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(12) **United States Patent**
Chaudhri et al.

(10) **Patent No.:** **US 9,740,381 B1**
(45) **Date of Patent:** **Aug. 22, 2017**

(54) **DEVICES, METHODS, AND GRAPHICAL USER INTERFACES FOR PROVIDING FEEDBACK DURING INTERACTION WITH AN INTENSITY-SENSITIVE BUTTON**

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(71) Applicant: **Apple Inc.**, Cupertino, CA (US)

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(73) Assignee: **APPLE INC.**, Cupertino, CA (US)

Office Action, (Search Report), dated Jan. 25, 2017, received in Danish Patent Application No. 201670728 (7411DK), which corresponds with U.S. Appl. No. 15/271,194, 10 pages.
(Continued)

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

(21) Appl. No.: **15/271,194**

Primary Examiner — Jeffrey A Gaffin

Assistant Examiner — Justin Lee

(22) Filed: **Sep. 20, 2016**

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

Related U.S. Application Data

(60) Provisional application No. 62/384,180, filed on Sep. 6, 2016.

(51) **Int. Cl.**
G06F 3/048 (2013.01)
G06F 3/0484 (2013.01)
(Continued)

(52) **U.S. Cl.**
CPC **G06F 3/04845** (2013.01); **G06F 3/016** (2013.01); **G06F 3/02** (2013.01);
(Continued)

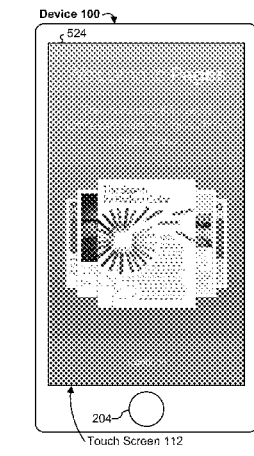
(58) **Field of Classification Search**
CPC G06F 3/016; G06F 3/0488; G06F 3/0414;
G06F 3/04883; G06F 17/30064; A63F
2300/1037

See application file for complete search history.

(57) **ABSTRACT**

An electronic device: while displaying a first user interface, detects a first input that is consistent with a request to display a second user interface and a request to display a third user interface. In response, the device starts to display a first animated transition from the first to the second user interface. While the first animated transition is being displayed, the device detects a second input. In response, the device determines that the second input is consistent with the request to display the third user interface and whether the second input is received at a first or at a later, second time. If at the first time, the device: interrupts the first animated transition at a first point and displays a second animated transition from the first point to the third user interface. If at the second, later time, the device interrupts the first animated transition at a second point (after the first point), and displays a third animated transition from the second point to the third user interface.

48 Claims, 170 Drawing Sheets



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|------|--|---|
| (51) | Int. Cl.
G06F 3/0481 (2013.01)
G06F 3/01 (2006.01)
G06F 3/0488 (2013.01)
G06F 3/02 (2006.01)
G06T 13/80 (2011.01) | 2014/0089791 A1 3/2014 Ishimaru
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|------|--|---|

- (52) **U.S. Cl.**
 CPC **G06F 3/04817** (2013.01); **G06F 3/04883**
 (2013.01); **G06T 13/80** (2013.01)

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Office Action (Search Report), dated Jan. 27, 2017, received in Danish Patent Application No. 201670739 (7411DK02), which corresponds with U.S. Appl. No. 15/271,194, 8 pages.

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Office Action, dated Mar. 2, 2017, received in Danish Patent Application No. 201670740 (7411DK03), which corresponds with U.S. Appl. No. 15/271,194, 2 pages.

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Office Action, dated Mar. 28, 2017, received in Danish Patent Application No. 201670740 (7411DK03), which corresponds with U.S. Appl. No. 15/271,194, 2 pages.

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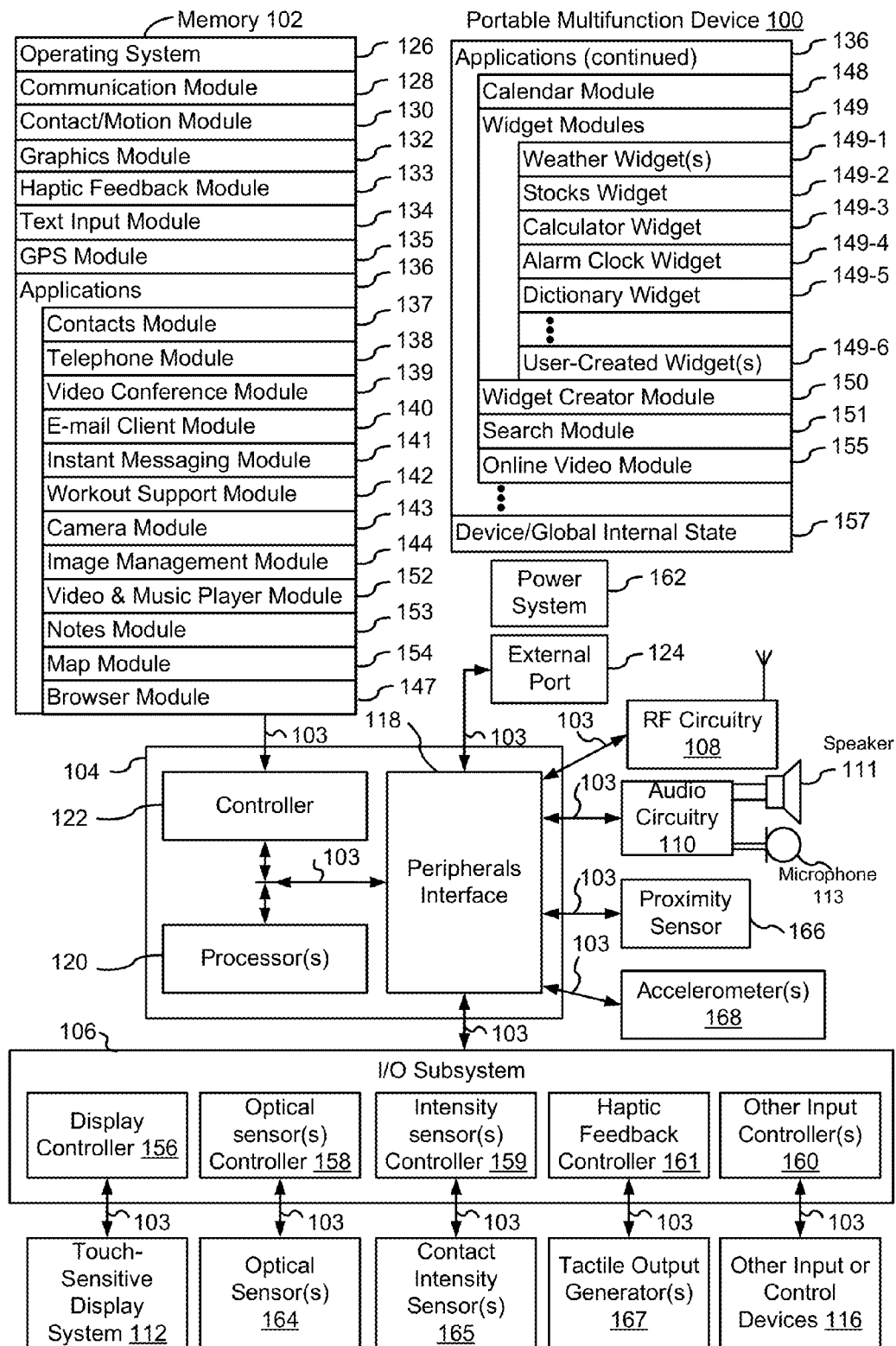


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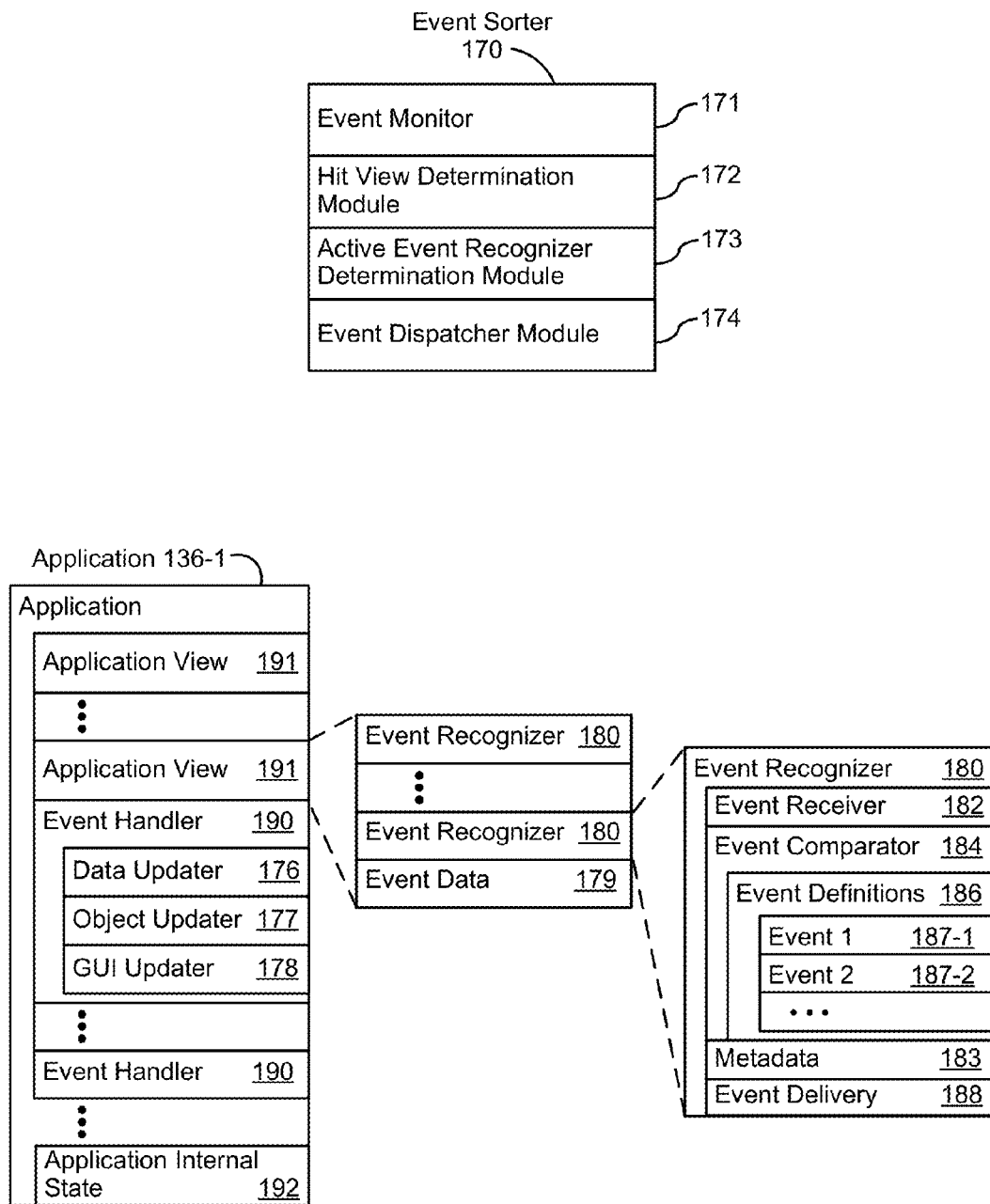


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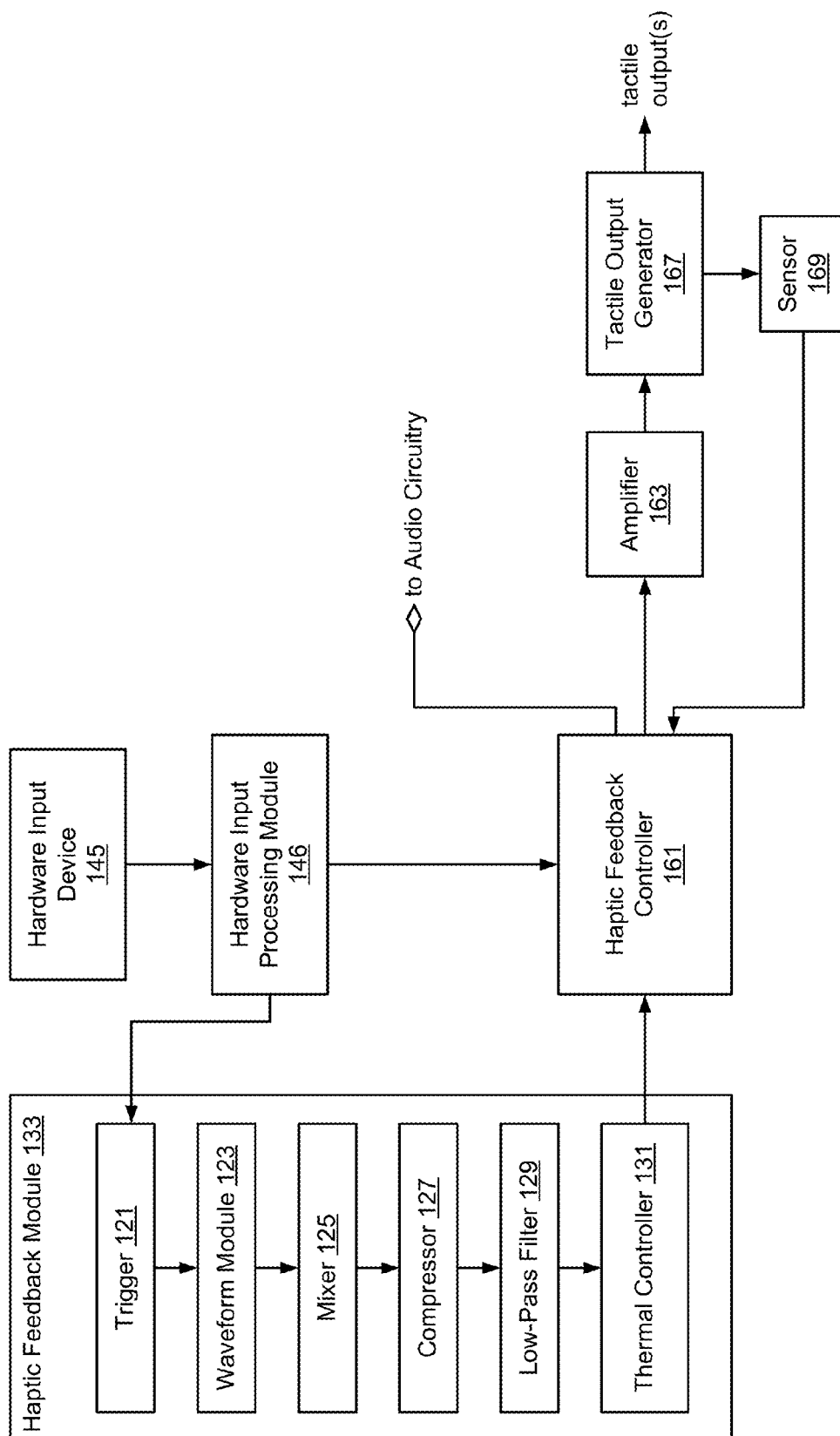
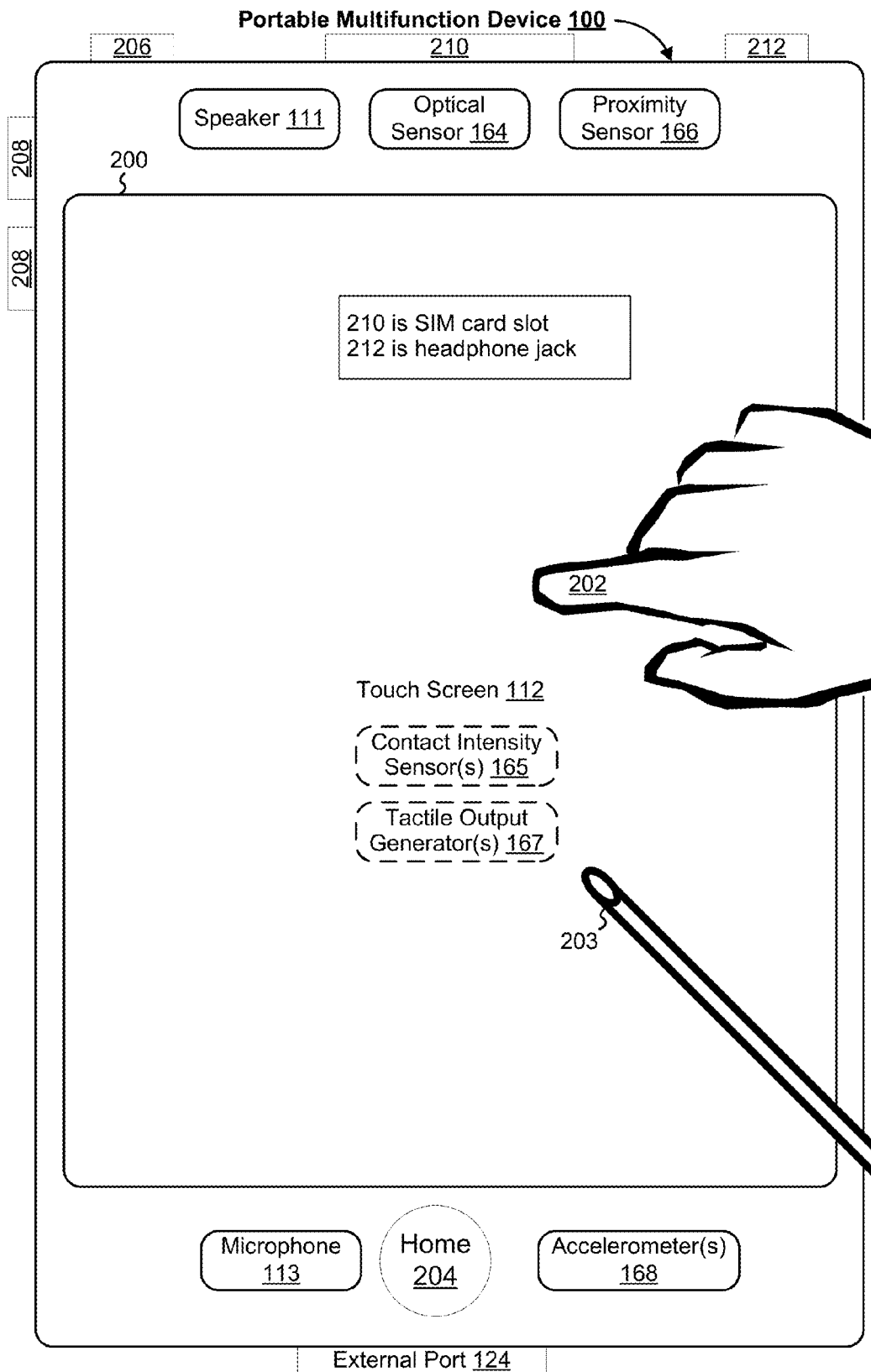


Figure 1C



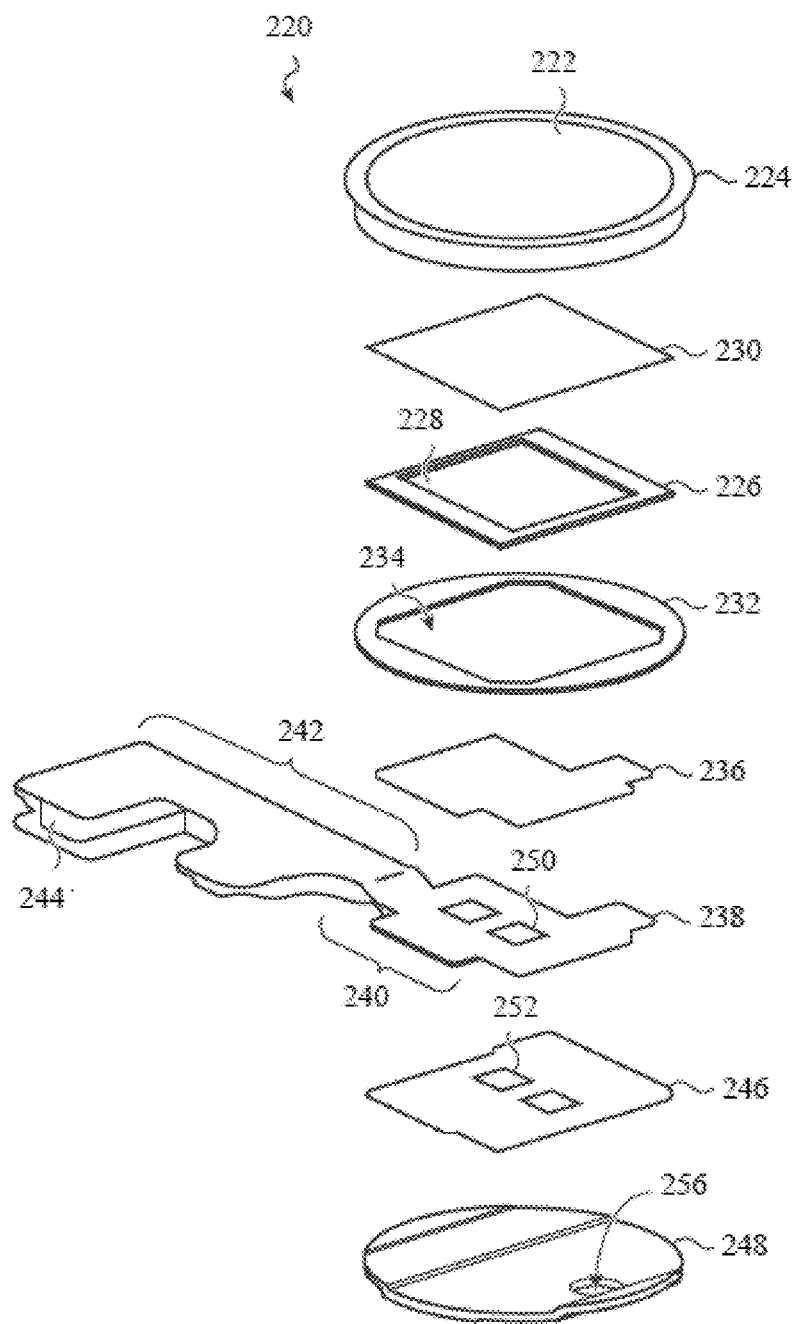


Figure 2B

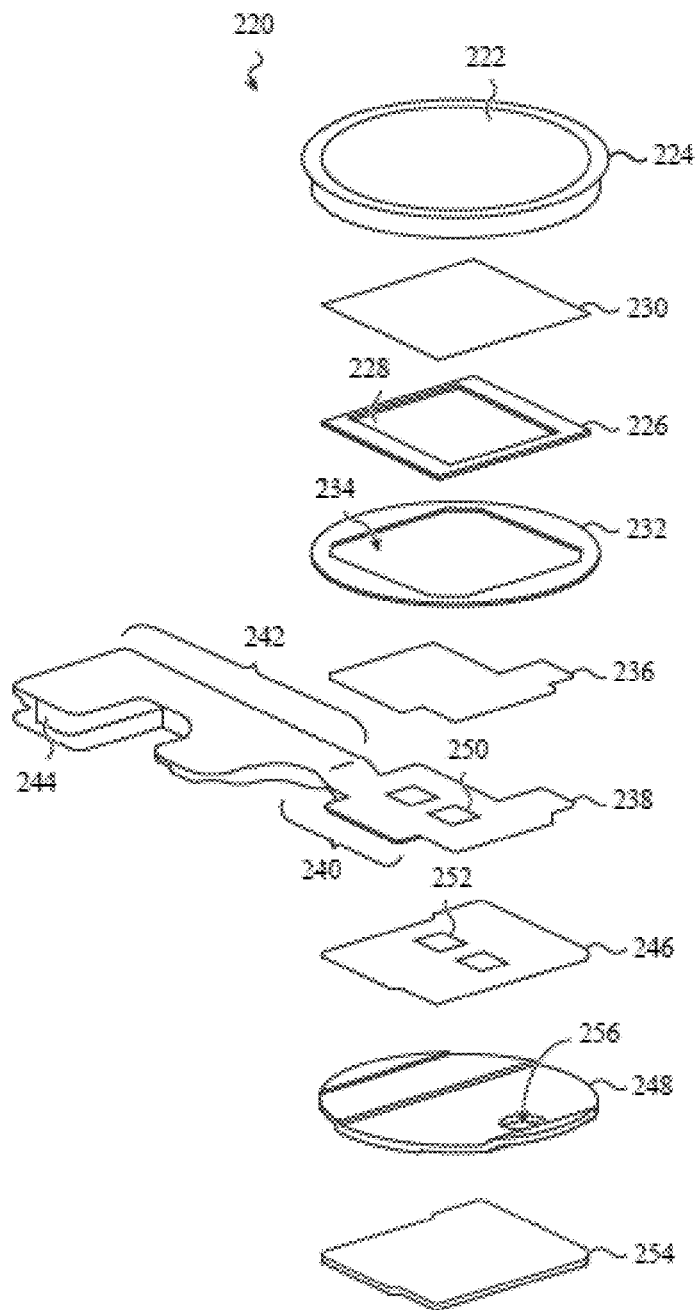


Figure 2C

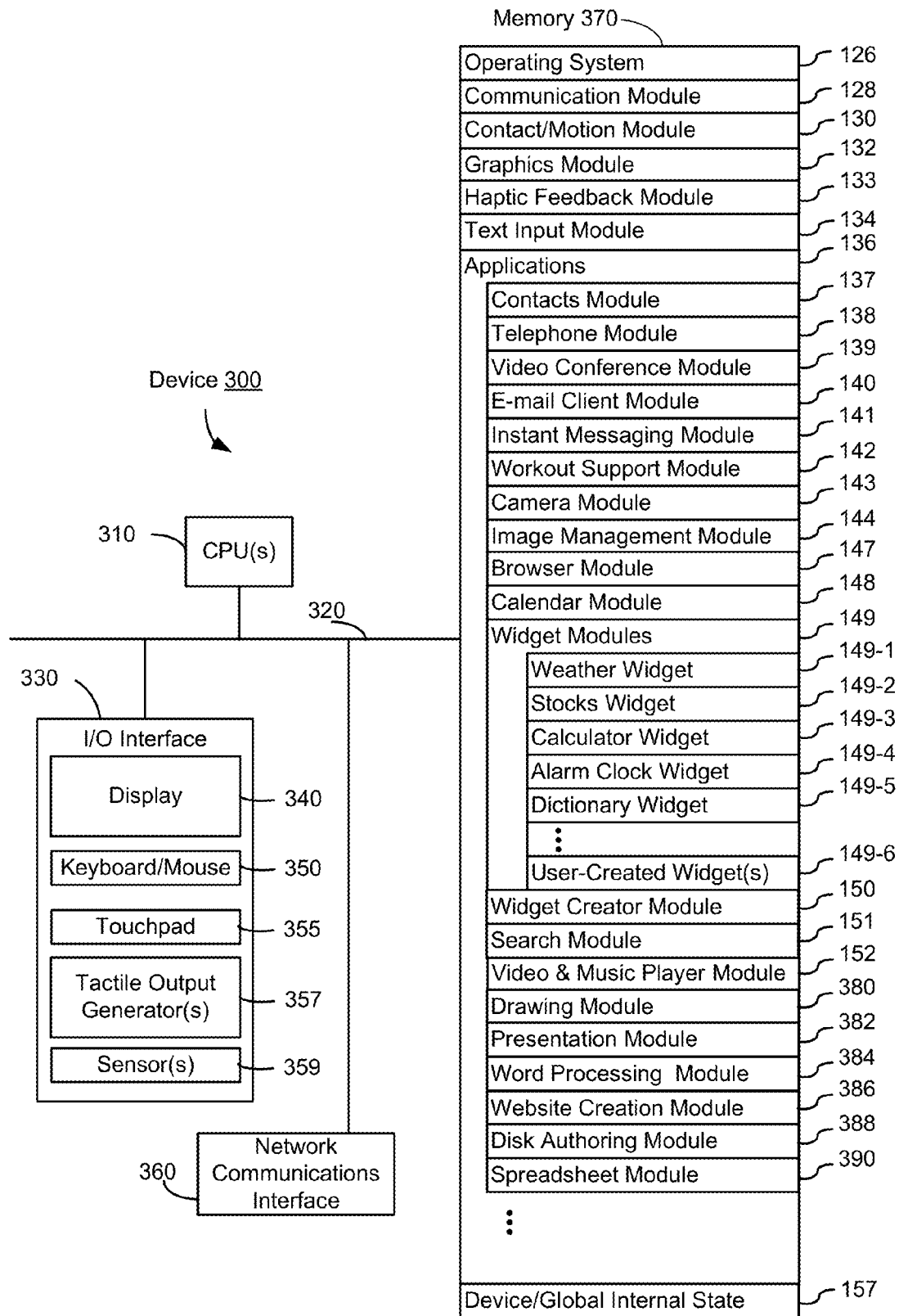
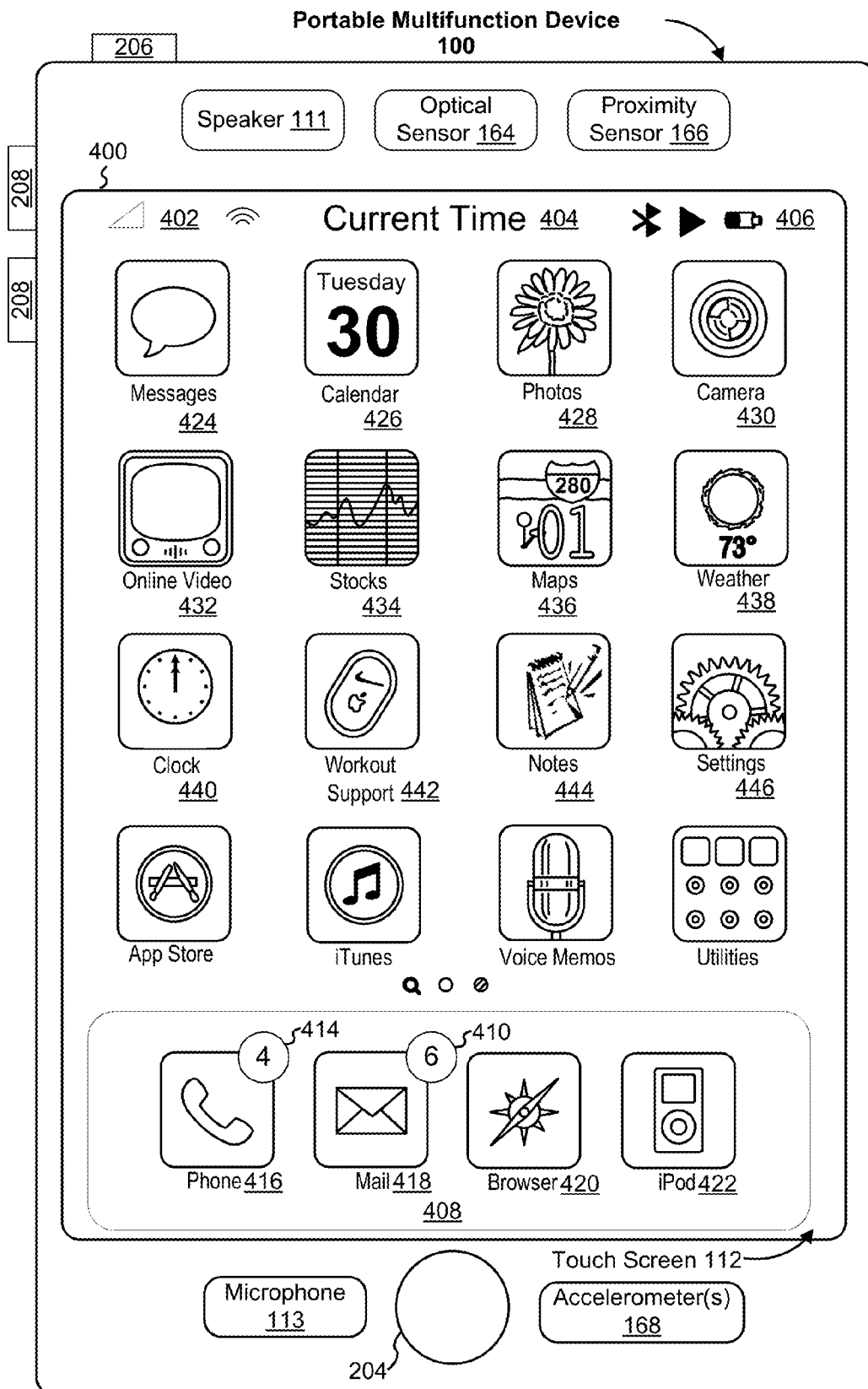


Figure 3

**Figure 4A**

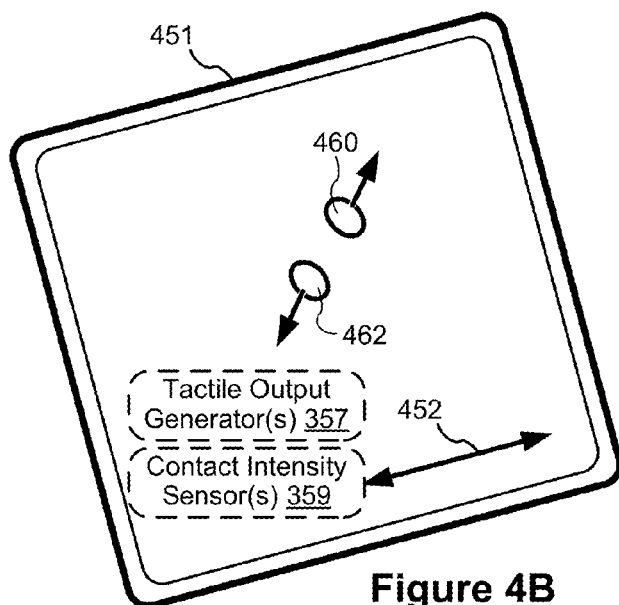
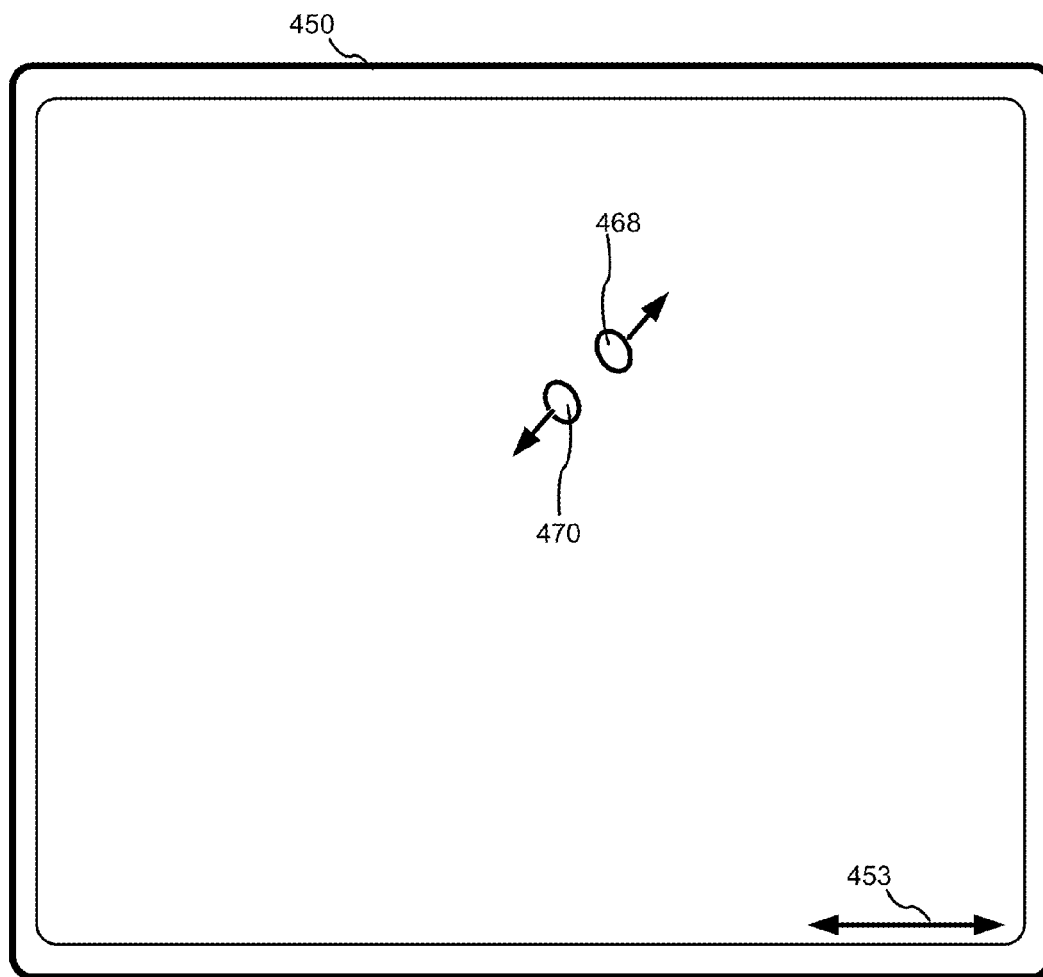


Figure 4B

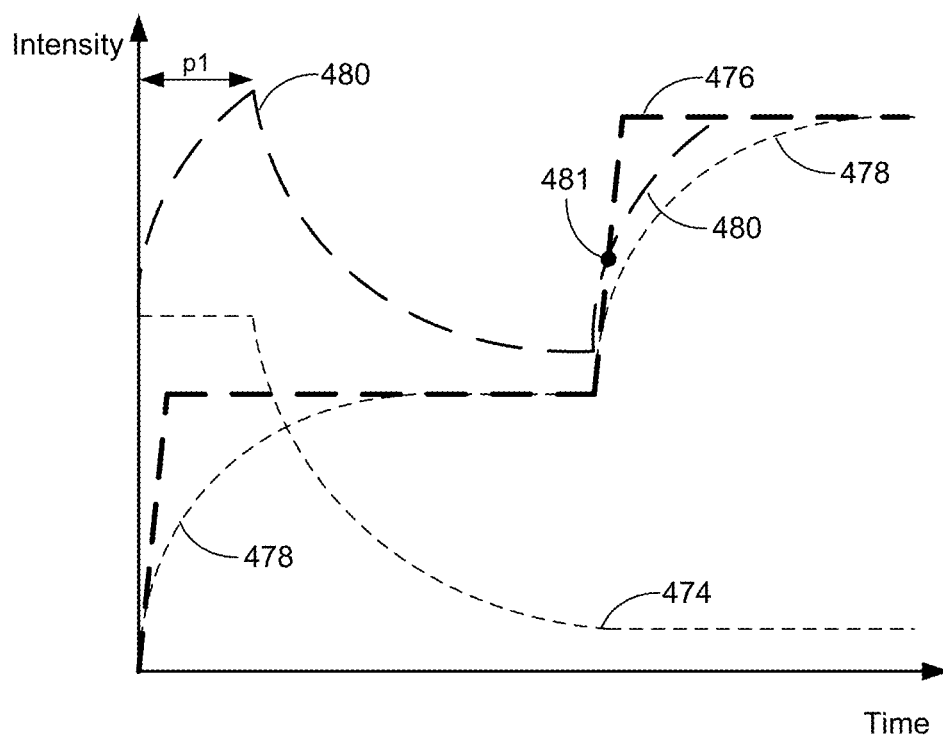


Figure 4C

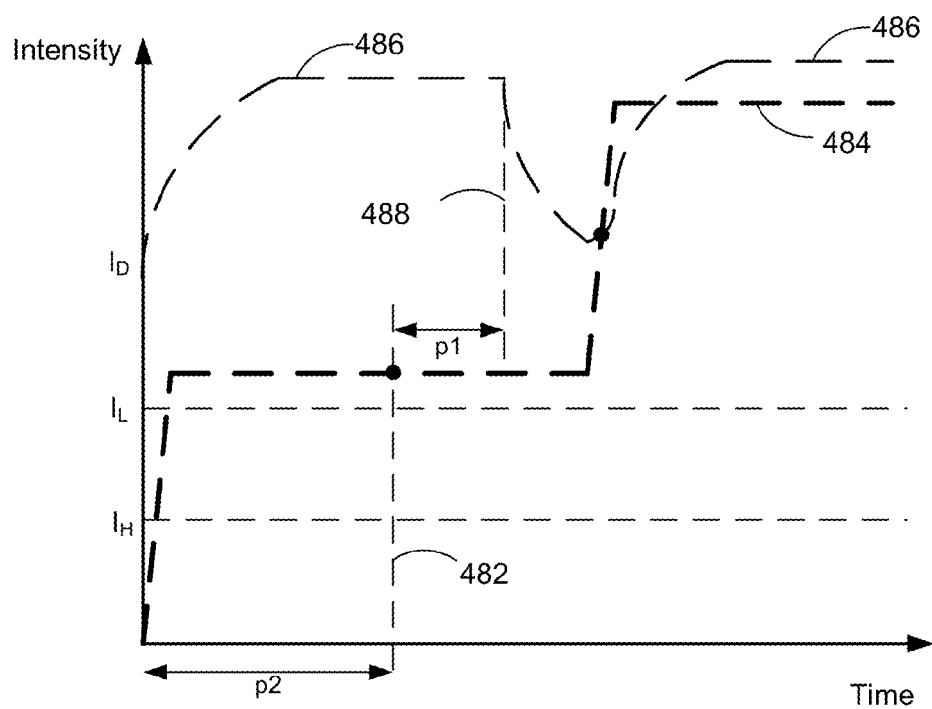


Figure 4D

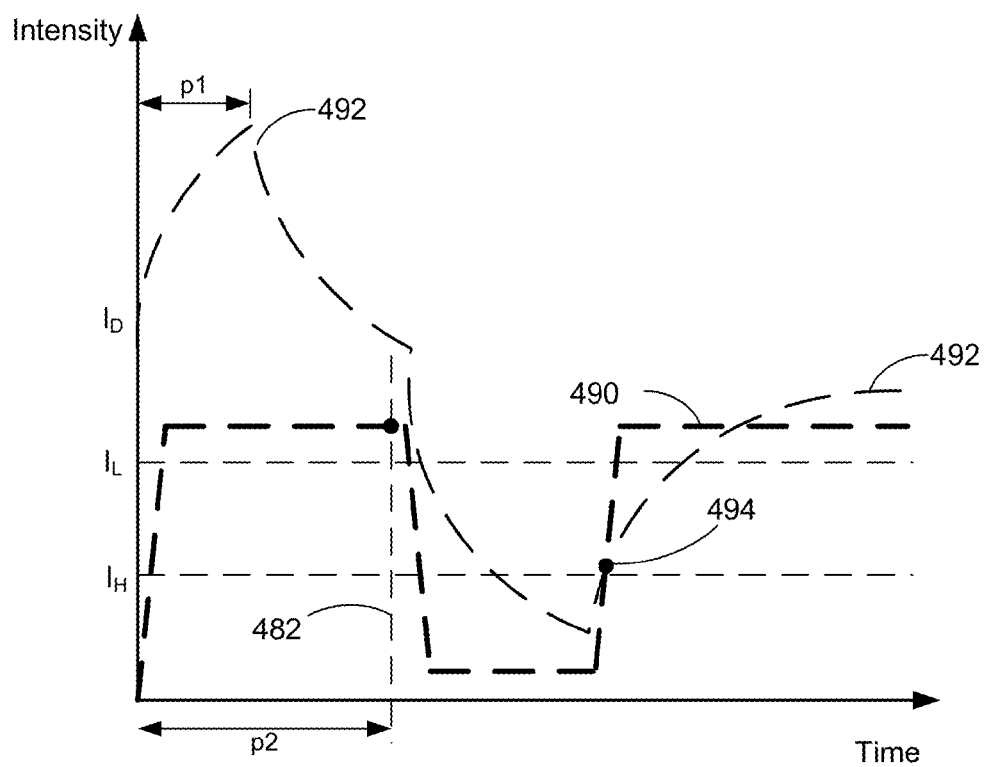


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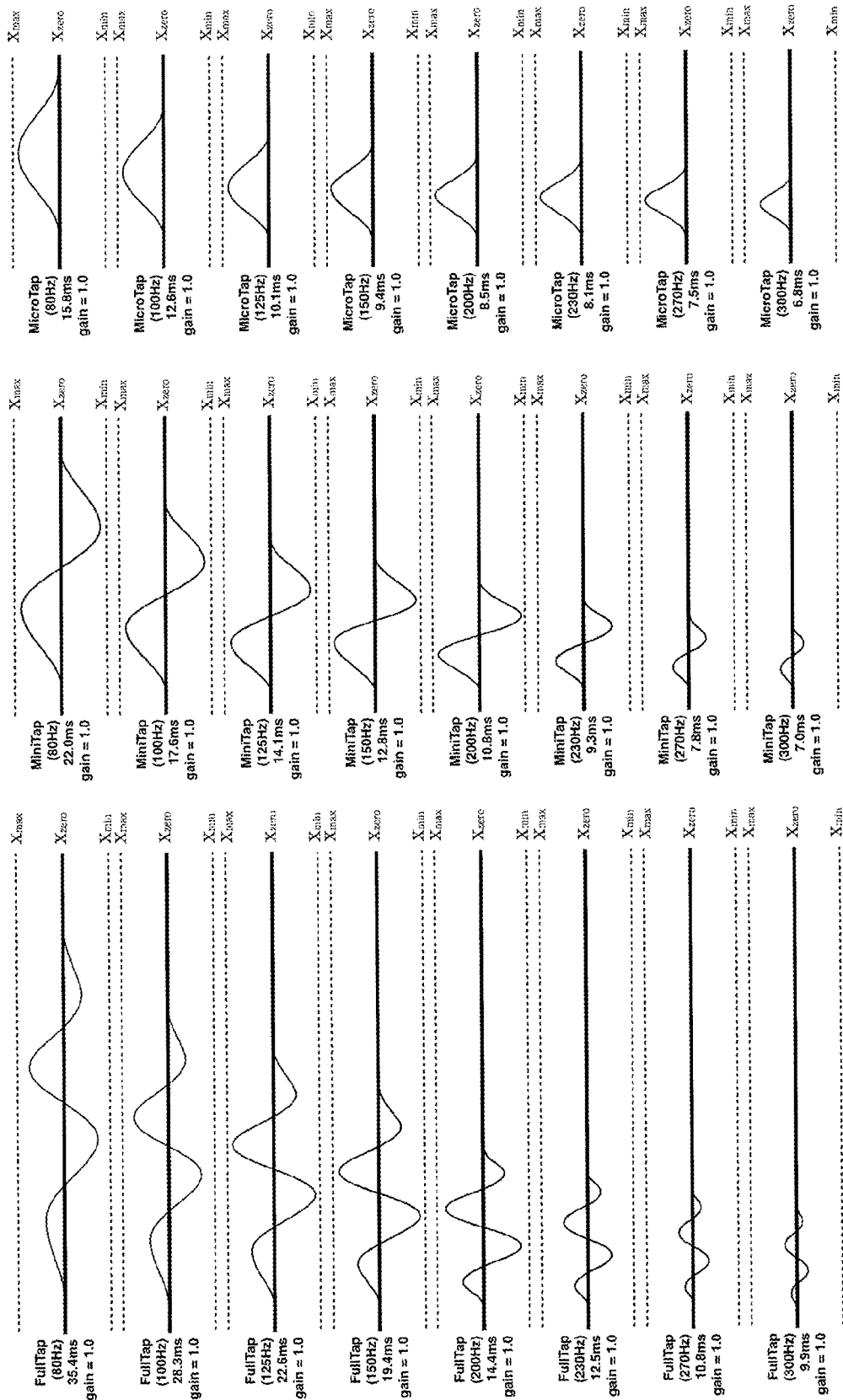


Figure 4F

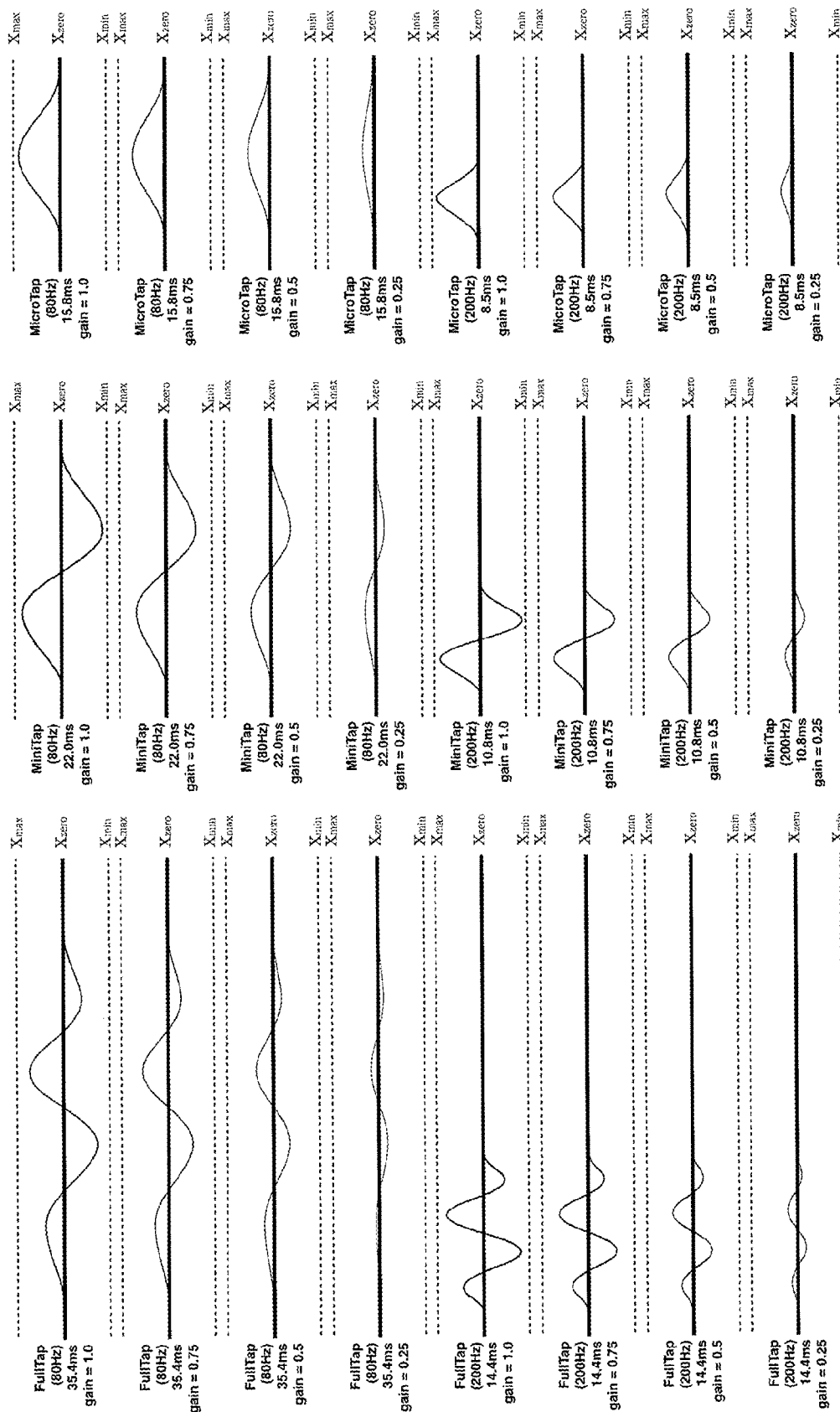


Figure 4G

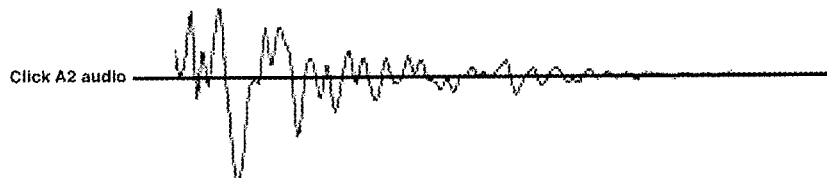
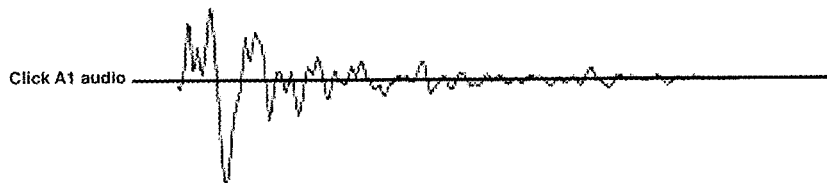


Figure 4H

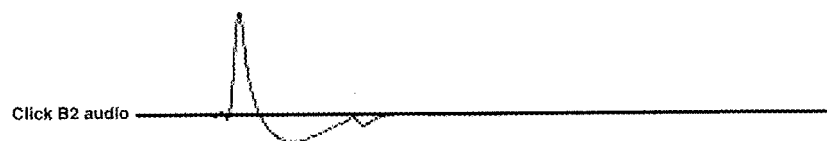


Figure 4I

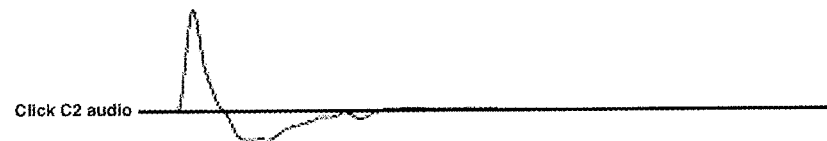
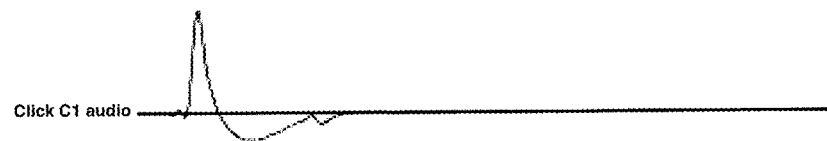


Figure 4J

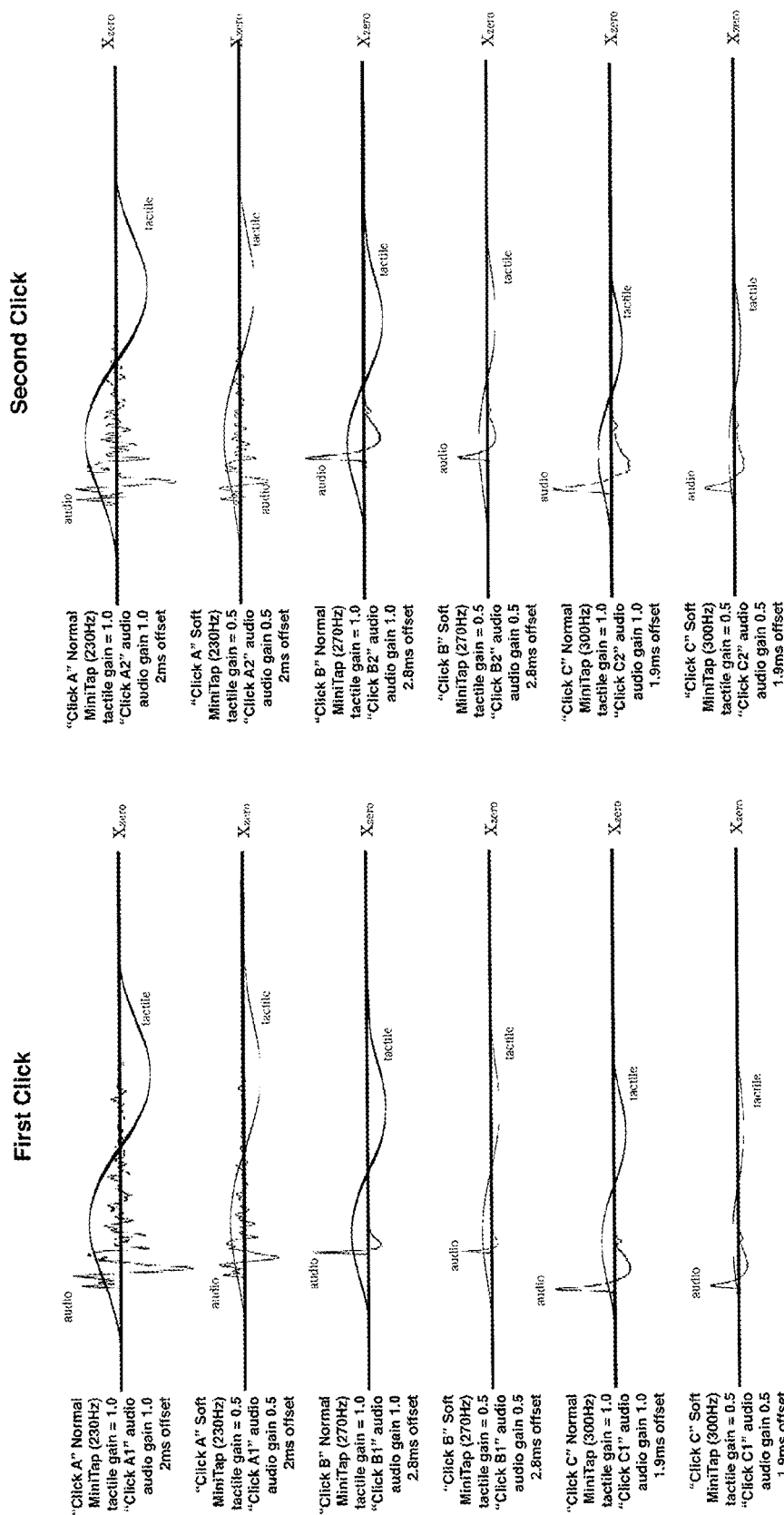


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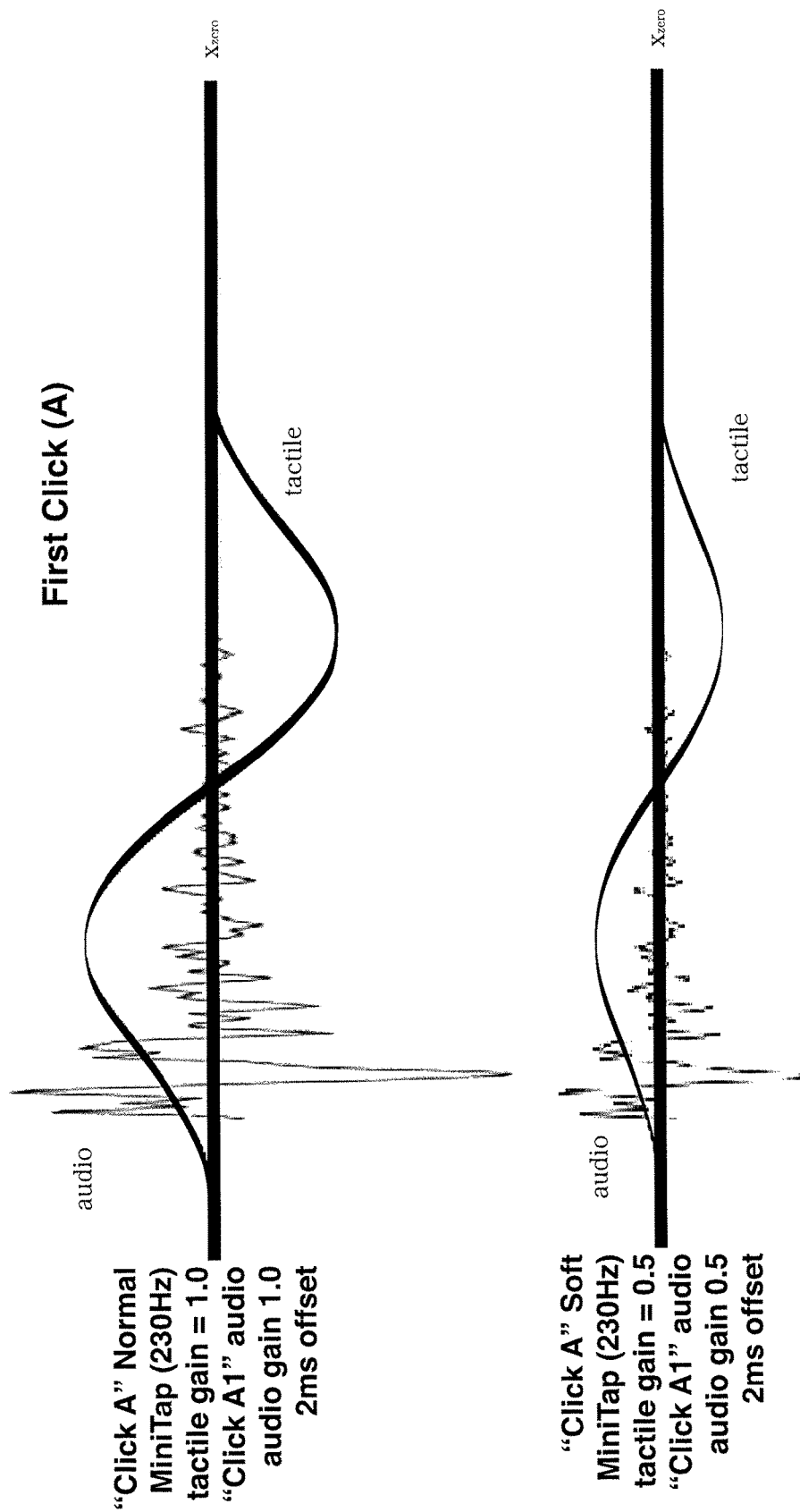


Figure 4L

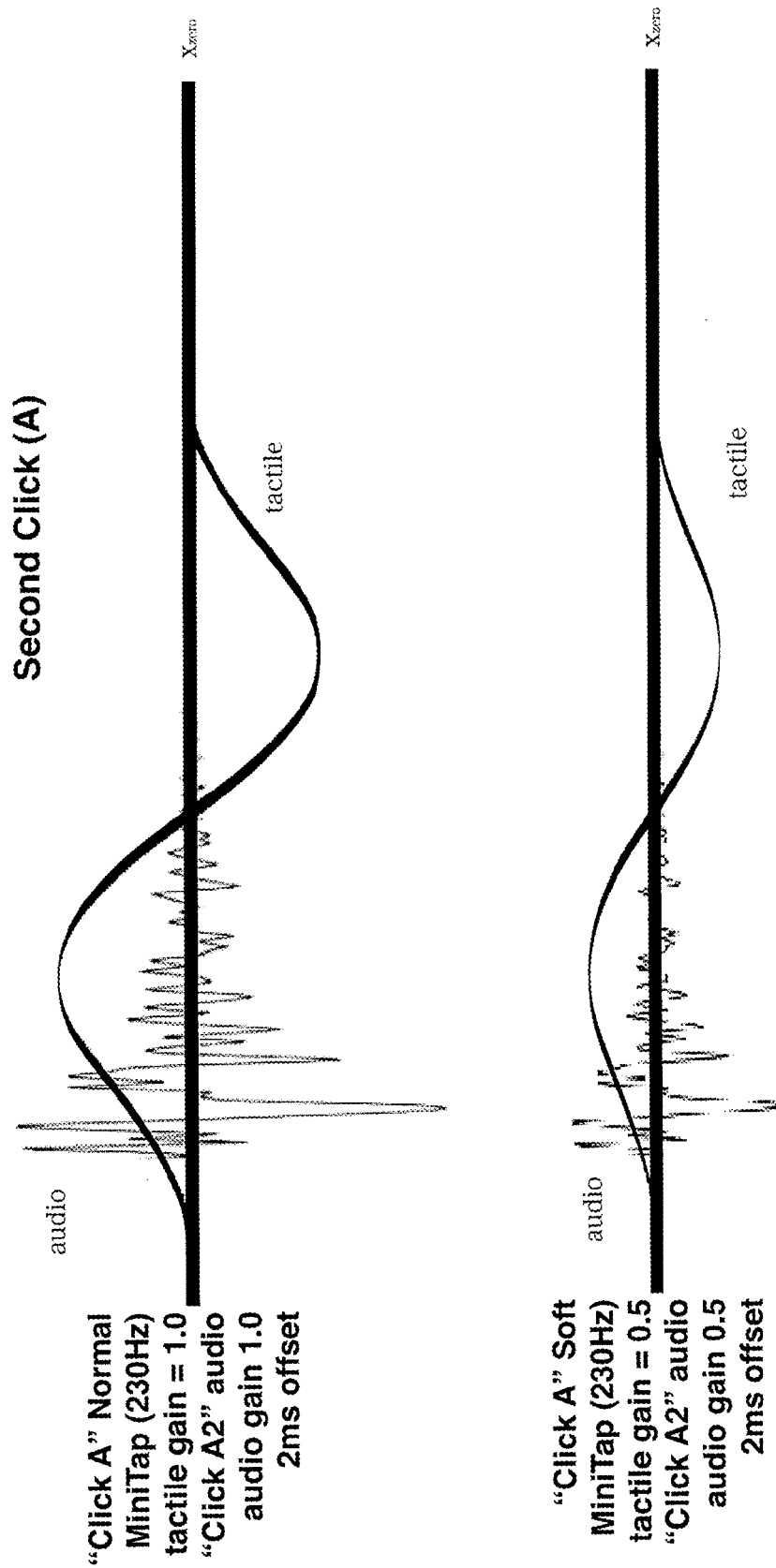


Figure 4M

First Click (B)

