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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/977,028	07/21/2014	Kaining YUAN	P44326US	4957
88032	7590	02/28/2020	EXAMINER	
Jordan IP Law, LLC 12501 Prosperity Drive, Suite 401 Silver Spring, MD 20904			JOSEPH, DENNIS P	
			ART UNIT	PAPER NUMBER
			2621	
			NOTIFICATION DATE	DELIVERY MODE
			02/28/2020	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KAINING YUAN

Appeal 2019-001606
Application 13/977,028
Technology Center 2600

Before JEREMY J. CURCURI, JAMES B. ARPIN, and
IFTIKHAR AHMED, *Administrative Patent Judges*.

AHMED, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ appeals under 35 U.S.C. § 134(a) from a final rejection of claims 28, 30–37, 39–46, and 48–54, all of the pending claims. Claims 1–27, 29, 38, and 47 are cancelled. Appeal Br. 22–26. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

Technology

The application relates to “the handling of mobile devices,” and particularly to “a hardware based approach to identifying user grasps of touch screen mobile devices.” Spec. ¶ 1.

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). According to Appellant, the real party in interest is Intel Corporation. App. Br. 3.

Illustrative Claim

Claim 28 is illustrative and reproduced below with certain limitations at issue emphasized:

1. A mobile device comprising:

a back touch sensor disposed on a back of the device;

a front touch screen disposed on a front of the device;

an enclosure including a frame having edges to expose the front touch screen;

a back logic module to use the back touch sensor to identify a back touch event with respect to the back of the device;

a front logic module to use the front touch screen to identify a front touch event with which one or more applications are to be controlled and with respect to the front of the device;

a classification logic module to associate the front touch event with either a user grasp or

a user request based at least in part on the back touch event; and

a prompt logic module to ***display on the front touch screen a target grasp area located on the back of the device in response to the back touch event on the back of the device if the back touch event corresponds to a single hand, wherein the target grasp area is to be displayed on the front touch screen as an outline of the back touch event, and wherein the front touch event is to be associated with the user grasp and withheld from the one or more applications on the device if the front touch event lies within the displayed target grasp area*** and the front touch event is an initial touch event relative to the back touch event, wherein the back touch event is to be withheld from the one or more applications.

REJECTIONS

Claims 28, 30, 31, 34, 37, 39, 40, 43, 46, 48, 49, and 52 stand rejected under 35 U.S.C. § 103(a) as obvious over the combined teachings of Escobedo (US 2013/0076644 A1; Mar. 28, 2013) and Luo (US 2011/0261058 A1; Oct. 27, 2011). Final Act. 2.

Claims 32, 33, 41, 42, 50, and 51 stand rejected under 35 U.S.C. § 103(a) as obvious over the combined teachings of Escobedo, Luo, and Libin (US 2013/0234929 A1; Sept. 12, 2013). Final Act. 13.

Claims 35, 44, and 53 stand rejected under 35 U.S.C. § 103(a) as obvious over the combined teachings of Escobedo, Luo, and Suzuki (US 2012/0256963 A1; Oct. 11, 2012). Final Act. 17.

Claims 36, 45, and 54 stand rejected under 35 U.S.C. § 103(a) as obvious over the combined teachings of Escobedo, Luo, and Moradian (US 2012/0086658 A1; April 12, 2012). Final Act. 20.

ISSUE

Did the Examiner err in finding that the combined teachings of Escobedo and Luo teach or suggest “display[ing] on the front touch screen a target grasp area located on the back of the device in response to the back touch event on the back of the device if the back touch event corresponds to a single hand, wherein the target grasp area is to be displayed on the front touch screen as an outline of the back touch event, and wherein the front touch event is to be associated with the user grasp and withheld from the one or more applications on the device if the front touch event lies within the displayed target grasp area,” as recited in claim 28?

ANALYSIS

Independent claim 28 recites a prompt logic module to “display on the front touch screen a target grasp area located on the back of the device in response to the back touch event on the back of the device if the back touch event corresponds to a single hand, wherein *the target grasp area is to be displayed on the front touch screen as an outline of the back touch event*, and wherein *the front touch event is to be associated with the user grasp and withheld from the one or more applications on the device if the front touch event lies within the displayed target grasp area.*” Appeal Br. 22 (Claims App.) (emphasis added). Independent claims 37 and 46, the only other independent claims, recite similar limitations.²

