



(12) **United States Patent**
Alvarez Rivera et al.

(10) **Patent No.:** **US 8,965,449 B2**
(45) **Date of Patent:** **Feb. 24, 2015**

(54) **DEVICES AND METHODS FOR PROVIDING ACCESS TO INTERNAL COMPONENT**

(56) **References Cited**

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U.S. PATENT DOCUMENTS
7,215,881 B2 5/2007 Borngaber et al.
7,447,772 B2 11/2008 Natuno et al.
2007/0255961 A1* 11/2007 Tracy et al. 713/186
(Continued)

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

FOREIGN PATENT DOCUMENTS

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 812 days.

EP 1850205 10/2007
KR 20-1999-0025961 7/1999
(Continued)

(21) Appl. No.: **13/082,118**

OTHER PUBLICATIONS

(22) Filed: **Apr. 7, 2011**

International Search Report and Written Opinion dated Sep. 26, 2012, PCT/US2012/031663, 18 pages.
(Continued)

(65) **Prior Publication Data**

US 2012/0258773 A1 Oct. 11, 2012

(51) **Int. Cl.**

H04M 1/00 (2006.01)
G06F 1/16 (2006.01)
G06F 21/32 (2013.01)
G06F 21/83 (2013.01)
H04L 29/06 (2006.01)
H04W 12/06 (2009.01)

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(52) **U.S. Cl.**

CPC **G06F 1/1656** (2013.01); **G06F 21/32** (2013.01); **G06F 21/83** (2013.01); **G06F 1/1684** (2013.01); **H04L 63/0861** (2013.01); **H04W 12/06** (2013.01); **G06F 2221/2101** (2013.01)
USPC **455/552.1**; 455/566; 455/556.2; 455/550.1

(57) **ABSTRACT**

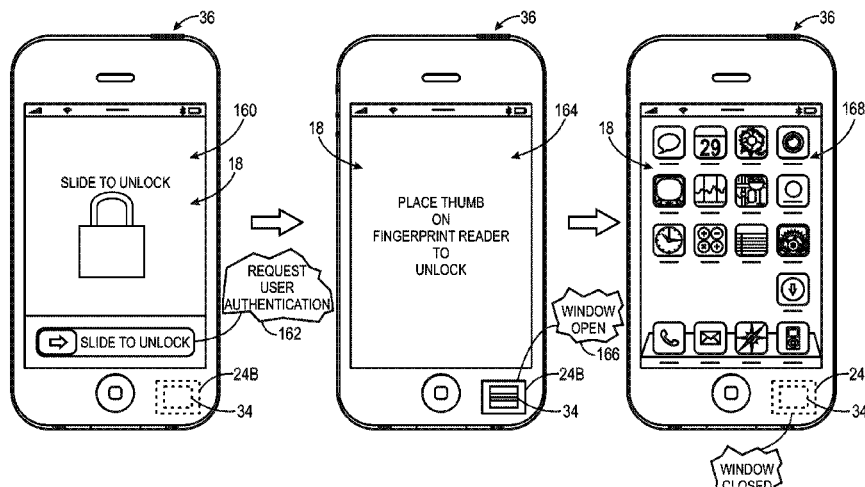
Systems, methods, and devices are disclosed for applying concealment of components of an electronic device. In one embodiment, an electronic device may include a component that is disposed behind a window configured to selectively become transparent or opaque, such as a polymer-dispersed liquid crystal (PLDC) window. The component includes an image capture device, a strobe flash, a biometric sensor, a light sensor, a proximity sensor, or a solar panel, or a combination thereof. Additionally, the electronic device includes data processing circuitry configured to determine when an event requesting that the component be exposed occurs. Furthermore, the electronic device includes a window controller that may control the window to become transparent, to expose the component upon the occurrence of the event requesting that the component be exposed.

(58) **Field of Classification Search**

CPC H04W 12/00; G06K 9/00006
USPC 455/556.1, 556.2, 550.1, 566, 552.1, 455/410, 411, 414.1, 418; 370/329, 401; 345/58, 82, 522, 589, 173, 6, 629

18 Claims, 13 Drawing Sheets

See application file for complete search history.



