

Appeal decision

Appeal No. 2017-2651

Kyoto, Japan Appellant	KYOCERA CORPORATION
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The case of appeal against the examiner's decision of refusal of Japanese Patent Application No. 2013-246330, entitled "ELECTRONIC DEVICE", [the application published on Jun. 8, 2015, Japanese Unexamined Patent Application Publication No. 2015-106165] has resulted in the following appeal decision:

Conclusion

The appeal of the case was groundless.

Reason

No. 1 History of the procedures

The present application is an application filed on Nov. 28, 2013, reasons for refusal were notified as of Sep. 6, 2016, a written opinion was submitted on Nov. 11, 2016, a decision of refusal was made as of Nov. 25, 2016, and an appeal was demanded against this on Feb. 23, 2017. After that, reasons for refusal were notified as of Mar. 22, 2018 by the body, an amendment was made as of May 21, 2018, reasons for refusal (hereinafter, referred to as "Reasons for refusal by the body") were notified as of May 29, 2018 by the body further, and a written opinion was submitted on Aug. 1, 2018.

No. 2 The Invention

The invention according to Claim 1 of the present application (hereinafter, referred to as "the Invention") is as follows as specified by the matters described in Claim 1 of the scope of claims of the written amendment as of May 21, 2018.

"[Claim 1]

An electronic device including a touch sensor on a front surface and a touch sensor on a back surface, comprising:

- a control unit including two control modes, the control modes being a scroll mode to scroll a currently displayed screen upon detecting a slide operation on the touch sensor on the back surface and a pointer mode to move a currently displayed pointer upon detecting an operation on the touch sensor on the back surface, and configured to switch the control modes from the scroll mode to the pointer mode upon detecting a switching operation on the touch sensor on the back surface during the scroll mode;

- a pressing force detector to detect pressing force against the touch sensor on the back surface; and

a tactual sense presentation unit to present a tactual sense to the touch sensor on the back surface by generating vibration according to a predetermined vibration pattern, wherein

the control unit presents a tactual sense to the touch sensor on the back surface by the tactual sense presentation unit, and switches the control modes from the scroll mode to the pointer mode upon data based on pressing force detected by the pressing force detector satisfying a predetermined standard."

No. 3 Outline of the notified reasons for refusal

The outline of Reasons for refusal by the body is as follows.

The invention according to Claim 1 of the present application is an invention that could have been invented with ease before the filing date of the application by a person having usual knowledge in the technical field of the Invention (hereinafter, referred to as "a person skilled in the art") based on the inventions described in the following publications distributed in Japan or abroad before the application was filed, or inventions available to the public through electric communication lines, and, therefore, the applicant should not be granted a patent in accordance with the provisions of Article 29(2) of the Patent Act.

Note

1. U.S. patent publication No. 2013/0007653
2. Japanese Unexamined Patent Application Publication No. 2010-146513

No. 4 Described matters in the Cited Documents and Cited Invention

1. Cited Document 1

(1) Described matters

In U.S. patent publication No. 2013/0007653 cited in Reasons for refusal by the body (hereinafter, referred to as "Cited Document 1"), there are described the following technical matters. Note that the underlines are given by the body.

"[0021] FIG. 1 is a front perspective view of an electronic device 100 according to an exemplary embodiment. The electronic device 100 may be, for example, a handheld wireless device, such as a cellular phone, a Personal Digital Assistant (PDA), a smart phone, a tablet, or a laptop computer, a multimedia player, an MP3 player, a digital broadcast receiver, a remote controller, or any other electronic device."

"[0023] The device 100 further includes a touch screen display (or first touch sensitive surface) 122 positioned on the front housing face 120. The front touch screen display 122 is integrated into the front housing face 120 and is configured as both a display screen and a manual user interface."

"[0024] FIG. 2 is a rear view of the device 100 of FIG. 1 according to an exemplary embodiment. FIG. 2 particularly illustrates a rear (reverse or second) housing face 140 of the housing 110 that is substantially opposite the front housing face 120 of FIG. 1. A rear touch pad 142 is positioned on the rear housing face 140 and is configured as another user interface."

"[0032] FIG. 4 is an exemplary flow diagram 400 illustrating a method of controlling

the electronic device 100 according to an exemplary embodiment.

[0033] In step 410, in a default touch pad mode, the controller 300 may also enable limited control of the device 100 based on inputs at the rear touch pad 142. As described below, in the default mode, the rear touch pad 142 is typically used for scrolling. As noted above, the inputs may be formed from any type of gesture or combination of gestures, including single-and multi-finger glides and taps."

