

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

SMITH INTERFACE TECHNOLOGIES, LLC,
Patent Owner.

IPR2024-01087
Patent 10,656,755 B1

Before JAMESON LEE, JEFFREY S. SMITH, and
MIRIAM L. QUINN, *Administrative Patent Judges*.

LEE, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining Some Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

We instituted an *inter partes* review of claims 1–13, 15–35, and 37–43 (“challenged claims”) of U.S. Patent No. 10,656,755 B1 (Ex. 1001, “the ’755 patent”) owned by Smith Technologies, LLC (“Patent Owner”). Paper 7 (“Decision to Institute” or “Inst. Dec.”). We have authority to conduct this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

Oral hearing was held on October 16, 2025, a transcript of which has been entered as Paper 31 (“Tr.”). We determine that Apple Inc. (“Petitioner”) has proved by a preponderance of the evidence that claims 1–4, 6, 7, 10–13, 15–17, 19, 20, 23–26, 29, 32–35, 37, 38, and 40–42 of the ’755 patent are unpatentable, but have not proved by a preponderance of the evidence that claims 5, 8, 9, 18, 21, 22, 27, 28, 30, 31, 39, and 43 are unpatentable.

A. Background

Petitioner filed a Petition requesting an *inter partes* review of the challenged claims pursuant to 35 U.S.C. §§ 311–319. Paper 2 (“Pet.”). Patent Owner filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

The Decision to Institute was entered on January 14, 2025. Paper 7. Patent Owner filed a Response to the Petition (Paper 14, “PO Resp.”). Petitioner filed a Reply to the Patent Owner’s Response (Paper 22, “Reply”). Patent Owner filed a Sur-reply (Paper 25, “Sur-reply”).

B. Real Parties in Interest

Petitioner identifies itself as the real party in interest. Pet. 94. Patent Owner also identifies itself as the real party in interest. Paper 3 (Patent Owner’s Mandatory Notices), 1.

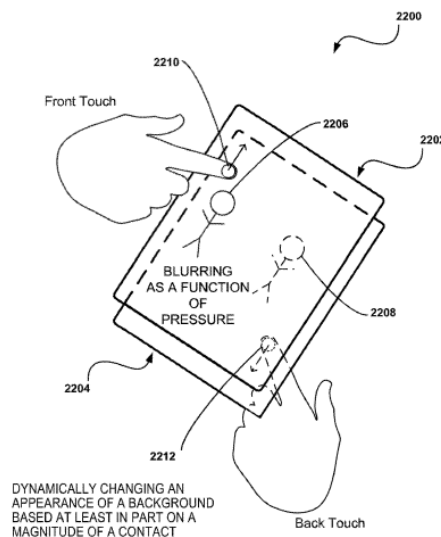
C. Related Matters

As required by 37 C.F.R. § 42.8(b)(2), each party identifies *Smith Interface Technologies, LLC v. Apple Inc.*, Case No. 3-23-cv-01187 (S. D. Cal.), filed June 27, 2023. Pet. 94; Paper 3, 1. Patent Owner also identifies one concluded case: *Smith Interface Technologies, LLC v. Samsung Electronics Co., Ltd. et al.*, 2-22-cv-00290 (E. D. Tex.). Paper 3, 1.

D. The '755 Patent

The '755 patent issued on May 19, 2020, from Application No. 16/558,022, filed August 30, 2019. Ex. 1001, codes (21), (22), (45). It claims priority through a chain of continuation applications to three provisional applications the earliest filed of which is Provisional Application No. 61/515,835, filed August 5, 2011. *Id.* at code (60).

The '755 patent is titled “Gesture-Equipped Touch Screen System, Method, And Computer Program Product.” Ex. 1001, code (54). The patent generally relates to “touch screens.” Ex. 1001 at 1:37–38. According to the '755 patent, Figure 22, shown below, illustrates “a 3D layered user interface.” Ex. 1001 at 73:66.



[Figure 22 of the 755 patent]

Figure 22 of the '755 patent shows a 3D layered user interface, including front layer 2202, back layer 2204, display element 2208, and gestures 2210 and 2212. *Id.* at 73:66–67; 76:1–6. Gestures may move elements on a foreground display layer or virtual background display layer. *Id.* at 76:1–14. An appearance of a background may be dynamically changed based at least in part on a magnitude of a contact. *See id.* Fig. 22 (caption). According to the '755 patent, “gesture magnitude refers to the magnitude of the associated gesture dynamics” and “in one embodiment, the gesture magnitude of a swipe may include the length of the swipe and/or the contact pressure exerted during the swipe.” *Id.* at 67:1–5. The patent describes examples of the use of layers, such as that “a background layer may be transformed such that it appears to be below rippling water, while the foreground layer appears to be floating on the surface.” *Id.* at 75:27–29.

Of all challenged claims, claims 1 and 23 are independent. Claim 1 is illustrative and reproduced below:¹

- [1.pre] An electronic device, comprising:
 - [1.a] a display;
 - [1.b] a touch-sensitive surface;
 - [1.c] one or more processors;
 - [1.d] memory; and
 - [1.e] one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors, the one or more programs including instructions for:

¹ The bracketed labels correspond to those used by Petitioner to reference the claim elements. *See* Pet. vii–viii. We use the same labels here for ease of reference, understanding, and consistency.

- [1.f] displaying a first user interface on the display, wherein the first user interface includes:
- [1.g] a background with an appearance, and
- [1.h] one or more foreground objects;
- [1.i] while displaying the first user interface on the display, detecting a first input by a first contact on the touch-sensitive surface at a location in the first user interface that corresponds to the background of the first user interface; and
- [1.j] 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,
- [1.k] wherein 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
- [1.l] wherein 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.

Ex. 1001, 101:10–42.

Claim 23 is a method claim but recites steps corresponding to the functionalities recited in claim 1. *Id.* at 104:51–105:9.

E. References and Declarations

Petitioner relies on the following references:

Name	Patent Document/Publication	Exhibit
Jablonski ²	US 6,920,606 B1	1008
Jobs ³	US 2008/0122796 A1	1009

² Issued July 19, 2005. Ex. 1008, code (45).

³ Published May 29, 2008. Ex. 1009, code (43).

Name	Patent Document/Publication	Exhibit
Westerman ⁴	US 2008/0316183 A1	1005
Townsend ⁵	US 2010/0103118 A1	1006
Hackborn ⁶	US 2011/0119610 A1	1004

Petitioner relies on the Declaration and Supplemental Declaration of Andrew Cockburn, Ph.D. (Exs. 1003, 1031). Patent Owner relies on the Declaration of Mark P. Mahon, Ph.D. (Ex. 2005).

F. Asserted Ground of Unpatentability

Petitioner asserts that the following grounds of unpatentability:

Claims Challenged	35 U.S.C. § ⁷	Reference(s)/Basis
1–3, 7, 10, 11, 13, 15, 17, 20, 22–25, 29, 32, 33, 35, 37, 38, 41, 42	103(a)	Hackborn, Westerman
4, 5, 8, 9, 21, 26, 27, 30, 31, 43	103(a)	Hackborn, Westerman, Townsend
16	103(a)	Hackborn, Westerman, Jablonski
18, 19, 39, 40	103(a)	Hackborn, Westerman, Jobs
1, 4–8, 10–12, 15, 17–20, 22, 23, 26–30, 32, 34, 37–42	103(a)	Hackborn, ⁸ Westerman, Jobs

⁴ Published December 25, 2008. Ex. 1005, code (43).

⁵ Published April 29, 2010. Ex. 1006, code (43).

⁶ Published May 19, 2011. Ex. 1004, code (43).

⁷ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, (2011), amended 35 U.S.C. §§ 102 and 103 effective March 16, 2013. Because the ’755 patent claims priority to an application filed before the AIA’s amendments to §§ 102 and 103, we apply the pre-AIA versions of §§ 102 and 103.

⁸ For this alleged ground of obviousness, Petitioner is relying on an embodiment of Hackborn different from that relied on in other grounds.

Pet. 4, 44, 53, 55, 63.

II. ANALYSIS

A. *Burden of Proof*

Petitioner has the burden of proving unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e). That burden never shifts to Patent Owner except in limited circumstances not present here. *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1375 (Fed. Cir. 2016). “Preponderance of the evidence means the greater weight of evidence, evidence which is, more convincing than the evidence which is offered in opposition to it.” *United States v. C.H. Robinson Co.*, 760 F.3d 1376, 1383 (Fed. Cir. 2014) (internal quotations omitted).

B. *Level of Ordinary Skill in the Art*

Petitioner relies on declaration testimony of Dr. Cockburn, who asserts that a person of ordinary skill in the art (hereinafter “POSITA”) “would have had at least a bachelor’s degree in computer science, computer engineering, electrical engineering, human-computer interaction, or a related field, and would have had at least two years of relevant work experience in the design and development of graphical user interfaces (GUIs), human-computer interfaces, or equivalents thereof.” Pet. 9 n.2 (citing Ex. 1003 ¶ 26); Ex. 1003 ¶ 26.

Patent Owner asserts that Dr. Cockburn’s definition of the level of ordinary skill in the art “is overbroad to the extent it includes work experience in the design and development of human-computer interfaces.” PO Resp. 7. Instead, Patent Owner proposes the following: “[A] POSITA would have had at least a bachelor’s degree in computer science, computer engineering, electrical engineering, or a related field, and would have had at

least two years of relevant work experience in the design and development of graphical user interfaces (GUIs) or equivalents thereof.” PO Resp. 7.

The difference between the parties’ positions is solely that Petitioner includes “human-computer interaction” as a relevant degree and “human computer interfaces” as relevant working experience. We need not resolve that difference, because no matter which stated level of ordinary skill is applied, all of our findings and conclusions would be the same and because neither party asserts the other party’s expert is not qualified as an expert.

In the Decision on Institution, we adopted Petitioner’s stated level of ordinary skill in the art. Inst. Dec. 8. We continue to adopt Petitioner’s stated level of ordinary skill in the art.⁹

C. Claim Construction

We use the same claim construction standard that would be used to construe a claim in a civil action under 35 U.S.C. § 282(b), including construing the claim 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(b) (2022). The claim construction standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc) is applicable.

Claim terms are generally given their ordinary and customary meaning as would be understood by one with ordinary skill in the art in the context of the specification, the prosecution history, other claims, and extrinsic evidence including expert and inventor testimony, dictionaries, and learned treatises, although extrinsic evidence is less significant than the

⁹ Our findings and conclusions would be the same, however, had we applied Patent Owner’s articulation of the level of ordinary skill in the art.

intrinsic record. *Phillips*, 415 F.3d at 1312–17. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

The specification may reveal a special definition given to a claim term by the patentee, or the specification or prosecution history may reveal an intentional disclaimer or disavowal of claim scope by the inventor. *Id.* at 1316. If an inventor acts as his or her own lexicographer, the definition must be set forth in the specification with reasonable clarity, deliberateness, and precision. *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998). The disavowal, if any, can be effectuated by language in the specification or the prosecution history. *Poly-Am., L.P. v. API Indus., Inc.*, 839 F.3d 1131, 1136 (Fed. Cir. 2016).

Only those claim terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

Petitioner asserts that “no claim terms need be construed to resolve issues of controversy in the present Petition.” Pet. 3. Patent Owner agrees that “no formal constructions of any claim terms are necessary.” PO Resp. 7. We agree with the parties that no express construction of any claim term is necessary.

*D. Alleged Obviousness of Claims 1–3, 7, 10, 11, 13, 15
17, 20, 22–25, 29, 32, 33, 35, 37, 38, 41, and 42 over
Hackborn and Westerman*

1. The Law on Obviousness

A claim is unpatentable under 35 U.S.C. § 103(a) “if the differences between the subject matter to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. § 103(a); *see KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations, including commercial success, long-felt but unsolved needs, failure of others, and unexpected results. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

2. Overview of Hackborn (Ex. 1004)

Hackborn discloses it “relates to components of computer operating systems, including background desktop components commonly referred to as computer wallpaper.” Ex. 1004 ¶ 2. Hackborn describes “techniques that may be used for managing objects on a home screen for a computer operating system.” *Id.* ¶ 6. Figure 1, shown below, shows a computing device with home screen which includes “live wallpaper.” *Id.* ¶ 15.

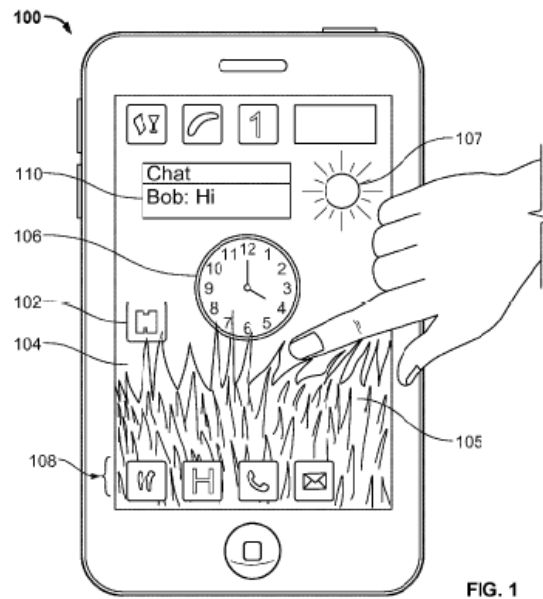


Figure 1 shows a computing device displaying a home screen layout that includes live wallpaper. Ex. 1004 ¶ 15.

As disclosed in Hackborn, Figure 1 illustrates computing device 100, wallpaper 104, with grass 105 and sunny sky 107. Ex. 1004 ¶ 26. Hackborn describes that “[i]n 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.* ¶ 28.

3. Overview of Westerman (Ex. 1005)

Westerman describes ways for “interpreting manual swipe gestures as input in connection with touch-sensitive user interfaces that include virtual keyboards.” Ex. 1005, code (57). Westerman describes its method includes “detecting a swipe gesture across the virtual keyboard, determining a direction of the swipe gesture, and performing a predetermined function determined by the direction of the swipe gesture.” *Id.* ¶ 18.

Westerman’s “[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.” Ex. 1005 ¶ 19. Westerman notes that “[i]f the displacement does not exceed the threshold, the input can be interpreted as a conventional tap.” *Id.* In addition, the “time of the motion associated with the input can also be compared to a maximum swipe gesture timeout threshold” where, “[i]f the timeout threshold is exceeded, the input can be interpreted as a conventional tap.”

