

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

SMITH INTERFACE TECHNOLOGIES, LLC,
Patent Owner.

IPR2024-01091
Patent 10,936,114 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, 27, 30, 32, 34, 59, 62, and 64 of U.S. Patent No. 10,936,114 B1 (Ex. 1001, “the ’114 patent”) owned by Smith Technologies, LLC (“Patent Owner”). Paper 8 (“Decision to Institute” or “Inst. Dec.”). Because claims 27 and 59 were statutorily disclaimed by the Patent Owner subsequent to institution of review (Ex. 2015), they are not before us for adjudication and are no part of this Final Written Decision. Claims 1, 30, 32, 34, 62, and 64 (“challenged claims”) are before us for adjudication.

We have authority to conduct this *inter partes* review under 35 U.S.C. § 6. Oral hearing was held on October 16, 2025, a transcript of which has been entered as Paper 33 (“Tr.”). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

We determine that Apple Inc. (“Petitioner”) has proved by a preponderance of the evidence that claims 30 and 32 of the ’114 patent are unpatentable. We determine that Petitioner has not proved by a preponderance of the evidence that any of claims 1, 32, 34, and 64 of the ’114 patent is 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 8. On January 27, 2025, subsequent to institution of review and prior to filing of the Patent Owner Response, the Board authorized claim construction briefing by the parties. Paper 10. Patent Owner filed a Response to the Petition (Paper 18, “PO Resp.”), which includes Patent Owner’s claim

construction positions. Petitioner filed a Reply to the Patent Owner's Response (Paper 23, "Reply"). Petitioner also filed a claim construction briefing. Paper 22. Patent Owner filed a Sur-reply (Paper 26, "Sur-reply").

Oral hearing was held on October 16, 2025. A copy of the hearing transcript has been entered into the record (Paper 33, "Tr.").

B. Real Parties in Interest

Petitioner identifies itself as the real party in interest. Pet. 87. Patent Owner also identifies itself as the real party in interest. Paper 3, 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. 87; 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 '114 Patent

The '114 patent issued on March 2, 2011, from Application No. 16/558,026, 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 codes (60), (63).

The '114 patent is titled "Gesture-Equipped Touch Screen System, Method, And Computer Program Product." Ex. 1001, code (54). The patent generally relates to "touch screens" and describes "altering a user experience based on a received signal." *Id.* at 1:37–38, 4:49–51, Fig. 3. Ways in which the user experience may be altered include, for example, (i) by causing input to the device, (ii) by causing output from the device, and (iii) by causing

processing by the device. *Id.* at 17:2–5. In addition, the received signal may include “a pressure signal which is indicative of a magnitude of pressure” and “the user experience may be altered as a function of the magnitude of the pressure being applied to the touch screen, utilizing the pressure signal.” *Id.* at 16:11–14 (describing step 302 in Figure 3), 17:19–23 (describing step 304 in Figure 3).

Figure 5, shown below, illustrates “a pressure-sensitive user interface for making a selection.” Ex. 1001, 4:55–56.

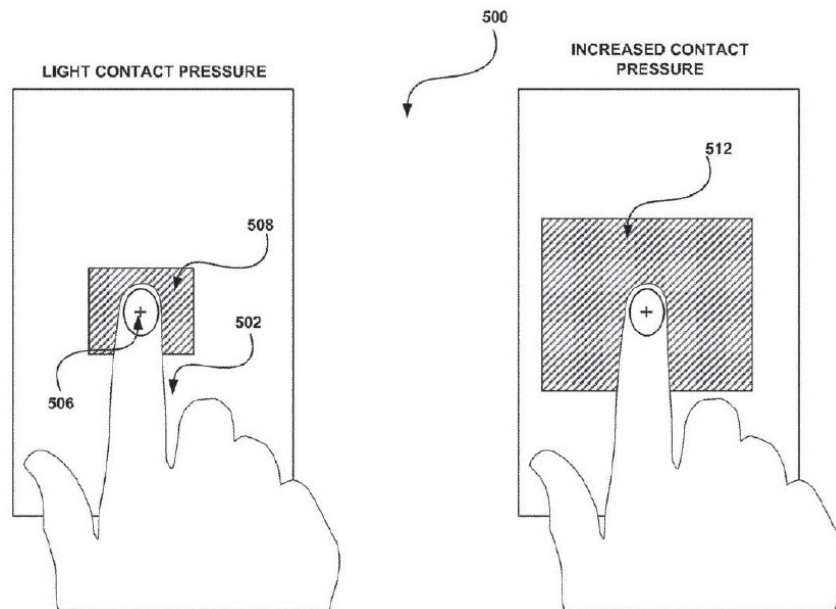


Figure 5 shows user interface 500, user’s finger 502, contact point 506, and selection areas 508 and 512. Ex. 1001, 28:9–19. The user interface shown on the left depicts selection area 508 with “light contact pressure,” whereas the user interface shown on the right depicts a larger selection area 512 reflecting “increased contact pressure.” *Id.* at Fig. 5. As the patent explains:

a user’s finger 502 may exert a small amount of force over contact area 504, which is centered on contact point 506 located on a pressure sensitive touch screen. If the contact pressure level is sufficient, then a selection area 508 having a selection

boundary 510 is calculated and displayed. As the contact pressure is increased, the selection boundary expands to encompass a larger selection area 512.

Id. at 28:12–19.

All challenged claims are independent. Claims 1, 30, 32, and 34 are representative and reproduced below:¹

- [1.pre] An apparatus, comprising:
 - [1.a] at least one non-transitory memory storing instructions and a plurality of applications;
 - [1.b] a touch screen; and
 - [1.c] one or more processors in communication with the at least one non-transitory memory and the touch screen, wherein the one or more processors execute the instructions to:
 - [1.d] display, via the touch screen, an object and at least a portion of an interface;
 - [1.e] detect a gesture on the touch screen on the object;
 - [1.f] when a magnitude of a duration of the gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;
 - [1.g] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object,
 - [1.h] where the scaling includes a reduction in a size such that the size is inversely related to the magnitude of the duration of the gesture being detected on the touch screen on the object; and
 - [1.i] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than

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

a second magnitude threshold, perform another operation.

Pet. v.

[30.pre] An apparatus, comprising:

[30.a] at least one non-transitory memory storing instructions and a plurality of applications;

[30.b] a touch screen;

[30.c] a vibrator; and

[30.d] one or more processors in communication with the at least one non-transitory memory, the touch screen, and the vibrator, wherein the one or more processors execute the instructions to cause the apparatus to:

[30.e] display a first object and at least one other object;

[30.f] detect a gesture on the touch screen on the first object;

[30.g] during detection of at least a portion of the gesture before a completion thereof is detected, perform a scale operation, based on a change in a duration of the gesture being detected on the touch screen on the first object, on at least the at least one other object,

[30.h] where the scale operation includes a reduction in a size that is inversely related to the duration of the gesture being detected on the touch screen on the first object; and

[30.i] after at least a portion of the scale operation, vibrate the apparatus and perform an action.

Pet. vi–vii.

[32.pre] An apparatus, comprising:

[32.a] at least one non-transitory memory storing instructions and a plurality of applications;

[32.b] a touch screen; and

[32.c] one or more processors in communication with the at least one non-transitory memory and the touch screen, wherein the one or more processors execute the instructions to:

- [32.d] display, via the touch screen, a first object and at least one other object;
- [32.e] detect at least one component of a gesture on the touch screen on the first object;
- [32.f] when a first component of the gesture is detected where a magnitude of a duration of the gesture being detected on the touch screen on the first object is less than a first magnitude threshold, perform a function upon a cessation of the gesture being detected;
- [32.g] when a second component of the gesture is detected where the magnitude of the duration of the gesture being detected on the touch screen on the first object is greater than the first magnitude threshold, perform a scale operation for the at least one other object,
- [32.h] where the scale operation includes a reduction in a size so as to be inversely related to the magnitude of the duration of the gesture being detected on the touch screen on the first object; and
- [32.i] when a third component of the gesture is detected where the magnitude of the duration of the gesture being detected on the touch screen on the first object is greater than a second magnitude threshold, perform another function.

Pet. vii-viii.

- [34.pre] A method, comprising:
 - [34.a] at an apparatus including a watch with
 - [34.b] at least one non-transitory memory storing a plurality of applications,
 - [34.c] a touch screen, and
 - [34.d] one or more processors in communication with the at least one non-transitory memory and the touch screen:
 - [34.e] displaying, via the touch screen, an object and at least a portion of an interface;
 - [34.f] detecting a gesture on the touch screen on the object;

- [34.g] based on the magnitude of a duration of the gesture detected on the touch screen on the object being detected to be less than a first magnitude threshold, performing an operation;
- [34.h] based on the magnitude of the duration of the gesture detected on the touch screen on the object being detected to be greater than the first magnitude threshold, performing a scaling in connection with at least the object,
- [34.i] where the scaling includes a reduction in a size such that the size is inversely related to the magnitude of the duration of the gesture being detected on the touch screen on the object; and
- [34.i] based on the magnitude of the duration of the gesture detected on the touch screen on the object being detected to be greater than a second magnitude threshold, perform another operation.

Pet. vii–viii.

Claim 32 is an apparatus claim similar to claim 1, except that claim 32 refers to detecting a first, second, and third component of the gesture, where claim 1 refers simply to detecting a gesture.

Claim 62 is a method claim with steps corresponding to the functionalities recited in apparatus claim 30. Each of claims 30 and 62 recites a vibrator and requires vibrating the apparatus after a [portion of a scale operation.

Claim 64 is a method claim similar to claim 34, except that claim 64 refers to detecting a first, second, and third component of the gesture, where claim 34 refers simply to detecting a gesture.

E. References and Declarations

Petitioner relies on the following references:

Name	Patent Document/Publication	Exhibit
Lang	US 2006/0139320 A1 (June 29, 2006)	1006
Bowens	US 2009/0273571 A1 (Nov. 5, 2009)	1005
Burrough	US 2010/0156818 A1 (June 24, 2010)	1007
Kim	US 2010/0302281 A1 (Dec. 2, 2010)	1004

Petitioner relies on the Declaration and Supplemental Declaration of Andrew Cockburn, Ph.D. (Exs. 1003, 1022). Patent Owner relies on the Declaration of Vijay Madisetti, Ph.D. (Ex. 2008).

F. Asserted Ground of Unpatentability

Petitioner asserts that the following grounds of unpatentability:

Claims Challenged	35 U.S.C. §²	Reference(s)/Basis
1, 32	102	Kim
1, 32	103(a)	Kim
34, 64	103(a)	Kim, Lang
30	103(a)	Kim, Burrough
62	103(a)	Kim, Lang, Burrough
1, 32	103(a)	Kim, Bowens
34, 64	103(a)	Kim, Bowens, Lang
30	103(a)	Kim, Bowens, Burrough
62	103(a)	Kim, Bowens, Lang, Burrough

Pet. 2.

² 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 ’114 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.

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’s expert, Dr. Cockburn, testifies 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.” 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. 11–12. 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. 11.

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. 10. We continue to adopt Petitioner’s stated level of ordinary skill in the art.³

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

³ 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 in the Petition that “no claim terms need be construed to resolve issues of controversy in the present Petition.” Pet. 3. Patent Owner in its Preliminary Response took the following position: “Key here, a period of time that begins in the middle of the mapped gesture, such as at the beginning of a later component or sub-step of the gesture, is not the duration of the gesture, but rather the duration of the component of the gesture.” Prelim. Resp. 5. The parties’ positions were then more developed in the Patent Owner Response (Paper 18) and in Petitioner’s Claim

Construction Briefing (Paper 22), as well as Petitioner’s Reply (Paper 23) and Patent Owner’s Sur-reply (Paper 26).

