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FERENCE & ASSOCIATES LLC
409 BROAD STREET
PITTSBURGH, PA 15143

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MICHAELA ROSE CASE, AARON MICHAEL STEWART, and THOMAS JOHN SLUCHAK

Appeal 2018-004194[1]
Application 13/690,262[2]
Technology Center 2600

Before CARL W. WHITEHEAD JR., JAMES B. ARPIN, and SHARON FENICK, *Administrative Patent Judges*.

ARPIN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) the Examiner's decision rejecting claims 1, 3–10, and 12–19. Final Act. 2. Claims 2 and 11 are canceled. App. Br. Claims App'x. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] In this Decision, we refer to Appellants' Appeal Brief ("App. Br.," filed August 14, 2017) and Reply Brief, ("Reply Br.," filed February 14, 2018); the Final Office Action ("Final Act.," mailed March 13, 2017); the Examiner's Answer ("Ans.," mailed December 14, 2017); and the originally-filed Specification ("Spec.," filed November 30, 2012).

[2] According to Appellants, the real party-in-interest is Lenovo (Singapore) PTE, Ltd. App. Br. 3.

STATEMENT OF THE CASE

Appellants' recited methods, devices, and program products relate to "receiving force input in a z direction with respect to a planar surface of an input device of an information handling device; measuring the force input at the input device; and modifying one or more actions of the information handling device commensurate with the measured force input; wherein the one or more actions are associated with input along the planar surface." Spec. ¶ 3. As noted above, claims 1, 3–10, and 12–19 are pending. Claim 1, directed to method for inputting information to an information handling device, claim 10, directed to information handling devices, and claim18, directed to program products storing computer program code for operating information handling devices, are the independent claims. App. Br. Claims App'x. Claims 3–10 and 19 depend directly or indirectly from claim 1, and claims 12–17 depend directly or indirectly from claim 10. *Id.*

Claim 1, reproduced below, is representative.

1. A method, comprising:

receiving a gesture input at a planar surface of an input device of an information handling device;

determining a force input in a z direction with respect to the gesture input to the planar surface by measuring the force input at the input device;

performing, based upon the gesture input and the force input, one or more gesture input actions; and

modifying an intensity of the one or more gesture input actions of the information handling device, wherein the modifying the intensity of the one or more gesture input actions comprises modifying the intensity commensurate with the measured force input.

Id.; *see* App. Br. 5–7.

REFERENCES

The Examiner relies upon the following prior art in rejecting the pending claims:

Bells *et al.* ("Bells")	US 2011/0018695 A1	Jan. 27, 2011
Son *et al.* ("Son")	US 2012/0105367 A1	May 3, 2012

THE REJECTIONS

Claims 1, 4–10, and 13–19 stand rejected under 35 U.S.C. § 102(b) as anticipated by Bells. Final Act. 3–6. Claims 3 and 12 stand rejected under 35 U.S.C. § 103(a) as rendered obvious over the combined teachings of Bells and Son. *Id.* at 6–7.

Unless otherwise indicated, we adopt the Examiner's findings in the Answer as our own and add any additional findings of fact appearing below for emphasis. We address these rejections below.

ANALYSIS

A. Anticipation By Bells

The Examiner finds that Bells discloses each and every element of claims 1, 4–10, and 13–19. Final Act. 3–6. For the purposes of this Appeal, Appellants argue independent claims 1, 10, and 18 together. App. Br. 14; Reply Br. 16. Appellants argue claim 19 separately, but the rejections of dependent claims 4–9 and 13–17 stand or fall with the rejections of independent claims 1 and 10. App. Br. 14 ("for the purposes of this Appeal only, a claim may be considered to stand or fall with the claim from which it depends.").

