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

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(54) **ACTIVATING DISPLAY AND PERFORMING USER AUTHENTICATION IN MOBILE TERMINAL WITH ONE-TIME USER INPUT**

(58) **Field of Classification Search**  
CPC ..... H04W 4/02; H04W 12/08; H04W 8/22;  
H04W 52/027; H04W 12/06; H04M 1/67;  
(Continued)

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(73) Assignee: **FIRSTFACE CO., LTD.**, Seoul (KR)

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

This patent is subject to a terminal disclaimer.

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(65) **Prior Publication Data**

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(Continued)

**Related U.S. Application Data**

(63) Continuation of application No. 14/538,880, filed on Nov. 12, 2014, now Pat. No. 9,179,298, which is a  
(Continued)

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**Foreign Application Priority Data**

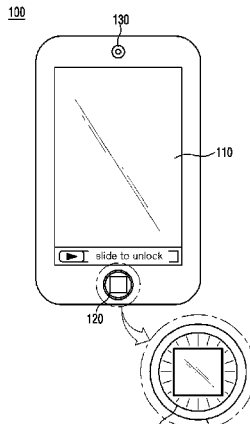
Oct. 19, 2011 (KR) ..... 10-2011-0106839

(57) **ABSTRACT**

(51) **Int. Cl.**  
**H04M 1/00** (2006.01)  
**G06Q 30/02** (2012.01)  
(Continued)

Disclosed is a mobile terminal including a touch screen display, a power button and an activation button for turning on the touch screen display. Upon detection of one-time pressing of the activation button while the touch screen display is turned off, the terminal is configured to turn on the touch screen display and perform a fingerprint authentication function in addition to turning on the touch screen display. The touch screen display displays a lock screen thereon as it is turned on in response to the detection of one-time pressing, and the lock screen is displayed on the touch screen display when the fingerprint authentication function is being performed. A lock state of the terminal continues when the fingerprint authentication function fails to authenticate a user, and the lock state is released for  
(Continued)

(52) **U.S. Cl.**  
CPC ..... **G06Q 30/0262** (2013.01); **G06F 3/04883** (2013.01); **G06F 21/32** (2013.01);  
(Continued)



Apple Ex. 1001

enabling other functions of the terminal when the fingerprint authentication function authenticates a user.

**18 Claims, 5 Drawing Sheets**

**Related U.S. Application Data**

continuation of application No. 14/058,761, filed on Oct. 21, 2013, now Pat. No. 8,918,074, which is a continuation of application No. 13/590,483, filed on Aug. 21, 2012, now Pat. No. 8,831,557.

(51) **Int. Cl.**

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*H04M 1/67* (2006.01)  
*H04M 1/725* (2006.01)  
*H04W 8/22* (2009.01)  
*G06F 21/32* (2013.01)  
*H04W 12/06* (2009.01)  
*H04W 52/02* (2009.01)  
*G06F 3/0488* (2013.01)  
*G06K 9/00* (2006.01)  
*H04L 29/06* (2006.01)  
*H04W 12/08* (2009.01)  
*G06F 21/36* (2013.01)  
*G06F 21/62* (2013.01)  
*H04W 4/22* (2009.01)  
*H04W 88/02* (2009.01)

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

CPC ..... *G06F 21/36* (2013.01); *G06F 21/62* (2013.01); *G06K 9/00006* (2013.01); *G06K 9/00087* (2013.01); *G06K 9/00221* (2013.01); *G06K 9/00597* (2013.01); *G06Q 30/0241* (2013.01); *G06Q 30/0261* (2013.01); *G06Q 30/0267* (2013.01); *G06Q 30/0269* (2013.01); *H04L 63/0861* (2013.01); *H04M 1/67* (2013.01); *H04M 1/7258* (2013.01); *H04M 1/72519* (2013.01); *H04W 4/02* (2013.01); *H04W 8/22* (2013.01); *H04W 12/06* (2013.01); *H04W 12/08* (2013.01); *H04W 52/027* (2013.01); *H04M 2250/12* (2013.01); *H04M 2250/52* (2013.01); *H04W 4/22* (2013.01); *H04W 88/02* (2013.01); *Y02B 60/50* (2013.01)

(58) **Field of Classification Search**

CPC ..... H04M 1/7258; H04M 2250/52; H04M 1/72519; G06F 21/32  
 USPC ..... 455/411, 414.1, 420, 404.2, 410; 726/1, 726/16  
 See application file for complete search history.

