

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

**SAMSUNG ELECTRONICS CO., LTD. AND
SAMSUNG ELECTRONICS AMERICA, INC.,**
Petitioners

v.

MAXELL, LTD.,
Patent Owner

Inter Partes Review No.: IPR2024-00828

**PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO.
8,982,086 UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. §§ 42.1-100, ET SEQ**

TABLE OF CONTENTS

I.	Introduction.....	1
II.	Statement of Precise Relief Requested.....	1
III.	The '086 Patent.....	1
	A. Overview of the '086 Patent.....	1
	B. '086 Patent Prosecution History.....	5
	C. Reexamination of the '086 Patent	5
	D. Reissue of U.S. Patent No. 8,654,093	5
	E. Person of Ordinary Skill in the Art	6
	F. Claim Construction Under 37 C.F.R. § 42.104(b)(3)	6
	1. “first information necessary for an identification of the user” (all claims)	7
	2. “second information relating to the identification of the user” (all claims)	8
IV.	Prior Art References	9
	A. Rogers.....	9
	B. Rosenberg.....	9
	C. Miyazawa	9
	D. Rekimoto	10
V.	Legal Standard for Obviousness.....	10
VI.	Ground 1: Rogers and Rosenberg.....	11
	A. Motivation to Combine	11
	B. Claim 1	15
	1. [1pre] An information processing apparatus comprising:	15
	2. [1a] a touch panel configured to detect a contact of a finger of a user;	16
	3. [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;.....	18
4.	[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;.....	20
5.	[1d] memory that is configured to store second information relating to the identification of the user, which is stored in advance; and	24
6.	[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:.....	27
7.	[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.....	30
C.	Claim 2. The information processing apparatus according to claim 1, wherein said first information includes a position and an area of the finger contacting with said touch panel.....	38
D.	Claim 4. The information processing apparatus according to claim 1, wherein said specified process includes releasing of a lock of resting an operation of said information processing apparatus.....	39
E.	Claim 5. 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.....	40
F.	Claim 6. The information processing apparatus according to claim 1, wherein the touch panel includes one or more capacitive sensors, such that the contact of the finger is detected	

	based on variations in capacitance of the one or more capacitive sensors in response to the contact.	43
G.	Claim 7. The information processing apparatus according to claim 1, wherein the touch panel comprises a display screen configured to display information during the identification mode that informs the user to use a finger to execute an unlock operation of the information processing apparatus.....	45
VII.	Ground 2: Rogers, Rosenberg, Miyazawa.....	46
A.	Motivation to Combine	46
B.	Claim 9. The information processing apparatus according to claim 1, wherein the first controller is configured to execute one or more of tapping, dragging, flicking, and pinching operations based on the detection of contact of the finger.	49
C.	Claim 10. The information processing apparatus according to claim 9, wherein the first controller is configured to execute tapping operations, and the tapping operations include detection of contact of the finger for a first time period.....	52
D.	Claim 11. The information processing apparatus according to claim 9, wherein the first controller is configured to execute dragging operations, and the dragging operations correspond to the user moving the finger while maintaining contact for a first time period.....	53
E.	Claim 12	55
	1. [12a] The information processing apparatus according to claim 9, wherein the first controller is configured to execute flicking operations, and the flicking operations correspond to the user sliding the finger for a first time period, and.....	55
	2. [12b] wherein the first controller is configured to execute pinching operations, and the pinching operations correspond to the user establishing two contacts and increasing the distance between the established two contacts.....	57
F.	Claim 13	58
	1. [13a] The information processing apparatus according to claim 9, wherein the first controller is configured to	

	execute said dragging operations, and the dragging operations correspond to the user moving the finger while maintaining contact for a first tie period, and.....	58
2.	[13b] wherein the first controller is configured to execute said flicking operations, and the flicking operations correspond to the user sliding the finger for a second time period that is shorter than the first time period.....	58
G.	Claim 14. The information processing apparatus according to claim 1, wherein the touch panel comprises a display screen displaying a plurality of icons corresponding to applications being executed on the information processing apparatus, and the information processing apparatus is configured to execute an operation for moving at least one of the plurality of icons based on an operation that requires contact by a finger for a predetermined period of time.	60
VIII.	Ground 3: Rogers and Rekimoto	63
A.	Motivation to Combine	63
B.	Claim 1	67
1.	[1pre]	67
2.	[1a]	67
3.	[1b]	67
4.	[1c]	67
5.	[1d]	67
6.	[1e]	67
7.	[1f]	67
C.	Claim 2	72
D.	Claim 4	72
E.	Claim 5	72
F.	Claim 6	75
G.	Claim 7	75
IX.	Ground 4: Rogers, Rekimoto, Miyazawa	75
A.	Motivation to Combine	75

B.	Claim 9	78
C.	Claim 10	78
D.	Claim 11	78
E.	Claim 12	78
1.	[12a]	78
2.	[12b]	78
F.	Claim 13	79
1.	[13a]	79
2.	[13b]	79
G.	Claim 14	79
X.	Discretionary Denial is not Warranted	79
A.	35 U.S.C. § 314(a) Analysis.....	79
B.	35 U.S.C. § 325(b) Analysis	80
XI.	Compliance with Formal Requirements	81
A.	Mandatory Notices Under 37 C.F.R. §§ 42.8(b)(1)-(4)	81
1.	Real Party-In-Interest.....	81
2.	Related Matters	81
3.	Lead and Backup Counsel	81
4.	Service Information.....	82
B.	Standing.....	82
XII.	Conclusion	82

INDEX OF EXHIBITS

Exhibit No.	Description
1001	U.S. Patent No. 8,982,086
1002	File History of U.S. Pat. No. 8,982,086
1003	Declaration of Seth James Nielson, Ph.D.
1004	Reexamination File History of U.S. Patent No. 8,982,086
1005	Reissue File History of U.S. Patent No. 8,654,093
1006	U.S. Patent No. 8,683,582 (“Rogers”)
1007	U.S. Patent Publication No. 2007/0097096 (“Rosenberg”)
1008	U.S. Patent No. 8,633,909 (“Miyazawa”)
1009	U.S. Patent No. 7,877,707 (“Westerman”)
1010	U.S. Patent No. 8,477,115 (“Rekimoto”)
1011	U.S. Patent No. RE48,830 (“RE48,830”)

TABLE OF CLAIMS

CLAIMS
[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 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.
[2] The information processing apparatus according to claim 1, wherein said first information includes a position and an area of the finger contacting with said touch panel.
[4] The information processing apparatus according to claim 1, wherein said specified process includes releasing of a lock of resting an operation of said information processing apparatus.
[5] 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.

CLAIMS

[6] The information processing apparatus according to claim 1, wherein the touch panel includes one or more capacitive sensors, such that the contact of the finger is detected based on variations in capacitance of the one or more capacitive sensors in response to the contact.

[7] The information processing apparatus according to claim 1, wherein the touch panel comprises a display screen configured to display information during the identification mode that informs the user to use a finger to execute an unlock operation of the information processing apparatus.

[9] The information processing apparatus according to claim 1, wherein the first controller is configured to execute one or more of tapping, dragging, flicking, and pinching operations based on the detection of contact of the finger.

[10] The information processing apparatus according to claim 9, wherein the first controller is configured to execute tapping operations, and the tapping operations include detection of contact of the finger for a first time period.

[11] The information processing apparatus according to claim 9, wherein the first controller is configured to execute dragging operations, and the dragging operations correspond to the user moving the finger while maintaining contact for a first time period.

[12a] The information processing apparatus according to claim 9, wherein the first controller is configured to execute flicking operations, and the flicking operations correspond to the user sliding the finger for a first time period, and

[12b] wherein the first controller is configured to execute pinching operations, and the pinching operations correspond to the user establishing two contacts and increasing the distance between the established two contacts.

[13a] The information processing apparatus according to claim 9, wherein the first controller is configured to execute said dragging operations, and the dragging operations correspond to the user moving the finger while maintaining contact for a first time period, and

[13b] wherein the first controller is configured to execute said flicking operations, and the flicking operations correspond to the user sliding the finger for a second time period that is shorter than the first time period.

CLAIMS

[14] The information processing apparatus according to claim 1, wherein the touch panel comprises a display screen displaying a plurality of icons corresponding to applications being executed on the information processing apparatus, and the information processing apparatus is configured to execute an operation for moving at least one of the plurality of icons based on an operation that requires contact by a finger for a predetermined period of time.

I. INTRODUCTION

Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc. (“Petitioners”) request *inter partes* review of claims 1, 2, 4-7, and 9-14 (“Challenged Claims”) of U.S. Patent No. 8,982,086 (“’086 patent,” **EXError! Reference source not found.**), owned by Maxell, Ltd. (“PO”), pursuant to 35 U.S.C. §§311–19 and 37 C.F.R. §42.100.

II. STATEMENT OF PRECISE RELIEF REQUESTED

In accordance with 35 U.S.C. § 311, Petitioners request cancelation of the Challenged Claims in view of the following grounds:

Ground	Claims	Stat. Basis	Prior Art
1	1, 2, 4-7	35 U.S.C. § 103 ¹	Rogers, Rosenberg
2	9-14	35 U.S.C. § 103	Rogers, Rosenberg, Miyazawa
3	1, 2, 4-7	35 U.S.C. § 103	Rogers, Rekimoto
4	9-14	35 U.S.C. § 103	Rogers, Rekimoto, Miyazawa

III. THE ’086 PATENT

A. Overview of the ’086 Patent

The ’086 patent is directed to an apparatus having a touch panel that “displays a plurality of pieces of identification information including letters, figures, and symbols” that a user may select to identify him/herself. EX1001, 1:40-44. The ’086 patent discloses the ability of the touch panel to distinguish between

¹ Pre-AIA §§102 and 103 apply throughout this petition.

touches from a fingertip (also referred to as “finger tip input”) and touches from a finger pad (“finger pad input”). EX1001, 3:46-56, 5:20-42, 6:1-8, and FIGS. 3, 4A-6, 8-14.

FIG. 4A

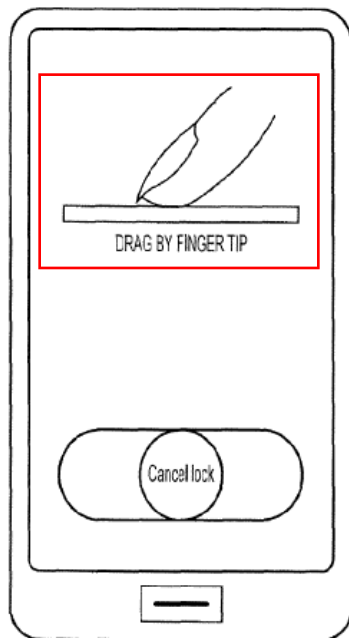
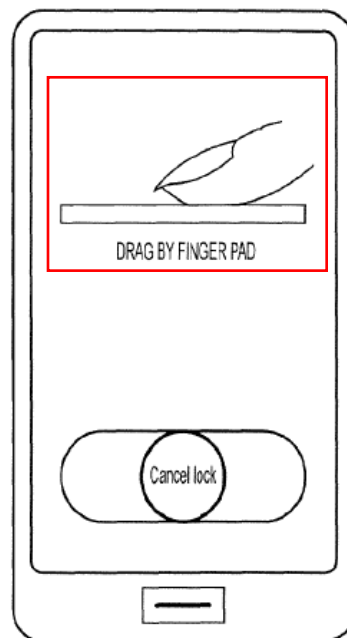


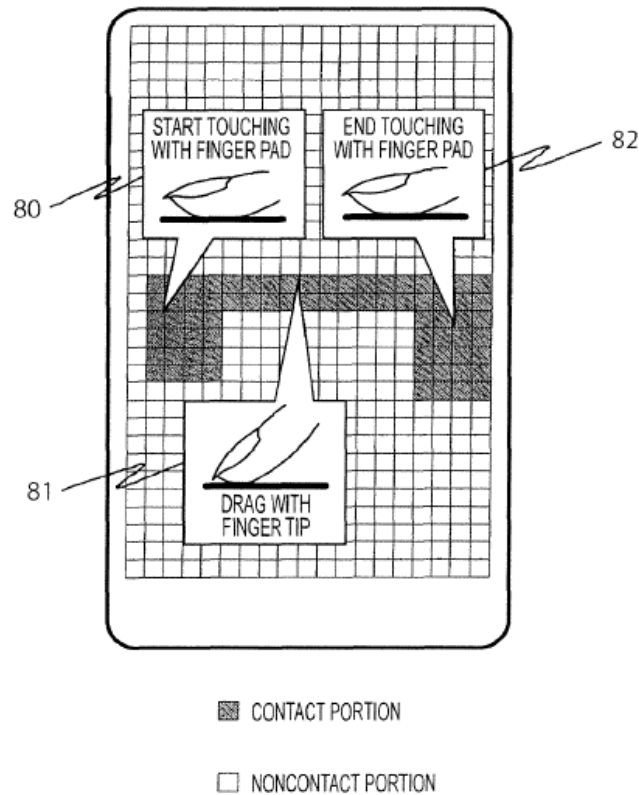
FIG. 4B



EX1001, FIGS. 4A, 4B.²

² All emphasis, color, and annotations are added, unless otherwise indicated.

