

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Michael S. Smith
U.S. Patent No.: 10,649,578 Attorney Docket No. 50095-0164IP1
Issue Date: May 12, 2020
Appl. Serial No.: 16/559,606
Filing Date: September 3, 2019
Title: GESTURE-EQUIPPED TOUCH SCREEN SYSTEM, METHOD,
AND COMPUTER PROGRAM PRODUCT

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**PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES PATENT
NO. 10,649,578 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42**

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LIST OF EXHIBITS

APPLE-1001	U.S. Patent No. 10,649,578
APPLE-1002	U.S. Patent No. 10,649,578 File History
APPLE-1003	Declaration of Dr. Loren Terveen
APPLE-1004	U.S. Pat. Apl Pub. No. 2010/0095240 (“Shiplacoff”)
APPLE-1005	U.S. Pat. No. 9,658,766 (“Nan”)
APPLE-1006	First Complaint, <i>Smith Interface Technologies, LLC v. Apple Inc.</i> , 3-23-cv-01187, S.D. Cal. (June 27, 2023)
APPLE-1007	Exhibit A2 of Infringement Contentions, <i>Smith Interface Technologies, LLC v. Apple Inc.</i> , 3-23-cv-01187, S.D. Cal. (June 5, 2024)
APPLE-1008	U.S. Pat. No. 9,311,112 (“Shaffer”)
APPLE-1009	U.S. Pat. No. 8,547,244 (“Duarte”)
APPLE-1010	U.S. Pat. No. 8,375,336 (“Matthews”)
APPLE-1011	U.S. Pat. App. Pub. No 2010/0185989 (“Shiplacoff ’989”)
APPLE-1012	U.S. Pat. No. 9,716,874 (“Jacobs”)
APPLE-1013-1019	RESERVED
APPLE1020	United States District Courts — National Judicial Caseload Profile (Dec. 31, 2023) United States Courts (uscourts.gov), https://www.uscourts.gov/sites/default/files/fcms_na_distprofile1231.2023_0.pdf (last visited June 25, 2024)
APPLE1021	Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (USPTO June 21, 2022) (“Guidance”)

APPLE1022 Case Management Order, *Smith Interface Technologies, LLC v. Apple Inc.*, 3-23-cv-01187, S.D. Cal. (June 20, 2024)

LISTING OF CHALLENGED CLAIMS

Claim 1	
[1pre]	An electronic device, comprising:
[1a]	a display;
[1b]	a touch interface;
[1c]	one or more processors;
[1d]	memory; and
[1e]	one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors, the one or more programs including instructions for:
[1f]	displaying a home screen on the display, the home screen including an icon associated with an application;
[1g]	while displaying the home screen, detecting a first input by a first contact on the icon;
[1h]	in response to detecting the first input, replacing the home screen with a user interface of the application;

[1i]	while displaying the user interface of the application, detecting a second input by a second contact that includes movement across the display in a direction;
[1j]	in response to detecting the second input and in accordance with a determination that the second input meets one or more criteria that is met when the second input is detected to include a movement parameter that is above a movement threshold, displaying at least a portion of the user interface of the application in a first virtual display layer that appears at a lesser depth as compared to a second virtual display layer, such that the at least portion of the user interface of the application is reduced in size and is further displayed in its entirety when displayed in the first virtual display layer; and
[1k]	in response to detecting the second input and in accordance with a determination that the second input does not meet the one or more criteria that is met when the second input is detected to include the movement parameter that is above the movement threshold, replacing the user interface of the application with the home screen including the icon associated with the application.

Claim 2	
[2]	The electronic device of claim 1, wherein the electronic device is configured such that the detecting the second input by the second contact that includes movement across the display in the direction, includes detecting the second input by the second contact that includes movement that starts at an edge of the display.
Claim 3	
[3]	The electronic device of claim 1, wherein the electronic device is configured such that the detecting the second input by the second contact that includes movement across the display in the direction, which includes a vertical direction.
Claim 4	
[4]	The electronic device of claim 1, wherein the electronic device is configured such that the second virtual display layer includes at least a portion of the home screen that is visible.
Claim 8	
[8]	The electronic device of claim 1, wherein the electronic device is configured such that the at least portion of the user interface of the

	application is displayed in the first virtual display layer, as a component of a multitasking interface.
Claim 9	
[9]	The electronic device of claim 1, wherein the electronic device is configured such that the at least portion of the user interface of the application is displayed in the first virtual display layer which is one of a plurality of virtual display layers that appear at lesser depths as compared to the second virtual display layer.
Claim 10	
[10]	The electronic device of claim 1, wherein the electronic device is configured such that the at least portion of the user interface of the application is displayed along with at least parts of other user interfaces of other applications.
Claim 11	
[11]	The electronic device of claim 1, wherein the electronic device is configured such that the at least portion of the user interface of the application is displayed along with at least parts of other user interfaces of other applications that are active.

Claim 12	
[12]	The electronic device of claim 1, wherein the electronic device is configured such that the home screen is displayed in the same manner, when detecting the first input and in response to detecting the second input and in accordance with the determination that the second input does not meet the one or more criteria that is met when the second input is detected to include the movement parameter that is above the movement threshold.
Claim 13	
[13]	The electronic device of claim 1, wherein the electronic device is configured such that the second contact includes at least one of a swipe gesture or a slide gesture.
Claim 14	
[14]	The electronic device of claim 1, wherein the electronic device is configured such that at least one of: the display and the touch interface are components of a touch screen; the determination is performed in response to detecting the second input; the determination is performed after detecting the second input;

	the determination is performed at any time after detecting the second input; the second input is detected to include the movement parameter that is above the movement threshold, when the second input moves a predetermined threshold distance; the second input is detected to include the movement parameter that is above the movement threshold, when the second input moves a predetermined threshold length; the second input is detected to include the movement parameter that is above the movement threshold, when the second input moves a minimum threshold distance; the second input is detected to include the movement parameter that is above the movement threshold, when the second input moves a minimum threshold length; the first virtual display layer appears at the lesser depth as compared to the second virtual display layer by having a smaller z-value; the first virtual display layer appears at the lesser depth as compared to the second virtual display layer by being only partially overlaid on the second virtual display layer;
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	the first virtual display layer appears at the lesser depth as compared to the second virtual display layer by the second virtual display layer being at least partially covered; the at least portion of the user interface of the application includes only the at least portion of the user interface of the application; the at least portion of the user interface of the application includes an entirety of the user interface of the application; the one or more criteria includes a single criterion; the one or more criteria includes a plurality of criteria; the movement parameter includes a distance parameter; the movement threshold includes a distance threshold; the movement parameter includes a length parameter; the movement threshold includes a length threshold; the movement parameter includes a velocity parameter; the movement threshold includes a velocity threshold; the movement parameter includes an acceleration parameter; the movement threshold includes an acceleration threshold; the movement across the display includes movement across the touch interface where the touch interface resides on top of the display;
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	the movement across the display includes movement across the touch interface that resides between the display and the first and second contacts; the movement across the display includes movement across the touch interface; or the movement across the display includes movement across the touch interface that coincides with the display.
Claim 15	
[15pre]	A method, comprising:
[15a]	at an electronic device with a display, a touch interface, memory, and one or more processors:
[15b]	displaying a home screen on the display, the screen including an icon associated with an application;
[15c]	with the home screen displayed, detecting a first input by a first contact on the icon;
[15d]	in response to detecting the first input, replacing the home screen with a user interface of the application;

[15e]	with the user interface of the application displayed, detecting a second input by a second contact that includes movement across the display in a direction;
[15f]	in response to detecting the second input and in accordance with a determination that the second input meets one or more criteria that is met with the second input being detected to include a movement parameter that is above a movement threshold, displaying at least a portion of the user interface of the application in a first virtual display layer that appears at a lesser depth as compared to a second virtual display layer, where the at least portion of the user interface of the application is reduced in size and is further displayed in its entirety in the first virtual display layer; and
[15g]	in response to detecting the second input and in accordance with a determination that the second input does not meet the one or more criteria that is met with the second input being detected to include the movement parameter that is above the movement threshold, replacing the user interface of the application with the home screen including the icon associated with the application.