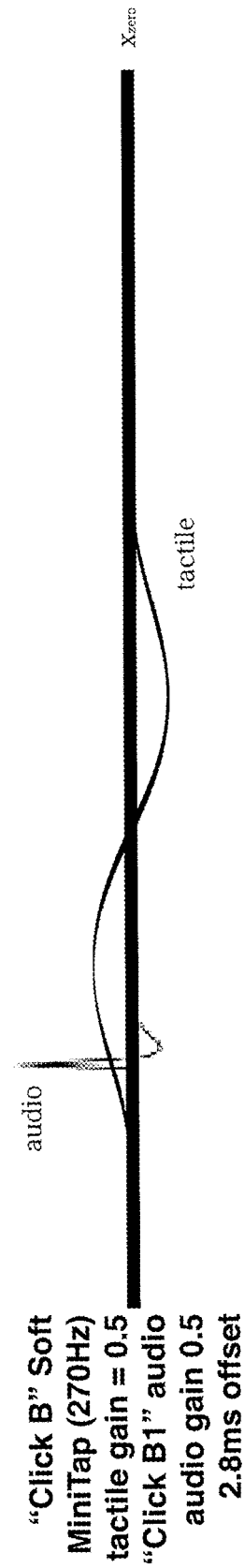
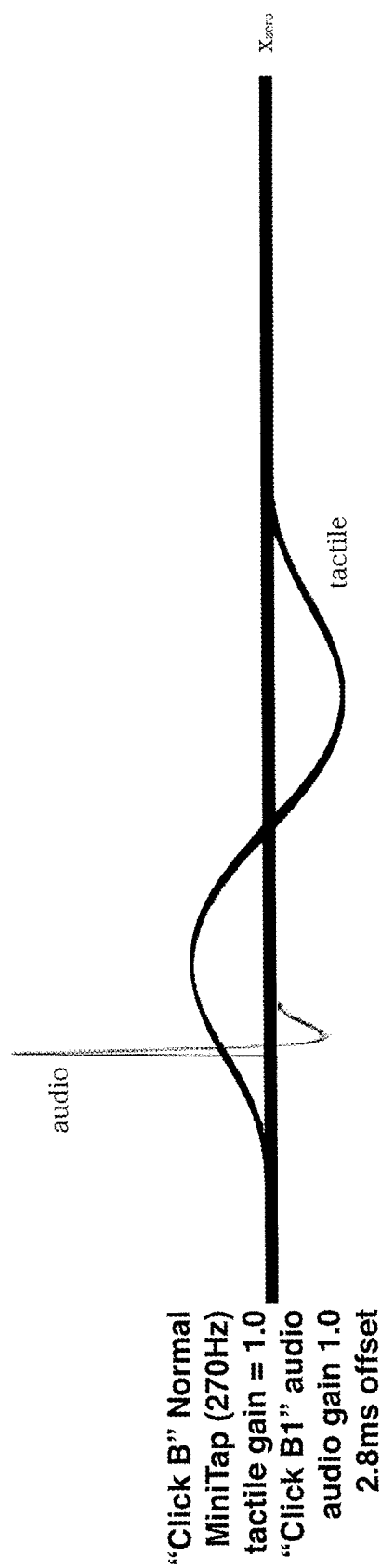


Figure 4N

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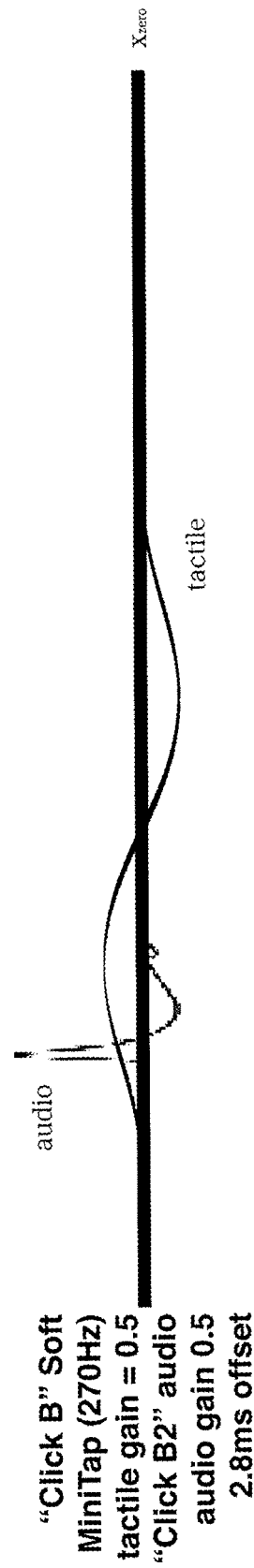
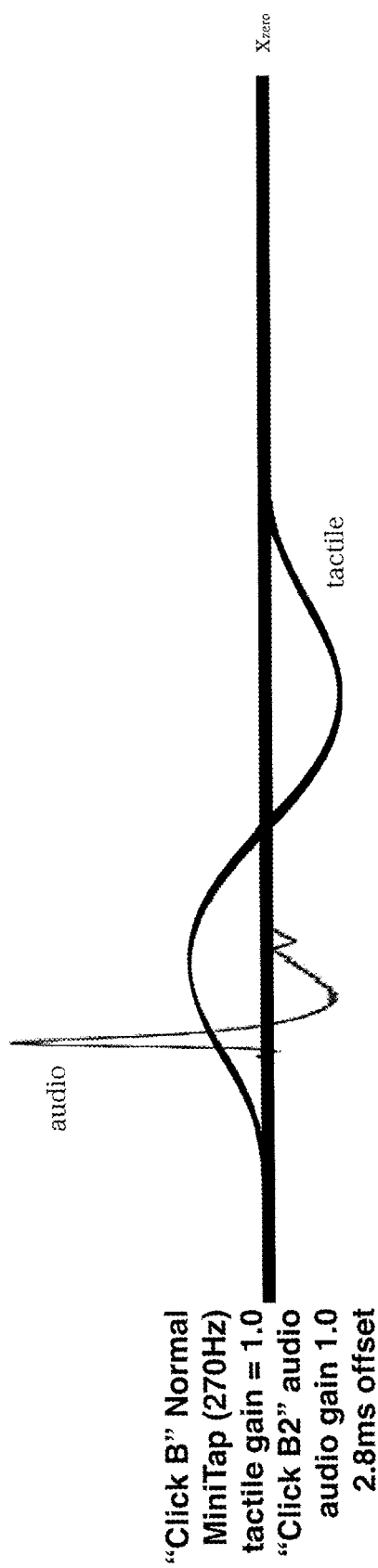


Figure 40

First Click (C)

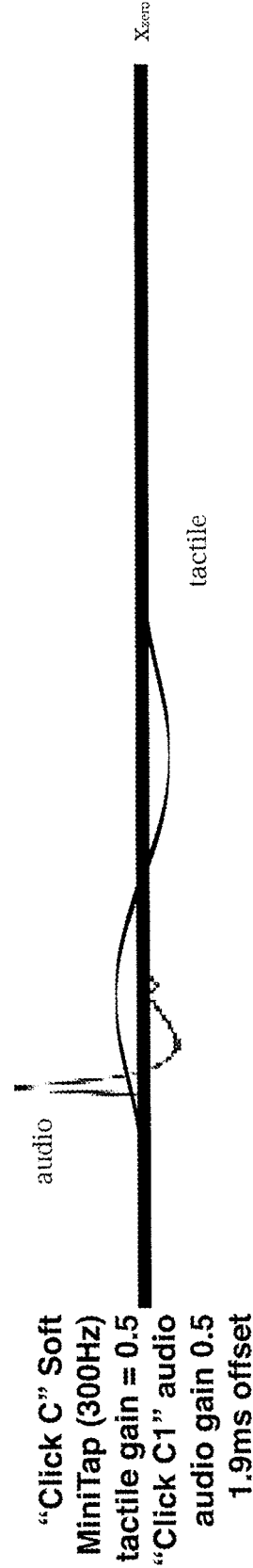
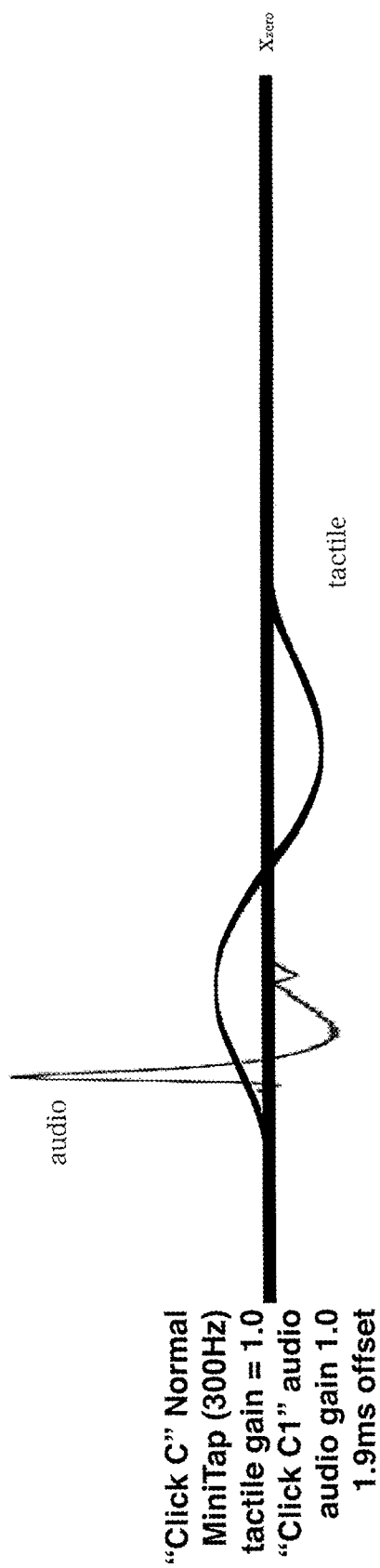


Figure 4P

Second Click (C)

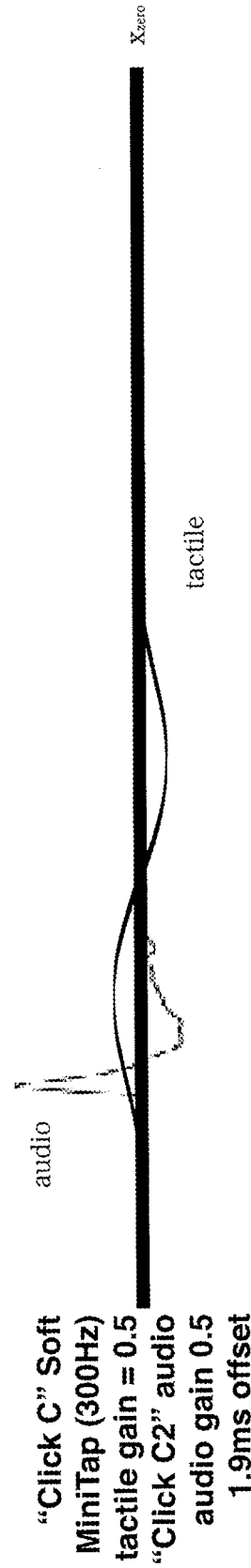
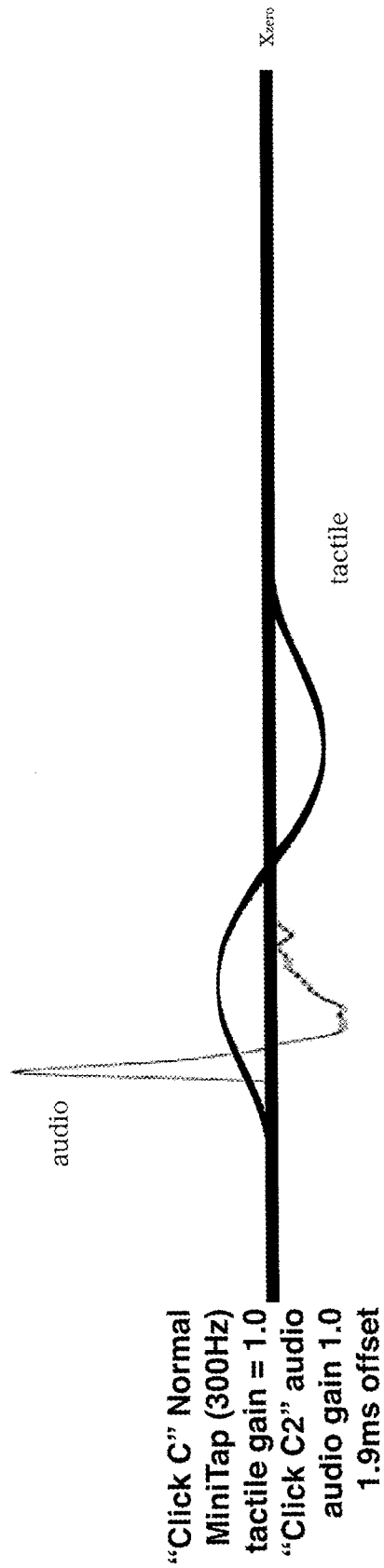


Figure 4Q

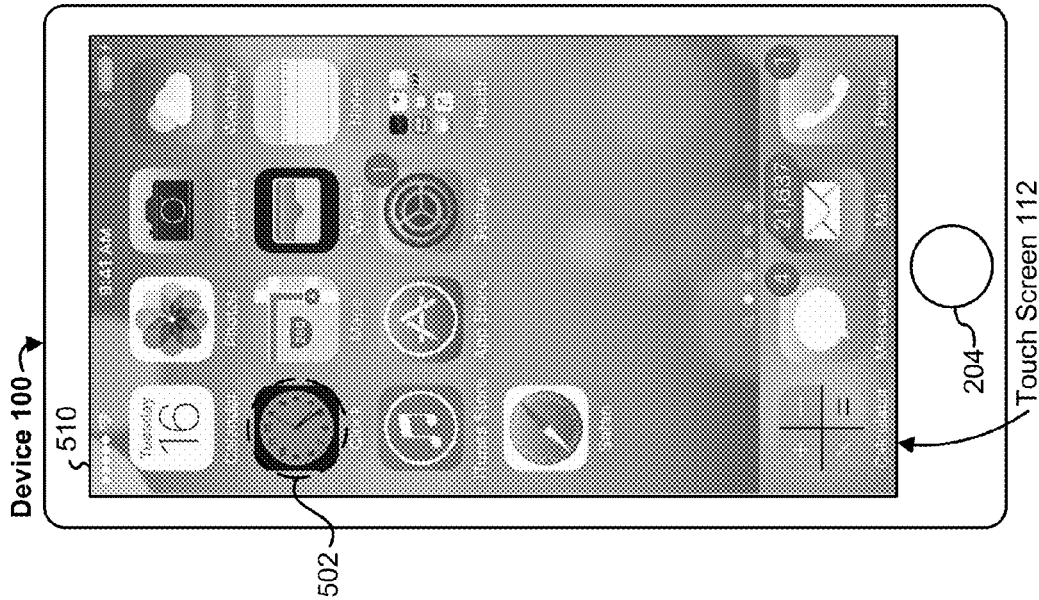


Figure 5A2

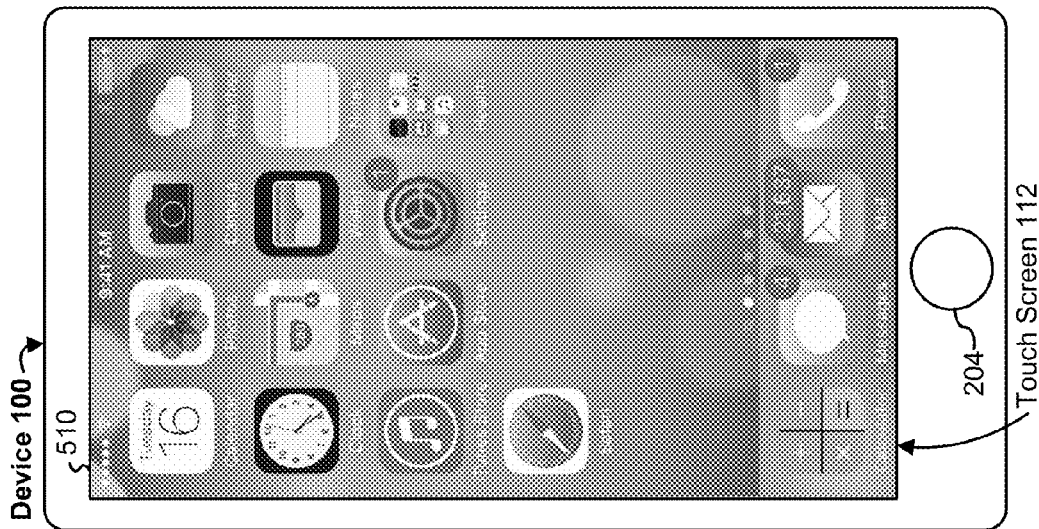
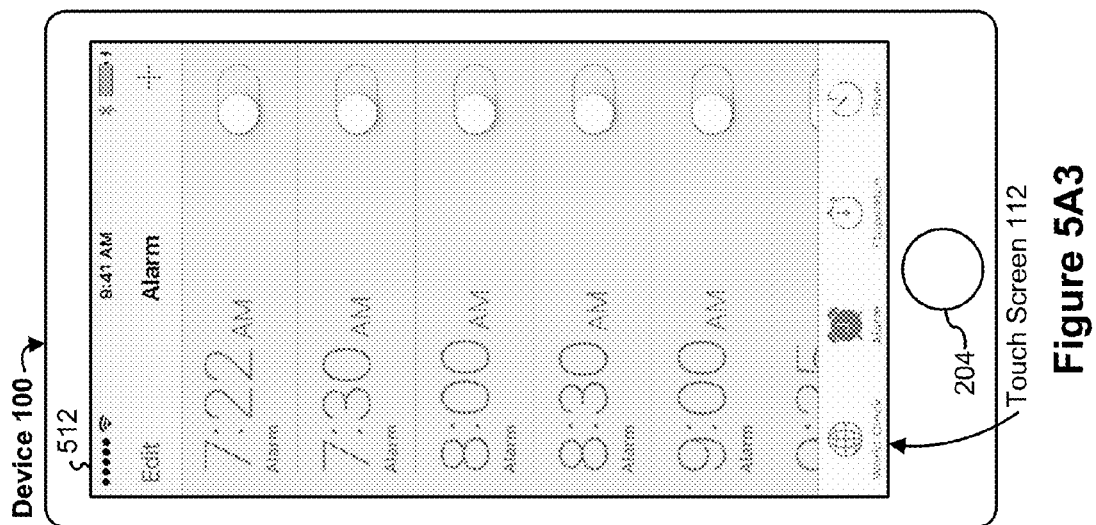
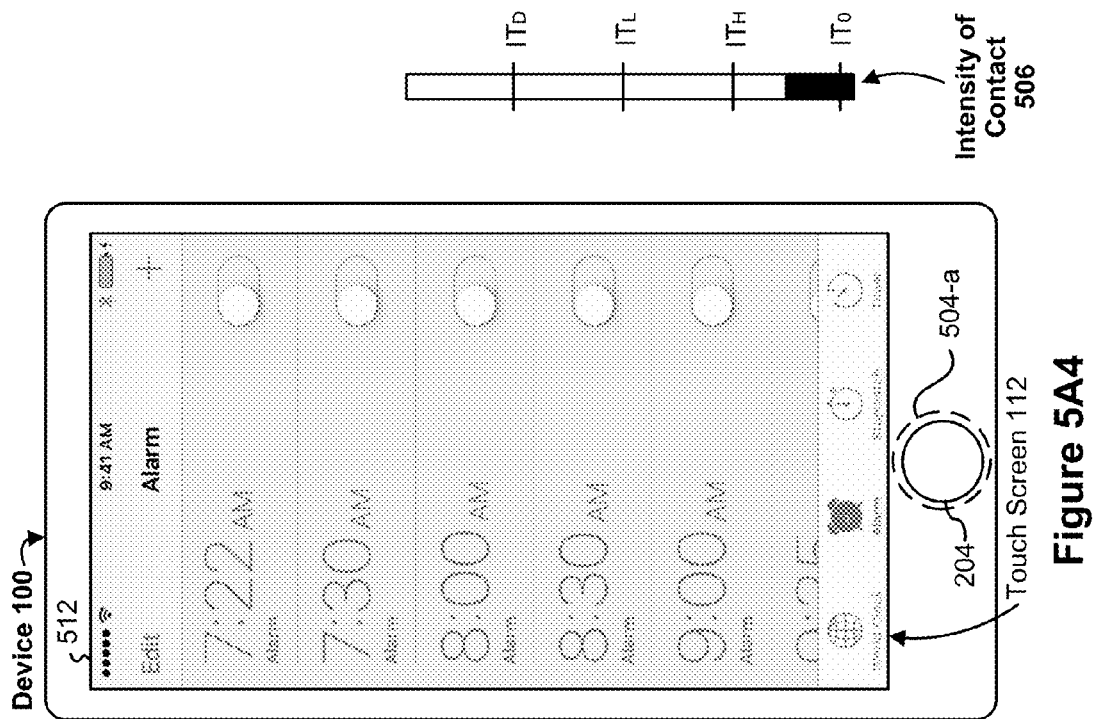


Figure 5A1



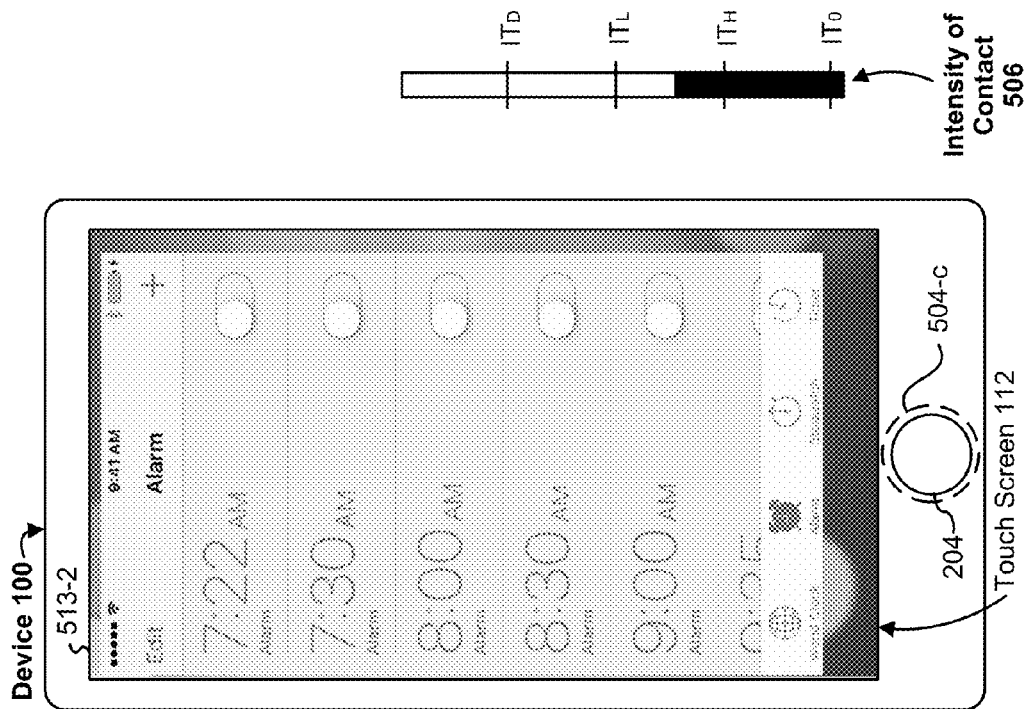


Figure 5A6

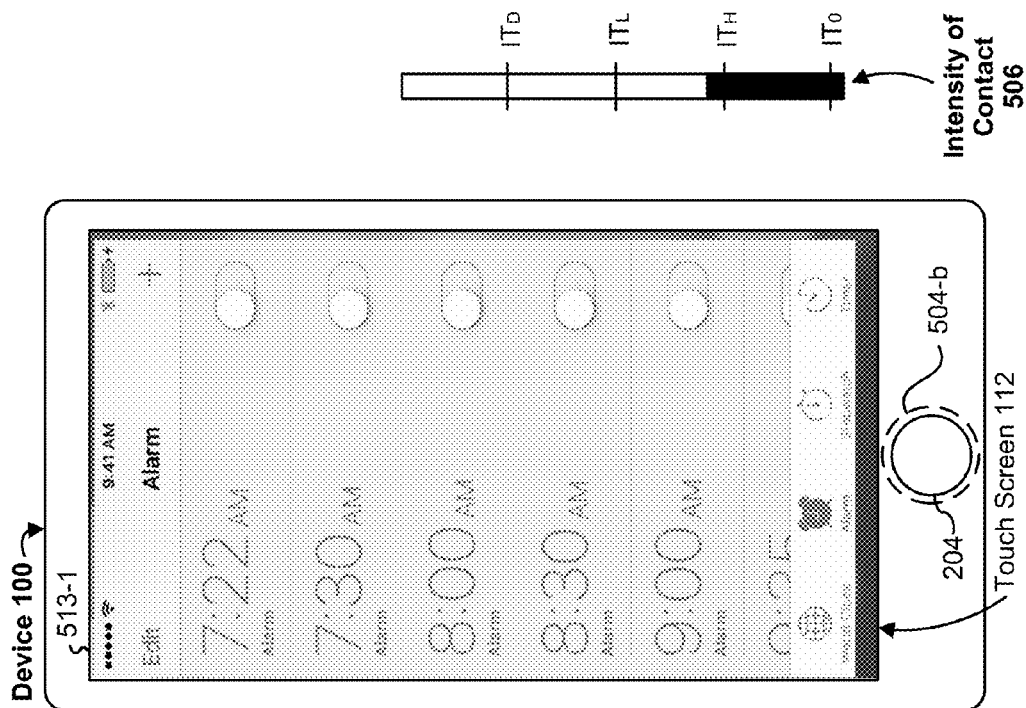
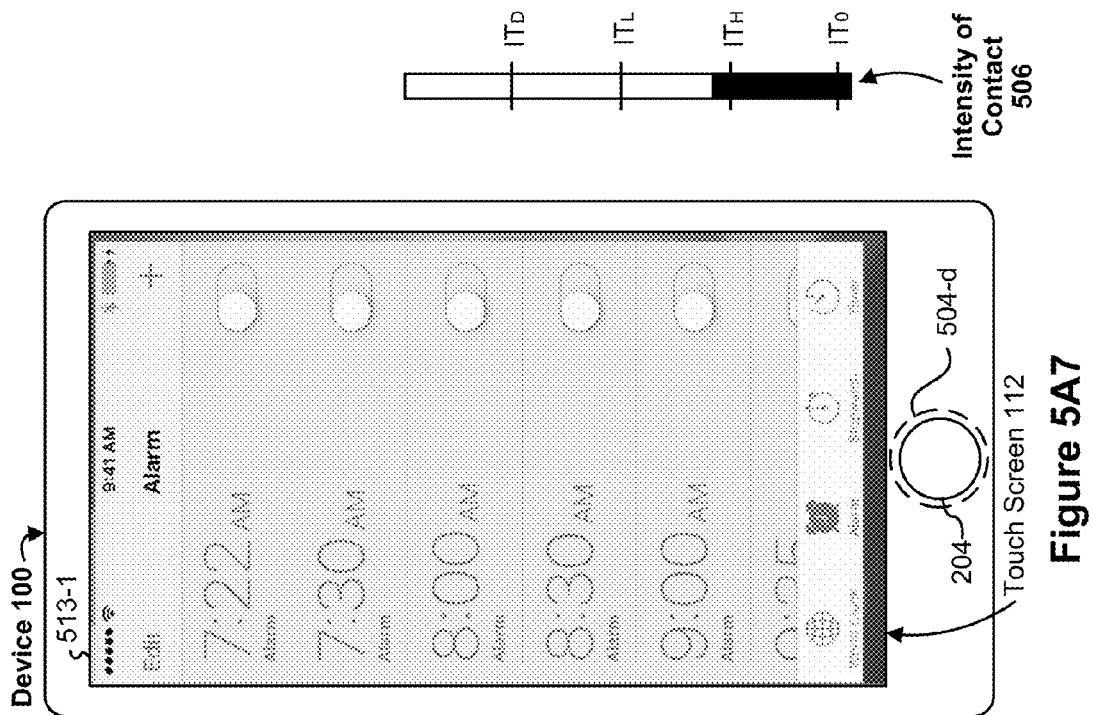
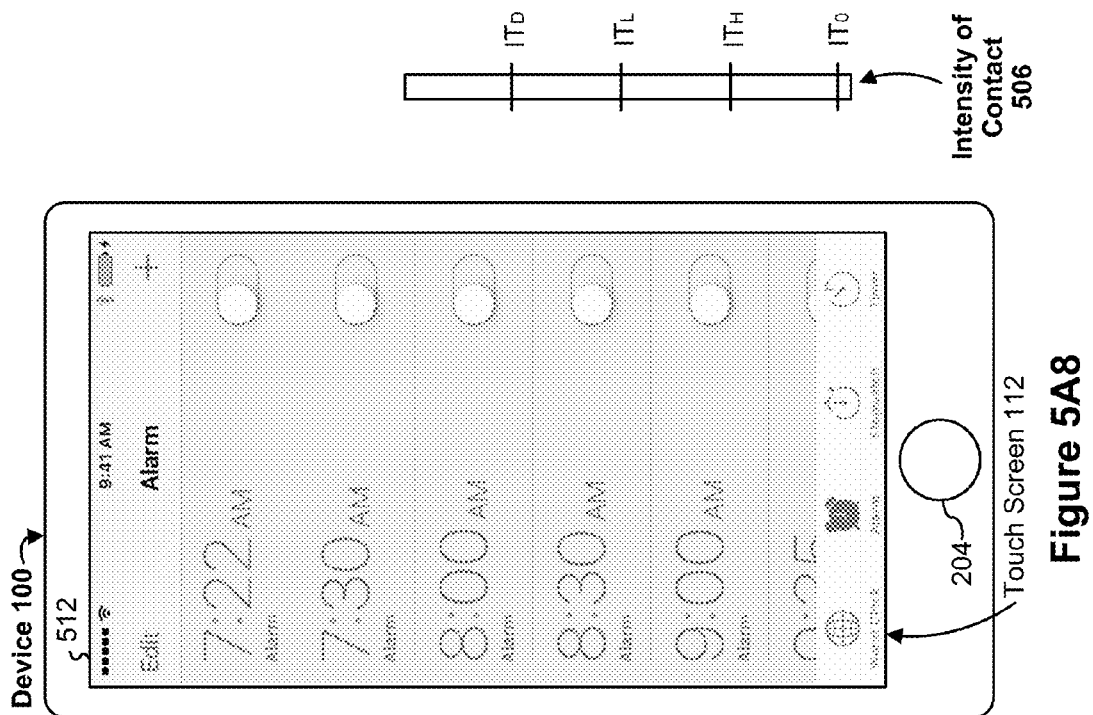
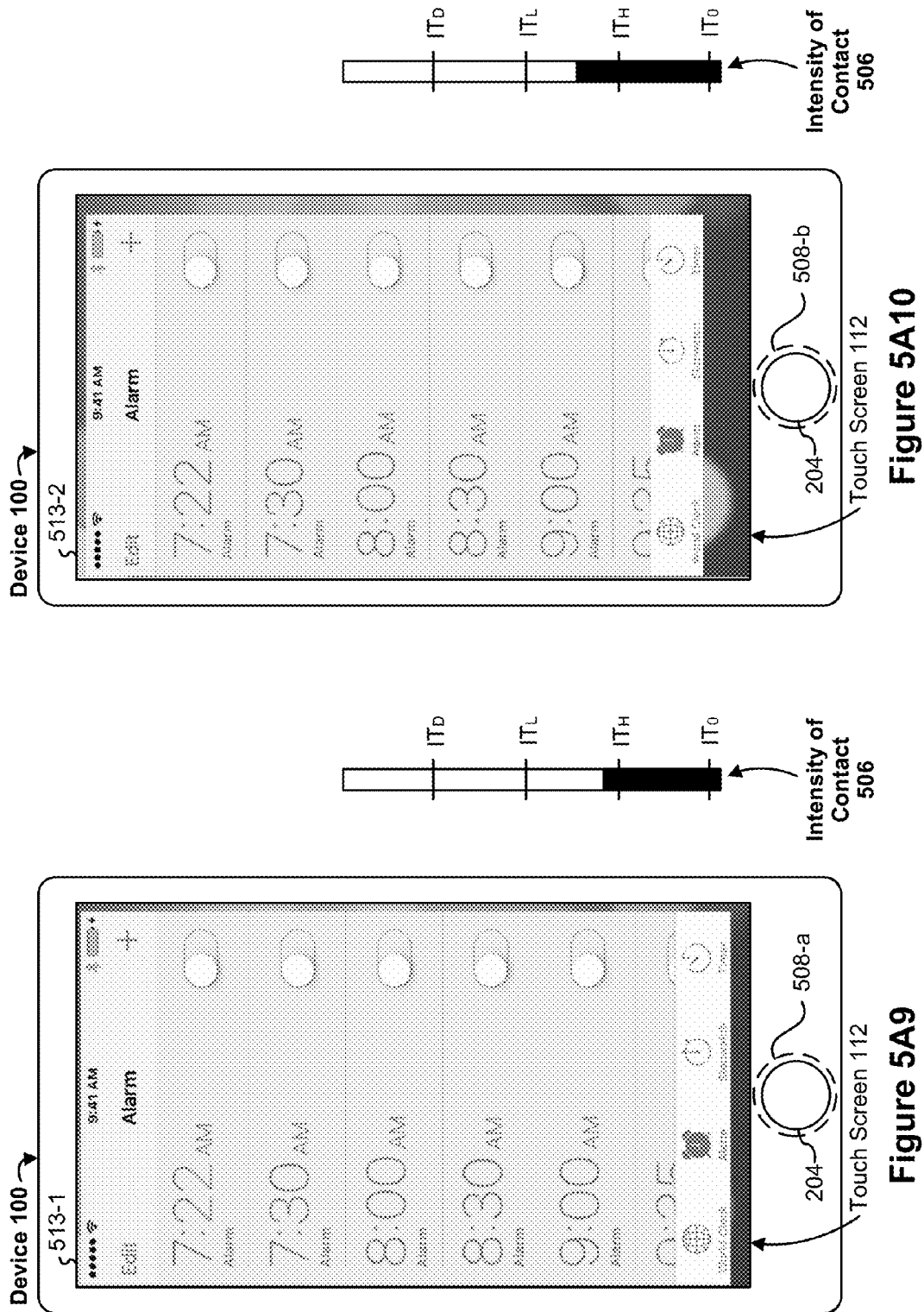
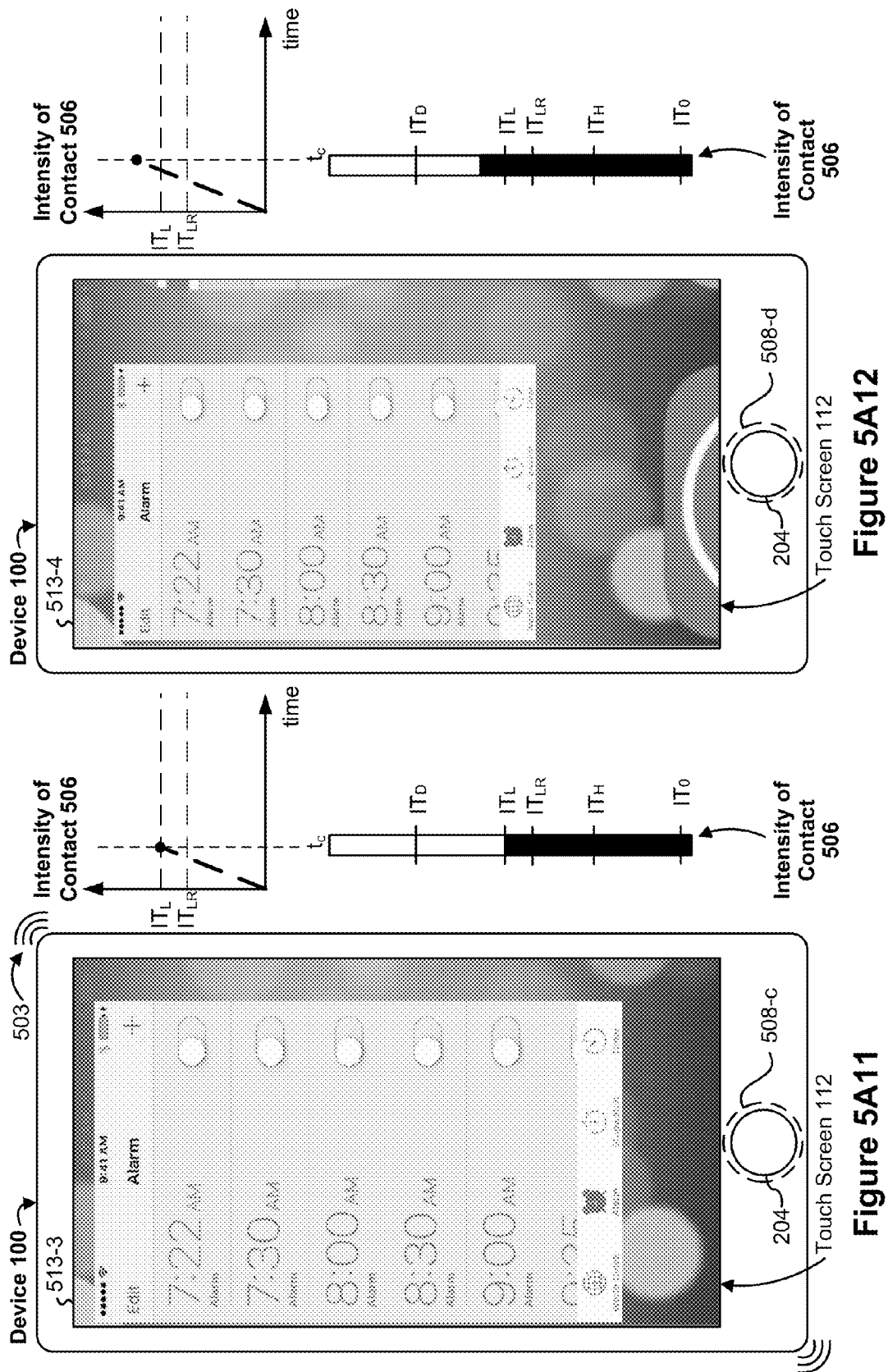
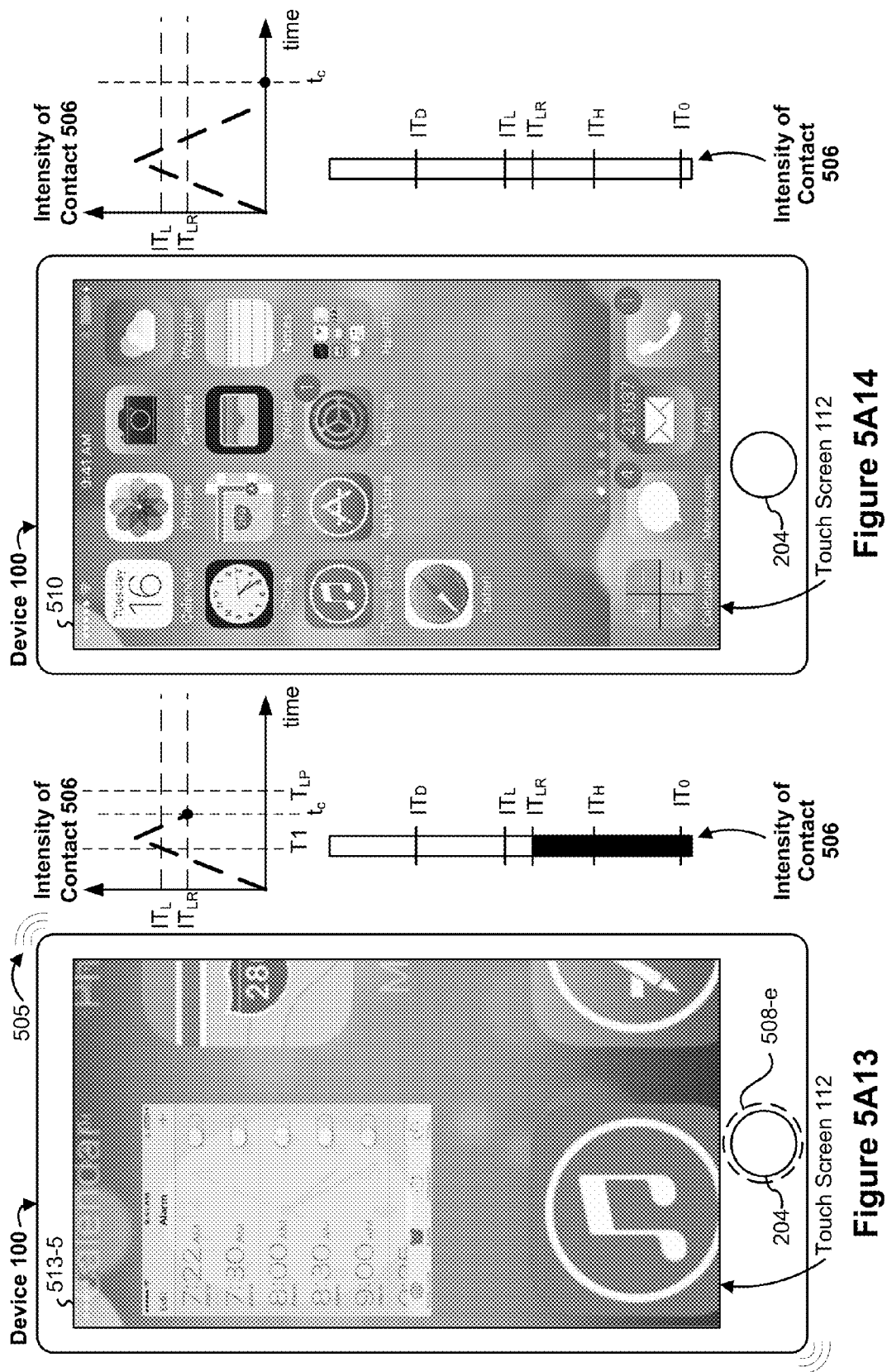


Figure 5A5









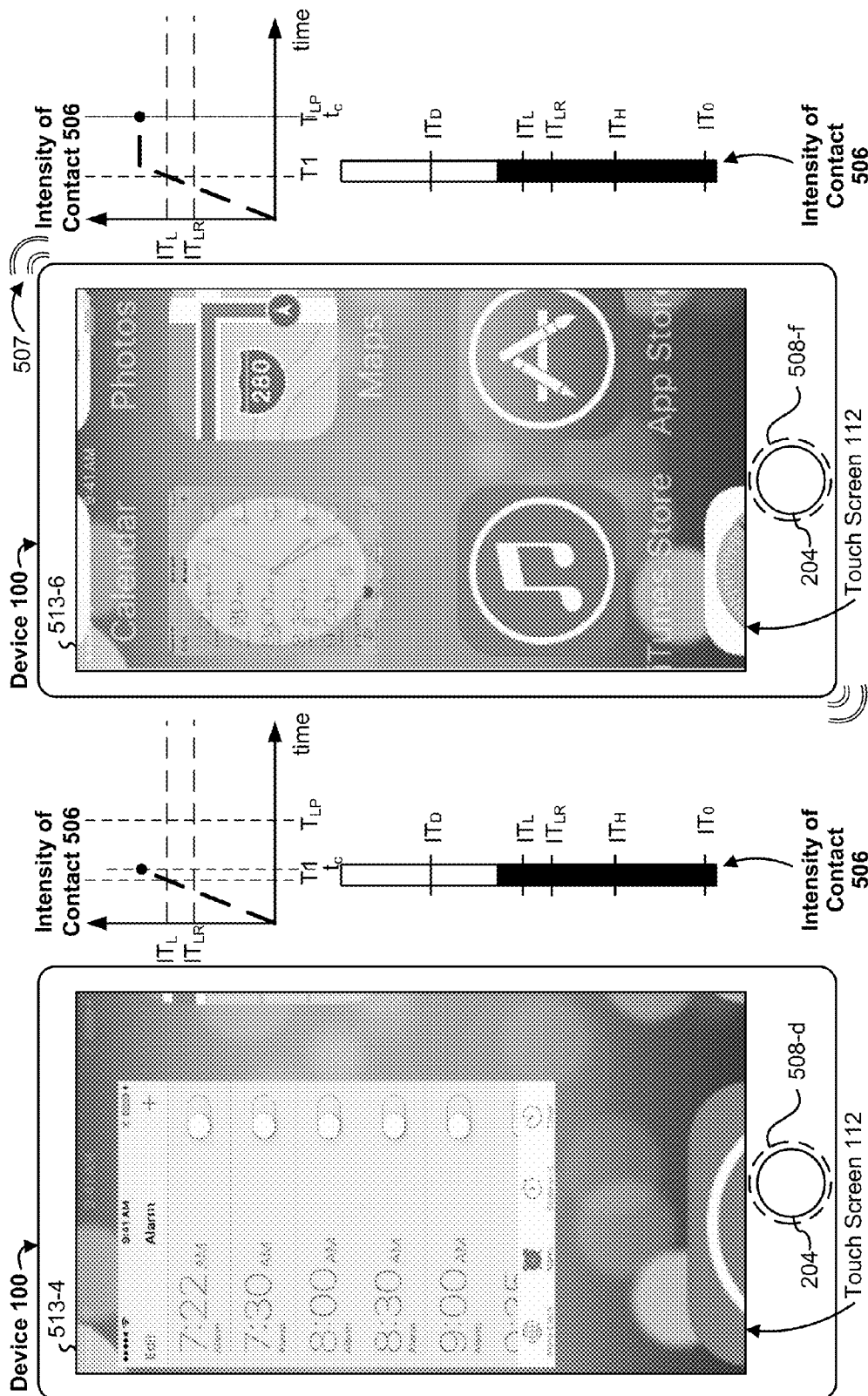


Figure 5A16

Figure 5A15 (same as 5A12)

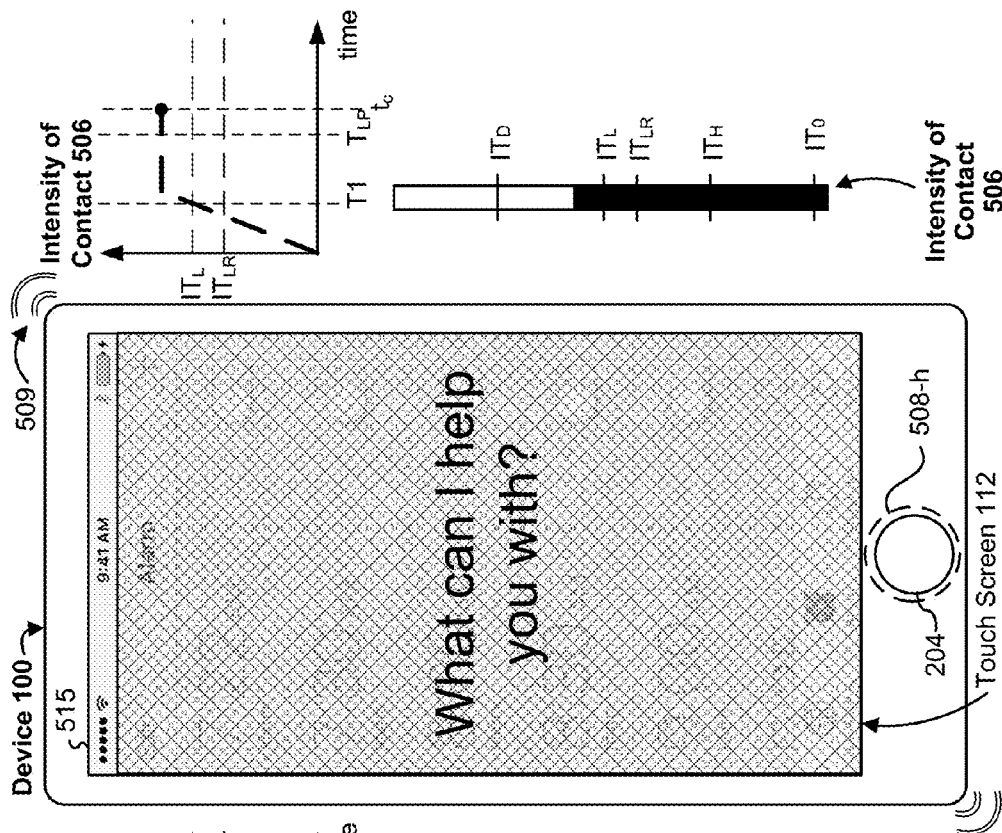


Figure 5A18

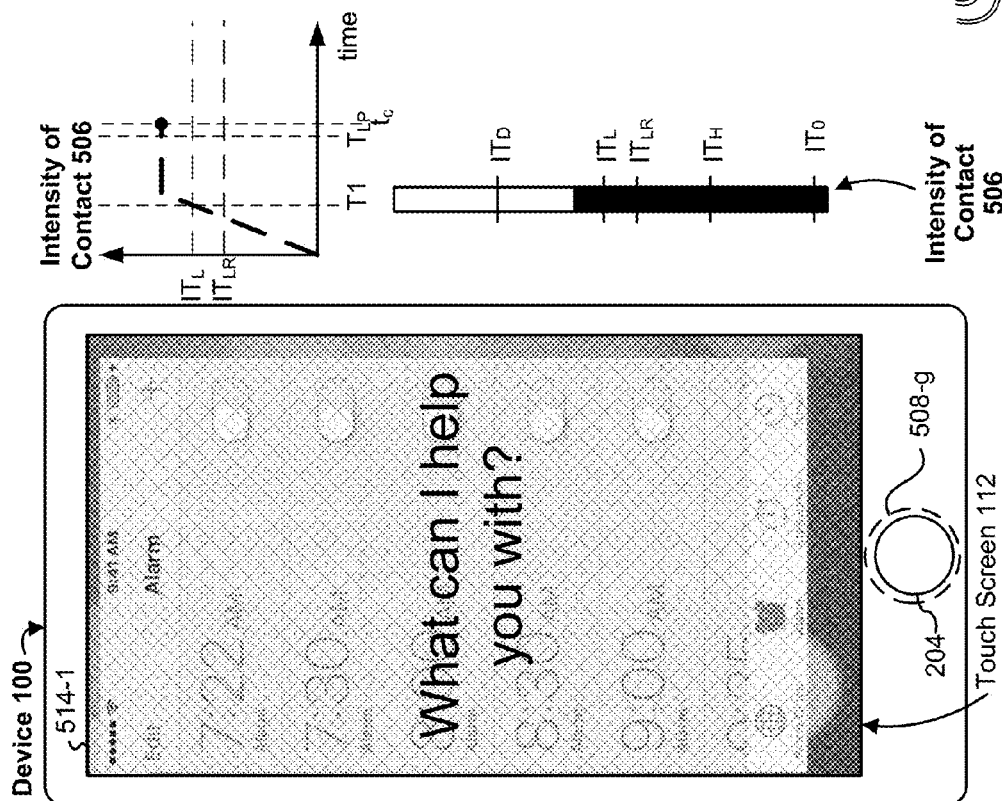


Figure 5A17

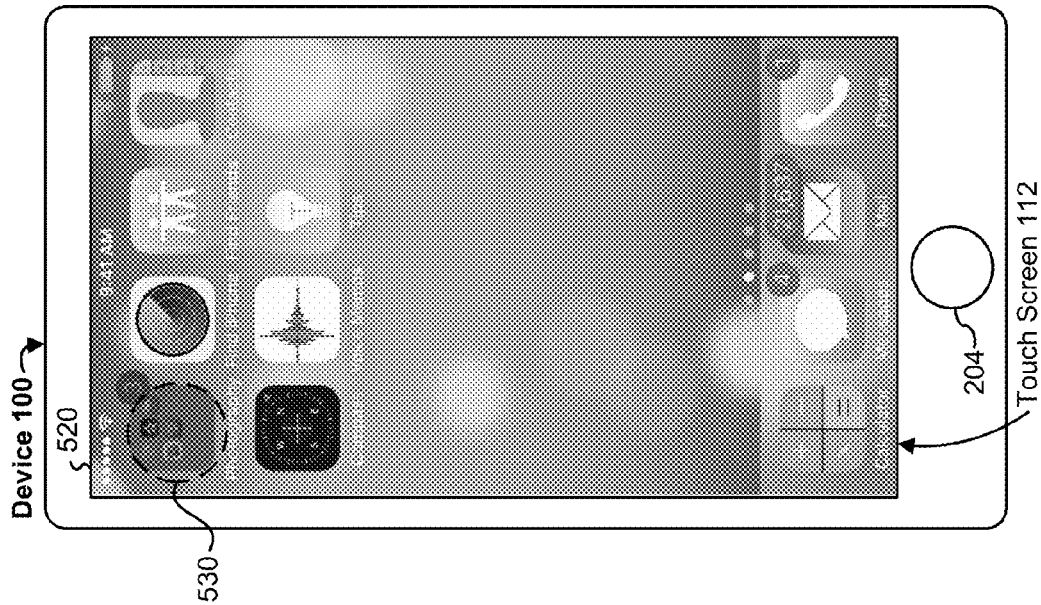


Figure 5B2

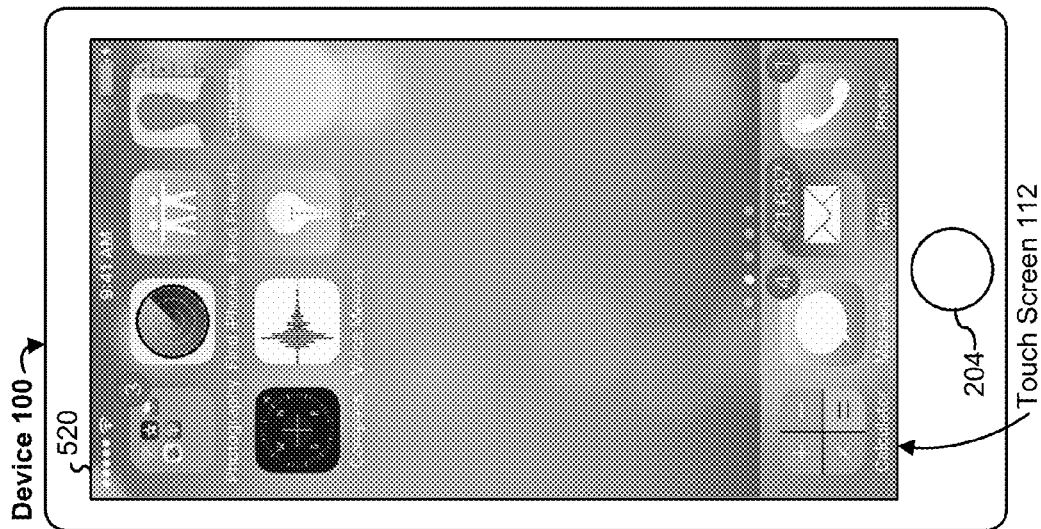


Figure 5B1

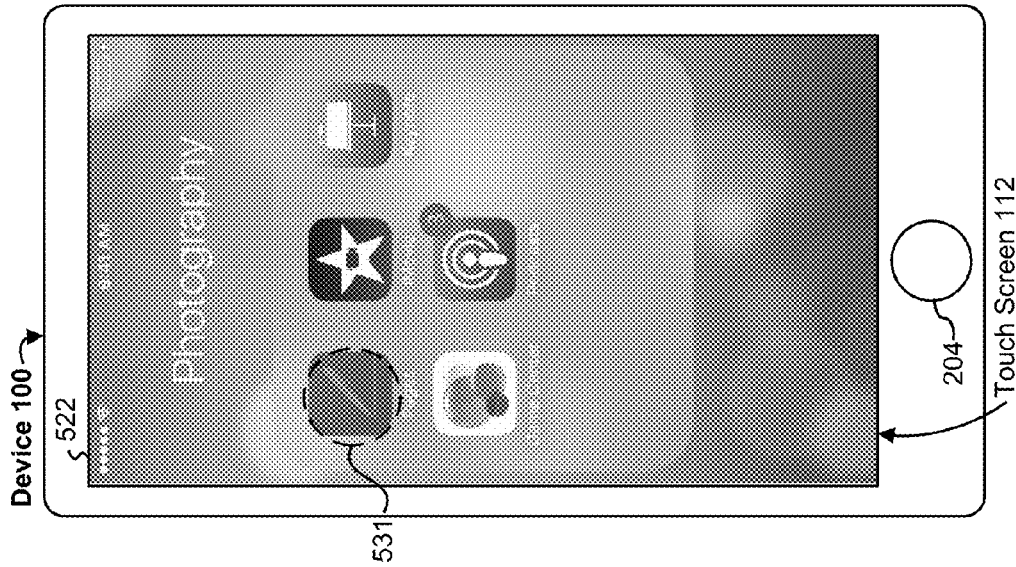


Figure 5B4

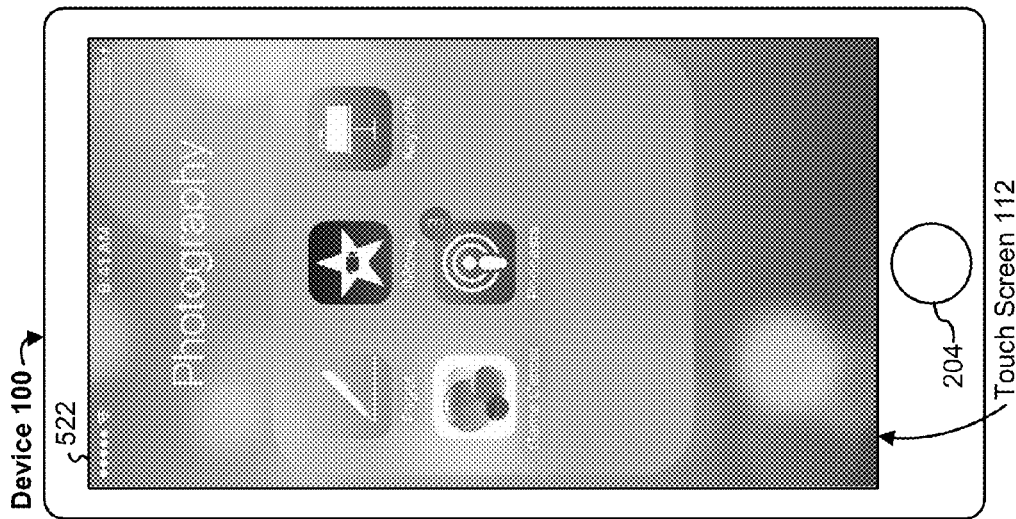


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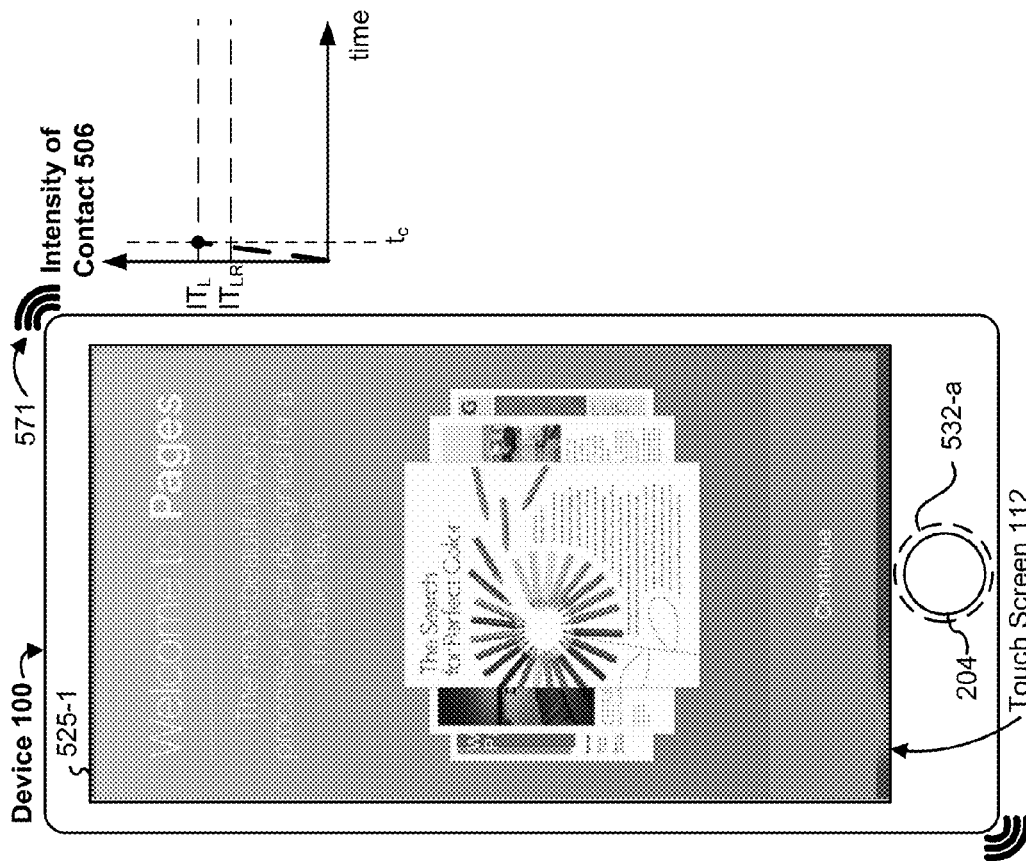


