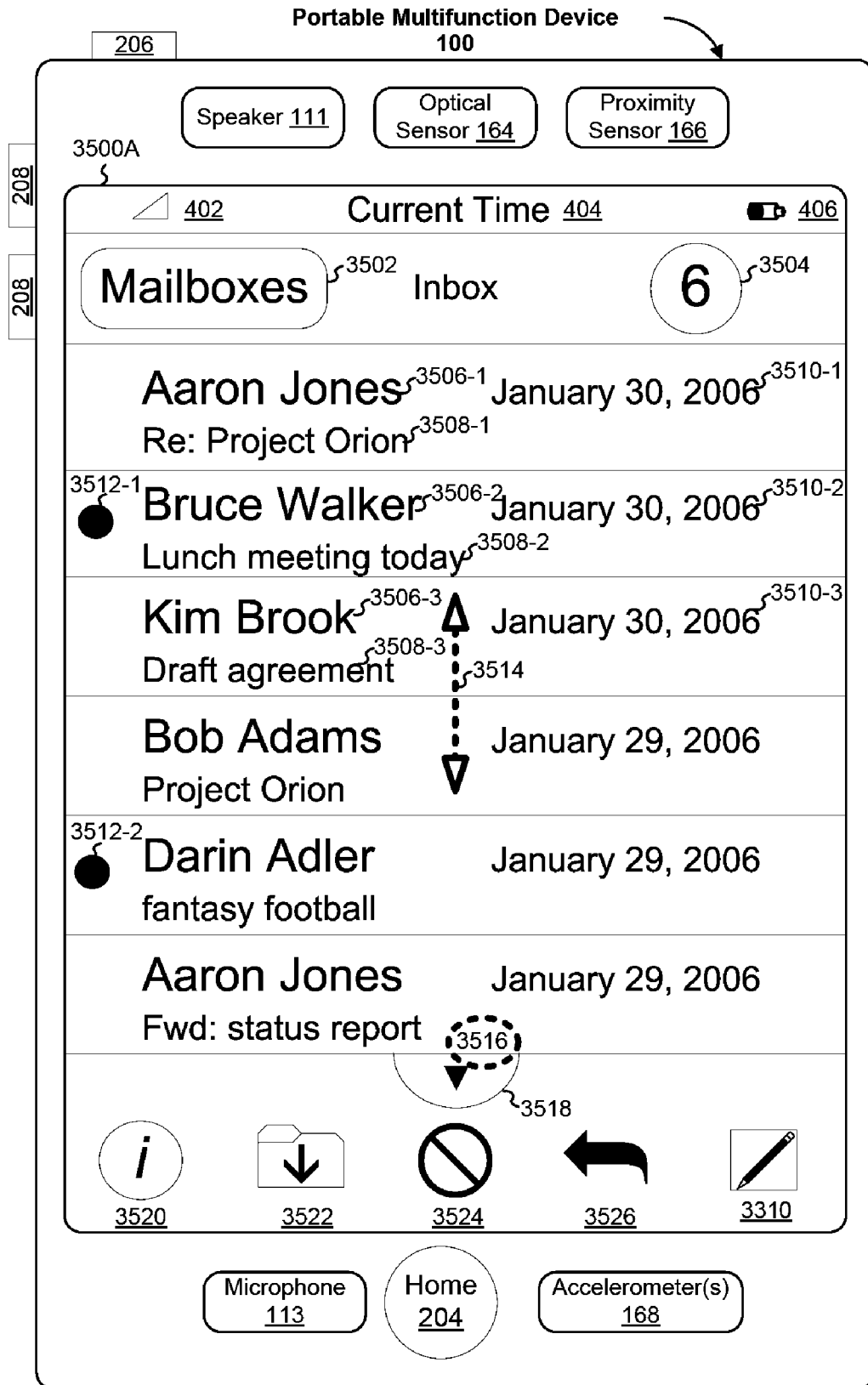


Figure 35A

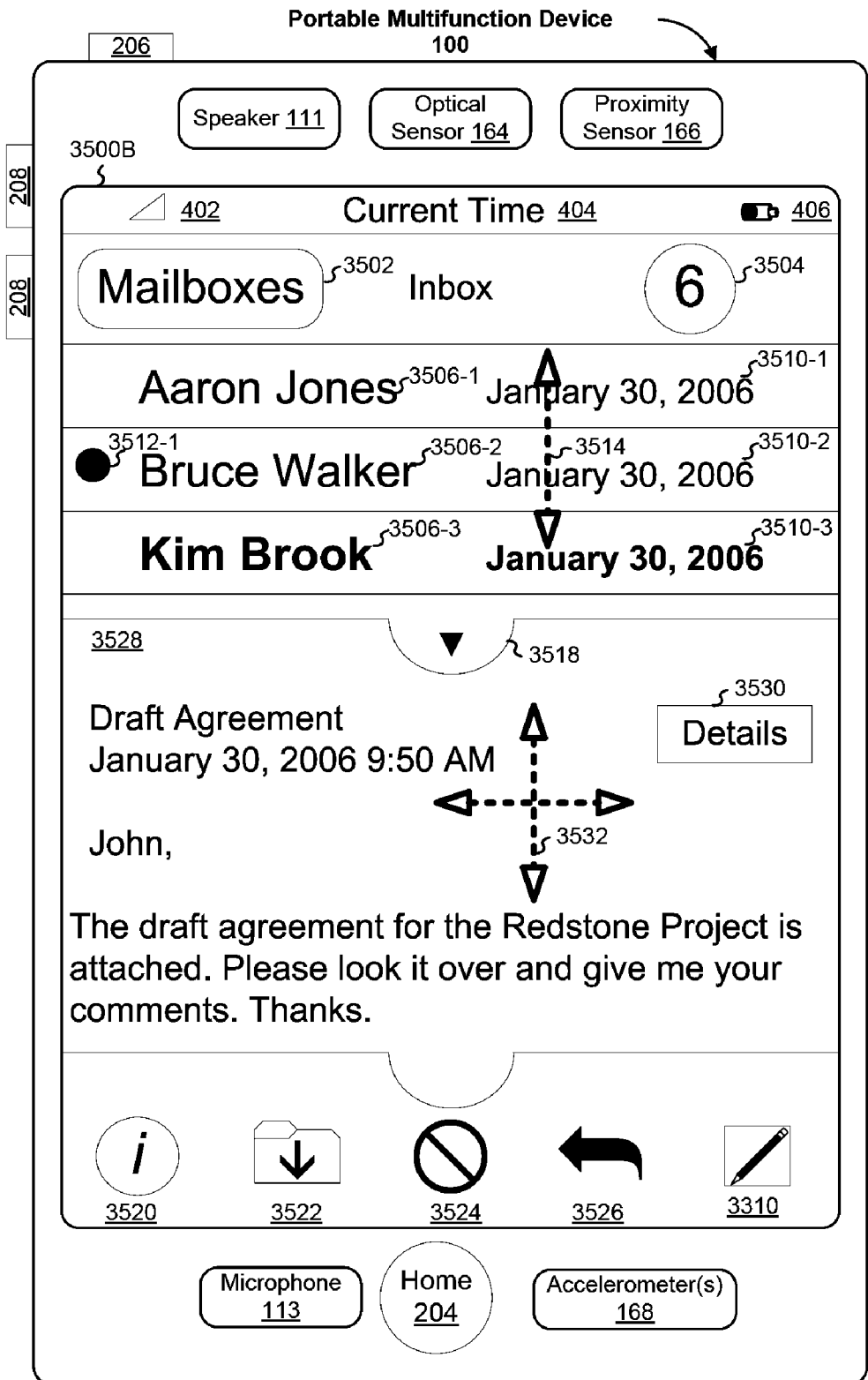


Figure 35B

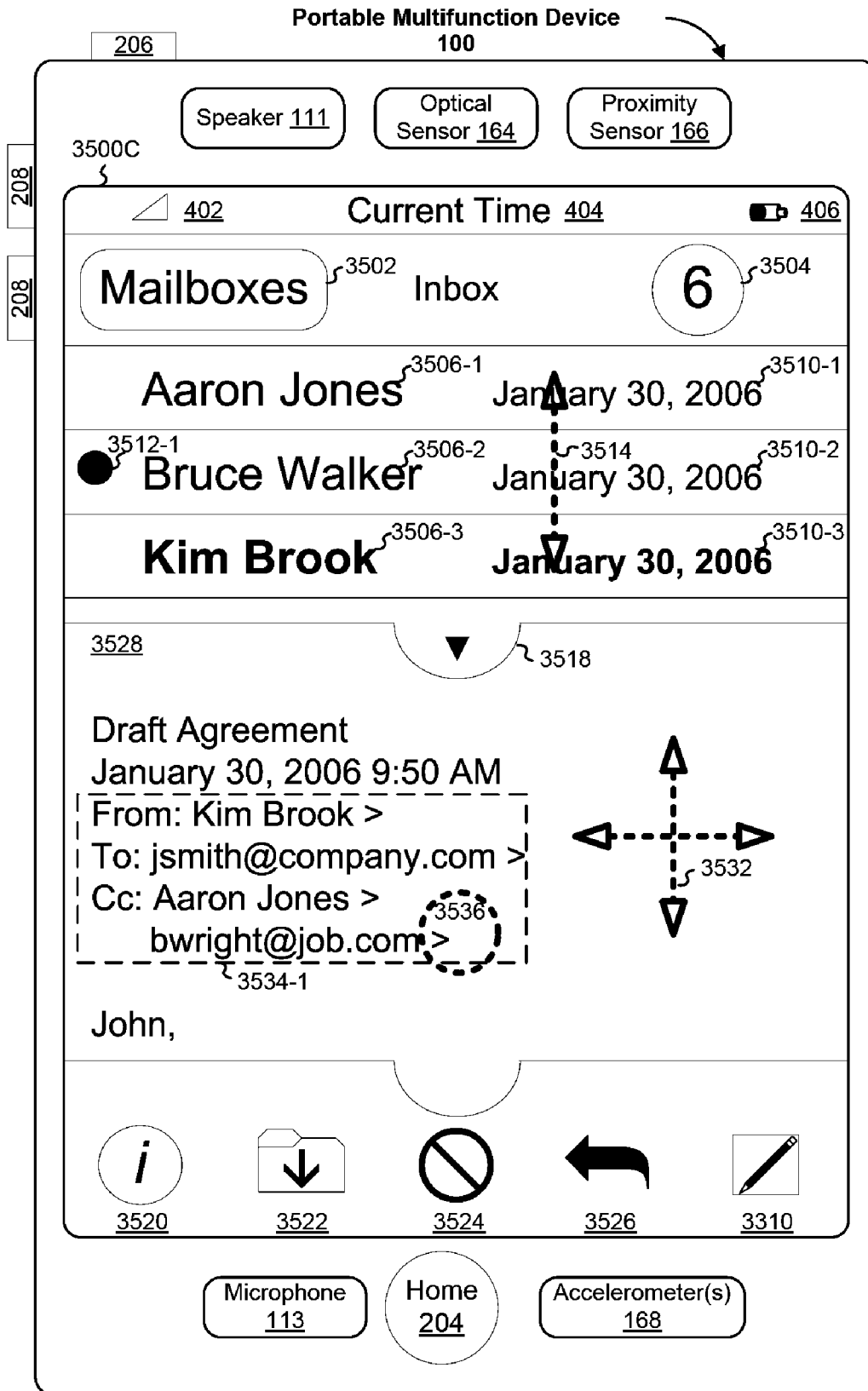


Figure 35C

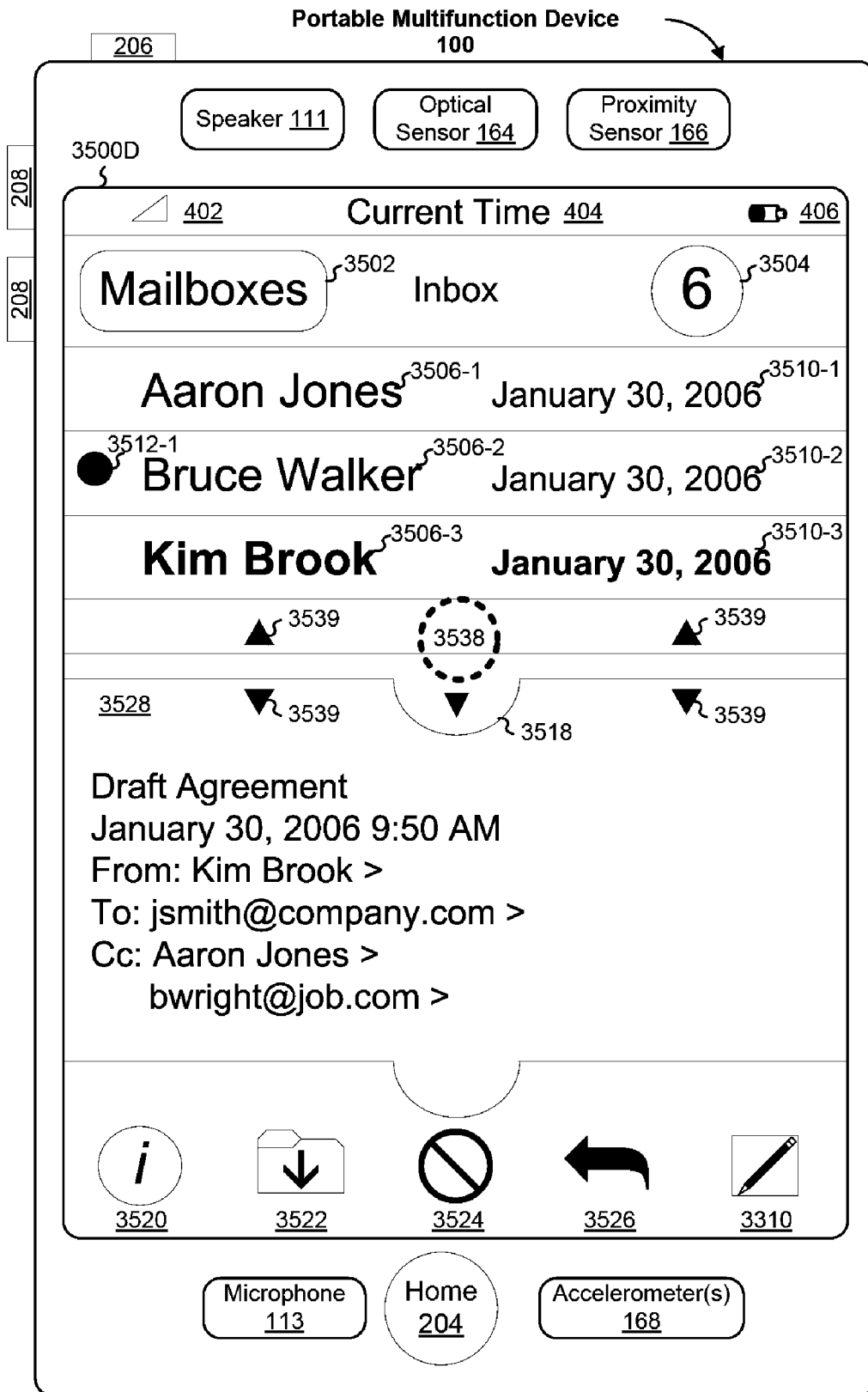


Figure 35D

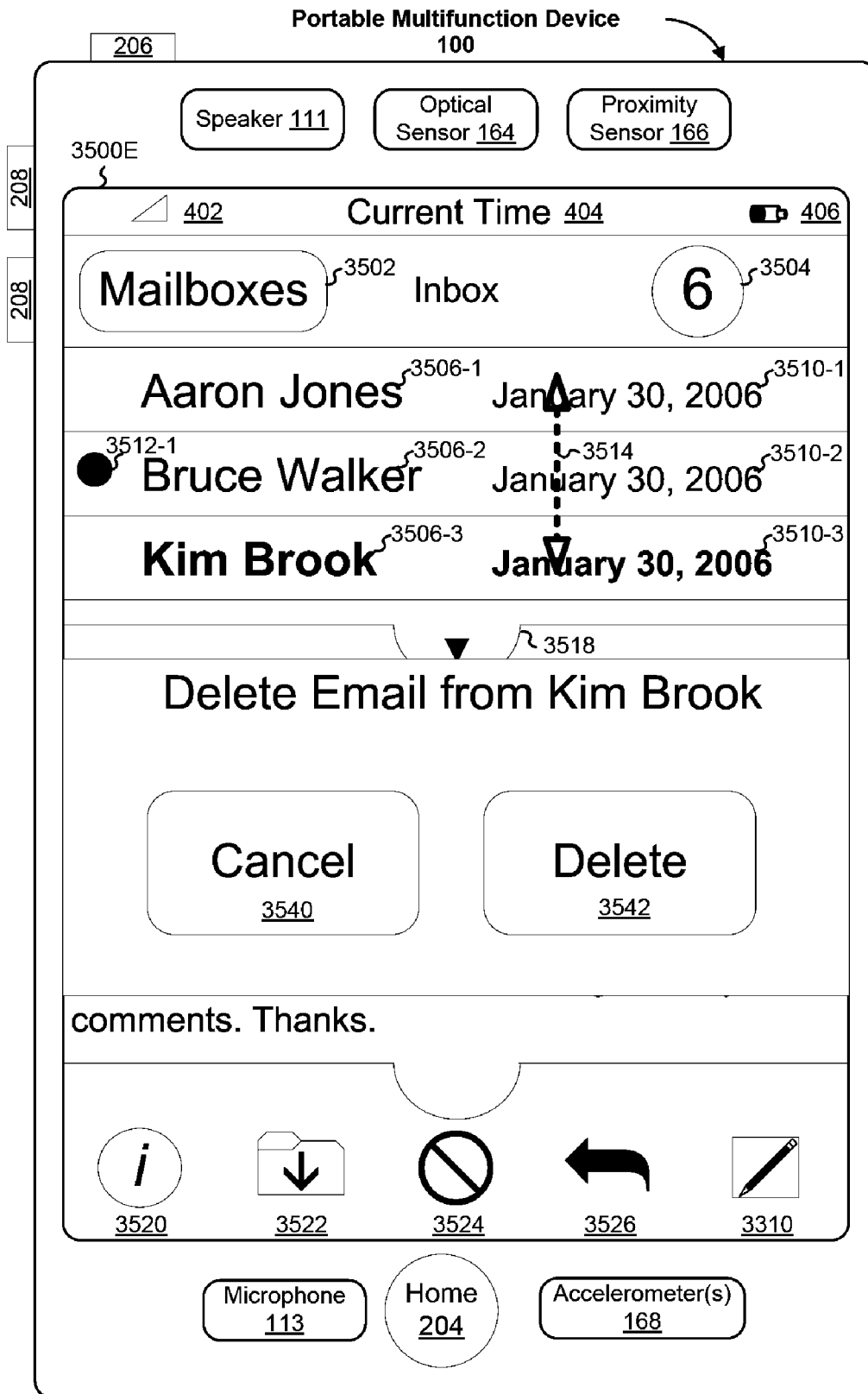