1. Independent Claims 1, 10, and 18

Bells's Figure 17 is reproduced below:

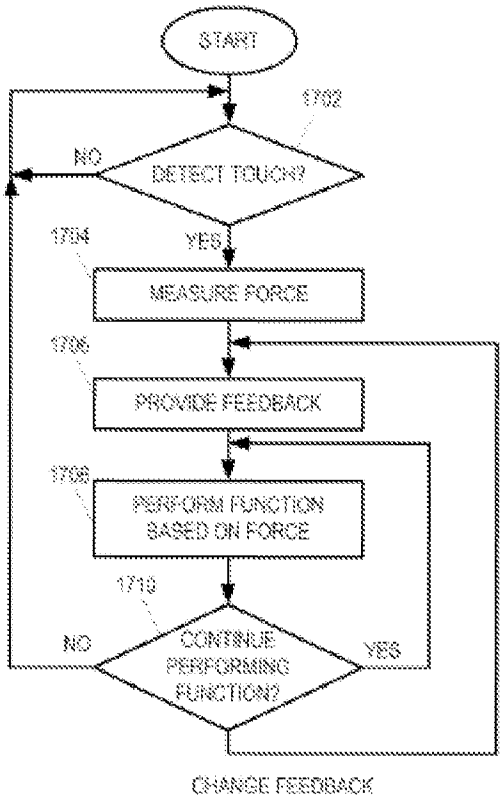

FIG. 17

Figure 17 depicts a flowchart of a method of providing feedback and performing functions based on force of a detected touch on a touch-sensitive display in accordance with the present disclosure. Bells ¶ 7. In particular, referring to Figure 17, the recited step of "receiving a gesture input at a planar surface of an input device of an information handling device" reads on Bells's step 1702 of detecting a touch via one or more force sensors 122 of portable electronic device 100. *Id.* ¶ 42; *see* Final Act. 3. The recited step of "determining a force input in a z direction with respect to the gesture input to the planar surface by measuring the force input at the input device" reads on Bells's step 1704 of measuring the force applied to force

sensors 122. Bells ¶ 42; *see* Final Act. 3. Referring to Bells's Figures 3 and 4, the measured force may be substantially perpendicular to the surface of a screen, i.e., in the z-direction. Bells ¶ 46, Figs. 3, 4; *see* Final Act. 3. Appellants do not contest the mapping of these recited elements on Bells's disclosures. *See* App. Br. 15; Reply Br. 17.

The Examiner further finds that Bells discloses the recited step of "performing, based upon the gesture input and the force input, one or more gesture input actions." Final Act. 3–4. In particular, the Examiner finds that "Bells clearly discloses embodiments in which an amplitude of feedback (such as scrolling, panning and/or zooming) is proportionally adjusted based on different thresholds of force input (see at least paragraphs [0028], [0031], [0032], [0038], [0040]-[0045] and [0051]-[0055])." Ans. 3. Again, Appellants do not contest the mapping of this recited element on Bells's disclosures. App. Br. 16–17 (quoting Bells ¶ 44 (discussing step 1708 ("Perform Function Based on Force") of Bells's Fig. 17)).

The Examiner also finds that Bells discloses the recited step of "modifying an intensity of the one or more gesture input actions of the information handling device, wherein the modifying the intensity of the one or more gesture input actions comprises modifying the intensity commensurate with the measured force input." Final Act. 4. In particular:

> Bells clearly discloses embodiments in which an amplitude of feedback (such as scrolling, panning and/or zooming) is proportionally adjusted based on different thresholds of force input (see at least paragraphs [0028], [0031], [0032], [0038], [0040]-[0045] and [0051]-[0055]). More specifically, Bells discloses determining an amount of force associated with a detected touch, comparing the detected amount to thresholds A and B (paragraph [0042] and [0054]-[0055]) and adjusting the amplitude of feedback related to the amount of force detected

> (paragraphs [0041]-[0045] and [0054]-[0055]). That is, the device may provide a greater amplitude of feedback for a touch imparted with a greater force (see the discussion in at least paragraphs [0041]-[0045] and [0054]-[0055]). Bells explicitly discloses that the feedback can be, scrolling, panning and/or zooming (paragraphs [0044] and [0051]-[0055]) and more specifically that the feedback can be the rate at which the scrolling, panning and/or zooming occurs (see at least paragraph [0044] which states "For example, when scrolling, panning, or zooming an image displayed on device, the amount of scrolling, panning, or zooming may be related to the force. For example, when a harder force is detected, scrolling, panning, or zooming may be farther or faster than for a softer force.").

Ans. 3–4. Bells further discloses that the rate of panning or zooming may be "based on a linear, exponential, polynomial, or inverse relationship" with the amount of force detected. Bells ¶ 55; *see* Ans. 4.