1. How “the gesture” (claims 1, 32, 34, and 64) relates to “detecting a gesture” (claims 1 and 34)/“detect at least one component of a gesture” (claim 32)/“detecting at least one component of a gesture” (claim 64), and whether all references to “the gesture” identifies the same gesture or can be met by different detected gestures starting at different times

Independent claims 1, 32, 34, and 64 share a common claim construction issue that is central to the parties’ dispute. Each of these claims first recites the detection of a gesture or at least one component of a gesture. Each of these claims then follows with three actions, each one tied to a determination of “a duration” or “the duration” of “the gesture” as compared to a first or second threshold. The language in each claim is reproduced in the following Table:

Claim 1 (emphasis added): [1.e] detect a gesture on the touch screen in the object; [1.f] when a magnitude of a duration of the gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation; [1.g] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object; [1.i] when the magnitude of the	Claim 34 (emphasis added): [34.f] detecting a gesture on the touch screen in the object; [34.g] based on a magnitude of a duration of the gesture detected on the touch screen on the object being detected to be less than a first magnitude threshold, performing an operation; [34.h] based on the magnitude of the duration of the gesture detected on the touch screen on the object being detected to be greater than the first magnitude threshold, performing a scaling in connection with at least the object; [34.j] based on the magnitude of the duration of the gesture detected on
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<p>duration of the gesture being detected on the touch screen in the object is greater than a second magnitude threshold, perform another operation;</p>	<p>the touch screen on the object being detected to be greater than a second magnitude threshold, performing another operation;</p>
<p>Claim 32 (emphasis added);</p> <p>[32.e] detect at least one component of a gesture on the touch screen on the first object;</p> <p>[32.f] when a first component of the gesture is detected where a magnitude of a duration of the gesture being detected on the touch screen on the first object is less than a first magnitude threshold, perform a function upon a cessation of the gesture being detected;</p> <p>[32.g] when a second component of the gesture is detected where the magnitude of the duration of the gesture being detected on the touch screen on the first object is greater than the first magnitude threshold, perform a scale operation for the at least one other object,</p> <p>[32.i] when a third component of the gesture is detected where the magnitude of the duration of the gesture being detected on the touch screen on the first object is greater than a second magnitude threshold, perform another function.</p>	<p>Claim 64 (emphasis added):</p> <p>[64.f] detecting at least one component of a gesture on the touch screen on the first object;</p> <p>[64.g] in response to a first component of the gesture being detected where a magnitude of a duration of the gesture being detected on the touch screen on the first object is detected to be less than a first magnitude threshold, performing a function upon a cessation of the gesture being detected;</p> <p>[64.h] in response to a second component of the gesture being detected where the magnitude of the duration of the gesture being detected on the touch screen on the first object is detected to be greater than the first magnitude threshold, performing a scale operation for the at least one other object;</p> <p>[64.j] in response to a third component of the gesture being detected where the magnitude of the duration of the gesture being detected on the touch screen on the first object is detected to be greater than a second magnitude threshold, performing another function.</p>

Hereinbelow, we discuss the parties' positions and then provide our analysis. In summary, we agree with Patent Owner that the sole detecting of a gesture or detecting at least a component of a gesture as recited in each claim provides the one gesture that serves as the antecedent basis for each subsequent term "the gesture" used in the conditional action portion of each claim, and thus prior art gestures relied on to meet each "the gesture" recitation must have a common starting point in time. We disagree with Petitioner that these limitations may be met by detecting as many gestures as it takes to have all evaluated conditions satisfied.

2. *Patent Owner's Position*

Patent Owner's position is best summarized by the following presentation by Patent Owner's counsel: "And the first question is: does the claim permit pointing to three different gestures [to meet the three action requirements of each independent claim]? And the answer is, from the plain language of the claim, no, because it says the gesture, the gesture, the gesture." Tr. 27–28. Patent Owner explains:

The claim language itself defines the recited "gesture" as a user touch initially detected "on the touch screen at the object." Limitations [1.e], [32.e], [34.f], [64.f]; EX2008, ¶58. As explained in Section II.A, above, "gestures" include multi-action "pattern-based gestures" that "may be recognized in the form of an ordered sequence" by, for example, "using a decision tree." EX1001, 75:24-26; EX2010, [00581]. Accordingly, "component of the gesture being detected," consistent with the specification and plain meaning, refers to one component of a multi-part gesture. EX2008, ¶58. In sum, a gesture may have multiple components, but the gesture repeatedly referenced in the claims is a user input that begins with detection of a touch on an object on the touch screen. *Id.* A user input that begins at an intermediate component of a multi-component feature is not the gesture. *Id.*

PO Resp. 22.

Patent Owner asserts that “the duration of the gesture” being detected on the touch screen on the object plainly refers to “the length of a period of time beginning at the start of the gesture and ending at the time of the execution of the logic [recognizing the inputted gesture] or at the conclusion of the gesture.” PO Resp. 24.

Patent Owner further explains:

With this context, the antecedent bases “**the duration of**” and “**the gesture**” indicate that evaluating the preconditions recited in each Limitation **requires evaluating instances of user input beginning at a common starting point**. EX2008, ¶60. Here, the plain language of the claims defines that common starting point as the initial detection of a user touch “on the touch screen at the object.” Limitations [1.e], [32.e], [34.f], [64.f]; EX2008, ¶60. Accordingly, it is not sufficient, in collectively mapping the conditional Limitations, to point to logic in the prior art for detection of gestures that do not share the common starting point or that are determined based on “durations” starting at any point other than the common starting point. EX2008, ¶60.

At the same time, because the claims refer to the logic used to evaluate numerous instances of user input, it is not necessary that the prior art include logic where the preconditions for each Limitation would be met in response to a single user input. EX2008, ¶61. This is again consistent with “decision-tree” and detection logic for detecting multi-part pattern-based gestures as described in connection with Figure 23 of the ’114 Patent and Figure 24 of the incorporated-by-reference ’918 Provisional as further discussed in Section II.A, above. *Id.*

PO Resp. 24–25 (emphasis added).

Patent Owner asserts: “Nothing in the language of Claims 1, 32, 34, and 64 suggests any of the recited conditional Limitations [the three action requirements] are optional or may be ignored in mapping the prior art.

EX2008, ¶62.” PO Resp. 26. As to method claims 34 and 64, Patent Owner additionally explains:

As to Claims 34 and 64, nothing in the plain language suggests any of the recited conditional Limitations are optional or may be ignored in mapping the prior art. Rather, “the plain and unambiguous language” of the claims requires that “to come within the claim” each element must be performed “where their preconditions apply.” See *Sierra Wireless*, 2025 U.S. App. LEXIS 5458 at *5. In *Sierra Wireless*, the Federal Circuit emphasized the “and” between two method steps that the Board had deemed “cannot both occur in response to the same set of stimuli” as indicating each step must be performed “where their preconditions apply.” *Id.*, *4-5. Like in *Sierra Wireless*, the claims here link the conditional limitations with “and,” indicating each Limitation must be performed where their preconditions apply. See Limitations [1.g], [32.g], [34.h], [64.h]. Further, Claims 34 and 64 more closely resemble the claim the Federal Circuit addressed in *Hytera Communications Co. v. Motorola Solutions, Inc.*, 841 F. App’x 210 (Fed. Cir. 2021), which distinguished *Schulhauser*. There, the Federal Circuit found the method claim at issue “requires that a specific action be taken in response to each of two alternative specified conditions,” and the claim “is not met unless the TDMA system is configured to perform each claimed responsive action.” *Id.*, 216; see also *Ex Parte Brosius*, Appeal No. 2010-001734, 4-5 (BPAI January 19, 2012) (citing to *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363 at 1372 (Fed. Cir. 2003) (holding that two conditional method “limitations (b) and (c) are not optional because if their condition is satisfied, these limitations *require* certain steps to be performed” (emphasis in original))).

The same is true here. Claims 34 and 64 include multiple conditional steps that specify different actions based on evaluation of the touch input against various criteria that must be performed when a precondition is met. EX2008, ¶62. Each condition leads to a different action, or set of actions, and understanding the claim fully requires evaluating all possible conditions and their corresponding actions. *Id.* Further, like the recitation of “in a TDMA system” in the *Hytera* claims, claims

34 and 64 here recite the context of the method being performed “at an apparatus including a watch [with] / [having] ... a touch screen” (Limitation [84.a]), which, as discussed above, connotes a group of logic all expected to be met when a given precondition applies. EX2008, ¶62.

PO Resp. 27–28.

3. *Petitioner’s Position*

At the outset, Petitioner notes that the ’114 patent broadly treats a “gesture” as including a “user input defined by inputs, flags, and signals.” Paper 22, 2 (citing Ex. 1001, 58:13–15). Petitioner also notes that the ’114 patent identifies example gestures, including “two finger, double press,” “two finger pinch-to-zoom,” “quick flick gesture,” “swipe, slide or other simple gesture.” *Id.* According to Petitioner, “the claims permit *different* detected gestures, each having a *different* duration magnitude, to meet the conditional limitations.” Paper 22, 2.

Petitioner explains: “A single duration magnitude cannot meet the conditions of limitations [1.f], [1.g], and 1[i] because a single duration magnitude cannot meet mutually exclusive conditions—a single duration magnitude cannot be both greater than and less than a first magnitude threshold.” Paper 22, 6. Petitioner further explains:

Notably, Petitioner’s position is consistent with the claims’ recitation of antecedent basis. The Petition gives full effect to that basis, clarifying that each of limitations [1.f], [1.g], and [1.i] refers back to the gesture detected in limitation [1.e]—specifically, to the magnitude of the gesture’s duration as detected in limitation [1.e]. Pet., 18-26.

Id. at 7.⁴

⁴ Under Petitioner’s construction, however, each reference back to the gesture detected in limitation [1.e] can refer to a different detected gesture.

Petitioner points to dependent claims 33 and 65 which present a scenario where all three conditions are met by a detected gesture. Paper 22, 9 n.2; 11. Petitioner points to dependent claims 10, 11, 43, and 44 each of which expressly recites “a first gesture,” “a second gesture,” and “a third gesture.” Petitioner explains: “because no single magnitude of a single duration of a single gesture can meet all conditional limitations,” “Petitioner has mapped each of [1.f], [1.g], and [1.i] to different gestures detected in limitation [1.e], each having its own duration magnitude. APPLE-1022, ¶37.” *Id.* at 12. Petitioner further asserts that with respect to method claims 34 and 64, based on *Ex Parte Schulhauser*, Appeal No. 2013-007847, 2016 WL 6277792, *6-10 (PTAB Apr. 28, 2016) (precedential), because the recited conditions are mutually exclusive, only steps corresponding to a satisfied condition need to be met. *Id.* at 13–14.

4. *Analysis*

We determine Patent Owner’s position that all references to “the gesture” must refer back to the same gesture reflects the plain meaning of the claim language. In each independent claim, the structure and usage of the language in dispute are the same. Only one gesture detection is recited, and there is no language reasonably indicating repetition or reiteration of detection for any reason at any time.

Patent Owner’s position that to meet “the gesture” recitations, prior art “gestures” must all share a common starting point also makes sense and is appropriate. The same gesture must start from the same starting point or else it is not the same gesture. Specifying the understanding this way avoids treating two similar gestures as the same gesture, if they have different starting points. For instance, two taps may be the same in every way, except

for their starting points. They are not the same gesture in the context of these claims.

