

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

MAXELL, LTD.,
Patent Owner.

IPR2024-00828
Patent 8,982,086 B2

Before NEIL T. POWELL, TERRENCE W. McMILLIN, and
KEVIN C. TROCK, *Administrative Patent Judges*.

McMILLIN, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background and Summary*

Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc. (“Petitioner”)¹ filed a Petition for *inter partes* review of claims 1, 2, 4–7, and 9–14 of U.S. Patent No. 8,982,086 B2 (Ex. 1001, “the ’086 patent”). Paper 3 (“Pet.”). Maxell, Ltd. (“Patent Owner”)² filed a Preliminary Response. Paper 7 (“Preliminary Response” or “Prelim. Resp.”). We instituted the petitioned review (Paper 9, “Inst. Dec.”).³

Patent Owner filed a Patent Owner Response (Paper 16, “PO Resp.”) to oppose the Petition. Petitioner filed a Reply (Paper 23, “Pet. Reply”) to the Patent Owner Response. Patent Owner filed a Sur-reply (Paper 25, “PO Sur-reply”) to the Reply. We conducted an oral hearing on August 12, 2025. A transcript has been entered into the record (Paper 40, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6(b)(4) and § 318(a). This Decision is a final written decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of claims 1, 2, 4–7, and 9–14 of the ’086 patent. We determine Petitioner has shown by a preponderance of the evidence that claims 1, 2, 4–7, and 9–14 of the ’086 patent are unpatentable.

¹ Petitioner identifies Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc. as the real parties-in-interest to this proceeding. Pet. 81.

² Patent Owner identifies Maxell, Ltd. as the real party-in-interest to this proceeding. Paper 5, 1.

³ Patent Owner filed two requests for Director review of the Institution Decision. Papers 11 and 22. The first request was denied. Paper 13. The second request was not considered because it was untimely. Ex. 3100.

B. Related Proceeding

The parties identify the following district court matter related to the '086 patent: *Maxell, Ltd. v. Samsung Electronics Co. Ltd.*, Case No. 5:23-cv-00092 (E.D. Tex.).⁴ Pet. 81; Paper 5, 1.

In addition, Patent Owner identifies the following proceedings related to the '086 patent: IPR2021-00362; and Reexamination No. 90/014,638. Paper 5, 1.

C. The '086 Patent (Ex. 1001)

The '086 patent is titled “Information Processing Apparatus.” Ex. 1001, code (54). The '086 patent relates to “an information processing apparatus” that includes “a touch panel which displays a plurality of pieces of identification information including letters, figures, and symbols, and for detecting a contact of the panel with a finger of a user or other objects.” *Id.* at 1:42–46. The apparatus can determine which identification information is contacted and whether the area of the detected contact matches a stored reference area range. *See id.* at 1:46–64. More specifically, an embodiment for an enhanced security function “incorporates a four-digit password and a difference in the contact range.” *Id.* at 6:17–18. This embodiment stores a registered password as well as an input method for each password number, where the input method may be either a fingertip input or a finger pad input. *Id.* at 7:53–55, 8:20–22.

⁴ On September 18, 2025, an Order (Exhibit 1026) was entered in this district court case in which the asserted claims of the '086 patent were found to be not infringed (*id.* at 4–10, 39) and invalid due to lack of written description under 35 U.S.C. § 112 (*id.* at 26–31, 40). Our jurisdiction is limited to determination of unpatentability on the basis of prior art consisting of patents or printed publications (35 U.S.C. § 311(b)) and the issues of infringement and lack of written description are not before us.

Figure 11A, reproduced below, illustrates an embodiment of the '086 patent for registering a password. Ex. 1001, 2:40–41.

FIG. 11A

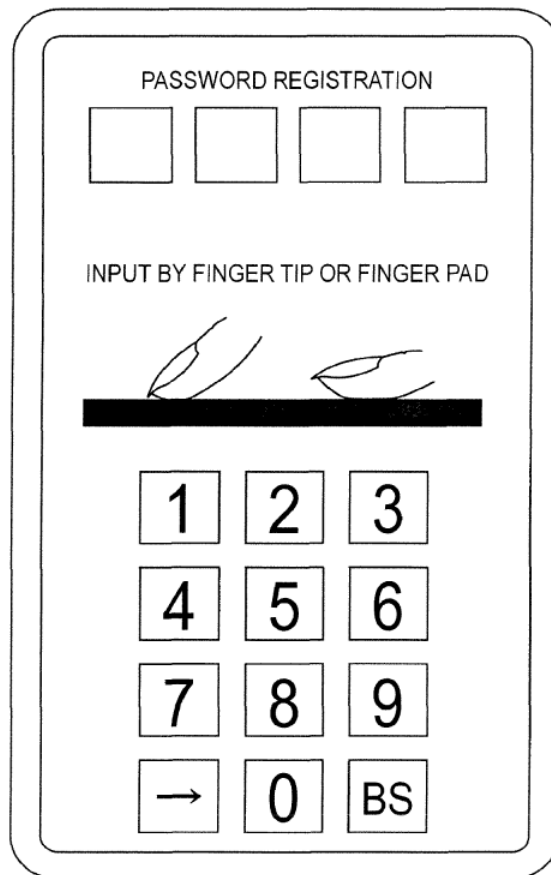


Figure 11A depicts the screen of an information processing apparatus. *Id.* As shown in Figure 11A, a user may be prompted by a portable terminal to input a password using either a fingertip or finger pad for any of numbers 0 through 9, for each of the four numbers in a password. *See id.* at 6:47–54. When entering selected numbers, a control unit compares a contact range with a threshold value determined during a calibration process, in order to determine whether a fingertip or finger pad was used for selecting the number. *See id.* at 6:55–64, 6:29–45. For example, as shown in Figures

11C and 11B, reproduced below, the portable terminal determines that a fingertip was used for selecting the first number 0, and a finger pad was used for selecting the second number 5. *See id.* at 6:59–67.

FIG. 11B

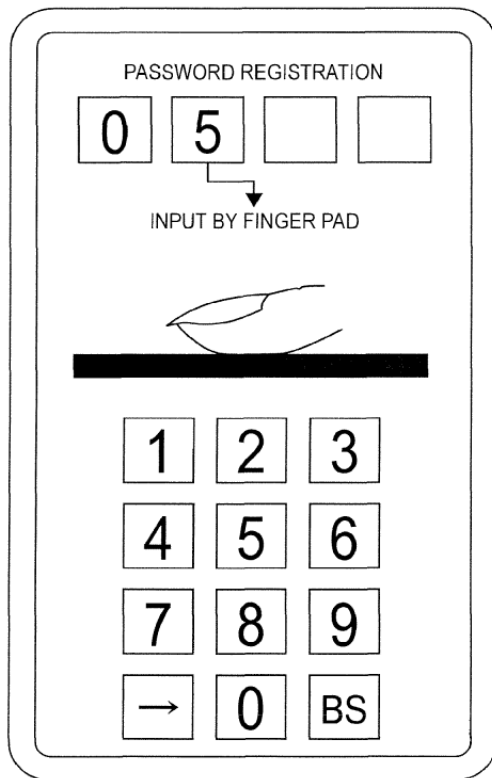
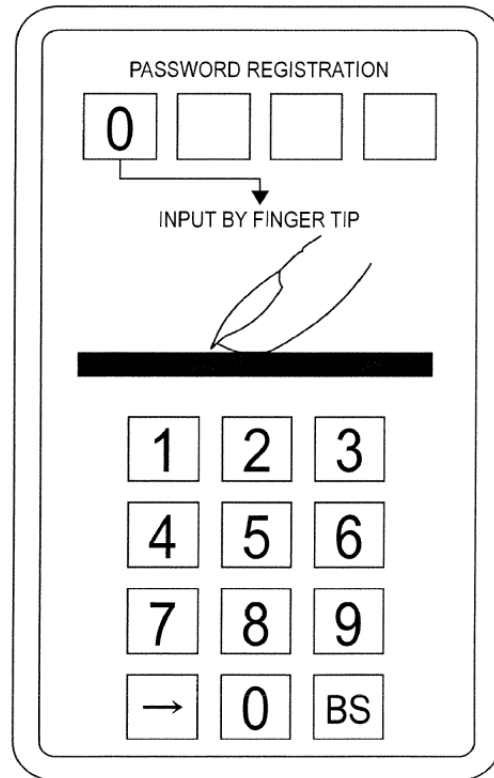


FIG. 11C



Figures 11B and 11C depict further screens to inform the user whether a finger pad input or a fingertip input has been made. *Id.* at 2:42–47. The result of registering a password as shown in Figures 11A through 11C may be stored as in the table shown in Figure 12A, reproduced below.

FIG. 12A

DIGIT	1	2	3	4
PASSWORD	0	5	2	8
INPUT METHOD	FINGER TIP	FINGER PAD	FINGER PAD	FINGER PAD

Figure 12A shows “data consisting of a password and a set of corresponding input method[s].” *Id.* at 6:23–24; *see also id.* at 7:2–6. According to the ’086 patent, this embodiment enhances security “by only storing, in addition to the password registered, the input method for each of the password numbers,” and “[f]rom the view of a user, the user only needs to remember the input method for each password number to unlock the portable terminal.” *Id.* at 7:53–59.

D. Challenged Claims

Petitioner challenges claims 1, 2, 4–7, and 9–14 of the ’086 patent.⁵

Pet. 1. Claim 1 is the sole independent claim and recites:⁶

[1pre]. An information processing apparatus comprising:

[1a] a touch panel configured to detect a contact of a finger of a user;

[1b] a detector configured to detect first information necessary for an identification of the user when the contact is detected between the touch panel and the finger of the user;

[1c] a first controller configured to control the information processing apparatus to operate into two operating modes: at

⁵ Claims 5–15 of the ’086 patent were added during reexamination. *See* Ex. 1004 (file history for Reexamination No. 90/014,638), 4.

⁶ In order to follow the arguments made by the parties, we have added and adopted the claim limitation designations from the “Table of Claims” in the Petition. Pet. vii–ix.

least an identification mode and a registering mode, as the operating mode thereof;

[1d] memory that is configured to store second information relating to the identification of the user, which is stored in advance; and

[1e] a second controller configured to execute a specified process when said first information and said second information are coincident within said identification mode, wherein:

[1f] in said registering mode, there are provided a first registering mode for inputting input information by a pad of the finger, and a second registering mode for inputting input information by an end of the finger, and said second information relating to the identification of the user is produced upon basis of the input information, which is inputted at least in the first or second mode.

Ex. 1001, 8:36–60; Ex. 1002, 21 (Certificate of Correction dated May 28, 2019).

E. The Asserted Grounds

Petitioner challenges claims 1, 2, 4–7, and 9–14 of the '086 patent based on the grounds set forth in the table below.

Claims Challenged	35 U.S.C. §	Reference(s) ⁷
1, 2, 4–7	103(a) ⁸	Rogers ⁹ , Rosenberg ¹⁰
9–14	103(a)	Rogers, Rosenberg, Miyazawa ¹¹
1, 2, 4–7	103(a)	Rogers, Rekimoto ¹²
9–14	103(a)	Rogers, Rekimoto, Miyazawa

Pet. 1. Petitioner supports the Petition with the Declaration of Seth James Nielson, Ph.D. (Ex. 1003; *see also* Ex. 1019 (Reply Declaration of Dr. Nielson); Ex. 2009 (transcript of the deposition of Dr. Nielson); Ex. 2013 (transcript of the deposition of Dr. Nielsen taken in the district court case)). Patent Owner supports its Response with the Declaration of Jacob O. Wobbrock, Ph.D. (Ex. 2005; *see also* Ex. 1014 (excerpts from an expert declaration of Dr. Wobbrock before the ITC); Ex. 1017 (excerpts from an

⁷ Petitioner contends that the cited art qualifies as prior art under applicable law. *See* Pet. 9–10. Patent Owner does not dispute the prior art status of the cited art. *See* PO Resp. We determine that the cited art qualifies as prior art.

⁸ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103, and was effective on March 16, 2013. The application for the ’086 patent is a continuation of U.S. Application No. 13/366,983, filed on February 6, 2012, and also claims priority to a foreign application filed on February 9, 2011. Ex. 1001, codes (22), (63), (30), 1:5–8. Because the application for the ’086 patent claims a priority date before the effective date of the applicable AIA amendment, the pre-AIA version of § 103 applies for purposes of institution.

⁹ US 8,683,582 B2, issued Mar. 25, 2014, filed Jun. 16, 2008 (Ex. 1006).

¹⁰ US 2007/0097096 A1, published May 3, 2007 (Ex. 1007).

¹¹ US 8,633,909 B2, issued Jan. 21, 2014, filed Dec. 29, 2010 (Ex. 1008).

¹² US 8,477,115 B2, issued Jul. 2, 2013, filed Jun. 7, 2006 (Ex. 1010).

expert declaration Dr. Wobbrock before the ITC); Ex. 1018 (transcript of the deposition of Dr. Wobbrock)).¹³

¹³ The Court was very critical of Dr. Wobbrock's testimony in the related district court case. *See generally* Ex. 1026 (September 18, 2025 Order). With regard to the '086 patent, the Court found that Dr. Wobbrock's testimony was not based on any record evidence (*id.* at 7, 9), arbitrary (*id.*), contrary to the evidence (*id.* at 7–8), unjustified (*id.* at 8), *ipse dixit* (*id.* at 9), conclusory (three times) (*id.*), insufficient to support a jury verdict (three times) (*id.* at 9, 27), untethered from the Specification (three times) (*id.* at 28, 30, 31), inconsistent (*id.* at 29), insufficient to support his opinion (*id.* at 29–30), unsupported (*id.* at 30), and not to be credited by a reasonable jury (*id.* at 31). We have considered this criticism of Dr. Wobbrock's testimony in view of the September 16, 2025, Memorandum to the Members of the Patent Trial and Appeal Board on the subject of "PTAB consideration of prior findings of fact and conclusions of law" (available at: https://www.uspto.gov/sites/default/files/documents/Memo_re_prior_findings_of_fact_and_conclusions_of_law_9_16_25.pdf?utm_campaign=subscripti%00%00ncenter&utm_content=&utm_medium=email&utm_name=&utm_source=g%00%00ovdelivery&utm_term=) and in light of the case law (*see, e.g., N.L.R.B. v. Pittsburgh S.S. Co.*, 337 U.S. 656, 659 (1949) ("[I]n the determination of litigated facts, the testimony of one who has been found unreliable as to one issue may properly be accorded little weight as to the next.")). We have similarly found Dr. Wobbrock's testimony to be contrary to the plain and ordinary meaning of the claims, untethered from the Specification, unsupported by the evidence, inconsistent, arbitrary, and conclusory. We accord the testimony of Dr. Wobbrock little or no weight. We view the testimony of Petitioner's expert, Dr. Nielson, as more credible and persuasive as it tracks more closely with the '086 patent and the cited art. *EcoFactor, Inc. v. Google LLC*, 137 F.4th 1333, 1339 (Fed. Cir. 2025) (quoting *Daubert v. Merrell Dow Parns., Inc.*, 509 U.S. 579, 597, 589 (1993) ("The Supreme Court has explained 'that the trial judge plays a "gatekeeping role," "through which it must "ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable."')").

II. OBVIOUSNESS ANALYSIS

A. *Principles of Law*

Under 35 U.S.C. § 103(a), “[a] patent claim is unpatentable if the differences between the subject matter sought 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.” *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (similar language). The question of obviousness involves resolving 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 ordinary skill in the art; and when presented (4) objective evidence of non-obviousness (not presented here). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Further, “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *See KSR*, 550 U.S. at 418.

B. *Level of Ordinary Skill in the Art*

Petitioner contends:

A person of ordinary skill in the art (“POSITA”) at the time of the alleged invention of the ’086 patent would have had a Bachelor’s Degree in electrical engineering, computer engineering, computer science, or a related field, with at least one to two years of experience in the field of computing devices with touch interfaces.