Figure 5B6

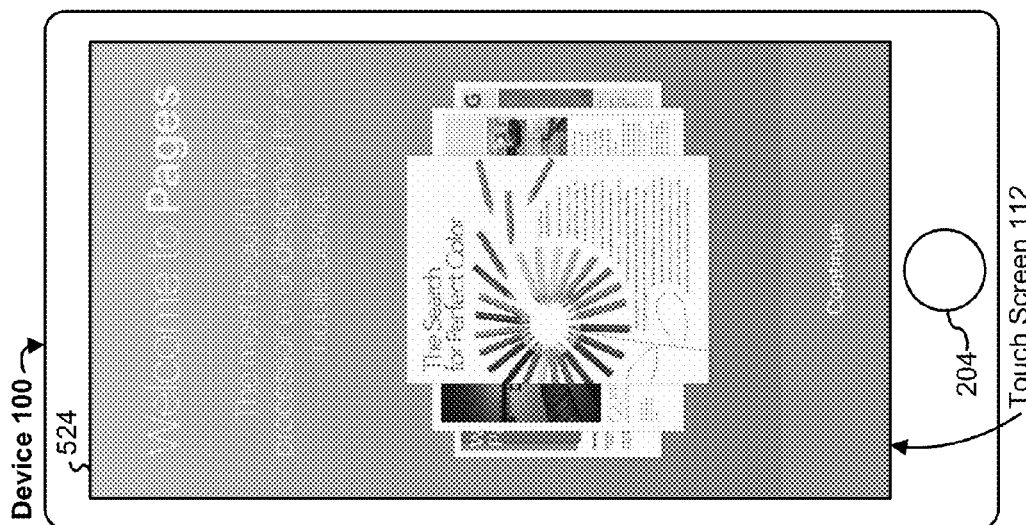


Figure 5B5

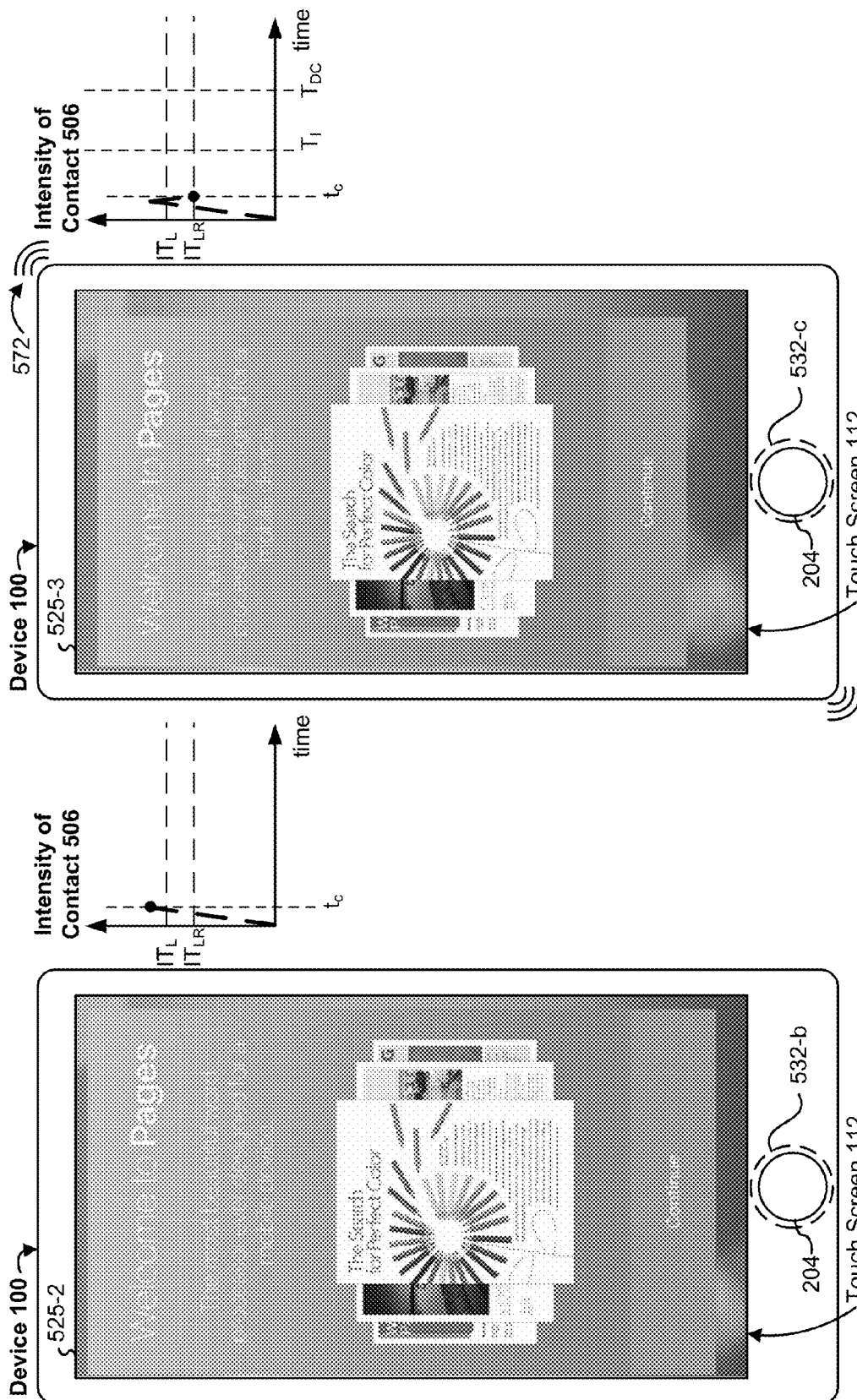


Figure 5B8

Figure 5B7

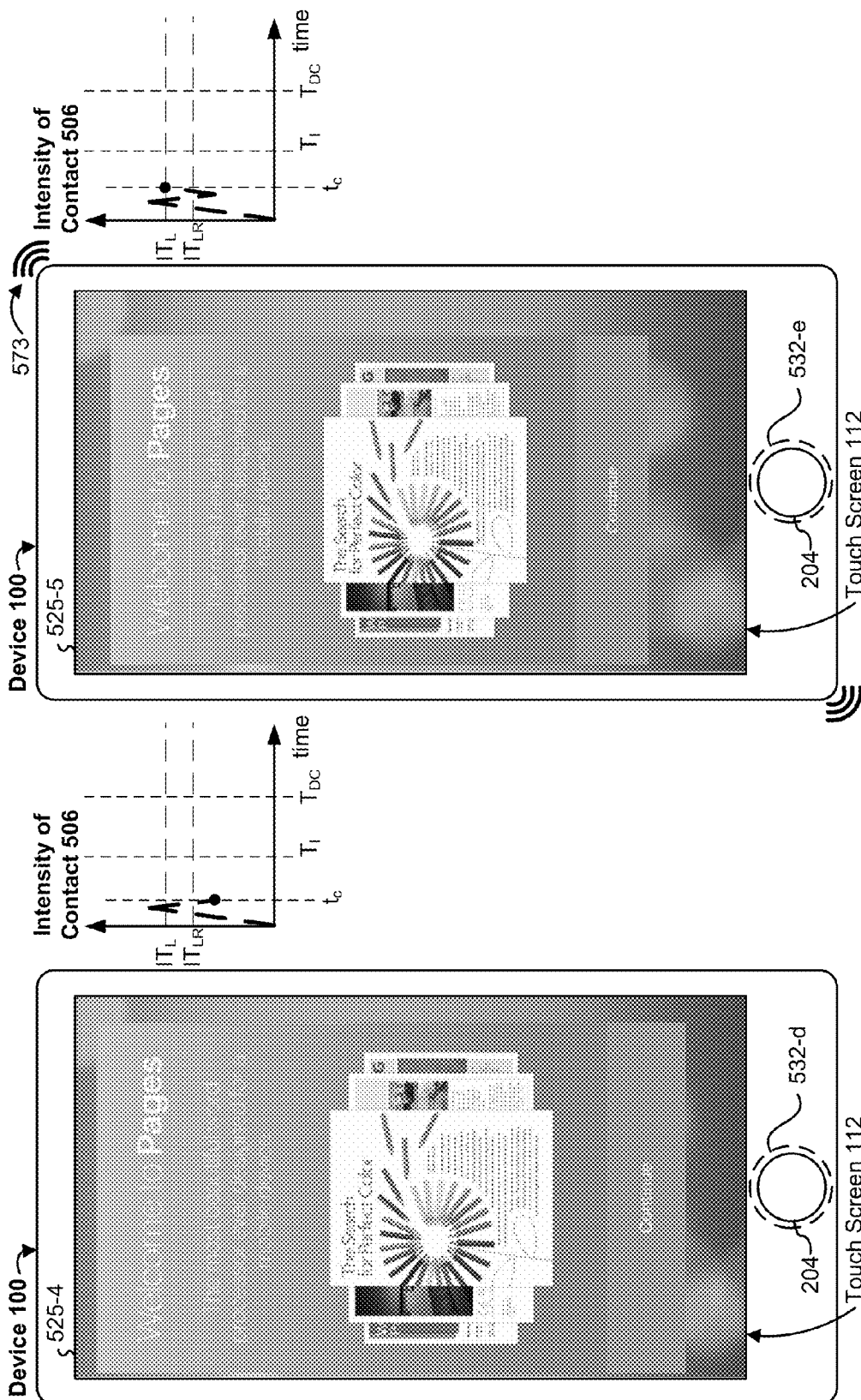


Figure 5B10

Figure 5B9

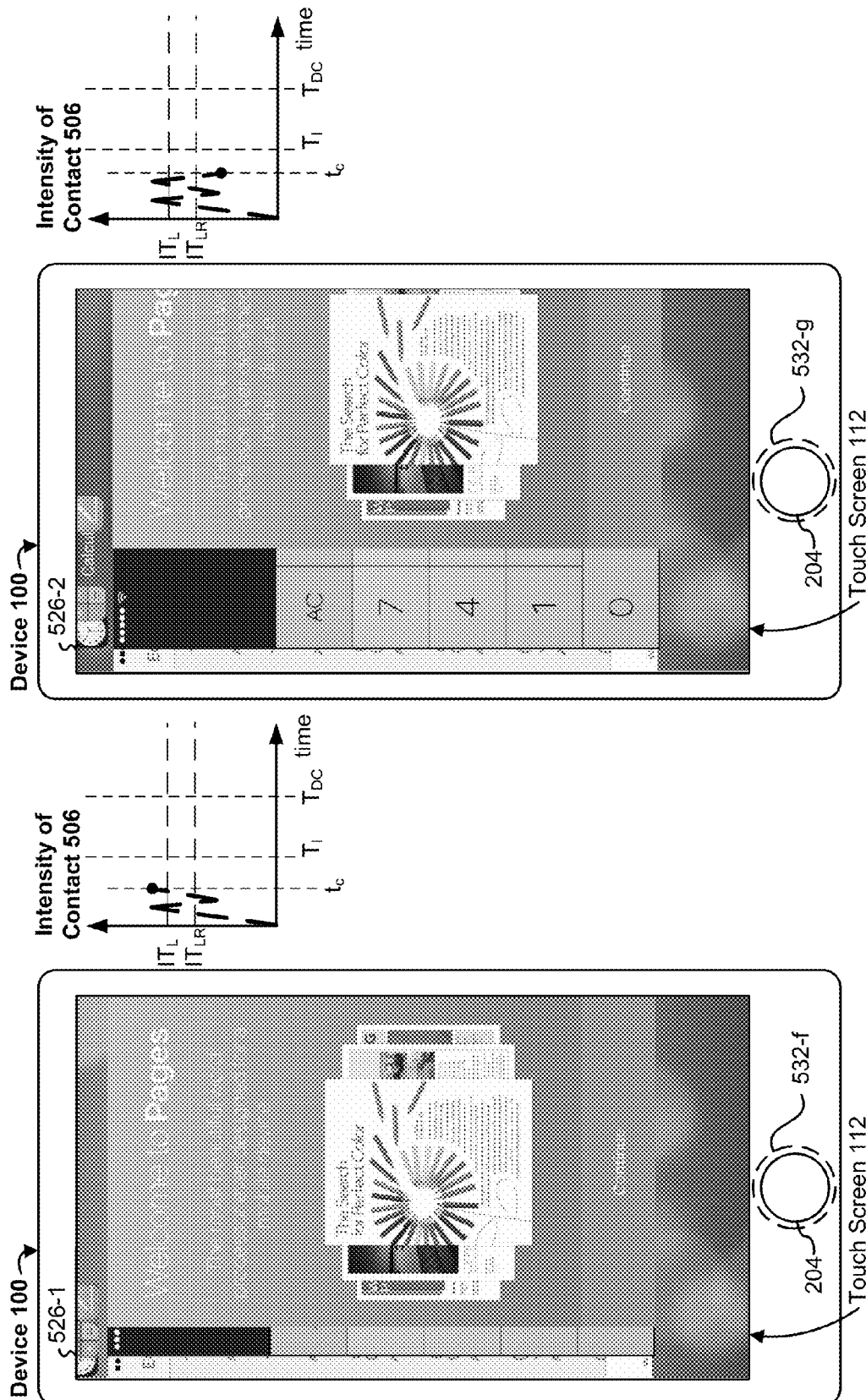
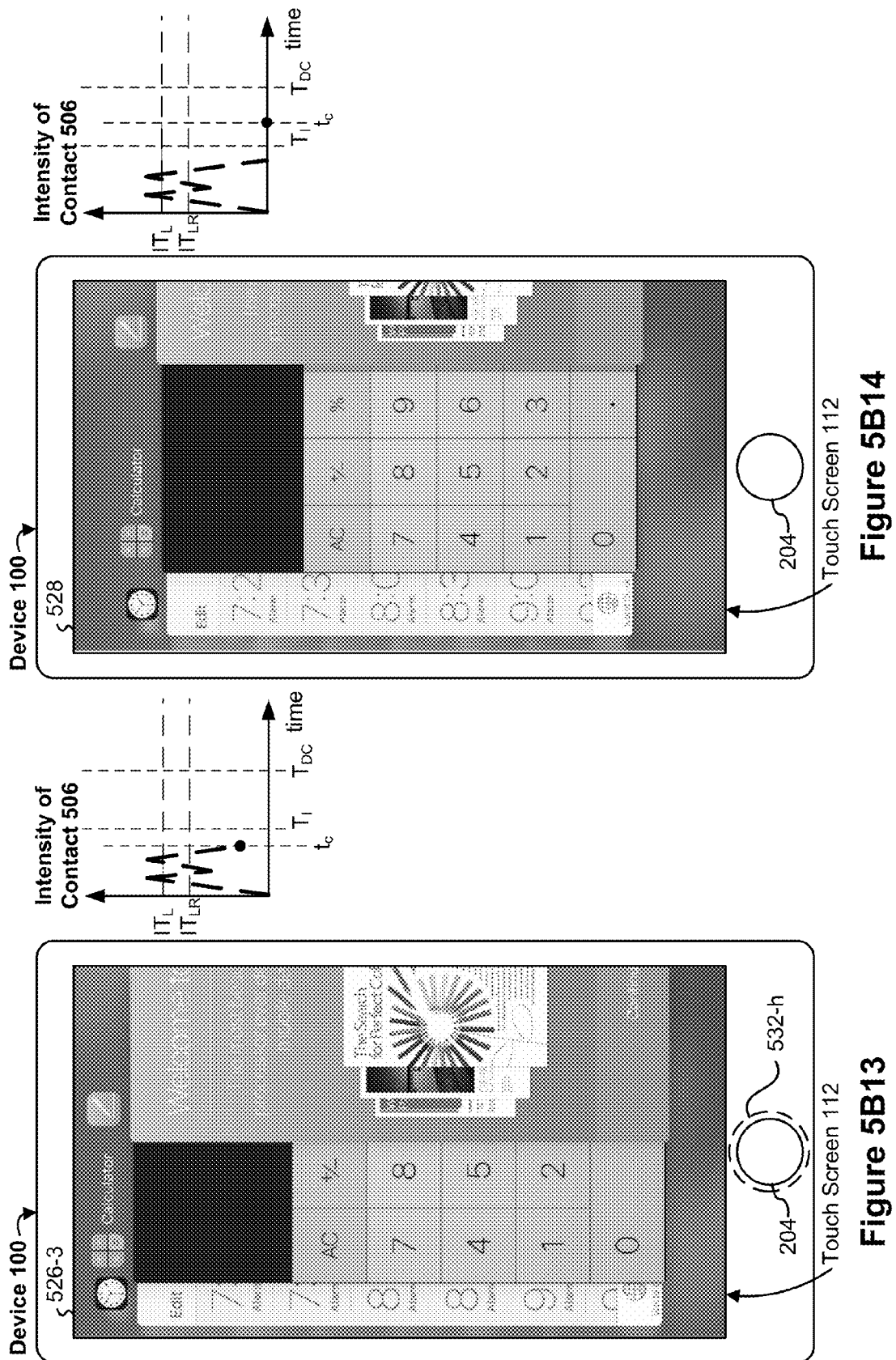
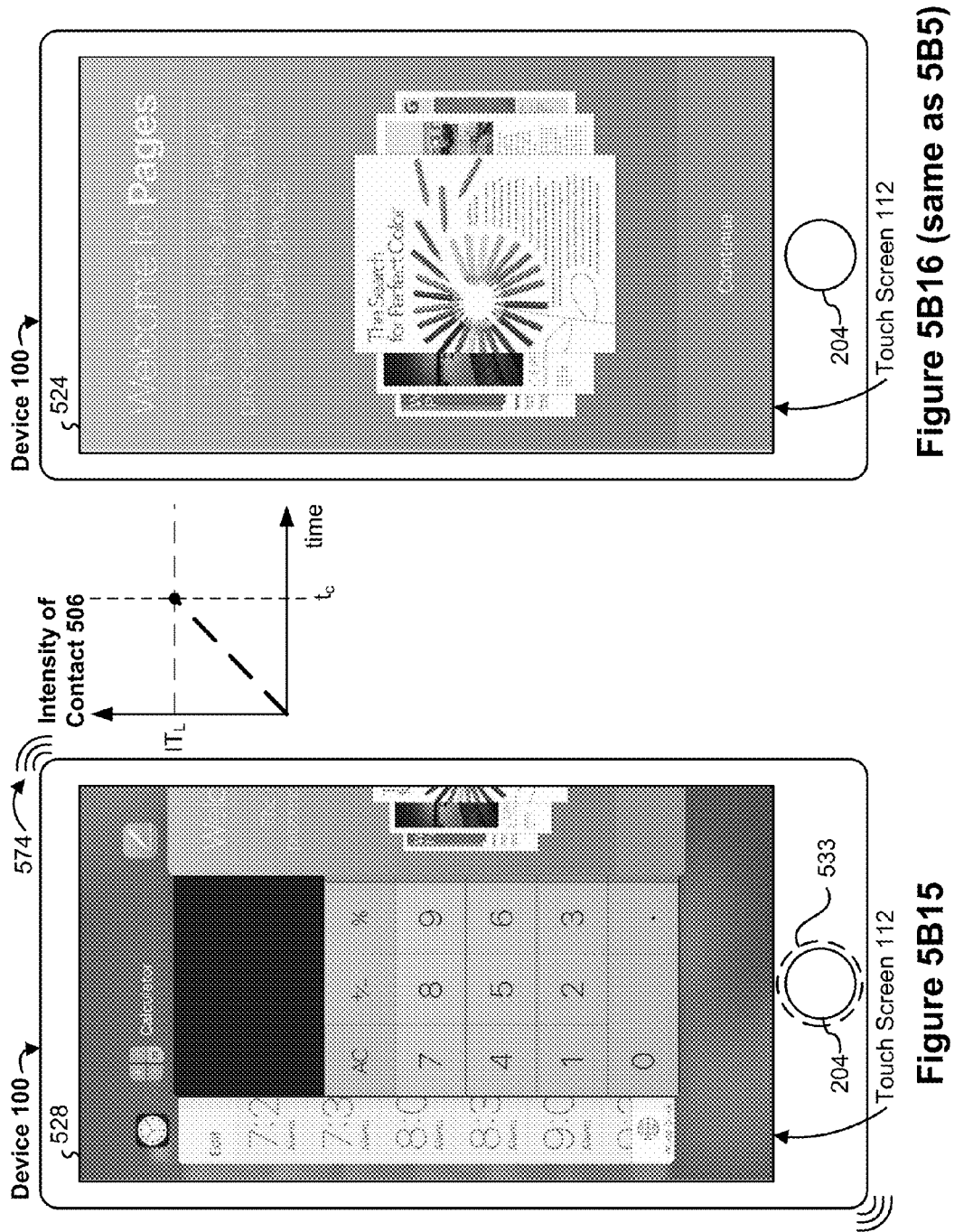
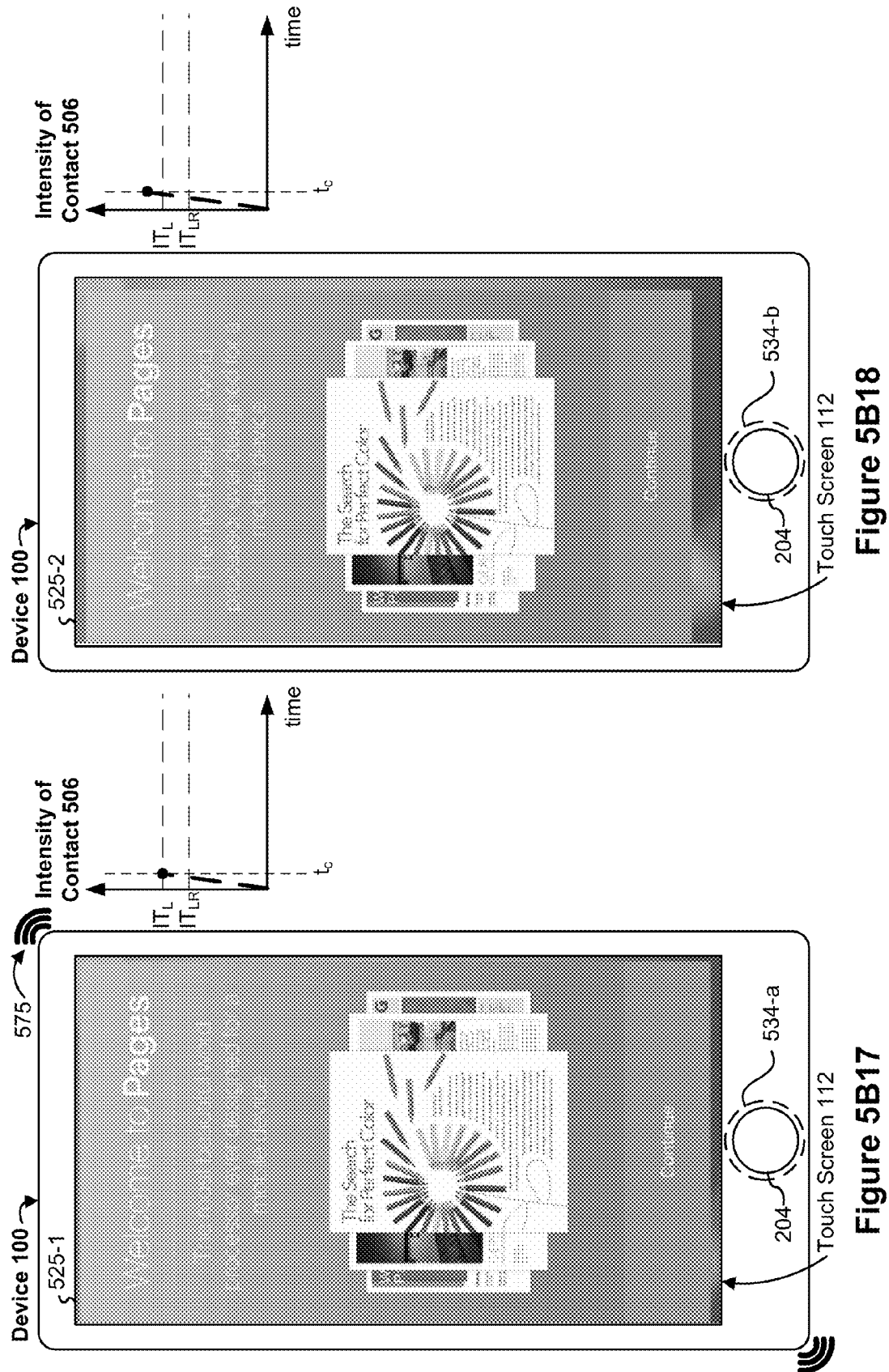


Figure 5B12

Figure 5B11







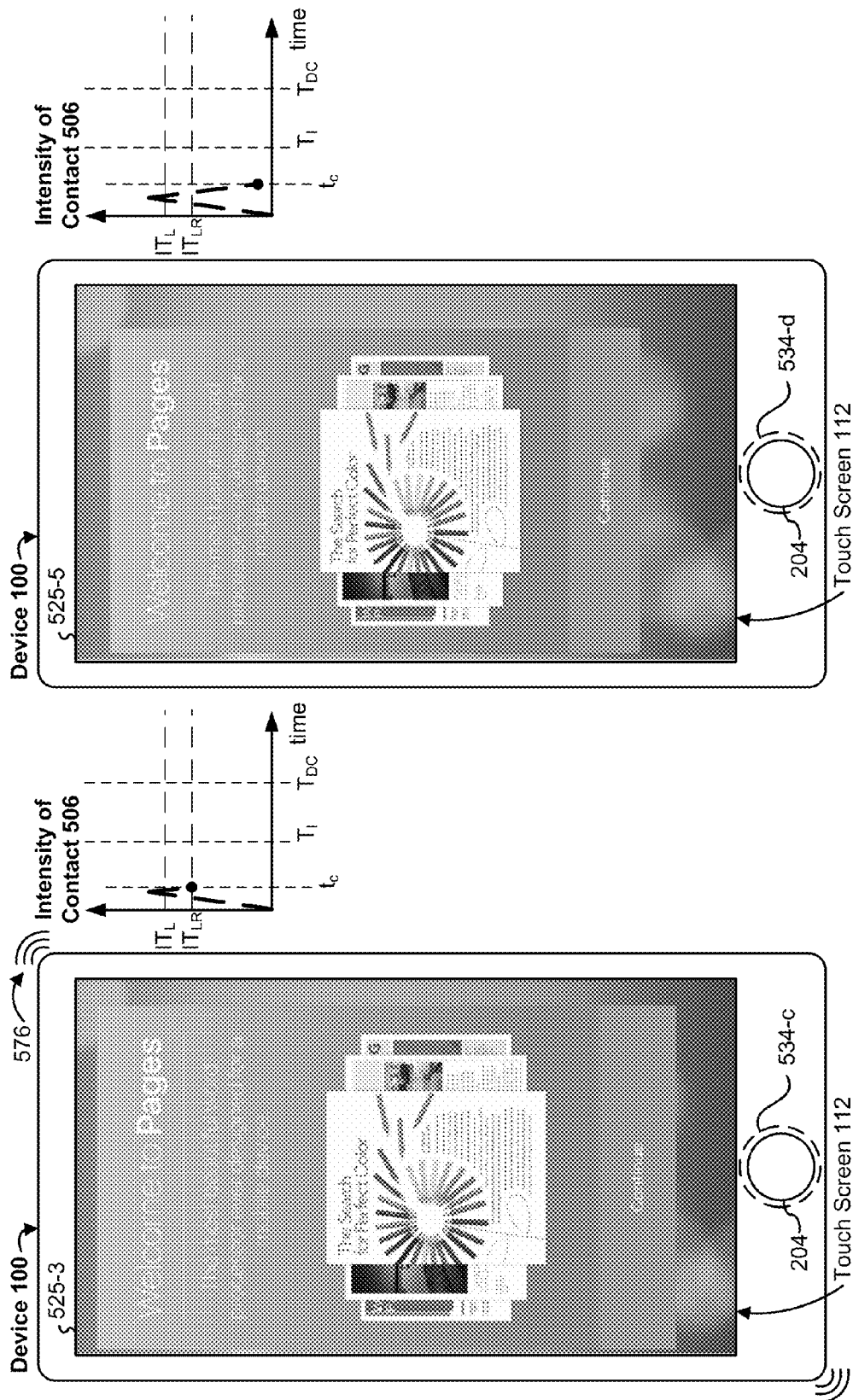


Figure 5B20

Figure 5B19

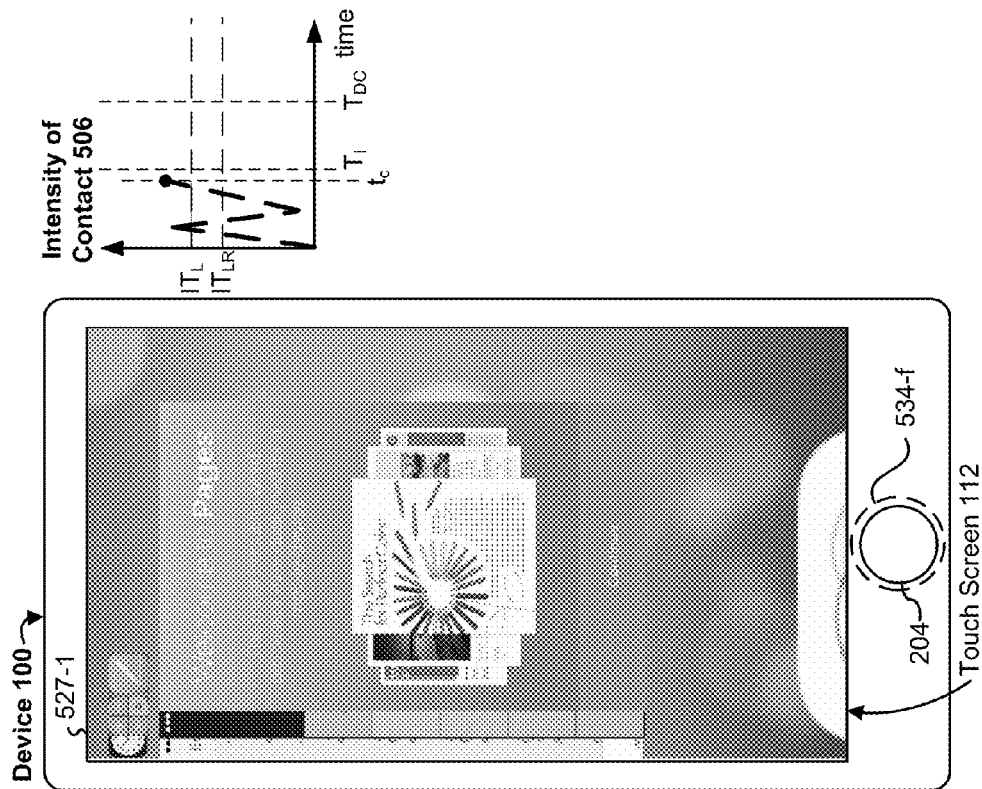


Figure 5B22

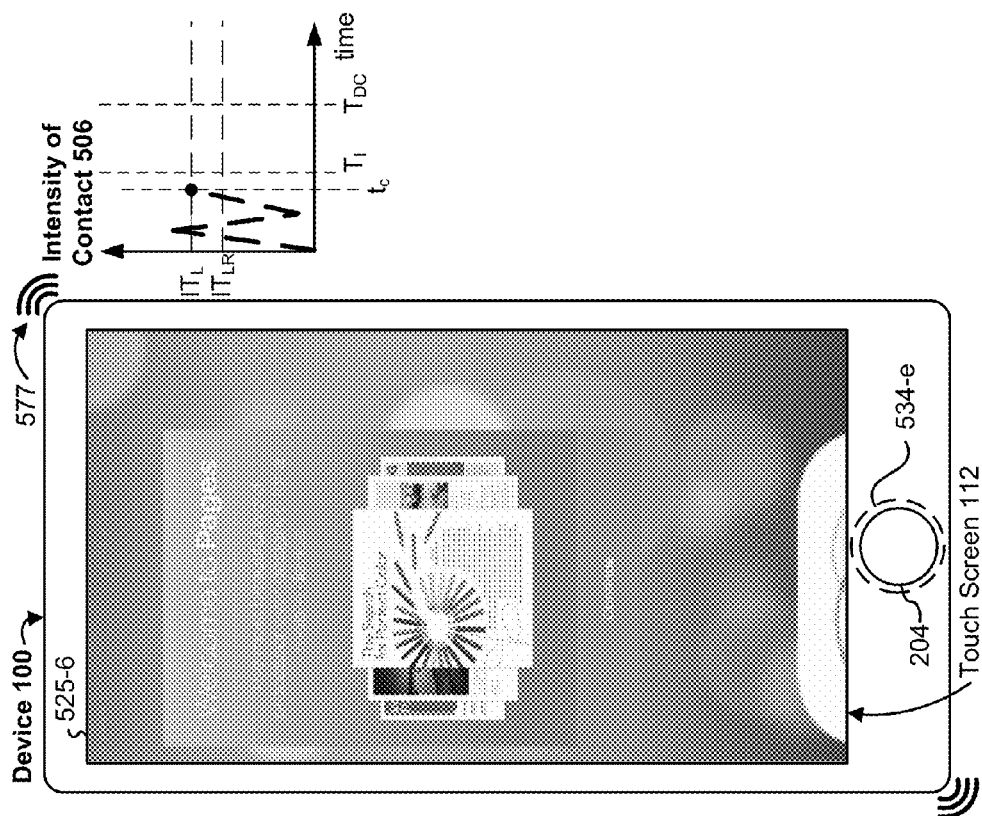
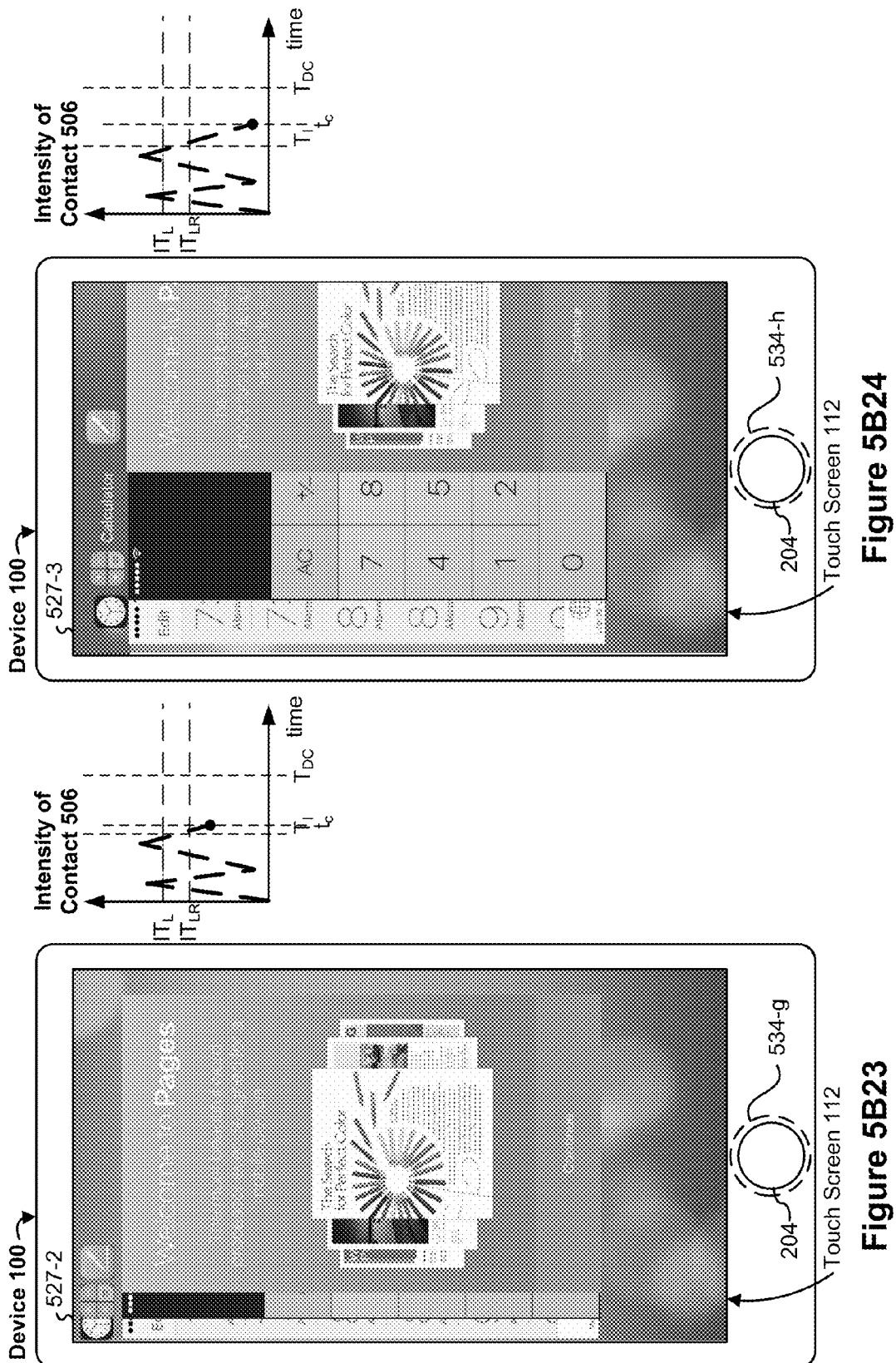


Figure 5B21 (compared to 5B10)



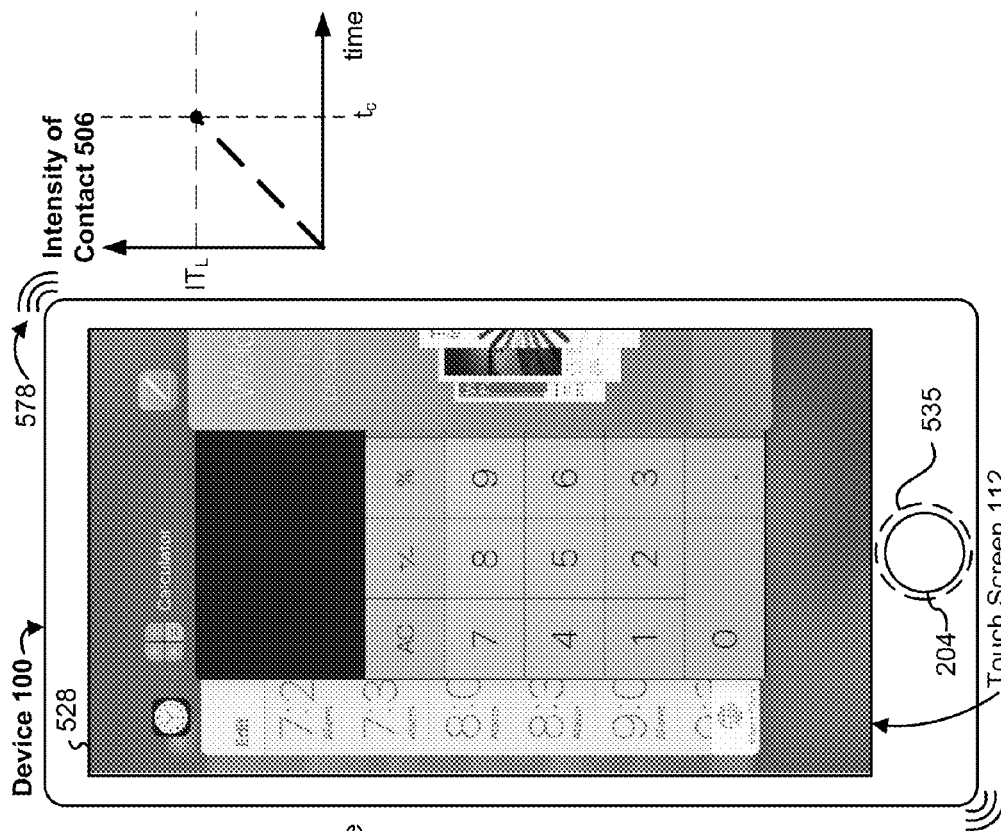


Figure 5B25

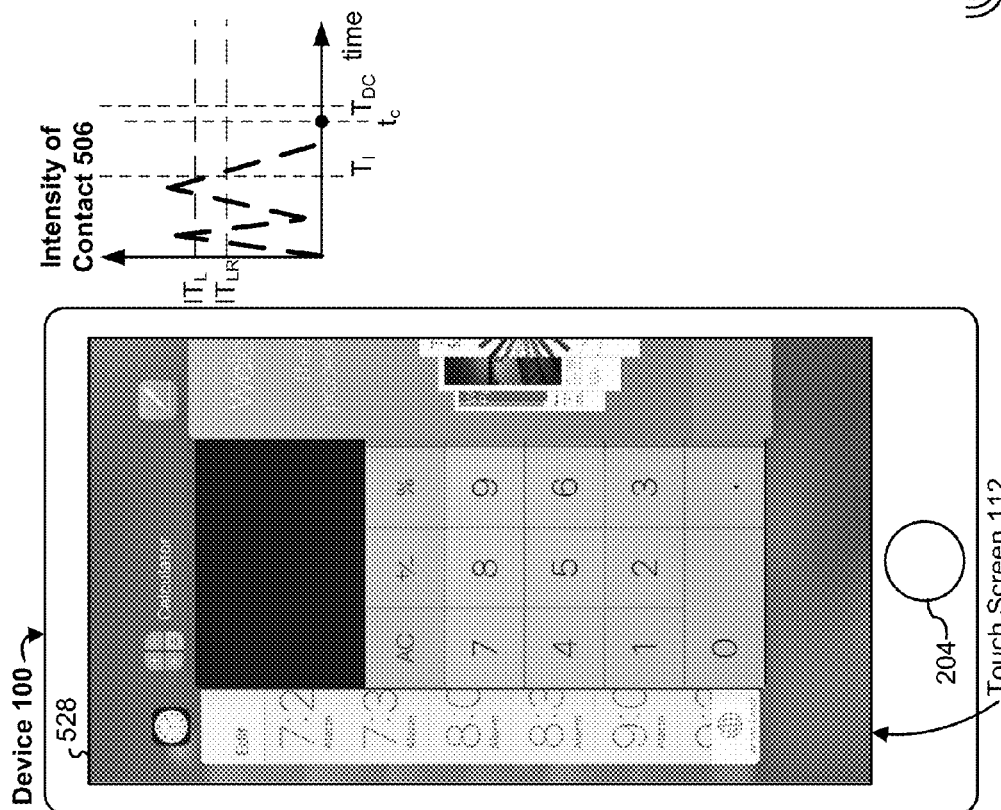


Figure 5B26

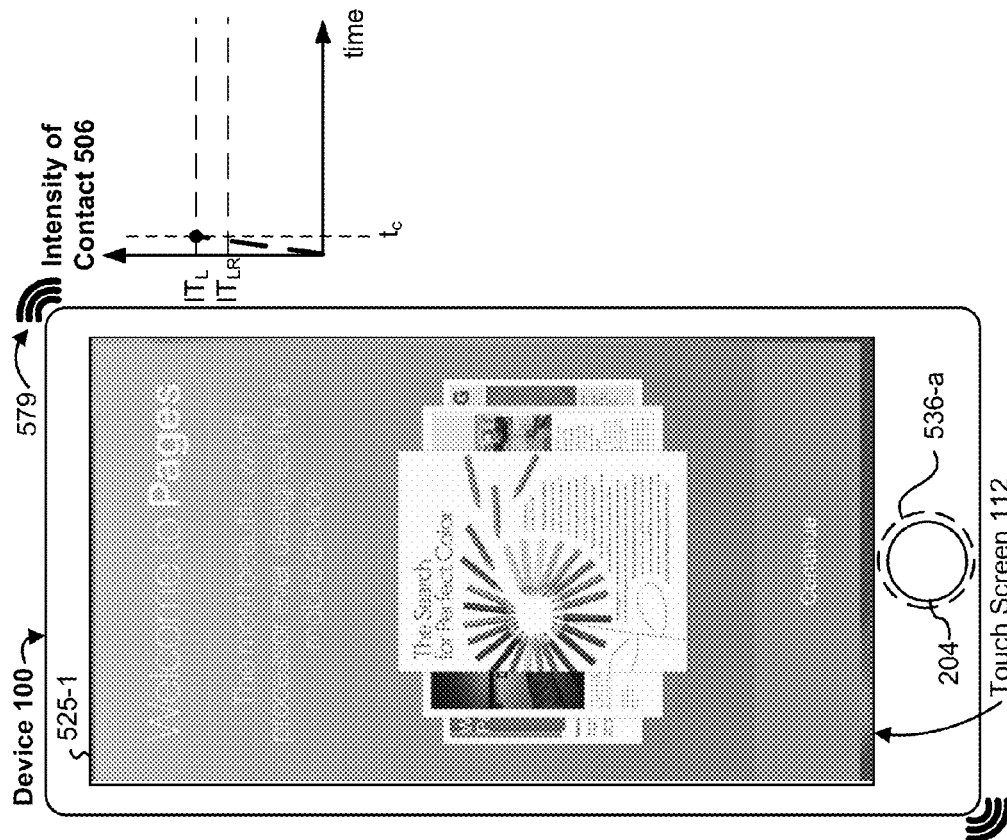


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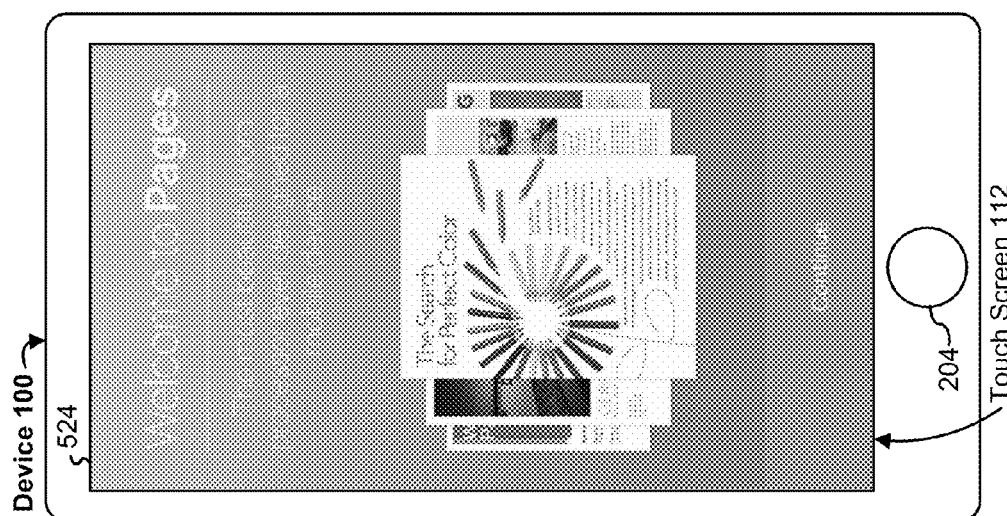
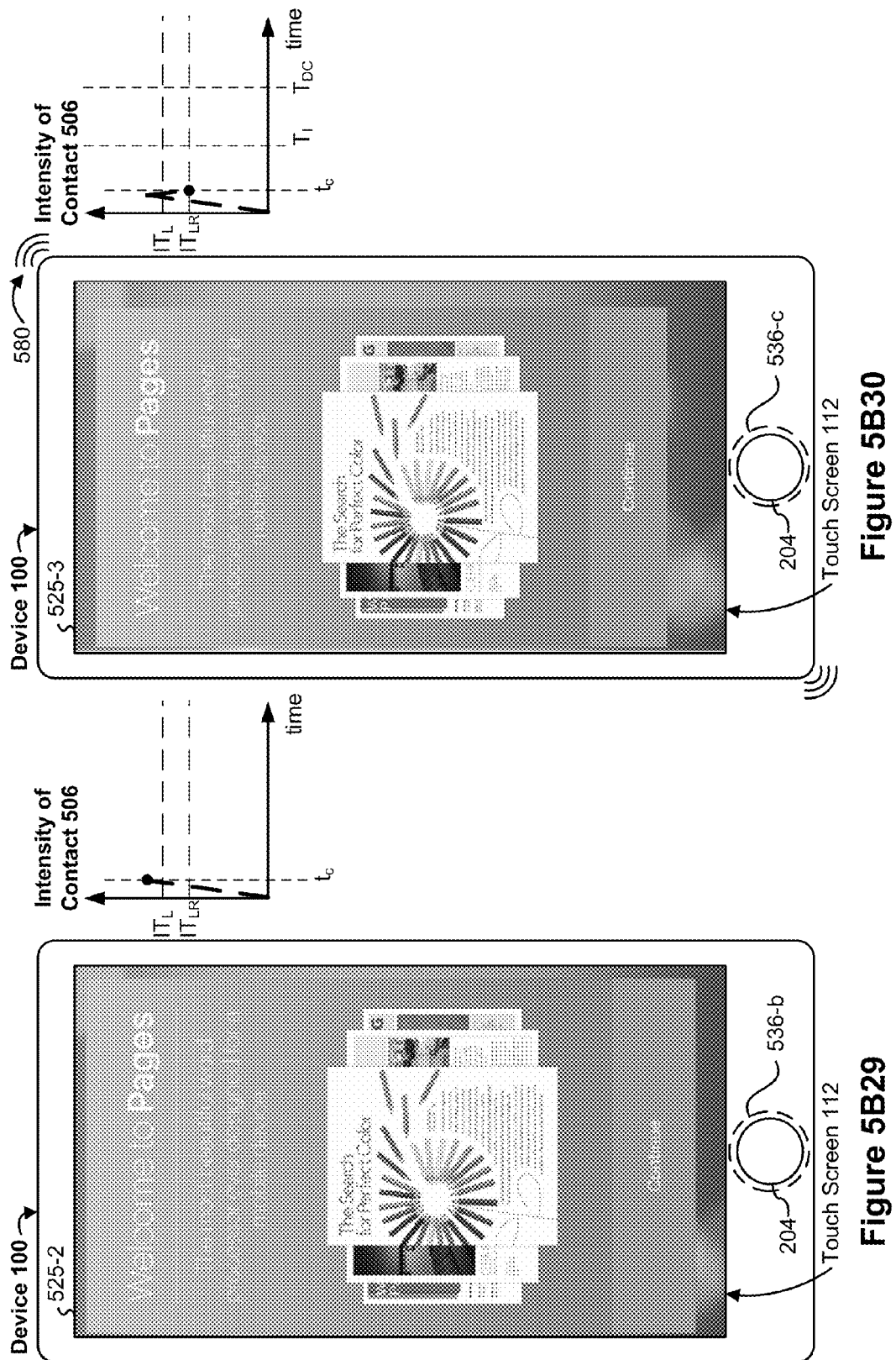


Figure 5B27 (same as 5B5)



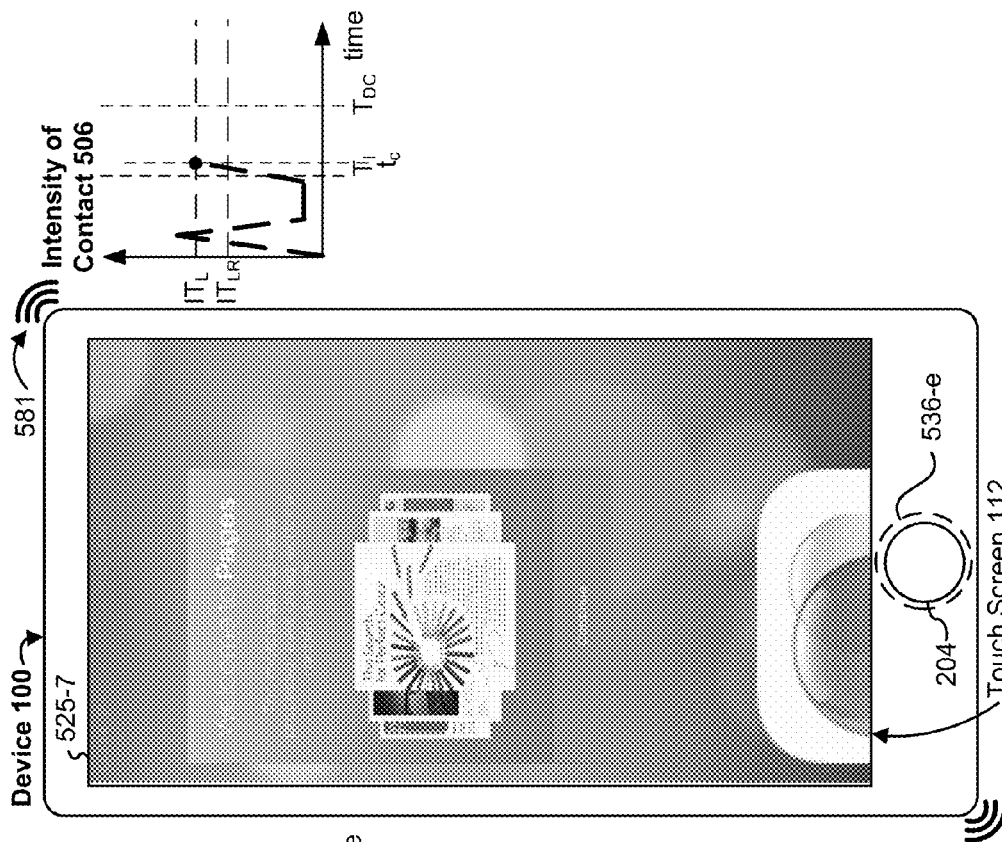


Figure 5B32

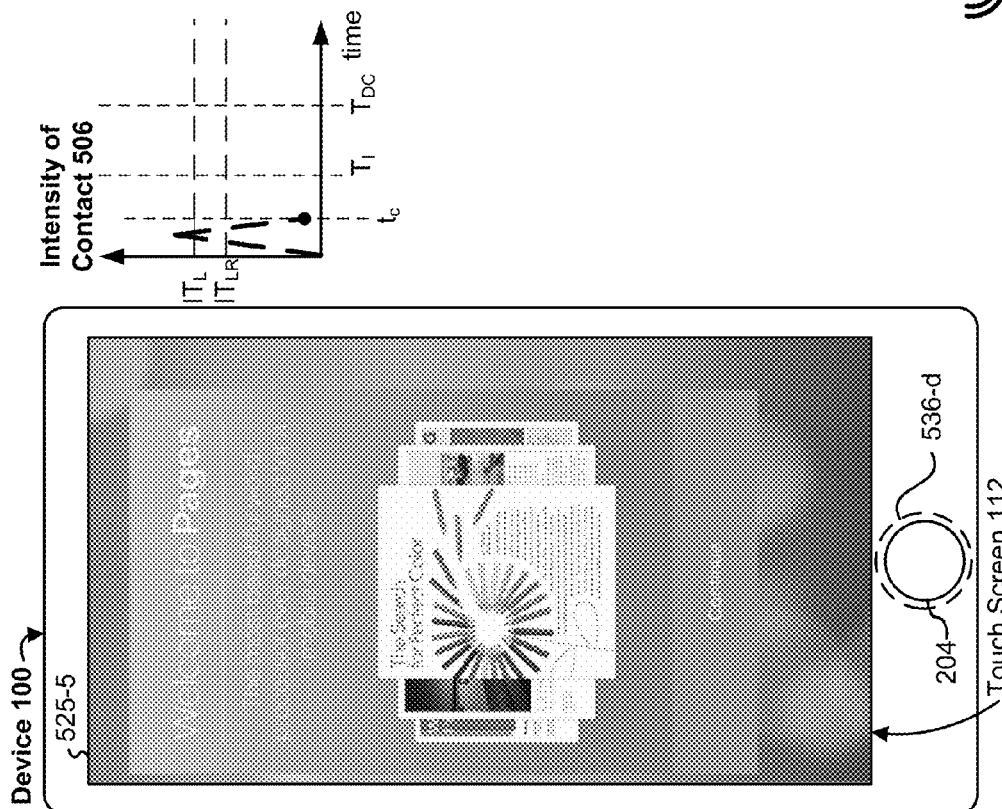


Figure 5B31

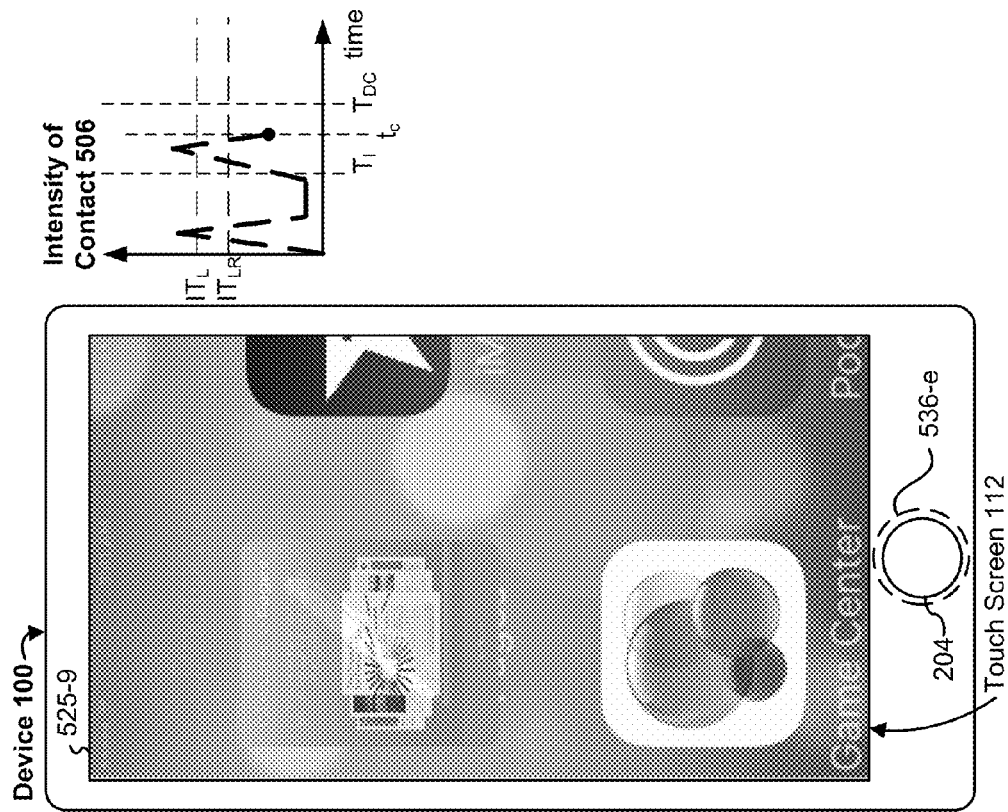


Figure 5B34

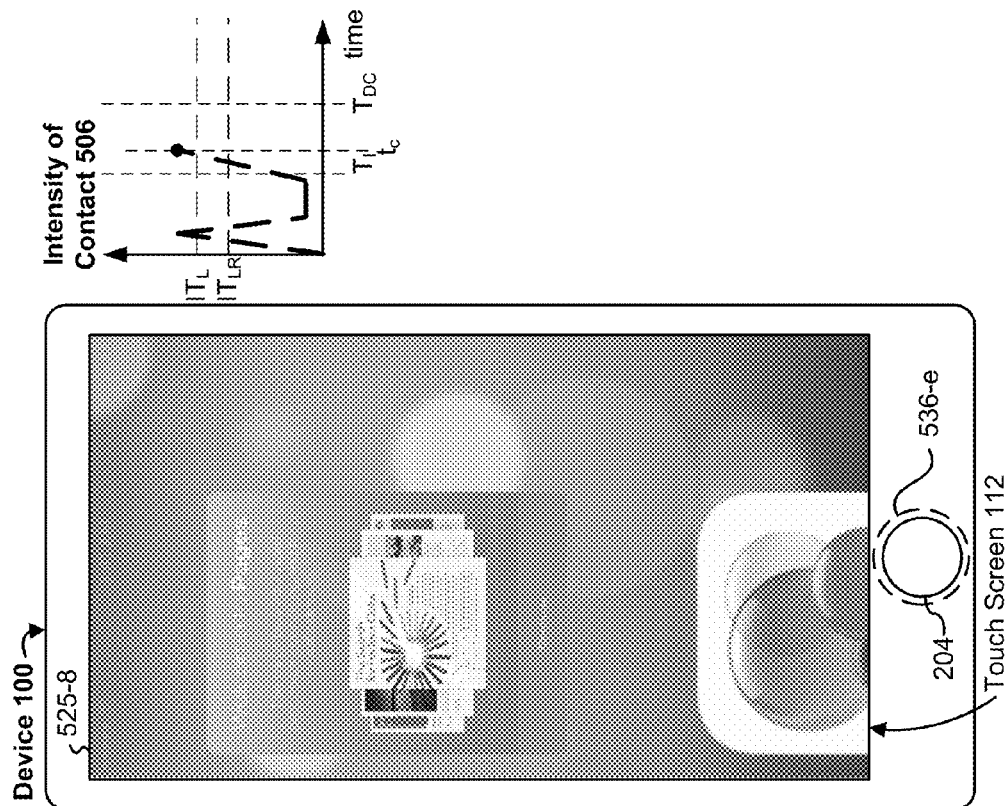
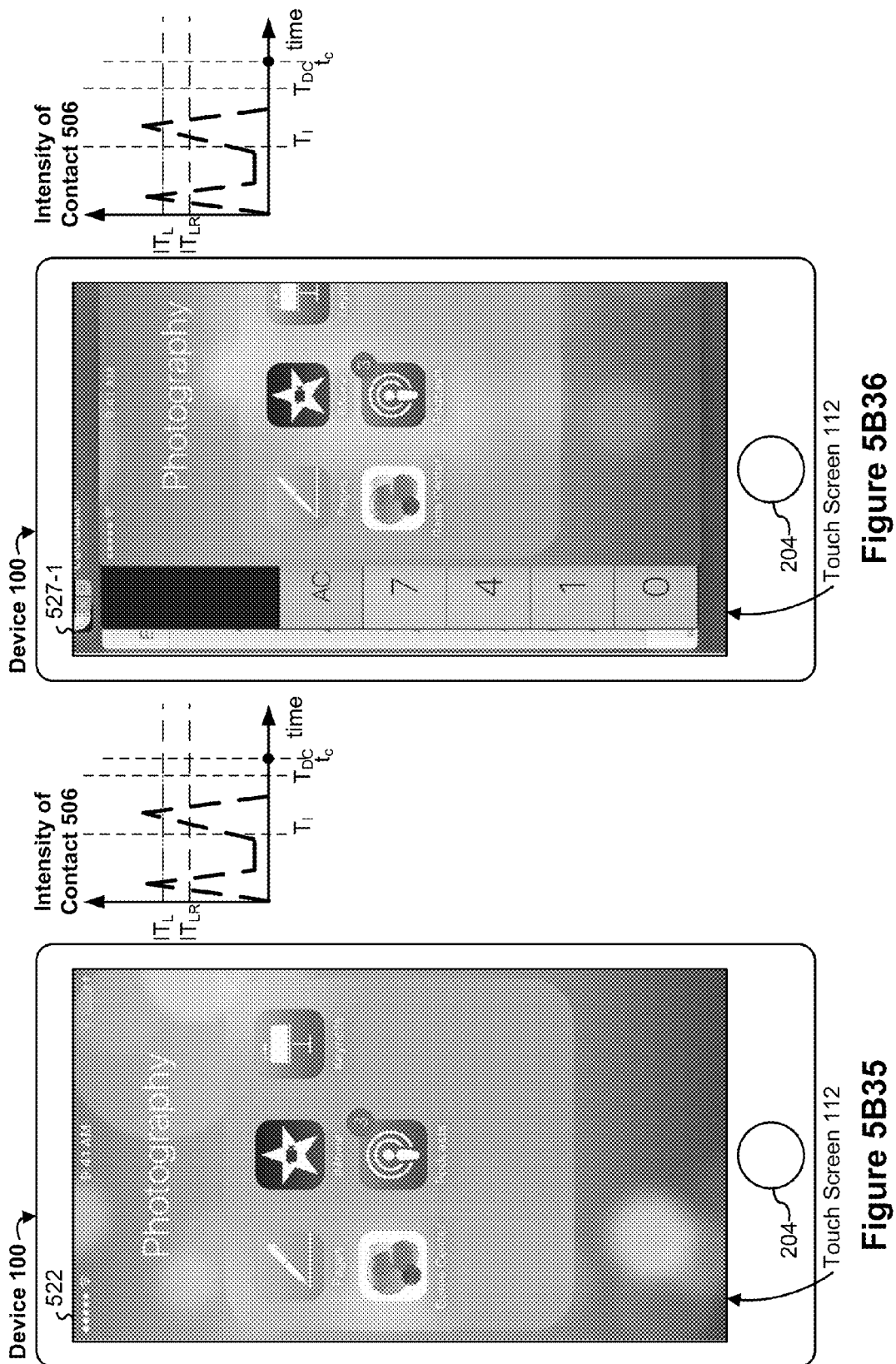


Figure 5B33



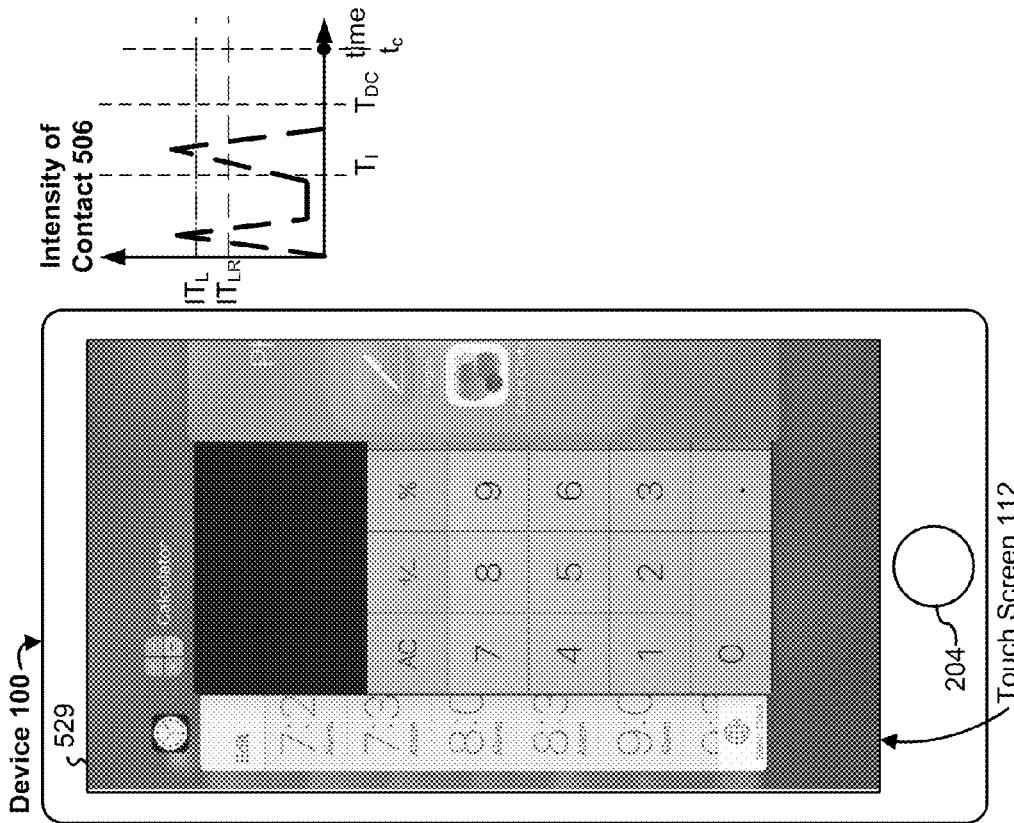


Figure 5B37

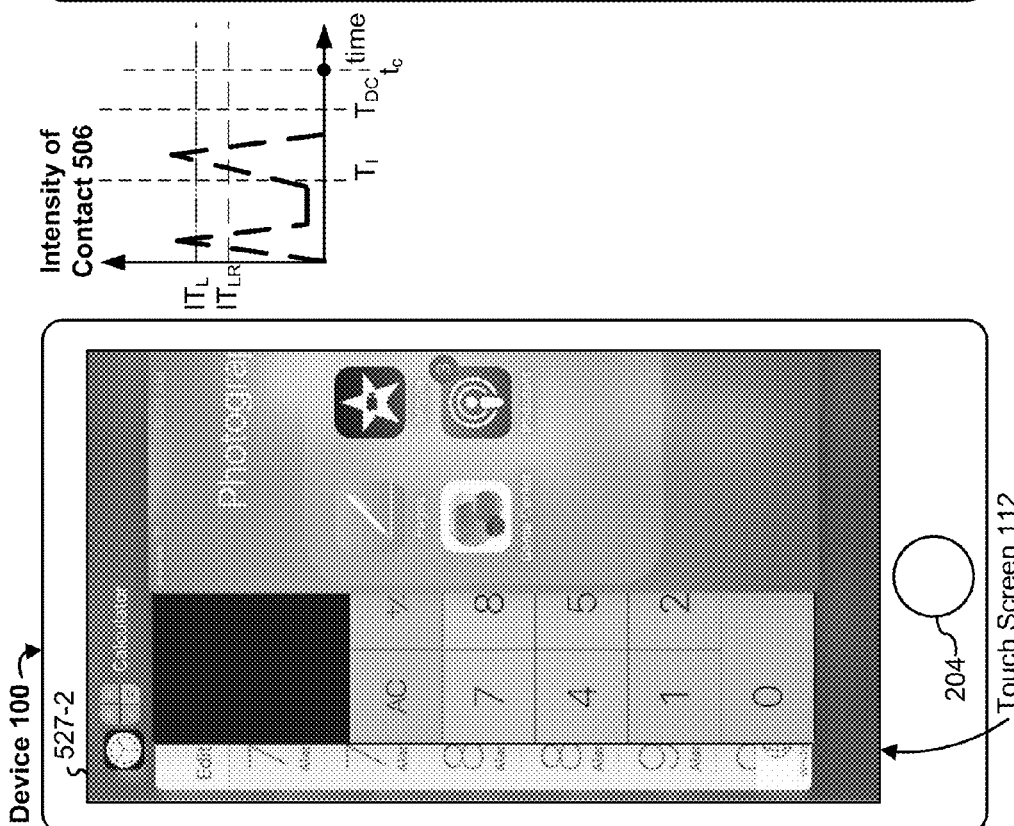


Figure 5B38

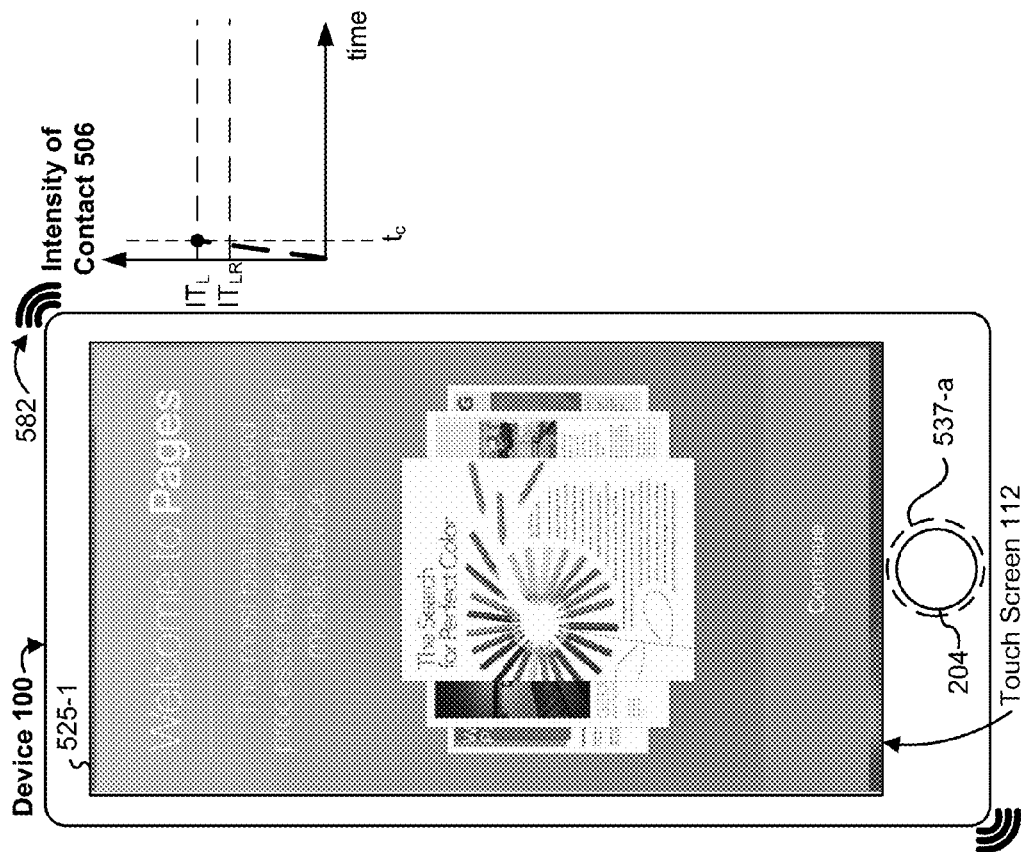


Figure 5B40

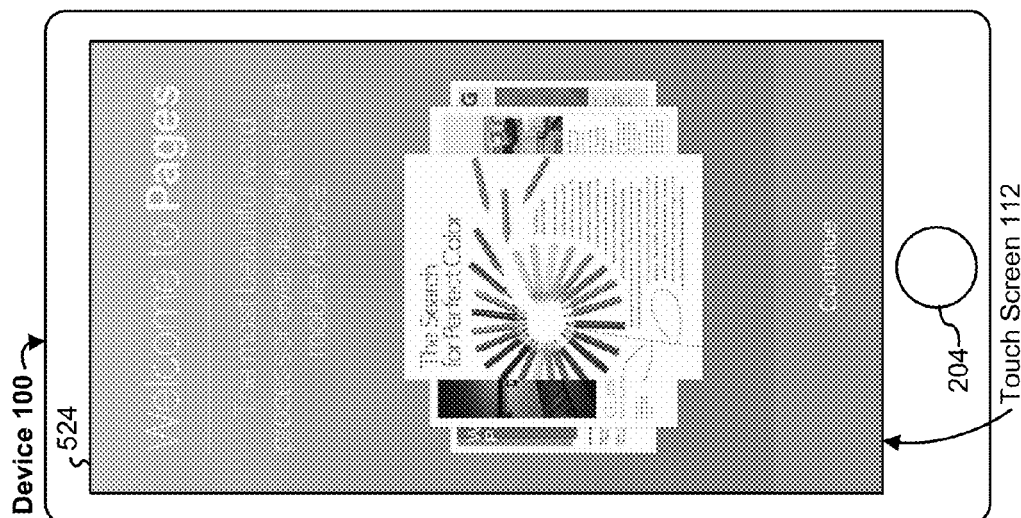


Figure 5B39 (same as 5B5)