4. *Claim 1*

Patent Owner does not dispute Petitioner’s accounting of the preamble [1.pre] and limitations [1.a] through [1.i], for which Petitioner makes its assertions on pages 14–20 of the Petition. We have reviewed Petitioner’s reasonings and supporting evidence for [1.pre] and [1.a] through [1.i], and find no deficiency with respect thereto. Hereinbelow, we discuss the issues relating to the other limitations of claim 1.

a) *Limitation [1.j]*

Limitation [1.j] recites:

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,

Pet. vii. Petitioner asserts:

Hackborn explains that, in response to a user “swiping her finger across a touch-sensitive display screen” shown in Figure 1, “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." APPLE-1004, [0028].

Pet. 21.

Petitioner explains:

Hackborn further teaches or renders obvious that, while the live wallpaper changes (e.g., grass appears to sway) responsive to the user touch, the icons do not move. APPLE-1004, [0028], [0033], [0040]-[0043], [0046]-[0048], FIGS. 1, 4, 5A-5B, 6; APPLE-1003, ¶66. For instance, Hackborn states that "the application area would be displayed above the wallpaper layer and the icon layer" such that the "live wallpaper 604 may continue to update in the background, whether the user is working on applications or not." APPLE-1004, [0047]. Hackborn also explains that display updates to the background may occur independently of updates to other displayed items – "the wallpaper object may execute in its own separate environment, and the wallpaper 104 may be updated independently of other displayed graphics that are associated with the other objects, constructs, or applications." *Id.*, [0027]. Hackborn also discloses that "[i]cons 608a-d are shown on a display layer above the wallpaper 604." *Id.*; *see also id.*, [0025]. Based at least on these teachings of independence of background/foreground display updates, and on Hackborn's discussion of different "layers" of appearance of the interface, a POSITA would have understood that a user swipe on the grass would affect only the appearance of the wallpaper and not the appearance of any of the objects on layers above the wallpaper layer or, at the least, they would have considered this obvious from the cited disclosures of Hackborn. APPLE-1003, ¶66; *see* APPLE-1004, [0029]-[0036], FIG. 2.

Pet. 21–22.

With respect to responding to a detected contact having a magnitude that is above a threshold, Petitioner relies on the teachings of Westerman and Petitioner's reasons for combining the teachings of Hackborn and Westerman. Pet. 9–14, 22. Petitioner asserts:

[A] POSITA would have further found obvious that the HWD [Hackborn-Westerman-Device] 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.” APPLE-1005, [0018]-[0019], [0060]-[0061] (describing using distance and time magnitudes associated with the input), [0062] (explaining that “an initial velocity at touchdown” can be used ‘to distinguish a swipe from a tap’), [0063]-[0064]; APPLE-1003, ¶67. Thus, the detection of the user input would be in accordance with a determination that the input has a magnitude (e.g., path length) that is above a threshold, or a predetermined minimum. *Id.*

Pet. 22.

In particular, Petitioner notes:

Hackborn explains that, “[i]n the example shown in FIG. 1, a user is swiping her finger across a touch-sensitive display screen,” and in 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.” APPLE-1004, [0028]; *see also id.*, [0033]-[0034]; APPLE-1003, ¶49.

Hackborn further teaches that its device can receive other “predetermined inputs,” including “tapping on the display screen.” APPLE-1004, [0028]. In response, Hackborn states that “[t]he touch interface 706 may coordinate with the display controller 704 to identify what item or items on a display a user is selecting by touching at a particular location.” *Id.*, [0054]. *To the extent Hackborn lacks details on how to distinguish tap from swipe inputs, a POSITA would have naturally looked to other prior art teachings that discuss “interpreting manual swipe gestures as input in connection with touch-screen keyboards,” such as Westerman.* APPLE-1003, ¶50; APPLE-1005, [0011].

Pet. 11–12 (emphasis added). As is noted by Petitioner, Westerman discloses identifying a finger swipe by determining whether the finger path displacement exceeds a predetermine threshold (Ex. 1005 ¶ 19) and by using

an initial velocity at touchdown to distinguish a swipe from a tap (Ex. 1005 ¶¶ 61–62). *Id.* at 12.

Notwithstanding Patent Owner’s argument, discussed below, we are persuaded by Petitioner that Petitioner’s proposed combination of Hackborn and Westerman reasonably suggests and adequately accounts for limitation [1.j].

Patent Owner asserts:

Petitioner’s asserted combination fails to disclose “dynamically changing the appearance of the background ... in accordance with a determination that the first contact has a magnitude that is above a threshold.” In Hackborn, the live grass wallpaper is active and “may *respond to inputs* from a user”, one “*example*” of which is “bend[ing] or sway[ing] as if contacted by the user’s finger during [a] swipe.” EX1004, [0026], [0028]. Hackborn explains that the information it collects from an input “may be used by the process executing the wallpaper 104 to determine that the user’s finger *contacted* items on the wallpaper—here, the grass 105.” EX1004, [0033]. Thus, a POSITA would understand that Hackborn’s only disclosed criteria for causing a change to the grass is contact with a finger, not path length or velocity (nor whether such an input is a swipe *instead of* a tap). EX2005, ¶67. Hackborn’s reference to specific functions like a swipe “are meant to be exemplary only, and are not meant to limit implementations.” EX1004, [0061].

Hackborn does not indicate that taps would be excluded from the inputs that animate the grass, nor does Hackborn suggest such a distinction is necessary or desired. EX2005, ¶68. The goal of Hackborn’s moving grass is to generate an animation to make it seem like “the user’s finger contacted items on the wallpaper,” as if in real life. EX1004, [0033]; EX2005, ¶68. A POSITA would therefore understand that Hackborn’s live grass wallpaper is intended to simulate the real world effect of touching grass. EX2005, ¶68. And, as Petitioner’s expert acknowledged, “[i]n the physical real world,” “if you poke a blade of grass ..., it’s going to bend away from you.” EX2007, 63:21–64:2.

PO Resp. 27–28. Patent Owner further asserts: “Neither Hackborn nor Westerman disclose or suggest that a tap should be ignored while a swipe initiates an action.” *Id.* at 28.

According to Patent Owner, Petitioner fails to articulate an adequate motivation to combine the teachings of Westerman regarding how to recognize a swipe with the teachings of Hackborn because Petitioner does not “point to anywhere that Hackborn discloses or suggests distinguishing between taps and swipes on its wallpaper.” Pet. 21. Patent Owner asserts that “Petitioner uses the Challenged Claims as a roadmap, engaging in impermissible hindsight by manufacturing a problem in Hackborn to be solved with unnecessary prior art so as to reconstruct the claimed inventions.” *Id.* Patent Owner explains that Westerman distinguishes between taps and swipes on a virtual keyboard to determine which discrete function should result from a given input, whereas Hackborn is simply interested, broadly, in whether a given user contact is on the wallpaper or on an icon displayed above the wallpaper. *Id.* at 22. Patent Owner contends that Petitioner’s alleged need to look outside of Hackborn for teachings on how to identify a swipe or distinguish a swipe from a mere contact “is false as a premise.” *Id.* at 23.

Patent Owner further notes that Dr. Cockburn contends that a POSITA would have been motivated to implement Hackborn’s animation in a way that would “simulate real-world behavior,” and that Dr. Cockburn concedes that real-world grass moves whether poked or swiped. PO Resp. 24. Patent Owner takes the view that “Hackborn does not need a threshold determination between taps and swipes to initiate movement of the grass because the grass already moves based on the magnitude of a contact.” *Id.*

at 25. Patent Owner notes that in paragraph 28, Hackborn gives other examples of activating live wallpaper and one of them is “tapping on the display screen a predetermined number of times within a predetermined time period.” PO Resp. 24. According to Patent Owner, that confirms that a single tap would move the blades of grass in the background wallpaper, just the same as a swipe. *Id.*

Patent Owner contends that the magnitude of the vector data that represents the position, speed, and direction of the contact is what determines the magnitude of the visual effect of the dynamically generated animation. PO Resp. 24. Patent Owner summarizes: “Thus, a POSITA would understand that there is no need for a threshold determination between swipes and taps in Hackborn because less contact movement on the grass already results in less apparent movement of the grass—it is a continuum.” *Id.* Patent Owner contends that neither Hackborn nor Petitioner provides a rationale “why Hackborn’s live grass wallpaper would seek to prevent taps on the wallpaper from causing the grass to move.” *Id.* at 26.

We have considered all of Patent Owner’s arguments but find them misplaced and unavailing. They do not undermine Petitioner’s accounting for limitation [1.j]. Petitioner’s positions are better supported by the cited evidence than are Patent Owner’s assertions which, in our view, are strained.

First, we find that Hackborn clearly discloses an embodiment in which swiping the finger, not just mere contact without motion (i.e., a tap), moves the blades of grass in the background wallpaper. Hackborn explicitly states: “In the example shown in FIG. 1, a user is swiping her finger across a touch-sensitive display screen of the computing device. In 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." Ex. 1004 ¶ 28. Because this description expressly refers to "swiping" or moving the finger "across" the display screen, it does not encompass a mere tap, or contact by the user that does not move on the display screen.

If a single-tap-contact embodiment for moving the blades of grass in the background wallpaper is disclosed, it would be in an embodiment different from the swiping embodiment. Here, Petitioner is relying only on the swiping embodiment for moving the blades of grass in the background wallpaper. Thus, we disagree with Patent Owner that Hackborn discloses no need to distinguish a tap from a swipe. We find that in the swipe embodiment, it is important to distinguish a tap from a swipe, and thus there is reason, as Petitioner contends, for one of ordinary skill in the art to look to Westerman for implementation details on how to make such a distinction.

Specifically, for recognizing a swipe from a tap, Westerman describes determining whether the finger path displacement exceeds a predetermined threshold (Ex. 1005 ¶¶ 19, 61), and examining the initial velocity of the contact at contact's touchdown (Ex. 1005 ¶¶ 19, 62). As for Patent Owner's noting that in several instances Hackborn generally refers to a user's finger contacting items on the wallpaper, that does not undermine Petitioner's positions, because in the "swipe" embodiment, the referenced contact would be a swipe, and not a single tap without any motion of the finger.

In any event, we do not find disclosure in Hackborn of a single-tap-contact embodiment for moving the blades of grass in the background wallpaper. Paragraph 28 of Hackborn does refer to other examples of

activating live wallpaper, including tapping on the display screen a predetermined number of times within a predetermined time period, but that is not a disclosure of a single-tap embodiment for activation. Those examples also are not expressly tied to grass-blades wallpaper. Even if that example were a single-tap embodiment for grass-blades wallpaper, it would be different from and independent of Hackborn's "swipe" embodiment for grass-blades wallpaper and would not undermine Petitioner's reliance on Hackborn's "swipe" embodiment for activating live grass-blades wallpaper.

Patent Owner's discussion of Hackborn's converting each contact to vector data having position, speed, and direction information also does not undermine Petitioner's assertions. Rather, Hackborn's discussion of vector data is consistent with Petitioner's reliance on a user's "swipe" action, and provides reasons for one of ordinary skill in the art to look to Westerman's teachings with regard to what more to do with such vector information, e.g., determining initial touch down speed and/or contact path length and examining their magnitude to recognize a swipe.

Further, that grass blades would, in real life, move if one simply tapped the touch-sensitive display, rather than swiped it, and that Hackborn's intent is to simulate real-life movement do not mean Hackborn discloses a single-tap embodiment for activating movement of the grass blades in the wallpaper. The fact is that in Hackborn's "swipe" embodiment the live wallpaper is activated when the grass blades are swiped on the display screen.

As for Patent Owner's contention (PO Resp. 26) that neither Hackborn nor Petitioner provides a rationale "why Hackborn's live grass wallpaper would seek to prevent taps on the wallpaper from causing the

grass to move,” the argument is misplaced. Petitioner does not contend that, in general, Hackborn affirmatively prevents taps on the wallpaper from causing the grass to move, for all examples and in all instances. Petitioner simply relies on the “swipe” embodiment for Petitioner’s contentions, which does not encompass single-tap activation without finger movement on the display screen as discussed above. If Hackborn has a single-tap activation embodiment, it would be separate from the “swipe” embodiment on which Petitioner relies.

For the foregoing reasons, we are persuaded by Petitioner that Petitioner’s proposed combination of Hackborn and Westerman reasonably suggests and adequately accounts for limitation [1.j].

b) Limitation [1.k]

Limitation [1.k] recites: “wherein 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.” Pet. vii.

Petitioner explains:

Hackborn explains that, as shown in Figure 1, when a user swipes on the grass in the “live” wallpaper, “the grass blades look as if the finger is actually contacting them as it drags across the screen of the device.” APPLE-1004, [0033]. Thus, the farther the swipe, the more extreme the grass movement expected from Hackborn. *Id.* The dynamic change in appearance of the background (e.g., grass moving) is based at least in part on the magnitude of the gesture because the grass movement effect only occurs in the HWD [Hackborn-Westerman-Device] if the input is determined to be a swipe, in accordance with the magnitude (e.g., path length) of the input, per Westerman. APPLE-1003, ¶68; APPLE-1004, [0028]; APPLE-1005, [0018]-[0019], [0060]-[0064].

Pet. 23. Patent Owner’s arguments pertaining to limitation [1.k] are the same as those it asserts for limitation [1.j], i.e., Hackborn should not be read

as distinguishing a tap from a swipe. We have addressed and rejected that argument in discussing limitation [1.j] above.

Accordingly, we are persuaded by Petitioner that Petitioner's proposed combination of Hackborn and Westerman reasonably suggests and adequately accounts for limitation [1.k].

c) Limitation [1.l]

Limitation [1.l] recites: "wherein 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." Pet. vii.

