

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,

Petitioner

v.

SMITH INTERFACE TECHNOLOGIES, LLC,

Patent Owner

Case IPR2024-01087
Patent No. 10,656,755

PATENT OWNER PRELIMINARY RESPONSE

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PATENT OWNER’S EXHIBIT LIST

Exhibit	Shorthand	Description
2001	Surati	Declaration of Rajeev Surati, PhD
2002	CV	CV of Rajeev Surati, PhD
2003	JCC	Excerpt of Joint Claim Construction Chart Exhibit A
2004	Stay Order	October 2, 2024 Order Granting in Part Apple’s Motion to Stay in <i>Smith Interface Technologies, LLC v. Apple Inc.</i> , 3-23-cv-01187, S.D. Cal (Dkt. No. 127).

I. INTRODUCTION

Institution should be denied because the Petition fails to establish a reasonable likelihood of prevailing on any challenged claim. Petitioner’s obviousness theories are conclusory and legally insufficient. Petitioner relies on a secondary reference for a threshold to determine whether a user input is a swipe, but overlooks that the primary reference’s animation of a background does not depend on whether an input is a swipe. As such, Petitioner’s combination of the cited prior art references do not include every feature of the challenged claims.

II. OVERVIEW OF THE ’755 PATENT

The ’755 Patent “generally relate[s] to touch screens.” EX1001, 1:37–38. Specifically, the ’755 Patent focuses on improving user interfaces for increasingly complex touchscreen devices. EX1001, Abstract. For example, the claims include, responsive to the magnitude of a gesture exceeding a threshold, dynamically changing the appearance of a background—without changing the appearance of foreground objects—displaying in sequence multiple images based at least in part on the magnitude of the gesture. EX1001, Cl. 1, 23.

“Gesture magnitude refers to the magnitude of the associated gesture dynamics. For example, in one embodiment, the gesture magnitude of a swipe gesture may include the length of the swipe and/or the contact pressure exerted during the swipe.” EX1001, 67:1–5. “[T]he operations associated with a gesture

may be carried out as a function of the associated gesture dynamics,” which “are aspects of a gesture that may vary without changing the identity of the gesture.” EX1001, 65:18–22. Examples of such aspects include “contact point velocity, contact point acceleration, contact pressure velocity, contact pressure acceleration, time to complete gesture, and/or any other aspect which may be associated with a gesture.” EX1001, 65:22–27.

“[A] selection function may determine one or more presentation properties of a selection,” “vary one or more presentation properties as a function of contact pressure,” or “determine one or more fundamental properties of a selection.” EX1001, 29:30–59. “[P]ossible presentation properties may include, but are not limited to, shading, color, contrast, brightness, line style, animation routine, transparency, pattern, border style, area style, and/or any other visual property that may describe an object on a display.” EX1001, 29:31–36.

For example, the selection (e.g., background of the first user interface) can dynamically change as a function of user input based on that input exceeding a threshold (e.g., pressure exerted on the device exceeds a threshold). EX1001, Abstract, 29:43–46. Figure 22 of the ’755 Patent depicts such as a configuration, in which the user can “dynamically chang[e] an appearance of a background [blurring] based at least in part on a magnitude of a contact [pressure].” EX1001, Figure 22.