The Examiner finds that the combined teachings of Escobedo and Luo teach or suggest this limitation. According to the Examiner, Escobedo discloses detecting inputs within two areas 208a and 208b on the front and the back of the device respectively, such that “a first input area 208a . . . is the detected input of the thumb (read as a target grasp area as this indicates the position of the thumb)” and “can follow the input from the rest of the hand” to area 208b. Final Act. 3–4 (citing Escobedo ¶¶ 32, 33, 34, 37, Fig. 2d). The Examiner further finds that Escobedo discloses “whether to consider an input as spurious or not depending on if the inputs, as shown in Figure 2D, are in those particular locations and/or within a certain time period.” *Id.* at 4 (citing Escobedo ¶¶ 33, 34, 42) (explaining that “if the input is detected in the area 208a, in conjunction with the inputs made to

² Claim 37 recites a non-transitory, computer-readable storage medium comprising a set of instructions to be executed by a processor, and claim 46 recites a method. Appeal Br. 24, 26 (Claims App.).

area 208b, it is determined that the user is holding the device with a single hand and this spurious input is disregarded”).

The Examiner finds, “Escobedo does not explicitly teach to display on a front touch screen of the device the target grasp area located on the back of the device,” as an outline of the back touch event. *Id.* The Examiner finds that this missing aspect of Escobedo is taught by Luo, which discloses “a user holding a device with a front panel and the majority of the fingers touching the back of the device,” in which the front panel “displays a graphical representation of the user’s fingers 108 as well as regions where the fingers are touching the back surface.” *Id.* (citing Luo ¶¶ 29, 39, Figs. 1, 4, 5).

The Examiner finds that when Luo is “combined with Escobedo, the areas where the user is touching in the back . . . can be explicitly displayed on the front display, i.e.,] an outline of the back touch event.” *Id.* at 4–5. The Examiner finds that “[o]ne of ordinary skill in the art would realize that Escobedo’s functionality is the same as the current invention, and simply displaying the grasp area, for input to be made there, is something that combining Luo would cover.” *Id.* at 5. The Examiner reasons that “[i]t would have been obvious to one of ordinary skill in the art, at the time of the invention, to implement the display of the fingers on the back panel, as taught by Luo, with Escobedo’s device, with the motivation that this can facilitate data entry by helping the user properly position their fingers on the touchpad to enter the correct keys.” *Id.* (citing Luo, ¶ 54).

Appellant agrees with the Examiner that “Escobedo is directed to preventing ‘spurious’ touches, such as gripping motions, from being used as input to an application,” and “teaches to establish configurations (*i.e.*,

mappings) of front and rear inputs that are defined to correspond to spurious front inputs.” Appeal Br. 16–17 (citing Escobedo ¶¶ 7, 34) (emphasis on cited references omitted throughout). Appellant however argues that “Escobedo has no use for visualizing on its front display any inputs to its rear touch input surface” because “the principle of operation of Escobedo is to leverage correspondence of front touch events to rear gripping events that is established *via known, pre-programmed configurations.*” *Id.* at 17 (emphasis added). On the other hand, Appellant argues Luo “is directed to *enabling* a user to enter touches made to a touchpad on a back panel so that the touches may be used as input keystrokes to an application.” *Id.* (citing Luo ¶ 3).

Appellant asserts that “one of ordinary skill in the art would not have had a reason to combine Escobedo and Luo . . . at least since Escobedo does not use its back panel for data entry at all, since Escobedo presents a different principle of operation to determine spurious input, and since the purported combination would be a fundamental reworking of Escobedo that would change the principle of operation of Escobedo.” *Id.* Appellant further contends that Luo’s teaching of entering keystrokes from the back panel “teaches away from Appellant’s claimed approach.” *Id.* at 17–18.

The Examiner responds: “Appellant is not applying an ordinary skill and not realizing what the combination of Escobedo and Luo would reasonably teach, but rather, requests undue considerations when making this combination.” Ans. 7. The Examiner explains that “Appellant’s disclosure displays the target grasp area as a means for directing the user where to make touch inputs and Luo also enables/assists in this regard.” *Id.* Thus, the Examiner explains, “Escobedo, as modified by Luo, would not be

destroyed in its functionality, but rather, it would be enhanced in being able to visually assist the user in making inputs,” and “would not result in a fundamental reworking of Escobedo that would change the principle of operation.” *Id.*

We find the Examiner’s reason to combine the teachings of the references lacks a rational underpinning. We agree with Appellant that the Examiner has not sufficiently explained how the combined teachings of Escobedo and Luo teach or suggest “the front touch event [being] associated with the user grasp and withheld from the one or more applications on the device *if the front touch event lies within the displayed target grasp area*” which is “displayed on the front touch screen as an outline of the back touch event.” *See* Appeal Br. 17–18. Although Escobedo teaches a “spurious input detection engine 110 [that] may include a plurality of *pre-programmed* and/or *user provided* spurious input configurations that include combinations of first input on the touch input display 106 and the second input on the touch input surface 108,” (which the Examiner determines teaches a touch event within the target grasp area) (Escobedo ¶ 34 (emphasis added), Fig. 2d), there is no indication that these configurations include a target grasp area that is “an outline of the back touch event,” as recited in claim 28. In contrast, Escobedo teaches:

[A] spurious input configuration may include the first input on the touch input display **106** represented by *the first input area 208a* and the second input on the touch input surface 108 represented by *the second input area 208b*. Furthermore, the spurious input configuration may include the first input on the touch input display **106** represented by the first input area 208a and the second input on the touch input surface 108 represented by the second input areas **208b** being *located adjacent a common edge of the touch input display 106* (e.g., the edge **102d** of the

tablet chassis in the illustrated embodiment) such that a spurious input will be detected whenever the user holds and/or supports the tablet computing device **100** with a single hand **204a**.

Escobedo ¶ 34 (referring to Fig. 2d) (emphasis added). That is, Escobedo's spurious input detection engine disregards inputs to specific predefined regions (e.g., 208a and 208b) located adjacent to a common edge. The Examiner has not sufficiently explained how these configurations teach or suggest a target grasp area corresponding to "an outline of the back touch event" identified by the back touch sensor.

We agree with the Examiner that Luo teaches "being able to display the outline of back touch inputs in a dual sided touch panel," but we are not persuaded by the Examiner that "one of ordinary skill in the art would indeed be motivated to combine the teachings of Escobedo and Lou to arrive at the claimed invention." Ans. 7.

Although one of ordinary skill in the art may understand that two references *could* be combined, this does not imply a reason to combine the references. *See Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 993-94 (Fed. Cir. 2017); *see also Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) ("[O]bviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention."). "Obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination." *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011) (citing *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)).

The Examiner has not explained adequately why a person of skill in the art would have had reason to combine the spurious input detection system of Escobedo with the real-time fingerprint image superimposed upon a virtual keyboard layout as disclosed by Luo. Although both references relate to handheld devices with dual touch displays, the references are directed to different problems associated with different aspects of use of such devices. Escobedo is directed at determining whether an input to the touch display is spurious based on the location of the input, as well as factors such as movement, acceleration, and orientation of the device, and thereby disregarding such an unintended input. Escobedo ¶¶ 34, 42; *see also* Ans. 5. Luo, on the other hand, seeks to use the back panel for user keyboard input, freeing up the keyboard space on the front panel. *See* Luo ¶¶ 10, 29.

The Examiner's reason to combine the two references to enhance Escobedo's invention "in being able to visually assist the user in making inputs" is not persuasive. Ans. 7; *see also* Final Act. 5 (finding that the combination "can facilitate data entry by helping the user properly position their fingers on the touchpad to enter the correct keys"). The Examiner reasons that such "visual assistance is similar to what Appellant defines [as] the functionality of the target grasp area." Ans. 6 (citing Spec. ¶ 16). The suggestion to combine the applied references, however, must come from the references, not from the application's disclosure. *See In re Dow Chemical Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988). Moreover, it is unclear to us how adding visual assistance for the user of the device would enhance Escobedo's spurious input detection system which seeks to detect *unintentional* inputs, such as those caused by a user holding the device with

their hand. There is simply nothing in the applied references that bridges the gap between their respective teachings.

Therefore, we are persuaded by Appellant’s arguments that the Examiner fails to demonstrate that the ordinarily skilled artisan would have had reason to combine the references in the manner proposed. Further, the various other grounds of rejection do not cure the deficiency discussed above. Accordingly, given the record before us, we do not sustain the Examiner’s rejections of independent claims 28, 37, and 46, and their dependent claims 30–36, 39–45, and 48–54.

DECISION

For the reasons above, we reverse the Examiner’s decision rejecting claims 28, 30–37, 39–46, and 48–54.

In summary:

Claims Rejected	35 U.S.C. §	References	Affirmed	Reversed
28, 30, 31, 34, 37, 39, 40, 43, 46, 48, 49, 52	103(a)	Escobedo, Luo		28, 30, 31, 34, 37, 39, 40, 43, 46, 48, 49, 52
32, 33, 41, 42, 50, 51	103(a)	Escobedo, Luo, Libin		32, 33, 41, 42, 50, 51
35, 44, 53	103(a)	Escobedo, Luo, Suzuki		35, 44, 53
36, 45, 54	103(a)	Escobedo, Luo, Moradian		36, 45, 54
Overall Outcome				28, 30–37, 39–46, 48–54.

REVERSED