FIG. 8



EX1001, FIG. 8.

The “input using one’s finger pad is characterized in that the contact range of the finger and the touch panel 1 is wider than that of the fingertip input.”

EX1001, 3:1-13. The ’086 patent also teaches associating the type of touch—fingertip versus finger pad—with the selected pieces of identification information to form a password for unlocking the device, thereby forming a password based on numbers, letters, symbols, etc. and the correct type of touch. EX1001, 6:12-7:63, and FIGS. 11-14. FIGS. 11A-11C and 12A illustrate a password formed from a

combination of touch-type and numeric values. EX1001, 2:40-47, 2:48-49, 6:12-7:63. Upon registering the password, the user presumably would subsequently unlock the device by entering the same sequence of numbers (“0528”) using the same sequence of touches (tip, pad, pad, pad).

FIG. 11A

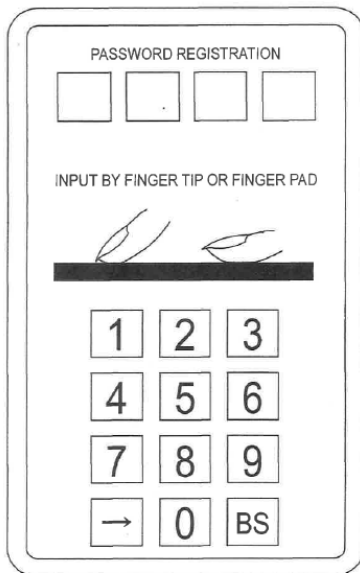


FIG. 12A

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

EX1001, FIGS. 11A, 12A.

The '086 patent also teaches different touch operations performed by the user, including “tapping, dragging, flicking, and pinching.” EX1001, 3:46-56. The control unit disclosed in the '086 patent distinguishes between the various disclosed touch operations by comparing the number of sensors that respond to the user’s touch while the operation is executed. EX1001, 5:20-42.

B. '086 Patent Prosecution History

U.S. Application no. 14/154,993 (“’993 application”), the application that issued as the ’086 patent, was filed on 1/14/2014, and claims priority to JP Application no. 2011-025576, filed on 2/9/2011. EX1001 (22), (30); EX1002, 172 (ADS).³ The ’086 patent is also a continuation of U.S. Patent No. 8,654,093 (“’093 patent”), EX1001, (63), and issued with claims 1-4. EX1001, cols. 8-9.

C. Reexamination of the ’086 Patent

The ’086 patent was reexamined by the PTO as Reexamination Request No. 90/014,638, which resulted in a Reexamination Certificate issued on September 28, 2021. EX1004, 3-4. The reexamination added claims 5-15. EX1004, 4.

D. Reissue of U.S. Patent No. 8,654,093

PO submitted the ’093 patent, the parent of the ’086 patent, for reissue on 1/29/2019. EX1005, 802. During that proceeding, PO attempted to add claims 8-34 that recited a memory for storing “first information corresponding to a fingerprint of the user.” EX1005, 622-629, 876-881. The Examiner rejected these claims for, among other things, lack of adequate written description support in the ’093 patent,

³ Petitioners are not challenging in this IPR whether the ’086 patent is entitled to the 2/9/2011 priority date or any priority date before the 1/14/2014 filing date, but reserve the right to do so in litigation or in any other proceeding, including a subsequent IPR.

which has the same specification as the '086 patent. EX1005, 561 (“[t]here is no support for storing information related to a fingerprint, as the specification discloses storing information as to the fingertip or finger pad.”). The Examiner also rejected proposed claims 8-34 “as being based upon new matter added to the patent for which reissue is sought;” the Examiner cited the written description rejection as the basis for this position. EX1005, 562. Ultimately, PO canceled claims 8-34, and the application issued as RE48,830. EX1005, 1, 513-515, 539-541. The term “fingerprint” does not appear in any claim of RE48,830. EX1011, 8:50-10:58.

E. Person of Ordinary Skill in the Art

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. EX1003, ¶45. Additional education or experience might substitute for the above requirements. *Id.*

F. Claim Construction Under 37 C.F.R. § 42.104(b)(3)

The Challenged Claims are interpreted using the same claim construction standard that is used to construe the claim in a civil action in federal district court. 37 C.F.R. § 42.100(b).

Petitioners do not contend that its proposed constructions are complete constructions of these limitations or the claims for any other purpose, including for issues that have been raised in the District Court Litigation (as defined in §XI below). Because the prior art asserted herein discloses the preferred embodiment within the indisputable scope of the claims, the Board need not construe the outer bounds of the claims as part of these proceedings. *See, e.g., Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)) (providing that only those terms that are in controversy need be construed, and only to the extent necessary to resolve the controversy).

Claim terms not listed below should be construed according to their plain and ordinary meaning to a POSITA.

1. “first information necessary for an identification of the user” (all claims)

Petitioners propose this term to mean “information sufficient for the identification of the user, but not including information about a user’s fingerprint.” EX1003, ¶¶55-59. The doctrine of prosecution disclaimer prevents PO from trying to capture subject matter in its claims that the applicant explicitly conceded was not claimed. *SanDisk Corp. v. Memorex Prods.*, 415 F.3d 1278, 1286-87 (Fed. Cir. 2005). During prosecution of RE48,830, PO tried to claim “information corresponding to a fingerprint of the user” in an attempt to contend that

“fingerprint information” was a type of user “information.” EX1005, 622-629, 876-881. The Patent Office rejected that effort, concluding that the patent’s written description would not support it. EX1005, 561. PO thereafter cancelled those claims, confirming that the claimed “information” cannot include “fingerprint” information. EX1005, 513-515, 539-541. Petitioners’ construction properly reflects PO’s disclaimer of claim scope.

Petitioners propose this construction to be consistent with their proposed construction in the concurrent litigation. Petitioners submit, however, that the Board need not rule on this construction because the prior art cited herein discloses the components for detecting, storing and/or using the “first information necessary for an identification of the user” whether it can/cannot include “information about a user’s fingerprint.”

2. “second information relating to the identification of the user” (all claims)

Petitioners propose this term to mean “information related to the identification of a user, but not including information about a user’s fingerprint.” EX1003, ¶¶60-63. The reasoning for Petitioners’ construction of “first information” applies to this term also. For the same reasons discussed above with respect to that term, PO clearly disclaimed information about a user’s fingerprint, and the construction of “second information relating to the identification of the user” must also reflect that disclaimer. *SanDisk*, 415 F.3d at 1286-87.

Petitioners also propose this construction to be consistent with their proposed construction in the concurrent litigation. Petitioners submit, however, that the Board need not rule on this construction because the prior art cited herein discloses the components for detecting, storing and/or using the “second information relating to the identification of the user” whether it can/cannot include “information about a user’s fingerprint.”

IV. PRIOR ART REFERENCES

The challenges in this Petition are based on the knowledge of a POSITA and the prior art described below.

A. Rogers

U.S. Patent No. 8,683,582 (“Rogers”) was filed on 6/16/2008 and issued 3/25/2014. Rogers is prior art under 35 U.S.C. §102(e).

B. Rosenberg

U.S. Patent Publication No. 2007/0097096 (“Rosenberg”) was filed on 1/23/2007 and published 5/3/2007. Rosenberg is prior art under 35 U.S.C. §§102(a), 102(b).

C. Miyazawa

U.S. Patent No. 8,633,909 (“Miyazawa”) was filed on 12/29/2010 and issued 1/21/2014. Miyazawa is prior art under 35 U.S.C. §102(e).

D. Rekimoto

U.S. Patent No. 8,477,115 (“Rekimoto”) was filed on 6/47/2006 and published 7/2/2103. Rekimoto is prior art under 35 U.S.C. §102(e).

V. LEGAL STANDARD FOR OBVIOUSNESS

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

With respect to factor (3), the level of skill in the art at the time of the alleged invention of the ’086 patent is discussed above. With respect to factor (4), PO has not provided any evidence of secondary considerations that would weigh in favor of non-obviousness, let alone any evidence that establishes a nexus between any secondary consideration and the challenged claims. In any event, the showing of invalidity in this Petition is strong and any alleged secondary considerations are

insufficient to establish non-obviousness in light of this strong *prima facie* showing. *Intercontinental Great Brands (Kraft) v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1347 (Fed. Cir. 2017). Factors (1) and (2) are addressed below.

VI. GROUND 1: ROGERS AND ROSENBERG

A. Motivation to Combine

It would have been obvious to a POSITA to combine the teachings of Rogers and Rosenberg. Both references are directed to allowing users to input information via touchsurface⁴ technology and are analogous art to the '086 patent.

EX1003, ¶86; EX1006, Abstract, FIGS. 1, 2A; EX1007, Abstract, FIG. 1.

Rosenberg discloses that the use of finger end and finger pad touch is “natural and intuitive” for users, and teaches distinguishing the use of a finger pad/finger end by relying “upon the orientation in which the user’s finger engages the touch screen,” which is consistent with one of the '086 patent’s stated goals of “offer[ing] improved convenience to users.” EX1001, 1:34-36, EX1007, ¶28.

⁴ The terms “touchscreen/touchsurface” may also be referred to as “touch screen/touch surface” or “touchScreen/touchSurface” as Rogers makes clear that “a ‘touchscreen’ is a touch input device Touchscreens and touchpads are generically referred to herein as ‘touchsurfaces.’” EX1006, 3:4-10.

Thus, 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. EX1003, ¶187.

Rogers teaches distinguishing between a "large fingertip and a small stylus tip" based on "area difference[s]" between the two input types as a factor in graphical passcode authentication. EX1006, 7:59-62. A POSITA would have recognized that this implementation goal would have been better accomplished through Rosenberg's disclosure of distinguishing finger pad touches from fingertip touches. EX1003, ¶188. Rosenberg expressly states that "a stylus is often not always preferred because it requires that the user employ another piece of hardware that needs to be stored, taken out of a holder for usage, put away after usage, and is often accidentally lost," and that "a stylus is often not convenient for touch screen interfaces that enable multipoint targeting and multi-finger gesturing because a user can not easily hold a stylus at the same time he or she is performing a multi-finger gesture." EX1007, ¶30. A POSITA therefore 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. EX1003, ¶88.

Moreover, adding 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). *KSR*, 550 U.S. 398 at 416 (2007) (“[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious.”); EX1003, ¶89.

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. EX1003, ¶90. Rogers discloses that the “measurable parameters” of a “template graphical passcode” can include “contact area.” EX1006, 4:15-19. Rosenberg teaches distinguishing between finger pad and finger end touches by

“size, shape, and/or orientation of the detected finger.” EX1007, ¶50. Rosenberg further discloses that “finger-tip interaction” and “finger-pad interaction” are “generally easily distinguishable for a given finger of a given user because the finger contact area caused by a finger-tip interaction is substantially smaller in total area, often narrower in shape (i.e., a more eccentric ellipse), and usually has the major axis orientated such that it extends in a direction across the width of the user’s finger.” EX1007, ¶49. 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.” EX1003, ¶90.

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. EX1006, 4:48-62 (describing “training sessions”), EX1007, ¶49 (describing “calibration routine”). Because a user can readily distinguish between a finger end and a finger pad when performing input, and because Rosenberg teaches the ability to “easily distinguish[]” between a finger end and a

finger pad, it would have been obvious to modify Rogers (to the extent not already taught) to receive input information indicating the use of a pad or end of a finger. EX1003, ¶91. Because Rogers also teaches that the contact area on the touchscreen may be one of the parameters for the graphical passcode, Rogers expressly suggests to a skilled artisan the ease of making the modification to detect the end/pad of a finger and that the area of contact is a desirable parameter for inputting an authentication passcode. EX1003, ¶91. A POSITA would have had a reasonable expectation of success in modifying Rogers in this manner for at least the same reasons. *Id.*

B. Claim 1

1. [1pre] An information processing apparatus comprising:

To the extent the preamble is limiting, Rogers discloses it. EX1003, ¶92. 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.” EX1006, 1:62-66; 3:14-28; 5:6-48; FIG. 1:

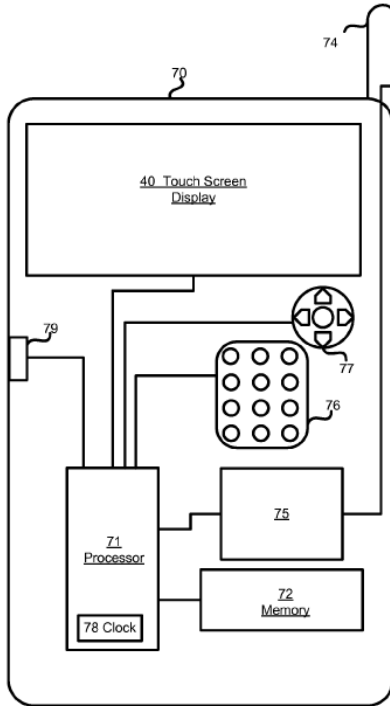


Fig. 1

EX1006, FIG. 1.

2. [1a] a touch panel configured to detect a contact of a finger of a user;

Rogers discloses this limitation. EX1003, ¶¶93-94. Rogers discloses a “touch screen display 40” as one of the “typical components” of exemplary “electronic device 70.” EX1006, 5:6-16; FIG. 1.