Figure 35E

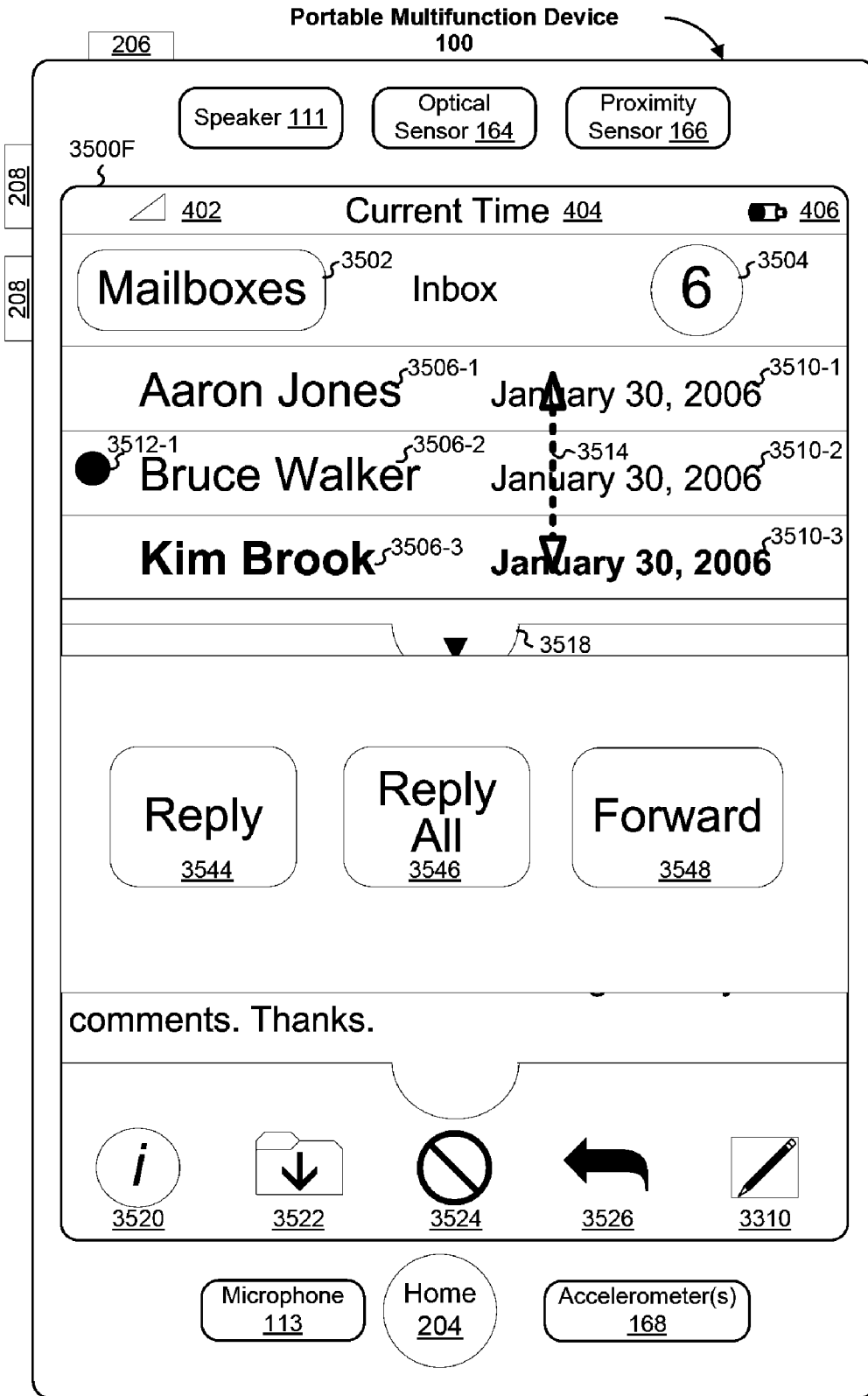


Figure 35F

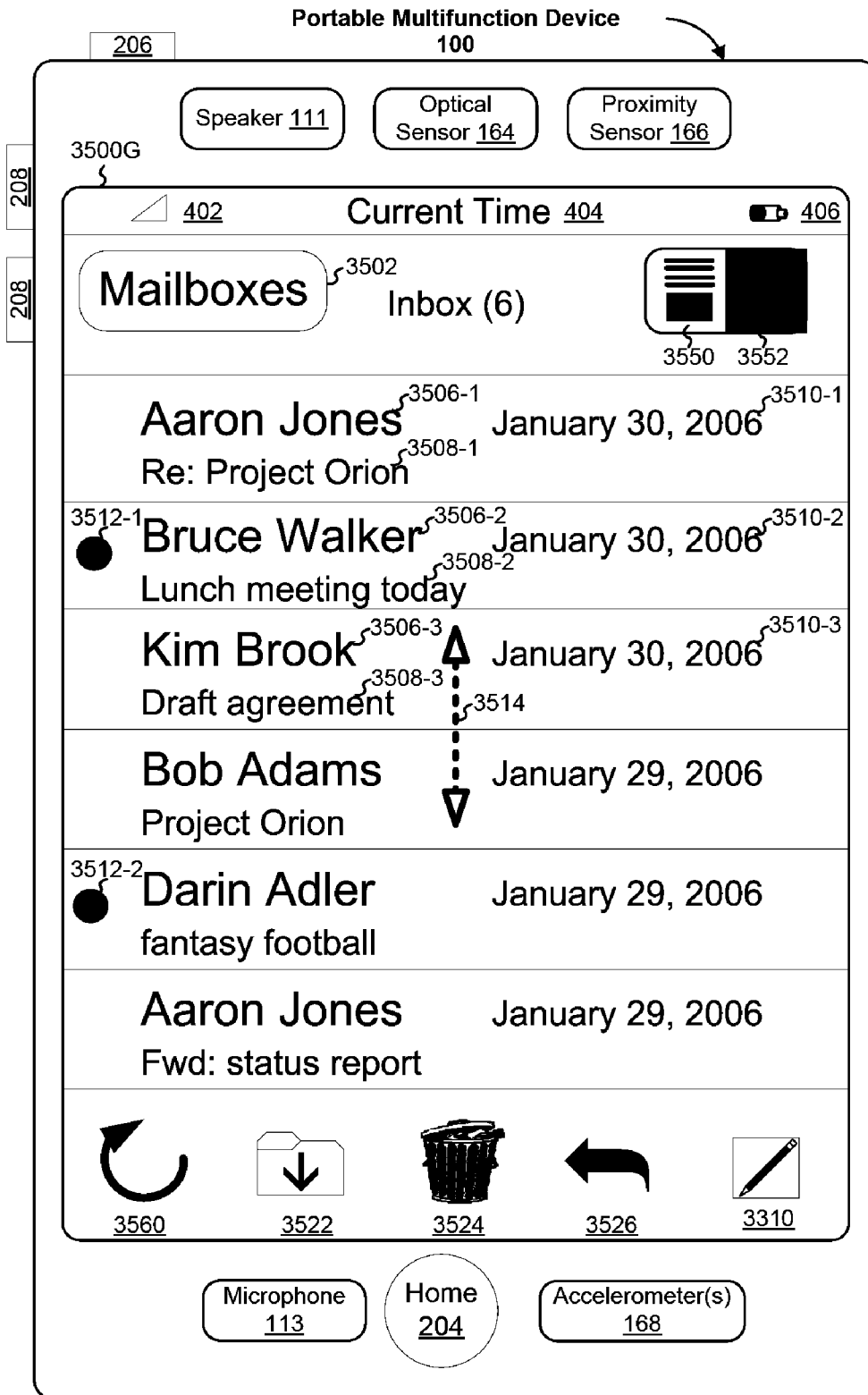


Figure 35G

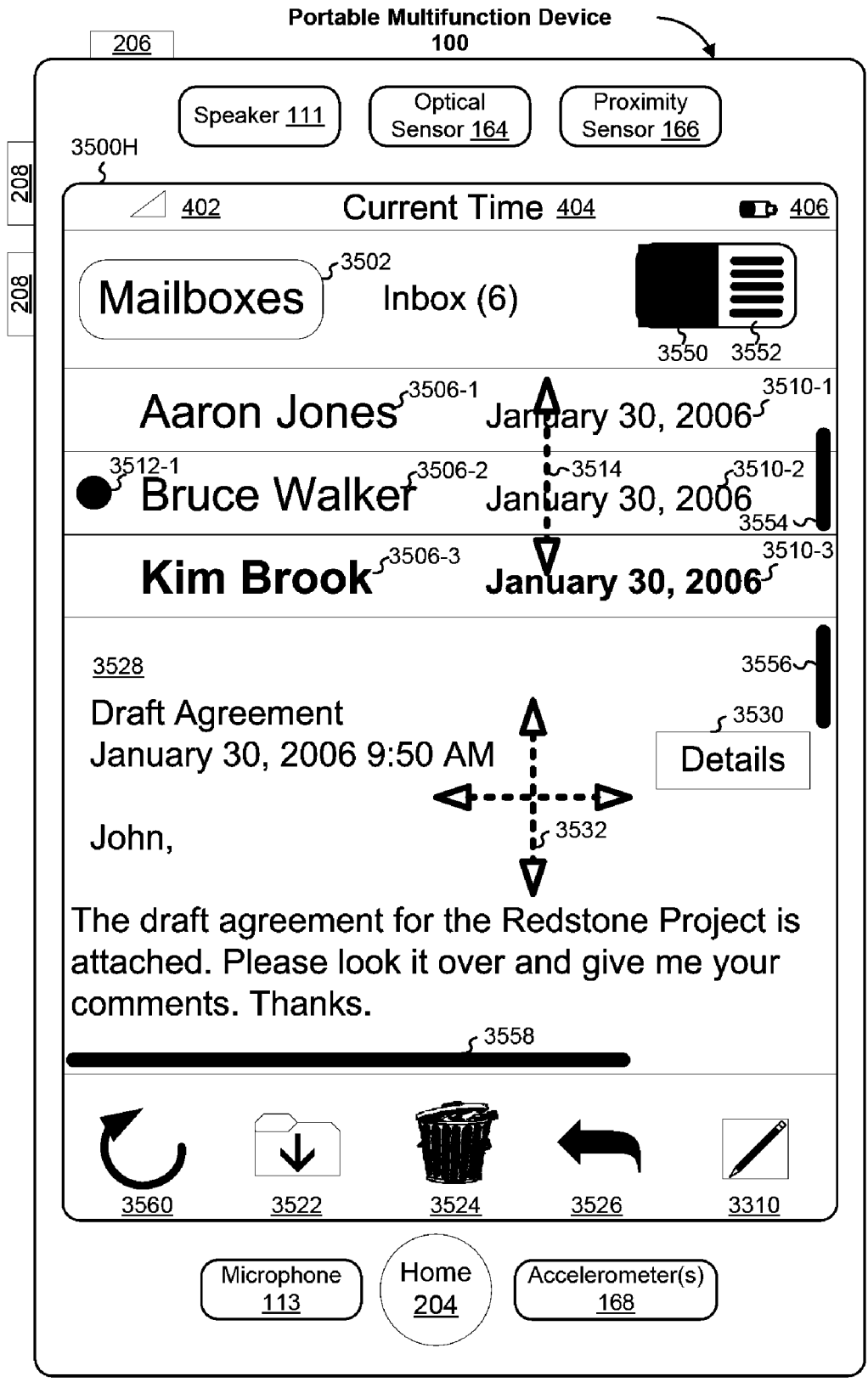


Figure 35H

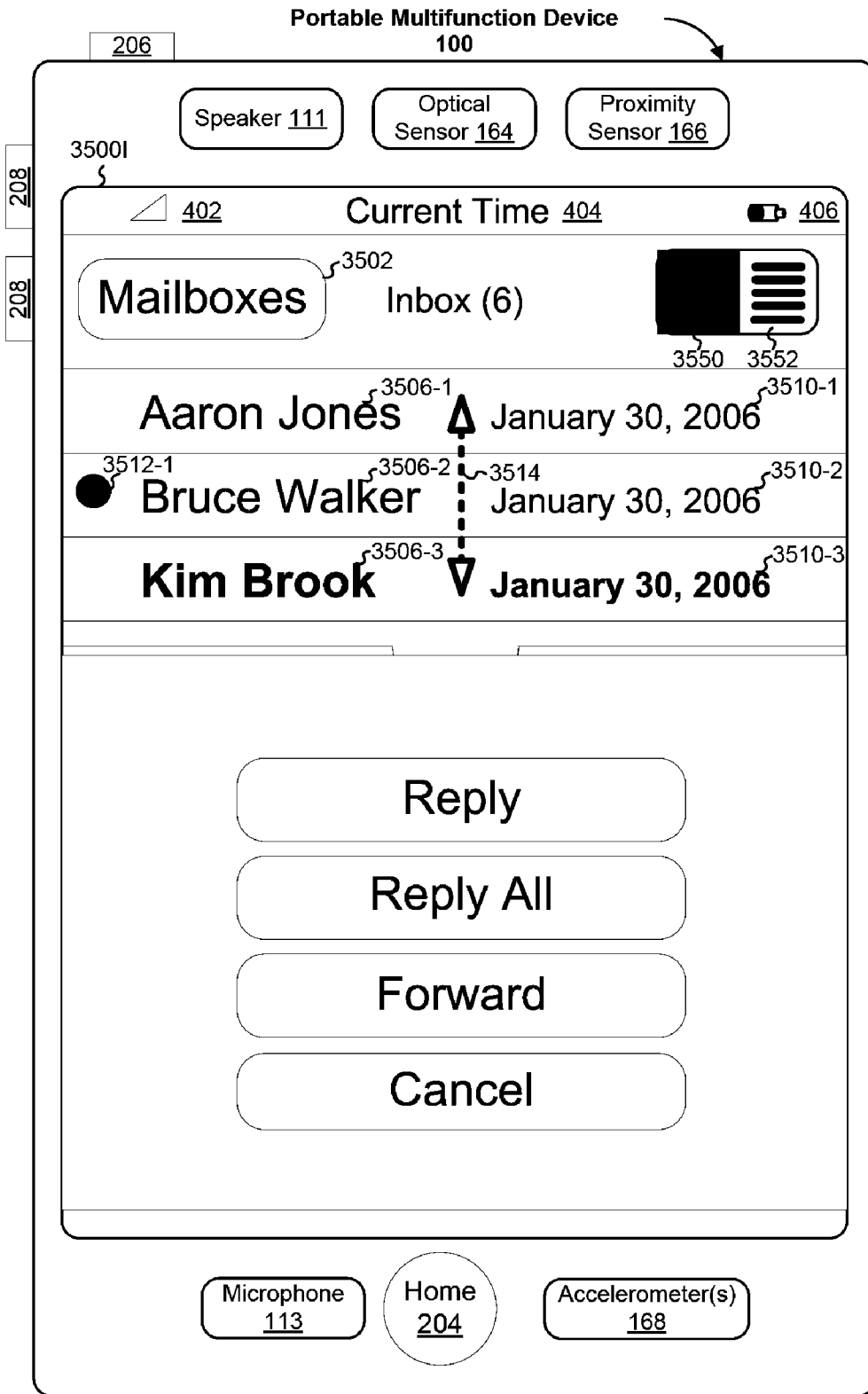


Figure 35I

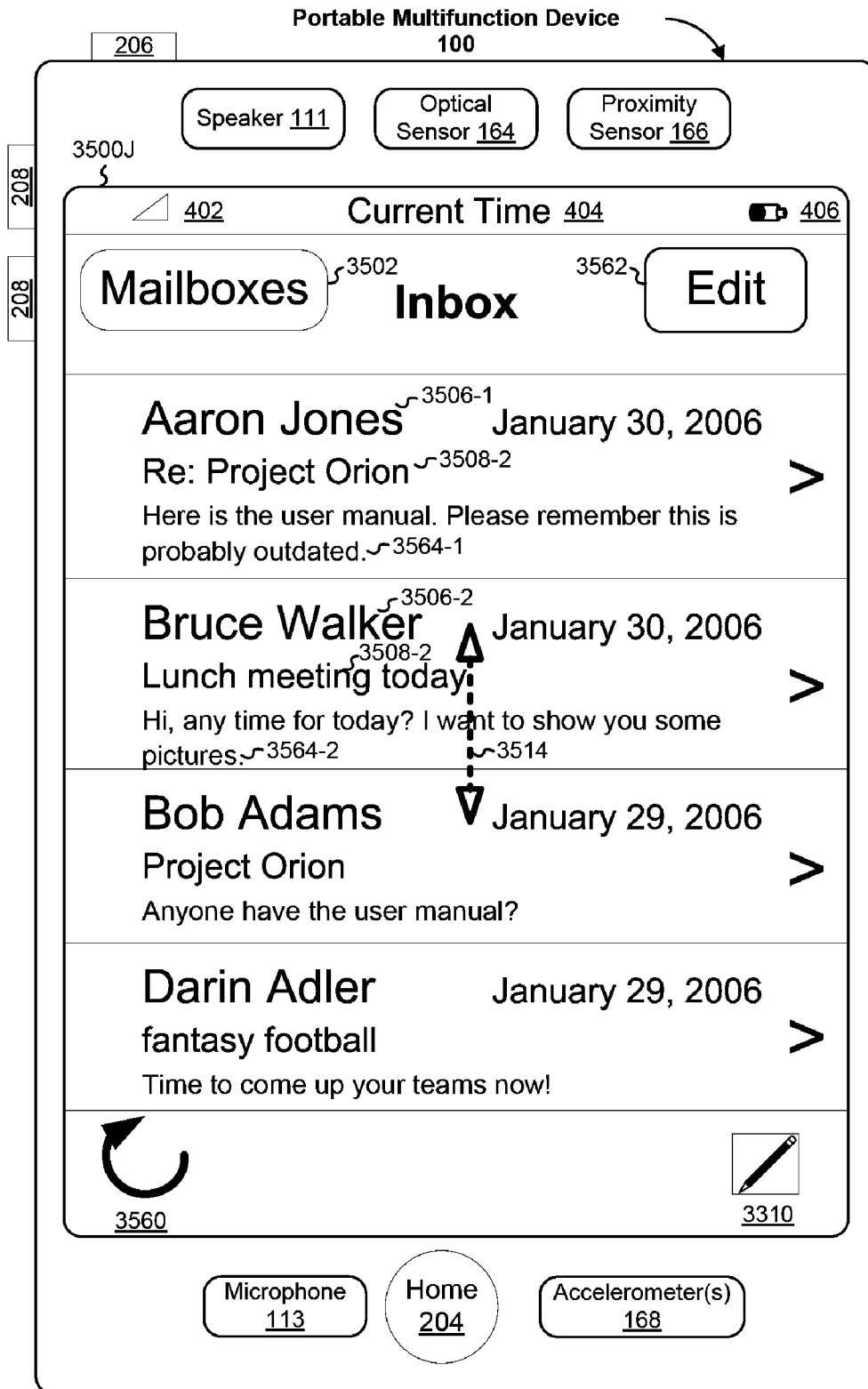