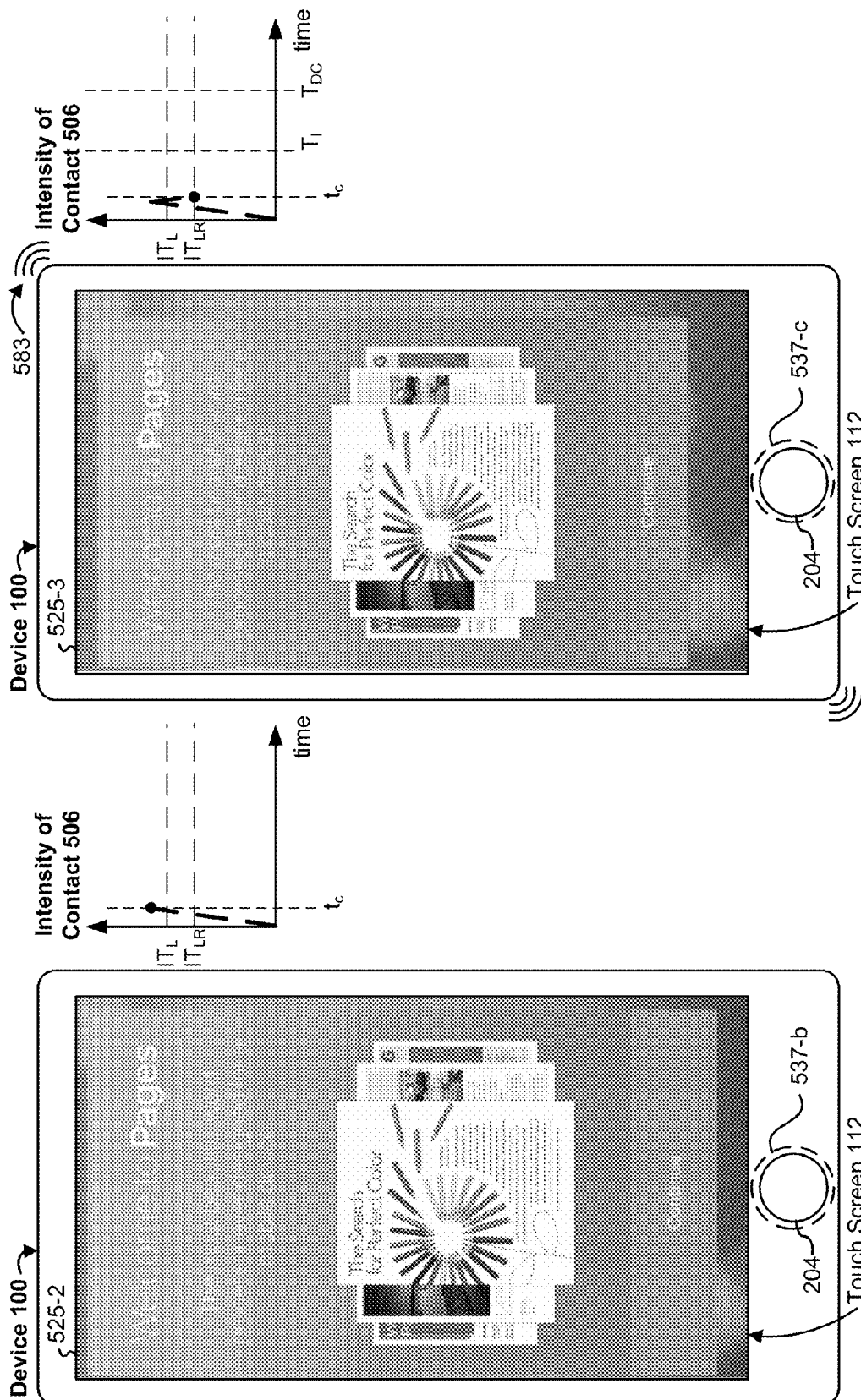
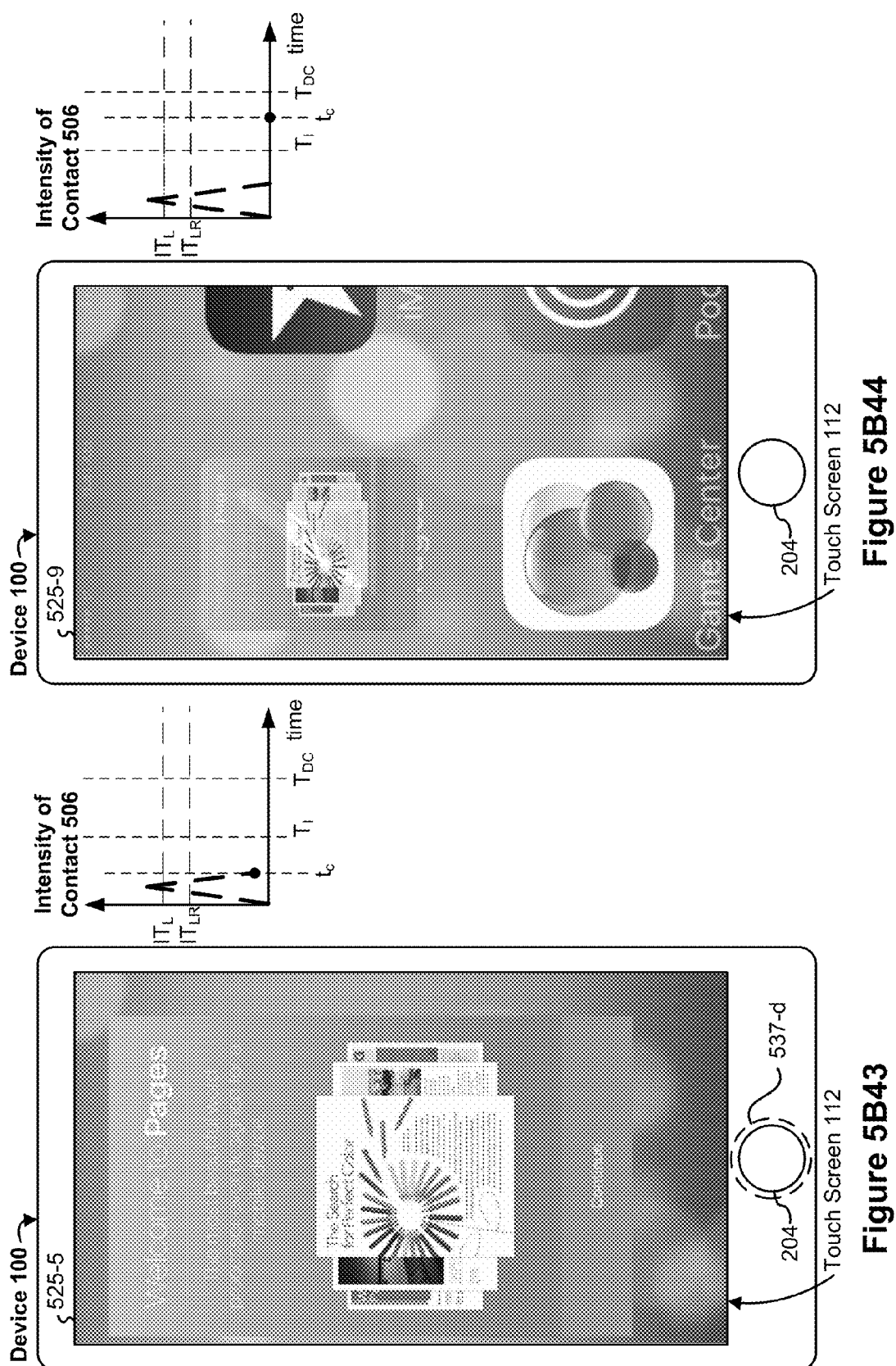
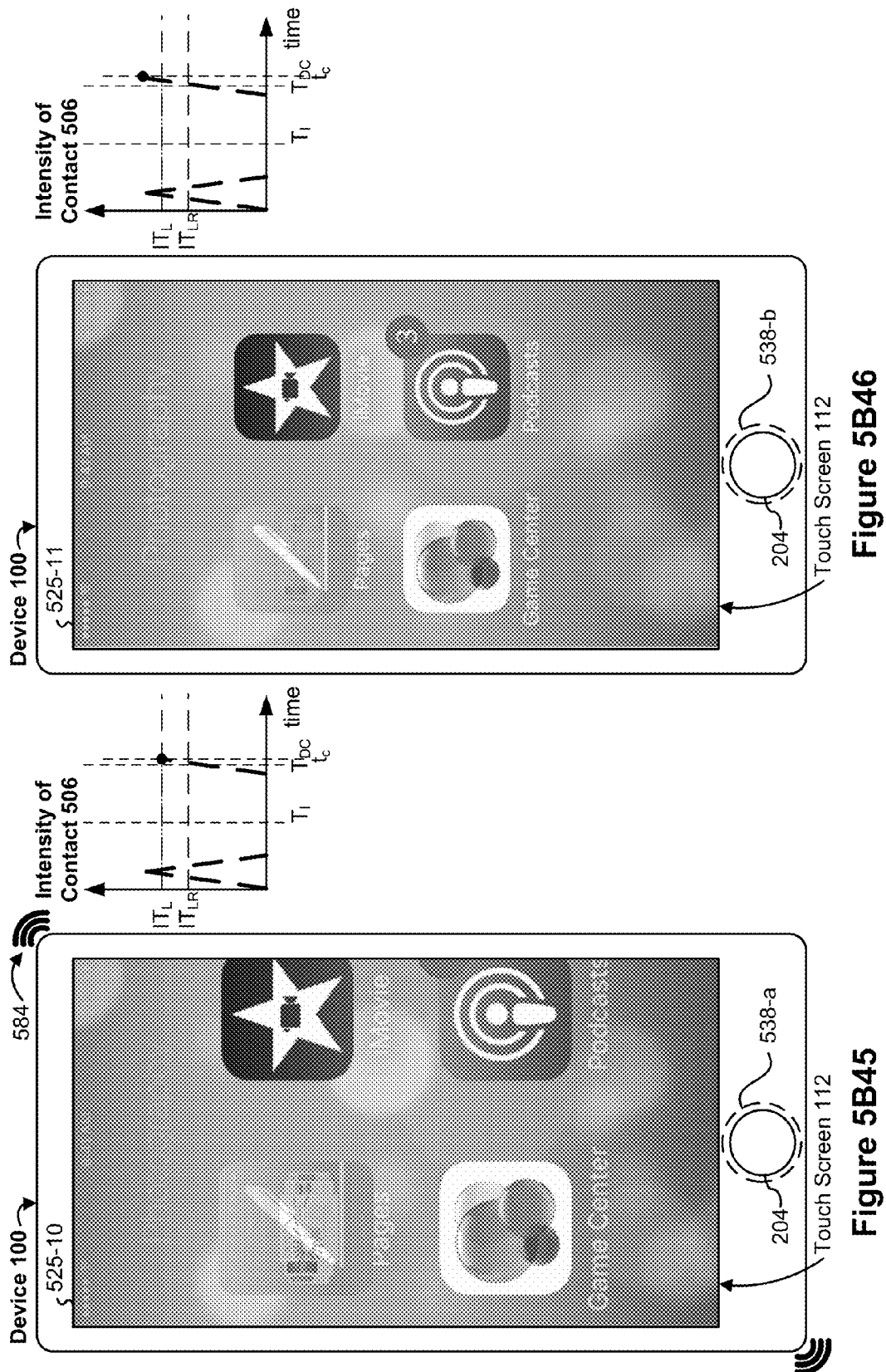


Figure 5B42

Figure 5B41





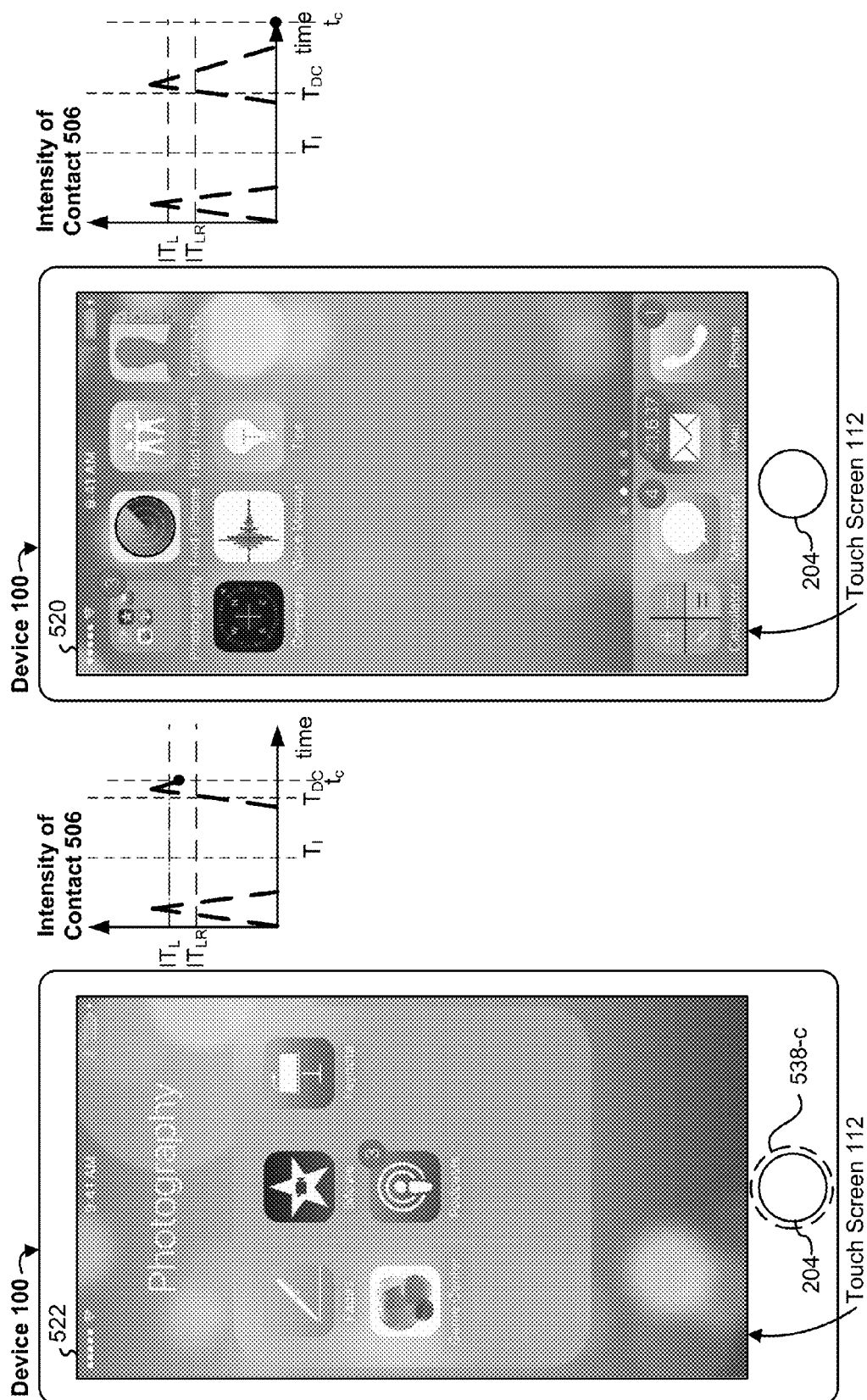


Figure 5B48

Figure 5B47

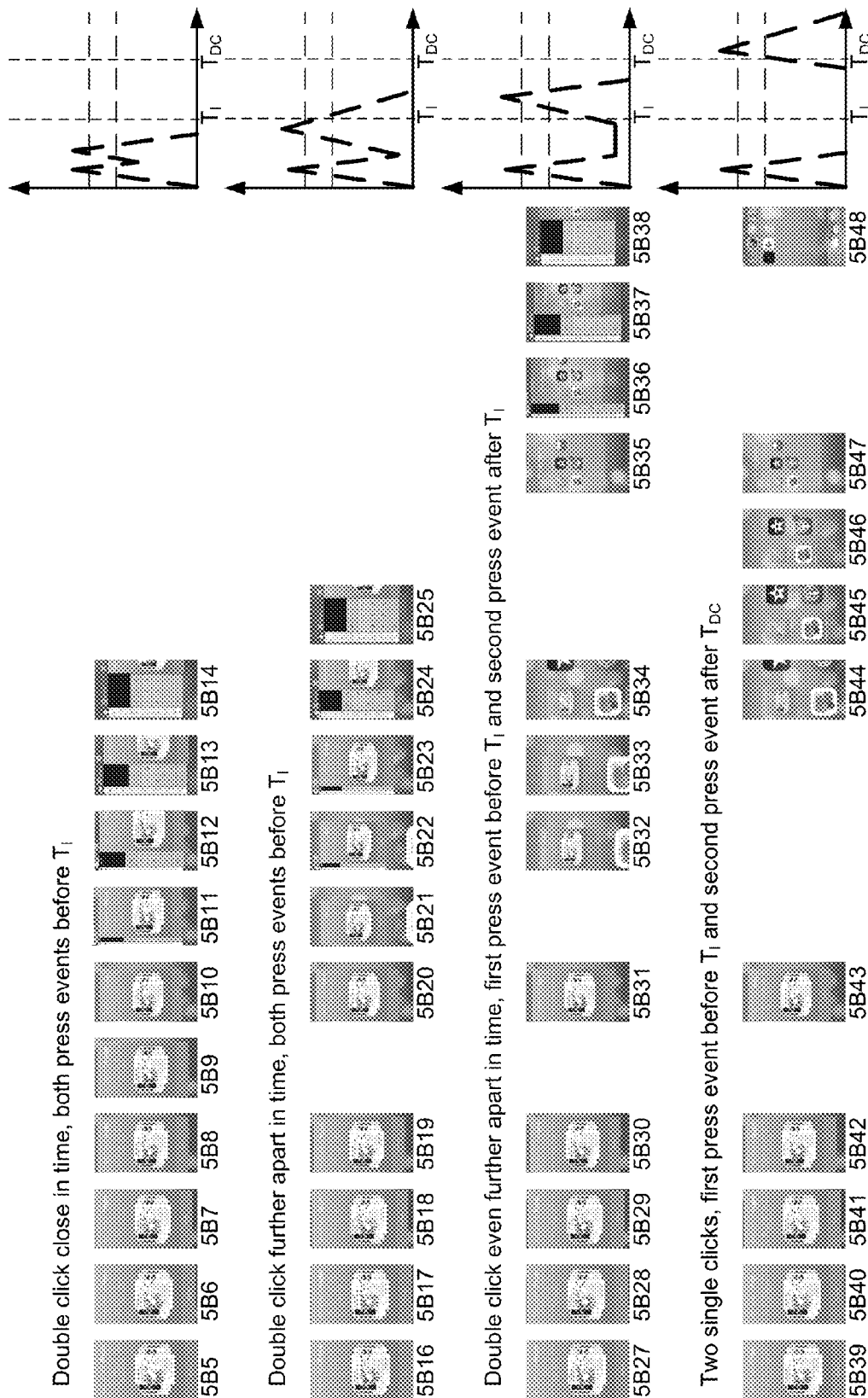


Figure 5B49

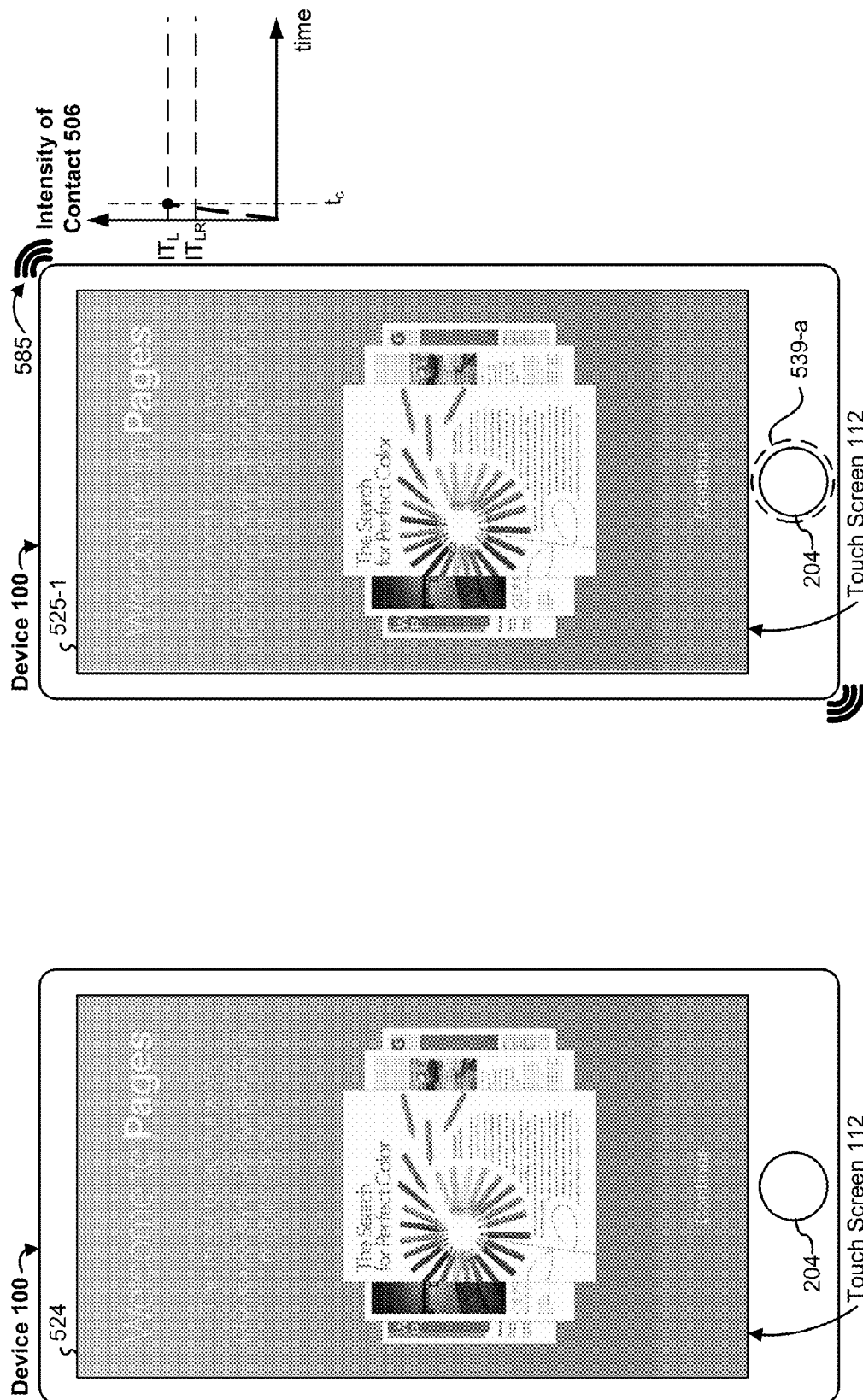


Figure 5B51

Figure 5B50 (alternate sequence to 5B5)

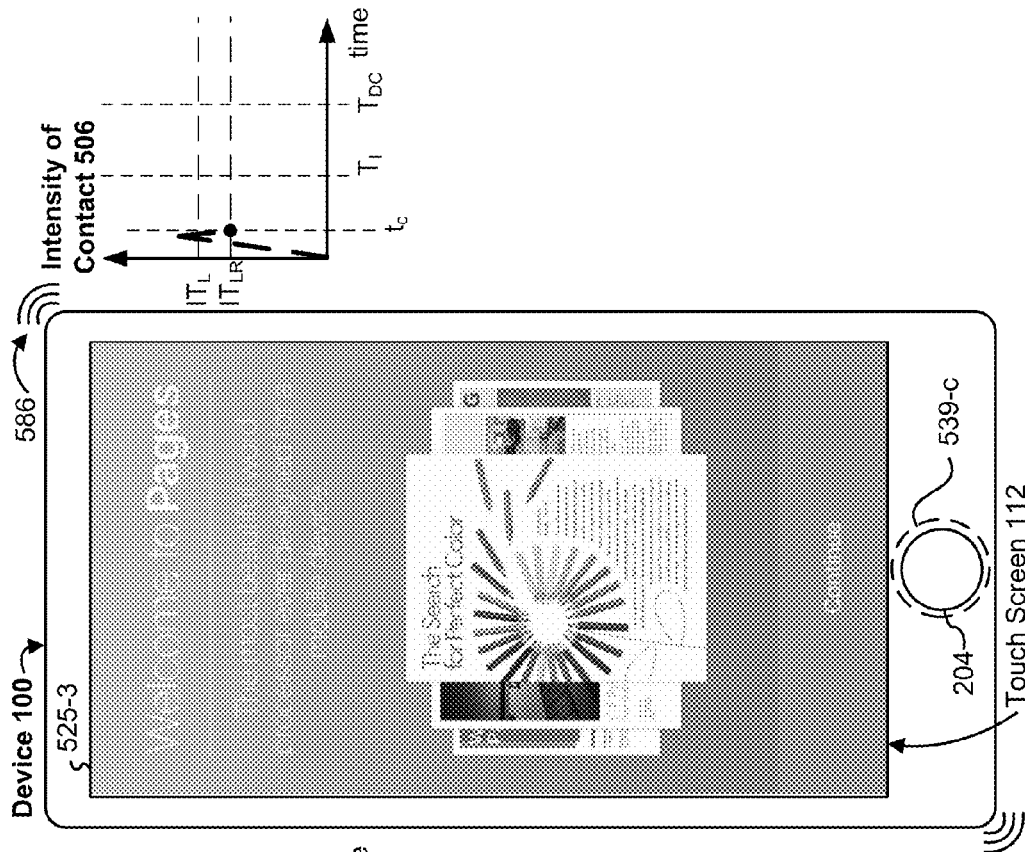


Figure 5B53

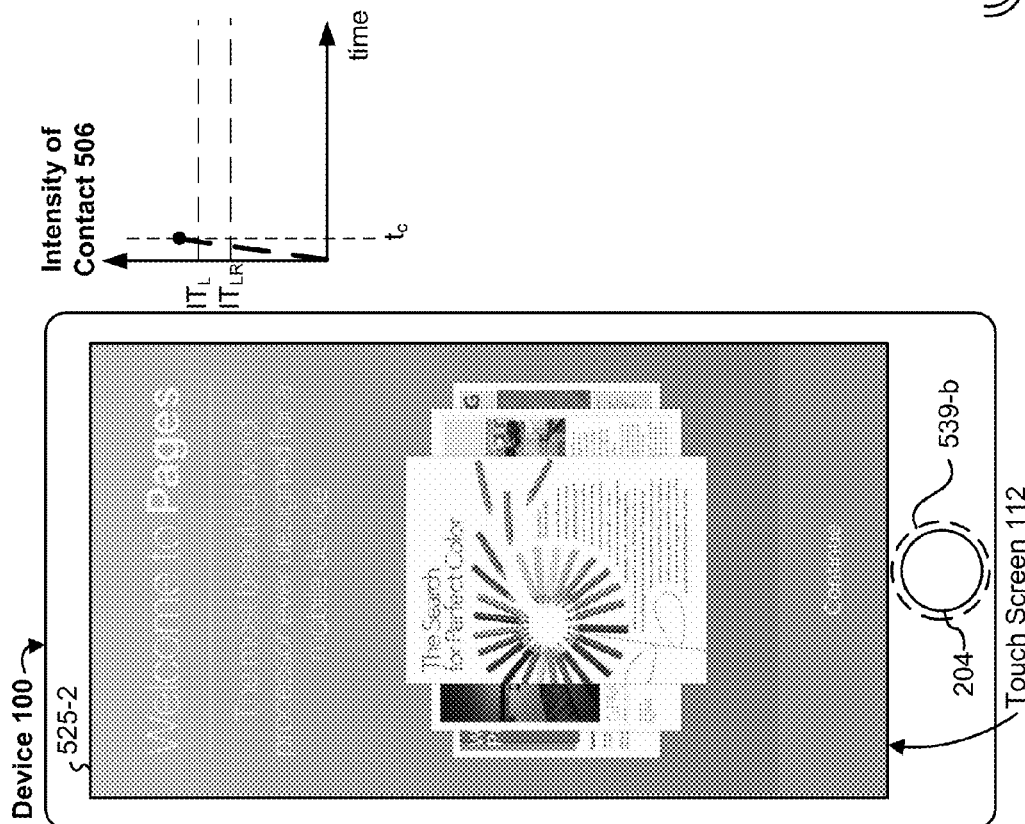


Figure 5B52

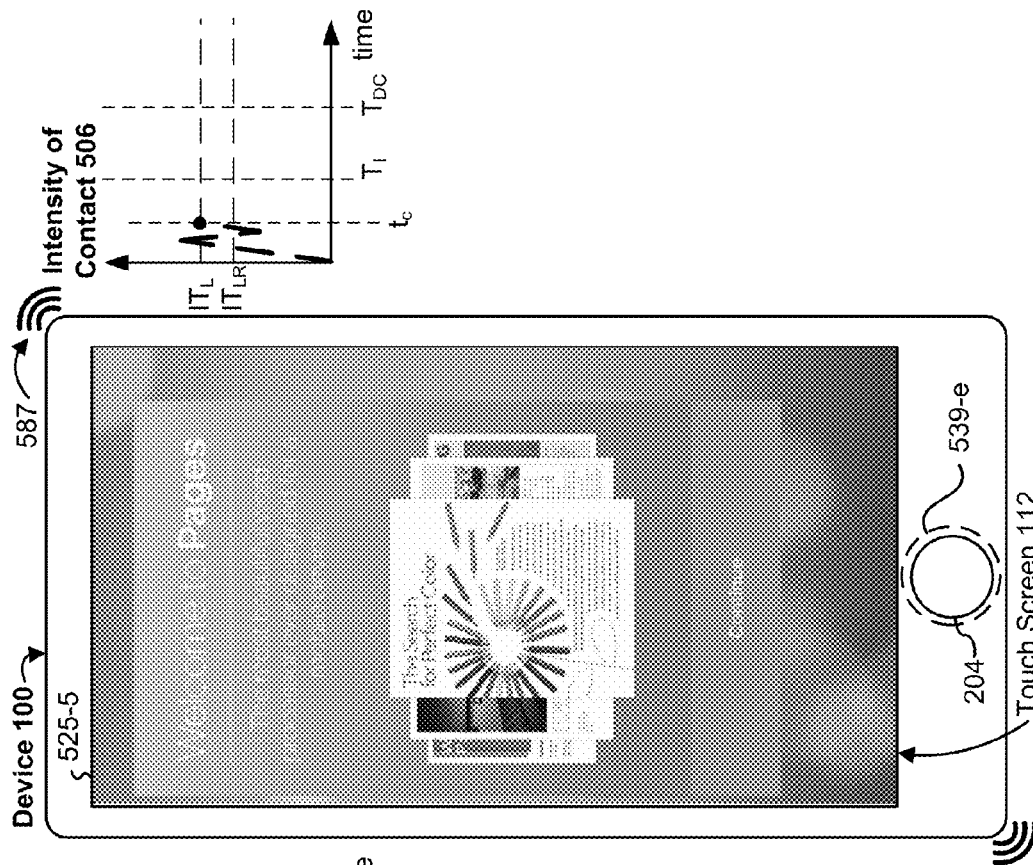


Figure 5B55

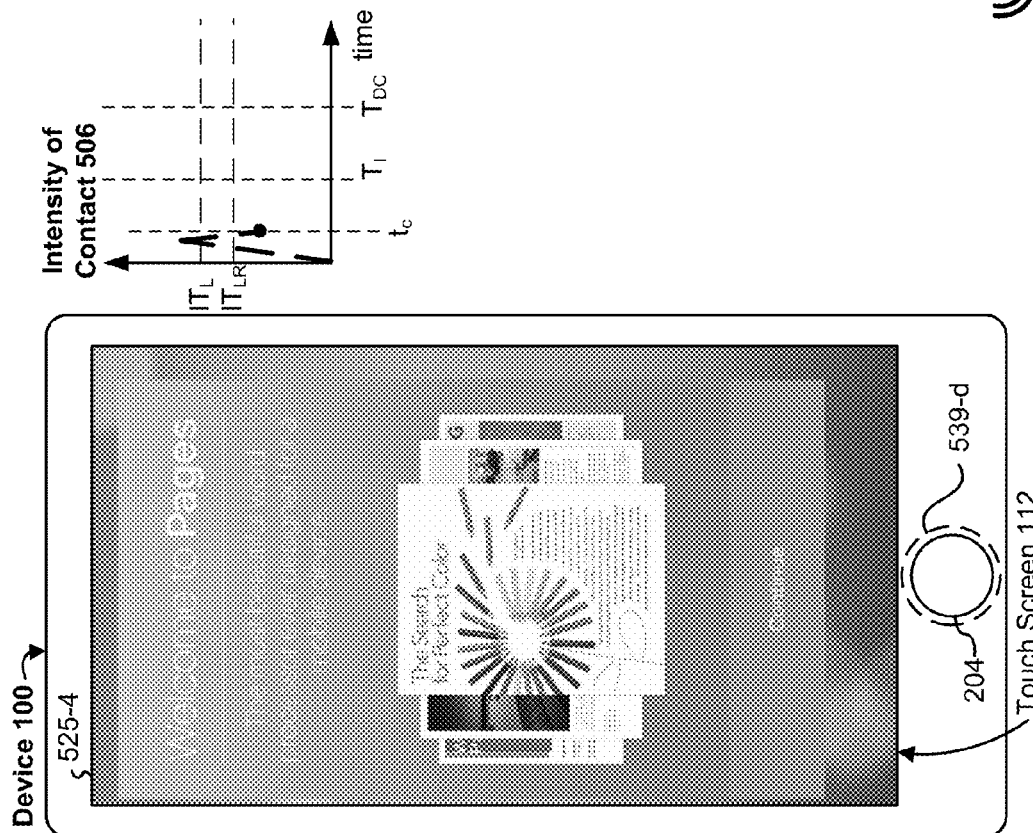


Figure 5B54

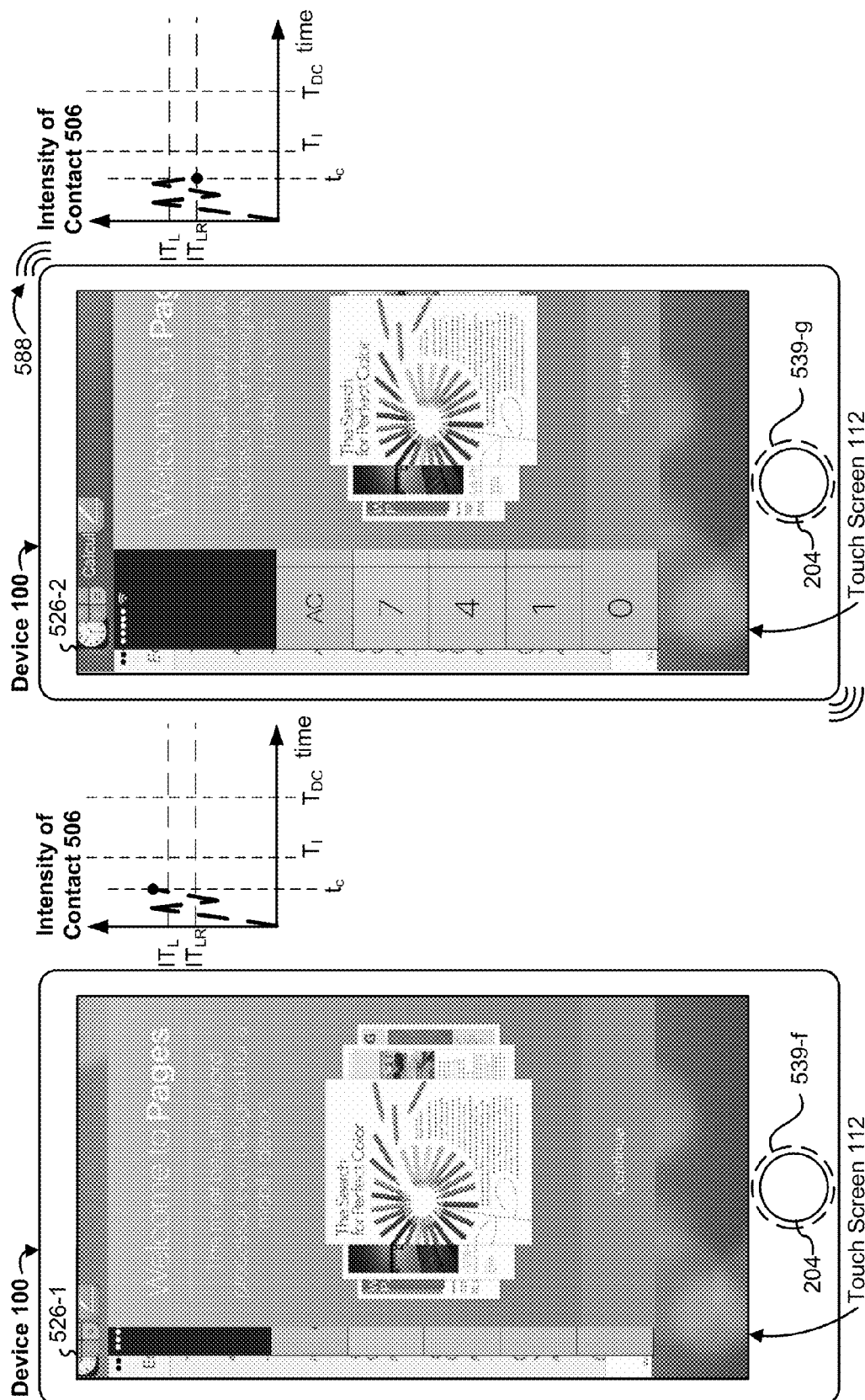
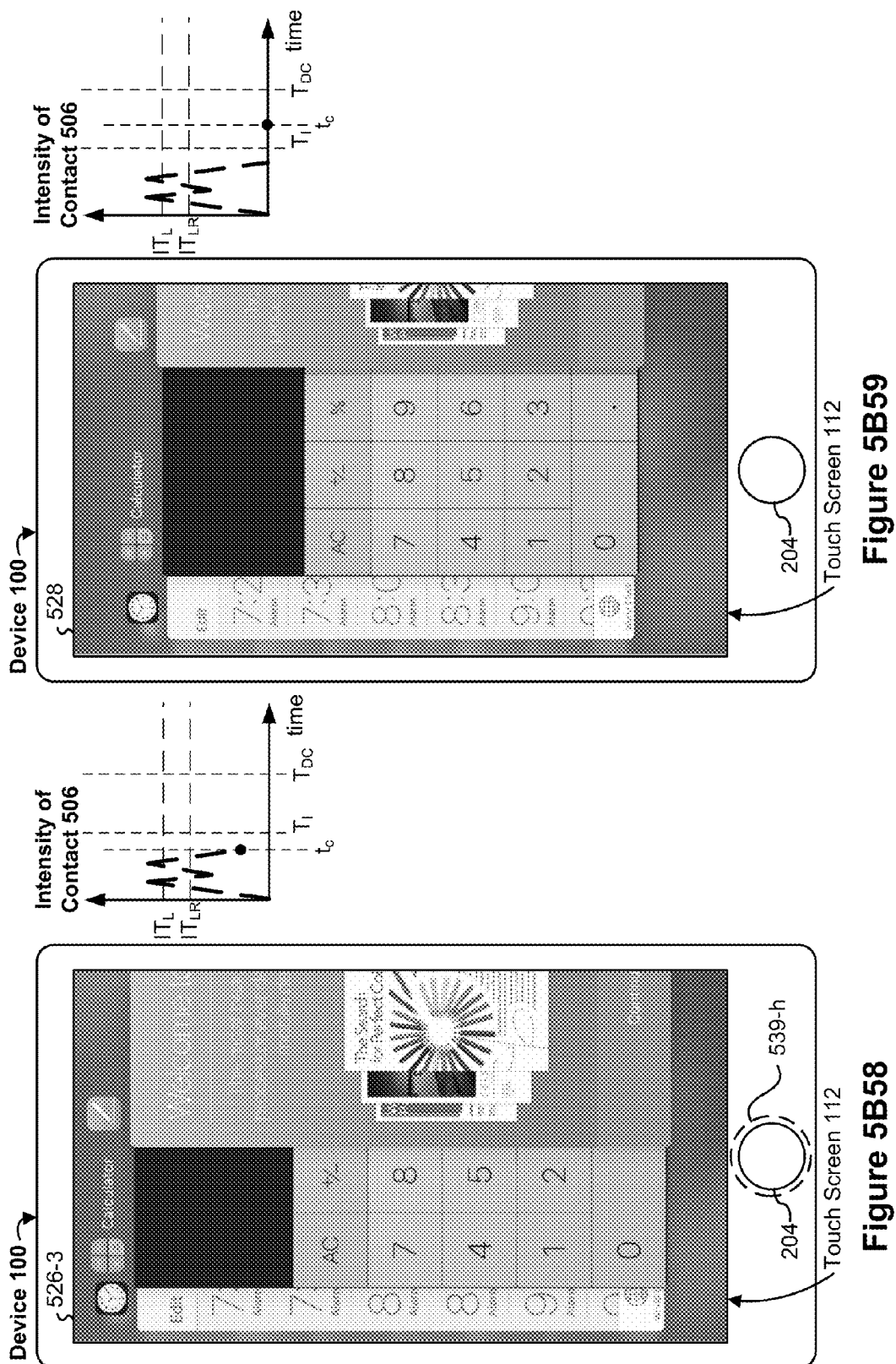


Figure 5B57

Figure 5B56



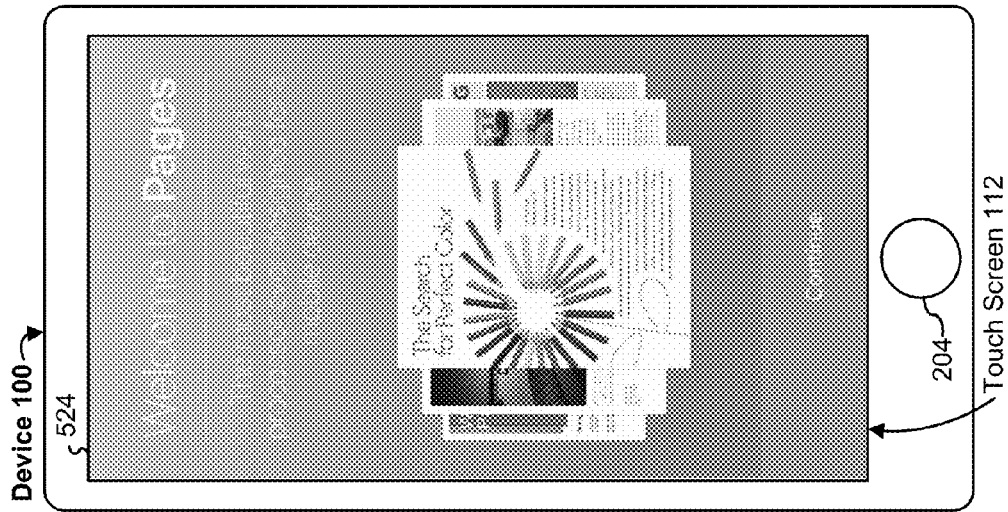


Figure 5B61

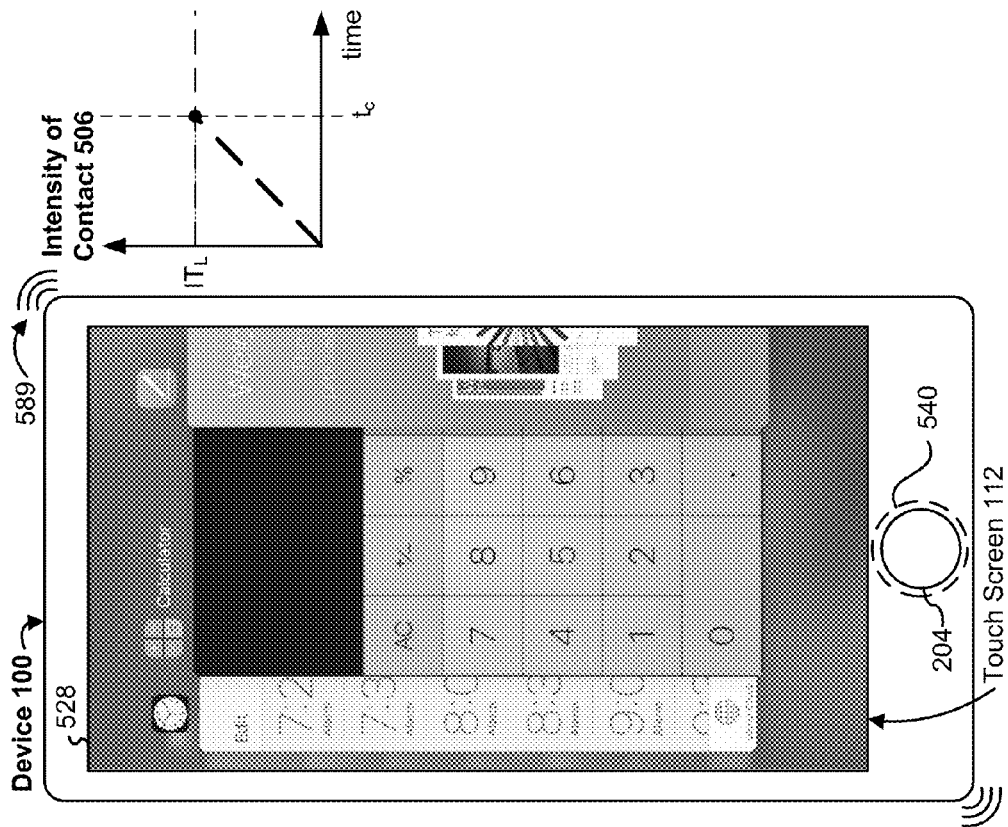


Figure 5B60

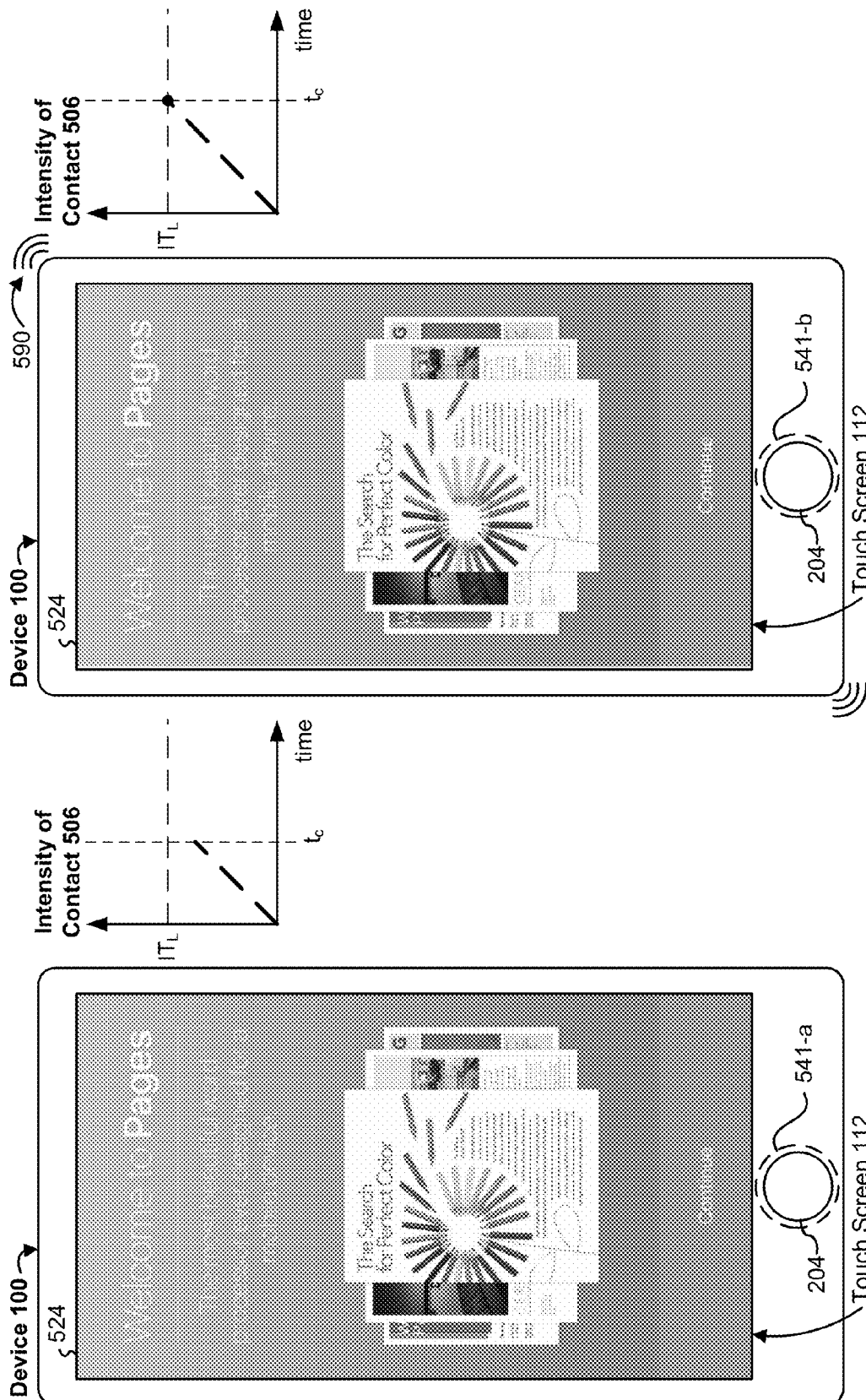


Figure 5B63

Figure 5B62

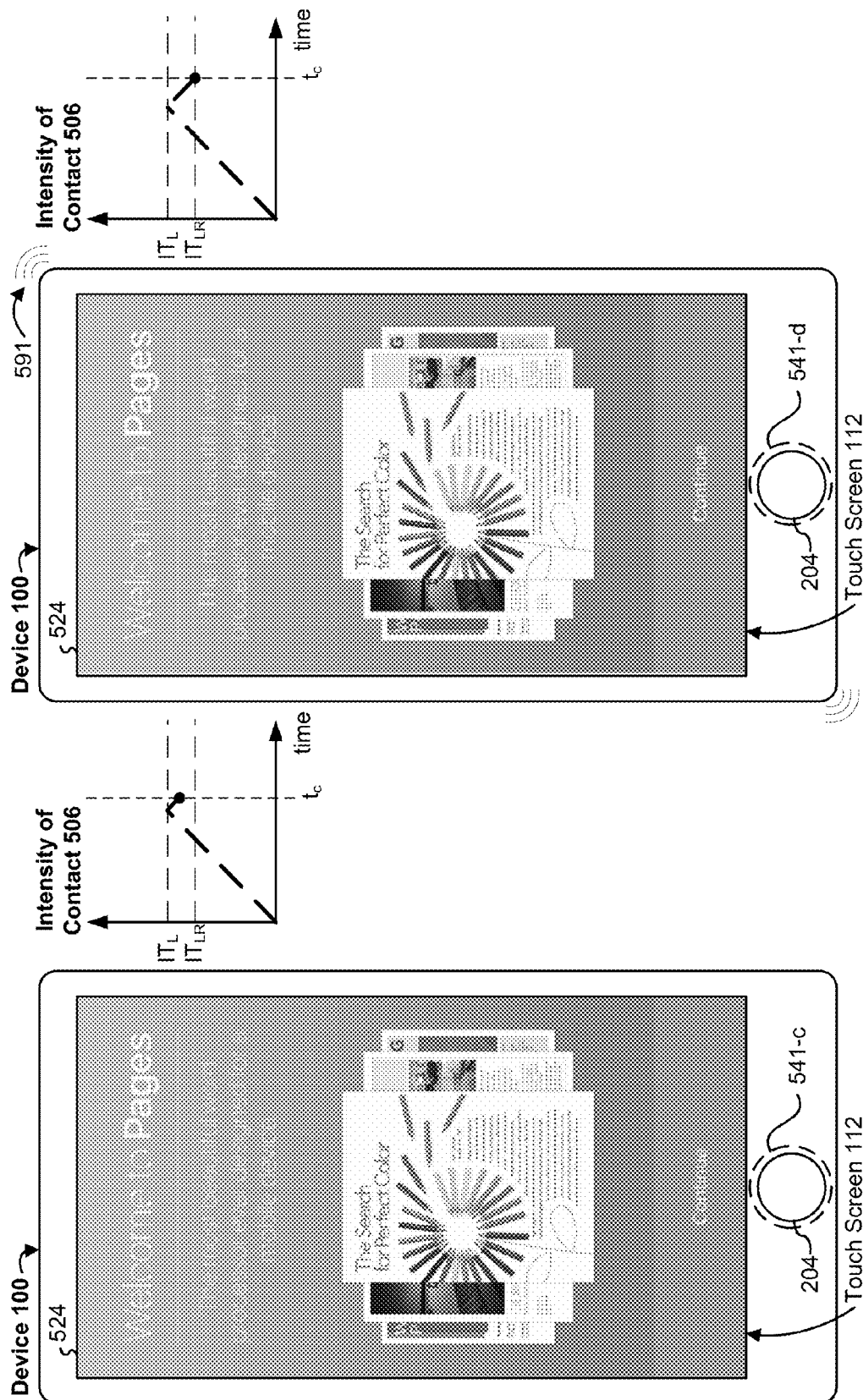


Figure 5B65

Figure 5B64

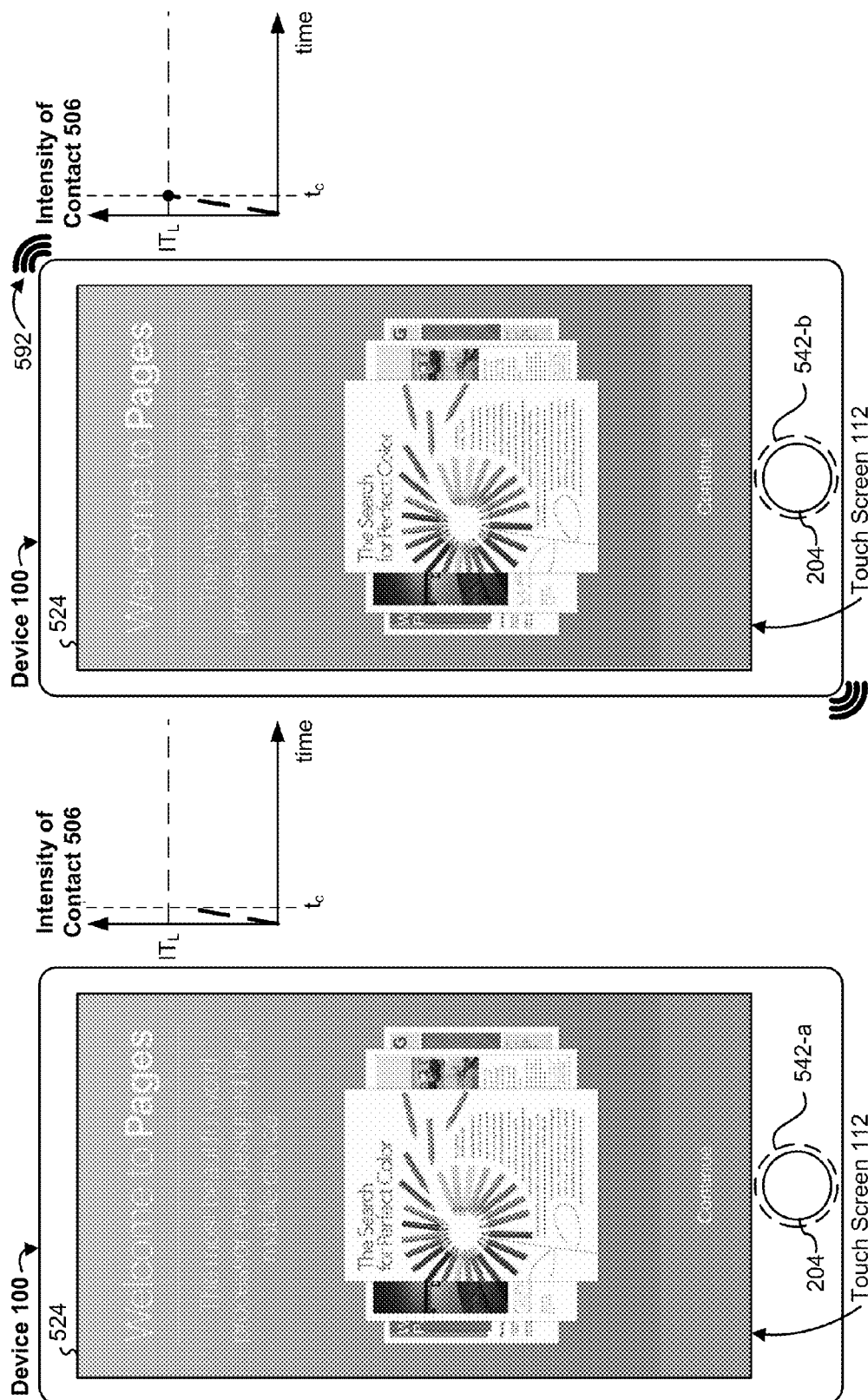


Figure 5B67

Figure 5B66 (same as 5B62)

