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Paper 17
Date: October 10, 2024

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner,

v.

SLYDE ANALYTICS, LLC,
Patent Owner.

IPR2024-00040
Patent 9,804,678 B2

Before JAMESON LEE, JOHN F. HORVATH, and
ST.JOHN COURTENAY III, *Administrative Patent Judges.*

LEE, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review After Remand
35 U.S.C. § 314

I. INTRODUCTION

A. Background

Samsung Electronics Co., Ltd and Samsung Electronics America, Inc. ("Petitioner") filed a Petition requesting an *inter partes* review of claims 1–15 ("challenged claims") of U.S. Patent 9,804,678 B2 (Ex. 1001, "the '678 patent") pursuant to 35 U.S.C. §§ 311–319. Paper 3 ("Pet."). Slyde Analytics, LLC ("Patent Owner") filed a Preliminary Response. Paper 9 ("Prelim. Resp.").

With our authorization, Petitioner filed a Preliminary Reply (Paper 10, "Prelim. Reply") to address Patent Owner's arguments in the Preliminary Response regarding discretionary denial under 35 U.S.C. § 314(a), and Patent Owner filed a Preliminary Sur-reply (Paper 11, "Prelim. Sur-reply") On April 30, 2024, we denied institution of *inter partes* review in this proceeding. Paper 12 ("First Institution Decision"). On May 16, 2024, Petitioner requested Director Review of the First Institution Decision. Paper 13 ("DR Request").

At issue in the DR Request was our construction of the claim term "processor." In the First Institution Decision, we stated: "We find that a 'processor' has to execute code, program, or instructions, and cannot be met simply by any electrical circuit." Paper 12, 12. On August 2, 2024, the Director vacated the First Institution Decision and remanded to the Board for further proceedings. Paper 14 ("Director Decision").

The Director determined that "the Board erred in construing the claimed 'processor' based solely on extrinsic evidence without first thoroughly considering all of the intrinsic evidence." Director Decision 9. Specifically, the Director found that "[t]he Board should have considered

whether limitation 14[E][3] provides additional context for understanding the processor as introduced in limitation 14[E][1]. *Id.* The Director instructed that "[o]n remand, the Board should jointly consider 14[E][1] and 14[E][3] along with Petitioner's arguments in relation to Orr and Orr682 as pertaining to these claim limitations." *Id.* at 9–10.

The Director also instructed that the Board should have considered the '678 patent's disclosed embodiment in which inertial sensor 23's "embedded power processing capabilities comprise a processor or other processing means for executing programmable software code for analy[z]ing the acceleration values delivered by the accelerometer, and for generating signals or values when certain conditions are met." Director Decision 10. Additionally, the Director instructed that the Board may consider extrinsic evidence when construing "processor," but "should not import limitations into the claims from the extrinsic evidence that are narrower than the Specification's own requirements, or lack thereof." *Id.* at 11.

The Director determined that "the extrinsic evidence currently of record does not support what appears to be a negative limitation in the Board's construction, which is that the processor 'cannot be met simply by any electrical circuit.'" Director Decision 11.

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2023). An *inter partes* review may not be instituted unless the information presented in the Petition "shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). Upon consideration of the contentions and the evidence of record before us, and consistent with the Director's remand instructions,

we conclude Petitioner has not shown a reasonable likelihood that it would prevail in establishing unpatentability of at least one challenged claim of the '678 patent.

Accordingly, we decline to institute an *inter partes* review of the challenged claims of the '678 patent.

B. Real Parties in Interest

Petitioner identifies itself as real party in interest. Pet. 1. Patent Owner identifies itself as real party in interest. Paper 5, 2.

C. Related Matters

Petitioner and Patent Owner each identify the following litigations involving the '678 patent as related matter: *Slyde Analytics LLC v. Samsung Electronics Co., Ltd., et al.*, Case No. 2-23-cv-00083 (E.D. Texas); *Slyde Analytics LLC v. Zepp Health Corporation*, Case No. 2-23-cv-00172 (E.D. Texas). Pet. 1; Paper 5, 2.[1]

D. The '678 Patent

The '678 patent is directed to a wristwatch with a touch panel and a plurality of power modes. Ex. 1001, 1:15–17. The user may enter a gesture, e.g., a tap, double tap, or long tap, to switch power modes. *Id*. at 2:43–47. The '678 patent describes that "[t]he simultaneous and combinatory usage of an inertial sensor, such as an accelerometer, and of a touch sensor or touch panel for detecting a gesture provides a more reliable discrimination between various gestures and other manipulations." *Id*. at 2:48–52. Figures 1a and 1b are reproduced below:

[1] Patent Owner appears to have incorrectly listed the case numbers as starting with "3:23" rather than "2:23."

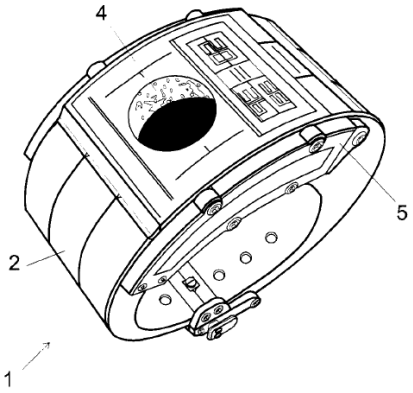

Fig. 1a

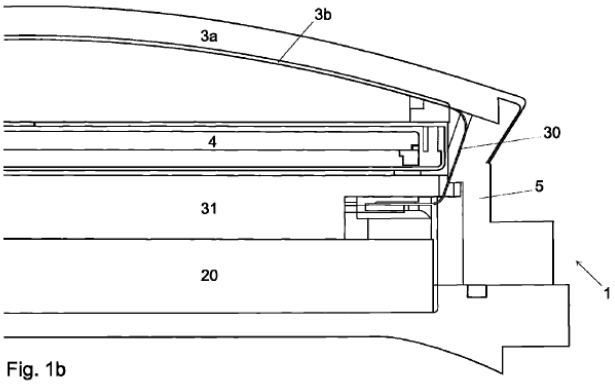

Fig. 1b

Figure 1a is a perspective view of a wristwatch with a touch display and Figure 1b illustrates a transverse cut through the wristwatch of Figure 1a. Ex. 1001, 3:23–28. The wristwatch includes wristband 2 and watch case 5 closed with glass 3a, and touch sensor 3b covering digital matrix display 4. *Id*. at 3:45–48.