Pet. 6 (citing Ex. 1003 ¶ 45). Petitioner further contends that “[a]dditional education or experience might substitute for the above requirements.” *Id.*

Similarly, Patent Owner contends: “[a] POSITA would have at least a Bachelor’s degree in Electrical Engineering, Computer science, or a related field, with at least one year of experience in the field of computing devices

with touch interfaces.” PO Resp. 8 (citing Ex. 2005 ¶¶ 76–77). Although there are minor differences in these definitions of the level of ordinary skill in the art, the parties agree that this issue is not disputed. Tr. 11:24–26 (Petitioner’s counsel); 43:16–22 (Patent Owner’s counsel indicating agreement with Petitioner’s definition); *see also* Pet. Reply 1 (“The experts agree on the definition of ordinary skill in the art (‘POSITA’).”

Determining the level of ordinary skill in the art involves various factors, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citation omitted). The prior art of record also reflects the level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). We adopt the assessment offered by Petitioner as it is not disputed and is consistent with the ’086 patent and the asserted prior art.

C. Claim Construction

In *inter partes* reviews, the Board construes claims using the same claim construction standard employed in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b) (2023). Claim terms are generally given their ordinary and customary meaning. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at 1313. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language

itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–1317). Extrinsic evidence consisting of all evidence external to the patent and prosecution history includes expert and inventor testimony, dictionaries, and learned treatises. *Phillips* at 1317. While extrinsic evidence can shed useful light on the relevant art, it is less significant than the intrinsic record in determining the legally operative meaning of claim language. *Id.* “[T]he specification and prosecution history only compel departure from the plain meaning in two instances: lexicography and disavowal.” *GE Lighting Sols., LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014).

1. “first information necessary for an identification of the user” and “second information relating to the identification of the user” as recited in Claim 1

In the Petition, Petitioner proposes two claim constructions, and contends the remaining claim terms “should be construed according to their plain and ordinary meaning to a POSITA.” Pet. 7. For “*first information necessary for an identification of the user*” as recited in claim 1, Petitioner contends that this term means “information sufficient for the identification of the user, **but not including information about a user’s fingerprint.**” *Id.* (emphasis added). For “*second information relating to the identification of the user*” as recited in claim 1, Petitioner contends that this term means “information related to the identification of a user, **but not including information about a user’s fingerprint.**” *Id.* at 8 (emphasis added).

However, for both proposed constructions, the Petition states, “Petitioners propose this construction to be consistent with their proposed construction in the concurrent litigation,” but “that the Board need not rule

on this construction because the prior art cited herein discloses the components” whether or not the construction is adopted in this proceeding. *Id.* at 8, 9. In its Reply, Petitioner goes even further and argues that whether these claim terms encompass fingerprint recognition is irrelevant to the invalidity issues in this proceeding. *See* Pet. Reply 1–2 (“Although Petitioners respectfully disagree that these terms encompass fingerprint recognition, the issue is irrelevant to whether Petitioner’s prior art invalidates the claims, and the Board may proceed based on the terms’ undisputed plain and ordinary meaning.”).

Patent Owner also contends these terms should be given their plain and ordinary meaning. PO Resp. 9–10; PO Sur-reply 1.

Accordingly, no need exists to expressly construe these claim terms to resolve the parties’ disputes. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe 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))). We accord these terms their plain and ordinary meanings.

2. “*first registering mode for inputting input information by a pad of the finger*” and “*second registering mode for inputting input information by an end of the finger*” as recited in Claim 1

Claim 1 of the ’086 patent recites:

1. An information processing apparatus comprising:

. . . .

a first controller configured to control the information processing apparatus to operate into two operating modes: at

least an identification mode and a registering mode, as the operating mode thereof;^[14]

. . . .

in said registering mode, there are provided a first registering mode for inputting input information by a pad of the finger, and a second registering mode for inputting input information by an end of the finger, and said second information relating to the identification of the user is produced upon basis of the input information, which is inputted at least in the first or second mode.^[15]

Ex. 1001, 8:36–60.

Patent Owner contends that “*first registering mode for inputting input information by a pad of the finger*” should be construed as “a first operational state for registering in which information is input by a pad of the finger” and “*second registering mode for inputting input information by an end of the finger*” should be construed as “a second operational state for registering in which information is input by the end of the finger, the first registering mode and the second registering mode being different operational states.” PO Resp. 10. In its Sur-reply, Patent Owner argues that “The Board should either adopt Patent Owner’s proposed constructions **or**, **alternatively**, give the terms their plain and ordinary meaning as understood by a POSITA and within the context of the ’086 patent.” PO Sur-reply 2 (emphasis added). For the reasons discussed below, we accord these terms their plain and ordinary meanings and do not adopt the narrowing constructions offered by Patent Owner.

¹⁴ The parties refer to this limitation as limitation or element “1c.”

¹⁵ The parties refer to this limitation as limitation or element “1f.”

We start our analysis of this issue with the language of claim 1 and the arguments of the parties based upon the language of claim 1. “[T]he claims themselves provide substantial guidance as to the meaning of particular claim terms.” *Phillips* at 1314. In support of its contentions, in its Response, Patent Owner argues:

Th[e] consistent application of what a mode is applies to the terms “identification mode” (element [1c]), “registering mode” (element [1c]), “first registering mode” (element [1f]), and “second registering mode” (element [1f]), as well as Claims 5 and 7.^[16] EX2005, ¶83. The claims of the ’086 Patent explicitly refer to identification mode and registering mode as “**two operating modes.**” EX1001, 8:43-46 (claim 1); EX2005, ¶83. Therefore, where the claims describe that the first and second registering modes “are provided” “in said registering mode” (EX1001, 8:54 (claim 1)), the first and second registering modes are also operating modes of the system. EX2005, ¶83.

PO Resp. 10–11. In opposing these constructions, Petitioner argues:

P[atent] O[wner] proposes to construe the “first registering mode” and “second registering mode” of limitation [1f] as distinct “operational states.” POR 10. P[atent] O[wner] additionally “interpret[s]” an operational state as “a system state such that the same action has different results or effects based on the current value of the system state.” POR 36; EX1018,

¹⁶ Patent Owner never explains how or why dependent claims 5 and 7 that both depend directly from claim 1 support its claim construction argument. *See* PO Resp. 10–21; PO Sur-reply 2–9. Patent Owner cites paragraph 83 of the Declaration of Dr. Wobbrock (Ex. 2005) (Patent Owner’s expert) in support, but paragraph 83 is a verbatim copy of the paragraph from the Response in which this citation is found with no explanation or supporting reasoning. *See also* fn. 13 *supra*. (determining Dr. Wobbrock’s testimony is entitled to little or no weight). No matter. Based on our independent review of claims 5 and 7, we determine that they do not support Patent Owner’s claim construction argument.

37:12-44:6. As evidenced by the fact that P[atent]O[wner] has never proposed to construe these terms in numerous prior proceedings, these terms require no construction. Plain and ordinary meaning should therefore apply. Additionally, there are many reasons for rejecting P[atent]Owner]’s construction. EX1019, ¶¶ 11-25.

First, the claim language contradicts P[atent]O[wner]’s proposed construction. EX1019, ¶ 14. Limitation [1c] refers to the “identification mode” and “registering mode” as “operating modes.” EX1001, 8:43-46. Limitation [1f], however, makes no such distinction for the “first registering mode” and the “second registering mode” that are provided in “said registering mode,” and instead refers to them as “mode[s] for inputting input information.” *Id.* 8:54-57. It would be improper to rewrite limitation [1f] to include an “operational states” requirement that the patentee knew how to apply but purposely omitted. *Takeda Pharm. Co. Ltd. v. Zydus Pharms. USA, Inc.*, 743 F.3d 1359, 1365 (Fed. Cir. 2014) (refusing to rewrite a claim to include a word, when the remainder of the claim demonstrated that the inventors knew how to use that word when they so desired and decided not to do so).

Pet. Reply 2–3 (footnote omitted). In its Sur-reply, Patent Owner argues:

Petitioner acknowledges that the “first registering mode” and the “second registering mode” are “registering . . . mode[s] for inputting input information.” Reply at 2. Despite this acknowledgment, Petitioner argues that “[i]t would be improper to rewrite limitation [1f] to include an ‘operational states’ requirement.” *Id.* However, both the “first registering mode” and the “second registering mode” are sub-operating modes of the “said registering mode” and are thus differing operational states. *See* EX1001, 8:43-46 (referring to the identification mode and the registering mode as “two operating modes”).

PO Sur-reply 3. We reject Patent Owner’s contention that the language of claim 1 supports its proposed constructions. Instead, we determine that the proposed constructions are contradicted by the language of claim 1.

Limitation 1c provides that “*the information processing apparatus*” is “*control[led] . . . to operate in[] two operating modes.*” Limitation 1c requires that the “*two operating modes [be] at least an identification mode and a registering mode.*” No other modes are identified in this limitation or elsewhere in the claims as “*operating modes*”.

Limitation 1f provides that, “*in said registering mode, there are provided a first registering mode . . . and a second registering mode.*” This claim language indicates the “*first registering mode*” and the “*second registering mode*” “*are provided*” “*in*” the “*registering mode.*” Taken together with the language of limitation 1c, this language indicates that the “*first registering mode*” and the “*second registering mode*” both “*operate*” in the “*registration mode*” which is delineated as an “*operating mode.*”

We find no support in the language of claim 1 for construing the “*first registering mode*” and the “*second registering mode*” as “*operating modes,*” or as “*different operational states,*” or “*sub-operating modes of the ‘said registering mode’*” as contended by Patent Owner. There is no express statement in claim 1 that the “*first registering mode*” and the “*second registering mode*” are “*operating modes,*” or are “*different operational states,*” or are “*sub-operating modes of the ‘said registering mode.’*” The language of claim 1 is clear that the only two “*operating modes*” explicitly recited in claim 1 are the “*identification mode*” and the “*registration mode.*” Claim 1 recites that these two “*modes*” are “*operating modes,*” but does not recite that the “*first registering mode*” and the “*second registering mode*” are “*operating modes.*” The language of claim 1 cannot be read to include the requirements that the “*first registering mode*” and the “*second registering*

mode” are “*operating modes*,” or are “different operational states,” or are “sub-operating modes of the ‘said registering mode.’”

Rather, we agree with Petitioner that the language of limitation 1c that specifically refers to the “*registering mode*” as an “*operating mode*” and the language of limitation 1f that refers to the “*first registering mode*” and the “*second registering mode*” as “*mode[s] for inputting input information*” that are “*provided in said registering mode*” contradicts Patent Owner’s proposed construction that would require the “*first*” and “*second registering mode[s]*” to be “different operational states.” The plain and ordinary meaning of the language of claim 1 provides that the “*first registering mode*” and the “*second registering mode*” are “*mode[s] for inputting input information*” that are “*provided in said registering mode*” which is one of the two delineated “*operating modes*.” Both “*first*” and “*second*” “*registering mode[s]*” “*for inputting input information*” are recited as “*provided in said registering mode*,” a single “*operating mode*.”¹⁷

We next consider whether the Specification of the ’086 patent supports Patent Owner’s proposed construction and conclude that it does not. The Specification “is the single best guide to the meaning of a disputed term.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Outside of the claims, the ’086 patent does not use the term “mode,”

¹⁷ To construe “mode” as “operating mode,” we would have to conclude that, in the context of the claim, the word “mode” inherently means “operating mode” which would make “operating mode” redundant and the word “operating” superfluous. *See Phillips* at 1314 (“To begin with, the context in which a term is used in the asserted claim can be highly instructive. To take a simple example, the claim in this case refers to ‘steel baffles,’ which strongly implies that the term ‘baffles’ does not inherently mean objects made of steel.”).

either alone, or as part of the following phrases: “operating modes,” “identification mode,” “registering mode,” “first registering mode,” or “second registering mode.” We determine that lexicography does not apply to these claim terms. *See generally* Ex. 1001. None of these terms are defined in the Specification of the ’086 patent. *Id.* Patent Owner does not rely on lexicography. *See* Tr. 25:4–10 (Patent Owner’s counsel arguing that plain and ordinary meaning applies).

Patent Owner argues:

The specification of the ’086 Patent supports a construction of a “first registering mode for inputting input information by a pad of the finger” as “a first operational state for registering in which information is input by a pad of the finger” and a “second registering mode for inputting input information by a pad of the finger” as “a second operational state for registering in which information is input by a pad of the finger.” In describing the “process for password registration,” *i.e.*, the claimed “registering mode,” the specification also describes steps in the registering process. *See* EX1001, 6:28-36; EX2005, ¶84. For example, referring to Figures 10A and 10B, the specification discloses that in the registering mode, an image “is displayed to prompt the user to make a finger tip contact” and “control unit 3 records the contact range of the finger tip input.” EX1001, 6:31-33; FIG. 10A; EX2005, ¶84. This disclosure is an example of the claimed second registering mode or “a second operational state for registering in which information is input by an end of the finger.” EX2005, ¶84.

....

As an example of the claimed first registering mode, in the registering mode, an image is “displayed to prompt the user to make a finger pad contact” and “control unit 3 records the contact range of the finger pad input.” *Id.*, 6:34-36; FIG. 10B; EX2005, ¶85. The separate step during the registering process underscores that the first and second registering modes are different operational states of the system. *Id.*

....

Accordingly, as described in the specification, the first and second registering modes are first and second operational states for registering. EX2005, ¶85.

PO Resp. 11–13. Thus, Patent Owner relies on Figures 10A and 10B and the related description as supporting its construction.

Petitioner responds to this argument with:

Second, the specification contradicts P[atent]O[wner]’s “interpretation” of the first and second registering modes as distinct “operational states.” P[atent]O[wner] argues that evidence of the two modes being distinct operational states can be found in Figures 10A and 10B. POR 11-13. This is wrong. These figures show “calibration”—not “registering”—as the figures’ labeling demonstrates. . . . The specification defines “calibration” as “an operation of setting a threshold value that is used for determining a contact range” to distinguish finger tip and pad inputs. *Id.* 3:59-60, 4:61-5:19. Figures 10A and 10B are “typical screen image[s] displayed during calibration” to generate this “threshold value.” *Id.* Fig. 9 (steps S2001-S2004), 6:16-51.

The specification discloses that password registration occurs *after* calibration. EX1001, Fig. 9 (S2006-S2010), 6:28-7:7. Figures 11A-11C, labeled “password registration,” are described as “a screen that prompts the user to register a password” (11A) and as “screen[s] displayed during password registration to inform the user that a finger [pad/tip] input has been made” (11B, 11C). EX1001, 2:34-47. . . . The “numeric string of four input numerals” entered by the user during password registration “is registered as the password as shown in FIG. 12A” below.

P[atent]O[wner] does not dispute that a password results from the registration process in the specification and recited in limitation [1f]. *See* POR 4; EX2005, ¶ 84; EX1018, 33:3-35:12. Indeed, during re-examination of the ’086 patent, P[atent]Owner cited Figures 11A, 11B, and 11C as support for new claim 5 and its recitation of images and descriptive text associated with the first and second registering modes of

limitation [1f]. EX1004, 4 (new claim 5), 75 (identifying support for new claim 5). P[atent]O[wner] and Dr. Wobbrock simply ignore that concession. The excerpts above plainly demonstrate that registration occurs in a single “operational state,” wherein the device recognizes—via a first and second registering mode—two different types of touch input for registering the password entries. EX1001, 6:52-7:7. Thus, the first and second “registering modes” of limitation [1f] are not distinct “operational states” as P[atent]Owner] argues. EX1019, ¶¶ 16-19. They are instead input modes, as the claim language recites and as Petitioners’ expert Dr. Nielson testified. EX2009, 49:8-53:8.

Pet. Reply 3–6 (footnote omitted). For the reasons discussed below, we reject Patent Owner’s argument that the Specification supports its constructions and determine that Petitioner’s contrary argument is supported by the Specification.

Figures 10A and 10B are reproduced below.