Figure 35J

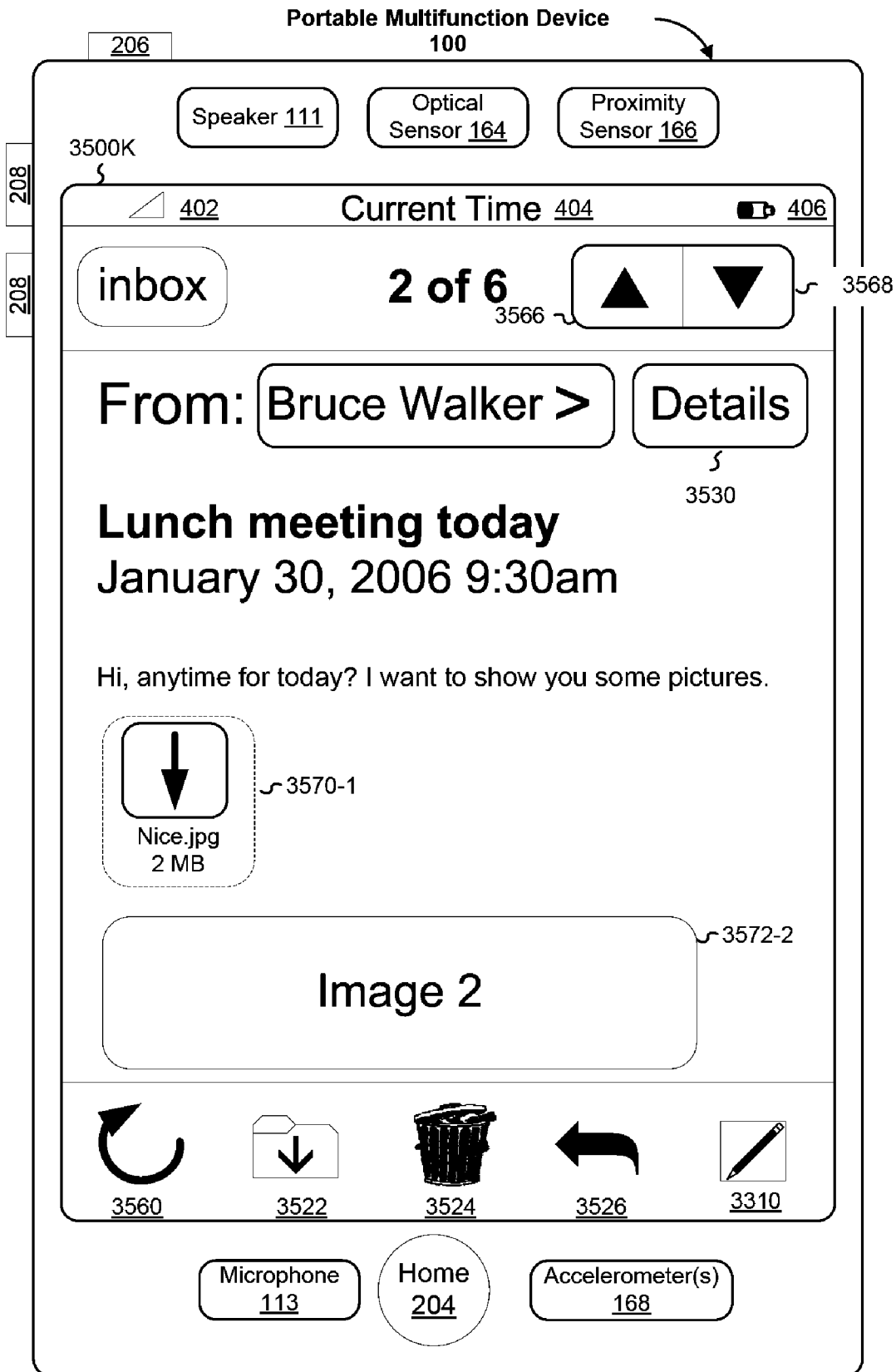


Figure 35K

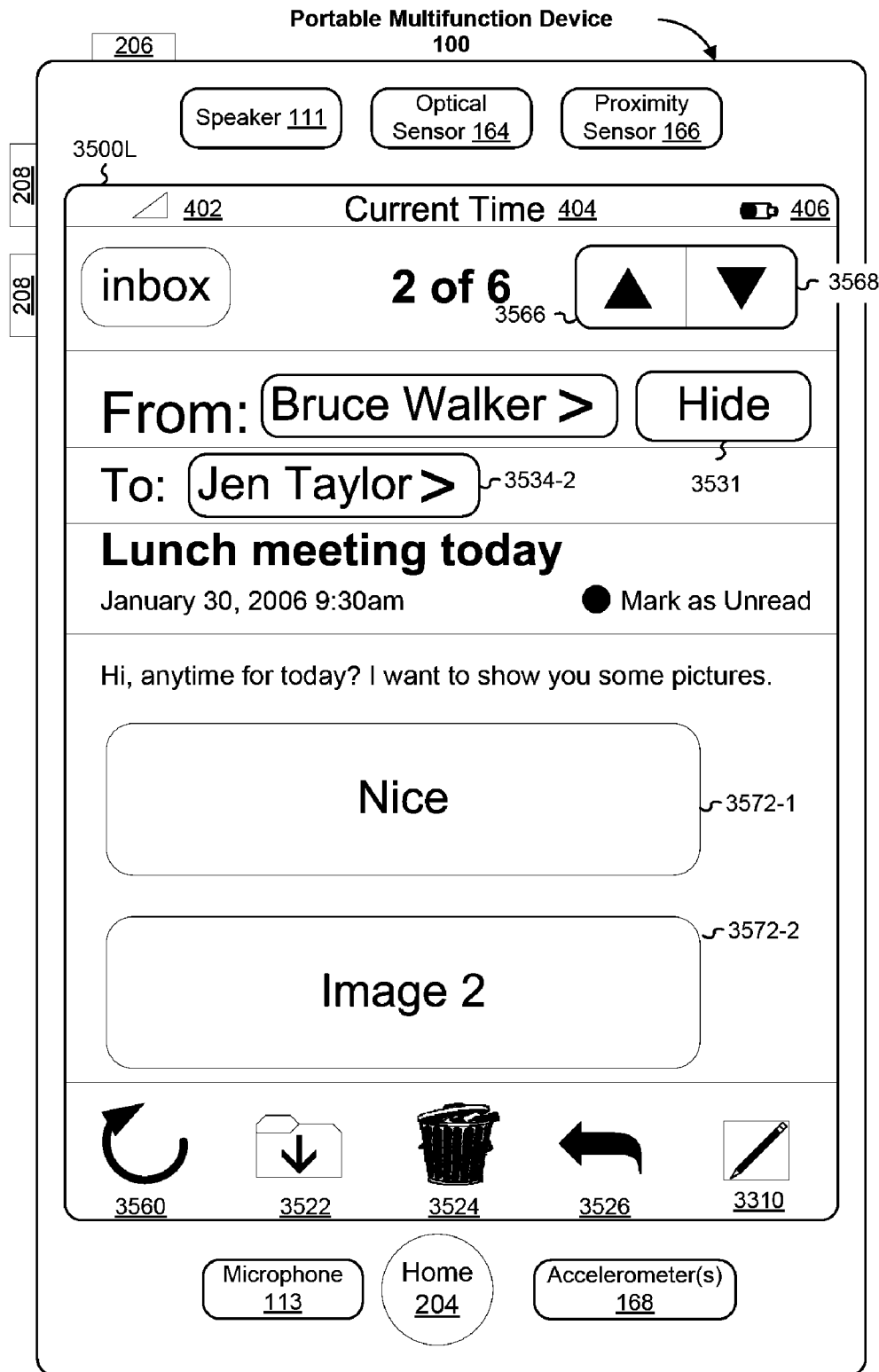


Figure 35L

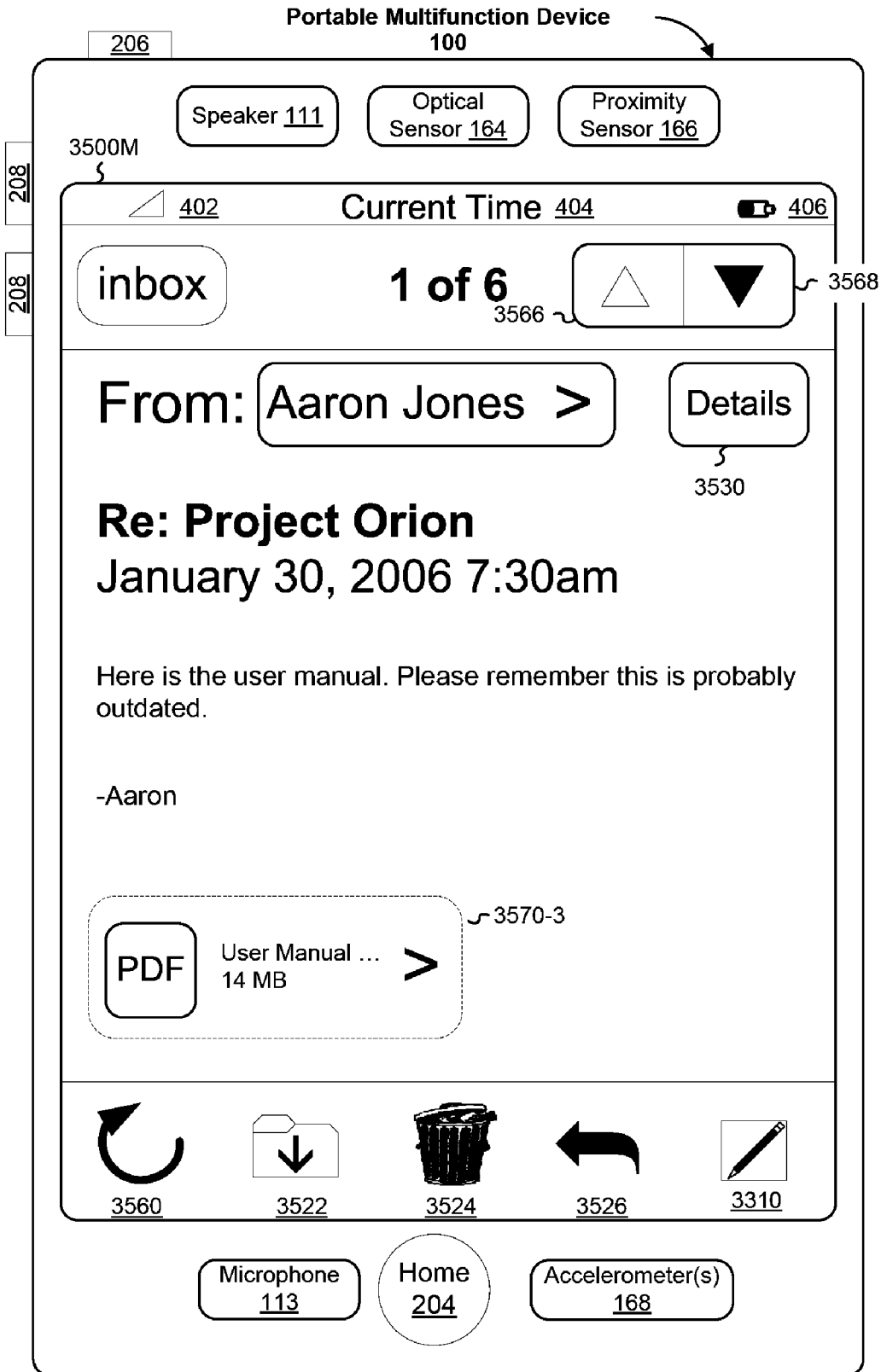


Figure 35M

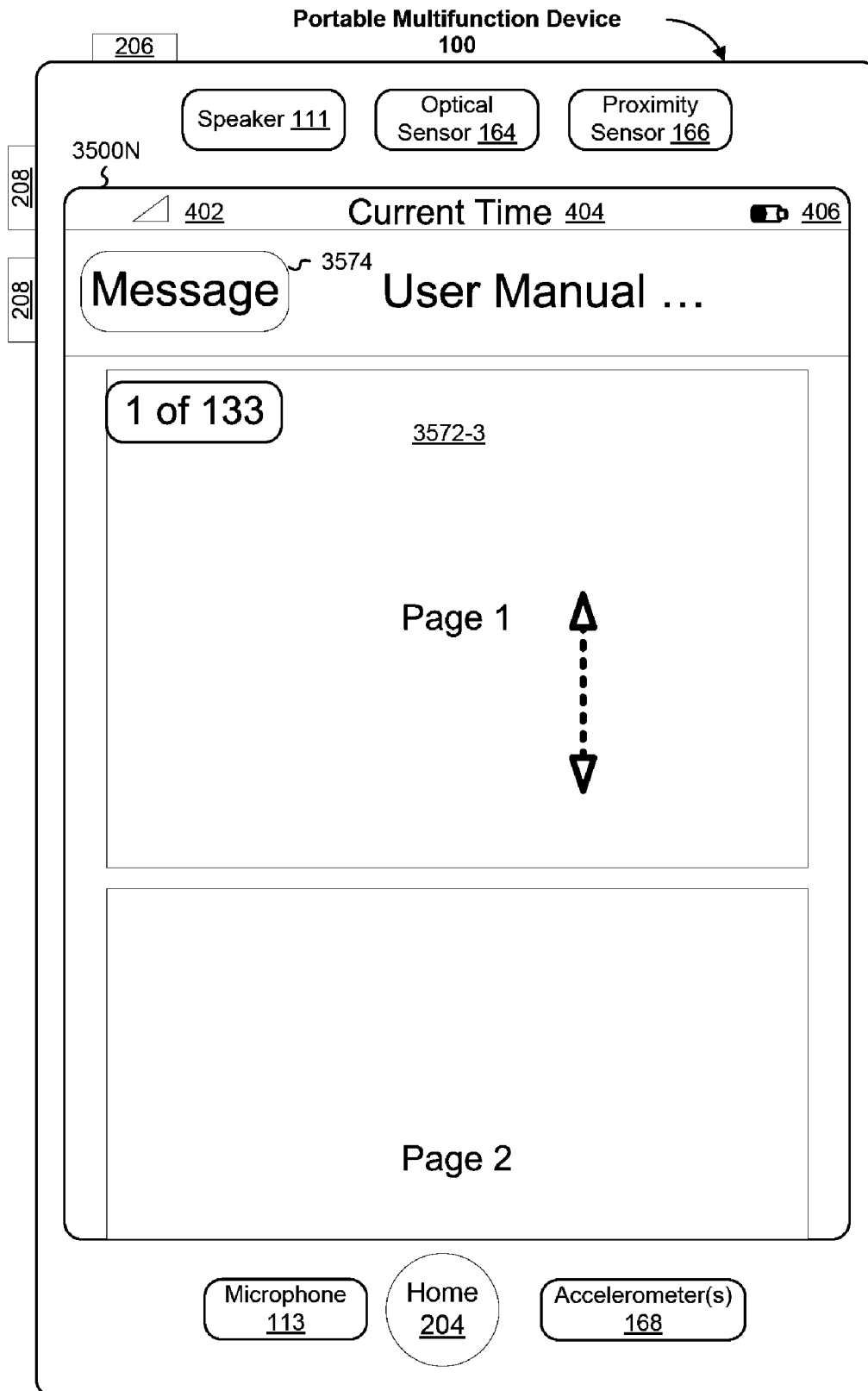


Figure 35N



Figure 350