Figure 2 is reproduced below:

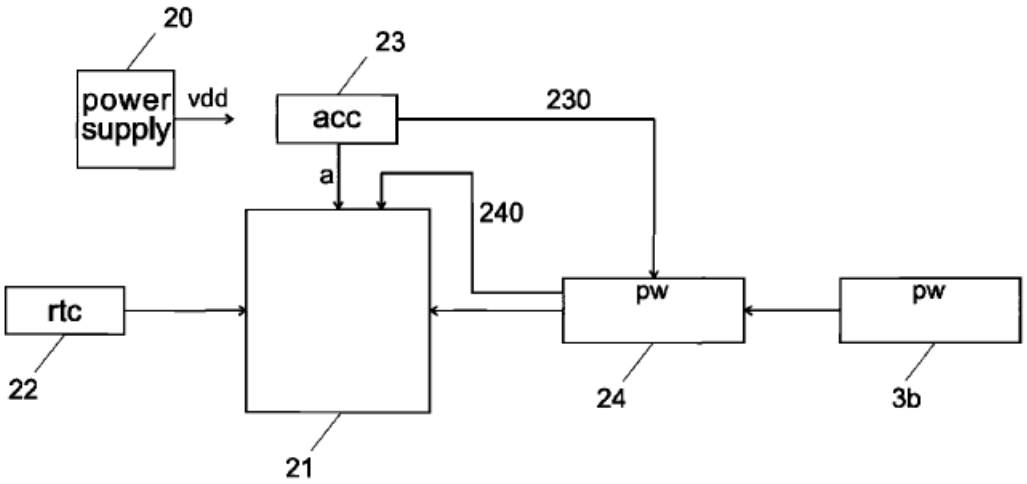

Fig. 2

Figure 2 illustrates the internal components of the wristwatch. Ex. 1001, 3:27–28. Power supply 20 supplies power to all components. *Id*. at 5:12–14. Microcontroller 21 controls display of indications on matrix panel 4,

depending on signals provided by sensors 22, 23, and on commands entered by the user through touch panel 24. *Id*. at 5:13–16. Touch panel controller 24 interprets touch signals provided by touch panel 3b when the user touches glass 3a, and converts such touch signals into command signals for microcontroller 21. *Id*. at 5:31–36.

The '678 patent describes that power on signal 230 generated by inertial sensor 23 is used to wake up touch panel 3b and/or touch controller 24. Ex. 1001, 7:40–44. Touch controller 24 generates second wake up signal 240 to wake up microcontroller 21 when the touch controller confirms the detection of a tap by the user. *Id*. at 7:65–8:1. Wake up signal 230 of inertial sensor 23 is generated very fast at the beginning of a user tap, and touch controller 24 is immediately woken up and used to confirm the tap on touch sensor 3b during the remaining time of the tap. *Id*. at 8:3–7.

Microcontroller 21 is only woken up by the second wake up signal of touch controller 24. Ex. 1001, 8:26–27. The '678 patent further describes another embodiment as follows:

> In one embodiment, a rough discrimination between a wake up gesture and no wake up gesture is made by the inertial sensor 23 and/or the touch sensor 3b, in order to wake up the microprocessor 21. The microprocessor then analyses the sequence of acceleration value[s] delivered by the acceleration sensor, as well [as] the signals delivered by the touch controller 24, to confirm or inf[o]rm the decision to wake up the device 1 and in particular the display and touch panel 3b. If the microprocessor confirms the ta[p] detection, it remains in operating mode and wake[s] up the display. On the other hand, if tap detection is not confirmed by the more advanced algorithms used by the microcontroller, the [microcontroller] puts the touch panel 3b, touch controller 24 and itself back into the first power mode.

Ex. 1001, 8:34–47.

Claims 1 and 14 are independent and reproduced below:[2]

14. [14[pre]] A wristwatch which can be operated in a plurality of power modes including a first power mode and a second power mode, comprising:

[14[A]] a display;

[14[B]] a microcontroller;

[14[C] a touch panel underneath a cover glass of said wristwatch for detecting a gesture on said cover glass;

[14[D]] a touch controller for interpreting touch signal provided by the touch panel and for converting said signals into command signal;

[14[E][1]] an inertial sensor comprising an accelerometer and a processor and/or other processing means,

[14[E][2]] said accelerometer being arranged for generating an acceleration signal and

[14[E][3]] the processor and/or other processing means being arranged for discriminating between gesture and no gesture based on a direction of said acceleration signal as measured by said accelerometer being a three dimensional accelerometer, and

[14[E][4]] on a slope or frequency of said acceleration signal,

[14[E][5]] while the microcontroller and the touch controller are in a sleep power mode;

[14[F] wherein each touch controller is commanded so as to be switched to said second power mode upon gesture detection by said inertial sensor and for detecting a tap gesture on the cover glass with the touch panel; and

[14[G][1]] wherein the microcontroller is arranged for controlling a display of indication on the display and

[2] The bracketed labels correspond to those used by Petitioner to reference the claim elements. *See* Pet. 23–50. We use the same labels here for ease of reference, understanding, and consistency.

[14[G][2]] commanded so as to be switched to said second power mode upon a tap gesture detection by said touch controller and

[14[G][3]] for discriminating between gesture and no gesture based at least on signals from said touch panel.

Ex. 1001, 12:19–48.