FIG. 10A

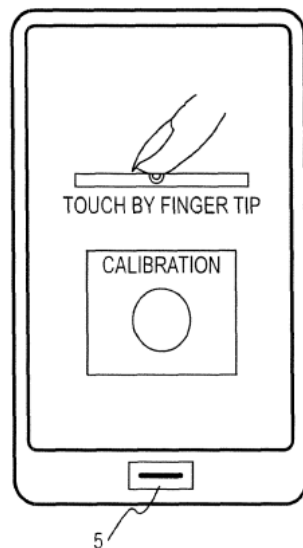
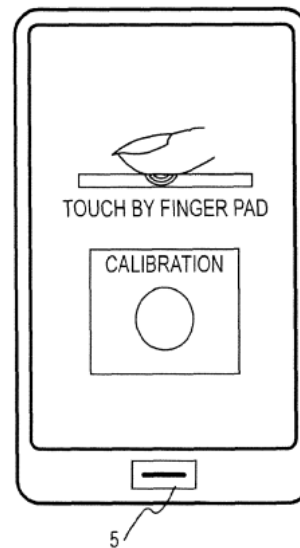


FIG. 10B



Figures 10A and 10B depict “typical screen images displayed during calibration.” Ex. 1001, 6:20–21; *see also id.* at 2:34–39 (describing Figures

10A and 10B as “displayed during calibration”). Patent Owner relies on the Specification stating the calibration depicted in Figures 10A and 10B are part of the registration process as supporting its constructions. PO Resp. 11–13 (citing Ex. 1001, 6:28–36). The cited passage in the ’086 patent Specification provides:

The process for password registration will be first described with reference to the flow chart of FIG. 9. After initial settings such as counter reset is done, an image as shown in FIG. 10A is displayed to prompt the user to make a fingertip contact (S2000). A control unit 3 records the contact range of the finger tip input (S2001). Next, an image as shown in FIG. 10B is displayed to prompt the user to make a finger pad contact. The control unit 3 records the contact range of the finger pad input (S2002).

Ex. 1001, 6:28–36. This passage refers to the flow chart of Figure 9, reproduced below.

FIG. 9

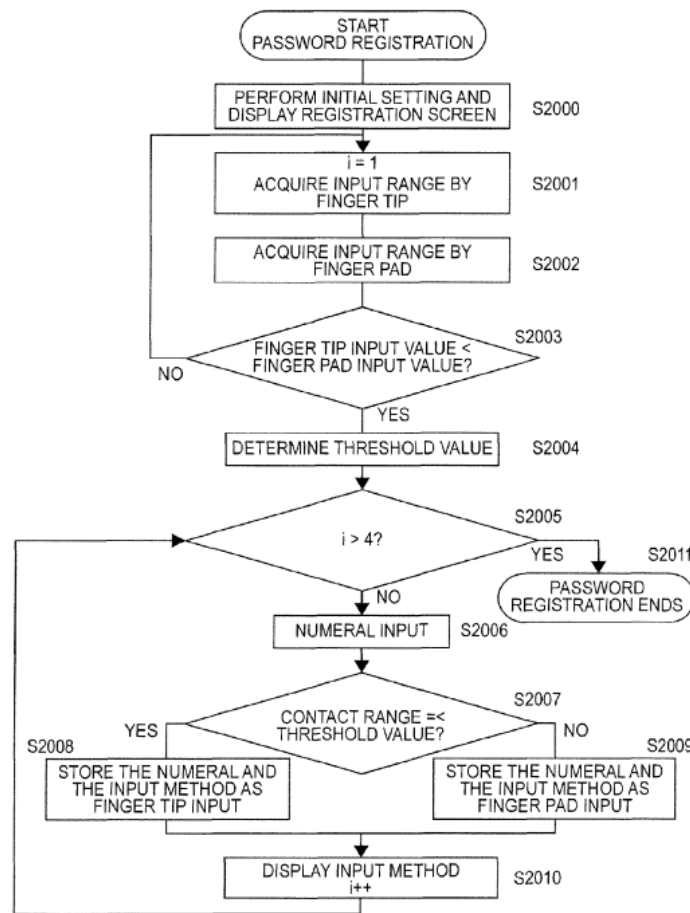


Figure 9 depicts “a flow chart for password registration.” *Id.* at 2:33.

Patent Owner does not explain how or why the calibration process (depicted in the upper half of Figure 9) directly relates to inputting information for registering a password (inputting identifying information for the user) as recited in limitation 1f of claim 1. The Specification of the ’086 patent provides:

A second embodiment^[18] of the present invention relates to a portable terminal 0 using a password. The second

¹⁸ “The portable terminal 0 according to the second embodiment has the same configuration as that of the portable terminal 0 according to the first embodiment unless otherwise specified.” Ex. 1001, 6:24–27. The description of the first embodiment in the Specification of the ’086 patent includes additional disclosure of how the terminal is calibrated to distinguish

embodiment is characterized in that it stores not only a numeric password but also a difference in the contact range with the aim of enhancing security. A description is made for an example of the enhanced security function that incorporates a four-digit password and a difference in the contact range with reference to; FIG. 9 showing a flow chart of password registration, FIGS. 10A and 10B showing typical screen images displayed during calibration, FIGS. 11A to 11C showing screen images for prompting a user to register a password, and FIGS. 12A and 12B showing data consisting of a password and a set of corresponding input method.

Ex. 1001, 6:12–24. The calibration process depicted in Figures 9, 10A, and 10B, and described in the '086 patent relates to determining the contact range of the finger inputs in order to distinguish between finger tip inputs and finger pad inputs. The calibration process is described in detail in the following passage from the Specification of the '086 patent.

The process for password registration will be first described with reference to the flow chart of FIG. 9. After initial settings such as counter reset is done, an image as shown in FIG. 10A is displayed to prompt the user to make a fingertip contact (S2000). A control unit 3 records the contact range of the finger tip input (S2001). Next, an image as shown in FIG. 10B is displayed to prompt the user to make a finger pad contact. The control unit 3 records the contact range of the finger pad input (S2002). Contact ranges are detected at the timing when a button switch 5 is pushed following the contact with finger tip or finger pad. When the contact range of the finger pad input is larger than that of the finger tip input, the control unit 3 authorizes the input as a correct input (S2003: Yes). The contact range of the finger tip input is determined as a threshold value and the value is stored (S2004). When the contact range of the finger pad input is Smaller than that of the finger tip input (S2003: No), the control unit 3 prompts the user

between finger tip inputs and finger pad inputs. *See id.* at 2;64-3:38; *see also id.* Figs. 1A, 1B, 2.

to make a finger tip input again (S2001). Completing the determination of a threshold value, the control unit 3 next checks the counter value. When the counter is 4 or less (S2005: No), the control unit 3 displays a message to inform the user that a password can be input by either the finger tip input or the finger pad input (FIG. 11A). Registration of the numbers is then authorized.

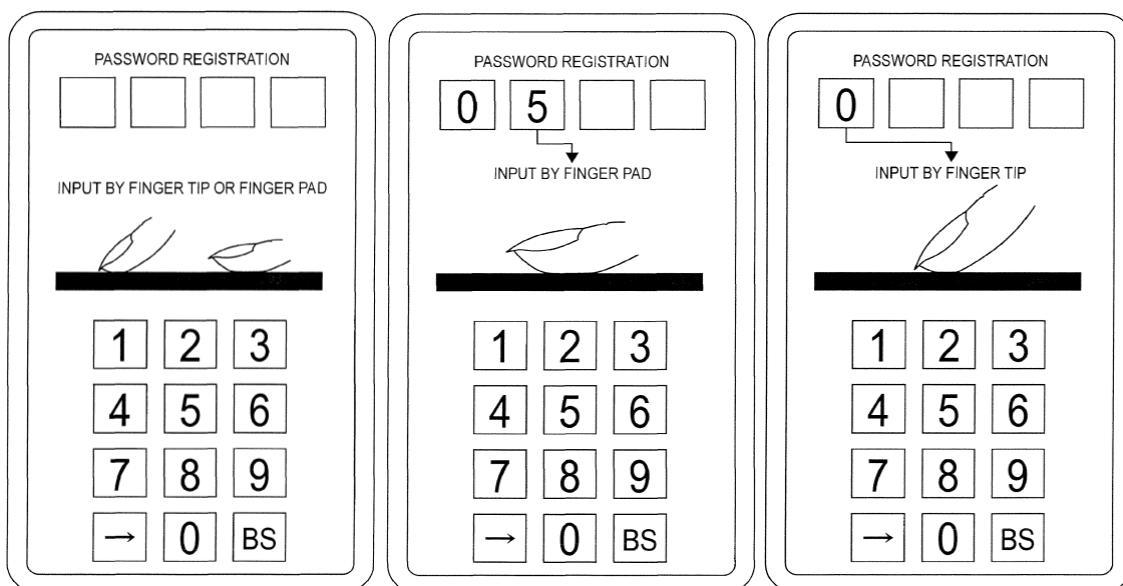
Id. at 6:28–51. As described in the Specification, calibration relates to determining the contact ranges of finger tip inputs and finger pad inputs. As indicated in the last sentence of this passage, the registration of the user's password, the identification information, is not authorized until after the calibration is completed. Figures 10A and 10B and this passage in the Specification do not describe the complete registration process. Figures 10A and 10B do not relate to the input of the password which is the information used to identify the user which is the purpose stated in claim 1 for inputting information in the first and second registering modes of limitation 1f.

Figures 11A, 11B, and 11C of the '086 patent are reproduced below.

FIG. 11A

FIG. 11B

FIG. 11C



Figures 11A, 11B, and 11C of the '086 patent depict “screen images for prompting a user to register a password.” Ex. 1001, 6:21–22. The detailed description of these figures and the registration process in the '086 patent provides:

[T]he control unit 3 displays a message to inform the user that a password can be input by either the finger tip input or the finger pad input (FIG. 11A). Registration of the numbers is then authorized.

The user selects and touches any numbers among numbers 0 to 9 displayed on a touch panel 1 by either the finger tip input or the finger pad input. The selected numbers are registered as input numerals (S2006). Then, the control unit 3 compares the contact range with the threshold value. When the contact range is equal to or smaller than the threshold value (S2007: Yes), the control unit 3 stores the input numeral in association with the finger tip input (S2008). A message as shown in FIG. 11C is displayed to inform the user that the numeral has been registered by finger tip input. When the contact range is larger than the threshold value (S2007: No), the control unit 3 stores the input numeral in association with the finger pad input (S2009).

The control unit 3 displays a message as shown in FIG. 11B to inform the user that the numeral has been registered by finger pad input. The control unit 3 then increments the counter and proceeds to the next password input (S2010). When the counter is greater than 4 (S2005: Yes), a numeric string of four input numerals is registered as the password as shown in FIG. 12A. In addition, the input method of either the finger tip input or the finger pad input corresponding to the numeral is stored for each input numeral. The password registration thus terminates (S2011).

Ex. 1001, 6:48–7:7. Figure 12A of the '086 patent is reproduced below.

FIG. 12A

DIGIT	1	2	3	4
PASSWORD	0	5	2	8
INPUT METHOD	FINGER TIP	FINGER PAD	FINGER PAD	FINGER PAD

Figure 12A depicts “a table showing data composed of a password and a corresponding input method.” *Id.* at 2:48–49. The calibration screens in Figures 10A and 10B are not used to register a password. They could not be because these calibration screens do not contain a number keyboard so that the user can enter a password including both a number and an input method (finger pad or finger tip) as shown in Figure 12A. The registration screens in Figures 11A, 11B, and 11C provide a number keyboard in which the numbers may be input by touching with a finger pad or tip.

And, as Petitioner points out, Patent Owner pointed to Figures 11A, 11B, and 11C, as support for the “first registering mode” and “second registering mode” elements of newly-added, dependent claim 5 during prosecution of the reexamination of the ’086 patent. *See* Pet. Reply 5–6 (citing Ex. 1004, 75). Claim 5 recites: “The information processing apparatus according to claim 1, wherein the touch panel comprises a display screen configured to display a first image and first descriptive text associated with the first registering mode and a second image and second descriptive text associated with the second registering mode.” Ex. 1004, 4. Claim 5 indicates that, contrary to Patent Owner’s claim construction argument, the apparatus recited in claim 1 should be construed broadly enough to include a single touch panel with a single display screen that displays images and text associated with both the “first registering mode” and the “second registering mode.” *See also* Ex. 1001, Fig. 11A (depicting a touch screen display for

“Password Registration” displaying images and text for “input by finger tip or finger pad.”).

We determine that Figures 11A, 11B, and 11C directly relate to limitation 1f and that Figures 10A and 10B do not directly relate to limitation 1f. Figures 11A, 11B, and 11C “provid[e]” “in said registering mode,” “a first registering mode for inputting information by a pad of the finger, and a second registering mode for inputting information by an end of the finger” as recited in limitation 1f. The “second information relating to the identification of the user is produced upon the basis of the input information, which is inputted at least in the first or second mode” as recited in limitation 1f. The calibration process of Figures 10A and 10B do not relate to the input of “information relating to the identification of the user [that] is produced upon the basis of the input information, which is inputted at least in the first or second mode” as recited in limitation 1f. Moreover, the purpose of calibration and registration in the manner recited belies Patent Owner’s claim construction argument. The apparatus must be able to distinguish a finger tip from a finger pad because they are input in the same “operating mode.” If the finger tip “registering mode” and finger pad “registering mode” were distinct “operating modes,” it would be unnecessary for the apparatus to differentiate these two “registering mode[s].” The apparatus could differentiate the inputs based upon the “operating mode” it was in. The Specification contradicts, rather than supports, Patent Owner’s proposed constructions. Patent Owner’s proposed constructions are inconsistent with the plain and ordinary meaning of the claim terms in view of the Specification.

We next turn to analysis of the file history and determine that the file history does not support Patent Owner's proposed constructions. Neither party argues that disclaimer or disavowal of claim scope is applicable. Tr. 13:4–5 (“Petitioners believe that this term does not need construction, that the plain and ordinary meaning can be used.”); *id.* at 25:15–22 (Patent Owner's counsel acknowledging that there is no disclaimer or disavowal with regard to the meaning of mode). With regard to the file history, Patent Owner argues:

Such a construction would also be consistent with the file history of the '086 Patent, specifically the reexamination of the '086 Patent. EX2005, ¶86. For example, during the reexamination of the '086 Patent, for element [1c], the examiner issued a rejection based on the reference (U.S. Patent No. 8,941,466 (“Bayram”)) disclosing an “authentication phase” corresponding to the claimed identification mode and a “registration phase” corresponding to the claimed registering mode. *See* EX1004 at 86; EX2005, ¶86. For element [1f], the examiner pointed to a “signature” that may include “finger touch information that includes an area of the finger touch, a shape of the finger touch, an orientation of the finger touch, [and] characteristics of the finger touch.” *Id.* at 88. As with Petitioners' admission with respect to Rogers here, the examiner admitted that Bayram did not explicitly disclose that “fingertips and finger pads produce different sizes, shapes, and orientations” and thus relied on the disclosures in Rosenberg. EX1004 at 89.

An interview was conducted with the examiner, during which it was agreed that “the combination did not have 2 registration modes, one for the finger tip and one for the finger pad.” EX1004 at 8. Further, as described by the applicant:

During the interview, Patent Owner's representatives explained the differences between the cited art and the limitations of clam 1, in particular the “first registering mode for inputting information by a pad of the finger, and a second

registering mode for inputting input information by an end of the finger.” Specifically, Patent Owner’s representatives explained that neither Bayram nor Rosenberg (nor the two in combination) taught these features of claim 1, as outlined in more detail herein. Patent Owner’s representatives also responded to the examiner’s questions regarding the now-settled litigation involving the ’086 Patent, as well as support in the specification for the limitations discussed.

EX1004 at 75.

More particularly, neither Bayram nor Rosenberg nor Chin (nor the combination of these references) teach “a first registering mode for inputting input information by a pad of the finger, and a second registering mode for inputting input information by an end of the finger” (emphasis added). Instead, as discussed during the interview in this proceeding, Bayram at best describes real-time input and signature recognition but does not describe separate registering modes.

EX1004 at 75. In response to the examiner interview and the excerpted arguments above, the reexamination certificate was issued. *See* EX1004 at 8; EX2005, ¶87.

