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(54) **LOAD REQUIRED TO CANCEL AN INPUT ON A TOUCH SENSOR IS ADJUSTED WHEN THE SLIDE OF A TOUCH OBJECT IS DETECTED**

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CPC *G06F 3/0486* (2013.01); *G06F 3/0414* (2013.01); *G06F 3/0416* (2013.01)

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

(56) **References Cited**

U.S. PATENT DOCUMENTS

2002/0015064 A1* 2/2002 Robotham et al. 345/863
2004/0021643 A1* 2/2004 Hoshino et al. 345/173
2010/0057235 A1* 3/2010 Wang et al. 700/94

FOREIGN PATENT DOCUMENTS

CN   1845043 A   10/2006
JP   2000-200147 A   7/2000
JP   2004070492 A   *   3/2004
(Continued)

OTHER PUBLICATIONS

An Office Action; "Decision of Rejection," issued by the Japanese Patent Office on Nov. 12, 2013, which corresponds to Japanese Patent Application No. 2012-505475 and is related to U.S. Appl. No. 13/635,829; with English concise explanation.
(Continued)

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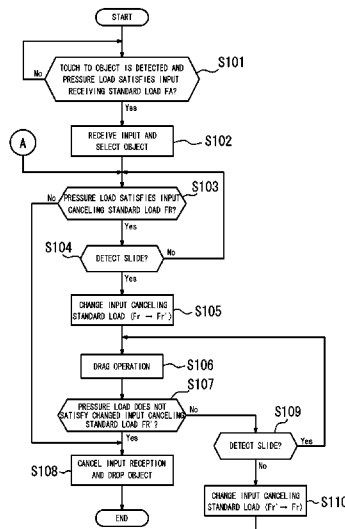*Assistant Examiner* — Kirk Hermann
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(57) **ABSTRACT**

An electronic device for receiving an input based on a pressure load that reduces a risk of ending a drag operation despite a user's intention is provided.

The electronic device includes a touch sensor configured to detect a touch by a touch object, a load detection unit configured to detect a pressure load on a touch face of the touch sensor, and a control unit configured to enter or cancel an input receiving state for receiving an input based on the pressure load detected by the load detection unit. The control unit, in the input receiving state, controls to make a standard load for canceling the input receiving state when a slide of the touch object touching the touch face is detected and a standard load for canceling the input receiving state when the slide of the touch object touching the touch face is not detected different from each other.

4 Claims, 9 Drawing Sheets

(56) **References Cited**

FOREIGN PATENT DOCUMENTS

JP	2005-196810	A		7/2005
JP	2006-039745	A		2/2006
JP	2006-311224	A		11/2006
JP	2007080110	A	*	3/2007

OTHER PUBLICATIONS

An Office Action: "Notice of Reasons for Rejection," issued by the Japanese Patent Office on Aug. 13, 2013, which corresponds to Japanese Patent Application No. 2012-505475 and is related to U.S. Appl. No. 13/635,829; with Concise Explanation.

International Search Report; PCT/JP2011/001077; Apr. 12, 2011.