Claim 16	
[16]	The method of claim 15, wherein the detecting the second input by the second contact that includes movement across the display in the direction, includes detecting the second input by the second contact that includes movement that starts at an edge of the display.
Claim 17	
[17]	The method of claim 15, wherein the detecting the second input by the second contact that includes movement across the display in the direction, includes a vertical direction.
Claim 18	
[18]	The method of claim 15, wherein the second virtual display layer includes at least a portion of the home screen that is visible.
Claim 22	
[22]	The method of claim 15, wherein the at least portion of the user interface of the application is displayed in the first virtual display layer, as a component of a multitasking interface.
Claim 23	
[23]	The method of claim 15, wherein the at least portion of the user interface of the application is displayed in the first virtual display

	layer which is one of a plurality of virtual display layers that appear at lesser depths as compared to the second virtual display layer.
Claim 24	
[24]	The method of claim 15, wherein the at least portion of the user interface of the application is displayed along with at least parts of other user interfaces of other applications.
Claim 25	
[25]	The method of claim 15, wherein the at least portion of the user interface of the application is displayed along with at least parts of other user interfaces of other applications that are active.
Claim 26	
[26]	The method of claim 15, wherein the home screen is displayed in the same manner, when detecting the first input and in response to detecting the second input and in accordance with the determination that the second input does not meet the one or more criteria that is met when the second input is detected to include the movement parameter that is above the movement threshold.

Claim 27	
[27pre]	A non-transitory computer readable storage medium storing one or more programs, the one or more programs comprising instructions which, when executed by an electronic device with a display and a touch-sensitive surface, cause the electronic device to:
[27a]	display a home screen on the display, the home screen including an icon that corresponds to an application;
[27b]	while displaying the home screen, detect a first input by a first contact on the icon;
[27c]	in response to detecting the first input on the icon, replace the home screen with a user interface of the application;
[27d]	while displaying the user interface, detect a second input by a second contact that includes movement across the display in a direction;
[27e]	in response to detecting the second input and in accordance with a determination that the second input meets a first one or more criteria that is met when the second input is detected to include a movement parameter that is above a movement threshold and that the second input that meets a second one or more criteria that is met when the second input is detected to include a duration parameter that is above

	a duration threshold, display at least a portion of the user interface of the application in a first virtual display layer that appears at a lesser depth as compared to a second virtual display layer, where the at least portion of the user interface of the application is reduced in size and is further displayed in its entirety when displayed in the first virtual display layer; and
[27f]	in response to detecting the second input and in accordance with a determination that the second input meets the first one or more criteria that is met when the second input is detected to include the movement parameter that is above the movement threshold and that the second input does not meet the second one or more criteria that is met when the second input is detected to include the duration parameter that is above the duration threshold, replace the user interface of the application with the home screen including the icon that corresponds to the application.
Claim 28	
[28]	The non-transitory computer readable storage medium of claim 27, wherein the one or more programs further comprise instructions which, when executed by the electronic device, cause the electronic

	device to operate such that the detecting the second input by the second contact that includes movement across the display in the direction, includes detecting the second input by the second contact that includes movement that starts at an edge of the display.
Claim 29	
[29]	The non-transitory computer readable storage medium of claim 27, wherein the one or more programs further comprise instructions which, when executed by the electronic device, cause the electronic device to operate such that the detecting the second input by the second contact that includes movement across the display in the direction, includes a vertical direction.
Claim 30	
[30]	The non-transitory computer readable storage medium of claim 27, wherein the one or more programs further comprise instructions which, when executed by the electronic device, cause the electronic device to operate such that the second virtual display layer includes at least a portion of the home screen that is visible.

Claim 34	
[34]	The non-transitory computer readable storage medium of claim 27, wherein the one or more programs further comprise instructions which, when executed by the electronic device, cause the electronic device to operate such that the at least portion of the user interface of the application is displayed in the first virtual display layer, as a component of a multitasking interface.
Claim 35	
[35]	The non-transitory computer readable storage medium of claim 27, wherein the one or more programs further comprise instructions which, when executed by the electronic device, cause the electronic device to operate such that the at least portion of the user interface of the application is displayed in the first virtual display layer which is one of a plurality of virtual display layers that appear at lesser depths as compared to the second virtual display layer.
Claim 36	
[36]	The non-transitory computer readable storage medium of claim 27, wherein the one or more programs further comprise instructions which, when executed by the electronic device, cause the electronic

	device to operate such that the at least portion of the user interface of the application is displayed along with at least parts of other user interfaces of other applications.
Claim 37	
[37]	The non-transitory computer readable storage medium of claim 27, wherein the one or more programs further comprise instructions which, when executed by the electronic device, cause the electronic device to operate such that the at least portion of the user interface of the application is displayed along with at least parts of other user interfaces of other applications that are active.
Claim 38	
[38]	The non-transitory computer readable storage medium of claim 27, wherein the one or more programs further comprise instructions which, when executed by the electronic device, cause the electronic device to operate such that the home screen is displayed in the same manner, when detecting the first input and in response to detecting the second input and in accordance with the determination that the second input meets the first one or more criteria that is met when the second input is detected to include the movement parameter that is above the

	movement threshold and that the second input does not meet the second one or more criteria that is met when the second input is detected to include the duration parameter that is above the duration threshold.
Claim 39	
[39]	The non-transitory computer readable storage medium of claim 27, wherein the one or more programs further comprise instructions which, when executed by the electronic device, cause the electronic device to operate such that at least one of: the display and the touch-sensitive surface are components of a touch screen; the determination is performed in response to detecting the second input; the determination is performed after detecting the second input; the determination is performed at any time after detecting the second input; the second input is detected to include the movement parameter that is above the movement threshold, when the second input moves a predetermined threshold distance;

	the second input is detected to include the movement parameter that is above the movement threshold, when the second input moves a predetermined threshold length; the second input is detected to include the movement parameter that is above the movement threshold, when the second input moves a minimum threshold distance; the second input is detected to include the movement parameter that is above the movement threshold, when the second input moves a minimum threshold length; the first virtual display layer appears at the lesser depth as compared to the second virtual display layer by having a smaller z-value; the first virtual display layer appears at the lesser depth as compared to the second virtual display layer by being only partially overlaid on the second virtual display layer; the first virtual display layer appears at the lesser depth as compared to the second virtual display layer by the second virtual display layer being at least partially covered; the at least portion of the user interface of the application includes only the at least portion of the user interface of the application;
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	the at least portion of the user interface of the application includes an entirety of the user interface of the application; the reduction in size results from a scaling operation; the first one or more criteria includes a single criterion; the first one or more criteria includes a plurality of criteria; the second one or more criteria includes a single criterion; the second one or more criteria includes a plurality of criteria; the movement threshold prevents inadvertent display of the at least portion of the user interface of the application in the first virtual display layer; the movement threshold prevents the display of the at least portion of the user interface of the application in the first virtual display layer, in response to inadvertent user input; the movement parameter includes a distance parameter; the movement threshold includes a distance threshold; the movement parameter includes a length parameter; the movement threshold includes a length threshold; the movement parameter includes a velocity parameter; the movement threshold includes a velocity threshold;
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	the movement parameter includes an acceleration parameter; the movement threshold includes an acceleration threshold; the movement across the display includes movement across the touch-sensitive surface where the touch-sensitive surface resides on top of the display; the movement across the display includes movement across the touch-sensitive surface that resides between the display and the first and second contacts; the movement across the display includes movement across the touch-sensitive surface; or the movement across the display includes movement across the touch-sensitive surface that coincides with the display.
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Apple Inc. (“**Petitioner**” or “**Apple**”) petitions for *Inter Partes* Review (“**IPR**”) of claims 1-4, 8-18, 22-30, and 34-39 (the “**Challenged Claims**”) of U.S. Patent 10,649,578 (“**the ’578 Patent**”). Apple submits that this Petition demonstrates a reasonable likelihood of prevailing with respect to at least one Challenged Claim, and respectfully requests institution of IPR and cancellation of all Challenged Claims as unpatentable.

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

A. Standing

Apple certifies that the ’578 Patent is available for IPR. APPLE-1006. Apple is not barred or estopped from requesting this review challenging the Challenged Claims on the below-identified grounds.

B. Challenge and Relief Requested

Apple requests IPR of the Challenged Claims on the grounds¹ set forth in the table shown below. Additional explanations and support for each ground are set forth in the Declaration of Dr. Terveen. (APPLE-1003), referenced throughout this

¹ Because indefiniteness issues cannot be raised in an IPR proceeding, Petitioner addresses claim terms in this Petition as best understood in light of Patent Owner’s infringement allegations, and reserves the right to assert that certain claim terms are indefinite in the parallel District Court proceeding.

Petition. APPLE-1003, ¶¶[1]-[92].