To reiterate, the understanding applied by the examiner to the claimed modes was based on the same understanding put forth by the Patent Owner during the reexamination and as stated above. EX2005, ¶88. Indeed, in describing a “mode” as used in the claims, applicant offered the following explanation:

A POSITA would understand that the concept of a mode is a setting S such that the same action A has different results or effects based on the current value of S. Put differently, when S equals mode M1, then action A leads to result B1. But when S equals mode M2, then same action A leads to result B2. For example, with caps lock “off”, the action of hitting the “W” key is to produce a lower-case “w”. But with caps lock “on”, the same action of hitting the “W” key is to

produce an upper-case “W”. The same action A produces different results (B1, B2) because of the current mode setting S.

In the '086 Patent, touching the screen, the action A, registers values for a fingertip (Figure 10A) in one registering mode M1. The same action A, touching the screen, registers values for a finger pad (Figure 10B) in another registering mode M2. So, in Figures 10A and 10B, the two registering modes have the same action resulting in different outcomes, namely the values registered for finger tips and pads, respectively.

EX1004 at 29 (Decl. of Jacob Wobbrock, ¶¶ 68-69); *see also* EX2005, ¶88.

PO Resp. 13–15. We have considered this argument and reject Patent Owner’s contention that the file history of the '086 patent supports its proposed construction.

Patent Owner points to the rejection of claim 1 during reexamination. *See* PO Resp. 13–16 (quoted above) (citing Ex. 1004 ('086 patent reexamination file history) 86–89). As acknowledged by Patent Owner, “[f]or element [1f], the examiner pointed to a ‘signature’ [disclosed in US Patent No. 8,941,466 (“Bayram”)] that may include ‘finger touch information that includes an area of the finger touch, a shape of the finger touch, an orientation of the finger touch [and] characteristic of the finger touch.’” *Id.* at 13–14 (citing Ex. 1004, 88) (last alteration in original). This passage shows that the Examiner interpreted limitation 1f in such a manner that the “first registering mode” and “the second registering mode” were not different “operational states” or distinct “operational modes” as argued by Patent Owner. Instead, the Examiner relied on a single state or mode in the cited reference as disclosing both “registration modes” of limitation 1f.

With regard to the arguments made during reexamination, Patent Owner fails to identify any argument made by the patent holder that supports its argument that the “first registering mode” and “the second registering mode” as recited are different “operating states” or distinct “operating modes.” *See* PO Resp. 13–16. Indeed, during this reexamination, Patent Owner acknowledged that the cited references disclosed only a single “operating state” or “operating mode.” *See* Ex. 1004, 76–79. We have considered Patent Owner’s arguments, the cited passages, and the entirety of the reexamination record and find no support for Patent Owner’s proposed constructions.

In summary, we find that the intrinsic evidence (the language of the claims, the Specification, and the file history) does not support Patent Owner’s proposed constructions. To the contrary, we determine that the intrinsic evidence strongly supports rejecting Patent Owner’s proposed constructions. The intrinsic evidence supports interpreting limitation 1f according to its plain and ordinary meaning.

Patent Owner argues that “extrinsic evidence supports [its] constructions.” PO Resp. 16 (bolding and capitalization from heading removed). Specifically, Patent Owner argues:

Extrinsic evidence further demonstrates that a POSITA would understand that the first and second registering modes are operational states of the system or device. EX2005, ¶91. For example, PCMag describes “mode” as an “operational state that a system has been switched to.” EX2011 at 1. Similarly, another dictionary provides a computer science definition for mode: “One of several alternative conditions or methods of operation of a device.” EX2012 at 3. As another example, “different contexts that change the interpretation of commands are called modes.” EX2010 at 5. Therefore, these examples demonstrate that construction expressed above for a first

registering mode and a second registering mode is consistent with the understanding of a POSITA. EX2005, ¶91.

Id. Cited paragraph 91 of the Wobbrock Declaration consists of nothing more than a practically verbatim copy of the above-quoted paragraph in the Response without any further explanation or reasoning. *See* Ex. 2005 ¶ 91. We accord Dr. Wobbrock’s testimony little or no weight for the reasons discussed above (*see* fn. 13 *supra*) and in light of the case law relating to the use of expert testimony as extrinsic evidence of claim construction. *See Phillips*, 415 F.3d at 1318 (“a court should discount any expert testimony ‘that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent.’” (quoting *Key Pharms. v. Hercon Labs. Corp.*, 161 F.3d 709, 716 (Fed. Cir. 1998))).

We do accord some weight to the extrinsic evidence relating to the interpretation of “mode” found in Exhibits 2010–2012 cited by Patent Owner. *See Phillips*, 415 F.3d at 1318 (“dictionaries and treatises can be useful in claim construction”). But, we determine that these references are not in conflict, and, in our view, support interpreting the terms in claim 1 according to their plain and ordinary meanings. *See* Pet. Reply 6–7 (arguing “the extrinsic evidence does not support P[atent]O[wner]’s position”).

We accord these terms their plain and ordinary meanings. We determine that claim 1 of the ’086 patent requires that the “*first registering mode for inputting input information by a pad of the finger*” and “*second registering mode for inputting input information by an end of the finger*” are provided in the same “*operating mode.*” We do not construe these terms are

requiring two different operational states for the “*first registering mode*” and the “*second registering mode*” as contended by Patent Owner.

D. Asserted Obviousness of Claims 1, 2, and 4–7 Based on Rogers and Rosenberg

Petitioner challenges claims 1, 2, and 4–7 as being obvious over Rogers and Rosenberg. *See* Pet. 1, 11–46. Patent Owner argues that Petitioner have failed to show that Rogers and Rosenberg teach or suggest, alone or in combination, limitations 1d, 1e, 1f, and the limitation of dependent claim 5. PO Resp. 21–51. We start our analysis of this ground with a description of the disclosures of Rogers and Rosenberg and then consider the arguments and evidence presented by the parties.

1. Rogers (Ex. 1006)

Rogers is titled, “Method and System for Graphical Passcode Security.” Ex. 1006, code (54). Rogers observes that typical alphanumeric passwords for computer security “are easily forgotten or confused between different devices,” and recognizes “a need for secure access methods that facilitate easily remembered and intuitive passcodes and personal identifiers.” *Id.* at 1:20–29. Accordingly, Rogers discloses “methods and systems for reliably and rapidly identifying graphical passcodes and/or identifiers entered on a touchscreen or touchpad of an electronic device.” *Id.* at 1:35–38. In particular, “a user may create a graphical passcode by touching the touchpad in a memorable manner one or more times and storing the resulting information.” *Id.* at 1:46–49. “[A]n envelope is defined for a measurable parameter (e.g. pressure, speed) of the stored graphical passcode.” *Id.* at 1:50–52. “When a user requests access to the secured electronic device” and “inputs the graphical passcode . . . in the same memorable manner,” if the measurable parameter for the input graphical

passcode falls within the envelope, the user is provided access to the device. *Id.* at 1:53–61. “In some embodiments, authentication of the subsequently inputted graphical passcode may employ a measurement of a size (i.e., area) of the object or fingertip applied to the touchsurface.” *Id.* at 7:56–59. The area difference “between a large fingertip and a small stylus tip,” in one example, may be used “as a measured parameter that can be compared against the template graphical passcode for authentication.” *Id.* at 7:59–62.

Figure 1 of Rogers, reproduced below, illustrates an exemplary device capable of using graphical passcodes. Ex. 1006, 2:16–18.

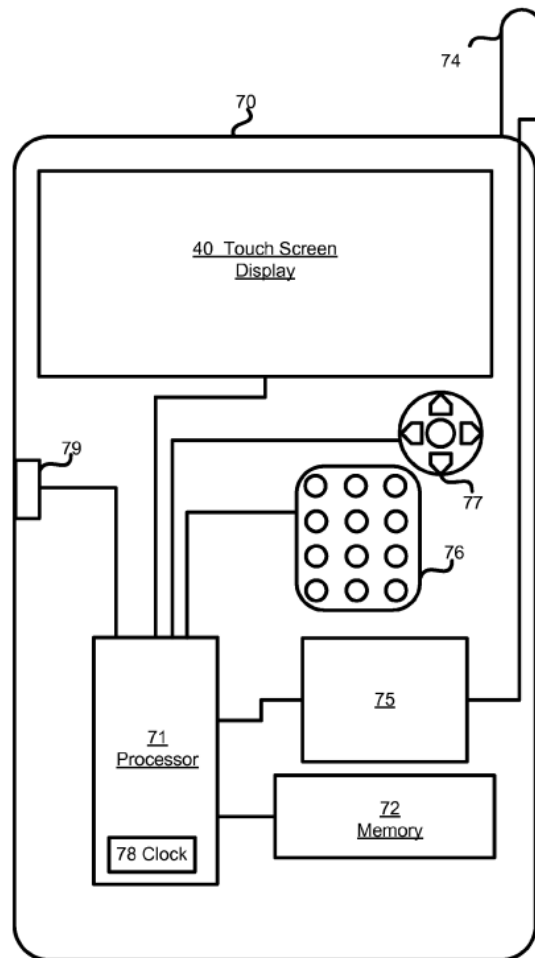


Fig. 1

Figure 1 depicts electronic device 70 that comprises touch screen display 40, processor 71, and memory 72. *Id.* at 5:6–11. “During an initialization procedure, the user can execute a graphical passcode to be used as a template graphical passcode on the touch screen display 40.” *Id.* at 5:16–19. “[E]ach time a user wishes to access the electronic device 70, the user[] provides the graphical passcode.” *Id.* at 5:21–23. “[E]lectronic device 70 may include sensors for detecting and measuring the pressure or force applied to the touchscreen 40,” and this measurement may be “plotted or correlated as a function of time or position.” *Id.* at 5:39–44.

Figure 4 of Rogers is reproduced below.

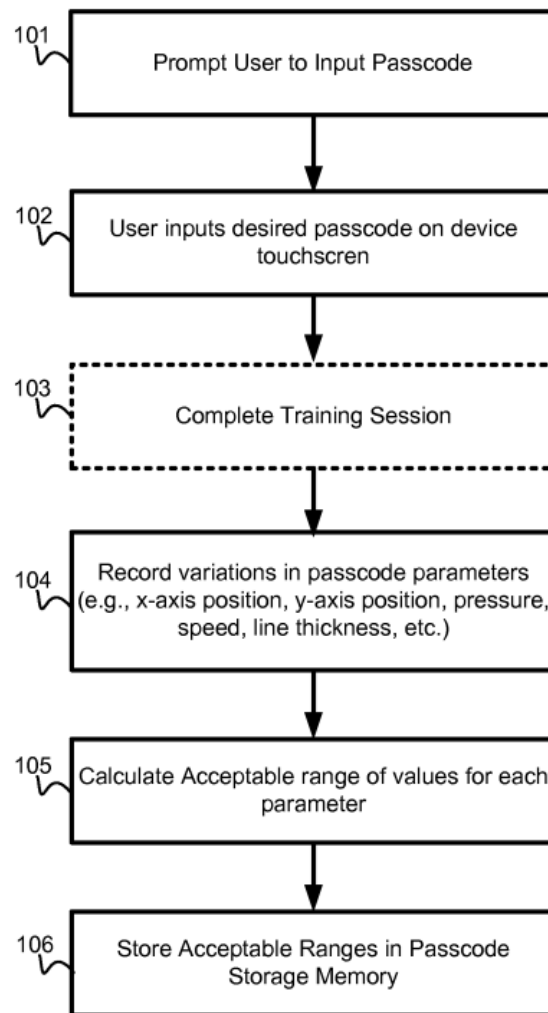


Fig. 4

Figure 4 depicts a process flow diagram for creating and storing a desired graphical passcode. Ex. 1006, 2:30–31. As shown in Figure 4, after prompting in step 101, a user may input a graphical passcode in step 102, “such as by drawing a finger tip across the touchsurface in the appropriate manner.” *Id.* at 8:44–49. Optionally, the user engages in a training session, in step 103, by entering the passcode multiple times in order to “generate the necessary parameter envelopes.” *Id.* at 8:49–54. In step 104, electronic

device 70 records at least one characteristic parameter of the passcode, for example, “X-axis position, Y-axis position, pressure, speed, line thickness, etc.” *Id.* at 8:55–61. In steps 105 and 106, processor 71 of the device calculates “an acceptable envelope or range of values for each characteristic parameter within the passcode template,” and “the acceptable envelope values are stored in the memory 72 as part of the passcode template.” *Id.* at 9:1–25. “The passcode template and its acceptable envelope values are used by the processor 71 to determine the authenticity of a subsequently inputted graphical passcode.” *Id.* at 9:25–28.

2. *Rosenberg (Ex. 1007)*

Rosenberg is titled “Bimodal User Interface Paradigm for Touch Screen Devices.” Ex. 1007, code (54). Rosenberg relates to “a unique targeting methodology for GUIs implemented upon touch screen devices.” *Id.* ¶ 8. Specifically, Rosenberg describes “a bimodal targeting paradigm in which a user may naturally and intuitively select between two targeting modes, a traditional targeting mode (referred to herein as direct-targeting) and a modified targeting mode (referred to herein as offset-targeting).” *Id.* “[D]irect-targeting is particularly well adapted for user interaction with large graphical elements” and this mode may be “engaged when it is determined that the user is tip-pointing upon the touch screen.” *Id.* “Offset-targeting is well adapted for user interaction with small graphical elements” and this mode may be “engaged when it is determined that the user is pad-pointing upon the touch screen interface.” *Id.* Rosenberg provides “a variety of methods for distinguishing between finger-tip interactions and finger-pad interactions, including as assessment of the finger contact area size, shape, and/or orientation.” *Id.* ¶ 27.

3. *Analysis of Claim 1*

For the reasons that follow, we are persuaded that Petitioner establishes that the subject matter of independent claim 1 would have been obvious in view of the combination of Rogers and Rosenberg.¹⁹ Our limitation-by-limitation analysis of claim 1 is provided below.

¹⁹ Patent Owner argues that we should consider U.S. Patent No. RE49,669 E (Ex. 2021) and its file history (Ex. 2022) as evidencing consideration of Rogers and Rosenberg by the Office in connection with substantially similar claims. Paper 45, 2 (“RE49,699 addresses substantially similar patent claims as the claims being challenged in the ’086 Patent.”). RE49,699 includes one independent claim added by reissue, claim 8. Ex. 2021, 10:23–11:16. Claim 8 of RE49,699 is much lengthier than claim 1 of the ’086 patent and includes a number of limitations and a great deal of language not appearing in claim 1 of the ’086 patent. *See id.* Thus, the scope of the claims considered during reissue was much different than the scope of the challenged claims of the ’086 patent. Of particular note, claim 8 of the RE49,699 has limitations reciting “a first password” and “a second password” (*see* Ex. 2021, 11:10–16) which do not appear in any challenged claim of the ’086 patent. As acknowledged by Patent Owner, the Examiner allowed the reissue claims, including claim 8, based on these limitations. Paper 45, 3 (citing Ex. 2022, 607); *see also* Ex. 2022, 585. Moreover, although the Examiner considered art cited here during the reissue proceedings, as acknowledged by Patent Owner, this consideration consisted only of the Examiner indicating that this art submitted in an IDS had been considered. *Id.* at 4. Patent Owner does not direct our attention to, and we discern, no substantive treatment of any prior art cited in this proceeding by the Office during the reissue. *See generally* Ex. 2022. The disputed issues raised in the file history of RE49,699 (*see, e.g.*, Ex. 2022, 536–44 (Amendment arguing allowability)) do not correlate to any of the disputed issues in this proceeding so that RE49,699 (Ex. 2021) and its file history (Ex. 2022) are not of any particular benefit or insight to the decision-making necessary in this proceeding.