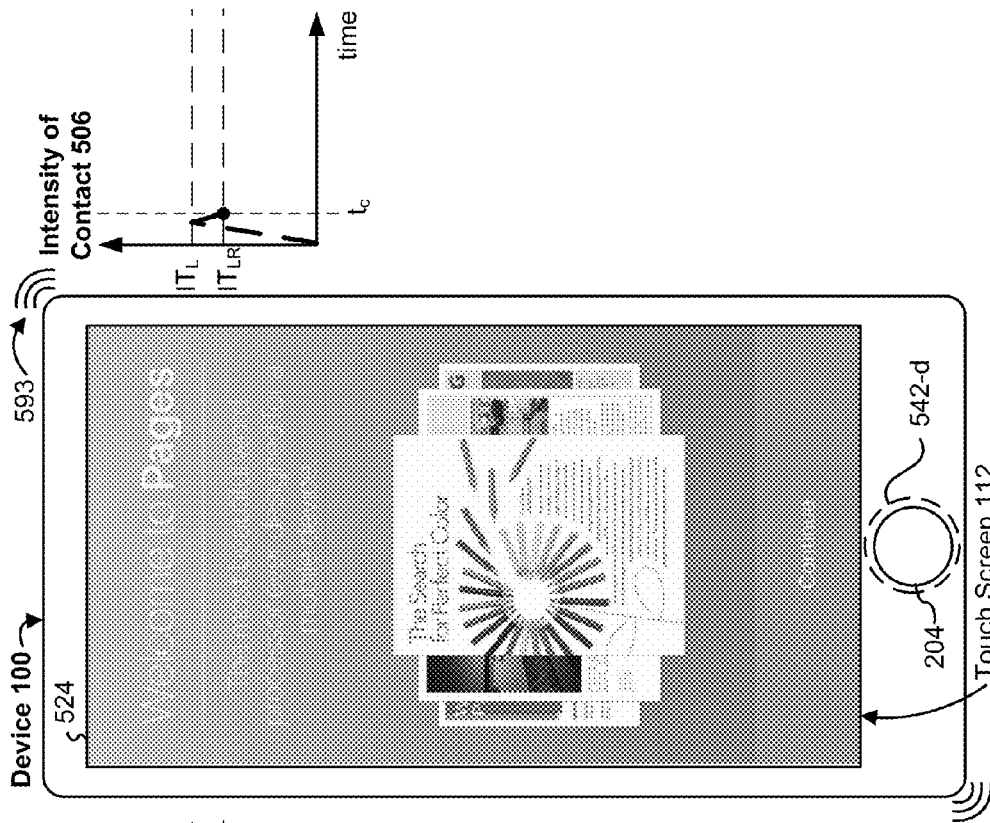


Figure 5B68

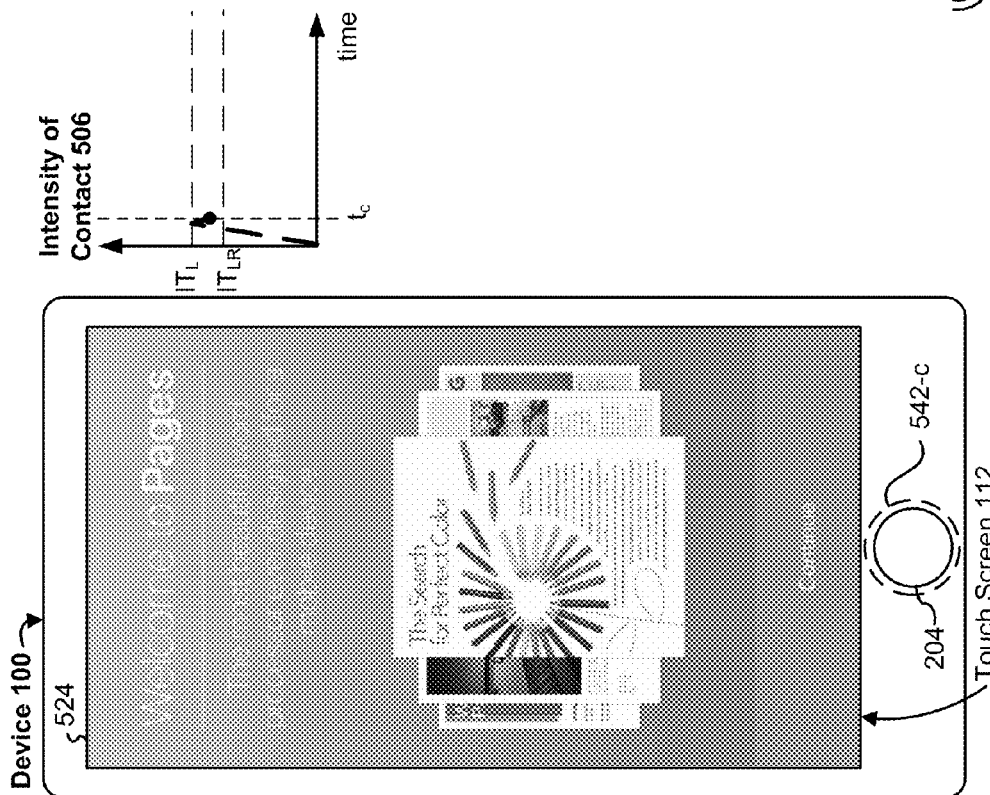
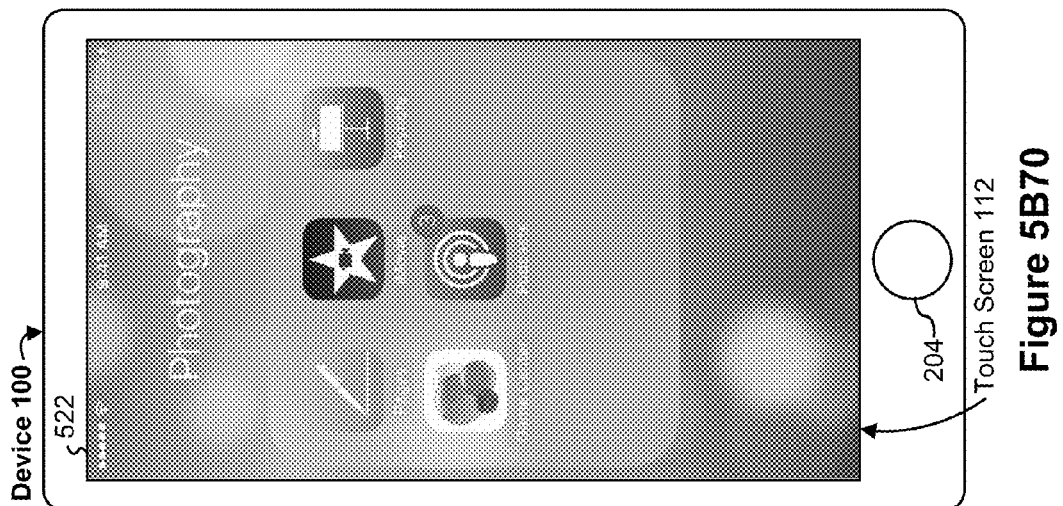
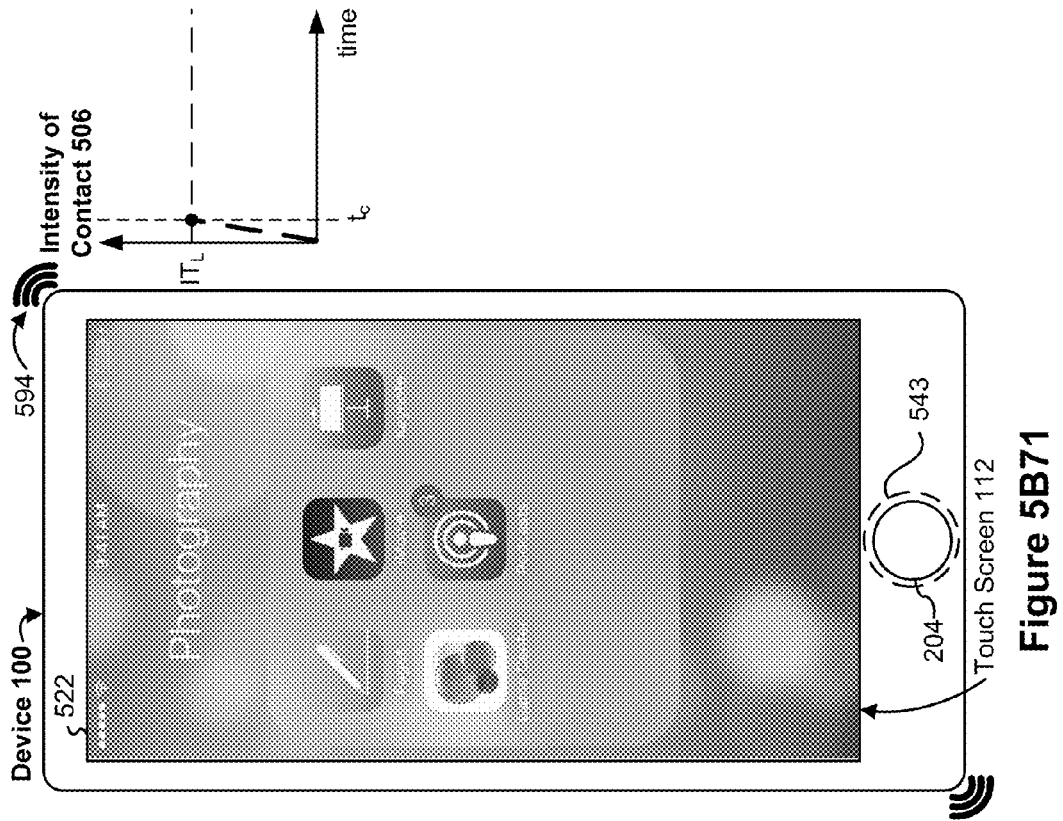
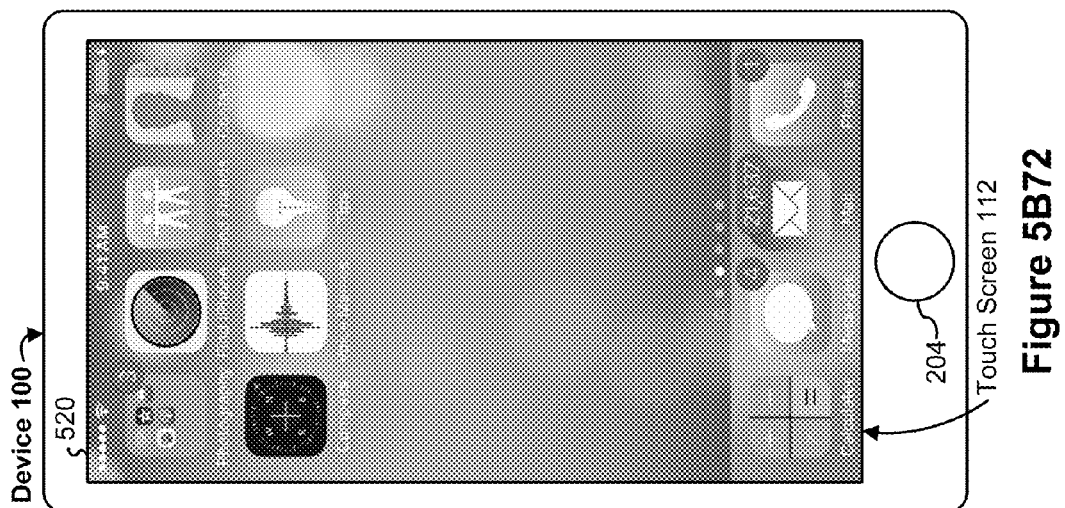
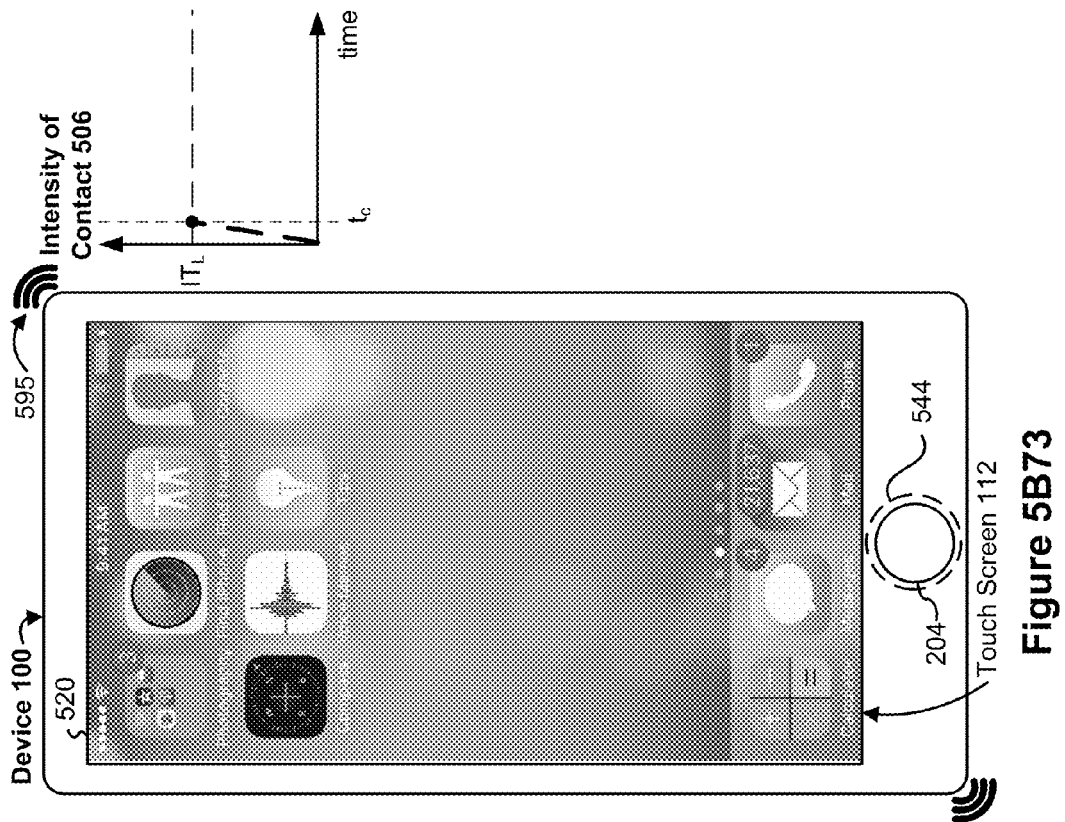


Figure 5B69





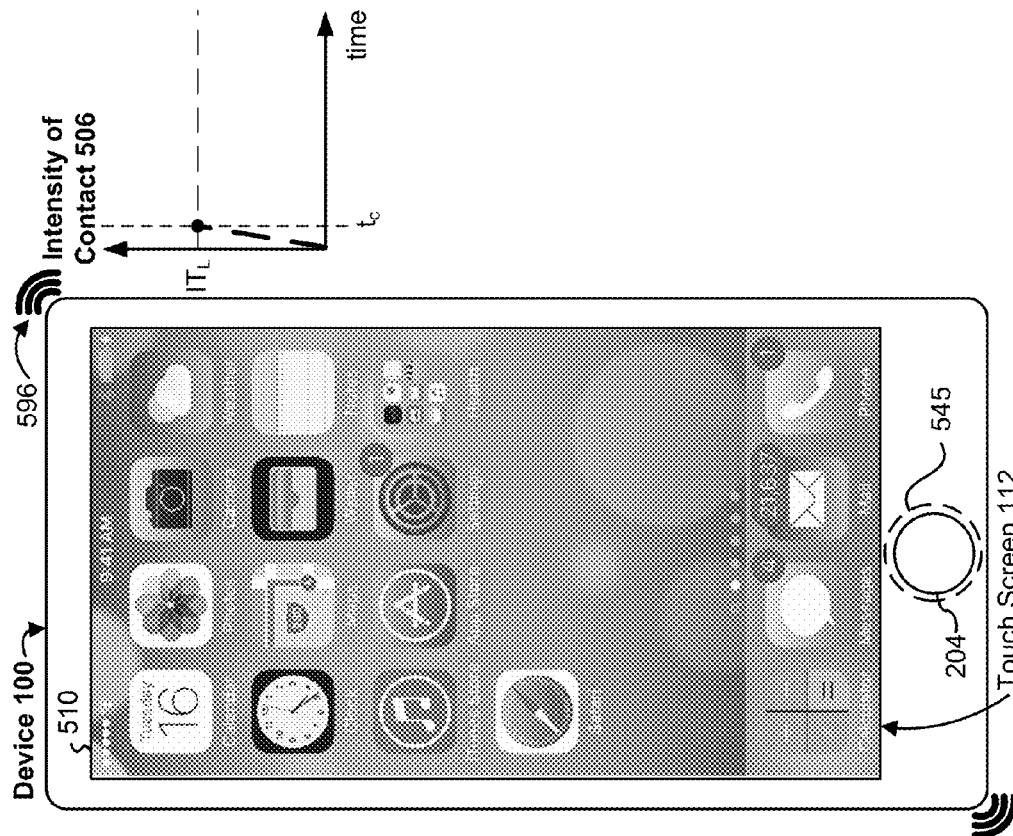


Figure 5B75

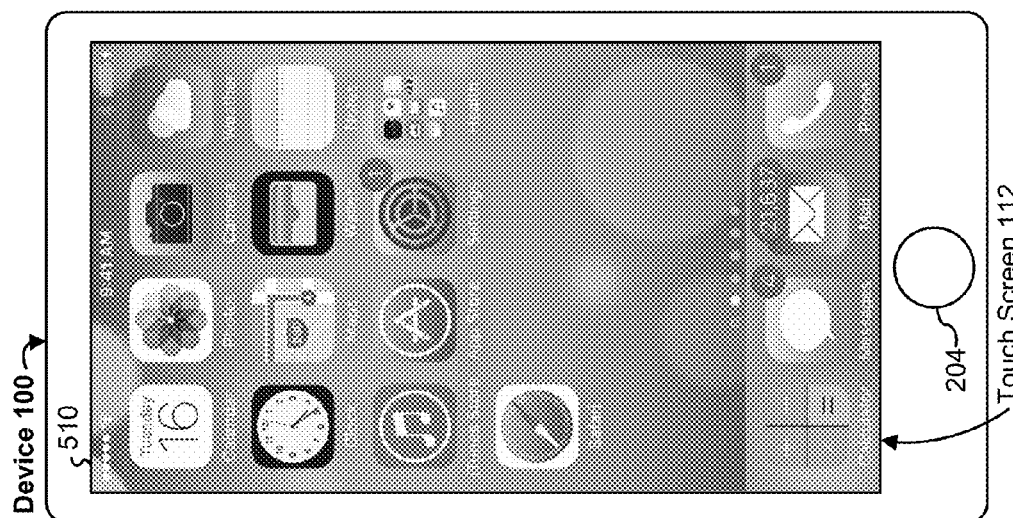


Figure 5B74

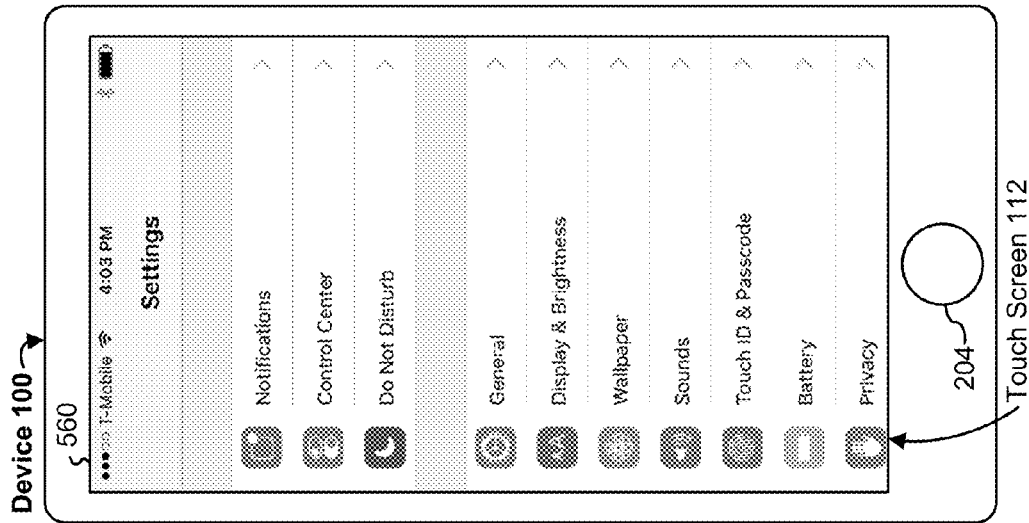


Figure 5C1

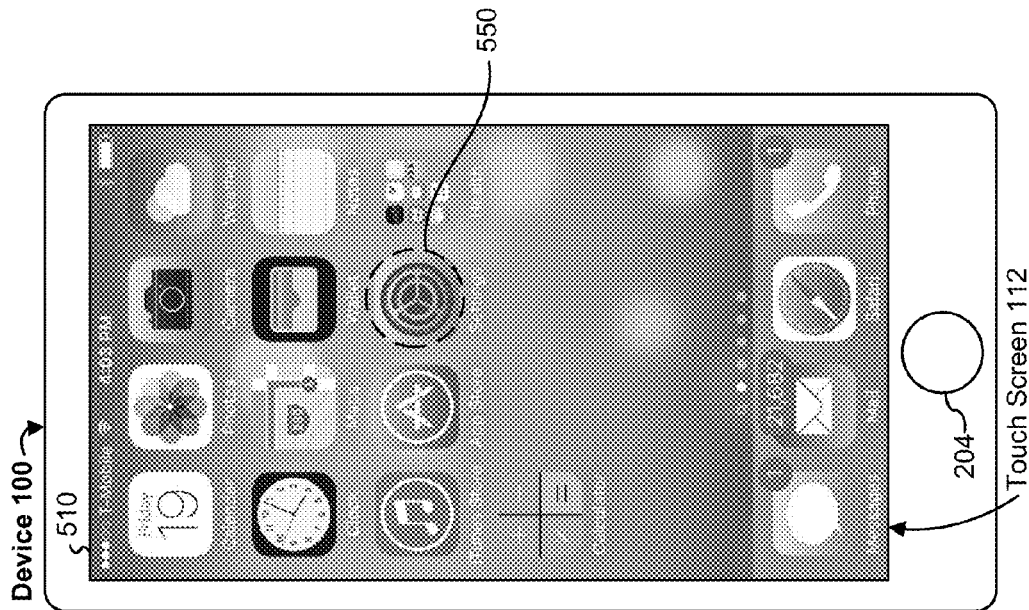


Figure 5C2

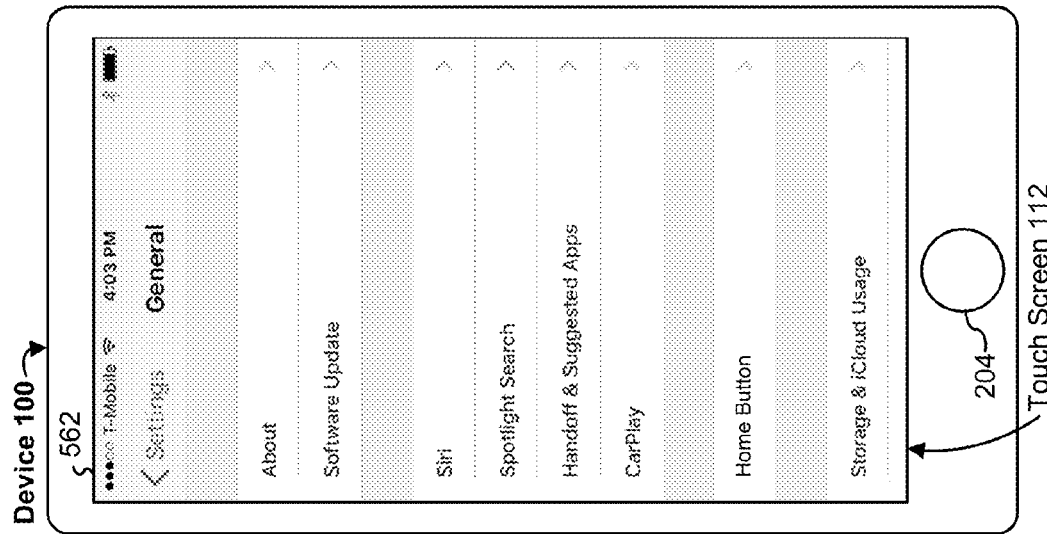


Figure 5C4

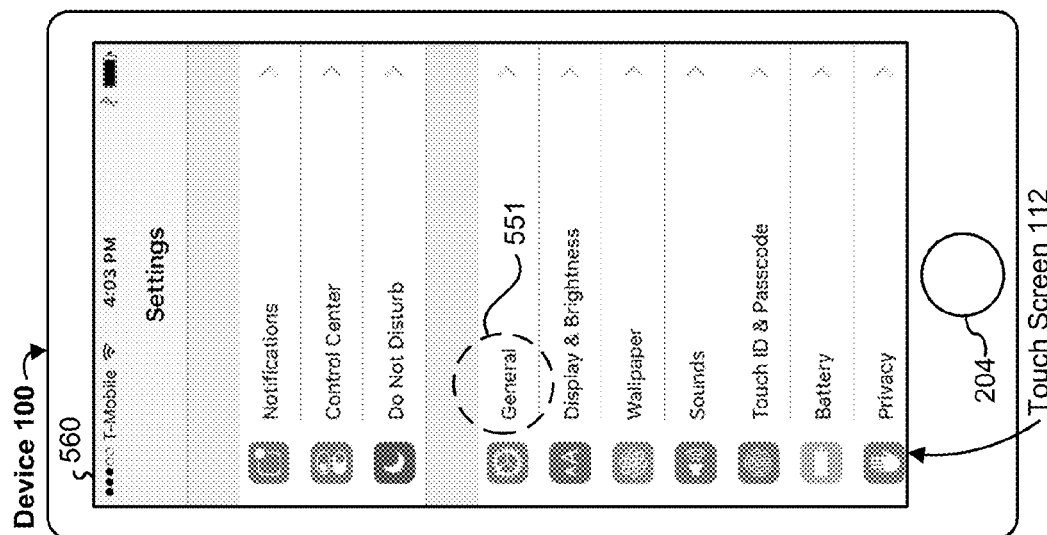


Figure 5C3

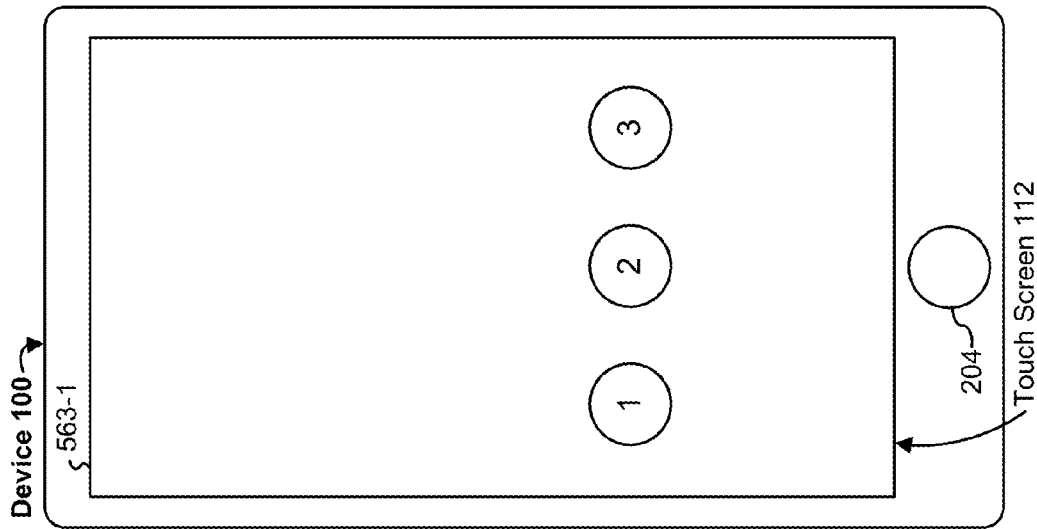


Figure 5C6

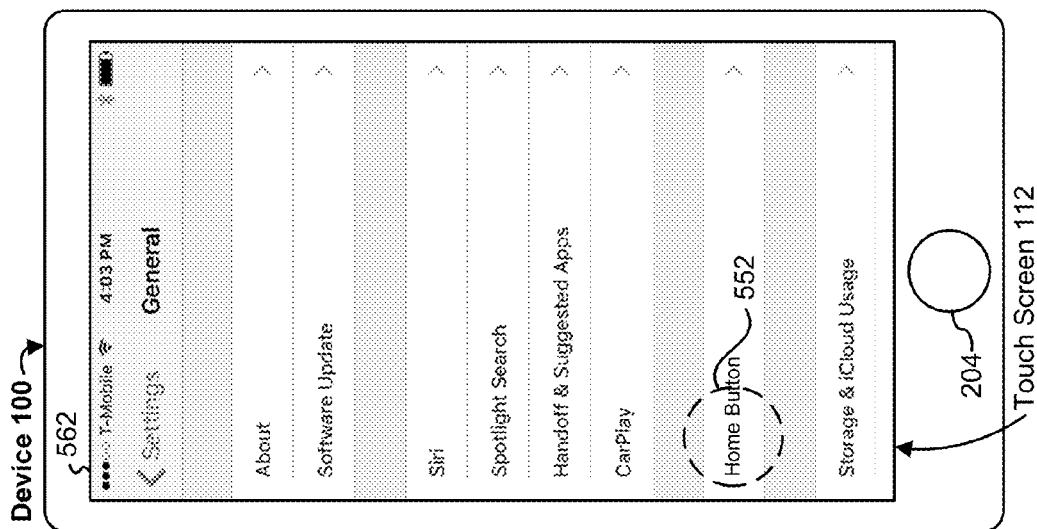


Figure 5C5

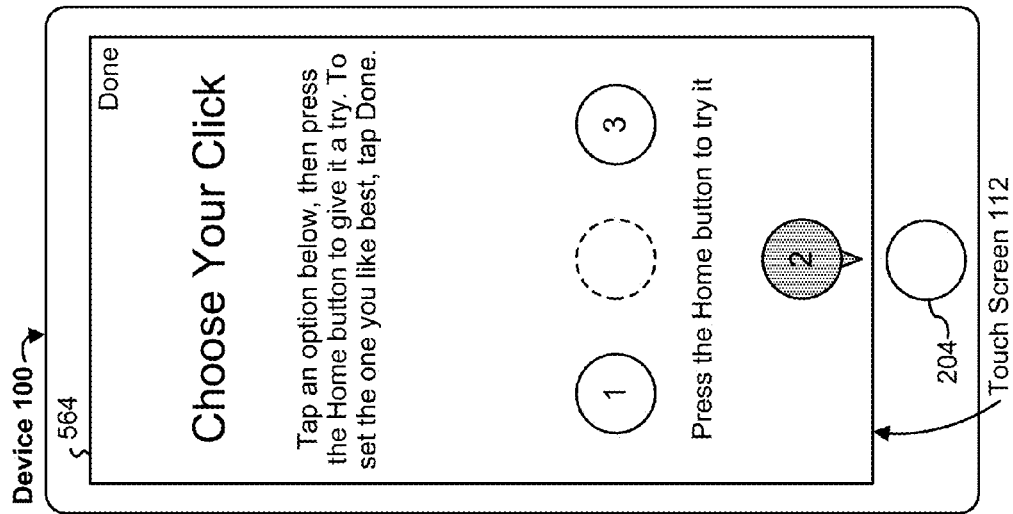


Figure 5C8

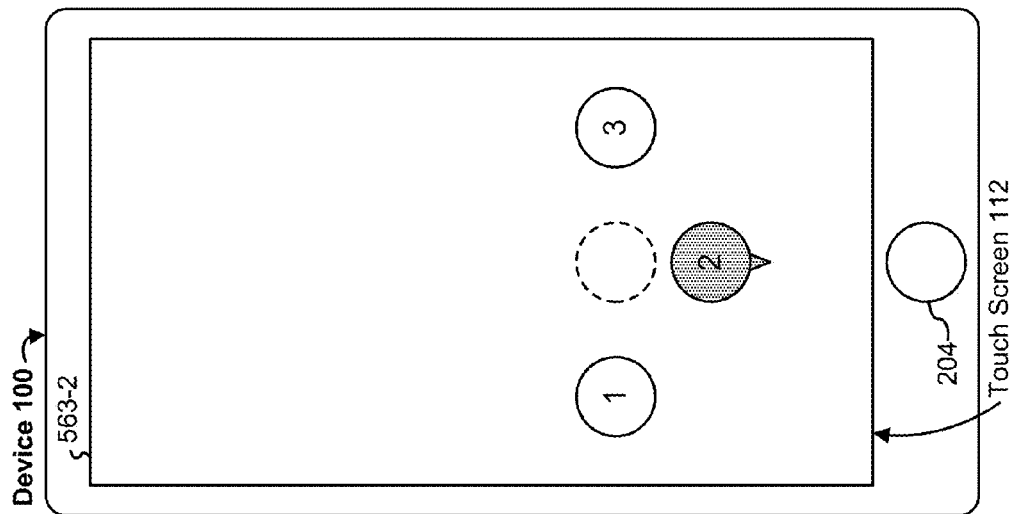


Figure 5C7

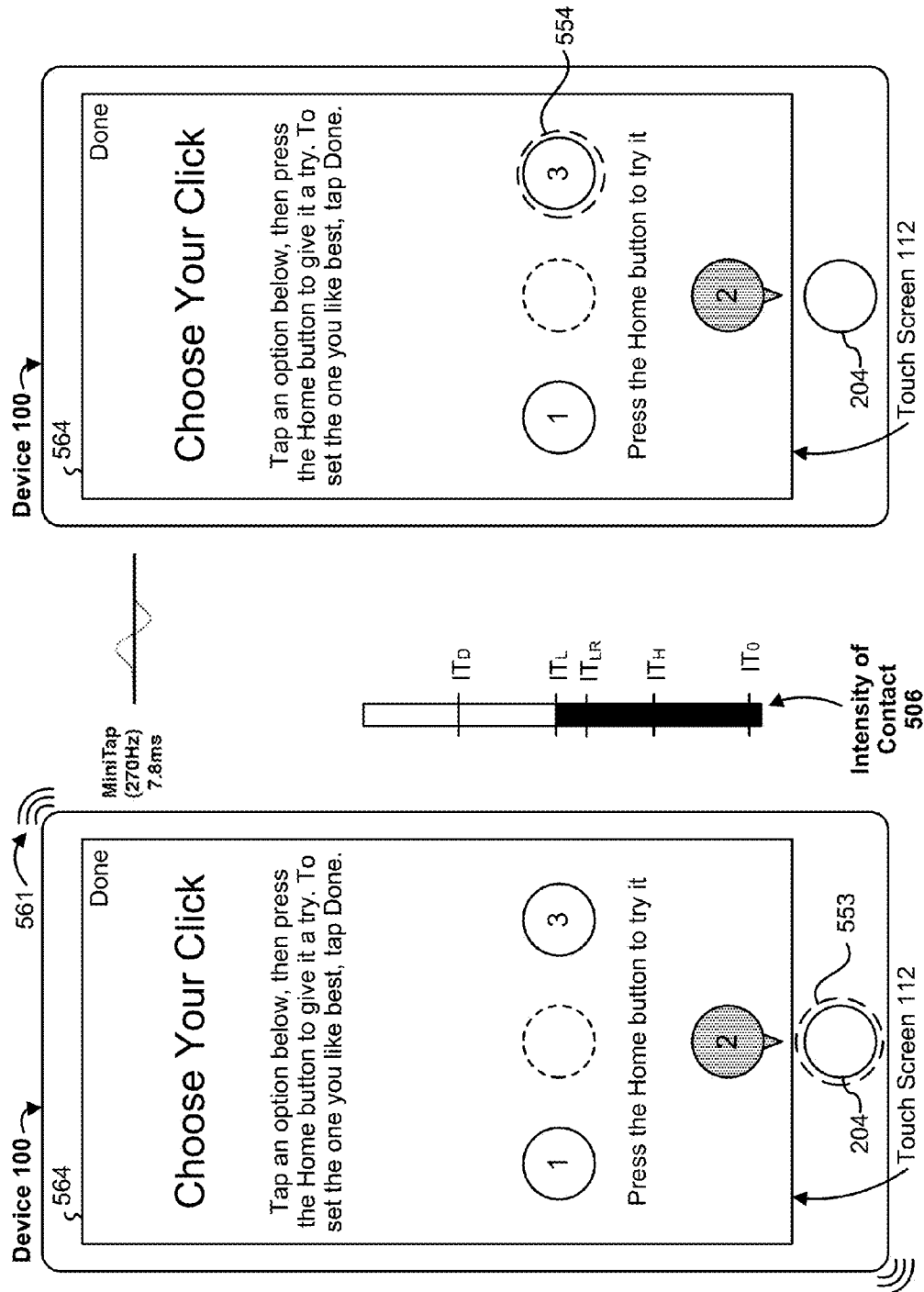


Figure 5C10

Figure 5C9

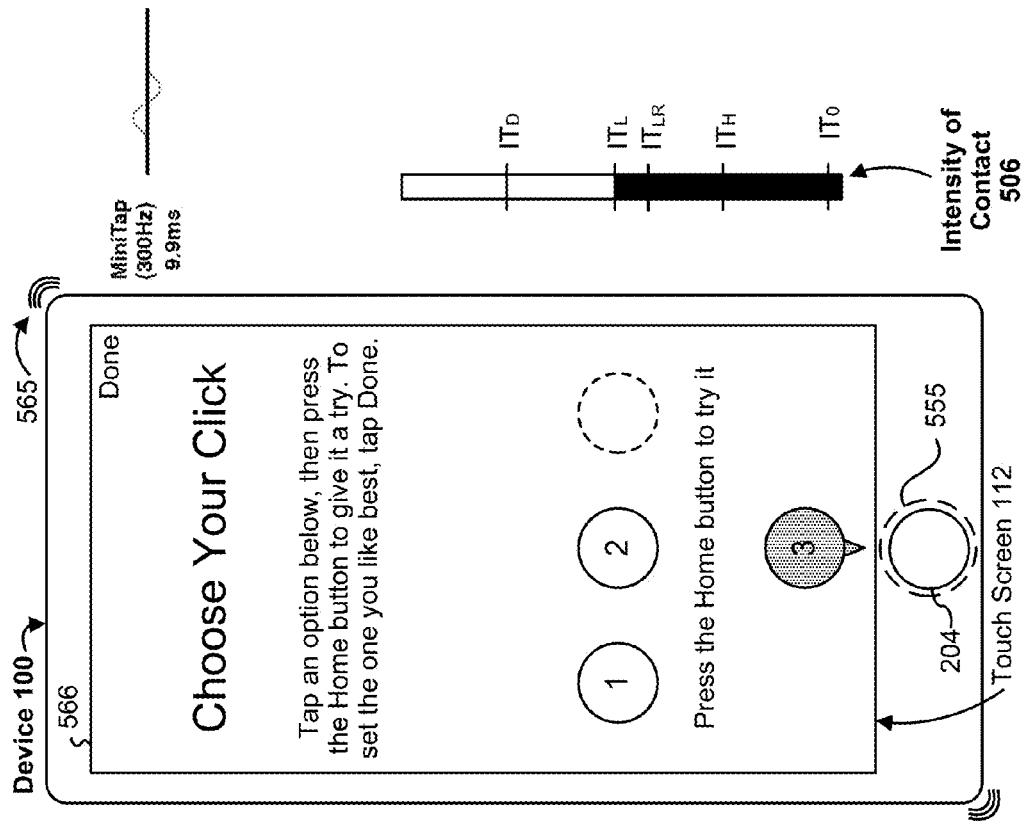


Figure 5C11

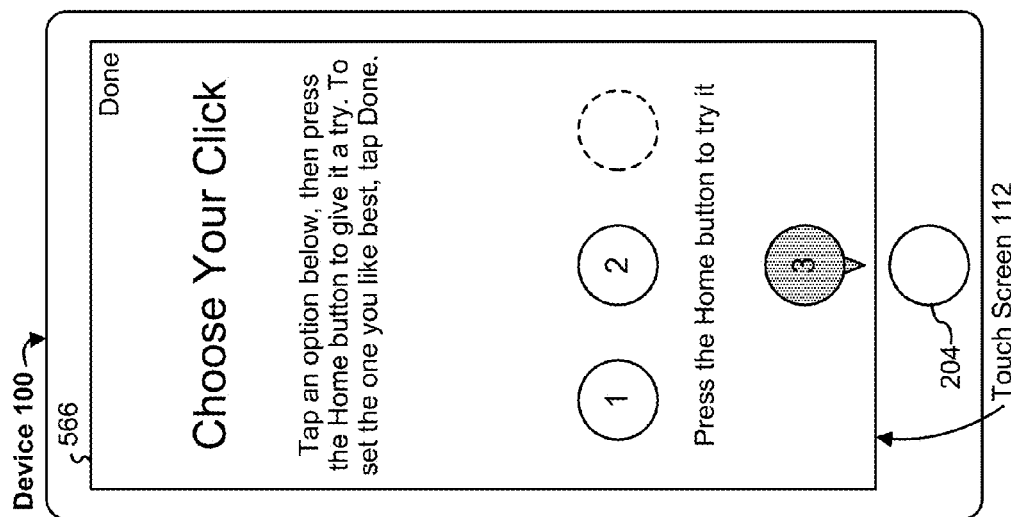
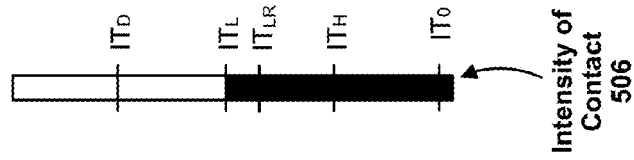


Figure 5C12



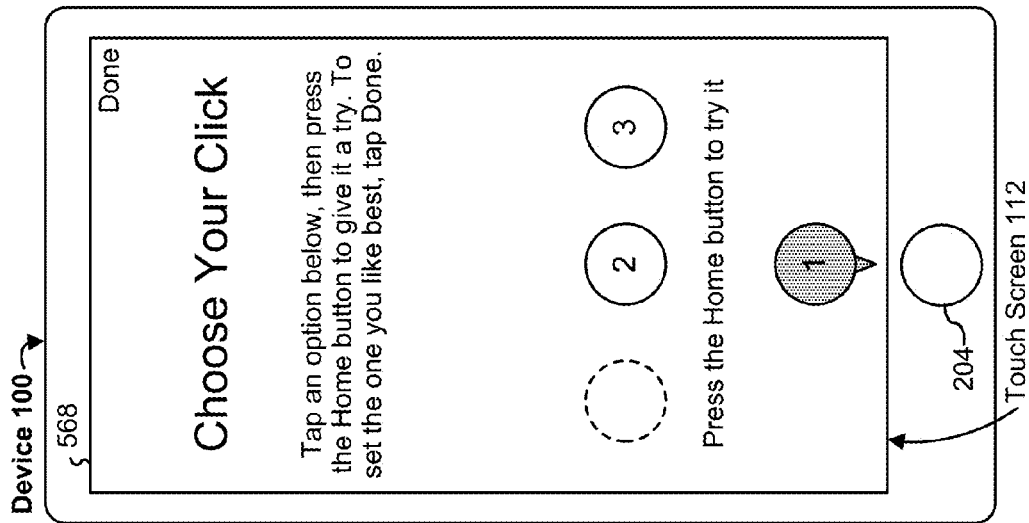


Figure 5C14

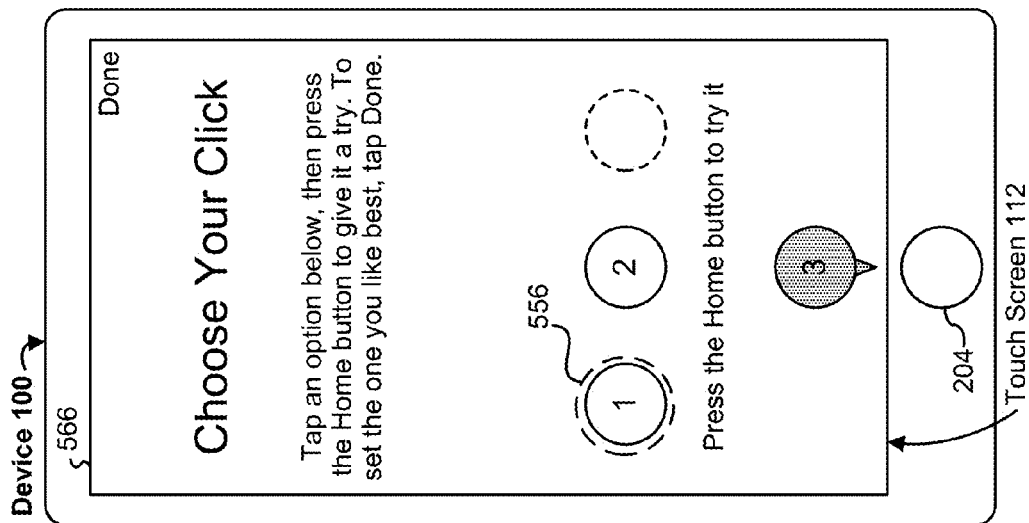
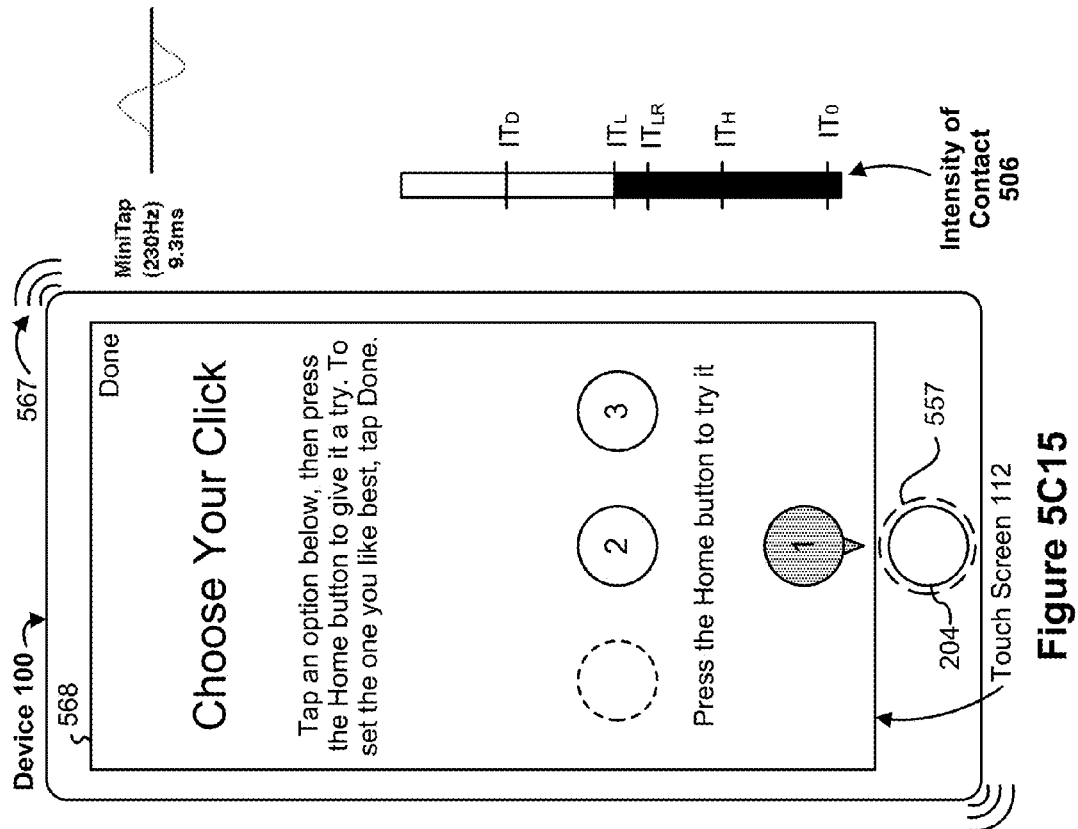
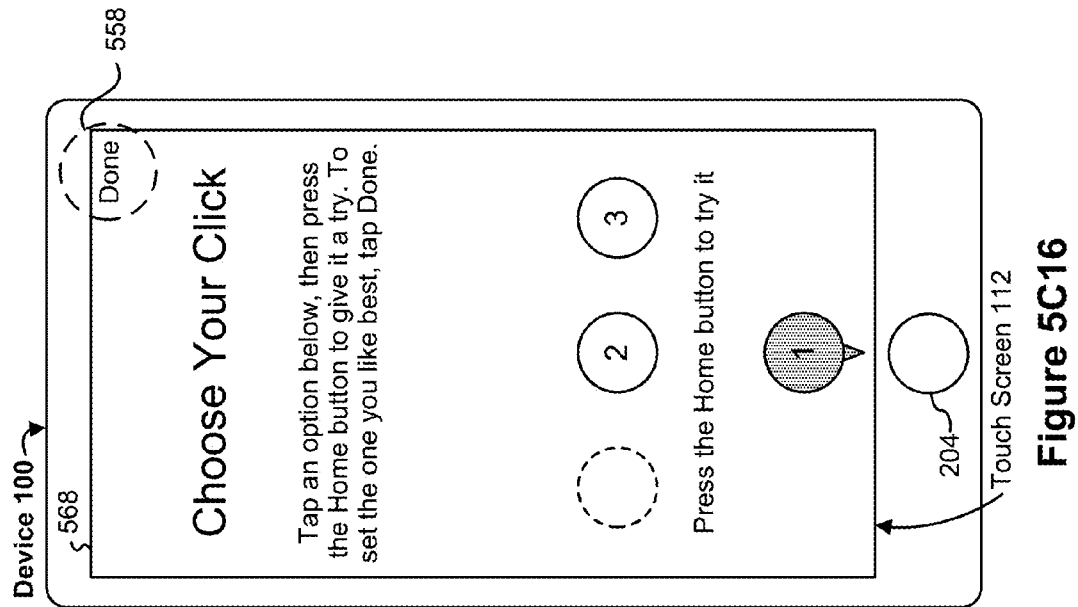


Figure 5C13



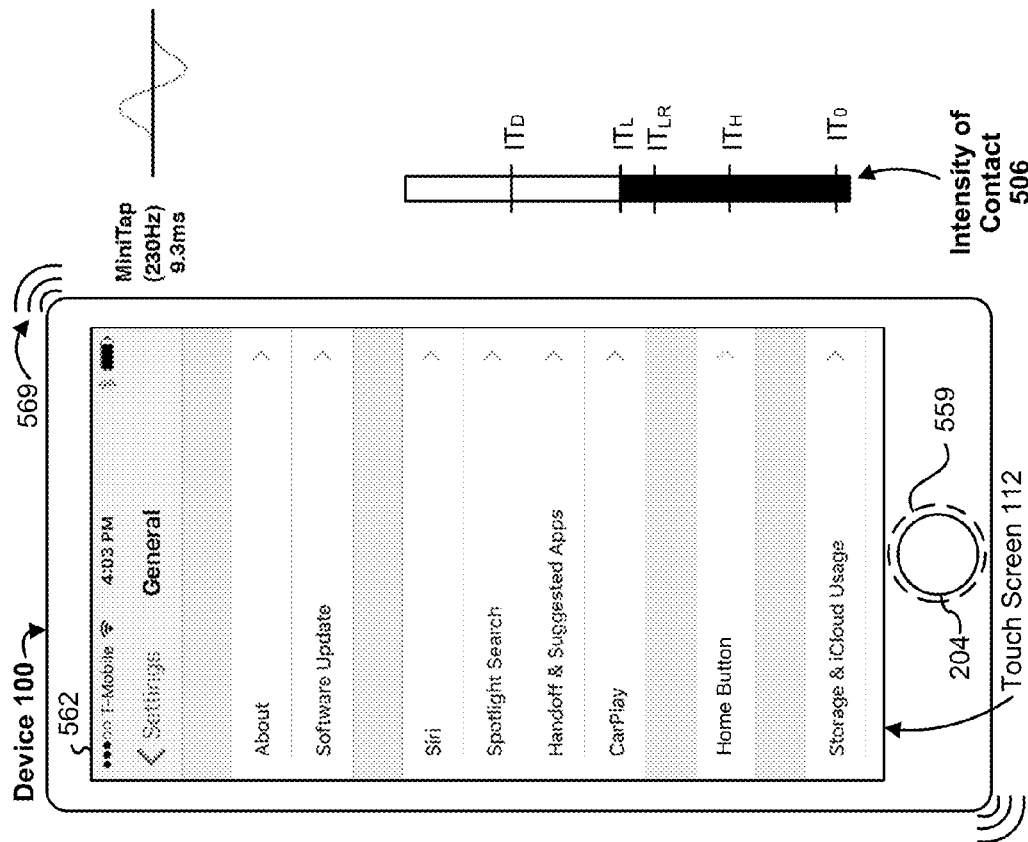


Figure 5C18

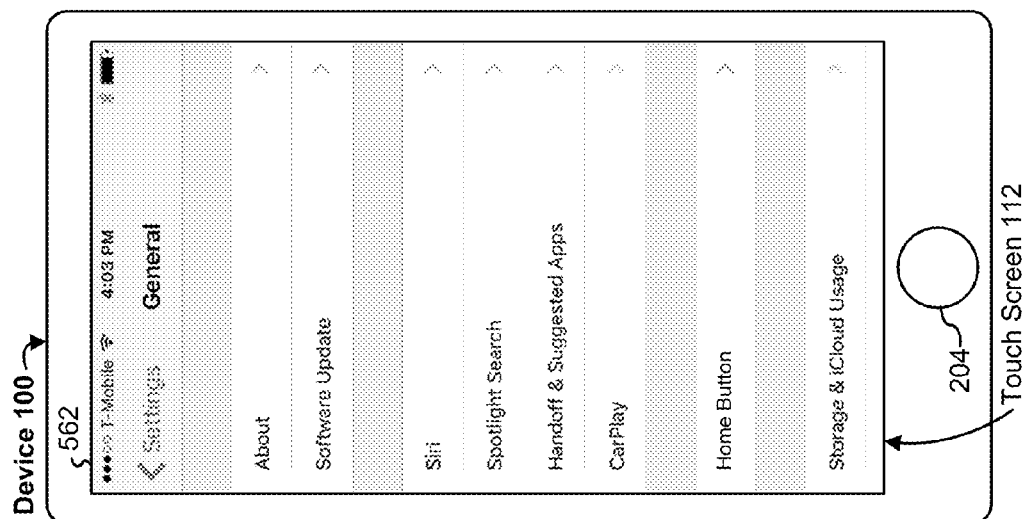


Figure 5C17

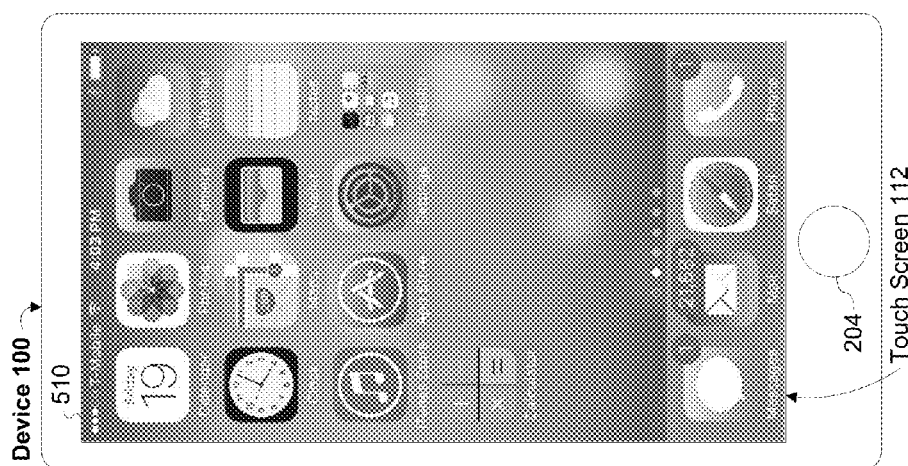


Figure 5C19

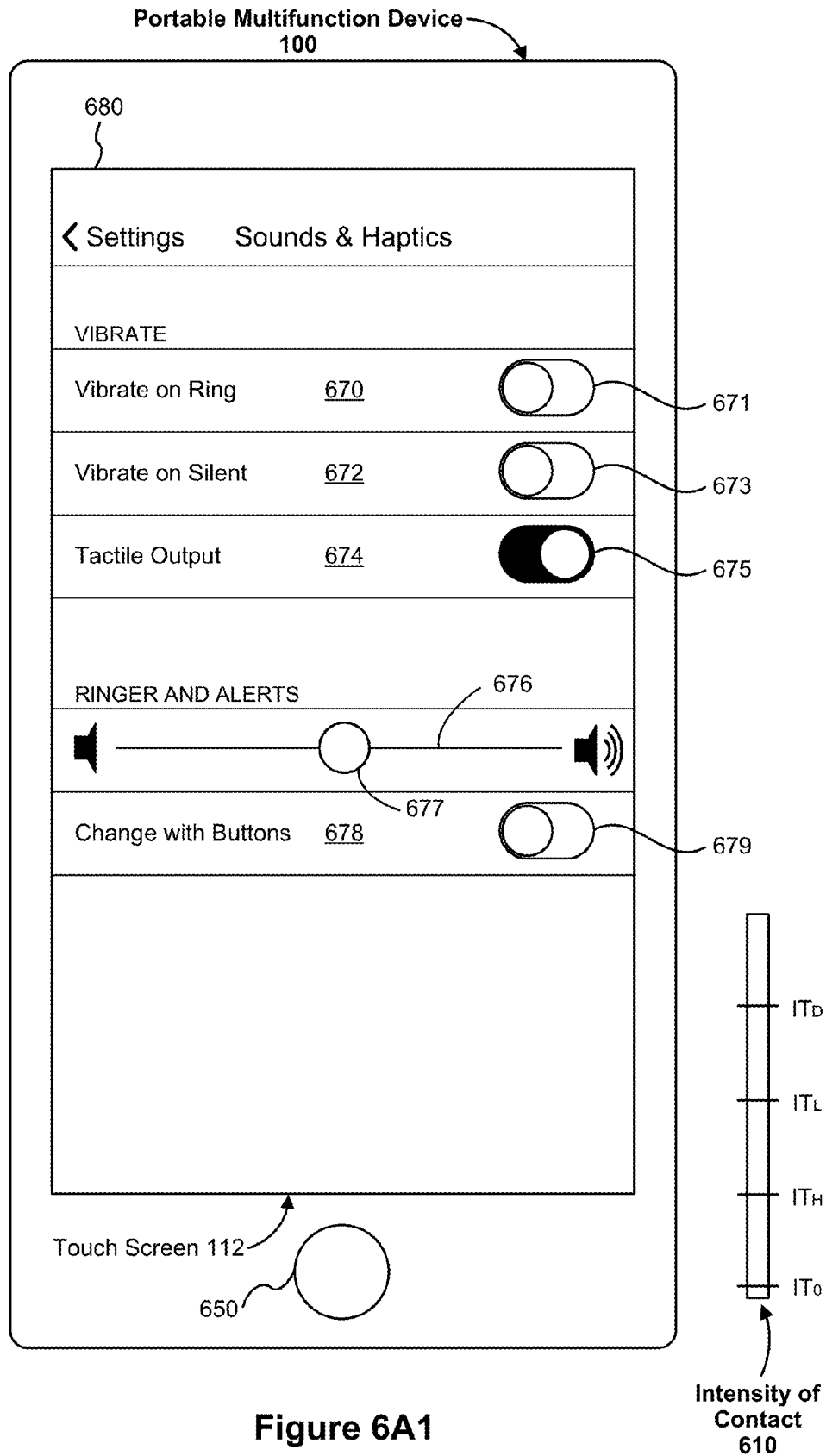


Figure 6A1



Figure 6A2

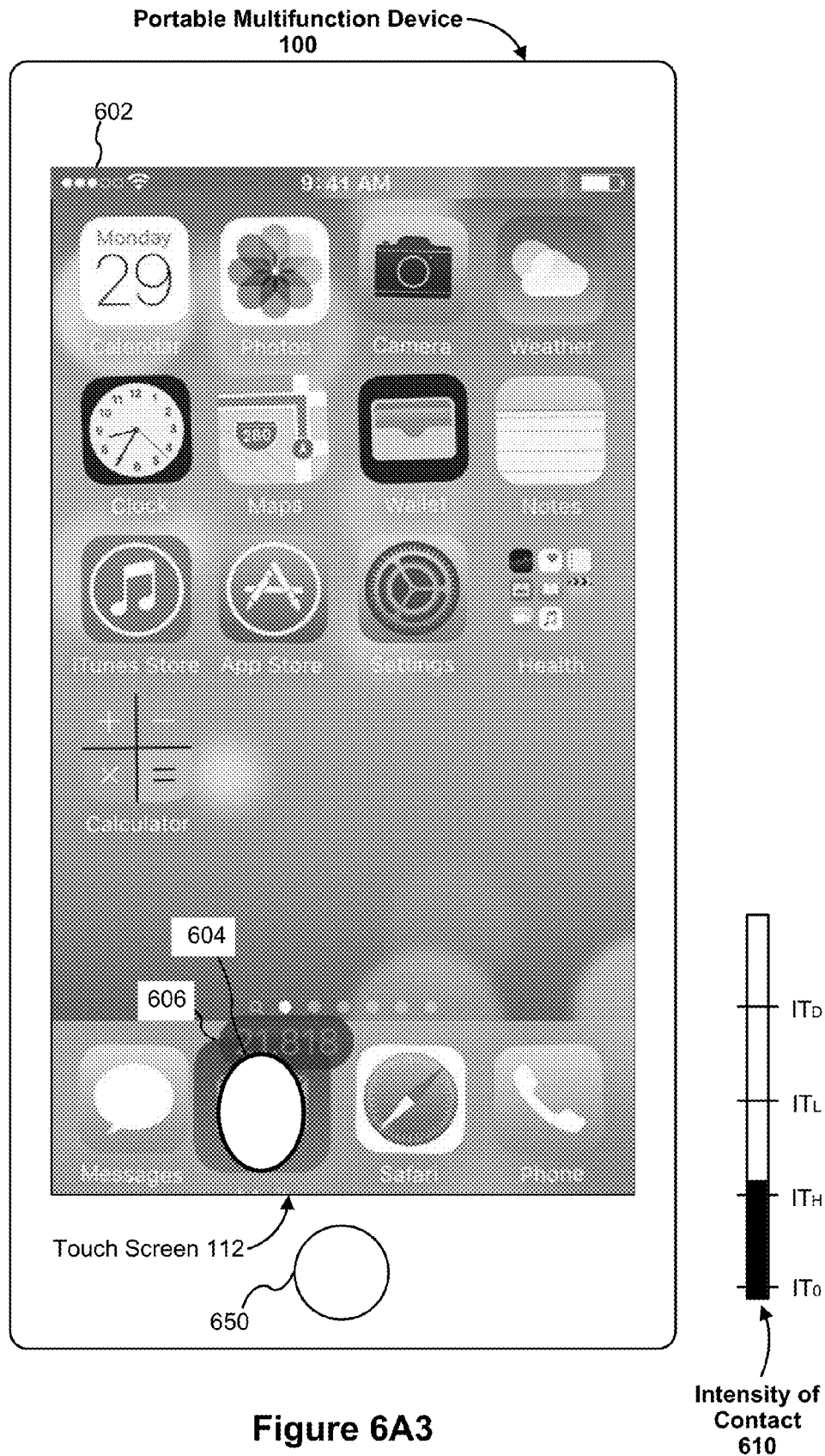
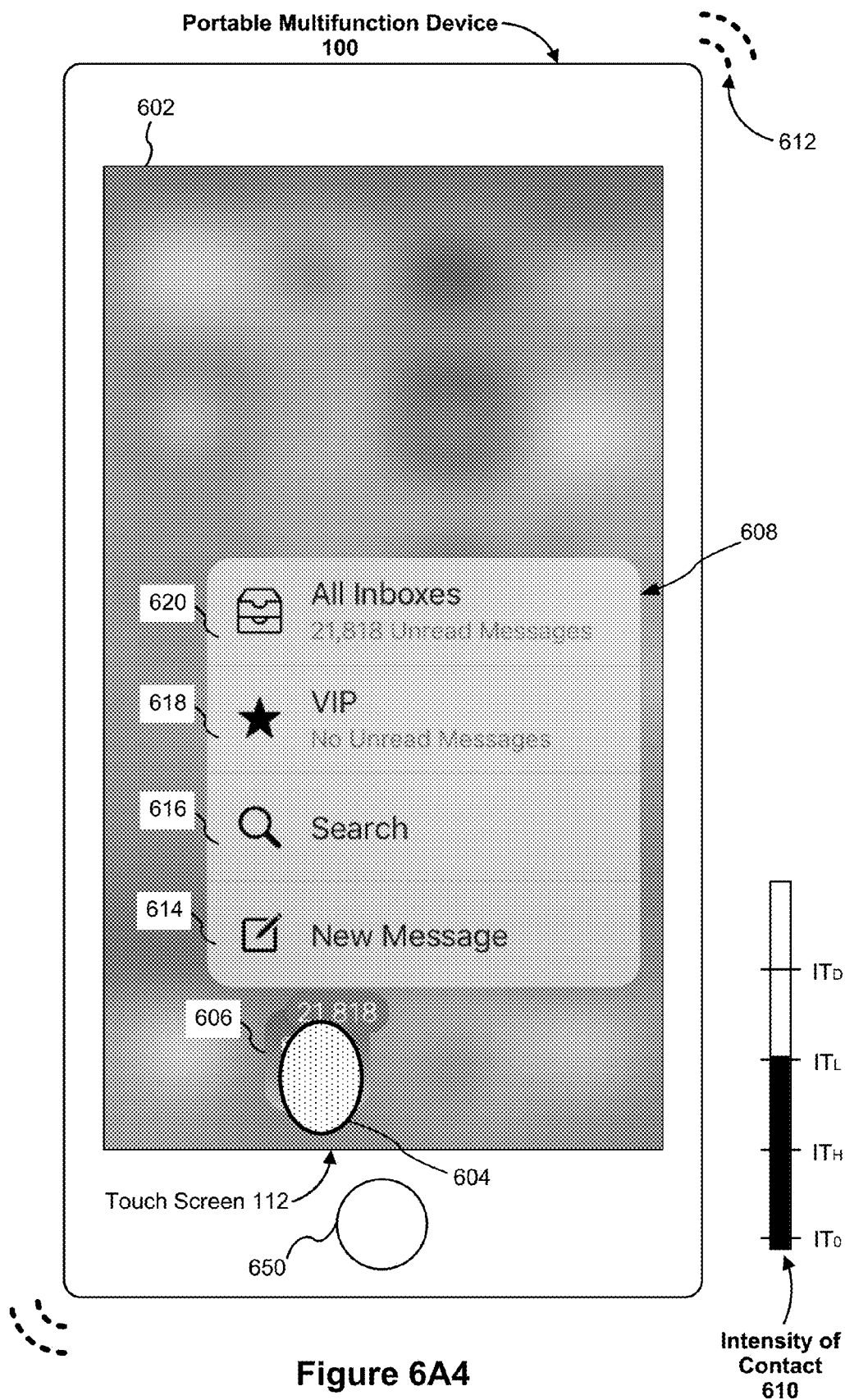