Ground	Claims	Basis for Rejection (35 U.S.C. § 103)
1	1-4, 8-18, 22-30, and 34-39	Shiplacoff
2	1-4, 8-18, 22-30, and 34-39	Shiplacoff in view of Nan

The '578 Patent claims priority to a number of earlier parent applications and provisional applications, the earliest of which was filed on August 5, 2011. While Petitioner does not take a position as to whether the '578 Patent is entitled to a priority date of August 5, 2011, for the purposes of this Petition only, Petitioner has used August 5, 2011 as the earliest possible priority date (“**Critical Date**”) of the Challenged Claims. Each of the prior art references applied in the Grounds listed above qualifies as prior art to the '578 Patent on at least the bases shown below:

Reference	Filed	Published	Prior Art Basis
Shiplacoff	04/01/2009	04/15/2010	§§102(a), (b), (e)
Nan	05/27/2011	05/23/2017	§102(e)

II. SUMMARY OF THE '578 PATENT

A. Brief Description

The '578 Patent describes “an electronic device with a display and a touch-sensitive surface.” APPLE-1001, Abstract, 1:37-56. The electronic device can detect an input on a first icon displayed on a screen having a touch-screen surface,

determine whether that input meets an application-launch criteria, and in response to determining that the input does indeed meet indicated criteria, launch an application that corresponds to the first icon. APPLE-1001, 1:37-56. Then, if and after a second input involving a movement across the display is detected while the first user interface is being displayed, an operation corresponding to the detected second input is performed. APPLE-1001, 1:37-56; APPLE-1003, ¶[21].

B. Summary of the Prosecution History

The '578 patent was issued from US patent application no. 16/559,606 (the “**606 application**”), which was filed as a Track 1 application. APPLE-1002, 2-5. After one office action and by virtue of Examiner amendment, the '606 application was allowed by an Examiner who indicated that the prior art did not disclose feature [1j] (“in response to detecting the second input and in accordance with a determination that the second input meets one or more criteria that is met when the second input is detected to include a movement parameter that is above a movement threshold, displaying at least a portion of the user interface of the application in a first virtual display layer that appears at a lesser depth as compared to a second virtual display layer, such that the at least portion of the user interface of the application is reduced in size and is further displayed in its entirety when displayed in the first virtual display layer”). APPLE-1002, 760-778.

As explained below, the Examiner was wrong. The implicated feature ([1j]),

independent claim 1 generally, and at least the dependent claims challenged by this petition are rendered obvious by Shiplacoff, alone or in combination with Nan.

C. Level of Ordinary Skill in the Art

The range of qualifications for a Person of Ordinary Skill in the Art at the time of the Critical Date (“**POSITA**”) would have included a bachelor’s degree in computer science, computer engineering, electrical engineering, human-computer interaction, or a comparable field and at least two years of professional experience in the design and development of graphical user interfaces (GUIs), human-computer interfaces, or equivalents thereof. APPLE-1003, ¶¶[22]-[24], [11]. Additional years of experience could substitute for an advanced-level degree (and *vice versa*). *Id.*

III. CLAIM CONSTRUCTION UNDER 37 C.F.R. §§ 42.104(b)(3)

All claim terms should be construed according to the *Phillips* standard. *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005); 37 C.F.R. §42.100. Apple submits that no claim terms need be construed to resolve issues of controversy in the present Petition. *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011).

IV. THE CHALLENGED CLAIMS ARE UNPATENTABLE

A. Ground 1: Claims 1-4, 8-18, 22-30, and 34-39 are obvious over Shiplacoff

1. Overview of Shiplacoff²

Shiplacoff discloses an electronic device 100 with a screen 101 that can display various icons 104, 106. APPLE-1004, ¶[63], FIG. 1 (reproduced below).

“[S]creen 101 is touch-sensitive, so that a user can activate an application or function by touching a displayed icon 104, 106.” APPLE-1004, ¶[64]. For example, by selecting the calendar icon 106, a card corresponding to a calendar application can be displayed in full screen, as shown in FIG. 2. APPLE-1004, ¶¶[77]-[78]; APPLE-1003, ¶[25].

² General descriptions provided for this and other references and combinations thereof are incorporated into each subsection and mapping of the claims that includes citations to these references.

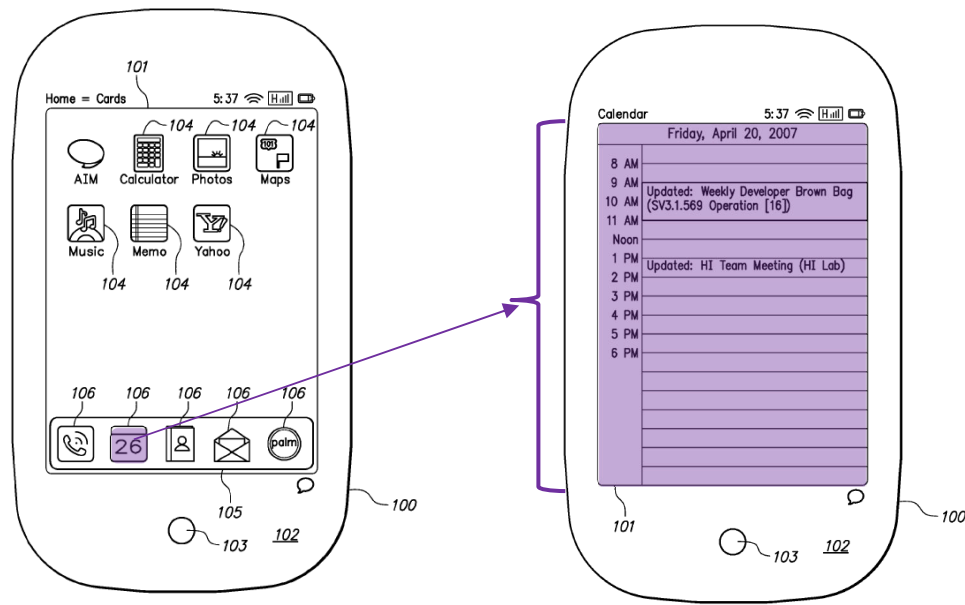


FIG. 1

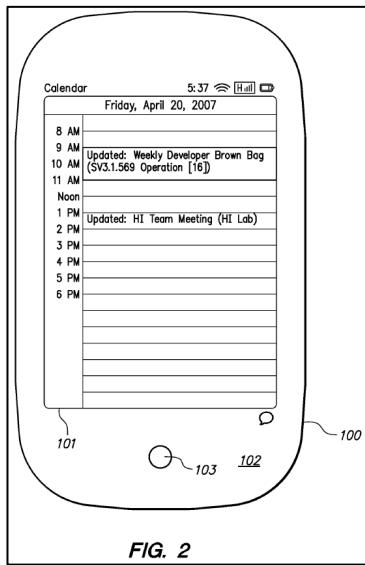
FIG. 2

APPLE-1004, FIGS. 1 (left), 2 (right).

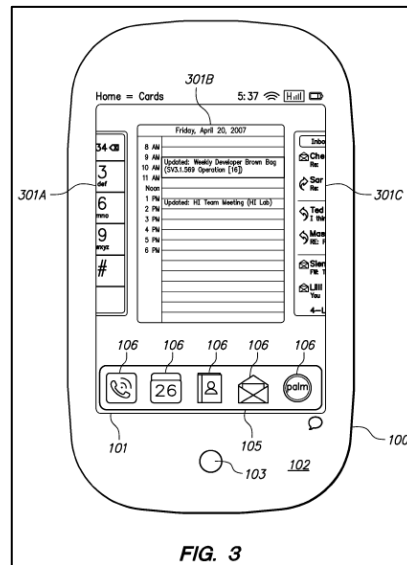
Shiplacoff “provides techniques for displaying and manipulating representations of activities on an electronic device using a card metaphor.”

APPLE-1004, ¶[60]. “Cards” refer to “areas of the screen that can be moved and manipulated by the user.” APPLE-1004, ¶[60]. “Users interact with cards to launch, terminate, and reorder activities, as well as to navigate among activities and perform other operations.” APPLE-1004, ¶[60]; APPLE-1003, ¶[26].

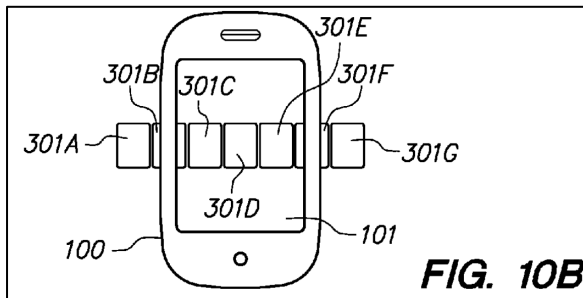
Shiplacoff also implements several display modes through which a user interacts with the device 100 including a full-screen mode, a card mode, a shuffle mode, and a grid mode. APPLE-1004, ¶¶[68]-[73]. Examples of a full-screen mode are shown in FIG. 2, a card mode in FIG. 3, a shuffle mode in FIG. 10B, and a grid mode in FIG. 10G. APPLE-1003, ¶[27].



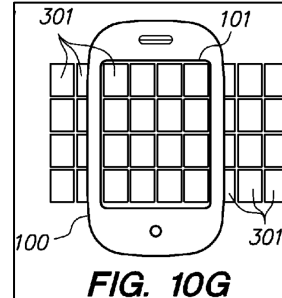
Full screen mode



Card Mode



Shuffle Mode



Grid Mode

APPLE-1004, FIGS. 2 (top left), 3 (top right), 10B (bottom left), 10G (bottom right).