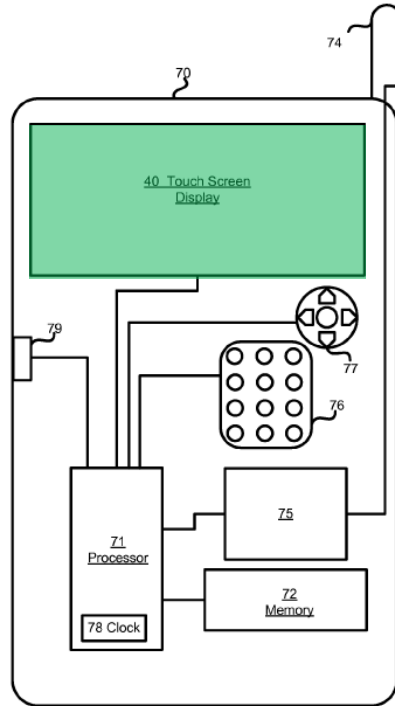


Fig. 1

EX1006, FIG. 1.

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.

3. **[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;**

Rogers discloses this limitation. EX1003, ¶95.

first information necessary for an identification of the user

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.

a detector configured to detect ... when the contact is detected between the touch panel and the finger of the user

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.

With respect to the claimed “first information necessary for the identification of the user” (e.g., graphical passcode), 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. 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.

4. [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;

Rogers discloses this limitation. EX1003, ¶100. Rogers discloses a “processor 71” which is a controller that controls “electronic device 70” to operate in two operating modes: a registration mode for “initializing an electronic device with a template graphical password,” and an identification mode for “using graphical passcodes to gain access to an electronic device.” EX1006, 8:42-49, FIG. 4 (initializing steps), 9:29-36, FIG. 5 (authenticating process with gain access steps); *see also* Abstract, 1:45-61, 3:57-4:14, 5:16-27.

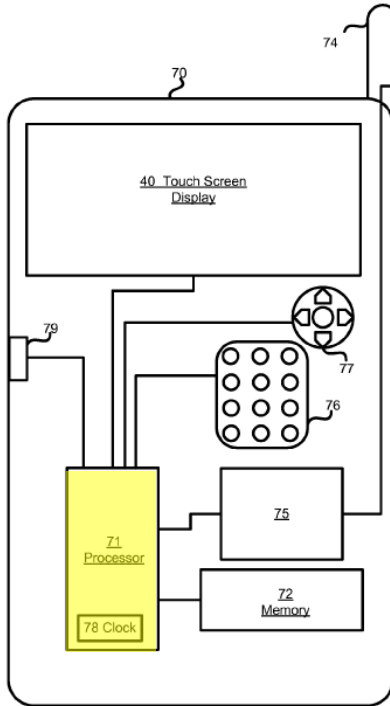


Fig. 1

EX1006, FIG. 1.

The process disclosed by Rogers' FIG. 5 (described as "authenticating a graphical passcode") is the claimed "identification mode." It shows the process flow controlled by processor 71 "for using graphical passcodes to gain access to an electronic device." EX1006, 9:29-31; 2:32-33; EX1003, ¶101. Regarding, the "identification mode," Rogers discloses "[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." EX1006, 33-36, FIG. 5:

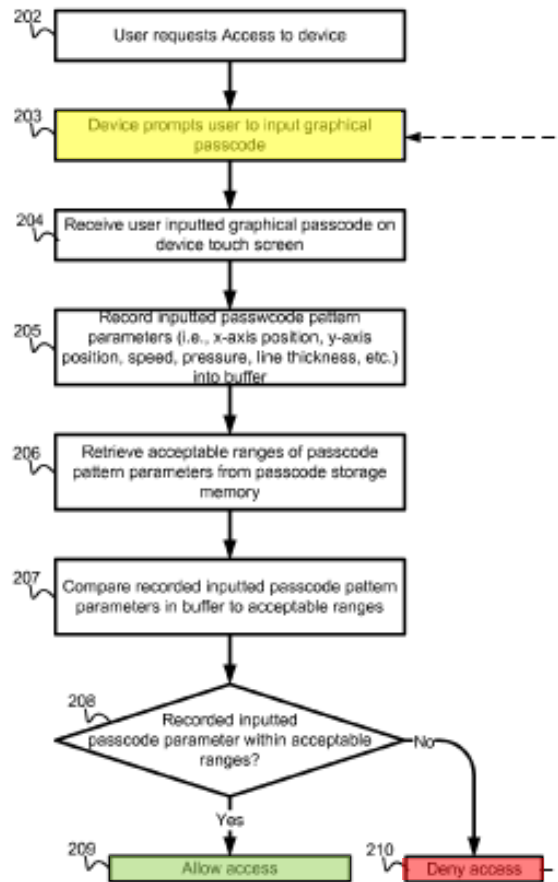


Fig. 5

EX1006, FIG. 5.

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.

The process disclosed by Rogers' FIG. 4 is the claimed "registration mode" as it shows a mode of operation in which the processor 71 controls the electronic device 70 to initialize, i.e., "creating and storing," a "template graphical passcode." EX1003, ¶103. For example, "[t]he electronic device 70 *via the processor 71* and display 40 may prompt a user to input a desired graphical passcode, step 101." EX1006, 8:44-46. 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.

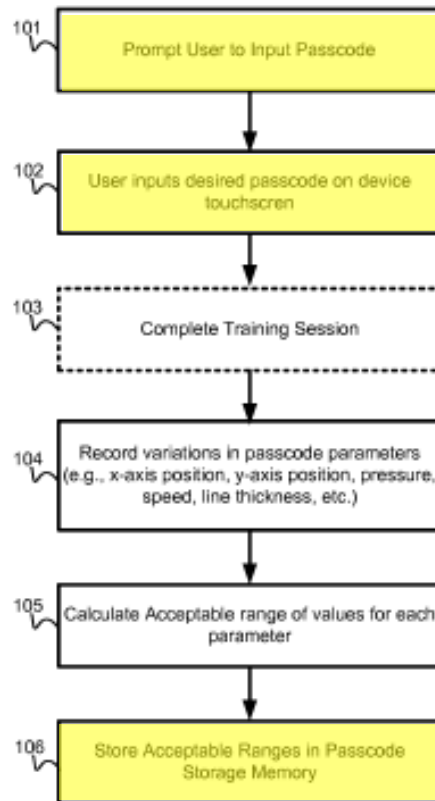


Fig. 4

EX1006, FIG. 4.

5. [1d] memory that is configured to store second information relating to the identification of the user, which is stored in advance; and

Rogers discloses this limitation. EX1003, ¶104.

second information relating to the identification of the user

Rogers discloses the claimed “second information,” particularly, the “graphical passcode” created and stored based on the user’s finger touch captured by the device during the “creating and storing a desired graphical passcode” process illustrated in FIG. 4; EX1003, ¶105. For example, Rogers discloses that

“[a] user’s selected graphical password is stored in memory for comparison to subsequent entries of graphical passcode in order to authenticate the users.”

EX1006, Abstract. Authenticating of a user in Rogers discloses “identification of the user” as claimed in the ’086 patent: “The graphical passcode is used as a password, personal identifier, or key to provide secure access to an electronic device, network, website or the like.” EX1006, 3:32-39, 13:14-20 (“The present graphical passcodes . . . can be used to lock or unlock an electronic device . . . or identify an individual to an electronic device, network or website.”); EX1003, ¶105.

memory configured to store the second information in advance

Rogers discloses an electronic device 70 that has “a computer readable memory 72.” EX1006, 5:6-11; FIG. 1:

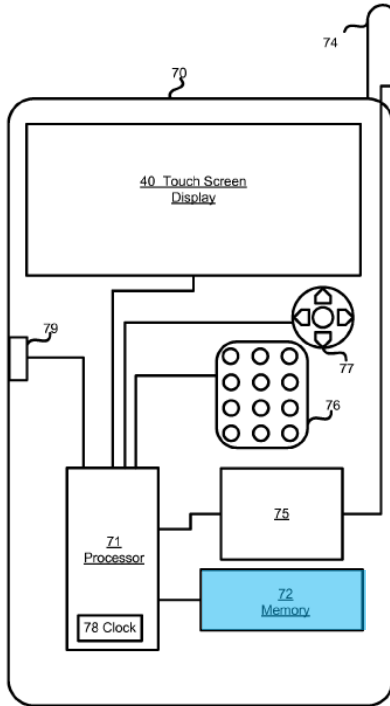


Fig. 1

EX1006, FIG. 1.

Rogers discloses that memory 72 stores the graphical passcode, which is “second information relating to the identification of the user.” EX1006, 5:19-21; EX1003, ¶¶106-107. In addition, the graphical password is stored “in advance” because the authentication process occurs “subsequent” to the storage process:

Subsequently, each time a user wishes to access the electronic device 70, the users provides the graphical passcode to the electronic device 70 via the touch screen 40. The processor 71 compares the subsequently inputted graphical passcode to the template graphical pass code and associated plots or datasets (*i.e.*,

one or more envelopes) stored in the memory 72 as described more fully below.

EX1006, 5:21-27; *see also* 8:41-67 (“The 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.”); 9:22-28 (“Once the acceptable envelope values have been calculated, the acceptable envelope values *are stored in the memory 72* as part of the passcode template, step 106. The passcode template and its acceptable envelope values are used by the processor 71 to determine the authenticity of a *subsequently* inputted graphical passcode.”); 9:36-51.

6. **[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:**

Rogers discloses or renders obvious this limitation. EX1003, ¶108. Rogers discloses that hardware such as processor 71 can be “processing elements” (plural).

The hardware used to implement the forgoing embodiments may be *processing elements* and memory elements configured to execute a set of instructions, wherein the set of instructions are for performing method steps corresponding to the above methods. Alternatively, some steps or methods may be performed by *circuitry that is specific to a given function*.

EX1006,13:21-27; *see also id.* 14:28-40. Rogers also discloses that processor 71 can be hardware, software, or some combination of both.

Those of skill in the art would appreciate that the various illustrative logical blocks, modules, circuits, and algorithm steps described in connection with the embodiments disclosed herein *may be implemented as electronic hardware, computer software, or combinations of both....*

EX1006, 14:41-55; *see also* 14:56-15:4 (disclosing that embodiments of a method or algorithm—singular—may be embodied in “hardware, software modules, or a combination of the two.”). A POSITA would have understood and continue to understand that Rogers discloses that functions of processor 71 could be split into multiple components including multiple processing elements, software modules, or a combination of software modules combined with hardware processors and circuits. EX1003, ¶¶109-110.

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. EX1003, ¶111.

Regarding the claimed “execut[ing] a specified process when said first information and said second information are coincident with said identification mode,” 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 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.

A POSITA would have understood that Rogers discloses that the processing element of processor 71 that unlocks the device 70 can be a different processing element than the processing element that performs the functions of limitation 1[c] discussed above. EX1003, ¶113.

Should PO argue that a second controller is not explicitly disclosed by Rogers, a POSITA would have found it obvious to modify Rogers to have a second controller configured to execute the specified process of this limitation based at least on the above teachings. EX1003, ¶114. Because Rogers suggests that multiple hardware/software components (or a combination of the two) can be used to implement a controller and its functional steps, including the passcode authentication process disclosed in FIG. 5, a POSITA would have found the modification obvious to try. Rogers discloses that using two or more hardware and/or software components to perform the functions of a single component (i.e., using two controllers instead of one controller) is a simple substitution—namely,

taking a single controller and replacing it with multiple controllers that collectively perform the same functions— and Rogers further discloses that a POSITA would have had a reasonable expectation of success in making the substitution by disclosing that the “illustrative components, blocks, modules, circuits, and steps” described in the specification were described “to clearly illustrate th[e] interchangeability of hardware and software.” EX1006, 14:45-49. Moreover, a POSITA would have been motivated to make this change to improve device security by separating the processor functions of the device that were responsible for authenticating a user via stored data from other generalized device functions such as selecting applications or programs/processes that do not implicate these security features. EX1003, ¶114.

7. **[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.**

Rogers or the Rogers-Rosenberg combination renders this limitation obvious. EX1003, ¶115.

first registering mode (finger pad input) and second registering mode (finger end/tip input)

Rogers discloses two registering modes that distinguish between inputting two different types of user input. EX1003, ¶¶116-124. Rogers discloses that its graphical passcode template is registered by prompting the user to enter the graphical passcode and measuring various parameters with which the passcode is entered. EX1006, 3:32-39, 4:15-19 (“The graphical passcode is essentially a series of touches, swipes and/or taps on a touchsurface” that are inputted with “one or more measurable parameters (e.g., timing, speed, pressure, force, line thickness, contact area, or location)...”).

Alternatively or additionally, Rogers discloses that the “inputted graphical passcode may employ a measurement of a size (i.e., area) of the object or fingertip applied to the touchsurface,” allowing the touchsurface, for example, to “discriminate between a large fingertip and a small stylus tip.” EX1006, 7:56-62. Rogers discloses that “[a]uthentication may require a measured contact area greater than or less than a certain size, or within a certain size range.” EX1006, 7:56-67.