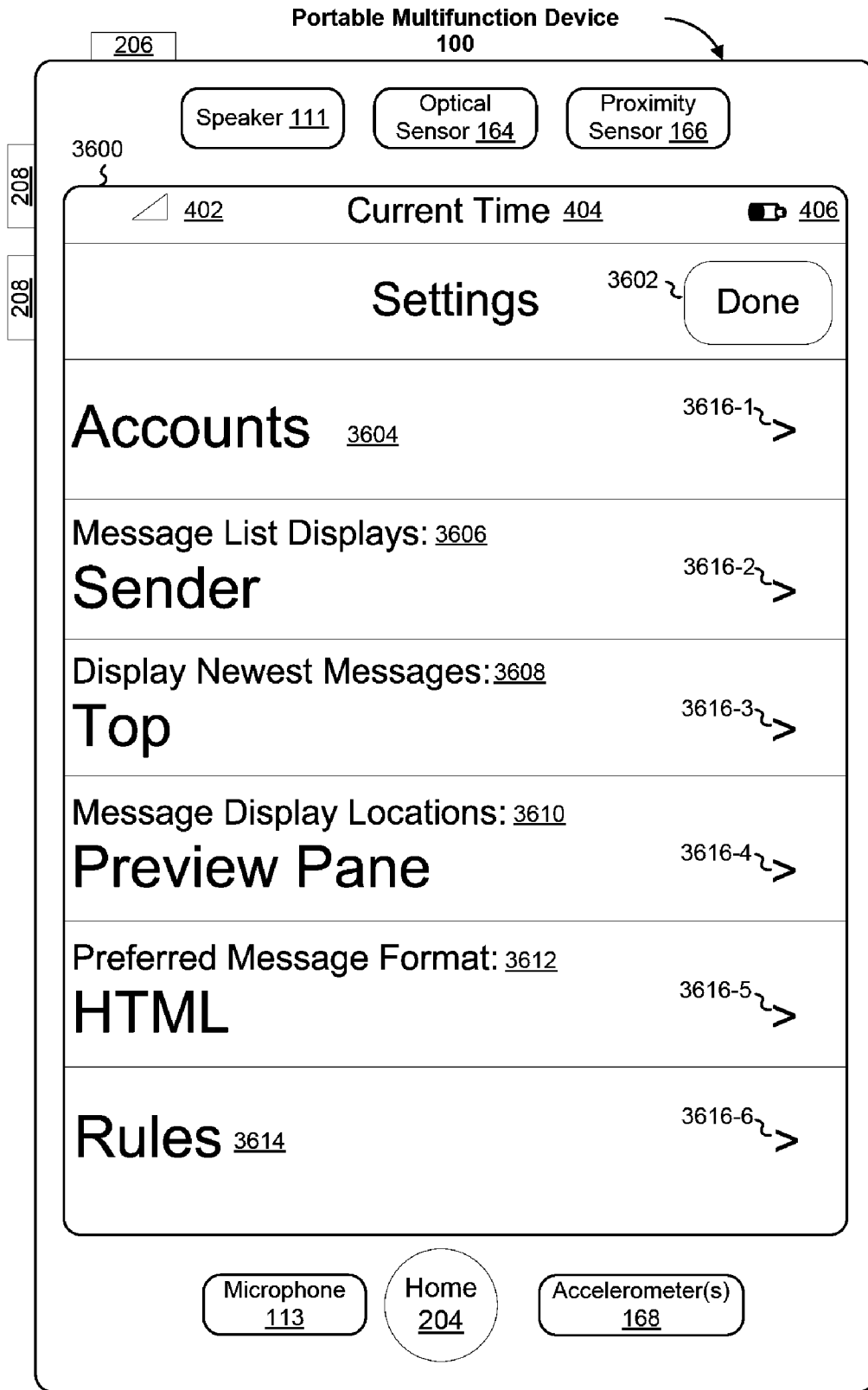


Figure 36

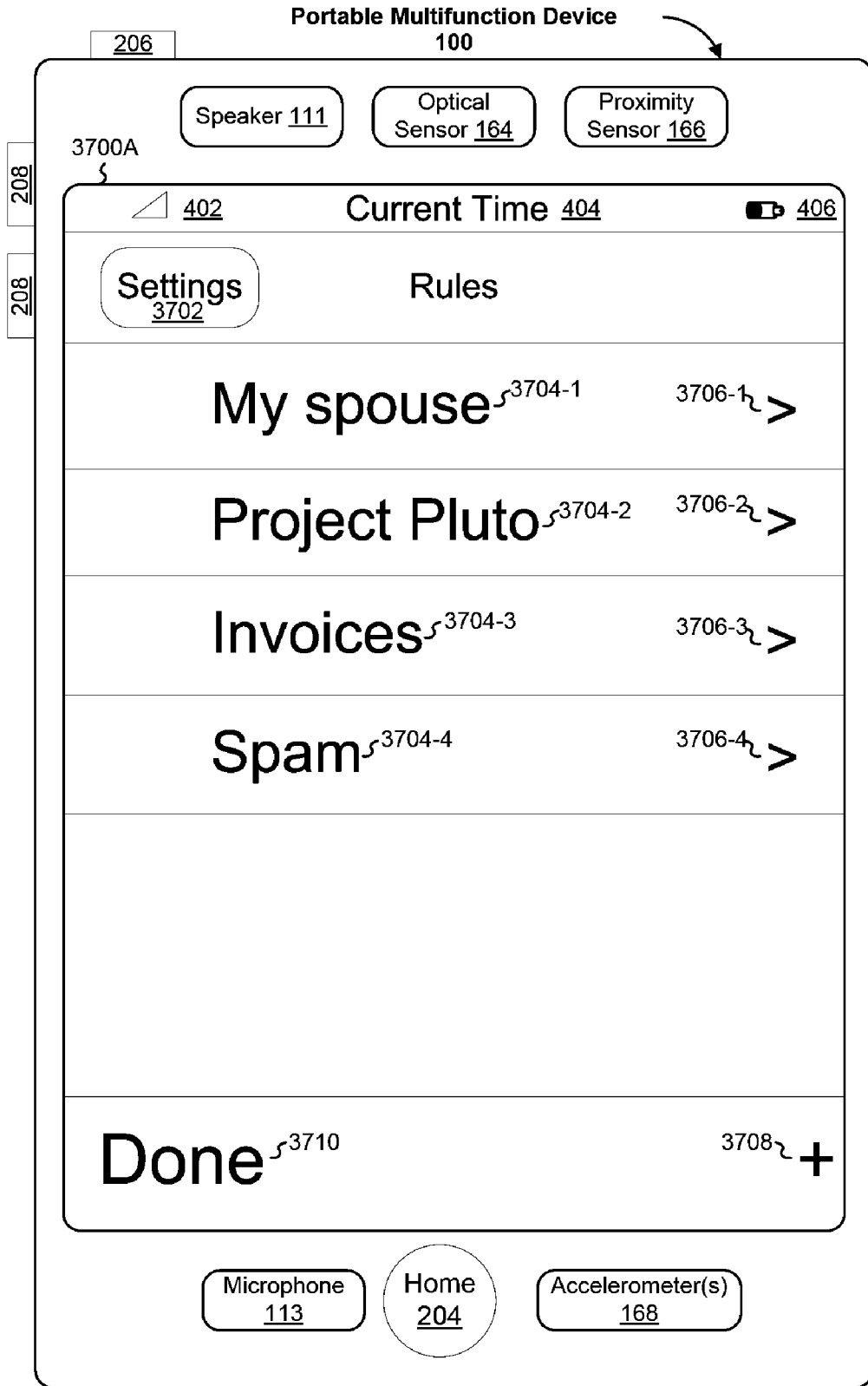


Figure 37A

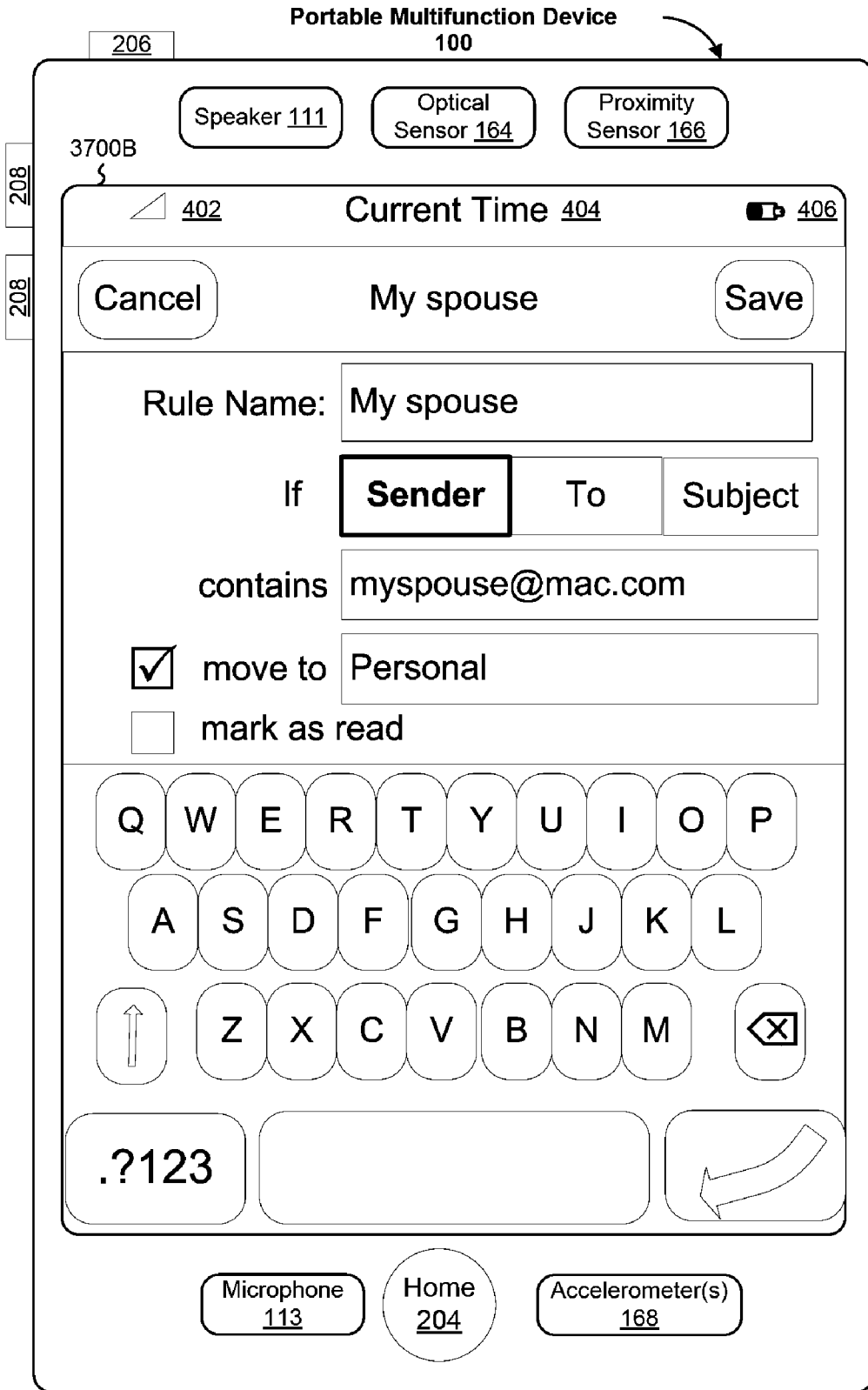


Figure 37B

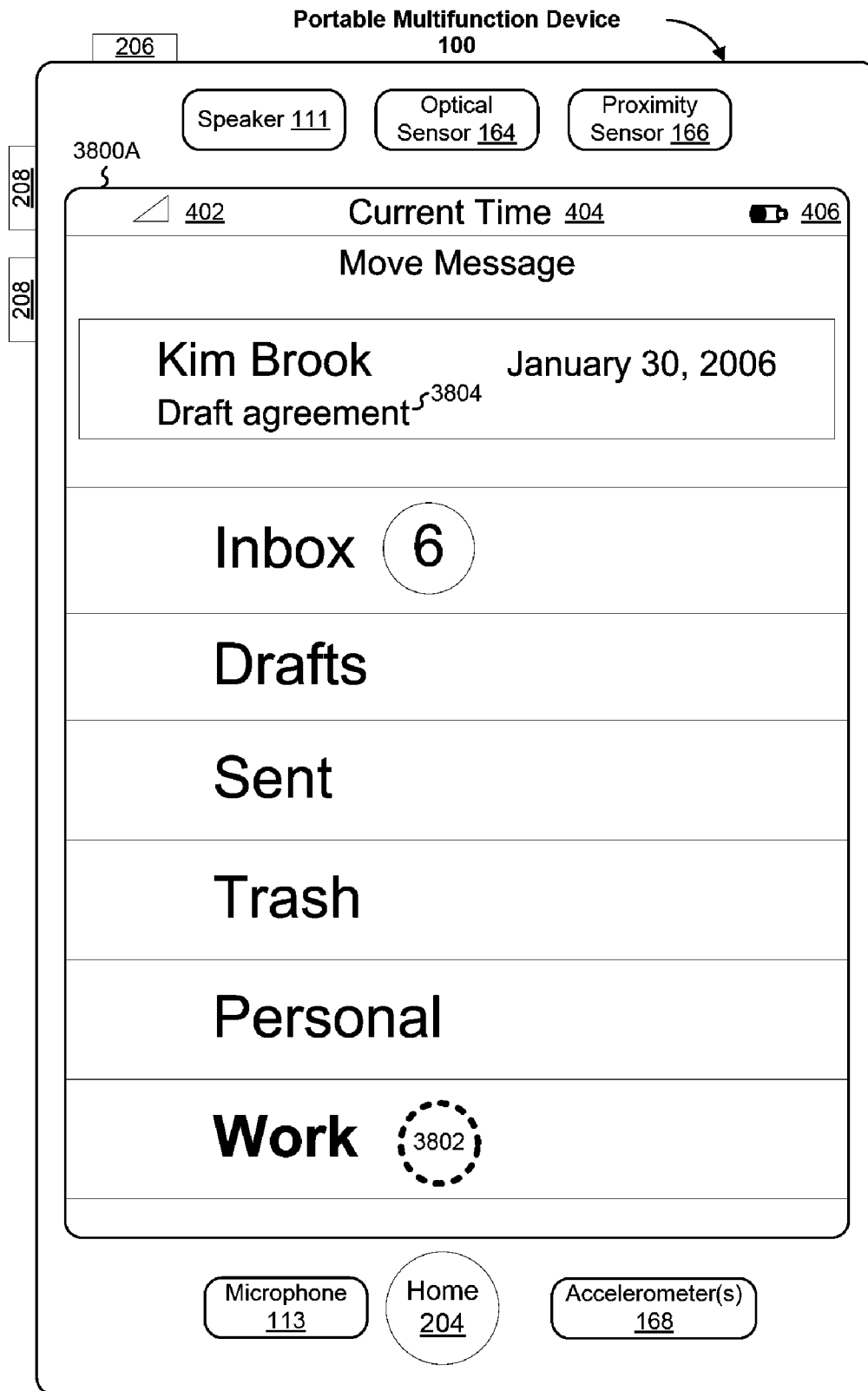


Figure 38A

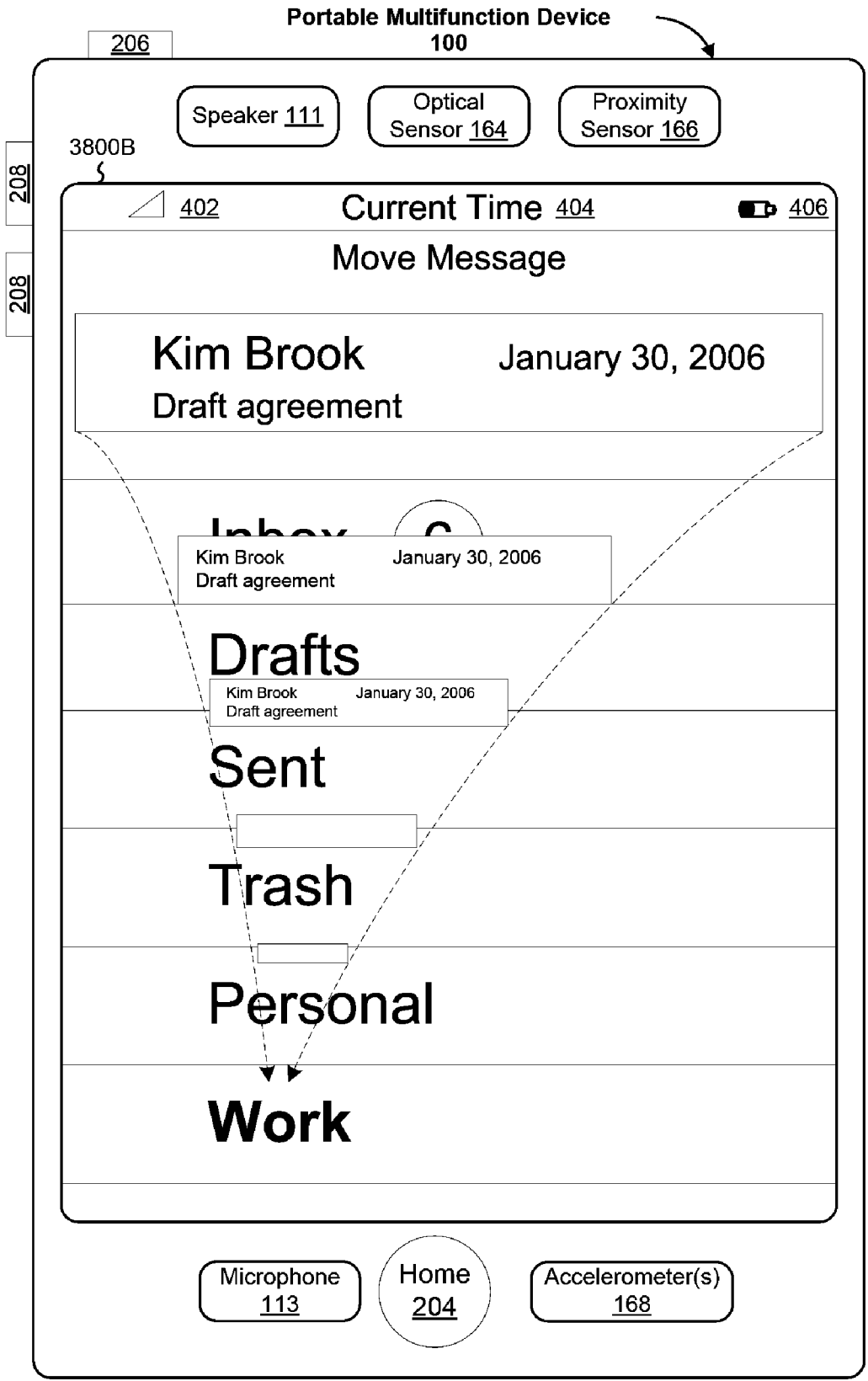


Figure 38B