Figure 6A3



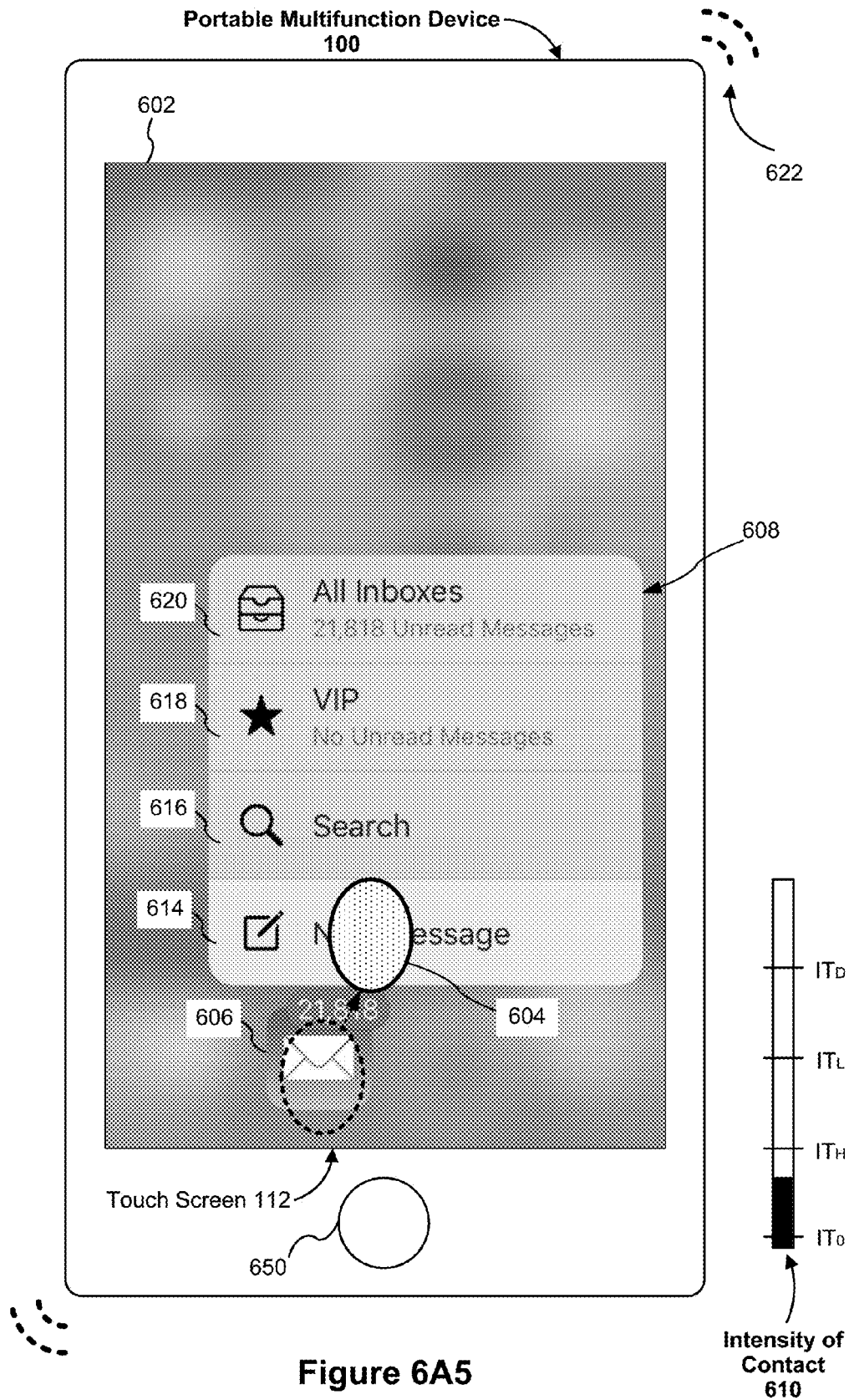
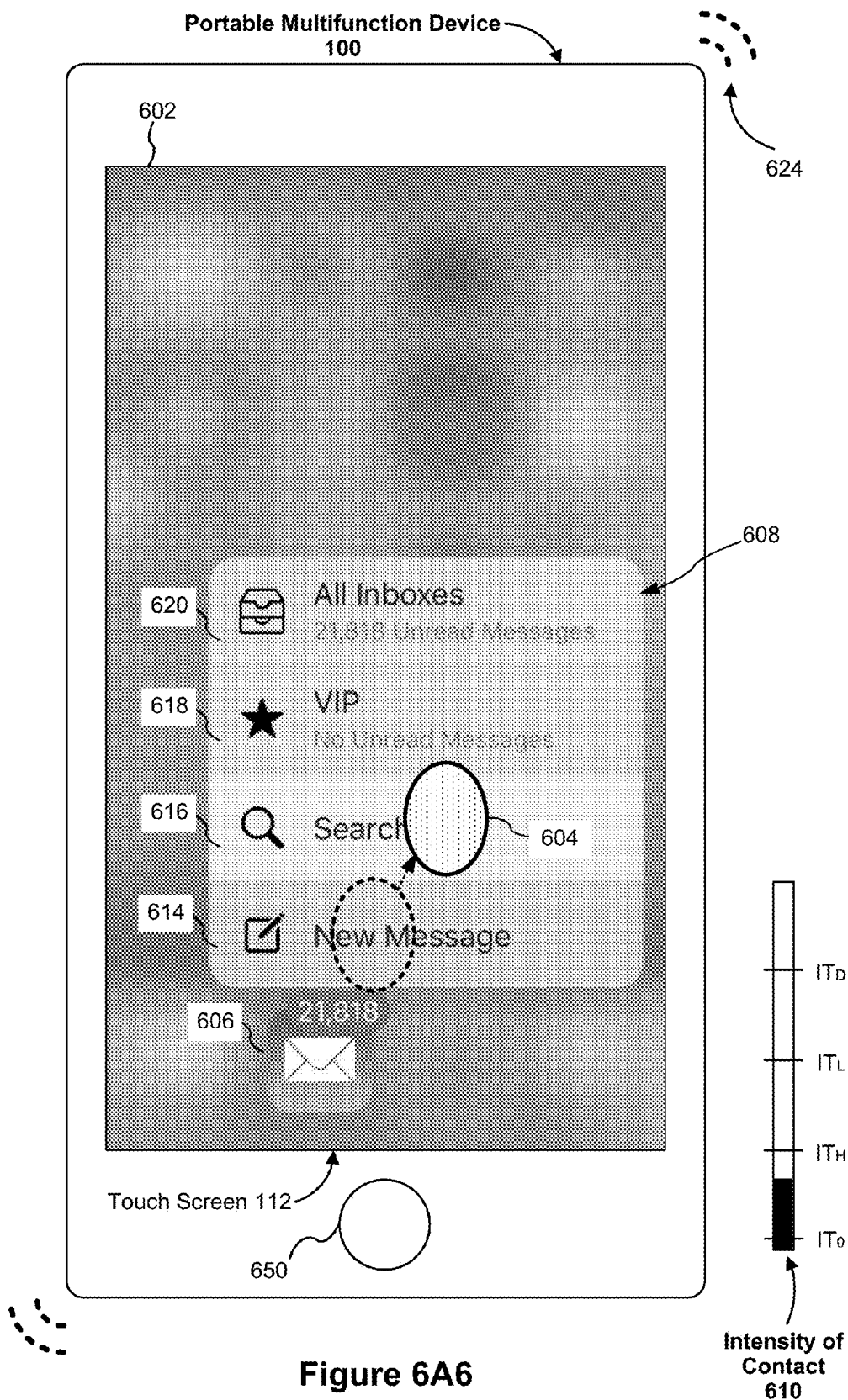
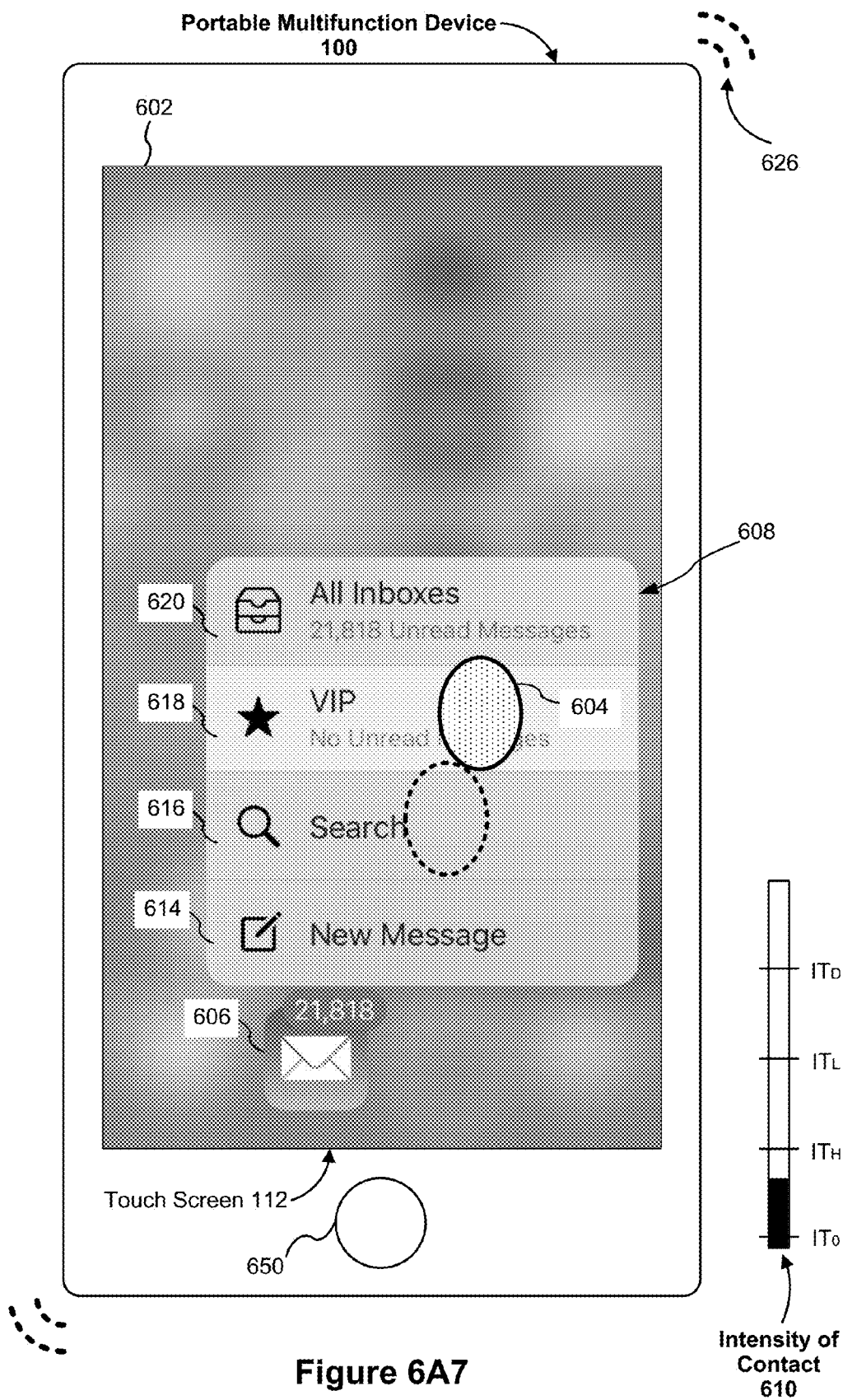
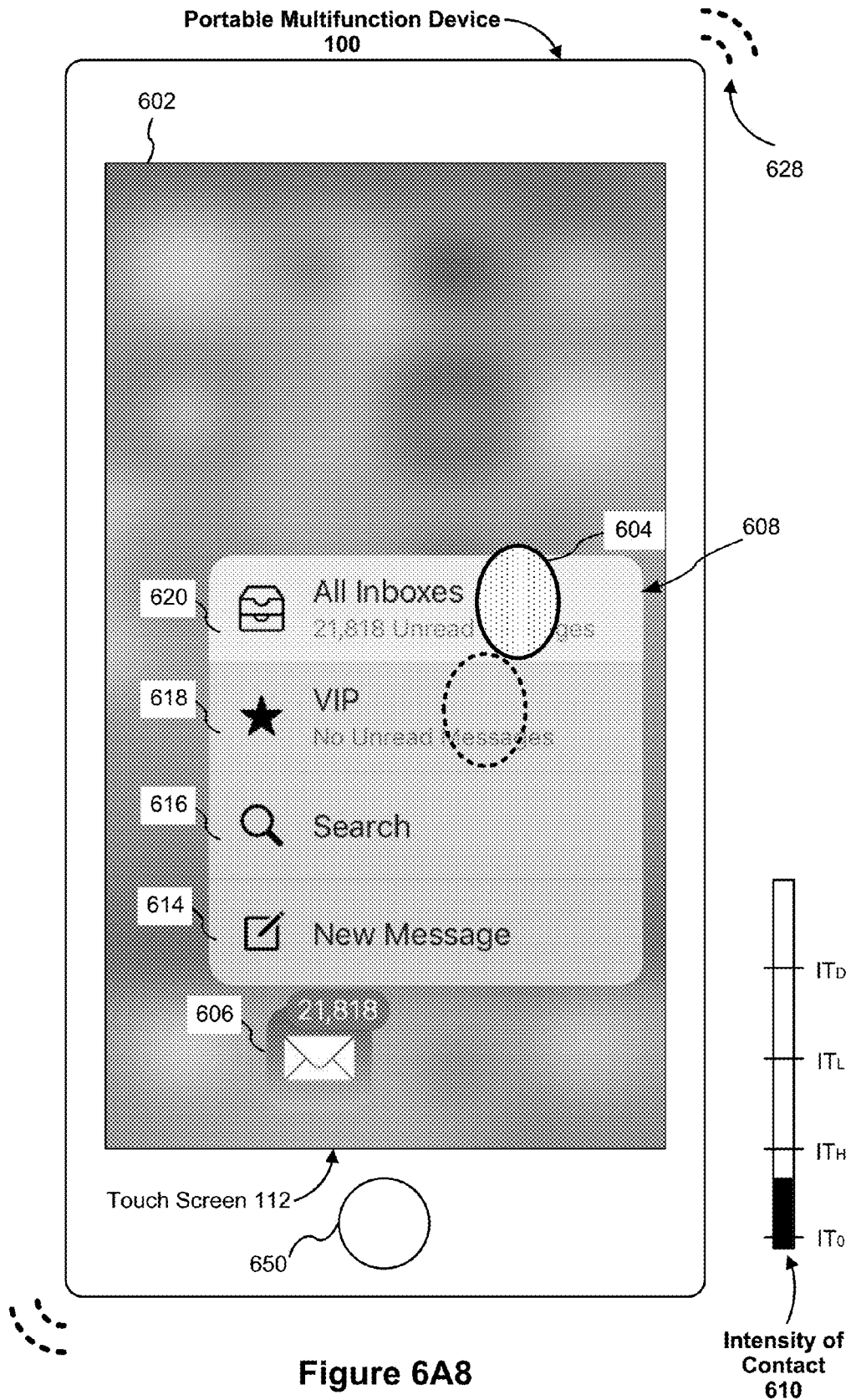


Figure 6A5







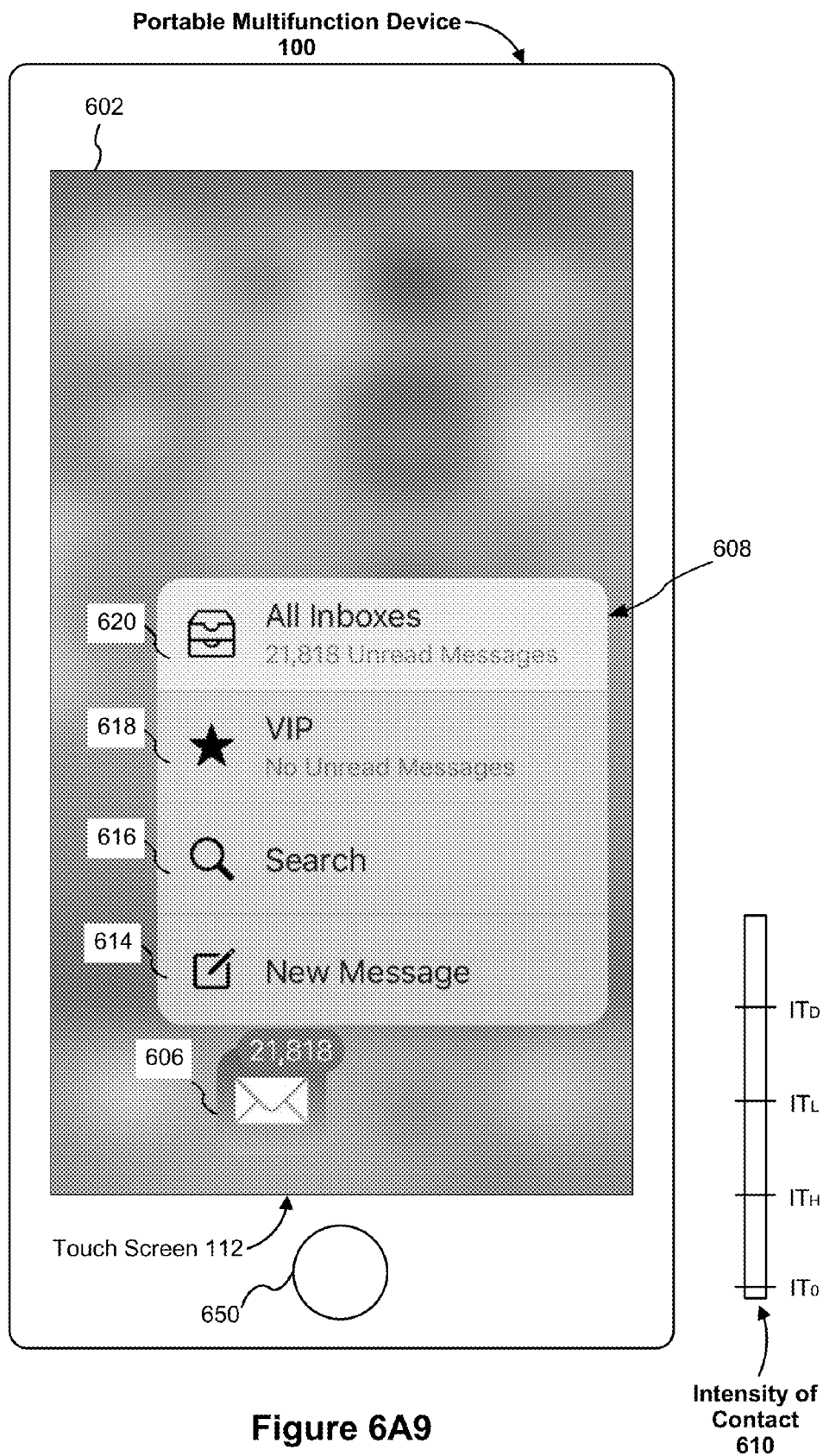


Figure 6A9

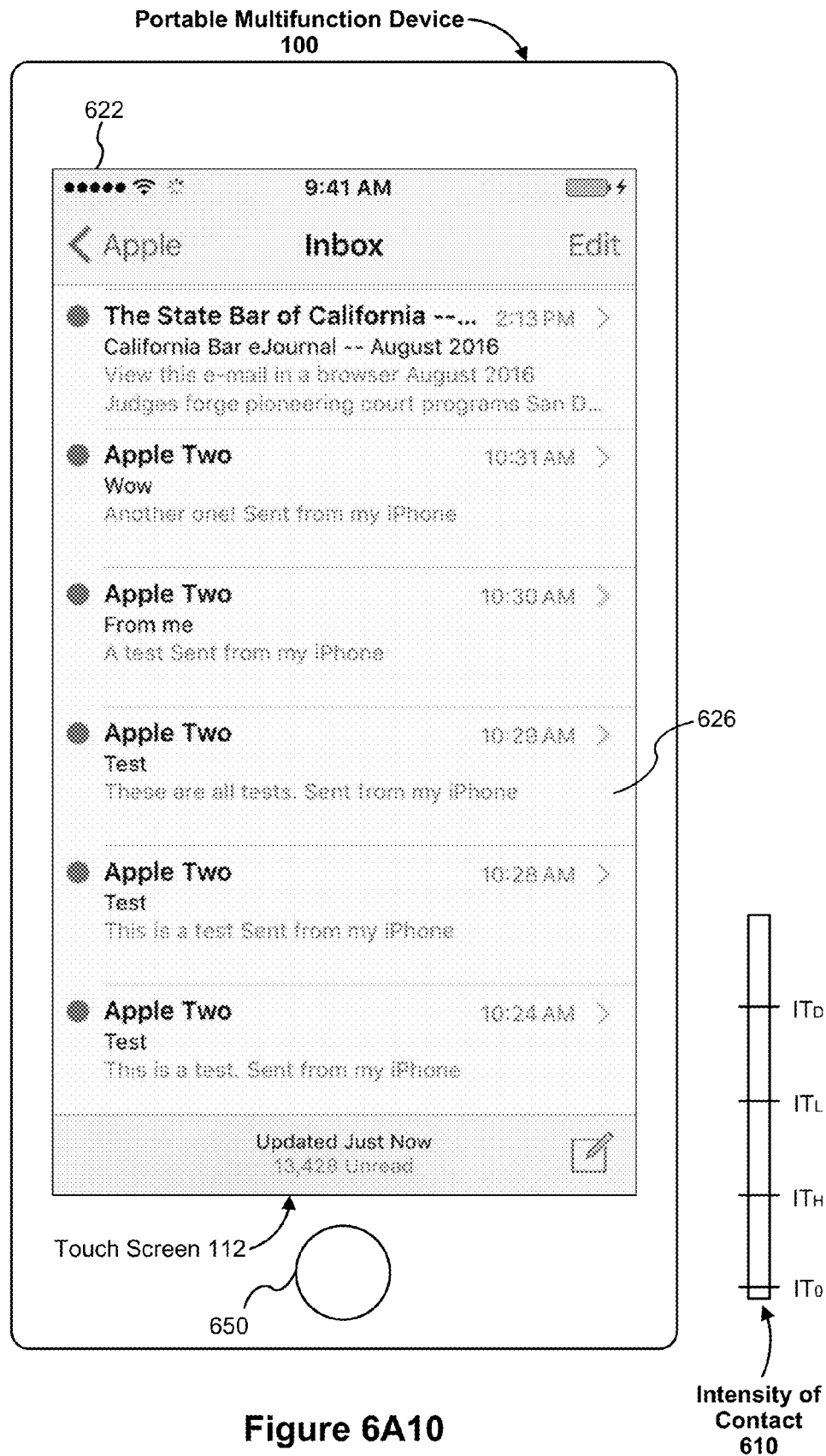
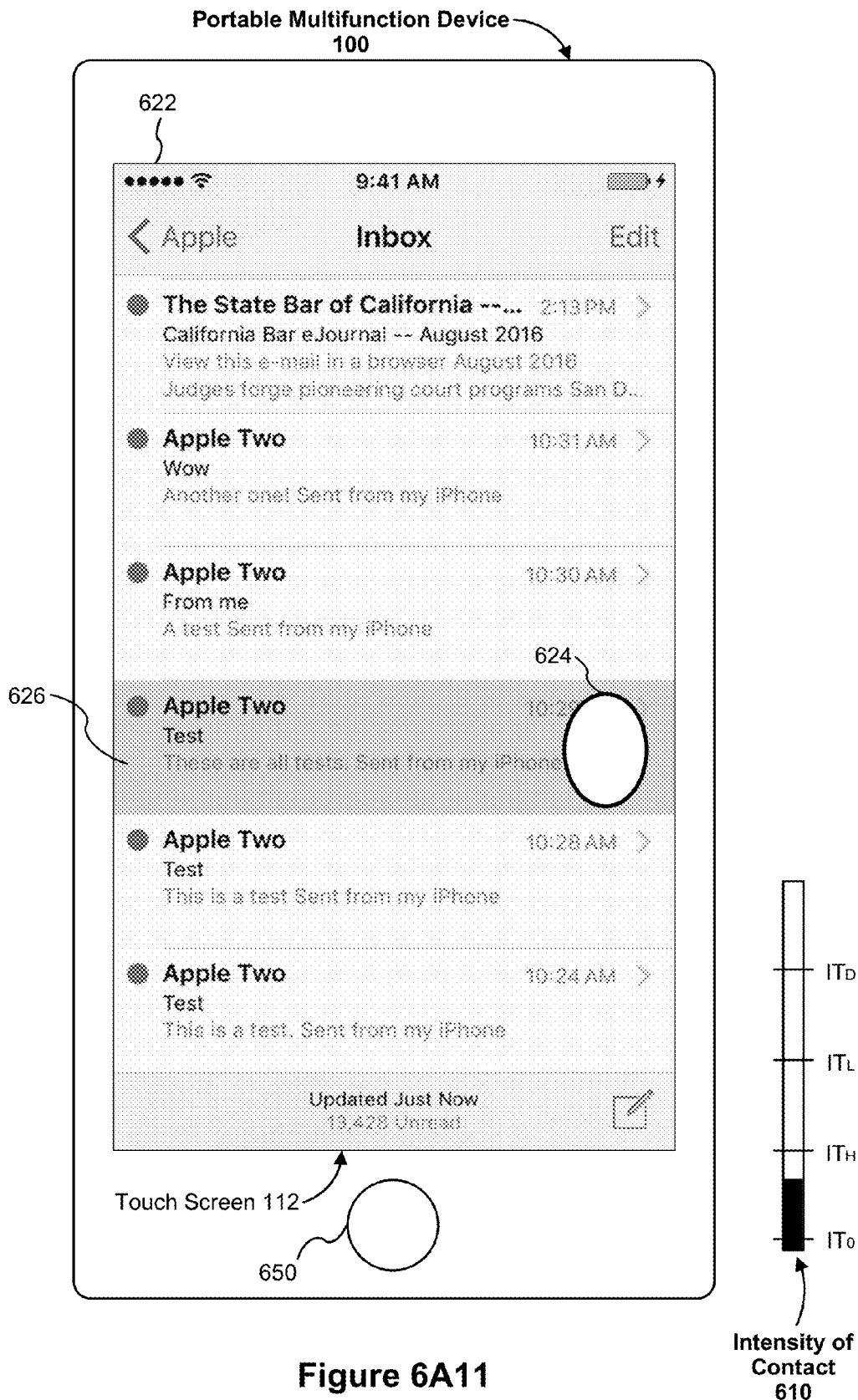


Figure 6A10



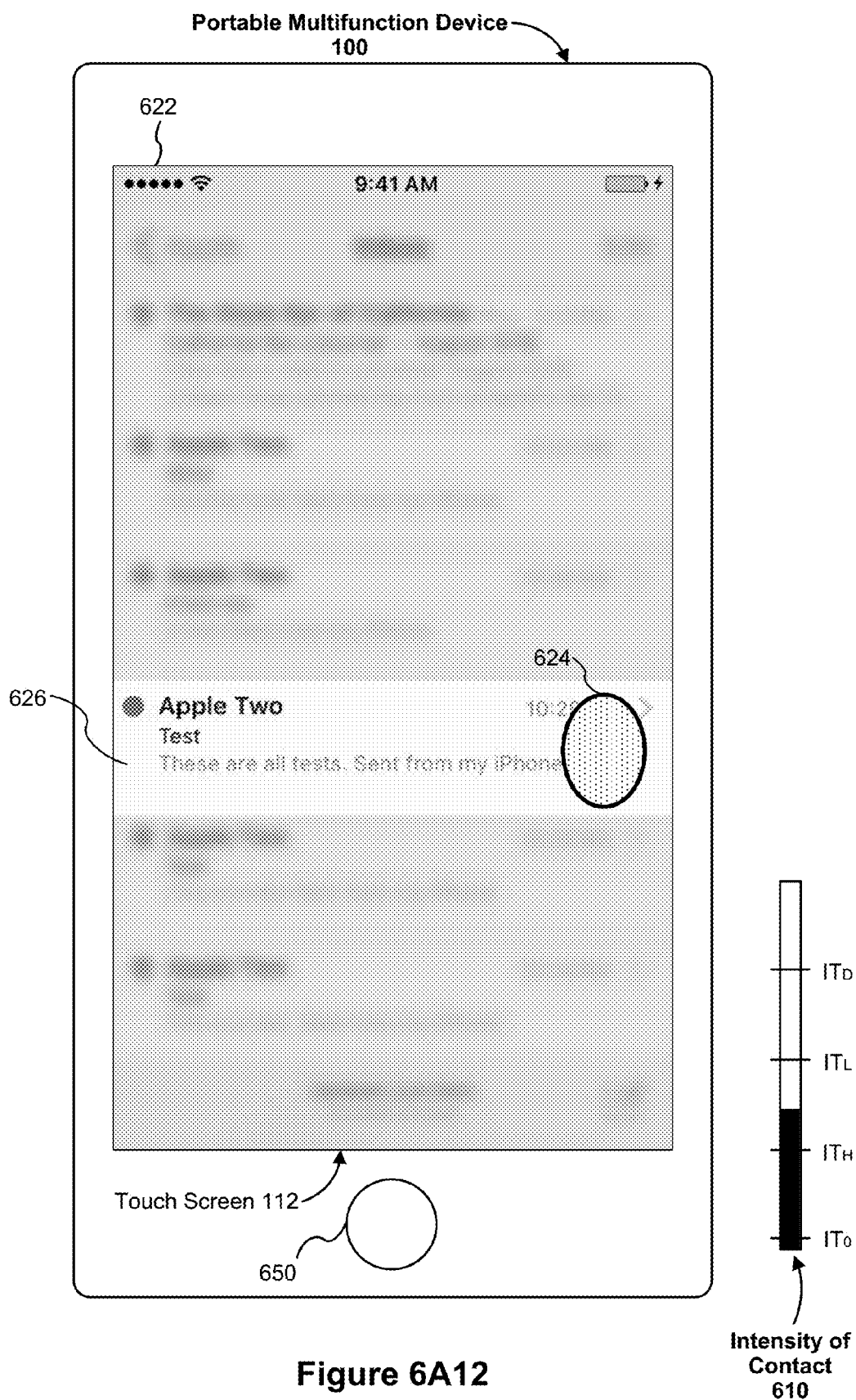
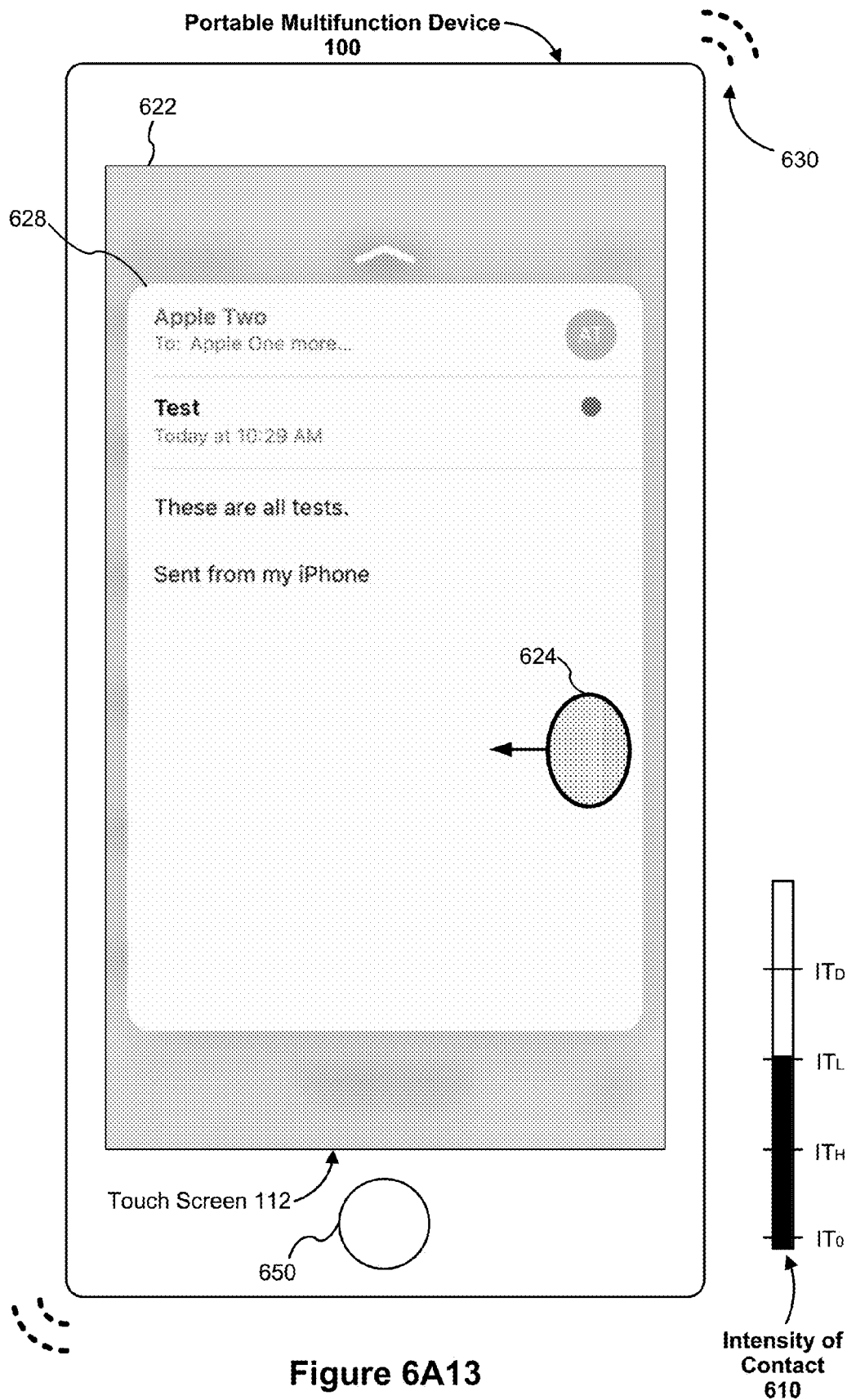


Figure 6A12



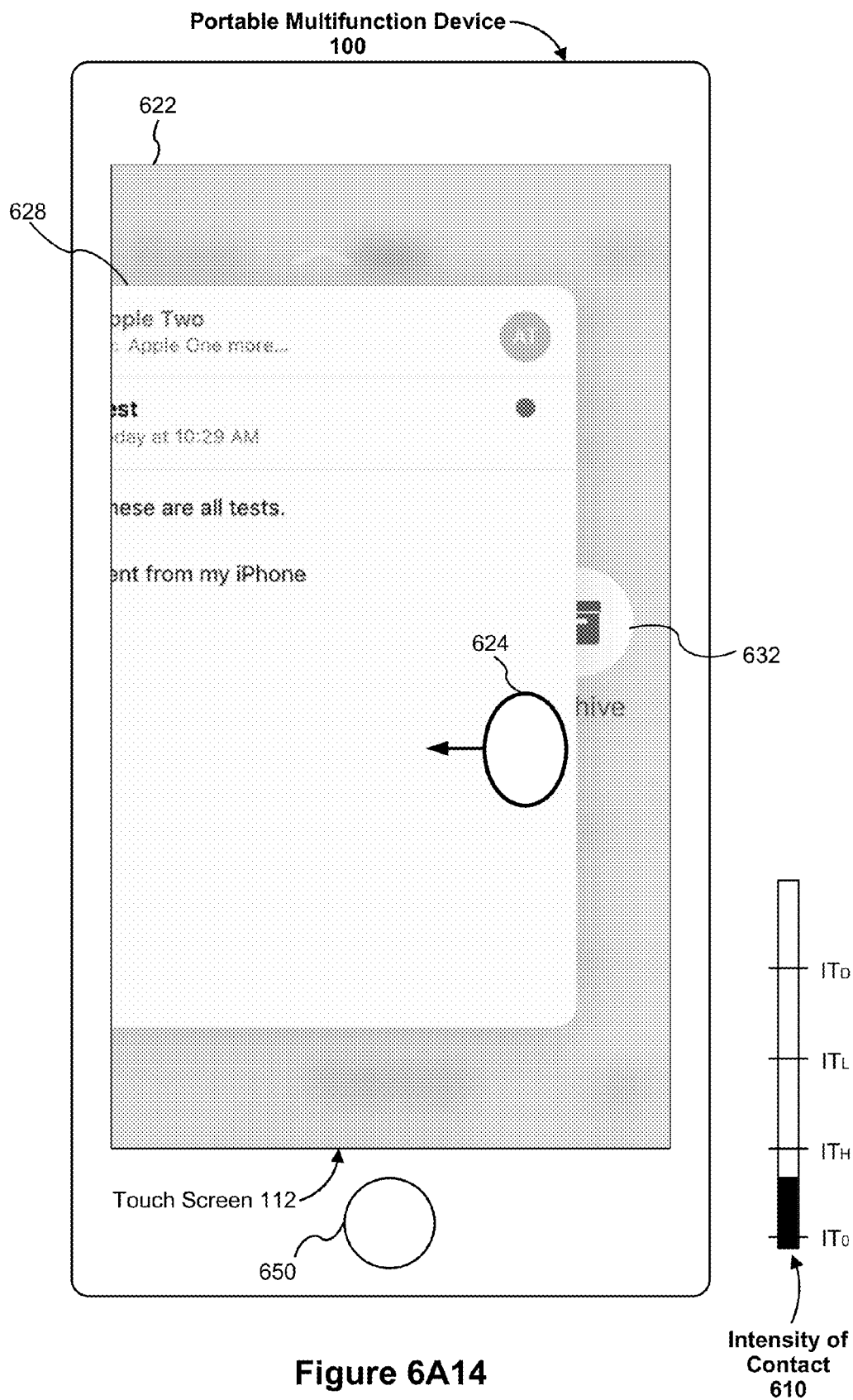
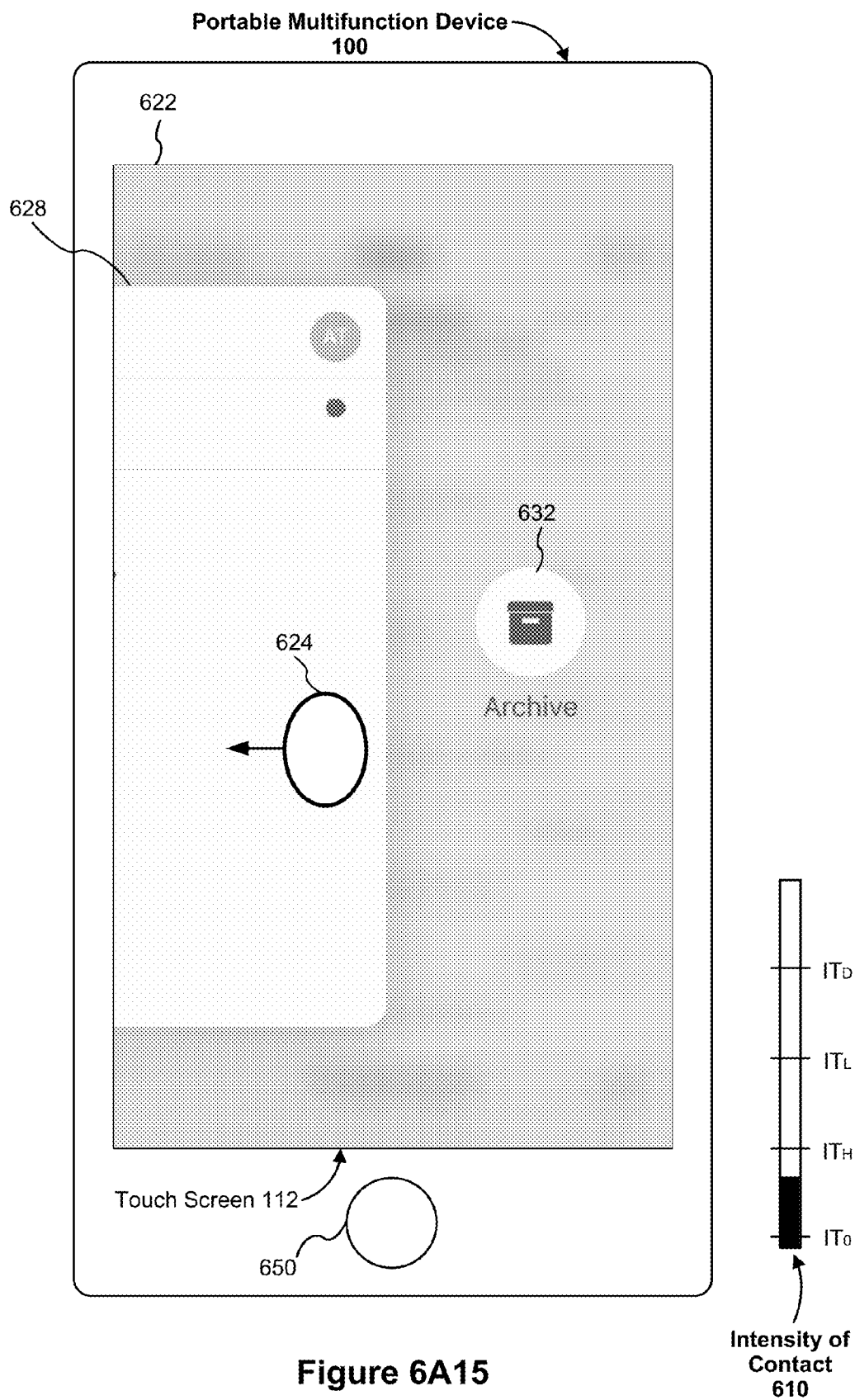


Figure 6A14



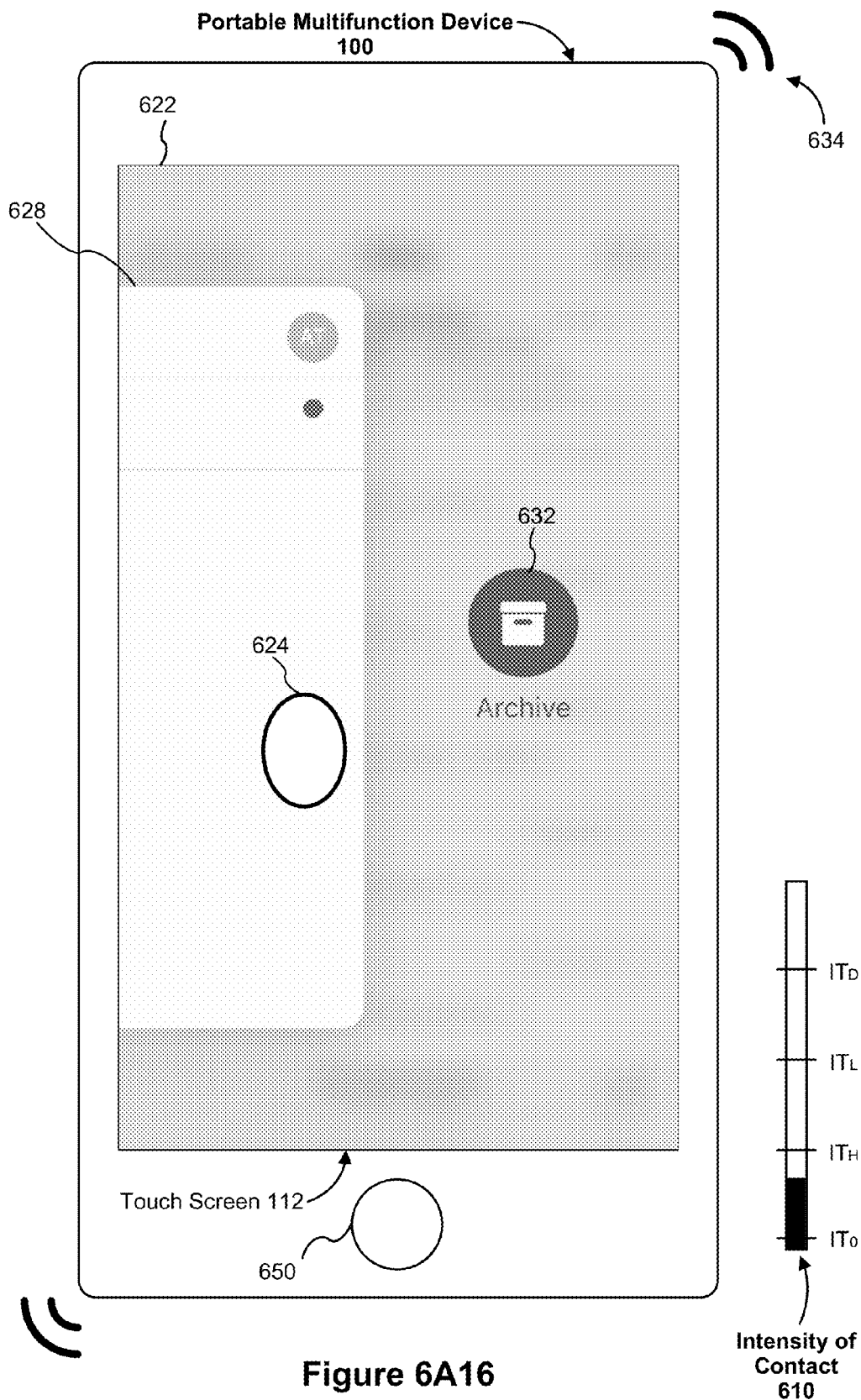
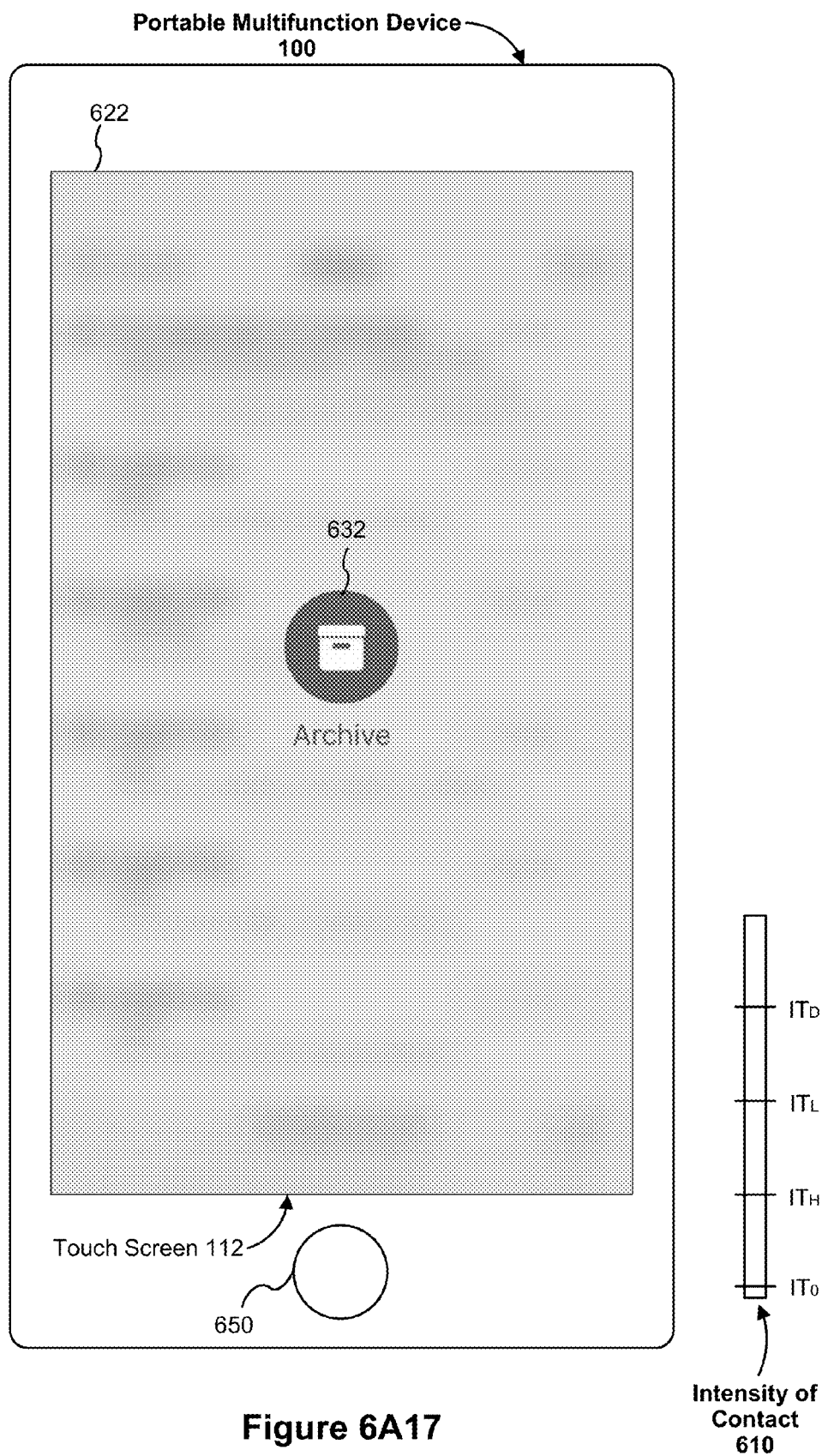


Figure 6A16



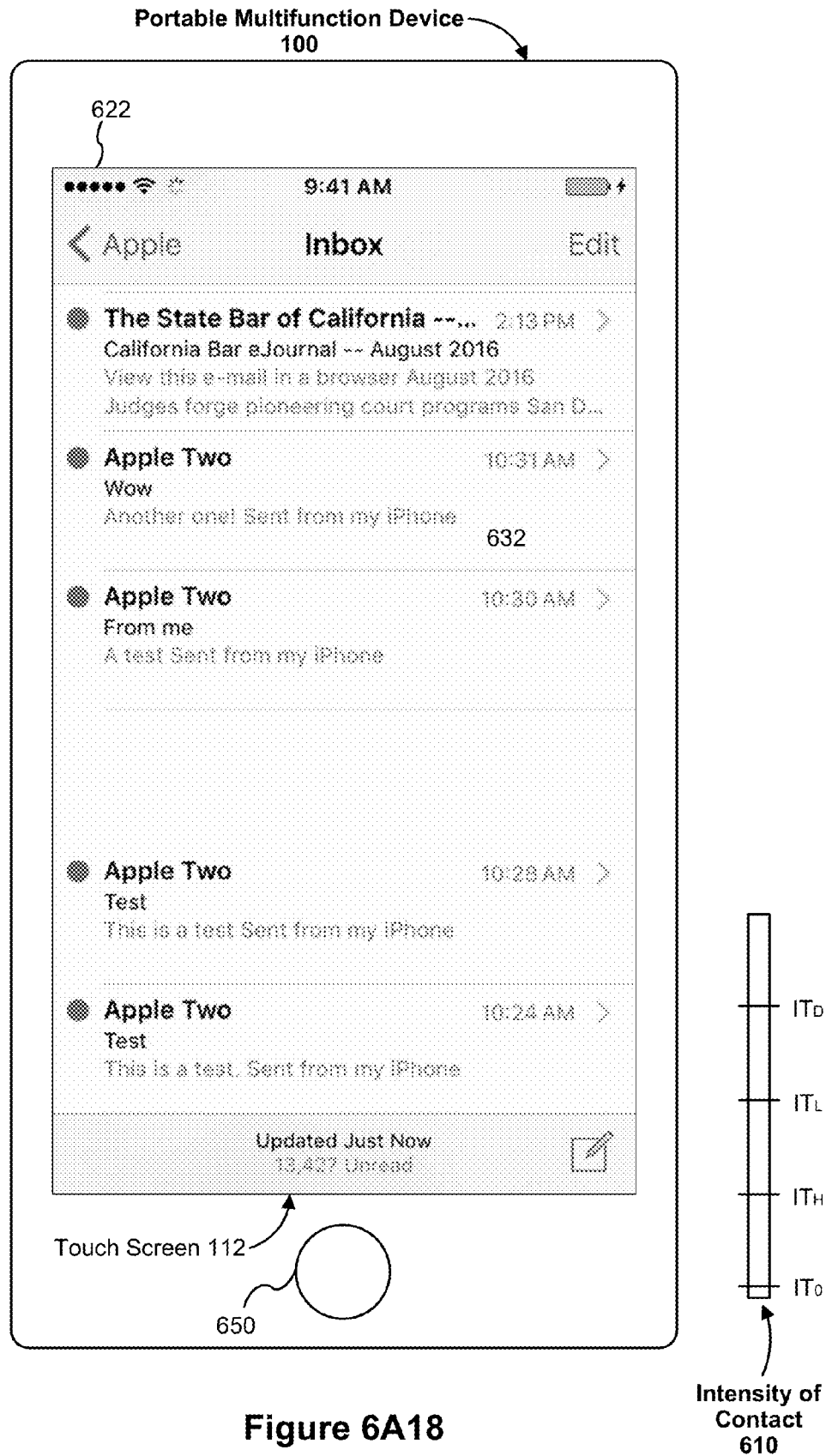


Figure 6A18

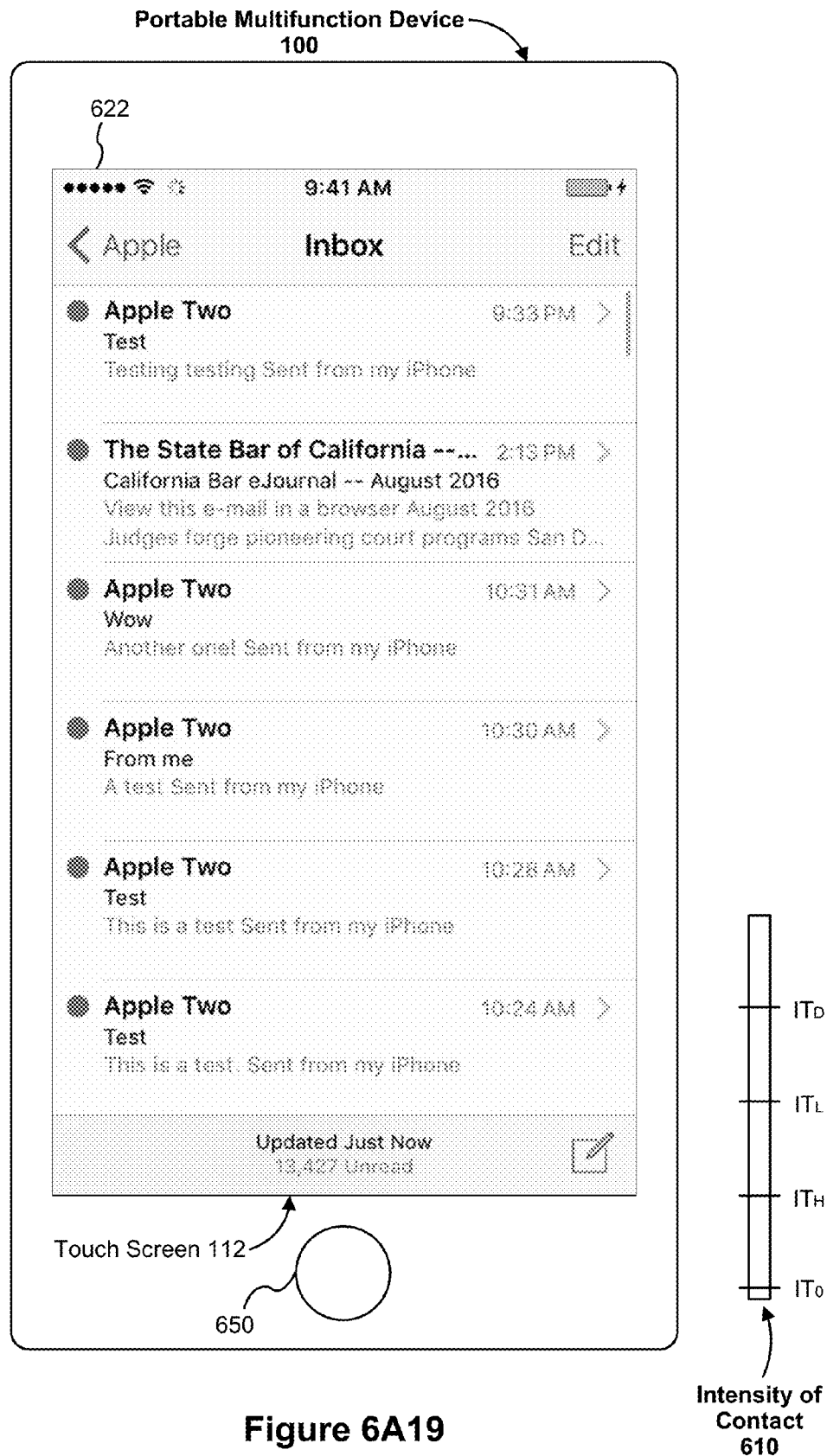
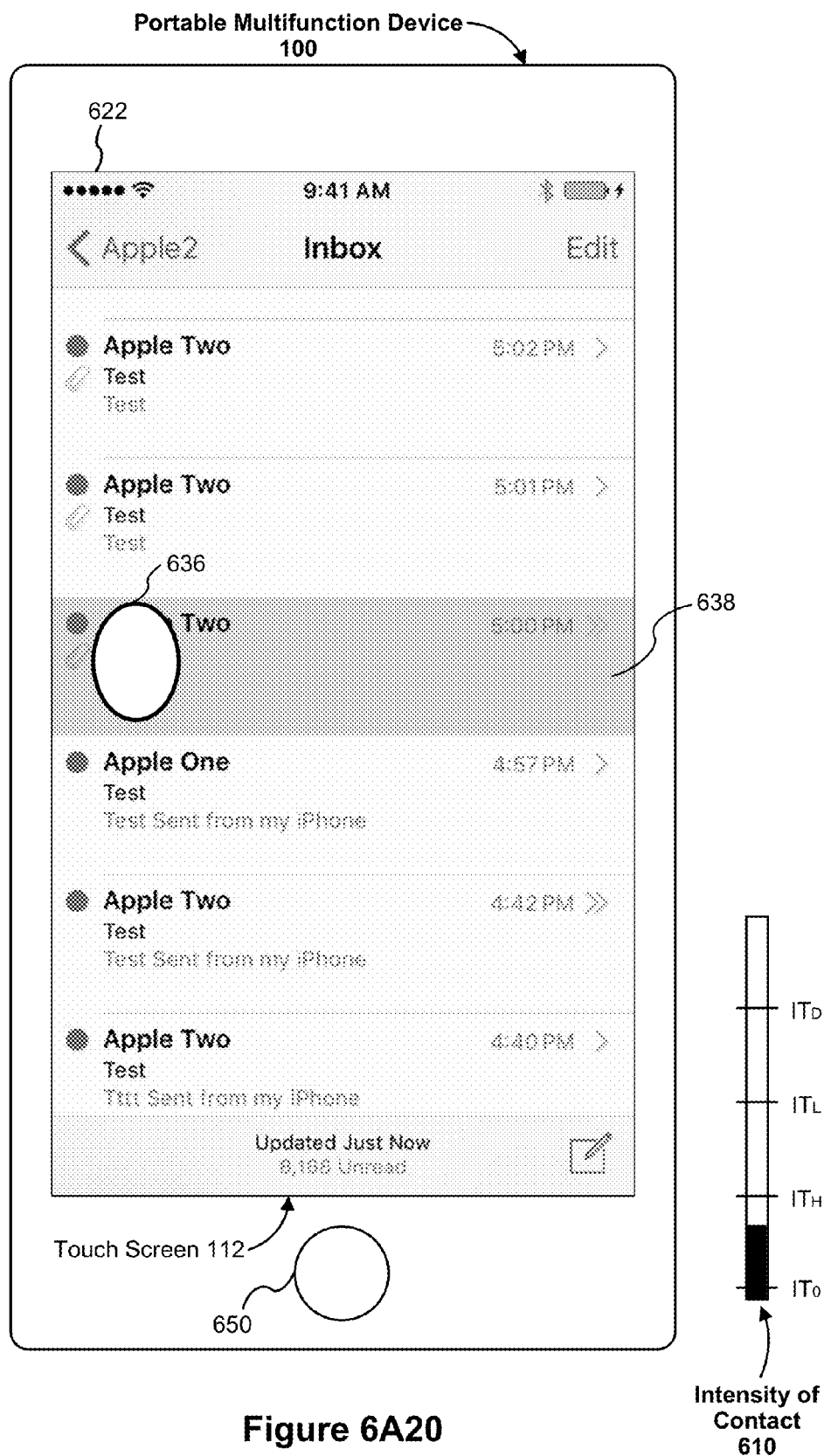


Figure 6A19



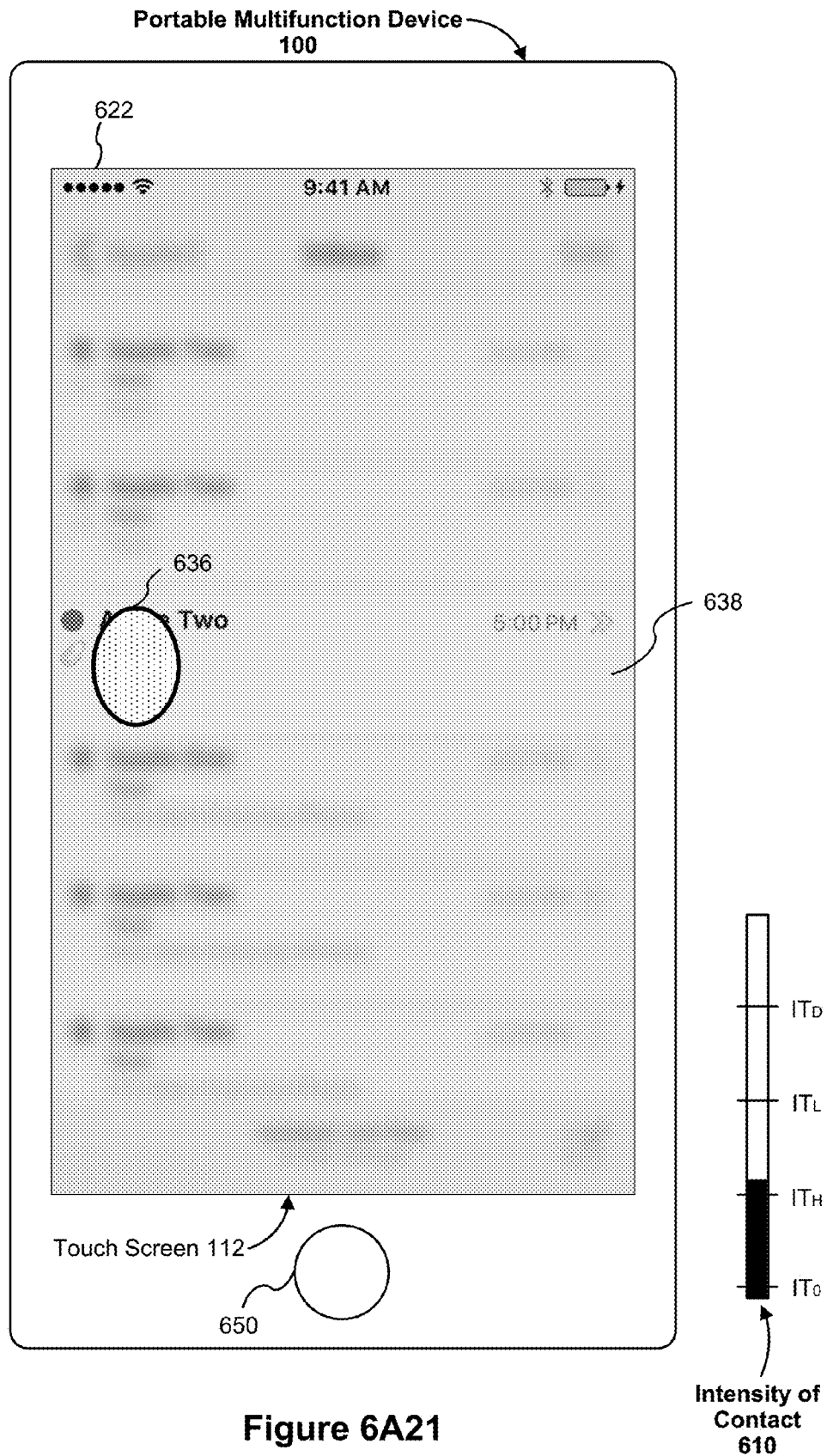
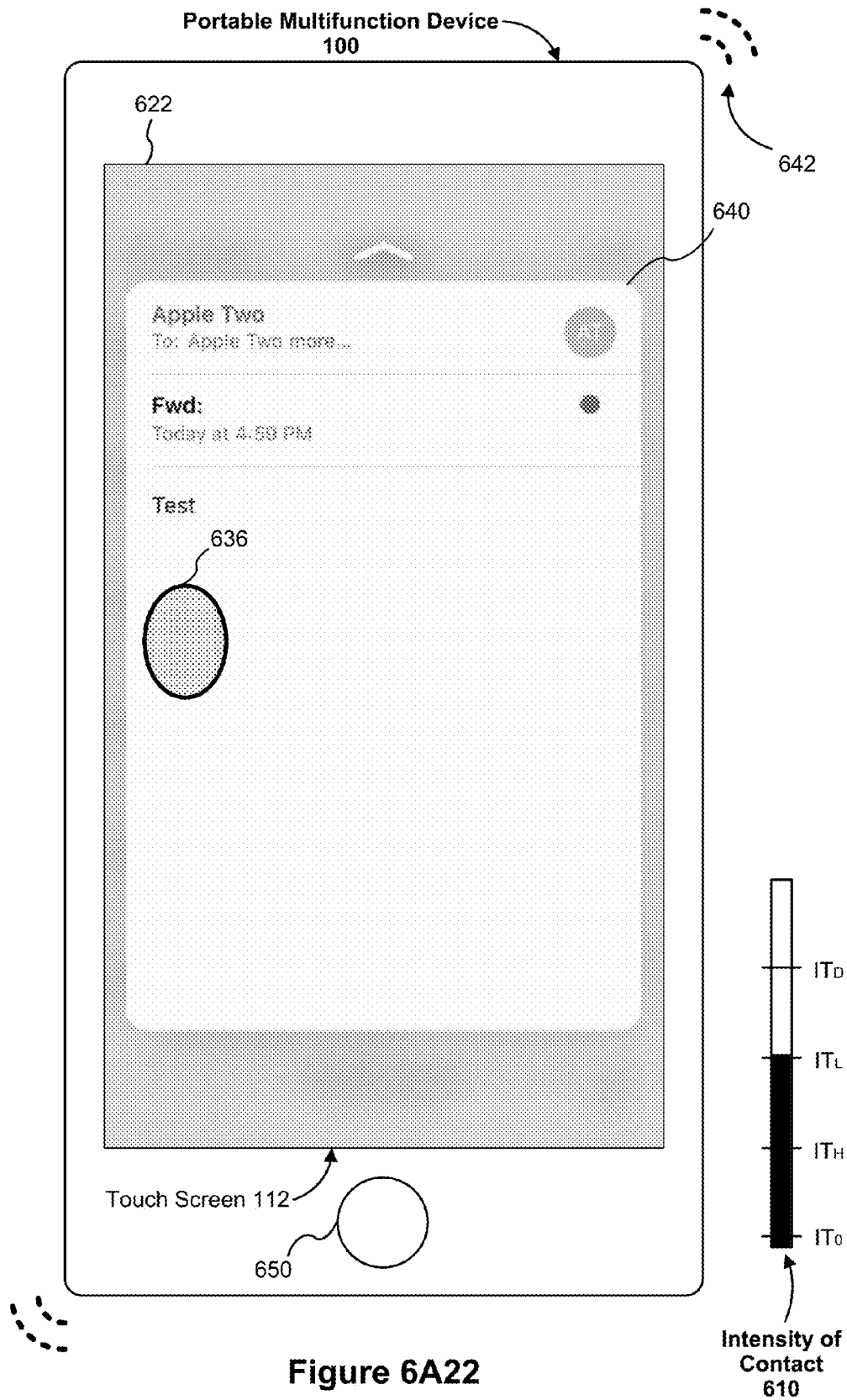
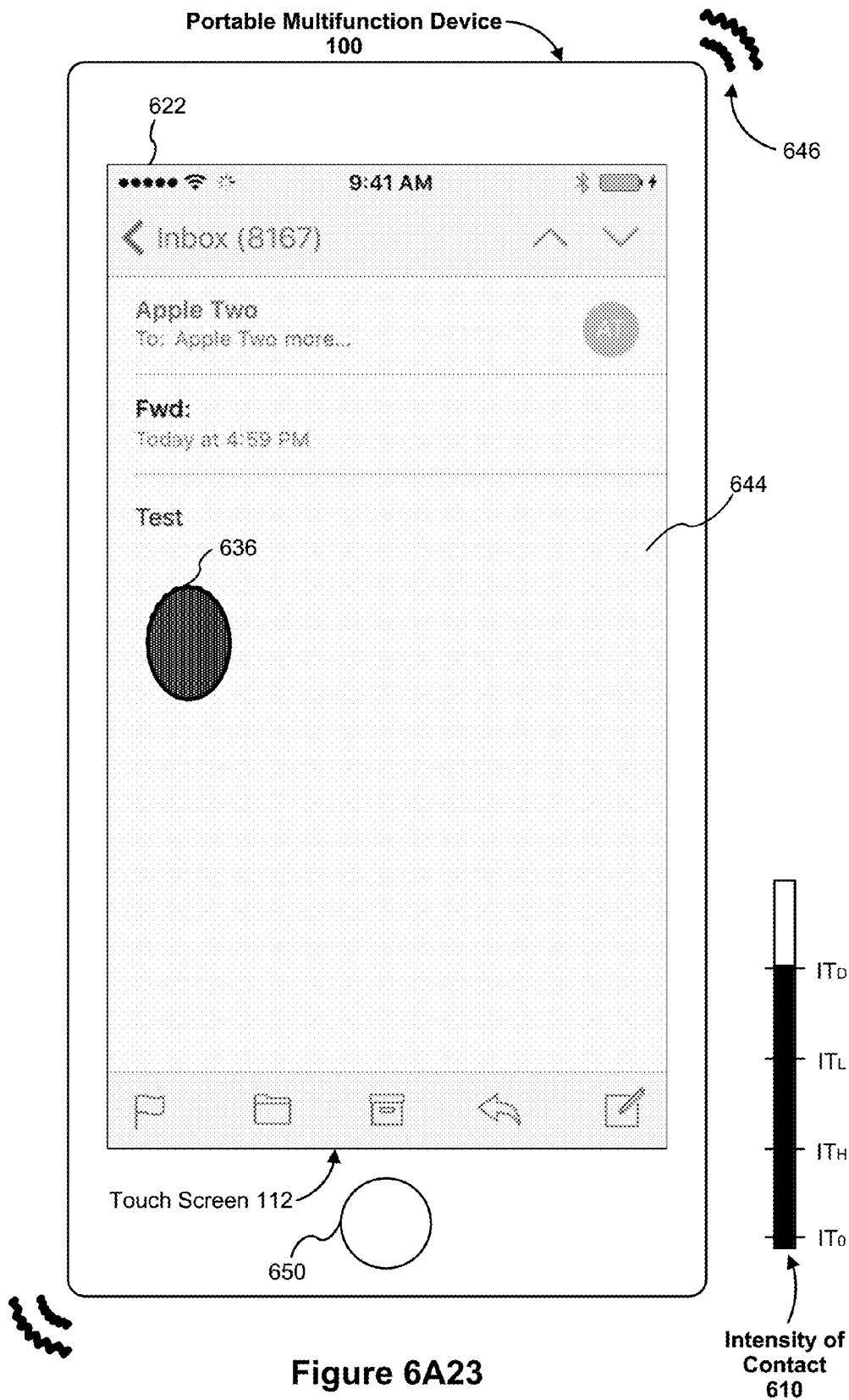