The “full-screen mode is optimized for maximum use of screen space for interacting with a single activity; [and the] card mode is optimized for easily switching focus from one activity to another and for easily initiating and terminating activities.” APPLE-1004, ¶[74]; APPLE-1003, ¶[28].

In one or more of the modes (e.g., the card mode), the device “can receive input from the user ... to switch from one display mode to another, and/or to reposition displayed cards in response to user input specifying a switch to another card.” APPLE-1004, ¶¶[73], [77]. “[T]he user can [also] launch additional activities by returning to the launch screen as shown in FIG. 1.” APPLE-1004, ¶[99]; APPLE-1003, ¶[29].

2. Analysis

(a) Claim 1

[1pre]

[1pre]

To the extent the preamble is limiting, Shiplacoff discloses an “***electronic device***, such as a handheld computer, personal digital assistant (PDA), personal computer, kiosk, cellular telephone,” as well as “devices such as smartphones, [and] handheld computers.” APPLE-1004, ¶¶[61]-[62]. An example of an electronic device is shown below in Shiplacoff’s FIG. 1. APPLE-1004, ¶[63]; APPLE-1003, ¶[41].

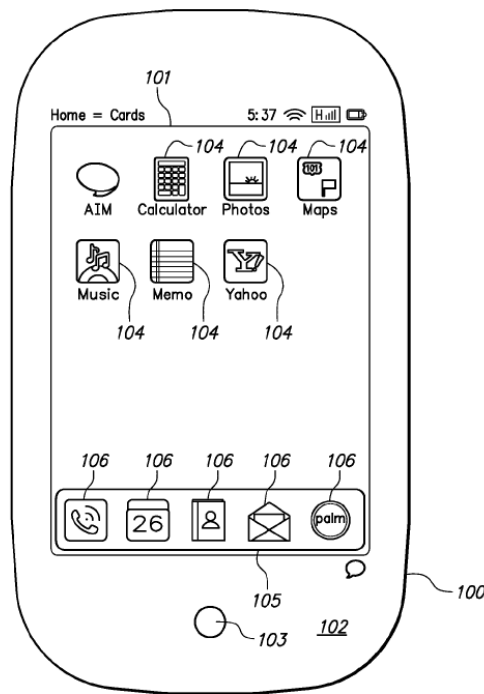


FIG. 1

APPLE-1004, FIG. 1.

[1a]

Shiplacoff's electronic device includes a display screen (“*display*”).

APPLE-1004, ¶[63], FIG. 1; APPLE-1003, ¶[42]. For example, FIG. 1 illustrates “an example of a device 100 including a display screen 101 showing a launcher including several icons 104 representing applications that can be opened by the user, according to one embodiment.” APPLE-1004, ¶[63].

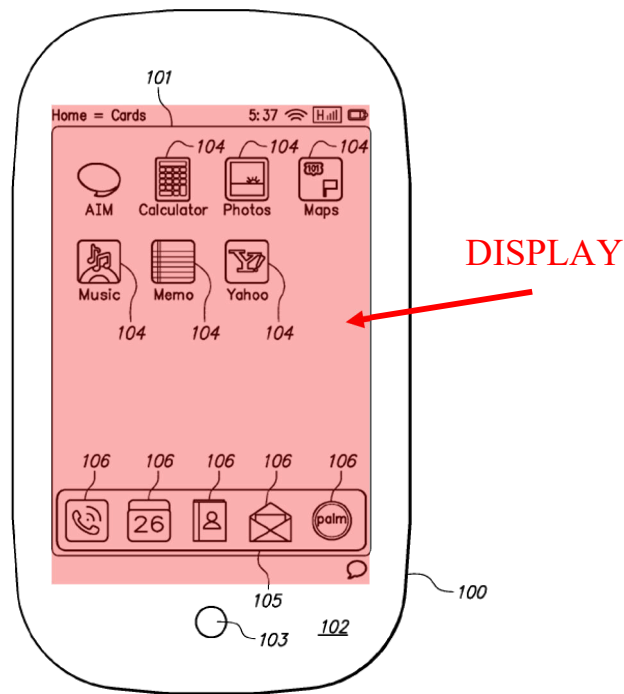


FIG. 1

APPLE-1004, FIG. 1.

[1b]

Shiplacoff teaches that “screen 101 is touch-sensitive, so that a user can activate an application or function by touching a displayed icon 104,106.”

APPLE-1004, ¶[64], FIG. 1 (reproduced below). A POSITA would have understood that a screen 101 that is touch-sensitive includes a touch interface for receiving user input. APPLE-1003, ¶[43].

Shiplacoff also discloses a physical button 103 that “can be used to toggle between full-screen mode and card mode.” APPLE-1004, ¶[67]. Therefore, Shiplacoff discloses or at least suggests a touch interaction with the user to inspire

a toggling between modes. More, it would have been obvious to a POSITA at the critical date to employ a button that is otherwise touch sensitive. APPLE-1003, ¶[44]. Accordingly, Shiplacoff discloses multiple “*touch interface[s]*.”

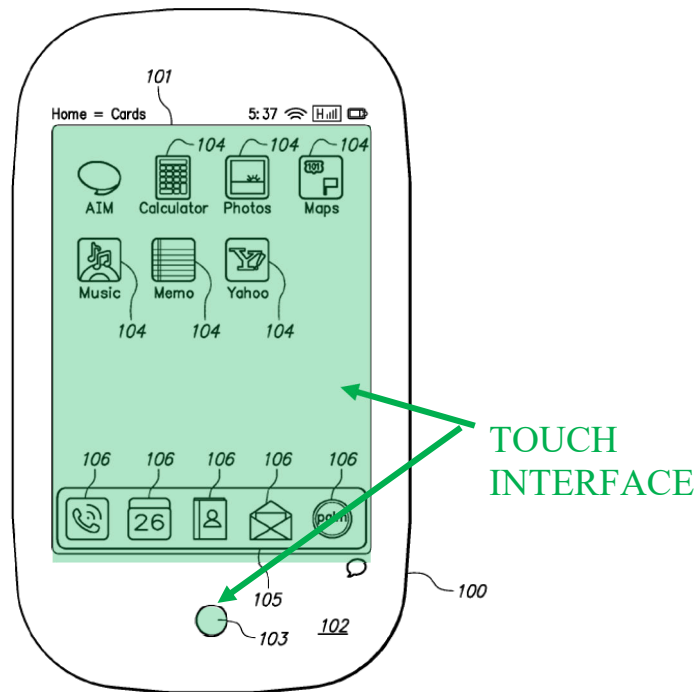


FIG. 1

APPLE-1004, FIG. 1.

[1c], [1d] and [1e]

Shiplacoff discloses “*one or more processors*,” a “*memory*” and “*one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors.*” APPLE-1003, ¶[45]. In particular, Shiplacoff teaches that:

The present invention also relates to an apparatus for performing the

operations herein. This apparatus may be specially constructed for the required purposes, or it may comprise a general-purpose computer selectively activated or reconfigured by a computer program stored in the computer. Such a computer program may be stored in a computer readable storage medium, such as, but is not limited to, any type of disk including floppy disks, optical disks, CD-ROMs, magnetic-optical disks, read-only memories (ROMs), random access memories (RAMs), EPROMs, EEPROMs, magnetic or optical cards, application specific integrated circuits (ASICs), or any type of media suitable for storing electronic instructions, and each coupled to a computer system bus. Further, the computers referred to herein may include a single processor or may be architectures employing multiple processor designs for increased computing capability.³

APPLE-1004, ¶¶[0180]-[0182]; *see also* APPLE-1004, ¶[61]; APPLE-1003, ¶[46].

[1f]

Shiplacoff discloses “*displaying a home screen on the display*,” as shown below in Shiplacoff’s FIG. 1. Shiplacoff’s “display screen 101 show[s] a launcher including several icons 104 representing applications that can be opened by the

³ Underlining added for emphasis.

user.” APPLE-1004, ¶[63]. As one example, Shiplacoff displays a home screen, shown in FIG. 1, that includes a calendar icon associated with a calendar application. Therefore, Shiplacoff also teaches that “*the home screen include[s] an icon associated with an application.*” APPLE-1003, ¶[47].