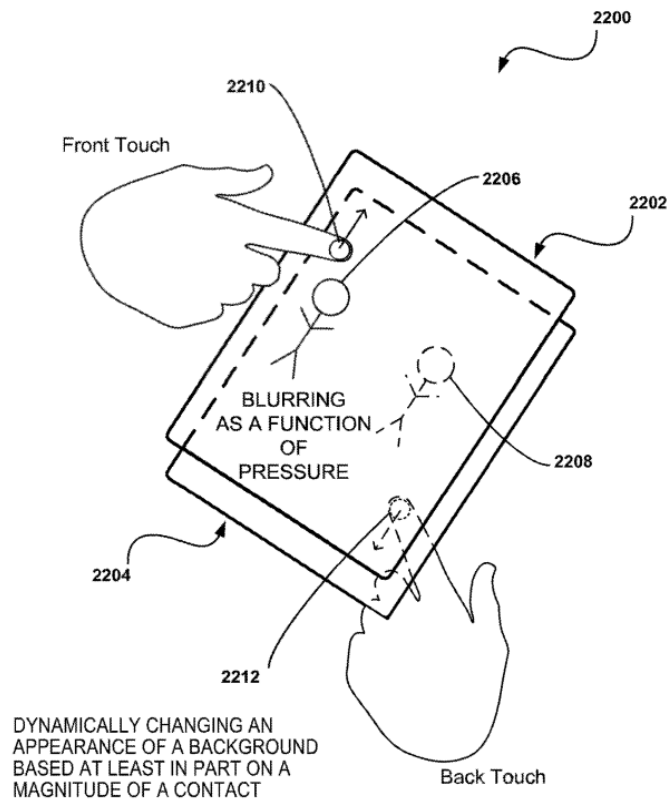


FIGURE 22

A. Independent Claims 1 and 23

Independent claims 1 and 23 of the '755 Patent are directed to an electronic device that is programmed to perform certain functions. *See generally* EX1001. Specifically, claims 1 and 23 include “in response to detecting the first input by the first contact, in accordance with a **determination that the first contact has a magnitude that is above a threshold**, dynamically changing the appearance of the background of the first user interface without changing an appearance of the one or more foreground objects in the first user interface.” EX1001, Claims 1, 23

(emphasis added). Additionally, “the dynamic change in the appearance of the background of the first user interface is based at least in part on the *magnitude of the first contact* and “the dynamic change in the appearance of the background of the first user interface includes displaying in sequence at least some of a plurality of images based at least in part on the magnitude of the first contact.” EX1001, Claims 1, 23.

B. Claim Construction

The claims are construed “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100; *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). Petitioner “submits that no claim terms need to be construed to resolve issues of controversy in the present Petition.” Pet. (Paper 2), 3.

In the Litigation,¹ however, Apple proposes that the claim term “magnitude of the first contact” in the ’755 Patent is indefinite. EX2003, 9. Contrary to its

¹ *Smith Interface Technologies, LLC v. Apple Inc.*, 3-23-cv-01187, S.D. Cal. (the “Litigation”). On October 2, 2024, the Court granted in part Petitioner’s request to stay the Litigation, staying the Litigation “pending the issuance of the last of the

Litigation position, Petitioner does not assert that this term is indefinite in its Petition and, indeed, had no problem understanding the terms to map them (albeit in a flawed mapping). *E.g.*, Pet., 4.

Patent Owner disputes that “magnitude of the first contact” is indefinite. The words used in the phrase are common, understandable words, and the arrangement of those words and the surrounding claim language make the plain and ordinary meaning of the term apparent, as demonstrated by the Petition itself. The plain and ordinary meaning of the term is readily understandable, and Patent Owner believes no formal constructions are necessary.

III. LEVEL OF ORDINARY SKILL

Patent Owner does not necessarily agree with all aspects of Petitioner’s proposed level of ordinary skill, but does not believe that resolving that level is necessary to resolve the issues raised in this preliminary response.

IV. OVERVIEW OF THE PRIOR ART

A. Hackborn (EX1004)

Hackborn is titled “Live Wallpaper” and “relates to components of computer operating systems, including background desktop components commonly referred to as computer wallpaper.” EX1004, [0002]. Hackborn is directed at systems and

PTAB’s institution decisions on Apple’s pending IPR petitions,” with any “further stay” to be addressed after those decisions. EX2004.

methods for “animating” a traditional wallpaper on the home screen of a mobile computer device to produce a “live wallpaper.” *See, e.g.*, EX1004, [0009] (“method further includes producing an animated moving display of the graphical wallpaper representation”).

Hackborn accomplishes this by making the traditional wallpaper “an object that includes executable code” which is executed in response to input and “cause[s] the wallpaper 104 to change in appearance.” EX1004, [0026].