"[0038] Returning to FIG. 4, in step 420, the device 100 monitors inputs received from the user for a first predetermined input. The first predetermined input may be any suitable input, such as a "figure 8" input on the front touch screen display 122 or the rear touch pad 142, a double tap input on the rear touch pad, or a press-and-hold input on the rear touch pad 142 that indicates a user's intention to modify the operating mode.

[0039] If, however, the first predetermined input is detected in step 420, the flow diagram 400 proceeds to step 430 and the device 100 operates in a second touch pad mode, particularly in a navigation touch pad mode."

"[0041] If the navigation mode is not canceled in step 450, the flow diagram 400 proceeds to step 460 in which the device 100 operates in a navigation mode."

"[0042] As such, in substep 461, a first type of touch input (e.g., a finger glide or movement) on the rear touch pad 142 functions to move the displayed pointer icon about a static or near-static image displayed on the front touch screen display 122."

"[0045] After one of the touch inputs in step 460, the flow diagram 400 proceeds to step 470 in which the device 100 determines if the intended task in the navigation mode 460 is completed. It may be assumed that the task of the user is completed with the selection and the flow diagram 400 returns to step 410 such that the device 100 further operates in the default mode."

(2) Cited Invention

According to the above-mentioned described matters (in particular, refer to the underlined portions), the following are recognized.

Cited Document 1 describes the electronic device 100 such as a cellular phone (paragraph 0021), and the electronic device 100 has the front touch screen display 122 (paragraph 0023) and the rear touch pad 142 (paragraph 0024).

Referring to FIG. 4 indicating a flow chart of the control method of the above-mentioned electronic device 100 and according to statements corresponding to this chart, the electronic device 100 has, as control by the controller 300, a default touch pad mode 410 (paragraph 0033) and a navigation mode 460 (paragraph 0041).

In the default touch pad mode 410, the rear touch pad 142 is typically used for scrolling by a gesture to make a finger slide (paragraph 0033).

In the navigation mode 460, touch input to the rear touch pad 142 works as a function to move a displayed pointer icon, for example (paragraph 0042).

Furthermore, when a press-and-hold input is carried out to the rear touch pad 142 by a user, control to switch from the default touch pad mode 410 to the navigation mode 460 is performed (paragraphs 0038, 0039), and, after that, when it is determined

that the task of the navigation mode 460 is completed, return to the default touch pad mode 410 (paragraph 0045) is performed.

According to the above, it is recognized that there is described in Cited Document 1 the following invention related to the electronic device 100 (hereinafter, referred to as "Cited Invention").

[Cited Invention]

"The electronic device 100 such as a cellular phone comprising the front touch screen display 122 and the rear touch pad 142, comprising:

the default touch pad mode 410 to perform scrolling by a gesture to make a finger slide on the rear touch pad 142, and the navigation mode 460 to move a displayed pointer icon by touch input to the rear touch pad 142; and

the controller 300 configured to perform control to switch from the default touch pad mode 410 to the navigation mode 460 when a press-and-hold input is made to the rear touch pad 142, and, after that, return to the default touch pad mode 410 when it is determined that the task of the navigation mode 460 is completed."

2. Cited Document 2

(1) Described matters

In Japanese Unexamined Patent Application Publication No. 2010-146513 (hereinafter, referred to as "Cited Document 2") cited in Reasons for refusal by the body, there are described the following technical matters. Note that the underlines are given by the body.

"[0001]

The present invention relates to an input device that includes an input unit to receive input by pressing force.

[Background Art]

[0002]

In recent years, as an input unit to receive an input operation by a user in information equipment, a home electric appliance, and the like, an input device having a plate-shaped input unit to receive input by pressing force, such as a touch panel and a touch switch, is widely used. Although such input unit includes ones of various methods such as a resistive film method, an electrostatic capacity method, and the like, all of these are methods to receive input according to pressing force by a finger or a stylus pen, and, unlike push-button switches, the input unit itself is not displaced even when being pressed.

[0003]

For this reason, an operator cannot obtain feedback at the time of receipt of input according to pressing force, and, therefore, there is a case where, in an input device provided with a touch panel, an input mistake due to mis-operation such as pressing the same position over and over again is easily caused, for example, giving stress to the operator.

[0004]

As a method that can prevent such input mistake, there is known one in which an input operation can be confirmed by a sense of hearing or a sense of vision by, for example, making a sound upon receiving a pressing force input, or changing a display

state, such as changing a display color of an object for input such as an input button whose image is being displayed on a display unit corresponding to the relevant pressing force area.