Appellants disagree, contending that Bells does not disclose the modifying step recited in claim 1. App. Br. 15–17. In particular, Appellants contend that providing feedback, as disclosed by Bells, is different from modifying, as recited in claim 1; and Bells's disclosure that "the amount of scrolling, panning, or zooming *may be related to* the force" (Bells ¶ 44 (emphasis added)) does not disclose "*modifying the intensity commensurate with the measured force input*." App. Br. 16-17. We disagree.

First, Appellants contend that, "in Bells, the feedback is in response to providing the input and is used to indicate to the user that the system is performing a function." App. Br. 16; Reply Br. 18. In particular, Appellants focus on Bells's example of tactile feedback of a specific duration. *E.g.*, App. Br. 16 (quoting Bells ¶ 45). Nevertheless, Bells discloses that "[t]he feedback may be tactile, visual, audible, and so forth and may be of any suitable type, style, duration, and amplitude" and that, referring to Figure 17,

"[t]he feedback may be based on the amount of force measured at **1704** by the device **100**." Bells ¶ 43. Bells's feedback is not limited to tactile feedback of a limited duration. As the Examiner notes, Bells explains that scrolling, panning, or zooming an image displayed may be related to the force of the user's touch, such that "when a harder force is detected, scrolling, panning, or zooming may be farther or faster than for a softer force." *Id.* ¶ 44; *see* Final Act. 4. Thus, we are persuaded that Bells's feedback (scrolling, panning, and/or zooming) discloses modifying the intensity of an output in response to the measured force input.

Second, Appellants contend, "Bells merely teaches that the amount may be related to the force, but fails to explain the relationship between the amount and the force." App. Br. 17; Reply Br. 19. Specifically, Appellants contend that Bells does not disclose "*modifying the intensity commensurate with the measured force input*." App. Br. 17 (emphasis added). Nevertheless, we understand "commensurate" broadly to mean "the modification depends on a change in the applied force of the contact, as sensed and measured using an input device." Spec. ¶ 16; *see id.* ¶ 27 (giving examples of "commensurate" modifications). Further, the Specification describes that:

> For adjusting feedback, changes in force result in changes in magnitude of feedback provided by an information handling device. The feedback may include feedback means such as haptic or audio feedback. *Thus, if a user is pressing with more force on a touch screen, the information handling device may modify a default action, such as haptic or audio feedback action, to commensurately increase (e.g., proportionally) the haptic or audio feedback provided to the user.* This may correspond to an attempt to match the physiological necessities of the situation, for example supplying greater haptic feedback to a user on a

> harder press, as a lighter/default haptic feedback may go unnoticed due to the pressure of the input. *Moreover, this modification of a default feedback action may provide the user with additional information, such as a proportional feedback indicative of the sensed force, thus providing the user with a metric of how much force is being supplied to the input device.*

Spec. ¶ 36 (emphases added). Thus, we understand a "commensurate" modification may be proportional to the pressing force and that Bells discloses such a relationship between the pressing force and the feedback or modification. *See* Bells ¶ 43 ("For example, the amplitude of the feedback may be *proportionally* based on the amount of force, such that the device **100** provides a greater amplitude of feedback for a touch imparted with a greater force." (emphasis added)), ¶ 51 ("Panning may alternatively take place *proportionally* to the amount of force." (emphasis added)); ¶ 55 ("Alternatively, the distance **1204** scrolled may be *proportional* to the force applied, thus the amount of scrolling may be *proportional* to the force applied, and more than two different scrolling distances may be utilized." (emphases added)). We agree that Bells discloses the modifying step recited in claim 1.

For the above reasons, the Examiner has shown that each and every element of independent claim 1 is disclosed by Bells. Final Act. 3–4; Ans. 2–5. The elements of claim 1 are substantially the same as those recited in each of independent claims 10 and 18. App. Br. Claims App'x. We are persuaded that the Examiner also has shown that each and every element of independent claims 10 and 18 is disclosed by Bells. Final Act. 5–6; Ans. 2–5; *see* Reply Br. 16 ("Accordingly, Applicants respectfully submit that the arguments provided for one claim are also applicable to other claims containing similar claim limitations."). Thus, we are not persuaded

that the Examiner erred in the concluding claims 1, 10, and 18 are anticipated by Bells.