Petitioner explains:

As discussed above, in response to a determination that a magnitude (e.g., path length) of the user input indicates the input to be a swipe, the device "generate[s] an animation that makes the grass blades look as if the finger is actually contacting them as it drags across the screen." *Id.*, [0033]; APPLE-1005, [0018]-[0019], [0060]-[0064]. While the '755 Patent appears to be silent regarding a dynamic change in appearance of the background, a POSITA would have understood or found obvious that such an "animation" showing the movement of grass would comprise a plurality of images shown in succession that cause the user to see what appears to be the movement of grass, where each of the images are slightly different from one another but displayed in sequence to suggest movement as the images change. APPLE-1003, ¶69 (citing APPLE-1026; APPLE-1027). Indeed, Hackborn describes "produc[ing] an animated **sequence** coordinated with [a] user selection, at or near" a "location on the display at which the user interacts." APPLE-1004, claims 22-33 (emphasis added). In this way, Hackborn teaches displaying in sequence **at least some** of a plurality of images. *Id.*

Pet. 24. Petitioner then adds:

Hackborn further teaches other images (in addition to the "at least some") of the plurality of images that are displayed in

the live wallpaper. APPLE-1003, ¶70. In addition to the live grass animation in the live wallpaper, Hackborn describes other “active content” that can be included in the live wallpaper. APPLE-1004, [0008]. Indeed, Hackborn states that “live wallpaper can include a combination of the described wallpaper examples.” *Id.*, [0050] (emphasis added).

Id. at 25. Petitioner summarizes: “Thus, a POSITA would have understood that the live wallpaper can include any combination, for example, of the moving grass images, photographs, and images from social network websites. APPLE-1003, ¶73; APPLE-1004, [0050].”

Notwithstanding Patent Owner’s argument, discussed below, we are persuaded by Petitioner that Petitioner’s proposed combination of Hackborn and Westerman reasonably suggests and adequately accounts for limitation [1.1].

Patent Owner asserts:

Petitioner argues that such composites [composite wallpapers] are taught merely because Hackborn states that “live wallpaper can include a combination of the described wallpaper examples.” Pet., 25 (quoting EX1004, [0050]). Petitioner manufactures these composites to insert specific features from one embodiment into another in order to meet a specific claim limitation, and does not provide any explanation of why a POSITA would have combined these particular aspects of those wallpapers *in the manner proposed*. See *Abiomed, Inc. v. Maquet Cardiovascular, LLC*, IPR2017-01204, -01205, Paper 8 at 11 (PTAB Oct. 23, 2017) (“Based on the record before us, we are left unpersuaded that the features of [prior art reference’s] various embodiments are interchangeable or that one skilled in the art would have combined those features in the manner proposed by Petitioner.”); EX2005, ¶70. Without further evidence that a POSITA would have made these combinations of embodiments as proposed by Petitioner, such combinations are legally insufficient.

PO Resp. 29–30. This argument by Patent Owner is misplaced and inconsequential, with respect to limitation [1.1], because Petitioner also relies on the grass-blades wallpaper alone, without the addition of any other images in combination with the grass blades.

Accordingly, we are persuaded by Petitioner that Petitioner’s proposed combination of Hackborn and Westerman reasonably suggests and adequately accounts for limitation [1.1].

d) Conclusion

For the foregoing reasons, Petitioner has proved by a preponderance of the evidence that claim 1 would have been obvious over Hackborn and Westerman.

5. Claim 23

Claim 23 is substantially similar to claim 1. Petitioner’s accounting for claim 23 is essentially the same as Petitioner’s accounting for claim 1, and Patent Owner’s arguments directed to claim 23 are the same as those it asserts for claim 1. For essentially the same reasons we conclude above that Petitioner has shown by a preponderance of the evidence that claim 1 is unpatentable over Hackborn and Westerman, we conclude that Petitioner has shown by a preponderance of the evidence that claim 23 is unpatentable over Hackborn and Westerman.

6. Dependent Claims 2, 3, 10, 11, 13, 15, 20, 24, 25, 32, 33, 35, 41, and 42

Claims 2, 3, 10, 11, 13, 15, and 20 each depend, directly or indirectly, from claim 1 and claims 24, 25, 32, 33, 35, 41, and 42 each depend, directly or indirectly, from claim 23. Patent Owner does not present arguments additional to those it has presented for claims independent claims 1 and 23, discussed and rejected above. We have reviewed Petitioner’s accountings

for claims 2, 3, 10, 11, 13, 15, 20, 24, 25, 32, 33, 35, 41, and 42, and are persuaded thereby.

Petitioner has proved by a preponderance of the evidence that claims 2, 3, 10, 11, 13, 15, 20, 24, 25, 32, 33, 35, 41, and 42 would have been obvious over Hackborn and Westerman.

7. *Dependent Claims 7 and 29*

Claim 7 depends from claim 1 and claim 29 depends from claim 23. Claim 7 recites, in pertinent part: “in response to detecting the first input by the first contact on the touch-sensitive surface, in accordance with a determination that the first input does not have a magnitude above the threshold, maintaining the appearance of the background of the first user interface.” Pet. viii–ix. Claim 29 essentially recites the same. *Id.* at xv.

Petitioner explains:

If the magnitude (e.g., path length) is below a threshold, the HWD [Hackborn-Westerman-Device according to Petitioner’s combination] identifies the user input as a tap, rather than a swipe, as Westerman teaches. APPLE-1005, [0061]; APPLE-1003, ¶78. Thus, a POSITA would have understood that if the magnitude (e.g., path length) is not above the threshold, the HWD identifies the gesture as a tap, and not as a swipe, so the background remains unchanged. APPLE-1003, ¶78.

Pet. 31–32.

Patent Owner asserts:

Petitioner contends that under Westerman’s swipe-detection logic, a “tap” would leave Hackborn’s wallpaper unchanged, thereby satisfying Claim 7. *See* Pet., 31. But Petitioner’s argument relies on the mistaken premise that Hackborn’s wallpaper only responds to movement-based gestures (e.g., swiping). Hackborn instead repeatedly emphasizes that grass responds to user contact—not just movement. EX1004, [0026], [0028]; *see also* Section V.A.2.a).

PO Resp. 30. Patent Owner further asserts: “If anything, Hackborn indicates that its grass moves whenever it is touched—i.e., contact is made—regardless of the swipe length or force.” *Id.* at 31.

Patent Owner’s arguments are the same as that which it presents for independent claims 1 and 23, discussed and rejected above. We determined, in discussing claims 1 and 23, that in Hackborn’s “swipe” embodiment for activating live wallpaper of blades of grass, a non-moving contact would not activate the grass blades, and that to the extent there is an embodiment for activating the live wallpaper of grass blades it would be separate from and independent of the Hackborn’s “swipe” embodiment for doing the same.

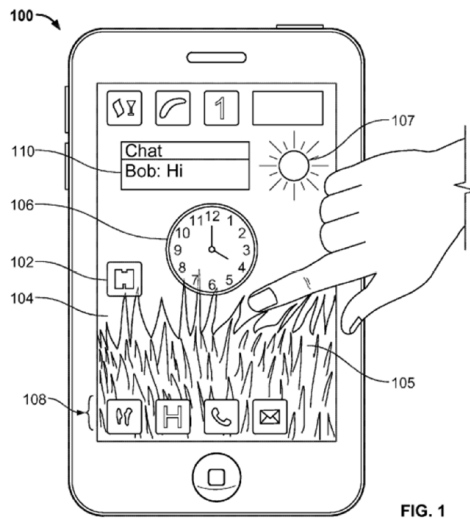
Thus, notwithstanding Patent Owner’s contrary arguments, we are persuaded by Petitioner’s accounting for claims 7 and 29. Petitioner has proved by a preponderance of the evidence that claims 7 and 29 would have been obvious over Hackborn and Westerman.

8. *Claim 22*

Because claim 22 depends from claim 21, it incorporates all of the limitations of claim 21. Also, claim 22 itself, aside from referencing claim 21 from which it depends, adds close to two columns of additional limitations. Ex. 1001, 103:13–104:50.

Petitioner’s entire treatment of claim 22 is reproduced below:

The HWD renders [22] obvious (e.g., “the background includes [or is] a background image,” “the one or more foreground objects includes one or more application icons”). APPLE-1004, [0026] (“wallpaper shows grass 105 below a sunny sky 107”), [0028], [0030], FIG. 1 (showing, e.g., a phone application icon and a mail application icon); APPLE-1003, ¶92.



APPLE-1004, FIG. 1

[Figure 1 shows a screen with live wallpaper. Ex. 1004 ¶ 15.]

Petitioner's accounting for claim 22 is facially deficient, because it fails to address the limitations of claim 21,¹⁰ and innumerable limitations of claim 22 itself. We note that claim 21 is not challenged in this alleged ground of obviousness.

In its Reply, Petitioner asserts: "Claim 22 was inadvertently listed in Ground 1A [Hackborn and Westerman] instead of 1B [Hackborn, Westerman, and Townsend], which included claim 21 from which it depends." Reply 19. Even if so, the fact remains that it was not addressed in the Petition, and Petitioner has not applied the teachings of Townsend to the limitations of claim 22.

Accordingly, Petitioner has not proved by a preponderance of the evidence that claim 22 would have been obvious over Hackborn and Westerman.

¹⁰ Claim 21 has not been challenged by Petitioner under the obviousness ground of unpatentability over Hackborn and Westerman.

9. *Claims 17, 37, and 38*

Claim 17 depends directly from claim 1. Pet. x. Each of claims 37 and 38 depends directly from claim 23. *Id.* at xvi.

Claim 17 recites: “wherein the electronic device is configured such that the at least some of the plurality of images is displayed, in sequence, by automatically moving, one-by-one, through the at least some of the plurality of images.” Pet. x.

Claim 37 recites: “wherein the at least some of the plurality of images is displayed, in sequence, by automatically displaying, one-by-one, the at least some of the plurality of images.” *Id.* at xvi.

Claim 38 recites: “wherein the at least some of the plurality of images is displayed, in sequence, by automatically moving, one-by-one, through the at least some of the plurality of images.” *Id.*

Petitioner asserts:

[W]here the plurality of images includes images from a social networking website, Hackborn teaches that, “as new information is received” (including information with images), “already displayed posts may be scrolled (e.g., downward).” APPLE-1004, [0046]. With reference to Figure 6 (below), Hackborn explains that, “[w]hen post 606a is received, the previously displayed posts (e.g., posts 606bm 606c, 606d, 606e) may be shifted downward.” *Id.*, [0047]. Thus, the images in the posts are displayed in sequence by automatically moving one-by-one through them as new posts are received. *Id.*; APPLE-1003, ¶86.

Pet. 39. This reasoning is unpersuasive. The reference in claims 17, 37, and 38 to “the at least some of the plurality of images” identifies the at least some of the plurality of images first recited in claim 1 on which claim 17 depends, and the at least some of the plurality of images first recited in claim 23 on which claims 37 and 38 depend. According to independent claims 1 and 23, however, the displaying in sequence of the at least some of the

plurality of images must be based in part on the magnitude of the first contact. Pet. vii–vii, xiv. The social networking posts and images contained therein images, identified by Petitioner as being displayed in sequence by automatically moving one-by-one, have not been shown by Petitioner as being displayed based in part of the magnitude of the user contact, as Patent Owner correctly notes. PO Resp. 32–35.

In its Reply, Petitioner attempts to change its reasoning for claims 17, 37, and 38 by shifting to rely on the background wallpaper of grass swaying in response to user swiping. Reply 13–14. This shift in reliance is a belated new argument and not entitled to consideration. We decline to consider it.

Accordingly, Petitioner has not proved by a preponderance of the evidence that claims 17, 37, and 38 would have been obvious over Hackborn and Westerman.

E. Alleged Obviousness of Claims 4, 5, 8, 9, 21, 26, 27, 30, 31, and 43 over Hackborn, Westerman, and Townsend

1. Overview of Townsend

Townsend describes an “application-programming interface (API) for applications to extend the input received from various multi-touch hardware devices to simulate real-world behavior of application objects.” Ex. 1006, code (57). Townsend describes that its “inertia system provides more realistic movement for application objects manipulated using multi-touch hardware and the API provides a consistent feel to manipulations across applications.” *Id.* Townsend describes accomplishing this because “the inertia system actually generates the events based on a simulation of the behavior of the objects.” *Id.* ¶ 5.

Townsend explains that “real world objects do not typically stop moving when a user stops pushing them, but rather exhibit some inertia and keep moving until friction slows them finally to a stop.” *Id.* ¶ 14. In Townsend, “touch input first goes through a process to interpret the movement of one or more contacts as manipulations” and “[m]anipulations map more directly to user intentions than do individual touch inputs and add support for basic transformation of objects using multiple touch contacts.” *Id.* Townsend describes its system “simulates the continued movement of an application object after the user stops touching the object based on initialization parameters and constraints defined for the object.” *Id.* ¶ 21.

2. *Petitioner’s Proposed Combination of
Hackborn, Westerman, and Townsend*

Petitioner explains:

To the extent that Hackborn does not describe specific techniques and implementation details for animating the grass, a POSITA would have naturally looked to related prior art, such as Townsend, which teaches an API and simulation engine that enable applications “to simulate real-world behavior of objects” using “techniques based on physics to simulate the behavior of the object” in response to touch gestures (e.g., animating the movement of blades of grass). APPLE-1004, [0028]; APPLE-1006, [0014], [0021], [0039]; APPLE-1003, ¶117. A POSITA would have understood that the Hackborn-Westerman-Townsend device (“HWTD”) includes “a simulation engine that performs calculations based on physics to determine the behavior of an object based on [] parameters,” per Townsend, for example, to “provide realistic deceleration or elasticity behavior for application objects set in motion by user touch input.” APPLE-1003, ¶117; APPLE-1006, [0039]. For instance, Townsend describes the use of “initial simulation parameters,” such as “the final state of an application object when a user stopped touching the object.” APPLE-1006, [0039]. In this way, the HWTD would display the “live” wallpaper in a manner that is responsive to the particular user input, such that the changes in the display

are dynamically responsive to changes in the user input, including changing the speed or direction of the touch. APPLE-1003, ¶117.

A POSITA would have been motivated to employ an API and simulation engine that enable simulation of real-world behavior of objects based on physics using various parameters, per Townsend, to implement the “live” wallpaper of Hackborn. APPLE-1003, ¶118. In the combination, a POSITA would have understood that the device’s simulation engine would “perform[] calculations based on physics to determine the behavior of an object [grass] based on” parameters such as characteristics of the user input, per Townsend, including the physical length (e.g., displacement) of the touch (per Westerman), the duration of the touch (per Westerman), direction of the touch (per Hackborn and Townsend), and/or the speed of the touch (per Hackborn), such that the wallpaper (grass blades) “look as if the finger is actually contacting them as it drags across the screen of the device,” per Hackborn. APPLE-1003, ¶118; APPLE-1004, [0033]; APPLE-1005, [0018]-[0019], [0060]-[0063]; APPLE-1006, [0016], [0020], [0037], [0039].