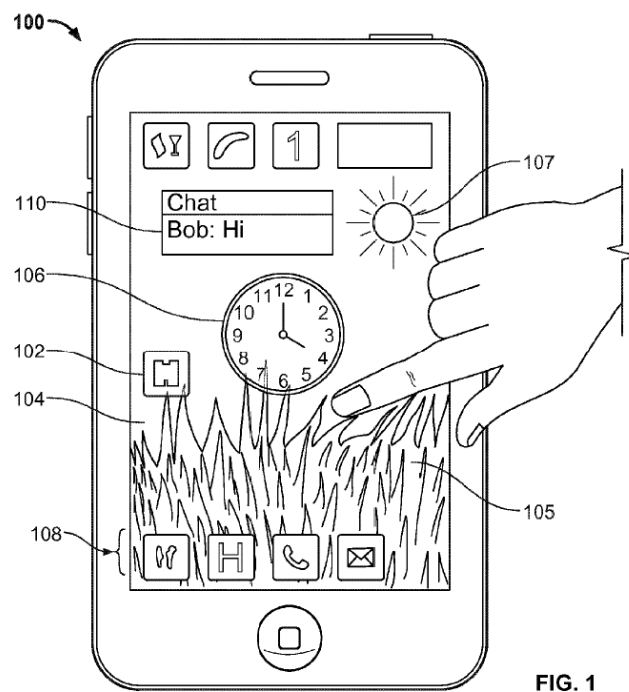


FIG. 1

Hackborn’s Figure 1 shows a “general home screen layout,” that includes “wallpaper 104” and “icons 108.” *See, e.g.*, EX1004, [0026], [0030].

Hackborn explains that “the wallpaper shows grass 105” and “may ordinarily look like a traditional wallpaper in the form of a static image.” EX1004, [0026].

However, this “wallpaper may be active, and in this example may *respond to inputs* from a user of the computing device.” *Id.* (emphasis added). “In the *example* shown in FIG. 1, a user is swiping her finger across a touch-sensitive display screen of the computing device” and “[i]n response, the blades of grass 105 displayed in the area of the screen swiped by the user are caused to bend or sway as if contacted by the user's finger during the swipe.” *Id.*, [0028] (emphasis added). Hackborn also offers details of the “touch-sensitive display screen,” in that “[a] touch interface 706 may take a familiar form and may interpret input by a user on a touchscreen” by “coordinat[ing] with the display controller 704 to *identify what item or items on a display a user is selecting by touching at a particular location.*” EX1004, [0054]. Thus, Hackborn discloses a display controller determining what a user selects—*e.g.*, wallpaper 104 vs. icon 108—based on location of a user input rather than the type of user input or gesture. EX2001, ¶66. Nor does Hackborn limit the wallpaper-moving user inputs to swipes; instead, Hackborn explicitly refers to a user swiping as an “example.” EX1004, [0028]. As an alternative to a wallpaper always reacting to user inputs, Hackborn explains that “[o]ther examples of live wallpaper may not be immediately responsive to user input on the screen of the device” and may instead “become responsive to direct user input only after a predetermined user input is received by the device.” EX1004, [0028]. “Thus, in a first mode, user input on a touchscreen may be interpreted as being directed to icons displayed on a layer over

the wallpaper, and in another mode (which can be switched to using the techniques just described), user input may be interpreted as being directed to items displayed on the wallpaper.” *Id.* Here too, Hackborn does not disclose or suggest that the type of input impacts whether a user input is interpreted as applying to the wallpaper or an icon; rather, in one mode, all user inputs are directed to the wallpaper and, in another mode, all user inputs are directed to icons. EX2001, ¶70.

Hackborn also notes that “[e]xamples of *predetermined user inputs* that may be received by the device to [*switch from the icon mode to the wallpaper mode, i.e.,*] cause the live wallpaper to become responsive to user input can include agitating or shaking the device, selecting an icon, button (not shown in FIG. 1), or area of the display screen (e.g., a corner of the screen) reserved for activating the live wallpaper, making a particular movement on or across the display screen, tapping on the display screen a predetermined number of times within a predetermined time period, and others.” EX1004, [0028]. Hackborn’s only discussion of a tap input is therefore in the context of a device in the first mode (in which all inputs are to the icon display layer; *not* the wallpaper): “tapping on the display screen a predetermined number of times within a predetermined time period” to switch the device into the wallpaper-input mode in which all user inputs cause the wallpaper to react. EX2001, ¶72.

B. Westerman (EX1005)

Westerman is titled “Swipe Gestures For Touch Screen Keyboards” and “relates generally to input systems, methods, and devices, and more particularly, to systems, methods, and devices for interpreting manual swipe gestures as input in connection with touch-screen keyboards.” EX1005, [0011]. “These allow for a user entering text using the virtual keyboard to perform certain functions using swipes *across the key area* rather than tapping particular keys.” EX1005, Abstract (emphasis added).