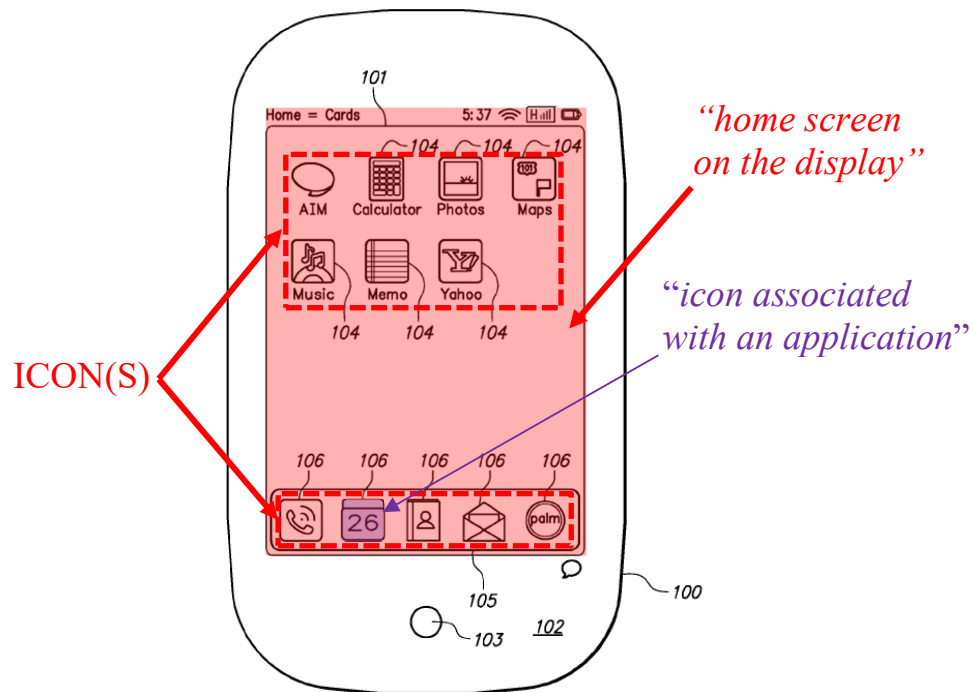


FIG. 1

APPLE-1004, FIG. 1.

[1g]

Shiplacoff discloses that “screen 101 is touch-sensitive, so that a user can activate an application or function by touching a displayed icon 104, 106.”

APPLE-1004, ¶¶[64], [63], [66], FIG. 1. A POSITA would have understood that when a home screen is displayed on screen 101 (“*while displaying the home*

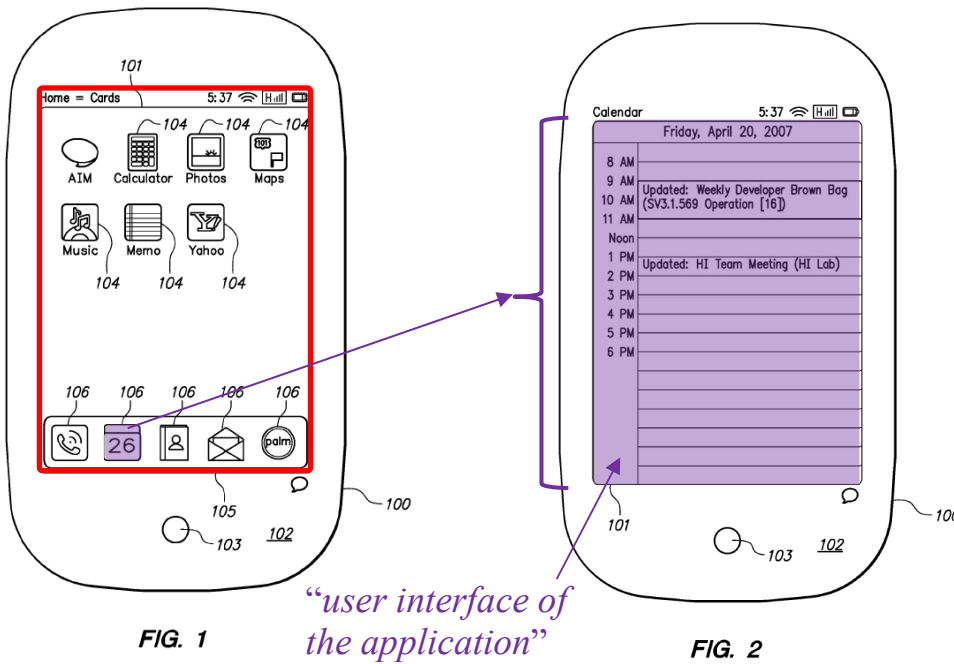
screen) in Shiplacoff, the electronic device detects a user input when the user touches an icon, such as a calendar icon 104 shown in FIG. 1 (“*detecting a first input by a first contact on the icon*”). APPLE-1003, ¶[48].

[1h]

Shiplacoff teaches the use of two or more modes for interacting with the electronic device 100. APPLE-1004, ¶¶[67], [68]. For instance, Shiplacoff describes “a ‘full-screen’ mode, in which a card representing an application or other activity occupies substantially the entire display screen 101.” APPLE-1004, ¶¶[69], [75], FIG. 2. Other modes include a card mode, a shuffle mode, and a grid mode. APPLE-1004, ¶¶[68]-[72]. “Depending on the current display mode, cards 301 are displayed differently.” APPLE-1004, ¶[68]. In Shiplacoff, “cards” refer to “areas of the screen that [relate and represent an application, and that] can be moved and manipulated by the user.” APPLE-1004, ¶¶[60], [69], FIGS. 2-3. “Users interact with cards to launch, terminate, and reorder activities, as well as to navigate among activities and perform other operations.” APPLE-1004, ¶¶[60]-[61]; APPLE-1003, ¶[49].

When Shiplacoff’s electronic device is in a full-screen mode, and an icon on the home screen is selected by a user (“*first input*”), a card representing an application associated with the selected icon occupies the full-screen of the electronic device. APPLE-1004, ¶¶[74]-[76]. For example, when the calendar

icon 106 is selected, the home screen is replaced with a calendar user interface that is shown in FIG. 2. APPLE-1003, ¶[50].



APPLE-1004, FIGS. 1 (left), 2 (right).

Thus, Shiplacoff discloses or renders obvious *“in response to detecting the first input, replacing the home screen with a user interface of the application.”*

APPLE-1003, ¶[51].

[1i]

Shiplacoff teaches that “device 100 can receive input from the user. In various embodiments, such input can cause device 100 to switch from one display mode to another, and/or to reposition displayed cards in response to user input specifying a switch to another card.” APPLE-1004, ¶[73]. Various mechanisms can “be provided for switching among the modes.” APPLE-1004, ¶[77]. For

example, “the user can switch among the various modes by performing a gesture. One example of such a gesture is a ‘swipe up’ gesture beginning in gesture area 102 and extending onto screen 101. In one embodiment, such a gesture switches from full-screen mode to card mode, or from card mode to shuffle mode, or from shuffle mode to grid mode.” APPLE-1004, ¶[127]; APPLE-1003, ¶[52].

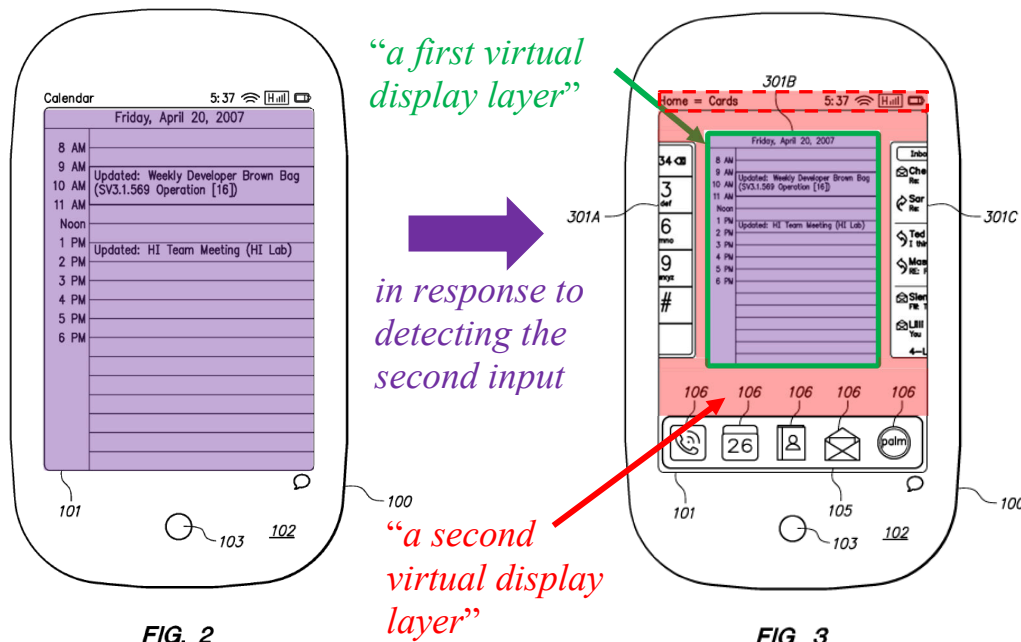
A swipe up gesture that begins in gesture area 102 and extends onto screen 101 (and thus would be understood as teaching or suggesting at least a touch on the screen 101) includes a “***movement across the display in a direction.***” APPLE-1003, ¶[53]. A swipe up gesture, while involving movement in an upward direction, is indeed a swipe across the display in a direction. Accordingly, a POSITA would have understood that when Shiplacoff’s device detects a gesture, such as a swipe up gesture, while displaying an application on the touch screen display, Shiplacoff teaches “***while displaying the user interface of the application, detecting a second input by a second contact that includes movement across the display in a direction.***” APPLE-1003, ¶[53]. Notably, Shiplacoff is not limited to a swipe up gesture, and teaches that other gestures and contacts can also be used. APPLE-1004, ¶¶[126]-[130].