Pet. 46–47. Petitioner further explains: “It would have been obvious to a POSITA to use an API and simulation engine to implement the ‘live’ wallpaper because these elements were well-known for providing graphical displays.” *Id.* at 47–48 (citing Ex. 1006, ¶¶ 31, 39, 50).

Notwithstanding Patent Owner’s arguments to the contrary, discussed below, we find that Petitioner has articulated a reasonable and supported rationale as to why one of ordinary skill in the art would have looked to Townsend to consider its teachings regarding simulation of objects which have been caused to move, and which considers the effects of inertia and frictional resistance.

Patent Owner asserts that Petitioner’s rationale “over-generalizes Townsend’s actual teachings and fails to explain how its system would be relevant—or helpful—for animating the swaying, anchored grass of

Hackborn.” PO Resp. 36. Patent Owner also asserts: “Townsend’s inertia system ‘receives manipulations that only describe the movement of an object based on the movement of contacts with the multi-touch hardware.’

EX1006, [0016].” *Id.* Patent Owner further asserts: “A POSITA would understand that Townsend’s inertia system operates on the motion of whole objects moving across a screen, not a comprehensive physics engine that simulates the real world behavior of any object under any condition.” *Id.* at 36–37 (citing Ex. 2005 ¶ 83).

Patent Owner explains:

Hackborn’s grass is not a free-floating object traveling across the screen after finger release. EX1004, [0028]. Rather, the grass remains anchored at its base and merely “bends or sways as if contacted by the user’s finger.” *Id.* A POSITA would see little relevance of Townsend to Hackborn’s grass animation because Townsend’s inertia engine does not model the deformation or bending of flexible objects in response to a force being applied, nor does it teach or mention simulating the oscillation of that flexible, anchored object after the removal of an applied force. EX2005, ¶84. Moreover, there are no freely moving objects in Hackborn’s live grass wallpaper that would prompt a POSITA to look for a system like Townsend’s. *Id.* Absent a stated need for the object-level friction and collision detection that Townsend discloses, it is simply hindsight to assert that a simulation of Hackborn’s bending grass would be implemented with Townsend’s full-object inertia system without any sufficient rationale to do so. *See Belden Inc.*, 805 F.3d at 1073 (“[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.”).

PO Resp. 37 (emphasis in original).

Petitioner persuasively rebuts Patent Owner’s contentions. First, Petitioner notes that Patent Owner omits Townsend’s broader explanation of

its inertia system: (1) “to move naturally, objects should also exhibit physical characteristics such as elasticity and deceleration; and (2) “the inertia system actually generates the events based on a simulation of the behavior of the objects.” Reply 14. Petitioner adds that “[a] POSITA would have understood such deceleration can occur because of simulated friction between the object and air, and thus describes friction in its simulation of real-world behavior.” *Id.* at 15 (citing Ex. 1031 ¶ 49.).

Second, Petitioner responds as follows:

[Patent Owner] mischaracterizes Townsend as limited to “movement of [free] objects across a screen and colliding into each other,” thus incorrectly concluding that Townsend’s teaching is inapplicable to the “swaying, anchored grass of Hackborn.” POR, 16, 36; APPLE-1031, ¶50. Rather, Townsend teaches that “initialization information may also specify a pivot point of the object.” APPLE-1006, [0022]. A POSITA would have understood that a pivot point is relevant to fixed objects (e.g., grass). APPLE-1031, ¶50. Thus, a POSITA would have understood Townsend’s broader applicability. *Id.*

Further, [Patent Owner]’s argument that a “POSITA would see little relevance of Townsend to Hackborn’s grass animation” due to Townsend’s alleged shortcomings relating to flexible objects and Hackborn’s lack of “freely moving objects” is again based on mischaracterization of Townsend as limited to freely moving objects. POR 37; APPLE-1031, ¶ 51

Reply 15.

Petitioner’s rebuttal points are supported by the cited evidence and undermine the Patent Owner’s assertions about Petitioner’s not having put forth an adequate motivation to combine the teachings of Hackborn and Townsend.

First, Townsend’s calculations of the motion of objects, taking into consideration the inertia at the point of release, frictional deceleration

through the air, and elasticity of material, are relevant to simulating the motion of Hackborn's grass blades even though the grass blades are anchored at one end and the objects Townsend models are free-traveling. Townsend does not have to simulate or model the motion of anchored objects to have relevance. These considerations are general and are not solely limited to non-anchored and freely-moving objects. Patent Owner does not contend that for anchored objects, frictional resistance, inertia, and elasticity of material do not affect their motion.

Second, regarding Petitioner's identifying Townsend's disclosure about a "pivot point" of the object, Patent Owner asserts: "Townsend uses the term 'pivot point' in the context of describing whole object transformations, such as scaling and rotation. EX1006, [0022]. Townsend does not describe it as a parameter applicable to modeling a flexible structure that sways about a fixed base. *Id.*" Sur-reply 10. Patent Owner fails to explain why the anchored base of a grass blade is not a pivot point of rotation for the grass blade. We find that the "pivot point" consideration of Townsend is relevant.

We determine Townsend's teachings about the effects of frictional resistance, inertia, and "pivot point" are all relevant to Hackborn's simulation of the movement of anchored grass blades which have been caused to move by a user's swipe. Petitioner has articulated reasoning with rational underpinnings to combine the teachings of Hackborn and Townsend in the manner proposed by Petitioner.

3. *Claims 5 and 27*

Claim 5 depends from claim 1 and further recites: "wherein the electronic device is configured such that a magnitude of the dynamic change

in the appearance of the background of the first user interface decays following detection of a cessation of the first contact.” Pet. viii.

Claim 27 depends from claim 23 and further recites: “wherein a magnitude of the dynamic change in the appearance of the background of the first user interface decays following detection of a cessation of the first contact.” Pet. xiv–xv.

Petitioner explains:

Hackborn teaches that “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” and doing so “in a manner that simulates frictional dragging of elements.” APPLE-1004, [0008], [0028]. . . . APPLE-1003, ¶121. Additionally, *Townsend teaches that “the simulation engine may provide realistic deceleration or elasticity behavior for application objects set in motion by user touch input,” e.g., “if the user lifted the contacts while the object had a velocity in a particular direction, then inertia system continues sending events that indicate that the object is moving in that direction, slowing down over time as the object decelerates,” or decays.* APPLE-1006, [0016], [0039]. *A POSITA would have recognized that the motion of grass decays (decelerates) once the swipe ceases, per Townsend.* APPLE-1003, ¶121. Moreover, Hackborn describes “changing the manner in which the graphical wallpaper representation is displayed” by “animating motion in the graphical wallpaper representation in a manner that simulates frictional dragging of elements of the graphical wallpaper representation.” APPLE-1004, [0008], claims 4-9. A POSITA would have understood that, by simulating “frictional dragging,” the animating motion of the wallpaper representation (e.g., blades of grass) would appear to slow down, or decay, over time due to a force (e.g., simulated friction) that opposes the “force” provided by the user input (e.g., simulated touching of grass). APPLE-1003, ¶121.

Pet. 49–50 (emphasis added).

Patent Owner first argues that Hackborn does not discuss the animation motion that occurs after the dragging finger is no longer touching the grass, and that one of ordinary skill in the art would understand “frictional dragging” of Hackborn as simply describing the animation of the user’s finger touching the element. PO Resp. 39. The argument is misplaced, because the above-quoted explanation from Petitioner conveys that Petitioner relies primarily on Townsend’s inertial system to expand on Hackborn’s simulated frictional dragging of the grass blades through the air as though in a natural environment.

Patent Owner then argues:

Petitioner does not identify any disclosure in Hackborn indicating that the purported “decay” due to friction occurs “**following** detection of a cessation of the first contact,” as required by claim 5. A POSITA would understand that cessation of a first contact occurs, for example, when the user lifts a finger from contacting the screen at the end of a gesture. EX2005, ¶88. However, whether contact with the screen has ended is not a determination considered anywhere in Hackborn’s disclosure. *Id.* . . . A POSITA would not expect that the animation of the blades of grass would delay until the finger is lifted from the screen instead of not touching the grass because any delay in performing the grass animation following the contact with the grass would not make “the grass blades look as if the finger is actually contacting them.” *Id.*; EX1004, [0033].

PO Resp. 39–40. This argument is persuasive. Ceasing contact with the screen is different from no longer touching or dragging the grass on the screen. In Petitioner’s accounting, Hackborn’s simulated frictional dragging results in the ceasing of grass movement after the user ceases to swipe. Pet. 49-50; Ex. 1003 ¶ 121. It is the addition of Townsend’s realistic deceleration or elasticity that provides for further decelerated motion based on inertia.

In its Reply, Petitioner posits a scenario where the gesture of swiping the grass blades is at the edge of the screen and another scenario where the gesture of swiping the grass blades is not at the edge of the screen. Reply 16–17. In both, Petitioner suggests that decay would occur after detection of cessation of contact with the screen. *Id.* However, Petitioner does not cite to any evidence which shows that cessation of contact with the screen is actually detected. When asked at oral hearing about this matter, counsel for Petitioner similarly did not identify any specific detection of cessation of contact. Tr. 18–20. We find that, at most, the evidence supports recognizing user’s finger no longer dragging the grass or no longer touching the grass, but does not support detecting cessation of contact with the screen as claimed. Therefore, we find that Petitioner’s evidence is deficient because the claim requires “decay[] following detection of a cessation of the first contact.”

For the foregoing reasons, Petitioner has not proved by a preponderance of the evidence that claims 5 and 27 are unpatentable over Hackborn, Westerman, and Townsend.

4. *Claims 8 and 30*

Claim 8 depends from claim 1, and further recites: “wherein the one or more programs includes instructions for: in response to detecting a cessation of the first input, ceasing the dynamically changing of the appearance of the background.” Pet. ix.

Claim 30 depends from claim 23 and further recites: “in response to detecting a cessation of the first input, ceasing the dynamically changing of the appearance of the background.” Pet. xv.

Patent Owner presents essentially the same arguments as it presents for claims 5 and 27. We have reviewed Petitioner’s accounting for claims 8

and 30 (Pet. 50, 52). It similarly lacks a showing for how detection of cessation of contact is met, as we discussed above in the context of claims 5 and 27.

Accordingly, Petitioner has not proved by a preponderance of the evidence that claims 8 and 30 are unpatentable over Hackborn, Westerman, and Townsend.

5. *Claims 9 and 31*

Claim 9 depends from claim 1 and further recites “wherein the one or more programs includes instructions for: in response to detecting a cessation of the first input, ceasing the dynamically changing of the appearance of the background and reverting to the display of the first user interface, including the background, on the display.” Pet. ix.

Claim 31 depends from claim 23 and further recites “in response to detecting a cessation of the first input, ceasing the dynamically changing of the appearance of the background and reverting to the display of the first user interface, including the background, on the display.” Pet. xv.

Petitioner explains:

Townsend teaches that the simulation component “uses techniques based on physics to simulate the behavior of the object for a period after the user releases the object.” APPLE-1006, [0021]. A POSITA would have understood that, according to physics, the blades of grass, at least in some instances, would return to their initial positions upon cessation of contact, and therefore the background reverts to its original state. APPLE-1003, ¶124.

Pet. 51–52. Petitioner’s expert, Dr. Cockburn, testifies the same. Ex. 1003 ¶ 124. We are unpersuaded by this reasoning, which is speculative and based on mere coincidence, which in our view does not satisfy “in response to.” We agree with Patent Owner that “Petitioner’s speculation that blades

of grass ‘would return to their initial positions upon cessation of contact’ lacks textual grounding in Hackborn and Townsend. PO Resp. 42–43.

Further, with regard to both claims 9 and 31, as discussed above in the context of claims 5, 8, 27, and 30, Petitioner has not shown any detection of cessation of contact.

Accordingly, Petitioner has not proved by a preponderance of the evidence that claims 9 and 31 are unpatentable over Hackborn, Westerman, and Townsend.

6. *Claims 21 and 43*

Claim 21 depends from claim 1 and further recites: “wherein the electronic device is configured to, in response to detecting a cessation of the first input, revert to one of the plurality of images that is different from that which is displayed as the background prior to detecting the first input.” Pet. x.

Claim 43 depends from claim 23 and further recites: “in response to detecting a cessation of the first input, displaying an image that is different from that which is displayed as the background prior to detecting the first input.” Pet. xvi.

Petitioner asserts:

Hackborn teaches that the displayed grass moves as if contacted by a finger, and Townsend teaches that a “simulation engine performs calculations based on physics to determine the behavior of an object” so that the simulation object can provide “realistic deceleration or elasticity behavior for application objections set in motion by user touch input.” *Id.* A POSITA would have understood and/or found obvious that, in some scenarios (e.g., when objects interact according to “elasticity behavior”), after the gesture ceases, the scene will not revert to the original image (e.g., because the user touch caused the grass to move in one direction and not move back). APPLE-1003, ¶125. Indeed, a

decision among two choices, ceasing with the grass returned to its original position and ceasing with the grass in a position other than the returned position, is a design choice well within the grasp of a POSITA. *Id.*

Pet. 51–52. Petitioner’s expert, Dr. Cockburn, testifies the same. Ex. 1003

¶ 125. We are unpersuaded by this reasoning.

Regarding claim 21, ceasing with the grass in a position other than the original position is not what is claimed. Rather, the grass must return to one of the other plurality of images which were previously displayed. Petitioner has not addressed the specific feature claimed. Further, Petitioner’s reference to “in some scenarios” conveys reliance on speculation and coincidence, which we do not regard as satisfying “in response to.”

Unlike claim 21, claim 43 is broader and requires only displaying an image that is different from that which is displayed as the background prior to detecting the first input, not necessarily one of the previously displayed images. However, Petitioner’s accounting is also inadequate, by calling the ending image a design choice. Petitioner relies on Hackborn, Westerman, and Townsend to display the natural frictional dragging of the grass blades as though they are moving in nature, taking into consideration of frictional drag through the air and material elasticity of the grass blades themselves. Thus, the end image of the grass blades in the simulation is an image according to the formulas and techniques of the simulation, not something arbitrarily selectable by choice. Petitioner has not explained why by applying the formulas and techniques of Townsend in Hackborn the resulting image would be something different from that which is displayed as the background prior to detecting the first input.