FIG. 6A shows an example graphical passcode that “consists of two simultaneous swipes 110, 120 (e.g., made with two fingers), followed by a tap 130 in the middle of the touch surface.” EX1006, 10:8-10.

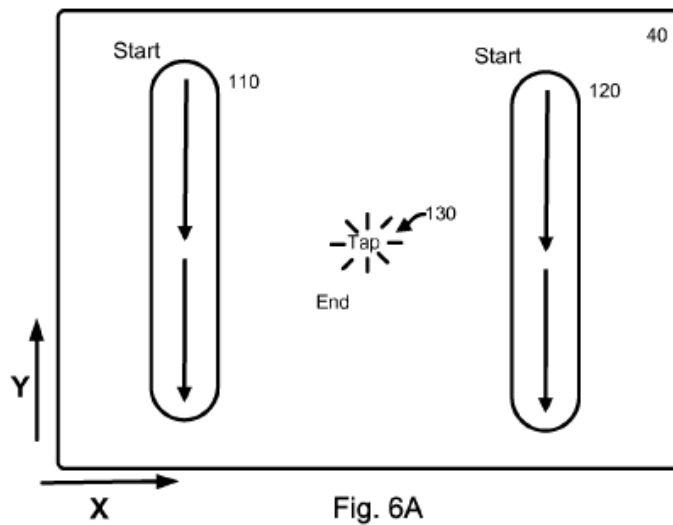
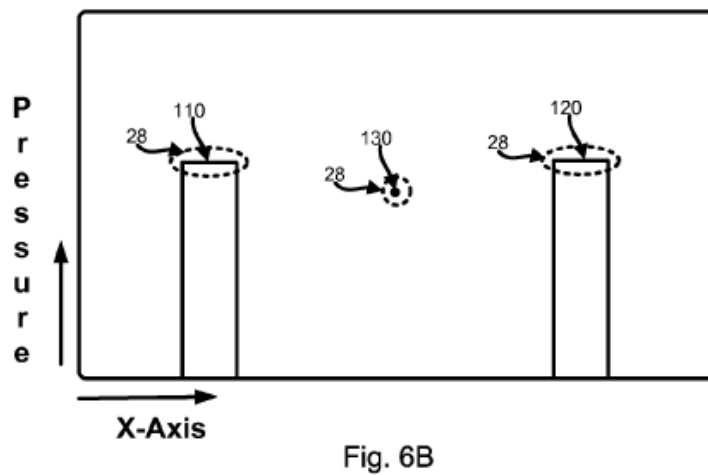


FIG. 6B shows using pressure to measure the width and position of the two finger swipes 110 and 120:



Rogers discloses that line thickness is the contact area between the finger and the touch screen, EX1006, 3:52, and that a capacitive sensor can be used to measure the width of finger touch. EX1006, 1:66-2:3, 5:11-14, 13:27-35, 13:51-59.

Additionally, Rogers' discussion of FIG. 7 makes clear that different measurements of the same input parameter type can be stored for touches at

different positions on the touch screen. EX1006, 10:44-48, FIGS. 7A (illustrating graphical passcode entered by 5 taps), 7B (illustrating varying pressures with X-position), 7C (illustrating varying pressures with Y-position), 7D, 7E (illustrating pressure versus time for all 5 taps); EX1003, ¶121. Because Rogers discloses that size or area of the fingertip measured by the screen can be used instead of or in addition to pressure, a POSITA would have understood that Rogers discloses the registration of a graphical passcode can discriminate between smaller and larger contact areas of the user's finger and different positions on the touch screen. EX1003, ¶121. That is, Rogers discloses separate registering modes for entering different pieces of user information based on the size measured from the contact area of the user's touch. Thus, Rogers' disclosure of registering a graphical passcode that distinguishes between small and large contact areas corresponds to the first and second registration modes. *Id.*

Rogers further discloses two registration modes in the form of the "training session" for developing the thresholds, ranges or envelopes, and the measured parameters such as line thickness. This involves repeated entry of the passcode to create thresholds for distinguishing between the different measured parameters, such as line thickness or contact area, for the touch inputs that make up the desired passcodes. EX1006, 8:42-67. The measured passcode parameters can include "line thickness" or area and be stored based in part on the position of the input on the

touch screen. EX1006, 8:59-67. Thus, a training session that creates a threshold for a narrow line thickness or small area at one position and a threshold for a wide line thickness or large area at another position, correspond to the first and second registration modes of the claim. EX1003, ¶122.

Rogers discloses or renders obvious that the different user input information entered in the two claimed registration modes include a pad of the finger and an end of the finger. Rogers discloses that finger touches are some of the types of user input information that the disclosed graphical template can distinguish between: “contact area” or “line width” is a detected parameter Rogers discloses can be distinguished during input measurement of finger touches. EX1006, 7:56-67. A POSITA would have understood that Rogers’ disclosure of contact area and line width would distinguish between different fingers or portions of a finger. EX1006, FIGS. 6A-6E; EX1003, ¶123.

A POSITA would have also understood that Rogers’ disclosure is virtually identical to the “modes” of the ’086 patent’s preferred embodiment of this claim limitation. EX1003, ¶124. The ’086 patent describes identifying finger pad input from finger tip input based on differences in measurements between a small contact range and a wider contact range. EX1001, 3:3-13. Thus, Rogers’ disclosure of discriminating between a small contact area or line width and a large contact area or line width expressly discloses “finger tip input” and “finger pad input” as

those terms are used for the preferred embodiment of the '086 patent. EX1003,

¶124.

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

The claim limitation also requires that the second information related to identification of the user that is stored in advance, for example a passcode, must be produced by inputting information in “at least” one of the first or second modes (presumably the registering modes). That is, the second information must include at least a measurement of narrow contact range (fingertip input) or a wide contact range (finger pad input), but the claim language does not require both. EX1003, ¶125. Rogers discloses this limitation because it expressly discloses the discrimination between narrower and wider contact areas and that at least one of the narrow or wider contact ranges can be used when registering a graphical passcode. *Id.* The narrow or wider contact range information is stored, created, or “produced,” when the user inputs information in the first or second registration mode. EX1006, 7:56-67 (“Authentication may require a measured contact area greater than or less than a certain size, or within a certain size range. The size requirement can be determined during a training session, or can be predetermined or can be selected by the user.”). Moreover, Rogers discloses an example that

includes recording the contact area width as part of the graphical passcode registration process. EX1006, 10:4-15, FIGS. 6A, 6B.

Rogers in view of Rosenberg

To the extent PO argues that Rogers does not fully disclose limitation [1f] because Rogers does not explicitly recite the use of “finger pad” and “finger tip” inputs, Rogers in view of Rosenberg renders this limitation obvious. EX1003, ¶¶126-129.

Rosenberg discloses inputting input information by a pad of the finger (“pad-pointing”) and inputting input information by an end of the finger (“tip-pointing”): “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 finger-pad 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.

Rosenberg explicitly discloses identifying pad-pointing as opposed to tip-pointing “[b]ased upon the size and/or shape” of the contact area (shown as an ellipse A’ in FIG. 6):

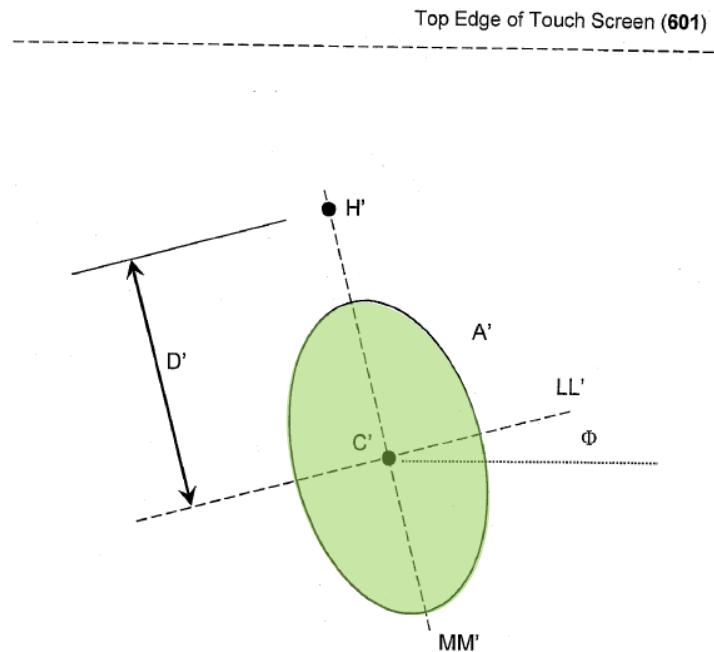


Fig. 6

EX1007, FIG. 6. Rosenberg provides an example in which pad-pointing is shown in FIG. 8A and tip-pointing is shown in FIG. 8B. EX1007, ¶50.

Fig 8a

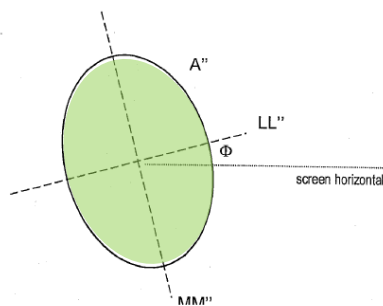
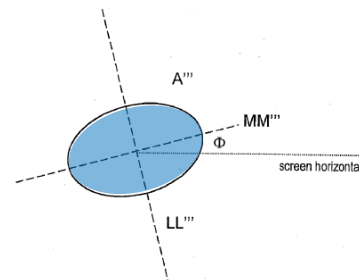


Fig 8b



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.

C. Claim 2. The information processing apparatus according to claim 1, wherein said first information includes a position and an area of the finger contacting with said touch panel.

The Rogers-Rosenberg combination renders claim 1 obvious. §VI.B. Rogers discloses “first information,” §VI.B.3, and that “said first information includes a position and an area of the finger contacting with said touch panel.” EX1003, ¶¶130-131.

Specifically, Rogers discloses that “when the template graphical passcode is inputted, one or more measurable parameters (e.g. timing, speed, pressure, force, line thickness, *contact area*, or *location*) of the inputted template graphical passcode is measured by the touchsurface. The measured parameters may be

plotted as a function of time and/or position on the touchsurface.” EX1006, 4:15-

21. “When a graphical passcode is subsequently inputted, the same parameters are measured and plotted as a function of time and/or position and compared to the plots of the template graphical passcode.” EX1006, 4:27-30; *see also* 3:48-56 (“‘envelope’ refers to a range of a parameter within a graphical passcode that accounts for the inherent variability in such passcodes. The parameter can be, for example, pressure, force, speed, *X-axis position*, *Y-axis position*, or *line thickness (i.e. contact area)*.”), 7:56-67.

D. Claim 4. The information processing apparatus according to claim 1, wherein said specified process includes releasing of a lock of resting an operation of said information processing apparatus.

The Rogers-Rosenberg combination renders claim 1 obvious. §VI.B. Rogers discloses the “specified process,” §VI.B.6, and discloses or renders obvious that “said specified process includes releasing of a lock of resting an operation of said information processing apparatus.” EX1003, ¶132.

Specifically, Rogers discloses that “graphical passcodes can be used in the same manner that conventional passwords, security codes or personal identifiers are currently used” and explicitly discloses that “the passcodes can be used to lock or unlock an electronic device.” EX1006, 13:14-17. Rogers discloses or renders obvious that the 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) to provide the user access to the device. EX1006, 5:16-27; 9:29-10:3, FIG. 5. A POSITA would have understood that a locked device is in a resting operation and that unlocking the device releases the lock of the resting operation. EX1003, ¶133.

E. Claim 5. 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.

The Rogers-Rosenberg combination renders claim 1 obvious. §VI.B. Rogers in view of Rosenberg renders obvious the inputting of second information relating to the identification of the user in the first or second registering mode, §VI.B.7, and renders obvious this limitation. EX1003, ¶¶134-138. Rogers also discloses that its touch panel 40 includes a display. EX1006, 3:4-5 (“As used herein, a ‘touchscreen’ is a touch input device with an associated image display.”), 5:6-16:

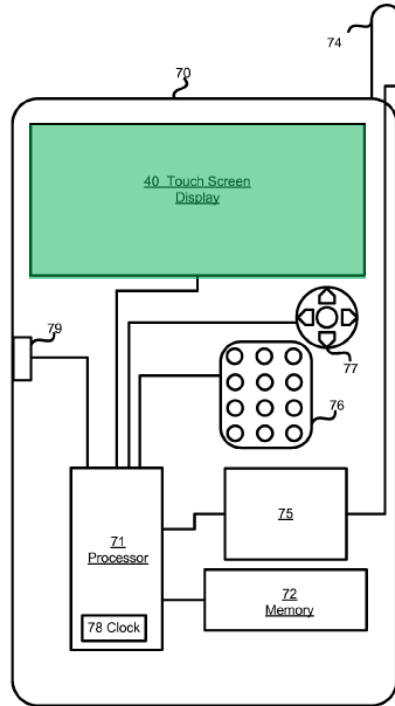
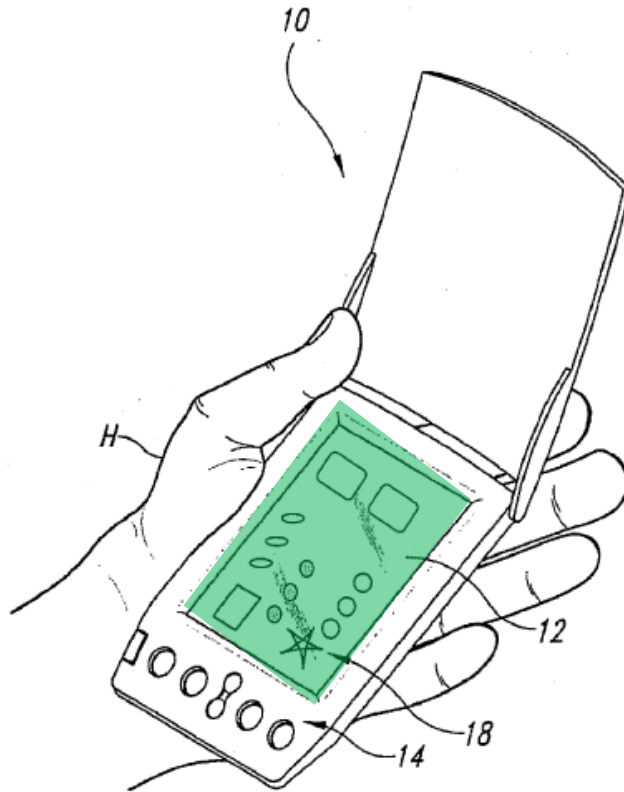


Fig. 1

EX1006, FIG. 1.