[1j]⁴

As explained in [1i], a user can switch from the full-screen mode to the card mode, which is “is optimized for easily switching focus from one activity to another and for easily initiating and terminating activities,” by using a swipe up gesture. APPLE-1004, ¶¶[73], [74], [77]. As shown in Shiplacoff’s FIG. 3, when the display mode switches to the card mode, the calendar application card 301B (*“at least a portion of the user interface of the application in a first virtual*

⁴ Claims 1, 9, 14, 15, 23, 27, 35, and 39 of the ’578 patent recite features directed to how certain elements appear. For example, [1j] includes “a first virtual display layer *that appears* at a lesser depth.” Petitioner submits that these features carry no patentable weight as they are directed to how a user perceives certain user interface elements, such as layers. The appearance of displayed elements is subjective and is an abstract concept directed to a user-based mental process related to an observation made by a human. Petitioner submits that any claim features directed to how certain elements *appear* in the ’578 patent and in related challenged patents (*See* Section VI.B) should not be accorded any patentable weight. Notwithstanding the lack of patentable weight of certain features in the Challenged claims, Petitioner has still provided prior art mappings for all the features in the Challenged claims.

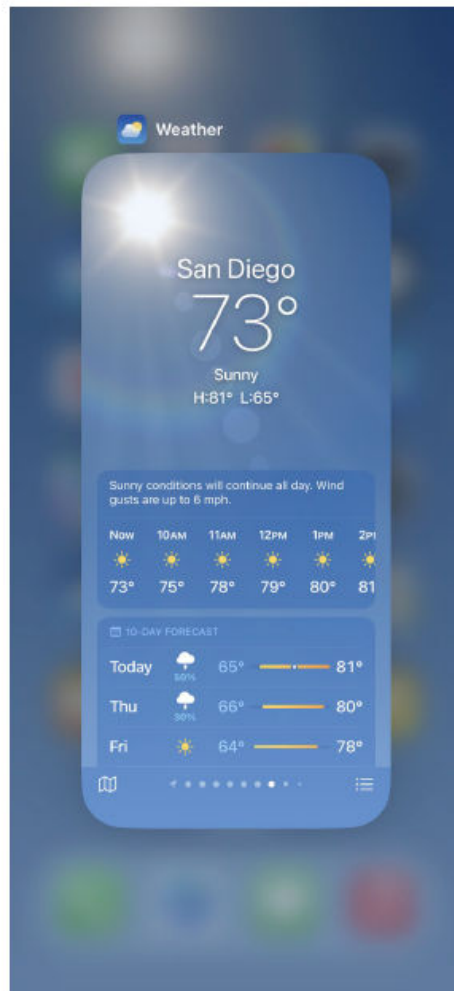
display layer”) appears “*reduced in size and is further displayed in its entirety when displayed in the first virtual display layer.*” “Other cards 301A, 301C are only partially visible and do not have focus. ... [P]artially displayed cards 301A, 301C are shown slightly smaller than card 301B having focus, so as to further emphasize the fact that card 301B has focus.” APPLE-1004, ¶[78]. Shiplacoff’s FIG. 3 also shows a background layer is displayed behind card 301B and could optionally include the icons such as the battery, time. APPLE-1004, ¶¶[77]-[78]; APPLE-1003, ¶[54].



APPLE-1004, FIGS. 2 (left), 3 (right).

As can be seen in the annotated version of FIG. 3 above, the calendar application card 301B is displayed in “*a first virtual display layer*” that appears at *a lesser depth as compared to*” the background layer behind calendar application

card 301B (“*second virtual display layer*”). APPLE-1003, ¶[55]. Indeed, Patent Owner applied a similar mapping in its infringement contentions by pointing to a weather application window “that appears at a lesser depth (e.g., foreground, etc.)” than the background behind it. APPLE-1007, 10.



APPLE-1007, 10.

As described by Shiplacoff, cards 301A and 301C are smaller in size and less focused, thereby causing card 301B to appear at a lesser depth. APPLE-1004,

¶[78]; APPLE-1003, ¶[56].

As Dr. Terveen explains, the use of depth perception to create an appearance of different distances is a well-known concept. APPLE-1003, ¶[56]; *see generally*, APPLE-1012. Objects that are smaller and less focused appear to be located further away than objects that are located closer to a person. APPLE-1003, ¶[56]; APPLE-1012, 4:37-41, 59:18-23. By displaying different cards using a similar depth perception technique, an appearance of the cards 301A-301C and the background layer having different distances can be achieved. APPLE-1003, ¶[56]. In Shiplacoff, card 301B is largest in size and more focused, and thus appears as a layer that is closest to a user. APPLE-1003, ¶[56].

In addition, the use of resizing and blurring (e.g., out of focus) of side cards 301A and 301C or the appearance of card 301B as a foreground layer superimposed onto a background layer are also precisely the type of depth cues that the '578 patent describes as providing a 3D viewing effect that creates an impression that a user is viewing cards at different depths. APPLE-1001, 68:29-38 (“a cue refers to feedback, visual or otherwise, which is provided to the user. ... in one embodiment, the anchor object may be highlighted (e.g., change of color, text highlight, 3D representation, flashing or other dynamic selection area behavior, etc.”); 68:39-42 (“In various embodiments, cues may include 3D or pseudo-3D effects. For example, in one embodiment, the anchor object may be made to

appear to be floating above a background image, using 3D cues”); 68:48-50 (“In another embodiment, the pseudo-3D representation may be responsive to user focus (including, in some embodiments, user gaze”). The ’578 patent displays a 3D layered user interface, which “may be implemented in a layered display device. In the context of the present description, a layered display device refers to a device with at least one display that is made up of a plurality of overlapping display layers, each layer able to display content independent of other layers, with all layers facing the same direction.” APPLE-1001, 69:3-14. “For example, in one embodiment, a 3D layered user interface may have a virtual foreground display layer and a virtual background display layer.” APPLE-1001, 69:22-32 Thus, Shiplacoff’s use of a background layer and cards 301A-301C being displayed at different depths is consistent with the ’578 patent’s first and second virtual display layers. APPLE-1003, ¶[57].

Feature [1j] also recites “*and in accordance with a determination that the second input meets one or more criteria that is met when the second input is detected to include a movement parameter that is above a movement threshold.*”

Claim 1 does not specify what the “one or more criteria” are, or what the “movement threshold” is. Under the plain and ordinary meaning of these terms, it would have been obvious to a POSITA that Shiplacoff also renders obvious this feature. APPLE-1003, ¶[58]. For instance, Shiplacoff’s device detects user input

and differentiates between contacts and gestures such as a single tap or swipe up gesture, so that it can determine the appropriate corresponding operation to execute. APPLE-1003, ¶[58]. A POSITA would have understood that a swipe up gesture (“*second input*”) includes a touch and slide of the touch in an upward direction on the contact/display screen. APPLE-1003, ¶[58]. Thus, it would have been obvious to a POSITA that when Shiplacoff’s device detects a touch and slide action for a certain displacement amount and direction (“*a movement parameter*”) on the screen that is greater than a predetermined displacement amount and in a particular direction (e.g., upward) relative to an initial touch position (“*that is above a movement threshold*”), Shiplacoff renders feature [1j] obvious. APPLE-1003, ¶[58].