Further, with regard to both claims 21 and 43, as discussed above in the context of claims 5, 8, 27, and 30, Petitioner has not shown any detection of cessation of contact.

Thus, Petitioner has not proved by a preponderance of the evidence that claims 21 and 43 are unpatentable over Hackborn, Westerman, and Townsend.

7. *Claims 4 and 26*

Claim 4 depends from claim 1 and further recites: “wherein the electronic device is configured such that the dynamic change in the appearance of the background of the first user interface is based in part on a positive rate of change in the magnitude of the first contact.” Pet. viii.

Claim 26 depends from claim 23 and further recites: “wherein the dynamic change in the appearance of the background of the first user interface is based in part on a positive rate of change in the magnitude of the first contact.” Pet. xiv.

Petitioner presents its accounting for claims 4 and 26 on pages 48–49 and 52 of the Petition. Patent owner makes no argument additional to those it presents for claims 1 and 23. We are persuaded that Petitioner has made an adequate accounting for claims 4 and 26. We determine that Petitioner has proved by a preponderance of the evidence that claims 4 and 26 are unpatentable over Hackborn, Westerman, and Townsend.

F. *Alleged Obviousness of Claim 16 over Hackborn, Westerman, and Jablonski*

Claim 16 depends from claim 1 and further recites: “wherein the electronic device is configured such that the background is one of pre-installed backgrounds stored in the memory and the background is capable of being selected by a user.” Pet. x.

Jablonski discloses an interactive system for providing wallpaper or screen saver images for display on the background of a personal computer visual display. Ex. 1008, Abstr. Jablonski states: “Wallpaper images are usually included as part of the computer’s operating system, or are added later by the user with the addition of a designated wallpaper program or other software, or by downloading images from various sources on the Internet, such as web pages, commercial sites, or the like.” *Id.* at 1:34–38.

Petitioner asserts: “Jablonski explains that ‘[w]allpaper images are usually included as part of the computer’s operating system.’ APPLE-1008, 1:34–40. In view of this well known teaching, a POSITA would have found it obvious for the background (e.g., grass wallpaper to be one of a plurality of pre-installed wallpapers stored in the memory of the HW-Jablonski device. APPLE-1003, ¶133.” Patent Owner does not present arguments directed to claim 16 that are additional to those it presents for claim 1, which we have discussed and rejected above.

We are persuaded by Petitioner’s expressed reasoning. Petitioner has proved by a preponderance of the evidence that claim 16 would have been obvious over Hackborn, Westerman, and Jablonski.

G. Alleged Obviousness of Claims 18, 19, 39, and 40 over Hackborn, Westerman, and Jobs

Claim 18 depends from claim 1 and further recites: “wherein the electronic device is configured such that the first user interface includes a lock screen.” Pet. x.

Claim 19 depends from claim 1 and further recites: “wherein the electronic device is configured such that the first user interface includes a lock screen that is unlocked. Pet. x.

Claim 39 depends from claim 23 and further recites: “wherein the first user interface includes a lock screen.” Pet. xvi.

Claim 40 depends from claim 23 and further recites: “wherein the first user interface includes a lock screen that is unlocked.” Pet. xvi.

Jobs discloses a device with a touch-sensitive display with a graphical user interface. Ex. 1009 ¶ 8. The user interacts with the graphical user interface primarily through finger contacts and gestures on the touch-sensitive display. *Id.* Figures 3A and 4B of Jobs are reproduced below:

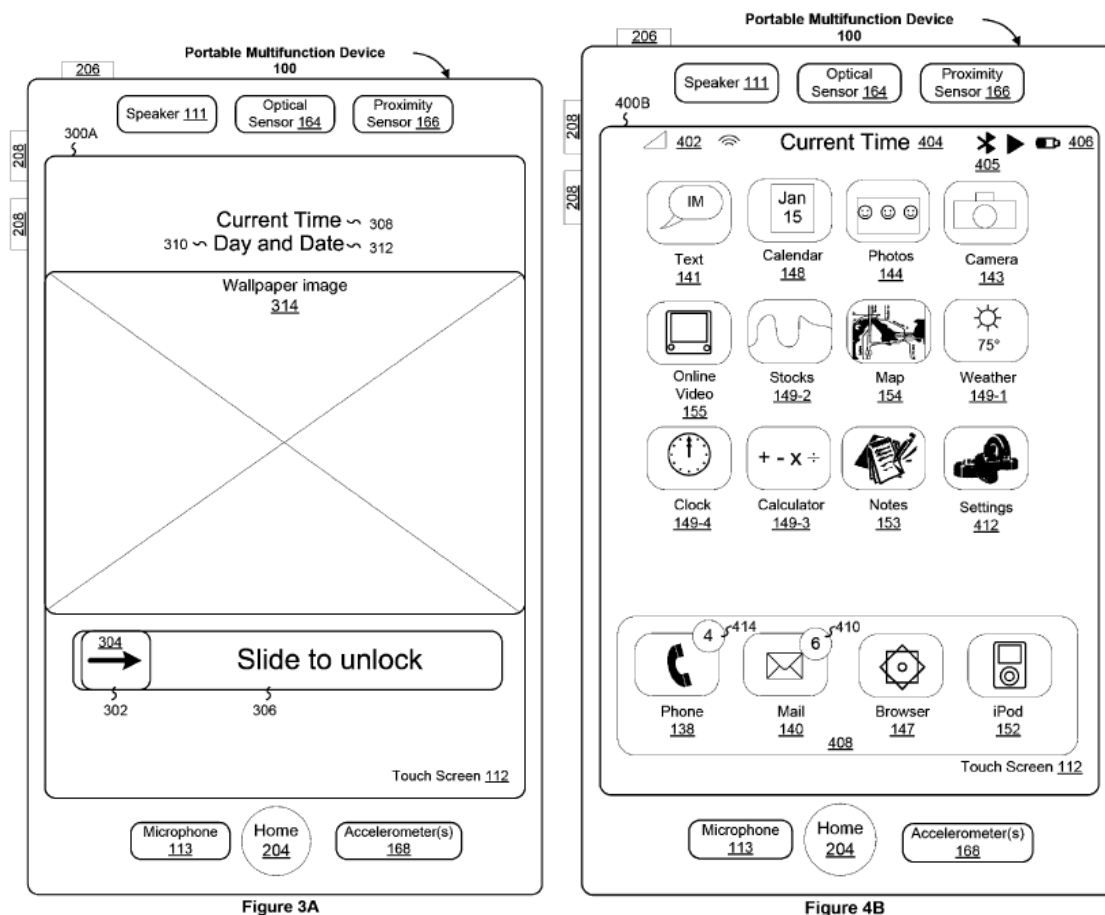


Figure 3A illustrates an exemplary user interface screen for unlocking a portable electronic device according to some embodiments of Jobs.

Ex. 1009 ¶ 168. Figure 4B illustrates an exemplary user interface screen for an unlocked device according to some embodiments of Jobs. *Id.* ¶ 180.

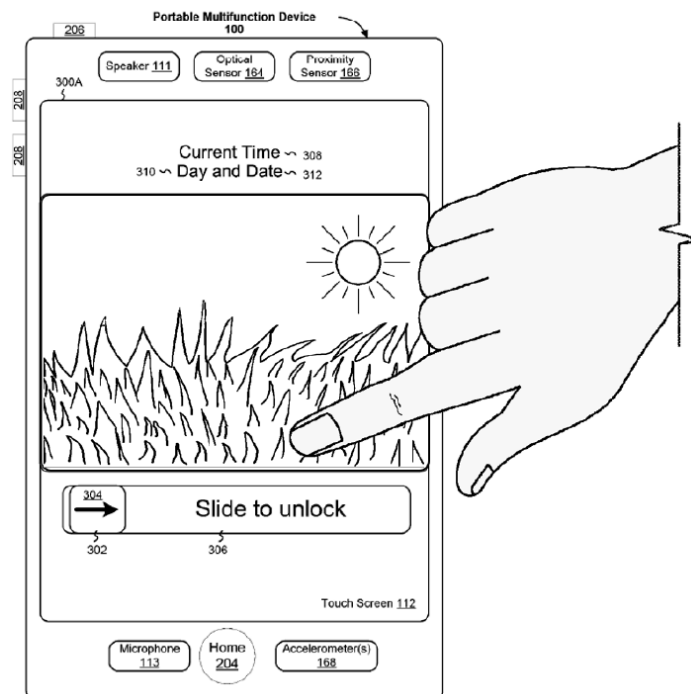
Petitioner explains that its Hackborn and Westerman combination includes a touch screen that displays live wallpaper as taught by Hackborn, and uses threshold values to distinguish between taps and swipes as taught by Westerman and that Job discloses a device that also includes wallpaper and further teaches the ability to lock and unlock the touch screen. Pet. 57. Petitioner further explains:

It would have been obvious to a POSITA for the HWD [Hackborn Westerman Device] to further include a lock screen with a wall paper image, per Jobs, and as was well-known and desirable by the Critical date. APPLE-1003, ¶139 (citing APPLE-1010, [0004], FIGS. 4A-4B, 5A-5B). Moreover, it would have been further obvious and desirable to a POSITA to provide means by which “unintentional activation or deactivation of functions” can be avoided, such [as] Jobs’ lock screen with a wallpaper image. *Id.*

Additionally, given Hackborn’s teaching of using live wallpaper, it would have been obvious to a POSITA to implement the Hackborn-Westerman-Jobs device (“HWJD”) to include a lock screen with a wallpaper, per Jobs, such that the lock screen wallpaper is “live” like the unlocked screen, per Hackborn. APPLE-1003, ¶140. Such a modification would “provide updated information, altered aesthetics, a change of theme, environment or pace, or a diversion from the status quo,” as taught by Hackborn. *Id.*; APPLE-1004, [0026]. In this way, “the [lock screen] wallpaper need not be a static image, but can be active and may execute code so as to produce interesting and compelling user interface examples,” per Hackborn. APPLE-1003, ¶140; APPLE-1004, [0036]. This would have motivated a POSITA to implement the HWJD to include a lock screen with live wallpaper, thereby improving the device by preventing “unintentional activation or deactivation of functions” while still producing an “interesting and compelling user interface” in the lock screen. APPLE-1003, ¶140. In the HWJD (as shown below),

a user could lock the device with a lock screen having a wallpaper, per Jobs, and the wallpaper is a “live” wallpaper, per Hackborn, such that user touch on the background (grass) causes the grass to move but does not cause foreground objects, such as the “unlock image 302” to change appearance. *Id.*; APPLE-1004, [0028], FIG. 1; APPLE-1009, FIG. 3A.

Pet. 58–59. Petitioner produces the following image as illustrating the resulting user interface in a device locked with or by a lock screen:



Pet. 62. The illustration depicts a device locked by or with a lock screen according to Petitioner’s proposed combination of Hackborn, Westerman, and Jobs. *Id.* at 59–60.

Based on Patent Owner’s arguments, discussed below, we find that Petitioner has not adequately accounted for claims 18 and 39, but has adequately accounted for claims 19 and 40.

Patent Owner argues that Petitioner’s assertion that one of ordinary skill would have been motivated to improve the device by preventing unintentional activation or deactivation of functions while still producing an

interesting and compelling user interface in the lock screen is rooted in hindsight. PO Resp. 46. Patent Owner explains that the primary purpose of Jobs’s “lock state” is to minimize user input to save battery life and prevent unintentional or unauthorized use of the device or activation or deactivation of functions. *Id.* at 47 (citing Ex. 1009 ¶ 177). Patent Owner further asserts:

Petitioner’s alleged reasons for merging Hackborn, Westerman, and Jobs on a lock screen ignore the fundamental conflict between a power- and security-conscious UI intended for when a phone is not in use (Jobs) and a continuously interactive, user-contact-driven wallpaper (Hackborn). EX2005, ¶103. Petitioner’s combination is nothing more than impermissible hindsight that does not logically flow from the references’ teachings.

PO Resp. 47–48. We disagree that Petitioner’s proposed combination of Hackborn and Jobs is rooted in impermissible hindsight.

Hackborn itself expressly teaches “wallpaper need not be a static image, but can be active and may execute code so as to produce interesting and compelling user interface examples. Ex. 1004 ¶ 34. We agree with Petitioner (Reply 21) that a user selecting live wallpaper benefits from updated information, altered aesthetics, a change of theme, environment or pace, or a diversion from the status quo, in exchange for additional battery use.¹¹ We also agree with Petitioner (Reply 21) that in Petitioner’s proposed

¹¹ Patent Owner asserts that this assertion is speculative, undermined by Jobs’s express teachings, and also constitute an impermissible new argument first presented in the Reply. Sur-reply 14. We disagree. The trade-off is self-evident, not speculative. Jobs’s goals on preserving power consumption still is largely achieved by locking the functional features. And the argument is not impermissibly new because it is directly responsive to Patent Owner’s argument (PO Resp. 47) that Petitioner’s combination ignores the fundamental conflict between a power- and security-conscious UI intended

combination unintentional or unauthorized use of the device or unintentional or unauthorized activation or deactivation of functions are still largely achieved because functions other than interacting with the wallpaper and unlocking the device are unavailable on the lock screen. Further, in Petitioner's proposed combination the lock screen still reduces battery use by preventing unintentional or unauthorized activation of functions. We see no fundamental inconsistency in combining the teachings of Hackborn and Jobs in the way Petitioner proposes.

Thus, Patent Owner's argument that Petitioner fails to put forth a sufficient reason to combine the teachings of Hackborn and Jobs is unavailing and does not undermine Petitioner's proposed reasons to combine teachings from Hackborn and Jobs.

With respect to claims 18 and 39, Patent Owner asserts that Petitioner fails to show that in the lock screen of Petitioner's proposed combination there is no one or more foreground objects as are required by independent claims 1 and 23. PO Resp. 48. It is true that in Petitioner's illustration of the lock screen resulting from Petitioner's proposed combination, there is no one or more foreground objects, and it is also true that claims 1 and 23 each require one or more foreground objects on the display screen. In its Reply, Petitioner argues that Patent owner's assertions "are based on an overly strict interpretation of the Petition." Pet. 22. We disagree.