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FIG. 1

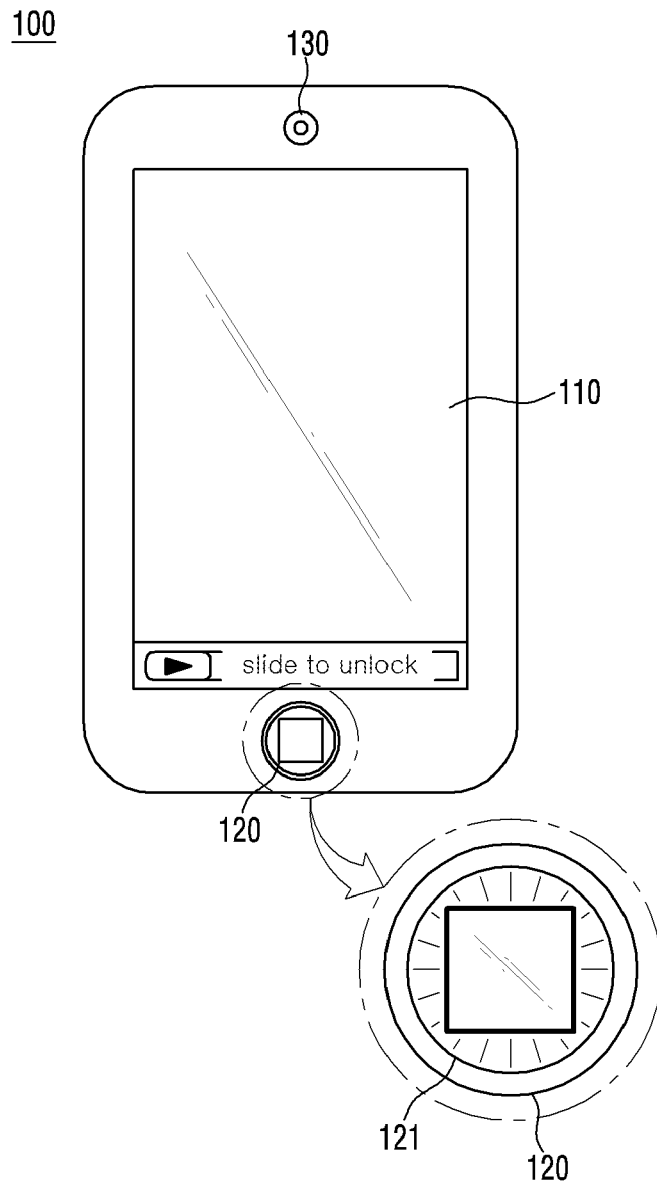
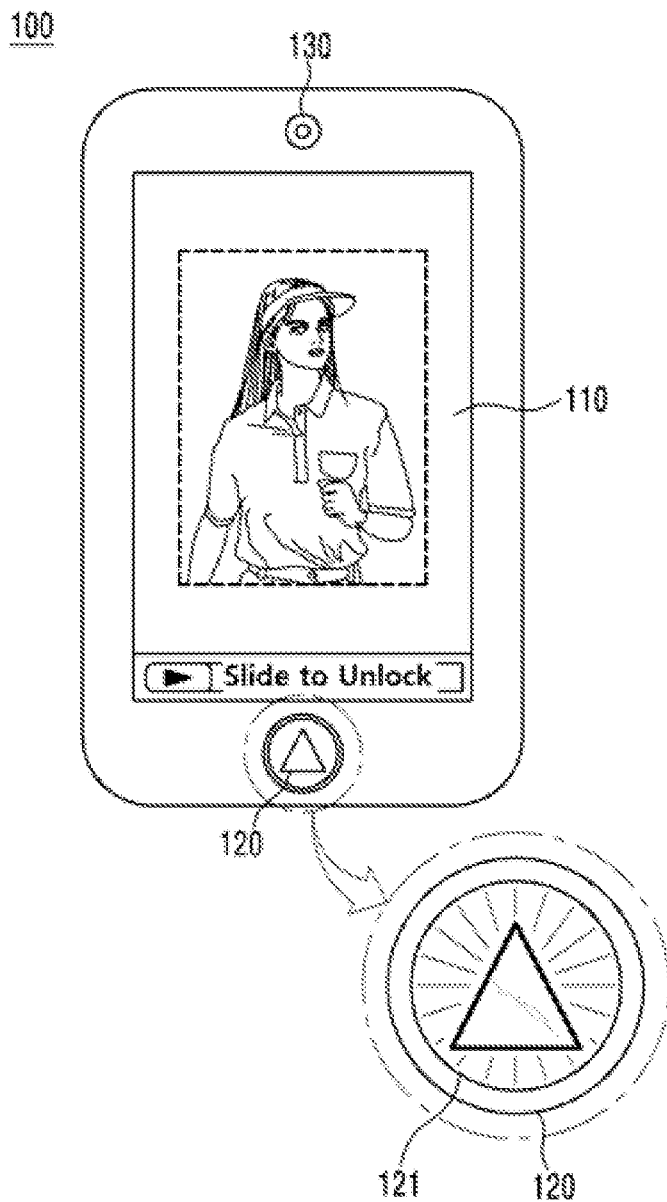


FIG. 2



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