The Examiner also concludes that claims 4–10 and 13–17, which depend directly or indirectly from independent claim 1 or 10, are anticipated by Bells. Final Act. 6–10. Appellants contend that, because the Examiner erred in rejecting independent claims 1 and 10, we cannot sustain the rejections of dependent claims 4–10 and 13–17. *See* App. Br. 14; Reply Br. 16. For the above reasons, we disagree, and, thus, we are not persuaded that the Examiner erred in the concluding claims 4–10 and 13–17 are anticipated by Bells.

2. Dependent Claim 19

Claim 19 depends directly from independent claim 1 and recites the methods of claim 1 "further comprising: determining another level of force input exceeding another threshold; and thereafter selecting a response curve based on the rate of change." App. Br. Claims Appx. For the above reasons, Bells discloses each and every element of the methods of claim 1. The Examiner further finds that Bells discloses the additional elements recited in claim 19. Final Act. 6. We agree.

First, the Examiner finds that Bells discloses "determining another level of force input exceeding another threshold." Final Act. 6; Ans. 5 (citing Bells's Fig. 2). Bells's Figure 2 is reproduced below:

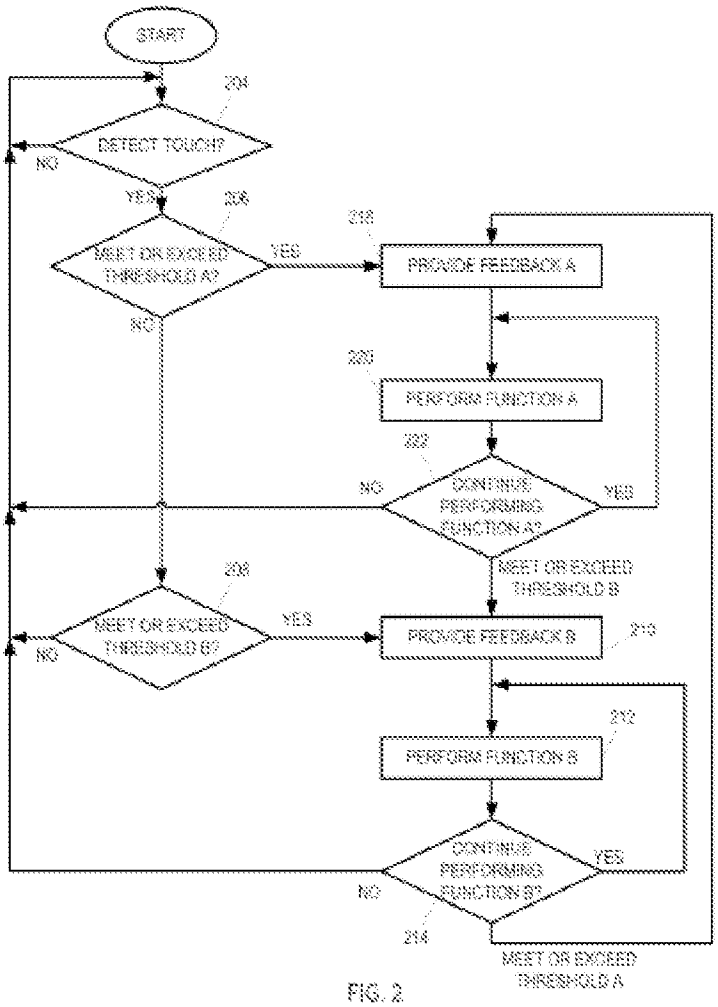

FIG. 2

As with Bells's Figure 17,[3] Figure 2 depicts "a flowchart of a method of providing feedback and performing functions based on force of a detected

[3] We do not consider Bells's Figures 2 and 17 as separate embodiments, and, thus, we apply the disclosure of Figure 2 with that of Figure 17. *See Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) ("[U]nless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove

touch on a touch-sensitive display." Bells ¶ 7. The Examiner finds that Bells discloses comparing a level of force detected at step 204 to Threshold A at step 206 and Threshold B at step 208. *Id.* at ¶¶ 25, 27. Thus, the Examiner finds that "Bells clearly discloses determining a level of force input exceeding a threshold in at least elements 206 and 208 of Figure 2 and the discussion in paragraphs [0025], [0027], [0032], [0042], and [0051]-[0055])." Ans. 5. Appellants do not contest this finding. App. Br. 17–19; Reply Br. 20–21.