[0005]

However, in the case of a feedback method that acts on the sense of hearing, it leads to difficulty in confirming in a noisy environment, and, in conjunction with this, when a piece of equipment being used is in a sound muting state by a silent mode and the like, this does not work. In addition, in the case of a feedback method that acts on a sense of vision, when the size of an object for input being displayed on a display unit is small, in particular in the case of finger input, there is a case where confirmation of a change in display state cannot be made because the object for input is hidden beneath the finger.

[0006]

There is also proposed a feedback method in which, without relying on a sense of hearing and a sense of vision, a touch panel is made to vibrate upon receiving an input by the touch panel, generating a sense of touch on a fingertip of an operator (for example, refer to Patent Documents 1 and 2).

[0007]

[Patent Document 1] Japanese Unexamined Patent Application Publication No. 2003-288158

[Patent Document 2] Japanese Unexamined Patent Application Publication No. 2008-130055

[Disclosure of The Invention]

[Problem to be solved by the invention]

[0008]

However, the technologies disclosed in the above-mentioned Patent Documents 1 and 2 are ones that merely generate a sense of touch on a fingertip of an operator by vibration. In other words, these are ones that present a sense of touch like "throbbing" to a fingertip of an operator in contact with a touch panel by making the touch panel vibrate, and thus these are not ones that present real click feeling like "click" felt when a push-button switch having a metal dome is operated, for example.

[0009]

For this reason, when, for example, an input key of information equipment, such as a portable terminal such as a cellular phone, a calculator, a ticket-vending machine, or the like, or an input key and the like of an operation unit in a home electric appliance, such as a microwave oven or a television, is constituted by a touch panel, and the above feedback technology is applied to the touch panel, an operator will have a sense of strangeness.

[0010]

Therefore, an object of the present invention having been made in the light of such point is to provide an input device that can present, when an operator operates an input unit of a pressing force type, realistic click feeling similar to that felt when a push-button switch is operated.

[Means for solving the problem]

[0011]

The invention of an input device according to Claim 1 to achieve the above-mentioned purpose includes

an input unit to receive an input by pressing force,
a load detecting unit to detect a pressing load to the input unit,
a vibration unit to vibrate the input unit, and
a control unit to control, when a pressing load detected by the load detecting unit satisfies a predetermined standard for receiving input to the input unit, driving of the vibration unit in such a way that click feeling is presented to a pressing object pressing the input unit, and after having received input to the input unit, when a pressing load detected by the load detecting unit satisfies a predetermined standard, control driving of the vibration unit in such a way that click feeling is presented to the pressing object.

[Advantage of the Invention]

[0012]

According to the present invention, when a pressing load to an input unit satisfies a predetermined standard for receiving input, the input unit is vibrated, and, after that, when a pressing load to the input unit satisfies a predetermined standard, the input unit is vibrated. Therefore, it becomes possible to present real click feeling to an operator similar to that felt when a push-button switch is operated."

No. 5 Comparison

The Invention and Cited Invention will be compared.

"The electronic device 100 such as a cellular phone comprising the front touch screen display 122 and the rear touch pad 142" of Cited Invention corresponds to "An electronic device including a touch sensor on a front surface and a touch sensor on a back surface" of the Invention.

"The default touch pad mode 410 to perform scrolling by a gesture to make a finger slide on the rear touch pad 142" and "the navigation mode 460 to move a displayed pointer icon by touch input to the rear touch pad 142" of Cited Invention correspond to "a scroll mode to scroll a currently displayed screen upon detecting a slide operation on the touch sensor on the back surface" and "a pointer mode to move a currently displayed pointer upon detecting an operation on the touch sensor on the back surface" of the Invention, respectively, and the two are identical in a point of "comprising: two control modes, the control modes being a scroll mode to scroll a currently displayed screen upon detecting a slide operation on the touch sensor on the back surface and a pointer mode to move a currently displayed pointer upon detecting an operation on the touch sensor on the back surface".

The control "to switch from the default touch pad mode 410 to the navigation mode 460 when a press-and-hold input is made to the rear touch pad 142" performed by "the controller 300" of Cited Invention corresponds to the control operation of "a control unit configured to switch the control modes from the scroll mode to the pointer mode upon detecting a switching operation on the touch sensor on the back surface during the scroll mode" of the Invention, and the two are identical in a point including "a control unit configured to switch the control modes from the scroll mode to the pointer mode upon detecting a switching operation on the touch sensor on the back surface during the scroll mode".

In addition, in order for "the controller 300" of Cited Invention to perform the above control, it is obvious that a detecting unit to detect that a press-and-hold input is made to the rear touch pad 142 is mandatory, and "press" means "pressing force".