1. [1[pre][1]] A method combining gesture detection by an inertial sensor and gesture detection with a touch panel for switching a wristwatch from a first power mode to a second power mode, [1[pre][2]] wherein the inertial sensor comprises an accelerometer and a processor and/or other processing means, [1[pre][3]] and wherein the wristwatch comprises a microcontroller controlling a display of indication on a digital matrix display of the wristwatch [1[pre][4]] and a touch controller for interpreting touch signal provided by a touch panel underneath a cover glass and for converting said signals into command signals, the method comprising:

[1[A]] using the accelerometer of the inertial sensor for generating an acceleration signal used for detecting a gesture on the cover glass of said wristwatch, while the microcontroller and the touch controller are in a sleep power mode;

[1[B]] using the processor and/or other processing means of the inertial sensor for discriminating between gesture and no gesture based on a direction of said acceleration signal and on a slope or frequency of said acceleration signal as measured by said accelerometer being a three dimensional accelerometer,

[1[C]] in response to a detection of a gesture by said inertial sensor, waking up the touch controller;

[1[D]] using the touch controller for detecting a tap gesture on the cover glass with the touch panel;

[1[E]] waking up the microcontroller in said wristwatch upon detection of a tap gesture by said touch controller,

[1[F]] using said microcontroller for detecting said gesture and for discriminating between gesture and no gesture based at least on signals from the touch panel.

Ex. 1001, 10:60–11:23.

E. Evidence relied on by Petitioner

Petitioner relies on the following references:[3]

Name	Patent Document	Exhibit
Orr[4]	US Patent 7,605,552 B2	1005
Pasquero[5]	US Patent 8,914,075 B2	1009
Li[6]	US Patent 9,019,230 B2	1007
Yeung[7]	US Pub. App. 2009/0164219 A1	1008
Orr682[8]	US Pub. App. 2010/0194682 A1	1006

Petitioner also relies on the Declaration of Benjamin B. Bederson, Ph.D. Ex. 1002. Patent Owner's Preliminary Response and Preliminary Sur-reply do not rely on the testimony of any expert witness.

F. Asserted Ground of Unpatentability

Petitioner asserts that the challenged claims of the '678 patent are unpatentable based on the following grounds (Pet. 17, 61, 66, 71, 72, 76):

[3] The '678 patent issued from Application No. 14/352,727, which has PCT filing date of Oct. 12, 2012, from PCT/EP2012/070273. Ex. 1001, codes (21), (22), (86). The '678 patent claims priority to CH 1689/11, filed Oct. 18, 2011. *Id*. at code (30).
[4] Issued Oct. 20, 2009. Ex. 1005, code (45).
[5] Issued Dec. 16, 2014, from Pat. Application 12/884,522, filed Sept. 17, 2010. Ex. 1009, codes (21), (22), (45).
[6] Issued April 28, 2015, from Pat. Application 12/916,577, filed Oct. 31, 2010. Ex. 1007, codes (21), (22), (45).
[7] Published June 25, 2009. Ex. 1008, code (43).
[8] Published Aug. 5, 2010. Ex. 1006, code (43).

Claims Challenged	35 U.S.C. §[9]	Reference(s)/Basis
1–5, 7, 10–12, 14	103	Orr, Orr682
6, 8, 9, 15	103	Orr, Orr682, Li
1–5, 7, 10–12, 14	103	Orr, Orr682, Pasquero
6, 8, 9, 15	103	Orr, Orr682, Pasquero, Li
12, 13	103	Orr, Orr682, Pasquero, Yeung
1–5, 7, 10–14	103	Orr, Orr682, Yeung

II. ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner asserts the following with respect to the level of ordinary skill in the art:

> A person of ordinary skill in the art at the relevant time ("POSITA") would have had a bachelor's degree in electrical engineering, computer science, computer engineering, or a related field, and 2-3 years of experience in the research, design, development, or testing of graphical user interfaces, inertial sensors, touchscreens, and human-computer interaction in mobile devices, with additional education substituting for the experience and vice-versa.

Pet. 5–6 (citing Ex. 1002 ¶ 47).

Patent Owner states that for the purposes of the Preliminary Response, it "utilizes Petitioner's proposed level of skill in the art." Prelim. Resp. 7.

[9] The Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284 (2011) ("AIA"), amended 35 U.S.C. §§ 102 and 103. Based on the record before us, the '678 patent has an effective filing date prior to the effective date of the applicable AIA amendments (March 16, 2013). We, therefore, refer to the pre-AIA version of 35 U.S.C. § 103.

On this record, we adopt Petitioner's statement of the level of ordinary skill in the art. It is supported by the cited testimony of Dr. Bederson and not disputed by Patent Owner. Further, it appears consistent with what is reflected by the content of the applied prior art references. *Cf. Okajima v. Bourdeau*, 261 F.3d 1350, 1354–55 (Fed. Cir. 2001) (the applied prior art may reflect an appropriate level of skill).

B. 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 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 (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))).

1. "processing means"

Independent claims 1 and 14 each include the term "processing means." Petitioner asserts that "it is not necessary to determine whether §112(6) applies to resolve this Petition," because the claims recite "processor and/or other processing means" in the alternative and the applied prior discloses "processor." Pet. 6–7. Patent Owner states that it "agrees with Petitioner that claim construction is not warranted, despite Petitioner proposing that certain terms are subject to 35 U.S.C. § 112(6)," and that it "does not believe claim construction is required to resolve any issues." Prelim. Resp. 6.

2. "processor"

The term "processor" appears in limitation 14[E][1] and limitation 14[E][3].[10] Neither party provides a construction for the term and the Specification of the '678 patent does not expressly set forth any definition

[10] It similarly appears in claim 1.

for the term. We begin our analysis by looking within claim 14 itself, specifically by looking at limitations 14[E][1], 14[E][3], and 14[E][4] together. These limitations, together with limitation 14[E][2], recite:

> [14[E][1]] an inertial sensor comprising an accelerometer and a *processor* and/or other processing means,
>
> [14[E][2]] said accelerometer being arranged for generating an acceleration signal and
>
> [14[E][3]] *the processor* and/or other processing means *being arranged for discriminating between gesture and no gesture based on a direction of said acceleration signal as measured by said accelerometer being a three dimensional accelerometer*, and
>
> [14][E][4]] on a slope or frequency of said acceleration signal

Ex. 1001, 1:29–36 (emphasis added). The language in limitation 14[E][1] does not say anything about the recited "processor." It does not indicate what structural components the processor possesses and does not indicate what functions the processor performs. The language in limitations 14[E][3] and 14[E][4] says more, but only sets forth the function the recited processor must perform, i.e., "discriminating between gesture and no gesture based on a direction of said acceleration signal as measured by said accelerometer being a three dimensional accelerometer, and on a slope or frequency of said acceleration signal." Neither limitation 14[E][1], nor limitation 14[E][3], nor limitation 14[E][4] provides meaningful information as to the structure of the recited "processor."