Figure 6A21





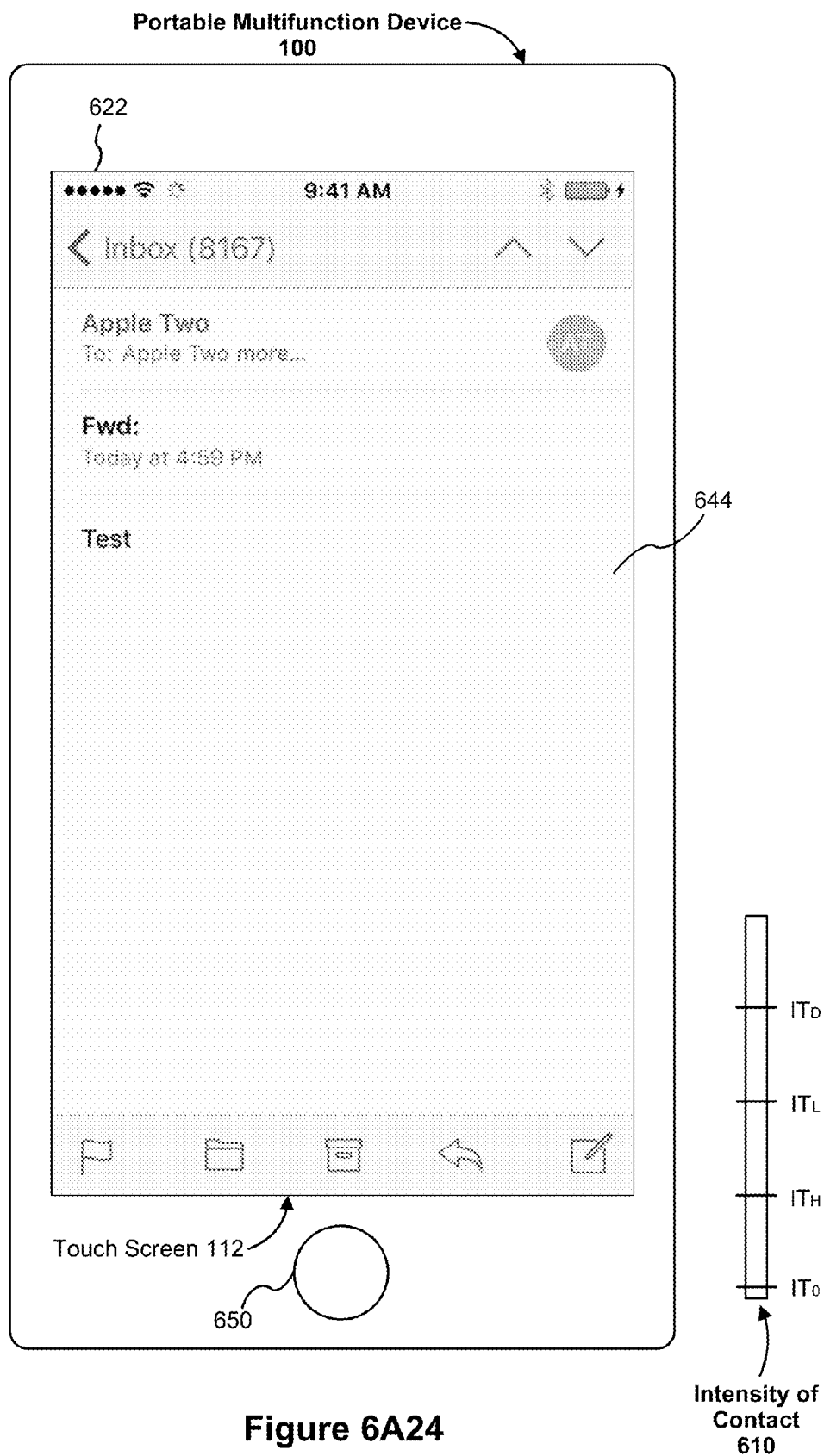
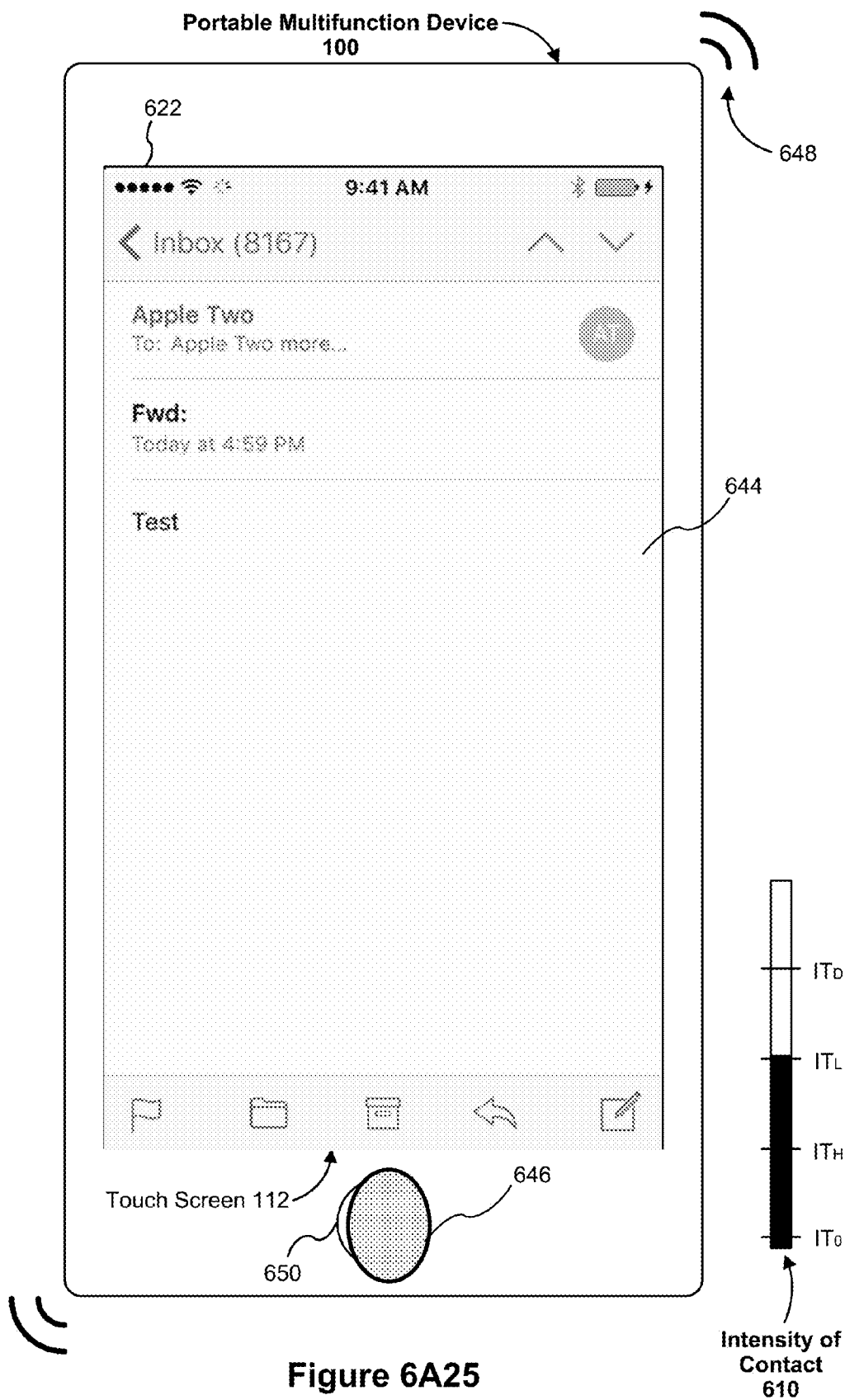


Figure 6A24



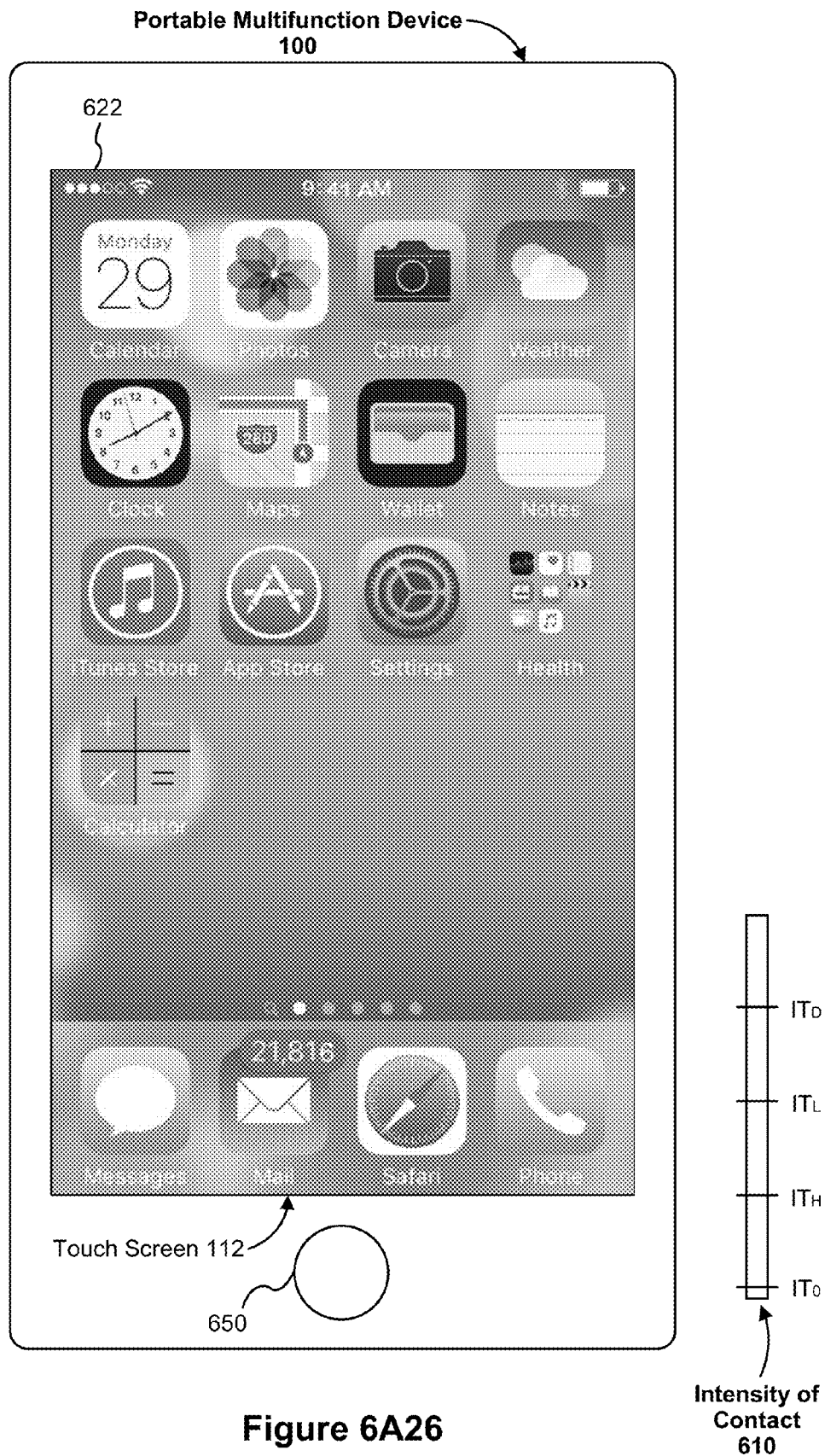


Figure 6A26

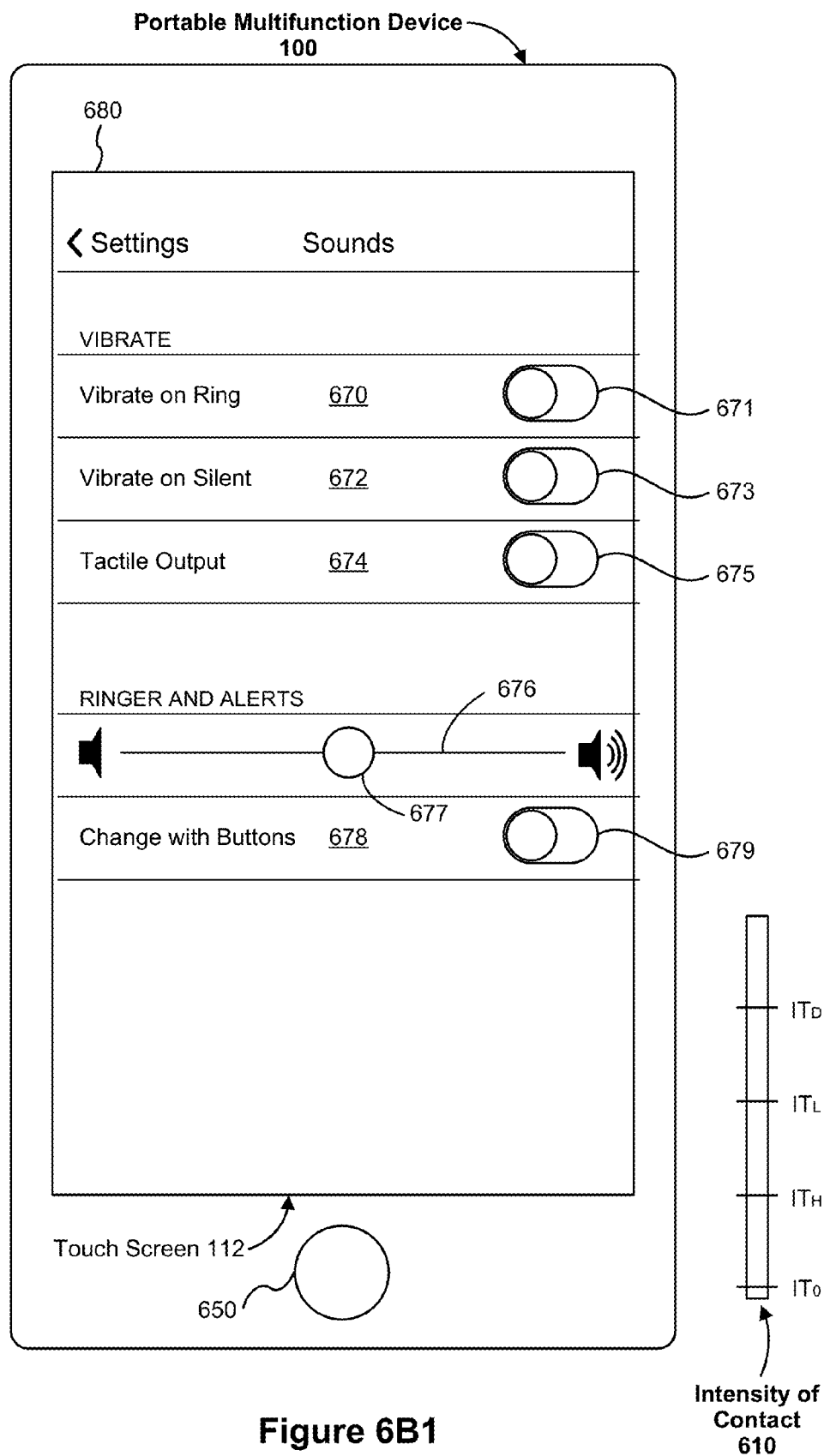




Figure 6B2

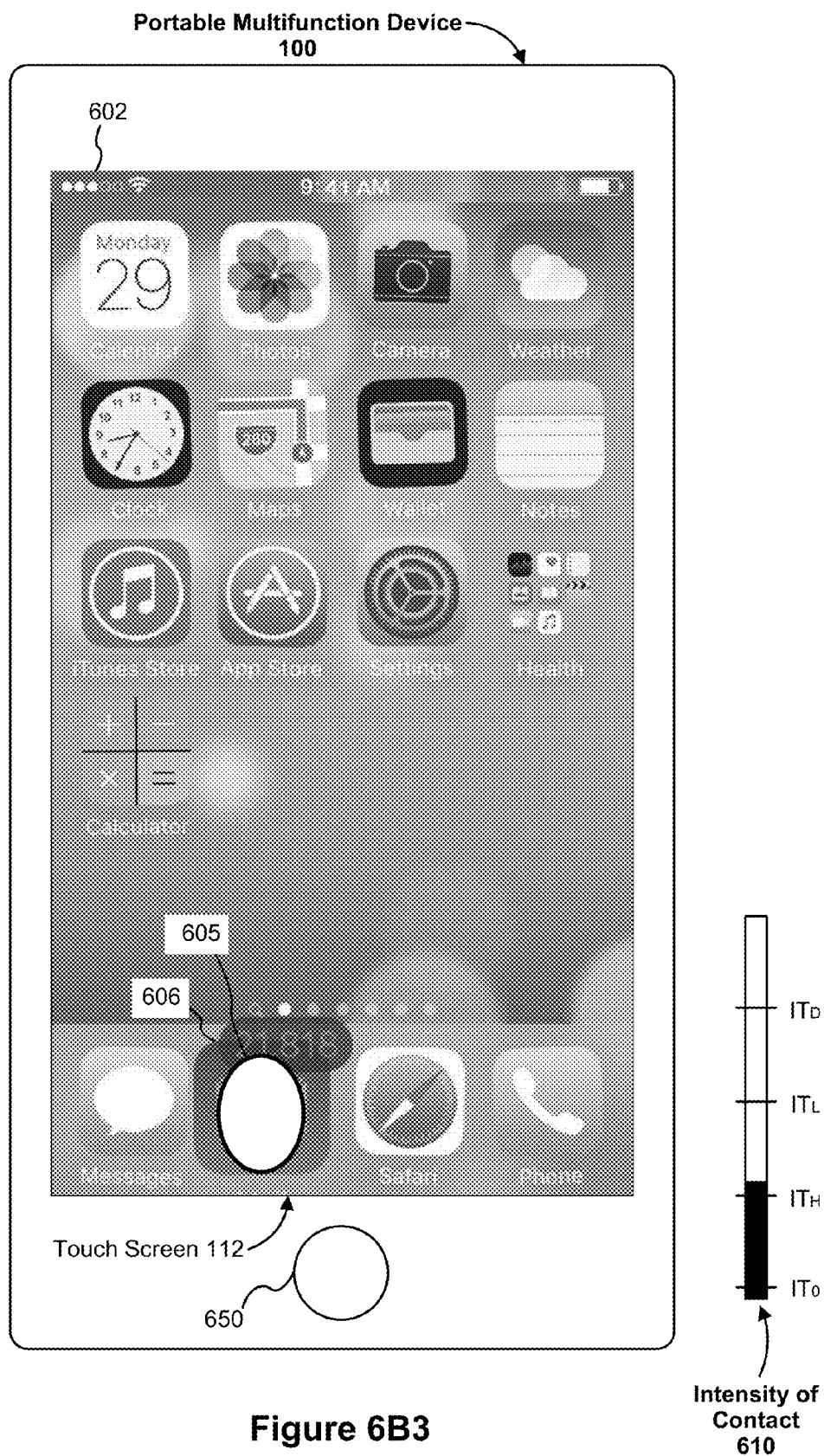
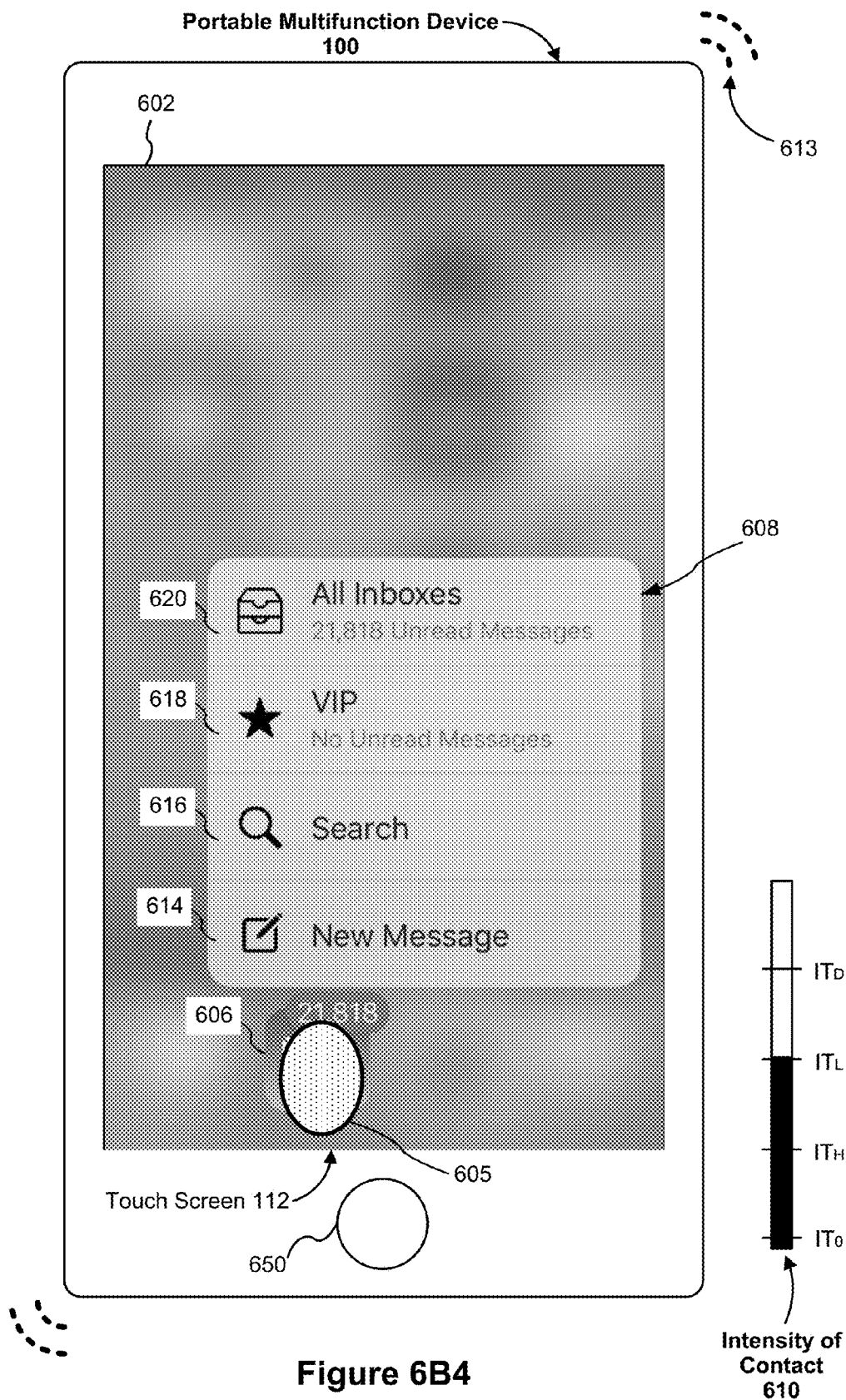
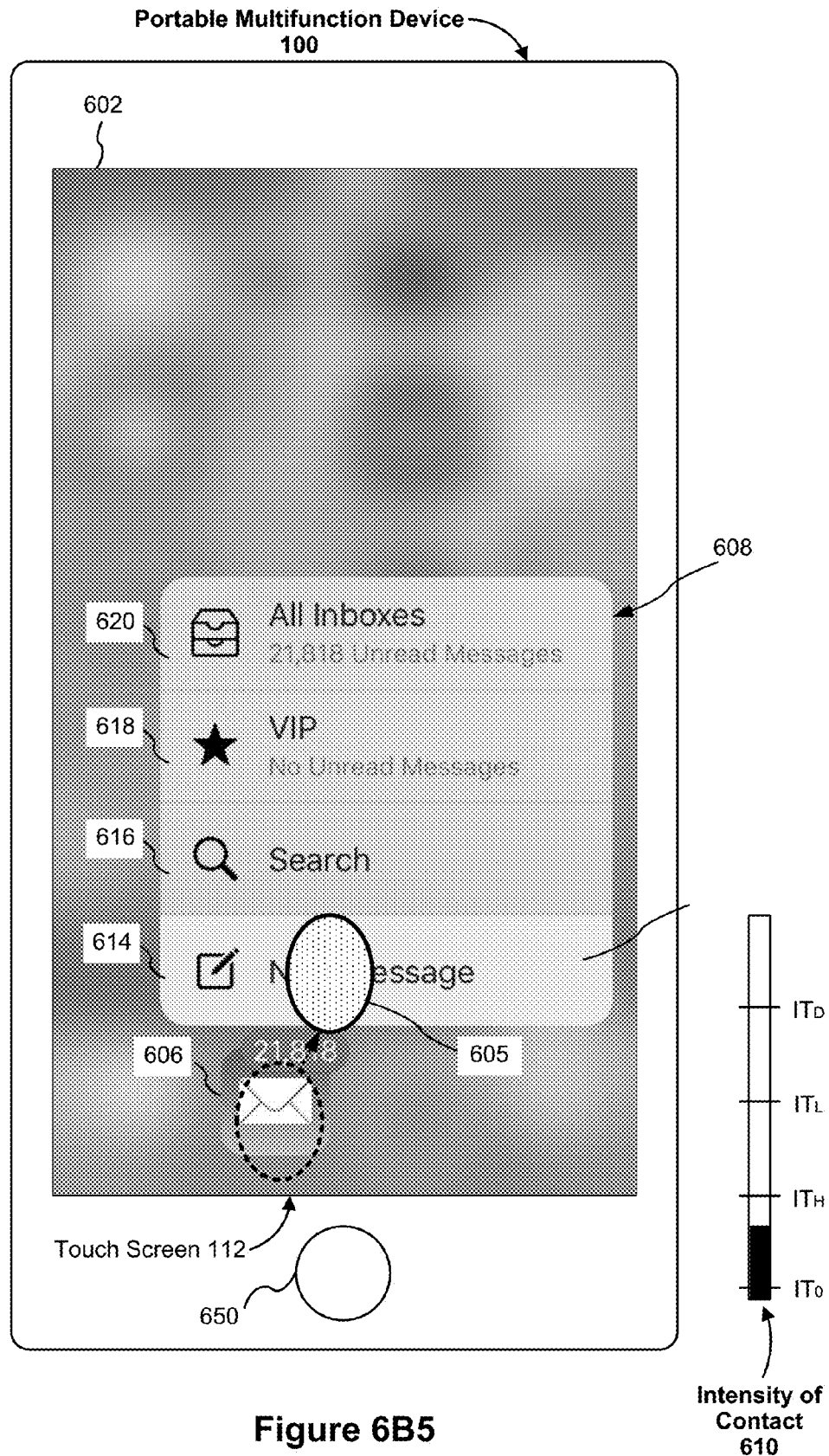


Figure 6B3





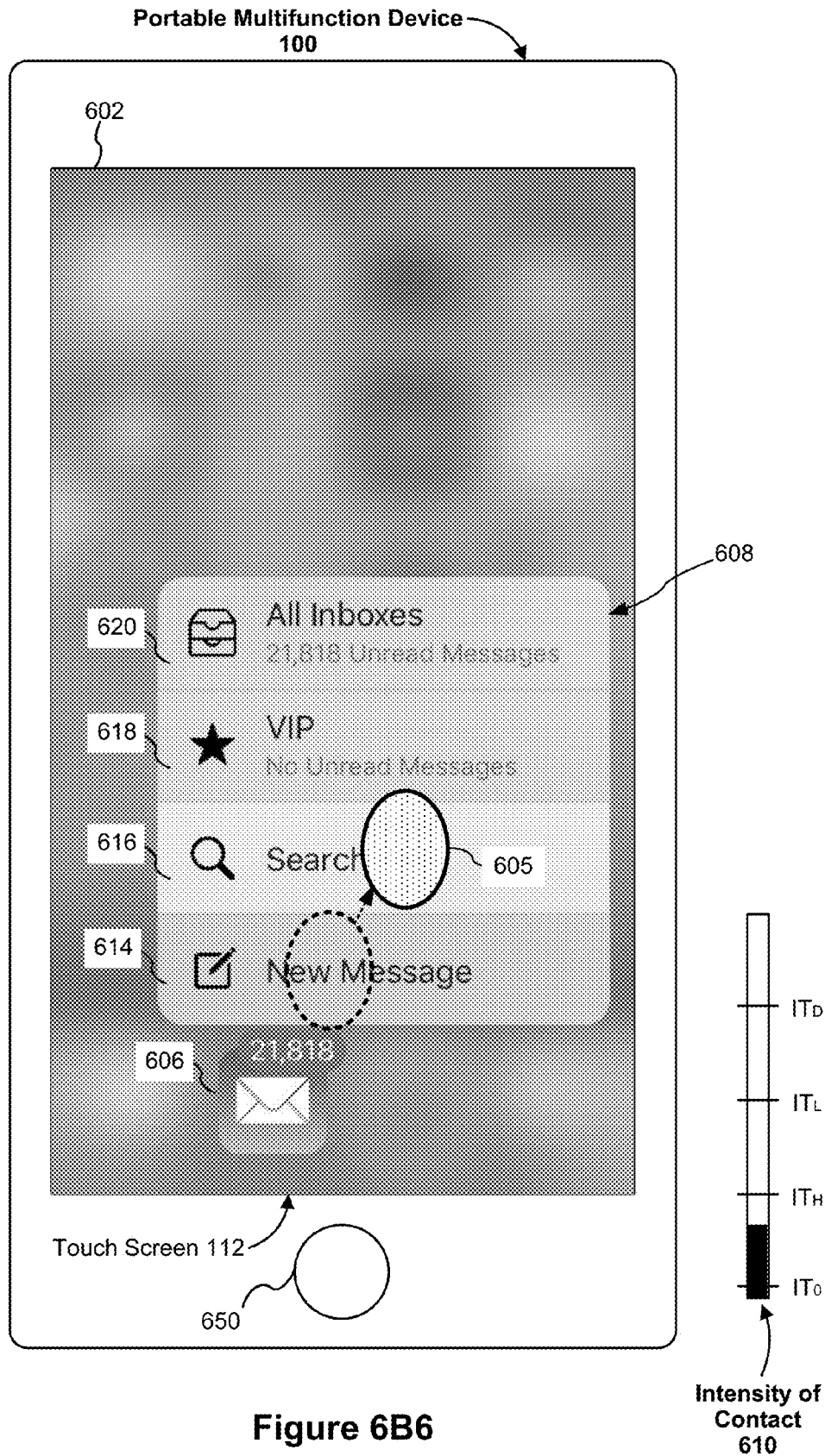


Figure 6B6

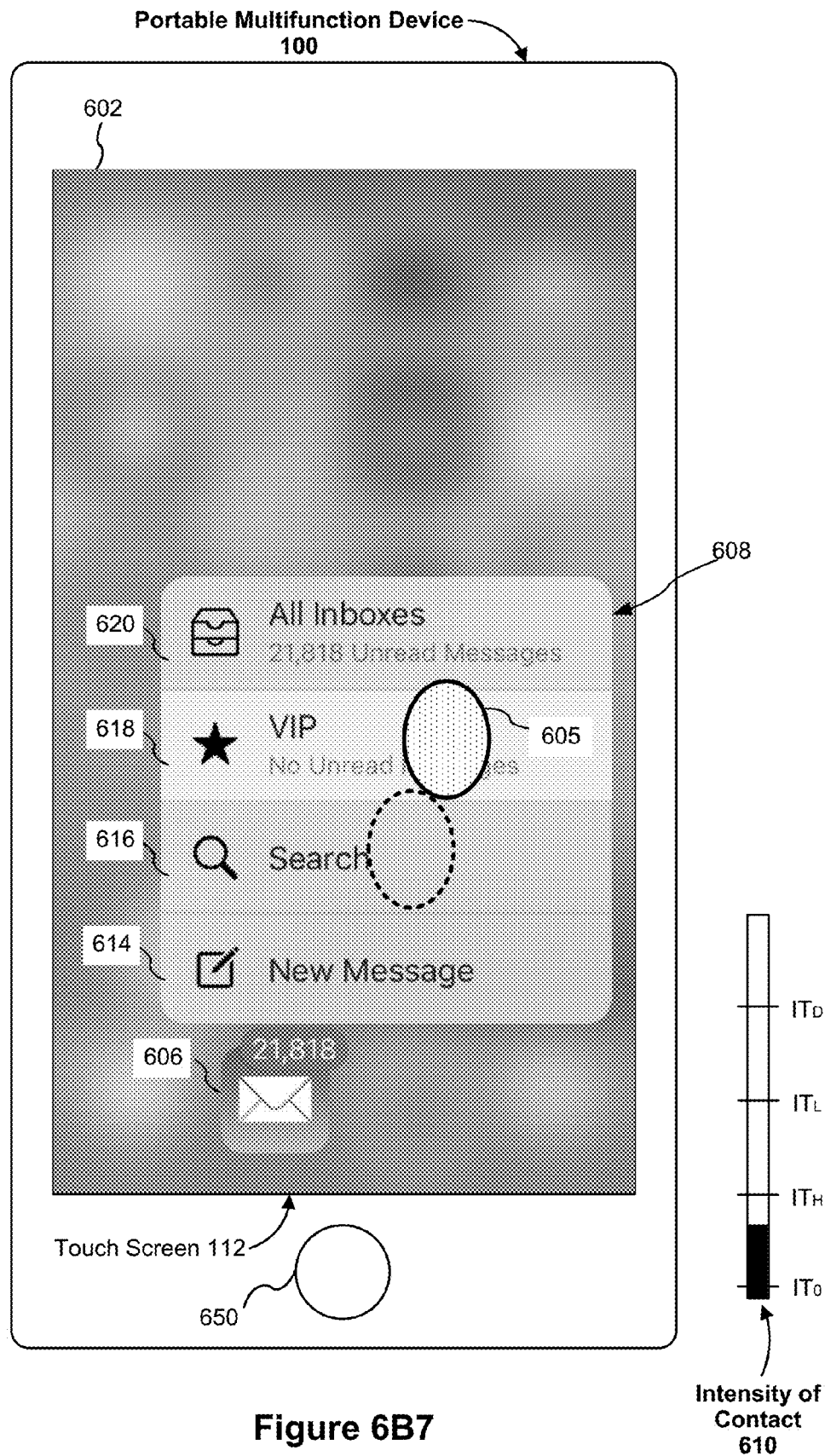


Figure 6B7

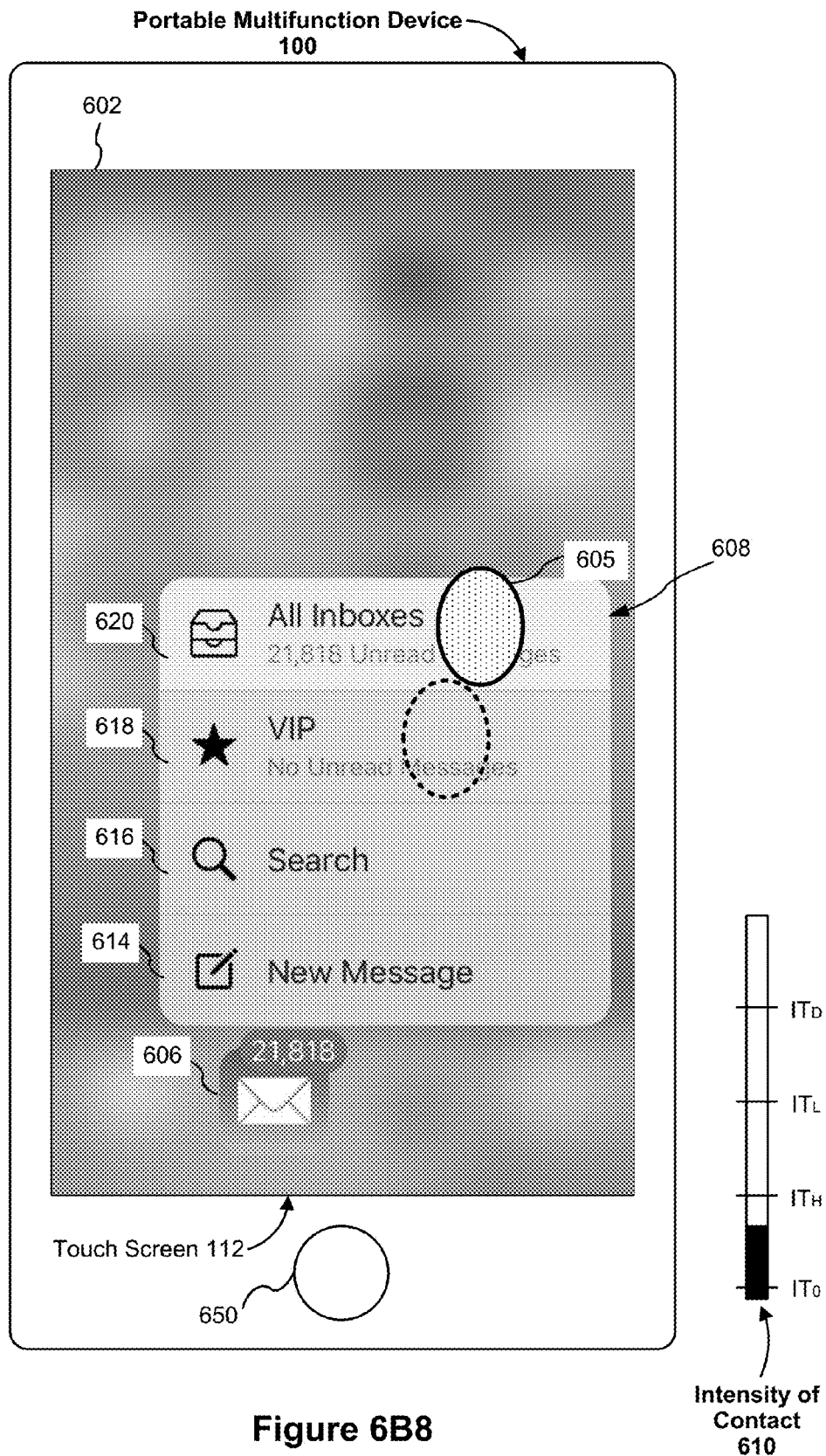


Figure 6B8

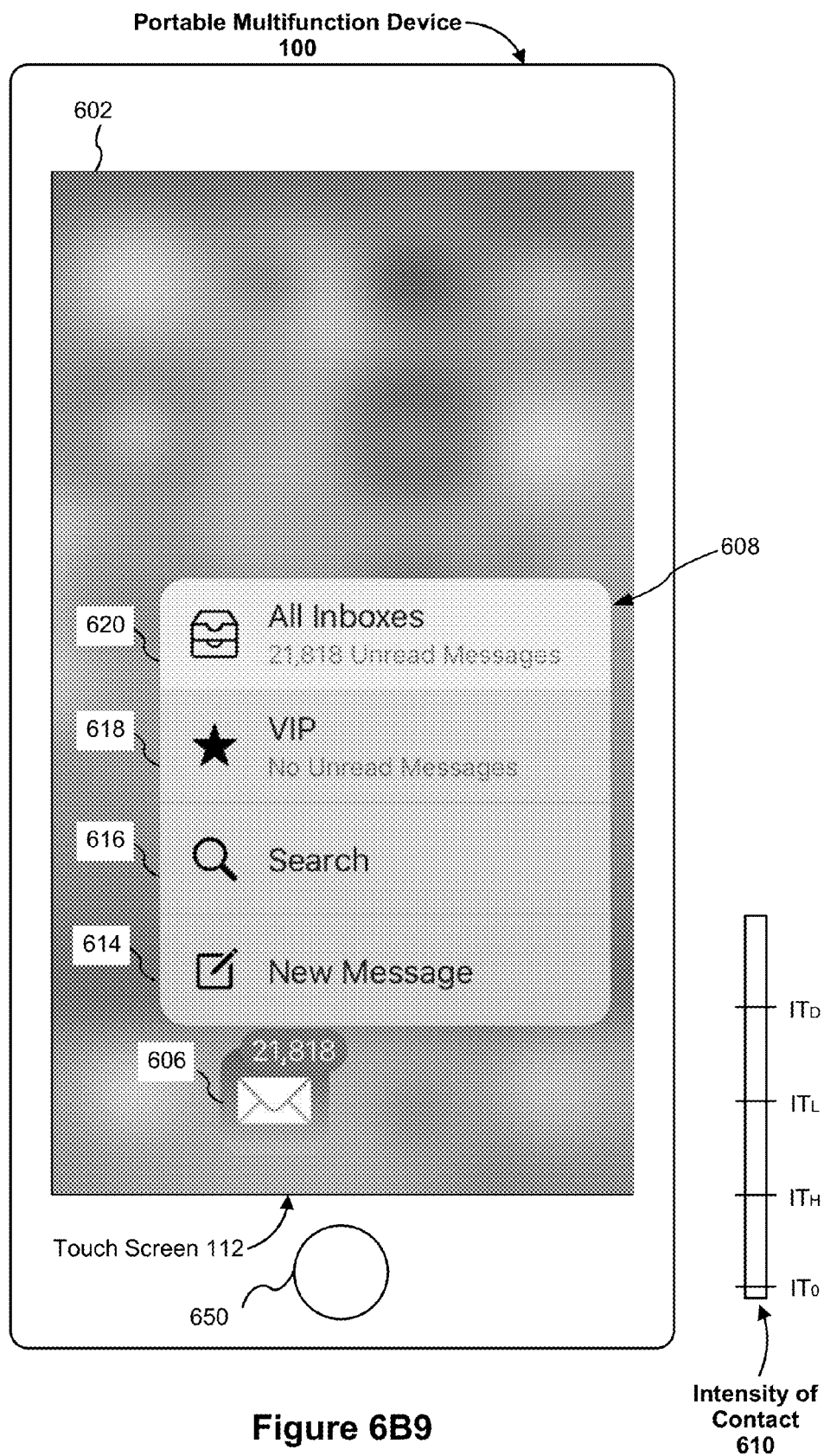


Figure 6B9

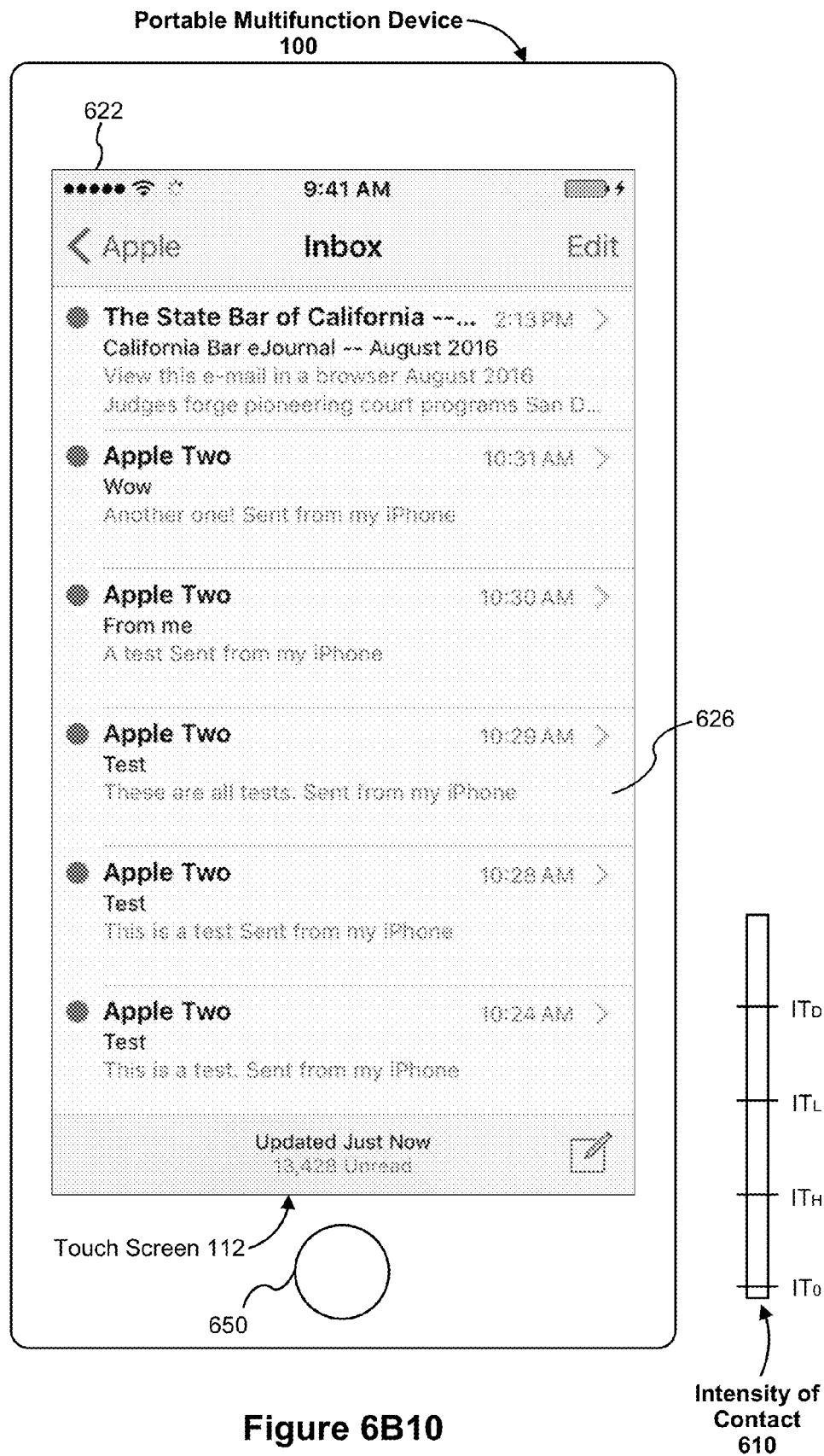


Figure 6B10

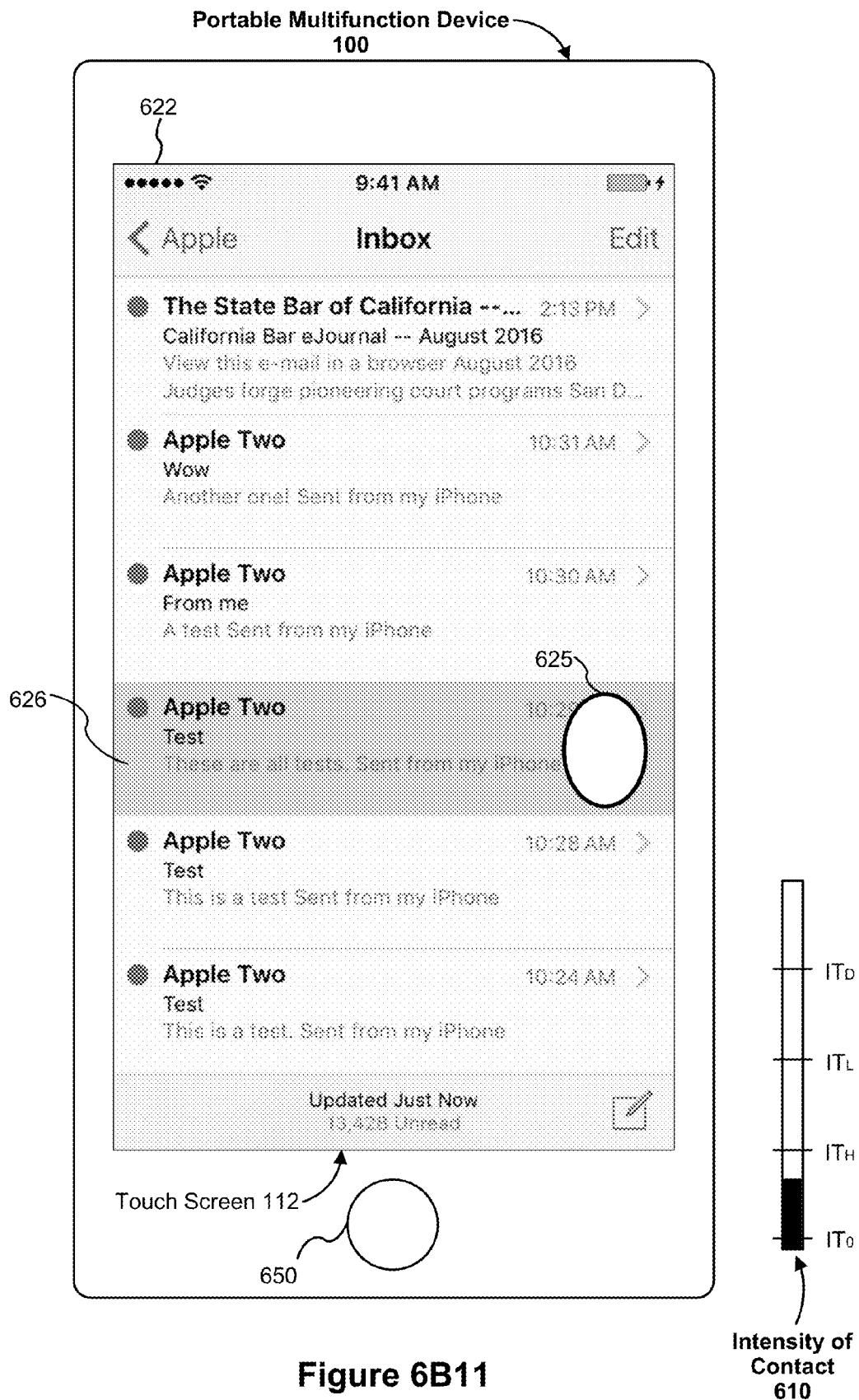
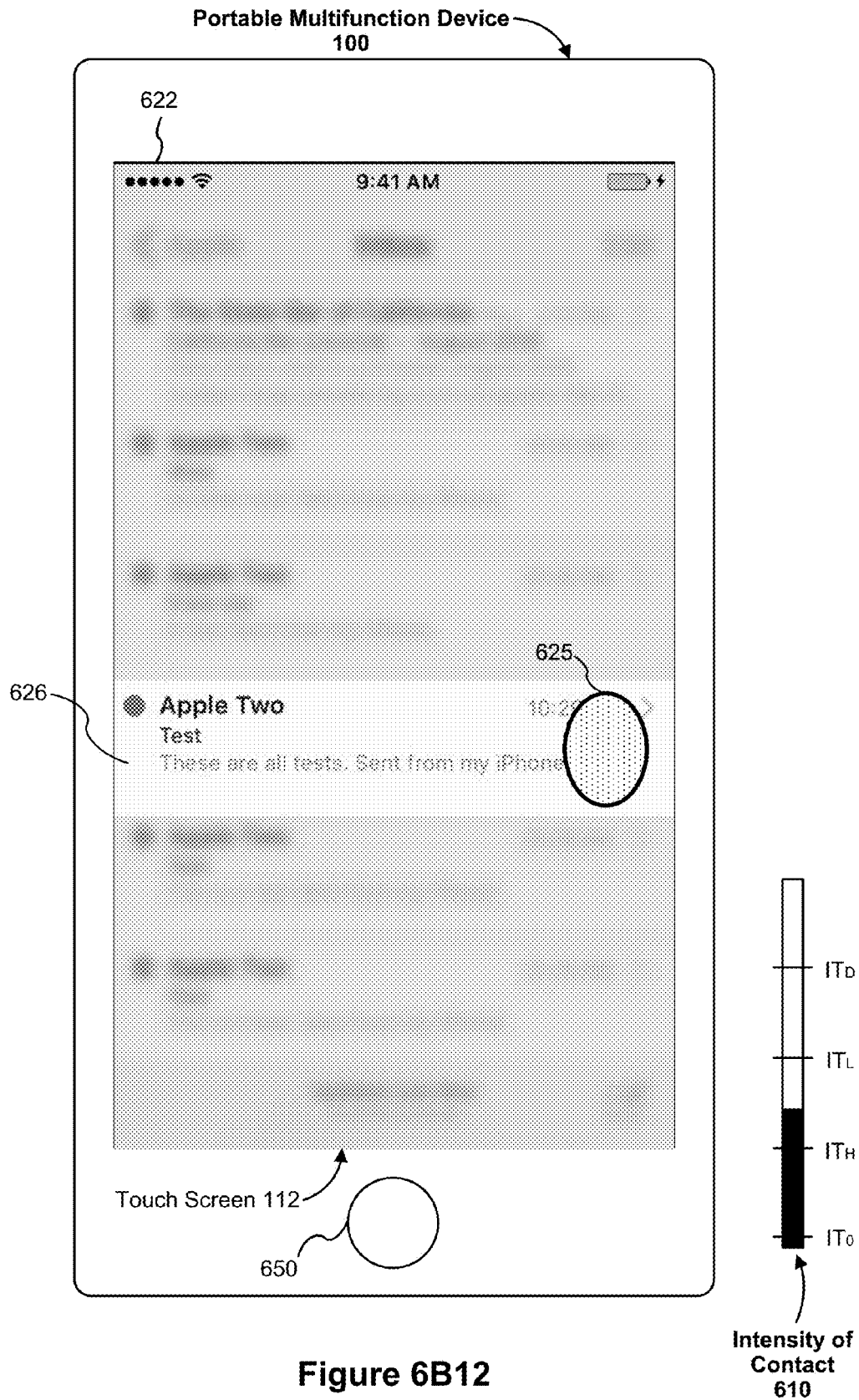


Figure 6B11



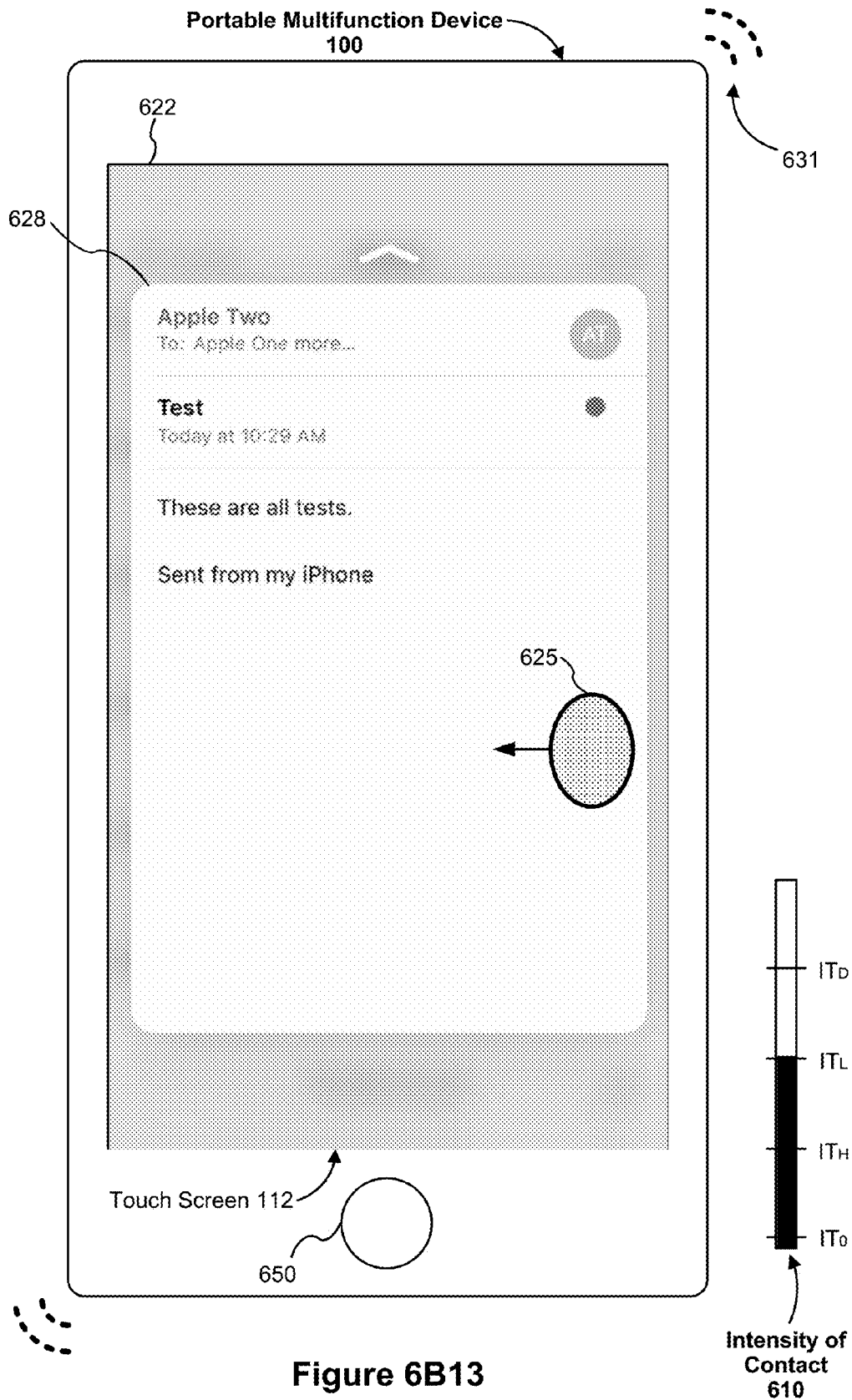


Figure 6B13

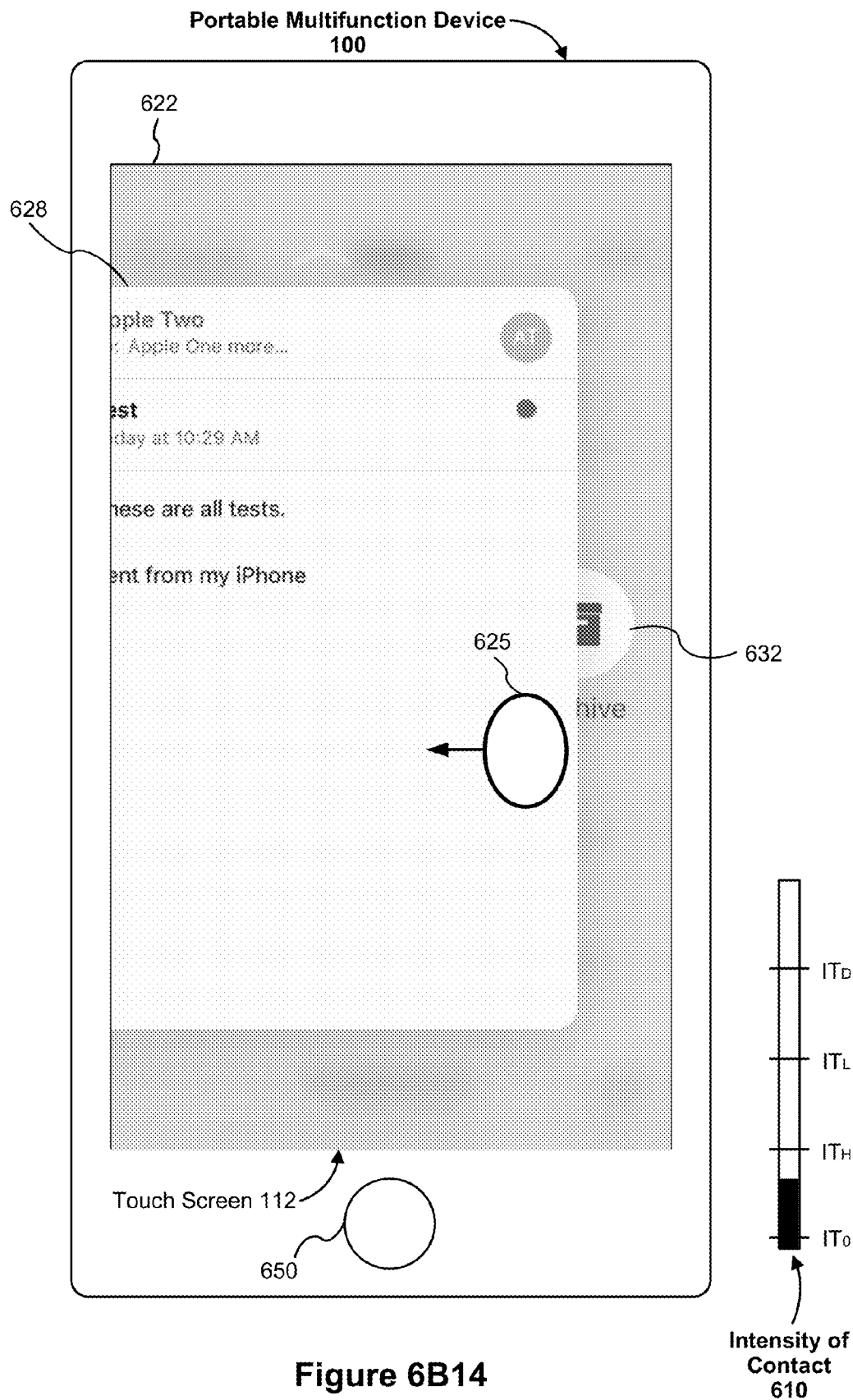
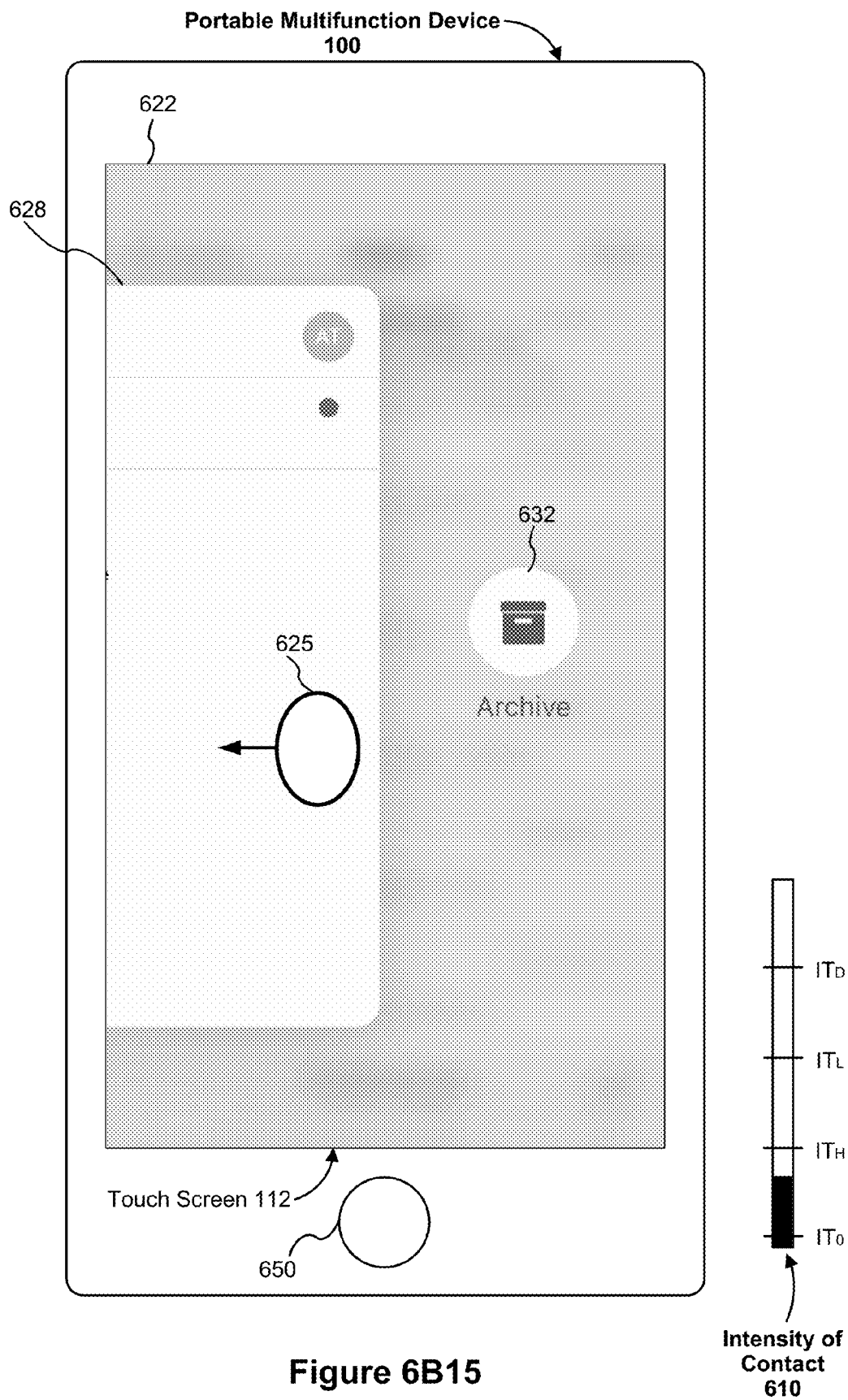
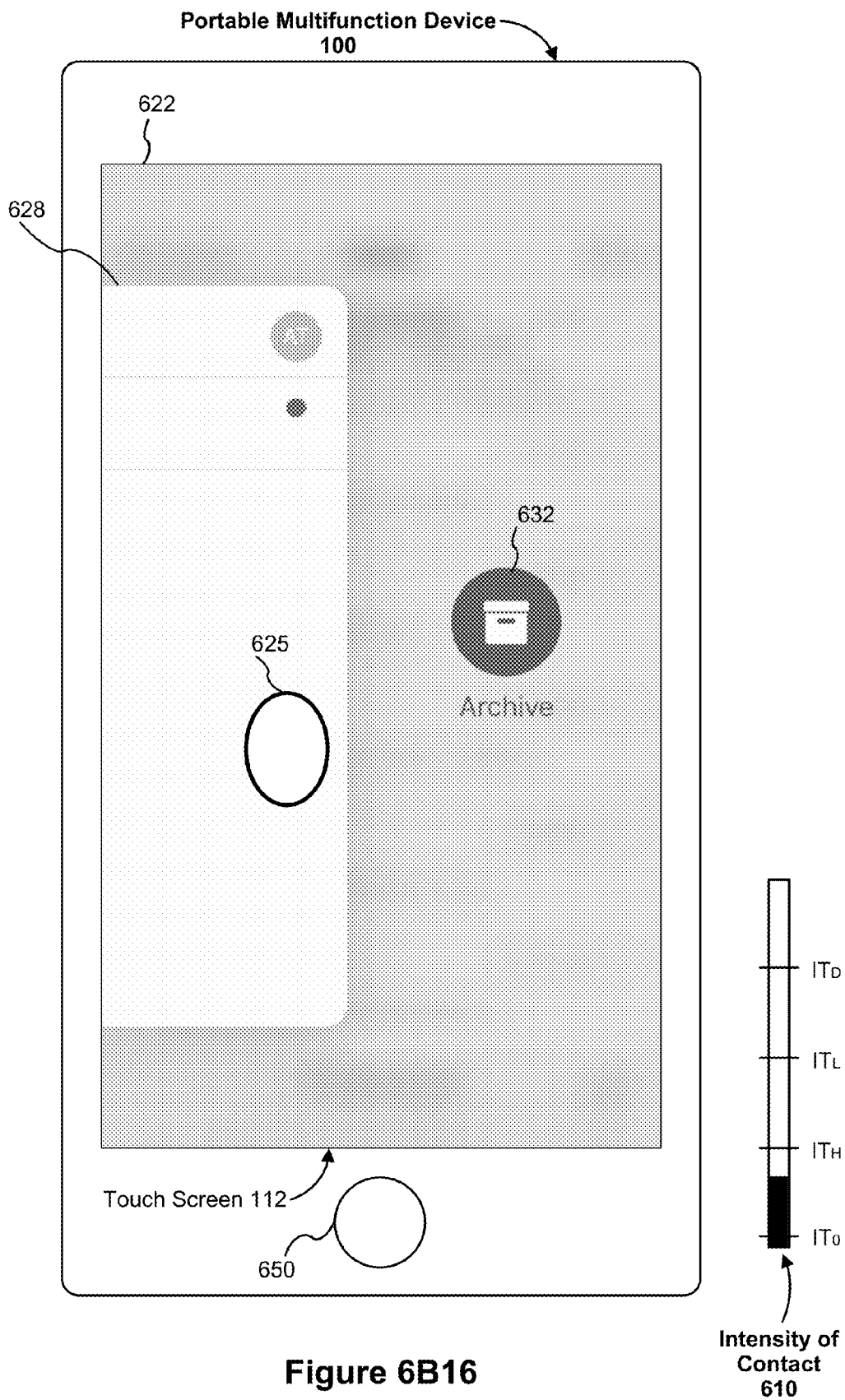
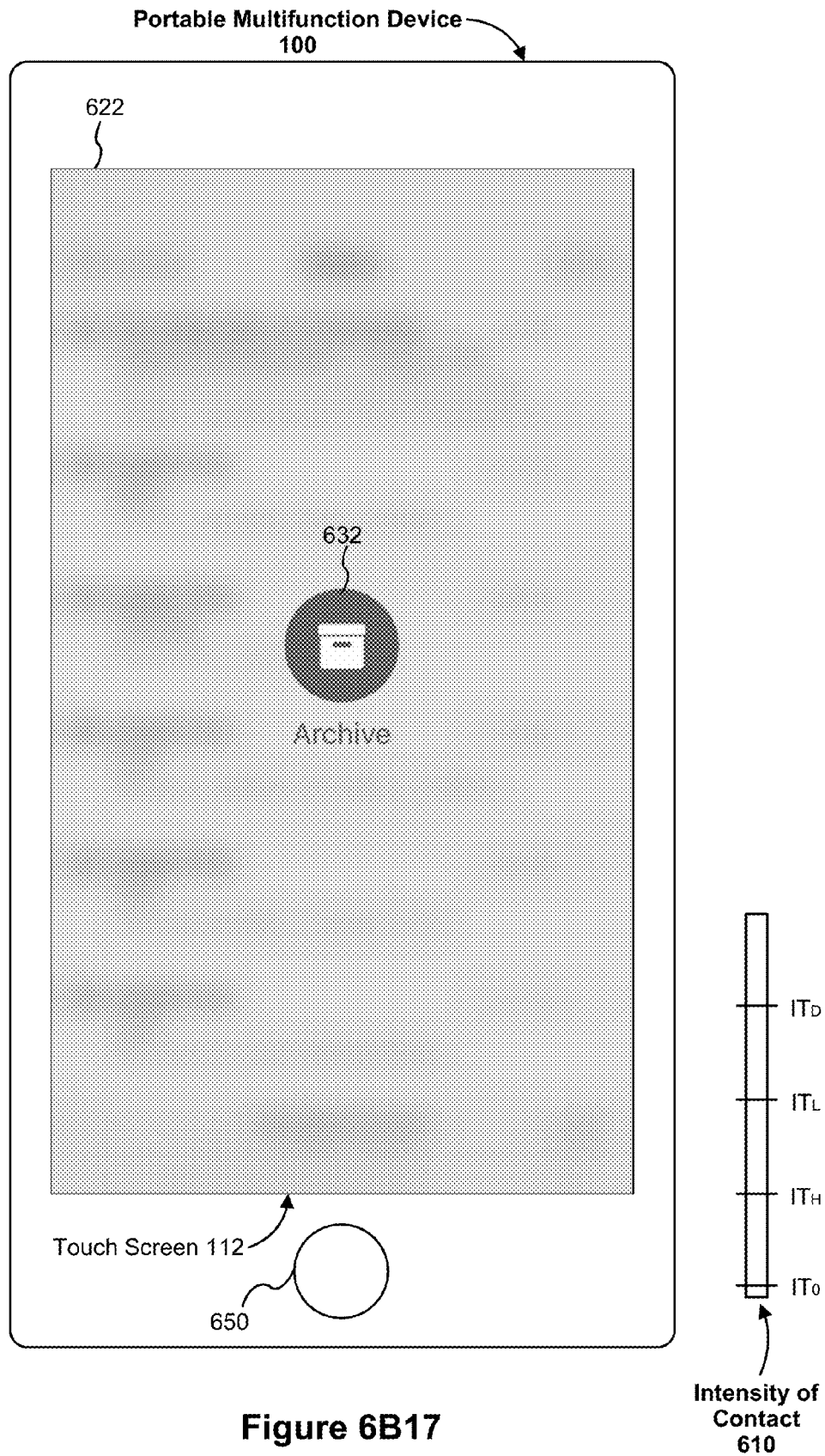


