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Ye et al.

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(54) **3D POINTING DEVICE AND METHOD FOR COMPENSATING MOVEMENT THEREOF**

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Related U.S. Application Data

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(51) **Int. Cl.**
G09G 5/00   (2006.01)

(52) **U.S. Cl.**
USPC **345/156**

(58) **Field of Classification Search** .... None
See application file for complete search history.

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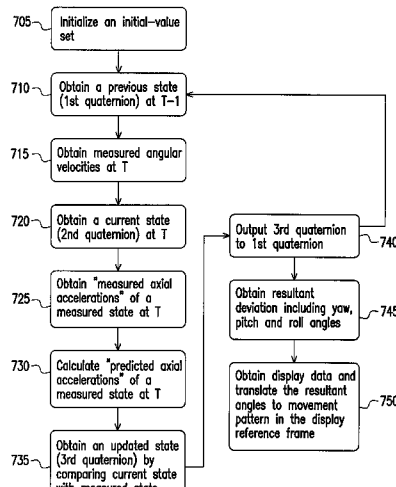*Primary Examiner* — William Boddie
Assistant Examiner — Bryan E Earles
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(57)   **ABSTRACT**

A three-dimensional (3D) pointing device capable of accurately outputting a deviation including yaw, pitch and roll angles in a 3D reference frame and preferably in an absolute manner is provided. Said 3D pointing device comprises a six-axis motion sensor module including a rotation sensor and an accelerometer, and a processing and transmitting module. The six-axis motion sensor module generates a first signal set comprising angular velocities and a second signal set comprising axial accelerations associated with said movements and rotations of the 