Petitioner argued to the Director that the claim language does not include the Specification's description of a processor "executing programmable software code," suggesting that the term is broader than the Specification's description of that embodiment, prompting the Director to

instruct us to consider "whether the claimed processor is broader than this one embodiment from the Specification." Director Decision 10. But the plain and ordinary meaning of the term "processor" itself may implicate a device having a structure that executes programmable software code, and thus the lack of the express wording "executing programmable software code" in the claims referencing the processor may not discriminate between the recited processor and the processor described in the one and only embodiment described in the Specification. To the extent that Petitioner takes the view that the term "processor" means any structure that performs the function recited in claim limitations 14[E][3] and 14[E][4], we disagree for two reasons.

First, "processor" is recited in alternative language, and the other alternative, i.e., "other processing means," suggests there are structures that are not "processors" that may perform the subsequently recited discriminating function.

Second, there is a well-established and long-standing prohibition against purely functional claiming. In *Halliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1 (1946), the Supreme Court held invalid an apparatus claim on the ground that it used a "means" term with a stated function, which together was purely functional. Such a claim was improper because the means term with a stated function merely described a particular end result, did not set forth any specific structure, and would encompass any and all structures for achieving that result, including those which were not what the applicant had invented. *Id.* at 12–13.

Subsequent to the Supreme Court's decision in *Halliburton*, Congress enacted 35 U.S.C. § 112, paragraph 6, which provides: "An element in a

claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." This provision does not completely eliminate the "*Halliburton* Rule" against "purely functional claiming." Those terms which do not invoke 35 U.S.C. § 112, paragraph 6, are still subject to the *Halliburton* prohibition against functional claiming. *See Sanada v. Reynolds*, 67 USPQ2d 1459 (BPAI 2003) (Informative) (finding "any claim that includes purely functional claim language and which . . . is not subject to the limited construction under 35 U.S.C. § 112, sixth paragraph, falls into a 'dead zone' according to the Halliburton rule . . . and thus is unpatentable").

Neither party suggests that "processor" invokes 35 U.S.C. § 112, paragraph 6. Nor do we so find. Thus, the *Halliburton* Rule against functional claiming still applies to "processor" and we do not construe that term to cover *any* structure which performs the recited function of "*discriminating between gesture and no gesture based on a direction of said acceleration signal as measured by said accelerometer being a three dimensional accelerometer and on a slope or frequency of said acceleration signal*."

We have reviewed the other claims in the '678 patent. They do not recite anything which would change our analysis above based on the language of claim 14 itself. Next, we turn to the Specification of the '698

patent. The term processor appears only once in the entire Specification.[11] That passage in the Specification states:

> The inertial sensor 23 could be an accelerometer with embedded power processing capabilities and which is always powered on in the first low power mode. The embedded power processing capabilities comprise *a processor or other processing means for executing programmable software code* for analysing the accelerations values delivered by the accelerometer, and for generating signals or values when certain conditions are met.

Ex. 1001, 6:15–22 (emphasis added). We read the phrase "for executing programmable software code" as referring back to both the "processor" and the "other processing means." The disjunctive "or" between "processor" and "other processing means" binds the two together as the subject being addressed.

Accordingly, we know from the Specification's only disclosure of the term, that a "processor" in an inertial sensor has a structure that is configured to execute programmable software code.[12]

Also in the record of this proceeding is a definition of "processor" in The Authoritative Dictionary of IEEE Standards Terms (7th ed. 2000) at 872:

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[11] The Specification also discloses microprocessor 21, which it also refers to as microcontroller 21, and describes it distinctly from inertial sensor 23 and any processor within inertial sensor 23. *See, e.g.,* Ex. 1001, 5:40–42 (disclosing microcontroller 21 "interprets the signals from . . . the inertial sensor 23"), 8:34–37 (disclosing inertial sensor 23 performs a "rough discrimination between a wake up gesture and no wake up gesture" in order to "wake up the microprocessor 21"), 12:29–38 (claim 14 reciting both an inertial sensor comprising a processor and a microcontroller), Fig. 2 (illustrating both microprocessor 21 and inertial sensor 23).

[12] Neither party cites to any portion of the prosecution history of the '678 patent as shedding light on what constitutes a "processor." We are aware of none.

processor (1) (A) (computers) (hardware). A data processor. **(B) (computers)** (pascal computer programming language). A system or mechanism that accepts a program as input, prepares it for execution, and executes the process so defined with data to produce results. *Note:* A processor may consist of an interpreter, a compiler and run-time system, or other mechanism, together with an associated host computing machine and operating system, or other mechanism for achieving the same effect. A compiler in itself, for example, does not constitute a processor.

(Std100/SUB/PE) 812-1984, C37.1-1994

(2) (software) A computer program that includes the compiling, assembling, translating, and related functions for a specific programming language, for example, Cobol processor, Fortran processor. *See also:* multiprocessor.

(C) [20], [85]

(3) The combination of the IU, FPU, and CP (if present).

(C/MM) 1754-1994

(4) (A) A device that interprets and executes instructions, consisting of at least an instruction control unit and an arithmetic unit. *See also:* coprocessor; preprocessor. **(B)** A device that contains a central processing unit. (C) 610.10-1994

Processor A main system processor unit that executes operating system code and manages system resources. It is usually constrained on the number of CSRs it can devote to the functions of a given I/O Unit. (C/MM) 1212.1-1993

Ex. 3002. We recognize that the Director stated: "[T]he Board should ensure that any extrinsic evidence reflects the meaning at the relevant time. In this case, the IEEE dictionary relied on by the Board was published over a decade before the filing date of the application." Director Decision 11 (internal citation omitted). Here, we cannot ensure that the dictionary definition reflects a meaning at the time of the filing date of the application, although we do not believe the meaning of the term "processor" significantly changed between 2000 and 2011. Nonetheless, we use it simply to confirm our understanding of the term based on the intrinsic evidence as discussed above. The IEEE dictionary definition for "processor" supports our understanding based on the Specification that the claimed "processor" has a

structure that is configured to execute programmable code. With or without the IEEE dictionary definition, our conclusion is the same.