[1pre] An information processing apparatus comprising:

Petitioner does not take a position as to whether the preamble of claim is limiting. Pet. 15 (“To the extent that the preamble is limiting, Rogers discloses it.”) (citing Ex. 1003 (Nielson Decl.) ¶ 92). The Petition states, “Rogers discloses that its embodiments may be implemented ‘on various computer or electronic devices, including cellular phones, laptop computers, personal digital assistants (PDAs), smart phones, desktop computers, gaming consoles and the like.’” *Id.* (quoting Ex. 1006, 1:62–66) (also citing *id.* at 3:14–28, 5:6–48, Fig. 1).

Patent Owner does not dispute that the cited art discloses the preamble. *See generally* PO Resp.

We find that the cited art discloses “[a]n information processing apparatus.”

[1a] a touch panel configured to detect a contact of a finger of a user;

Petitioner relies on Rogers for this limitation. Pet. 16–17 (citing Ex. 1003 (Nielson Decl.) ¶¶ 93–94; Ex. 1006, code (57) (Abstract), 1:35–38, 1:45–50, 3:32–39, 5:6–27, 7:56–62, 8:44–49, 10:4–10, Fig. 1). Figure 1 of Rogers is reproduced below.

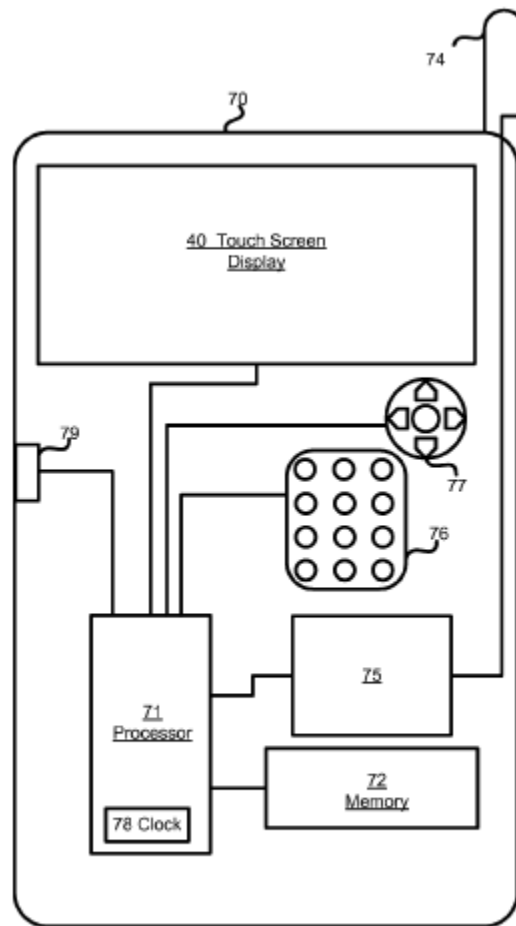


Fig. 1

“Figure 1 depicts typical components of a[n] electronic device 70.” Ex. 1006, 5:6. The depicted device includes touch screen display 40. *Id.* at 5:10–11. Rogers provides that “[t]he touch screen display 40 can be any type of touch screen, such as a resistive-sensing touchscreen, capacitive-sensing touchscreen, infrared sensing touch-screen, acoustic/piezoelectric sensing touchscreen or the like.” *Id.* at 5:11–14. Rogers discloses that “[i]n some embodiments, the electronic device 70 may include sensors for detecting and measuring the pressure or force applied to the touchscreen 40.” *Id.* at 5:39–41.

With regard to this limitation, the Petition states:

Rogers discloses that the “touch screen display 40 can be any type of touch screen,” and explains that a user may “draw[] a finger tip across the touchsurface” to “input[] a graphical passcode.” EX1006, 5:11-27, 8:46-49. For example, Rogers discloses, “[a] method and system for electronic access security [that] uses touches and movements on a touch sensitive surface to determine graphical passcode that are used in a manner similar to passwords.” EX1006, Abstract. “Various embodiments provide methods and systems for reliably and rapidly identifying graphical passcodes and/or identifiers entered on a touchscreen or touchpad of an electronic device.” EX1006, 1:35-38; *see also* 1:45-50; 3:32-39; 7:56-62; 8:44-49; 10:4-10.

Pet. 17.

Patent Owner does not dispute the showing for this limitation. *See generally* PO Resp.

We find that Rogers teaches this limitation.

[1b] a detector configured to detect first information necessary for an identification of the user when the contact is detected between the touch panel and the finger of the user;

Petitioner relies on Rogers for this limitation. Pet. 18–20 (citing Ex. 1003 (Nielson Decl.) ¶¶ 95–99; Ex. 1006, 1:46–61, 5:28–30, 7:56–59, 9:1–28, 13:28–68, Fig. 5).

With regard to “*first information necessary for an identification of the user*,” as recited in claim 1, the Petition states:

Rogers discloses the claimed “first information,” particularly, the “graphical passcode” entered by the user’s finger touch and captured by the device during an “authenticating” process illustrated in FIG. 5. EX1003, ¶96. Rogers discloses that “when a user requests access to the secured electronic device, the user is prompted to enter the graphical passcode.” EX1006, 1:53-55. “The user then inputs

the graphical passcode *by touching the touchscreen or touchpad* in the same memorable manner” that matches the same “measurable parameters” as the user’s previously registered passcode stored in memory. EX1006, 1:46-55. “The measurable parameter of the input graphical password is measured, and compared with the envelope [(e.g., pressure, speed)] of the parameter stored in memory.” EX1006, 1:57-60. This matching process is used to identify the user: “Access is provided if the measured parameter falls within the envelope.” EX1006, 1:45-61. . .

Rogers further discloses that the processor 71 measures the parameters of the inputted graphical passcode for comparison with the graphical passcode template that was previously stored. EX1006, 9:1-28. Regarding the user’s finger, Rogers discloses taking “a measurement of a size (i.e., area) of the object or fingertip applied to the touchsurface.” EX1006, 7:56-59.

Pet. 18, 20 (bracketed material in original). With regard to “*a detector configured to detect . . . when the contact is detected between the touch panel and the finger of the user*” as recited in claim 1, the Petition states:

Rogers discloses that the electronic device 70 can include “sensors for *detecting* and measuring the pressure or force applied to the touchscreen 40.” EX1006, 5:28-30. With respect to the user’s finger and detecting finger contact, Rogers discloses taking “a measurement of a size (i.e., area) of the object or fingertip applied to the touchsurface.” EX1006, 7:56-59. Rogers thus explicitly discloses that the sensors are detectors configured to detect first information necessary for an identification of the user when the contact is detected between the touch panel and the finger of the user. EX1003, ¶97.

Moreover, Rogers at 13:28-59 discloses support for additional sensing technologies that “touchscreen 40” may use for detecting the input of a user’s graphical password, including “resistive, Surface Acoustic Wave, Capacitive, Infrared, Strain Gauge, Optical Imaging, Dispersive Signal technology, acoustic

pulse recognition, and frustrated total internal reflection.”

EX1006, 13:30-35. Rogers also discloses:

Regardless of which touchscreen technology is implemented, when a user touches a particular point on the touchscreen 40 panel, an *electrical signal may be sensed and converted into an interrupt signal by a hardware driver layer 50*.

The hardware driver 50 is a firmware program that converts signals from the touchscreen 40 into data signals which can be stored and interpreted by software applications.

EX1006, 13:60-68. . . .

Thus, Rogers discloses that the sensors of the touchscreen 40, the sensors in conjunction with the hardware driver layer 50, and/or the sensors in conjunction with the hardware driver layer plus the processor 71 are configured to detect the graphical passcode when the contact is detected between the touch panel and the finger of the user. EX1003, ¶¶98-99.

Id. at 18–20.

Patent Owner does not dispute the showing for this limitation. *See generally* PO Resp.

We find that Rogers teaches this limitation.

[1c] a first controller configured to control the information processing apparatus to operate into two operating modes: at least an identification mode and a registering mode, as the operating mode thereof;

Petitioner relies on Rogers for this limitation. Pet. 20–24 (citing Ex. 1003 (Nielson Decl.) ¶¶ 100–103; Ex. 1006, code (57) (Abstract), 1:45–61, 2:32–33, 3:57–4:14, 5:16–27, 8:42–67, 9:22–36, 9:38–42, 9:50–10:1, Figs. 1, 4, 5).

Petitioner identifies processor 71 (*see, e.g.*, Fig. 1 (reproduced *supra*)) as taught by Rogers as the recited controller. Pet. 20. Petitioner identifies the process taught in the flow chart of Figure 5, reproduced below, as the recited identification mode. *Id.* at 21.

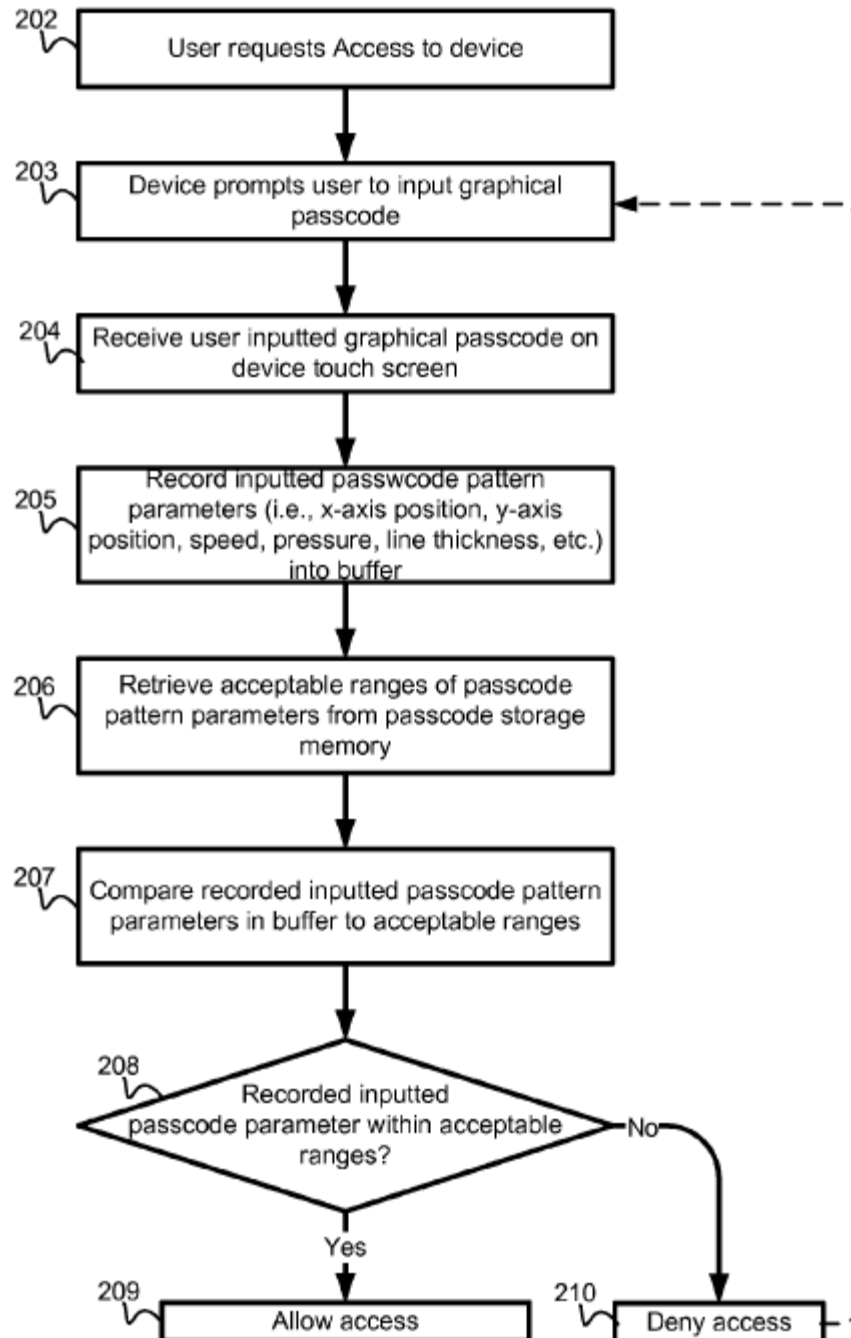


Fig. 5

Figure 5 depicts “a process flow diagram . . . for authenticating a graphical passcode.” Ex. 1006, 2:32–33. The detailed description of Figure 5 in Rogers states that “[t]he electronic device 7 via the processor 71 and display 40 prompts the user to input a graphical passcode that is being used as an authentication credential, step 203.” *Id.* at 9:33–36. With regard to the process depicted in Figure 5 of Rogers, the Petition provides:

As part of an authentication process, the user enters a graphical passcode on the touch surface, and “processor 71 measures various characteristic parameters (*e.g.*, pressure, force, speed, X or Y coordinate data) of the inputted graphical passcode and stores the measured parameter values in a memory buffer, step 205.” EX1006, 9:38-42. At step 207, the entered graphical passcode and parameters are compared to the “graphical passcode template” that was previously stored. EX1006, 9:54-57. And at step 208, the processor 71 determines whether the inputted graphical passcode matches or is coincident to the graphical passcode template. EX1006, 9:57-60. If there is a match, the user is allowed access to the device, and if there is no match, the user is denied access. EX1006, 9:50-10:1. EX1003, ¶102.

Pet. 22–23.

Petitioner identifies the process taught in the flow chart of Figure 4 of Rogers, reproduced below, as the recited registration mode. Pet. 23.

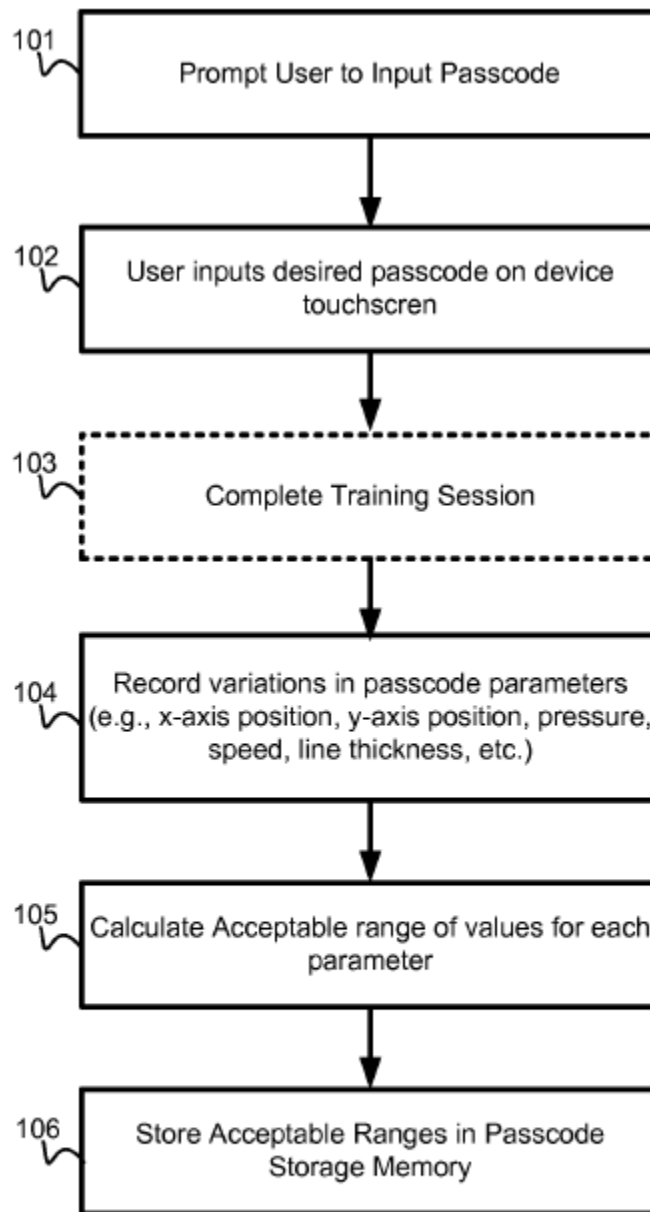


Fig. 4

Figure 4 depicts “a process flow diagram . . . for creating and storing a desired graphical passcode.” Ex. 1006, 2:30–31. The detailed description of Figure 4 in Rogers states that “[t]he electronic device 70 via the

processor 71 and display 40 may prompt a user to input a desired graphical passcode, step 101.” *Id.* at 8:44–46. With regard to the process depicted in Figure 4 of Rogers, the Petition provides:

At step 102, “the user inputs a graphical passcode to be used as a passcode template, . . . such as by drawing a finger tip across the touchsurface in the appropriate manner.” EX1006, 8:42-49. At steps 103 and 104, the process is repeated several times in a training session so that the device can measure and learn the typical variations when the user enters the graphical passcode. EX1006, 8:49-67. Once the graphical passcode and parameters are determined, the graphical passcode is stored in memory. EX1006, 9:22-25. “The passcode template and its acceptable envelope values are used by the processor 71 to determine the authenticity of a subsequently inputted graphical passcode” (in the identification mode). EX1006, 9:25-28.