Westerman developed its “textual input on virtual keyboards” techniques to address challenges with “[c]onventional touch-typing techniques” that are “difficult to use on touch-screen based small form factor devices” and force users to resort to “‘hunt and peck’ typing techniques.” EX1005, [0017].

Westerman’s Figure 1A shows “a user typing” using a “virtual keyboard 116” by employing “directional swipes (also referred to herein as ‘swipe gestures’) over the alphabetic keys” “as an alternative to striking certain key.” EX1005, [0028], [0043], [0045]. “[T]he user is entering the text ‘ok’ in response to a query received through a chat application. By tapping finger 124 on the area corresponding to the letter ‘o’ on virtual keyboard 116 the letter ‘o’ is entered in text field 114. A tophat 118 with a representation of the letter ‘o’ is displayed providing feedback to the user. As shown in FIG. 1B, the user then attempts to tap the letter ‘k’ using finger 124.

However, the user inadvertently taps the letter ‘j’ as indicated by top hat 125. Although this typographical error could be corrected through the use of virtual backspace key 123, the backspace function can also be invoked by the rightward [sic] swipe illustrated in FIGS. 2A through 2C.” EX1005, [0047].

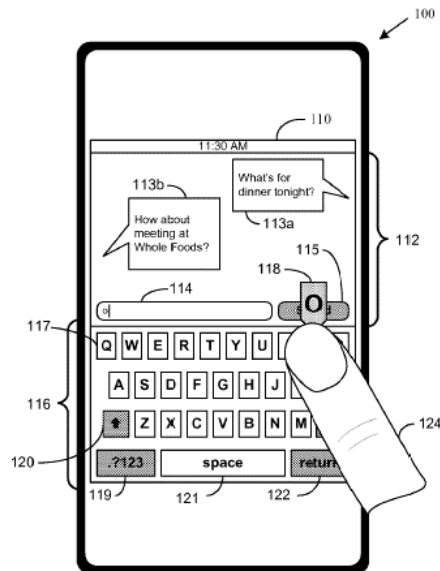


FIG. 1A

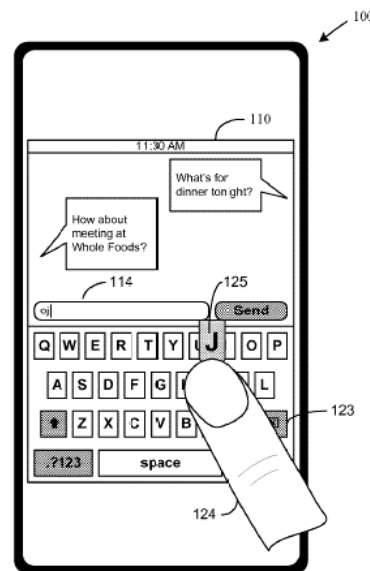


FIG. 1B

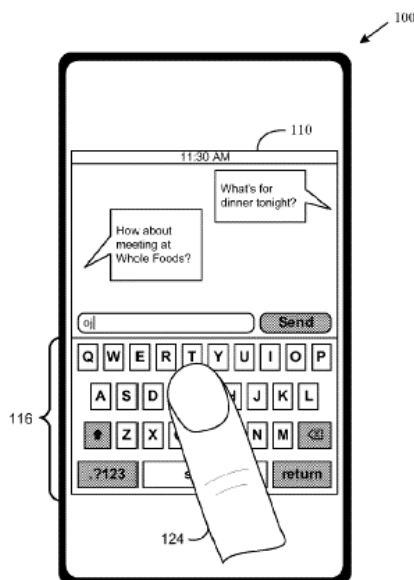


FIG. 2A

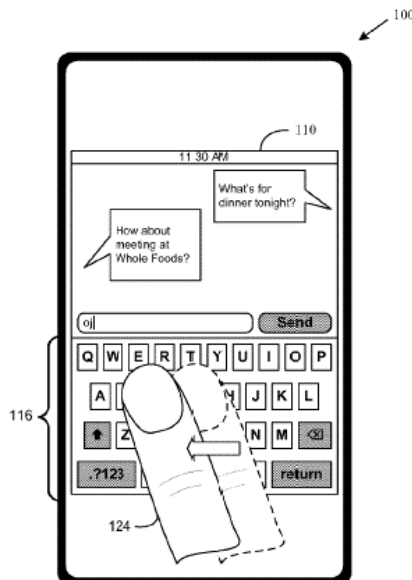


FIG. 2B

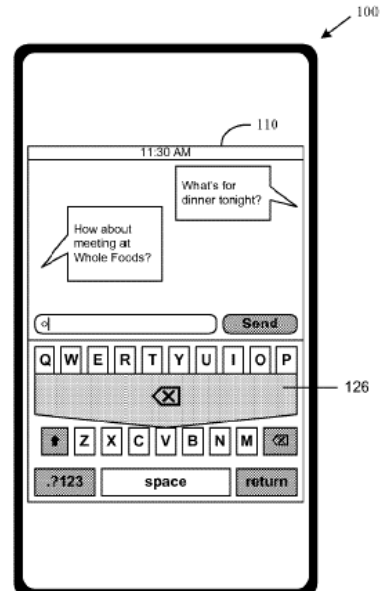


FIG. 2C

Westerman discloses “a method for interpreting swipe gesture input to a device” using “a virtual keyboard area, in which taps of a touch object generate text input.” EX1005, [0018].

Westerman’s focus is virtual keyboards, for which taps were already conventionally detected; as such, Westerman’s approach to swipe detection (and distinguishing taps) is specific to the context of virtual keyboards. In particular, Westerman describes that “[d]etecting a swipe gesture can include acquiring touch image data from the touch-sensitive device, processing the image to generate one or more finger path events, determining a displacement of the one or more finger path events, and detecting a swipe gesture if the displacement exceeds a predetermined threshold.” EX1005, [0019]. Even if displacement exceeds a threshold, the gesture may still be interpreted as a “tap” if the duration of the gesture exceeds “a maximum swipe gesture timeout threshold.” *Id.* This timeout threshold “can be used to allow slower motions to permit a user to fine tune key selection e.g., using the displayed top hats [corresponding to letter ‘keys’].” *Id.*, [0062]. Specifically, “[i]f the time of the motion is greater than the swipe gesture timeout threshold, i.e., took too long to be a swipe gesture, the event is interpreted as a key tap, and the system updates the key choice that corresponds to the location of the finger (block 1008).” *Id.*

