

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC and MOTOROLA MOBILITY LLC
Petitioners

v.

MULTIFOLD INTERNATIONAL INCORPORATED PTE. LTD.,
Patent Owner

IPR2025-00058

Patent No. 9,158,494

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 9,158,494**

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LIST OF EXHIBITS

EX1001	U.S. Patent No. 9,158,494 (“the ’494 patent”)
EX1002	Declaration of Sandeep Chatterjee, Ph.D.
EX1003	Curriculum Vitae of Sandeep Chatterjee, Ph.D.
EX1004	Prosecution History of U.S. Patent App. No. 13/366,483
EX1005	U.S. Patent Application Publication No. 2012/0306782 (“Seo”)
EX1006	U.S. Provisional Patent Application No. 61/441,491, Certified Translation of U.S. Provisional Patent Application No. 61/441,491 into English, and Translation Certificate (“Seo Provisional”) ¹
EX1007	U.S. Patent Application Publication No. 2010/0248788 (“Yook”)
EX1008	Scheduling Order for <i>Multifold International Incorporated Pte. Ltd. v. Motorola Mobility LLC</i> , Case No. 1:23-cv-01173 (D. Del.)
EX1009	Scheduling Order for <i>Multifold International Incorporated Pte. Ltd. v. Google LLC</i> , Case No. 1:23-cv-01323 (D. Del.)
EX1010	U.S. Patent No. 8,649,824 (“Choi”)
EX1011	U.S. Patent No. 8,566,301 (“Rueben”)
EX1012	Mobile Phone Museum, Nokia 9000 Communicator (https://www.mobilephonemuseum.com/phone-detail/nokia-9000-communicator)

¹ The applicant filed this provisional application as multiple separate documents.

Exhibit 1006 is the relevant original document from the provisional application and the applicant’s certified translation, not the complete set of all documents comprising the provisional.

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EX1013	U.S. Patent No. 6,912,664 (“Ranganathan”)
EX1014	U.S. Patent No. 8,265,705 (“Lee”)
EX1015	U.S. Patent No. 9,692,881 (“Jyonoshita”)
EX1016	An Introduction to Graphical User Interfaces with Java Swing, Paul Fisher, Addison Wesley, 2005 (excerpt)

I. INTRODUCTION

Google LLC and Motorola Mobility LLC (collectively “Petitioners”) respectfully request *inter partes* review of claims 1, 2, 4, 6, 9, 10, 12–14, and 18–20 (“the challenged claims”) of U.S. Patent No. 9,158,494 (“the ’494 patent”) (EX1001) assigned to Multifold International Incorporated Pte. Ltd. (“Patent Owner”).

II. MANDATORY NOTICES

Real Parties-in-Interest: Pursuant to 37 C.F.R. §42.8(b)(1), Petitioners identify Google LLC² and Motorola Mobility LLC³ as the real party-in-interest.

Related Matters: The ’494 patent is asserted in *Multifold International Incorporated Pte. Ltd. v. Google LLC*, Case No. 1:23-cv-01323 (D. Del.) and *Multifold International Incorporated Pte. Ltd. v. Motorola Mobility LLC*, Case No.

² Google LLC is a subsidiary of XXVI Holdings Inc., which is a subsidiary of Alphabet Inc. XXVI Holdings Inc. and Alphabet Inc. are not real parties-in-interest to this proceeding.

³ Motorola Mobility LLC is a direct, wholly owned subsidiary of Motorola Mobility Holdings LLC, which is indirectly a wholly-owned subsidiary of Lenovo Group Ltd. Motorola Mobility Holdings LLC and Lenovo Group Ltd. are not real parties-in-interest to this proceeding.

1-23-cv-01173 (D. Del.). The '494 patent was previously asserted in *Multifold International Incorporated Pte. Ltd. v. Samsung Electronics Co., Ltd. et al*, Case No. 2-21-cv-00371 (E.D. Tex.), which was dismissed on June 2, 2022, with the court's grant of a joint motion to dismiss.

The '494 patent originates from U.S. Patent Application No. 13/366,483, filed on February 6, 2012, and claims priority to Provisional Application No. 61/539,884, filed on September 27, 2011.

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Petitioners consent to electronic service at the emails listed above for each
Petitioner.

III. PAYMENT OF FEES UNDER 37 C.F.R. §§42.15 AND 42.103

The PTO is authorized to charge any fees due during this proceeding to
Deposit Account No. 50-2613.

IV. GROUNDS FOR STANDING

Petitioners certify under 37 C.F.R. §42.104(a) that the '494 patent is available for review and Petitioners are not barred or estopped from requesting review on the grounds identified herein.

V. PRECISE RELIEF REQUESTED AND GROUNDS RAISED

Petitioners respectfully request review of claims 1, 2, 4, 6, 9, 10, 12–14, and 18–20 of the '494 patent and cancellation of these claims as unpatentable. The challenged claims should be found unpatentable on the following grounds:

Ground 1: Claims 1, 2, 4, 6, 10 and 12 are unpatentable under pre-AIA 35 U.S.C. §102 as anticipated by Seo (EX1005).

Ground 2: Claims 1, 2, 4, 6, 10, 12, and 13 are unpatentable under pre-AIA 35 U.S.C. §103 as being obvious in view of Seo.

Ground 3: Claims 14 and 18–20 are unpatentable under pre-AIA 35 U.S.C. §103 as being obvious in view of Seo and Yook (EX1007).

Ground 4: Claim 9 is unpatentable under pre-AIA 35 U.S.C. §103 as being obvious in view of Seo and Choi (EX1010).

For purposes of this proceeding, Petitioners assume the earliest possible priority date of the '494 patent is September 27, 2011.⁴ Seo published from an application filed February 10, 2012 and claims priority to provisional application No. 61/441,491 filed February 10, 2012 (EX1005, Cover), Yook published from an application filed March 22, 2010, and Choi issued from an application filed on May 12, 2009, and thus each qualifies as prior art under at least §102(e). As explained below in Section IX, Seo meets the test set forth in *Dynamic Drinkware, LLC v. National Graphics, Inc.*, 800 F.3d 1375 (Fed. Cir. 2015) detailing when a non-provisional application can claim the benefit of its earlier provisional filing date for purposes of serving as prior art in the instant proceeding.

The above-listed prior art was not identified during prosecution (EX1001, Cover; *see also generally* EX1004).

VI. LEVEL OF ORDINARY SKILL

A person of ordinary skill in the art at the time of the alleged invention of the '494 patent ("POSITA") would have had an undergraduate degree in electrical engineering, computer engineering, computer science or a related field along with

⁴ Petitioners do not concede that the '494 patent is entitled to such a priority date and reserve the right to challenge such priority claim in this proceeding and other proceedings.

two years of work experience in the field of user interface technologies, including *e.g.*, graphical user interface technologies, or a related field. (EX1002 ¶¶20–21.)⁵

More education can supplement practical experience and vice versa. (*Id.*)

VII. OVERVIEW OF THE '494 PATENT

The '494 patent broadly relates to “methods and devices for minimizing and maximizing displayed output associated with applications.” (EX1001, Abstract; EX1002 ¶¶32–34.) Specifically, the alleged invention concerns presenting one or more of multiple pages of an application across the displays. (*Id.*, 1:57-2:11.) For instance, “an application presented as two or more pages in a portrait mode can be minimized to present one of the two or more pages.” (*Id.*, Abstract.) “The page that continues to be displayed can comprise a primary or preferred page, while the page that is dismissed can comprise a secondary or ancillary page.” (*Id.*)

For example, with reference to figure 40 (shown below), the '494 patent discusses presenting two pages from an application (step 4008), receiving a user input to minimize an application (step 4012) after which the “primary page” continues to be presented and an “ancillary page” is no longer presented (step

⁵ Petitioners submit the declaration of Dr. Sandeep Chatterjee (EX1002), an expert in the field of the '494 patent. (EX1002 ¶¶2–13, ¶¶14–127 (citing EX1005–EX1007, EX1010–EX1016); EX1003.)

4016). (*Id.*, 48:1-41, Fig. 40.) Thereafter, another user input maximizes the application (step 4020), after which the first and second pages are again presented, just like step 4008 (step 4024). (*Id.*, 48:42-62, Fig. 40.)

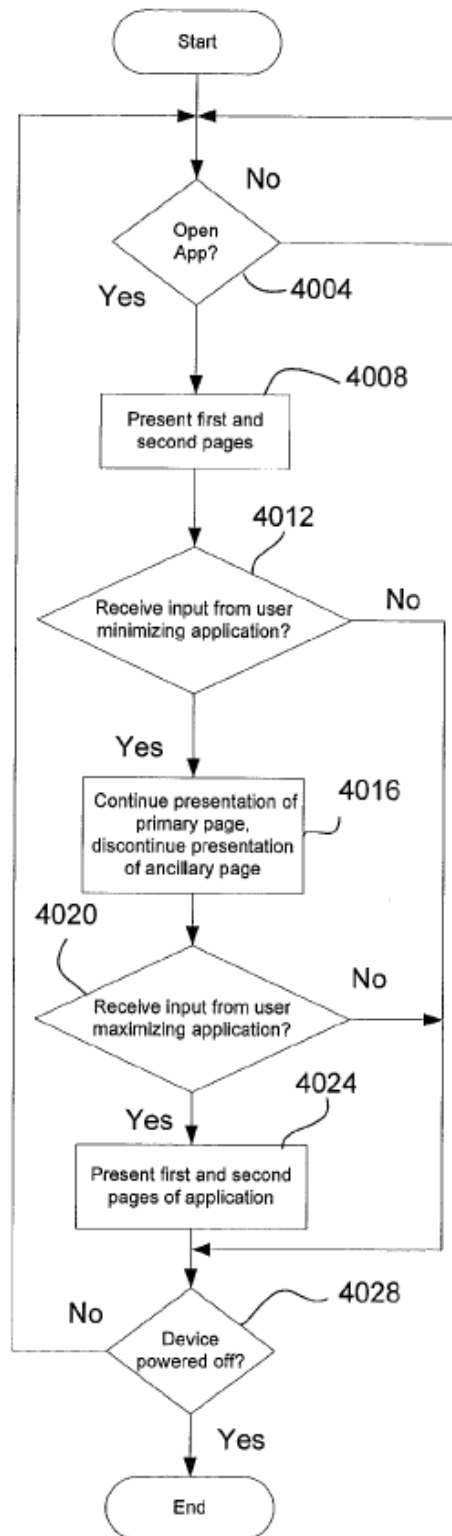
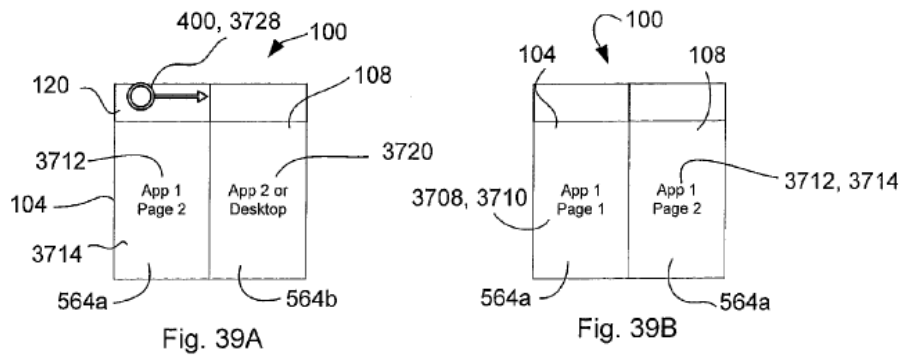
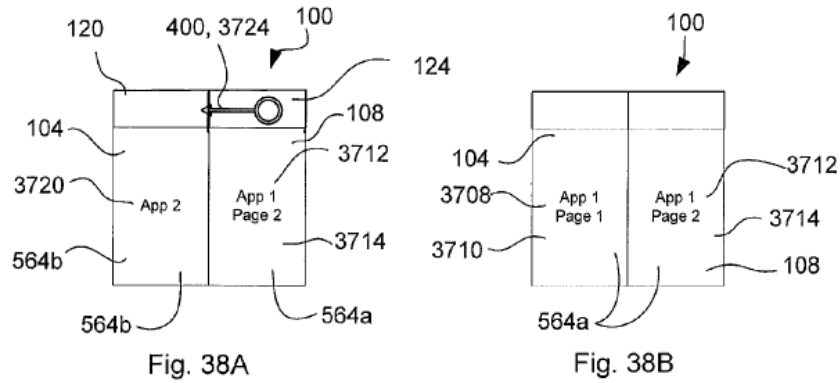
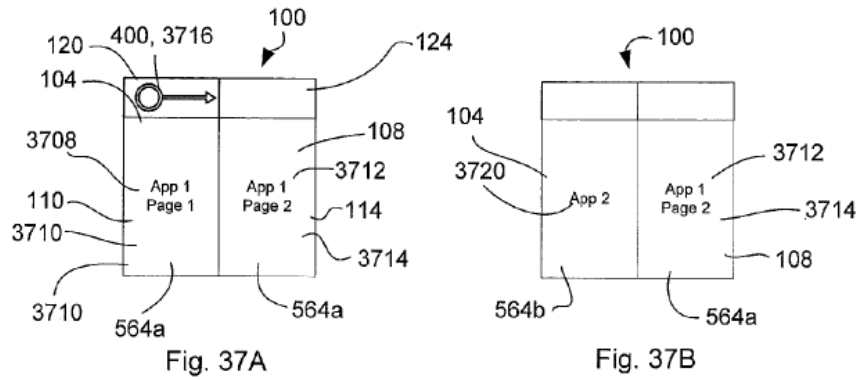


Fig. 40

(EX1001, Fig. 40.)

A similar method is depicted in figures 37A-38B, where pages 1 and 2 of app 1 are presented on the two displays in figure 37A, then after a user input page 1 of app 1 on the left display is replaced by app 2 in figure 37B. (*Id.*, 46:38-47:22, Figs. 37A-37B). Then, in figure 38A, a different user input is received, which returns the device's two displays to their original content of pages 1 and 2 of app 1. (*Id.*, 47:47:23-49, Figs. 38A-38B.)



(*Id.*, Figs. 37A-39B.)

VIII. CLAIM CONSTRUCTION

The Board only construes the claims when necessary to resolve the underlying controversy. *Toyota Motor Corp. v. Cellport Sys., Inc.*, IPR2015-00633, Paper No. 11 at 16 (P.T.A.B. Aug. 14, 2015) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)). Here, given the correlation between the prior art references and the challenged claims of the '494 patent, the Board need not construe any terms of the challenged claims to resolve the underlying controversy. (EX1002 ¶46.)⁶ As demonstrated below, the prior art in the proposed grounds disclose or suggest and render obvious the challenged claims under their plain and ordinary meaning of the terms.

IX. DETAILED EXPLANATION OF GROUNDS

As detailed below, each of the challenged claims are unpatentable. (EX1002 ¶¶47–126.)

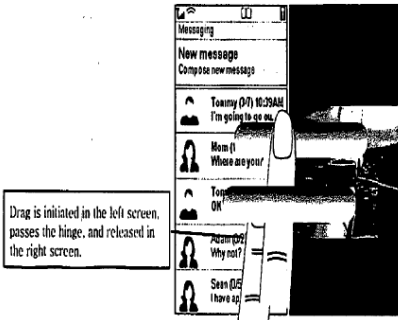
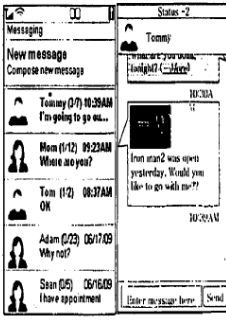
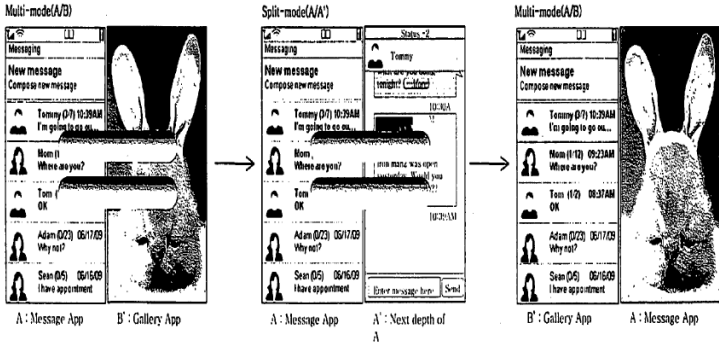
⁶ Petitioners reserve all rights to raise claim construction and other arguments, including challenges under 35 U.S.C. §112, in district court as relevant to those proceedings. By applying the plain meaning or proposed constructions herein for this proceeding, Petitioner does not concede the claims are definite, have specification support, etc., and thus reserves the right to address any associated §112 issues in other proceedings.

As noted above in Section V, all Grounds rely on Seo being entitled to the filing date of the Seo Provisional. Below, Petitioner demonstrates that (1) at least one claim of Seo is supported by the Seo Provisional, and (2) the subject matter relied upon in Seo is also described by the Seo Provisional.

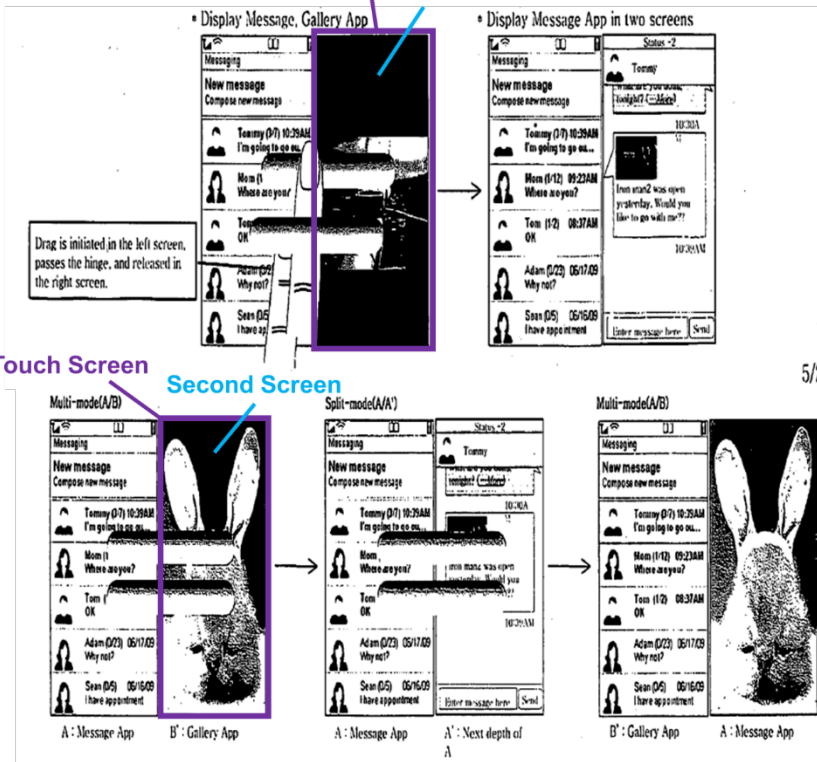
“A reference patent is only entitled to claim the benefit of the filing date of its provisional application if the disclosure of the provisional application provides support for the claims in the reference patent in compliance with §112.” *Dynamic Drinkware, LLC*, 800 F.3d at 1382; *see also Ex parte Mann*, 2016 WL 7487271, at *6 (P.T.A.B. Dec. 21, 2016) (“[U]nder *Dynamic Drinkware*, a non-provisional child can be entitled to the benefit of a provisional application's filing date if the provisional application provides sufficient support for at least one claim in the child.”).

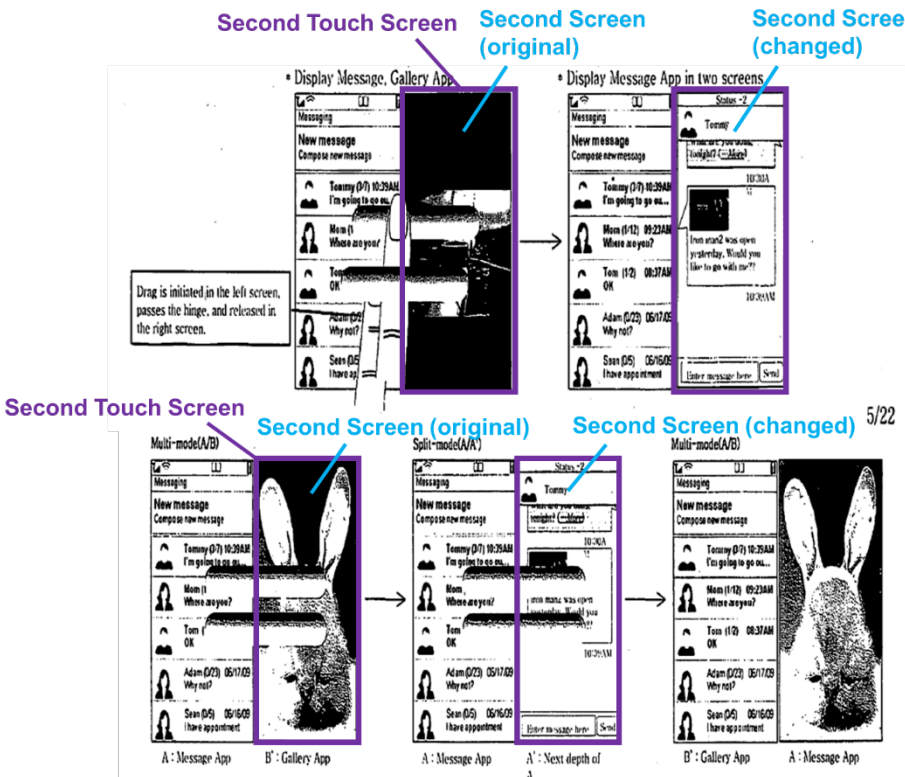
The following chart demonstrates the enabling support found in the Seo Provisional for claim 1 of Seo. The analysis for each claim element in the Grounds also includes supporting citations to the Seo Provisional. (EX1002 ¶39.)

Seo Claim 1	Exemplary Disclosures of the Seo Provisional
1. A method of changing screens in an apparatus including multiple touch screens, the	To the extent the preamble is limiting, the Seo Provisional discloses this limitation. The Seo Provisional discloses in the summary of the invention a “[t]ouch screen input device,” where “touch input gestures input in dual touch screens have connectivity and are operated, an input controller receives the touch input gestures as a single input,” “[e]ach touch input is processed through recognizing a motion direction and the number of touch inputs,” and “[s]creens are changed in

Seo Claim 1	Exemplary Disclosures of the Seo Provisional
method comprising:	accordance with a motion direction based on an analyzed touch input.” (EX1006, 34 (emphasis added).) Seo Provisional provides examples of changing screens: •Case: In a case of different Apps displayed in two screen, two screen touch gestures are input in the two screens and then one App is displayed in the two screens. • Display Message, Gallery App  • Display Message App in two screens  (Id.)  (Id., 38.)
displaying a first screen in a first touch screen;	The Seo Provisional discloses this limitation. For example, it discloses a screen with a message gallery from a messaging application (“first screen”) in a touch screen (“first touch

Seo Claim 1	Exemplary Disclosures of the Seo Provisional
	screen”). (E.g., EX1006, 34-41.) • Display Message, Gallery App • Display Message App in two screens First Touch Screen First Screen Drag is initiated in the left screen, passes the hinge, and released in the right screen. Multi-mode(A/B) Split-mode(A/A') Multi-mode(A/B) A : Message App B : Gallery App A : Message App A' : Next depth of A B : Gallery App A : Message App (Id., 34 (top), 38 (bottom) (annotated).)
displaying a second screen in a second touch screen;	The Seo Provisional discloses this limitation. For example, it discloses a screen with an image from a gallery application (“second screen”) in a touch screen (“second touch screen”). (E.g., EX1006, 34-41.)

Seo Claim 1	Exemplary Disclosures of the Seo Provisional
	Second Touch Screen Second Screen  Drag is initiated in the left screen, passes the hinge, and released in the right screen. • Display Message, Gallery App • Display Message App in two screens Multi-mode(A/B) Split-mode(A/A') Multi-mode(A/B) A : Message App B' : Gallery App A : Message App A' : Next depth of A B' : Gallery App A : Message App (<i>Id.</i>, 34 (top), 38 (bottom) (annotated); <i>see also id.</i>, 34 (“different Apps displayed on two screens”).)
detecting multiple touches in the first touch screen;	The Seo Provisional discloses this limitation. For example, it discloses “two screen gestures are input in the two screens” (“multiple touches”), “an input controller receives the touch input gestures as a single input” and “[e]ach touch input is processed through recognizing a motion detection and the number of touch inputs,” (“detecting”). (<i>E.g.</i>, EX1006, 34; <i>see also id.</i>, 37 (“Touch Sensor”).) The touch inputs start on the first screen. (<i>Id.</i> (two fingers shown on the left-side touch screen and text in the figure on page 34 reading “[d]rag is initiated in the left screen, passes the hinge, and released in the right screen”).)
detecting continuous movements of the multiple touches from the first touch	The Seo Provisional discloses this limitation. For example, the Seo Provisional figures show the two-finger touch input going past the hinge onto the second (right-side) screen. (<i>E.g.</i> EX1006, 34 (figure text reading “Drag is initiated in the left screen, passes the hinge, and released in the right screen.”), 38; <i>see also id.</i>, 36 (describing touch recognition on both

Seo Claim 1	Exemplary Disclosures of the Seo Provisional
screen to the second touch screen; and	screens).) The Seo provisional also discloses that the input “is performed in a direction of the hinge” to change the display, but “[w]hen the two touch drag is not passed the hinge, the view mode is not changed.” <i>Id.</i> , 34.
changing the second screen of the second touch screen in response to the continuous movements of the multiple touches.	The Seo Provisional discloses this limitation. For example, the Seo Provisional’s figures show the second touch screen changing in response to the continuous movements of the multiple touches (past the hinge). (<i>E.g.</i>, EX1006, 34, 38; <i>see also id.</i>, 34 (“Screens are changed in accordance with a motion direction based on an analyzed touch input.”), 38 (“When drag is performed in a direction of the hinge in a state of input of the two touches, an effect of shifting of a screen is displayed as a feedback for a mode change.”).)  (<i>Id.</i>, 34 (top), 38 (bottom) (annotated).)

A. Ground 1: Seo Anticipates Claims 1, 2, 4, 6, 10, and 12

1. Claim 1

i) [1.pre] “A method for controlling a display of a device, comprising:”

To the extent limiting, Seo discloses the preamble of claim 1. (EX1002 ¶¶48–50.) For example, Seo provides a “method of changing screens using multiple touch screens” in response to a user input such as “multiple touches.” (EX1005, Abstract; *see also* EX1006, 34 (summary of the invention); EX1002 ¶¶35–38.)

As shown in figures 8A and 8B, the “multiple touches” 880/881 (figure 8A) and 882/883 (figure 8B) are gestures that control a display of device 100 (not labeled in those figures). (EX1005, Figs. 8A, 8B; EX1002 ¶49.) For example, figure 8A starts with a “screen 800 displayed in the first touch screen 190a” showing a friend list screen 810 of a messenger application on the left, and a second screen 850 displaying a photo screen 860 in the second touch screen 190b on the right,⁷ where the first screen 800 and second screen 850 correspond to

⁷ The labels for the two touch screens 190a (left screen) and 190b (right screen) are shown in figure 1 and referenced throughout the specification. (EX1005, FIG. 1; *see also id.* ¶¶[0032]-[0033].) Those labels are used in this Petition to denote the left and right touch screen displays for clarity because the specification refers to several different “screens.”

separate applications. (EX1005 ¶¶[0099], [0101]-[0102]; EX1006, 34, 38 (figures showing the same).) Following the multiple touch gesture input 880/881, the second screen 850 changes to a third screen 820 corresponding to the first screen 800 (messenger application), such as a detailed messaging screen for a selected friend, so that both screens correspond to the same application. (EX1005 ¶¶[0125]-[0126], Fig. 8A; *see also id.* ¶¶[0103]-[0124] (explaining that the screen change results from the multiple touch gesture input); EX1002 ¶49 ; EX1006, 34 (“[s]creens are changed . . . based on an analyzed touch input), 38 (figures showing the same).)

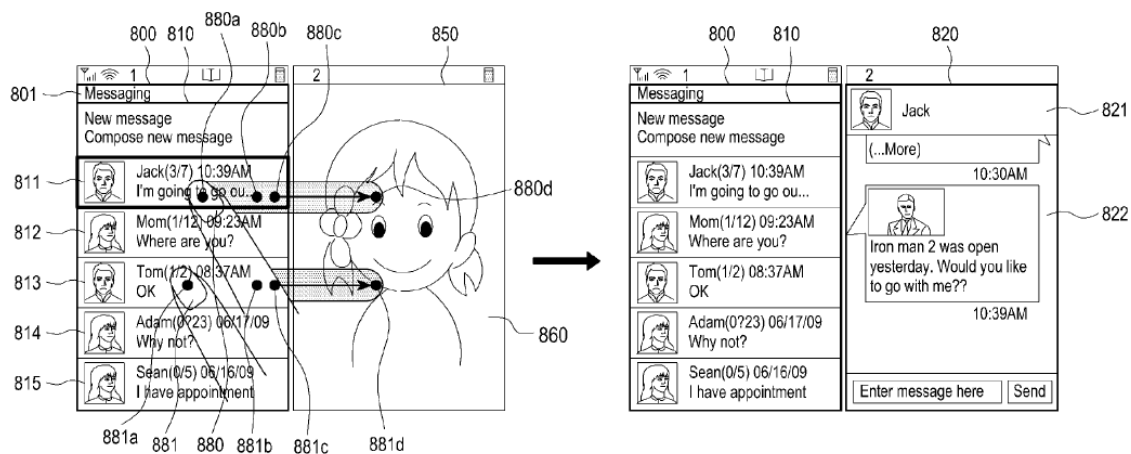


FIG. 8A

(EX1005, Fig. 8A; *see also* EX1006, 34, 38.)

Figure 8B shows the reverse operation, where multiple touch gesture 882/883 in the opposite direction minimizes the messaging screen 820 in the touch screen 190b, so that the device again shows the second screen 850 corresponding

to the photo screen 860 displayed in figure 8A. (EX1005 ¶¶[0130]-[0140], Fig. 8B; EX1002 ¶50); EX1006, 38 (figure showing the same).)

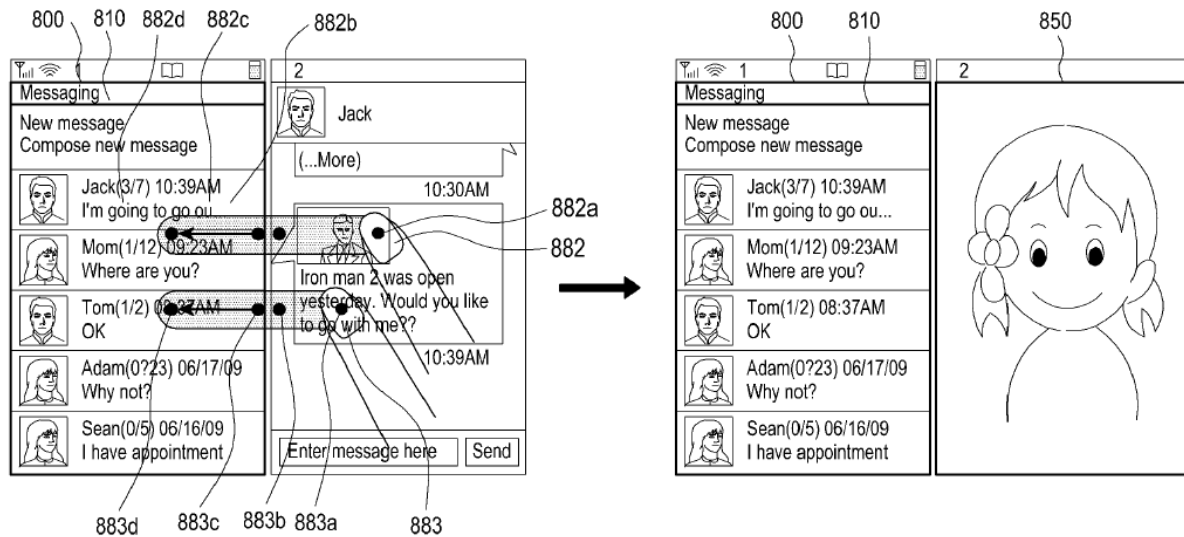


FIG. 8B

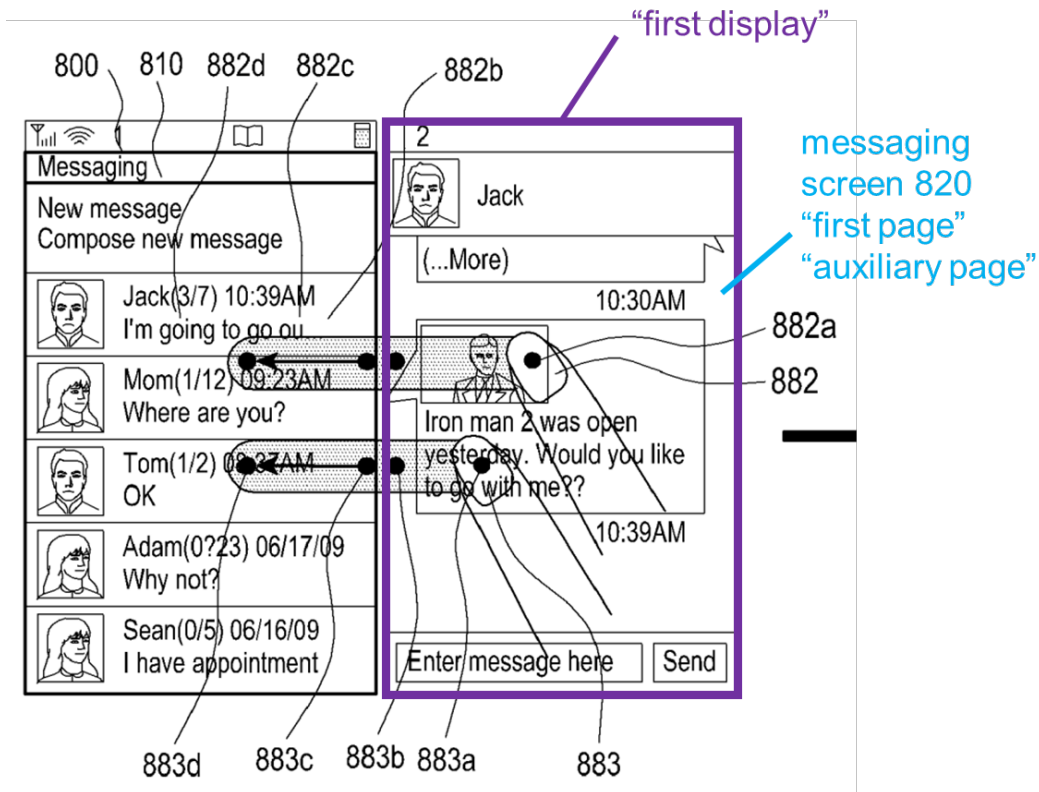
(EX1005, Fig. 8B; *see also* EX1006, 38.)

- ii) [1.a] “presenting a first page of a first application on a first display of the device, wherein the first page is an auxiliary page;”

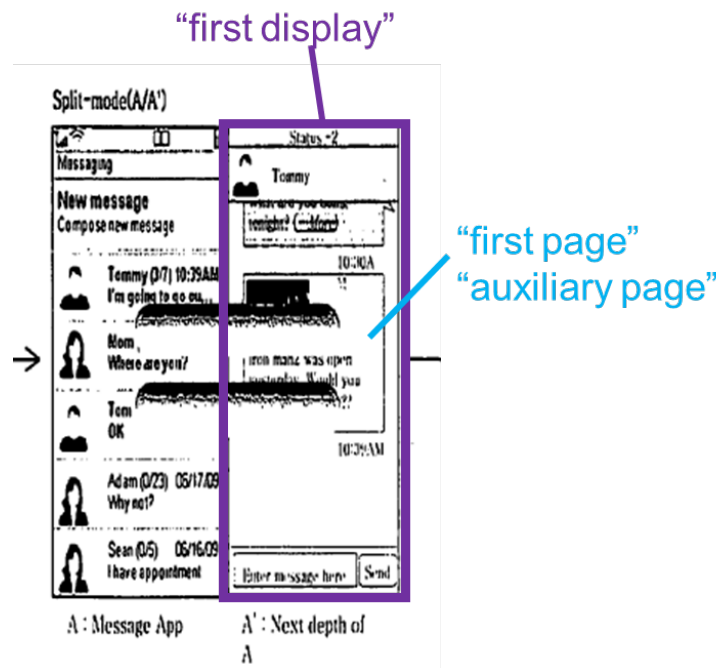
Seo discloses this limitation. (EX1002 ¶¶51–54.) For example, in figure 8B, Seo discloses a messaging screen 820 (labeled in figure 8A; “first page”) in a portion of the right-side touch screen 190b (“first display”)⁸ for a specific contact

⁸ The ’494 patent explains that “[t]he term ‘display’ refers to a portion of one or more screens used to display the output of a computer to a user.” (EX1001, 4:22-23.) The Petition’s mapping to “display[s]” in Seo corresponds to a portion of Seo’s multiple screens (i.e., each mapped “display” is one of the two screens).

in the main messaging screen 800 on left-side touch screen 190a. (EX1005, Fig. 8B; EX1002 ¶51; *supra* §IX.A.1(i).) The messaging screen 820 is a screen of the messaging application (“first application”). (EX1005, Fig. 8B; EX1002 ¶51.)



(EX1005, Fig. 8B (annotated excerpt).)



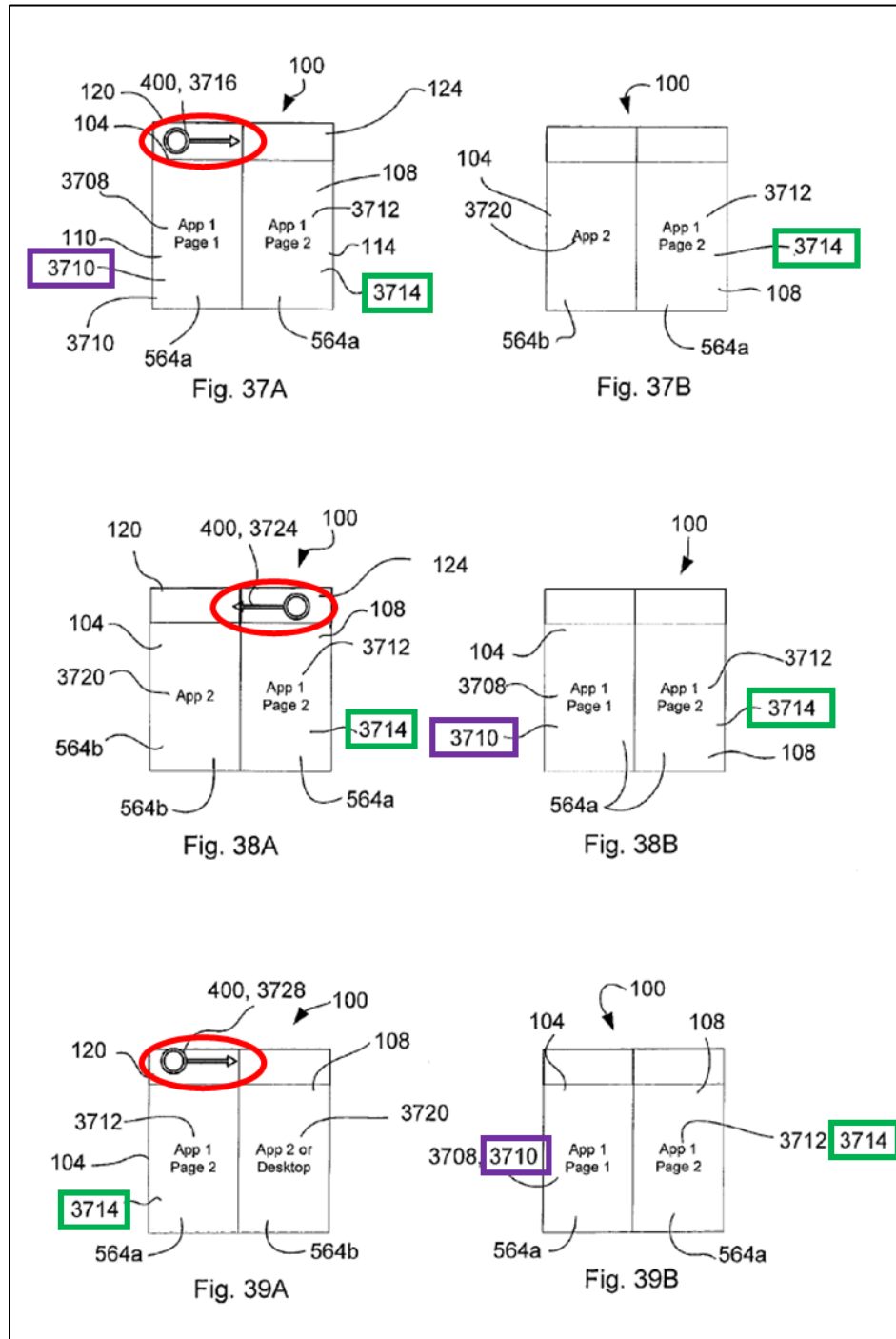
(EX1006, 38 (annotated excerpt).)

A POSITA would have understood that Seo's messaging screen for a specific contact 820 is an "auxiliary page" to the main messaging screen 800 at least because it is alternatively displayed or hidden in response to a user input, whereas screen 800 is always displayed. (EX1002, ¶52.) The '494 patent's figures 37A-38B and 40, and their related description, confirm that Seo's messaging screen 820 is an "auxiliary" page like the '494 patent's "auxiliary" page 3710, which is similarly displayed or hidden in response to a user input.⁹ (*Id.*)

⁹ The '494 patent refers only once to an "auxiliary page," with reference to "page 3710 [being] displayed" along with "the primary [page] 3714" "when the maximization command was received" at step 4020 in figure 40. (EX1001, 48:42-56.) But in describing the figure 40 embodiment, the '494 patent alternatively

For example, the '494 patent's figure 40 is a flow chart that describes (1) minimizing the auxiliary page 3710 in response to user input for minimizing an application while continuing to display a primary page 3714 (step 4016), and then (2) maximizing the auxiliary page 3710, which is displayed alongside primary page 3714, in response to a user input for maximizing an application (step 4024). (EX1001, 48:1-56, Fig. 40.) Similar methods of operation are illustrated in figures 37-39. (EX1001, 47:5-17 (“[T]he minimization operation command entered . . . has the effect of discontinuing or dismissing the first page 3708 of the first application 564a. The display of the second page 3712 of the first application 564a continues.”), 47:17-22 (“[A]ny minimization operation performed with respect to the first application 564a while the first 3708 and second 3712 pages are displayed results in the first page 3708 (in this example the control or ancillary page 3710) being closed, while the second page 3712 (in this example the content or primary page 3714) persists.”). (EX1002 ¶53.)

references page 3710 as a “secondary” or “ancillary” page. (EX1001, 48:21, 26, 49-50). This Petition treats those terms as equivalents in the specification for purposes of this analysis because they all refer to the same page 3710.

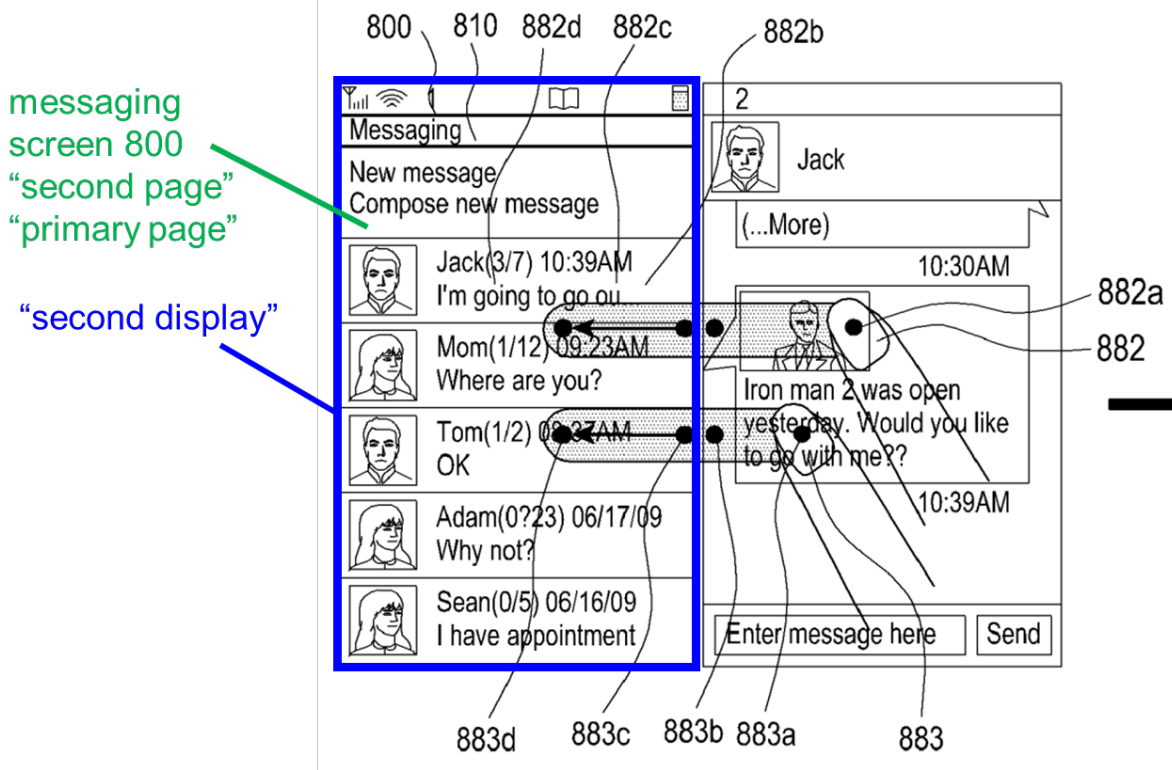


(EX1001, Figs. 37-39 (showing secondary page 3710 (purple) is displayed or hidden in response to a user input (red), but primary page 3714 (green) is always displayed).)

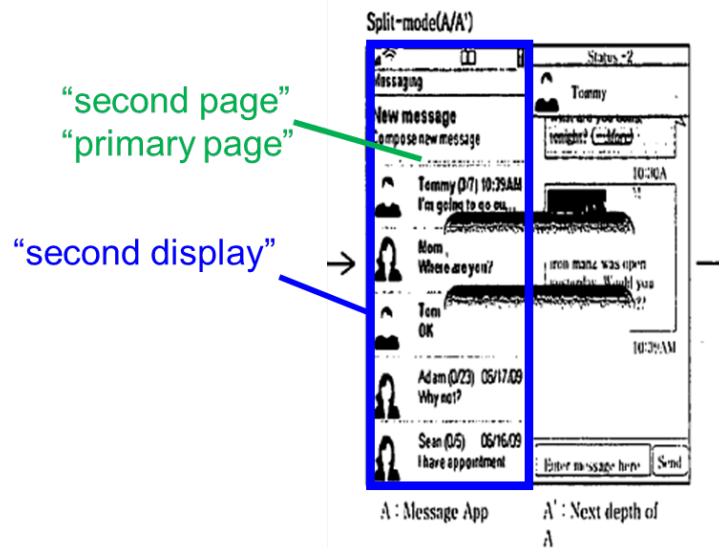
This method of operation where an “auxiliary” page is displayed or hidden in response to a user input, while a “primary” page remains displayed, is the same method of operation disclosed by Seo. (EX1002 ¶54.) Like the ’494 patent, Seo discloses hiding or displaying screen 820 in response to a user input, while screen 800 remains displayed during the user inputs that hide/display screen 820. (EX1005, Figs. 8A, 8B; EX1002 ¶54; *supra* §IX.A.1(i); EX1006, 34-40 (also discussed *supra* §IX).) Thus, Seo’s messaging screen for a specific contact 820 is an “auxiliary page” to the main messaging screen 800 at least because it is alternatively displayed or hidden in response to a user input, whereas screen 800 remains displayed during what the ’494 patent calls “minimization” and “maximization” operations, discussed above. (EX1002 ¶54.)

iii) [1.b] “presenting a second page of the first application on a second display of the device, wherein the second page is a primary page,”

Seo discloses this limitation. (EX1002 ¶¶55–56.) For example, in figure 8B, Seo discloses a main messaging screen 800 (“second page”) including a title bar 801 and friend list screen 810 in the left-side touch screen 190a (“second display”). (EX1005 ¶[0099], Fig. 8B; EX1002 ¶55; *supra* §IX.A.1(i); *see also* EX1006, 34, 38.) The main messaging screen 800 is a screen of the messaging application (“first application”). (EX1005 ¶[0099], Fig. 8B; *supra* §IX.A.1(ii).)



(EX1005, Fig. 8B (annotated excerpt).)



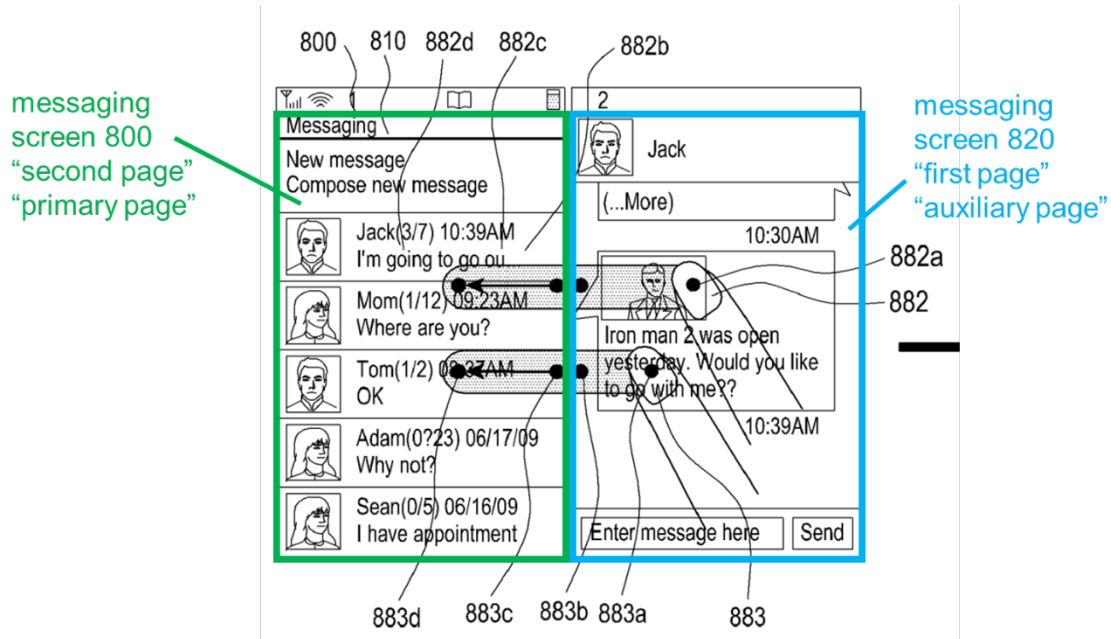
(EX1006, 38 (annotated excerpt); *see also id.*, 34.)

A POSITA would have understood that Seo’s main messaging screen 800 with the contact list is a “primary page” for similar reasoning described above for the “auxiliary” page. (*Supra* §IX.A.1(ii).) Messaging screen 800 remains displayed—does not close and open during what the ’494 patent calls minimization and maximization operations—like the auxiliary screen 820. (EX1005, Figs. 8A, 8B; EX1006, 34, 38; *see also* EX1001, 47:17-22 (“the second [primary] page . . . persists”).) Additionally, from figures 8A and 8B, it would have been apparent to a POSITA that a user could select a contact from the primary messaging screen 800 to view that contact’s detailed chat window on an auxiliary messaging screen 820. (EX1005, Fig. 8A (gesture input 880/881), Fig. 8B; EX1002 ¶56; *see also* EX1006, 34, 38 (figures showing the same gesture input as EX1005).) Thus, the auxiliary screen 820 opens from an input (gesture) started on the messaging screen 800. Accordingly, a POSITA would have understood that screen 800 is the primary screen of the two screens (or “pages”). (EX1002 ¶56.)

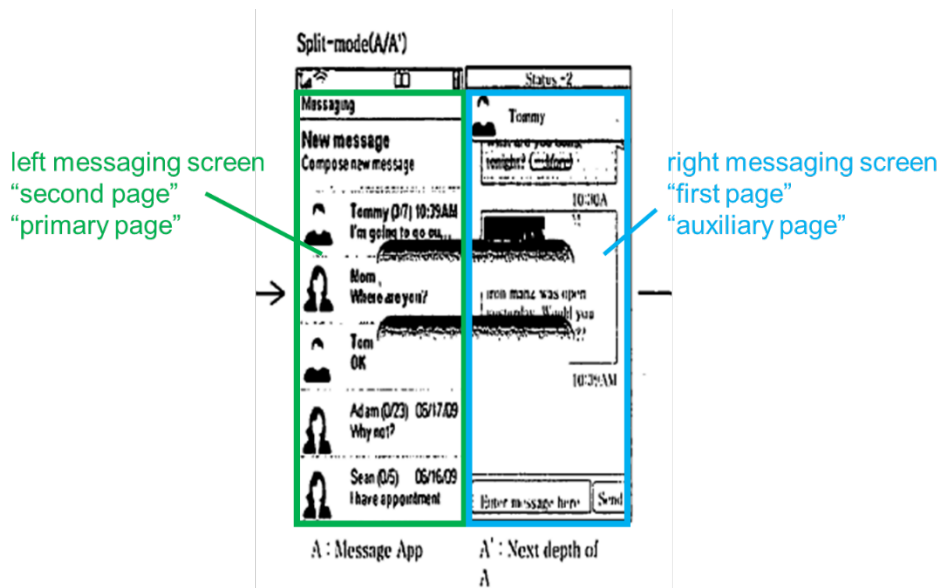
iv) [1.c] “wherein the first and second pages present different content and are distinct pages, and wherein the auxiliary page is a child of the primary page;”

Seo discloses this limitation. (EX1002, ¶¶57–59.) Seo’s first page (messaging screen 820) presents a detailed messaging window for a particular contact, whereas the second page (messaging screen 800) presents a list of

contacts, which is different content in distinct pages. (EX1005, FIG. 8B; *supra* §§IX.A.1(i)-(iii); *see also* EX1006, 34, 38.)



(EX1005, Fig. 8B (annotated excerpt).)



(EX1006, 38 (annotated excerpt).)

The pages in figure 8B above are unlike Seo's figure 9A, or the '494 patent's figure 6I, where the same content—a single continuous image—is spread across two displays so that the two pages are not distinct and display portions of the same content (the image). (EX1005, ¶¶[0159]-[0160], Fig. 9A; EX1001, 26:35-44, Fig. 6I.) This contrast confirms that a POSITA would have recognized Seo's figure 8B embodiment as disclosing “distinct pages” with “different content.” (EX1002 ¶58.)

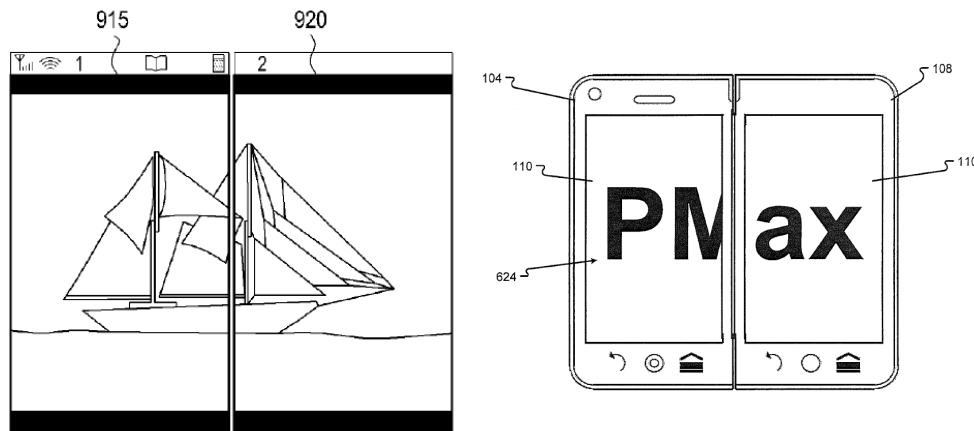


FIG. 6I

(EX1005, Fig. 9A (left; excerpt); EX1001, Fig. 6I (right).)

For the limitation “wherein the auxiliary page is a child of the primary page,” Seo's first/auxiliary page (messaging screen 820) opens via interactions with Seo's primary page (messaging screen 800) that cause the messaging application to expand or maximize onto the second display to show the auxiliary page (messaging screen 820). (EX1005, Fig. 8A; *see also* EX1006, 34, 38.) In effect, the messaging screen 820 is “born” from messaging screen 800, and is part

of the same messaging application, giving them a parent-child relationship.

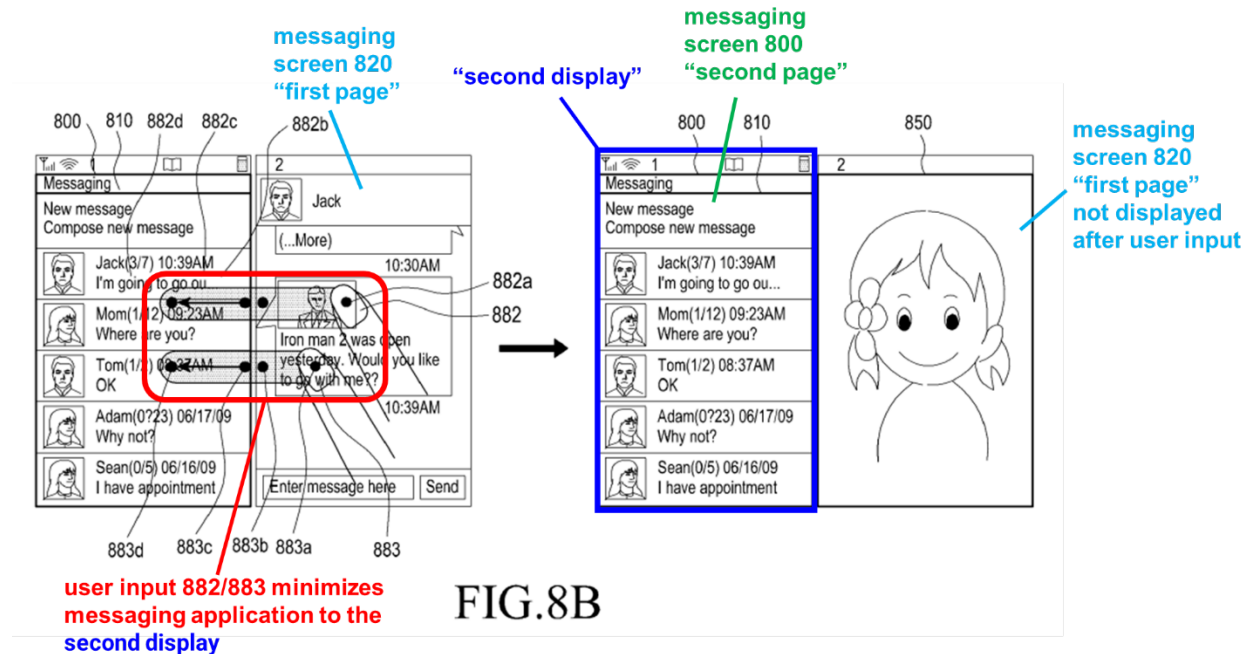
(EX1002 ¶59.) Accordingly, a POSITA would have recognized messaging screen 820 as “a child of the primary page” 800. (*Id.*)¹⁰

- v) **[1.d] “receiving a first input from a user, wherein the first input includes an input to minimize the first application to one of the first and second displays of the device, wherein the second page of the first application is displayed by one of the first display of the device and the second display of the device, and wherein the first page of the first application is not displayed.”**

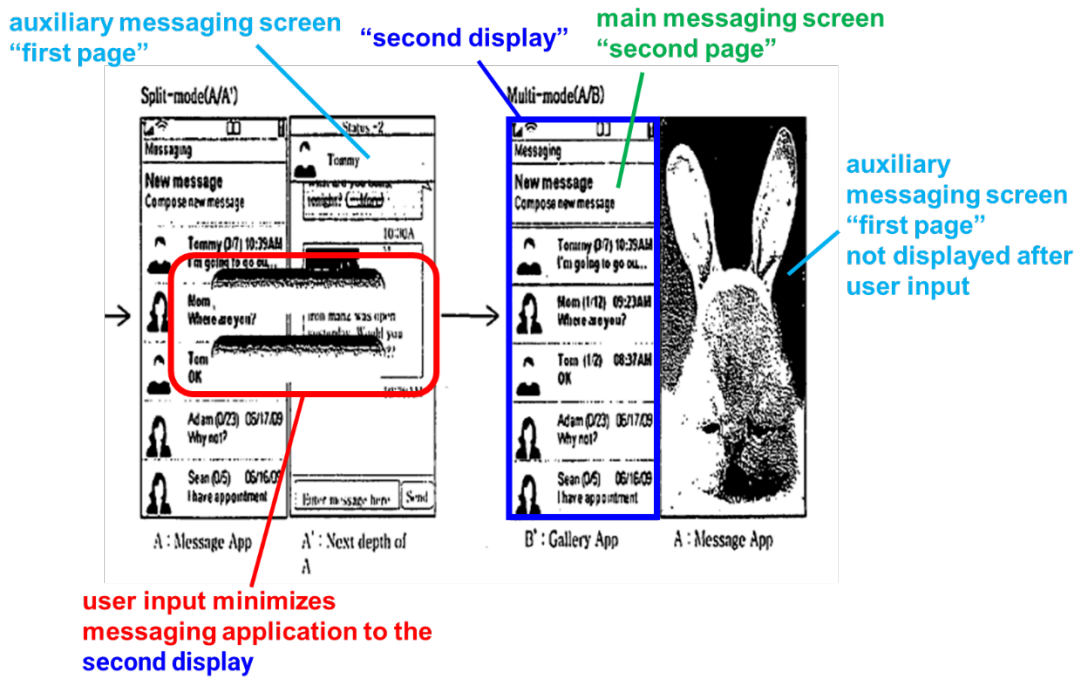
Seo discloses this limitation. (EX1002 ¶¶60–61.) For example, figure 8B discloses gesture input 882/883 (“a first input from a user”) that minimizes the messaging application to the left-side touch screen 190a (“the second display[] of the device”), such that the main messaging screen 800 remains displayed on the left-side touch screen 190a (“second page of the first application is displayed by . . . the second display of the device”) and the messaging screen 820 is no longer displayed on the right-side touch screen 190b (“the first page of the first application is not displayed.” (EX1005, ¶¶[0129]-[0130], [0137]-[0140], FIG. 8B; EX1002 ¶60; *see also* EX1006, 38 (showing gesture inputs in the middle figure

¹⁰ The ’494 patent never uses the term “child” page, but given the similarities between Seo and the ’494 patent, Seo discloses a “child” page under any reasonable interpretation. (EX1002 ¶60.)

that minimize the messaging application to the left-side touch screen such that the main messaging screen remains displayed on that screen and the other messaging screen is no longer displayed on the right-side touch screen.)



(EX1005, Fig. 8B (annotated); EX1002 ¶60.)



(EX1006, 38 (annotated excerpt).)

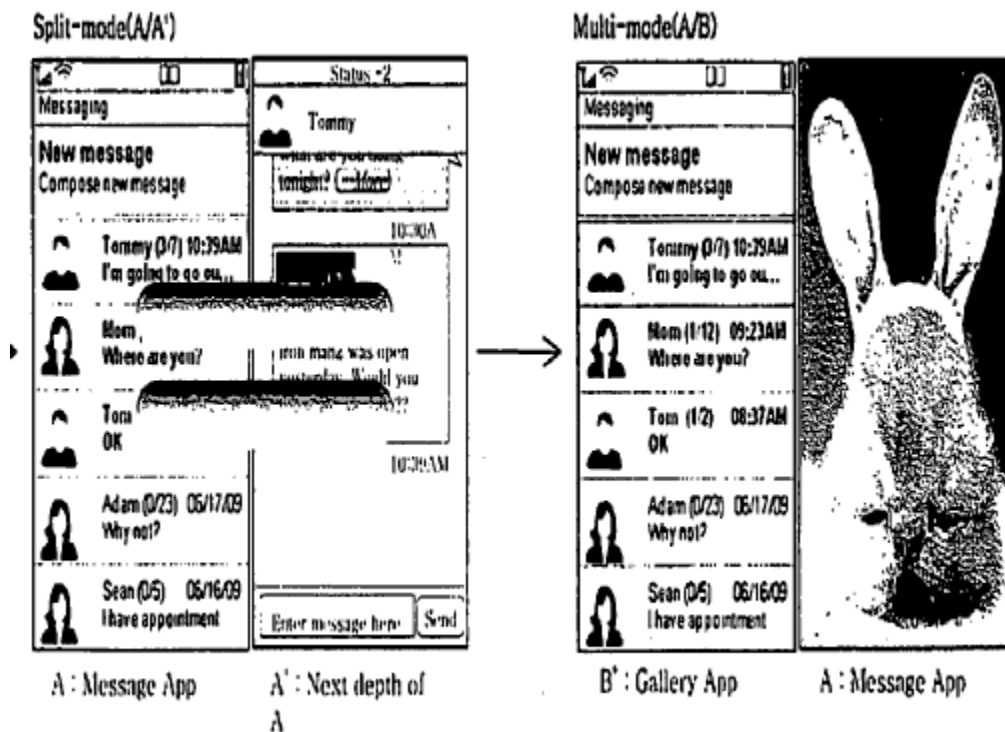
With reference to figure 8B, Seo explains that "the user inputs the multiple touches 882 and 883" in the "screen 820 of . . . touch screen 190b" (EX1005 ¶[0130]) which changes "screen 820 to . . . screen 850 in response to the arrivals of the multiple touches 882 and 883 at the positions 882c and 883c in . . . touch screen 190a" (*id.* ¶[0137]). (See also, e.g., EX1006, 34 ("Screens are changed in accordance with a motion direction based on an analyzed touch input."), 38 ("When drag is performed in a direction of the hinge in a state of input of the two touches, an effect of shifting of a screen is displayed as a feedback for a mode change.") This method of operation is shown in annotated figure 8B above. (EX1002 ¶61; see also EX1006, 38.)

2. **Claim 2:** “The method of claim 1, wherein the first input from the user is received in a gesture capture region of the device, and wherein the gesture capture region is included as part of at least one of the first and second displays of the device.”

Seo discloses these limitations. (EX1002 ¶62.) The multiple touch input 882/883 (“first input from the user”) is received by the device starting in touchscreen 190b and continuing into touchscreen 190a (“received in a gesture capture region of the device . . . included as part of at least one of the first and second displays of the device”). (EX1005, Fig. 8B; EX1002 ¶62; *supra* §IX.A.1(v) (discussing user inputs 882/883); *see also* EX1006, 34, 38.) A POSITA would have understood that the multiple touch input 882/883 is a two-finger gesture (e.g., a swiping or drag & drop motion) as illustrated in figure 8B. (*See also* EX1006, 34, 38 (describing a two touch drag & drop gesture).) Additionally, Seo calls the identical but reverse-direction multiple touch input 880/881 shown in figure 8A “drag & drop **gestures** or flick **gestures**,” confirming such an understanding. (EX1005 ¶[0108] (emphasis added), Fig. 8A; *see also* EX1006, 34 (“touch input gestures”), 38 (“Drag & Drop”).) A POSITA would have also understood the area where the gesture input is made is a “gesture capture region” because the gesture input within that region is detected (“captured”) by the device. (EX1002 ¶62; *see also* EX1001 3:60-61, 5:4-9, 9:28-38.)

3. Claim 4: “The method of claim 1, wherein after receiving the first input a first page of a second application is presented by the first display.”

Seo discloses this limitation. (EX1002 ¶¶63.) After receiving the multiple touch input 882/883 (“first input”) the right-side touch screen 190b (“first display”) presents screen 850, which is a photo screen from a second application that is different from the messenger application (“a first page of a second application is presented by the first display”). (EX1005 ¶¶[139]–[140], Fig. 8B; *supra* §IX.A.1(v); *see also* EX1006, 38 (figure showing that after receiving the two-finger input gesture, a photo screen from a gallery application is displayed on the right-side (“first”) display).)



(EX1006, 38.)

Seo further discloses that screen 800 and screen 850 “again correspond to different applications,” after receiving the user input. (EX1005 ¶[0140]; *see also id.* ¶¶[0102] (800 and 850 “are screens corresponding to separate applications”), [0137]–[0139] (screens 800 and 850 “correspond to different applications”); EX1006, 34 (“different Apps displayed in two screen[s]”), 38 (identifying the screens as “Gallery App” and “Message App” in the far-right figure after the user input).)

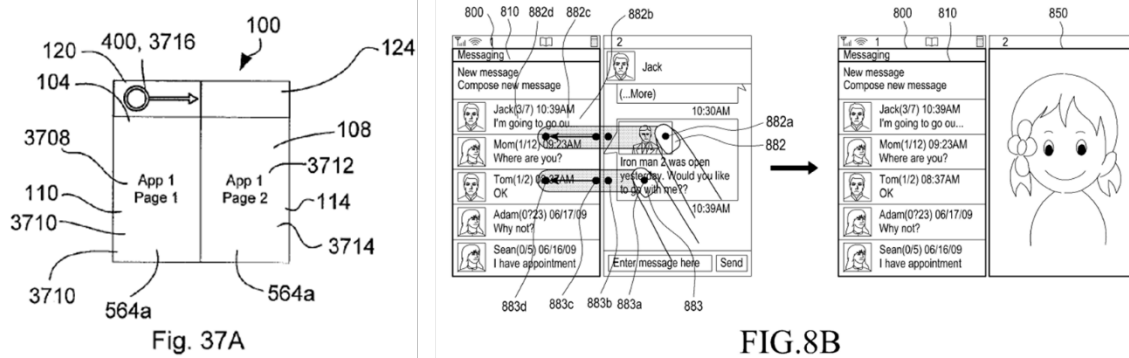
4. Claim 6:

- i) [6.a] “The method of claim 1, wherein the device is oriented such that the first and second displays are presented in a dual portrait format,”**

Seo discloses this limitation. (EX1002 ¶¶64–65.) Seo discloses orienting the device such that touch-screen displays 190b and 190a (“the first and second displays”) are presented with each display in a portrait orientation (“in a dual portrait format”). (EX1005, Fig. 8B; EX1002 ¶64; *see also* EX1006, 38 (showing the same).)

For example, the ’494 patent explains that “FIG 37A depicts a device 100 with first 104 and second 108 screens . . . in a dual portrait mode or orientation.” (EX1001, 46:38-40, Fig. 37A.) This screen configuration, with side-by-side screens each in a portrait orientation, is the same as that disclosed by Seo.

(EX1002 ¶65; compare EX1001, Fig. 37A, with EX1005, Fig. 8B and EX1006, 38.)



(EX1001, Fig. 37 (left); EX1005, Fig 8B (right); see also EX1006, 38 (same disclosure as Seo’s Fig. 8B).)

- ii) **[6.b] “and wherein the first input includes a gesture that is input from a side of the device corresponding the first display towards a side of the device corresponding to the second display.”**

Seo discloses this limitation. (EX1002 ¶66.) For example, the arrows on figure 8B disclose that the gesture input 882/883 (“the first input includes a gesture”) (*see supra* §IX.A.2) is input starting from the right-side touchscreen display 190b (“input from a side of the device corresponding to the first display”) indicated by positions 882a/883a, and moving towards and onto the left-side touchscreen display 190a (“towards a side of the device corresponding to the second display”) indicated by positions 882d/883d. (EX1005, FIG. 8B; *see also id.* ¶[0134] (“movements from initial positions 882a and 883a . . . to last positions 882d and 883d”); EX1006, 34 (“Drag is initiated in the left screen, passes the

hinge, and released in the right screen.”), 38 (“drag is performed in a direction of the hinge”).)

5. **Claim 10: “The method of claim 1, further comprising: after receiving the first input, receiving a second input from the user, wherein the second input includes an input to maximize the first application to both of the first and second displays of the device, wherein the first page of the first application is presented on the first display of the device and the second page is displayed on the second display of the device.”**

Seo discloses these limitations. (EX1002 ¶¶67–69.) For example, Seo discloses input 880/881 (“receiving a second input from the user”) to maximize the messaging application to fill both the right-side touchscreen 190b and left-side touch screen 190a (“wherein the second input includes an input to maximize the first application to both of the first and second displays of the device”), reverting back to presenting the messaging screen 820 of the messaging application on right-side touchscreen 190b (“wherein the first page of the first application is presented on the first display of the device”) and the main messaging screen 800 on left-side touch screen 190a (“the second page is displayed on the second display of the device”). (EX1005, Fig. 8A; *see also* EX1005 ¶¶[0125]–[0126]; *supra* §IX.A.1(i); EX1006, 34, 38 (first two figures on left); EX1002 ¶67.) For example, in figure 8A, multi-touch user input 880/881 causes the device to maximize the messaging application and display the detailed messaging screen 820 on the right-side touchscreen 190b. (EX1005, Fig. 8A; *see also* EX1006, 34, 38.)

Although Seo discloses first opening the detailed messaging screen 820 (figure 8A) and then closing it (figure 8B), a POSITA would have understood from Seo that this is not a one-time process where the messenger window cannot then again be opened, but is instead a repeatable loop. (EX1002 ¶68; EX1006, 38.) Accordingly, a POSITA would have readily recognized from Seo's disclosures that the device would have been configured to re-open the detailed messaging screen for a specific contact 820 after closing it (e.g., to review the chain of messages with that contact). (EX1002 ¶68.) And of course the method for closing it would have been the same, should the user want to close it again. (*Id.*) Thus, a POSITA would have understood Seo's method as a repeatable loop, where the user can continually close and open the detailed messaging screen 820 as desired or needed, and as shown in figures 8A and 8B. (*Id.*; EX1005, Figs. 8A, 8B.) Indeed, it would have been strange and unintuitive if Seo's user interface could only open a detailed messaging window once or close it once, without ever being able to re-open or re-close that same window again. (EX1002 ¶68.)

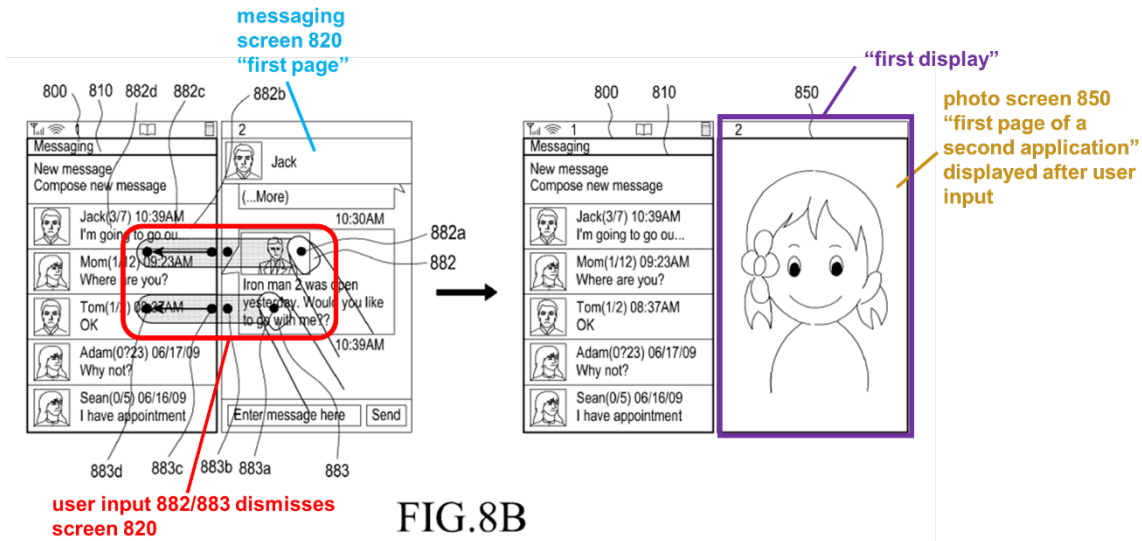
Thus, a POSITA would have understood that Seo discloses receiving a second input "after" receiving a first input. (EX1002 ¶69.)

6. Claim 12:

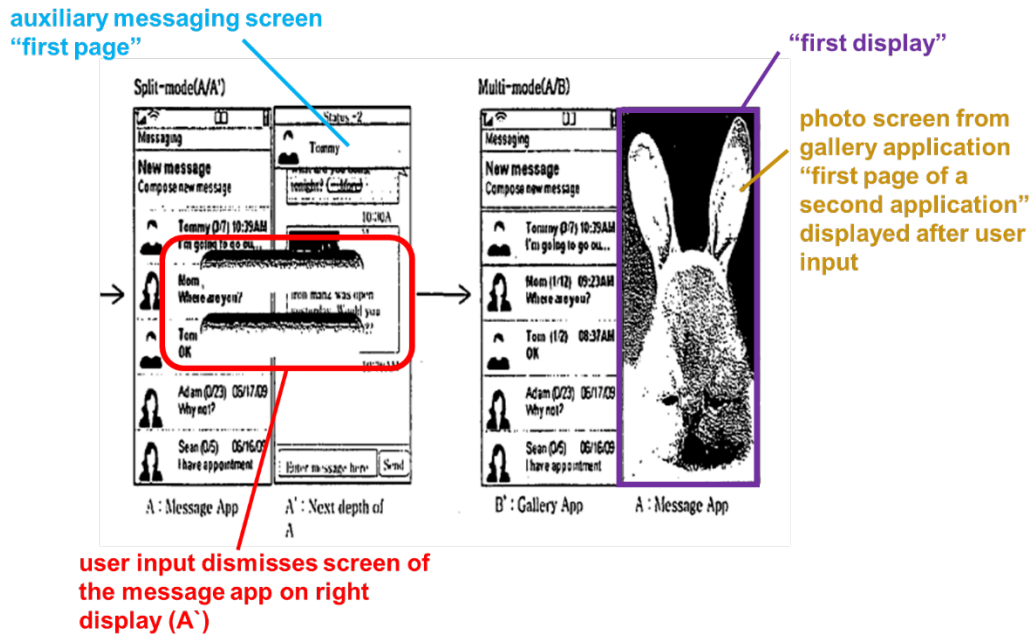
- i) [12.a] **“The method of claim 10, further comprising: after receiving the first and second inputs, receiving a third input from the user dismissing the first page of the application, wherein one of a first page of a second application or a desktop is presented by the first display of the device;”**

Seo discloses these limitations. (EX1002 ¶¶70–72.) For example, Seo discloses gesture input 882/883 (“a third input from a user”) that dismisses messaging screen 820 (“the first page of the [first] application”) by minimizing the messaging application to the left-side touch screen 190a (the second display) as discussed for claim 1. (*Supra* §IX.A.1(v); EX1005, ¶¶[0129]–[0130], [0137]–[0140], FIG. 8B; EX1002 ¶70; *see also* EX1006, 38 (showing gesture inputs in the middle figure that minimize the messaging application to the left-side touch screen and displays a gallery application on the right-side touch screen).) That method reveals a photo screen from a second application (“a first page of a second application”) on the right-side touch screen 190b (“first display”), as discussed for claim 4. (*Supra* §IX.A.1(v); EX1005 ¶¶[139]–[140], Fig. 8B; EX1006, 38 (figure showing that after receiving the two-finger input gesture, a photo screen from a gallery application is displayed on the right-side (“first”) display). Seo further discloses that screen 800 and screen 850 “again correspond to different applications,” after receiving the user input. (EX1005 ¶[0140], Fig. 8B; *see also id.* ¶¶[0102] (800 and 850 “are screens corresponding to separate applications”),

[0137]–[0139] (screens 800 and 850 “correspond to different applications”); *see also* EX1006, 34 (“different Apps displayed in two screen[s]”), 38 (identifying the screens as “Gallery App” and “Message App” in the far-right figure after the user input).)



(EX1005, Fig. 8B (annotated); EX1002 ¶70.)



(EX1006, 38 (annotated excerpt).)

With reference to figure 8B, Seo explains that “the user inputs the multiple touches 882 and 883” in the “screen 820 of . . . touch screen 190b” (EX1005 ¶[0130]) which changes “screen 820 to . . . screen 850 in response to the arrivals of the multiple touches 882 and 883 at the positions 882c and 883c in . . . touch screen 190a” (*id.* ¶[0137]). (See also *e.g.*, EX1006, 34 (“Screens are changed in accordance with a motion direction based on an analyzed touch input.”), 38 (“When drag is performed in a direction of the hinge in a state of input of the two touches, an effect of shifting of a screen is displayed as a feedback for a mode change.”) This method of operation is shown in annotated figure 8B above. (EX1002 ¶71; see also EX1006, 38.)

This claim element effectively requires repeating the method steps of claim 1 (e.g., an input to minimize the first page of the first application). As discussed for claim 10, a POSITA would have understood from Seo that the disclosed process of opening messaging screen for a particular contact 820 (EX1005, Figure 8A) and closing the messaging screen for a particular contact (*id.*, Figure 8B) is not a one-time process where the messenger window cannot then again be opened, but is instead a repeatable loop. (*Supra* §IX.A.5; EX1002 ¶72; *see also* EX1006, 38.) Thus, such a person would have understood that Seo discloses receiving a third input “after” receiving the first and second inputs. (EX1002 ¶72.)

- ii) **[12.b] “after receiving the third input, receiving a fourth input from the user to maximize the first application to the first and second displays of the device, wherein the second display of the device presents the second page of the first application, and wherein the first display of the device presents the first page of the first application.”**

Seo discloses these limitations. (EX1002 ¶¶73–74.) For example, Seo discloses the limitations of this claim element for the same reasons discussed for claim 10. (*Supra* §IX.A.5.)¹¹ For instance, Seo discloses input 880/881

¹¹ Taken together, claim elements 12[a] and 12[b] generally repeat claim element 1[d], claim 4, and claim 10 and thus claim 12 in its entirety is disclosed for the

(“receiving a fourth input from the user”) to maximize the messaging application to fill both the right-side touchscreen 190b and left-side touch screen 190a (“maximize the first application to the first and second displays of the device”), reverting back to presenting the a messaging screen 820 of the messaging application on right-side touchscreen 190b (“wherein the first display of the device presents the first page of the first application”) and the main messaging screen 800 on left-side touch screen 190a (“wherein the second display of the device presents the second page of the first application”). (EX1005, Fig. 8A; *see also* EX1005 ¶¶[0125]–[0126]; *supra* §§IX.A.1(i), IX.A.5; EX1006, 34, 38 (first two figures on left); EX1002 ¶73.) For example, in figure 8A, multi-touch user input 880/881 causes the device to maximize the messaging application and display the detailed messaging screen 820 on the right-side touchscreen 190b. (EX1005, Fig. 8A; *see also* EX1006, 34, 38.)

A POSITA would have understood from Seo that the detailed messaging screen 820 can be opened (figure 8A) and then closed again (figure 8B), in a repeatable loop. (EX1005, Figs. 8A, 8B; EX1002 ¶74; EX1006, 38.) As explained for Claim 10, this is not a one-time process where the messenger window cannot

same reasons discussed for those claims. (EX1002 ¶73; *supra* §§IX.A.1(d), IX.A.3, IX.A.5.)

then again be opened, but is instead a repeatable loop. (EX1002 ¶74; *supra* §IX.A.5.) Accordingly, a POSITA would have recognized from Seo’s disclosures that the device would have been configured to re-open the detailed messaging screen for a specific contact 820 after closing it (e.g., to review the chain of messages with that contact). (EX1002 ¶74.) Similarly, the method for closing the re-opened window would have been the same, should the user want to close it again. (*Id.*) Thus, a POSITA would have understood Seo’s method as a repeatable loop, where the user can continually close and open the detailed messaging screen 820 as desired or needed, and as shown in Figures 8A and 8B. (EX1002 ¶74; EX1005, Figs. 8A, 8B; EX1006, 34–40.) Accordingly, a POSITA would have understood that Seo discloses receiving a fourth input “after” receiving a third input. (*Id.*)

B. Ground 2: Seo Renders Claims 1, 2, 4, 6, 10, 12 and 13 Obvious

As discussed in Ground 1, Seo discloses claims 1, 2, 4, 6, 10, and 12. To the extent that Seo does not expressly disclose any particular limitation(s) of those claims, a POSITA would have found the claims obvious in view of the same disclosures cited and a POSITA’s understanding of those disclosures including what they would suggest to such a person. (*Supra* §IX.A; EX1002 ¶75.) The reasons a POSITA would have found claims 10, 12, and 13 obvious are addressed in more detail below.

1. Claim 10

Seo discloses and/or suggests these limitations. (EX1002, ¶¶76–79.) As described in Ground 1, Seo discloses every limitation of claim 10. (*Supra* §IX.A.5.) Seo renders claim 10 obvious for the same reasons discussed. (*Id.*; EX1002 ¶76.)

To the extent that Seo does not expressly disclose receiving the second input “after” receiving the first input, such a trivial modification to Seo’s disclosed method would have been obvious in view of a POSITA’s knowledge and understanding of the art, including how users would interact with an electronic device like that disclosed in Seo, and common sense. (EX1002 ¶¶29–31, 77.) A POSITA would have understood that typical users of a device want the ability to both *open* and *close* a window or screen of an application (e.g., open a desired window if it was previously closed, or close an unwanted window that is open). (EX1002 ¶77.) Seo discloses both closing the messaging screen for a specific contact 820 (figure 8B) and opening the messaging screen for a specific contact (figure 8A). (*Id.*; *see also* EX1006, 38.)

Accordingly, a POSITA would have readily recognized that a user running Seo’s messenger application would have wanted to be able to re-open the detailed messaging screen for a specific contact 820 after closing it (e.g., to review the chain of messages with that contact). (EX1002 ¶78.) And of course a user would

have wanted to be able to close the detailed messaging screen 820 again after re-opening it. (*Id.*) Thus, a POSITA would have understood Seo's method as a repeatable loop, where the user can continually close and open the detailed messaging screen 820 as desired or needed. (*Id.*) Therefore, it would have been obvious to receive the second input (opening messaging screen 820) "after" receiving the first input (closing messaging screen 820). Indeed, it would have been unintuitive to design a user interface for, e.g., a messaging application where the detailed messaging screen for a particular contact can only be closed and not opened again after it has been closed. *See Unification Techs. LLC v. Micron Tech. Inc.*, No. 2023-1348, 2024 WL 3738401, at *6 (Fed. Cir. Aug. 9, 2024) (affirming obviousness over a single reference that taught every limitation in view of expert's testimony about what a POSITA would have understood from its disclosures); *Monsanto Tech. LLC v. E.I. Dupont De Nemours & Co.*, 878 F.3d 1336, 1347 (Fed. Cir. 2018) (affirming PTAB's determination "that a PHOSITA would have been motivated to combine elements of [a single prior art reference]" to find claim obvious); *c.f. Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1362 (Fed. Cir. 2016) (explaining common sense has been invoked to supply a "simple" missing limitation where the "the technology [at issue was] particularly straightforward" (citing *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1326 (Fed. Cir. 2009))).

Accordingly, a POSITA would have been motivated and found it obvious to make this modification to Seo, to the extent not already present in Seo's disclosures, to address the foreseeable issues arising from a user interface where a detailed messaging application screen could not be re-opened or re-closed after it was used the first time. (EX1002 ¶79.) Because such a modification is merely repeating already-disclosed method steps to perform the same function in the same way, a POSITA would have had a reasonable expectation of success. (*Id.*)

2. Claim 12

Seo discloses and/or suggests the limitations of claim elements 12[a] and 12[b]. (EX1002 ¶80.) As discussed for Ground 1, these claim elements generally require repeating the method steps of claim element 1[d], claim 4, and claim 10, as disclosed by Seo. (*Supra* §IX.A.6.) To the extent these claim elements are not already disclosed by Seo, the obviousness discussion for claim 10 explains why a POSITA would have found it obvious to make the method steps for opening and closing the detailed messaging window repeatable in a loop instead of a one-time process. (*Supra* §IX.B.1; EX1002 ¶80.) That same rationale applies to claim 12, the details of which are discussed above. (*Supra* §IX.A.6; EX1002 ¶80.)

Accordingly, for those same reasons, A POSITA would have been motivated and found it obvious to modify Seo, to the extent claim 12 is not already present in Seo's disclosures, to address the foreseeable issues arising from a user interface

where a detailed messaging application screen 820 could not be closed or re-opened after it was closed for the first time (as required by claim element 1[d]). (*Supra* §IX.A.6; EX1002 ¶80.) Because such a modification is merely repeating already-disclosed method steps to perform the same function in the same way, a POSITA would have had a reasonable expectation of success. (EX1002 ¶80.)

3. Claim 13: “The method of claim 1, wherein the first display of the device is the left hand display while the device is in a dual-portrait mode, and wherein the second display of the device is the right hand display while the device is in the dual-portrait mode.”

Seo suggests and renders obvious these limitations. (EX1002 ¶¶81–83.)

Seo’s touch screen 190b (“first display”) is the right-hand display and Seo’s touch screen 190a (“second display”) is the left-hand display, as mapped to claim 1.

That claim links the first display to the display containing the application page that is closed in the claimed method. A POSITA would have found it obvious to switch the application pages between Seo’s touch screens 190a and 190b, such that the first display (presenting the first page) is on the left-hand side instead of the right-hand side. (EX1002 ¶81.) This change would not have impacted the functionality of Seo’s device or disclosed method. (*Id.*) Indeed, Seo discloses swapping the pages presented on its displays. (*Infra*, §IX.C.4.)

There are only two known and predictable options to choose from: (1) the first display is Seo’s touch screen 190a on the left or (2) the first display is Seo’s

touch screen 190b on the right. A person designing a user interface would have had to make a decision between the two options based on factors such as aesthetics, personal preference, and their view of which may have been more user-friendly, among other design considerations. (EX1002 ¶82.) The result of either option would have been readily predictable—either the first screen is on the left or on the right. (*Id.*) Thus, a POSITA would have had a reasonable expectation of success in the modification. (*Id.*) Indeed, Seo (via its incorporation by reference of the Seo Provisional (EX1005 ¶1)) discloses a gesture input to swap the pages presented on its two displays (EX1006, 21, 25). That further demonstrates that which application screen is shown on which display is unimportant because it can be changed, confirms that it would have been obvious to a POSITA to show the application screens presented on either display. (EX1002 ¶82.) Ultimately, there is nothing novel about deciding to put one screen of an application on a right-hand display and another on a left-hand display, or vice-versa, when there are just two known and equally viable options, and the result of either is entirely predictable. (*Id.*) See *C.R. Bard, Inc. v. Medline Indus., Inc.*, No. 2020-1900, 2021 WL 3574043, at *4 (Fed. Cir. Aug. 13, 2021) (“When two equally viable options are available, as here, then, without more, either one would seem to have been obvious.”); *Geo. M. Martin Co. v. All. Mach. Sys. Int’l LLC*, 618 F.3d 1294, 1302 (Fed. Cir. 2010) (affirming district court’s finding claims obvious as a matter of

law where there was “only a discrete number of possible design options . . . the top clamp, the bottom clamp, or both clamps” because that is “exactly the type of ‘finite number of identified, predictable solutions’ that justifies a legal conclusion that the result, when expected, is ‘the product not of innovation but of ordinary skill and common sense.’” (quoting *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007)).

Confirming as much, the ’494 patent specification does not provide any explanation for why the inventors claimed the first display is the left hand display or identify any benefit to that configuration. (EX1002 ¶83.) And in fact claim 11 recites “moving the second page of the first application to the first display,” confirming there is nothing special about having one particular page of the first application on either the first or the second display. (EX1001, claim 11.) As such, nothing indicates that having the first display as the left hand display is central to, or even important to, the alleged invention. (EX1002 ¶83.) That fact is further confirmed by this feature’s inclusion only in a dependent claim, where claim 1 permits either display to be the first display.

C. Ground 3: Seo and Yook Render Claims 14 and 18–20 Obvious

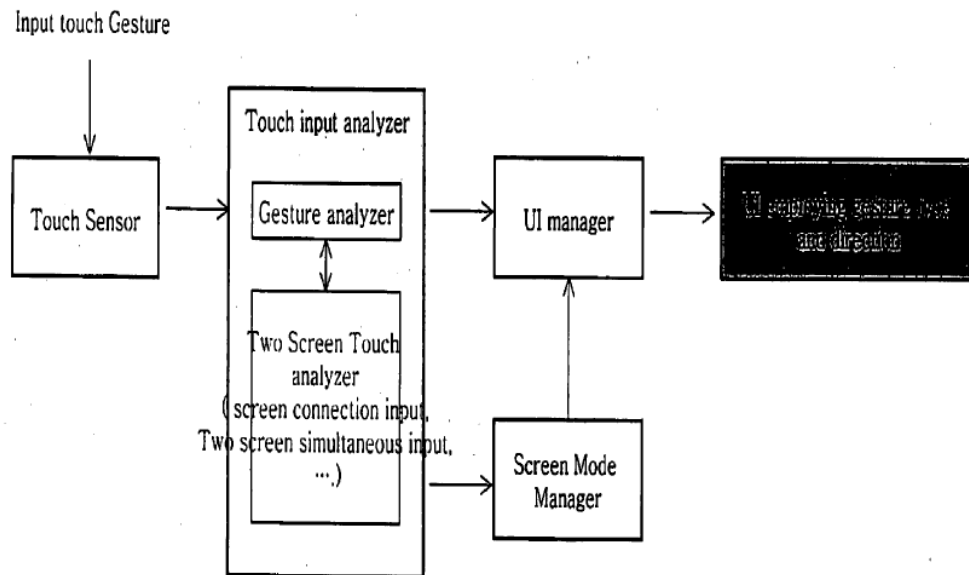
1. The Seo-Yook Combination

Seo discloses a device 100 including touch screens 190a and 190b. (EX1005, Fig. 1; *see also* EX1006, 31 (“a terminal employing dual displays”), 36

(“dual touch screens”). Through touch inputs, the user can change the information displayed on the dual touch screens. (EX1005, Figs. 5–9B, ¶¶[0097]–[0176] (describing Figs. 5–9B); *see also, e.g.*, EX1006, 6–73 (describing changing information displayed on dual touch screens through user interaction); EX1002 ¶84.)

The Seo Provisional provides a flowchart of the “S/W [software] construction diagram,” showing how touch inputs are detected and processed to change the displays. (EX1006, 37.)

3.2 Construction of the invention: S/W construction diagram



(*Id.*)¹²

Much of this is carried over to Seo (and all of it is expressly incorporated by reference into Seo (EX1005 ¶[0001])), which similarly describes an algorithm for changing the screens of the touch screen displays in response to user inputs on the touch screens. (*See, e.g.*, EX1005, ¶¶[0097]–[0140] (describing the figure 5 algorithm in conjunction with figures 8A and 8B).) Seo adds more details

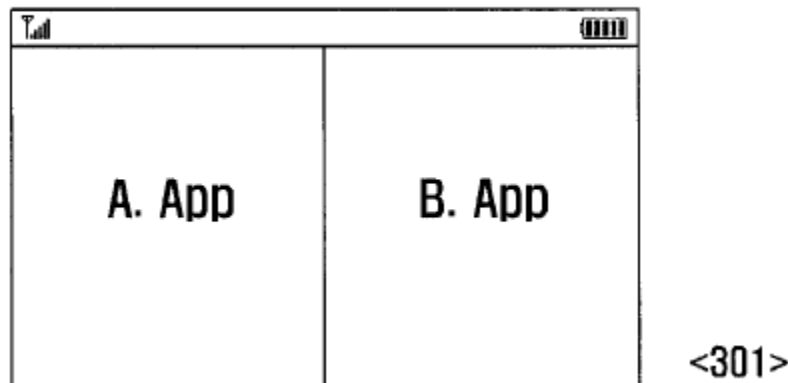
¹² The dark box on the far-right side states “UI employing gesture type and direction.” The flow chart appears multiple times in the Seo Provisional translation and is more legible on other pages. (*E.g.*, EX1006, 24.)

regarding the hardware that controls this algorithm. (EX1002 ¶86.) For example, in figures 3 and 4 disclose a controller with a “central Processing Unit (CPU) 111” operatively connected to “a Read Only Memory (ROM) 112 that stores a control program for controlling the apparatus 100” ([0055]) and also a “storage unit 175” that “stores a control program for controlling the apparatus 100,” including “data input/output in response to the operation of . . . the first touch screen 190a and the second touch screen 190b” ([0080]). (EX1005, Figs. 3, 4.) Although these latter hardware elements of a “memory” and a “central processing unit” are only expressly disclosed in Seo, Seo evidences simultaneous invention of those hardware elements, which is a strong indicator of obviousness. *Geo. M. Martin Co. v. All. Mach. Sys. Int’l LLC*, 618 F.3d 1294, 1305 (Fed. Cir. 2010) (“Independently made, simultaneous inventions, made ‘within a comparatively short space of time,’ are persuasive evidence that the claimed apparatus ‘was the product only of ordinary mechanical or engineering skill.’”). Thus, Seo’s implementation of the software and method described in both Seo and the Seo provisional using conventional hardware including a processor and memory, confirms that a POSITA would have found such an implementation obvious. (EX1002 ¶86.)

Similar to Seo and the ’494 patent, Yook relates to “dividing a screen into divided screen areas that correspond to activated user functions; and outputting

functional view areas associated with the activated user functions to the corresponding divided screen areas.” (EX1007, Abstract; EX1002 ¶87.) For example, Yook discloses a portable computer system providing divided screen areas to simultaneously present application content/images and user functions on respective displays. (EX1007, Abstract, FIGS. 1-2, ¶¶[0006]-[0009], [0024]-[0026], [0030]-[0036].) The device can selectively display application functional areas on separate displays on the device. (*Id.*, ¶¶[0038]-[0042] (FIG. 3), [0043]-[0057] (FIGS. 4A-4E).)

FIG . 3



(EX1007, FIG. 3.)

Such features allow the portable computer device to enable a user to simultaneously view different applications on the device's screen, and allow efficient interaction with a respective active application and between applications. (*Id.*) (EX1002 ¶88.)

Yook provides examples of various types of multi-application/display configurations and functionalities. (See, e.g., EX1007, ¶¶[0077]-[0080] (FIG. 7A (Web access and Music playback applications)), [0081]-[0083] (FIG. 7B (mail and map applications)), [0084]-[0087] (FIG. 8C (mail and phone applications)), [0088]-[0091] (FIG. 8 (Web access and memo applications)), [0094]-[0103] (FIGS. 10-11 (Web access and Twitter applications)), [0104]-[0107] (FIG. 12 (file search and Twitter applications)), [0108]-[0112] (split twitter application)); EX1002 ¶89.)

FIG . 7a

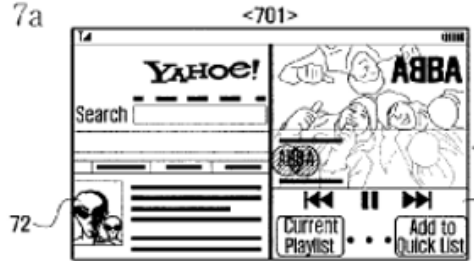


FIG . 10



FIG . 7c

FIG . 7b

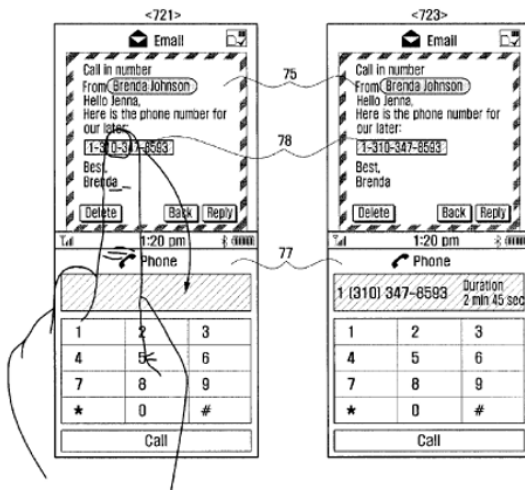
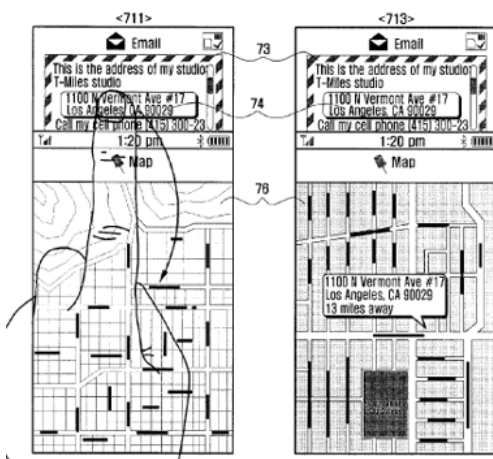


FIG . 11

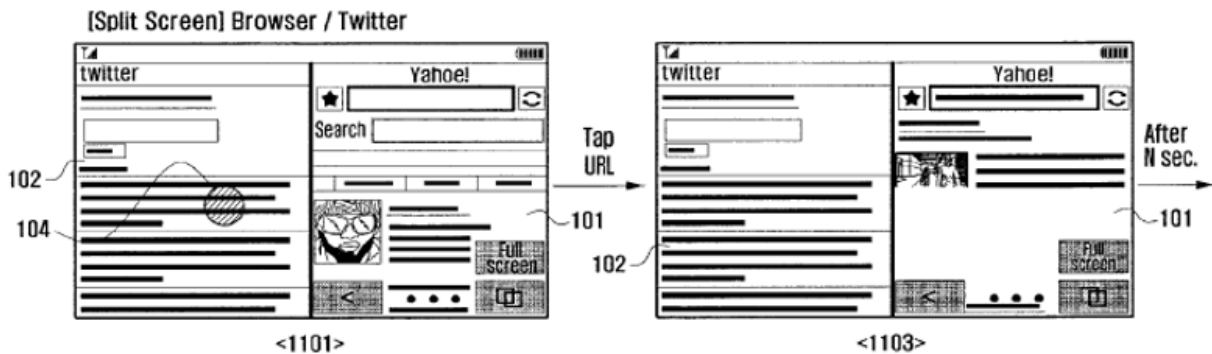
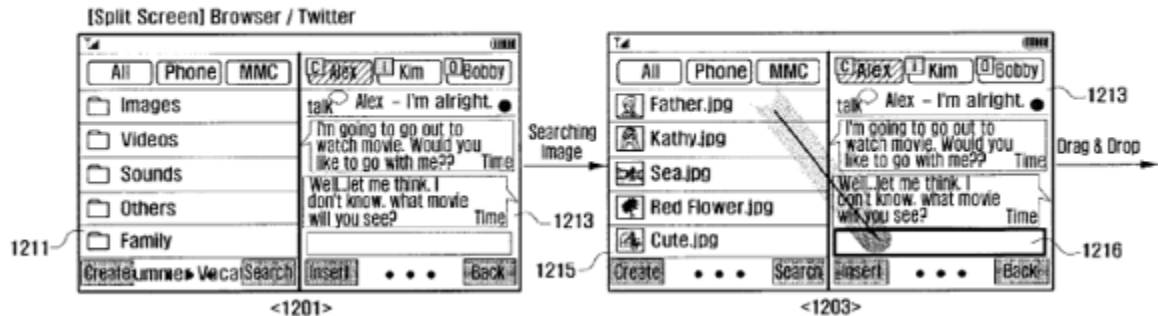


FIG . 12



(EX1007, FIGS. 7A-7C, 10-12, (some excerpted).)

Yook discloses that its device (mobile terminal 100) includes a control unit 160 coupled to and in communication with the touch screen 140 and a storage unit 150 comprising the split-screen management program. (See, e.g., EX1007, Fig. 2; ¶¶[0025], [0028] (“touch pad 121 arranged at the touch screen 140 can generate an input signal corresponding to a touch of the user and send the input signal to the control unit 160”), [0031] (control unit 160 controls display unit 141 of touch screen 140), [0033]–[0034] (“storage unit 150 stores a screen area management program”), [0035] (“screen area management program can be loaded on the control

unit 160 in response to activation of a particular user function”), [0039] (“control unit 160 can control the display unit 141 to divide the screen into two areas”).

Yook also discloses:

The above-described methods according to the present invention **can be realized in hardware or as software or computer code that can be stored in a recording medium** such as a CD ROM, a RAM, a floppy disk, a hard disk, or a magneto-optical disk or downloaded over a network, **so that the methods described herein can be executed by such software using a general purpose computer, or a special processor** or in programmable or dedicated hardware, such as an ASIC or FPGA. As would be understood in the art, the computer, the processor or the programmable hardware include memory components, e.g., RAM, ROM, Flash, etc. that may store or receive software or computer code that when accessed and executed by the computer, processor or hardware implement the processing methods described herein.

(EX1007 ¶[0117] (emphasis added).)

A POSITA would have appreciated that like the '494 patent, both Seo and Yook disclose systems and methods for controlling the display of a mobile device, including controlling the display of multiple screen areas and multiple applications in response to user inputs. (EX1002 ¶91.) A POSITA addressing the technology

of the '494 patent therefore would have had reason to look to Seo and Yook. (*Id.*)

Although Seo provides systems and methods for controlling multiple displays, applications, and screens in response to user inputs on touch screens, the Seo Provisional does not provide the specific internal hardware components on which such methods should be implemented. (*Id.*) Yook provides those components, including a control unit or processor, a memory, and software stored on the memory for controlling a touch screen display in response to user inputs. (*Id.*)

Given the similarity of Seo and Yook, such a person would have had reasons to consider combining their teachings, and implementing Seo's systems and methods using the generic hardware components disclosed by Yook including the processor, memory, and software stored on the memory for controlling a touch screen display in response to user input. (*Id.*) Indeed, the '494 patent admits that such "hardware [was] known in the art." (EX1001, 49:64-50:4 (listing exemplary known hardware that can be used for the disclosed embodiments including "processors" and "memory [or] nonvolatile storage"); *see also* EX1002 ¶26.) A POSITA would have been motivated to look to Yook and incorporate its teachings in Seo at least because Seo lacks pertinent details (e.g., the internal hardware components) that would have been needed to implement the disclosed methods, and Yook provides those components for a similar device with similar functionality. (EX1002 ¶91.)

Therefore, the Seo-Yook combination would have been a routine and conventional implementation of known methods using known hardware components performing their known functions, well within a POSITA's skills and ability to accomplish. (EX1002 ¶92.) Accordingly, a POSITA would have been capable of such an implementation of Seo and would have had a reasonable expectation of success in the combination. (*Id.*) Based on the teachings of Yook, the modified Seo device would have been configured to perform the same methods as disclosed by Seo in the same way, using a processor to execute instructions stored on software in a memory with instructions for implementing the methods as disclosed by Yook, where the processor upon executing such software instructions would change the touch screen displays as disclosed by Seo. (*Id.*)

2. Claim 14:

i) [14.pre] “A device comprising:”

To the extent limiting, Seo in view of Yook discloses the preamble of claim 14. (EX1002 ¶93.) For example, Seo discloses an apparatus 100 (“a device,” depicted as a mobile computing device having two touch screens 190a and 190b. (EX1005, Figs. 1, 8A, 8B; *see also e.g.*, EX1006, 34, 38.) Consistent with the explanation above (*supra* §IX.C.1) and below (*infra* §IX.C.2(iv)–(vi)), when combined with the teachings of Yook, the Seo-Yook device comprises a memory,

processor, and application programming (e.g., software) for performing the same methods as Seo discloses. (EX1002 ¶¶93.)

ii) [14.a] “a first display, including:”

[14.b] “a touch display, wherein the touch display is located within a first area of the first display;”

[14.c] “a gesture capture region, wherein the gesture capture region is located within a second area of the first display;”

Seo discloses and/or suggests these limitations. (EX1002 ¶¶94–96.) For example, Seo discloses right-side touch screen 190b (“a first display, including: a touch display”). (EX1005, Fig. 8B; EX1006, 34 (right-side touch screen), 38 (right-side touch screen); *supra* §IX.A.1(i)–(ii).) Being a touch screen display, a POSITA would have understood that the entire area of the right-side touch screen 190b is “a touch display,” and thus “located within a first area of the first display.” (EX1002 ¶94.)

Seo further discloses that the multiple touch gesture input 882/883 is received by the device starting in touchscreen 190b (analysis and citations *supra* §IX.A.2), and thus Seo’s “first display” necessarily contains a “gesture capture region [that] is located within a second area of the first display” because gestures input on the first display are received by Seo’s device. (EX1005, Fig. 8B; EX1002 ¶95; *supra* §IX.A.1(v) (discussing user inputs 882/883); *see also* EX1006, 34, 38.) A POSITA would have understood that the multiple touch input 882/883 is a two-

finger gesture (e.g., a swiping or drag & drop motion) as illustrated in figure 8B. (EX1005, Fig. 8b; *see also* EX1006, 34, 38 (describing a two touch drag & drop gesture).)

Claim 14 does not require the “first area” to be separate from the “second area.” Principles of claim differentiation confirm this interpretation because claim 15, which depends from claim 14, adds that additional requirement. (EX1001, Claim 15 (requiring the gesture capture region to be “included in at least one of the first and second displays in an area outside of the first touch display and the second touch display”).)

iii) [14.d] “a second display, including:”

[14.e] “a second touch display, wherein the second touch display is located within a first area of the second display;”

[14.f] “a second gesture capture region, wherein the second gesture capture region is located within a second area of the second display”

Seo discloses and/or suggests these limitations. (EX1002 ¶¶97–98.) For example, Seo discloses left-side touch screen 190a (“a second display, including: a second touch display”). (EX1005, Fig. 8B; EX1006, 34 (left-side touch screen), 38 (left-side touch screen); *supra* §IX.A.1(i)–(iii).) Being a touch screen display, a POSITA would have understood that the entire area of the left-side touch screen

190a is “a touch display,” and thus “located within a second area of the second display.” (EX1002 ¶97.)

Seo further discloses that the multiple touch gesture input 882/883 received by the device starting in touchscreen 190b (discussed for claim element 14[c]) continues into and is also received by touchscreen 190a (analysis and citations *supra* §IX.A.2), and thus Seo’s “second display” necessarily contains a “gesture capture region [that] is located within a second area of the second display” because gestures input on the second display are received by Seo’s device. (EX1005, Fig. 8B; EX1002 ¶98; *supra* §IX.A.1(v) (discussing user inputs 882/883); *see also* EX1006, 34, 38.)

iv) [14.g] “memory;”¹³

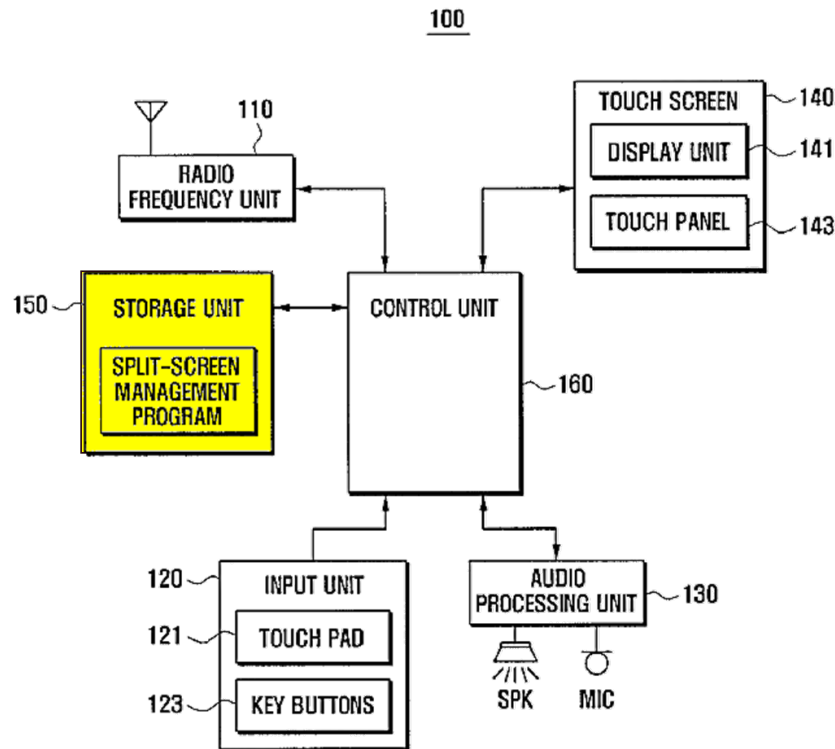
Seo in view of Yook discloses and/or suggests this limitation. (EX1002 ¶¶99–103.) Seo discloses a device that implements various processes including

¹³ Although the claim 14 confusingly recites “the second display memory,” the prosecution history shows the word “memory” on its own line separate from “the second display,” suggesting the applicant may have forgotten to include punctuation between “second display” and “memory,” causing the limitations to appear together on the same line in the issued patent. (EX1004, 742.)

changing the pages and/or applications displayed on its touch screens in response to user inputs on those touch screens. (*See generally* §§IX.A-C; EX1005, Figs. 8A, 8B; EX1006, 34-40.)

Yook discloses a storage unit 150 (“memory”) (EX1007 ¶[0025]), where the device “can activate a screen area management program stored in the storage unit 150 in response to a user request . . . [to] output functional view areas related to activated user functions on the individual divided screen areas” (*id.* ¶[0026]; *see also id.* ¶[0034] (“storage unit 150 stores a screen area management program”)). (EX1002 ¶100.)

Accordingly, Petitioner treats “memory” as a distinct limitation here, consistent with the formatting of the claims submitted and allowed during prosecution.



(EX1007, Fig. 2.)

Yook further discloses that “methods according to the present invention can be realized . . . as software or computer code that can be **stored in a recording medium** such as [a RAM or a hard disk] . . . so that the methods . . . can be executed by such software using a general purpose computer, or a special processor” and that “[a]s would be understood in the art, the computer [or] the processor . . . **include memory components**, e.g., RAM, ROM, Flash, etc. that may **store or receive software or computer code** that when accessed and executed by the computer, processor or hardware implement the processing methods described herein.” (EX1007 ¶[0117] (emphasis added).) Thus, Yook

discloses a memory to store software for executing methods for managing multiple touch-screen display areas. (EX1002 ¶101.)

Consistent with such teachings and the discussion above in §IX.C.1, a POSITA would have found it obvious to implement Seo's device with the software instructions for its methods stored on a memory in the device, as disclosed by Yook. (EX1002 ¶102.) Indeed, a POSITA would have understood that such instructions would need to be stored somewhere in order for Seo's methods to be executed on Seo's device, and would have found it obvious to store them on Seo's device itself as disclosed by Yook. (*Id.*) In such an implementation, the programming would have been executed by a processor, as also disclosed by Yook. (EX1007 ¶[0117] (disclosing that the methods described can be realized as software or computer code stored in a medium for execution by a processor as understood in the art); *see also id.*, Fig. 1 (control unit 160).) The Seo-Yook device would have provided the same features as Seo, with the additional aspect that the programming for those features is stored on a memory implemented in Seo's device so that they can be executed to perform Seo's disclosed methods. (*Supra* §IX.C.1; EX1002 ¶102.)

A POSITA would have had a reasonable expectation of success because the combination is no more than using a known and conventional memory on an electronic device to perform its conventional function of storing information.

(EX1002 ¶103.) Such an implementation would have been well within a POSITA's skills and abilities. (*Id.*)

v) **[14.h] “a processor in communication with the first display, second display, and memory;”¹⁴**

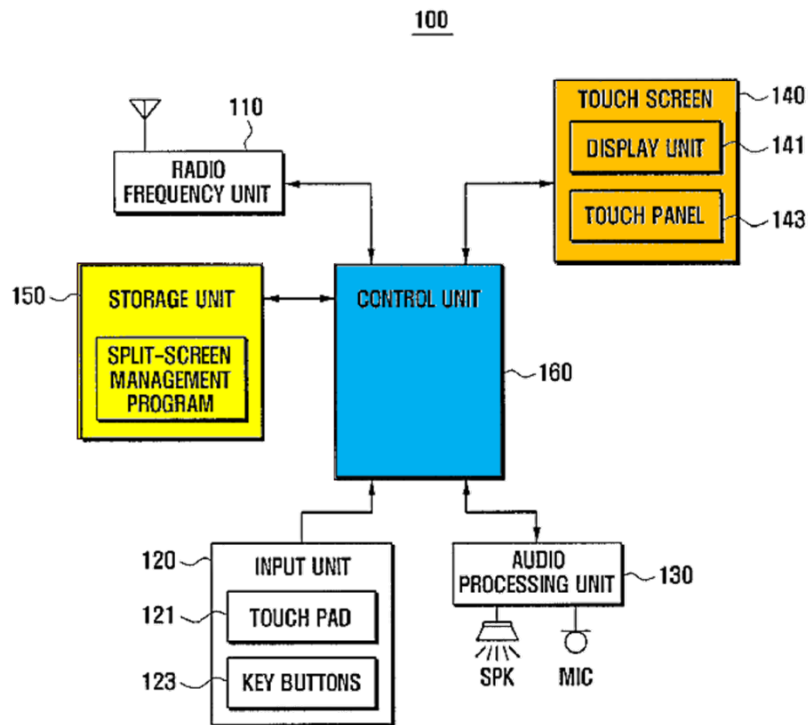
Seo in view of Yook discloses and/or suggests these limitations. (EX1002 ¶¶104–107.) The Seo Provisional discloses a software touch input analyzer that receives inputs from the touch sensor on Seo's touch screens to manage the screen modes and UI. (EX1006, 37). Seo similarly discloses a ROM 112 and storage unit 175 connected to a controller 110 with CPU 111 that receives inputs from the touch screens 190a and 190b (“first display, second display”) to manage the screen modes and UI. (*See, e.g.*, EX1005, ¶¶[0053], [0055] (“(CPU) 111, the ROM 112 and the RAM 113 are connected through an internal bus”), [0056] (“controller 110 controls the touch screen controller 195”), [0128] (“the controller 110 . . . change[s] at least one of the first screen 800 of the first touch screen 190a and the second screen 850 of the second touch screen 190b in response to the arrival of at least one of the multiple touches 880 and 881 in the second touch screen 190b”), FIG. 3; *see also supra* §IX.C.1.) Thus, Seo and the Seo Provisional disclose at

¹⁴ The claim does not indicate whether “memory” is a second memory, or whether it refers to the “memory” of claim element 14[g]. For purposes of the Petition, Petitioner assumes it refers to the memory of claim element 14[g].

least that user inputs on the touch screens are recognized and processed by the device to change the displays. (EX1002 ¶104.)

To the extent that Seo does not expressly disclose a processor in communication with the first display, second display and memory, those features would have been obvious in view of Yook. (*Supra* §IX.C.1; EX1002 ¶105.) Yook discloses and/or suggests a control unit (“a processor”) (or alternatively a “processor” (EX1007 ¶[0117])),¹⁵ in communication with touch screen 140 and a storage unit 150 (“memory”). (EX1007, Fig. 2)

¹⁵ A POSITA would have understood from Yook that a “control unit” is a processor, consistent with the ’494 patent’s discussion. (EX1001, 12:57-13:4; EX1002 ¶105.) Indeed, Yook describes implementing the described system using a “processor,” as disclosed or suggested in paragraph 117. (EX1007 ¶[0117]; EX1002 ¶105.)



(EX1007, Fig. 2 (annotated) (disclosing control unit 160 in communication with storage unit 150 and touch screen 140).)

Based on the disclosures discussed in this section, and also for the reasons and based on the additional disclosures discussed in sections IX.C.1 and IX.C.2(iv), a POSITA would have found it obvious to implement the Seo-Yook system with a processor in communication with the first display, the second display, and memory. Such a skilled person would have been motivated to do so and would have had a reasonable expectation of success for the reasons discussed in section IX.C.1. (EX1002 ¶106.)

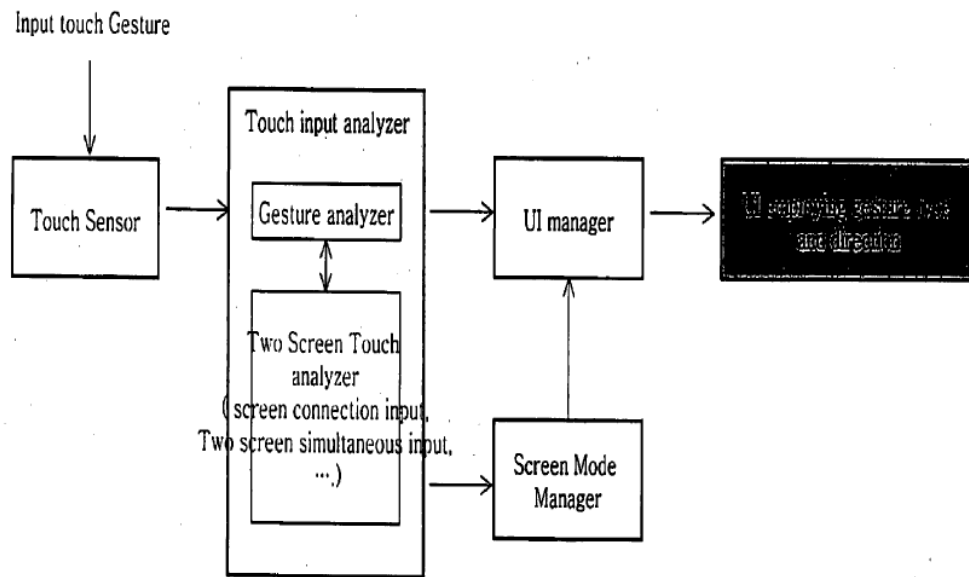
Whereas Yook has one touch screen that it can divide into multiple areas for different content, Seo has two touch screens that can display different content. Thus, a POSITA would have understood that as implemented in Seo, the processor would need to be in communication with both the first touch screen and the second touch screen, or it could not control Seo's two touch screens, or receive touch inputs from both touch screens, as required to implement Seo's methods. (EX1002 ¶107; *see, e.g.*, EX1005, Figs. 8A, 8B; EX1006, 34, 38.) Accordingly, a POSITA would have found it obvious—indeed, necessary—for the modified Seo-Yook system to have the processor in communication with both touch screens for the modified system to function as disclosed by Seo. (EX1002 ¶107.)

vi) [14.i] “application programming stored in the memory and executed by the processor, wherein the application programming is operable to:”

Seo in view of Yook discloses and/or suggests these limitations. (EX1002 ¶108.) As discussed for claim elements 14[g] and 14[h], and in accordance with the discussion of the combined Seo-Yook system discussed in section IX.C.1, a POSITA would have been motivated and found it obvious to implement Seo's method as software (“application programming”) stored in the Seo-Yook system's memory and executed by its processor to perform the methods disclosed by Seo for presenting applications and pages on Seo's touch screens. (*Supra* §§IX.C.1, IX.C.2(iv)–(v); EX1002 ¶108.) Indeed, Seo discloses a “S/W [software]

construction diagram,” showing how touch inputs are detected and processed to change the displays. (EX1006, 37.)

3.2 Construction of the invention: S/W construction diagram



(*Id.*)

vii) [14.j] “present a first page of a first application in a first portion of the first display;”

Seo in view of Yook discloses and/or suggests this limitation. (EX1002 ¶109.) For example, Seo discloses, suggests, and/or renders obvious this claim limitation for the same reasons discussed for claim element 1[a]. (*Supra* §IX.A.1(ii); EX1002 ¶109.) The analysis of the Seo-Yook system presented for claim elements 14[g]–[i] does not impact Seo’s disclosure of this claim element. (EX1002 ¶109.) Although claim 1 recites “on a first display,” whereas element

14[j] recites “in a first portion of the first display,” this distinction does not change the analysis of Seo. The ’494 patent explains that “[t]he term ‘display’ refers to a portion of one or more screens” (EX1001, 4:22-23) and thus a portion of a display can similarly be a portion of one or more screens (e.g., Seo’s touch screen 190(b)). (EX1002 ¶109.)

- viii) [14.k] “present a second page of the first application in a second portion of the second display, wherein the first and second pages present different content and are distinct pages, and wherein the second page is a child of the first page;”**

Seo in view of Yook discloses and/or suggests, and renders obvious, these limitations. (EX1002 ¶¶110.) For example, Seo discloses, suggests, and/or renders obvious these claim limitations for the same reasons discussed for claim elements 1[b] and 1[c]. (*Supra* §§IX.A.1(iii)–(iv); EX1002 ¶110.) The analysis of the Seo-Yook system presented for claim elements 14[g]–[i] does not impact Seo’s disclosure of this claim element. (EX1002 ¶110.)

- ix) [14.l] “receive input entered by a user in the gesture capture region;”**

Seo in view of Yook discloses and/or suggests, and renders obvious, these limitations. (EX1002 ¶¶111.) This claim element does not state whether the input should be in the first gesture capture region or the second gesture capture region, but Seo discloses receiving an input in both gesture capture regions and thus discloses either option, as discussed for claim element 1[d] and claim 2. (*Supra*

§§IX.A.1(v), IX.A.2.) Thus, Seo discloses this claim element for the same reasons discussed therein. (*Id.*). The analysis of the Seo-Yook system presented for claim elements 14[g]–[i] does not impact Seo’s disclosure of this claim element.
(EX1002 ¶111.)

- x) **[14.m] “in response to a first input entered by the user to minimize the first application to one of the first and second portions of the display, present the second page of the first application in one of the first and second portions of the display and discontinue the presentation of the first page of the application.”**

Seo in view of Yook discloses and/or suggests, and renders obvious, these limitations. (EX1002 ¶¶112.) For example, Seo discloses, suggests, and/or renders obvious this claim limitation for the same reasons discussed for claim element 1[d]. (*Supra* §§IX.A.1(iv); EX1002 ¶112.) The analysis of the Seo-Yook system presented for claim elements 14[g]–[i] does not impact Seo’s disclosure of this claim element. (EX1002 ¶112.)

3. Claim 18:

- i) **[18.pre] “A non-transitory computer readable medium having stored thereon computer-executable instructions, the computer-executable instructions causing a processor to execute a method for selectively presenting an application across a display of a device, the computer-executable instructions comprising:”**

Seo in view of Yook discloses and/or suggests, and renders obvious, these limitations. (EX1002 ¶¶113.) As discussed for claim elements 14[g]–[i], it would

have been obvious to implement Seo's methods in the Seo-Yook modified device via software stored on a memory ("[a] non-transitory computer readable medium") (claim element 14[g]) which could be executed by a processor ("the computer-executable instructions causing a processor to execute a method") to present a first and/or second page 820/800 of a messaging application on one of the first displays 190b and/or second displays 190a ("presenting an application across a display of a device"), as detailed in the analysis for at least claims 1 and 14. (*Supra* §§IX.A.1, IX.C.1–2 (including IX.C.2(iv) regarding "memory"); EX1002 ¶113.) Thus, a POSITA would have found it obvious in view of Yook to store and execute instructions for Seo's method steps discussed for the below claim elements on a non-transitory computer readable medium. (EX1002 ¶113.)

ii) [18.a] "instructions to display a first page of a first application on a first display portion of the device;"

Seo in view of Yook discloses and/or suggests, and renders obvious, these limitations. (EX1002 ¶¶114.) Seo discloses and/or suggests the claimed instructions for the reasons discussed for claim elements 1[a] and 14[j]. (EX1002, ¶114; *supra* §§IX.A.1(ii), IX.C.2(vii).) A POSITA would have found it obvious to implement the method discussed for those claim elements as "instructions" stored in a computer-readable medium of the Seo-Yook system for at least the reasons discussed for claim elements 14[g]–[i] and 18[pre]. (EX1002, ¶114; *supra* §§IX.C.2(iv)–(vi), IX.C.3(i).)

- iii) **[18.b] “instructions to display a second page of the first application on a second display portion of the device, wherein the first and second pages present different content and are distinct pages, and wherein the second page is a child of the first page; and”**

Seo in view of Yook discloses and/or suggests, and renders obvious, these limitations. (EX1002 ¶¶115.) Seo discloses and/or suggests the claimed instructions for the reasons discussed for claim elements 1[b], 1[d], and 14[k]. (EX1002, ¶115; *supra* §§IX.A.1(iii), (v), IX.C.2(viii).) A POSITA would have found it obvious to implement the method discussed for those claim elements as “instructions” stored in a computer-readable medium of the Seo-Yook system for at least the reasons discussed for claim elements 14[g]–[i] and 18[pre]. (EX1002, ¶115; *supra* §§IX.C.2(iv)–(vi), IX.C.3(i).)

- iv) **[18.c] “in response to a first input received from a user to minimize the first application to one of the first and second display portions of the device, display the second page of the first application on one of the first and second display portions of the device and discontinue the display of the first page of the application.”**

Seo in view of Yook discloses and/or suggests, and renders obvious, these limitations. (EX1002 ¶¶116.) Seo discloses and/or suggests the claimed instructions for the reasons discussed for claim elements 1[d] and 14[m]. (EX1002, ¶116; *supra* §§IX.A.1(v), IX.C.2(x).) A POSITA would have found it obvious to implement the method discussed for those claim elements as

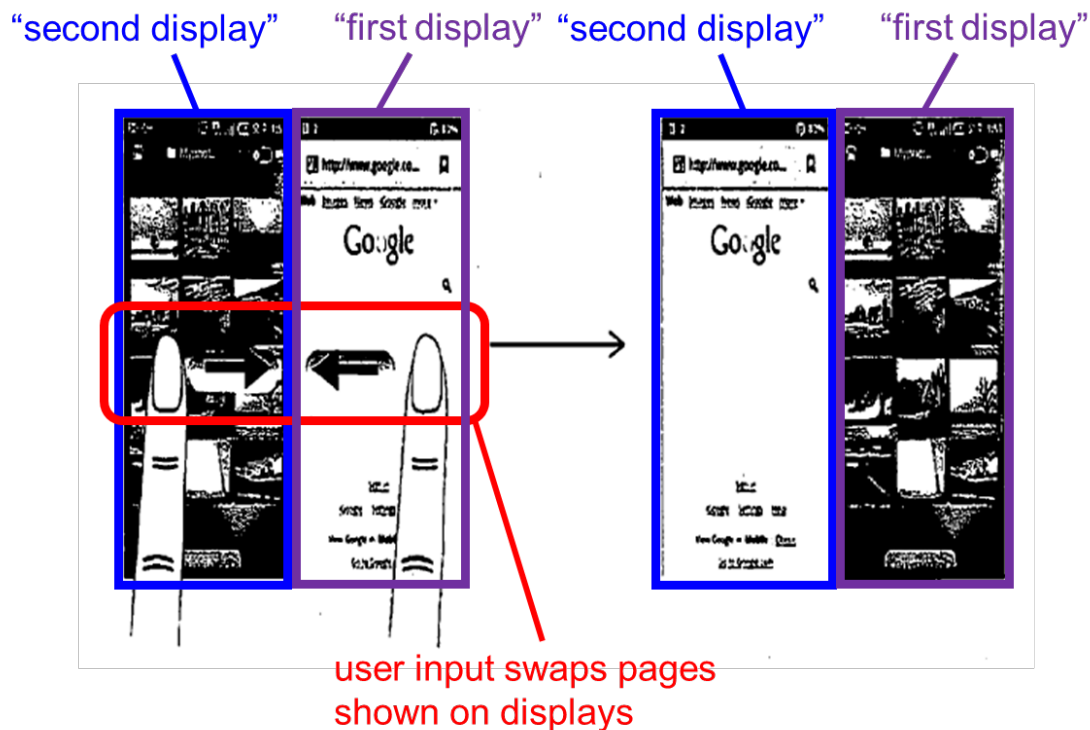
“instructions” stored in a computer-readable medium of the Seo-Yook system for at least the reasons discussed for claim elements 14[g]–[i] and 18[pre]. (EX1002, ¶116; *supra* §§IX.C.2(iv)–(vi), IX.C.3(i).)

4. **Claim 19: “The computer readable medium of claim 18, wherein the device includes multiple displays, wherein the first display portion of the device includes a first display of the multiple displays, wherein the second display portion of the device includes a second display of the multiple displays, and wherein in response to one of the first input and a second input received from the user the second page of the first application is displayed on the first display of the device.”**

Seo in view of Yook discloses and/or suggests, and renders obvious, these limitations. (EX1002 ¶¶117–121.) For example, Seo discloses a device having first and second displays (touch screens 190b and 190a, respectively) as discussed for claim limitations 1[a], 1[b], 14[a], 14[d], and 18[pre]–18[b] (*supra* §§IX.A.1(ii)–(iii), IX.C.2(i), (ii), IX.C.2(i)–(iii) (“device includes multiple displays”). Thus, the first display portion 190b “includes” a first display 190b of the multiple displays 190a and 190b, and the second display portion 190a similarly “includes” a second display 190a of the multiple displays. (*See id.*; *supra* §§IX.C.2(vii)–(viii); EX1006, 5–40 (describing controlling two displays of a single device). EX1002 ¶117.).

Seo further discloses (via its incorporation of the Seo Provisional), receiving a user input to swapping the application pages displayed from one display to the

other (“in response to . . . a second input received from the user the second page of the first application is displayed on the first display of the device”). (EX1006, 21 (“When a user simultaneously touches two displays and flicks/drags in a direction of the hinge, two displays are swapped.”), 25 (showing “2 Screen 2 Finger Pinch Close” gesture).) (EX1002 ¶118.)



(EX1006, 21)

Although Seo’s exemplary figures show swapping displays where there are pages of different applications shown on each page, the disclosure is not so limited. (EX1006, 21.) Seo discloses that “the two displays are swapped” (*id.*), which a POSITA would have understood from the context of Seo to disclose or suggest that whatever is shown on each of the device’s physical displays is swapped (EX1002

¶119). Thus, when the first page of the first application is displayed on the first display portion and the second page of the first application is displayed on the second display portion as discussed for claim 18 (*supra* §§IX.C.3(ii)–(iii)), Seo discloses that a second input received from the user (as shown in the above figure) would swap those pages between displays such that the second page of the first application is displayed on the first display of the device. (EX1006, 21–25.)

To the extent not expressly disclosed, a POSITA would have been motivated and found it obvious to combine these embodiments from Seo. (EX1002 ¶120.) Seo (including its incorporated disclosures from the Seo Provisional) discloses several different ways a user can control the information shown on dual-screen portable devices. (*See generally* EX1006). Indeed, Seo’s relevant embodiments and others respond to a need Seo recognized for “a UI through which a user can excitingly and intuitively input instructions in a device [having dual displays] with various methods.” (*See, e.g.*, EX1006, 5, 19, 31.) Reviewing the disclosure as a whole, it is clear that Seo does not intend each of its separate gesture inputs to be exclusive of one another, but instead that they could all be incorporated into the same device and used in any order to control the display. (*See* EX1006, 5-40; EX1002 ¶120.)

Thus, a POSITA would have been motivated to combine Seo’s embodiments so that a user could swap the pages shown on each display with a gesture, as

disclosed by Seo, including when two pages of the same application are concurrently shown (one on each display), and found it obvious to do so. (EX1002 ¶121.) Doing so would have provided maximum usability because a user could intuitively control which screen they wanted a particular application page displayed on. (*Id.*) Seo similarly explains that with the screen swap gesture, “[a] user can make more simple and full interaction according to [the] user’s intention.” (EX1006, 21.) The combination would have been nothing more than combining the functionality of multiple known device inputs (e.g., Seo’s input to minimize an application as discussed for claim 18 and Seo’s input to swap the displayed pages) into a single device to control the device’s displays in the same way as disclosed or suggested by the prior art. (EX1002 ¶121.) Therefore, claim 19 would have been obvious over the Seo-Yook combination. And the modified Seo-Yook device of claim 18, wherein certain instructions are stored on a computer readable medium, does not change this analysis. (*Id.*)

5. Claim 20: “The computer readable medium of claim 19, wherein in response to an input received from the user to maximize the first application the first page of the first application is displayed on the first display of the device and the second page of the application is displayed on the second display of the device.”

Seo in view of Yook discloses and/or suggests, and renders obvious, these limitations. (EX1002 ¶122.) For example, for the reasons discussed for claim 12, Seo discloses and/or suggests the limitations of claim 20. (*Supra* §§IX.A.6(ii),

IX.B.2.) The modified Seo-Yook device of claims 18 and 19 operates in the manner disclosed/suggested by Seo and thus that combination does not impact the analysis. (EX1002 ¶122.)

D. Ground 4: Seo and Choi Render Claim 9 Obvious

1. Claim 9: “The method of claim 1, wherein the first application is a web browser, and wherein the primary page is a content page that includes web content.”

Seo in view of Choi discloses and/or suggests and renders obvious these limitations. (EX1002, ¶¶123–126.) As described in Grounds 1 and 2, Seo discloses and/or suggests all the limitations of claim 1. (*Supra* §§IX.A.1, IX.B.1). For claim 1, the primary and auxiliary/child pages were mapped to a messaging application. (*Id.*) However, Seo also discloses displaying pages from a web browser application including web content (*see* EX1006, 6 (“Google” webpage), 20–21 (same), 25–27 (same), 32 (same)), and when describing the PC-based background art, Seo shows what appears to be two pages from a web browser on a screen (*id.*, 33). Thus Seo at least suggests a browser application and a primary page including web content. (EX1002 ¶123.)

Choi discloses “a web browsing method for showing a method of operating main and sub windows in a mobile terminal,” wherein “a webpage (e.g., a main webpage) first opened when executing a web browser may be displayed on a main window (e.g., the TOLED 154), and a webpage or pop-up page linked to the first-

opened webpage may be displayed on a sub window (e.g., the LCD 151).”

(EX1010, 28:49-56; Fig. 48.) Similar to how Seo’s parent and child windows for the messaging application work, Choi also discloses that the pop-up page on the second LCD display 151 can be linked to the first webpage and opened from “a user’s touch input.” (EX1010, 29:1-9, Fig. 49A.) Thus, a POSITA would have understood that Choi discloses a main or primary webpage on one display and child/auxiliary webpage on a secondary display, similar to Seo’s primary and auxiliary pages discussed for claim 1. (EX1002 ¶124.) Choi’s primary/parent window also displays web content at least because Choi discloses “certain text (or [a] certain object) on a webpage #1” displayed on the main window TOLED 154. (EX1010, 29:5; EX1002 ¶124.)

A POSITA considering Seo’s disclosures and the field of the ’494 patent would have had reason to look to Choi at least because Choi is in the same field, as it relates to user interfaces and interactions with mobile devices having multiple displays (e.g., EX1010, Figs. 5–25, 39–51), and would have been reasonably pertinent to the alleged problems the alleged inventors of the ’494 patent sought to solve (e.g., “a multi-display device that can selectively display pages of information in response to [a user input]”) (EX1001, 1:54-56). (EX1002 ¶¶41–45, 125.) Having looked to Choi, a POSITA would have been motivated and found it obvious to implement Seo’s method for controlling a display of a device wherein

the first application is a web browser, wherein the primary page is a content page that includes web content, in view of Choi and such a person's knowledge and ordinary skill and/or creativity. Web browser applications were common long before the time of the alleged invention, and the '494 patent does not purport to have invented them. (EX1002 ¶125; *see e.g.*, EX1011, 6:20-29 (disclosing a "web-browsing application on a mobile device (e.g. Blackberry® web browser or any other hand held/smart phone browser).") A POSITA would have understood that a user of Seo's device would have wanted to use a known browser application on that device, like that disclosed by Choi and known in the state of the art. (EX1002 ¶125.) And such a person would have been motivated to provide that feature to users to address a clear user and market demand for basic computer functionality like a browser application. (*Id.*) Accordingly, they would have been motivated and found it obvious to combine Seo and Choi to arrive at the alleged invention. (*Id.*)

A POSITA would have a reasonable expectation of success in the combination because it was no more than running a known application (a web browser application that could operate on multiple displays like Choi discloses) according to the known methods disclosed and/or suggested by Seo. (EX1002 ¶126.) Thus, the Seo-Choi combination renders claim 9 obvious.

X. DISCRETIONARY DENIAL IS NOT APPROPRIATE

A. Institution is Warranted Under § 325

The prior art in Grounds 1–4 was not applied/discussed during prosecution, and the arguments presented herein, supported by expert testimony, are not the same or substantially the same as those considered during prosecution. Thus, discretionary denial under § 325(d) should not be exercised here.

B. Institution is Warranted Under *Fintiv*

The six *Fintiv* factors do not justify denying institution. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (Mar. 20, 2020) (precedential).

Petitioners may respectively request a stay of litigation if institution is granted. The district court has not indicated how it will rule on such motions. Nor does the PTAB infer how a district court would so rule. *Hulu LLC v. SITO Mobile R&D IP, LLC*, IPR2021-00298, Paper 11 at 10-11 (May 19, 2021). Thus, this factor is neutral. *See, e.g., Sand Revolution II, LLC v. Continental Intermodal Group – Trucking LLC*, IPR2019-01393, Paper 24 at 7 (June 16, 2020).

The **second factor** (trial proximity) favors institution. Trial is not set until August 3, 2026 against Motorola and November 16, 2026 against Google. (EX1008, 18; EX1009, 20.) This IPR should conclude months before either trial. Accordingly, this factor weighs heavily against discretionary denial.

The **third factor** (investment) favors institution. To date, little substantive

investment has occurred in the two litigations, particularly as to invalidity. Discovery recently commenced in both proceedings and the parties have served their respective preliminary contentions. (EX1008, 4; EX1009, 4.) Claim construction process has not begun, and the claim construction hearings are scheduled for June 27, 2025 (EX1008, 18; EX1009, 18) after the expected date of the institution decision. No depositions have occurred, no expert discovery has been conducted, and no summary judgment motions have been filed in either litigation. (*Id.*) See *Sand Revolution* at 11.

Petitioners proceeded with reasonable diligence. PO's allegations initially asserted over 100 claims across sixteen patents. Petitioners filed this Petition within three months of receiving PO's infringement contentions and just over two weeks after PO was required to narrow the number of Asserted Claims from 100 to 40. (EX1008, 4; EX1009, 4.) "[I]t is often reasonable for a petitioner to wait to file its petition until it learns which claims are being asserted against it in the parallel proceeding." *Fintiv* at 11.

The **fourth factor** (overlap) favors institution. Petitioners challenge claims 6, 9, 12, 14, and 18–20, which are not at issue in the litigations. Moreover, because this proceeding will conclude prior to any trial (*supra*), even if there was complete overlap, this factor would favor institution.

Although the same parties are involved in both proceedings, the **fifth factor** (parties) is outweighed by the other factors as explained herein. Thus, under the “holistic view” of whether integrity of the system and efficiency is best served, institution is favored. *Samsung Elecs. Co. Ltd. v. Dynamics Inc.*, IPR2020-00505, Paper 11 at 15 (Aug. 12, 2020).

The **sixth factor** (other circumstances) favors institution. Petitioners present strong grounds demonstrating how the challenged claims are unpatentable under both PO’s unsupported infringement interpretations and interpretations supported by the intrinsic record. (§§VIII; IX.) Also, the grounds rely on prior art combinations not before the Office, which highlight the unpatentability of the claims. (*Id.*) Thus, the merits are compelling. *Fintiv* at 14-15.

XI. CONCLUSION

Petitioners request institution of IPR for the challenged claims based on the above specified grounds.

Respectfully submitted,

Dated: October 17, 2024

By: / Naveen Modi/
Naveen Modi (Reg. No. 46,224)
Counsel for Petitioner Google
Designated Lead Counsel for Petitioners

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. §42.24(d), the undersigned certifies that the foregoing
Petition for *Inter Partes* Review of U.S. Patent No. 9,158,494 contains, as
measured by the word-processing system used to prepare this paper, 13,990 words.
This word count does not include the items excluded by 37 C.F.R. §42.24 as not
counting towards the word limit.

Respectfully submitted,

Dated: October 17, 2024

By: / Naveen Modi/
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CERTIFICATE OF SERVICE

I hereby certify that on October 17, 2024, I caused a true and correct copy of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 9,158,494 and supporting exhibits to be served via express mail on the Patent Owner at the following correspondence address of record as listed on Patent Center:

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