(56)

References Cited

WO WO 02/103504 12/2002
WO WO 2008/030976 3/2008

U.S. PATENT DOCUMENTS

2008/0266773 A1* 10/2008 Szolyga et al. 361/683
2009/0273562 A1 11/2009 Baliga et al.
2010/0066928 A1 3/2010 Pelfrey

FOREIGN PATENT DOCUMENTS

KR 10-2003-0014946 2/2003

OTHER PUBLICATIONS

Korean Office Action dated Sep. 26, 2014, KR 10-2013-7028335, 14 pages.

* cited by examiner

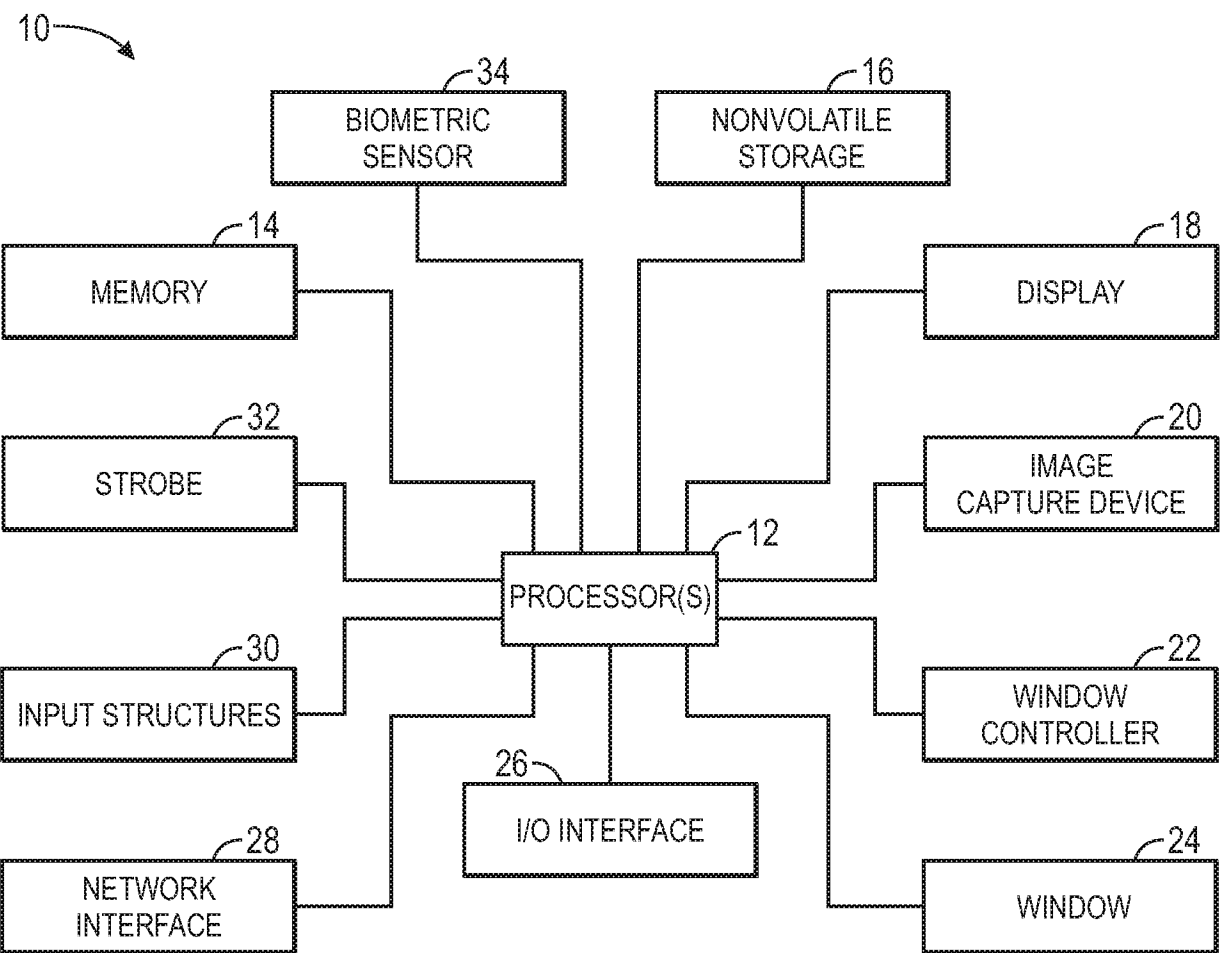


FIG. 1

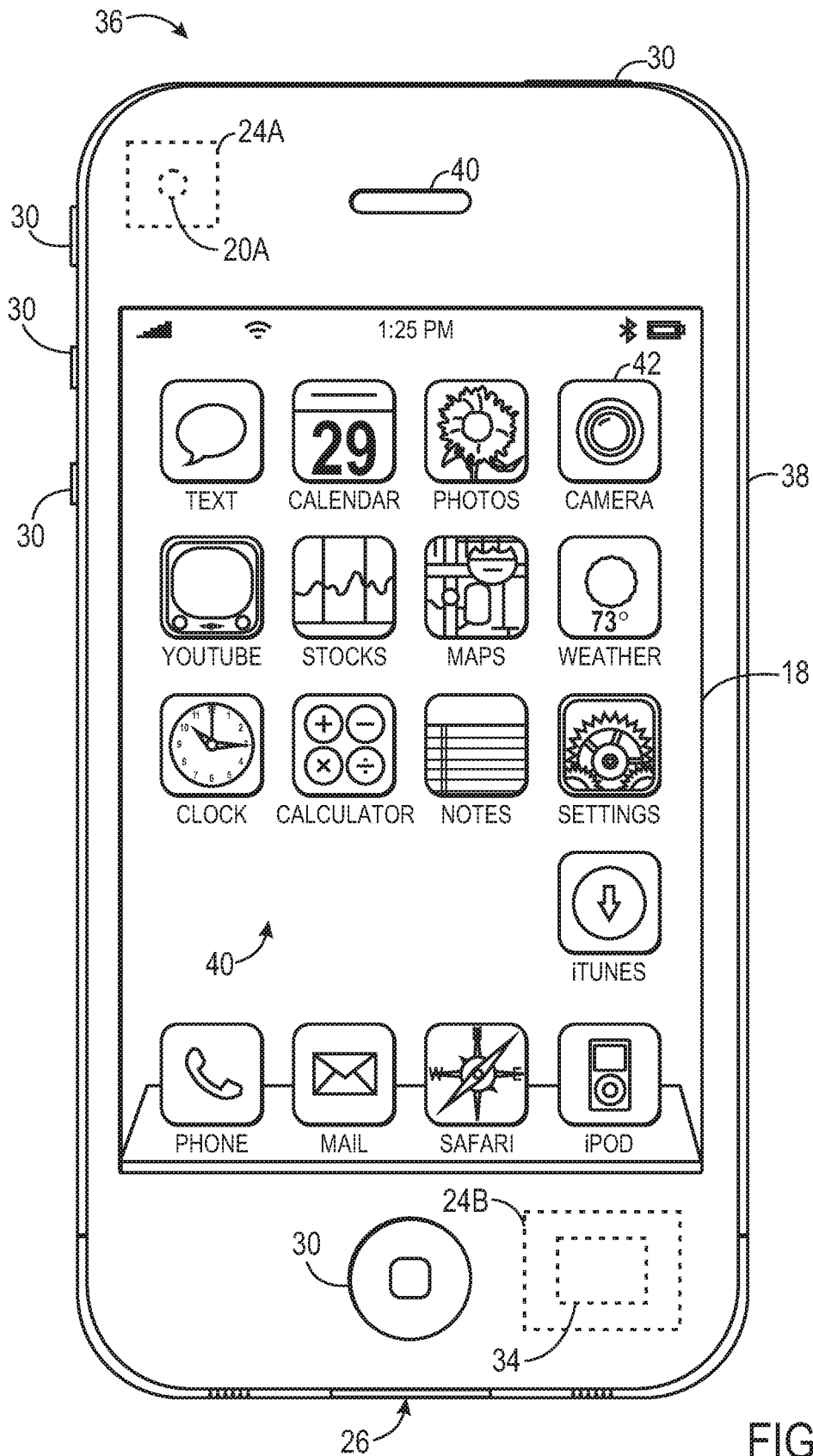


FIG. 2

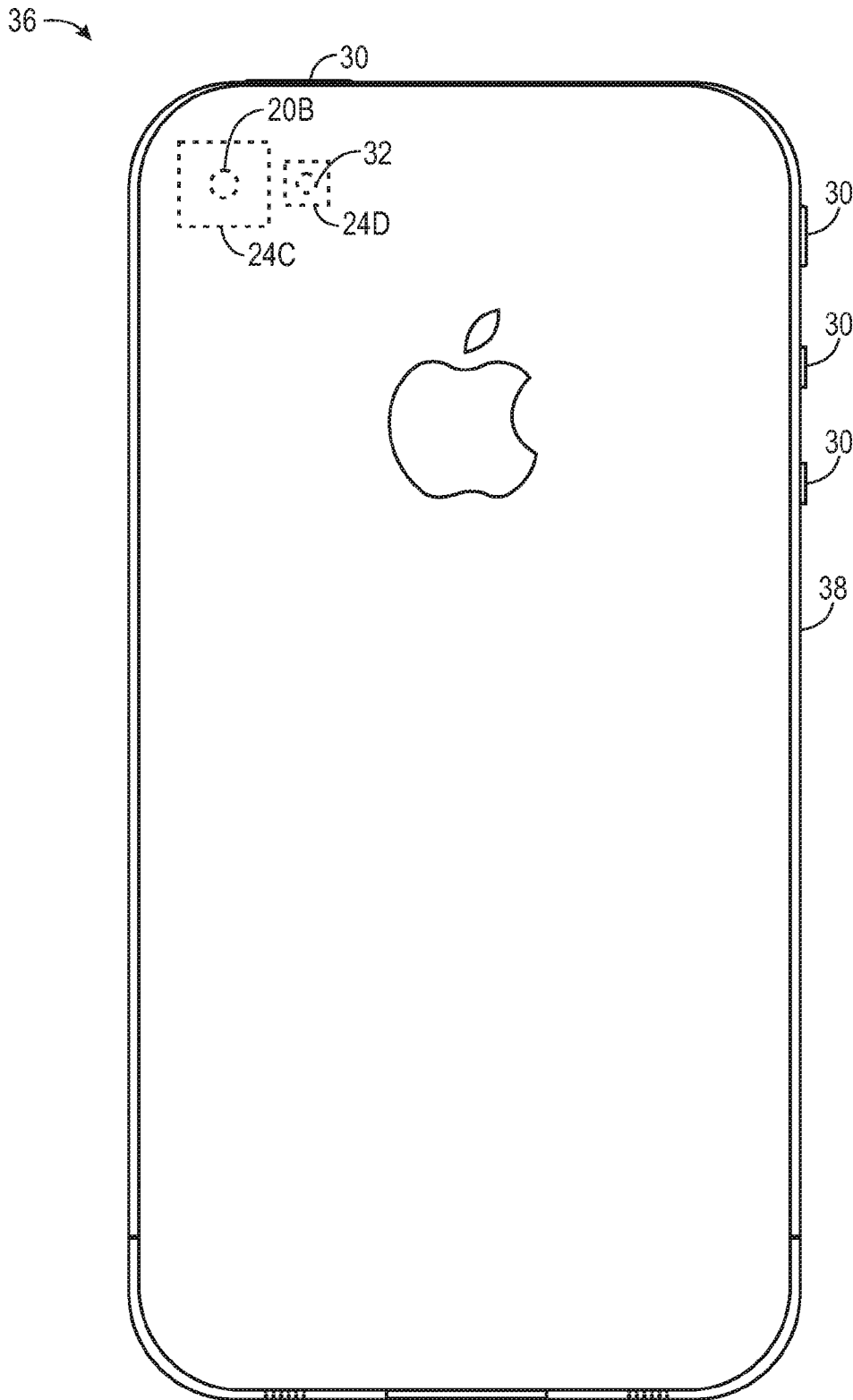


FIG. 3

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