Pet. 23.

Patent Owner does not dispute the showing for this limitation. *See generally* PO Resp.

We find that Rogers teaches this limitation.

[Id] memory that is configured to store second information relating to the identification of the user, which is stored in advance; and

Petitioner relies on Rogers for this limitation. Pet. 24–27 (citing Ex. 1003 (Nielson Decl.) ¶¶ 104–107; Ex. 1006, code (57) (Abstract), 3:32–39, 5:6–11, 5:19–27, 8:41–67, 9:22–28, 9:36–51, 13:14–20, Figs. 1, 4).

As depicted in Figure 1 (reproduced *supra*) of Rogers, electronic device 70 comprises memory 72. And, the detailed description of Figure 1 states, “[t]he electronic device 70 has . . . a computer readable memory 72.” Ex. 1006, 5:7–9.

With regard to storing in advance information relating to identification of the user, Rogers teaches that “[d]uring an initialization procedure, . . . The template graphical passcode and associated plots or datasets are stored in the non-volatile computer readable memory 72” (Ex. 1006, 5:16–19) and “[t]he electronic device 70 processor 71 measures at least one characteristic parameter of the inputted template graphical passcode and stores the measured at least one characteristic parameter in the internal memory 72 as at least part of the passcode template, step 104” (*id.* at 8:51–59; *see also id.* at 5:21–27, 9:22–28).

Patent Owner disputes the showing for this limitation. PO Resp. 48. However, Patent Owner’s argument relating to this limitation is tied to its proposed constructions of the “first registering mode” and “second registering mode” that are discussed above and rejected. *See* Section II.C.2 *supra*. The Patent Owner’s Response states:

Rogers in view of Rosenberg does not disclose the first and second registering modes in element [1f]. EX2005, ¶¶120-149. As a consequence, Rogers in view of Rosenberg also fails to provide the claimed second information. *Id.*, ¶152. Even though Rogers discusses some information being stored, Rogers fails to disclose that the information being stored is “produced upon basis of the input information, which is inputted at least in the first or second mode,” as claimed. *Id.*

Therefore, for at least the same reasons that Rogers in view of Rosenberg does not disclose element [1f], Rogers in view of Rosenberg does not disclose the claimed second information in element [1d].

PO Resp. 48. We reject this argument because it is not in accordance with the plain and ordinary meaning of the related limitations of claim 1.

We find that Rogers teaches this limitation.

[1e] a second controller configured to execute a specified process when said first information and said second information are coincident within said identification mode, wherein:

Petitioner relies on Rogers for this limitation. Pet. 27–30 (citing Ex. 1003 (Nielson Decl.) ¶¶ 108–114; Ex. 1006, 5:16–27, 8:42–10:3, 13:21–27, 14:28–15:4, Fig. 5).

Petitioner relies on the disclosure in Rogers that the hardware may be “processing elements” (plural) and “may be performed by circuitry that is specific to a given function.” Pet. 27–28 (citing Ex. 1006, 13:21–27). The Petition states:

A POSITA would have understood that Rogers discloses that the separate processes performed by processor 71 are disclosed as being performed by separate processing elements, each of which could be run on a separate module. A POSITA would have understood that these multiple processing elements running on separate modules are the claimed multiple controllers.

Id. at 28 (citing Ex. 1003 ¶ 111).²⁰

With regard to “*execut[ing] a specified process when said first information and said second information are coincident within said identification mode*” as recited, the Petition provides:

Rogers discloses that a processing element of processor 71 (“second controller”) unlocks the electronic device 70 (“specified process”) when the entered graphical passcode (“first information”) matches the stored graphical password template (“second information”). EX1006, 5:16-27; *see also* 8:42-9:28, and FIG. 4 (registration of graphical password

²⁰ We note that “It is well settled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced.” *In re Harza*, 274 F.2d 669, 774 (CCPA 1960); *see also* MPEP § 2144.04 (VI)(B).

template); 9:29-10:3, and FIG. 5 (authentication of user to unlock device by matching entered graphical password to previously stored graphical password template). EX1003, ¶112.

Pet. 28–29.

Patent Owner disputes the showing for this limitation. PO Resp. 21–31. Specifically, Patent Owner argues that Rogers does not disclose a “second controller.”²¹ *Id.* Patent Owner contends that “Rogers discloses a single processor 71 and a single memory 72 and a specific way of connecting all the components in its architecture.” *Id.* at 23 (citing Ex. 1006, Fig. 1). Patent Owner argues that a POSITA would view the first and second controllers as separate units. *Id.* at 24. And, Patent Owner argues that “Rogers does not disclose a distinct, separate second controller by structure or function.” *Id.* Patent Owner asserts that a processor is not a controller and that “a POSITA would not equate any type of processor to a controller. In particular, ‘controller’ is a well understood structure in electrical and computer engineering that, at minimum, has processing, input/output/ (I/O), and memory.” *Id.* at 24–25.

Patent Owner further asserts that an example of the claimed “first controller” and “second controller” is a microcontroller such as described in Exhibit 2008 at 18 (Valdes-Perez, F.E. and Pallas-Areny, R. (2009) *Microcontrollers: Fundamentals and Applications with PIC*. Boca Raton, FL: CRC Press). *Id.* at 25. And, Patent Owner contends that “[a] POSITA

²¹ Patent Owner is not arguing that the term “second controller” needs to be construed. Tr. 38:8–9 (Patent Owner’s counsel stating that “Neither party is arguing that the term needs to be construed.”); *see also id.* at 39:3–4 (Patent Owner’s counsel stating “[B]ut again, neither party is arguing that controller needs to be construed.”).

would recognize that the control unit disclosed in the '086 Patent corresponds to, for example, a microcontroller as disclosed in this book.” *Id.* at 26. And, with regard to the “second controller” element of claim 1, Patent Owner acknowledges:

The determination unit disclosed in the '086 Patent that is disclosed as within the control unit provides support for a separate controller even if it is within control unit 3. This is the case because, even if it runs on the same CPU, the memory it draws from and the code it executes are different than the first controller. EX2005, ¶110. Also, the input it receives—the first information—to perform matching with the second information stored in its memory is different. *Id.* The determination unit relies on reference information from the storage unit and input information from the user (EX1001, 3:27-28), and performs the matching algorithm (EX1001, 1:53-64). EX2005, ¶110. Thus, the '086 Patent discloses two separate controller structures, a control unit 3, and a determination unit, and both are implemented in both hardware and software, utilizing the microcontroller’s CPU, memory, I/O, and program code for their respective and distinct purposes. EX2005, ¶110. And just like the textbook discloses, the component would “fetch” instructions and execute different processes to provide separate structures. See EX2008 at 18; EX2005, ¶110.

Id. at 28.

At oral argument, Patent Owner acknowledged that the first and second controllers do not have to be two distinct, physically separate components or devices. Tr. 40:8–13 (Patent Owner’s counsel arguing: “I want to clarify something. Our argument is not that they have to be two distinct components. What Petitioner has to do is show the two claimed controllers, and they're claimed as performing certain functionality, and they haven't shown the claimed second controller. We've never said that they need to be distinct, physically separate components.”); 42:8–11 (Patent

Owner's counsel agreeing that the "first and second controller do not have to be two distinct, separate devices."). Indeed, Patent Owner acknowledges that, as described in the Specification of the '086 patent, the first controller is the control unit and the second controller is the determination unit that is included in the control unit. *Id.* at 40:13–16 ("[W]e agree, yes, that the control unit is the first controller as claimed, and an example of the second controller would be the determination unit in the specification, and those would meet the first and second controller in the claims."); *see also* PO Resp. 23 (arguing that in the '086 patent that the recited "second controller" is the determination unit). In this regard, the Specification of the '086 patent provides: "The control unit 3 includes . . . a determination unit which determines condition in accordance with input information into the control unit 3." Ex. 1001, 3:26–29. And, Patent Owner agrees that the first and second controller can be met by separate code or software that performs the particular recited functions. Tr. 42:12–43:7.

Patent Owner's contentions with regard to this limitation are inconsistent and contradictory and, thus, non-persuasive. No matter. In light of Patent Owner's acknowledgment that the "second controller" can be included in the same apparatus as the "first controller" and that the "second controller" can be separate code or software that performs the matching and other functions of this limitation ("*a second controller configured to execute a specified process when said first information and said second information are coincident within said registering mode*"), we find that a clear preponderance of the evidence supports Petitioner's showing in the Petition for this limitation.

We find that Rogers teaches this limitation.

[If] in said registering mode, there are provided a first registering mode for inputting input information by a pad of the finger, and a second registering mode for inputting input information by an end of the finger, and said second information relating to the identification of the user is produced upon basis of the input information, which is inputted at least in the first or second mode.

Petitioner relies on a combination of the teachings of Rogers and Rosenberg for this limitation. Pet. 1, 30–38 (citing Ex. 1003 (Nielson Decl.) ¶¶ 115–129; Ex. 1006, 1:66–2:3, 3:3–13, 3:32–39, 3:52, 4:15–19, 5:11–14, 7:56–67, 8:42–67, 10:4–15, 10:44–48, 13:27–35, 13:51–59, Figs. 6A–6E, 7A–7E; Ex. 1007 ¶¶ 27, 28, 30, 45, 50, Figs. 6, 8A, 8B). The showing in the Petition as to this limitation is lengthy, detailed, and well-supported. *See id.*

As discussed above, the Petition (Pet. 23) provides a showing that Rogers teaches two operating modes including a registering mode as depicted in Figure 4 of Rogers and described as “a process flow diagram . . . for creating and storing a desired graphical passcode.” Ex. 1006, 2:30–31. With regard to inputting the graphical passcode, Petitioner relies on the disclosure in Rogers of using the size or area of the object or fingertip applied to the touch surface. Pet. 31–34.

Petitioner acknowledges that Rogers does not explicitly disclose two modes of inputting information using both the pad of the finger and the end of the finger (fingertip) or distinguishing between these two different specific modes of inputting information. *See* Pet. 36 (citing Ex. 1003 ¶¶ 126–129) (To the extent P[atent] O[wner] argues that Rogers does not disclose [this] limitation . . . because Rogers does not explicitly recite the use of ‘finger pad’ and ‘finger tip’ inputs, Rogers in view of Rosenberg renders this limitation obvious.”). For these explicit teachings, the Petitioner

relies on Rosenberg. *Id.* at 36–38. With regard to Rosenberg, the Petition provides:

Rosenberg discloses inputting input information by a pad of the finger (“pad-pointing”) and inputting input information by an end of the finger (“tippointing”): “embodiments of the present invention are operative to distinguish between finger-tip interactions (referred to herein as “tip-pointing”) where the user engages the touch screen with the tip of his or her finger and finger-pad interactions (referred to herein as “pad-pointing”) where the user engages the touch screen with the pad of his or her finger.” EX1007, ¶30. According to Rosenberg, “a variety of methods for distinguishing between finger-tip interactions and fingerpad interactions, including an assessment of the finger contact area size, shape, and/or orientation” are used to “enable mode selection in a particularly natural and intuitive manner, based upon the orientation in which the user’s finger engages the touch screen.” EX1007, ¶¶27, 28, 45.

Id. at 36. And, Petitioner relies on Figures 8A and 8B, reproduced below, and the related description in Rosenberg as providing teachings related to the finger pad and fingertip modes of inputting information. *Id.* at 37–38.

Fig 8a

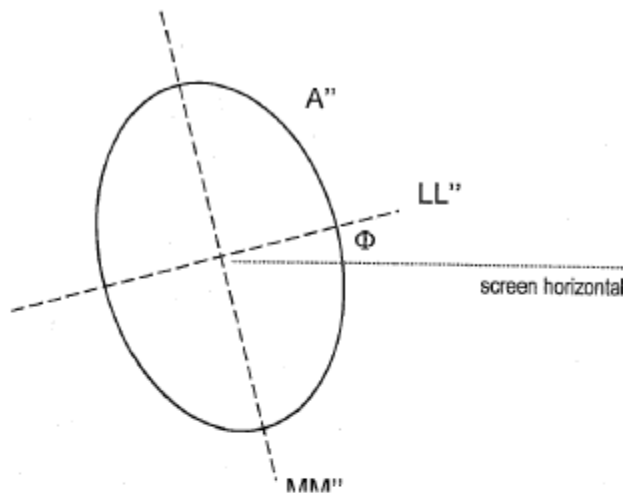
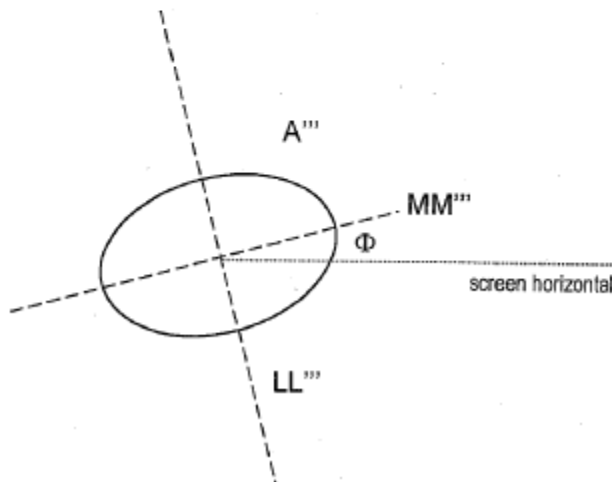


Fig 8b



Figures 8A and 8B depict “two example finger contact areas shown as they might be detected by touch screen sensor hardware.” Ex. 1007 ¶ 22. Figure 8A “represents a characteristic finger contact area for a **pad**-pointing interaction caused by an index finger of a typical user.” *Id.* ¶ 50 (emphasis added). Figure 8B “represents a characteristic finger contact area for a **tip**-pointing interaction as caused by an index finger of a typical user. *Id.* (emphasis added). With regard to figures 8A and 8B, the Petition provides:

The tip-pointing interaction (FIG. 8B) “is substantially smaller in size (both area and circumference), more eccentric in

shape (i.e., less rounded), and is oriented such that the major axis MM' is oriented closer to the reference screen horizontal." EX1007, ¶50. The pad-pointing contact (FIG. 8A) "is substantially larger in size (both area and circumference), is less eccentric in shape (i.e., more rounded), and is oriented such that the minor axis LL" is oriented closer to the reference screen horizontal." EX1007, ¶50. "Thus, each of the size, shape, and/or orientation of the detected finger contact area may be used alone or in combination by the routines of the present invention to distinguish between a tip-pointing interaction and a pad-pointing interaction." EX1007, ¶50; EX1003, ¶129.

Id. at 38.

Patent Owner disputes whether the cited art teaches this limitation. PO Resp. 31–48. Specifically, Patent Owner argues that "Rogers or the Rogers-Rosenberg combination does not disclose first and second registering modes."²² *Id.* at 32.

Patent Owner argues that the Rogers/Rosenberg combination fails to teach multiple registration modes under the plain and ordinary meaning of claim 1. PO Resp. 32–35. Patent Owner contends that "as explained by Dr. Nielson, Petitioners interpret 'first registering mode' and 'second registering mode' as different *input methods* that can be detected." *Id.* at 34. However, Patent Owner never clearly explains why this interpretation is incorrect. The plain and ordinary meaning of limitation 1f is that the "first registering mode" and the "second registering mode" are different input methods.