Petitioner explains that the foreground objects are in the "unlock image," and that the user interface in its combination of Hackborn and Jobs has two screens, a home screen (unlocked) and a lock screen (locked). Pet.

for when a phone is not in use (Jobs) and a continuously interactive, user-contact-driven wallpaper (Hackborn).

22. According to Petitioner, the existence of foreground objects on the unlocked home screen satisfies the requirement for one or more foreground objects. *Id.* Patent Owner correctly notes that this assertion is an impermissible new argument first presented in the Reply. Sur-reply 16. If Petitioner intends to map two screens to a claimed limitation, that must be done in the Petition, and Petitioner may not simply add a second screen in the Reply to the previously non-existing mapping. We agree that this impermissible new argument is not entitled to consideration.

In any event, even if we were to consider the impermissible new argument, it is unpersuasive. The requirements of background wallpaper and foreground objects all pertain and relate to a display screen with respect to which something can be deemed in the background or in the foreground. When claims 18 and 39 add the recitation of a lock screen, it plainly and facially refers back to that display screen in the independent claims on which there is a background wallpaper and one or more foreground objects. It is neither natural nor logical to read the lock screen as, somehow, identifying another display screen separate from and independent of the display screen showing all the elements of the independent claims. Petitioner identifies no disclosure in the '755 patent of a lock screen that is separate from and independent of an unlocked screen.

Thus, we agree with Patent Owner that Petitioner's accounting for claims 18 and 39 is inadequate and deficient. Petitioner has not proved by a preponderance of the evidence that claims 18 and 39 are unpatentable over Hackborn, Westerman, and Jobs.

With respect to claims 19 and 40, Patent Owner makes a similar argument. PO Resp. 50–51. The argument, however, is unavailing for

claims 19 and 40. In Petitioner’s proposed combination, the foreground objects comes from Petitioner’s reliance on Hackborn, not Jobs. Pet. 58–59. Unlike claims 18, and 39, claims 19 and 40 refer to an unlocked state of the display screen. It cannot be reasonably disputed that in an unlocked state, the screen of Hackborn includes background wallpaper and one or more foreground objects. Accordingly, Petitioner has proved by a preponderance of the evidence that claims 19 and 40 are unpatentable over Hackborn, Westerman, and Jobs.

H. Alleged Obviousness of Claims 1, 4–8, 10–12, 15, 17–20, 22, 23, 26–30, 32, 34, and 37–42 over Hackborn, Westerman, and Jobs

1. Petitioner’s Proposed Combination and Motivation to Combine

Petitioner asserts that for at least the same reasons as presented in the alleged ground of obviousness based on Hackborn’s grass blades live wall paper, a POSITA reviewing Hackborn would have looked to Westerman for implementation details for how to discern a swipe from a tap. Pet. 63. Thus, Petitioner asserts that “a POSITA would have found it obvious to implement Hackborn with Westerman’s methods of distinguishing between tap and swipe gestures (e.g., using “predetermined thresholds”). *Id.* Petitioner further asserts: “Thus, a POSITA would have 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.’” *Id.*

For this alleged ground of obviousness, however, Petitioner relies on an embodiment of Hackborn different from the grass blades embodiment

discussed above in all other alleged grounds of obviousness.¹² Specifically, Petitioner relies on a Hackborn Figure 6 embodiment which has live wallpaper including “information fetched or received from one or more social services on the Internet.” Pet. 64. Figure 6 of Hackborn is reproduced below:

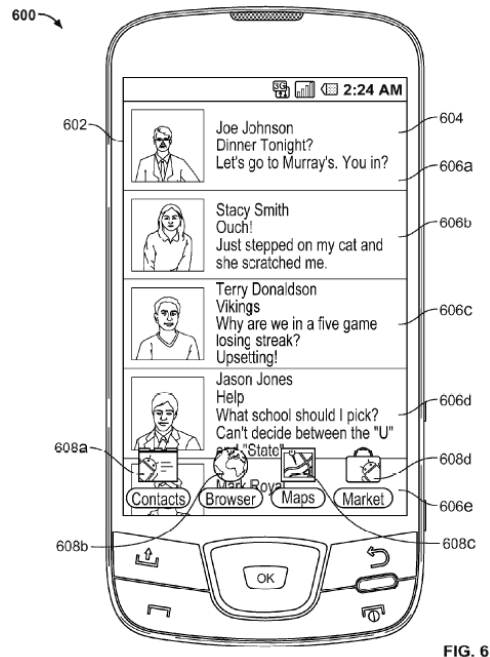


FIG. 6

Figure 6 shows an example of active content using live information from a social service as live wallpaper. Ex. 1006 ¶ 20.

Petitioner explains:

Regarding Figure 6, Hackborn explains that social media “posts 606a-e may be displayed” such that “as new information is received, already displayed posts may be scrolled (e.g., downward) and the new post may be displayed in a predetermined position.” *Id.*, [0047]. “[T]he wallpaper or a portion of the wallpaper [can] be selected, or a particular input may be provided,” to cause a change an appearance of the

¹² For this alleged ground of obviousness, based on Hackborn’s embodiment using social postings as live wallpaper, Petitioner refers to Hackborn as “Hackborn2.” Pet. 63. We, however, still refer to Hackborn as “Hackborn.”

wallpaper, including causing the wallpaper to “assume a more prominent display position or status.” *Id.*, [0048]; APPLE-1003, ¶147.

Given that Hackborn teaches (1) receiving user input on the background (live wallpaper), (2) causing the background to change appearance responsive to user input, (3) causing a portion of the background wallpaper to assume a more prominent display position, and (4) scrolling in new images or posts, a POSITA would have found it obvious for the device to receive a user input on the live wallpaper 604 of Figure 4, determine that input to be a swipe (per Westerman), and in response, cause the live wallpaper 604 to change its appearance by scrolling through the social media posts—or more particularly, scrolling to older posts (e.g., permit a user to view posts that were automatically scrolled out of view). APPLE-1003, ¶148. Indeed, a POSITA reviewing Hackborn’s teaching of scrolling social media posts in relation to Figure 6 would have found it obvious to provide a way to view older posts (e.g., partially-displayed post 606e) that s/he may not have already read before the posts were moved downward and less (or not) visible. *Id.* Specifically, a POSITA would have found it obvious to allow for manual scrolling through the posts by the user. *Id.*

The use of swiping motions to scroll through lists (including posts/messages/photos) was well-known at least by the Critical Date, as evidenced Jobs. APPLE-1003, ¶149 (citing APPLE-1009; APPLE-1017; APPLE-1018; APPLE-1019; APPLE-1020). Regarding Figure 6A, Jobs describes precisely the same manual scrolling of messages as discussed above, describing that “a user can scroll through the message conversation ... by applying a vertical swipe gesture 610 to the area displaying the conversation.” APPLE-1009, [0243], FIG. 6A; *see id.*, [0245]. With scrolling disclosures (e.g., Figure 6A), Jobs describes friction-based scrolling inertia, such that, “scrolling the list has an associated speed of translation that corresponds to a speed of movement of the object,” and “scrolling the list is in accordance with a simulation of an equation of motion having friction.” *Id.*, [1138]; APPLE-1003, ¶¶150-152.

Pet. 65–67. Figure 6A of Jobs is reproduced below:

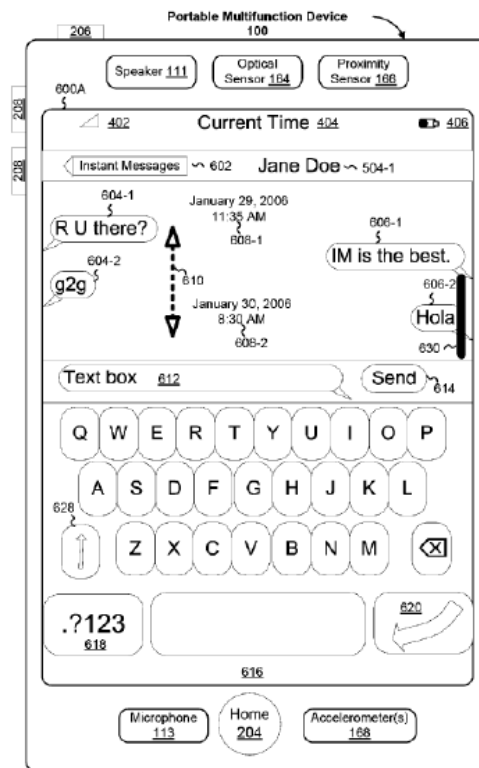


Figure 6A

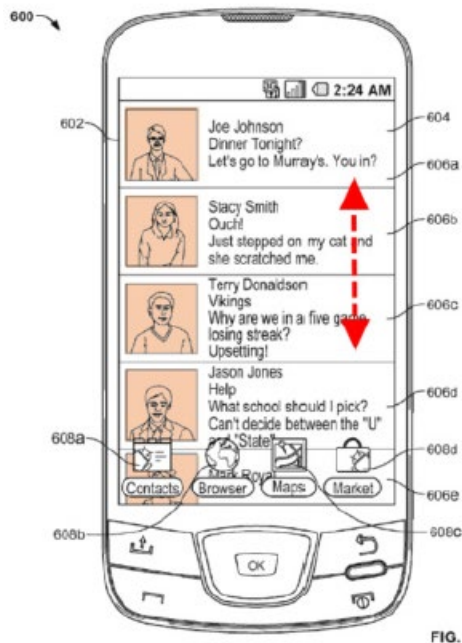
Figure 6A illustrates an exemplary user interface for inputting text for an instant message. Ex. 1009 ¶ 24.

Petitioner further explains:

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. APPLE-1003, ¶153; APPLE-1004, [0041], [0046]–[0048], FIGS. 4, 6; APPLE-1009, [0243], [0245], [0401], FIGS. 6A, 15. The modification of the live wallpaper (which includes social media posts with photographs of the poster, highlighted) with manual scrolling (shown in Jobs’ Figures 6A and 15) is illustrated below in modified Figure 6 of Hackborn. APPLE-1003, ¶153. A POSITA would have understood that Jobs’ disclosure of scrolling offers two alternatives on cessation of contact: decay

velocity with friction or stopping immediately such that, in Ground 2's combination of Hackborn2-Westerman-Jobs, cessation of the swiping motion would cause the resulting scrolling to either slow down or stop immediately. *Id.*

Pet. 68–69. Petitioner's annotated Figure 6 of Jobs appears on page 70 of the Petition and is reproduced below:



Petitioner's annotated Figure 6 of Jobs highlights in red the images of the people who made the social posting and includes red directional arrows showing the direction of manual scrolling. Pet. 68–69.

Petitioner further explains:

A POSITA reviewing Hackborn would have naturally looked to Jobs' disclosure of manual scrolling, especially given Hackborn's emphasis on live wallpapers with which a user can interact and teaching of live wallpapers that include images/posts from sources that are constantly receiving new images/posts. APPLE-1003, ¶154.

A POSITA would have understood that implementing Hackborn's device to associate a user swipe on its live wallpaper background with the resulting action of "scroll[ing] through the

[images of the wallpaper] using vertical upward and/or vertically downward gestures [] on the touch screen” with friction-based scrolling inertia would serve the purpose of providing an intuitive method for allowing a user to interact with the live wallpaper and view new images when the user wishes to see them, or view older posts that may have been automatically scrolled out of view. APPLE-1003, ¶155; APPLE-1009, [0253], [0401], FIG. 6A, 15. A POSITA would have recognized that applying Jobs’ disclosure of associating swipes with manual scrolling through images in Hackborn’s device would have led to predictable results without significantly altering or hindering the functions performed by Hackborn’s device, particularly because Hackborn already contemplates receiving swipes, displaying images/posts in a live background, allowing a user to interact with a live background to change its appearance, and scrolling through images/posts in the live background. APPLE-1003, ¶155.

Pet. 70–71.

Notwithstanding Patent Owner’s arguments to the contrary, discussed below, we find that Petitioner sets forth reasoning with rational underpinnings to combine the teachings of Hackborn, Westerman, and Jobs in the manner Petitioner proposes.

Patent Owner argues that Petitioner does not explain why manual scrolling would have been desirable in the context of Hackborn’s wallpaper. PO Resp. 53. Patent Owner similarly asserts that Petitioner’s position that a person of ordinary skill in the art would have found it obvious to allow for manual scrolling through the social media posts in the wallpaper is conclusory and devoid of reasoning. *Id.* We disagree.

We find Petitioner has clearly explained why manual scrolling of social media posts in Hackborn’s wallpaper would have been desirable, in a manner not relying on impermissible hindsight.

Petitioner first explains that in Hackborn's Figure 6 embodiment, social media posts are displayed in the background wallpaper as they are received and older posts are scrolled downward to make space for newer posts. Pet. 65. Petitioner then explains that Hackborn discloses that a user may select a portion of the wallpaper, or provide a certain input, to cause a change in the appearance of the wallpaper, including causing the wallpaper to assume a more prominent display position or status. *Id.* at 65–66 (citing Ex. 1004 ¶ 48). Petitioner further explains that given Hackborn's disclosure of accepting a user input which causes the appearance of the background wallpaper to change, e.g., some portions given a more prominent display position or status, one of ordinary skill in the art would have wanted or desired the ability to scroll through the social media posts to view older posts which were automatically scrolled out of view before being seen by the user. Petitioner then states:

Indeed, a POSITA reviewing Hackborn's teaching of scrolling social media posts in relation to Figure 6 would have found it obvious to provide a way to view older posts (e.g., partially-displayed post 606e) that s/he may not have already read before the posts were moved downward and less (or not) visible. *Id.*

Pet. 66.

The above-noted accounting of Petitioner's presentations demonstrate that Petitioner clearly articulated that one of ordinary skill in the art would have wanted to manually scroll through the social media posts which have been received and displayed in the background wallpaper to view those which she or he may not have already read before the posts were moved downward or off the screen to make space for newer posts. We agree that one of ordinary skill in the art would have recognized, in Hackborn's wallpaper embodiment with social media posts, that some earlier postings

may have been scrolled off screen without the user's having had an opportunity to view them, and that it would have been desirable for the user to be able to scroll them back for viewing. That is Petitioner's reason for providing manual scrolling for the social media posts in Hackborn's wallpaper displaying incoming social media posts. It is rationally based and not speculative. We credit the following testimony of Dr. Cockburn in that regard: "Since the older posts would have been automatically scrolled off the feed in the live wallpaper, a POSITA would have found it obvious to use a well-known technique (manual scrolling, per Jobs) to bring those posts back into view." Ex. 1031 ¶ 75.