For the foregoing reasons, we determine that a "processor" is a device having a structure that is configured to execute programmable code.

C. Alleged Obviousness of Claims 1–5, 7, 10–12, 14 over Orr and Orr682

1. Overview of Orr

Orr discloses a system and method for activating an electronic device from a low power state. Ex. 1005, code (57). An activation circuit is provided, which includes a motion sensor circuit, an input device, and a monitoring circuit connected to the input device. *Id*. The monitoring circuit provides power to the input device when the motion sensor circuit detects a notable movement of the device and selectively generates an activation signal used to activate the electronic device to a higher power state in response to receiving the notable signal from the input device. *Id*.

Figure 1 of Orr is reproduced below:

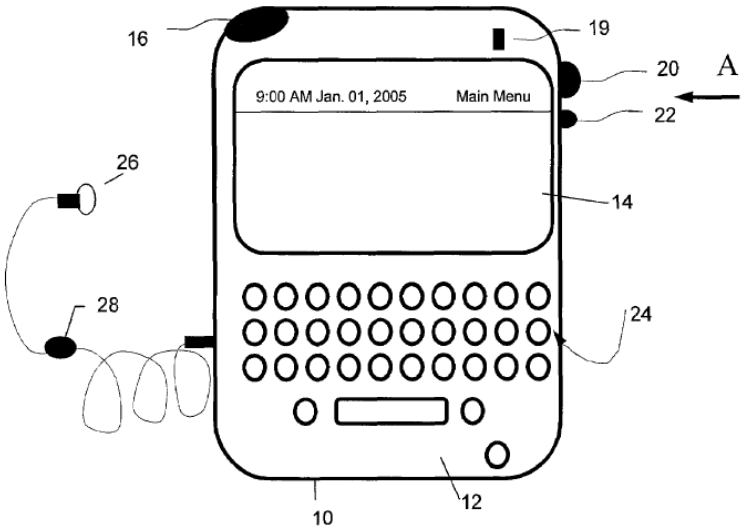

Fig. 1

Figure 1 is a schematic representation of an electronic device having a device activation system according to Orr. Ex. 1005, 1:50–52.

Electronic device 10 is based on a computing platform having functionality of an enhanced personal digital assistant with cellphone and e-mail features. Orr also states that "electronic device 10 can be based on construction design and functionality of other electronic devices, such as smart phones, desktop computers, pagers or laptops having telephony equipment." Ex. 1005, 3:45–48. Orr further states that "handheld devices optimally are lightweight, compact and have long battery life." *Id*. at 1:20–22.

Figure 2 of Orr is reproduced below:

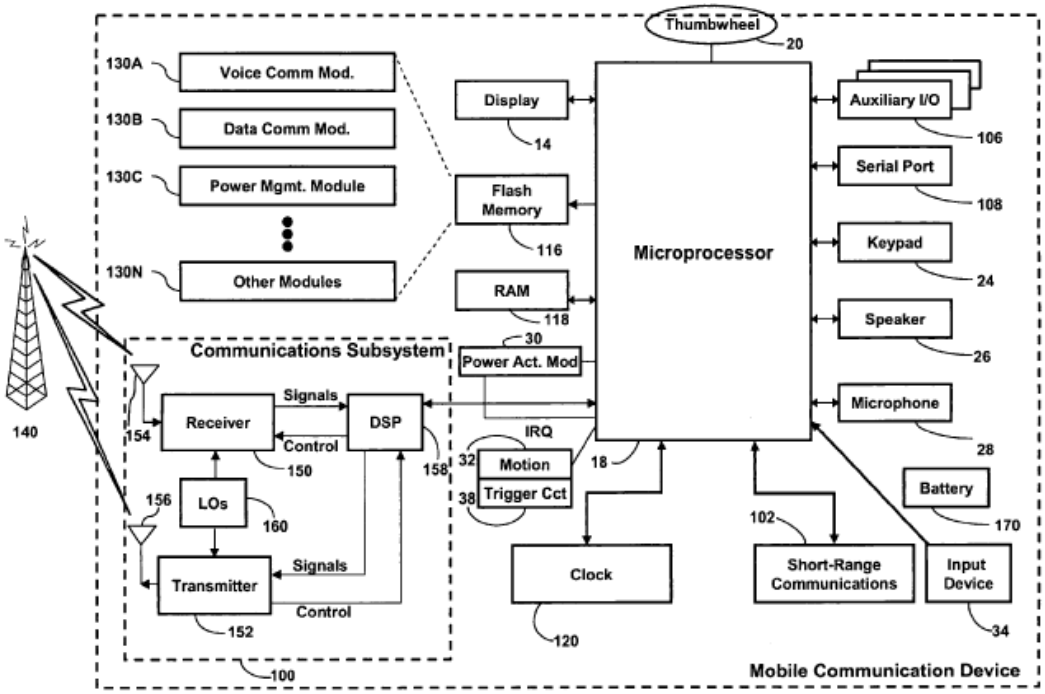

Fig. 2

Figure 2 is a block diagram of certain internal components of device 10 of Figure 1. Ex. 1005, 4:6–7.

Microprocessor is coupled to keypad 24, power activation module 30, motion sensor 32, input device 34, and other devices. Ex. 1005, 4:11–13. Microprocessor 18 controls the operation of the power activation module 30, as well as the overall operation of device 10, in response to activation of device 10. *Id*. at 4:13–16. Other internal components of device 10 include communication sub-system 100, short-range communication sub-system 102, keypad 24, display 14, auxiliary I/O device 106, serial port 108, speaker 16, microphone port 112 for microphone 28, flash memory 116, random access memory 118, and clock 120. *Id*. at 4:27–34.