Westerman does not suggest animating an image depending on whether an input is a swipe or a tap. EX2001, ¶84.

V. The Challenged Claims Are Patentable Over Hackborn And Westerman

Independent claims 1 and 23 (and their respective dependents) are patentable over Hackborn and Westerman for each of at least two independent reasons.

First, claims 1 and 23 each recite “in response to detecting the first input by the first contact, in accordance with a *determination that the first contact has a magnitude that is above a threshold*, dynamically changing the appearance of the background of the first user interface without changing an appearance of the one or more foreground objects in the first user interface.” EX1001, Claims 1, 23 (emphasis added). As explained in detail below, Petitioner’s alleged combination does not disclose or suggest that a background is dynamically changed in accordance with a determination that a contact has a magnitude that is above a threshold. To the contrary, what Petitioner’s combination actually discloses is that Hackborn’s changes to the appearance of its background “grass” occur regardless of whether a user input is a swipe or a tap.

Second, claims 1 and 23 each recite that “the dynamic change in the appearance of the background of the first user interface is based at least in part on the *magnitude of the first contact*. EX1001, Claims 1, 23 (emphasis added). As explained in detail below, Petitioner’s alleged combination does not disclose or suggest that a background is dynamically changed based on the magnitude of a contact. To the contrary, Hackborn only states that its background “grass” changes

its appearance in response to user input, not that the changes vary based at all on the magnitude of the user input.

A. Grounds 1A–1D: The Alleged Hackborn-Westerman Device (HWD) Would Not Change Hackborn’s Background In Accordance With A Determination That The User Input Has A Magnitude That Is Above A Threshold

Petitioner contends that “a POSITA would have found it obvious to implement Hackborn with methods such as those disclosed or rendered obvious by Westerman for distinguishing between tap and swipe gestures (e.g., using ‘predetermined thresholds’).” Pet., 13.