Second, characterizing “the same gesture” as having a common starting point” is appropriate because, as noted by Patent Owner (PO Resp. 5), the ’114 patent covers multi-part, multi-action gestures as “pattern-based gestures” that “may be recognized in the form of an ordered sequence” by, for example, “using a decision tree.” Ex. 1001, 75:24–26. Exemplary pattern-based gesture would be “described by a phase space path which represents the time evolution of the touch state associated with a contact point” on the touch screen. *Id.* at 73:41–44.

Figure 23 of the ’114 patent is reproduced below:

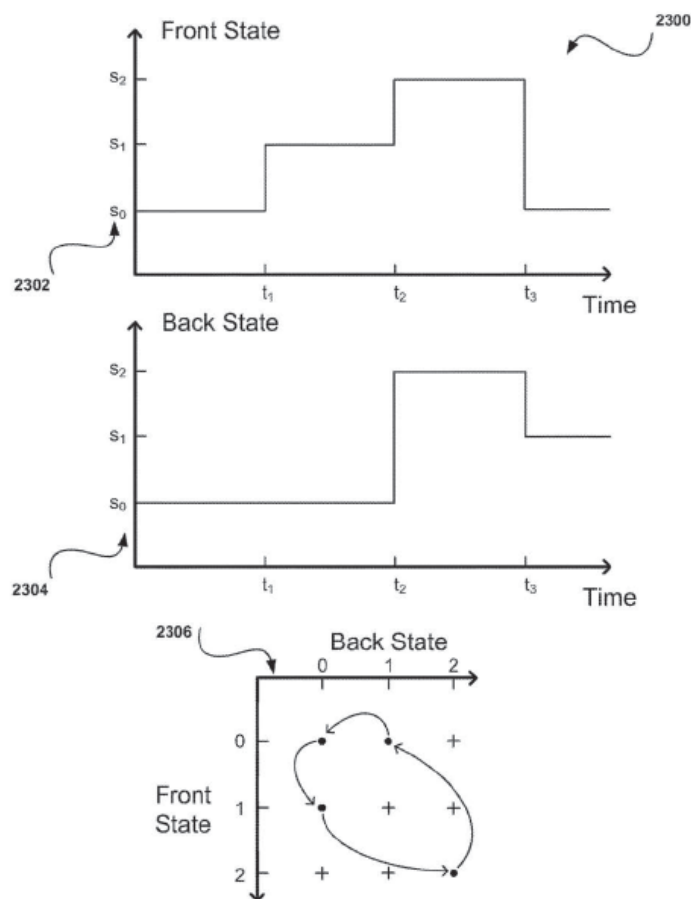


FIGURE 23

Figure 23 illustrates pattern-based gestures according to the '114 patent. Ex. 1001, 5:34–35. Gesture 2302 begins at time zero upon contact and begins to have a duration even before the entire gesture is complete. Thus, even if an initial portion of the gesture looks different from a longer or another portion of the gesture, the duration of that initial portion still is a duration of the gesture being detected. For this reason as well, we agree with Patent Owner that to meet “the gesture” recitations in the claims, the prior art “gestures” relied on to meet or check the claimed conditions must have a common starting point. This ensures that durations of the gesture may be properly assessed.

Petitioner’s position, that as many different user gestures may be detected and relied upon to meet all of the duration limitations in the three-action portion of the disputed claim language, relies on complex logic that is not reasonable in light of the plain reading of the claim. The gist of Petitioner’s position is this: Because no single gesture can have a duration that meets all three conditions, which are mutually exclusive, reliance on multiple separate gestures to meet “the gesture” and the required durations of “the gesture” is appropriate. Petitioner points to dependent claims 33 and 65 as reciting a scenario where all three conditions are met (Paper 22, 11), as confirming its claim construction position.

We are not persuaded by Petitioner’s reasoning relying on mutual exclusivity of the conditions, because the claims do not require satisfaction of all recited conditions by the gesture being detected. We specifically discuss, for example, independent claim 1, although the same discussion applies to each of independent claims 1, 32, 34, and 64.

Limitation [1.g] recites: “when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object.” Limitation [1.i] recites: “when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.” Because the claim does not require the first magnitude threshold and the second magnitude threshold to have the same value, there is no mutual exclusivity between the conditions specified in limitations [1.g] and [1.i]. In other words, these two durations may overlap for some period of time, but they are not co-extensive.

Limitation [1.f] recites: “when a magnitude of a duration of the gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation.” Because the claim does not require the first magnitude threshold and the second magnitude threshold to have the same value, there is no mutual exclusivity between the conditions specified in limitations [1.f] and [1.i]. Again, the durations provided for in meeting the first and second magnitude thresholds may overlap, but they are not co-extensive.

Although the conditions of limitations [1.f] and [1.g] cannot be met by the same magnitude of the duration of the gesture being detected, that is of no moment. We do not see these conditions as both required to be met by the gesture being detected. These limitations begin with the word “when,” which indicates a condition. In short, the implementing logic must make the check for these conditions, and whichever condition is found to exist, the

corresponding action taken. The conditions are evaluated against the one gesture being detected.

What is important is that the same gesture, i.e., inputs sharing a common starting point, are evaluated for each condition, and an action is taken if a corresponding condition is met. We agree with the following characterization by Patent Owner:

Patent Owner maintains that, for challenged apparatus claims 1, 30, and 32, all of the recited conditional logic must be present in the prior art combination, and that even for method claims 34, 62, and 64, Petitioner cannot evade showing the full scope of the claimed logic. The plain language of each independent claim sets out a device or process that is capable of evaluating multiple conditions and performing multiple corresponding actions.

Sur-reply 9. Insofar as Patent Owner asserts that “[a]ll [conditional limitations] must be met” (PO Resp. 2), Patent Owner is asserting that all evaluations, on the same gesture, i.e., sharing a common starting point, must be performed and not that all corresponding actions must be performed for each gesture being detected or detected. Patent Owner makes that clear by explaining:

“[T]he plain and unambiguous language” of the claims requires that “to come within the claim” **each** Limitation, not just one, must be performed “**where their preconditions apply.**” *See Sierra Wireless, ULC v. Sisvel S.P.A.*, 130 F.4th 1019, 2025 U.S. App. LEXIS 5458 *5 (Fed. Cir. Mar. 10, 2025); EX2008, ¶62.

PO Resp. 2. We refer also to the following exchange with Patent Owner’s counsel during oral hearing, which support the same point Patent Owner makes in its Response:

JUDGE LEE: I see, thank you. Thank you for that clarification. I think I understand what you are saying now. You're not saying that all three conditions have to be met. You're saying all three conditions have to be checked.

MR. LEVENTHAL: I am saying, yes, Your Honor.

JUDGE LEE: For the same input. Is that right?

MR. LEVENTHAL: Exactly, Your Honor.

Tr. 31:11–17.

Patent Owner additionally notes that apparatus claims 1 and 32 explicitly recite processors executing instructions to achieve the recited functionalities, which supports its view that all conditions are evaluated for the same gesture. We agree. The apparatus claims require structure capable of making the evaluation and then performing the action corresponding to a matching condition. But even for method claims 34 and 64, all conditions still must be evaluated for the same gesture. We agree with Patent Owner that method claims 34 and 64 here are of the type addressed by the Federal Circuit in *Sierra Wireless, ULC v. Sisvel S.P.A.*, 130 F.4th 1019 (Fed. Cir. 2025). PO Resp. 27. In *Sierra Wireless*, the Board held that the prior art need only disclose limitations 1[a], 1[b], and 1[c], or limitations 1[a], 1[b], and 1[d], because limitations 1[c] and 1[d] cannot both be satisfied in response to the same set of stimuli, and the Court reversed the Board, stating:

Here, we reject the Board's conclusion because the plain and unambiguous language of claim 1 requires that a method, to come within the claim, must perform both limitations 1[c] and 1[d] where their preconditions apply. '396 patent at 16:46–53 (“stopping the time . . . *and* transmitting the status report after the timer expires” (emphasis added)).

Sierra Wireless, 130 F.4th at 1022. Notably, like the claim in *Sierra Wireless*, the three conditions here are connected by the conjunctive “and.”

We also agree with Patent Owner (PO Resp. 27) that the method claims here are like claim 7 in *Hytera Communications Co. v. Motorola Solutions, Inc.*, 841 F. App’x 210 (Fed. Cir. 2021) (unpublished), where the Federal Circuit determined: “[C]laim 7 of the ’991 patent contains a clear indication that the method requires performance of the ‘selecting’ step in response to each of the two alternative conditions.” *Hytera*, 841 F. App’x at 217. In other words, each condition is checked and a corresponding action is taken depending on whichever condition is met.

In any event, claims 34 and 64 recite at least one non-transitory memory storing a plurality of applications and one or more processors in communication with the at least one non-transitory memory and the touch screen. It is implicit that the steps are performed by execution of the stored instructions just like the functionalities in the apparatus claims.

Petitioner’s reliance on dependent claims 33 and 65 is misplaced. Claim 33 depends from claim 32 and recites in pertinent part:

wherein the apparatus is configured such that: only the first component of the gesture is detected in a first use case scenario; the first and second components of the gesture are detected in a second use scenario; *the first, second, and third components of the gesture are detected in a third use case scenario;*

Ex. 1001, 108:4–9 (emphasis added). Similarly, claim 65 depends from claim 64 and recites in pertinent part:

wherein: only the first component of the gesture is detected in a first use case scenario; the first and second components of the gesture are detected in a second use scenario; *the first, second, and third components of the gesture are detected in a third use case scenario;*

Id. at 119:6–11 (emphasis added).

Petitioner, without sufficient explanation, reads too much into the language of claims 33 and 65. They merely indicate that in one potential scenario the system would detect three components of the gesture. They say nothing about how many of the recited conditions would be actually satisfied upon or after detecting the three components of the gesture. We see no justification to deviate from Patent Owner's plain reading of the claim language to Petitioner's proposal of allowing reliance on multiple different gestures, as many as it takes, to meet all conditions.

Petitioner's reliance on dependent claims 10 and 11, each of which depends from claim 1, is similarly unavailing. Claims 10 and 11 each present one scenario, referred to as "first gesture," where the detected gesture satisfies only the first condition, a second scenario, referred to as "second gesture," where the detected gesture satisfies only the second condition, and a third scenario, referred to as "third gesture," where the detected gesture satisfies the second and the third conditions but not the first condition. Petitioner similarly relies on dependent claims 43 and 44, each of which depends from claim 34, which share similar language with dependent claims 10 and 11.

None of this supports Petitioner relying on multiple different detected gestures, as many as it takes, to satisfy all three conditions. Rather, dependent claims 10, 11, 33, 43, 44, and 65 convey, consistent with Patent Owner's construction, that one gesture being detected on the display is examined to determine which one or more of the three conditions are satisfied by that one gesture based on the duration requirements recited in the claims, and as many actions are performed as there are corresponding satisfied conditions, one, two, or three.

Although claims 10, 11, 43, and 44 do use the terms “first gesture,” “second gesture,” and “third gesture,” it is clear, from context, that they each identify, respectively, an entire case scenario where the gesture is evaluated for all three conditions, and not that each gesture is a separately detected gesture to satisfy any one condition.

Petitioner additionally refers to dependent claim 9, which depends from claim 1, as setting forth a case scenario where only the second condition is met by the detected gesture. Paper 22, 6. For the same reasons discussed above in the context of claims 10, 11, 33, 43, 44, and 65, Petitioner’s reliance on dependent claim 9 is also unavailing. Petitioner also notes claim 26 as “reciting cessation of the magnitude of the duration of the gesture being detected,” but does not explain how that supports Petitioner’s proposed construction. *Id.* at 9.