Therefore, the Invention and Cited Invention are identical in a point of including "a pressing force detector to detect pressing force against the touch sensor on the back surface".

Accordingly, it can be said that, between the Invention and Cited Invention, there are the following corresponding feature and different feature.

[Corresponding feature]

An electronic device including a touch sensor on a front surface and a touch sensor on a back surface, comprising:

a control unit including two control modes, the control modes being a scroll mode to scroll a currently displayed screen upon detecting a slide operation on the touch sensor on the back surface and a pointer mode to move a currently displayed pointer upon detecting an operation on the touch sensor on the back surface, and configured to switch the control modes from the scroll mode to the pointer mode upon detecting a switching operation on the touch sensor on the back surface during the scroll mode; and

a pressing force detector to detect pressing force against the touch sensor on the back surface.

[Different Feature]

A point that the Invention is an invention "comprising: a tactual sense presentation unit to present a tactual sense to the touch sensor on the back surface by generating vibration according to a predetermined vibration pattern, wherein

the control unit presents a tactual sense to the touch sensor on the back surface by the tactual sense presentation unit, and switches the control modes from the scroll mode to the pointer mode upon data based on pressing force detected by the pressing force detector satisfying a predetermined standard", whereas, Cited Invention is an invention in which, although switching from the default touch pad mode 410 to the navigation mode 460 is performed when a press-and-hold input is made to the rear touch pad 142, the rear touch pad 142 does not have "a tactual sense presentation unit", and thus Cited Invention is not an invention in which "the control unit presents a tactual sense to the touch sensor on the back surface by the tactual sense presentation unit, and switches the control modes from the scroll mode to the pointer mode upon data based on pressing force detected by the pressing force detector satisfying a predetermined standard".

No. 6 Judgment

The above-mentioned different feature is examined.

Cited Invention is an invention in which switching of modes is performed when a press-and-hold input is made to the rear touch pad 142, and, for this reason, as described above, it can be said that a detecting unit to detect that a press-and-hold input has been made to the rear touch pad 142 is provided therein. To detect a press-and-hold input having been made by the detecting unit is, in other words, to satisfy a condition ("predetermined standard" in the Invention) that output data ("data based on pressing force" in the Invention) of the detecting unit to which operation input has been performed is data indicating a press-and-hold input, and, therefore, it can be said that this corresponds to "upon data based on pressing force detected by the pressing force

detector satisfying a predetermined standard" of the Invention.

Therefore, it can be said that the Invention and Cited Invention are common in a point of "switches the control modes from the scroll mode to the pointer mode upon data based on pressing force detected by the pressing force detector satisfying a predetermined standard".

On the other hand, according to the statements of paragraphs [0001]-[0012] of Cited Document 2 (in particular, the statements of the underlined portions), there is described an input device provided in information equipment, such as a cellular phone, and including an input unit to receive an input by pressing force, in which the input device includes a vibration unit to vibrate the input unit, and performs feedback to the input by controlling, when a detected pressing load satisfies a predetermined standard for receiving an input to the input unit, driving of the vibration unit in such a way that a tactual sense is presented to a pressing object pressing the input unit.

In Cited Invention that performs a press-and-hold input, it is obvious for a person skilled in the art that feedback to an input is useful as with the input device described in Cited Document 2, and there is no cause to prevent doing so. Therefore, it can be said that, in Cited Invention, there is a motive to apply the technology of the input device described in Cited Document 2.

Therefore, it could be conceived of with ease by a person skilled in the art to perform, by applying the technology described in Cited Document 2 to Cited Invention, feedback to an input by: including a vibration unit to vibrate the rear touch pad 142 that is an input unit; and controlling driving of the vibration unit in such a way that a tactual sense is presented to a finger on the rear touch pad 142 when a press-and-hold input is carried out to the rear touch pad 142, and thus the constitution that can be obtained in that manner is nothing but the constitution of the Invention concerning the aforementioned different feature.

Accordingly, the Invention is an invention that could have been invented by a person skilled in the art with ease based on Cited Invention and the technology matters described in Cited Document 2.

No. 7 Closing

As described above, the appellant should not be granted a patent for the Invention in accordance with the provisions of Article 29(2) of the Patent Act.

Accordingly, the present application should be rejected.

Therefore, the appeal decision shall be made as described in the conclusion.

Dec. 3, 2018

Chief administrative judge: YOSHIDA, Koichi
Administrative judge: CHIBA, Teruhisa
Administrative judge: YAMADA, Masafumi