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Alvarez Rivera et al.

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

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G06F 21/32	(2013.01)
G06F 21/83	(2013.01)
H04L 29/06	(2006.01)
H04W 12/06	(2009.01)

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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

(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
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

7,215,881 B2	5/2007	Borngraber et al.	
7,447,772 B2	11/2008	Natsuno et al.	
2007/0255961 A1 *	11/2007	Tracy et al.	713/186

(Continued)

FOREIGN PATENT DOCUMENTS

EP	1850205	10/2007
KR	20-1999-0025961	7/1999

(Continued)

OTHER PUBLICATIONS

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

(Continued)

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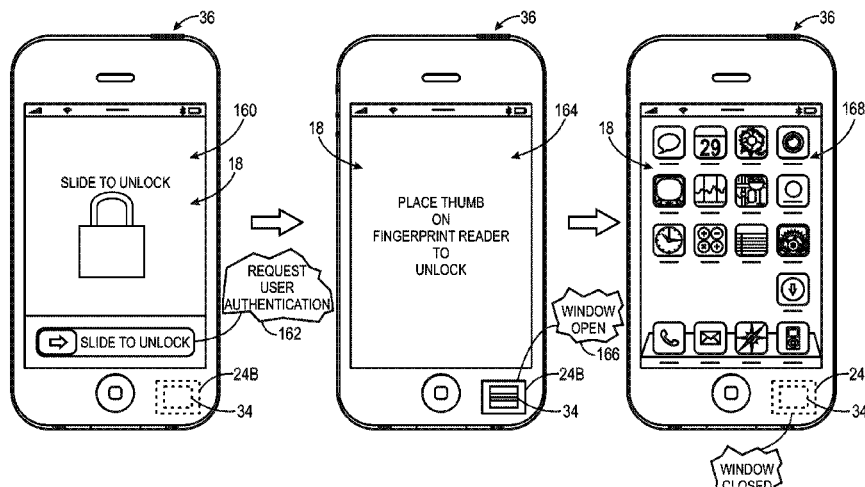
(57) **ABSTRACT**

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.