As discussed above, the dependent claims noted by Petitioner provide no basis, contrary to a plain reading of the claim language, to permit reliance on as many gestures as it takes, even if separate and unrelated to each other, to meet all the recited conditions. That would amount to an impermissible rewriting of the claims.

Petitioner asserts that Dr. Madisetti, on cross examination, “was repeatedly unable or at least unwilling to provide even one example—either in the ’114 Patent or a real-life use case—[of a single detected gesture] that would meet [all three claim conditions].” Reply 4. But, as we explain above, the conditions are evaluated against the one gesture being detected. There is no need for Patent Owner to identify any specific example of all three conditions being met by the same detected gesture. Rather, it is Petitioner who has not made a sufficient showing that the three conditions

cannot be evaluated for a single detected gesture, or different components of a single detected gesture, to support Petitioner's proposed claim construction.

Petitioner further argues:

Smith's overly narrow argument that the gesture must be a "single continuous touch" is inconsistent with its district court infringement contentions where it mapped [1.g] to a **tap** but then mapped [1.g] and [1.i] to a **long press** separate from the tap. APPLE-1024, 6-9, 27-30; APPLE-1025, 6-9, 20-23; APPLE-1026, 5-8, 24-27. That is, Smith's own contentions mapped claims 1 and 32 to two discontinuous touches on the accused devices.

Reply 14. This argument is misplaced and unavailing, because Patent Owner's proposed construction is that whatever is "the gesture" relied on to meet a condition must share a common starting point with "the gesture" relied on to evaluate the other conditions. With that in mind, we see no inconsistency between Patent Owner's position here and Patent Owner's contention in district court. We understand and agree with Patent Owner's explanation below:

Patent Owner's position is that all of the conditional limitations need **not** be met "in response to a single user input" or "a single instantiation of a gesture." POR, 25, 27. Rather, each conditional "Limitation requires evaluating instances of user input beginning at a common starting point." *Id.*, 24. This is true for the accused **tap** and **long press** gestures, both of which begin at the common starting point of the start of a touch on an application icon, but it is **not** true for the three gestures Petitioner maps to Limitations [1.f, 1.g, and 1.i], whose "mapped" durations do not start at a common starting point.

Sur-reply 8. To the extent Patent Owner mentions "single continuous gesture" as required, we understand it as referring to gestures with a common starting point for evaluation against all of the claimed conditions.

Petitioner also argues that Patent Owner's proposed construction is inconsistent with the "double press" example in the Specification. Reply 15. This argument is also misplaced and unavailing, because Petitioner again misunderstands Patent Owner's position. We understand and agree with the following explanation by Patent Owner rebutting Petitioner's argument:

[Petitioner's] criticism assumes that Patent Owner's position is that the Challenged Claims are limited to a gesture that includes continuous contact for the entirety of the gesture. This is not a position Patent Owner has taken. Patent Owner specifically noted that the specification's example gestures include "multi-part pattern-based" gestures without forbidding lift-off between parts. POR, 25; . . . The flaw in Petitioner's mapping in this case is a failure to map "the gesture" consistently, regardless of whether the claims permit that gesture to include lift-off between parts.

Sur-reply 8–9. We note that a double-press gesture includes a duration within which, starting from the first point of contact, there is but just a single press. Petitioner has shown no inconsistency between Patent Owner's position on claim construction and the "double press" example in the specification.

All of the foregoing analysis apply to each independent claim, apparatus and method claims alike. There is but just one gesture for evaluation against all three conditions, and depending on which one or more conditions on duration are met, a corresponding action is taken. In some scenarios less than all conditions are met and in some scenarios all conditions are met. Dependent claims 9, 10, 11, 33, 43, 44, and 65, discussed above, all support this understanding.

Petitioner points out that Patent Owner describes "duration" inconsistently across the three conditions. Paper 22, 5; Reply 7–8. Specifically, Petitioner notes that Patent Owner regards "duration" of

limitation [1.f] as having a period beginning from the start of the gesture and ending at the conclusion of the gesture, and “duration” of limitations [1.g] and [1.i] as having a period beginning at the start of the gesture and ending at the time of execution of the logic assessing the corresponding condition or at the conclusion of the gesture. The differently stated durations is inconsequential because it does not undermine Patent Owner’s proposed construction that all references to “the gesture” must refer back to the same detected gesture and must all have a common starting point. Even if the duration in limitation [1.f] is characterized the same way as the durations of limitations [1.g] and [1.i], our conclusion is the same.

Petitioner additionally identifies claim 23, which depends from claim 1, as indicating that a duration of the gesture need not be limited to a period that commences from the start of a gesture. Reply 13–14. Specifically, claim 23 includes the language: “when the magnitude of the duration of the gesture being detected on the touchscreen on the object is continually reduced before the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the second magnitude threshold.” Ex. 1001, 99:47–56. The thought is that if the “duration” must start from the beginning then it can only increase, not reduce.

Whether “a duration” as recited in limitation [1.f], and similarly in limitations [32.f], [34.g], and [64.g], must be limited to periods starting from the very beginning of the gesture need not be decided here. Petitioner’s view does not undermine Patent Owner’s key and fundamental position on claim construction that all “the gesture” recitations must refer back to the same gesture, i.e., user inputs with a common starting point in time. In other words, that a duration of the gesture may be any portion of “the gesture”

even if not counting from the very beginning of the gesture does not lead to Petitioner's construction of allowing multiple different gestures to be relied on, as many as it takes, to meet all the recited conditions.

Finally, we address whether the principle regarding conditional steps, expressed in *Ex parte Schulhauser*, Appeal No. 2013-007847, 2016 WL 6277792, *4 (PTAB Apr. 28, 2016) (precedential), applies to method claims 34 and 64 and would result in a different analysis. *Schulhauser* provides that if a method claim is written to embody two conditional steps which are mutually exclusive, i.e., satisfaction of one condition necessarily means non-satisfaction of the other, and thus only one of the two steps need to be performed, the one associated with the satisfied condition. *Id.*

Schulhauser is distinguishable from the circumstances of this case, because it presents a situation where each alternative condition could reasonably be regarded as a standalone method claim, and nothing appears incomplete if only one route is pursued. *See Hytera*, 841 F. App'x at 217. That is not the situation here. Rather, the claims here are like those in *Sierra Wireless* and in *Hytera*, as we explained above.

Petitioner asserts that Patent Owner's proposed construction is nonsensical and redundant. Reply 14. For all the reasons discussed above, we disagree. We find that Patent Owner's proposed construction is in accordance with a plain reading of the claim language.

5. *Conclusion*

For the foregoing reasons, we agree with Patent Owner's proposed construction that: The sole detecting of a gesture or detecting at least a component of a gesture as recited in each of claims 1, 32, 34, and 64 provides the one gesture that serves as the antecedent basis for each subsequent term "the gesture" used in the action portion of each claim, and

prior art gestures relied on to meet each “the gesture” recitation must have a common starting point in time.

We disagree with Petitioner that these limitations may be met by detecting different gestures, as many as it takes to have each the conditions for each action component satisfied.

D. Alleged Unpatentability of Claims 1 and 32 over Kim, for Anticipation under § 102 and for Obviousness under § 103

1. The Law on Anticipation

To establish anticipation, each and every element in a claim, arranged as recited in the claim, must be found in a single prior art reference.

Net MoneyIN, Inc. v. VeriSign, Inc., 545 F.3d 1359, 1369 (Fed. Cir. 2008); *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001). While the elements must be arranged in the same way as is recited in the claim, “the reference need not satisfy an *ipsissimis verbis* test.” *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009); *In re Bond*, 910 F.2d 831, 832–33 (Fed. Cir. 1990)).

2. 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).

3. *Overview of Kim (Ex. 1004)*

Kim discloses “a touch-based zooming technology in a mobile device and, more particularly, to a mobile device having a touch sensitive surface such as a touch screen, and a touch-based zooming control method in such a mobile device.” Ex. 1004 ¶ 3. Kim seeks to improve on prior art technologies that provide zooming function only at fixed rates, such as 10%, 20%, or 200%. *Id.* ¶¶ 6–7. Kim thus introduces new zoom techniques for mobile device touch screens. *Id.* ¶¶ 8–9.

Specifically, Kim discloses “a zoom mode is activated in response to an interrupt which occurs on a touch sensitive surface such as any of a touch screen and a touch pad of the mobile device.” Ex. 1004 ¶ 30. Kim describes that “depending on a touch-based user gesture, a continuous zooming action is simply and rapidly performed around a user’s desired point on target data displayed on a screen.” *Id.* Kim describes:

[A] gesture includes a long press event for activating a zoom mode, a move event for a zoom-in or zoom-out action in a zoom mode, a double tap event for returning to an initial state with a basic display size after a zoom-in or zoom-out action in a zoom mode, and a double tap event for a toggling function to obtain the effect of offering a preview image or a magnifier.

Id. ¶ 31.

Figure 5 of Kim is reproduced below:

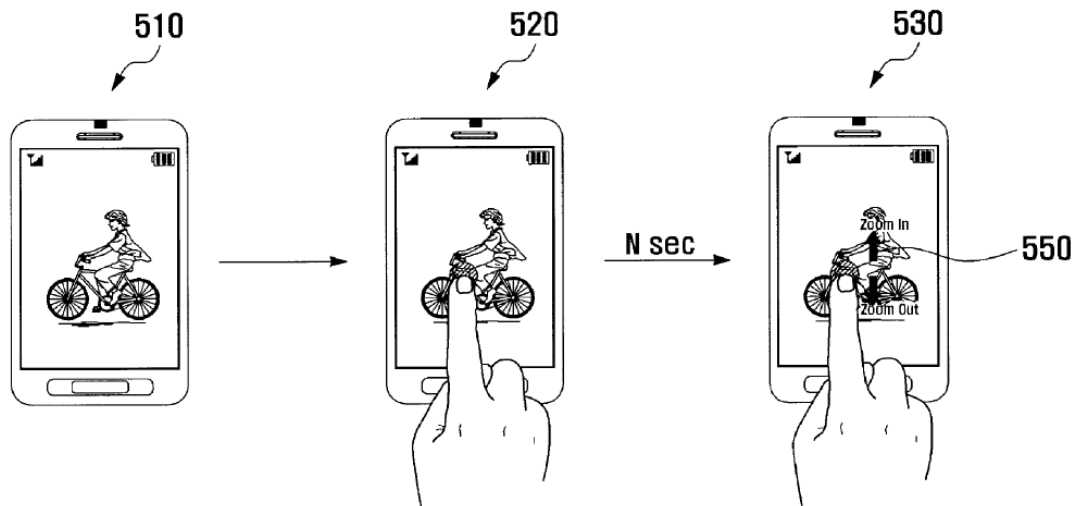


Figure 5 illustrates an example of a process of activating a zoom mode of a mobile device in accordance with an embodiment of Kim. Ex. 1004 ¶ 83. Kim explains: “FIG. 5 exemplarily illustrates a case where a long press input is assigned to an input event for the activation of the zoom mode. In this case, a user can invoke an input event at a desired position to be used as a central point of a zooming action.” *Id.* ¶ 85. Kim further explains that display of graphical element 550 is optional, and is provided “to inform [the user] of selectable zooming actions and their gesture directions.” *Id.* ¶ 86.