Rosenberg also discloses that its handheld computer includes a “display screen 12 [that] is a touch screen that is used as the primarily controls the operation of the computer 10.” EX1007, ¶30; FIG 1.



EX1007, FIG. 1.

Rosenberg's display screen 12 is configured to display "icons 18" or another "graphical element 18," EX1007, ¶30, and text. EX1007, ¶¶31, 43.

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.*

F. Claim 6. The information processing apparatus according to claim 1, wherein the touch panel includes one or more capacitive sensors, such that the contact of the finger is detected based on

variations in capacitance of the one or more capacitive sensors in response to the contact.

The Rogers-Rosenberg combination renders claim 1 obvious. §VI.B.

Moreover, Rogers discloses this limitation. EX1003, ¶¶139-140. For example, Rogers discloses that “the various embodiment methods and systems may be implemented with a variety of touch screen or touchpad technologies, including . . . *capacitive touch screens.*” EX1006, 1:66-2:2. With respect to FIG. 1, Rogers discloses that “touch screen display 40 can be any type of touch screen, such as . . . capacitive- sensing touchscreen.” EX1006, 5:6-11.

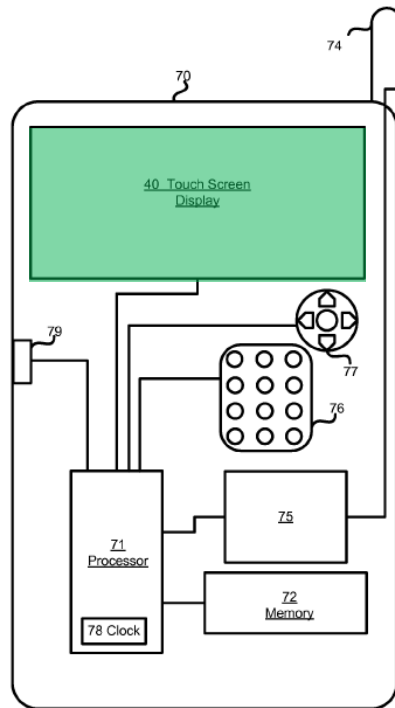


Fig. 1

EX1006, FIG. 1.

Rogers discloses that the contact of the finger is detected based on variations in capacitance of the one or more capacitive sensors in response to the contact: “a capacitive touch screen which is coated with a material that conducts a continuous electrical current across the sensor. When the *sensor’s ‘normal’ capacitance field (its reference state) is altered by another capacitance field, i.e., someone’s finger, electronic circuits located at each corner of the panel measure the resultant ‘distortion’ in the sine wave characteristics of the reference field and send the information about the event to the controller for mathematical processing.*”

EX1006, 13:51-59.

G. Claim 7. The information processing apparatus according to claim 1, wherein the touch panel comprises a display screen configured to display information during the identification mode that informs the user to use a finger to execute an unlock operation of the information processing apparatus.

The Rogers-Rosenberg combination renders claim 1 obvious. §VI.B.

Moreover, Rogers discloses its touch panel comprising a display screen configured to display information, §VI.E, and discloses displaying information during the identification mode that informs the user to use a finger to execute an unlock operation of the information processing apparatus. EX1003, ¶¶141-142.

For example, during the “authenticating a graphical passcode” process of FIG. 5 (identification mode), which is used to unlock and provide access to the Rogers device, §VI.D, Rogers discloses that “electronic device 7 (sp. 70) 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.*” EX1006, 9:31-36; FIG. 5:

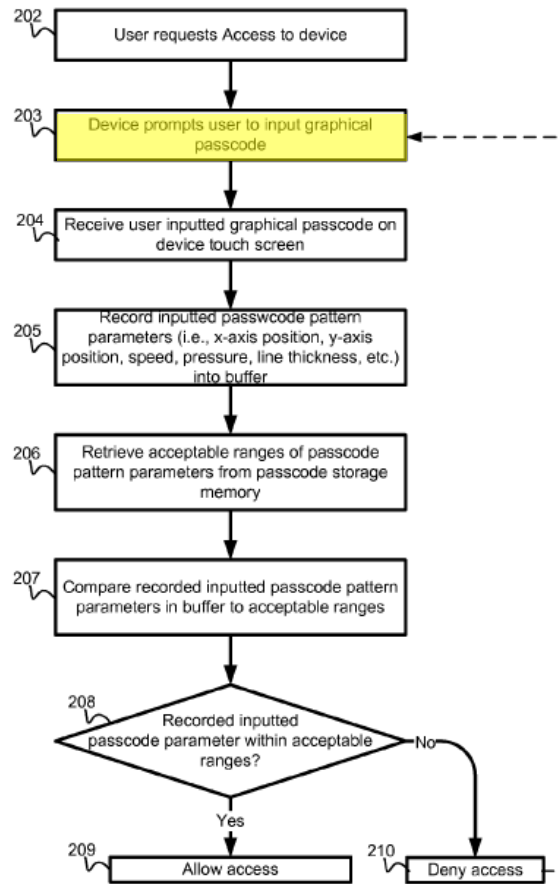


Fig. 5

VII. GROUND 2: ROGERS, ROSENBERG, MIYAZAWA

A. Motivation to Combine

As discussed above, Rogers, alone or in combination with Rosenberg, discloses touch operations that the user executes on the touch surface to create/enter the graphical passcode including multiple types of touch with different input parameters. EX1003, ¶143. Indeed, the method “uses touches and movements on a touch sensitive surface to determine graphical passcode that are

used in a manner similar to passwords. *Graphical passcodes comprise various combinations of swipes, taps or drags on a touchscreen surface as defined by a user.* A user's selected graphical passcode is stored in memory for comparison to subsequent entries of graphical passcode in order to authenticate the users."

EX1006, Abstract. In other words, the graphical passcode disclosed by Rogers, alone or in combination with Rosenberg "is essentially a *series of touches, swipes, and/or taps on a touchsurface of varying pressure, speed and position.*" EX1006, at 3:34-36. The user registers or re-enters the graphical passcode by performing touch operations on the disclosed touch surface, *i.e.*, "by touching a touchsurface in a series of movements and touches within a brief period of time." EX1006, 3:60-62.

A POSITA would have found it obvious and been motivated to integrate the gestures disclosed by Miyazawa into Rogers' graphical passcode for registration and entry. EX1003, ¶144. A POSITA would have been motivated to combine the teachings of Rogers-Rosenberg and Miyazawa because the references share the same field of touchsurface and touch input technology, particularly touch input devices capable of displaying information, which makes them analogous art to the '086 patent. *Id.* For example, Miyazawa's disclosure "relates to an information processing apparatus, an input operation determination method, and an input operation determination program and is suitable for an information processing

apparatus including, for example, a touch panel.” EX1008, 1:9-13. And Miyazawa discloses that “[t]he touch screen 102 includes a liquid crystal panel 102A which is a display device displaying various kinds of information and a touch panel 102B which is an input operation device receiving an input operation.” EX1008, 5:25-36. Similarly, Rogers discloses “[a] method or 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. Additionally, as explained immediately above, all three references disclose touch detection units that recognize different types of touch operations and their detection. EX1003, ¶144.

A POSITA therefore would have considered the “touch,” “swipe,” and “tap” operations disclosed in Rogers-Rosenberg and been motivated to modify that apparatus to support the “dragging,” “flicking,” “tapping,” and “pinching” operations disclosed in Miyazawa. EX1003, ¶145. Further, the gesture operations in Rogers and Miyazawa are identical to the gesture operations disclosed in the ’086 patent, EX1001, 3:46-56 (“Among types of operations performed by the user on the portable terminal 0 are tapping, dragging, flicking, and pinching. Tapping is an operation which the user touches one point of the screen with a finger for a moment on the touch panel 1. Dragging is an operation which the user moves his or her finger over the screen of the touch panel 1 while the finger is in contact

therewith. Flicking is an operation which the user quickly slides his or her finger on the screen of the touch panel 1 while touching it. Pinching is an operation which the user touches two points of the screen of the touch panel 1 with two fingers and changes the distance between the two panels.”). 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 all three references by making the modification. EX1003, ¶145.

B. Claim 9. The information processing apparatus according to claim 1, wherein the first controller is configured to execute one or more of tapping, dragging, flicking, and pinching operations based on the detection of contact of the finger.

The Rogers-Rosenberg combination renders claim 1 obvious. §VI.B. Rogers also discloses the claimed “first controller,” §VI.B.4, and renders obvious, alone or in combination with Miyazawa, that “the first controller is configured to execute one or more of tapping, dragging, flicking, and pinching operations based on the detection of contact of the finger.” EX1003, ¶¶146-150.

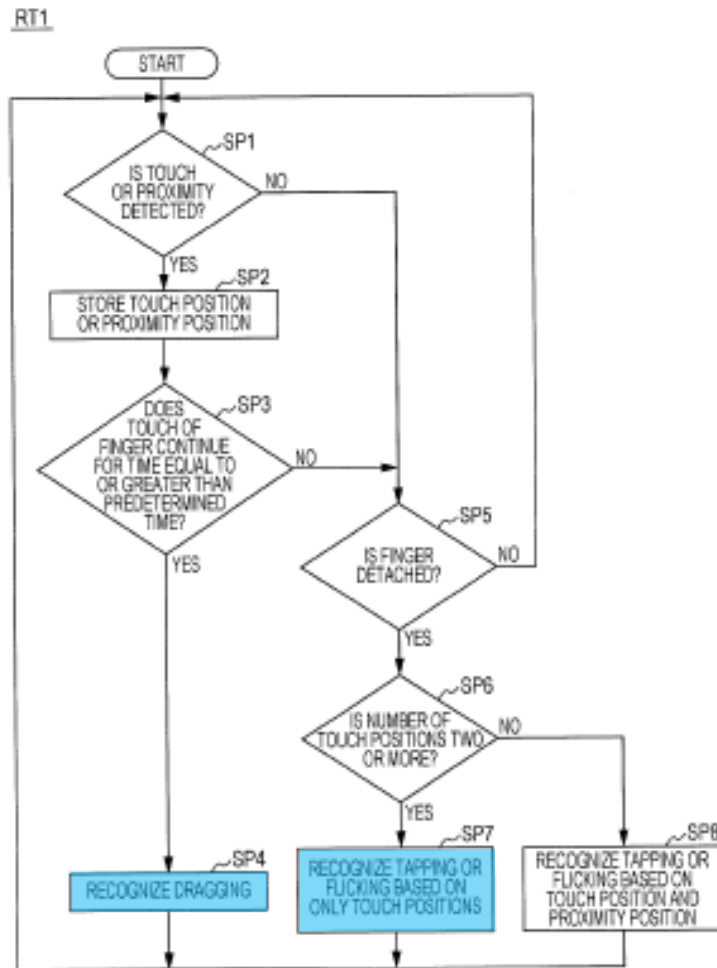
For example, Rogers discloses a “method and system for electronic access security uses touches and movements on a touch sensitive surface to determine graphical passcode that are used in a manner similar to passwords. Graphical passcodes comprise various combinations of swipes, *taps* or drags on a touchscreen surface as defined by a user. A user’s selected graphical passcode is stored in memory for comparison to subsequent entries of graphical passcode in

order to authenticate the users.” EX1006, Abstract. “The graphical passcode is essentially a series of touches, swipes, and/or *taps* on a touchsurface of varying pressure, speed and position.” EX1006, 3:34-36. Fig. 2A of Rogers “illustrates an exemplary graphical passcode consisting of a tap, a swipe, and two taps.” EX1006, 2:20-21.

The entered graphical passcode is used e.g., in an authentication process. EX1006, FIG. 5. A POSITA would have understood that Rogers first controller would be configured to execute the tapping operation based on the detection of contact of the finger based on these disclosures. EX1003, ¶148.

To the extent PO argues that this limitation also requires dragging, flicking, and/or pinching operations, Miyazawa discloses them. EX1003, ¶149. Specifically, Miyazawa at FIG 11 shows an operation recognition processing order with steps SP4, SP7 to execute dragging, tapping, and flicking operations:

FIG. 11



EX1008, FIG. 11.

Miyazawa also discloses the detection of “pinch-in or pinch-out” touch operations: “Moreover, the CPU 110 recognizes whether two fingers are moved in a direction in which the two fingers are closer to each other on the surface parallel to the operation surface or in a direction in which the two fingers are distant from each other, *based on the touch position and the proximity position, and determines*

whether the pinch-in is performed or the pinch-out is performed.” EX1008, 15:44-56.

C. Claim 10. The information processing apparatus according to claim 9, wherein the first controller is configured to execute tapping operations, and the tapping operations include detection of contact of the finger for a first time period.

The Rogers-Rosenberg-Miyazawa combination renders claim 9 obvious.

§VII.B. Rogers alone or in view of Miyazawa renders obvious that the first controller is configured to execute tapping operations. §VII.B. Moreover, Rogers renders obvious that the tapping operations include detection of contact of the finger for a first time period. EX1003, ¶¶151-152. Specifically, Rogers requires the user to create the graphical passcode “by touching a touchsurface in a series of movements and touches *within a brief period of time.*” EX1006, 3:60-62. Rogers also discloses that graphical passcode parameters “may be enveloped against time For authentication, a graphical passcode must occupy a portion of an envelope.” EX1006, 3:52-56.

Rogers further discloses that “when the template graphical passcode is inputted, one or more measurable parameters (e.g. *timing...*) of the inputted template graphical passcode is measured by the touchsurface. The measured parameters may be plotted as a function of time and/or position on the touchsurface.” EX1006, 4:15-21.

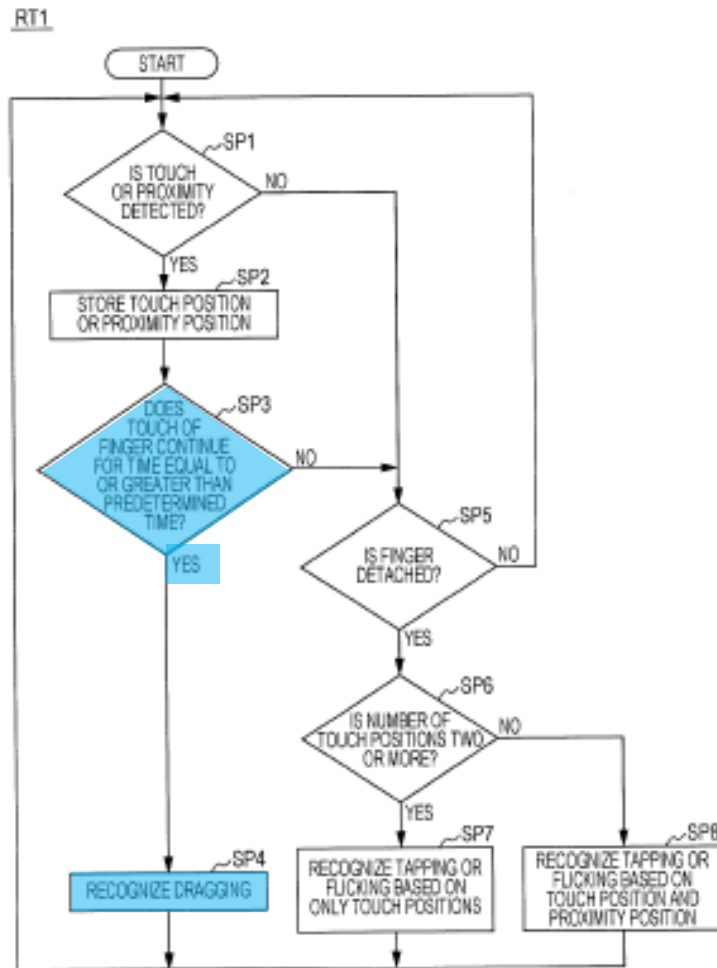
- D. Claim 11. The information processing apparatus according to claim 9, wherein the first controller is configured to execute dragging operations, and the dragging operations correspond to the user moving the finger while maintaining contact for a first time period.**

The Rogers-Rosenberg-Miyazawa combination renders claim 9 obvious.

§VII.B. Rogers alone or in view of Miyazawa disclose or render obvious that the first controller is configured to execute tapping operations. §VII.B. Moreover, Miyazawa at FIG 11 “recognize[s] dragging” when it is determined that the “touch of finger continue[s] for time equal to or greater than predetermined time.”

EX1008, FIG. 11 (YES at SP3 leading to SP4); EX1003, ¶¶153-154.

FIG. 11



EX1008, FIG. 11. Miyazawa states:

In step SP3, the CPU 110 determines whether the touch of the finger continues for a time equal to or longer than a predetermined time based on the history data. When the positive result is obtained in step SP3, it means that the operation surface is continuously touched with the finger, and then the CPU 110 allows the process to proceed to step SP4 subsequent to step SP3. In step SP4, the

CPU 110 determines that the operation input on the touch panel 102B is dragging, thus recognizes that the dragging is performed, and thus performs the process corresponding to the dragging.

EX1008, 10:59-11:15, *see also* 7:33-37 (“When detecting that the *touch of the finger on the operation surface continues for a time equal to or longer than a predetermined time* based on the history data, the CPU 110 recognizes an operation of continuously touching the finger on the operation surface, that is, *the dragging and thus recognizes the dragging as an input operation.*”).

E. Claim 12

- 1. [12a] The information processing apparatus according to claim 9, wherein the first controller is configured to execute flicking operations, and the flicking operations correspond to the user sliding the finger for a first time period, and**

The Rogers-Rosenberg-Miyazawa combination renders claim 9 obvious.

§VII.B. Rogers in view of Miyazawa renders obvious that the first controller is configured to execute flicking operations. §VII.B. Rogers or Miyazawa renders obvious that that flicking operations correspond to the user sliding the finger for a first time period. EX1003, ¶¶155-156. For example, Rogers FIG. 2E illustrates a swipe 22 shown as a trapezoid shape where the speed of the swipe 22 starts off fast and over time slows down, showing the user sliding the finger for a first time period. EX1006, 6:14-19; EX1003, ¶155. A POSITA would have understood that a

short swipe (i.e., over a short period of time) with a user's fingertip is a flick operation. EX1003, ¶155.

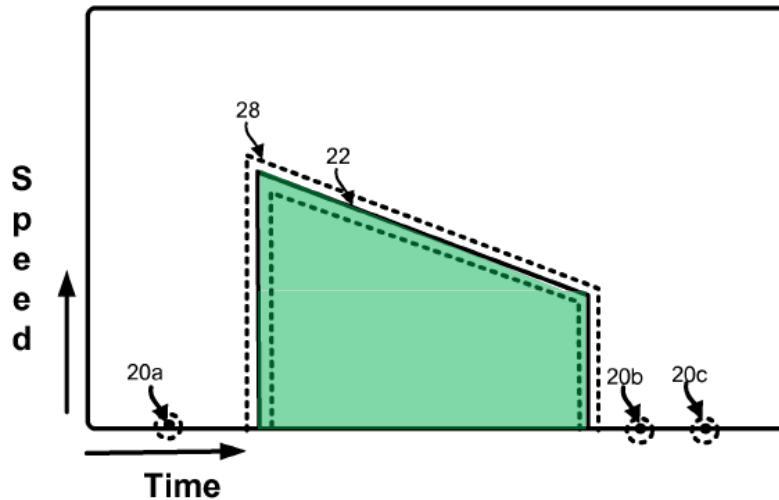


Fig. 2E

Additionally, Miyazawa discloses that “CPU 110 detects the *movement* of the touch position and determines that the performed input operation is *flicking*, when the distance between the start touch position and the end touch position is equal to or greater than a predetermined value.... The predetermined value is a value in which it is considered that the touch position is barely moved.” EX1008, 7:54-63. Moreover, Miyazawa identifies a dragging operation based on a determination of whether the user's touch “continue[s] for time *equal to or greater* than predetermined time,” EX1008, FIG. 11 (YES at SP3 leading to SP4), but determines flicking when the contact is less than that predetermined time (NO at step SP3 leading to SP7). EX1003, ¶156.

FIG. 11

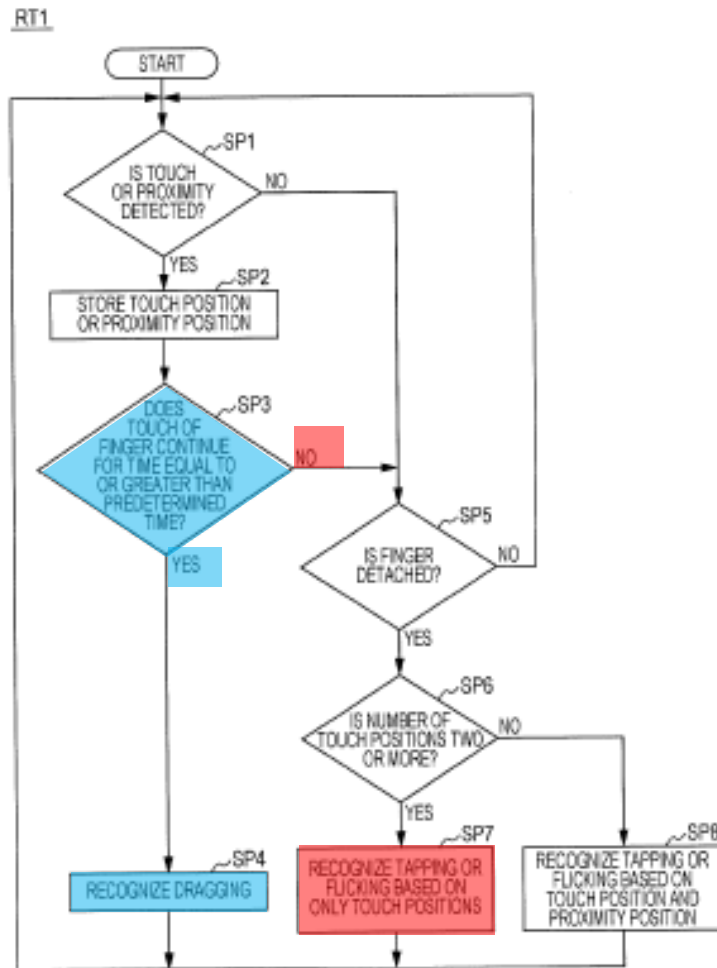


FIG. 1008, FIG. 11.

2. [12b] wherein the first controller is configured to execute pinching operations, and the pinching operations correspond to the user establishing two contacts and increasing the distance between the established two contacts.

Rogers in view of Miyazawa renders obvious that the first controller is configured to execute pinching operations. §VII.B. Miyazawa further discloses a pinching operation corresponding to the user establishing two contacts and

increasing the distance between the established two contacts. EX1003, ¶157.

Specifically, Miyazawa discloses that “CPU 110 recognizes 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 ... pinch-in or pinch-out is performed.*” EX1008, 15:44-49.

Moreover, the CPU 110 recognizes whether *two fingers are moved* in a direction in which the two fingers are closer to each other on the surface parallel to the operation surface or *in a direction in which the two fingers are distant from each other, ...* and determines whether the pinch-in is performed or the pinch-out is performed.” EX1008, 15:50-56.

F. Claim 13

1. **[13a] The information processing apparatus according to claim 9, wherein the first controller is configured to execute said dragging operations, and the dragging operations correspond to the user moving the finger while maintaining contact for a first time period, and**

The Rogers-Rosenberg-Miyazawa combination renders claim 9 obvious.

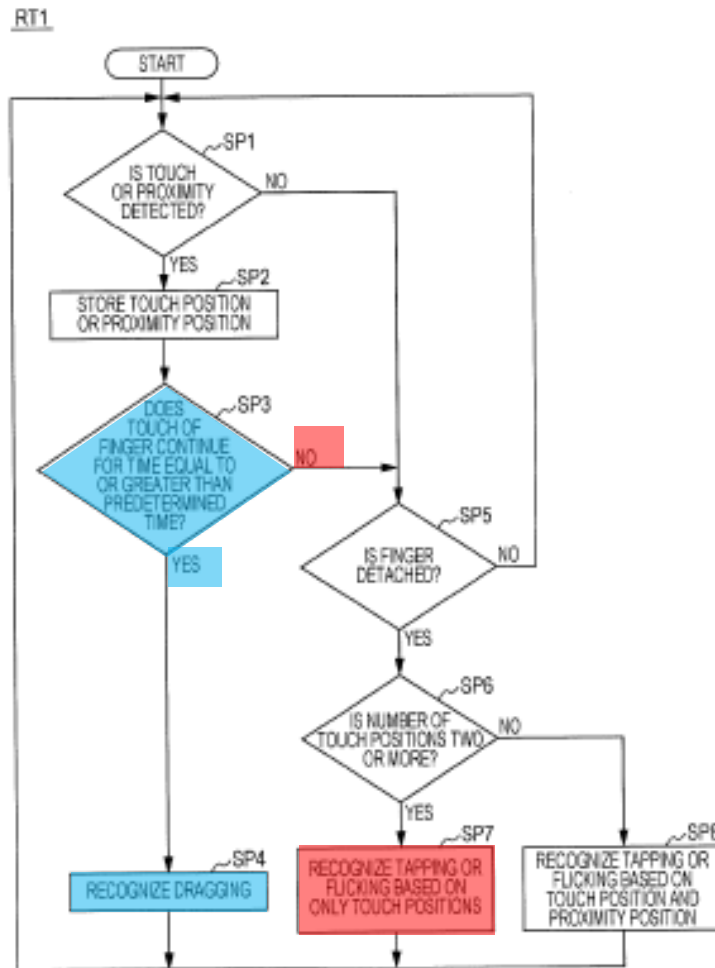
§VII.B. Moreover, Miyazawa discloses or renders obvious that the first controller is configured to execute dragging operations that correspond to the user moving the finger while maintaining contact for a first time period. §VII.D; EX1003, ¶158.

2. **[13b] wherein the first controller is configured to execute said flicking operations, and the flicking operations**

correspond to the user sliding the finger for a second time period that is shorter than the first time period.

Moreover, Rogers or Miyazawa render obvious that the first controller is configured to execute flicking operations that correspond to the user moving the finger while maintaining contact for a time period. §VII.E.1; EX1003, ¶159. A POSITA would have understood from the teachings of Rogers and Miyazawa that a “flicking operation” would require the user’s sliding contact to be over a shorter period of time than the period of time required for a dragging operation. EX1003, ¶159. Miyazawa teaches as much by evaluating its dragging operation based on a determination of whether the user’s touch “continue[s] for time equal to or *greater* than predetermined time,” EX1008, FIG. 11 (YES at SP3 leading to SP4), but determining flicking when the contact is less than that predetermined time (NO at step SP3 leading to SP7). EX1003, ¶159.

FIG. 11



EX1008, FIG. 11.

- G. Claim 14.** The information processing apparatus according to claim 1, wherein the touch panel comprises a display screen displaying a plurality of icons corresponding to applications being executed on the information processing apparatus, and the information processing apparatus is configured to execute an operation for moving at least one of the plurality of icons based on an operation that requires contact by a finger for a predetermined period of time.

The Rogers-Rosenberg combination renders claim 1 obvious. §VI.B.

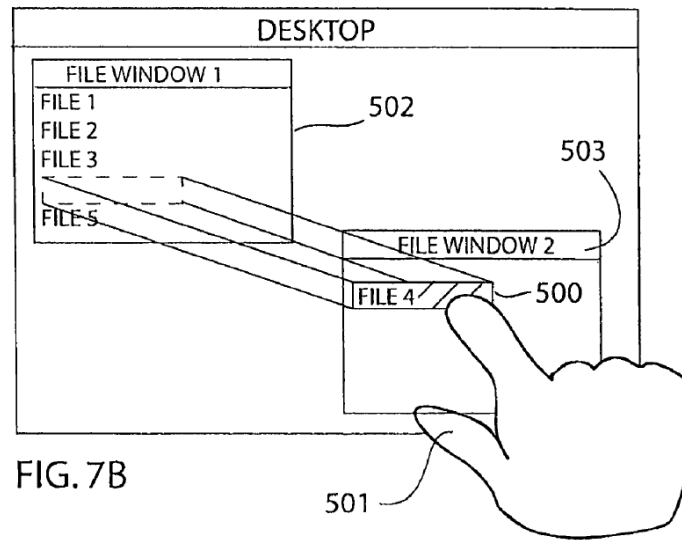
Moreover, Rogers and Rosenberg both disclose a touch panel comprising a display

screen configured to display information, §VI.E. Miyazawa renders the rest of this limitation obvious. EX1003, ¶160.

For example, Miyazawa discloses or renders obvious that the first controller is configured to execute dragging operations that correspond to the user moving the finger while maintaining contact for a first time period. §VII.D. A POSITA would have understood that one function of a dragging operation is to move objects displayed on the touchscreen (often referred to as a “drag and drop operation”). EX1003, ¶161. Indeed, this function was well known by at least 2007 as evidenced by Westerman:

Drag-and-drop function can be invoked by touching, with at least one finger, the image associated with the object to be dropped and graphically dragging the object to the desired drop location by maintaining the touch, such as shown in FIG. 7B, illustrating a drag and drop of a file listing 501 from folder window 502 to folder window 503.

EX1009, 12:41-46; FIG. 7B.



EX1009, FIG. 7B. A POSITA would have also understood that the object that can be dragged and drop includes icons, such as those used to represent applications installed on/accessible by the apparatus as this was within the POSITA's knowledge as evidenced by Westerman:

The display device 68 can be configured to display a graphical user interface (GUI) 69 that can provide an easy to use interface between a user of the computer system and the operating system or application running thereon. Generally speaking, *the GUI 69 can represent programs, files and operational options with graphical images, objects, or vector representations.* The graphical images can include windows, fields, dialog boxes, menus, *icons*, buttons, cursors, scroll bars, etc. Such images can be arranged in predefined layouts, *or can be created dynamically to serve the specific actions*

being taken by a user. During operation, the user can select and/or activate various graphical images in order to initiate functions and tasks associated therewith.

EX1009, 5:20-32; EX1003, ¶162.

A POSITA would have also understood that “a plurality of icons corresponding to applications being executed on the information processing apparatus” would have been displayed and capable of being dragged and dropped. EX1003, ¶163. For instance, Westerman discloses that “gestures 85 can be identified as commands for performing actions in *applications* stored in the memory 58, modifying *image objects* shown on the display 68.” EX1009, 6:45-47.

VIII. GROUND 3: ROGERS AND REKIMOTO

A. Motivation to Combine

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. EX1003, ¶164; EX1006, Abstract, FIGS. 1, 2A; EX1010, Abstract, FIG. 1. 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, EX1010, 1:53-67, and a POSITA would have understood that this would have added a benefit to Roger’s device. EX1003, ¶164.

Thus, 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. EX1003, ¶165.

Further, 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. EX1003, ¶166. Specifically, Rekimoto discloses:

During the input operation, the contact area of the contact sensor section 2 occupied by the fingertip equals a small area S1... The contact area of the contact sensor section 2 touched by the finger pad equals a large area S2... 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.*

EX1010, 5:18-31.

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. EX1003, ¶167.

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). *KSR*, 550 U.S. 398 at 416; EX1003, ¶168.

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. EX1003, ¶169. Rogers discloses that the "measurable parameters" of a "template graphical passcode" can include "contact area." EX1006, 4:15-19. Rekimoto teaches distinguishing between finger pad and fingertip touches by touch "areas S1, S2 [that] can be clearly distinguished by using a threshold St of a

specified area as a boundary size, shape, and/or orientation of the detected finger.”

EX1010, 5:29-31. Rekimoto further discloses that when compared to the fingertip contact S1, “the area S2 touched by the finger pad is larger (wider).” EX1010, 5:26-291. A POSITA would have viewed these disclosures in Rosenberg and been motivated to modify the “graphical passcode” features of Rogers so that the disclosed device detected information input by a finger pad or fingertip, because it would provide a “clearly distinguish[able]” basis upon which to program the device disclosed in Rogers to detect a “measurable parameter” based on “contact area.” EX1003, ¶169.

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. EX1003, ¶170. 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. EX1003, ¶170. A POSITA would have

had a reasonable expectation of success of modifying Rogers in this manner for at least the same reasons. EX1003, ¶170.

B. Claim 1⁵

1. [1pre]

To the extent the preamble is limiting, Rogers discloses it. §VI.B.1.

2. [1a]

Rogers discloses this limitation. §VI.B.2.

3. [1b]

Rogers discloses this limitation. §VI.B.2.

4. [1c]

Rogers discloses this limitation. §VI.B.3.

5. [1d]

Rogers discloses this limitation. §VI.B.5.

6. [1e]

Rogers discloses this limitation. §VI.B.6.

7. [1f]

The Rogers-Rekimoto combination renders this limitation obvious. EX1003, ¶177. As shown above in Ground 1, Petitioners submit that Rogers alone renders

⁵ Claim language has been reproduced in Grounds 1 and 2 and in the Table of Claims set forth above.

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. §VI.B.7.

Rogers in view of Rekimoto

To the extent PO argues that Rogers does not fully disclose limitation [1f] because Rogers does not explicitly recite the use of finger pad and fingertip inputs, Rogers in view of Rekimoto renders this limitation obvious. EX1003, ¶¶178-181.

Rekimoto discloses inputting input information by a pad of the finger (“finger pad”) and inputting input information by an end of the finger (“fingertip”):

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*.... 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*....

EX1010, 5:13-24.

FIG.2A

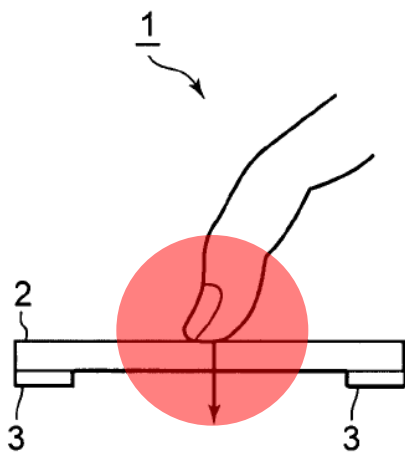
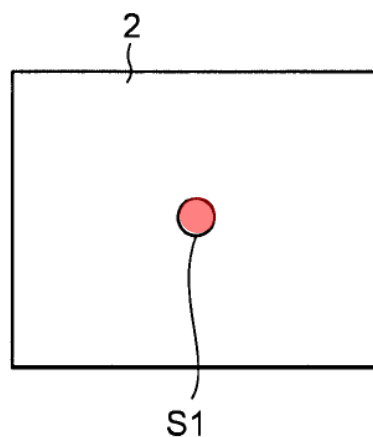


FIG.2B



EX1010, FIGS. 2A, 2B.

FIG.3A

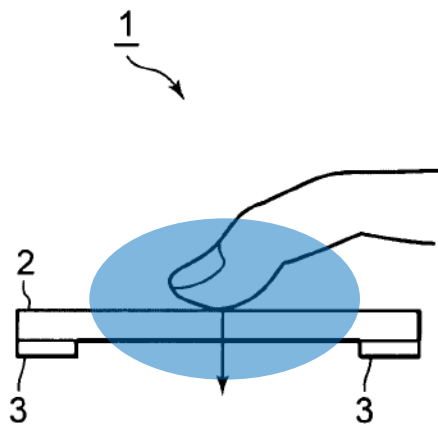
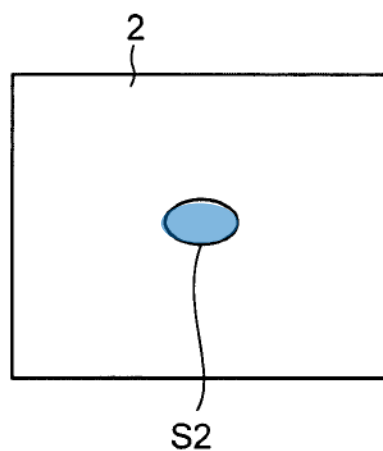


FIG.3B

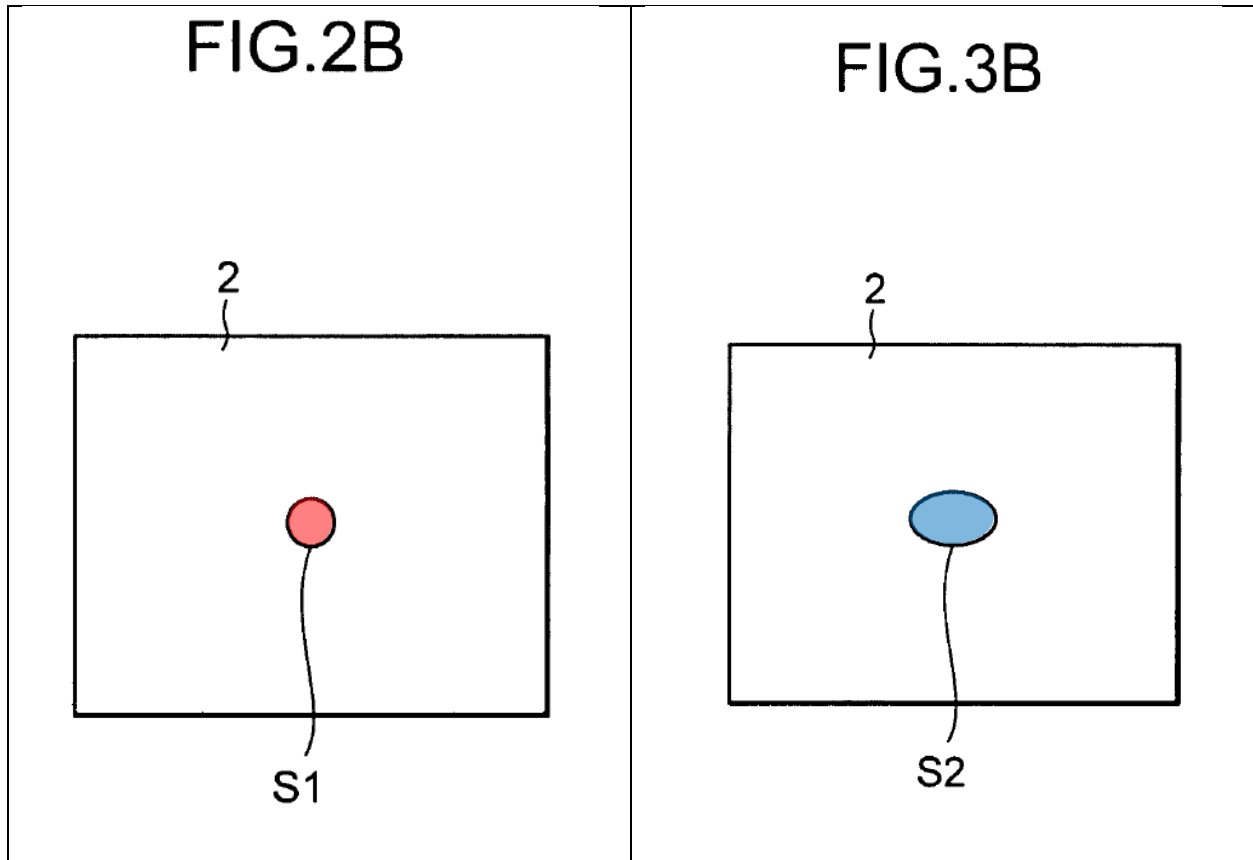


EX1010, FIGS. 3A, 3B.