An Office Action; "Notification of the First Office Action," issued by the State Intellectual Property Office of China on Sep. 25, 2014, which corresponds to Chinese Patent Application No. 201180014549.0 and is related to U.S. Appl. No. 13/635,829; with English translation.
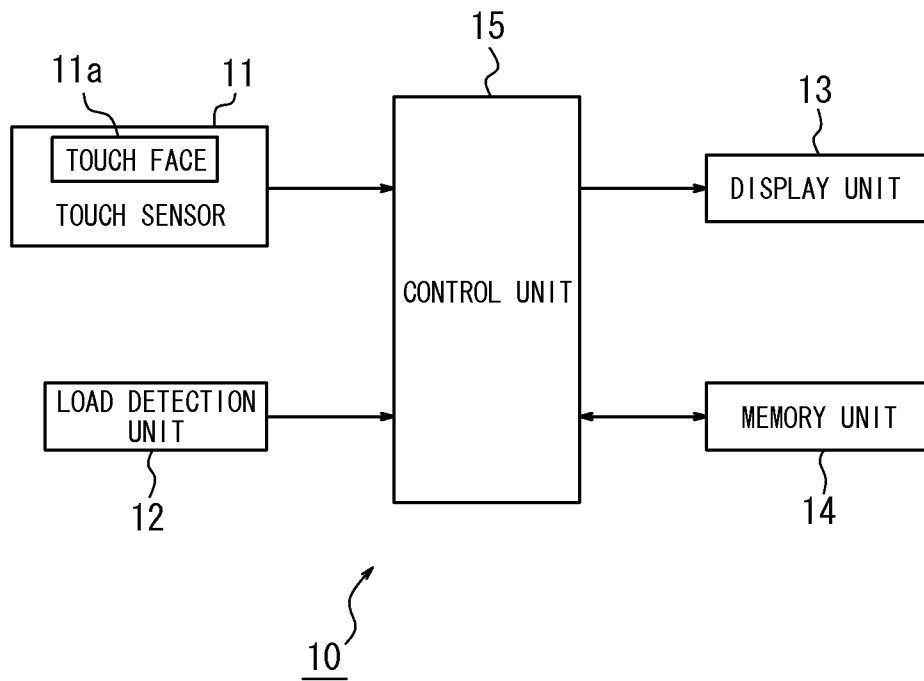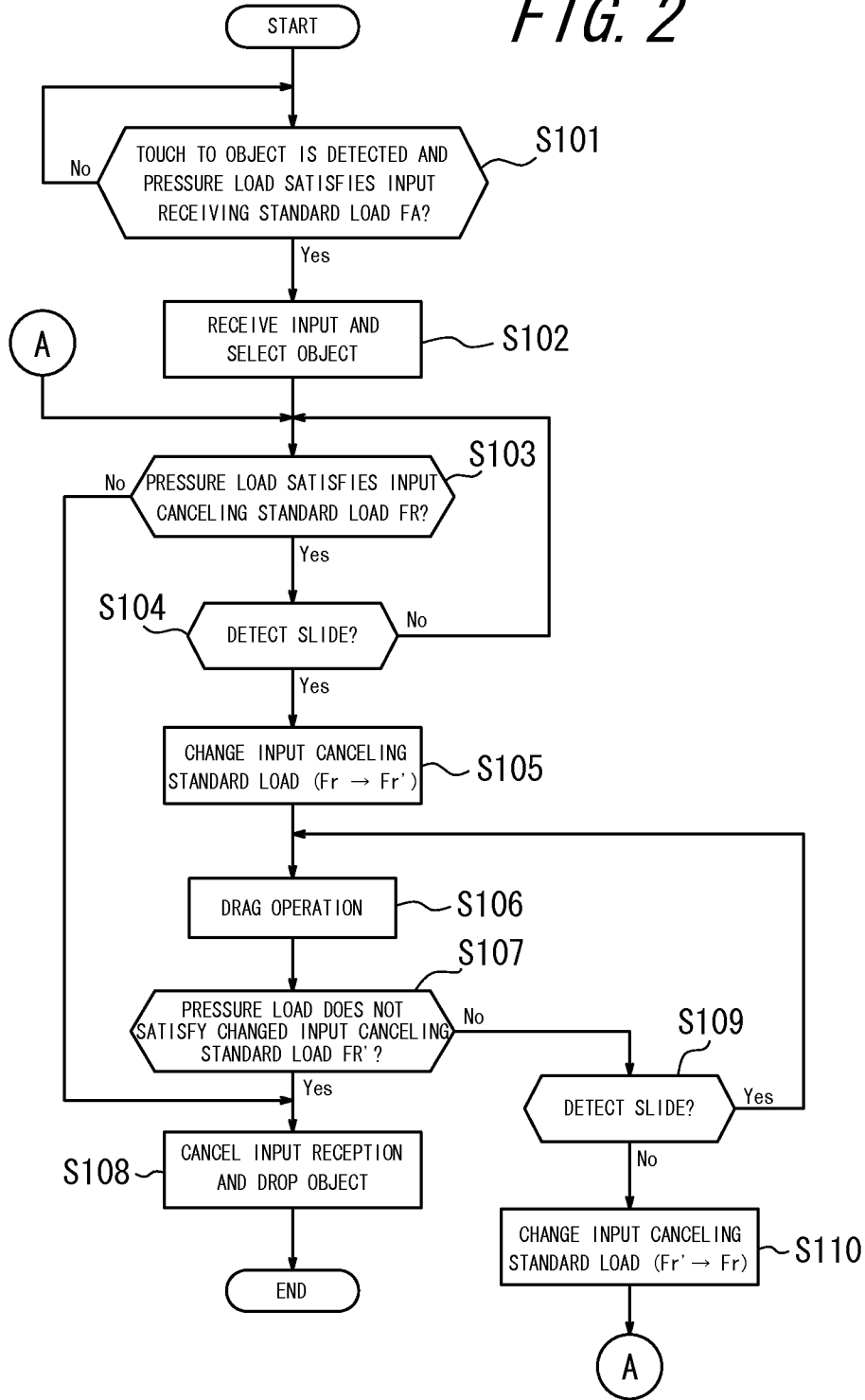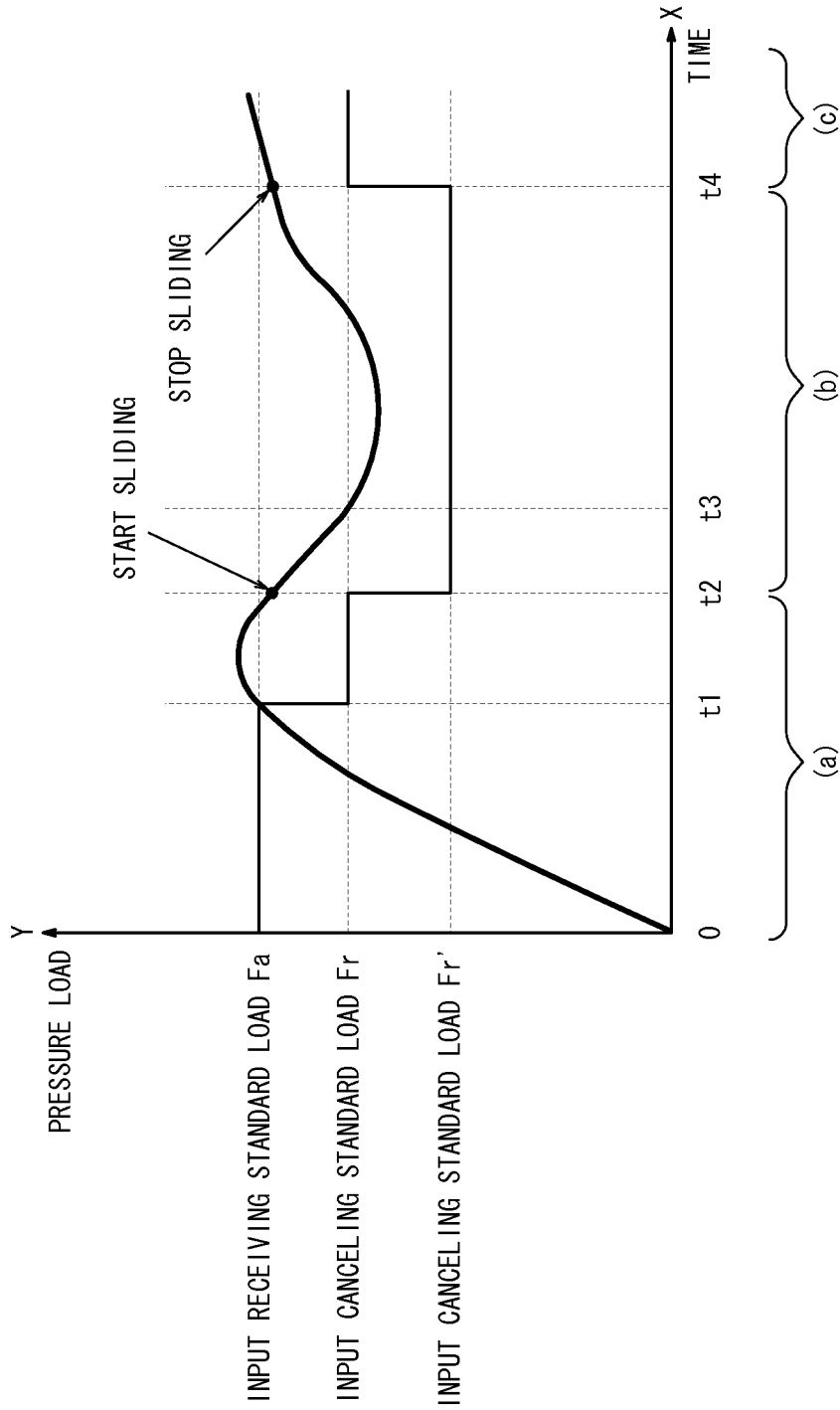
* cited by examiner

FIG. 1

FIG. 2

START

TOUCH TO OBJECT IS DETECTED AND
PRESSURE LOAD SATISFIES INPUT
RECEIVING STANDARD LOAD FA?   S101

No

Yes

RECEIVE INPUT AND
SELECT OBJECT   S102

A

PRESSURE LOAD SATISFIES INPUT
CANCELING STANDARD LOAD FR?   S103

No

Yes

DETECT SLIDE?   S104

No

Yes

CHANGE INPUT CANCELING
STANDARD LOAD (Fr → Fr')   S105

DRAG OPERATION   S106

PRESSURE LOAD DOES NOT
SATISFY CHANGED INPUT CANCELING
STANDARD LOAD FR'?   S107

No

Yes

S109

DETECT SLIDE?

Yes

No

CANCEL INPUT RECEPTION
AND DROP OBJECT   S108

CHANGE INPUT CANCELING
STANDARD LOAD (Fr'→ Fr)   S110

END

A

FIG. 3

DOCKET ALARM

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