As an example, Shiplacoff teaches that “[i]n one embodiment, the user can also launch additional activities [e.g., an application] by touching an icon 106 in quick-launch area 105.” APPLE-1004, ¶¶[99], [63]. In contrast, a swipe up gesture is used to implement a switch in modes (e.g., card mode to full screen mode). APPLE-1004, ¶¶[127]-[128]. The criteria for detecting a touch gesture includes detecting a touch for a certain period of time, but does not include any criteria for detecting a movement of the touch. APPLE-1003, ¶[59]. In contrast, the criteria for detecting a swipe up gesture includes detecting a touch and detecting a movement of the touch for a certain displacement amount and

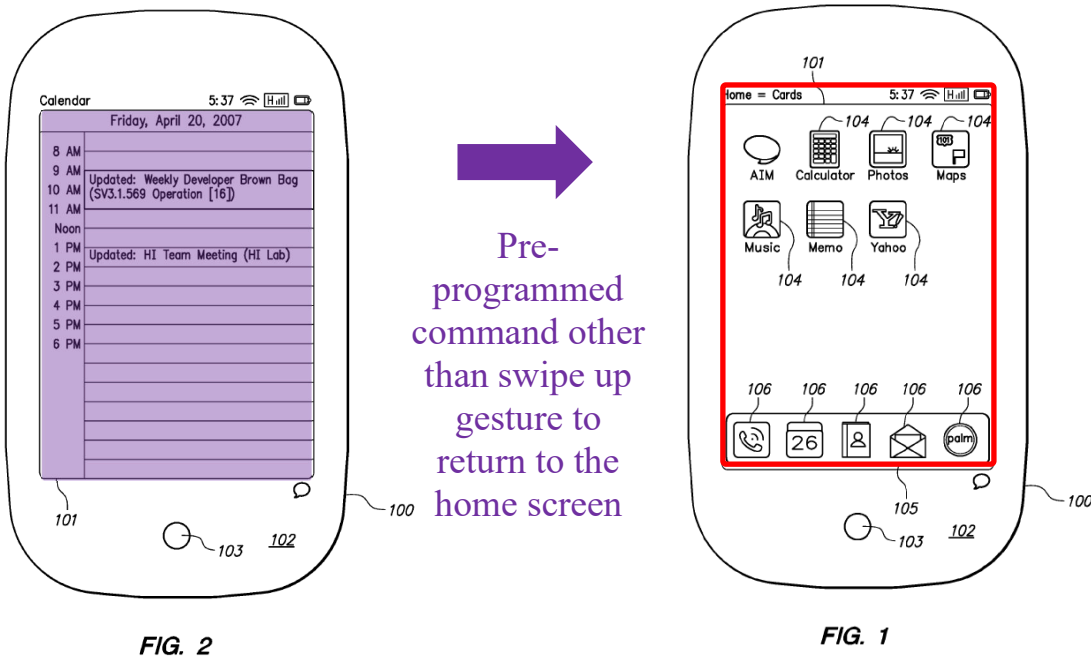
direction. APPLE-1003, ¶[59].

[1k]

Shiplacoff teaches that the user can perform another gesture or command to return to the home screen. In particular, Shiplacoff teaches that “the user can launch additional activities by returning to the launch screen as shown in FIG. 1. In one embodiment, this is performed by performing a gesture or other command.” APPLE-1004, ¶[99]. In some examples, a card can be dragged or flicked off screen, or a control can be selected to close a display card and, in some cases, return to the launch screen. APPLE-1004, ¶¶[100]-[102], [167]; APPLE-1003, ¶[60]. For instance, a card closed in a full-screen mode through a tap input on a control button would have, as a matter of design choice, returned to the launch screen to allow a user to launch another application of interest to the user. APPLE-1003, ¶[60].

When a gesture different from the swipe up gesture is used, it would also have been obvious to a POSITA that such a gesture would not have the same characteristics and movement parameters as the swipe up gesture so that Shiplacoff’s device can distinguish different gestures. APPLE-1003, ¶[61]. For example, it would have been obvious, if not understood, to use a different gesture, such as a tap or flick, that does not have the same movement parameters as those of a swipe up gesture (e.g., touch and slide action for a certain displacement amount

and upward direction). APPLE-1003, ¶[61]. Accordingly, it would have been obvious to a POSITA that when a different pre-programmed gesture, such as a tap or flick, is used, such a gesture (“*second input*”) “*does not meet the one or more criteria that is met when the second input is detected to include the movement parameter that is above the movement threshold,*” and would have returned the display, as a matter of design choice, to the launch screen in FIG. 1 that includes the calendar icon (“*replacing the user interface of the application with the home screen including the icon associated with the application*”). APPLE-1004, ¶[99]; APPLE-1003, ¶[61]. According, Shiplacoff renders obvious [1k].



APPLE-1004, FIGS. 2 (left), 1 (right).

(b) Claim 2

[2]

Shiplacoff teaches that device 100 includes a touch-sensitive gesture area 102 and screen 101. APPLE-1004, ¶[64], FIG. 1. “In one embodiment, gesture area 102 provides a touch-sensitive control area extending beyond the edges of touch-sensitive screen 101.” APPLE-1004, ¶[66]. The “swipe up” gesture “begins in gesture area 102 and extend[s] onto screen 101.” APPLE-1004, ¶[127]. As shown in Shiplacoff’s FIG. 1 below, Shiplacoff’s device would have detected a “swipe up” gesture (e.g., a contact and drag action) (“*detecting the second input by the second contact*”) that began in gesture area 102 and extends onto screen 101. Thus, it would have been obvious to a POSITA that, at least part of the “swipe up” gesture (notably the part that starts at the edge of screen 101) would have included “*movement that starts at an edge of the display.*” APPLE-1004, ¶[62].

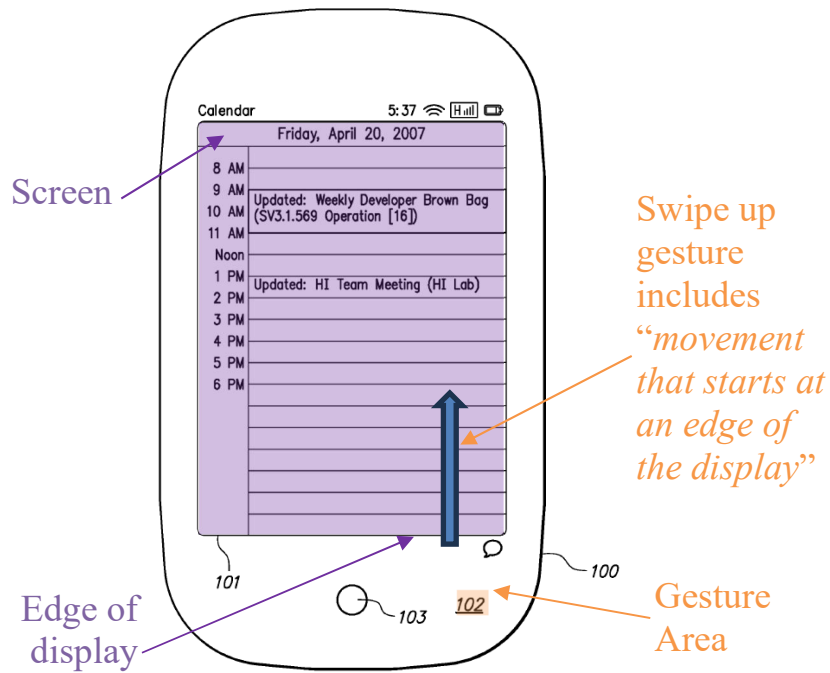


FIG. 2

APPLE-1004, FIG. 1.

(c) Claim 3

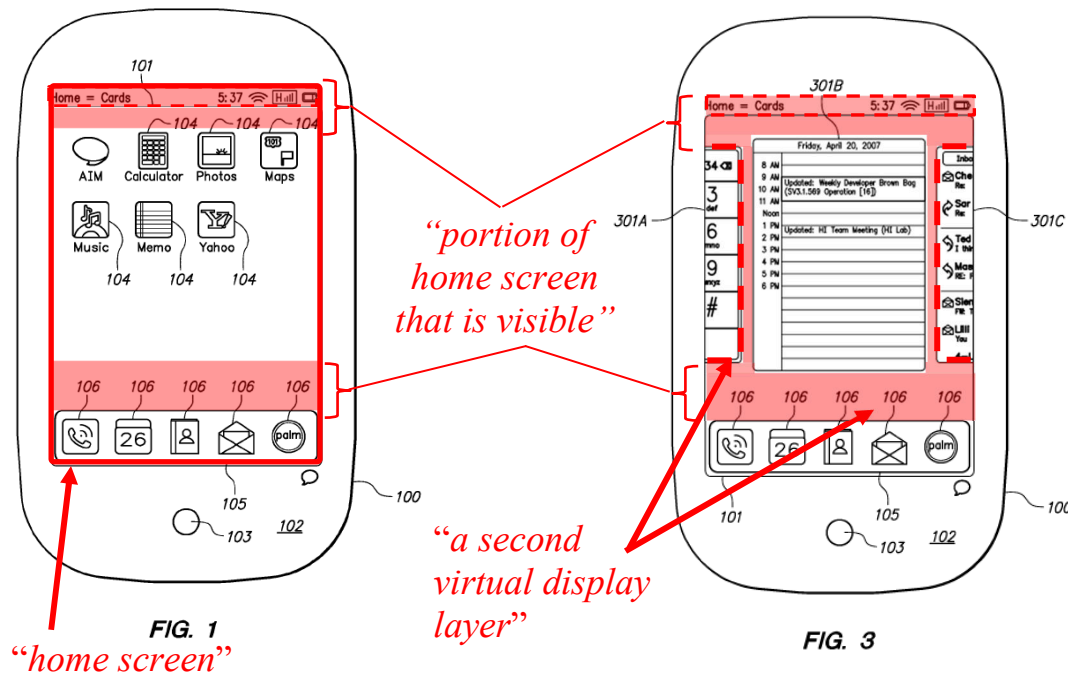
[3]

See [1i], [2]; APPLE-1003, ¶[63].