Figure 7 of Kim is reproduced below:

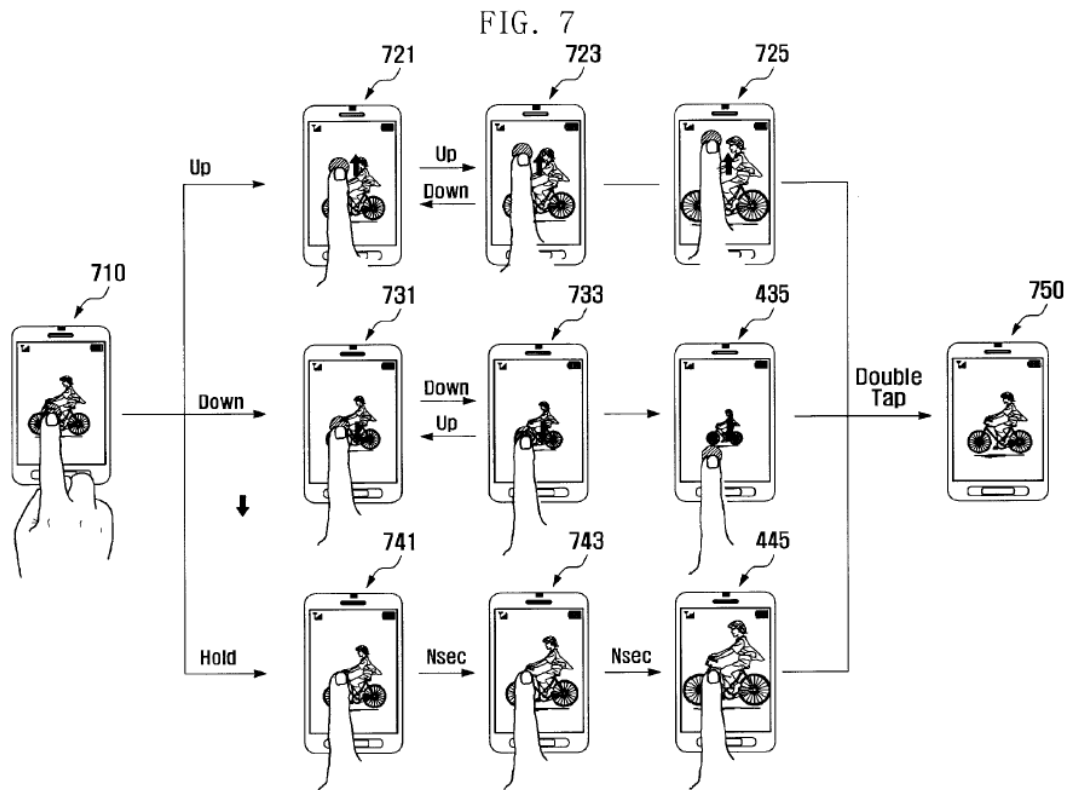


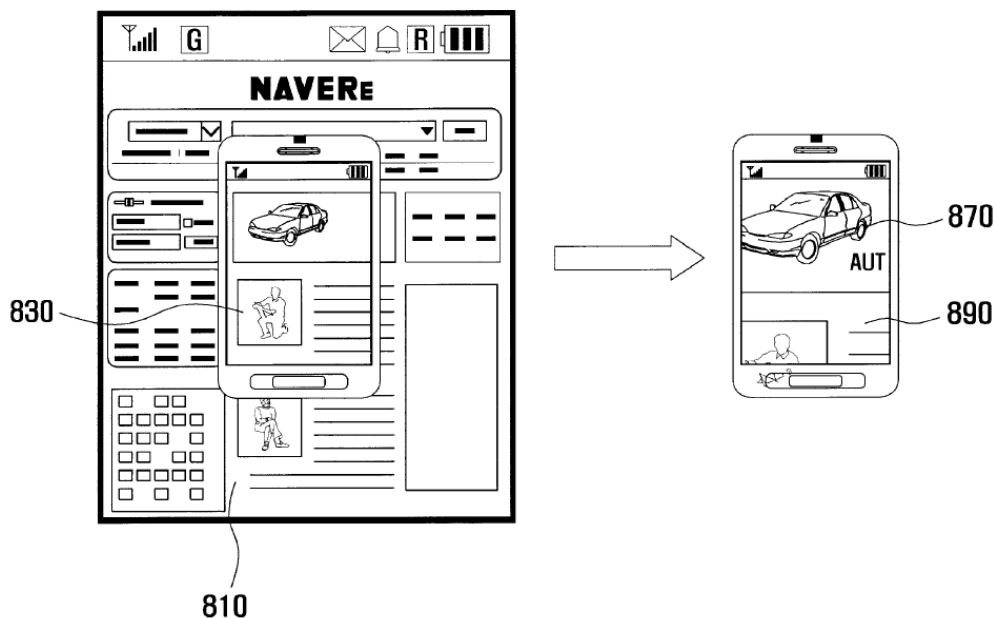
Figure 7 illustrates a process of executing a zooming function depending on a touch-based user gesture in a mobile device according to Kim. Ex. 1004 ¶ 25. Kim describes that a zoom mode can be activated when a user invokes a long press at a certain point (x, y) on a touch screen. *Id.* ¶ 139. Kim also describes that in the zoom mode, a user can perform a zooming action in two ways: (1) by moving a finger or stylus up or down from the pressed (x, y) point to perform either a zoom-in or zoom-out, or (2) by holding finger or stylus at the pressed point (x, y) without moving, and the device would enlarge or reduce the image at periodic intervals. *Id.* ¶¶ 139–140. The bottom path of Figure 7 illustrated above shows a zoom-in operation with a tap and hold gesture of the user, but Kim describes that the this hold event “may be alternatively assigned to a continuous zoom-out

function.” *Id.* ¶ 107. The top and middle paths appear to correspond to the tap-and-move zooming action illustrated in Kim’s Figure 5.

Kim describes that after any one of the move-up, move-down, or tap-and-hold event, which alters the scale of the displayed image, a user may invoke a double tap event on the screen, and that “in response to the double-tap event, the mobile device displays target data with a given basic magnification value, as indicated by the reference number 750.” Ex. 1004 ¶¶ 99, 103, 106.

Kim additionally discloses zooming on a portion of the content on a display screen, which portion includes multiple objects. Figure 8 of Kim is reproduced below:

FIG. 8



[Figure 8 illustrates a zooming function depending on a bitmap image (Ex. 1004 ¶ 26)]

Kim describes: “Referring to FIG. 8, a reference number 810 indicates a bitmap image. Also, a reference number 830 indicates a portion of a bitmap image actually displayed on the screen of the mobile device.

And also, a reference number 870 indicates display target data which is an enlarged portion of content.” Ex. 1004 ¶ 109. Kim further describes:

Specifically, the mobile device controls a zooming action by using the bitmap image **810** when executing a zooming function in response to a user gesture. Also, the mobile device offers display target data one of enlarged or reduced depending on the bitmap image **810**. In particular, display target data actually displayed on the screen is a portion **830** of the bitmap image **810** one of enlarged and reduced around a user's selected point. This portion **830** will be referred to as a viewport.

Id. ¶ 111.

4. *Claim 1*

At issue for adjudication of claim 1 are limitations [1.e], [1.f], [1.g], and [1.i]:

- [1.e] detect a gesture on the touch screen on the object;
- [1.f] when a magnitude of a duration of the gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;
- [1.g] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object,
- [1.i] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.

Pet. v.

As we explained and determined above in Section II.C on claim construction, the “gesture” recited in limitations [1.e], [1.f], [1.g], and [1.i], must be the same gesture and must have a common starting point. As we

explain below, however, Petitioner's accounting for limitations [1.e], [1.f], [1.g], and [1.i] are not in accordance with this requirement.

For limitation [1.e], Petitioner identifies any and all of the user gestures shown in Kim's Figure 5 and 7 as the detected gesture. Pet. 19–20.

Limitation [1.f] recites:

[1.f] when a magnitude of a duration of the gesture being detected on the touch screen on the object is less than a first magnitude threshold, perform an operation;

Pet. v. With regard to limitation [1.f], Petitioner explains:

Kim teaches or renders [1.f] obvious. APPLE-1003, ¶54. Kim describes “a double tap event for returning to an initial state with a basic display size after a zoom-in or zoom-out action.” APPLE-1004, [0031], [0064], [0099], [0103], [0106]. In describing the touch as a tap, Kim discloses that the duration of each of the taps of the double tap gesture must be less than a threshold value associated with a longer-lasting (i.e., hold) event (the “first magnitude threshold”). APPLE-1003, ¶54. In particular, from this disclosure and based on common knowledge of a tap, a POSITA would have understood that a double tap—a well known user input by the Critical Date—comprises two short duration taps in quick succession, which individually and collectively have a duration shorter than a threshold duration associated with a more persistent gesture (e.g., a hold). APPLE-1005,[0057]-[0058], [0069]; APPLE-1003, ¶54 (citing APPLE-1009; APPLE-1012). The duration of each of the taps of the double tap gesture is “a duration of the gesture.” APPLE-1003, ¶54 (citing APPLE-1010; APPLE-1011). In Kim's device, when a double tap event is generated, the “device displays target data with a given basic magnification value,” thus performing another operation. APPLE-1004, [0106]; APPLE-1003, ¶55.

Pet. 20.

A double-tap gesture is a gesture Petitioner identified in connection with limitation [1.e]. We are also persuaded that a double tap comprises two short duration taps in quick succession which would, both individually and

collectively, have a duration shorter than that of a more persistent gesture such as a single tap and hold gesture shown in the bottom path of Kim's Figure 7.

Limitation [1.g] recites:

[1.g] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold, perform a scaling in connection with at least the object,

Pet. v. With regard to limitation [1.g], Petitioner refers to the hold event in the bottom path of Kim's Figure 7. Pet. 21. Petitioner explains:

For such a hold event, a POSITA would have understood that the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than the first magnitude threshold (threshold value associated with a hold event). APPLE-1003, ¶56 (citing APPLE-1013; APPLE-1014; APPLE-1015). Kim explains that, in "a zoom-in process, the mobile device continuously offers a real-time, scaled-up bitmap image on the screen in response to the duration of the hold event," and when "the hold event is released from the screen, the mobile device displays an enlarge display target data around the selected point on the touch screen, depending on a zoom-in ratio of a bitmap image." APPLE-1004, [0105]. Kim further explains that "the hold event is assigned to a continuous zoom-in function is an exemplary case only," and "the hold event may be alternatively assigned to a continuous zoom-out function." *Id.*, [0107]; APPLE-1003, ¶57.

Id. Petitioner additionally asserts:

Kim also refers to the request for the zoom mode being activated in response to a "long press input" and a "long press event." APPLE-1004, [0031], [0034], [0042], [0049], [0085], [0139], Claim 2. A POSITA would have understood that Kim's long press would be discriminated from a normal press based on the contact being maintained (without moving) for longer than a threshold duration. APPLE-1004, [0140]; APPLE-1003, ¶59.

Id. at 22.