²² As discussed above with regard to limitation 1c of claim 1 which recites, "operat[ing] in[] two operating modes, at least an identification mode and a registering mode," Patent Owner does not dispute Petitioner's showing that Rogers teaches two operating modes including a registering mode as depicted in Figure 4 of Rogers and described as "a process flow diagram . . . for creating and storing a desired graphical passcode." Ex. 1006, 2:30–31.

Limitation 1f recites “*a first registering mode for inputting input information by a pad of the finger, and a second registering mode for inputting input information by an end of the finger*” or, according to the plain and ordinary meaning, two different input methods (by (1) finger pad and (2) finger tip). Patent Owner acknowledges “Rogers’ ability to ‘distinguish between two inputting two different types of user input’ . . . [d]uring the registration process disclosed in Rogers” (*id.* at 32–33) and that Rogers describes the “ability . . . to ‘discriminate between smaller and larger contact areas’” (*id.* at 33). We reject this argument as the cited art clearly teaches two registration modes.

Patent Owner also argues that the Rogers/Rosenberg combination fails to teach multiple registration modes under Patent Owner’s proposed constructions. PO Resp. 35–45. Specifically, Patent Owner argues that “the different *input methods* described in Rogers are not operational states and thus, cannot be understood as different operational states of the apparatus.” *Id.* at 36. As discussed above, we reject Patent Owner’s proposed constructions and accord this limitation its plain and ordinary meaning. *See* Section II.C.2. *supra*. Accordingly, we reject this argument.

With regard to Rosenberg, Patent Owner acknowledges that “Rosenberg discloses a first targeting mode and a second targeting mode, [and] both modes refer to different *responses* or outcomes after distinguishing different input methods.” PO Resp. 46 (citing Ex. 1007, code (57) (Abstract); *see also id.* at 47 (“the system of Rosenberg . . . describes different outputs in response to different inputs discernable based on parameters of the inputs”). The Abstract of Rosenberg provides:

A touch screen device provides bi-modal user interaction.
The touch screen device includes (a) a touch screen interface,

(b) a detector to detect an area of finger interaction with the touch screen surface, and (c) a processor. The processor determines, based on at least one of a size, a shape, and an orientation of the detected area of finger interaction, whether a current finger interaction is of one of a **finger-tip interaction** type and a **finger-pad interaction** type. **The processor also selects and implements, based on a determined interaction type, one of two different targeting modes**, including a first targeting mode selected and implemented in response to a determined finger-tip interaction type and a second targeting mode selected and implemented in response to a determined finger-pad interaction type. In a preferred embodiment, the first targeting mode is direct-targeting mode and the second targeting mode is an offset-targeting mode.

Ex. 1007, code (57). Thus, Patent Owner acknowledges that, in a context analogous to the claimed invention, Rosenberg teaches two modes—a first fingertip interaction mode and a second finger pad interaction mode. Patent Owner’s argument relating to limitation 1f fails to adequately address the combined teachings of Rogers and Rosenberg and is inconsistent with Patent Owner’s own description of the cited art.

We find that the combination of Rogers and Rosenberg teaches this limitation.

Motivation to Combine the Teachings of Rogers and Rosenberg

Petitioner articulates with supporting reasoning and evidence why a skilled artisan would have been motivated to combine the relied-on teachings of Rogers and Rosenberg. Pet. 11–15 (citing Ex. 1003 (Nielsen Decl.) ¶¶ 86–91; Ex. 1006, code (57) (Abstract), 3:4–10, 4:15–19, 4:48–62, 7:59–62, Figs. 1, 2A; Ex. 1007, code (57) (Abstract), ¶¶ 30, 49, 50, Fig. 1). With regard to motivation to combine, the Petition provides:

Both references are directed to allowing users to input information via touchsurface technology and are analogous art to the '086 patent. . . .

[A] POSITA would have found Rogers and Rosenberg to be compatible because of the technical similarity of their teachings, and a POSITA would have further recognized that Rosenberg's finger orientation disclosures, applied to Rogers' graphical passcode disclosures, would facilitate a "natural and intuitive" means of implementing the teachings of Rogers. A POSITA therefore would have been motivated to look to Rosenberg to improve Rogers, and vice-versa. . . .

A POSITA . . . would have considered the disclosures in Rosenberg and been motivated to modify Rogers' "large fingertip and a small stylus tip" example so that it instead used the "natural and intuitive" finger pad versus finger end distinction discussed in Rosenberg. A POSITA would have found this modification to be a simple substitution of elements well known in the art and would have had a reasonable expectation of success in achieving the benefits disclosed in Rosenberg by making the modification, which involved only routine skill. . . .

[A]dding finger end and finger pad touch detection to Rogers would involve no more than applying a known technique (i.e., finger end and finger pad touch detection/distinction as taught by Rosenberg) to a known device ready for improvement (Rogers' apparatus having "large fingertip and a small stylus tip" capabilities) to yield predictable results (simple to use touch screen interface with multipoint targeting and multi-finger gesturing). . . .

It also would have been obvious to combine Rogers with Rosenberg because both references disclose touch screen interfaces that detect a contact area of a finger. . . .

A POSITA would have considered Rosenberg's disclosures and been motivated to modify the "graphical passcode" features of

Rogers so that the disclosed device is capable of detecting information input by a pad or end of a finger, because it would provide a “generally easily distinguishable” basis upon which to program the device disclosed in Rogers to detect a “measurable parameter” based on “contact area.”

A POSITA would have further recognized that these features of Rogers and Rosenberg could be successfully combined because both references teach a “calibration” mode in which the user trains the device to recognize a specific range of input parameters that allows for some variation in input while remaining within acceptable tolerances. . . .

A POSITA would have had a reasonable expectation of success in modifying Rogers in this manner for at least the same reasons.

Id. (footnote and citations omitted).

Patent Owner does not dispute Petitioner’s showing as to motivation to combine the relevant teachings of Rogers and Rosenberg. *See generally* PO Resp.

We find that Petitioner establishes motivation to combine the relevant teachings of Rogers and Rosenberg.

4. Summary as to Claim 1

Petitioner has shown that the combination of Rogers and Rosenberg teaches all the limitations of claim 1. Petitioner provides articulated reasoning with rational underpinnings to support combining the relevant teachings of Rogers and Rosenberg. We conclude that claim 1 is unpatentable as obvious in light of Rogers and Rosenberg.

5. Claim 5

Claim 5 of the ’086 patent recites:

The information processing apparatus according to claim 1, wherein the touch panel comprises a display screen

configured to display a first image and first descriptive text associated with the first registering mode and a second image and second descriptive text associated with the second registering mode.

Ex. 1004, 4 (claim 5 was added during reexamination of the '086 patent).

Petitioner relies on its showing for claim 1 and a combination of the teachings of Rogers and Rosenberg for claim 5. Pet. 1, 40–43 (citing Ex. 1003 (Nielson Decl.) ¶¶ 134–138; Ex. 1006, 3:4–5, 5:6–16, 8:1–12, Fig. 1; Ex. 1007 ¶¶ 30, 31, 43, Fig. 1). Petitioner shows that Figure 1 of Rogers and the related description and Figure 1 of Rosenberg and the related description both disclose a touch panel comprising a display screen. *Id.* at 40–42. Petitioner shows that Rosenberg teaches displaying images and text on the display screen. *Id.* at 42 (citing Ex. 1007 ¶¶ 30 (“The display screen 12 is a touch screen . . . A graphical user interface [GUI] is displayed upon the screen, including buttons, icons, sliders, menus, and other GUI elements known in the art.”), 31 (“a touch screen GUI . . . with large graphical elements such as displayed buttons and icons [and] . . . small graphical elements such as text, small buttons, hyperlinks, pixels, and other graphical elements”), 43 (“graphical elements, such as individual letters in a textual display”).

With regard to combining the relevant teachings of Rogers and Rosenberg, the Petition provides:

A POSITA would have found it obvious for the Rogers and/or Rosenberg touchscreen displays to display a first image and first descriptive text associated with the first registering mode (finger pad registering mode) and a second image and second descriptive text associated with the second registering mode (fingertip/end registering mode). EX1003, ¶137. One benefit of doing so would be to help/guide the user through the

processes to achieve accurate and repeatable results. *Id.* Indeed, Rogers explicitly discloses using both text and a symbol (image) so that the “user may have an increased authentication rate.” EX1006, 8:10-12. According to Rogers, “the electronic device 70 can provide the user with a starting point or ending point for the graphical passcode. For example, the electronic device 70 may display an ‘X’ or target symbol at the start position or end position of the graphical passcode.” EX1006, 8:1-5. “This may tend to decrease the authentication failure rate and help the user to more accurately render the graphical passcode in embodiments where template graphical passcode data includes plots of measured pressure and/or speed is plotted against position.” EX1006, 8:5-9.

A POSITA would have understood that Rogers text and symbols would be used for both fingertip and finger pad operations such as those described in limitation [1f] and rendered obvious by Rogers and Rosenberg as both techniques would benefit from the same modifications in order to achieve increased authentication rates. EX1003, ¶138. Moreover, it would have been obvious to try as one of a few design choices (use of text and symbol guidance versus no guidance) for both forms of input. A POSITA would have had a reasonable expectation of success implementing these features on the Rogers-Rosenberg device because Rogers already had the technology to do so and was already doing so for its embodiments. *Id.*

Id. at 42–43. The showing in the Petition as to claim 5 is detailed and well-supported.

Patent Owner disputes the showing as to claim 5. PO Resp. 49–51. Specifically Patent Owner argues:

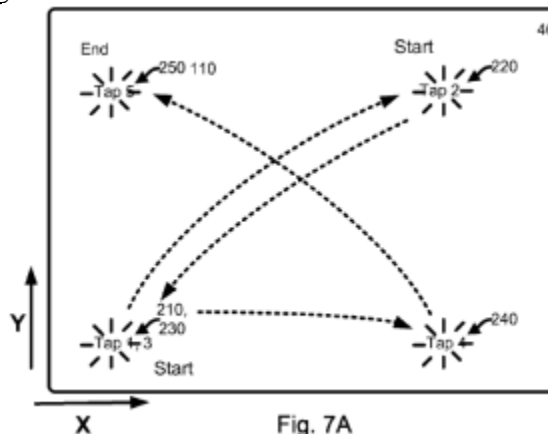
Neither Rogers nor Rosenberg (or the combination) discloses “a first image and first descriptive text associated with the first registering mode and a second image and second descriptive text associated with the second registering mode.” Indeed, Petitioners rely on the physical components from

Rogers and Rosenberg but import the knowledge of POSITA to describe the images and descriptions required by claim 5.

Id. at 49. Patent Owner further argues that “[a]bsent from the Petition is an articulated reason for why different forms of input would require different images and text *during a registration process.*” *Id.* at 50.

Petitioner responds to Patent Owner's argument relating to claim 5 as follows:

P[atent]O[wner] asserts that “Rogers offers no discussion of any particular graphical user interface implemented to register the graphical password.” POR 49. That is wrong. Rogers states that Figures 2A, 6A, 7A, and 8A each “illustrate[] an exemplary graphical passcode” registered by a user. EX1006, 2:20-43. Figure 7A below shows an example of the graphical passcode inputs on the “touchsurface” of the Rogers device.



EX1006, Fig. 7A. Rogers also teaches that the graphical passcode entered by the user can be accompanied by visible indicators such as “an ‘X’ or target symbol.” EX1006, 8:1-5. As explained in the Petition, these disclosures from Rogers—combined with Rosenberg’s disclosures regarding a similar touchsurface that can display “icons” and other “graphical elements”—would have provided more than a sufficient basis to render obvious the elements of claim 5. Petition, 40-43.

P[atent] O[wner] also argues that the Petition lacks “an articulated reason for why different forms of input would require different images and text during a registration process.”

POR 50. But the Petition, supported by Dr. Nielson's declaration, explains that it would have been obvious to display an image and descriptive text during registration to confirm for the user the location and touch input type registered by the device (e.g., to confirm, in Figure 7A above, the location of each tap and to confirm that the tap was registered as a tip/pad input). EX1003, ¶¶ 134-38. By providing visual confirmation of the location and input method of each registration input, the device would improve the accuracy of passcode registration and subsequent authentication. *Id.* P[atent]O[wner] does not address these arguments at all.

Pet. Reply 20–21.

After considering all the arguments and evidence presented by the parties with regard to claim 5, we find that the clear preponderance of the evidence favors Petitioner. We find that all the elements of claim 5 are taught by the cited art and that there existed a motivation to combine the relevant teachings of the cited references. We conclude that claim 5 is unpatentable as obvious.

6. *Claims 2, 4, 6, and–7*

Petitioner also asserts that dependent claims 2, 4, 6, and 7 are obvious in view of a combination of the teachings of Rogers and Rosenberg. Pet. 1, 38–40, 43–46. The Petition provides a detailed and well-supported showing that the additional limitations recited in dependent claims 2, 4, 6 and 7 are taught by Rogers and Rosenberg. *Id.*

Patent Owner does not specifically address the showing in the Petition as to dependent claims 2, 4, 6, and 7. *See generally* PO Resp.

We find that Petitioner has established that all the limitations of claims 2, 4, 6, and 7 are taught by the cited art and that Petitioner has articulated reasoning with rational underpinnings to combine the relevant

teachings of the cited art. We conclude that claims 2, 4, 6, and 7 are unpatentable as obvious.

E. Asserted Obviousness of Claims 9–14 Based on Rogers, Rosenberg, and Miyazawa

Petitioner challenges dependent claims 9–14 as being obvious over Rogers, Rosenberg, and Miyazawa. *See* Pet. 1, 46–63.

1. Miyazawa (Ex. 1008)

Miyazawa is titled “Information Processing Apparatus, Input Operation Determination Method, and Input Operation Determination Program.” Ex. 1008, code (54). Miyazawa relates to an information processing apparatus with a touch panel that detects touch positions and can determine, for example, when “flicking is performed,” which is detected by “movement of the touch position while the operation surface is touched with [an] instruction object,” or when “tapping is performed,” which is detected when there is no movement of the touch position. *Id.* at 1:46–57.

Miyazawa’s apparatus can also determine “whether two fingers are moved on the surface parallel to the operation surface based on both the touch position and the proximity position detected after the touch of the finger, and determines whether the two-point tapping is performed or the pinch-in or pinch-out is performed.” *Id.* at 15:44–49.

2. Claims 9–14

The Petition provides a detailed and well-supported showing that the additional limitations recited in dependent claims 9–14 are taught by Rogers, Rosenberg, and Miyazawa. Pet. 49–63. Petitioner articulates with supporting reasoning and evidence why a skilled artisan would have been motivated to combine the relied-on teachings of Rogers, Rosenberg, and Miyazawa. *Id.* at 46–49.

Patent Owner does not specifically address the showing in the Petition as to dependent claims 9-14. *See generally* PO Resp.

We find that Petitioner has established that all the limitations of claims 9–14 are taught by the cited art and that Petitioner has articulated reasoning with rational underpinnings to combine the relevant teachings of the cited art. We conclude that claims 9–14 are unpatentable as obvious.

F. Asserted Obviousness of Claims 1, 2, and 4–7 Based on Rogers and Rekimoto

Petitioner challenges claims 1, 2, and 4–7 as being obvious over Rogers and Rekimoto. *See* Pet. 1, 63–75. For claim 1, Petitioner relies on Rekimoto for the same limitation (limitation 1f) for which Petitioner relied on Rosenberg. *Id.* at 68–71.