Figure 3 is reproduced below:

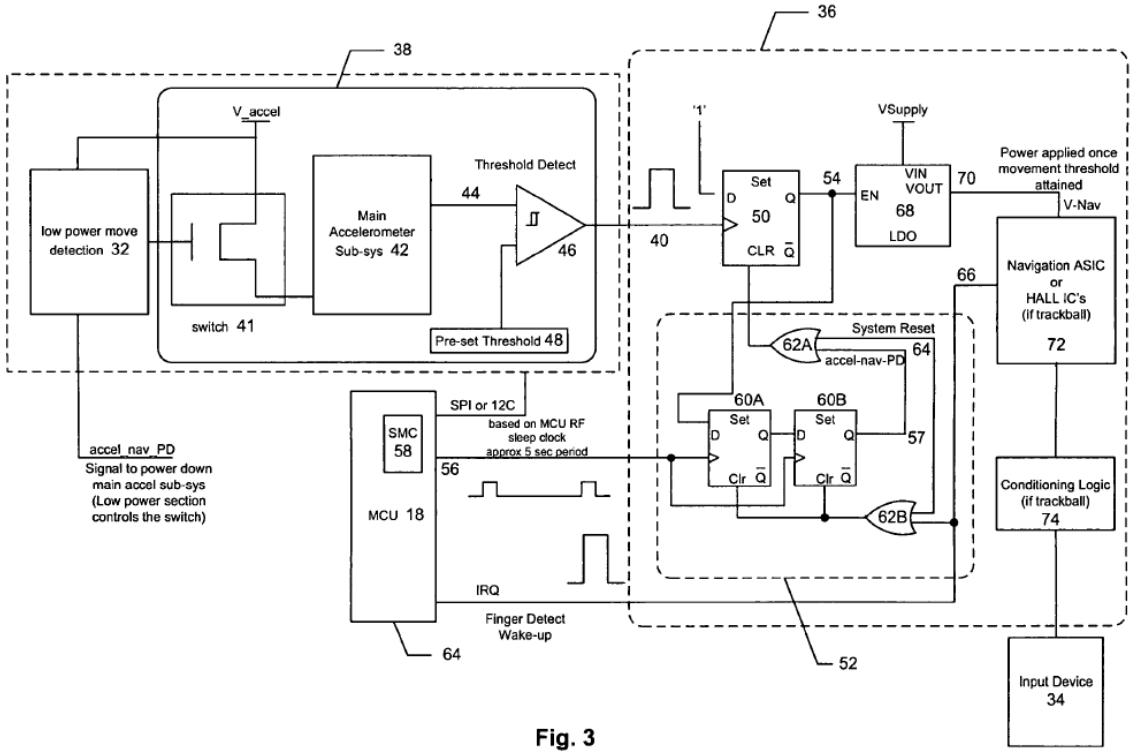

Fig. 3

Figure 3 is a block diagram of Orr's device activation system and its associated elements. Ex. 1005, 1:55–56.

Orr describes that power activation module 30, shown at high level in Figure 2, includes two main sections: (1) trigger circuit 38 used in

conjunction with motion sensor 32, and (2) monitoring circuit 36 used in conjunction with input device 34. Ex. 1005, 6:41–44. Collectively, trigger circuit 38 and motion sensor 32 are considered to be a motion sensor circuit. *Id*. at 6:47–48. "Once the trigger circuit 38 generates its activation signal, monitoring circuit 36 is activated with input device 34 to detect any further indication that the device is meant to be reactivated." *Id*. at 6:48–51. "Once monitoring circuit 36 determines that device 10 is meant to be re-activated, it sends a re-activation signal to microprocessor 18." *Id*. at 6:52–54.

Orr describes:

> In FIG. 3, for trigger circuit 38, when accelerometer (also noted by reference number 32) is moved, e.g. by a movement of device 10, the output signal generated by accelerometer 32 is provided to switch 41. If the signal is sufficient to activate switch 41, a power signal from switch 41 is provided to main sub-system 42 to activate it. In one embodiment, sub-system 42 provides a second motion sensor which is activated by the trigger signal from switch 41. As such, when a further movement is detected, the output of the second motion sensor in sub-system circuit 42 is provided to threshold comparator 46. Comparator 46 compares the signal 44 compared by comparator against a threshold value 48. If the size of signal 44 exceeds the threshold value 48, comparator 46 generates activation signal 40. Activation signal 40 represents a "true" activation signal received from sensor 32.

Ex. 1005, 7:3–17.

2. Overview of Orr682

Orr682 discloses a method for tap detection on a handheld electronic device using an accelerometer. Ex. 1006, code (57). It includes determining when measured acceleration exceeds an upper limit threshold and a lower limit threshold within a predetermined duration of each other. *Id*. When the upper limit threshold and the lower limit threshold have been exceeded, the

method determines a rate of change of acceleration between the upper limit threshold and lower limit threshold and registers a tap input when the rate of change of acceleration exceeds a predetermined tap threshold. *Id*. Orr682 describes that "[a] tap event will have a higher rate of change of acceleration (e.g., a greater or 'steeper' slope) than other events such as, for example, hand gestures or other rapid movements of the handheld electronic device 102." *Id*. ¶ 91.

3. Independent Claim 14

Limitation 14[E][1] recites: "an inertial sensor comprising an accelerometer and a processor and/or other processing means." Ex. 1001, 12:29–30. Limitation 14[E][3] recites: "the processor and/or other processing means being arranged for discriminating between gesture and no gesture based on a direction of said acceleration signal as measured by said accelerometer being a three dimensional accelerometer." *Id.* at 12:32–36. Petitioner foregoes accounting for the alternative of "other processing means" in limitation 14[E][1] and limitation 14[E][3], Pet. 6–7, and argues, instead, that Orr discloses an inertial sensor including an accelerometer and a processor and that the processor discriminates between gesture and no gesture based on the acceleration signal. *Id*. at 31–33.