18 Claims, 13 Drawing Sheets

(56) **References Cited**

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

OTHER PUBLICATIONS

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

* cited by examiner

FIG. 1

FIG. 2

FIG. 3

DOCKET ALARM
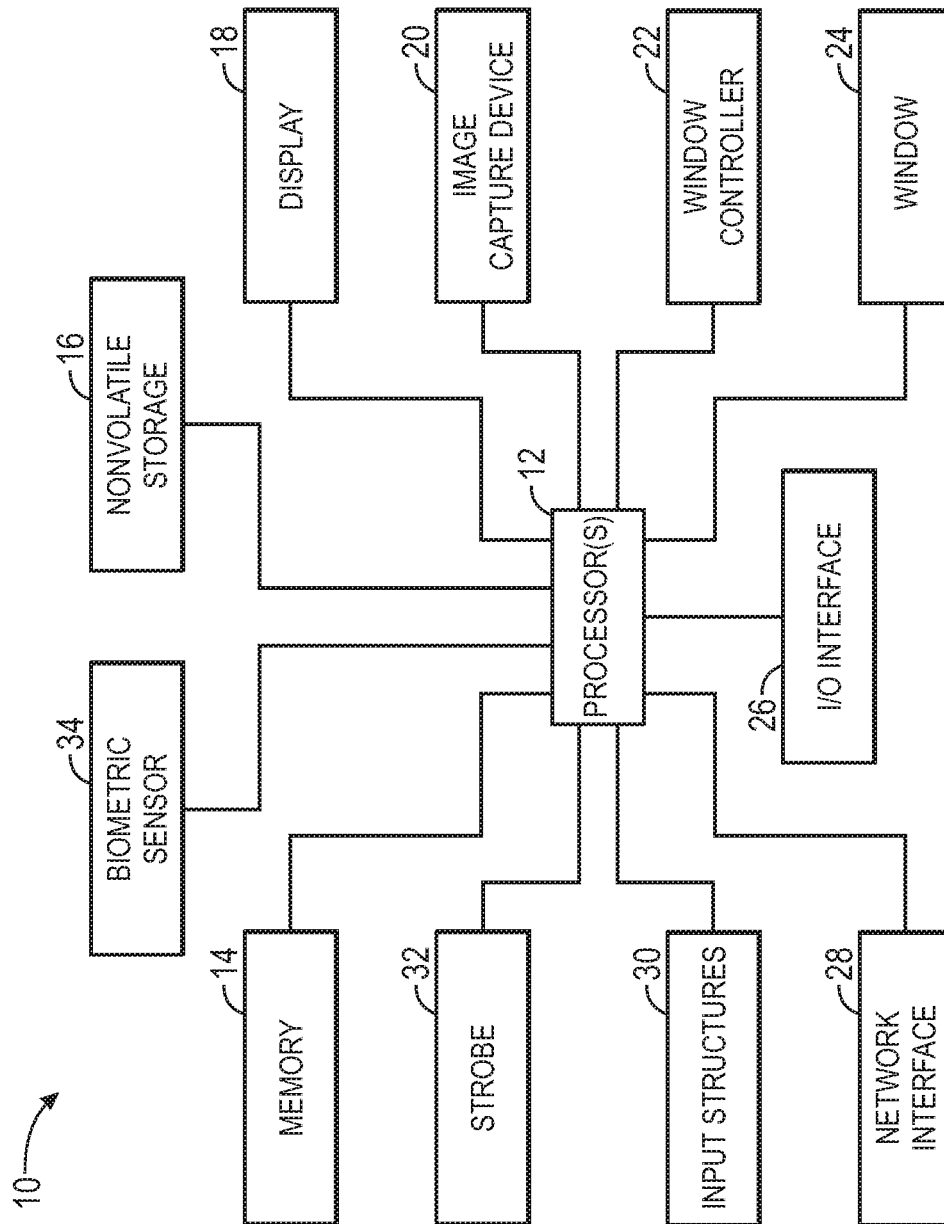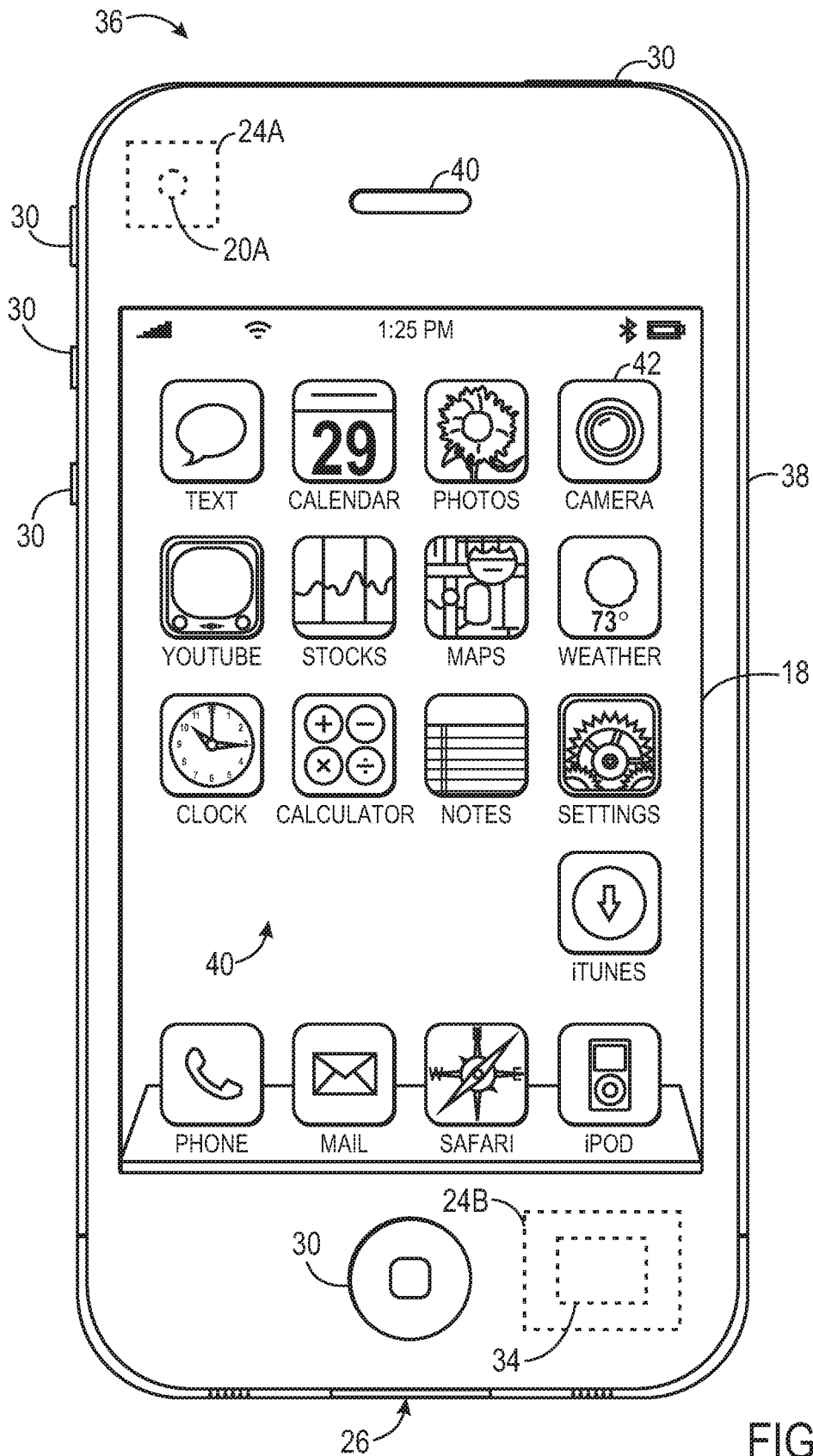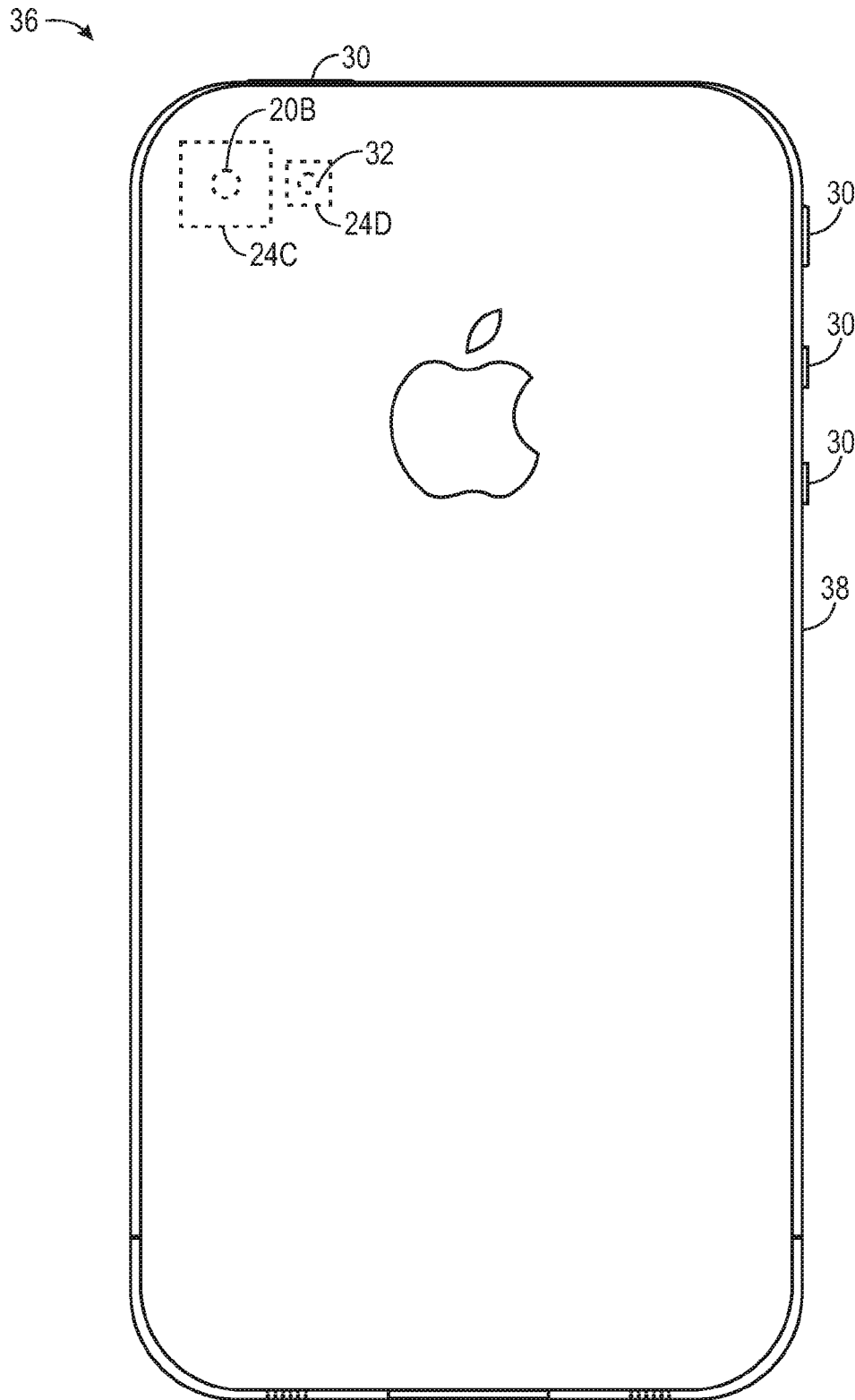
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