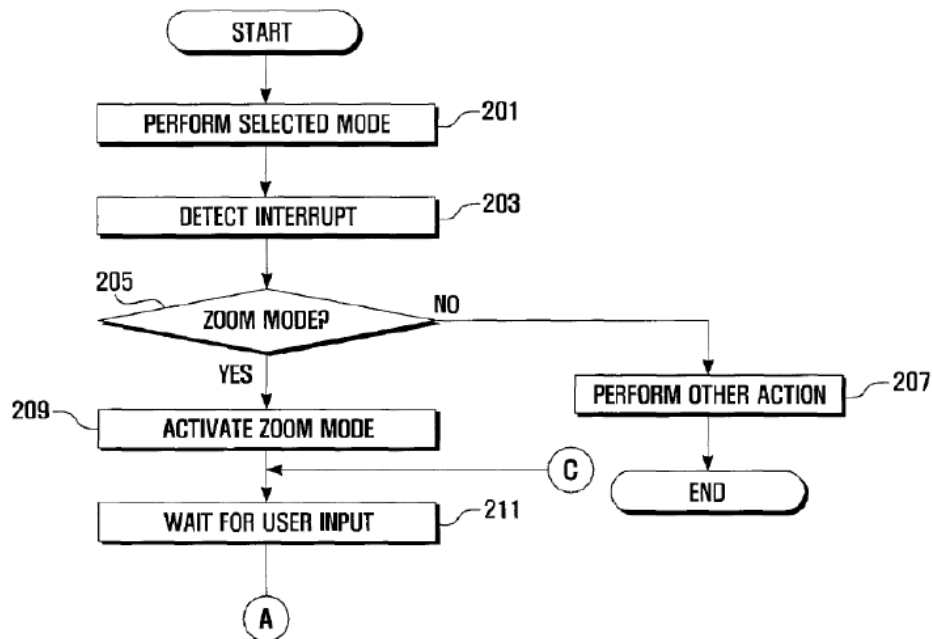
Neither the tap-and-hold gesture in the bottom path of Kim's Figure 7 nor the "long press input" and "long press event" of Kim such as that shown in Kim's Figure 5 is the double-tap gesture Petitioner relies on to satisfy limitation [1.f]. Neither has been shown to have a common starting point with the double tap. Thus, Petitioner's showing is inadequate.

Limitation [1.i] recites:

[1.i] when the magnitude of the duration of the gesture being detected on the touch screen on the object is greater than a second magnitude threshold, perform another operation.

Pet. v. Petitioner explains:

Kim teaches or renders [1.i] obvious. APPLE-1003, ¶62. Kim further describes "another operation" that is performed when the magnitude of the duration of the gesture is greater than a second magnitude threshold—specifically, a minimum threshold to be deemed an intentional touch. Specifically, Kim explains that, "[i]f detecting a user gesture, namely, if receiving an input event from a user through the touch screen, the mobile device determines the type of an input event." APPLE-1004, [0053]. Kim states that, "[i]f an interrupt is not a request for the activation of the zoom mode as the result of determination in step 205, the mobile device can perform some action in connection with an interrupt (step 207)," shown in Figure 2a below. APPLE-1004, [0050], FIG. 2a; APPLE-1003, ¶63.



APPLE-1004, FIG. 2a

[Figure 2A of Kim is a flow diagram of a method for a touch-based control in a zoom mode (Ex. 1004 ¶ 20)]

Kim additionally explains that if the mobile device determines that a detected user gesture does not correspond to any particular input event, “the mobile device disregards the received input event.” APPLE-1004, [0053]. Based on Kim’s disclosure of “disregarding” a received input, a POSITA would have understood that, for the detected interrupt (step 203) to be sufficient to cause the mobile device to “perform other action” (step 207), a magnitude greater than a minimum threshold value (e.g., the minimum threshold of an intentional user input) is relied upon, or rendered obvious, by Kim. APPLE-1004, FIG. 2a; APPLE-1003, ¶64. Thus, when the magnitude of the gesture is greater than a second magnitude threshold, the device “performs other action” (e.g., display requested menu). APPLE-1004, [0050], FIG. 2a; APPLE-1003, ¶64. A POSITA would have understood that such an interrupt would be caused by a gesture that is longer in duration than the second threshold (as necessary to avoid the gesture from being disregarded), shorter than the duration necessary for a long press threshold, and a different gesture than a double tap gesture. APPLE-1003, ¶64.

Pet. 24–26.

As explained by Petitioner, the interrupt gesture relied on by Petitioner in connection with limitation [1.i] is neither the double tap gesture relied by Petitioner on to satisfy limitation [1.f] nor the tap-and-hold gesture in the bottom path of Kim’s Figure 7 or the “long press input” and “long press event” of Kim relied on by Petitioner to satisfy limitation [1.g]. The interrupt gesture does not have a common starting point with the double tap, the tap-and-hold, the long press input, or the long press event. Thus, Petitioner’s showing is inadequate.

For the foregoing reasons, we are not persuaded that Petitioner has adequately accounted for limitations [1.e], [1.f], [1.g], and [1.i].

Accordingly, Petitioner has not proved by a preponderance of the evidence that claim 1 is either anticipated by or would have been obvious over Kim.

5. *Claim 32*

Claim 32 is substantially similar to claim 1. Our analysis for claim 32 is essentially the same as our analysis for claim 1, given the claim construction we provide above in Section II.C.

Relative to limitation [1.f], limitation [32.f] associates the limitation with detection of a first component of the gesture. Relative to limitation [1.g], limitation [32.g] associates the limitation with detection of a second component of the gesture. Relative to limitation [1.i], limitation [32.i] associates the limitation with detection of a third component of the gesture. Also, whereas limitation [1.g] requires performing scaling in connection with the object to which the gesture is applied, limitation [32.g] requires performing scaling for at least one other object. These differences are

inconsequential with respect to the issue that is determinative, which is common with the determinative issue for claim 1 as discussed above.

Specifically, Petitioner identifies Kim's double tap event as the claimed first component of the detected gesture (limitation [32.f]), Kim's press-and-hold event as the claimed second component of the detected gesture (limitation [32.g]), and an interrupt that is separate and apart from both the double tap event and the press-and-hold event as the claimed third component of the detected gesture (limitation [32.i]). Pet. 39, 41. Because the double tap, the press-and-hold, and the interrupt are not the same gesture or components of user inputs with a common starting point, Petitioner's showing is inadequate.

For the foregoing reasons, we are not persuaded that Petitioner has adequately accounted for limitations [32.e], [32.f], [32.g], and [32.i].

Accordingly, Petitioner has not proved by a preponderance of the evidence that claim 32 is either anticipated by or would have been obvious over Kim.

E. Alleged Obviousness of Claims 1 and 32 over Kim and Bowens

1. Overview of Bowens

Bowens describes a “state machine gesture recognition algorithm for interpreting streams of coordinates received from a touch sensor.” Ex. 1005, Abstr. Bowens relates to gesture recognition from capacitive or resistive touch sensors. *Id.* ¶ 1. Bowens states:

In particular, the invention relates to a touch sensor device comprising an at least one-dimensional sensor arranged to output a sense signal responsive to proximity of an object, a position processing unit for calculating a position of an interaction with the sensitive area from an analysis of the sense signals and output a time series of data indicative of interaction positions on the

sensor, and a gesture processing unit operable to analyze the time series data to distinguish one or more gesture inputs therefrom, wherein the gesture processing unit is coded with gesture recognition code comprising a plurality of linked state modules.

Id. ¶ 17.

Bowens identifies a number of gestures it addresses and describes a “single touch” state machine for gesture recognition supporting the following types of gestures: tap; press; double tap; flick; and drag. Ex. 1005 ¶¶ 56–77, 78 (describing state machine). Bowens then describes seven “states,” divided into “static touch” states (press, tap, double tap), and “moving touch” states (flick, drag). *Id.* The states include “Idle,” “Touched,” “Second Tap Pending,” “Double Tap Pending,” “Flick Pending,” “Drag Pending,” and “Pressed.” *Id.* ¶¶ 79–85. Bowens further describes an embodiment that is for “multitouch gestures,” adding “ping, rotate, and stretch,” which requires the addition of a “Multitouch state.” *Id.* ¶ 87. Finally, Bowens describes “transitions” between the various states.

Figure 1 of Bowens is reproduced below:

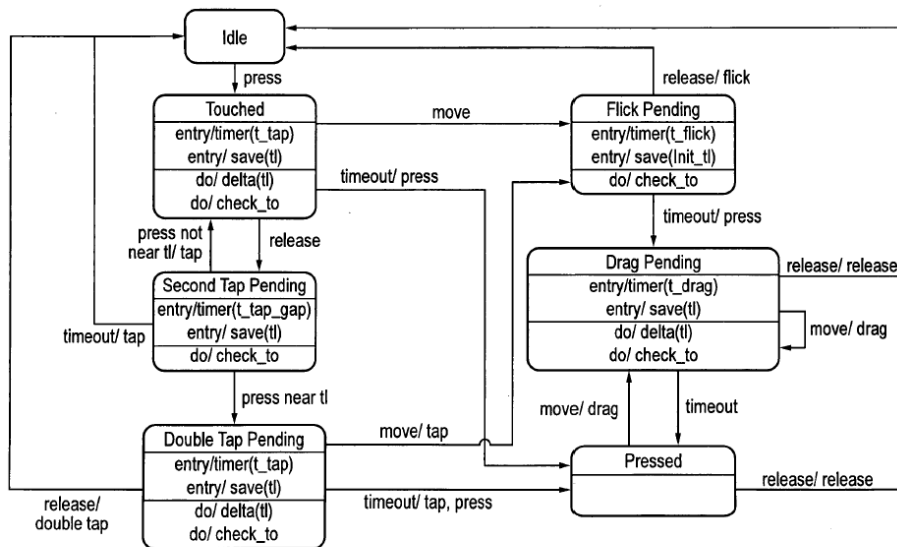


FIG. 1

Figure 1 of Bowens shows a gesture recognition state machine according to an embodiment of Bowens. Ex. 1005 ¶ 41. The illustrated state machine includes states of “Idle,” “Touched,” “Second Tap pending,” “Double tap pending,” “Flick Pending,” “Drag Pending,” and “Pressed,” as well as transitions between the various states. *Id.* ¶ 78.

2. *Petitioner’s Proposed Combination of Kim and Bowens*

Petitioner relies on Bowens for its specific implementation details pertaining to how to identify and differentiate various user touches and gestures on the display, such as a tap, a double tap, and a long press. Pet. 53–55. Petitioner also relies on Bowens’s disclosure that a tap gesture may be used to activate a hyperlink on a displayed webpage. *Id.* at 59 (citing Ex. 1005 ¶ 51). The proposed manner of combination, however, is inconsequential to the issue that is determinative on the alleged obviousness of claims 1 and 32 over Kim and Bowens.

3. *Claim 1*

Petitioner’s accounting for claim 1 on the alleged ground of obviousness over Kim and Bowens is deficient essentially for the same reasons Petitioner’s accounting for claim 1 on the alleged ground of obviousness over Kim alone is deficient.

Specifically, for limitation [1.e], Petitioner identifies various types of gestures which potentially may be detected on Kim’s display. Pet. 62. For limitation [1.f], Petitioner identifies a double tap as the detected gesture. *Id.* For limitation [1.g], Petitioner identifies Kim’s “tap and hold” or “long press” which invoke a continuous zoom-in or zoom-out function as the

detected gesture. *Id.* at 64–66. For limitation [1.i], Petitioner identifies a tap. *Id.* at 67–68.

As explained by Petitioner, the “tap and hold” or “long press” gesture relied on by Petitioner to satisfy limitation [1.g] is not the same as the double tap gesture relied on by petitioner to satisfy limitation [1.f], and the tap gesture relied on by Petitioner to satisfy limitation [1.i] is neither the double tap gesture relied on to satisfy limitation [1.f] nor the “tap-and-hold” or “long press” gesture relied on to satisfy limitation [1.g]. The three gestures relied on by Petitioner for limitations [1.f], [1.g], and [1.i] are not the same and do not share a common starting point. Thus, Petitioner’s showing is inadequate.

For the foregoing reasons, we are not persuaded that Petitioner has adequately accounted for limitations [1.e], [1.f], [1.g], and [1.i].

Accordingly, Petitioner has not proved by a preponderance of the evidence that claim 1 would have been obvious over Kim and Bowens.

4. *Claim 32*

Claim 32 is substantially similar to claim 1. Our analysis for claim 32 is essentially the same as our analysis for claim 1, given the claim construction we provide above in Section II.C.