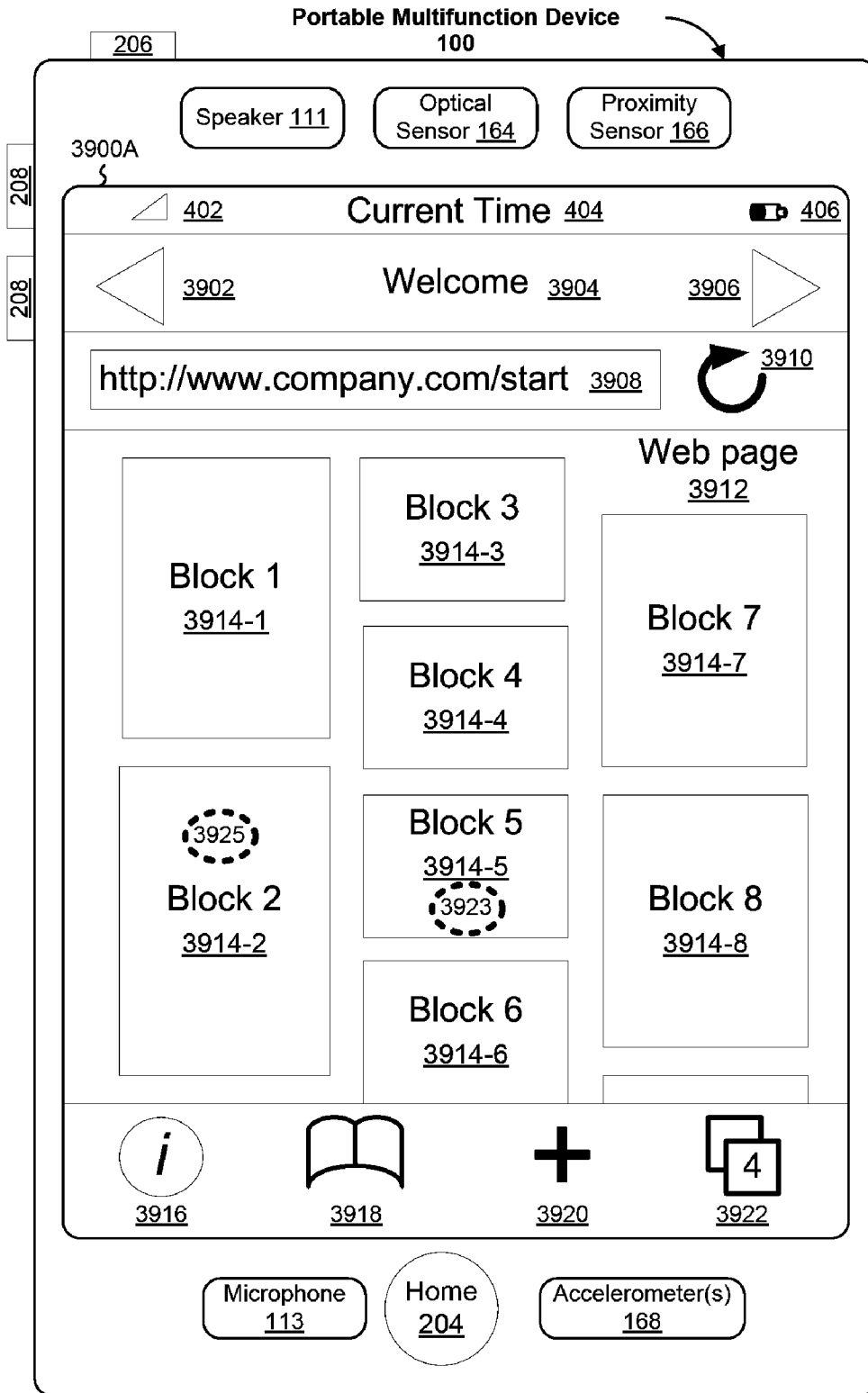


Figure 39A



Figure 39B

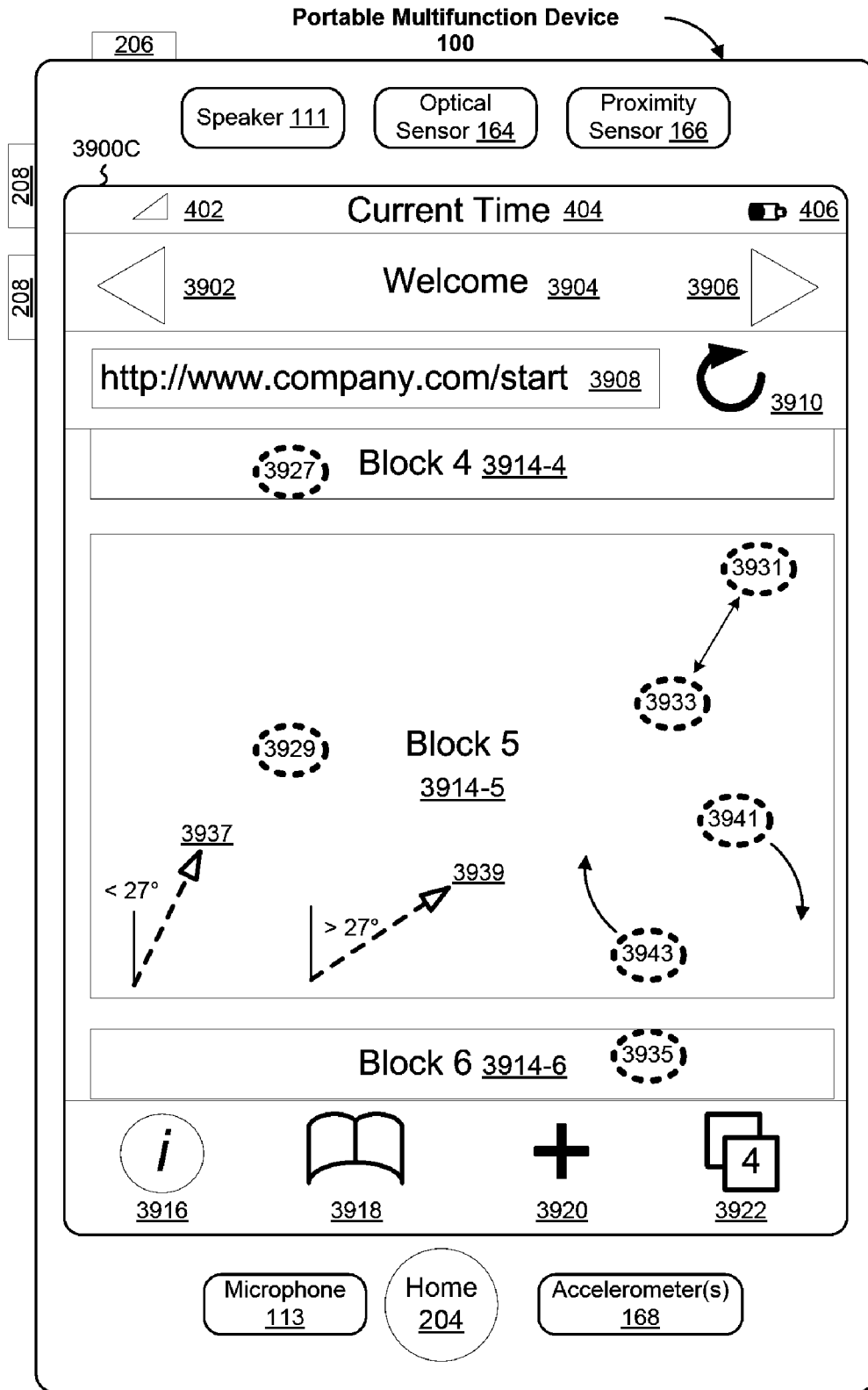


Figure 39C

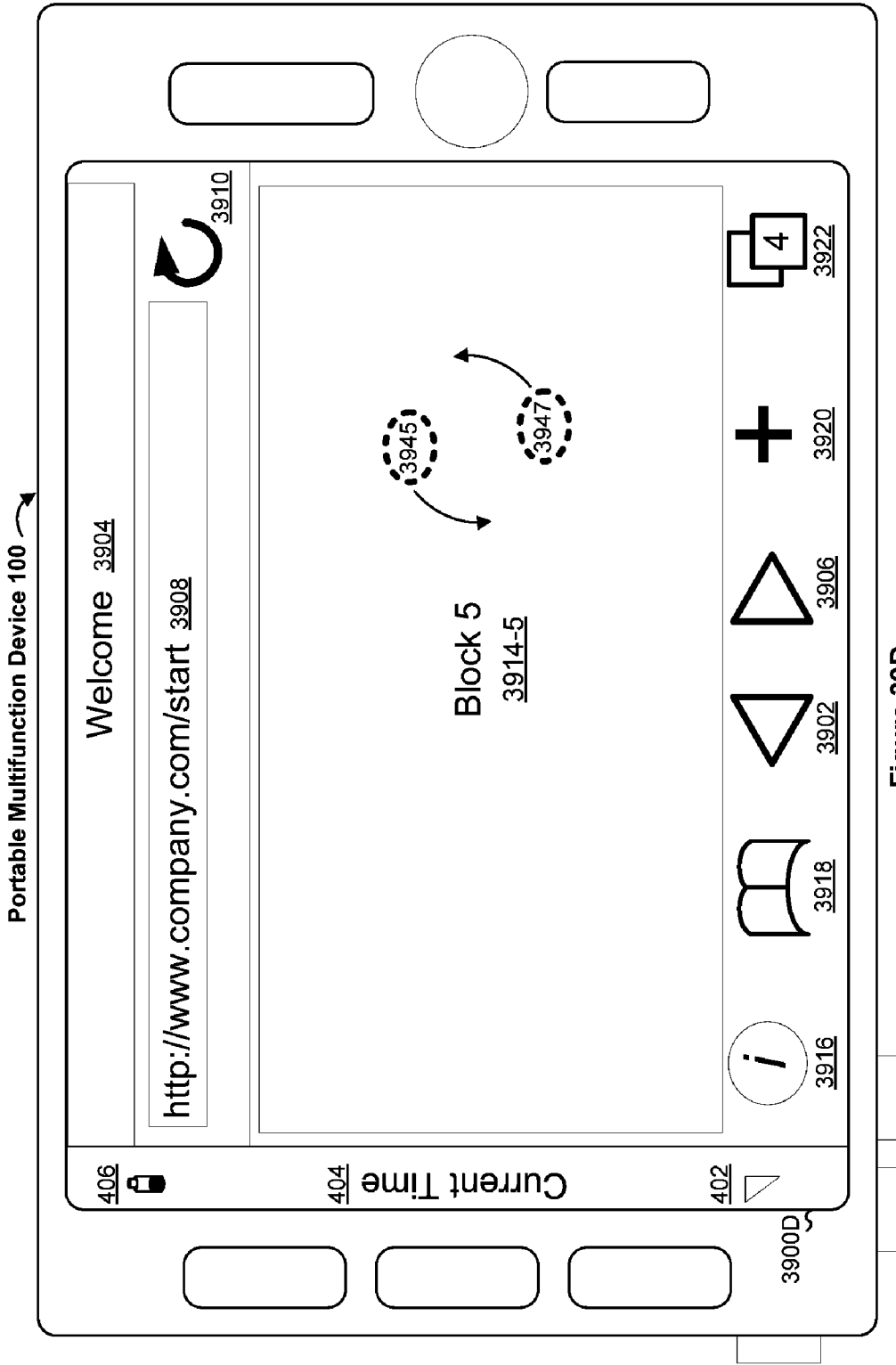


Figure 39D



Figure 39E

Portable Multifunction Device 100



Figure 39F

3900F