Petitioner produces an annotated version of Orr's Figure 3 on page 32 of the Petition, reproduced below:

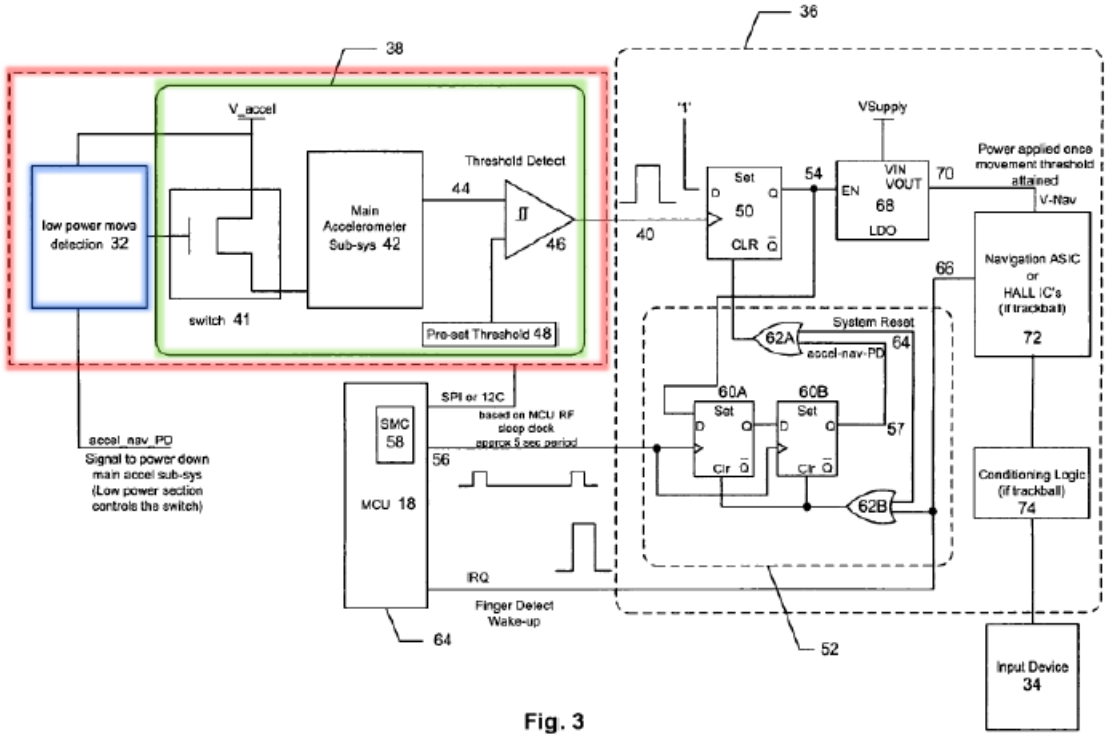

Fig. 3

Figure 3 is a block diagram of Orr's device activation system, and Petitioner has marked in red what it regards as the "inertial sensor," marked in blue what it regards as the "accelerometer," and marked in green trigger circuit 38 which it regards as the "processor." Ex. 1005, 1:55–56, Pet. 31–32.

"Processor," as we determined above in Section II.B.2, has a structure that is configured to execute programmable code. Nothing indicates that trigger circuit 38 is configured to execute programmable code. Petitioner does not contend that it does. Instead, Petitioner asserts:

> Orr's trigger circuit 38 comprising main sub-system 42 is an inertial sensor **processor** because it detects a "specific gesture," "such as a quick 'snap' movement in certain direction," "detects each component of the gesture," and analyzes each component "to determine whether the gesture has been properly formed."[6] Ex-1005, 8:64–9:7; Ex-1002 ¶¶123–124.

> [6] Indeed, trigger circuit 38 including subsystem 42 must be a processor that can perform such analysis/processing because it is performed while both touch controller (navigation ASIC 72) and microprocessor 18 are in a low-power sleep state, as discussed below for this claim element.

Pet. 31–32. Thus, Petitioner presents two reasons why it believes Orr's trigger circuit 38 is a processor according to limitations 14[E][1] and 14[E][3]: (1) trigger circuit 38 detects a specific gesture, detects each component of the gesture, and analyzes each component to determine whether the gesture has been properly formed; and (2) other gesture analyzing processors in the device (e.g., navigation circuit 72 or microcontroller 18) are in sleep mode during the time trigger circuit 38 operates. Neither reason, nor the two in combination, is sufficiently persuasive, even for institution purposes.

First, Petitioner has not asserted, much less demonstrated, that only a processor, and nothing else, can be used to detect a specific gesture, detect each component of the gesture, and analyze each component to determine whether a gesture has been properly formed. Although a processor may perform those functions, the record is inadequate to show, even for institution purposes, that only a processor, nothing but a processor, can perform those functions and that one of ordinary skill in the art would have so recognized. Thus, the fact that trigger circuit 38 detects a specific gesture, detects each component of the gesture, and analyzes each component to determine whether the gesture has been properly formed, does not make trigger circuit 38 a processor. Further, nothing indicates trigger circuit 38 is configured to execute programmable code.

Second, that there are processors elsewhere in the system but in sleep mode at the time the inertial sensor operates does not persuade us that trigger

circuit 38 itself must be a processor. This argument assumes, without supporting evidence and explanation, the stated functions of the trigger circuit can only be performed by a processor. Again, nothing indicates that trigger circuit 38 is configured to execute programmable code.

Third, Petitioner has not explained the presence of switch 41 and comparator 46 within trigger circuit 38, neither one of which, on this record, is shown as having anything to do with execution of programmable code.

Fourth, Orr describes that Main Accelerometer Sub-sys 42 in trigger circuit 38 includes a second motion sensor which is activated by a signal from switch 41 and which provides output signal 44 to threshold comparator 46. Ex. 1005, 7:3–17. Petitioner has not adequately explained the presence of this second motion sensor within Main Accelerometer Sub-sys 42. On this record, a motion sensor, such as the second motion sensor in Main Accelerometer Sub-sys 42, has not been shown to have anything to do with execution of programmable code.

For all of the foregoing reasons, Petitioner has not adequately accounted for limitations 14[E][1] and 14[E][3]. In short, trigger circuit 38 is not configured to execute programmable code and so has not been shown to teach or suggest the processor limitation. Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of claim 14 over Orr and Orr682.