Patent Owner also argues that Petitioner fails to address the fact that Hackborn already provides a way for a user to view past posts, i.e., by opening the social media application with which posts are associated, such as Facebook, through which the user can respond to a posting. PO Resp. 54 (citing Ex. 1004 ¶ 48). PO Resp. 54–55. Similarly, Patent Owner contends:

Petitioner fails to provide any evidence of a purported advantage of a manually-scrollable background feed over a dedicated application optimized for reading or interaction. EX2005, ¶118. A wallpaper interface is typically not structured for in-depth navigation. *Id.* Merely asserting that doing so would be "intuitive" to manually scroll a list does not overcome the practical design considerations or the absence of support in the references themselves for doing so in a background layer. *Id.* A POSITA would have understood that typical social media applications like the Facebook application already in Hackborn would have provided more robust interaction (e.g., scrolling, commenting, liking), and that providing feed updates to the live wallpaper therefore would have needlessly increased UI complexity while still being necessarily limited by the wallpaper form. *Id.*

Id. at 59. These arguments are misplaced and unavailing.

That a user may launch the social media application with which a posting is associated to view other postings and to respond to one or more postings does not conflict with or undermine Petitioner's proposed feature of scrolling in the background wallpaper among posts which have been received and displayed in the background, when the user has not yet decided to focus on, to target, or to respond to any particular social media post. Petitioner's proposed background scrolling feature and full social media applications appear to complement each other, rather than conflict, one providing a quick viewing without the rigors of launching a social media application and the other providing a more fulsome experience with complete functionalities by launching the associated application. We credit the following testimony of Dr. Cockburn, explaining why one would want to see a posting in the wallpaper rather than in a launched application: "[I]f they are just wanting to keep track of what messages have been received and stay up to date, they may not want to open up the application. It could be inconvenient. Whereas a quick glance might tell them if an important message from a boss or colleague that they had been waiting has arrived or not." Ex. 2007, 100:1–11; *see also* Ex. 1031 ¶ 75.

Patent Owner further argues:

[T]he Petition fails to connect the purported obviousness of manual scrolling *in the abstract* to the specific context of Hackborn's wallpaper. EX2005, ¶114. Neither Petitioner nor Dr. Cockburn assert that any of the cited prior art references disclose manual scrolling of such posts in a background or wallpaper layer. Pet., 66; EX2005, ¶114. Nor do Petitioner or Dr. Cockburn address the fact that Hackborn itself explains that "[i]n general and with regard to **any of** the displayed examples of live wallpaper in the figures, the wallpaper or a portion of the wallpaper be selected ... to cause the wallpaper or a portion thereof to assume a more prominent display position or status."

EX1004, [0048]. Importantly, Hackborn further explains that “[*for example*, display planes may be adjusted based on certain inputs or information received” *Id.* This is critical because adjusting a display plane of the wallpaper to cause it to assume a more prominent display position or status means moving the wallpaper forward out of the lowermost layer. EX2005, ¶114; *see also* EX1004, [0031], FIG. 2. As can be seen in Figure 2 of Hackborn, this would mean moving the wallpaper ‘upward’ to a plane above that of the icons. EX1004, [0031], FIG. 2; EX2005, ¶114.

And, doing so in response to interaction with (*e.g.*, scrolling) the wallpaper, as explicitly suggested by this passage of Hackborn, is fatal to Petitioner’s mapping of Limitation [1.j], which requires “changing the appearance of the background of the first user interface *without changing an appearance of the one or more foreground objects.*” EX2005, ¶115. This is because moving the wallpaper (604) to a plane above the icons (608) would mean that the icons (608) would no longer be displayed—*i.e.*, their appearance would change. *Id.* Of course, if the purpose of manual scrolling is to allow a user to view the posts 606, then it would make sense to follow Hackborn’s suggestion to move wallpaper 604 upward to a plane above icons (608)—in which the icons (608) would not block the wallpaper (604). *Id.*; *see also* EX1004, [0047] (“While no application windows are shown in FIG. 6, it is understood that a user could launch an application and work in an application area on the display 602, where the application area would be displayed above the wallpaper layer and the icon layer, for example.”), FIG. 4 (chat application window 410), [0041] (describing same). But, despite acknowledging Hackborn’s teaching of “causing a portion of the background wallpaper to assume a more prominent display position” (Pet., 66), Petitioner does not explain why a POSITA would have left Hackborn’s wallpaper 604 in the background when manually scrolling to improve visibility of posts 606. EX2005, ¶115. That failure further illustrates the lack of evidentiary or logical support for Petitioner’s contention that a POSITA viewing Hackborn alone would have “found it obvious” to add manual scrolling in the context of wallpaper 604 when in a *background* layer. *Id.*

PO Resp. 55–57.

The above-quoted arguments boil down to the contention that Petitioner fails to explain why one of ordinary skill in the art would have left Hackborn’s social media postings in the background wallpaper when performing Petitioner’s proposed manual scrolling, in light of Hackborn’s disclosure that when a user selects a particular social media posting that may be of interest, the selected portion of the wallpaper may be caused to assume a more prominent display position or status. In that regard, Hackborn states, in pertinent part:

In general and with regard to any of the displayed examples of live wallpaper in the figures, the wallpaper or a portion of the wallpaper [can] be selected, or a particular input may be provided, to cause the wallpaper or portion thereof to assume a more prominent display position or status. For example, display planes may be adjusted based on certain inputs or information received (e.g., from another computing device).

Ex. 1004 ¶ 48.

Patent Owner’s arguments are misplaced and unavailing. There is no inadequate explanation by Petitioner, because Petitioner’s proposed manual scrolling occurs prior to the user’s deciding to focus on and to select a particular post. At that stage, the user is merely browsing in general. We do not see illogic or inconsistency in leaving the social media posts in the background. Indeed, that is where Hackborn places them as an alert for initial viewing by the user.

In any event, we are not persuaded that assuming a more prominent display position or status necessarily means occupying a level the same as or higher than the foreground objects. Adjusting the display plane of the selected posts is just one exemplary way of making the selected post assume a more prominent display position or status. Ex. 1004 ¶ 48. Also, Hackborn

discloses many layers for its display screen. Ex. 1004, Fig. 2. A selected post potentially still may be beneath the foreground objects even if raised slightly.

Patent Owner further contends that Petitioner overlooks the technical limitations of Hackborn's system that would have made manual scrolling unworkable for Hackborn's live wallpaper. PO Resp. 58–59. In that regard, Patent Owner notes that Hackborn discloses that its live wallpaper is implemented in a distinct process and Hackborn describes a “process” as an environment isolated from other such environments. *Id.* at 58 (citing Ex. 1004, code (57)). Further, Patent Owner asserts that in Hackborn there is limited screen real estate for reading a manually scrollable feed, and that one of ordinary skill in the art “would understand that implementing Jobs’ continuous scrolling in a background context would demand significant modification of Hackborn’s wallpaper process to manage historical post data storage, collision with home-screen icons, and continuous input detection to allow up-or-down movement behind foreground objects.” *Id.* at 58–59.

According to Patent Owner, “[n]othing in the references or Petitioner’s arguments explain why a POSITA would implement manual scrolling despite these complexities, much less do so with Hackborn’s wallpaper remaining in the background layer during that scrolling.” *Id.* at 59. These arguments are unavailing. Limited screen real estate is a non-issue, because scrolling expands and multiplies that real estate where the social media posts are shown, with essentially no limits. And even if the modification to add manual scrolling is complex, such as the implementation being in a separate and isolated “process” from the other workings of the computer device, Patent Owner does not assert that such a modification is

near or beyond the limits of one of ordinary skill in the art. We credit the testimony of Dr. Cockburn that “[t]he use of swiping motions to scroll through lists (including posts/messages/photos) was well known at least by the Critical Date, as evidenced by Jobs.” Ex. 1003 ¶ 149 (citing Ex. 1009, [0243], [0245], [1133]-[1140], [1251]-[1254], FIGS. 6A, 12A, 16A, 43CC; APPLE-1017, [0156], [0182]-[0199]; APPLE-1018, [0187], [0197], FIGS. 23F and 24F; APPLE-1019, [0157], [0172], FIGS. 5A-5O; APPLE-1020, [0201], [0212], [0242]). Patent Owner’s assertion that adoption of manual scrolling in Hackborn is “unworkable” is without sufficient evidentiary support and not well grounded. It does not undermine Petitioner’s proposed combination.

We also disagree, as explained above, that Petitioner fails to explain why one of ordinary skill would have wanted to make the modification to add manual scrolling. The explained motivation is clear. With manual scrolling, a user can view all social media posts which have come in, and not be limited to just the most recent few posts, without having to launch the full social media application or applications.

Patent Owner additionally argues that “the vertical scroll of Jobs is not a binary determination—it’s continuous.” PO Resp. 60. Patent Owner explains:

A POSITA would have understood that there is no need for a threshold determination between swipes and taps in Hackborn or Jobs because Jobs already discloses scrolling where less contact movement on the social media feed would result in less scrolling of the feed. *Id.* indeed, Jobs teaches the receipt of “taps” but distinguishes them spatially rather than via thresholds. [Citations omitted] Nowhere does Petitioner explain why implementing manual scrolling in Hackborn’s virtual wallpaper requires receiving and distinguishing taps and swipes **in the**

same part of the screen. EX2005, ¶120. Yet that is what Westerman teaches and, absent a need for that in Hackborn, a POSITA starting with Hackborn would have had no reason to turn to Westerman. *Id.* In contrast, assuming *arguendo* that manual scrolling like that of Jobs were implemented in Hackborn, it would scroll with any moving input in a designated region, whereas another gesture in other designated areas would select corresponding posts. *Id.* Any other result would interfere with continuous scrolling by, *e.g.*, awkwardly forcing a user to move its input for a threshold distance or above a threshold speed before the social media posts of the wallpaper would begin to move. *Id.* Thus, Petitioner has not identified an actual problem in any combination of Hackborn and Jobs that would necessitate the binary determination of swipes versus taps of Westerman.

PO Resp. 60–61. For reasons explained below, these arguments are misplaced and unavailing.

Even assuming that Jobs’s swipe has no minimal threshold and that in Jobs a tap is detected spatially, that does not undermine Petitioner’s reasoning, because one of ordinary skill in the art is not limited or confined to the specific manner Jobs implements a “swipe.” Rather, once one of ordinary skill in the art recognizes from Jobs that a user’s “swipe” would manually scroll the list of messages on display, he or she would have been motivated to consult and look to Westerman on how to recognize a “swipe.” Further, we do not see anything “awkward” about recognizing a “swipe” by use of thresholds on finger path length and/or initial velocity, as taught by Westerman.

Additionally, we find Patent Owner’s assertion that in Jobs a tap is distinguished from a swipe spatially rather than by thresholds to be inadequately supported. In paragraph 164, Jobs states: “[A] swipe gesture that sweeps over an application icon may not select the corresponding application when the gesture corresponding to selection is a tap.” Ex. 1009

¶ 164. We find persuasive Petitioner’s assertion: “In Jobs, a tap and swipe can occur at the same location (on an application icon) causing different actions, so spatial distinctions are not sufficient [to distinguish a tap from a swipe]. APPLE-1009 [164]; APPLE-1031; ¶81.” Reply 30.

For the foregoing reasons, we find that Petitioner has presented a proper and evidentiarily supported motivation to combine the teachings of Hackborn, Westerman, and Jobs in the manner proposed by Petitioner.

2. *Claims 1 and 23*

Aside from its arguments relating to Petitioner’s proposed combination and motivation to combine, discussed and rejected above, Patent Owner makes a further argument regarding independent claims 1 and 23. Patent Owner asserts:

Hackborn explains that social-media updates shift older posts when new content arrives; it does not discuss rejecting inputs below a threshold. EX1004, [0047]; EX2005, ¶123. Jobs discloses the ability to vertically scroll through messages in an instant messaging application. EX1009, [0243], [1138]. While this might conceptually overlap with Hackborn’s notion of a feed, neither reference suggests gating display changes in the feed behind a threshold. EX2005, ¶123. The vertical scroll of Jobs is not a binary determination—it’s continuous. *Id.*; EX1009, [1138]. A POSITA would understand that Jobs does not rely on the distinction between a swipe and a tap to initiate its vertical scroll because the amount of scrolling corresponds to the magnitude of the contact movement. EX2005, ¶123. In other words, Jobs already discloses scrolling where less or no contact movement on the social media feed would result in less or no scrolling of the feed. *Id.* Westerman’s binary distinction between a “tap” and a “swipe” has no role in Jobs’ vertical scrolling. *Id.* Indeed, Westerman does not scroll. *Id.*

Thus, Petitioner fails to explain why the purported combination would include “dynamically changing the appearance of the background” “in accordance with a

determination that the first contact has a magnitude that is above a threshold” required by claim 1. Likewise, because petitioner relies solely on the same arguments for independent claim 23, it is also non-obvious for the same reasons.

PO Resp. 62–63.

The argument is misplaced and unavailing. First, the teachings relied on by Petitioner for meeting threshold requirements for recognizing a “swipe” comes from Westerman, not either Hackborn or Jobs. Second, Patent Owner overlooks paragraph 243 of Jobs, reproduced below, which describes scrolling through a message conversation by applying a vertical “swipe,” which is not a stationary tap:

In some embodiments, a user can scroll through the message conversation (comprised of messages 604 and 606) by applying a vertical swipe gesture 610 to the area displaying the conversation. In some embodiments, a vertically downward gesture scrolls the conversation downward, thereby showing older messages in the conversation. In some embodiments, a vertically upward gesture scrolls the conversation upward, thereby showing newer, more recent messages in the conversation.

Ex. 1009 ¶ 243. Petitioner relies on Job’s disclosure of using a swipe to scroll through a list of messages, and that provides the motivation to look to Westerman with regard to how to recognize a swipe, e.g., by comparison with predetermined thresholds. As noted above, we credit the testimony of Dr. Cockburn that “[t]he use of swiping motions to scroll through lists (including posts/messages/photos) was well known at least by the Critical Date, as evidenced by Jobs.” Ex. 1003 ¶ 149 (citations omitted).