Petitioner’s theory rests on the premise that because “Hackborn explains that its device can register both swipes and taps,”² “[a] POSITA reviewing Hackborn would have naturally looked to Westerman to better understand how to . . . discern between different user inputs (e.g., tap or swipe).” Pet., 12–13. Petitioner further claims that because “Hackborn and Westerman both describe the use of touchscreen devices and predetermined criteria for registering touches on the device, a POSITA

² Petitioner’s characterization of this quote grossly generalizes Hackborn’s single mention of “taps,” as explained in Section IV.A, undermining Petitioner’s asserted motivation for the combination. Nevertheless, at this stage, this Preliminary Response focuses instead on the fact that any combination with Westerman simply would not include several claim features.

would have reasonably understood the combination of Hackborn with Westerman to be successful with no unexpected results.” Pet., 14.

The Petition relies solely on Hackborn for the foundational decision of whether and when to change the appearance of its background. *See, e.g.*, Pet., 9–12. And the Petition turns to Westerman solely for guidance on “how to discern between different user inputs (e.g., tap or swipe).” Pet., 13–14 (citing EX1003, ¶52). As such, the Petition does not offer any proposed modifications to *which* user inputs cause Hackborn to change the appearance of its background. *See, e.g.*, Pet., 12–14.

The Petition then turns to Hackborn’s example of a “user [] swiping her finger across a touch screen” to cause “blades of grass swiped by the user . . . to bend or sway as if contacted by the user’s finger during the swipe.” Pet., 19–20 (quoting EX1004, [0028]).

Then, for Limitation [1.j], the Petition simply *assumes* that the grass only moves if the user has swiped instead of tapped. Pet., 20–21. The Petition does not say it so directly until the mapping for Limitation [1.k]—“the grass movement effect only occurs in the HWD if the input is determined to be a swipe”—but that asserted point is the crux of Petitioner’s entire obviousness theory. Yet the Petition offers no explanation as to why the words of Hackborn—disclosing an “example” of a user swiping—would have suggested that a swipe will cause the grass to move, but a tap will not. EX2001, ¶95.

Petitioner assumes too much. Hackborn neither discloses nor suggests that whether its wallpaper “grass” moves depends at all on the type of user input received. EX2001, ¶96. Hackborn instead indicates that its wallpaper responds to any “user input” on the wallpaper or, when in a certain mode, responds to any “user input” anywhere on the screen. EX2001 As explained above in Section IV.A, Hackborn broadly discloses that—when a user is permitted to interact with its wallpaper—its “wallpaper . . . may *respond to inputs* from a user of the computing device.” EX1004, [0026] (emphasis added); *see also* EX1004, [0028] (“in another mode . . . *user input* may be interpreted as being directed to items displayed on the wallpaper” (emphasis added)). Hackborn does not limit those user inputs to swipes. EX2001, ¶99 (citing EX1004, [0028]). To the contrary, after broadly disclosing user inputs, Hackborn lists “swiping” as a mere example of such a user input. EX2001, ¶99 (citing EX1004, [0028] (“In the *example* shown in FIG. 1, a user is swiping” (emphasis added)). As such, a POSITA would understand from Hackborn’s disclosure that—when its device permits a user to interact with a wallpaper—Hackborn’s “grass” will move responsive to any user input, regardless of whether a swipe or tap. EX2001, ¶100.

The Petition does not point to anything in Westerman that would change the disclosed functionality of Hackborn. Rather, the Petition merely states that “a POSITA would have further found obvious that the HWD would be implemented

such that, if the user input ‘exceeds the minimum swipe length threshold’ and/or if the ‘initial velocity at touchdown’ is greater than a velocity threshold, the input is ‘interpreted as a swipe event.’” Pet., 22 (citing EX1005, [0018]–[0019], [00600–[0064]; EX1003, ¶67). However, as explained above, whether an input is interpreted as a tap or a swipe is irrelevant because Hackborn’s grass moves in response to any input, not just a swipe. EX2001, ¶102.