4. Independent Claim 1

Similar to limitation 14[E][1], limitation 1[B] and recitation 1[pre][2] each recite "processor and/or other processing means" in an "inertial sensor." Ex. 1001, 10:63–64, 11:9–10. The preamble recitation is limiting because it is repeated in the body of the claim. Similar to limitation

14[E][3], limitation [1][B] recites "using the processor and/or other processing means of the inertial sensor for discriminating between gesture and no gesture based on a direction of said acceleration signal." *Id.* at 11:9–12. As in the case of claim 14, Petitioner foregoes accounting for the alternative of "other processing means" in limitation recitation 1[pre][2] and limitation 1[B], Pet. 6–7, and argues, instead, that Orr discloses an inertial sensor including an accelerometer and a processor. *Id*. at 31, 47, 49. We have addressed and rejected the same argument of Petitioner in the discussion of limitation 14[E][1] and limitation 14[E][3] above. For the same reasons, the argument is unpersuasive here.

For the foregoing reasons, Petitioner has not adequately accounted for recitation 1[pre2] and limitation 1[B]. Therefore, Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of claim 1 over Orr and Orr682.

5. Dependent Claims 2–5, 7, and 10–12

Claims 2–5, 7, and 10–12 each depend, directly or indirectly, from claim 1. Ex. 1001, 11:24–39, 11:44–47, 12:1–9. The deficiency of Petitioner's accounting for claim 1 over Orr and Orr682, as discussed above, equally applies to claims 2–5, 7, and 10–12.

Accordingly, Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of claims 2–5, 7, and 10–12 over Orr and Orr682.

D. Alleged Obviousness of Claims 6, 8, 9, 15 over Orr, Orr682, Li

Li describes various embodiments of a capacitive touchscreen system that is capable of sensing finger touches made on a capacitive touch screen

according to different scanning modes that reduce power consumption of the capacitive touchscreen system. Ex. 1007, code (57).

Claims 6, 8, and 9 each depend, directly or indirectly, from claim 1. Ex. 1001, 11:40–43, 11:48–55. Claim 15 depends from claim 14. *Id.* at 12:49–53. The deficiency of Petitioner's accounting for claim 1 over Orr and Orr682, as discussed above, equally applies to claims 6, 8, and 9, and is not cured by Petitioner's reliance on and application of Li. The deficiency of Petitioner's accounting for claim 14 over Orr and Orr682, as discussed above, equally applies to claim 15, and is not cured by Petitioner's reliance on and application of Li.

Accordingly, Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of claims 6, 8, 9, and 15 over Orr, Orr682, and Li.

E. Alleged Obviousness of Claims 1–5, 7, 10–12, and 14 over Orr, Orr682, and Pasquero

Pasquero discloses a portable electronic device in the form of a watch and normally worn at or near the wrist of a user. Ex. 1009, 3:38–41, 8:1–2. The device includes a display, touch sensors, processor, communication subsystem, speaker, microphone, actuator, and accelerometer. Ex. 1009, 2:27–51, 8:9–14.

The deficiency of Petitioner's accounting for claims 1–5, 7, 10–12, and 14 over Orr and Orr682, as discussed above, is not cured by Petitioner's reliance on and application of Pasquero. Accordingly, Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of claims 1–5, 7, 10–12, and 14 over Orr, Orr682, and Pasquero.

F. Alleged Obviousness of Claims 6, 8, 9, and 15 over Orr, Orr682, Pasquero, and Li

The deficiency of Petitioner's accounting for claims 6, 8, 9, and 15 over Orr, Orr682, and Li, as discussed above, is not cured by Petitioner's reliance on and application of Pasquero. Accordingly, Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of claims 6, 8, 9, and 15 over Orr, Orr682, Li, and Pasquero.

G. Alleged Obviousness of Claims 12 and 13 over Orr, Orr682, Pasquero, and Yeung

Yeung discloses accelerometer-based orientation and movement detection for controlling wearable devices such as wristwatches. Ex. 1008, code (57). Yeung describes that such accelerometer-based control offers significant advantages over conventional means of control, in terms of ease of use and durability. *Id*.

The deficiency of Petitioner's accounting for claim 12 over Orr, Orr682, and Pasquero, as discussed above, is not cured by Petitioner's reliance on and application of Yeung. Accordingly, Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of claim 12 over Orr, Orr682, Pasquero, and Yeung.

Claim 13 depends from claim 12. Ex. 1001, 12:10–17. The deficiency of Petitioner's accounting for claim 12 equally applies to claim 13. Accordingly, Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of claim 13 over Orr, Orr682, Pasquero, and Yeung.

H. Alleged Obviousness of Claims 1–5, 7, and 10–14 over Orr, Orr682, and Yeung

The deficiency of Petitioner's accounting for claims 1–5, 7, 10–12, and 14 over Orr and Orr682, as discussed above, is not cured by Petitioner's reliance on and application of Yeung. Accordingly, Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of claims 1–5, 7, 10–12, and 14 over Orr, Orr682, and Yeung.

Claim 13 depends from claim 12. Ex. 1001, 12:10–17. The deficiency of Petitioner's accounting for claim 12 equally applies to claim 13. Accordingly, Petitioner has not shown a reasonable likelihood that it would prevail in establishing obviousness of claim 13 over Orr, Orr682, and Yeung.

I. Discretionary Denial Under 35 U.S.C. § 314(a)

Citing *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11, at 6 (PTAB March 20, 2020) (precedential), Patent Owner urges that the "circumstances of the parallel District Court Litigation necessitate denial of the Petition under the Board's precedent, as every [*Fintiv*] factor considered in relation to efficiency, fairness, and the merits supports denial." Prelim. Resp. 18. We need not reach the issue of discretionary denial under 35 U.S.C. § 314(a) and *Fintiv*, because we determine Petitioner has not shown a reasonable likelihood that it would prevail in establishing that any challenged claim of the '678 patent is unpatentable.

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has not shown a reasonable likelihood that Petitioner would prevail in showing that at least one of claims 1–15 of the ’678 patent is unpatentable.

IV. ORDER

It is ORDERED that no *inter partes* review is instituted in this proceeding.

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