Figure 6B14







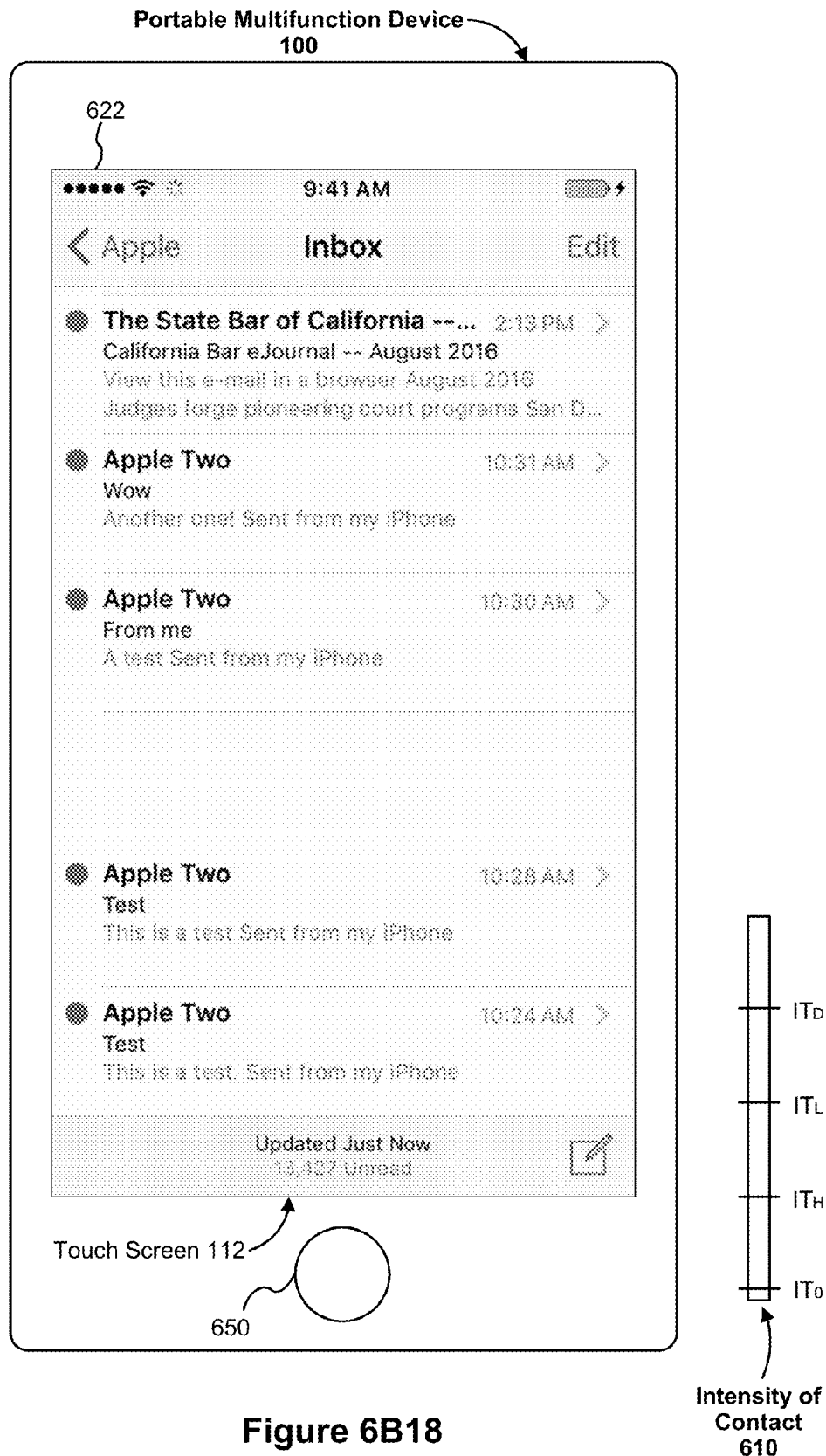


Figure 6B18

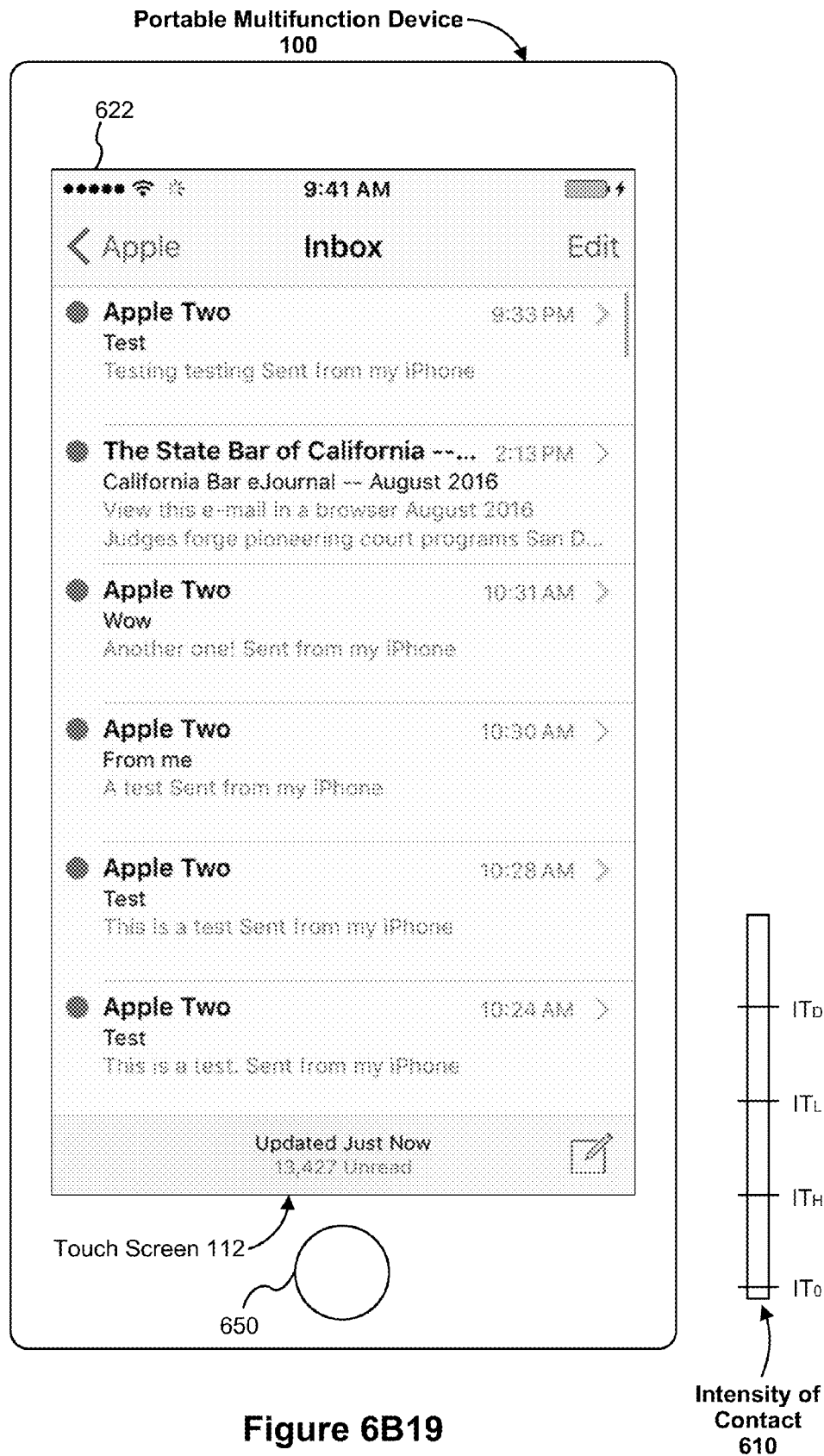
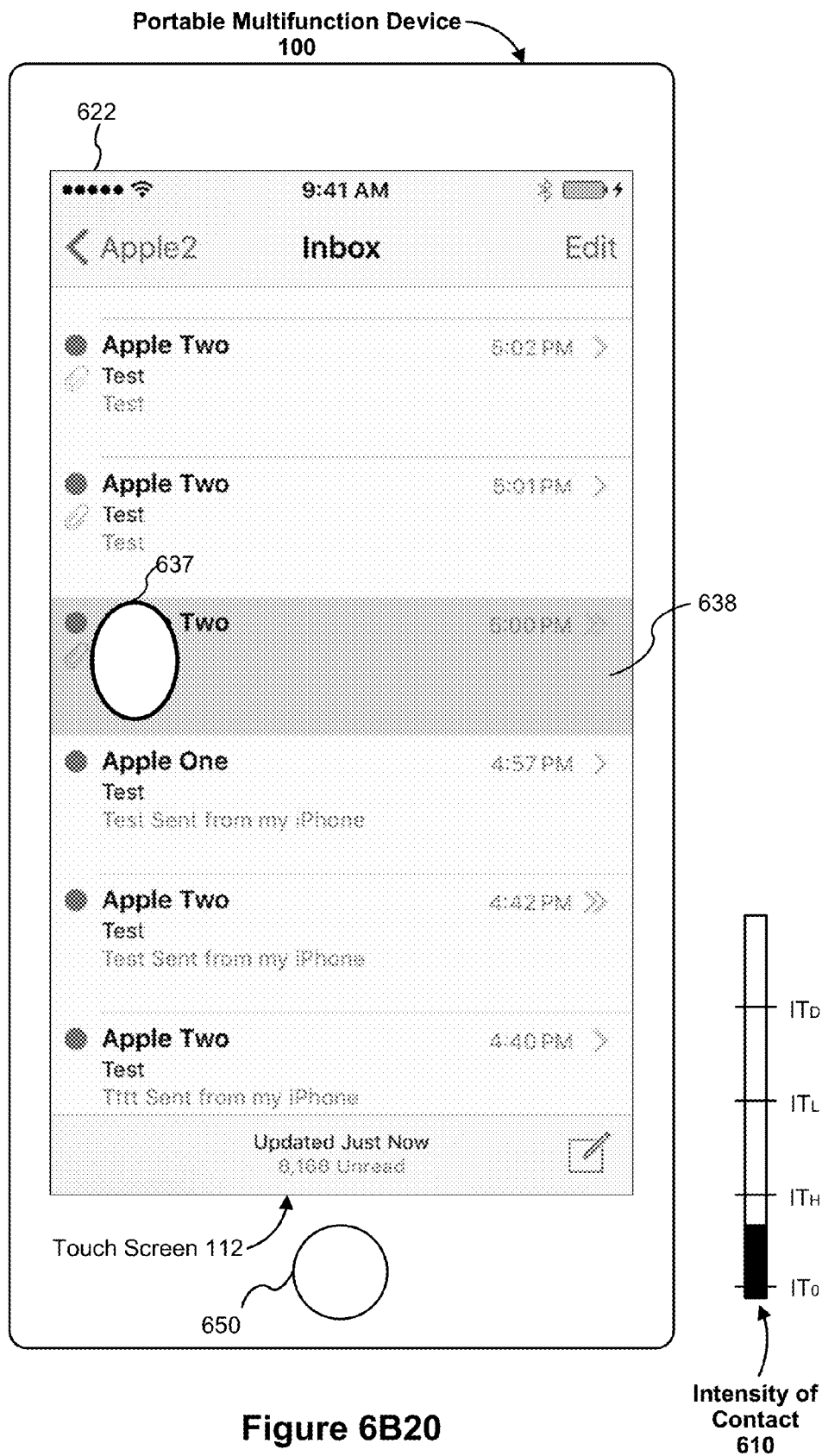


Figure 6B19



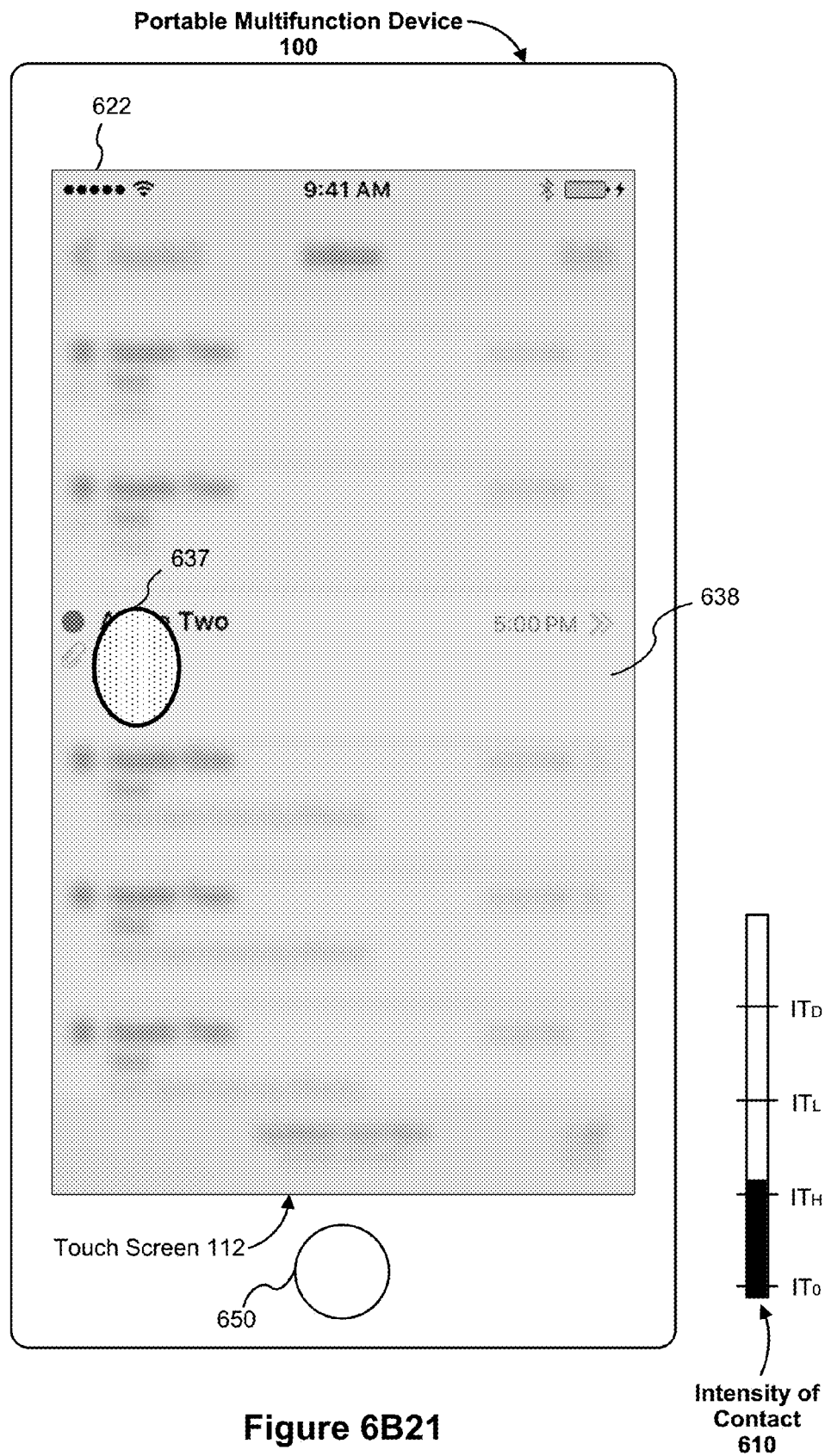
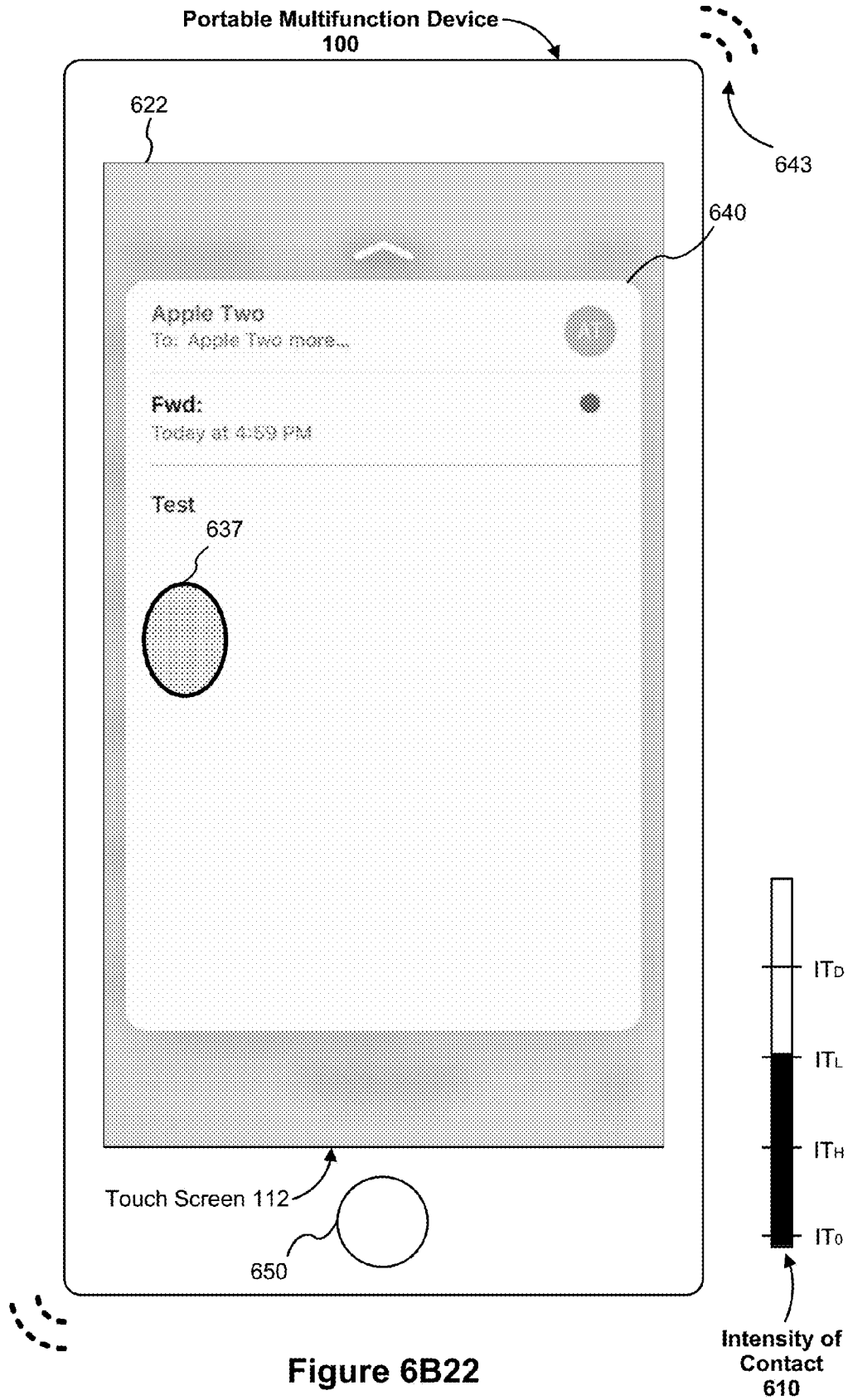
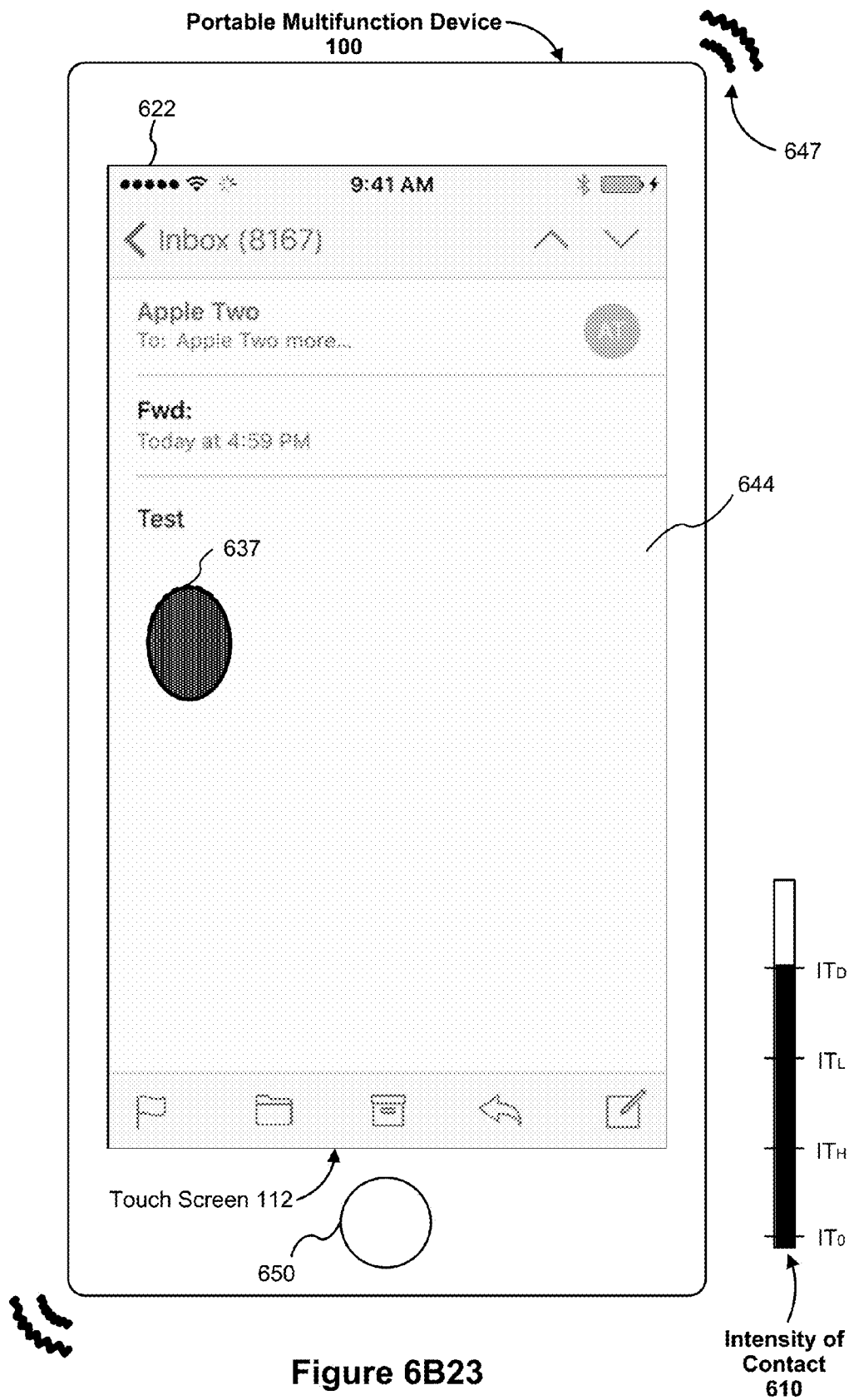


Figure 6B21





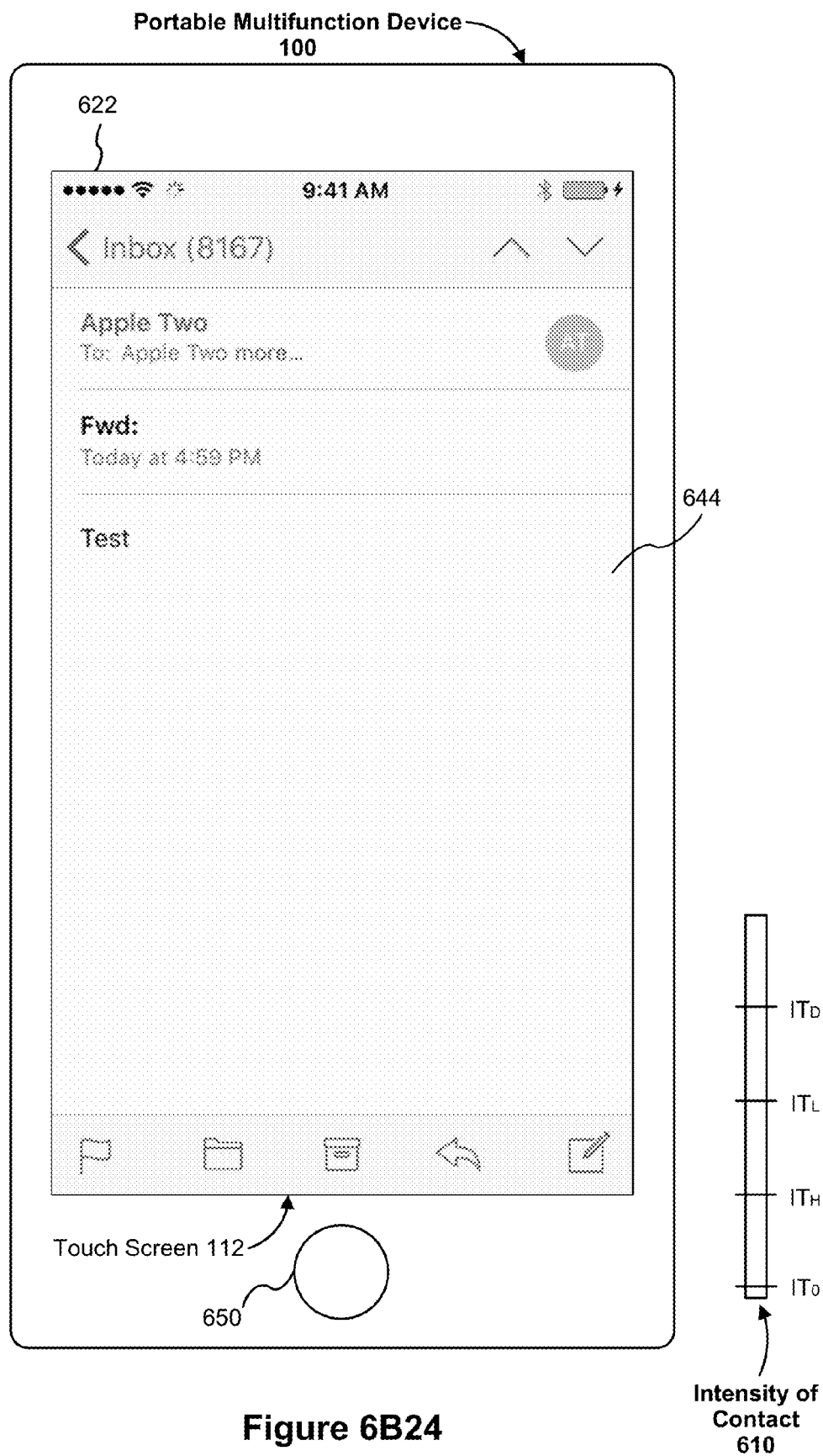


Figure 6B24

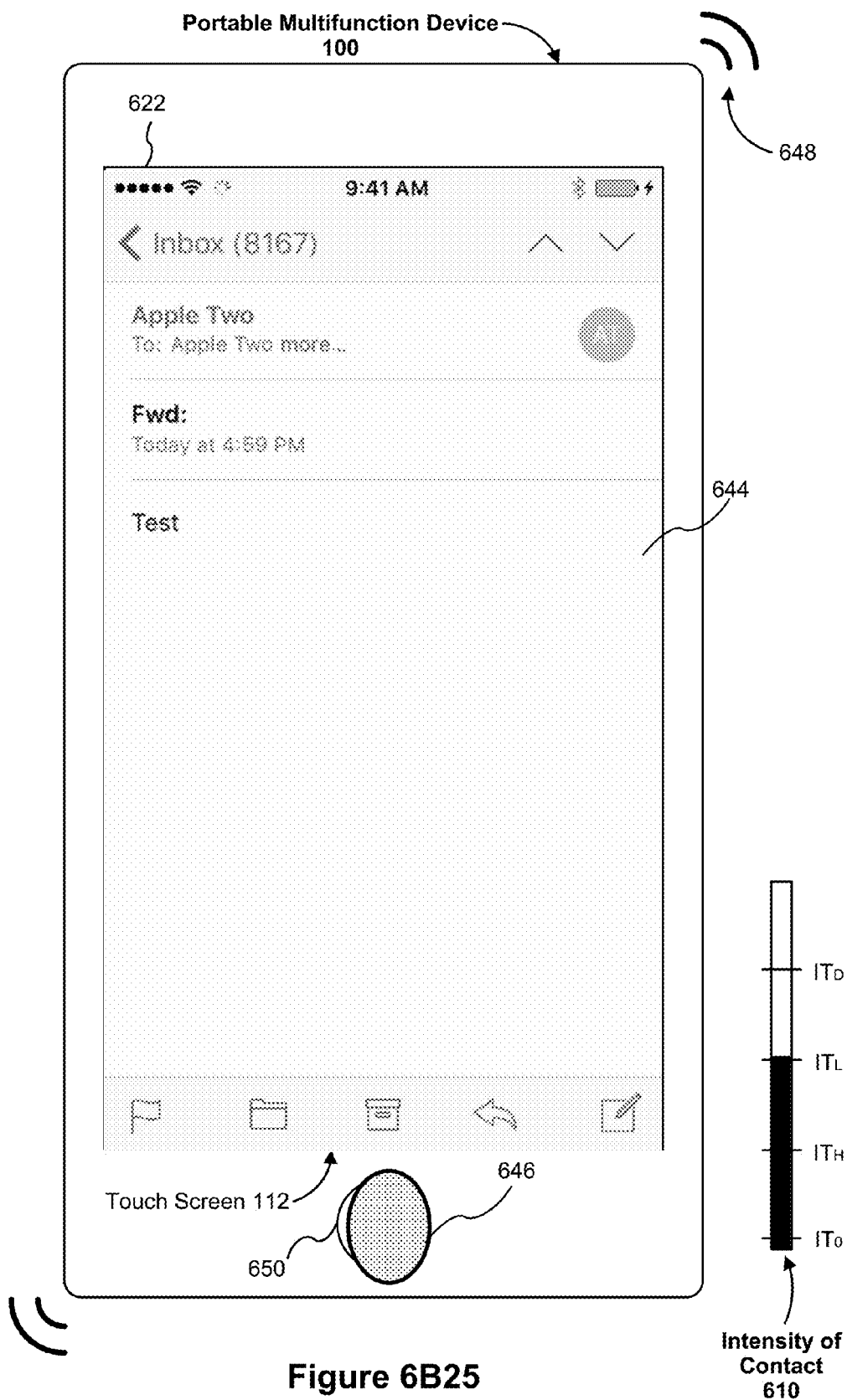




Figure 6B26

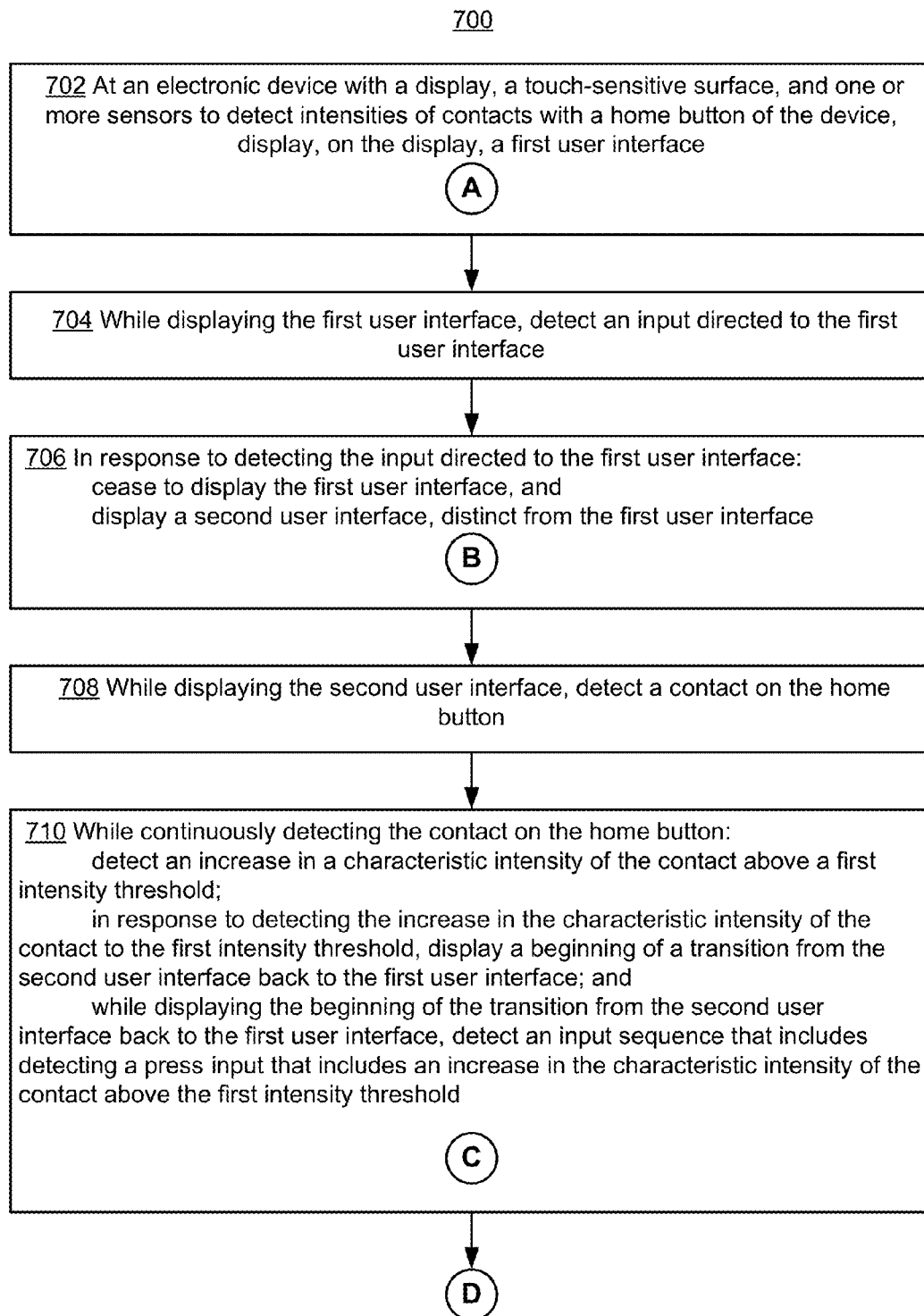


Figure 7A

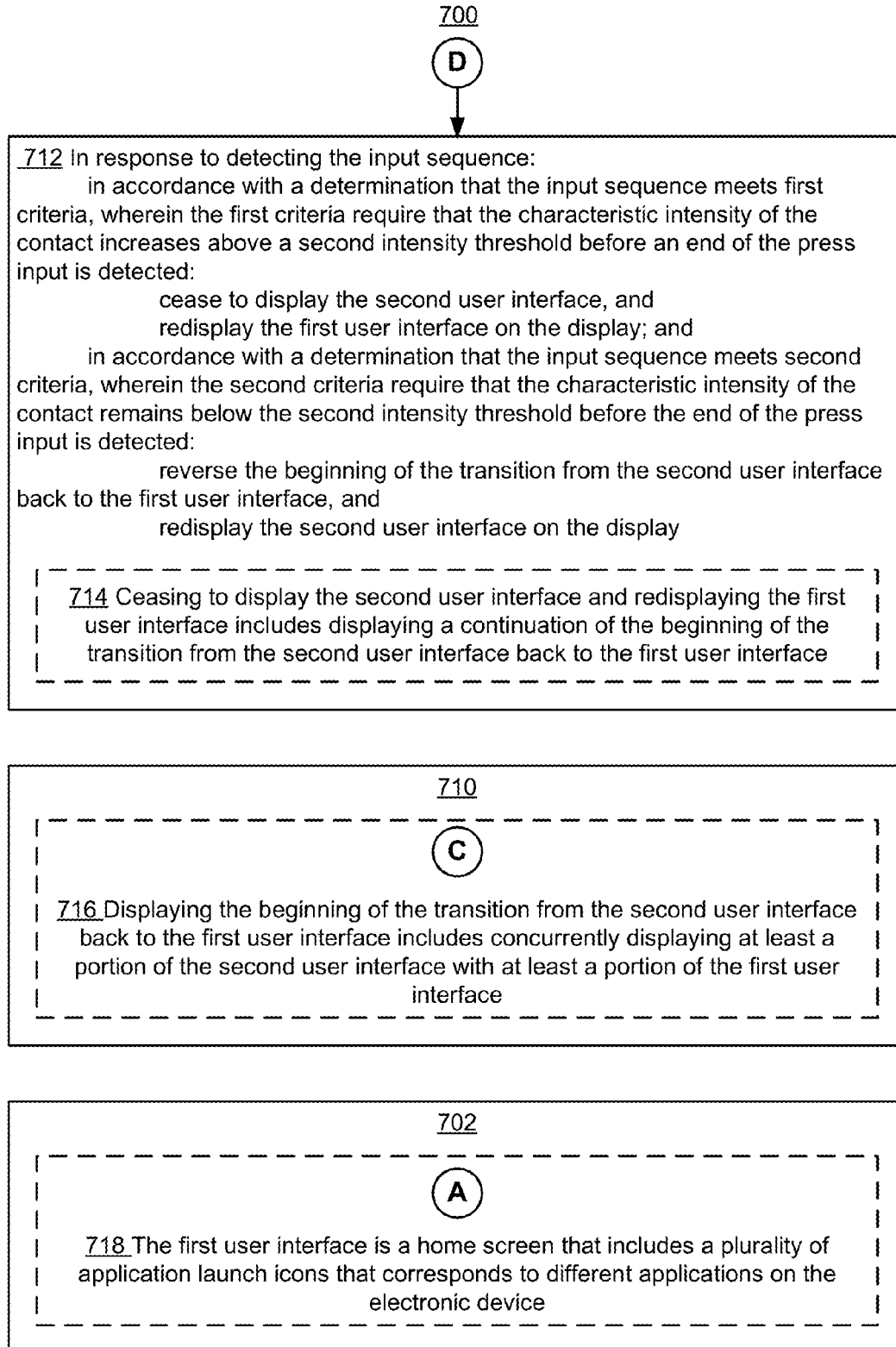


Figure 7B

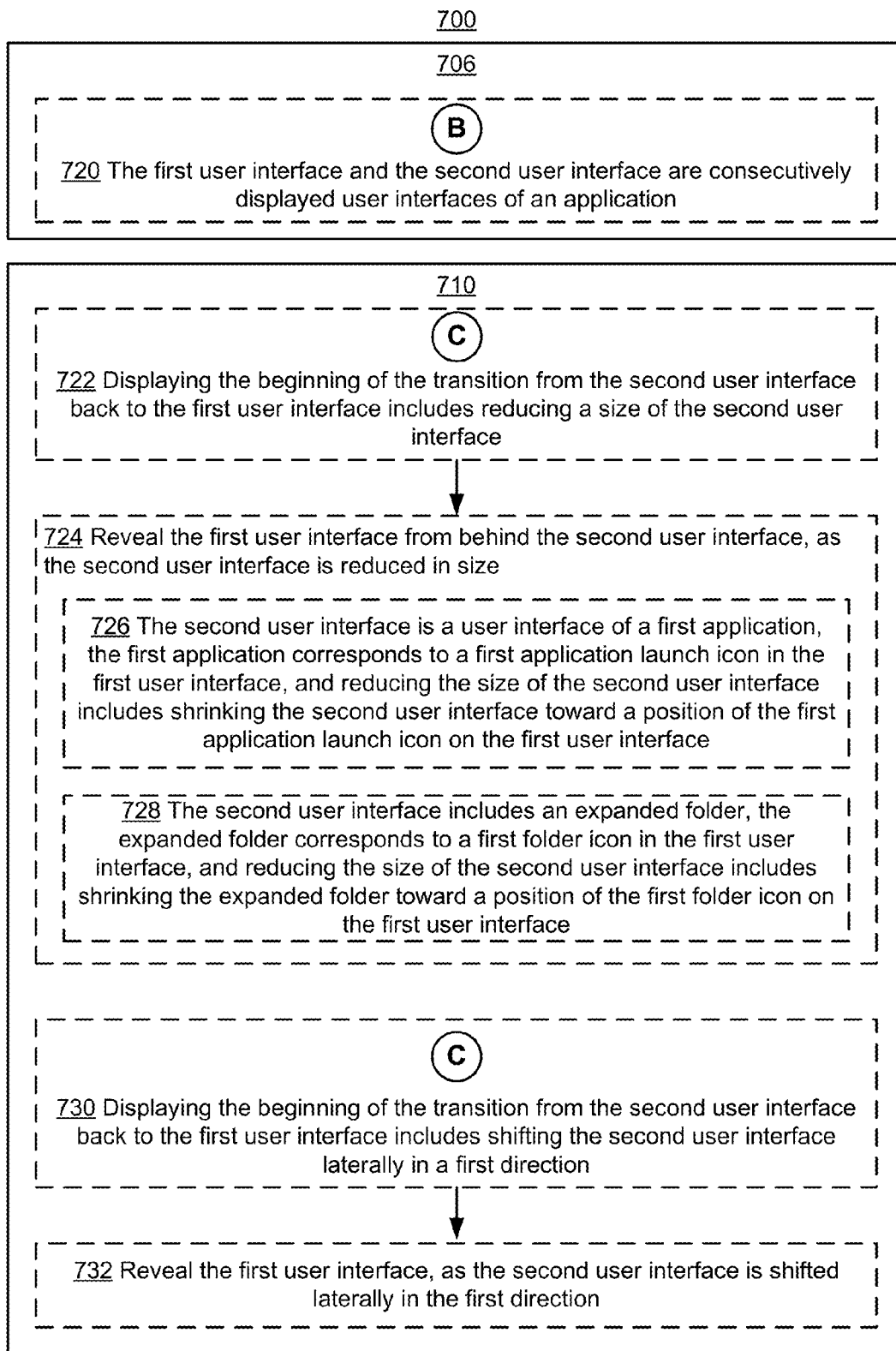


Figure 7C

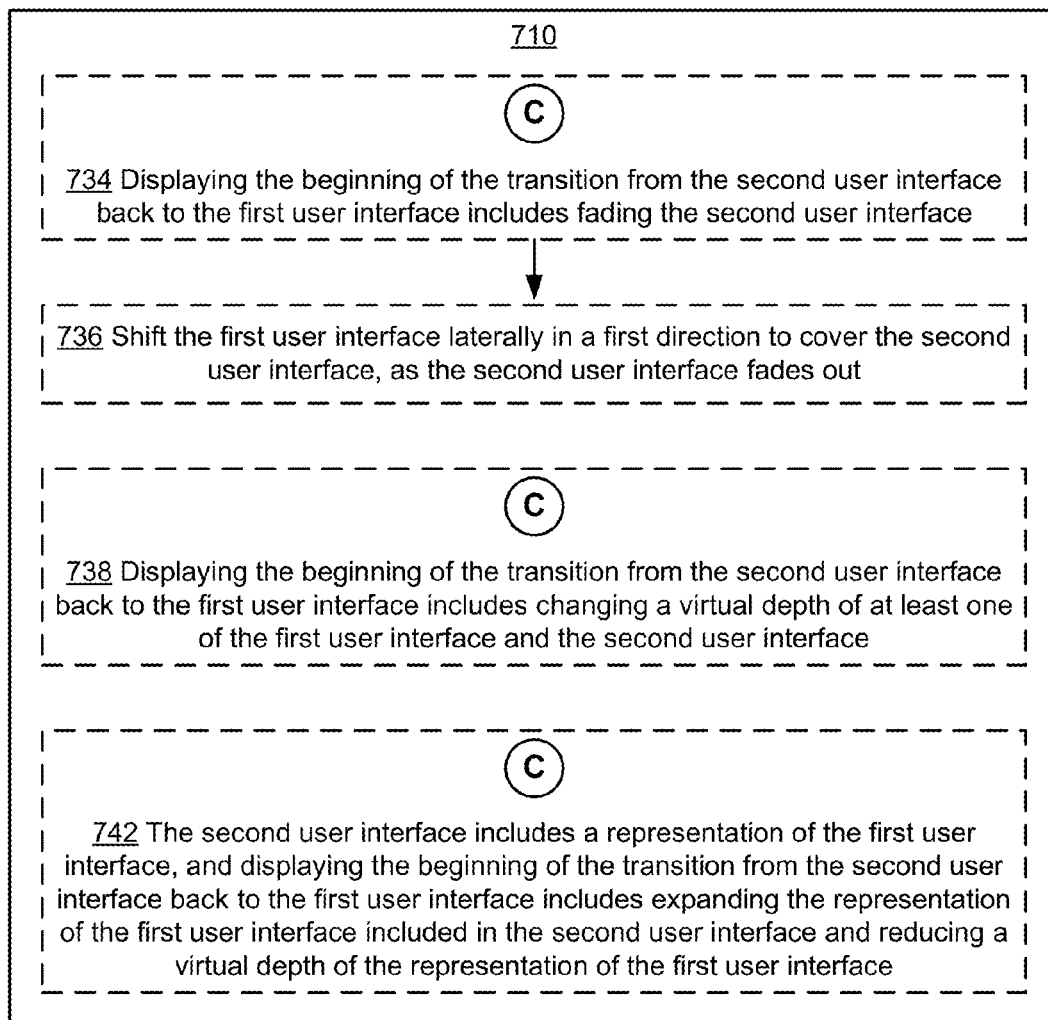
700

Figure 7D

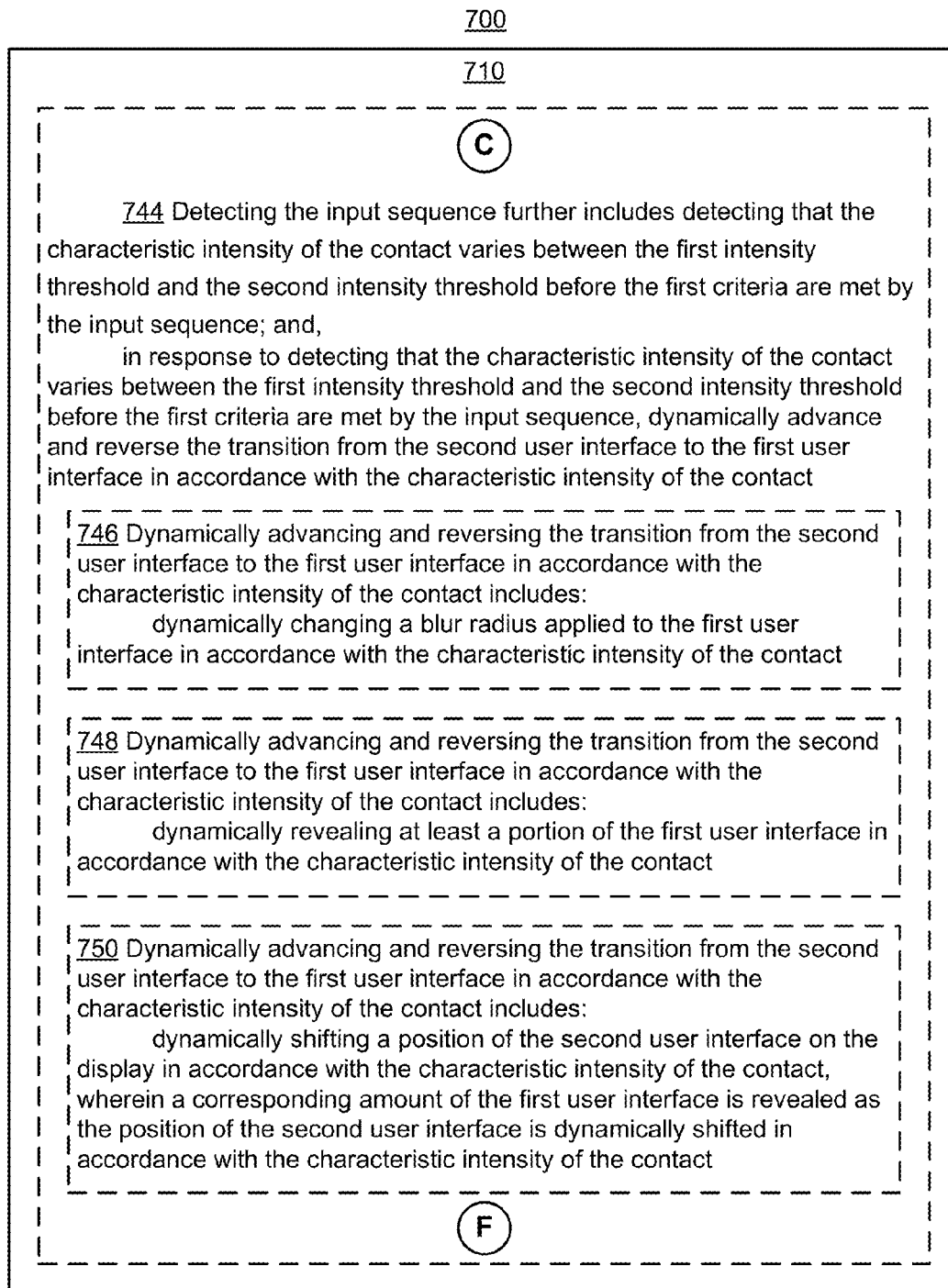


Figure 7E

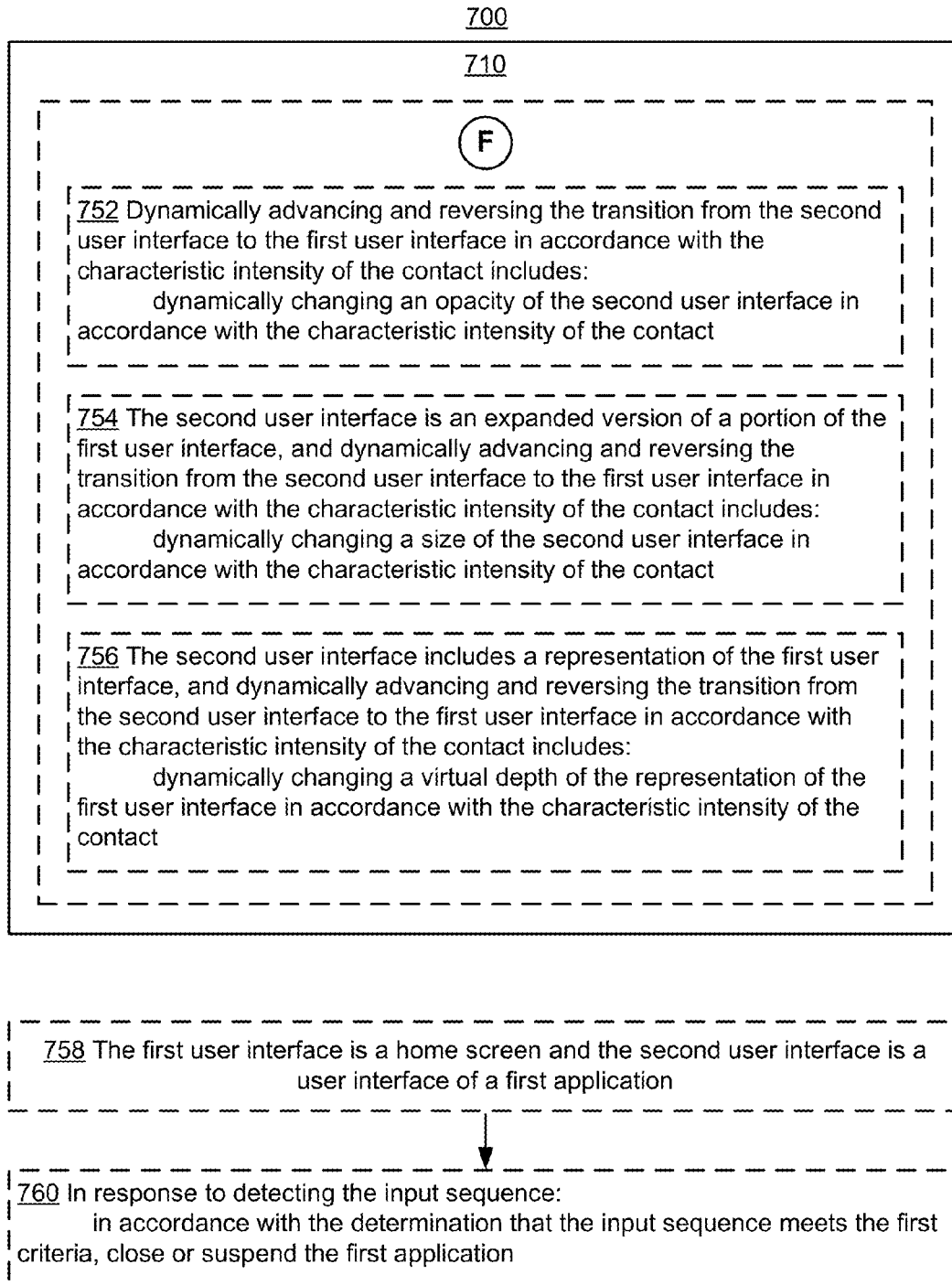


Figure 7F

700

762 The first user interface is a primary page of a multi-page home screen, and the second user interface is a secondary page of a multi-page home screen

764 The first user interface is a home screen, and the home screen includes a first folder icon that corresponds to a first folder that includes one or more folder items, and the second user interface includes an expanded view of the first folder that includes larger representations of the one or more folder items

766 The device includes one or more tactile output generators



768 In response to detecting the input sequence:
in accordance with the determination that the input sequence meets the first criteria, generate a first tactile output

770 Generate a tactile output upon detecting the increase in the characteristic intensity of the contact above the first intensity threshold

772 Forgo generating a tactile output in response to detecting the increase in the characteristic intensity of the contact above the first intensity threshold

774 In accordance with a determination that the input sequence includes an increase in the characteristic intensity of the contact above the second intensity threshold and satisfaction of long press criteria, interrupt an animated transition from the second user interface to the first user interface to display an animated transition to a third user interface that is associated with the long press criteria

776 In accordance with a determination that the input sequence includes an increase in the characteristic intensity of the contact above the second intensity threshold and satisfaction of multiple-click criteria, interrupt an animated transition from the second user interface to the first user interface to display an animated transition to a fourth user interface that is associated with the multiple-click criteria

Figure 7G

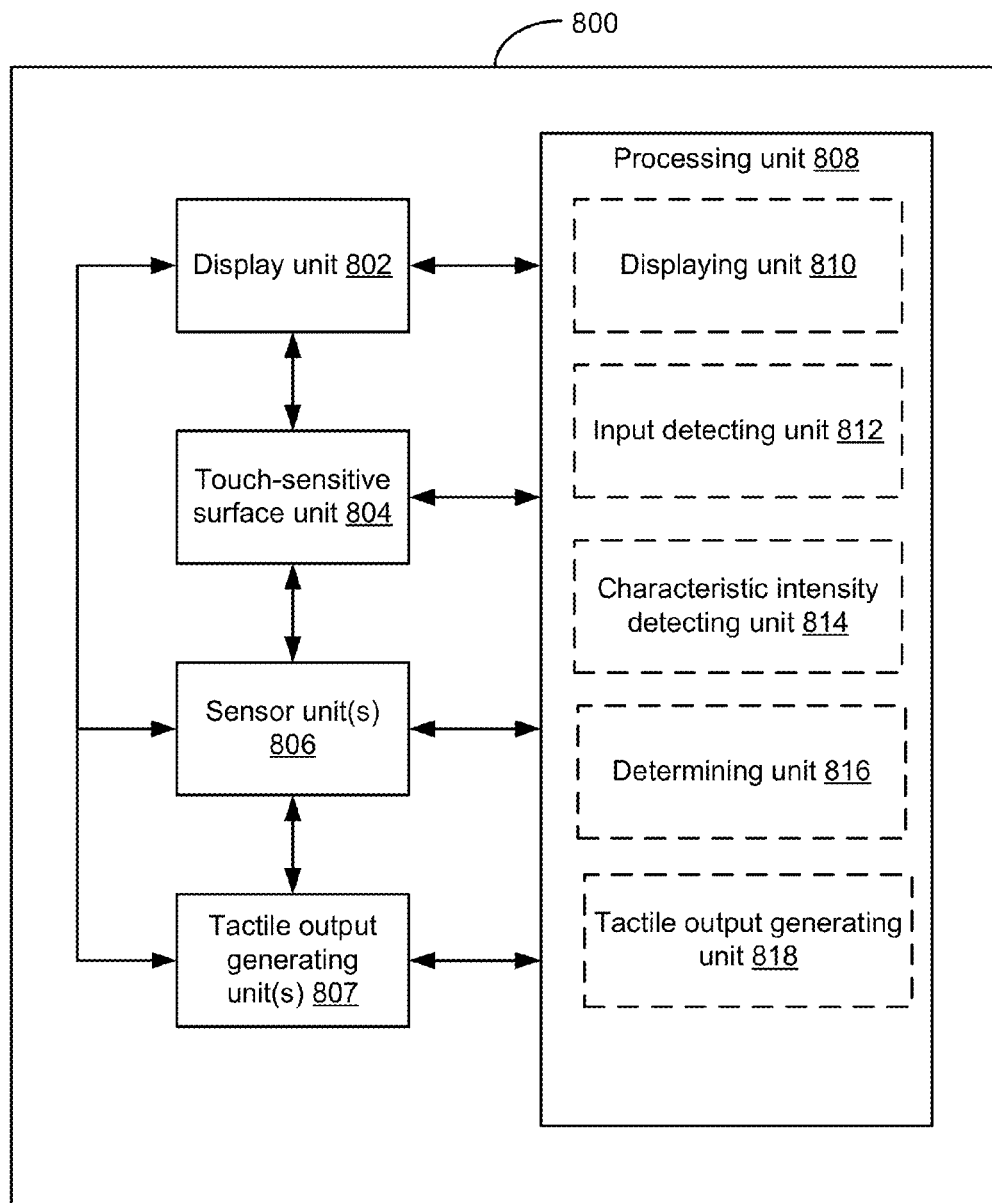


Figure 8

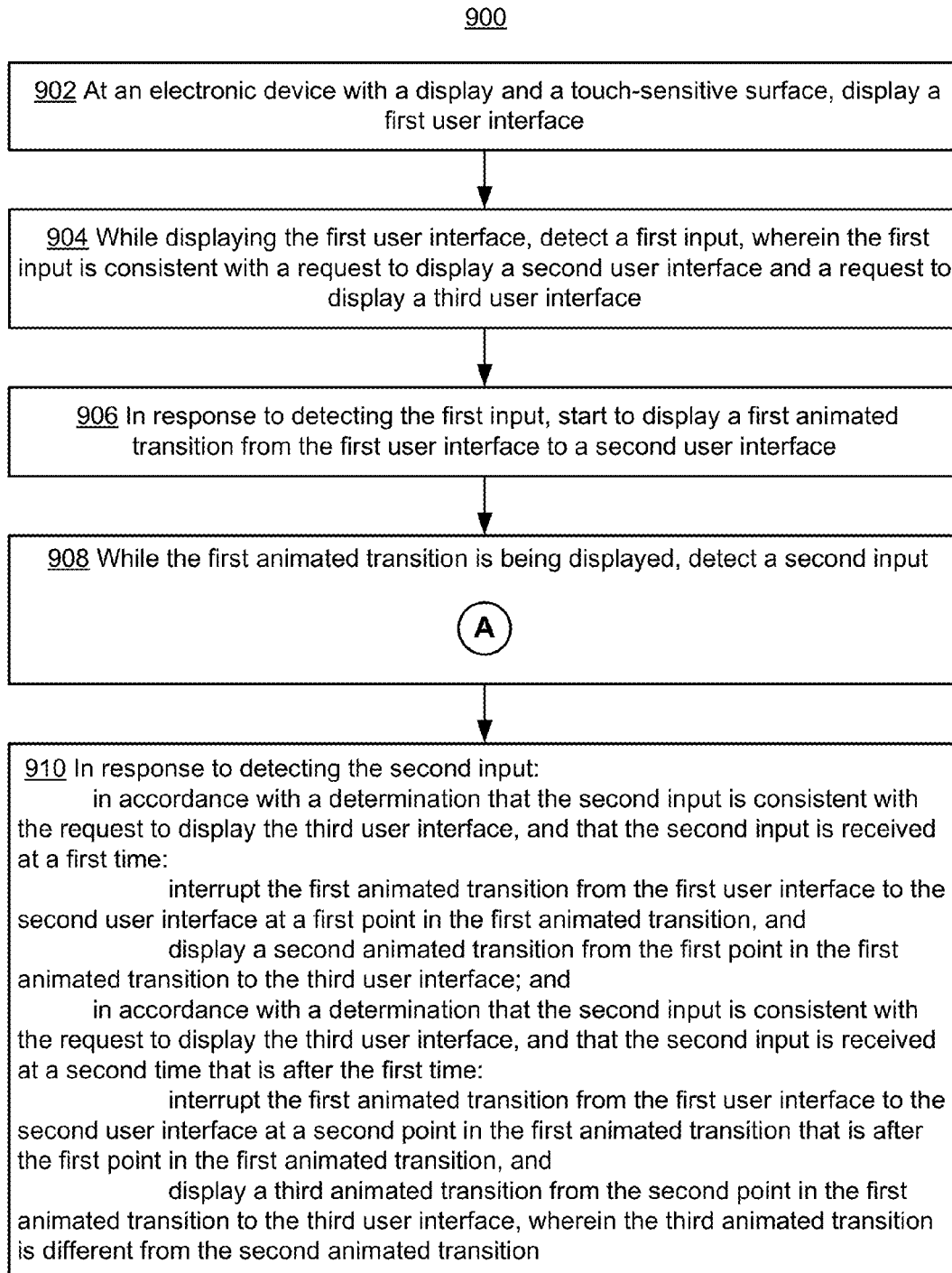


Figure 9A