



US007423557B2

(12) **United States Patent**
Kang

(10) **Patent No.:** **US 7,423,557 B2**
(45) **Date of Patent:** **Sep. 9, 2008**

(54) **KEY INPUT DEVICE COMBINED WITH KEY DISPLAY UNIT AND DIGITAL APPLIANCE HAVING THE SAME**

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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 72 days.

(21) Appl. No.: **11/347,233**

(22) Filed: **Feb. 6, 2006**

(65) **Prior Publication Data**
US 2006/0179088 A1 Aug. 10, 2006

(30) **Foreign Application Priority Data**
Feb. 4, 2005 (KR) 10-2005-0010595

(51) **Int. Cl.**
H03M 11/00 (2006.01)

(52) **U.S. Cl.** **341/23**; 345/170; 341/20;
379/433.04; 379/433.07

(58) **Field of Classification Search** 341/20,
341/22, 23; 345/170; 379/433.04, 433.07
See application file for complete search history.

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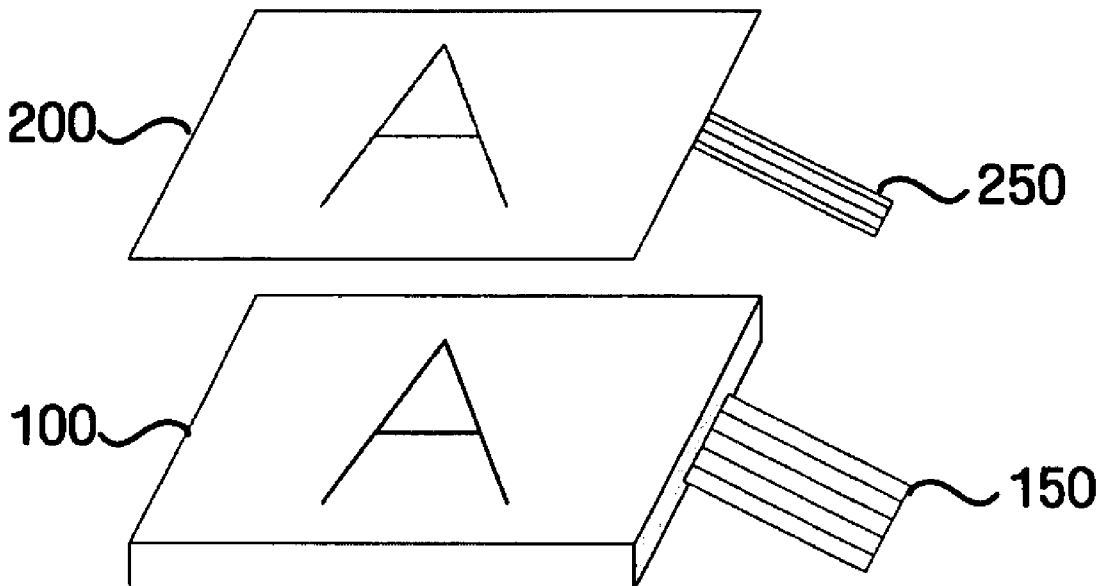
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(57) **ABSTRACT**

A key input device combined with a key display unit and a digital appliance having the same are disclosed. The key input device includes a key display unit for displaying a character or an image that identifies a key, a touch sensing unit that moves down and up by a pressure applied to this key, and a signal generation unit for generating an electric signal in accordance with the pressure applied to the key, wherein the character or the image displayed on the key display unit can be changed.