Ultimately, Hackborn does not disclose or suggest that its wallpaper “grass” moves in response to a swipe, but would not move in response to a tap. EX2001, ¶103. As such, even if Westerman’s teachings are incorporated, an input crossing a threshold to become a swipe would not impact whether or not Hackborn’s grass moves. EX2001, ¶104. The Petition therefore fails to show that the HWD combination would disclose or suggest either of Limitations[1.j] or [23.i]: “in response to detecting the first input by the first contact, in accordance with a ***determination that the first contact has a magnitude that is above a threshold***, dynamically changing the appearance of the background of the first user interface without changing an appearance of the one or more foreground objects in the first user interface.” Grounds 1B, 1C, and 1D do not address Limitations [1.j] and [23.i] and therefore cannot address this fundamental flaw in the HWD combination.

B. Ground 2: The Alleged Hackborn2-Westerman-Jobs Device (H2WJD) Would Not Change Hackborn's Background In Accordance With A Determination That The User Input Has A Magnitude That Is Above a Threshold

Petitioner's Ground 2 starts from a similar premise as Ground 1, with the exception that Ground 2 focuses on wallpaper 604 of Hackborn's Figure 6 (rather than wallpaper 104 of Hackborn's Figure 1). Pet., 63–65. Other than that, the foundations of Hackborn's and Westerman's teachings remains the same as discussed above in Sections IV.A, IV.B, and V.A.

The Petition also adds Jobs into the mix for Ground 2, specifically asserting that a "POSITA would have found it obvious to modify live wallpaper 604 such that a user could scroll through the images/posts of the wallpaper 'using vertically upward and/or vertically downward gestures' (i.e., swipes, detected per Westerman) 'on the touch screen,' per Jobs, instead of or in addition to new images/posts being scrolled in, per Hackborn." Pet., 69 (citing EX1003, ¶153; EX1004, [0041], [0046]–[0048], FIGS. 4, 6; EX1009, [0243], [0245], [0401], FIGS. 6A, 15).

Similar to the flaw explained above for Ground 1, Petitioner's theory for the addition of Jobs merely makes the social media posts in wallpaper 604 scrollable via user inputs (e.g., via vertical swipes) rather than automatically scrolling downward as new posts are added. EX2001, ¶108. But Petitioner does not articulate a rationale for changing Hackborn's foundation in which any user input on wallpaper 604 will cause the appearance of the wallpaper to change (by scrolling). See Section V.A

above. For example, in asserting that scrolling via vertical swipes would have been obvious, the Petition does not assert (much less explain why) that would have required not performing the same animation via other user inputs, such as taps. EX2001, ¶110. As such, the Petition simply does not articulate a theory for modifying Hackborn to only change the appearance of its background in this way (scrolling) when receiving a swipe (but not when receiving a tap). EX2001, ¶111.

Ultimately, Hackborn does not disclose or suggest that its wallpaper moves in response to a swipe, but would not move in response to a tap. EX2001, ¶112. As such, even if Westerman’s teachings are incorporated, an input crossing a threshold to become a swipe would not impact whether or not Hackborn’s wallpaper moves. EX2001, ¶113. Similarly, even if Jobs scrolling is added along with Jobs’ particular treatments of vertical swipes, the Petition does not assert that (much less explain why) doing so would modify Hackborn to not scroll its background when receiving other inputs. EX2001, ¶114. The Petition therefore fails to show that the Hackborn2-Westerman-Jobs combination would disclose or suggest either of Limitations[1.j] or [23.i]: “in response to detecting the first input by the first contact, in accordance with a *determination that the first contact has a magnitude that is above a threshold*, dynamically changing the appearance of the background of the first user interface without changing an appearance of the one or more foreground objects in the first user interface.”

VI. CONCLUSION

For the reasons explained above, the Petition fails to show a reasonable likelihood of success for either of independent claims 1 and 23. Nor do the Petition's mappings of dependent claims supply the deficiencies identified for independent claims 1 and 23. Institution should therefore be denied.

Dated: October 22, 2024

Respectfully submitted,

/Eagle H. Robinson/

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Reg. No. 61,361

Lead Counsel for Patent Owner

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(a)(i), the undersigned certifies that this Paper—exclusive of the table of contents, table of authorities, certificate of service, and this certificate of word count—includes 3,881 words. The undersigned relies upon the word count generated by Microsoft Word.

/Eagle H. Robinson/
Eagle H. Robinson (Reg. No. 61,361)

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that on October 22, 2024, complete copies of the foregoing Patent Owner Preliminary Response and EX2001–EX2004 were served on Petitioner via email (by consent), at the following email address(s):

IPR50095-0167IP1@fr.com

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