

Applicant: Kouji TSURUSAKI
Application No.: Not Yet Known

IN THE SPECIFICATION

Please amend the following paragraphs as illustrated.

[0003] The present invention relates to an electronic device and a ~~handheld~~ portable terminal provided ~~therewith~~ with the same.

[0006] An electronic equipment to which such a tactile transmission technique is applied includes a vibrating body provided on a touch panel. The electronic equipment can transmit various tactile senses to the user by causing flexural vibration of the touch panel in the vertical direction according to expansion and contraction motions of the vibrating body. The electronic equipment to which such a tactile transmission technique is applied is mainly provided in a ~~handheld~~ portable terminal; therefore, dust-proofing and water-proofing are necessary.

[0009] The present invention relates to an electronic device capable of adequately transmitting tactile senses to a user while ensuring certain dustproof performance and waterproof performance, and a ~~handheld~~ portable terminal provided ~~therewith~~ with the same.

[0010] ~~One aspect in an~~ An electronic device according to one aspect of the present invention comprises: a detecting unit that detects an input position; a first housing

including a base disposed opposite the detecting unit and a frame body positioned on the base so as to surround the detecting unit in plan view; an operation unit positioned at a front surface side of the detecting unit so as to cover the detecting unit in plan view; a vibrating body provided to the operation unit; and a flexible portion provided over a whole circumference of the frame body and supporting the operation unit.

[0011] ~~One aspect in a handheld~~ A portable terminal according to another aspect of the present invention comprises the electronic device according to the present invention in a second housing.

[0013] ~~[FIG. 1] It~~ FIG. 1 is a plan view illustrating an overall configuration of an electronic device according to a first embodiment of the present invention.

[0014] ~~[FIG. 2] It~~ FIG. 2 is a plan view illustrating an overall configuration of the electronic device illustrated in FIG. 1, when the electronic device is viewed from above while an operation unit is omitted.

[0015] ~~[FIG. 3] It~~ FIG. 3 is a cross-sectional view taken along a cutting-plane line I-I illustrated in FIG. 1.

[0016] ~~FIG. 4~~ ~~It~~ FIG. 4 is a cross-sectional view taken along a cutting-plane line II-II illustrated in FIG. 1.

[0017] ~~FIG. 5~~ ~~It~~ FIG. 5 is a cross-sectional view taken along a cutting-plane line III-III illustrated in FIG. 1.

[0018] ~~FIG. 6~~ ~~It~~ FIG. 6 is a diagram illustrating a state in which the operation unit and a touch panel are curved downward and a flexible portion is deflected upward.

[0019] ~~FIG. 7~~ ~~It~~ FIG. 7 is a diagram illustrating a state in which the operation unit and the touch panel are curved upward and the flexible portion is deflected downward.

[0020] ~~FIG. 8~~ ~~It~~ FIG. 8 is a flowchart illustrating an operation example of the electronic device.

[0021] ~~FIG. 9~~ ~~It~~ FIG. 9 is a plan view illustrating an overall configuration of an electronic device according to a second embodiment of the present invention.

[0022] ~~[FIG. 10]~~ ~~It~~ FIG. 10 is a plan view illustrating an overall configuration of the electronic device illustrated in FIG. 9, when the electronic device is viewed from above while the operation unit is omitted.

[0023] ~~[FIG. 11]~~ ~~It~~ FIG. 11 is a plan view illustrating an overall configuration of an electronic device according to a third embodiment of the present invention.

[0024] ~~[FIG. 12]~~ ~~It~~ FIG. 12 is a cross-sectional view taken along a cutting-plane line III-III illustrated in FIG. 11.

[0025] ~~[FIG. 13]~~ ~~It~~ FIG. 13 is a plan view illustrating an overall configuration of an electronic device according to a fourth embodiment of the present invention.

[0026] ~~[FIG. 14]~~ ~~It~~ FIG. 14 is a cross-sectional view taken along a cutting-plane line IV-IV illustrated in FIG. 13.

[0027] ~~[FIG. 15]~~ ~~It~~ FIG. 15 is an enlarged view of a supporting body.

[0028] ~~[FIG. 16]~~ ~~It~~ FIG. 16 is a plan view illustrating an overall configuration of an electronic device according to a fourth embodiment of the present invention.

[0029] ~~FIG. 17~~ ~~It~~ FIG. 17 is a cross-sectional view taken along a cutting-plane line V-V illustrated in FIG. 16.

[0030] ~~FIG. 18~~ ~~It~~ FIG. 18 is a perspective view illustrating an overall configuration of a handheld terminal.

[0032] Hereinafter, embodiments of the present invention will be described with reference to the drawings. Note that in the drawings to be referred to hereinafter, primary members necessary to describe the present invention, among components according to an embodiment of the present invention, are illustrated in a simplified manner, for convenience of explanation. Accordingly, an electronic device according to the present invention and a ~~handheld~~ portable terminal provided therewith may include other components that are not illustrated in the drawings to be referred to herein.

[0082] FIG. 18 is a perspective view illustrating an overall configuration of a ~~handheld~~ portable terminal P1 according to a sixth embodiment. As illustrated in FIG. 18, the ~~handheld~~ portable terminal P1 is, for example, a terminal, such as a mobile phone, a smartphone, or a PDA, and includes the electronic equipment X1 explained in the first embodiment, a voice input unit 101, a voice output unit 102, a key input unit 103, and a second housing 104.

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[0084] In addition, the ~~handheld~~ portable terminal P1 may include a digital camera function unit, a tuner for one-segment broadcasting, a short-distance wireless communication unit, such as an infrared communication function unit, and various interfaces, depending on a required function. However, detailed illustration and explanation of the units are omitted.

[0085] The ~~handheld~~ portable terminal P1 includes the electronic equipment X1; therefore, it is possible to adequately transmit tactile senses to a user while ensuring certain dustproof performance and waterproof performance.

[0086] An example has been explained above in which the ~~handheld~~ portable terminal P1 includes the voice input unit 101; however, the present invention is not limited thereto. Specifically, the ~~handheld~~ portable terminal P1 does not necessarily have to include the voice input unit 101.

[0087] Furthermore, while an example has been explained above in which the ~~handheld~~ portable terminal P1 includes the electronic equipment X1, any of the electronic equipments X2 to X5 may be employed instead of the electronic equipment X1. Moreover, it may be possible to employ a ~~handheld~~ portable terminal that includes any of the electronic equipments X2 to X5. The above embodiments may be combined as needed.

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[0089] ~~EXPLANATIONS OF LETTERS OR NUMERALS~~ REFERENCE SIGNS
LIST

[0091] P1 ~~HANDHELD~~ PORTABLE TERMINAL

Please change the title to:

ELECTRONIC DEVICE AND PORTABLE
TERMINAL PROVIDED WITH SAME