22 Claims, 15 Drawing Sheets



Apple Ex. 1037

FIG.1

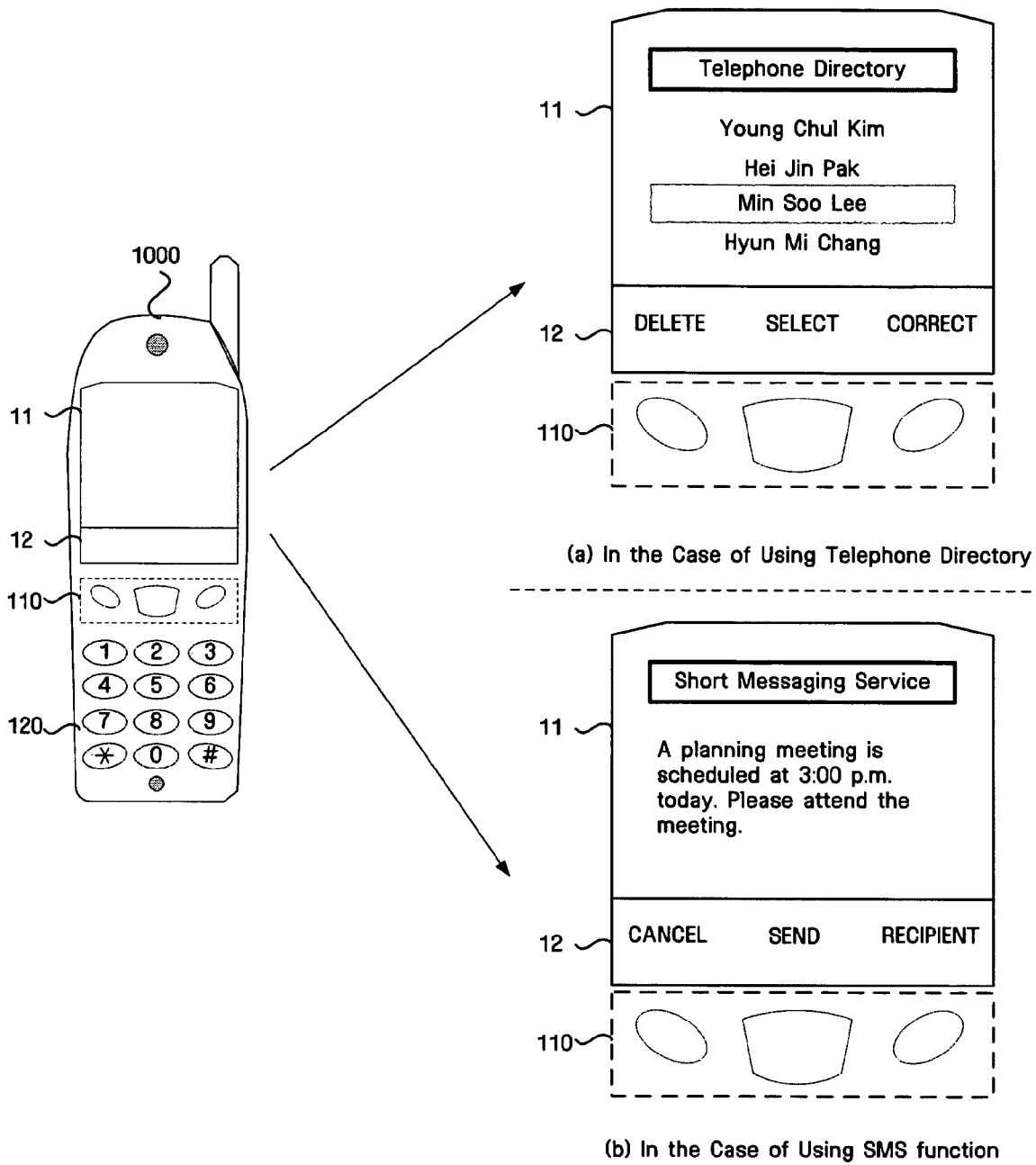


FIG.2A

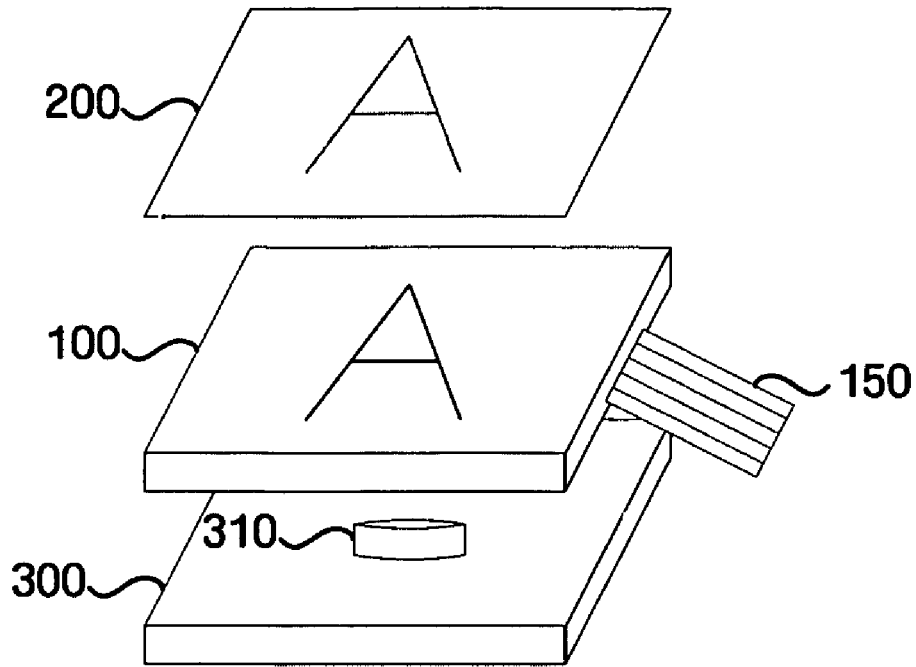


FIG.2B

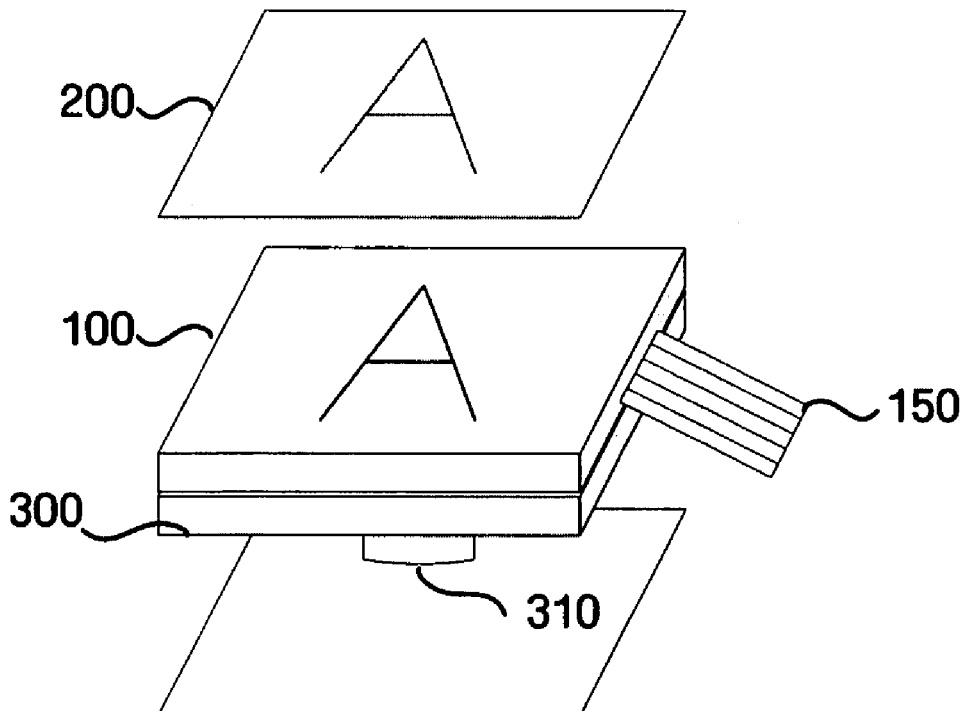