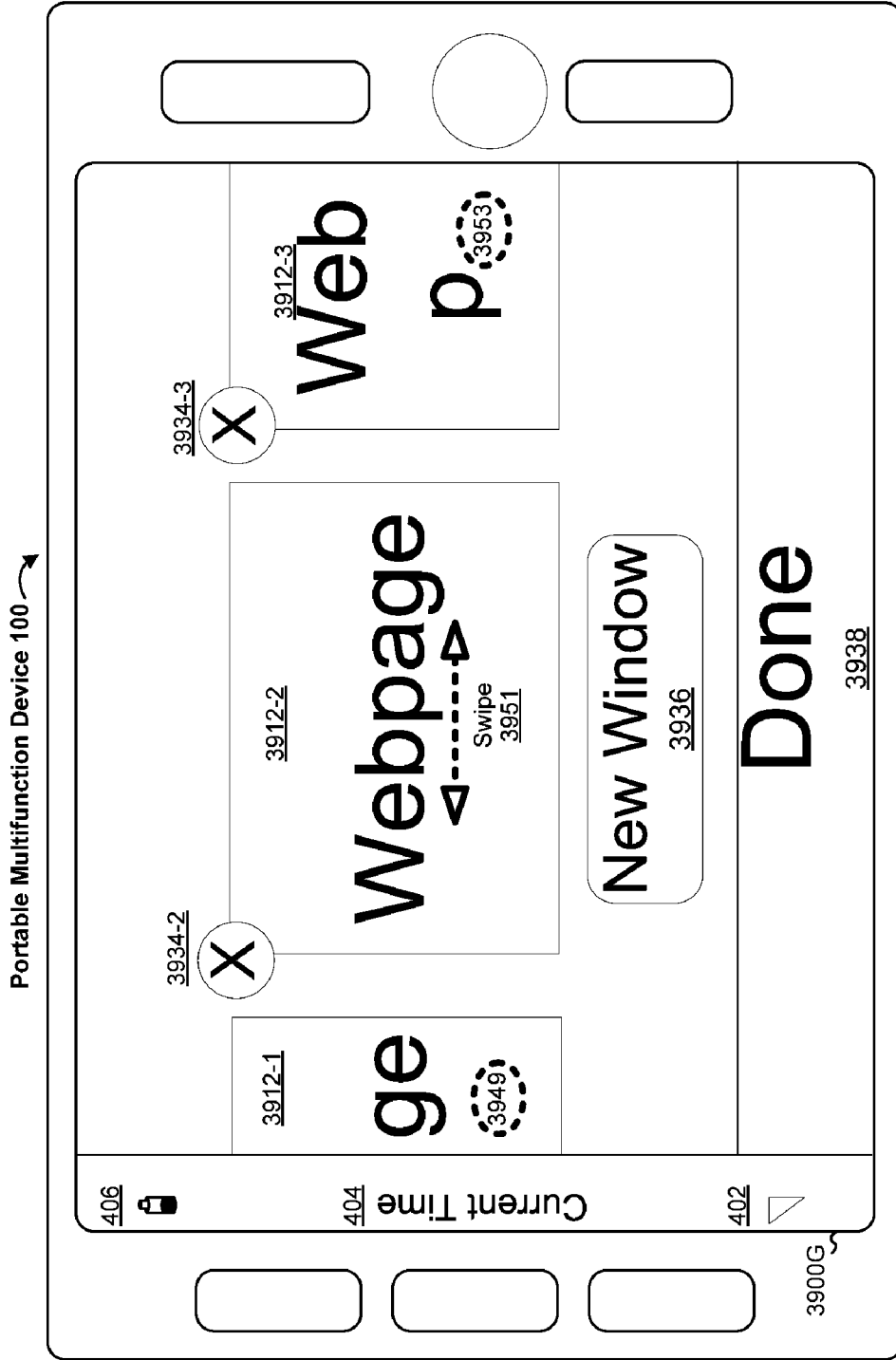


Figure 39G

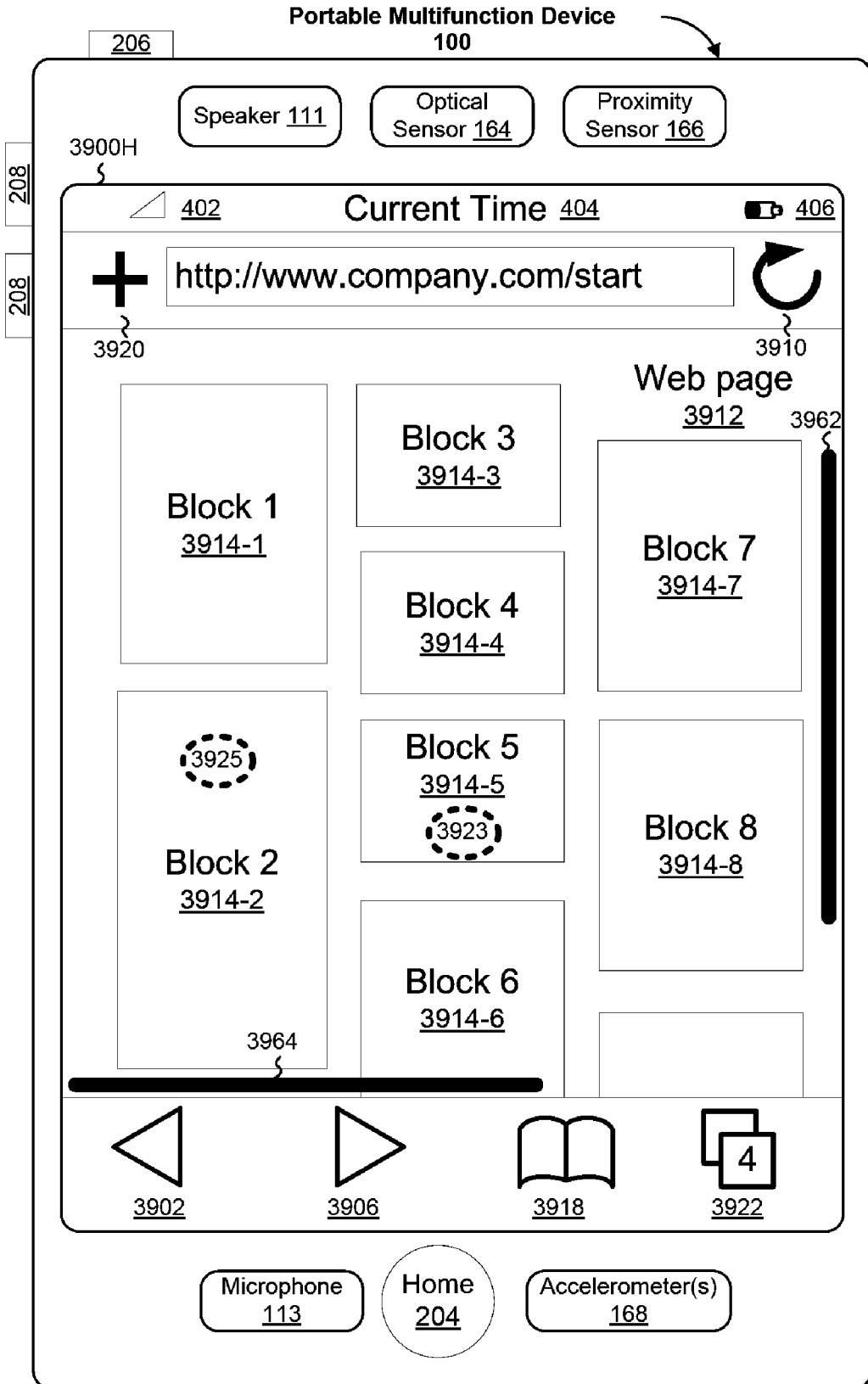


Figure 39H

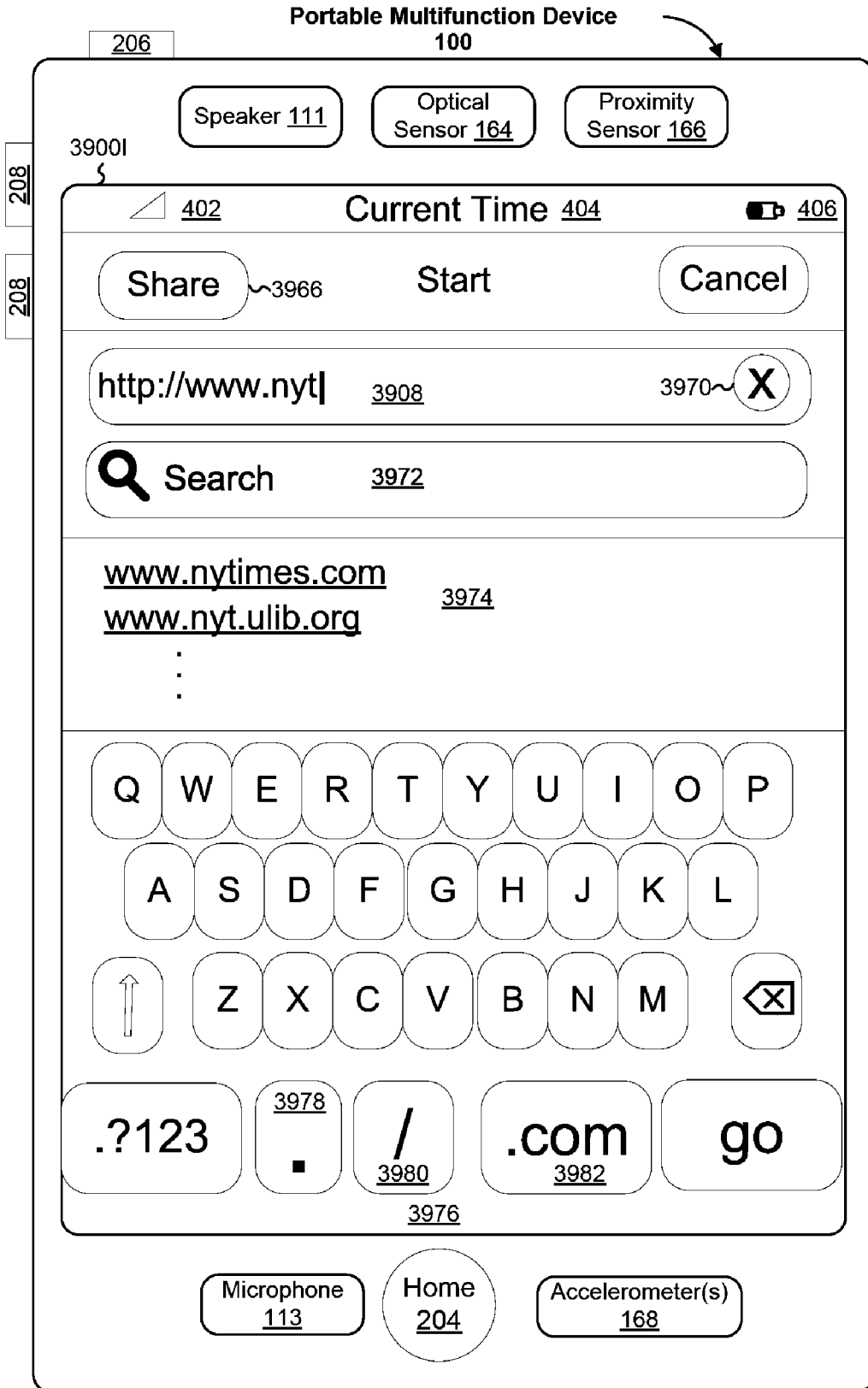


Figure 39I

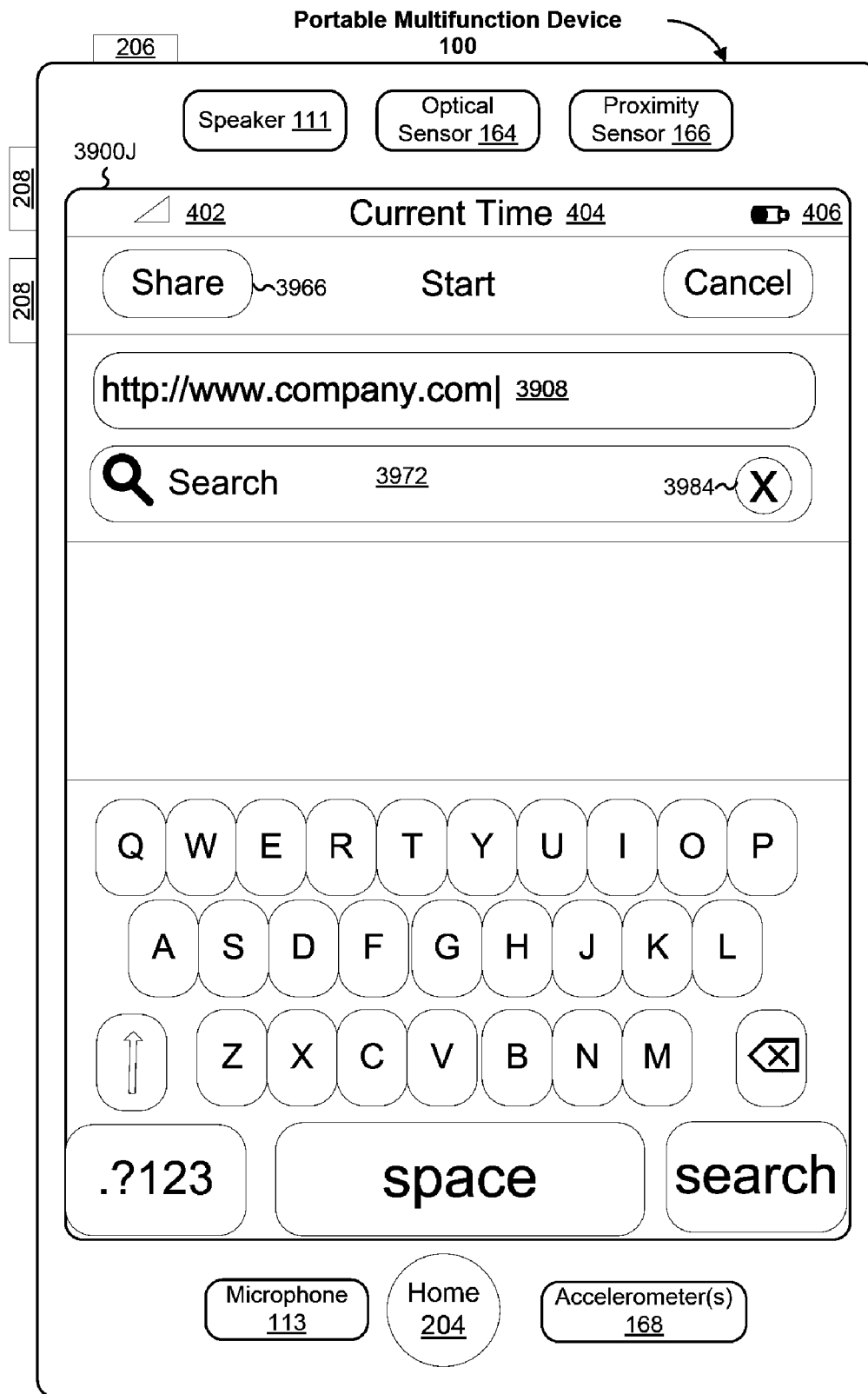


Figure 39J

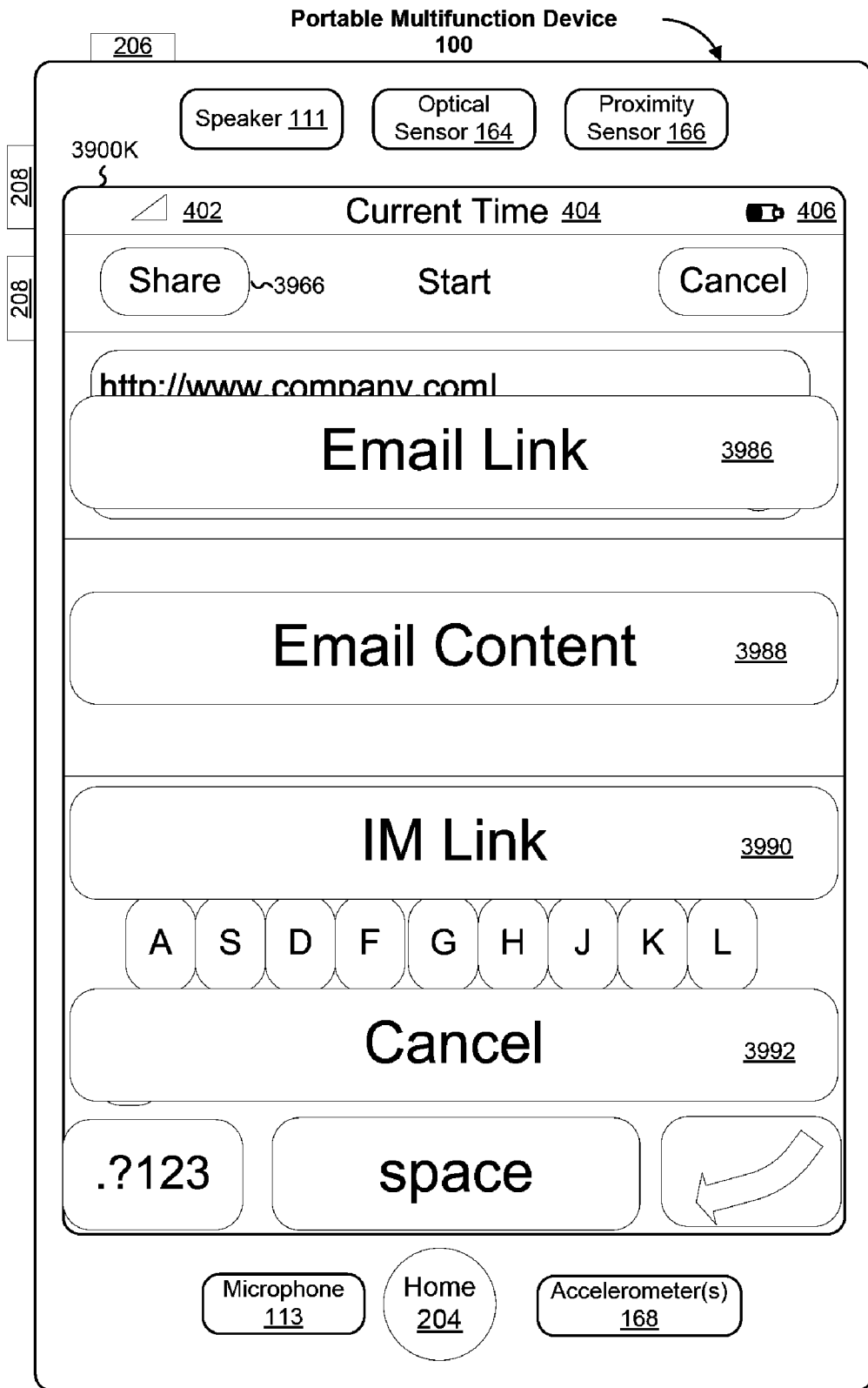


Figure 39K