Specifically, Petitioner identifies Kim’s double tap event as the claimed first component of the detected gesture (limitation [32.f]), Kim’s “long press” event as the claimed second component of the detected gesture (limitation [32.g]), and a tap event as the claimed third component of the detected gesture (limitation [32.i]). Pet. 76–78. Because the double tap, the “long press,” and the tap are not the same gesture or components of user inputs with a common starting point, Petitioner’s showing is inadequate.

For the foregoing reasons, we are not persuaded that Petitioner has adequately accounted for limitations [32.e], [32.f], [32.g], and [32.i].

Accordingly, Petitioner has not proved by a preponderance of the evidence that claim 32 would have been obvious over Kim and Bowens.

5. *Conclusion*

Petitioner has not proved by a preponderance of the evidence that claims 1 and 32 would have been obvious over Kim and Bowens.

F. *Alleged Obviousness of Claims 34 and 64 over Kim and Lang*

1. *Overview of Lang*

Lang describes a “user interface for small computing devices,” especially on “wearable” devices, such as personal digital assistants, cellular phones, and smart watches. Ex. 1006, Abstr., ¶ 3. Lang describes that wearable devices often have small space available for a practical user interface for complex applications, which makes them “awkward and difficult to use.” *Id.* ¶ 4. Lang discloses that these “problems are solved by providing a user with a relatively large bezel surface for interfacing with a small computing device,” which it provides. *Id.* ¶¶ 5, 27.

Figure 1, shown below, is an exemplary smart watch 102, embodying the Lang invention.

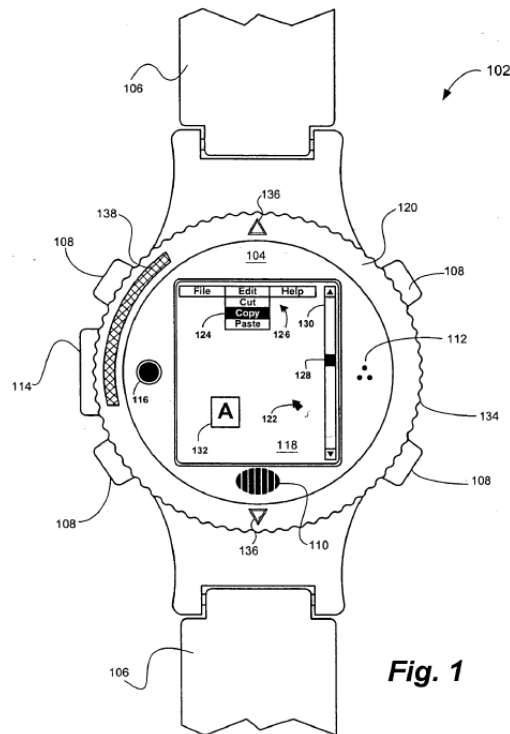


Fig. 1

Figure 1 of Lang shows a smart watch according to one embodiment of Lang. Ex. 1006 ¶ 10. Figure 1 illustrates device housing 104, input buttons 108, display screen 118, rotatable bezel 120, pointing icon cursor 122, highlighted selection cursor 125 in selection array 126, scroll bar cursor 128, scroll bar 130, text selection cursor 132, bezel buttons 136, and sensor 138. *Id.* ¶¶ 22–29. Lang describes that “the display screen 118 may be touch-sensitive.” *Id.* ¶ 20.

2. Claim 34

Claim 34 is essentially the method counterpart to apparatus claim 1, and claim 34 additionally requires the limitation “including a watch” for the underlying apparatus. Petitioner relies on the teachings of Lang to account for the “watch” limitation. Patent Owner makes no argument regarding combining teachings of Kim and Lang. The determinative issue is the same as that for claim 1.

Similar to limitation [1.e], limitation [34.f] recites “detecting a gesture on the touch screen on the object.”

Similar to limitation [1.f], limitation [34.g] recites: “based on the magnitude of a duration of the gesture detected on the touch screen on the object being detected to be less than a first magnitude threshold, performing an operation.” Whereas limitation [1.f] uses the introductory word “when,” limitation [34.g] uses the introductory term “based on.” The difference is inconsequential.

Similar to limitation [1.g], limitation [34.h] recites: “based on the magnitude of the duration of the gesture detected on the touch screen on the object being detected to be greater than the first magnitude threshold, performing a scaling in connection with at least the object.” Whereas limitation [1.g] uses the introductory word “when,” limitation [34.h] uses the introductory term “based on.” The difference is inconsequential.

Similar to limitation [1.i], limitation [34.j] recites: “based on the magnitude of the duration of the gesture detected on the touch screen on the object being detected to be greater than a second magnitude threshold, performing another operation.” Whereas limitation [1.i] uses the introductory word “when,” limitation [34.j] uses the introductory term “based on.” The difference is inconsequential.

Petitioner’s accounting for claim 34, aside from the requirement that the underlying apparatus includes a watch, is essentially the same as Petitioner’s accounting for claim 1. Pet. 43. The deficiency of Petitioner’s accounting for claim 1 applies equally to claim 34, because the detected gestures Petitioner relies on to meet limitations [34.f], [34.g], [34.h], and [34.j] are not the same and do not have a common starting point.

3. *Claim 64*

Claim 64 is substantially similar to claim 34. Our analysis for claim 64 is essentially the same as our analysis for claim 34, given the claim construction we provide above in Section II.C.

Relative to limitation [34.g], limitation [64.g] associates the limitation to a first component of the gesture. Relative to limitation [34.h], limitation [64.h] associates the limitation to a second component of the gesture. Relative to limitation [34.i], limitation [64.j] associates the limitation with a third component of the gesture. Also, whereas limitation [34.h] requires performing scaling in connection with the object to which the gesture is applied, limitation [64.h] requires performing scaling for at least one other object. These differences are inconsequential with respect to the issue that is determinative, which is common with the determinative issue for claim 34 as discussed above.

Specifically, Petitioner identifies Kim's double tap event as the claimed first component of the detected gesture (limitation [64.g]), Kim's "long press" event as the claimed second component of the detected gesture (limitation [64.h]), and a tap event as the claimed third component of the detected gesture (limitation [64.j]). Pet. 39–41, 44. Because the double tap, the "long press" and the tap as presented by Petitioner are not the same gesture or components of user inputs with a common starting point, Petitioner's showing is inadequate.

For the foregoing reasons, we are not persuaded that Petitioner has adequately accounted for limitations [64.f], [64.g], [64.h], and [64.j].

Accordingly, Petitioner has not proved by a preponderance of the evidence that claim 64 is unpatentable over Kim, Bowens, and Lang.

*G. Alleged Obviousness of Claims 34 and 64
over Kim, Bowens, and Lang*

1. Claim 34

Aside from relying on Lang’s teachings for an apparatus including a watch, Petitioner’s for claim 34 on the alleged ground of obviousness over Kim, Bowens, and Lang is the same as its accounting for claim 1 over Kim and Bowens. Pet. 80. Given our claim construction discussed above in Section II.C, the deficiency of Petitioner’s analysis for claim 1 applies equally to claim 34.

Specifically, as applied by Petitioner, the three gestures in limitations [34.g], [34.h], and [34.j] are not the same and do not share a common starting point. Thus, Petitioner’s showing is inadequate.

For the foregoing reasons, we are not persuaded that Petitioner has adequately accounted for limitations [34.f], [34.g], [34.h], and [34.j].

Accordingly, Petitioner has not proved by a preponderance of the evidence that claim 34 is unpatentable over Kim, Bowens, and Lang.

2. Claim 64

For limitations [64.e]–[64.j], Petitioner’s analysis is the same as its analysis for limitations [32.d]–[32.i] on the alleged ground of obviousness over Kim and Bowens. Pet. 80. Given our claim construction discussed above in Section II.C, the deficiency of Petitioner’s analysis for claim 32 applies equally to claim 64.

Specifically, Petitioner identifies Kim’s double tap event as the claimed first component of the detected gesture (limitation [64.g]), Kim’s “long press” event as the claimed second component of the detected gesture (limitation [64.h]), and a tap event as the claimed third component of the detected gesture (limitation [64.j]). Pet. 76–78, 80. Because the double tap,

the “long press” and the tap as presented by Petitioner are not the same gesture or components of user inputs with a common starting point, Petitioner’s showing is inadequate.

For the foregoing reasons, we are not persuaded that Petitioner has adequately accounted for limitations [64.f], [64.g], [64.h], and [64.j].

Accordingly, Petitioner has not proved by a preponderance of the evidence that claim 64 is unpatentable over Kim, Bowens, and Lang.

*H. Alleged Obviousness of Claim 30 over
(1) Kim and Burrough, and (2) Kim, Bowens, and Burrough, and
Alleged Obviousness of Claim 62 over
(1) Kim, Lang, and Burrough, and (2) Kim, Bowens, Lang, and
Burrough*

Claim 30, an apparatus claim, requires, in pertinent part: a vibrator, detect a gesture on the touch screen on a first object, during detection of at least a portion of the gesture and before a completion thereof is detected perform a scale operation on at least one other object, and after at least a portion of the scale operation, vibrate the apparatus and perform an action. Ex. 1001, 107:12–33.

Claim 62, a method claim, similarly requires, in pertinent part: a vibrator, detecting a gesture on the touch screen on the first object, in response to a detection of at least a portion of the gesture, performing a scale operation on at least one other object, and subsequent to the performance of the scale operation, vibrating the apparatus and performing an action. Ex. 1001, 118:16–35.

Claim 62 additionally requires that the recited method be performed at an apparatus including a watch. Ex. 1001, 118:15–21. For the “apparatus including a watch” aspect of claim 62, Petitioner relies on Lang. Otherwise, the reasoning of Petitioner is the same as that for claim 30. Patent Owner

makes no argument with respect to Petitioner's reliance on Lang's disclosure to account for the "apparatus including a watch" requirement of claim 62.

1. Overview of Burroughs

Burrough describes methods and systems for processing touch inputs on a "multi-touch sensing device," and "identifying at least one multi-touch gesture based on the data from the multi-touch sensing device and providing an appropriate multi-haptic response." Ex. 1007, Abstr.

Burrough describes that multi-touch devices "can distinguish more than one object (finger)," and that "multi-touch devices monitor a sensing surface for a touch or near touch, and when a touch occurs determines the distinct areas of contact and identifies the contacts via their geometric features and geometric arrangement." *Id.* ¶ 5. Burrough further describes that "research has shown that providing the multi-touch surface with the ability to provide physical (haptic) feedback makes the multi-touch experience even more efficient and realistic to the user." *Id.* ¶ 8. Burrough thus seeks to incorporate a corresponding physical response to the multi-touch experience, specifically "providing multiple and discretely located haptic sensations across a surface." *Id.* ¶¶ 9, 33. Burrough explains that multi-touch gestures are "performed with multiple touches as for example from multiple fingers, fingers and palms, a finger and a stylus, multiple styli and/or any combination thereof." *Id.* ¶ 43.

Burrough describes sensing touch events on the device, and using touch information to "query haptic database 134," which "describes a specific haptic response H_x in terms of duration of response, type of vibro-tactile response, strength of response, etc." *Id.* ¶ 47. The information in the database is used to "cause microcontroller 132 to activate at least haptic actuator 136," to create haptic response H_x . *Id.* Burrough describes that a

haptic actuator can be piezo-electric, where “the vibro-tactile response is generated by the mechanical flexion of a member composed of a piezoelectric material.” *Id.* ¶ 55.

2. *Claims 30 and 62*

Petitioner accounts for claim 30 over the Kim and Burrough combination on pages 44–51 of the Petition, and over the Kim, Bowens, and Burrough combination on pages 80–83 of the Petition. Pet. 44–51, 80–83.