3D pointing device in the 3D reference frame. The processing and transmitting module utilizes a comparison method to compare the first signal set with the second signal set to obtain an updated state of the six-axis motion sensor module based on a current state and a measured state thereof in order to output the resulting deviation in the 3D reference frame and preferably in an absolute manner.
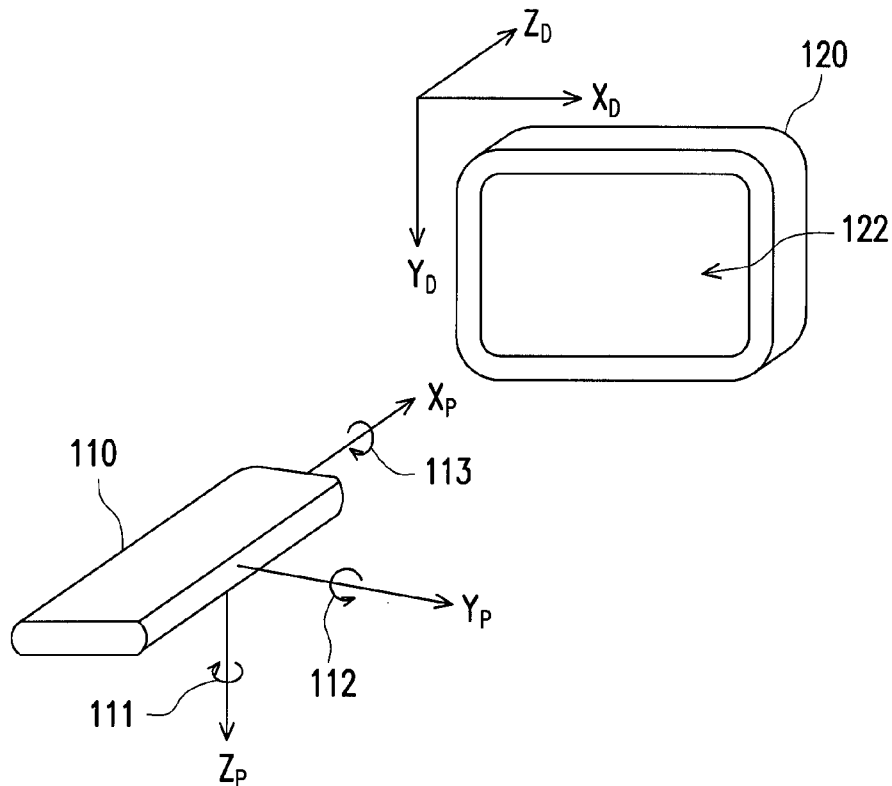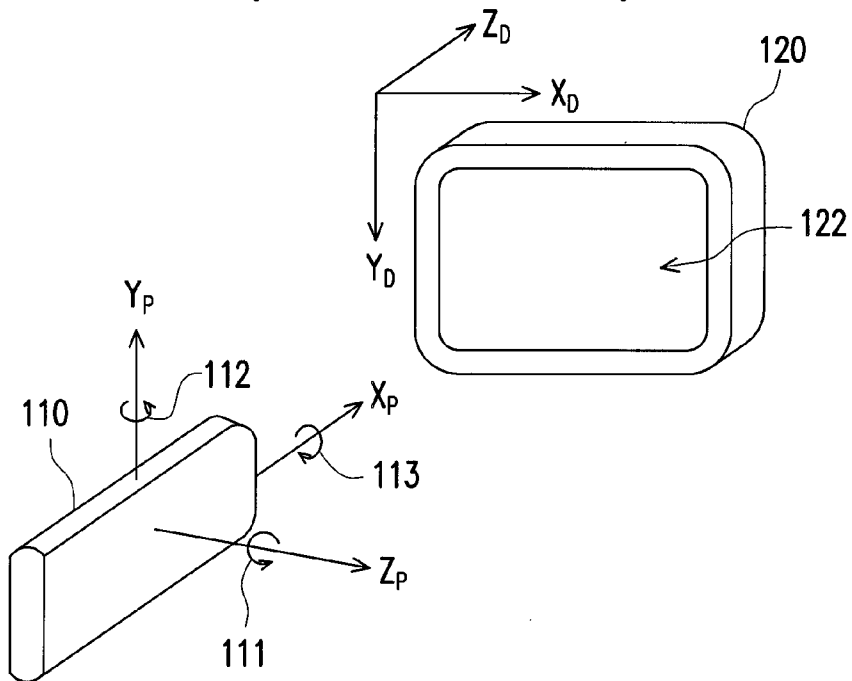
19 Claims, 7 Drawing Sheets
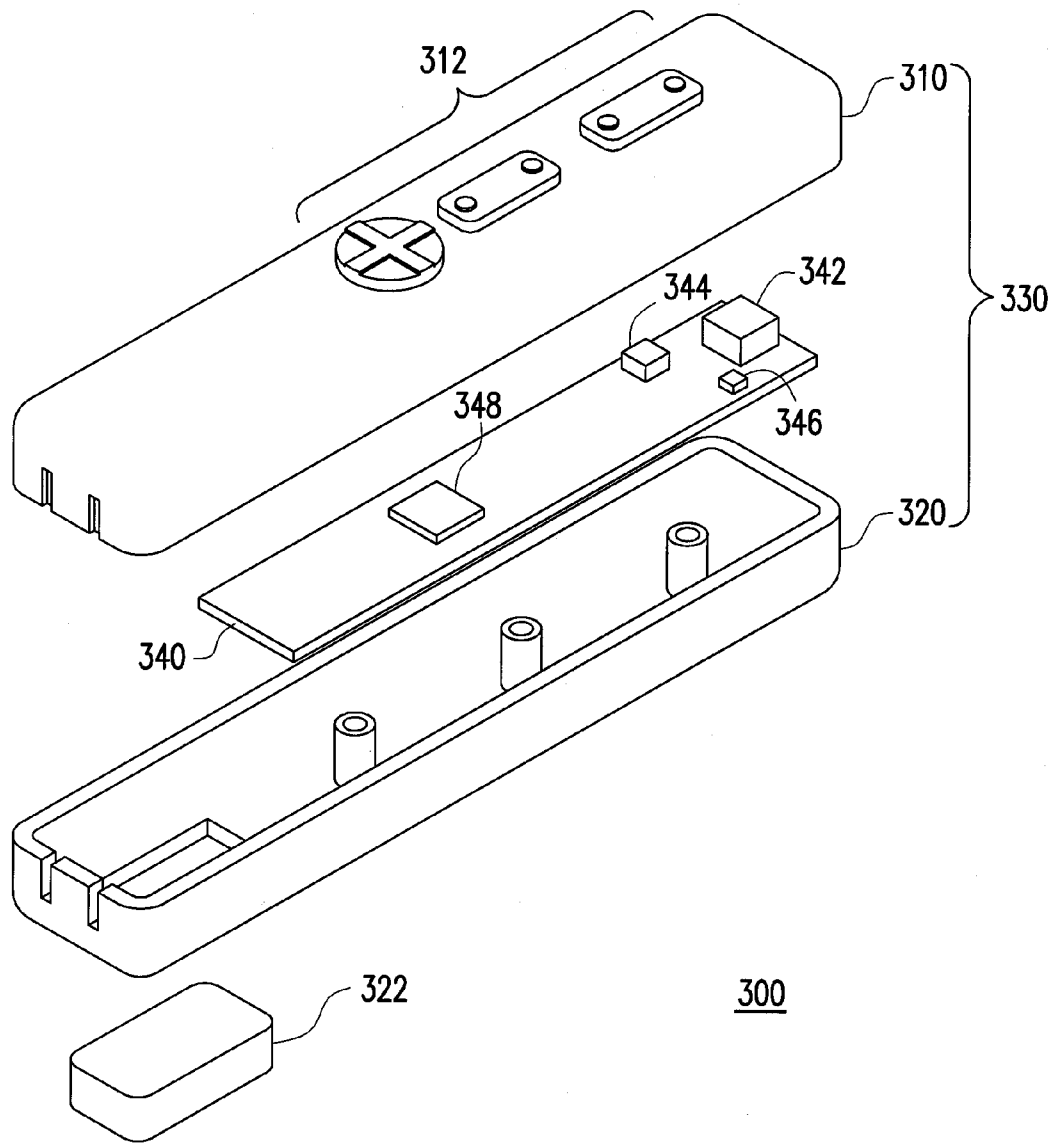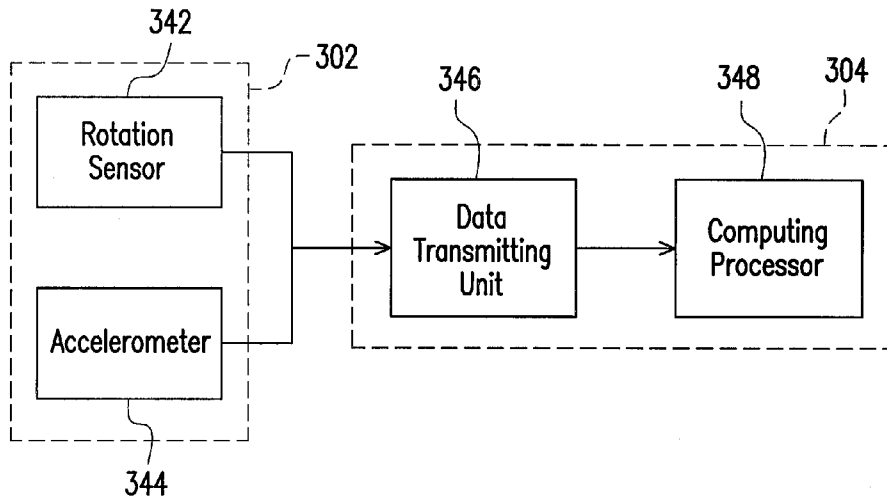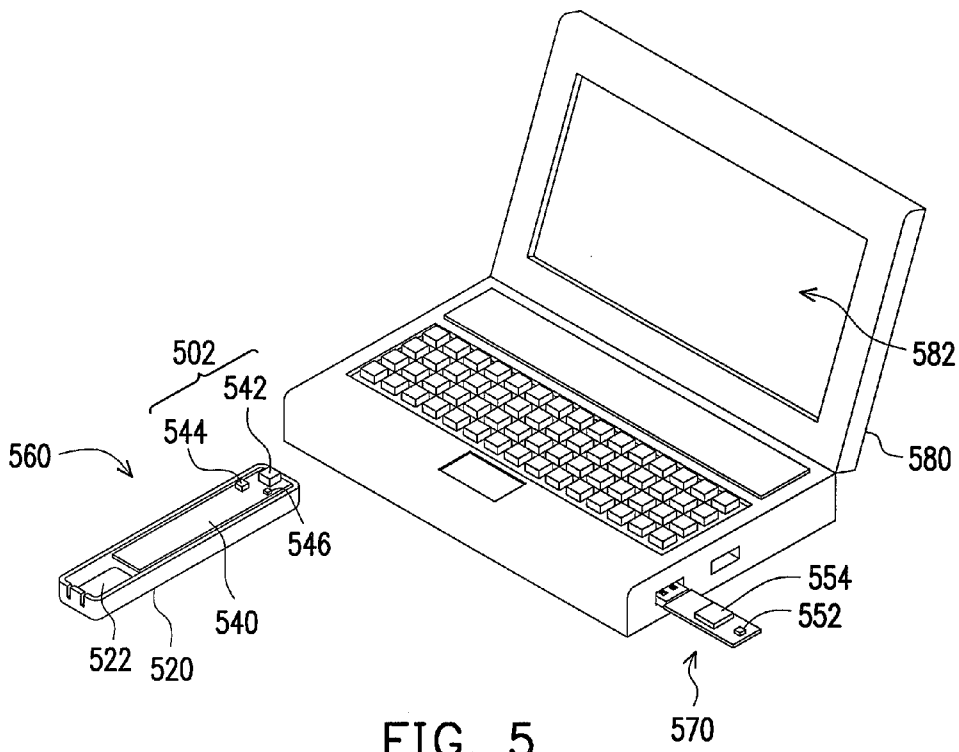
FIG. 1 (RELATED ART)