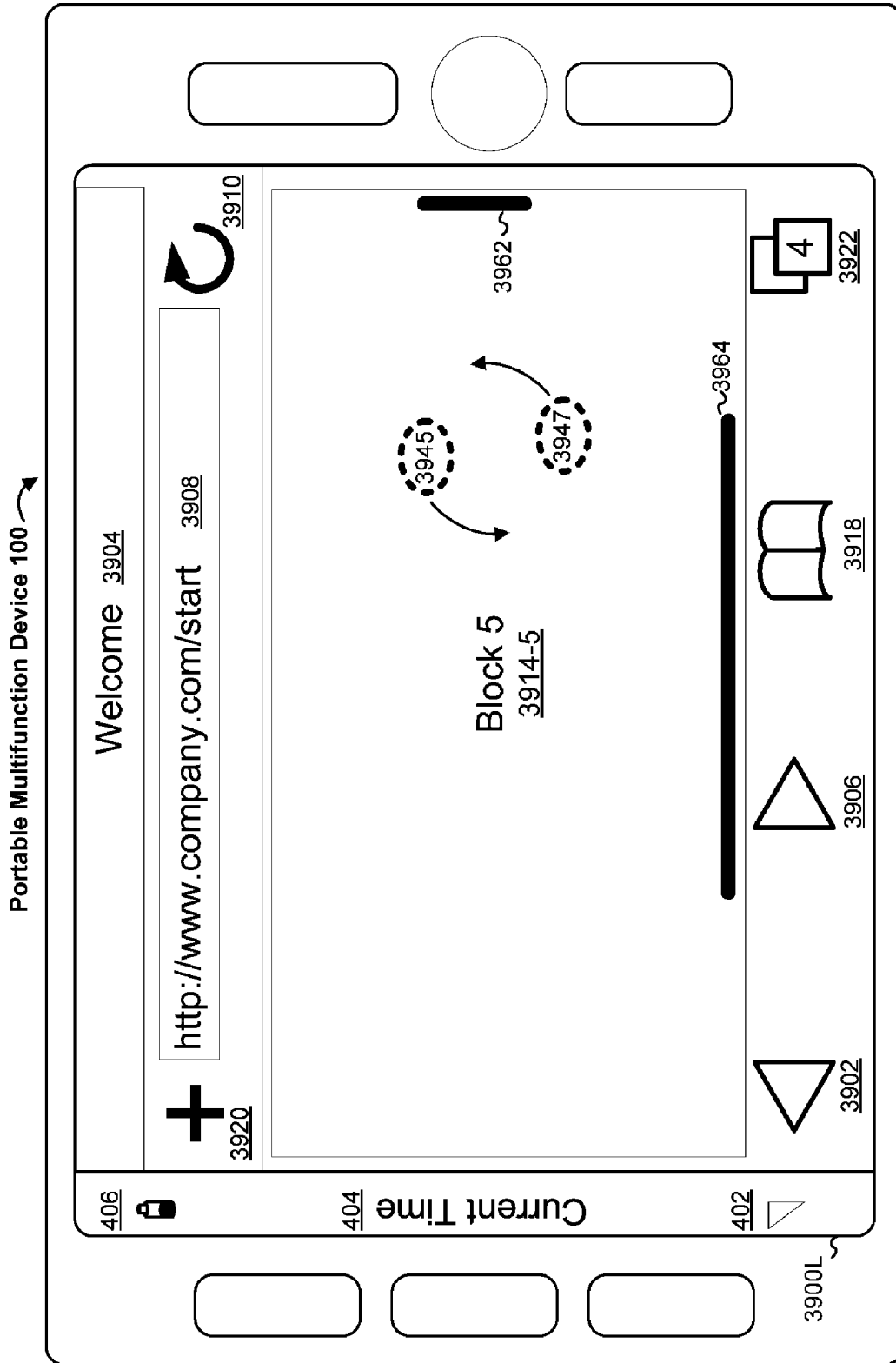


Figure 39L

Portable Multifunction Device 100

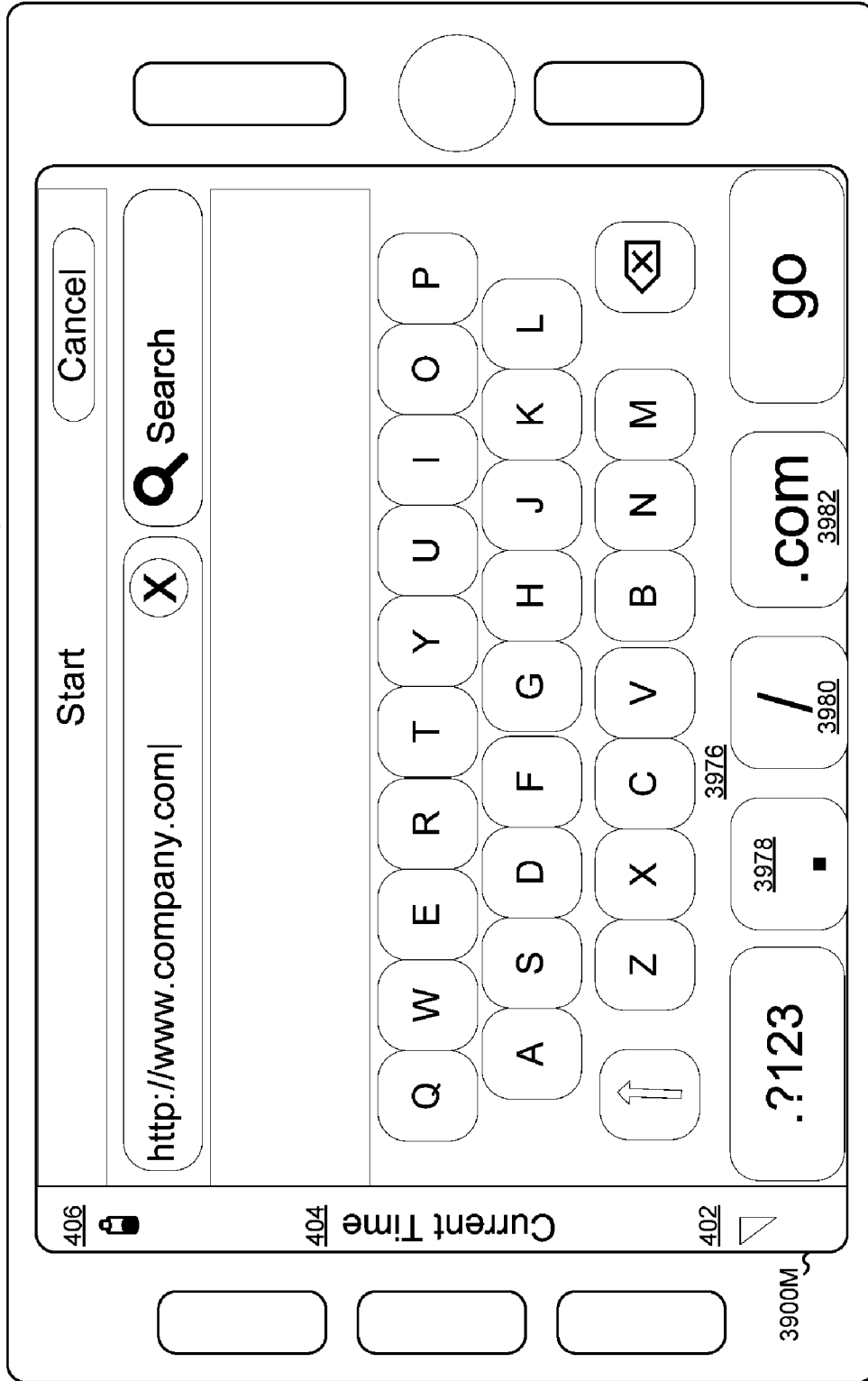


Figure 39M

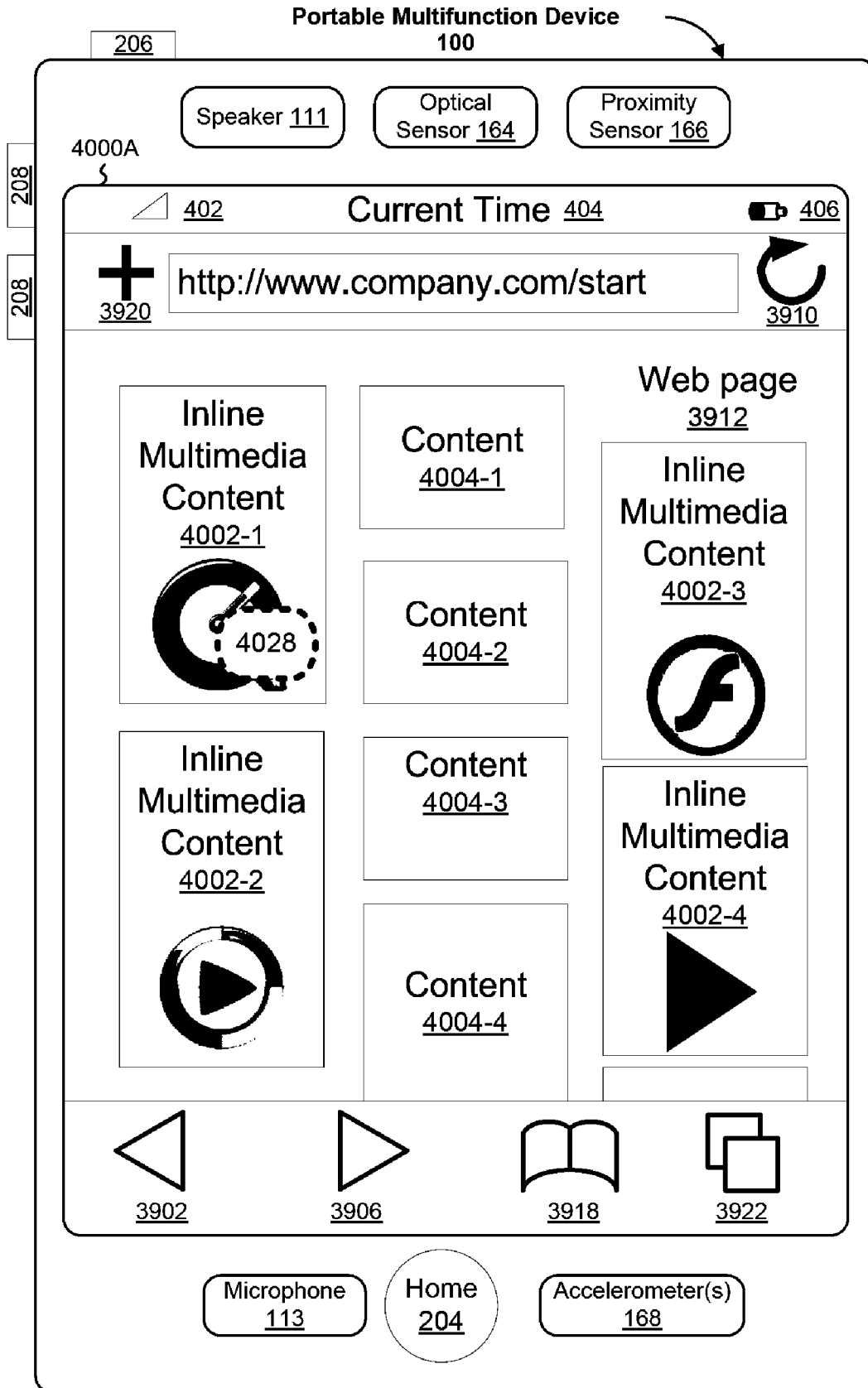


Figure 40A

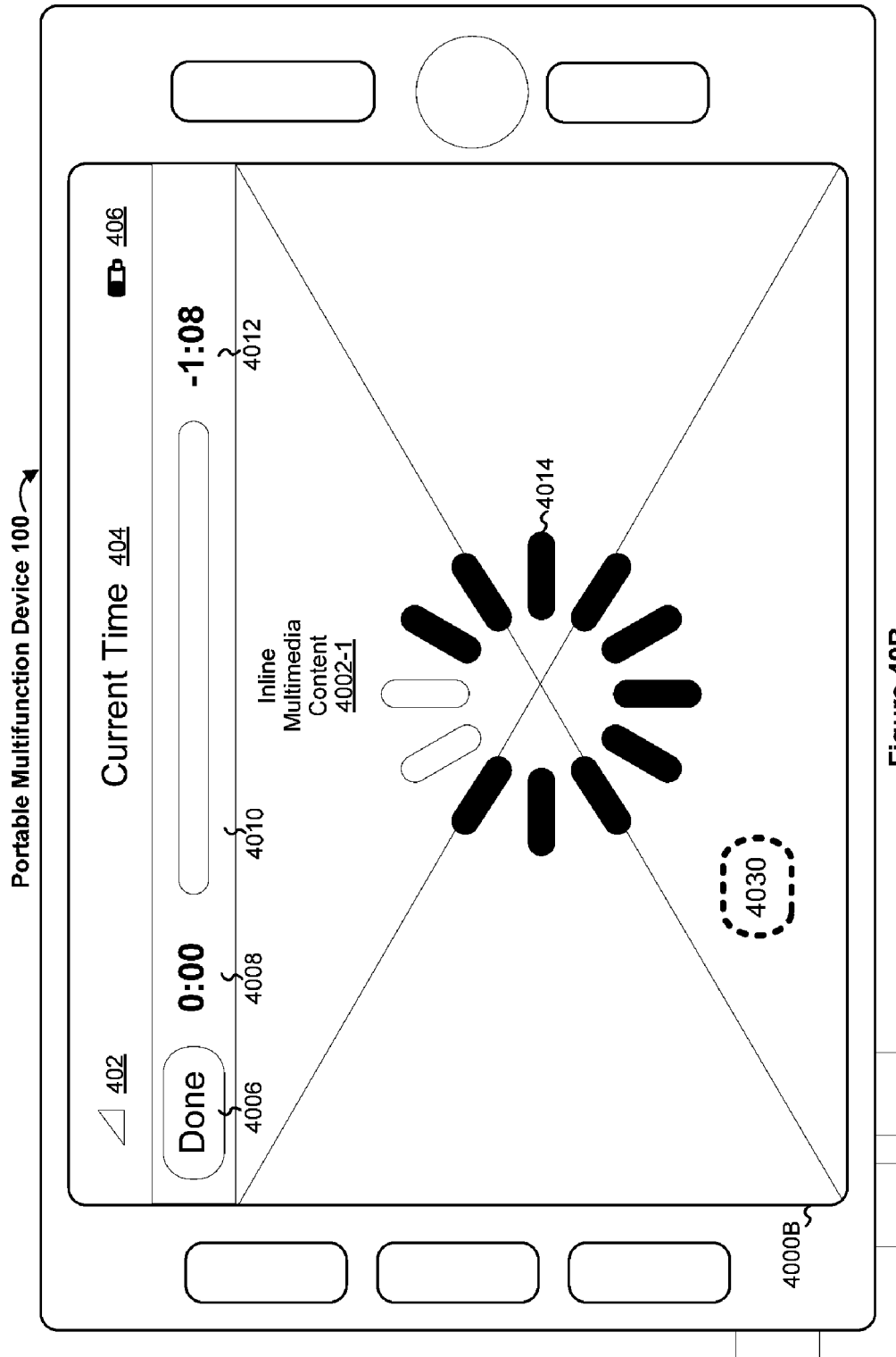


Figure 40B