FIG.2C

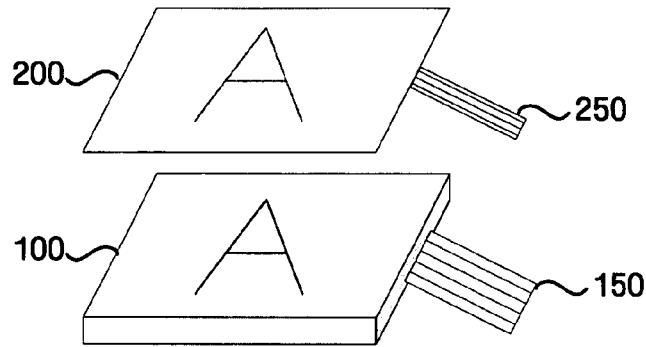


FIG.3A

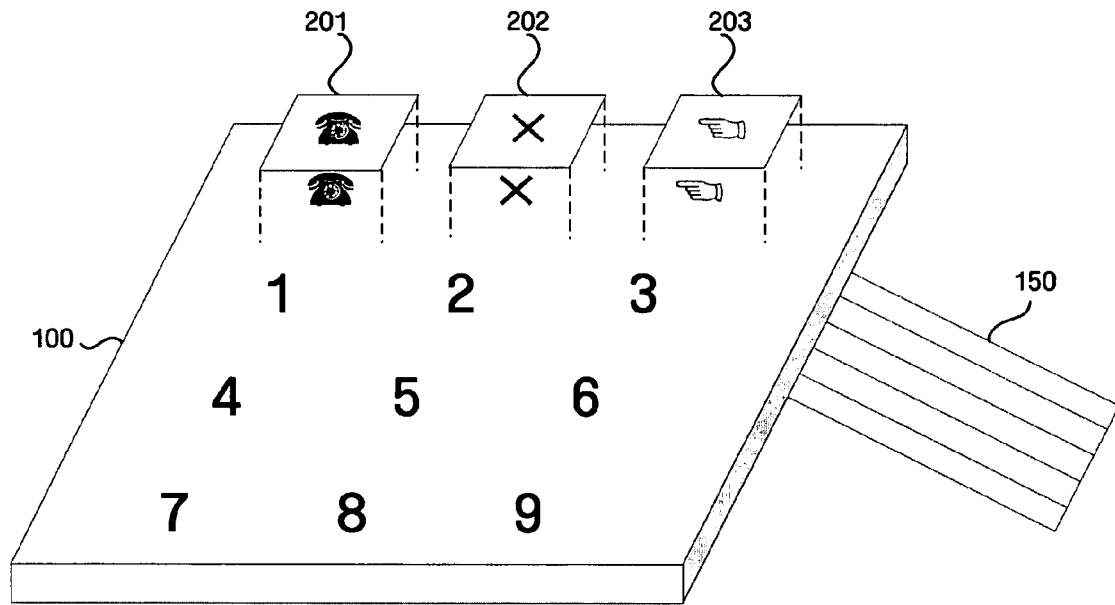


FIG.3B

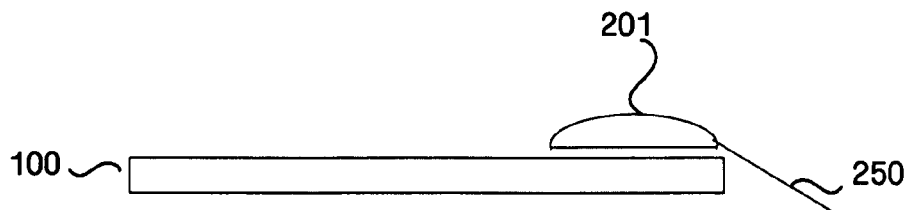


FIG.3C