1. Rekimoto (Ex. 1010)

Rekimoto is titled “Input Device, Information Processing Apparatus, Information Processing Method, and Program.” Ex. 1010, code (54). Rekimoto describes a problem relating to an input device that uses a pressure value “to zoom in or out on an image of a map in a navigation system or the like.” *Id.* at 1:47–48. Namely, “a user can increase or decrease his/her pressing force to increase the zoom percentage from 0 (no zoom in/zoom out), or to step back to 0 (no zoom in/zoom out), but cannot zoom out from 0 (no zoom in/zoom out).” *Id.* at 1:48–52. Rekimoto states it is desirable to provide a solution to “control an input in both positive and negative direction from zero without changing the position of a finger or the like.” *Id.* at 2:1–5. Rekimoto proposes using “two kinds of values, namely a contact area and a pressing force by a finger or an input device,” where “the detected contact area is discriminated by a predetermined threshold [and] the detected pressure value can be interpreted in one of two directions, a positive

or a negative direction from zero.” *Id.* at 2:8–15. In an embodiment, by pressing the input device “with a fingertip, the user can perform first processing for zooming in on an image in response to the pressing force,” and by pressing the input device “with the finger pad, the user can perform second processing for zooming out on the image in response to the pressing force.” *Id.* at 5:31–37.

2. Claim 1

For the preamble and all the limitations of claim 1, except last limitation 1f, Petitioner relies on Rogers as discussed above. *See* Pet. 67. The Petition provides a showing that the combination of Rogers and Rekimoto teaches all the elements of the limitation 1f of claim 1. *Id.* at 67–71 (citing Ex. 1003 (Nielsen Decl.) ¶¶ 177–181, Ex. 1010, 5:13–37, Figs. 2A, 2B, 3A, 3B). Limitation 1f is:

in said registering mode, there are provided a first registering mode for inputting input information by a pad of the finger, and a second registering mode for inputting input information by an end of the finger, and said second information relating to the identification of the user is produced upon basis of the input information, which is inputted at least in the first or second mode.

Ex. 1001, 8:54–60. With regard to Rogers, the Petition provides:

As shown above in Ground 1 [Rogers/Rosenberg combination], Petitioners submit that Rogers alone renders obvious a registering mode providing a first registering mode for inputting input information by a pad of the finger, and a second registering mode for inputting input information by an end of the finger, and said second information relating to the identification of the user is produced upon basis of the input information, which is inputted at least in the first or second mode.

Pet. 67–68. Petitioner acknowledges that “Rogers does not explicitly recite the use of finger pad and fingertip inputs” and relies on Rekimoto for these teachings. *Id.* at 68. The Petitioner contends, “Rekimoto discloses inputting input information by a pad of the finger (‘finger pad’) and inputting input information by an end of the finger (‘fingertip’).” *Id.* Petitioner relies on Figures 2A, 2B, 3A, and 3B, reproduced below, and the detailed description of these figures in the Specification of Rekimoto. *Id.* at 68–71.

FIG.2A

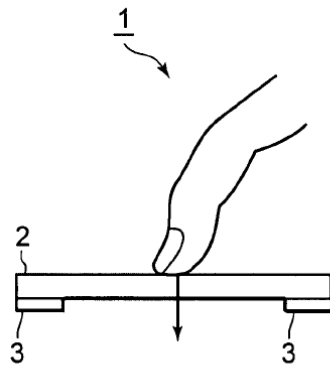


FIG.2B

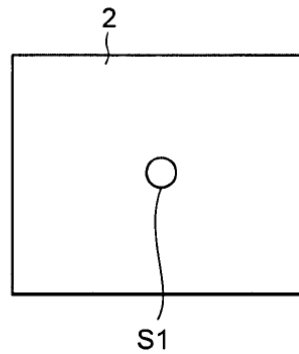


FIG.3A

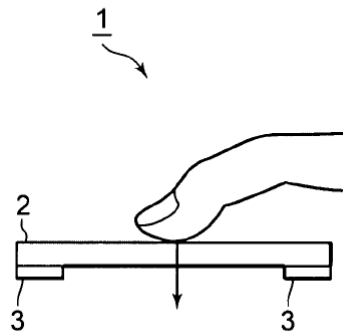
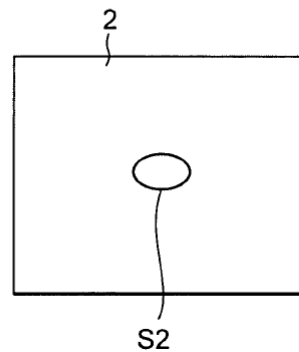


FIG.3B



Figures 2A, 2B, 3A, and 3B depict examples of input operations using a finger. Ex. 1010, 5:12–13. The relied-on passage in the Specification of Rekimoto states:

FIGS. 2A and 2B are a schematic sectional view and a plan view both showing the control panel (the surface of the contact sensor section 2) of an input section of the input device 1 which a user presses by erecting a finger and thus with a **fingertip**. During the input operation, the contact area of the contact sensor section 2 occupied by the **fingertip** equals a small area S1 such as shown in FIG. 2B. FIGS. 3A and 3B are a schematic sectional view and a plan view both showing the control panel (the surface of the contact sensor section 2) of the input device 1 which the user presses by laying down the finger and thus with the **finger pad**. The contact area of the contact sensor section 2 touched by the **finger pad** equals a large area S2 such as shown in FIG. 3B. That is, compared with the area S1, which is an area of the contact sensor section 2 surface touched by the **fingertip**, the area S2 touched by the **finger pad** is larger (wider). These areas S1, S2 can be clearly distinguished by using a threshold St of a specified area as a boundary. Therefore, by pressing the input device 1 by erecting a finger and thus with a **fingertip**, the user can perform first processing for zooming in on an image in response to the pressing force. Similarly, by pressing the input device 1 by laying the finger down and thus with the **finger pad**, the user can perform second processing for zooming out on the image in response to the pressing force.

Id. at 5:13–37 (emphasis added). We find that Rekimoto teaches two input modes—a fingertip mode and a finger pad mode—as recited in limitation 1f.

Patent Owner argues that this ground fails as to limitations 1e and 1f for the same reasons that the first asserted ground fails as to these limitations. *See* PO Resp. 51–57. Patent Owner’s Response provides:

Ground 3 relies on the same faulty arguments grounded in Rogers alone for claim limitations [1e] and [1f] distinguished above in Sections IV(A) [relating to limitation 1e] and IV(B) [relating to limitation 1f]. A combination of Rogers and Rekimoto does not change the result. Thus, Ground 3 fails for at least the same reasons. EX2005, ¶162.

Id. at 51. We reject this argument for the reasons discussed above in relation to these claim limitations. *See* Section II.D.3. *supra*.

We find that the combination of Rogers and Rekimoto teaches all the limitations of claim 1.

Petitioner articulates, with supporting reasoning and evidence, why a skilled artisan would have been motivated to combine the relied-on teachings of Rogers and Rekimoto. *See* Pet. 63–67 (citing Ex. 1003 (Nielsen Decl.) ¶¶ 164–170; Ex. 1006, code (57) (Abstract), 4:15–19, Figs. 1, 2A; Ex. 1007, code (57) (Abstract), 1:53–67. 5;18–31, Fig. 1). With regard to motivation to combine, the Petition provides:

It would have been obvious to a POSITA to combine the teachings of Rogers and Rekimoto because both references share the same field of inputting information via touchsurface technology, which makes them analogous art to the '086 patent. . . . Additionally, Rekimoto discloses its fingertip and finger pad touches as a solution to provide “continuous and smooth operation,” which was a problem with certain operations at the time . . . and a POSITA would have understood that this would have added a benefit to Roger’s device. . . .

[A] POSITA would have found the combination obvious to try due to the similarity of the technical teachings of the art, and also because a POSITA would have recognized that Rekimoto’s disclosures, applied to Rogers, would facilitate “continuous and smooth operation” for certain touch functions in Rogers. A POSITA therefore would have been motivated to look at Rekimoto to improve Rogers, and vice-versa. . . .

[A] POSITA would have recognized that the disclosure in Rogers of distinguishing between a “large fingertip and a small stylus tip” based on “area difference[s]” between the two input types would have been better accomplished through Rekimoto’s

disclosure of its fingertip and finger pad distinction technique. . . .

A POSITA therefore would have considered the disclosures in Rekimoto and been motivated to modify Rogers' "large fingertip and a small stylus tip" example so that it instead used the finger pad versus fingertip distinction disclosed by Rekimoto. A POSITA have found this modification to be a simple substitution of elements well known in the art and would have had a reasonable expectation of success in achieving the benefits disclosed in Rekimoto by making the modification, which involved only routine skill. . . .

Moreover, adding Rekimoto's fingertip and finger pad touch detection to Rogers would simply involve applying a known technique (i.e., fingertip and finger pad touch detection/distinction as taught by Rekimoto) to a known device ready for improvement (Roger's apparatus having large fingertip and a small stylus tip capabilities) to yield predictable results (simple to use touch screen interface with multipoint targeting and multi-finger gesturing). . . .

It also would have been obvious to combine Rogers with Rekimoto because both references disclose touch screen interfaces that detect a contact area of a finger. . . .

A POSITA would have further recognized that these features of Rogers and Rekimoto could be combined because the fingertip and finger pad are distinguishable inputs for a user, and because Rekimoto teaches the ability to "clearly distinguish[]" between the two, it would have been obvious to modify Rogers (to the extent not already taught) to receive input information including a pad or tip of the finger. . . . Because Rogers also teaches the contact area on the touchscreen may be one of the parameters for the graphical passcode, Rogers expressly suggests to a POSITA the ease of making the modification to detect the tip/pad of the finger and that the area of contact is a desirable parameter for inputting an authentication passcode. . . . A POSITA would have had a

reasonable expectation of success of modifying Rogers in this manner for at least the same reasons.

Id. (citations omitted).

Patent Owner does not dispute Petitioner's showing as to motivation to combine the relevant teachings of Rogers and Rekimoto. *See generally* PO Resp.

We find that Petitioner establishes motivation to combine the relevant teachings of Rogers and Rekimoto.

Petitioner has shown that the combination of Rogers and Rekimoto teaches all the limitations of claim 1. Petitioner provides articulated reasoning with rational underpinnings to support combining the relevant teachings of Rogers and Rekimoto. We conclude that claim 1 is unpatentable as obvious in view of Rogers and Rekimoto.

3. *Claims 2 and 4–7*

Petitioner also asserts that dependent claims 2 and 4–7 are obvious in view of a combination of the teachings of Rogers and Rekimoto. Pet. 1, 72–75. For these dependent claims, Petitioner relies on its showing relating to the Rogers/Rekimoto combination as to independent claim 1. *Id.* at 72. The Petition provides a showing that the additional limitations recited in dependent claims 2 and 4–7 are taught by Rogers and Rekimoto. *Id.* at 72–75.

Patent Owner does not specifically address the showing in the Petition as to dependent claims 2, 4, 6, and 7. *See generally* PO Resp.

Patent Owner argues that the combination of Rogers and Rekimoto fails to disclose the limitation recited in claim 5. PO Resp. 55–57. Claim 5 of the '086 patent recites:

The information processing apparatus according to claim 1, wherein the touch panel comprises a display screen configured to display a first image and first descriptive text associated with the first registering mode and a second image and second descriptive text associated with the second registering mode.

Ex. 1004, 4.

Petitioner relies on Rogers for disclosing a “*touch panel compris[ing] a display screen.*” Pet. 72 (citing Ex. 1006, 3:4–5 (“As used herein, a ‘touchscreen’ is a touch input device with an associated image display.”), 5:6–16 (“The electronic device 70 has . . . a touch screen display 40. The touch screen display 40 can be any type of touch screen. . . . The various embodiments are not limited to any particular type of touchscreen or touchpad technology.”). Petitioner also relies on Rekimoto as disclosing a touch display. *Id.* at 73. Rekimoto provides, “the contact sensor section 2 may include a touch sensor, a touch pad, or a touch panel.” Ex. 1010, 4:3–5.

Petitioner also relies on both Rogers and Rekimoto for disclosing displaying images and text in the registering modes. Pet. 73–74. Rogers provides:

In an alternative embodiment, the electronic device 70 can provide the user with a starting point or ending point for the graphical passcode. For example, the electronic device 70 may display an “X” or target symbol at the start position or end position of the graphical passcode.

Ex. 1006, 8:1–5. Rekimoto provides that the display screen includes buttons with “function names, icons representing functions, or the like respectively indicated thereon.” Ex. 1010, 9:38–42. The Petition states:

A POSITA would have found it obvious for the Rogers and/or Rekimoto touchscreen displays to display a first image

and first descriptive text associated with the first registering mode (finger pad registering mode) and a second image and second descriptive text associated with the second registering mode (finger tip/end registering mode). EX1003, ¶186. One benefit of doing so would be to help/guide the user through the processes to achieve accurate and repeatable results. *Id.* Indeed, Rogers explicitly discloses using both text and a symbol (image) so that the “user may have an increased authentication rate.” EX1006, 8:10-12. According to Rogers, “the electronic device 70 can provide the user with a starting point or ending point for the graphical passcode. For example, the electronic device 70 may display an ‘X’ or target symbol at the start position or end position of the graphical passcode.” EX1006, 8:1-5. “This may tend to decrease the authentication failure rate and help the user to more accurately render the graphical passcode in embodiments where template graphical passcode data includes plots of measured pressure and/or speed is plotted against position.” EX1006, 8:5-9.

A POSITA would have understood that Rogers text and symbols would be used for both fingertip and finger pad operations such as those described in limitation [1f] and rendered obvious by Rogers and Rekimoto as both techniques would achieve the same benefits (e.g., increased authentication rate). EX1003, ¶187. Moreover, it would have been obvious to try as one of a few design choices (use of text and symbol guidance versus no guidance) for both forms of input. A POSITA would have had a reasonable expectation of success implementing these features on the Rogers-Rekimoto device because Rogers already had the technology to do so and was already doing so for its embodiments. *Id.*

Pet. 74–75.

Patent Owner (incorrectly) argues that “Petitioners rely on the knowledge of POSITA alone as describing the images and descriptions required by claim 5.” PO Resp. 55. Patent Owner also argues that Petitioner’s showing as to the first and second registering modes in limitation 1f is deficient. *Id.* at 55–56 (“[W]here Petitioners miss the mark

in identifying a first and second registering mode, Petitioners cannot provide a sufficient explanation for finding it obvious to display an image and corresponding text for each registering mode.”). Considering the arguments of the parties and weighing the related evidence presented, we determine that, with regard to claim 5 and the combination of Rogers and Rekimoto, the clear preponderance of the evidence favors the position of Petitioner.

We find all the limitations of claims 2 and 4–7 are taught by Rogers and Rekimoto. We conclude that claim 2 and 4–7 are unpatentable as obvious in view of Rogers and Rekimoto.

G. Asserted Obviousness of Claims 9–14 Based on Rogers, Rekimoto, and Miyazawa

The Petition provides a showing that the additional limitations recited in dependent claims 9–14 are taught by Rogers, Rekimoto, and Miyazawa. Pet. 78–79. Petitioner articulates with supporting reasoning and evidence why a skilled artisan would have been motivated to combine the relied-on teachings of Rogers, Rosenberg, and Miyazawa. *Id.* at 75–78.

Patent Owner does not specifically address the showing in the Petition as to dependent claims 9–14. *See generally* PO Resp.

We find that Petitioner has established that all the limitations of claims 9–14 are taught by the cited art and that Petitioner has articulated reasoning with rational underpinnings to combine the relevant teachings of the cited art. We conclude that claims 9–14 are unpatentable as obvious.

III. CONCLUSION²³

We conclude that claims 1, 2, 4–7, and 9–14 of the ’086 patent are unpatentable. A summary of our conclusions is set forth in the table below.

²³ Should Patent Owner wish to pursue amendment of the challenged claims

Claims	35 U.S.C. §	Reference(s)	Claims Shown Unpatentable	Claims Not shown Unpatentable
1, 2, 4–7	103	Rogers, Rosenberg	1, 2, 4–7	
9–14	103	Rogers, Rosenberg, Miyazawa	9–14	
1,2, 4–7	103	Rogers, Rekimoto	1, 2, 4–7	
9–14	103	Rogers, Rekimoto, Miyazawa	9–14	
Overall Outcome			1, 2, 4–7, 9–14	

IV. ORDER

Accordingly, it is

ORDERED that claims 1, 2, 4–7, and 9–14 of U.S. Patent No. 8,982,086 B2 are determined to be unpatentable; 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.

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).

IPR2024-00828
Patent 8,982,086 B2

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