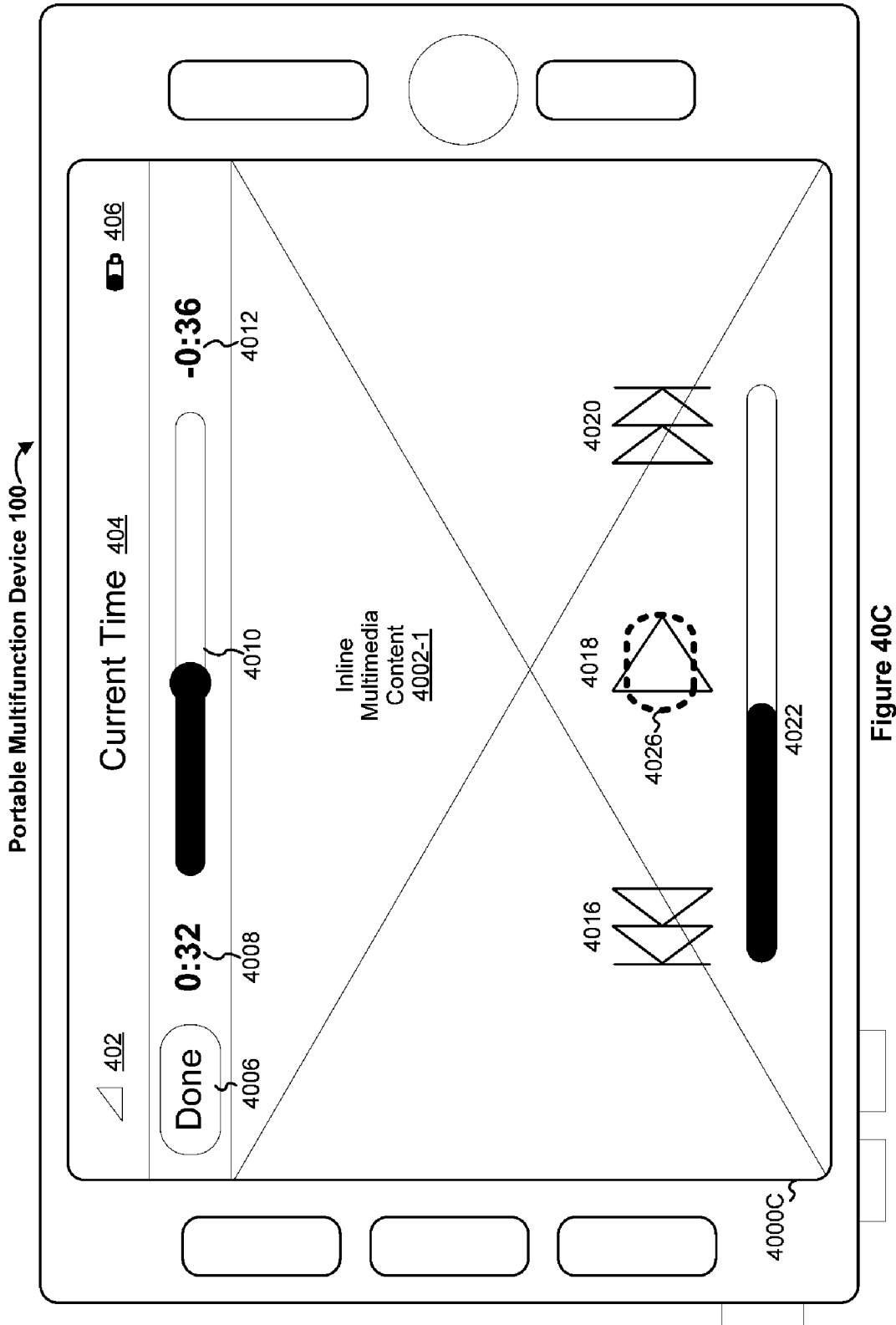


Figure 40C

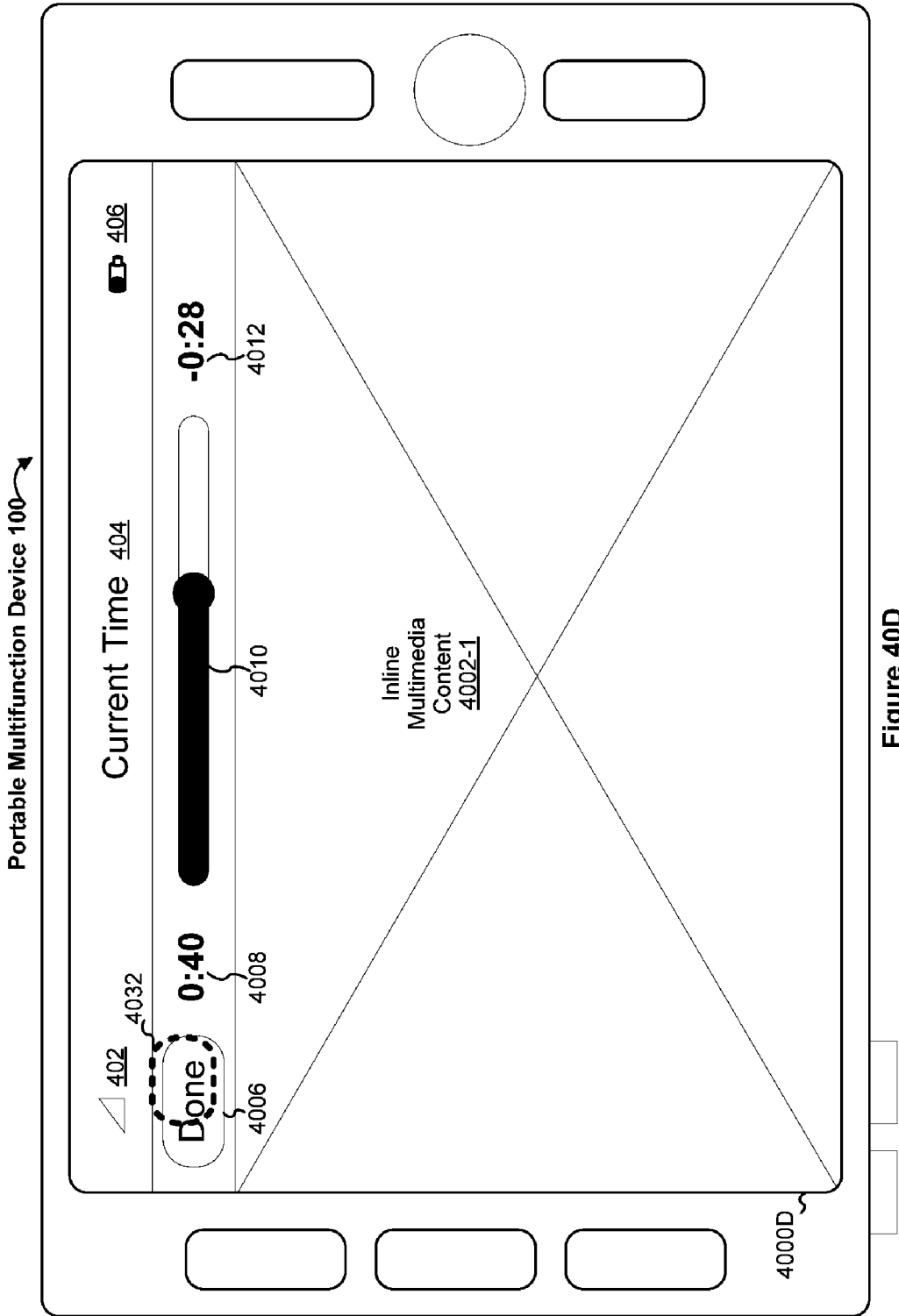


Figure 40D

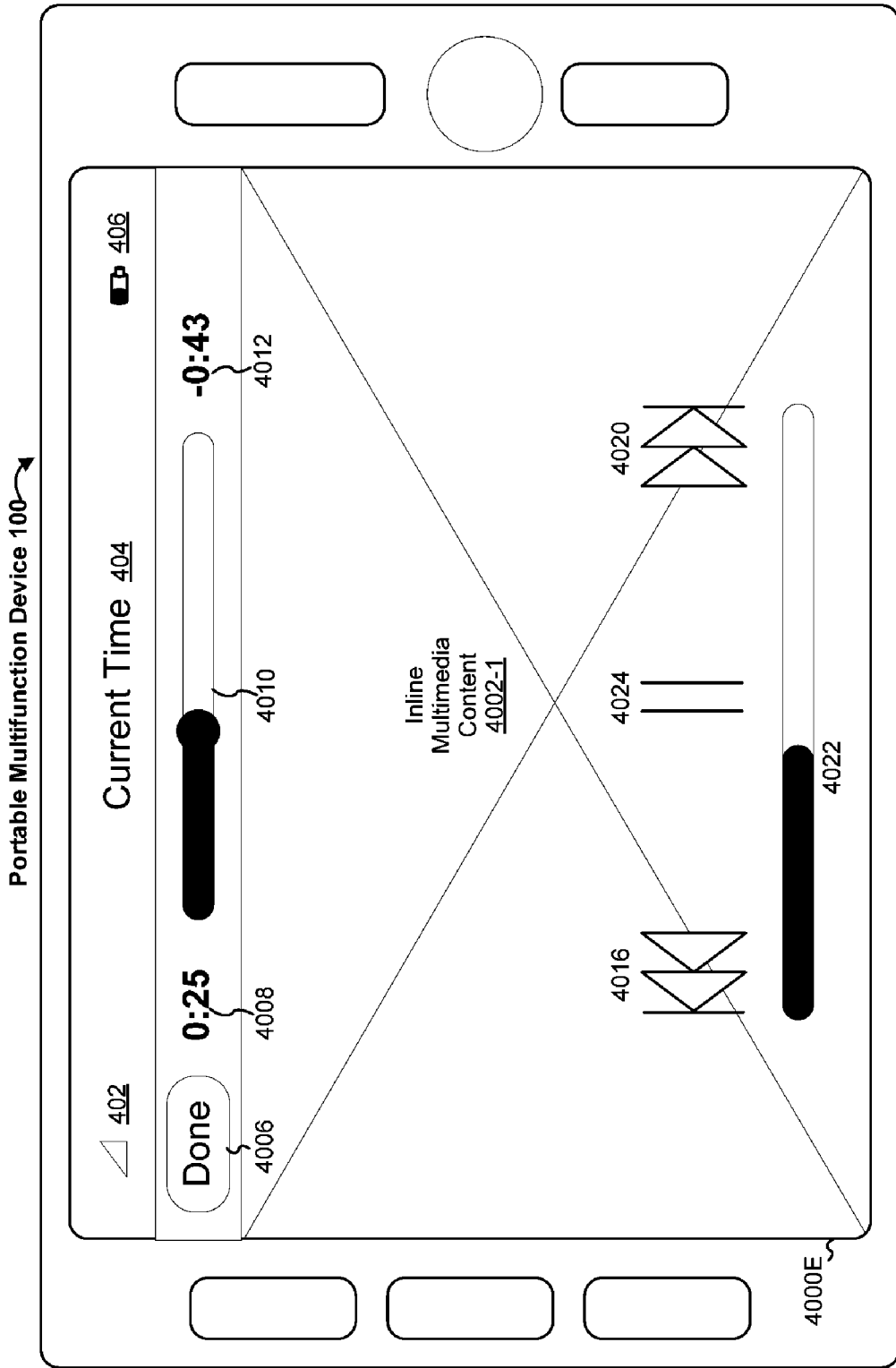


Figure 40E

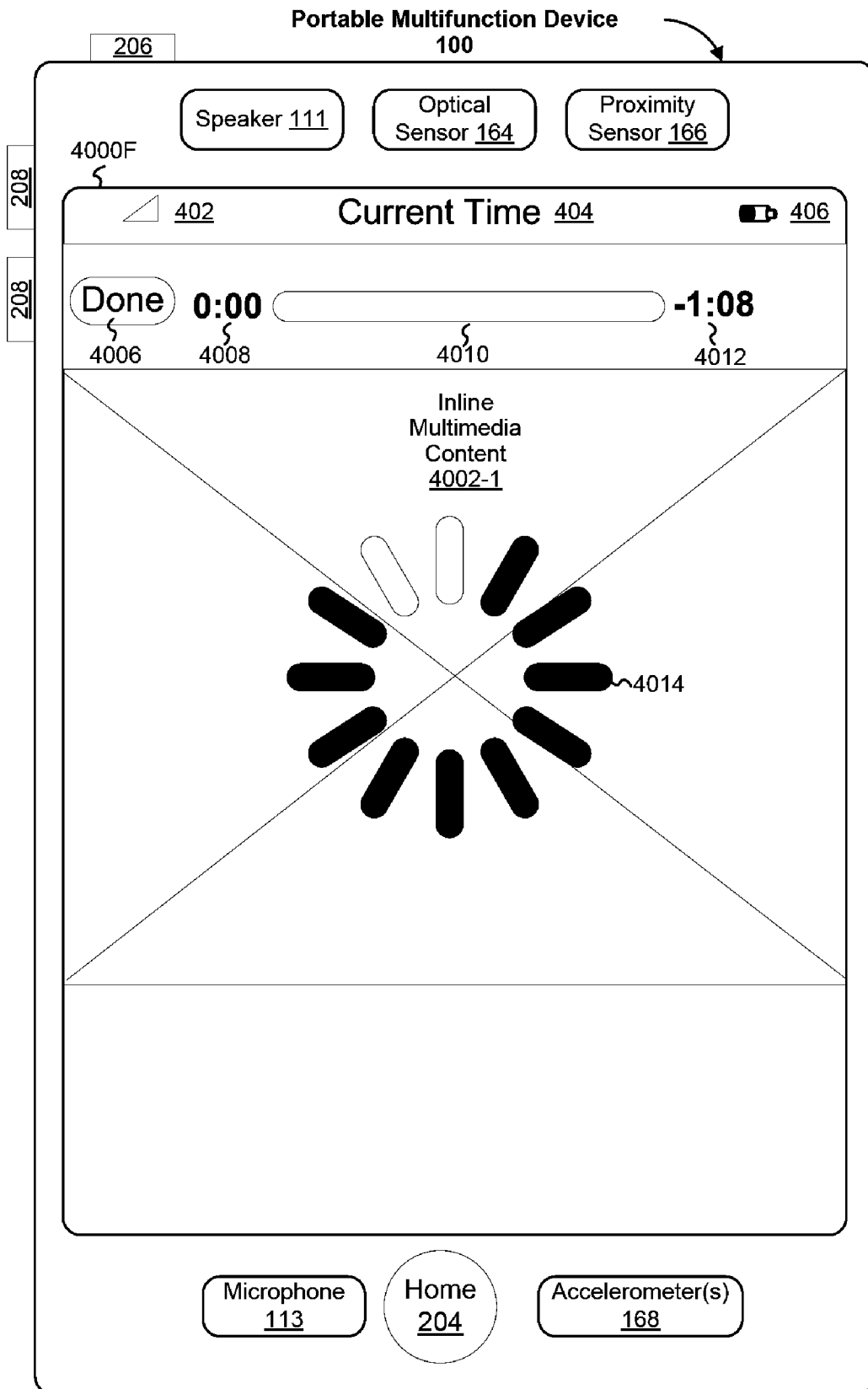


Figure 40F

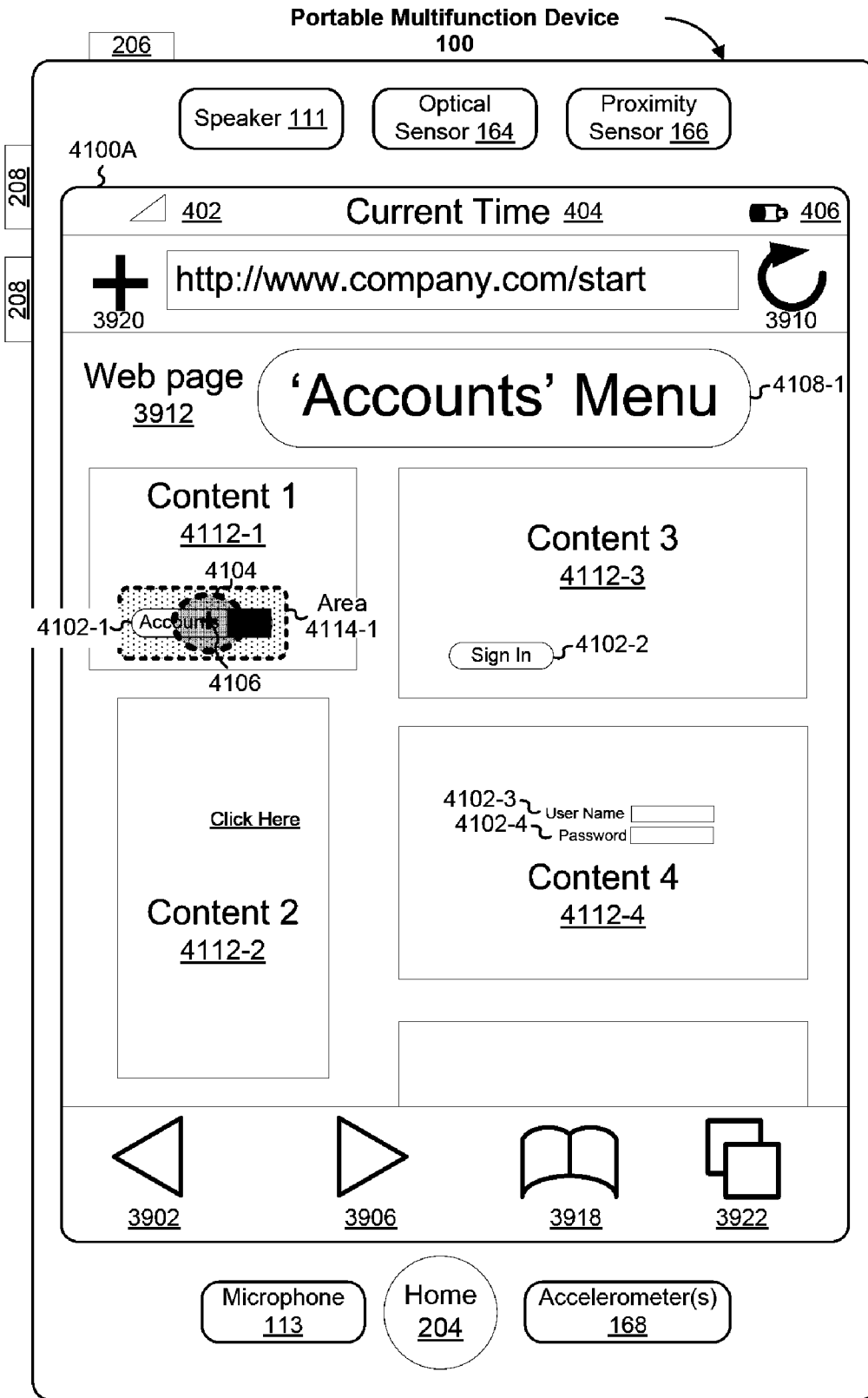


Figure 41A