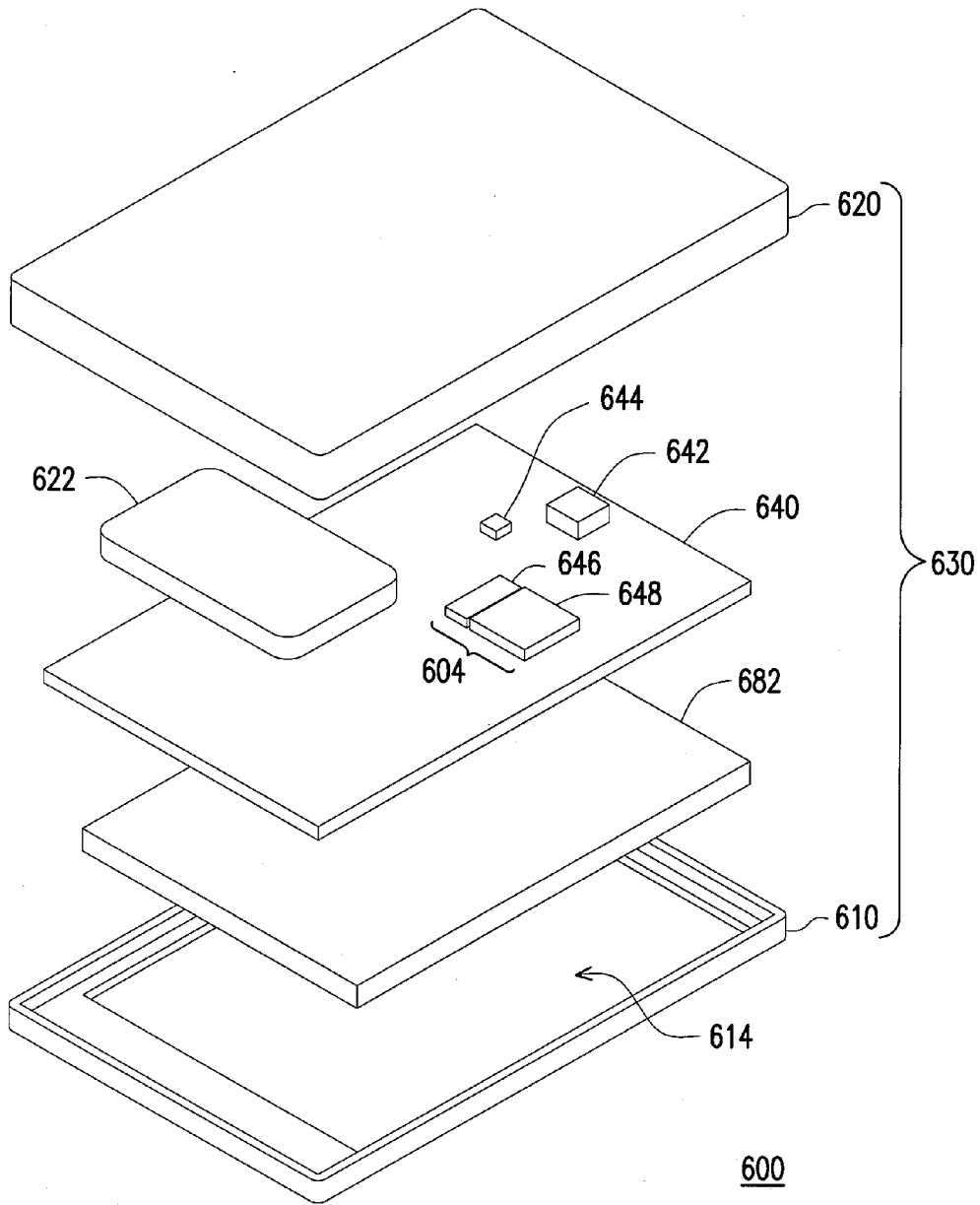FIG. 2 (RELATED ART)

FIG. 3

FIG. 4

FIG. 5

FIG. 6

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