Second, the Examiner finds that Bells discloses "thereafter selecting a response curve based on the rate of change." Final Act. 6; Ans. 5–6. The Examiner finds that the Specification does not define the recited "response curve." Ans. 6. The Examiner notes, however, that:

> Paragraph [0029] [of the Specification] recites "Default action modification may be achieved by utilizing force input measurements to invoke different gain or response curves. Invoking different response curves allows for the granular adjustment of input, such as change in cursor movement speed" while paragraph [0033] [of the Specification] recites "For example, in some scenarios, harder presses on an input device such as a touch screen invoke a more accurate response curve with lower gain, allowing greater precision. In other scenarios, softer presses invoke the more accurate response curve, with harder presses increasing the gain."

Id. From these disclosures, the Examiner concludes that the broadest reasonable interpretation of the term "response curve" is "the magnitude of

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prior invention of the thing claimed, and thus, cannot anticipate under 35 U.S.C. § 102."); *accord Application of Arkley*, 455 F.2d 586 (CCPA 1972). "Threshold" steps 206 and 208 of Figure 2 are examples of "Measuring" step 1704 of Figure 17. *See* Bells ¶¶ 14, 25, 38, 39, 42.

the response of a sensitive device to varying stimulus." *Id.* Appellants do not contest this interpretation, and we adopt it for purposes of this appeal.

Although Bells does not expressly describe "response curves" (*see* App. Br. 18), the Examiner finds that, Bells discloses various relationships between the input force and the resulting feedback. *See* Ans. 5-8. In particular, Bells discloses that:

> Alternatively, the distance **1204** scrolled may be proportional to the force applied, thus the amount of scrolling may be proportional to the force applied, and more than two different scrolling distances may be utilized. Alternatively, an inverse relationship between the distance scrolled and the amount of the force may be utilized. *Additionally or alternatively to scrolling, an application may pan or zoom a view of the document, picture, or image at a rate that is related to the amount of force detected based on any of a linear, exponential, polynomial, or inverse relationship.*

Bells ¶ 55 (emphasis added). Bells not only discloses different mathematical relationships between the input force and the related feedback, but that these different relationships alter the "rate" of change in the feedback, for example, panning or zooming. These relationships, for example, linear as opposed to exponential, disclose different response curves and rates of change in the feedback. *See In re Preda*, 401 F.2d 825, 826 (CCPA 1968) ("it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom."). Moreover, these operations may be in addition or as an alternative to other operations. Bells ¶ 55. Thus, on this record, we are persuaded that Bells discloses "selecting a response curve based on the rate of change."

The Examiner concludes that Bells also discloses each and every additional element of claim 19, and we agree.

B. Obviousness Over the Combined Teachings of Bells and Son

Claims 3 and 12 stand rejected as rendered obvious by the combined teachings of Bells and Son. Final Act. 8–10. Claims 3 and 12 depend directly from claims 1 and 10, respectively, and each recites "the threshold is user adjustable." App. Br. Claims App'x. The Examiner finds that Son teaches this limitation (Final Act. 7 (citing Son ¶¶ 76, 81)) and that a person of ordinary skill in the art would have had reason to combine the teachings of Bells and Son to achieve the recited methods and devices of these claims (*Id.* (citing Son ¶ 76)). In particular, both Bells and Son teach methods of "user interface for electronic devices using proportional force information" (Son, Abst.; *see* Bells, Abst.). Son teaches "[d]ifferent activation thresholds of tactile controls may be adjusted over time according to the present invention allowing the overall force-sensitivity of a tactile input device to accommodate different users' grasp and input capabilities" (Son ¶ 76). Thus, Son teaches an improvement to a shared purpose.

Appellants disagree contending that, unlike Son, "the [recited] threshold is specifically *selected by the user, not learned by the device* of Son." App. Br. 21 (emphasis added); *see* Reply Br. 23. However, as the Examiner notes, Son discloses "allowing the user to adjust thresholds by *manual* input of the force levels." Ans. 9 (emphasis added) (citing Son ¶ 81); *see* Final Act. 7. Thus, the Examiner finds that Son teaches a user-selected threshold.

The Examiner concludes that the combined teachings of Bells and Son render claims 3 and 12 obvious, and we agree.

Thus, we are not persuaded that the Examiner erred in rejecting claims 1, 3–10, and 12–19; and we sustain the rejections.

DECISION

We affirm the Examiner's decision to reject claims 1, 3–10, and 12–19.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED