

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Magnus Goertz
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Title: USER INTERFACE

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**PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES PATENT
NO. 8,812,993 PURSUANT TO 35 U.S.C. §§311–319, 37 C.F.R. §4**

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EXHIBITS

<u>Exhibit No.</u>	<u>Description</u>
1001	U.S. Patent No. 8,812,993 (“the ’993 patent”)
1002	Declaration of Benjamin B. Bederson
1003	File History for U.S. Patent No. 8,812,993
1004	Benjamin B. Bederson CV
1005	Certified translation of JP Published Patent Application No. 2002-55750 (“Hisatomi”), published February 20, 2002
1006	Xiangshi Ren & Shinji Moriyama, “Improving Selection on Pen-Based Systems: A Study of Pen-Based Interaction for Selection Tasks,” ACM Transactions on Computer-Human Interaction, Vol. 7, No. 3, September 2000, pp. 384-416 (“Ren”)
1007	U.S. Patent No. 5,422,656 to Allard et al. (“Allard-656”)
1008	U.S. Patent No. 5,249,296 to Tanaka (“Tanaka”)
1009	U.S. Patent No. 5,615,384 to Allard et al. (“Allard-384”)
1010	U.S. Patent No. 5,537,608 to Beatty et al. (“Beatty”)
1011	U.S. Patent No. 5,903,268 to Hirayama (“Hirayama”)
1012	U.S. Patent No. 5,305,435 to Bronson (“Bronson”)
1013	U.S. Patent No. 6,133,898 to Ludolph et al. (“Ludolph”)
1014	Tammara T. A. Combs and Benjamin B. Bederson “Does zooming improve image browsing?” Proceedings of the Fourth ACM Conference on Digital Libraries (DL ’99), ACM, New York, NY, USA, (August 1999) 130-137
1015	Dean Harris Rubine, “The Automatic Recognition of Gestures,” CMU-CS-91-202, December, 1991.
1016	U.S. Patent No. 6,710,791 to Kodama et al. (“Kodama”)
1017	IBM Corp., User’s Manual, “Simon Says ‘Here’s How!’” Part. No. 82G2557 (1994) (“IBM”)
1018	Benjamin B. Bederson & James D. Hollan, <i>Pad++: A Zooming Graphical Interface for Exploring Alternate Interface Physics</i> , UIST ’94 Proceedings of the 7th Annual ACM Symposium on User Interface Software and Technology 17 (1994), DOI: http://dx.doi.org/10.1145/192426.192435
1019	David Rogers et al., <i>Tossing Objects in a Desktop Environment</i> , submitted to Conference on Human Factors in Computing Systems (1996)

1020	David Rogers et al., Exemplar Figure of Tossing from <i>Tossing Objects in a Desktop Environment</i> , submitted to Conference on Human Factors in Computing Systems (1996)
1021	Benjamin B. Bederson, <i>Fisheye Menus</i> , UIST '00 Proceedings of ACM Conference on User Interface Software and Technology 217 (2000), DOI: 10.1145/354401.317382
1022	Leslie E Chipman et al., <i>SlideBar: Analysis of a Linear Input Device</i> , 23 Behaviour & Info. Tech. 1 (2004), DOI: 10.1080/01449290310001638487
1023	Hilary Browne et al., <i>Designing a Collaborative Finger Painting Application for Children</i> , HCIL-2000-17, CS-TR-4184, UMIACS-TR-2000-66 (Sept. 2000), available at https://hcil.umd.edu/pub-perm-link/?id=2000-17
1024	Pekka Parhi, Amy K. Karlson, and Benjamin B. Bederson. 2006. Target size study for one-handed thumb use on small touchscreen devices. In Proceedings of the 8th Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI '06). Association for Computing Machinery, New York, NY, USA, 203–210. DOI: https://doi.org/10.1145/1152215.1152260
1025	Karlson, Amy & Bederson, Benjamin & Contreras-Vidal, José. (2008). Understanding One-Handed Use of Mobile Devices. Handbook of Research on User Interface Design and Evaluation for Mobile Technology. 86-101. DOI:10.4018/978-1-59904-871-0.ch006
1026	Apple Newton Message Pad Handbook (1993)
1027	Handbook for Palm m500 Series Handhelds (1998)
1028	HP Jornada 520 Series Pocket PC User Guide (2001)
1029	U.S. Patent No. 5,821,930 to Hansen (“Hansen”)
1030	U.S. Patent Application Publication No. 2005/0024341 (“Gillespie”)
1031	Declaration of Mr. Jacob Munford
1032	Norman, D. A. (1988). <i>The psychology of everyday things</i> . BasicBooks. ISBN: 0-465-06709-3.
1033	U.S. Publication No. 2001/0043189 to Brisebois (“Brisebois”)
1034	Trial Delay Statistics
1035	Order Governing Proceedings - Patent Case, <i>Neonode Smartphone LLC v. Apple Inc.</i> , 6:20-cv-00505 (W.D.Tex. Oct. 5, 2020)

1036	Order Governing Proceedings - Patent Case, <i>Neonode Smartphone LLC v. Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc.</i> , 6:20-cv-00507 (W.D.Tex. Oct. 5, 2020)
1037	Order Granting Motion Continue Case Management Conference (CMC), <i>Neonode Smartphone LLC v. Apple Inc.</i> , 6:20-cv-00505 (W.D.Tex.) (W.D.Tex. [[DATE]])
1038	Order Granting Motion Continue Case Management Conference (CMC), <i>Neonode Smartphone LLC v. Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc.</i> , 6:20-cv-00507 (W.D.Tex. Oct. 7, 2020)
1039	Order Setting Markman Hearing, <i>Neonode Smartphone LLC v. Apple Inc.</i> , 6:20-cv-00505 (W.D. Tex. Oct. 26, 2020)
1040	Order Setting Markman Hearing, <i>Neonode Smartphone LLC v. Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc.</i> , 6:20-cv-00507 (W.D. Tex. Oct. 26, 2020)
1041	November 6, 2020 Letter from Apple Counsel to Neonode Counsel
1042	November 6, 2020 Letter from Samsung Counsel to Neonode Counsel

Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc.

(“Samsung”) and Apple Inc. (collectively “Petitioners”) petition for *Inter Partes* Review (“IPR”) of claims 1-8 (“the Challenged Claims”) of U.S. Patent No. 8,812,993 (“the ’993 patent”).

I. REQUIREMENTS FOR IPR UNDER 37 C.F.R. §42.104

A. Grounds for Standing Under 37 C.F.R. §42.104(a)

Petitioners certify the ’993 patent is available for IPR. This petition is being filed within one year of service of complaints against Petitioners. Petitioners are not barred or estopped from requesting this review of the Challenged Claims.

B. Challenge Under §42.104(b) and Relief Requested

Petitioners request cancellation of the Challenged Claims on the grounds below.

Ground	Claims	Basis (§103)
1A	1-3, 7, 8	Hisatomi, Ren
1B	4	Hisatomi, Ren, Allard-656
1C	5	Hisatomi, Ren, Tanaka
1D	6	Hisatomi, Ren, Kodama
2A	1-3, 7, 8	Hansen, Gillespie

Ground	Claims	Basis (§103)
2B	4	Hansen, Gillespie, Allard-656
2C	5	Hansen, Gillespie, Tanaka
2D	6	Hansen, Gillespie, Kodama

For this Petition, Petitioners treat 12/10/2002 as the earliest effective filing date of the Challenged Claims (“the Critical Date”). The following references are prior art:

Reference	Date(s)	Basis
Hisatomi	02/20/2002	§102(a)
Ren	09/2000 ¹	§102(b)
Allard-656	6/6/1995	§102(b)
Tanaka	09/28/1993	§102(b)
Kodama	1/31/1997	§102(e)
Hansen	10/13/1998	§102(b)

¹ EX1031, ¶¶6-8 (authenticating public availability date).

Reference	Date(s)	Basis
Gillespie	4/17/2002 ²	§102(e)

II. THE '993 PATENT

A. The '993 Patent Alleged Invention

The '993 Patent “relates to a user interface for a mobile handheld computer unit, which ... comprises a touch sensitive area, and [the] touch sensitive area is divided into a menu area and a display area.” EX1001, 1:14-17, 3:57-65; EX1002, ¶¶34-35.

The '993 patent's FIG. 1 illustrates “a user interface according to the present invention [] specifically adapted to computer units comprising a touch sensitive area 1, which is divided into a menu area 2 and a display area 3.” EX1001, 3:58-61. The '993 patent describes that “[a]ccording to the present invention the menu area 2 is adapted to present a representation of a first 21, a second 22 and a third 23 predefined function.” EX1001, 4:8-10. FIG. 1 illustrates a display area 3 (red) and a menu area (blue). EX1002, ¶36.

² Gillespie is actually entitled to a prior art date of 5/16/01 pursuant to *Dynamic Drinkware, LLC, v. National Graphics, Inc.*, 800 F.3d 1375 (Fed. Cir. 2015).

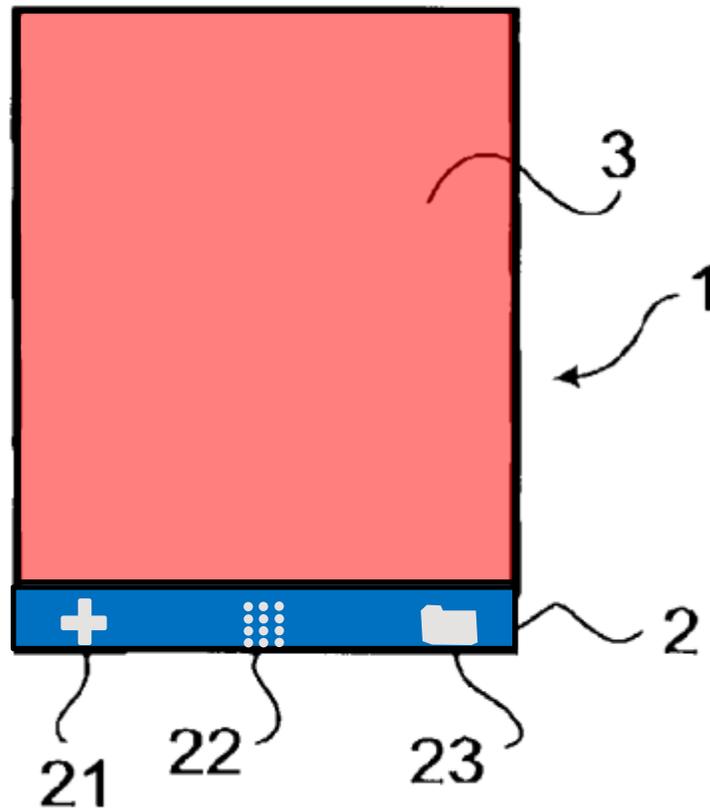


Fig. 1.

EX1001, FIG. 1 (annotated).

The '993 patent explains “FIG. 2 shows that any one of these three functions 21, 22, 23 can be activated when the touch sensitive area 1 detects a movement of an object 4 with its starting point A within the representation of a function on the menu area 2 and with a direction B from the menu area 2 to the display area 3.”

EX1001, 4:14-19. Figure 2 describes a touch beginning within menu area 2 (blue) and continuing into display area 3 (red). EX1002, ¶37.

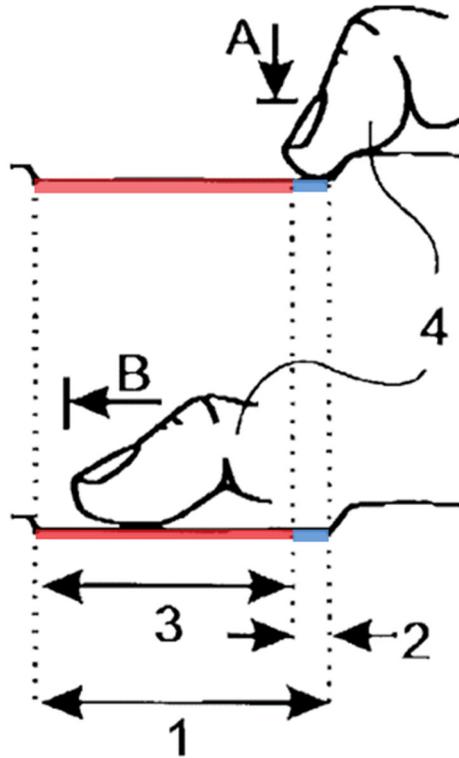
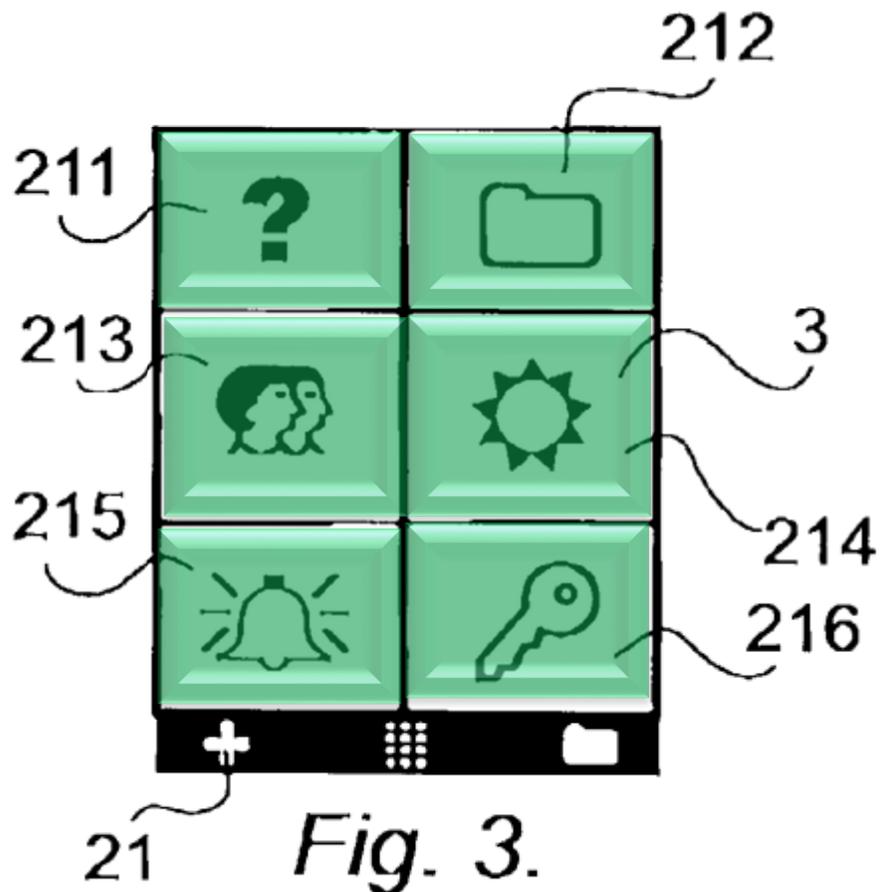


Fig. 2.

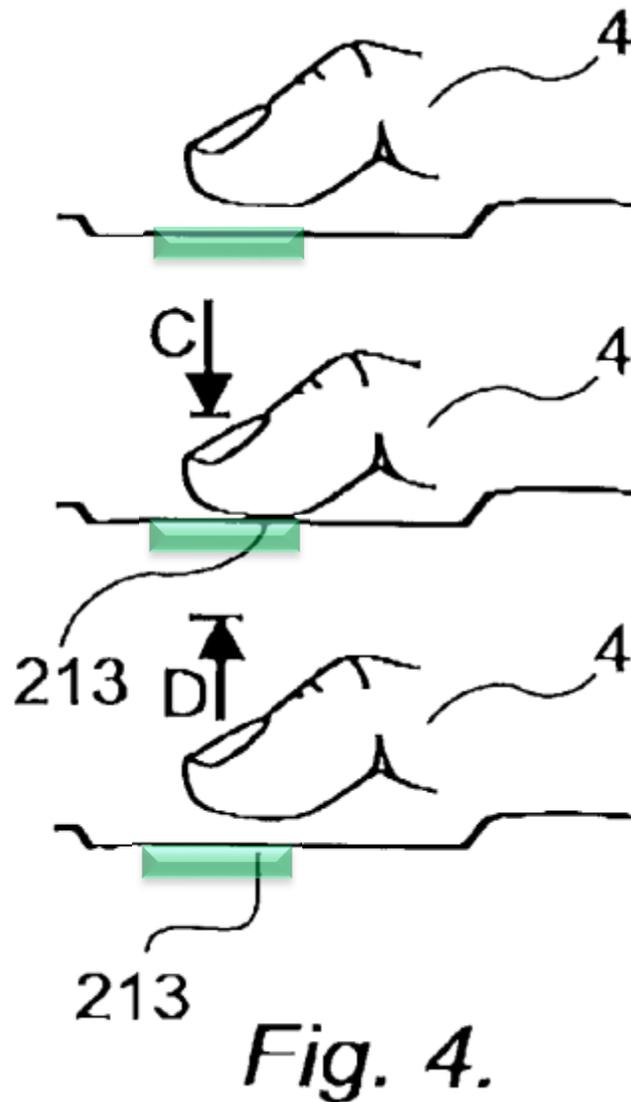
EX1001, FIG. 2.

The '993 patent states “[t]he first function 21 is a general application dependent function”, and “if the first function 21 is activated, then the display area 3 is adapted to display icons ... representing services or functions depending on the current active application.” *Id.*, 4:11-23. “If no application is currently active on the computer unit, then the icons 211, 212, 213, 214, 215, 216 are adapted to represent services or settings of the operations system of the computer unit, such as background picture, clock, alarm 215, users 213, help 211, etc.” EX1001, 4:36-40’ EX1002, ¶¶38-39.



EX1001, FIG. 3 (annotated, icons in green).

“FIG. 4 shows that selection of a preferred service or setting is done by tapping C, D on corresponding icon 213.” EX1001, 4:41-42, FIG. 4; EX1002, ¶¶40-41.



EX1001, FIG. 4 (annotated, location of an icon in green).

B. The '993 Patent Prosecution History

After several office actions and responses, Applicant amended the claims to require the otherwise activatable graphic be present “in a strip along at least one edge of the display screen.” EX-1003, 148-149. The Examiner rejected this feature based on Brisebois (EX1033), which was alleged to teach a physical, “flexible strip on [an] active edge” through which a “user can touch or press an

area of active edge input device.” EX1003, 92; EX1002, ¶¶42-46.

Applicant argued that Brisebois’s active edge 120 through which a user provides input is separate and distinct from display 110, so the user’s input cannot leave the active edge 120. EX1003, 77-79; *see also* EX1033, FIG. 1, ¶¶[0028]-[0030]. To distinguish Brisebois, Applicant amended the claims “to recite that the object glides away from and out of the strip,” as part of the multi-step gesture. EX1003, 73, 79 (emphasis in original). Applicant argued Brisebois fails to disclose this feature. *Id.* The Examiner subsequently allowed the claims. EX1003, 25-27; EX1002, ¶¶47-48.

C. Claim Construction

When determining validity, “claim terms need only be construed to the extent necessary to resolve the controversy.” *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011). Petitioners reserve the right to respond to constructions offered by Patent Owner or adopted by the Board. Petitioners are not waiving arguments under 35 U.S.C. §112 or arguments regarding claim scope possibly raised in litigation. Petitioners acknowledge that the present analysis is performed under the *Phillips* standard. EX1002, ¶53.

III. PRIOR ART

A. Well-Known Concepts by the Critical Date

By 2000, touch sensing technologies were deployed in a wide variety of products, including tablets, PDA’s, and mobile phones. *See, e.g.*, EX1026 (Apple

Newton Message Pad); EX1027 (Palm m500); EX1028 (HP Jornada Pocket PC).

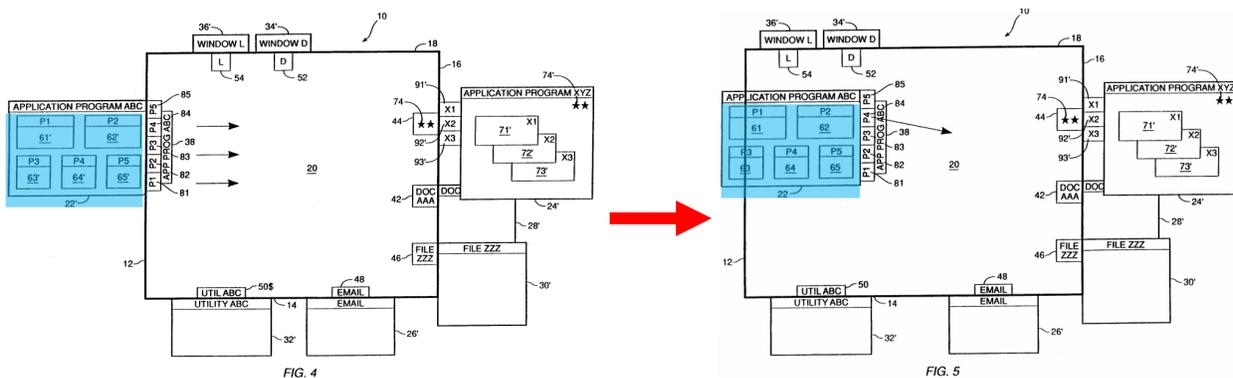
One example was the IBM Simon, available by 1995. *Id.*; EX1017; EX1002,

¶¶53-54.

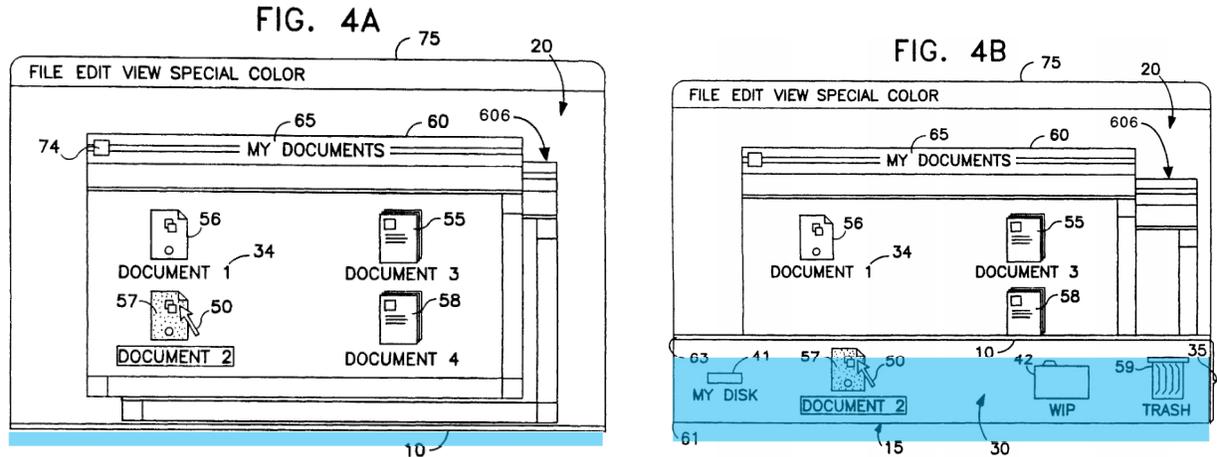


EX1017, 10-11.

At the time of the '993 patent, user interfaces that transitioned between states in response to a mouse or touch input were known in the art. *See, e.g.,* EX1012, 5:54-6:3, 7:23-35, 8:1-22, FIGS. 1, 4-5, 7-9; EX1013, 18:14-33, 19:62-65, FIG. 4A, 4B, 5A, 5B, 9A, 9B, 9C, 10A, 10B, 10C; EX1002, ¶¶54-72.



EX1012, Figs 4, 5 (annotated).



EX1013, FIGS. 4A, 4B.

B. Prior Art Combinations

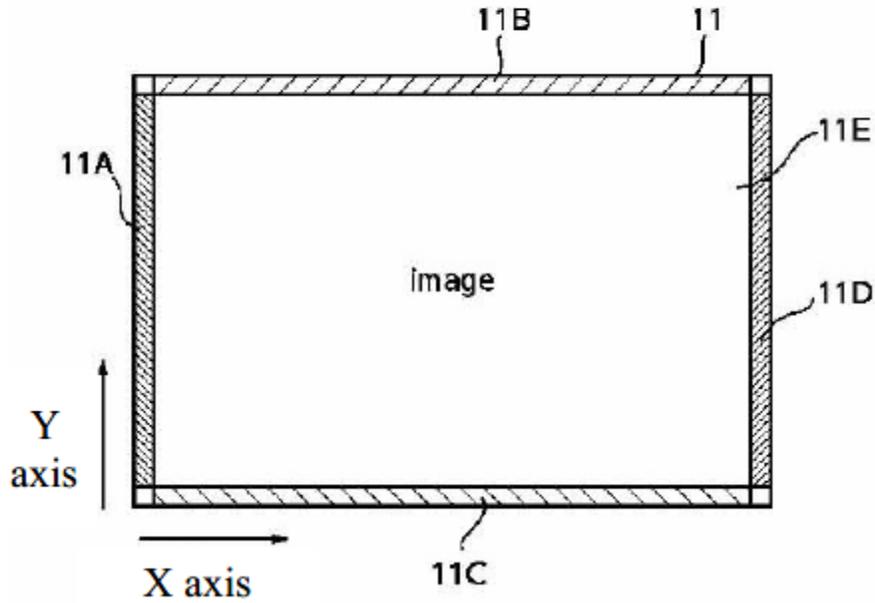
1. Hisatomi, Ren, Allard-656, Tanaka, and Kodama

a. Hisatomi

Hisatomi discloses a “portable information processing device 01 [that] is a notebook-sized portable information terminal (PDA) that is mounted with an image display screen 09 with the capability to display full-color image information in high definition, and receives the coordinate instructions mainly from a pen-type input device 05.” EX1004, ¶[0012]; EX1002, ¶¶73-80.

Hisatomi also teaches “an image display area 11E and [pull-out] menu display trigger areas 11A to 11D.” EX1004, ¶[0018]. Initially, only the whole main image and the menu trigger areas are visible in the display area. EX1004, FIGS. 5, 6, 10, 11; EX1002, ¶75.

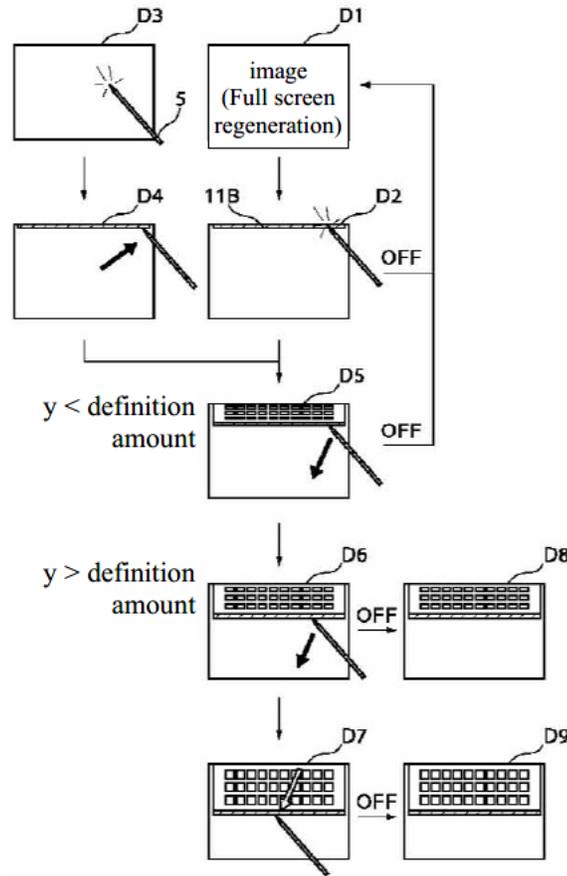
[FIG. 5]



EX1004, FIG. 5.

When the input device 05 is moved from the trigger area toward the center of the touch panel sensor 11, the pull-out menu and the icons it contains will be displayed. EX1004, ¶¶[0018], [0025], FIGS. 6, 10, 11, 12; EX1002, ¶¶76.

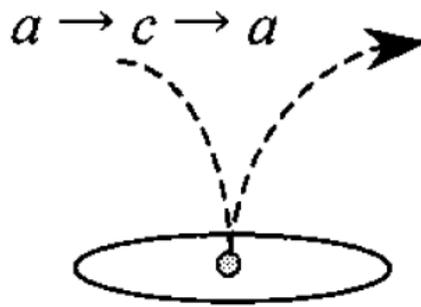
[FIG. 12]



EX1004, FIG. 12.

b. Ren

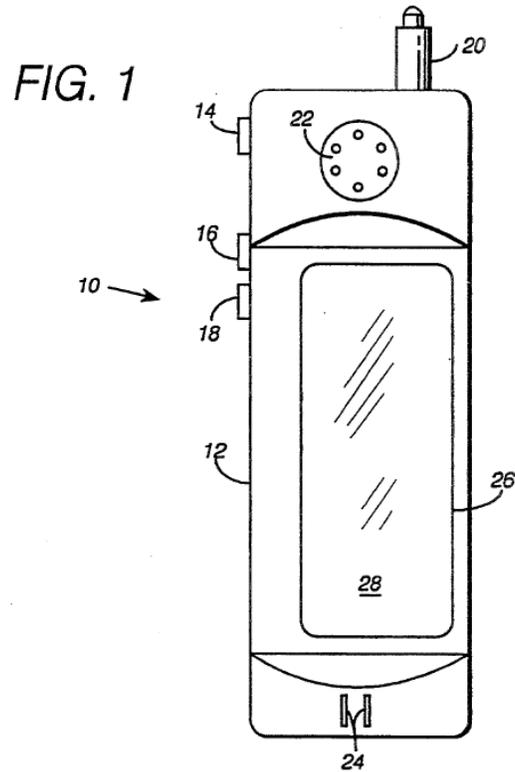
Ren discloses pen-based selection strategies for input on pen-based systems incorporating small touch-sensitive screens. EX1006, 384-385; EX1002, ¶¶81-84. One of the strategies disclosed and studied by Ren is the *Direct Off* selection strategy in which “the target is highlighted only while the pen is touching it. The selection is made at the moment the pen is taken off the target.” EX1006, 390.



EX1006, 390. The *Direct Off* strategy “was already in common use.” EX1006, 391. EX1002, ¶83.

c. Allard-656

Allard-656 discloses a personal communicator such as a “cellular phone and a complete data processing system.” EX1009, 3:28-31; EX1002, ¶¶85-88. The device includes a “touchscreen display 26 . . . and [a] user interface for entering information into and receiving information from.” EX1009, 3:45-50, 3:54-57; EX1002, ¶¶86.



EX1009, FIG. 1. The device of Allard-656 loads a phone application that interacts with the “Navigator program to create a Phone screen 108.” EX1009, 5:40-55; EX1002, ¶87.

FIG. 4A

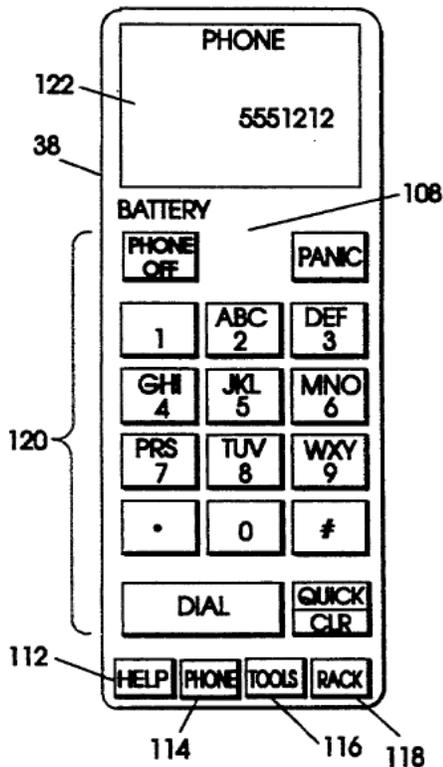
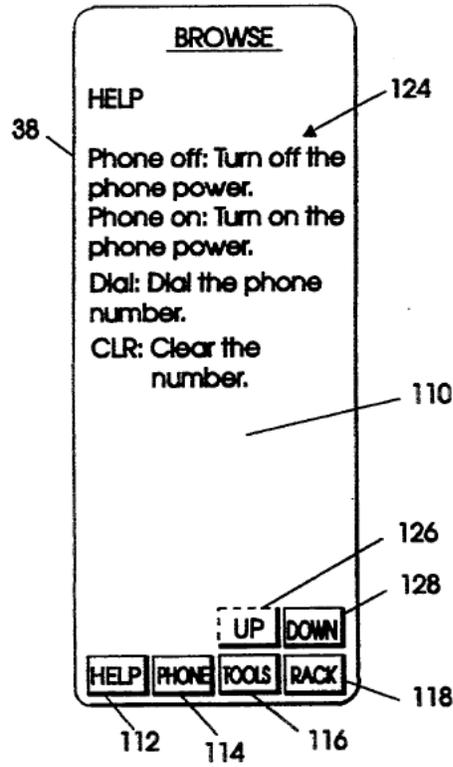


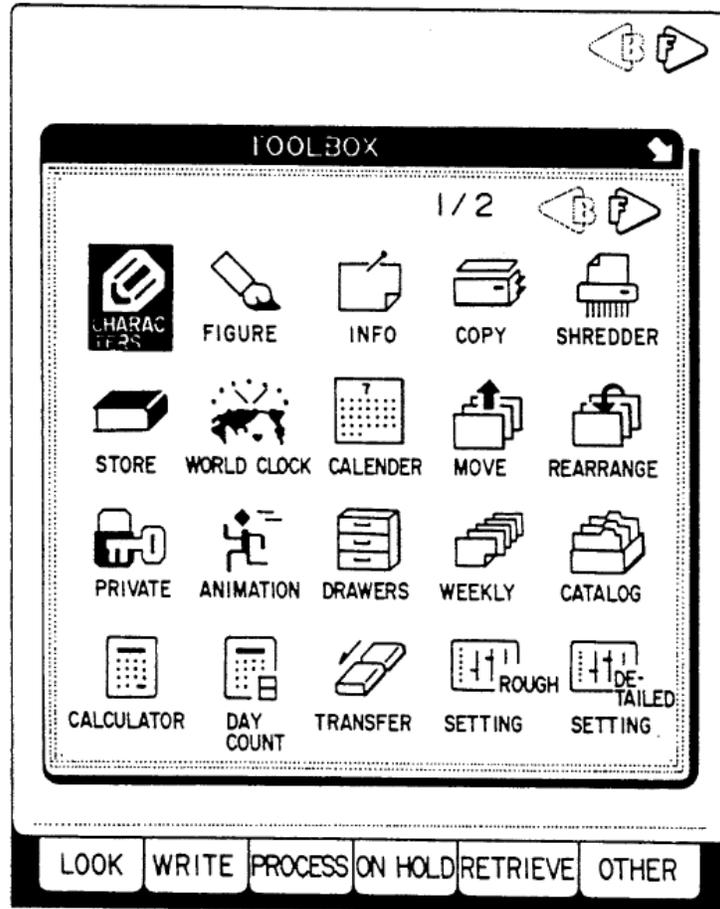
FIG. 4B



EX1009, FIGS 4A-4B. Allard-656's interface is very similar to that of the IBM Simon device, available by 1995. EX1017, pp. 10, 11; EX1002, ¶88.

d. Tanaka

Tanaka discloses an “electronic ‘organizer’ notebook device” that includes a tablet 8 with a display unit 9 and interface 2. EX1010, 3:46-65; EX1002, ¶¶89-92. When a TOOLBOX icon is selected, a TOOLBOX window is displayed. EX1010, 4:17-19. The toolbox “window contains various icons.” EX1010, 4:19; EX1002, ¶92.



EX1010, FIG. 5.

e. Kodama

Kodama discloses “a portable information gather apparatus which can function to manage captured information on a page basis.” EX1016, 1:9-14; EX1002, ¶93. Kodama’s pen computer displays icons—referred to as “stamps”—that are associated with various functions a user can select, including, *e.g.*, an alarm stamp 101. *See* EX1016, 5:35-43, 8:21-9:4.

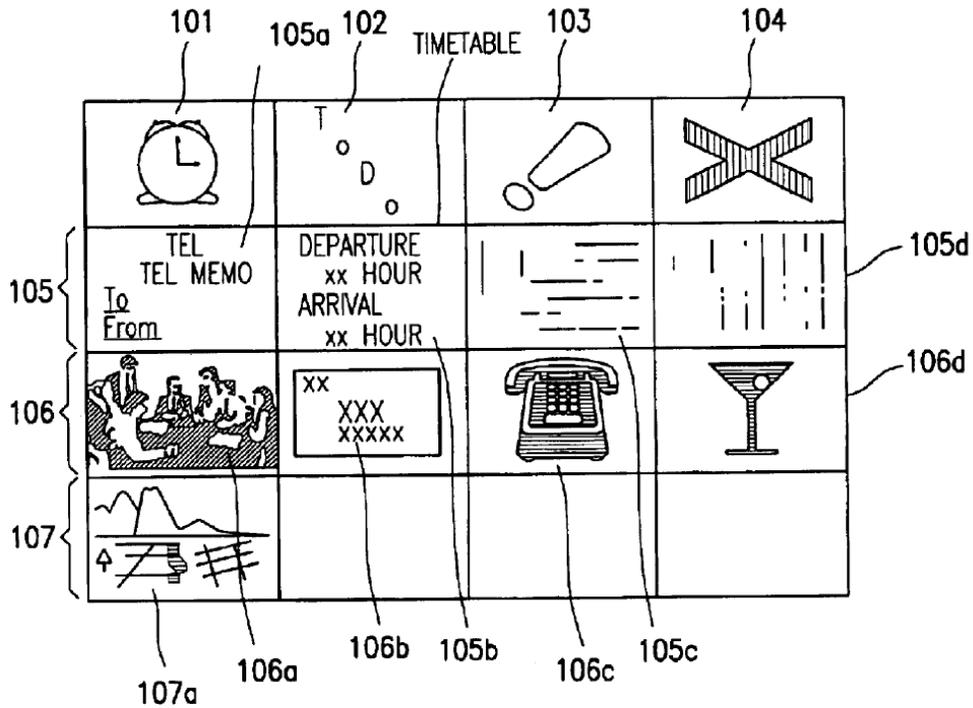


FIG. 4

EX1016, FIG. 4.

f. Motivation to Combine Hisatomi, Ren, Allard-656, Tanaka, and Kodama

Hisatomi in combination with Ren, Allard-656, Tanaka, and Kodama render obvious the challenged claims. A person of ordinary skill in the art as of the Critical Date (“POSA”)³ would have been motivated to combine the teachings of these references. EX1002, ¶94. All five references relate to GUIs on a touch screen display of a handheld device, and the ability of a user to navigate and select targets

³ See EX1002, ¶¶25, 49-52 (defining a POSA).

within the user interface in ways that make optimal use of the space on a small screen. Thus, the fact that all five references are from the same technology area and address the same set of challenges provides motivation for a POSA to combine the teachings of Hisatomi with Ren, and further with Allard-656, Tanaka, and Kodama. Additional motivations to combine are set forth for specific claim limitations below.

2. Hansen and Gillespie

a. Hansen

Hansen discloses a touch-sensitive user interface focused on providing improved user interactivity relative to traditional interfaces that rely on a mouse and keyboard. EX1029, 2:18-3:28, 4:26-33; EX1002, ¶¶95-97. Hansen’s interface enables detection and processing of an “input stroke”—a type of touch input that involves “continuous movement” of a user’s finger from a predetermined area (e.g., the edge) of a touch-sensitive display towards the center of the display. EX1029, 4:34-47. Using an input stroke, a user can access a computer program in an “intuitive” manner. *Id.*, 4:26-33. Hansen’s Figure 2 (reproduced below) illustrates an example input stroke. EX1002, ¶95.

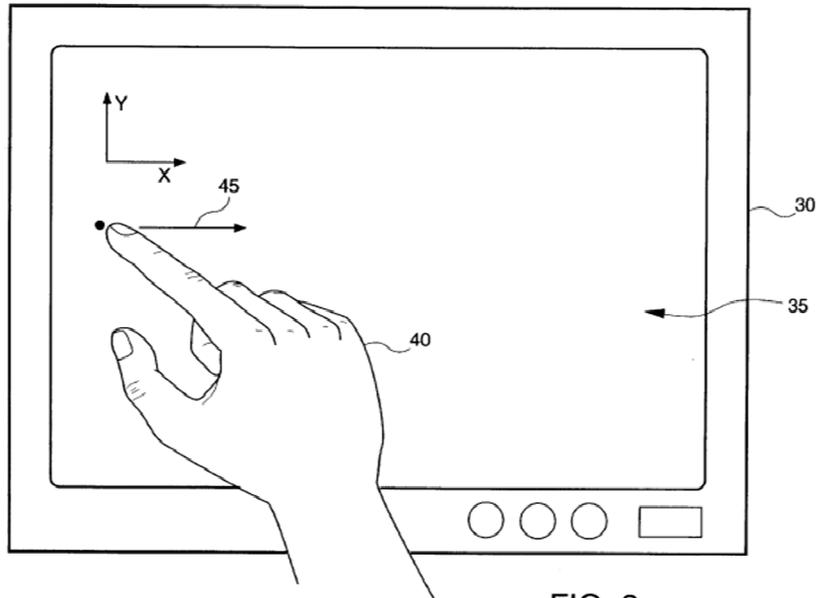


FIG. 2

EX1029, FIG. 2. As shown, a user performs an input stroke on touch-sensitive screen 35. EX1029, 4:8-20. The input stroke includes two steps: (1) a user's finger touches screen 35 within a predetermined area (e.g., the left-hand edge); and (2) while still touching screen 35, the user slides the finger towards the middle of screen 35 along arrow 45. EX1029, 4:34-47; EX1002, ¶96.

Figure 3A (reproduced below) shows a display of Hansen's interface before the user completes an input stroke. EX1029, 5:9-11.

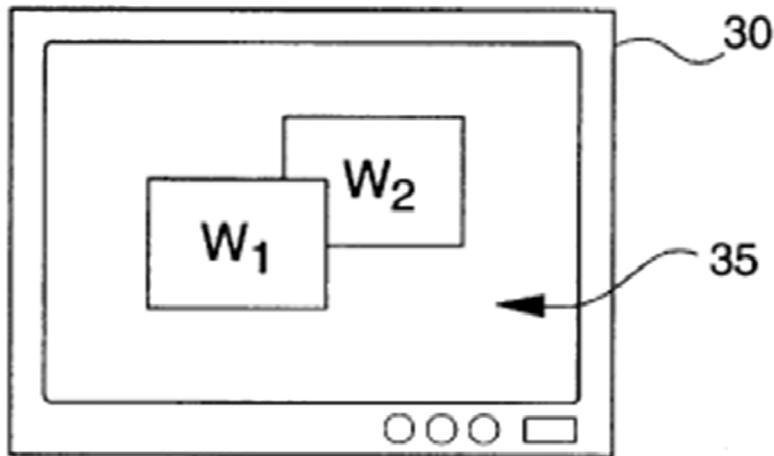


FIG. 3A

EX1029, FIG. 3A. The Figure 3A interface displays “any of a number of windows w1, w2 as are commonly displayed by a computer system.” EX1029, 5:11-13; EX1002, ¶97.

Figure 3B (reproduced below) shows a subsequent display of Hansen’s interface after the user has completed the two-step input stroke so that the display represents an outcome of the completed input stroke. EX1029, 5:6-13.

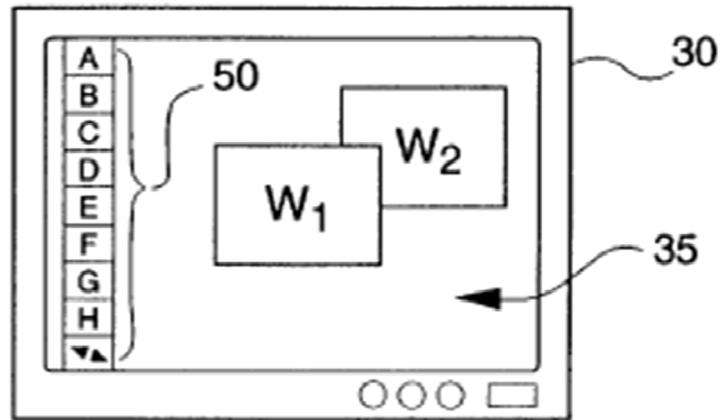


FIG. 3B

EX1029, FIG. 3B. As shown above, the Figure 3B display includes icons 50 in a line along the left-hand edge of screen 35. EX1029, 5:13-17. Each icon corresponds to a computer program, which is accessed through selection of the icon. *Id.*, 5:14-25. The user performs selection by “momentarily touching one of the plurality of icons 50,” *i.e.*, by tapping an icon. *Id.*, 5:26-35. Once a user selects an icon, a corresponding computer program is launched in a “working window,” as shown in Figure 3C (reproduced below). EX1029, 5:34-44; EX1002, ¶97.

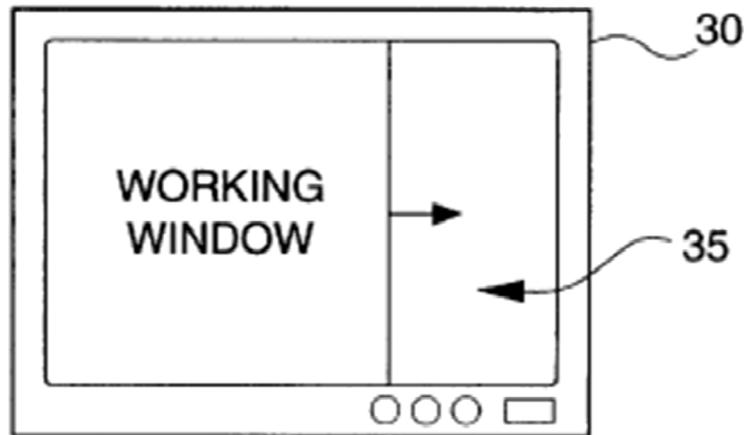


FIG. 3C

EX1029, FIG. 3C.

b. Gillespie

Gillespie describes user interfaces presented on a touch screen. EX1030, Abstract, [0033]; EX1002, ¶¶98-101. Specifically, Gillespie proposes incorporating a touch screen into a computer in a “similar way as a touch pad” and “could be introduced in addition to the other interface devices of the computer.” *Id.*, ¶[0036]; EX1002, ¶98.

Gillespie describes numerous “touch screen modes” for its touch screen—*e.g.*, “iconic,” “auxiliary,” and “pop-up.” EX1030, ¶[0045]. In the “iconic” mode, the touch screen is configured to operate as a “touch pad pointing device” in which finger motions and taps are “generally interpreted the same as when the touch screen operates as a conventional touch pad.” *Id.*, ¶[0046]; EX1002, ¶99.

Figure 4 (reproduced below) shows an example of an interface image 400

displayed by the touch screen when operating in the “iconic” mode. EX1002,

¶100.

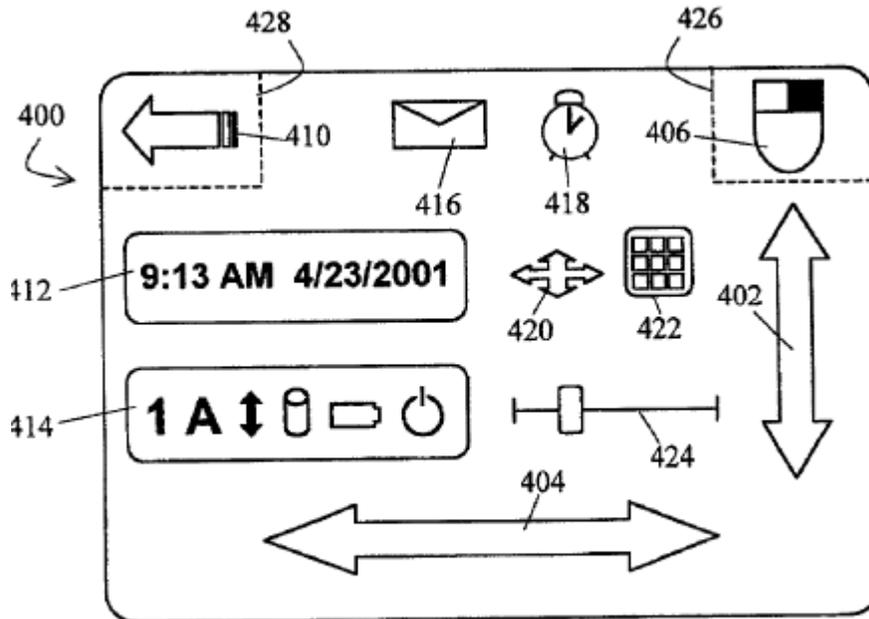


Figure 4

EX1030, FIG. 4. As shown above, image 400 shows various visual conventions that “indicate special tapping or scrolling regions on the touch sensor surface.” *Id.*,

¶¶ [0044], ¶ [0046]-[0056]. For example, dashed lines 426 and 428 in Figure 4 identify regions that can accept touch input. *Id.*, ¶[0049]. Similarly, dashed lines 516, 518, 520, and 522 in Figure 5 are used to indicate an “activated state of the touch screen,” communicating to a user that touch input in the corresponding regions “will be interpreted as special commands...” *Id.*, ¶[0057]. Gillespie describes examples of other visual conventions, such as “solid or colored lines,” “colored or inverted backgrounds,” or changes to the display or behavior of icons.

Id.

More broadly, Gillespie focuses on improving usability of touch-sensitive interfaces by displaying visual conventions and adjusting their appearance to reduce user confusion. EX1030, ¶[0059]. In this regard, Gillespie’s visual conventions afford users an understanding of how to use the touch interfaces described within its disclosure. EX1002, ¶101.

c. Motivation to Combine Hansen and Gillespie

As explained above, Hansen discloses a touch-sensitive user input focused on improving interactivity. EX1029, 2:18-3:28, 4:26-33. Hansen describes that it is “desirable to remove barriers that exist between the user and the computer system” by allowing users to provide touch input—specifically input strokes—to allow the user to “become more interactive with the computer system” so that performing tasks are “intuitive.” EX1029, 2:3-14; EX1002, ¶102.

Yet, Hansen’s disclosure does not address techniques of assisting users to become comfortable using this type of touch input. EX1002, ¶103. For example, Hansen does not address the known need to assist a user transitioning from a device employing a mouse and keyboard interface to a devices employing a touch-sensitive interface. *See, e.g.*, EX1029, 1:21-2:15; *id.* Hansen instead assumes that a user is proficient in using touch-sensitive interfaces to achieve its intended improvements in interactivity. EX1002, ¶103. Hansen therefore does not address scenarios in which a user is less experienced with touch-sensitive interfaces, or

accesses the disclosed interface for the first time. *Id.*

Given this gap in Hansen’s disclosure, a POSA looking to implement Hansen’s touch-sensitive user interface would have found it obvious to rely upon well-known prior art techniques to supplement Hansen’s teachings to further improve Hansen’s interface. For instance, a POSA would have understood that less-experienced users may not know how to initiate the input stroke disclosed in Hansen without any visible indicators. EX1002, ¶104. Indeed, in its Background section, Gillespie recognizes that many touch-sensitive user interfaces “have proven useful to expert users but confusing to novice users...” EX1030, ¶[0004].

Given these usability challenges to Hansen’s interface, a POSA would have been motivated to modify Hansen’s interface to include one or more indicators that visually represent the “predetermined area” within which a user’s touch initiates the two-step input stroke. EX1002, ¶¶105-06. To perform this modification, a POSA would have turned to Gillespie’s technique of using visual conventions to **“indicate control regions that respond specifically to finger motions** and/or finger taps, either at all times or only when the touch screen has been activated in a special way.” EX1030, ¶[0056]⁴. Given the various types of visual conventions disclosed in Gillespie, a POSA would have understood that such a modification

⁴ Emphasis is added by Petitioners unless otherwise noted.

could be performed in various ways. EX1002, ¶106; EX1030, ¶[0059].

One way in which a POSA would have modified Hansen to incorporate Gillespie’s visual conventions would be to modify Hansen’s Figure 3A display to incorporate a variation of Gillespie’s “solid or colored lines” and “colored or inverted backgrounds.” See EX1030, ¶[0059]; EX1002, ¶107. The added visual conventions would have identified the boundaries of the region of Hansen’s interface representing the predetermined area as a control region for initiating an input stroke. *Id.* An example of such a modified Figure 3A display is shown below:

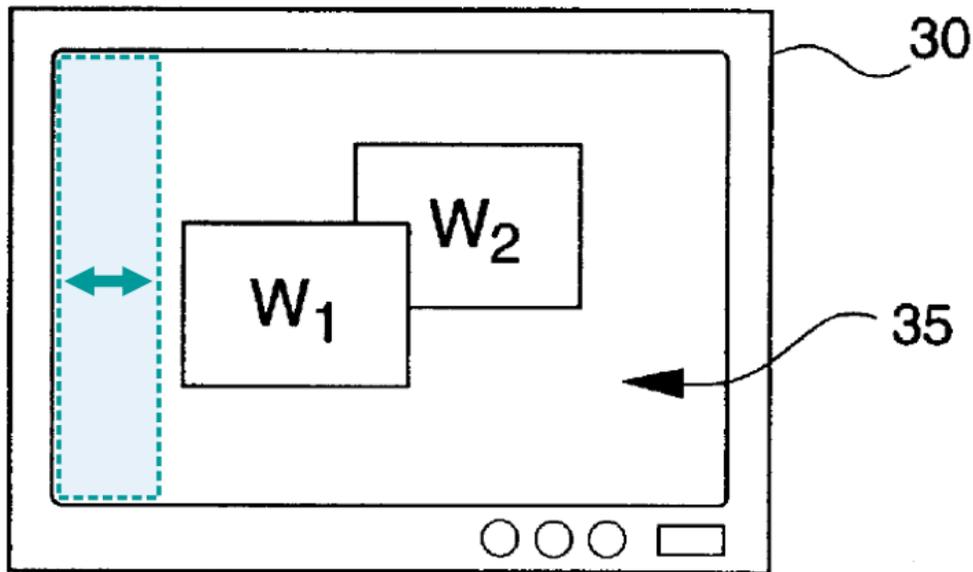


FIG. 3A

EX1029, FIG. 3A (modified to incorporate a Gillespie-type visual convention, e.g.,

dashed lines and colored background).⁵

A POSA designing user interfaces would have understood that visually identifying Hansen’s predefined area as shown in the modified Figure 3A display would have provided an “affordance”—a well-known design concept defined as “the perceived and actual properties an object, such as the fundamental properties that determine just how an object could possibly be used.” EX1002, ¶108 (citing to EX1032, 9). A POSA would have found it obvious that incorporation of Gillespie’s visual indicators into the Figure 3A display have “afforded” a user the understanding that the “predetermined area” could be used to transition to Hansen’s Figure 3B, display a menu of icons 50. *Id.* EX1002, ¶¶109-13.

IV. EXPLANATION OF UNPATENTABILITY

A. Ground 1A: Claims 1-3, 7, and 8 are rendered obvious by Hisatomi in view of POSA knowledge and/or Ren

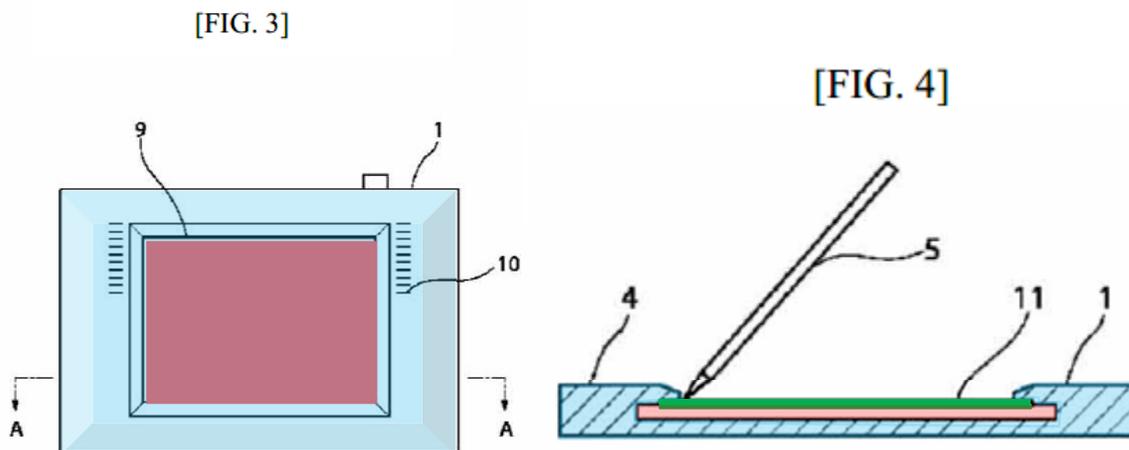
Claim 1 - [1.pre] “A non-transitory computer readable medium storing instructions, which, when executed by a processor of an electronic device having a touch-sensitive

⁵ As explained by Dr. Bederson, the modified figures provided throughout the petition are not intended to be to scale or to represent the actual graphics a POSA would have used to provide “affordance.” EX1002, ¶107. Instead, the modified figures are intended solely to be illustrative. *Id.*

display screen, cause the processor to enable a user interface of the device,”

Hisatomi discloses this element. EX1002, ¶¶114-20. Hisatomi discloses “notebook-sized portable information terminal[s]” that included “touch-sensitive keys on [a] liquid crystal display” such as a PDA. EX1004, 0002. 0012.

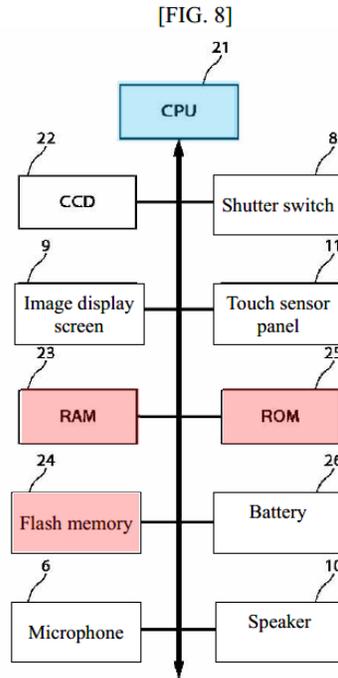
Hisatomi’s device includes a display screen 9 and touch panel sensor 11. EX1004, 0012, 0015-18; *see also id.*, 1031 and 21-22 (describing part 01, 05, 09, and 11). EX1002, ¶115.



EX1004, FIGS. 3 and 4 (annotated, device (blue), display (red), and touch panel sensor (green)); *see also id.*, FIGS. 5 and 8. A user provides input to the device 01 by touching the touch panel sensor 11, thereby providing “coordinate instructions mainly from a pen-type input device 05.” EX1004, 0015.

Hisatomi discloses one or more non-transitory computer readable medium (*i.e.*, RAM, ROM, Flash memory) storing instructions, and a processor for

executing the instructions stored on the computer readable medium. EX1002, ¶116.



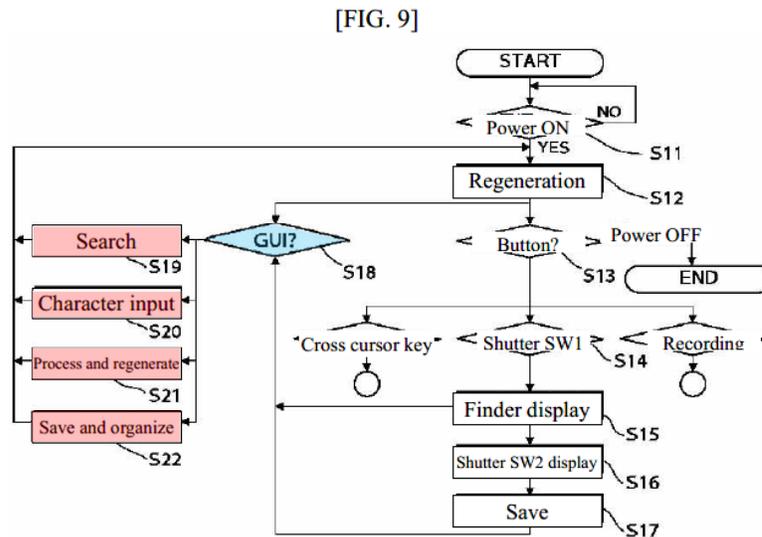
EX1004, FIG. 8 (annotated); *see also id.*, ¶¶[0029]-[0031]. The CPU 21 executes “various processing procedures” and functions based on the operating system stored in ROM 24. EX1004, ¶[0030], ¶[0031].

Hisatomi discloses a processing device that includes “a storage medium storing a program for executing this function list display means.” EX1004, ¶[0001]; *see also id.*, ¶¶[0009], [0030], [0031], [0249]; EX1002, ¶117.

The storage medium stores the program code for realizing the functions described in the embodiments of Hisatomi, and the CPU reads and executes the program code. EX1004, ¶[0247]; *see also* ¶¶[0248] (functionality of Hisatomi can be embodied in software), [0249], [0250]; EX1002, ¶118.

The execution of these instructions on the computer-readable medium by the processor enable a user interface of the electronic device. EX1002, ¶¶119-20.

Hisatomi “is related to the display of a menu containing various [Graphical User Interface] function buttons.” EX1004, 0037; *see also id.*, ¶¶[0018] (trigger areas registered in ROM), ¶¶[0036], [0039] (flowchart referring to operations in connection with ROM 25), ¶¶[0055]. Hisatomi teaches a graphical user interface (“GUI”) that allows a user to access certain processing functions.



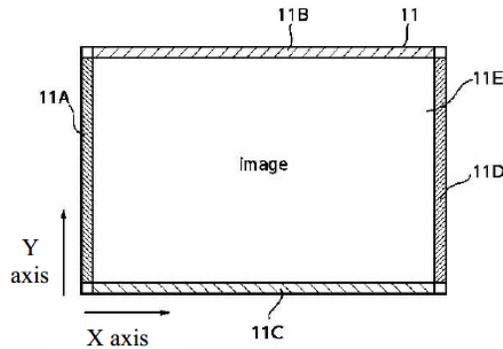
EX1004, FIG. 9 (annotated); FIGS. 7, 10-12, 27-31.

[1.a] “the user interface comprising at least two states, namely,”

As discussed below regarding elements [1.b] and [1.c], incorporated here by reference, Hisatomi discloses a “*tap-present state*” and a “*tap-absent state*”.

EX1002, ¶¶121-25. Figure 5 depicts a tap-absent state in which only an image and one or more graphics activatable only *without tapping* are present. EX1002, ¶123.

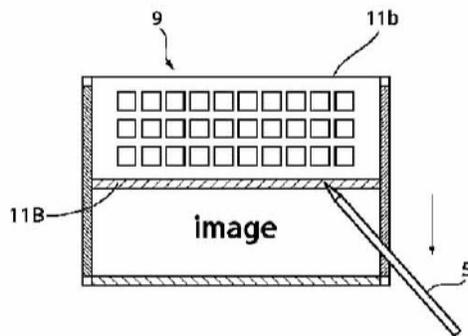
[FIG. 5]



EX1004, FIG. 5; *see also* ¶¶[0017], [0018], FIG. 30, screen D80.

Hisatomi also discloses a “*tap-present state including a plurality of tap-activatable icons.*” EX1002, ¶124.

[FIG. 7]



EX1004, FIG. 7; *see also* FIG 28-29, FIG 30, screen D84, 0024. Indeed, Hisatomi refers to a case where a menu is pulled out as a “pull-out menu display state.” *See, e.g.*, EX1004, FIG. 13, ¶¶[0054]-[0060].

Hisatomi discloses these two states commensurate with the disclosures in

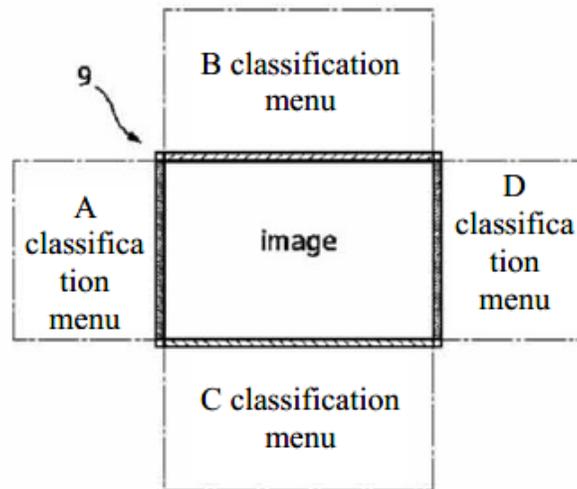
the '993 patent. EX1002, ¶125. The '993 patent does not explicitly describe any “*state*,” or that the user interface comprises any “*states*.” The '993 patent depicts a “touch sensitive area 1, which is divided into a menu area 2 and a display area 3” without disclosing as to whether the FIG. 1 illustration represents a “*tap-absent state*” where “*tap-activatable icons are absent*.” EX1001, 3:60-61. The '993 Patent proceeds to describe “the display area 3 is adapted to display icons ... representing services or functions depending on the current active applications,” but does not describe whether the view of Figure 3 constitutes a “tap-present state.” EX1001, 4:20-23. If Patent Owner argues Hisatomi fails to describe the displays as “*states*,” Hisatomi discloses the claimed states at least commensurate in scope with the disclosure of the '993 patent. EX1002, ¶125.

[1.b]: “(a) a tap-present state, wherein a plurality of tap-activatable icons for a respective plurality of pre-designated system functions are present, each system function being activated in response to a tap on its respective icon, and”

Hisatomi renders this element obvious either in view of POSA knowledge, or alternatively, in combination with Ren. EX1002, ¶¶126-136. Hisatomi discloses a user interface having a state in which one or more function lists may be displayed on the screen. EX1004, 0020-21, 0025, 0037, 126, FIGS. 7, 30. The “processing functions” taught by Hisatomi, may be “classified into [different] categories” and assigned to different classification lists. EX1004, ¶[0020], claims 1, 4, 9. Figure 6 of Hisatomi depicts four off-screen function lists A-D, and

teaches assignment of certain categories of functions to each list, such as a search function, character input, image processing and editing functions, and save functions, respectively. EX1004, ¶[0022], FIG. 9. EX1002, ¶¶127.

[FIG. 6]

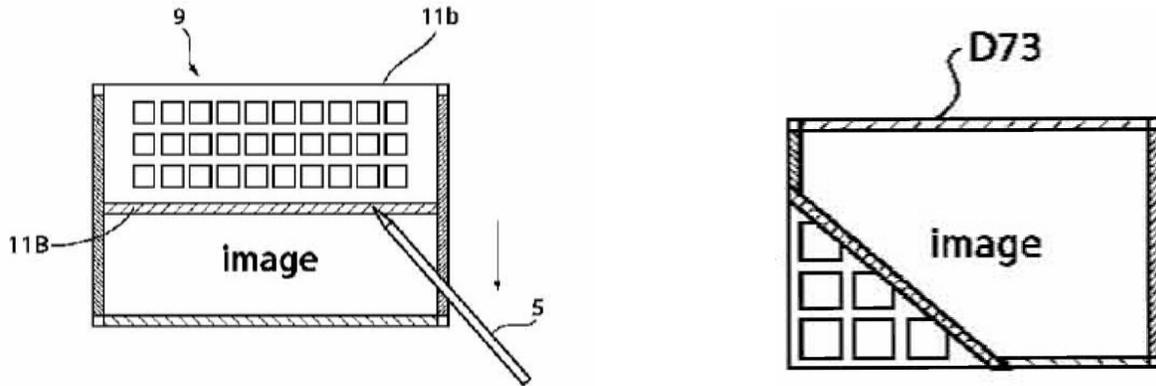


EX1004, FIG. 6.

The '993 Patent discloses if “the active application handles a picture, then the icons that are shown when the first function is activated can be services such as ‘save to disk’, ‘send as SMS’, or ‘delete’ and they can be settings such as ‘resolution’, ‘colour’, or ‘brightness’.” EX1001, 4:31-35. EX1002, ¶128.

Similarly, Hisatomi discloses when a function “list” is displayed on screen it includes function buttons, such as “icons or characters corresponding to each function.” EX1004, ¶[0025], 003, 21 (“a list of buttons based on icons or text”).

EX1002, ¶129.



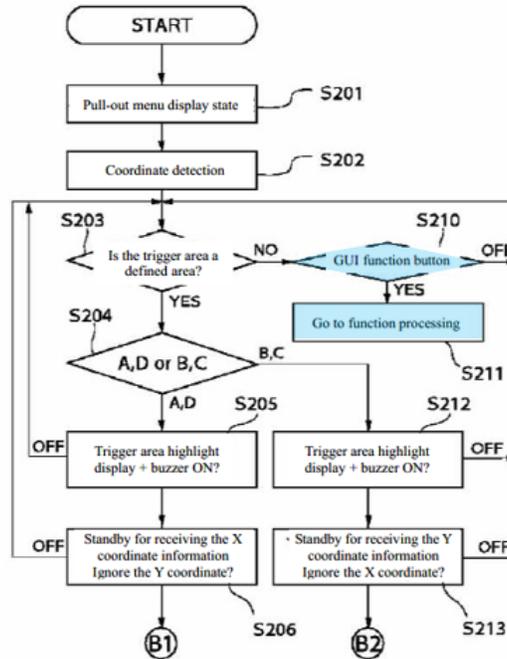
EX1004, FIGs 7, 27; *see id.*, ¶¶[0025], [0087].

It would have at least been obvious to a POSA that each icon is capable of selection (activation) by a user touching or tapping the icon with the pen device.

EX1002, ¶130. Hisatomi discloses when a pull-out menu is displayed and a touch is detected, the device determines “whether or not [a] specific function button (GUI function button) in the pull-out menu was selected.” EX1004, ¶[0055].

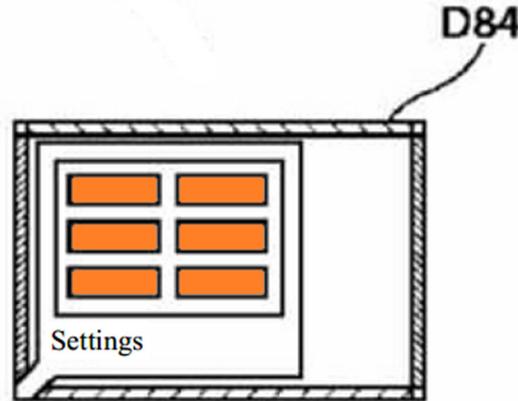
“[W]hen a desired function is selected from the list, the selected function will be executed.” EX1004, ¶¶[0003], [0055], [0015] (“touch panel sensor 11 ... is touched by the pen-type input device 05, the coordinate is designated by this touch, and various functions can be selected.”), FIG. 15 (image D13 illustrating a touch on a GUI function button within a menu).

[FIG. 13]



EX1004, FIG. 13; *see also id.*, FIGS. 49, 50, 131 (“selecting a soft button on the screen with the input device as in the conventional device”), ¶[0189].

Similarly, Figure 30 at screen D84 depicts a tap-present state including multiple tap-activatable icons (related to settings in this example). EX1004, ¶[0126], FIG. 30. It would have at least been obvious to a POSA that tapping one of these icons activates the related settings function. EX1004, ¶[0030] (“[B]y touching the soft button on the screen of the image display screen 09 with the input device 05, the coordinate ... can be detected, and according to the detected coordinate information, the CPU21 will execute various functions”), ¶[0131]. EX1002, ¶131.

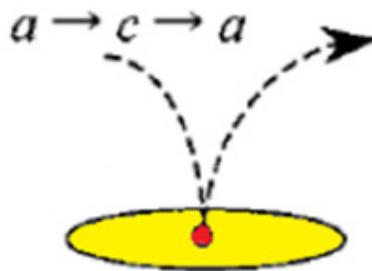


EX1004, FIG. 30 (annotated, icons in orange); *see also id.*, FIGS. 27, 28, 29, 31.

This claim element would have also been obvious to a POSA based at least on Hisatomi in combination with a POSA's general knowledge of well-known selection techniques in the prior art, and alternatively in view of Ren. EX1002, ¶132. In the '993 patent, "FIG. 4 shows that selection of a preferred service or setting is done by tapping C, D on corresponding icon 213." EX1001, 4:41-42. The "tapping" of FIG. 4 was a well-known technique for selecting a target in a GUI, like that disclosed by Hisatomi, and was one of the most common in 2002 as well as today. EX1002, ¶133. In the most common usage, touch screen interaction mirrored standard mouse usage. Interfaces for mice typically used click and drag (click meant a button press and release in substantially the same position and a drag involved moving the mouse while the button remained depressed). Similarly, interfaces for touch screens typically used "tap" and drag. A "tap" operates in the same way as a "click". While variations of tap functionality existed, the vast

majority of touch screen interfaces in 2002 relied primarily on simple tap or drag focused interfaces. EX1002, ¶¶133-34.

As one specific example of a “*function being activated in response to a tap on its respective icon,*” Ren describes a “*Direct Off*” technique for selecting a target and thereby activating its corresponding function, such as a menu. EX1002, ¶135. In the *Direct Off* strategy “the target is highlighted only while the pen is touching it,” and “selection is made at the moment the pen is taken off the target.” EX1006, 390. The *Direct Off* route $a \rightarrow c \rightarrow a$ reflects a typical “tap” selection technique for activating a function corresponding to the target, consistent with the “tapping C, D on corresponding icon 213” described in the ’993 Patent.



Ren, excerpt of FIG. 3. Ren describes the *Direct Off* strategy as “the same as the familiar mouse technique.” EX1006, 403. EX1002, ¶135.

It would have been obvious to a POSA to implement the Hisatomi device such that the icons are selected using the tap technique disclosed in the ’993 patent and well-known to a POSA, and explicitly disclosed by Ren. EX1006, 390, 403.

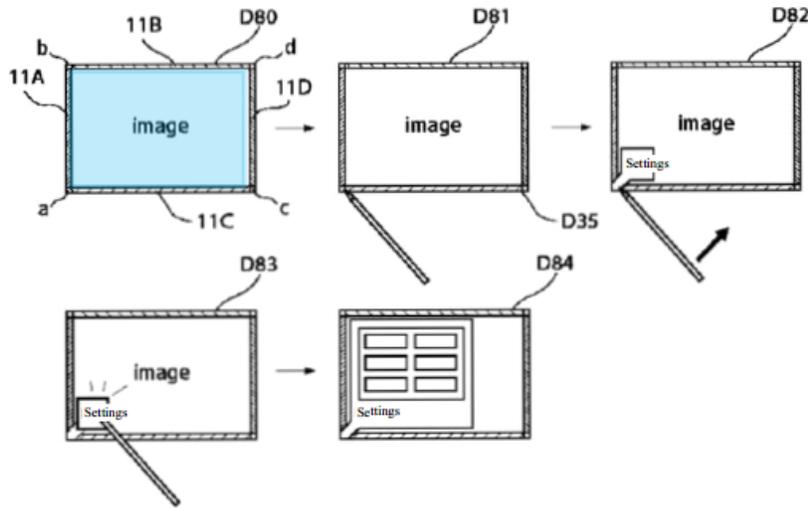
The tap selection technique was one of a handful of well-known selection

techniques for selecting a target (such as an icon or menu) in a GUI at the priority date of the '993 patent. This is also explicitly taught by Ren. EX1006, 390, 403. Ren also teaches the desirability of using the tap or *Direct Off* technique, for example, in dense displays where targets are close together. EX1006, 403. The ubiquity of the tap selection technique also would have motivated a POSA to use it for selection of the icons, as disclosed by Hisatomi and discussed above. It would have been within the level of ordinary skill to implement such a technique with predictable results, also because of the widespread use and knowledge of the tap selection technique. EX1002, ¶136.

[1.c]: “(b) a tap-absent state, wherein tap-activatable icons are absent but an otherwise-activatable graphic is present in a strip along at least one edge of the display screen for transitioning the user interface from the tap-absent state to the tap-present state in response to a multi-step user gesture comprising”

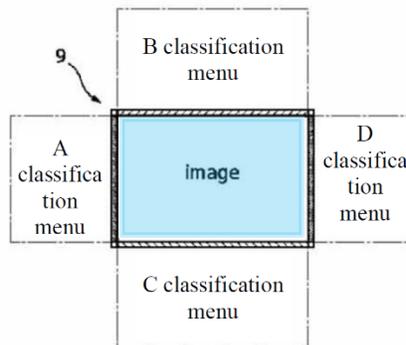
Hisatomi discloses this element. EX1002, ¶¶137-146. First, Hisatomi discloses a state in which “*tap-activatable icons are absent.*” EX1002, ¶138. The device begins with “a photo image or the like ... displayed using the full screen of the image display screen 09;” no icons or function lists are displayed. EX1004, 0040, 0124.

[FIG. 30]



EX1004, FIG. 30 (annotated, blue depicting a screen absent tap-activatable icons); *see also id.*, ¶¶[0019]-[0021], FIGS. 5, 6, 10, 12, 17, 19, 26, 28-29. Likewise, Figure 6 depicts the display screen 9 in a state where the “*tap-activatable icons are absent.*” EX1004, FIG. 6; *see* 0019-21.

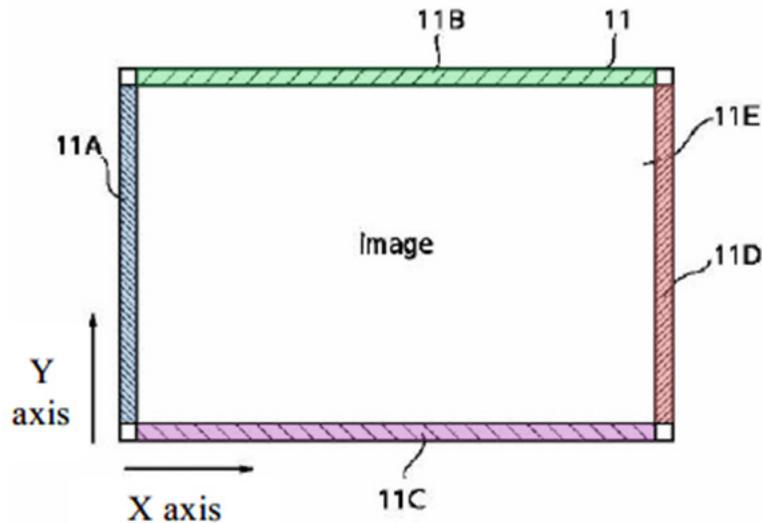
[FIG. 6]



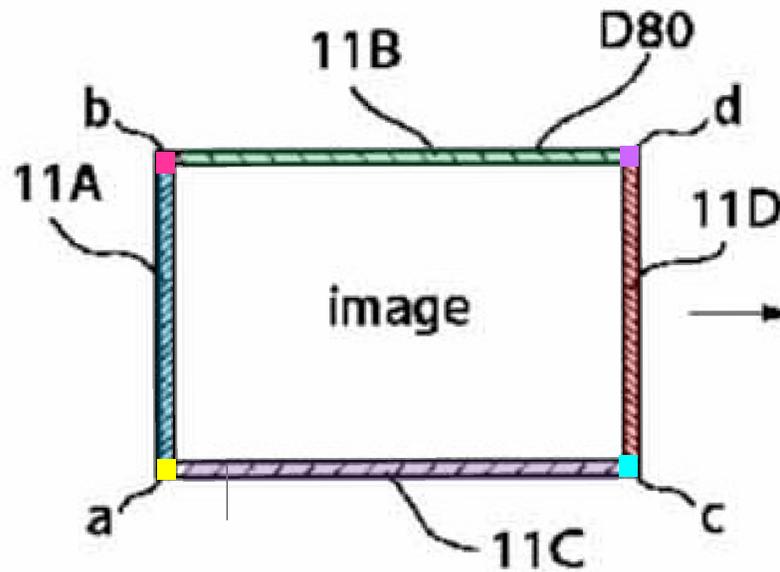
Hisatomi also teaches the desirability of a “*tap-absent state.*” The absence of icons on the screen avoids the scenario where a menu “hides a part of the main

image, and if there is important information in the hidden part, it will hinder editing work,” and “[t]herefore in such a case, it is not preferable that the main image is partially covered.” EX1004, 0005. EX1002, ¶139.

In Figures 5, 6, and 30 of Hisatomi at least one “*otherwise-activatable graphic*” is present in a “*strip along the edge of the display screen.*” EX1002, ¶140. Hisatomi’s trigger areas, such as Trigger Areas 11A-11D in Figure 5, are located along the edge of the screen, and graphics corresponding to the trigger areas are displayed.



EX1004, FIG. 5 (annotated); *see id.*, FIGS. 12 and 17.



EX1004, FIG. 30 (annotated); *see also id.*, ¶¶[0112]-[0115], [0124], FIG. 28.

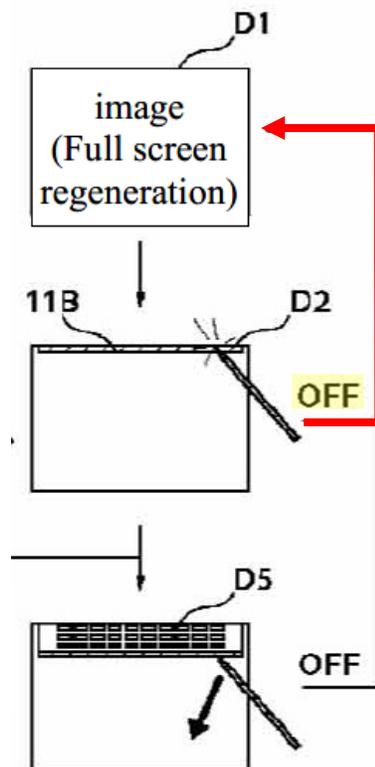
Hisatomi's trigger areas are "*strip[s]*" along at least one edge of the display screen.

EX1004, FIGS 4, 5, 30. EX1002, ¶¶139-40. The coordinates of the trigger areas ("*strip[s]*") are registered in memory; the device compares the coordinates detected from a touch with the trigger area coordinate information registered in the ROM to determine whether a trigger area has been touched. EX1004, ¶¶[0018], [0039], [0041], [0042], [0045]; EX1002, ¶140.

Hisatomi discloses the trigger areas 11A-D are indicated by graphics that cover the extent of each trigger area. EX1002, ¶141. These graphics are displayed on the display screen using different colors or patterns to distinguish one from another. EX1004, 0027; *see also id.*, ¶[00244] ("When the cursor reache[s] the edge on the screen, the bar for the purpose of pulling out the pull-out menu at the

display position will be displayed.”). EX1002, ¶¶141-42.

The trigger area graphics are not activatable by tap and thus are not “*tap-activatable icons*.” EX1002, ¶143. Touching a graphic and lifting the touch will cause the device to return to the display state illustrated in FIG. 5 and described at state S101 of the flow chart of FIG. 10. EX1004, ¶¶[0039], [0040]-[0041] (coordinate information “before reaching any of the ... trigger areas 11A to 11D will be treated as invalid”); *see also* ¶¶[0048], [0052] (return to the full screen image state S101 when x or y displacement amount is less than a defined amount).



EX1004, FIG. 12 (annotated); *see also id.*, FIGS. 10, 27-29.

In another example, step S705 of FIG. 29 represents a state in which a “start

button for the settings menu” is displayed as shown in FIG. 30 “when the coordinates of trigger area a are detected by the touch of the input device 05.”

EX1004, 125-126. For the same reasons discussed above, the state displayed in screen D82 is also a “*tap-absent state, wherein tap-activatable icons are absent.*”

EX1002, ¶144. Hisatomi describes that the “start button” is activated not by tapping, but by dragging the input device from the “a” to a point within the start button area and then lifting the input device off the screen. EX1004, 126 (“when the input device 05 is slid to the upper right and reaches the inside of the start button area (S706)”), FIGs 29, 30 (screen D83).

These graphics transition the user interface from a “*tap-absent state*” to a “*tap-present state*” in response to the user gesture described below in reference to element [1.d], incorporated here by reference. Specifically, the graphics taught by Hisatomi transition the user interface from a screen with no function list displayed to a screen in which a function list containing tappable icons is displayed.

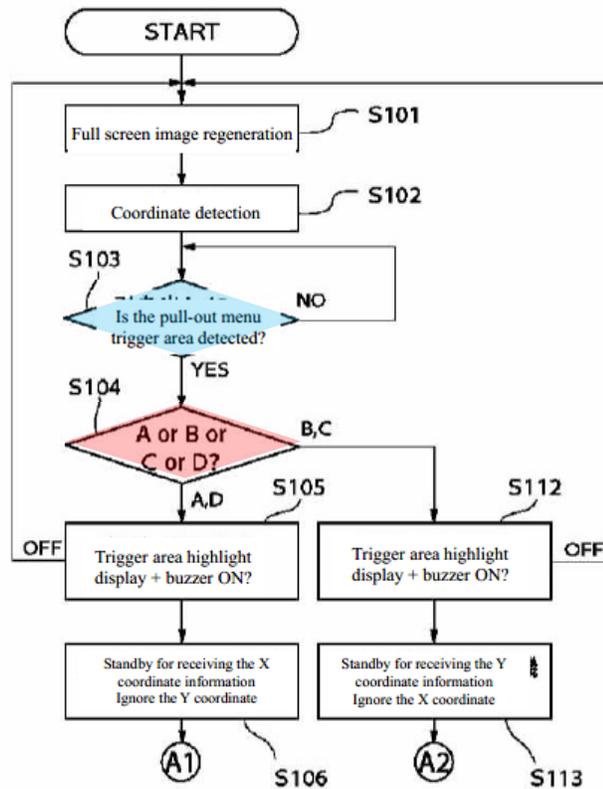
EX1004, 0018-27, 126, FIGS. 10-12, 27-30. EX1002, ¶¶145-46.

[1.d]: “[in response to a multi-step user gesture comprising (i) an object touching the display screen within the strip, and (ii) the object gliding on the display screen away from and out of the strip.]”

Hisatomi discloses this element. EX1002, ¶¶147-155. The device first determines whether the detected touch is within the trigger area coordinates (S103) (“*strip*”), indicated by the trigger area graphic, and then determines which trigger

area the touch occurred within (S104). EX1004, 0018, 0039, 0041-42, FIGS. 5, 10, 30 (screen D80). EX1002, ¶148.

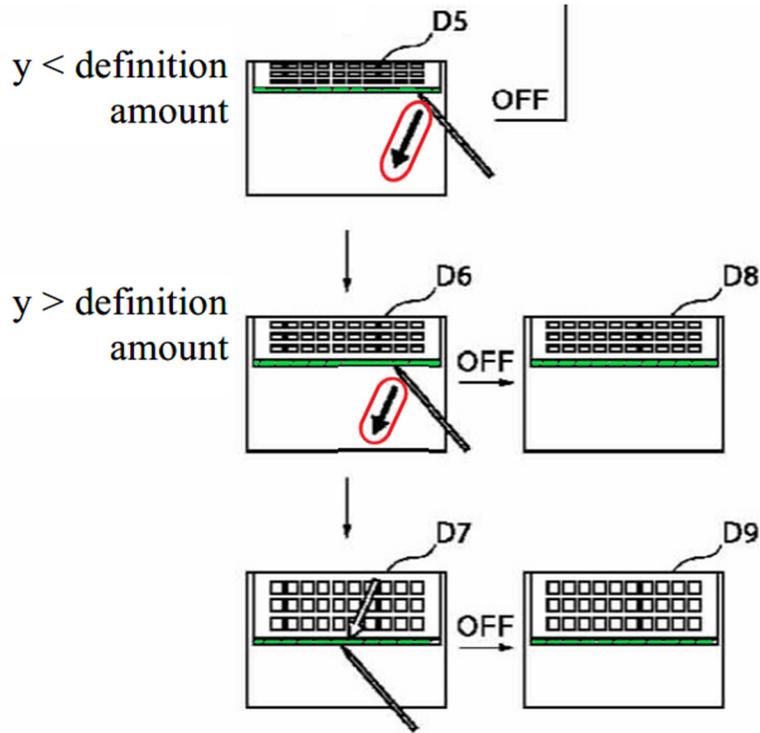
[FIG. 10]



EX1004, FIG. 10; *see also id.*, FIGs 16, 27-30.

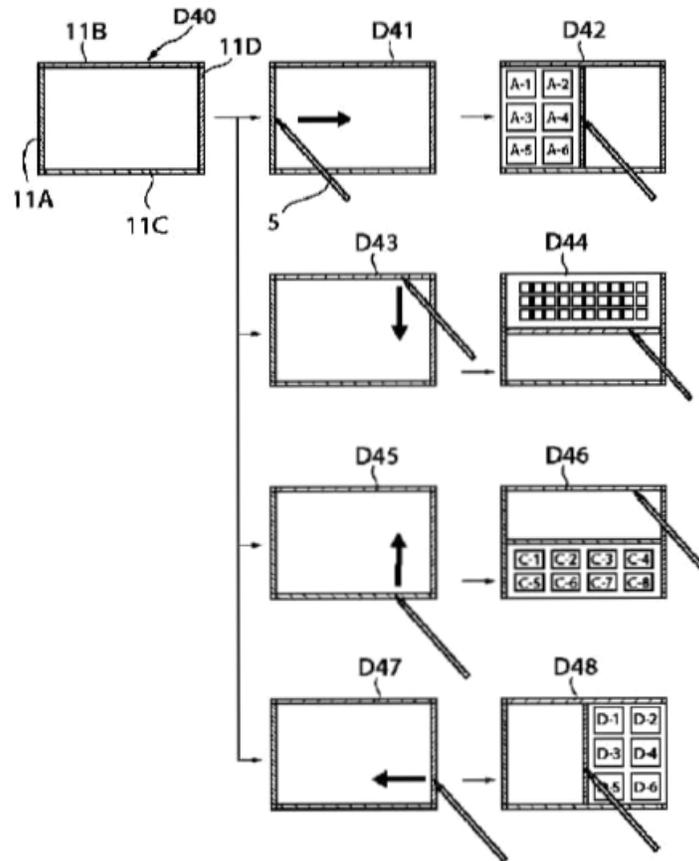
Touching the touch panel within a trigger area and then “dragging the input device 05 toward the center of the image display screen 09” causes the related function list in the pull-out menu to be displayed. EX1004, 0018, 0021, 0039, 126. EX1002, ¶149-50. “[W]hile the input device 05 was in contact with the pull-out menu display trigger area 11B ... , if this input device is slid toward the center of the image display screen 09, ... the B classification menu will be pulled out

accompanying with the motion of the input device 05” in the direction of the arrow
(red). EX1004, 0045, FIG. 12; EX1002, ¶151.



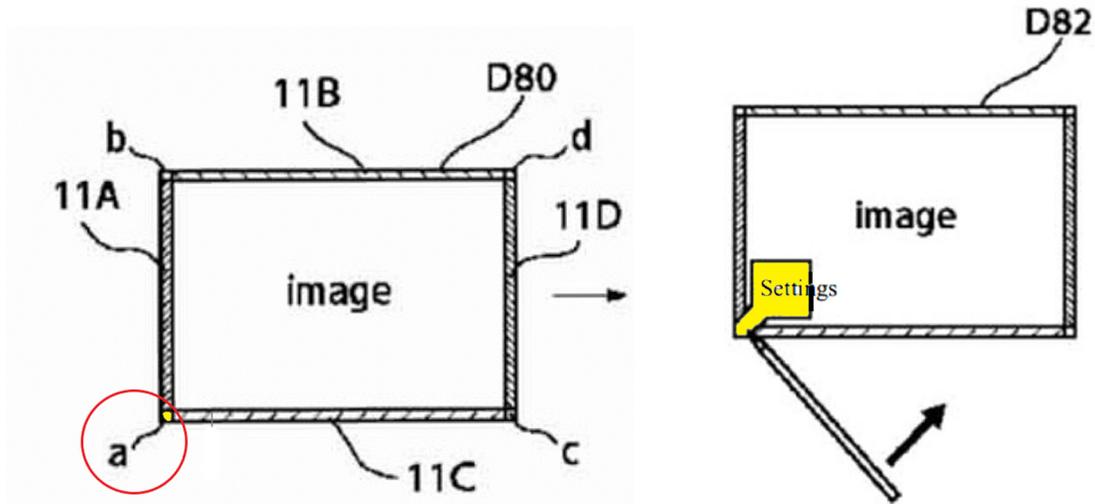
EX1004, FIG. 12 (annotated); *see also id.*, FIGS. 28, 30.

[FIG. 19]



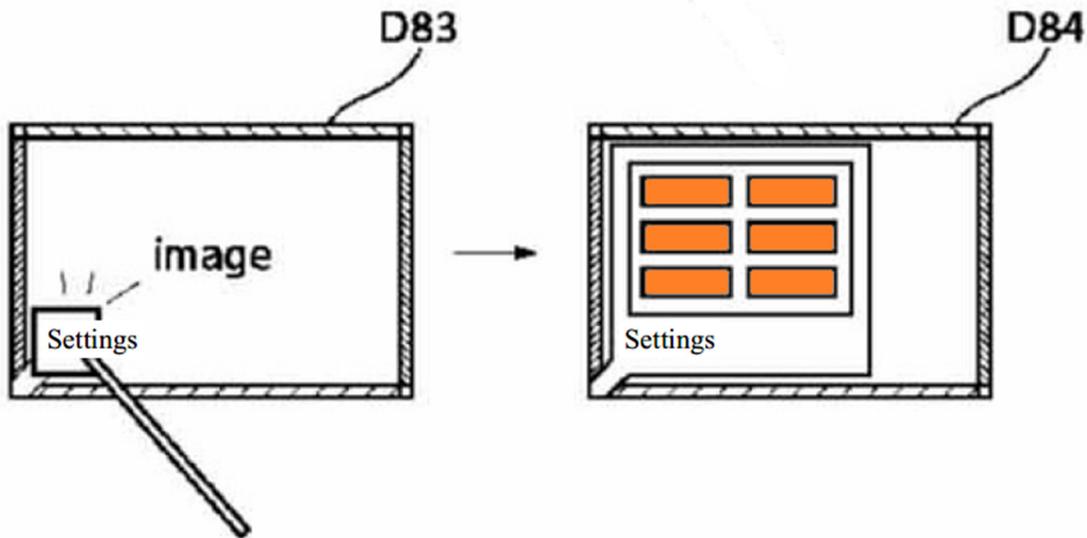
EX1004, FIG. 19. Pull-out menus along more than one edge may respond to movement along one or more axes. EX1004, 0111-117, FIGS. 27-30 (describing “shifting diagonally”). EX1002, ¶152.

In the embodiment of FIGs 29-30, “when the coordinates of trigger area a are detected by the touch of the input device 05, as shown on screen D82 ... , the start button for the settings menu will be pop-up displayed.” EX1002, ¶153; EX1004, 0125.



EX1004, FIG. 30 (annotated, trigger area in yellow and circled in red, start button in yellow). If the input device is lifted OFF the screen at this stage shown in screen D82, “the process will return to step S701”, which is the full screen image state shown in screen D80. EX1004, 0125; *see also* FIG. 29 (step S705 and the “OFF” logic). The trigger area is therefore not “*tap-activatable*.” EX1002, ¶153.

With the start button displayed for the settings menu, “as shown on screen D83 in FIG. 30, when the input device 05 is slid to the upper right [in the direction shown by the arrow in screen D82] and reaches the inside of the start button area (S706) and then goes OFF [the screen], the menu display process related to the start button will be executed, and the detailed settings menu as shown on screen D84 in FIG. 30 will be displayed (S707).” EX1004, 0126. EX1002, ¶154.



EX1004, FIG. 30 (annotated). The user interface therefore “*transitions from the tap-absent state to the tap-present state in response to a multi-step user gesture comprising (i) an object touching the display screen within the strip [at trigger area a], and (ii) the object gliding on the display screen away from and out of the strip.*” EX1002, ¶155.

Claim 2: “The computer readable medium of claim 1, wherein any state transition elicited by a user gesture that begins at a location at which the otherwise-activatable graphic is provided, transitions to the tap-present state.”

Hisatomi discloses claim 2. EX1002, ¶¶156-58. Specifically, Hisatomi discloses “when it is determined that the coordinate information generated by the input device 05 exists in the pull-out menu display trigger areas 11A to 11D,” the pull-out menu is displayed “when it is detected that the input device 05 was scrolled toward the center of the touch panel sensor 11” EX1004, 0018-23,

FIG. 10 (steps S106, S113). Touching within a trigger area and then “dragging the input device 05 toward the center of the image display screen 09” causes the related function list in the pull-out menu to be displayed. EX1004, ¶¶[0018], [0021], [0039], [0126]. In reference to FIGS. 10-12 Hisatomi describes that, “while the input device 05 was in contact with the pull-out menu display trigger area 11B ... if this input device is slid toward the center of the image display screen 09, ... the B classification menu will be pulled out accompanying with the motion of the input device 05” in the direction of the arrow indicated in red. EX1004, ¶[0045]; EX1002, ¶157.

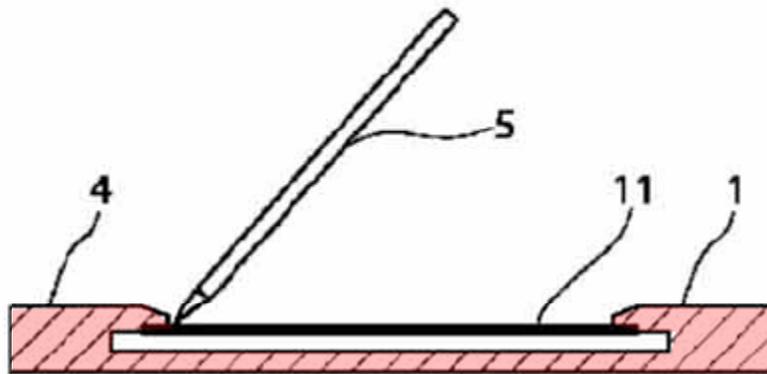
Hisatomi thus discloses each trigger area and its corresponding graphic is used for one purpose: to display the function list associated with the trigger area. See EX1004, ¶¶[0018], [0020], FIGS. 10, 11, 12, 17, 28, 30. Accordingly, “*any state transition elicited by a user gesture*” that begins at a location at which a trigger area graphic is provided “*transitions to the tap present state*” in which the function list (icons) are displayed. EX1002, ¶158.

Claim 3: “The computer readable medium of claim 1, wherein the tap-present state does not display the tap-activatable icons within a window frame.”

Hisatomi discloses claim 3. EX1002, ¶¶159-60. Hisatomi discloses dynamically displaying the tap-activatable icons of a function list without the use of a window frame. Hisatomi does not use the term “window” anywhere in the

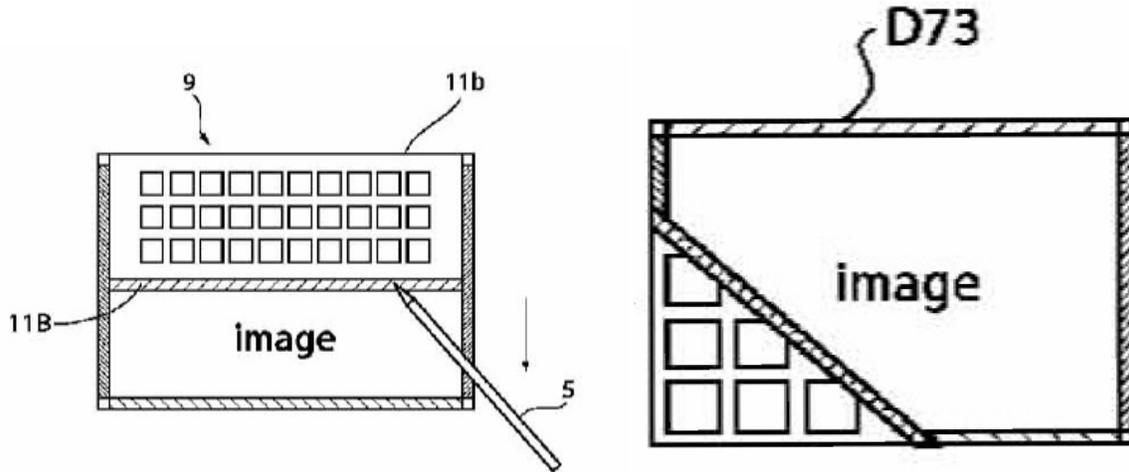
reference. Hisatomi uses the word frame but in a context inapposite to the claimed “window frame.” The “frame” described by Hisatomi refers to the physical object surrounding the display screen and is not a “window frame.” EX1004, ¶[0001] (describing “an information processing device equipped with an image display part surrounded by a frame forming a level difference”), page 21 (“04 exterior cover member (frame)”). EX1002, ¶159.

[FIG. 4]



EX1004, FIG. 4 (depicting exterior cover member 04).

Further, Hisatomi discloses examples of the tap-activatable icons of a function list being displayed by means other than a window frame. Figure 28 depicts icons displayed along the lower corners of the screen similar to “peeling back” the corner of the image display. EX1002, ¶160.



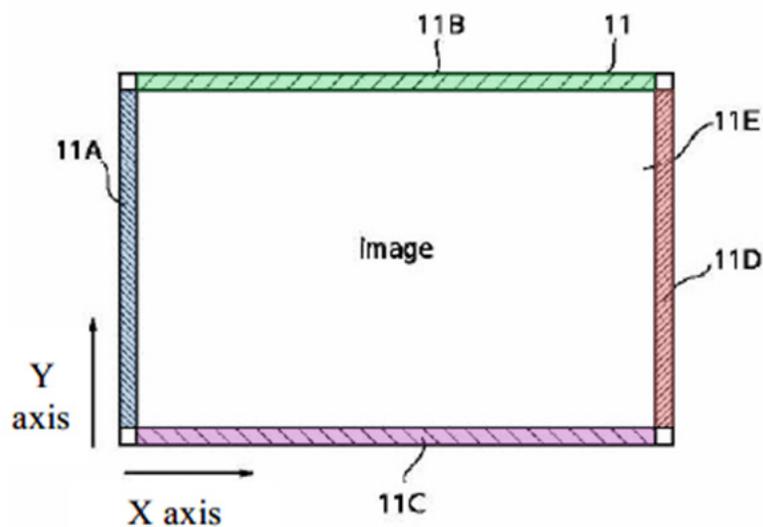
EX1004, FIGS. 7, 28. These icons are not contained within a window frame; the icons cannot be moved and remain anchored to an area. Additionally, Hisatomi teaches the function list may be expanded such that it covers the entire screen.

EX1004, ¶[0246]; *see also id.*, ¶¶[0099], [0101]-[0103], [0108] (“the entire display area of the image display screen 09 can be used for displaying the pull-out menu.”).

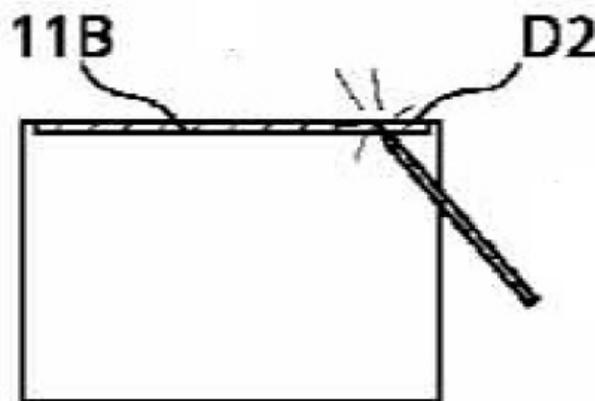
Claim 7: “The computer readable medium of claim 1, wherein the strip is less than a thumb's width wide within the display screen”

Hisatomi discloses claim 7. EX1002, ¶158. Hisatomi discloses coordinates of trigger areas 11A-11D in Figure 5 are located along the edge of the screen.

EX1004, 0018.



EX1004, FIG. 5 (annotated). The “coordinate definition of the pull-out menu display trigger areas 11A to 11D is determined by the shape of the pen tip of the input device 05, etc., and when the input device 05 is abutted on the exterior cover member 04, the coordinate range detected by the touch panel sensor 11 is defined with some margin.” EX1004, 0018. This spatial relationship is illustrated, for example, in FIG. 12.



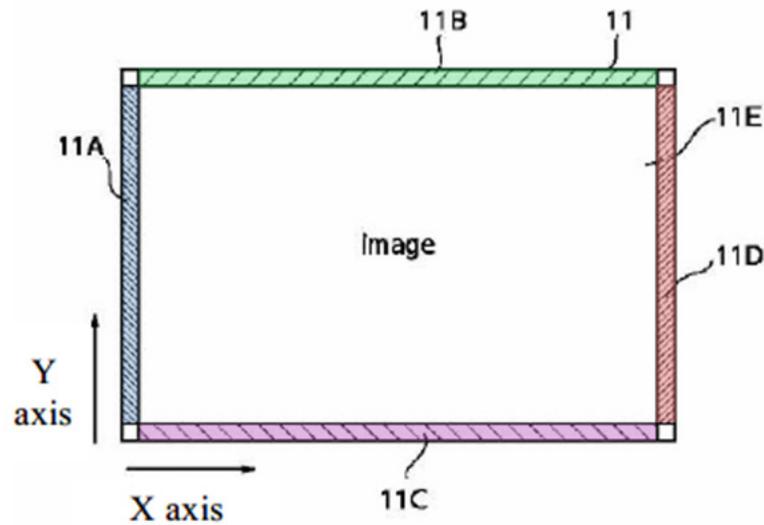
EX1004, FIG. 12.

While neither the claims nor the '993 patent specification provide any explicit indication as to a distance represented by a “thumb’s width,” a POSA would recognize the “shape of the pen tip” along with the disclosed margin is “*less than a thumb’s width wide.*” EX1002, ¶159. If Patent Owner argues this limitation is not disclosed by Hisatomi, a POSA would have at least been motivated to make the trigger areas “*less than a thumb’s width wide*” (e.g., less than one inch) consistent with Hisatomi’s teaching to avoid obscuring the image during editing functions.

Id.

Claim 8: “The computer readable medium of claim 1, wherein the multi-step user gesture comprises (i) the object touching the otherwise-activatable graphic, and (ii) the object gliding on the display screen away from and out of the strip.”

Hisatomi discloses claim 8. EX1002, ¶160. As explained for limitation [1.c], Hisatomi discloses the coordinates of the trigger area are identified to a user using graphics displayed using different colors or patterns. EX1004, 0027.



EX1004, FIG. 5. A touch within the coordinates of a trigger area strip will also be a touch on its related “*otherwise-activatable graphic.*” To display the associated pull-out menu, the multi-step user gesture includes the input device (“*object*”) touching the graphic overlaying the trigger area coordinates, and the input device (“*object*”) gliding on the display screen away from and out of the trigger area coordinates (“*strip*”). EX1002, ¶161.

B. Ground 1B: Claim 4 is rendered obvious by Hisatomi in view of POSA Knowledge and Allard-656 and/or Ren and Allard-656

Claim 4: “The computer readable medium of claim 1, wherein the plurality of pre-designated system functions comprises a help function.”

Hisatomi in combination with POSA knowledge and Allard-656, or alternatively, Ren and Allard-656, renders claim 4 obvious. EX1002, ¶¶165-171.

As discussed for Claim 1, Hisatomi discloses a user interface having a state in

which one or more function lists may be displayed on the screen. EX1004, ¶¶ [0020], [0021], 0025, 0037, 126; FIGS. 7, 30. Hisatomi depicts four different off screen function lists, A-D, and suggests categories of functions for each list may be assigned. EX1004, ¶ [0022], FIG. 6; *see also id.*, FIG. 9 (describing the same categories); EX1002, ¶166. Hisatomi does not limit how the menus are categorized or the types of functions that may be accessed via these menus. EX1002, ¶128.

It would have been obvious to a POSA to include a help function in one or more of these categories. EX1002, ¶167. A help function is one of a handful of common and typical functions a POSA would have known to include, or at least would have been obvious to try, in a user interface such that the user could obtain more information about how to interact with the interface, and the information and functionality available. *Id.* For example, Allard-656, which discloses user interface features of the well-known IBM Simon, discloses a “Help” function button on a touch screen “located in a predetermined position” on the screen. EX1009, 6:48-49. When the HELP button is selected it performs the function of displaying a Help screen to aid the user in navigating the user interface. EX1009, 5:51-55; *see also id.*, 6:12-38.

FIG. 4A

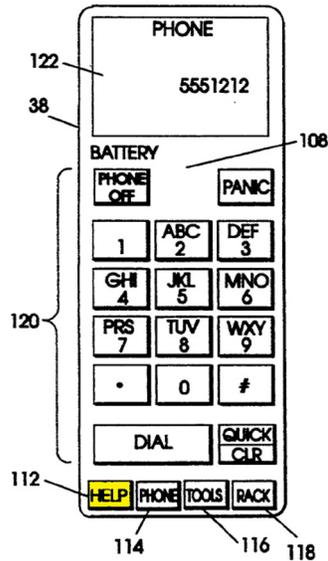
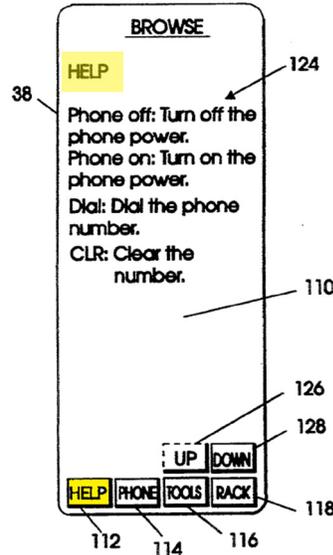


FIG. 4B



EX1009, FIGS. 4A, 4B (annotated).

It would have been obvious to a POSA to configure the Hisatomi device such that one or more of the icons in the function lists corresponded to a help function, as disclosed in Allard-656. EX1002, ¶168. A POSA would have been motivated to do so at least because utilizing a help icon was a well-known practice with benefits that would have been immediately apparent to a POSA. *Id.*

Hisatomi acknowledged the difficulties of new users interacting with a user interface for the first time. EX1005, 0223. Hisatomi also acknowledged a help function that “briefly explains what kind of function the icon corresponds to” would be beneficial. EX1004, ¶[0223]. When using a character input or color selection function list, a POSA would have understood it would be beneficial to the user to include a help function to further explain how the function list and the

functions it contains operate. EX1002, ¶168.

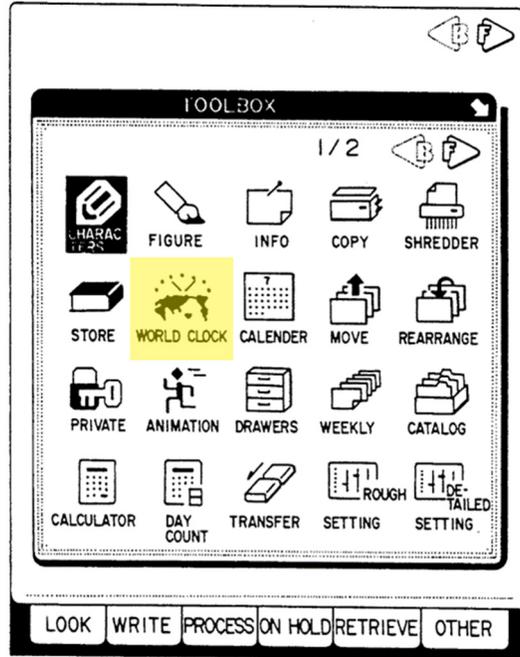
A POSA would have recognized Allard-656 and Hisatomi are both directed to pen input on a touch user interface of a handheld device. EX1002, ¶169. A POSA would have understood the teachings of Allard-656 address the same issues discussed in Hisatomi and solve the same problem in a manner that would provide benefits when working with smaller screen sizes. *Id.* Allard-656 discloses the HELP button presents information related to the “current screen at the time the HELP button is [] selected.” EX1009, 6:31-38. A POSA would have understood a help button could be placed in one or more of the context menus of Hisatomi. EX1002, ¶169. When a particular pull-out menu of Hisatomi is displayed, the menu would include a Help icon that provides information specific to that pull-out menu (*i.e.*, “the current screen at the time”). *Id.* The obvious need for user assistance and its well-known prevalence in user interfaces would have motivated a POSA to include icons indicating a pre-designated help function, as taught by Allard-656, in the menus of Hisatomi. *Id.* It would have been within the level of ordinary skill to implement such a technique with predictable results as it was merely an implementation detail. EX1002, ¶¶169-71.

C. Ground 1C: Claim 5 is Rendered Obvious by Hisatomi in view of POSA knowledge and Tanaka and/or Ren and Tanaka

[5]: “The computer readable medium of claim 1, wherein the plurality of pre-designated system functions comprises a clock function.”

Hisatomi in combination with POSA knowledge and Tanaka, or alternatively, Ren and Tanaka, renders claim 5 obvious. EX1002, ¶¶172-76. As explained above, Hisatomi discloses a user interface having a state in which one or more function lists may be displayed on the screen. EX1004, 0020-21, 0025, 0037, 126, FIGS. 7, 30. Hisatomi depicts four different off screen function lists, A-D, and suggests categories of functions for each list may be assigned. EX1004, ¶[0022], FIG. 6; *see also id.*, FIG. 9 (describing the same categories); EX1002, ¶173. Hisatomi does not limit how the menus are categorized or the types of functions that may be accessed via these menus. Yet, Hisatomi describes the desire to not obscure the image on the editing screen, as would have been required to always display a clock. EX1004, 0005. Therefore, a POSA would have found it obvious and desirable to include a clock function in the form of an icon. EX1002, ¶173.

Tanaka discloses a “Clock” function button. Tanaka discloses selecting and opening a “Toolbox” window that “contains various icons” including a “World Clock” icon. EX1010, 4:13-21, FIG. 5. EX1002, ¶174.



EX1010, FIG. 5 (annotated).

It would have been obvious to a POSA to configure the Hisatomi device to include an icon representing a clock function as disclosed in Tanaka. EX1002, ¶175. A POSA would have been motivated to include a clock function, such as that disclosed in Tanaka, in Hisatomi's list of icons because the ability to identify the current time as well as the passage of time without viewing a separate device was desirable across the variety of devices in which Hisatomi teaches its device could be implemented. EX1005, ¶[0243]. Indeed, Tanaka teaches incorporating the clock functionality within a menu of icons, similar to the context menus of Hisatomi. EX1002, ¶175. Indeed, such clock icons were ubiquitous in touchscreen devices. One well-known example in the prior art was the Palm

handheld organizer device, which included a clock function, as shown below.

EX1002, ¶175.

To open an application on your handheld:

1. Tap the Applications icon .



EX1027, 18. EX1002, ¶150.

It would have been within the level of ordinary skill to implement a well-known function such as a clock icon with predictable results, particularly given its ubiquity in the art. EX1002, ¶176.

D. Ground 1D: Claim 6 is Rendered Obvious by Hisatomi in view of POSA knowledge and Kodama and/or Ren and Kodama

[6]: “The computer readable medium of claim 1, wherein the plurality of pre-designated system functions comprises an alarm function.”

Hisatomi in combination with the POSA knowledge and Kodama, or alternatively, Ren and Kodama, renders claim 6 obvious. EX1002, ¶¶177-82. As discussed in reference to claim 5, Hisatomi discloses the use of numerous different

system functions that may be included within the function lists. EX1004, 0013-14, FIG. 1; EX1002, ¶178.

One explicit example of this limitation is Kodama, which discloses the claimed alarm function. Kodama discloses a portable, touchscreen device that displays a plurality of icons, referred to as “stamps.” EX1016, 1:8-23. Kodama teaches displaying a “list of stamps,” including “an alarm stamp 101, a To Do stamp 102, ... an automatic erase stamp.” EX1016, 8:21-28. Kodama describes when “the alarm stamp 101 is selected” from the list of stamps, “[t]his causes an alarm setting box 90 shown in FIG. 6B to be displayed on the screen.” EX1016, 8:54-56. “When the alarm has been set as described above, an alarm is given by an electronic sound or vibration to notify the user that the date and/or time for which the alarm has been set has arrived.” EX1016, 9:1-4; EX1002, ¶179.

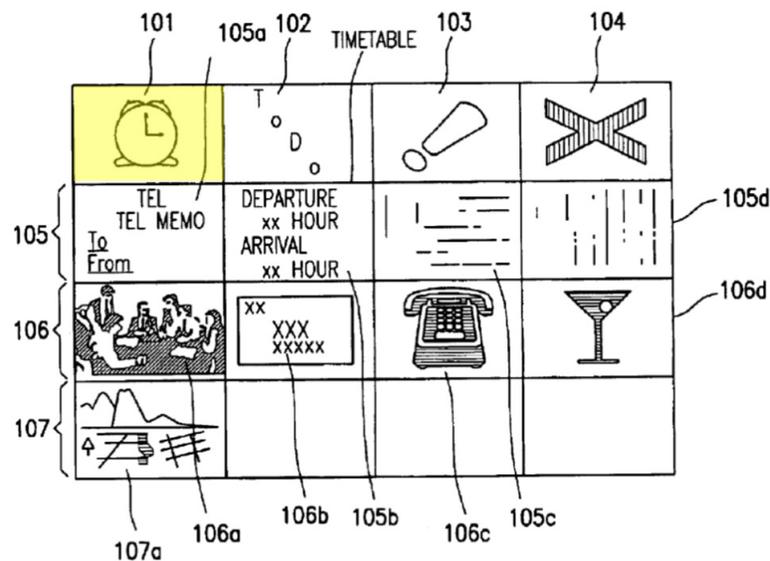


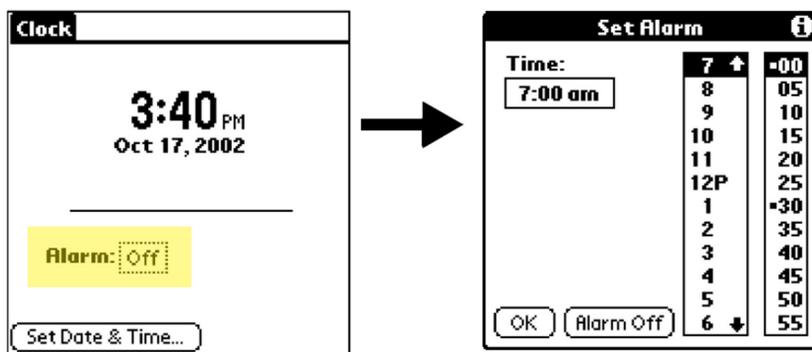
FIG. 4

EX1016, FIG 4 (annotated).

Kodama's disclosure of an alarm icon and function was common in the art. Indeed, another well-known example of claim 6 was the Palm organizer devices, which included an alarm function. As discussed above in regard to claim 5, it was well known in the art to include a clock function, such as disclosed in Palm organizers. EX1027, 18. EX1002, ¶180. The Palm clock function also included an alarm feature.

To set an alarm:

1. Tap the Applications icon .
2. Tap the Clock icon .
3. Tap the Alarm box to open the Set Alarm dialog box.



EX1027, 130. EX1002, ¶154.

It would have been obvious to a POSA to include an alarm function, such as disclosed by Kodama, as one of the icons disclosed by Hisatomi, such as in the settings pull-out menu. A POSA would have been motivated to combine these teachings at least because Hisatomi and Kodama are both directed to user

interfaces for pen-based handheld devices. A POSA would have recognized that, with the teaching of Hisatomi to not obstruct the view of the image being edited, a clock function would likely not be included on the main display screen, and therefore, it would be desirable to have an alarm that a user could set to manage the amount of time the user spends on editing functions. Alarm functions were basic functions well-known to a POSA and could have been implemented with predictable results. EX1002, ¶¶181-82.

E. Ground 2A: Claims 1-3, 7, and 8 are rendered obvious by Hansen in view of Gillespie

*[1.pre]*⁶

Hansen discloses [1.pre] to the extent the preamble is deemed limiting. EX1002, ¶¶183-84. Hansen discloses a memory unit 14 (“*computer readable medium*”) that stores instructions executed by CPU 12 (“*processor*”) of a computer system with touch-sensitive screen 35 (“*electronic device having a touch-sensitive display screen*”) to provide a user interface displayed through video monitor 30 (“*user interface*”). EX1029, 3:49-4:25; EX1002, ¶183.

CPU 12 includes electronic componentry to execute software that permits

⁶ The remainder of the petition references claim limitations by their previously established designation.

CPU 12 to control the computer system, including displaying working windows and various icons, and activating corresponding computer programs. EX1029, 3:58-4:4. CPU 12 also functions as a control means for generating and processing signals relating to input strokes. *Id.* Given this disclosure, Hansen describes that CPU 12 “**enable[s]**” the interface displayed through video monitor 30. *Id.* Additionally, since memory 14 is disclosed and claimed as defining data relating to interface elements (e.g., input stroke, plurality of icons), Hansen describes that the memory 14 “**store[s] instructions**” that cause CPU 12 to enable the interface displayed through video monitor 30. *Id.*, 3:58-4:4, 4:5-8, Claims 1, 16, 20; EX1002, ¶184.

[1.a]

Hansen discloses this element. As discussed below regarding elements [1.b] and [1.c], incorporated by reference, Hansen discloses a user interface with two states, such as a Figure 3B display (“**tap-present state**”) and a Figure 3A display (“**tap-absent state**”). EX1002, ¶185; *see* Section VI.A [1.a], *supra*.

[1.b]

Hansen discloses this element through disclosure of an interface provided through video monitor 30 (“**user interface**”) that provides a user with access to computer programs displayed in working windows. EX1029, FIGS. 2, 3A-3C. EX1002, ¶186; *see* Section III.B.2.a, *supra*. Figure 3B (annotated below) shows a

display of Hansen’s interface in a “*tap-present state*” after a user completes an input stroke. EX1029, 5:23-35. The Figure 3B display includes icons 50 (“*plurality of tap-activatable icons*”). The annotated version of Figure 3B below shows the display of Hansen’s interface (highlighted in red) and the icons 50 (highlighted in purple).

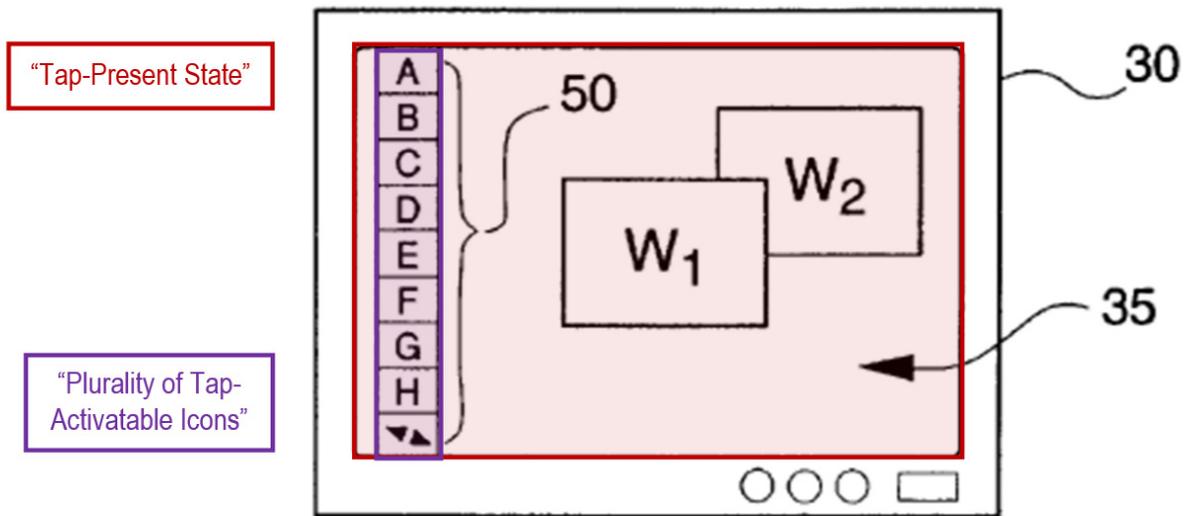


FIG. 3B

EX1029, FIG. 3B (annotated).

Each of the icons 50 “corresponds to a computer program that can be run in [a] working window,” and thus, the computer programs corresponding to the icons 50 represent the “*respective plurality of pre-designated system functions.*”

EX1029, 5:17-36. In discussing prior art personal computer operating systems, Hansen defines “icons” (e.g., icons 50) as “graphical representations of various

computer programs [that] are displayed on a computer screen,” and a POSA would have understood a computer program to be at least one type of “system function.” *Id.*, 1:34-43. Each of icons 50 can be selected by “momentarily touching one of the plurality of icons 50,” *i.e.*, a tap input. *Id.*, 5:33-36; EX1002, ¶187. In response to icon selection, a “working window associated with the icon selected by the user is scrolled onto the video monitor 30” such that the computer program is “*activated in response to a tap on its respective icon.*” EX1029, 5:36-46; EX1002, ¶187.

[1.c]

Hansen combined with Gillespie renders this element obvious. As discussed above (*see* Section III.B.2.a, *supra*), Hansen’s interface displayed through video monitor 30 (“*user interface*”) provides access to computer programs displayed in working windows. EX1029, FIGS. 2, 3A-3C. EX1002, ¶¶188-96. Figure 3A (annotated below) shows a display of Hansen’s interface in a “*tap-absent state*” before a user performs an input stroke. EX1029, 5:9-13. EX1002, ¶188.

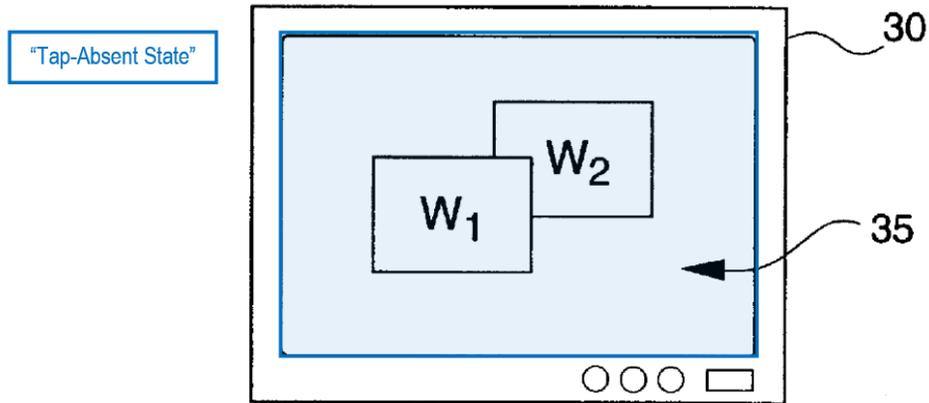


FIG. 3A

EX1029, FIG. 3A (annotated).

Hansen also discloses that input strokes are recognized only if an “initial starting position X1, Y1” of a touch input is within a “predetermined area” of screen 35 (“*strip*”). EX1029, 6:65-7:5; FIG. 4 (conditional block 106). Further, Hansen teaches that this “predetermined area or edge is user definable.” EX1029, 7:2-3. Yet, Hansen’s figures do not show any visible indicator representing an “*otherwise-activatable graphic.*”⁷ EX1029, 4:34-48; EX1002, ¶191.

⁷ In reference to FIG. 1, Hansen teaches that “arrow 45 does not appear on the video monitor but is shown merely for purposes of illustrating the first predetermined user input stroke.” EX1029, 4:46-48. In doing so, Hansen implicitly recognized the benefit of providing the arrow in FIG. 1 to explain the

As discussed above (*see* Section III.B.2.d, *supra*) this feature would have been made obvious when Hansen is combined with techniques well-known by the Critical Date of using various visual conventions to indicate a control region of a touch-screen display where special types of touch-based input (e.g., input stroke) are available. EX1002, ¶192. The modified version of Hansen’s Figure 3A below shows an example of the user interface that would have been provided by the obvious Hansen-Gillespie combination. As shown, the user interface includes a visual convention (shown in turquoise) to indicate to the user that a predetermined area (e.g., two centimeters from the left-hand edge of the display 35, as taught by Hansen) is a control region (“*strip along at least one edge of the display screen*”) for initiating an input stroke. EX1002, ¶193.

concept of the “first predefined input stroke” to the reader, evidencing the benefits of “affordance.” EX1002, ¶191 (fn 9).

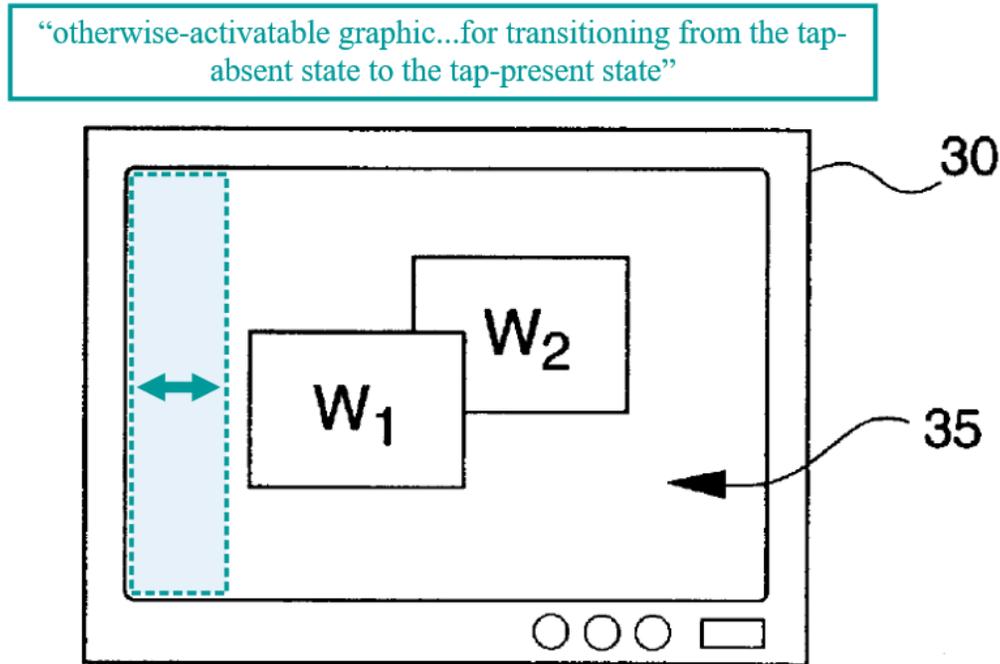


FIG. 3A

EX1014, FIG. 3A (annotated and modified to incorporate Gillespie’s visual convention, e.g., dashed lines 426, 428).

Thus, the visual indication taught by Gillespie (i.e., the dashed lines with a colored background and other visual “affordances,” such as text and arrows) incorporated into Hansen’s display is “*an otherwise-activatable graphic*,” and it is coextensive with Hansen’s predetermined area, which is “*a strip along at least one edge of the display screen.*” EX1002, ¶193.

The ’993 Patent does not define the term “strip,” or even use the term outside of the claims. *See generally* EX1001; EX1002, ¶194. Nor did the Applicant define the term “strip” during the prosecution that led to the ’993 Patent.

See, e.g., EX1003, 76-80, 153-159. In light of the specification, a POSA would have understood the claimed “strip” to encompass Hansen’s “predetermined area” at the left edge of the screen. EX1002, ¶194.

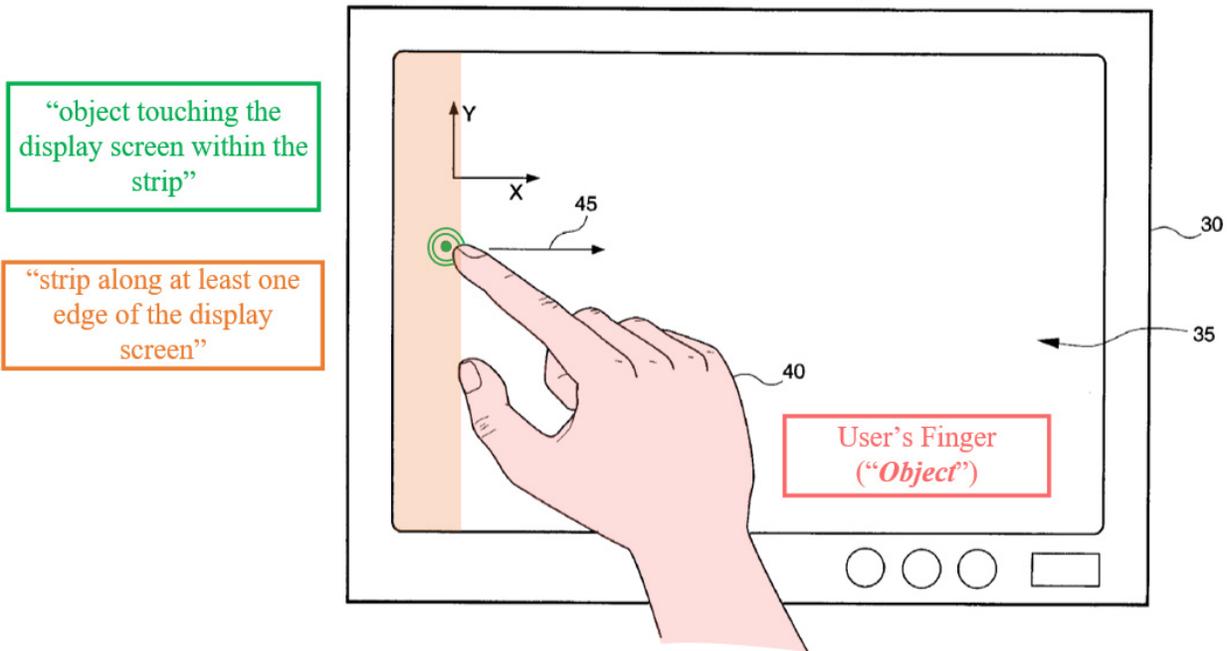
When amending the claims to include the term “strip,” the Applicant cited alleged support in “the original specification at least by page 5, lines 5-11, and” FIGS. 1 and 2. EX1003, 158. This portion of the ’993 patent simply explains that “a touch sensitive area 1 . . . is divided into a menu area 2 and a display area 3.” Consistent with this disclosure, Hansen similarly discloses the touch-sensitive screen 35 is divided to include a predetermined area within 2cm of the edge of the screen and the remaining area of the screen. EX1029, 4:34-37, 4:65-67, FIG. 2. EX1002, ¶195.

Additionally, as discussed below (*see* discussion of elements [1.c] and [1.d], *infra*), Hansen describes that the input stroke being completed on the Figure 3A display (“*tap-absent state*”) results in the Figure 3B display (“*tap-present state*”) being shown, which means that Hansen’s input stroke with respect to the otherwise-activatable graphic can be used for “*transitioning the user interface from the tap-absent state to the tap-present state.*” EX1029, 5:6-47; EX1002, ¶196.

[1.d]

Hansen in combination with Gillespie renders this element obvious. As

discussed above (*see* Section III.B.2.a, *supra*), Hansen discloses that a user can perform an input stroke (“*multi-step user gesture*”) including two steps. EX1029, 4:34-47; EX1002, ¶¶197-200. In the first step, a user uses a finger (“*object*”) to touch screen 35 at an initial starting position within a predetermined area, such as an area extending two centimeters from left-hand of the edge of the display 35 (“*display screen within the strip*”). EX1029, 4:34-47. An annotated version of Figure 2 (reproduced below) shows a user’s hand (highlighted in pink) touching the initial starting position (highlighted in green) within the predetermined area (highlighted in orange). EX1002, ¶197.



EX1029, FIG. 2 (annotated).

The annotated version of Figure 3A below shows the same concepts discussed above for this limitation but applied to Hansen’s Figure 3A display

(“*tap-absent state*”). EX1002, ¶198.

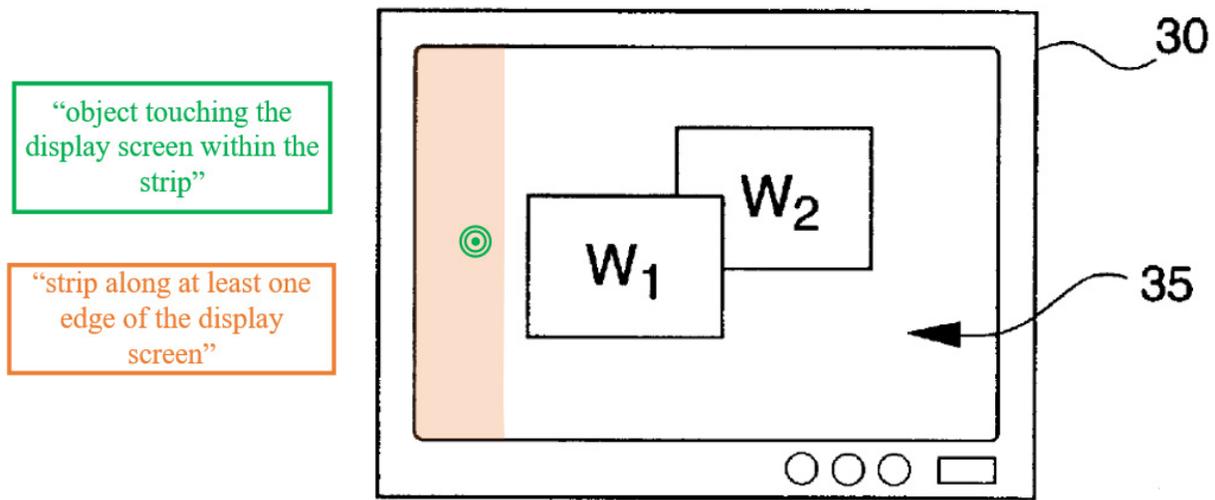


FIG. 3A

EX1029, FIG. 3A (annotated). In the Hansen-Gillespie combination described in Section III.B.2.d, *supra*, the user would touch the display screen in Hansen’s predetermined area (which is identified by a Gillespie-type visual convention added to the Hansen interface) that extends 2 cm from the left side of the screen.

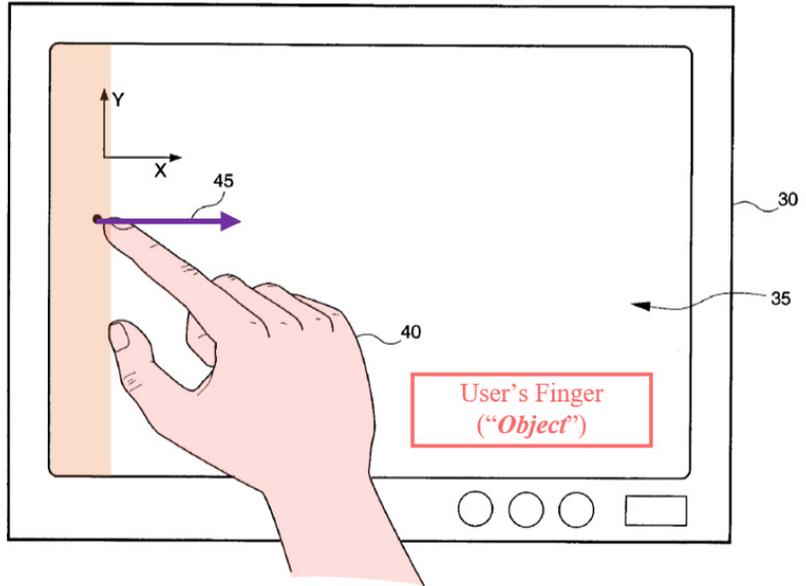
EX1002, ¶198. As described with respect to limitation [1.b], this visual convention (e.g., Gillespie’s dashed lines and colored background) is one example of a visual indication to the user of a “control region[] that respond[s] specifically to finger motions,” as taught by Gillespie. EX1030, ¶[0056].

In the second step of Hansen’s two-step gesture, after touching screen 35 within the predetermined area (“*strip*”), the user moves the finger towards the

middle of screen 35 along the direction of arrow 45 such that the finger “*glid[es]*
on the display screen away from and out of the strip”. EX1029, 4:34-67. An annotated version of Figure 2 (reproduced below) shows a user’s hand (highlighted in pink) moving in a direction 45 (highlighted in purple) away from and out of the predetermined area (highlighted in orange). EX1002, ¶199. Indeed, Hansen describes that the input stroke is determined to have been complete when computer determines that “the user has moved his/her finger in the X direction by more than a predetermined length,” and, in its example embodiment, that length is longer than the predetermined area (i.e., 3cm length stroke from a 2cm predetermined area). EX1029, 4:62-67, 7:37-49. Notably, Hansen does not describe that the predetermined area (“strip”) moves during the two-step input stroke, and a POSA would thus have found it obvious that it remained in a fixed location. EX1002, ¶199.

“gliding on the display screen away from and out of the strip”

“strip along at least one edge of the display screen”



EX1029, FIG. 2 (annotated).

The annotated version of Figure 3A below shows the same concepts discussed above for this limitation but applied to the Figure 3A display (“*tap-absent state*”). EX1002, ¶200.

“gliding on the display screen away from and out of the Strip”

“strip along at least one edge of the display screen”

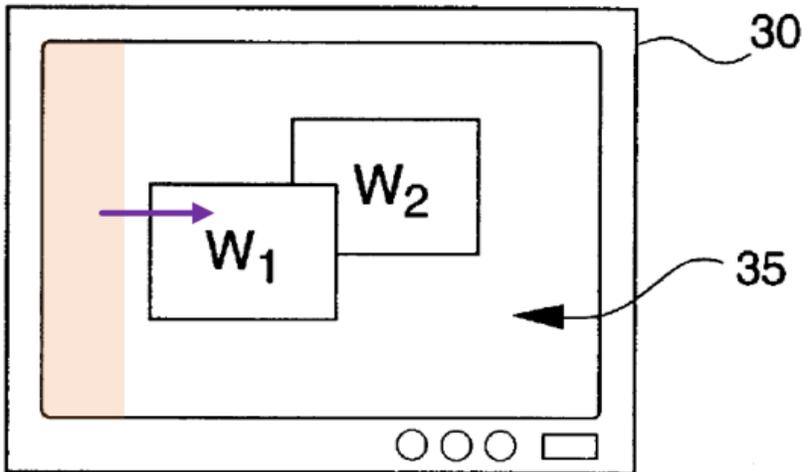


FIG. 3A

EX1029, FIG. 3A (annotated).

Claim 2

Hansen discloses claim 2. EX1002, ¶¶201-03. As discussed in regards to limitations [1.b] and [1.c], *supra*, Hansen describes transitioning from the Figure 3A display (“***tap-absent state***”) to the Figure 3B display (“***tap-present state***”) in response to a user completing an input stroke (“***multi-step user gesture***”) that includes two steps. EX1029, 4:34-47; EX1002, ¶202. In the first step, a user uses a finger to touch screen 35 at an initial starting position within a predetermined area, such as two centimeters from the left-hand of the edge of the display 35 (“***a location at which the otherwise-activatable graphic is provided***”). EX1029, 4:34-47. In the combination of Hansen and Gillespie described in Section III.B.2.d, *supra*, the user would touch the display screen within Hansen’s predetermined area (as visually indicated by the Gillespie-type visual convention added to the Hansen interface, which is coextensive with the 2cm strip described by Hansen). EX1002, ¶202.

Hansen does not describe or suggest that an input stroke being performed on the Figure 3A display results in any action other than transitioning to the Figure 3B display. Specifically, Hansen describes that “FIG. 3A illustrates the video monitor 30 before the user has drawn the first predetermined input stroke.” EX1029, 5:6-20. Hansen further teaches that “CPU 12 displays a plurality of icons 50 on the

touch-sensitive screen 35” if a received input on the Figure 3A display matches the first predetermined user input stroke. *Id.* In other words, the display of icons 50 shown in the Figure 3B display are “a result of the user performing the first predetermined input stroke” within the predetermined area of the Figure 3A display. *Id.* Thus, since the only result that Hansen describes in response to an input stroke being performed on the Figure 3A display is transitioning to the Figure 3B display, Hansen discloses that any state transition elicited by an input stroke that begins at an initial starting position within the predetermined area transitions to the Figure 3B display (“*tap-present state*”). EX1002, ¶203.

Claim 3

Hansen discloses claim 3. EX1002, ¶¶204-05. As discussed for limitation [1.b], *supra*, Hansen describes that the Figure 3B display (“*tap-present state*”) is provided after a user completes an input stroke on the Figure 3A display (“*tap-absent state*”). EX1029, 5:23-35. The annotated version of Figure 3B below shows the display of Hansen’s interface (highlighted in red) and icons 50 (highlighted in purple). EX1002, ¶204.

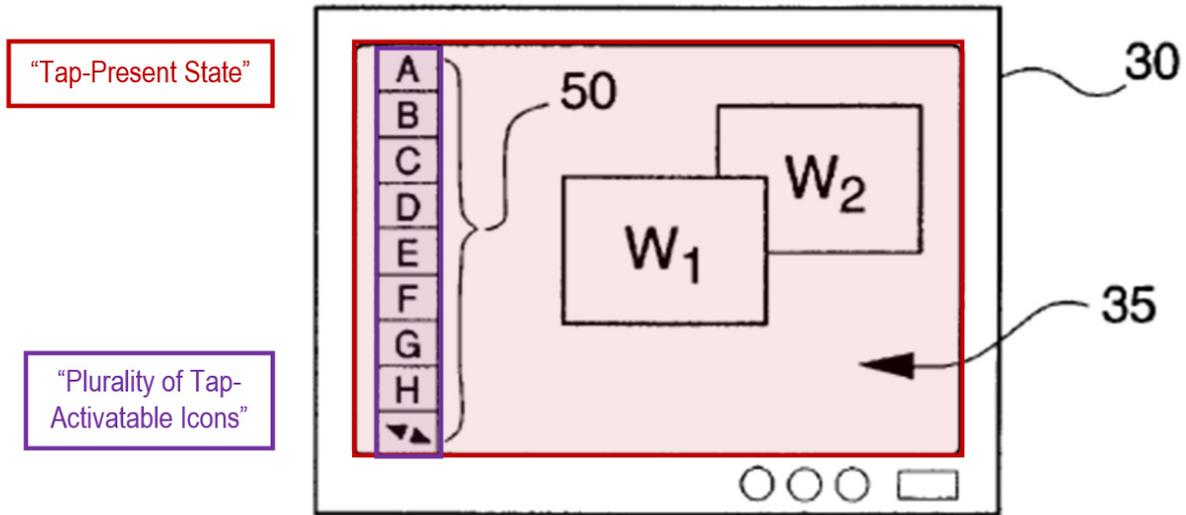


FIG. 3B

EX1029, FIG. 3B (annotated).

Hansen describes that “the plurality of icons 50 are displayed in a line along a predetermined edge of the monitor 30.” EX1029, 5:21-23. Because icons 50 are not presented on the Figure 3B display within any distinct user interface element, Hansen discloses that the Figure 3B display (“*tap-present state*”) does not display icons 50 (“*tap-activatable icons*”) “*within a window frame.*” EX1002, ¶205.

Notably, Hansen’s description of the display icons 50 being presented “in a line” is markedly distinct from its description of other display elements Hansen specifically calls “windows.” See EX1029, 5:6-25 (describing “a number of windows w1, w2” distinctly from the “icons 50” being “displayed in a line”); EX1002, ¶205. Indeed, Hansen separately confirms that “a specific area in which

the program appears on the screen, called a window, is displayed” after a user selects an icon. EX1029, 1:42-46. Thus, Hansen distinguishes display of the icons from the windows created to display the programs associated with those icons. EX1002, ¶205.

Claim 7

Hansen discloses claim 7 or at least renders it obvious. EX1002, ¶206-07. Neither the claims nor the '993 patent specification provide any explicit indication as to a distance represented by a “*thumb’s width*.” Hansen describes that the predetermined area in which an edge-based gesture can be received (“*strip*”) is positioned within 2cm of the left-hand edge of display 35. Hansen, 4:62-5:5. A POSA would have understood that Hansen’s 2cm-wide predetermined area (“*strip*”) is less than a thumbs-width wide. EX1002, ¶206.