We have reviewed Petitioner’s accounting for its alleged obviousness of claims 1 and 23 over Hackborn, Westerman, and Jobs, and find them amply supported by the provided reasoning and cited evidence,

notwithstanding Patent Owner's arguments to the contrary. Petitioner has proved by a preponderance of the evidence that claims 1 and 23 are unpatentable over Hackman, Westerman, and Jobs.

3. *Claims 7 and 29*

Claim 7 depends from claim 1 and further recites: “wherein the one or more programs include instructions for; in response to detecting the first input by the first contact on the touch-sensitive surface, in accordance with a determination that the first input does not have a magnitude above the threshold, maintaining the appearance of the background of the first user interface.” Pet. viii.

Claim 29 depends from claim 23 and further recites: “in response to detecting the first input by the first contact on the touch-sensitive surface, in accordance with a determination that the first input does not have the magnitude that is above the threshold, maintaining the appearance of the first user interface.” Pet. ix.

Petitioner explains:

[I]n [its proposed combination], when a user input is received on the wallpaper 604 is determined to be a swipe, in response the wallpaper 604 is caused to change its appearance by scrolling images/posts from the social media services (e.g., older social media posts that had been automatically scrolled §out of view). See §IV.E.1; see also §IV.E.2 (1.j)). A POSITA would have found obvious that the responsive scrolling of images in the H2QWJD is only in response to a swipe and not a tap, for example, which does not suggest the same scrolling output. APPLE-1003, ¶16. Thus, if the user input does not have a magnitude above the swipe threshold, the background remains unchanged. *Id.*

Pet. 79–80; *see also id.* at 89.

Patent Owner argues that none of the references indicate that mere “taps” do nothing. PO Resp. 63–64. Specifically, Patent Owner asserts:

Westerman discloses that functions still execute when a tap is detected. *See* EX1005, [0058] (“Keyboard input manager 907 interprets key tap events 906 and generates text events 908”). And Hackborn discloses that individual posts in the feed can be selected “to cause the wallpaper or portion thereof to assume a more prominent display position or status.” EX1004, [0048]. A POSITA would understand that is one possible way of selecting a post. EX2005, ¶126. Thus, none of the references disclose a mechanism that “maintains the appearance of the background” specifically because the contact is a tap. *Id.*

PO Resp. 64.

Petitioner provides this rebuttal:

While Hackborn explains that selection of the wallpaper *may* “cause the wallpaper or portion thereof to assume a more prominent display position,” Hackborn’s language is permissive (“may”) and not required. APPLE-1004, [0048]. Moreover, Hackborn does not teach that the wallpaper’s appearance changes, only that it may “assume a more prominent display position or status,” suggesting that it may move to a different display layer. *Id.*; APPLE-1031, ¶85. Smith’s reliance on Westerman’s and Jobs’s teachings about functions responsive to a tap are irrelevant because H2WJD’s response to a tap is based on Hackborn, not on portions of the secondary references not used in the combination. APPLE-1031, ¶85.

Reply 32.

We find Petitioner’s rebuttal inadequate. Although paragraph 48 of Hackborn indeed uses the word “may” when referring what happens in response to a selection of a portion of the wallpaper such as by a tap, i.e., causing the selection to assume a more prominent display position, the other alternative mentioned also would appear to change the appearance of the wallpaper, by activation of the associated social media application with

which a posting is associated. The entirety of Hackborn's paragraph 48 is reproduced below:

In general and with regard to any of the displayed examples of live wallpaper in the figures, the wallpaper or a portion of the wallpaper [can] be selected, or a particular input may be provided, to cause the wallpaper or a portion thereof to assume a more prominent display position or status. For example, display planes may be adjusted based on certain inputs or information received (e.g., from another computing device). In some examples, selection of the wallpaper or a portion of the wallpaper, or provision of a predefined input, may cause an application associated with the wallpaper or a portion of the wallpaper to launch or become active, and may allow the user to work with an aspect of the wallpaper or associated with the displayed wallpaper. For example, the user may view Terry Donaldson's post 606c and select the post to provide an opinion to the question posed. The user may respond that the coaching is subpar and that a change is warranted, as by speaking or typing such a response, and a message may be sent from the device 600 to another computing device (e.g., by wireless transmission). For example, if message 606c represents a Facebook post, selection of message 606c may launch a Facebook application on device 600, which may permit the user to respond to Donaldson's post 606c.

Ex. 1004 ¶ 48. There is no indication in Hackborn that nothing happens when a user has made a selection such as by a tap. As a whole, the disclosure appears to indicate otherwise. Petitioner has not adequately shown that when detecting a tap selection that is not a swipe, the appearance of the background wallpaper would remain unchanged.

Based on the foregoing, Petition has not proved by a preponderance of the evidence that claims 7 and 29 are unpatentable over Hackborn, Westerman, and Jobs.

4. *Claims 18, 19, 39, and 40*

For claims 18, 19, 39, and 40, Petitioner relies essentially on the same assertions it makes in the context of the alleged ground of obviousness based on the grass blades embodiment of Hackborn in combination with Westerman and Jobs. Pet. 84, 85, 90. Patent Owner also makes the same arguments it presents with respect to that alleged ground of obviousness. For the same reasons we provide above with respect to claims 18, 19, 39, and 40 in that alleged ground of obviousness over Hackborn, Westerman, and Jobs, we determine that Petitioner has made an adequate showing with respect to claims 19 and 40, but has not made an adequate showing with respect to claims 18 and 39.

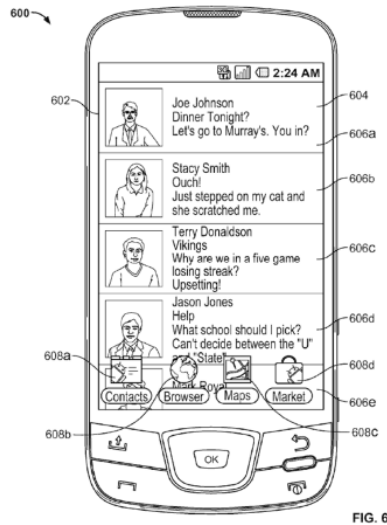
Accordingly, Petitioner has proved by a preponderance of the evidence that claims 19 and 40 are unpatentable over Hackborn, Westerman, and Jobs. Petitioner has not proved by a preponderance of the evidence that claims 18 and 39 are unpatentable over Hackborn, Westerman, and Jobs.

5. *Claim 22*

Because claim 22 depends from claim 21, it incorporates all of the limitations of claim 21. Also, claim 22 itself, aside from referencing claim 21 from which it depends, adds close to two columns of additional limitations. Ex. 1001, 103:13–104:50.

Petitioner's entire treatment of claim 22 is reproduced below:

The H2WJD renders [22] obvious (e.g., “the one or more foreground objects includes one or more application icons”). APPLE-1004, [0047], FIGS. 4, 6; APPLE-1003, ¶189. Specifically, Figure 6 shows foreground objects including application icons for contacts 608a, browser 608b, and maps 608c. *Id.*



APPLE-1004, FIG. 6

[Figure 6 shows live wallpaper on a screen, that includes information from a social service. Ex. 1004 ¶ 20.]

Pet. 87–88.

Petitioner’s accounting for claim 22 is facially deficient, because it fails to address the limitations of claim 21,¹³ and innumerable limitations of claim 22 itself. We note that claim 21 is not challenged in this alleged ground of obviousness.

Accordingly, Petitioner has not proved by a preponderance of the evidence that claim 22 would have been obvious over Hackborn and Westerman.

6. *Claim 28*

Claim 28 depends from claim 23 and further recites: “wherein the dynamic change in the appearance of the background of the first user interface is independent of the location that corresponds to the background.” Pet. xv. Petitioner asserts that because Jobs states that movement of the user’s finger is detected on or near the displayed portion of the list or simply

¹³ Claim 21 has not been challenged by Petitioner under the obviousness ground of unpatentability over Hackborn and Westerman.

“on the touch screen display,” and that in response to detecting the movement, the list of items displayed on the touch screen display is scrolled, a person of ordinary skill in the art would have understood that the scrolling gesture can occur at any location on the live wallpaper. Pet. 79, 89.

Patent Owner argues that Petitioner’s assertion fails because in Petitioner’s assertion, the dynamic change of the background is dependent on the location that corresponds to the background. According to Patent Owner, Petitioner admits that the detected location of the gesture is “within the message list.” PO Resp. 66.

Petitioner answers that it made no such admission. Reply 33. Petitioner clarifies that “while a gesture in the message list is an option, the gesture can occur **at any location** on the wallpaper and is thus independent of the location that corresponds to the background.” *Id.* (citing Ex. 1003 ¶ 175, Ex. 1031 ¶ 88). This clarification supports Patent Owner’s position. Because the gesture for manual scrolling is provided in the live wallpaper, which is the background, Petitioner’s accounting fails to satisfy the requirement of claim, 28, i.e., “wherein the dynamic change in the appearance of the background of the first user interface is independent of the location that corresponds to the background.” Figure 6 of Hackborn is reproduced below, illustrating the active social media posts in a live wallpaper as background (cited in Petition on page 73):

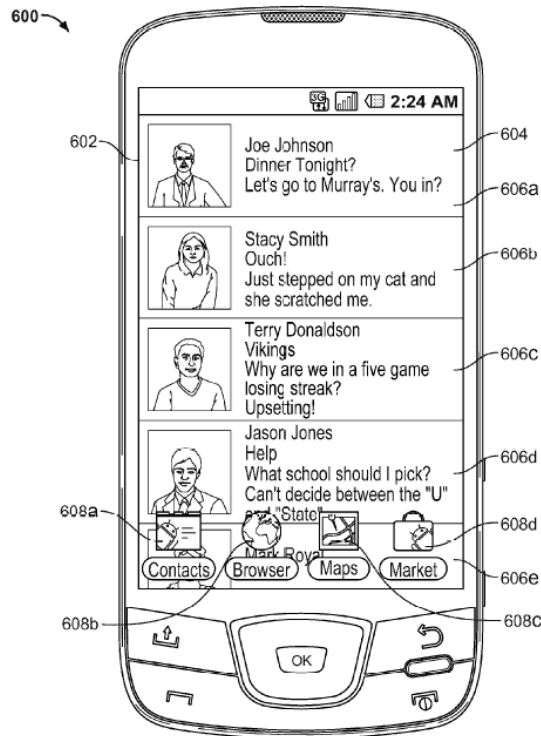


FIG. 6

Figure 6 shows an example of live wallpaper having active content including information from a social service. Ex. 1004 ¶ 20.

Accordingly, Petitioner has not proved by a preponderance of the evidence that claim 28 is unpatentable over Hackborn, Westerman, and Jobs.

7. *Claims 5, 8, 27, and 30*

Each of these dependent claims requires affirmative detection of cessation of contact. As in the case of Petitioner's lack of sufficient accounting for this requirement of these claims in the context of alleged obviousness over Hackborn, Westerman, and Townsend, discussed above, Petitioner likewise has not adequately shown detection of cessation of contact here in the alleged ground of obviousness over Hackborn, Westerman, and Jobs. For instance, Petitioner here relies on Jobs merely for the friction-based scrolling inertia and that decaying the scrolling would be initiated when the "finger is lifted from the touch screen." Pet. 78. There is

no discussion in the Petition for these claims on detecting the cessation of contact as required by the claims.

Accordingly, Petitioner has not proved by a preponderance of the evidence that any of claims 5, 8, 27, and 30.

8. *Claims 4, 6, 10–12, 15, 17, 20, 26, 32, 34, 37, 38, 41, and 42*

Claims 4, 6, 10–12, 15, 17, and 20 each depend, directly or indirectly, from independent claim 1. Claims 26, 32, 34, 37, 38, 41, and 42 each depend, directly or indirectly, from independent claim 23. Petitioner adequately accounts for these dependent claims. Patent Owner does not present arguments additional to those it asserts against independent claims 1 and 23 and those it makes with respect to proper motivation to combine, all of which we have discussed and rejected above.

Accordingly, we determine that Petitioner has proved by a preponderance of the evidence that claims 4, 6, 10–12, 15, 17, 20, 26, 32, 34, 37, 38, 41, and 42 are unpatentable over Hackborn, Westerman, and Jobs.

III. CONCLUSION¹⁴

We determine that Petitioner has proved by a preponderance of the evidence that claims 1–4, 6, 7, 10–13, 15–17, 19, 20, 23–26, 29, 32–35, 37, 38, and 40–42 of the '755 patent are unpatentable. We also determine that

¹⁴ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

Petitioner has not proved by a preponderance of the evidence that claims 5, 8, 9, 18, 21, 22, 27, 28, 30, 31, 39, and 43 of the '755 patent are unpatentable.

In summary:

Claims	35 U.S.C. §	References/Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1–3, 7, 10, 11, 13, 15, 17, 20, 22–25, 29, 32, 33, 35, 37, 38, 41, 42	103(a)	Hackborn, Westerman	1–3, 7, 10, 11, 13, 15, 20, 23–25, 29, 32, 33, 35, 41, 42	17, 22, 37, 38
4, 5, 8, 9, 21, 26, 27, 30, 31, 43	103(a)	Hackborn, Westerman, Townsend	4, 26	5, 8, 9, 21, 27, 30, 31, 43
16	103(a)	Hackborn, Westerman, Jablonski	16	
18, 19, 39, 40	103(a)	Hackborn, Westerman, Jobs	19, 40	18, 39
1, 4–8, 10–12, 15, 17–20, 22, 23, 26–30, 32, 34, 37–42	103(a)	Hackborn, Westerman, Jobs	1, 4, 6, 10–12, 15, 17, 19, 20, 23, 26, 32, 34, 37, 38, 40–42	5, 7, 8, 18, 22, 27–30, 39
Overall Outcome			1–4, 6, 7, 10–13, 15–17, 19, 20, 23–26, 29, 32–35, 37, 38, 40–42	5, 8, 9, 18, 21, 22, 27, 28, 30, 31, 39, 43

IV. ORDER

In consideration of the foregoing, it is hereby

ORDERED that claims 1–4, 6, 7, 10–13, 15–17, 19, 20, 23–26, 29, 32–35, 37, 38, and 40–42 of the '755 patent have been proved unpatentable by a preponderance of the evidence;

FURTHER ORDERED that claims 5, 8, 9, 18, 21, 22, 27, 28, 30, 31, 39, and 43 of the '755 patent have not been proved unpatentable by a preponderance of the evidence; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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Patent 10,656,755 B1

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