Rekimoto explicitly discloses distinguishing fingertip touches and finger pad touches:

During the input operation, the *contact area of the contact sensor section 2 occupied by the fingertip equals a small area S1...* The contact area of the contact sensor section 2 touched by the *finger pad equals a large area S2...* 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.*

EX1010, 5:18-31.



Rekimoto discloses that fingertip and finger pad touches can be used for different processing (zoom operations in the illustrated example): “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.” EX1010, 5:31-37; EX1003, ¶181.

C. Claim 2

The Rogers-Rekimoto combination renders claim 1 obvious. §VIII.B.

Rogers further discloses this limitation. §VI.C.

D. Claim 4

The Rogers-Rekimoto combination renders claim 1 obvious. §VIII.B.

Rogers further discloses or renders obvious this limitation. §VI.D.

E. Claim 5

The Rogers-Rekimoto combination renders claim 1 obvious. §VIII.B.

Rogers in view of Rekimoto renders obvious the inputting of second information relating to the identification of the user in the first or second registering mode, §VIII.B.7, and renders obvious this limitation. EX1003, ¶¶184-187. For example, Rogers discloses that its touch panel 40 includes a display. EX1006, 3:4-5 (“As used herein, a ‘touchscreen’ is a touch input device with an associated image display.”), 5:6-16:

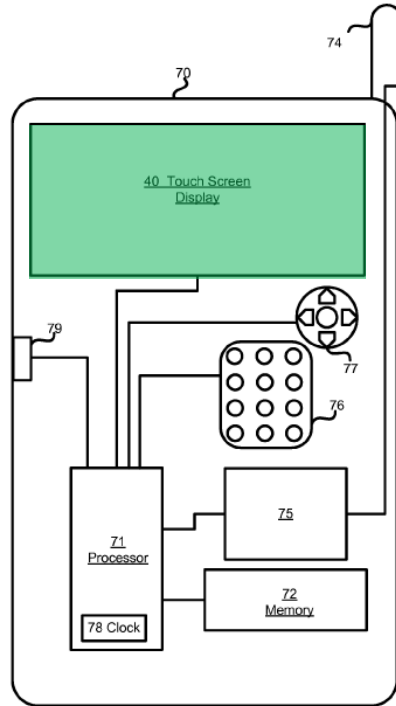


Fig. 1

EX1006, FIG. 1.

Rekimoto also discloses a touch display and manipulating displayed objects:

FIG. 5A

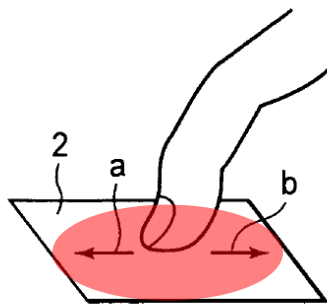


FIG. 5B



EX1010, FIGS. 5A, 5B. Rekimoto's display is configured to display "function names, icons representing functions, or the like." EX1010, 9:40-43.

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.*

F. Claim 6

The Rogers-Rekimoto combination renders claim 1 obvious. §VIII.B.
Rogers further discloses this limitation. §VI.F.

G. Claim 7

The Rogers-Rekimoto combination renders claim 1 obvious. §VIII.B.
Rogers further discloses this limitation. §VI.G.

IX. GROUND 4: ROGERS, REKIMOTO, MIYAZAWA

A. Motivation to Combine

It would have been obvious to a POSITA to combine the Rogers-Rekimoto apparatus with Miyazawa and a POSITA would have been motivated and capable of doing so for at least the same reasons provided for combining Rogers-Rosenberg with Miyazawa. §VII.A; EX1003, ¶190.

For example, Rogers, alone or in combination with Rekimoto, discloses various touch operations that the user executes on the touch surface to create/enter the graphical passcode. The method “uses touches and movements on a touch sensitive surface to determine graphical passcode that are used in a manner similar to passwords. *Graphical passcodes comprise various combinations of swipes, taps*

or drags on a touchscreen surface as defined by a user. A user's selected graphical passcode is stored in memory for comparison to subsequent entries of graphical passcode in order to authenticate the users." EX1006, Abstract. In other words, the graphical passcode disclosed by Rogers, alone or in combination with Rekimoto "is essentially a *series of touches, swipes, and/or taps on a touchsurface of varying pressure, speed and position.*" EX1006, at 3:34-36. The user creates the graphical passcode by executing touch operations on the disclosed touch surface, *i.e.*, "by touching a touchsurface in a series of movements and touches within a brief period of time." EX1006, 3:60-62. EX1003, ¶191.

A POSITA would have been motivated to incorporate the gestures disclosed by Miyazawa for e.g., the creation/entry of Rogers' graphical passcode. EX1003, ¶192. A POSITA would have been motivated to combine the teachings of Rogers-Rekimoto and Miyazawa because the references share the same field of touchsurface and touch input technology, particularly touch input devices capable of displaying information, which makes them analogous art to the '086 patent. EX1003, ¶192. The invention disclosed by Miyazawa "relates to an information processing apparatus, an input operation determination method, and an input operation determination program and is suitable for an information processing apparatus including, for example, a touch panel." EX1008, 1:9-13. And Miyazawa discloses that "[t]he touch screen 102 includes a liquid crystal panel 102A which is

a display device displaying various kinds of information and a touch panel 102B which is an input operation device receiving an input operation.” EX1008, 5:25-36. Similarly, Rogers discloses “[a] method or 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. Additionally, all three references disclose touch detection units that recognize different types of touch operations and their detection. EX1003, ¶192.

A POSITA therefore would have considered the “touch,” “swipe,” and “tap” operations disclosed in Rogers-Rekimoto and been motivated to modify that apparatus to execute the “dragging,” “flicking,” “tapping,” and “pinching” operations disclosed in Miyazawa. EX1003, ¶193. Further, the gesture operations in Rogers and Miyazawa are identical to the gesture operations disclosed in the ’086 patent, EX1001, 3:46-56 (“Tapping is an operation which the user touches one point of the screen with a finger for a moment on the touch panel 1. Dragging is an operation which the user moves his or her finger over the screen of the touch panel 1 while the finger is in contact therewith. Flicking is an operation which the user quickly slides his or her finger on the screen of the touch panel 1 while touching it. Pinching is an operation which the user touches two points of the screen of the touch panel 1 with two fingers and changes the distance between the two panels.”). 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 all three references by making the modification. EX1003, ¶193.

B. Claim 9

The Rogers-Rekimoto combination renders claim 1 obvious. §VIII.B.
Rogers alone or in combination with Miyazawa discloses or renders obvious this limitation. §VII.B.

C. Claim 10

The Rogers-Rekimoto-Miyazawa combination renders claim 9 obvious.
§IX.B. Rogers alone or in combination with Miyazawa discloses or renders obvious this limitation. §VII.B.

D. Claim 11

The Rogers-Rekimoto-Miyazawa combination renders claim 9 obvious.
§IX.B. Miyazawa discloses or renders obvious this limitation. §VII.B.

E. Claim 12

1. [12a]

The Rogers-Rekimoto-Miyazawa combination renders claim 9 obvious.
§IX.B. Rogers alone or in combination with Miyazawa discloses or renders obvious this limitation. §VII.E.1.

2. [12b]

Miyazawa discloses or renders obvious this limitation. §VII.E.2.

F. Claim 13

1. [13a]

The Rogers-Rekimoto-Miyazawa combination renders claim 9 obvious.

§IX.B. Miyazawa discloses or renders obvious this limitation. §VII.F.1.

2. [13b]

Rogers alone or in combination with Miyazawa renders obvious this limitation. §VII.F.2.

G. Claim 14

The Rogers-Rekimoto combination renders claim 1 obvious. §VIII.B.
Miyazawa discloses or renders obvious this limitation. §VII.G.

X. DISCRETIONARY DENIAL IS NOT WARRANTED

A. 35 U.S.C. § 314(a) Analysis

Discretionary denial is not warranted here as the “compelling merits” standard set forth in the June 21, 2022, *Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation* (“Interim Guidance”) and recent board decisions, weigh against discretionary denial. Indeed, as shown above, the alleged novelty of the ’086 patent was obvious in view of multiple prior art combinations.

The Challenged Claims are clearly invalid, Petitioners have not previously challenged any related patents based on the references relied upon in this petition. Were the Board to deny institution, potentially years of district court litigation

would be required just to obtain a finding of invalidity. Accordingly, the Board should not exercise its discretion to deny institution at least under the compelling merits standard. Interim Guidance at 4; *Vizio, Inc. v. Maxell, Ltd.*, IPR2022-01458, Paper 8, at 62.⁶

B. 35 U.S.C. § 325(b) Analysis

Applying the two-part framework discussed in *Advanced Bionics, LLC v. Med-El Elektromedizinische Gerate GMBH*, IPR2019-01469, Pap. 6, *8-9, the Board should not exercise its § 325(d) discretion to deny institution.

First, none of the challenges are substantially the same as those considered during prosecution. While Rogers was “considered,” it was not considered formally or in view of the Grounds present herein. Moreover, while Rosenberg was considered in combination with Bayram, whether Rosenberg discloses fingertip and finger pad touches was not formally addressed. None of the other art cited herein was considered during the prosecution of the ’086 patent.

Second, to the extent that the challenges herein are found to be based on prior art that is the same as or cumulative to prior art considered by the examiner

⁶ The Board’s *Fintiv* framework should be overturned because it (1) exceeds the Director’s authority, (2) is arbitrary and capricious, (3) and was adopted without notice-and-comment rulemaking.

during prosecution, the examiner has made a clear error in allowing the claims over such prior art. This is at least because the challenges in this Petition satisfy the compelling merits standard, and allowing the claims over such prior art is therefore clear error.

XI. COMPLIANCE WITH FORMAL REQUIREMENTS

A. Mandatory Notices Under 37 C.F.R. §§ 42.8(b)(1)-(4)

1. Real Party-In-Interest

Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc. are the Petitioners and real parties-in-interest.

2. Related Matters

The '815 patent is subject to the following action: *Maxell, Ltd. v. Samsung Electronics Co., Ltd., et al.*, Case No. 5:23-cv-92 (EDTX) (“District Court Litigation”).

3. Lead and Backup Counsel

Lead Counsel	Backup Counsel
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4. Service Information

Service information for lead and backup counsel is provided in the designation of lead and backup counsel above.

B. Standing

In accordance with 37 C.F.R. § 42.104(a), Petitioners certify that the '086 patent is available for *inter partes* review and that Petitioners are not barred or estopped from requesting an *inter partes* review challenging the patent claims on the grounds identified in this Petition.

XII. CONCLUSION

The Challenged Claims should be found unpatentable for the reasons discussed herein.

Date: April 26, 2024

Respectfully submitted,

/s/ Gianni Minutoli

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Petitioners certify that this petition includes 13,425 words, as measured by Microsoft Word, exclusive of the table of contents, mandatory notices under § 42.8, certificates of service, word count, claim listing, and exhibits.

Date: April 26, 2024

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CERTIFICATE OF SERVICE

The undersigned certifies pursuant to 37 C.F.R. §§ 42.6(e) and 42.105 that on April 26, 2024, a true and correct copy of the Petition for *Inter Partes* Review of U.S. Patent No. 8,982,086 challenging claims 1, 2, 4-7, and 9-14 was served by emailing a copy of same (by agreement) to the following attorneys for the Patent Owner:

maxell-samsung-service@mayerbrown.com

A courtesy copy was sent electronically to counsel for Patent Owner in the District Court Litigation:

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Date: April 26, 2024

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