Moreover, Hansen describes configurations in which the predetermined area (“*strip*”) is “user definable,” which indicates that the width of the predetermined area is configurable to various distances, including distances “*less than a thumb’s width wide*.” EX1029, 6:65-7:5; EX1002, ¶207. With this disclosure, a POSA would have recognized that Hansen contemplates the width of the predetermined area to be a design choice for minimizing inaccurate recognition of initiating an input stroke. EX1002, ¶207. This would have been useful to prevent unwanted detection of input stroke recognition in scenarios where the user provides a tap

input to interact with a window displayed near the edge of screen 35 (and not to initiate an input stroke), and to expand the usable part of the screen for similar or other gestures. *Id.*; EX1002, ¶207.

Claim 8

Hansen in combination with Gillespie renders claim 8 obvious. EX1002, ¶208. As discussed for element [1.c], *supra*, Hansen discloses that a user can perform an input stroke (“***multi-step user gesture***”) including two steps. EX1029, 4:34-47; EX1002, ¶208. In the Hansen-Gillespie combination, with the first step, a user uses a finger (“***object***”) to touch screen 35 at the Gillespie-type graphical icon added to the Hansen interface, which is coextensive with the entire 2cm strip described by Hansen (“***the object touching the otherwise-activatable graphic***”). EX1029, 4:34-47. In the second step, the user moves the finger towards the middle of screen 35 along the direction of arrow 45 such that the finger “***glid[es] on the display screen way from and out of the strip***” as discussed above for limitation [1.d], *supra*. EX1029, 4:34-67.

F. Grounds 2B, 2C, and 2D: Claims 4-6 are rendered obvious by Hansen and Gillespie in view of Allard-656, Tanaka, or Kodama

Hansen does not specifically describe nor limit examples of computer programs represented by icons 50. However, a POSA would have understood that computer programs contemplated by Hansen’s disclosure were well-known and conventional as of the Critical Date. EX1002, ¶¶102-113. Allard-656 (EX1009),

Tanaka (EX1010), or Kodama (EX1016), for example, each describe provision of icons associated with various functions (e.g., Calendar, Address Book, To Do, Time functions) that are activated by a user's tap on the touch sensitive display of a computing device. *See* EX1009, FIGS. 4A, 4B; EX1010, FIG. 5; EX 1016, FIG. 4. As a result these icons and their associated functions would have been understood by a POSA to be analogous to the icons 50 and associated computer programs described in Hansen. EX1002, ¶111. This understanding finds support in the respective disclosures of Hansen, Allard-656, Tanaka, and Kodama, which each describe nearly identical methods of providing access to functionalities and capabilities of their respective computing devices. *Id.*

Given these similarities in Hansen, Allard-656, Tanaka, and Kodama, a POSA would have found it obvious to combine each of Allard-656, Tanaka, and Kodama with the Hansen-Gillespie combination so that, in the resulting combinations, the list of icons 50 in the Hansen-Gillespie interface would have been configured to include one or more of the icon buttons taught in each of Allard-656, Tanaka, and Kodama. EX1002, ¶112. This configuration would have enabled the Hansen-Gillespie interface to provide access to one or more of the various useful features described in each of Allard-656, Tanaka, and Kodama through the working windows described in Hansen. EX1029, 5:14-25; EX1031, 10, 24, 25, 36.

Indeed, these combinations with each of Allard-656, Tanaka, and Kodama find similar support and motivation as the combinations described above with respect to the Hisatmoi-Ren combination. *See* Sections VI.B-D, *supra*. Following is a table briefly highlighting the relevant disclosure from each of Allard-656, Tanaka, and Kodama that a POSA would have found obvious to combine with Hansen and Gillespie for the reasons noted above. *See* EX1002, ¶¶113.

Claim	Relevant Disclosure
4	Allard-656, which discloses user interface features of the well-known IBM Simon, discloses a “Help” function button on a touch screen “located in a predetermined position” on the screen. EX1009, 6:48-49. When the HELP button is selected it performs the function of displaying a Help screen to aid the user in navigating the user interface. EX1009, 5:51-55; <i>see also id.</i> , FIGS. 4A, 4B, 6:12-38. In combination, a POSA would have found it obvious that one of Hansen’s icons 50 would be a HELP button that, when selected by the user, would displaying a Help screen to aid the user in navigating the user interface. EX1002, ¶¶209-13.
5	Tanaka discloses selecting and opening a “Toolbox” window that “contains various icons” including a “World Clock” icon. EX1010, 4:13-21, FIG. 5. A POSA would have been motivated to include a

	<p>clock function, such as that disclosed in Tanaka, in Hansen’s icons 50 at least because the ability to identify the current time as well as the passage of time without viewing a separate device was desirable in computing devices like that taught in Hansen. EX1002, ¶¶214-18.</p>
6	<p>Kodama discloses a portable device, such as a tablet operated with a pen, that displays a plurality of icons, called “stamps.” EX1016, 1:8-23. Kodama teaches display of a “list of stamps,” including “an alarm stamp 101” (EX1016, 8:21-28), and discloses when “the alarm stamp 101 is selected” from the list of stamps, “[t]his causes an alarm setting box 90 shown in FIG. 6B to be displayed on the screen.” EX1016, 8:54-56; EX1016, 9:1-4. A POSA would have been motivated to include an alarm function, such as that disclosed in Kodama, in Hansen’s icons 50 at least because the ability to notify a user of a specific event by date and time is beneficial in computing devices like that taught in Hansen. EX1002, ¶¶219-24.</p>

V. INSTITUTION SHOULD NOT BE DENIED UNDER 35 U.S.C. § 325(d)

Under 35 U.S.C. § 325(d), the Board uses a two-part framework to evaluate the six *Becton* factors in determining whether to exercise its discretion to institute.

Advanced Bionics, IPR2019-01469, Paper 6, 8-10 (PTAB Feb. 13, 2020)

(precedential) (citing *Becton*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017)

(precedential)). As discussed below, the *Becton* factors favor institution.

A. Petitioner’s Grounds and Obviousness Rationales Were Not Previously Considered by The Office

Becton factors (a), (b), (d) support institution because the Grounds set forth herein do not present the same or substantially the same prior art combinations or arguments that were previously before the Office. Neither Hisatomi nor Ren were cited by the Applicant or Examiner during original prosecution. *See, e.g.*, EX1001, 1-3 (listing references cited). Nor are these references cumulative of any of the references considered by the Examiner. Indeed, as was described in greater detail in Section IV, *supra*, Hisatomi explicitly discloses the claimed “strip”—the limitation that led to allowance. EX1002, 78-79. Therefore, the first part of the *Advanced Bionics* framework favors institution of Grounds 1A-1D.

Though Hansen was substantively addressed by the examiner in combination with Hirayama (EX1011) and Brisebois (EX1033), the secondary reference combined with Hansen in this Petition—Gillespie (EX1030)⁸—was not applied in

⁸ Gillespie was one of twelve references cited in the non-final Office Action of May 11, 2012 and one of sixteen references cited in the final Office Action of

any rejections. *See* EX1003, 87-97, 172-181, 248-256, 341-349, 432-449.

The Hansen combinations of Grounds 2A-2D are also materially different from those advanced during examination since they involve combining distinct, non-cumulative prior art teachings with Hansen. The examiner acknowledged Hansen disclosed the claimed “multi-step user gesture,” but noted Hansen did not “distinctly point out a multi-step user gesture at an otherwise activatable graphic.” EX1003, 90-91. Instead, the Examiner turned to Hirayama for this feature. *Id.*, 90-92 (12/4/2013 Office Action), *see also id.*, 175-77 (7/29/2013 Office Action). Specifically, the examiner sought to incorporate Hirayama’s icon 41 into Hansen to satisfy the “otherwise-activatable graphic” feature. *Id.*; *see also* EX1011, 4:61-5:13, Fig. 3A.

In contrast, the Hansen-Gillespie combination advanced herein applies *a new and distinct* prior art teaching—Gillespie’s visual conventions—to satisfy the same “otherwise-activatable graphic” feature. As discussed above (Section III.B.2, *supra*), Gillespie describes using visual conventions to “indicate control regions that respond specifically to finger motions and/or finger taps” and a POSA would have found it obvious to incorporate Gillespie’s visual conventions into Hansen’s

September 27, 2012, but was never applied as part of a rejection in any office action. EX1003, 350, 450.

interface to visually indicate the entire predetermined area of Hansen's interface within which a user can initiate an input stroke, affording a user a visual indication of Hansen's two-step input stroke. EX1029, ¶¶0056]; EX1002, ¶¶106-10; *see* Section III.B.2, *supra*.

This Petition proposes combining Gillespie with Hansen to use dashed lines, coloring, or other graphical "affordance" to visually identify the boundaries of a control region (e.g., the predetermined area of Hansen's interface), which results in an otherwise activatable graphic that is coextensive with Hansen's predetermined area, visually identifying and distinguishing the "strip" disclosed by Hansen (i.e., the predetermined area). Thus, the combinations of Grounds 2A-2D introduce a distinct type of graphic from the limited icon the Examiner relied upon to modify Hansen's otherwise indistinguishable predetermined area.

Indeed, even the rationales for the combinations are distinct. The Examiner's rationale for the Hansen-Hirayama combination was to prevent "unintentional movement or touching" since a touch input on Hirayama's icon could initiate an input stroke (*see* EX1003, 91-92), whereas the rationale for the Hansen-Gillespie combination is to indicate an entire area of the screen within which the input stroke could be initiated (*see* EX1002, ¶¶106-09). Thus, the Hansen-Gillespie combination is not cumulative of the Hansen-Hirayama combination evaluated during examination.

B. The Office Erred in Granting the '993 Patent

The Board need not reach part 2 of the *Advanced Bionics* framework because part 1 is not satisfied. However, even if the Board evaluates part 2, *Becton* factors (c), (e), and (f) support institution.

As to *Becton* factor (c), since Gillespie was not included in a ground of rejection advanced by the examiner, the examiner did not specifically evaluate the prior art teachings advanced herein for at least the “otherwise-activatable graphic” and “object gliding on the display screen away from and out of the strip” limitations. No references similar to Gillespie were applied by the Examiner or discussed by Patent Owner, much less included in a combination similar to the Hansen-Gillespie set forth herein. *Id.*, 89-92; *see Navistar, Inc. v. Fatigue Fracture Tech., LLC*, IPR2018-00853, Paper 13 at 17 (PTAB Sept. 12, 2018) (“Under [*Becton* factors] (c), (d), and (f) . . . the fact that [references] were of record, but not applied in any rejection by the Examiner . . . provides little impetus for us to exercise our discretion to deny institution under [35 U.S.C.]§ 325(d).”).

Becton factor (e) also favors institution since the examiner erred in evaluating the prior art for the recited limitation of “a strip along at least one edge of the display screen.” The examiner relied on Brisebois for this feature since the examiner incorrectly indicated neither Hansen nor Hirayama disclosed it. EX1003, 92. To distinguish Brisebois, the Patent Owner amended the claims to recite the

“multi-step user gesture” comprises “the object gliding on the display screen away from and out of the strip.” EX1003, 78-79.

However, the Examiner’s evaluation of Hansen appears to rest upon an incorrect assumption Hansen did not disclose the claimed “strip.” EX1003, 92 (“Hansen-Hirayama fails to teach a touch sensitive strip along at least one edge of the display screen”). This error is apparent from the Examiner’s unnecessary subsequent reliance on Brisebois’ “flexible strip 200,” which is described as “an elastomer strip of material” that is “composed of any resilient material” and “extends around at least one side of display 110.” *See* EX1003, 92; *see also* EX1033, ¶[0038].

Indeed, as described with respect to limitation [1.c] in Section IV.E.1, *supra*, the term “strip” never appears in the specification, nor did Patent Owner argue it was limited to a “strip of material” like Brisebois’ “flexible strip.”

As explained in Section IV.E.1, *supra*, a POSA would have understood Hansen’s “predetermined area” to be the claimed “strip,” since Hansen describes that the predetermined area is coextensive with a left-hand edge of display 35 and permits a user to initiate an input stroke *inside* the predetermined area and terminate the input stroke *outside* the predetermined area (i.e., “away from and out of the strip”). *See* Section IV.E, *supra*.

Given that the examiner overlooked Hansen’s disclosure of the claimed

“strip,” *Becton* factor (f) supports institution. The additional evidence and facts presented in this Petition warrant reconsideration of Hansen.

VI. PTAB DISCRETION UNDER § 314(a) SHOULD NOT PRECLUDE INSTITUTION

The *Apple Inc. v. Fintiv, Inc.* factors weigh against discretionary denial. IPR2020-00019, Paper 11, 5-6 (Mar. 20, 2020) (precedential). Recent Board decisions applying these factors confirm discretionary denial is not warranted here. *Apple Inc. v. Maxell, Ltd.*, IPR2020-00204, Paper 11, 11-20 (Jun. 19, 2020); *Sand Revolution II, LLC v. Cont’l Intermodal Group-Trucking LLC*, IPR2019-01393, Paper 24, 6-14 (Jun. 16, 2020); *Apple Inc. v. Seven Networks, LLC*, IPR2020-00156, Paper 10, 5-22 (Jun. 15, 2020).

A. Factor 1: Institution Will Enable a Stay

If this petition is instituted, a stay would be appropriate. *Crossroads Sys. v. DOT Hill Sys. Corp.*, 2015 U.S. Dist. LEXIS 77526 (W.D. Tex. June 16, 2015) (granting stay). Regardless, the Board has indicated it “will not attempt to predict how the district court in the related district court litigation will proceed because the court may determine whether or not to stay any individual case, including the related one, based on a variety of circumstances and facts beyond [its] control and to which the Board is not privy.” *Sand Revolution*, IPR2019-01393, Paper 24, 7 (June 16, 2020) (Informative); see *Intel Corp. v. VLSI Tech. LLC*, IPR2020-00158, Paper 16, *7 (May 20, 2020).

Overall, this factor does not support discretionary denial.

B. Factor 2: Uncertain District Court Schedule

The court has not yet set a trial date. Whenever it is set, the initial trial date should not support discretionary denial.

In the *Sand Revolution*, the Board found that a trial date five months before the FWD was “in relatively close proximity to the expected final decision” and insufficient to deny institution. *See Sand Revolution*, IPR2019-01393, Paper 24, 8-9. Here, the estimated trial date (neither the parties nor the court have confirmed) is April, 2022, which is approximately one month prior to the expected FWD. Trial will therefore not be sufficiently close, based on the guidance offered by *Sand Revolution*, to justify institution denial.

Even if trial were scheduled more than five months before May, 2022, which it is not, *Sand Revolution* questioned anchoring denial of institution on such an inherently unreliable schedule. *Id.*, 8-9 (“it is unclear that the court in the related district court litigation will adhere to any currently scheduled jury trial date or, if it is changed, when such a trial will be held.”). Indeed, across districts, over 40% of cases have their initial trial dates continued by more than 120 days; W.D. Tex. is not immune to the same. EX1034 (including data from two W.D. Tex. cases: 5-08-cv-00102 and 5-09-cv-00476).

In contrast, despite the pandemic, the Board has never wavered from the one-year statutory deadline for final decisions prescribed by 35 U.S.C. § 316(a)(11). *Sand Revolution*, IPR2019-01393, Paper 24, 9.

Overall, this factor does not support discretionary denial. *See id.*, 8-10.

C. Factor 3: Early Stage of Parallel Proceedings

By any objective standard, Petitioners filed this petition at a considerably early stage of the litigation and “this fact has weighed against exercising the authority to deny institution under *NHK*.” *Seven Networks*, IPR2020-00156, Paper 10, 11-12 (June 15, 2020). To this point, Petitioners filed this petition within just two weeks of Neonode serving infringement contentions, and prior to either party submitting proposed claim constructions or briefs. EX1035, 7-8; EX1037; EX1036, 7-8; EX1038; IPR2020-00019, Paper 11, 11–12 & n.22 (“it 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”). Moreover, no substantive orders have been issued by the court in the underlying litigation. And, although the court’s *Markman* hearing currently is scheduled for April 8, 2021, it is not clear when the court will issue a *Markman* order. EX1035; EX1036.

It is entirely appropriate that Petitioners file their petition only after receiving infringement contentions, as here. *Amazon.com, Inc. v. Customplay, LLC*, IPR2018-01498, Paper 13, 8-9 (finding that waiting “to better understand the

asserted claims, the bases for the infringement allegations ... and to identify relevant prior art” should not weigh in favor of discretionary denial); 157 Cong. Rec. S5429 (Sept. 8, 2011) (Sen. Kyl) (“High-technology companies ... are often sued by defendants asserting multiple patents with large numbers of vague claims [I]t is important that the section 315(b) deadline afford defendants a reasonable opportunity to identify and understand the patent claims that are relevant to the litigation”).

Moreover, this petition was filed well before the one-year statutory bar date, and less than five months after service of the complaints. *Mylan Pharma. Inc. v. Sanofi-Aventis Deutschland GMBH*, IPR2018-01680, Paper 22, 18 (PTAB Apr. 3, 2019) (finding that petition filed two months before bar date is “well within the timeframe allowed by statute, weighing heavily in [petitioner’s] favor”).

Overall, this factor weighs against discretionary denial.

D. Factor 4: The Petition Raises Unique Issues

The Texas cases are still in their infancy, with initial invalidity contentions not due until December, 2020. EX1035, 2; EX1037; EX1036, 2; EX1038. It is, thus, too early to evaluate overlap of issues between the Texas cases and any IPR resulting from this petition. Yet, in order to eliminate any doubt as to the absence of meaningful overlap between the proceedings, Petitioners have stipulated that, if the Board institutes this petition, Petitioners will not pursue those same instituted

grounds or grounds sharing the same primary reference in the district court proceeding. EX1041; EX1042. Because this is a joint IPR in which Petitioners are the only defendants in the district court matter, no opportunity will exist for the court to address the grounds advanced by this petition or grounds sharing the same primary references. Petitioners' stipulation weighs against discretionary denial. *See Sand Revolution*, IPR2019-01393, Paper 24, 11-12.

Additionally, the Petition challenges the validity of claim 4, which is not being asserted in the Texas cases, and challenges the validity of claims 2, 5, and 6, which are not asserted against Samsung. The district court also requires "significant[] narrowing [of] the number of claims asserted" for trial. EX1035, 9; EX1036, 9. As a result, the number of claims adjudicated at the district court will be significantly less than the number of claims addressed in this petition. With the rapid development of technology, there remains a significant likelihood of these unaddressed claims being reasserted, counseling against discretionary denial. *Seven Networks*, IPR2020-00156, Paper 10, 17.

Overall, the lack of overlap between issues in an instituted IPR and the related district court litigation weighs strongly against discretionary denial.

E. Factor 5: The Petition Will Enable Cancellation of Claims That Might Be Reasserted

Petitioners' petition is potentially helpful to future defendants. Petitioners' status as both Petitioners and defendant therefore is, at worst, a neutral factor.

Institution would serve overall efficiency, enabling the Board to determine invalidity of claims Patent Owner might otherwise later assert against others.

F. Factor 6: Other Considerations Support Institution

Petitioners have not previously challenged this patent. Indeed, this patent has never been challenged in a PTAB post-issuance proceeding. Moreover, as described above in Section V, *supra*, the Board has not previously considered the grounds set forth in this petition or substantively similar grounds.

Finally, the strength of Petitioner's patentability challenges on the preliminary record favor institution. *Seven Networks*, IPR2020-00156, Paper 10, 20-21. For these reasons, this factor also weighs against discretionary denial.

In summary, the *Fintiv* factors weigh against discretionary denial.

VII. CONCLUSION

Petitioners request cancellation of all Challenged Claims.

VIII. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(a)(1)

A. Real Party-In-Interest Under 37 C.F.R. § 42.8(b)(1)

Petitioners, Apple and Samsung, are the real parties-in-interest.

B. Related Matters Under 37 C.F.R. § 42.8(b)(2)

Petitioners are not aware of any disclaimers, reexamination certificates or petitions for *inter partes* review for the '993 patent. The '993 patent is the subject of an ongoing litigation in *Neonode Smartphone LLC v. Apple Inc.*, 6:20-cv-00505 (W.D.Tex.) and *Neonode Smartphone LLC v. Samsung Electronics Co. Ltd. and*

Samsung Electronics America, Inc., 6:20-cv-00507 (W.D.Tex.).

C. Lead And Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

Petitioners provide the following designation of counsel.

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D. Service Information

Please address all correspondence and service to the address listed above.

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Respectfully submitted,

Dated: November 6, 2020

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CERTIFICATION UNDER 37 CFR § 42.24

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petition for *Inter Partes* Review totals 13,800 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Dated: November 6, 2020

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4)(i) et seq. and 42.105(b), the undersigned certifies that on November 6, 2020, a complete and entire copy of this Petition for Inter Partes Review and all supporting exhibits were provided, via Express Mail, to the Patent Owner by serving the correspondence address of record as follows:

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The undersigned also certifies service pursuant to 37 C.F.R. §§ 42.6(e) and 42.105(b) on Patent Owner's lead litigation counsel by electronic copy of this Petition for *Inter Partes* Review and supporting material at the following address:

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