Petitioner accounts for claim 62 over the Kim, Lang, and Burrough combination on pages 51–52 of the Petition, and over the Kim, Bowens, Lang, and Burrough combination on pages 83–84 of the Petition. Pet. 51–52, 83–84.

Notwithstanding Patent Owner’s arguments to the contrary, discussed below, we are persuaded by Petitioner that claim 30 would have been obvious over either (1) Kim and Burrough, or (2) Kim, Bowens, and Burrough, and that claim 62 would have been obvious over either (1) Kim, Lang, and Burrough, or (2) Kim, Bowens, Lang, and Burrough.

For the Kim-Burrough combination as applied to claim 30, Petitioner explains:

Indeed, Burrough recognizes that “physical sensation [cannot] be provided by a conventional multi-touch system thereby forcing the user to visually locate the home key thereby making keyboard use less efficient and fatiguing.” APPLE-1007, [0008]. However, “providing the multi-touch surface with the ability to provide physical (haptic) feedback makes the multi-touch experience even more efficient and realistic to the user.” *Id.* Thus, Burrough teaches providing haptic feedback in response to user input, including zooming operations. *Id.*, [0079]-[0081], FIG. 11. The haptic feedback is provided using a haptic device (e.g., piezoelectric actuator assembly) in the portable device. *Id.*, [0013], [0033], [0037], [0047], [0055]-[0056], FIGS. 1A-1E; APPLE-1003, ¶136.

A POSITA would therefore have been motivated to include a haptic device and use of haptic feedback, per Burrough, in the device to provide haptic feedback to improve the user experience with the touch screen. APPLE-1003, ¶137. Specifically, a POSITA would have been motivated to provide haptic feedback to a user invoking a zoom operation, per Burrough, e.g., to provide an indication of whether a zoom gesture has been invoked. *Id.*; APPLE-1007, [0080].

Pet. 46.

Regarding limitation [30.i], “after at least a portion of the scale operation, vibrate the apparatus and perform an action,” Petitioner explains:

The Kim-Burrough-Device renders [30.i] obvious. APPLE-1003, ¶150. Kim explains that after a hold event that causes a zoon-in (or zoom-out) process, “[t]hereafter, a user can invoke a double tap event on the screen,” causing the device to display “target data with a given basic magnification scale.” APPLE-1004, [0106], FIG. 7; *see id.*, FIG. 2b. Thus, after at least a portion of the scale operation, the device performs an action (displays data with a given basic magnification). *Id.*; APPLE-1003, ¶150.

As discussed in §IV.C.2, the Kim-Burrough-Device includes a haptic device that provides a “vibro-tactile response.” APPLE-1007, [0013], [0033], [0037], [0047], [0055]-[0056], FIGS. 1A-1E, FIG. 11; APPLE-1003, ¶151; §IV.C.2. As shown in Figure 11 (excerpted below) [illustration omitted], Burrough teaches “generate a zoom out haptic signal” or “generate a zoom in haptic signal” after generating a zoom out or zoom in signal. APPLE-1004, [0080], FIG. 11. A POSITA would have understood that a haptic signal (1116/1118 of Figure 11) follows any zooming signal in the Kim-Burrough-Device, and therefore, the zooming action that occurs to “offer basic sized display” (243 in FIG. 2b of Kim) in the Kim-Burrough-Device would be accompanied by a haptic output, as Burrough teaches. APPLE-1003, ¶151.

Pet. 50–51. According to Petitioner, because the double-tap causes a scale reversion to a basic magnification setting, it is a form of scaling and would

be accompanied by haptics based on Burrough, and that vibration is “after” a portion of the scale operation caused by the press and hold gesture of Kim.

For the Kim-Bowens-Burrough combination as applied to claim 30, Petitioner’s accounting for the vibrator, the performing a scale operation on at least one other object, and vibrate the apparatus after at least a portion of the scale operation are essentially the same as that Petitioner presents for the Kim-Burrough combination as applied to claim 30. Pet. 81–82.

For the Kim-Lang-Burrough combination as applied to claim 62, Petitioner’s accounting for the vibrator, the performing a scale operation on at least one other object, and vibrate the apparatus subsequent to the performance of the scale operation are essentially the same as that Petitioner presents for the Kim-Burrough combination as applied to claim 30. Pet. 51–52.

For the Kim-Lang-Bowens-Burrough combination as applied to claim 62, Petitioner’s accounting for the vibrator, the performing a scale operation on at least one other object, and vibrate the apparatus subsequent to the performance of the scale operation are also essentially the same as that Petitioner presents for the Kim-Burrough combination as applied to claim 30. Pet. 83–84.

Patent Owner argues, however, that “adding Burrough’s haptic feedback to Kim would not result in adding haptic feedback upon recognition of a double tap user input.” PO Resp. 60 (citing Ex. 2008 ¶ 120). Patent Owner explains:

Petitioner asserts that “Burrough teaches providing haptic feedback in response to user input, including zooming operations” (Pet., 46), but this is an overgeneralization of Burrough’s disclosure. EX2008, ¶¶121. In the section Petitioner cites, Burrough discloses detecting a “zoom gesture” and

providing haptic feedback **during** an ongoing “zoom gesture.” EX1007, [0079]-[0081]; *see also* D.I., 40 (“Patent Owner’s point is well taken that Burrough’s teaching is vibration during an ongoing zoom operation.”). “If the distance between the two fingers increases (spread[s] apart),” “a zoom in signal is generated.” EX1007, [0080]. “The zoom-in signal, in turn, causes the haptic device associated with the two fingers to provide a zoom-in haptic signal,” which “can be, for example, faster (or slower) or more intense (or less intense) vibration as the distance between the two fingers increase[s].” *Id.* Additionally, “the vibro-tactile response for the two fingers can be different due to the varying pressure applied by each finger.” *Id.*, [0079].

Kim’s double-tap user input gesture, however, does not involve an ongoing zoom operation, much less ongoing changing movement or ongoing changing pressure. EX1004, [0079]-[0081]; EX2008, ¶122. Rather, upon detection of the double-tap, Kim instantaneously returns to the “basic magnification” level (which itself provides visual feedback to the user). EX2008, ¶122; *see also* D.I., 40 (“We also recognize [that] Patent Owner’s declarant’s other point — that Kim’s return of the zoomed object to basic magnification level occurs rapidly and visual feedback makes haptic feedback unnecessary — has merit.”). There is no ongoing zoom operation upon Kim’s double tap. EX1004, [0106]; EX2008, ¶122. Thus, even if a POSITA were motivated to apply Burrough’s disclosure to Kim, Burrough’s teachings would at most suggest adding haptic feedback **during** a continuous zoom-in or continuous zoom-out operation, not upon recognition of a double-tap user input gesture. EX2008, ¶122.

Further, there is no suggestion in Kim to combine a multi-touch detection algorithm as Burrough teaches with “a normal touch screen incapable of handling multi-touch input,” as Kim discloses. EX1004, [0008]; EX2008, ¶124. “[A] pinch zoom technique ... , however, [is] based on a multi-touch input by means of two finger interactions. Therefore, this technique may not be applicable to a mobile device having a normal touch screen incapable of handling a multi-touch input.” EX1004, [0008]. Kim teaches “a mobile device and related method which allows a simpler and more convenient zooming function.” *Id.*,

[0009]. Such a simpler and more convenient zooming function, as taught by Kim, is not directed to a device capable of handling multi-touch input. EX2008, ¶124; *see also* EX2013, 126:21-127:1 (“The specific disclosures of [Kim’s] embodiments do not rely on multi-touch sensing capabilities.”). Thus, a POSITA — recognizing that Burrough teaches vibration during an ongoing zoom operation in response to a multi-touch input — would read Kim as teaching away from implementing a multi-touch detection algorithm as Burrough describes. EX2008, ¶124.

PO Resp. 60–62.

For several reasons, Patent Owner’s arguments are unavailing and do not sufficiently undermine Petitioner’s reasoning.

First, we disagree that the zooming performed by Kim’s double tap gesture does not involve an ongoing zooming operation and that there is no ongoing zoom operation upon Kim’s double tap gesture. We find that while the reversion or return to the system’s basic default magnification level is happening, it is ongoing, and Burrough’s haptic feedback can and would be provided during that time as proposed by Petitioner from the perspective of one of ordinary skill in the art.

To the extent Patent Owner’s characterization of that return as occurring “instantly” means taking zero amount time and thus there is no interval for “during” to occur, that is not supported by the record evidence. Patent Owner cites to nothing in Kim to suggest that the return to basic magnification level upon a double-tap gesture occurs instantly as in taking zero time. However short a period, even for an instant, would be time for application of haptics. We do not see the absence of any time period for such return to default magnification to occur. When the display is making the change, the haptics would be applied.

Second, although Burrough involves a device capable of recognizing multi-touch finger gestures, including a two-finger gesture for zooming, and Kim discloses only a one-finger touch gesture for zooming, either touch and hold or double tap, that difference is inconsequential to the question of whether to add haptic feedback to a zooming operation. Patent Owner's contentions are based on an unduly narrow reading of the prior art.

A prior art reference must be considered for everything it teaches by way of technology and is not limited to the particular invention it is describing and attempting to protect. *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907 (Fed. Cir. 1985). Burrough teaches benefits for providing haptic feedback to accompany a zooming operation. We see no reason why that applies only to multi-touch finger control of zooming to which Burrough is specifically directed and not to Kim's double-tap return to the basic default magnification after an initial zooming deviation. Indeed, we see that a user would similarly benefit from use of concurrent haptic feedback in Kim to accompany the double-tap return to basic magnification, to signal that zooming has occurred. A user may not readily recognize that return to basic magnification has occurred if not paying careful attention.

Finally, Petitioner has not proposed to modify Kim by implementing multi-touch input in Kim as Burrough discloses and as Patent Owner suggests petition is proposing. Petitioner's rationale for obviousness does not require converting Kim from a device without capability for handling multi-touch inputs, such as two-finger control of zooming, to a device with multi-touch input capability including that for controlling zooming.

For the foregoing reasons, we determine that Petitioner has proved by a preponderance of the evidence that claim 30 is unpatentable over (1) Kim and Burrough, and also over (2) Kim, Bowens, and Burrough.

Also, for the foregoing reasons, we determine that Petitioner has proved by a preponderance of the evidence that claim 62 is unpatentable over (1) Kim, Lang, and Burrough, and also over (2) Kim, Lang, Bowens, and Burrough.

III. CONCLUSION⁵

We determine that Petitioner has proved by a preponderance of the evidence that claims 30 and 62 of the '114 patent are unpatentable. We also determine that Petitioner has not proved by a preponderance of the evidence that any of claims 1, 32, 34, and 64 of the '114 patent is unpatentable.

⁵ 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).

In summary:

Claims	35 U.S.C. §	References/Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1, 32	102	Kim		1, 32
1, 32	103(a)	Kim		1, 32
34, 64	103(a)	Kim, Lang		34, 64
30	103(a)	Kim, Burrough	30	
62	103(a)	Kim, Lang, Burrough	62	
1, 32	103(a)	Kim, Bowens		1, 32
34, 64	103(a)	Kim, Bowens, Lang		34, 64
30	103(a)	Kim, Bowens, Burrough	30	
62	103(a)	Kim, Bowens, Lang, Burrough	62	
Overall Outcome			30, 62	1, 32, 34, 64

IV. ORDER

In consideration of the foregoing, it is hereby

ORDERED that claims 30 and 62 of the '114 patent have been proved unpatentable by a preponderance of the evidence;

FURTHER ORDERED that claims 1, 32, 34, and 64 of the '114 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 10,936,114 B1

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