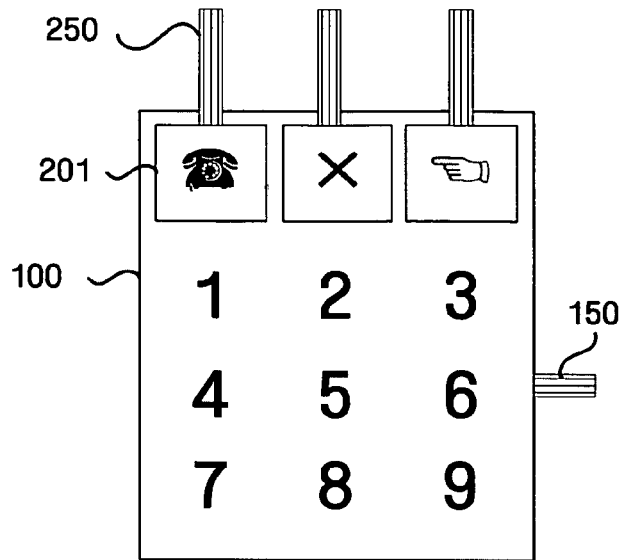


FIG.4A

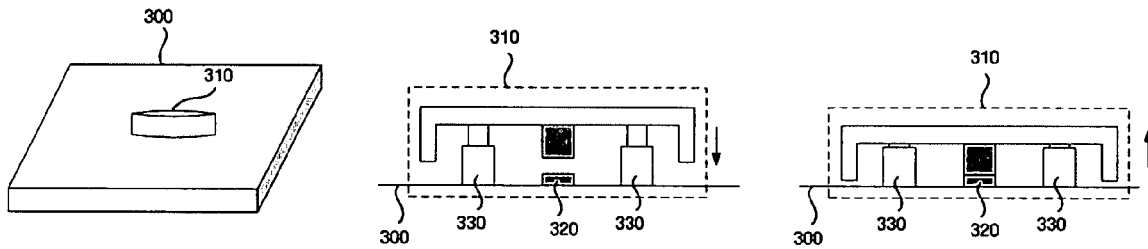
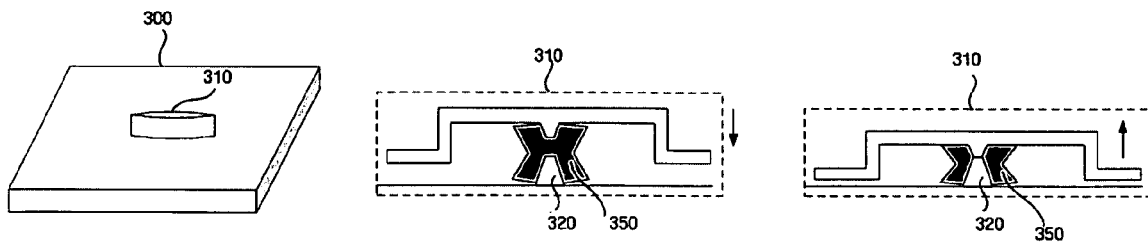


FIG.4B



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