(d) Claim 4

[4]

As shown in Shiplacoff's FIGS. 1 and 3 below, in the card mode, ***"the second virtual display layer includes at least a portion of the home screen that is visible."*** For instance, the portions shaded in red in the home screen shown in FIG. 1 are still visible in the background layer in the card mode. APPLE-1003, ¶[64].



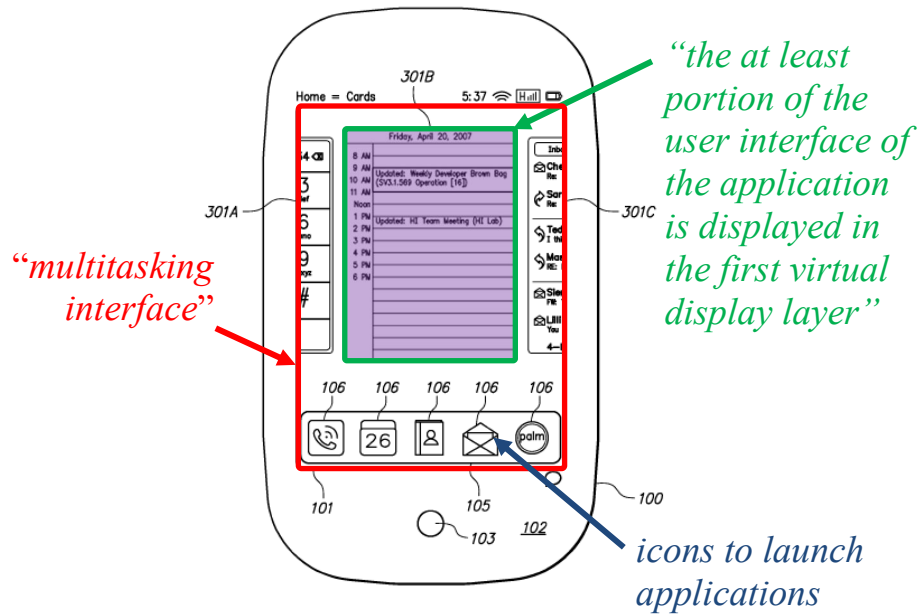
APPLE-1004, FIGS. 1 (left), 3 (right).

(e) Claim 8

[8]

As shown in Shiplacoff's FIG. 3 below, card 301B (*"the at least portion of the user interface of the application"*) *"is displayed in the first virtual display layer."* Card 301B is displayed *"as a component of a multitasking interface"* because the displayed interface in FIG. 3 includes interfaces for tasks that can be executed through multiple cards (e.g., application windows 301A and 301C) and application icons 106. APPLE-1004, ¶[78]. A POSITA would have understood that this multitasking interface allows a user to switch between and use multiple applications, e.g., by selecting other cards such as cards 301A, 301C, and icons

106. APPLE-1003, ¶[65].



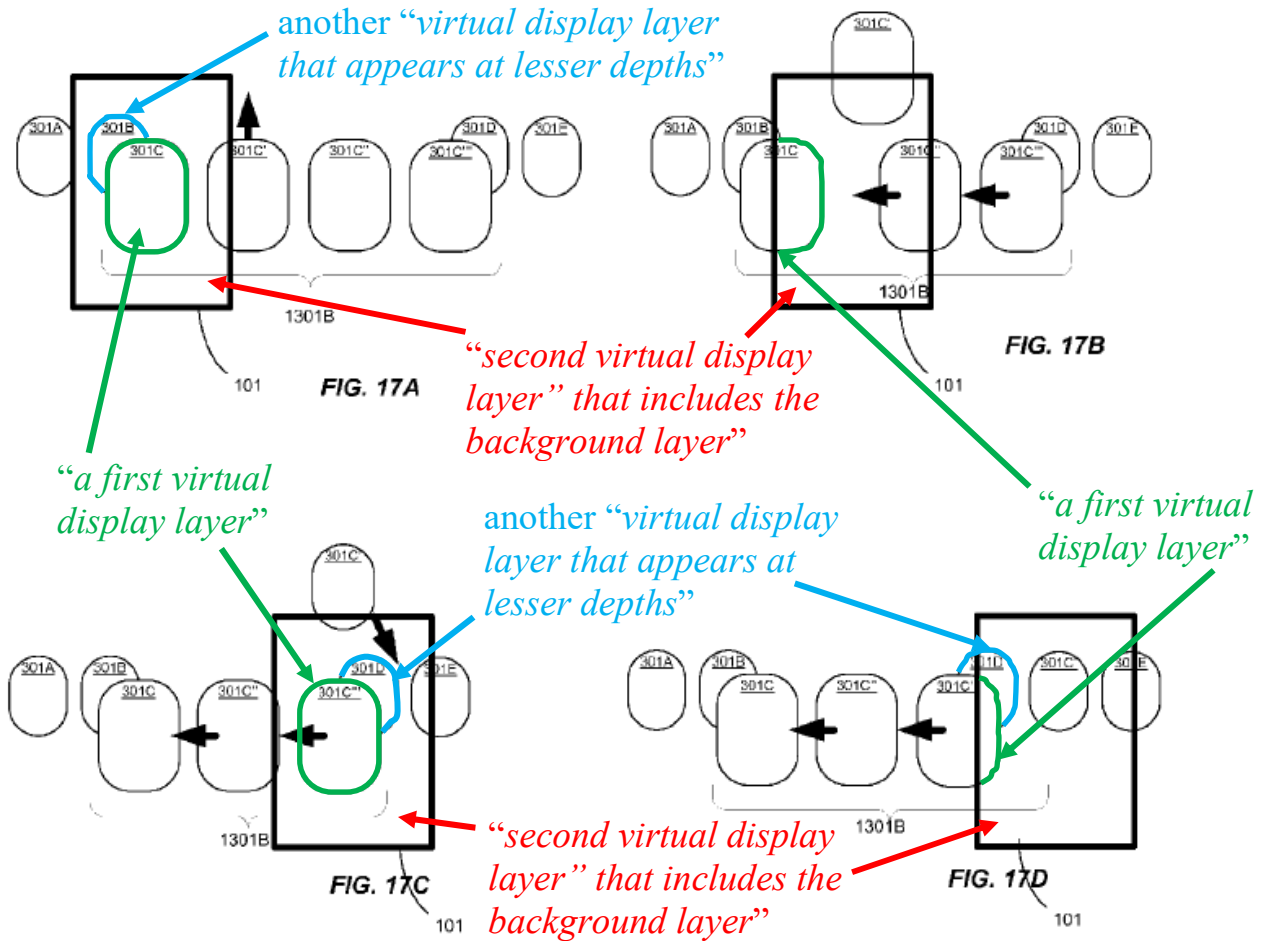
APPLE-1004, FIG. 3.

(f) Claim 9

[9]

As explained in [1j], Shiplacoff's card mode display screen includes at least a first virtual display layer that includes card 301B, and a second display layer that includes a background layer that appears to be in the background of card 301B.

APPLE-1004, FIG. 3. FIGS. 17A-D illustrate another example of various cards being displayed in a card mode. APPLE-1004, ¶[167]; APPLE-1003, ¶[66].



APPLE-1004, FIGS. 17A-D.

As shown in FIGS. 17A-D, the cards can appear at different depths. In FIG. 17A, card 301B appears behind card 301C. In FIGS. 17C and 17D, card 301D appears behind card 301C". APPLE-1003, ¶[67]. Although Shiplacoff does not explicitly teach that cards positioned behind a card in focus (e.g., card 301C in FIG. 17A) appear above the background layer, it would have been obvious to a POSITA that the cards positioned behind a card in focus are on a separate layer from the background layer and would appear at a lesser depth than the background

layer. APPLE-1003, ¶[67]. This is because the cards are transient and their positions can be changed based on user input. In contrast, the background layer remains constant regardless of the change in the card being displayed. In this manner, the cards appear to transition above a constant background. APPLE-1003, ¶[67].

In addition, implementing the cards to be at a lesser depth than the background layer would also have been a matter of obvious design choice. APPLE-1003, ¶[68]. For example, a designer could design the cards behind the card in focus to be at the same or different layer from the background layer. Designing these cards to appear above the background layer can resemble a deck of cards sliding across a table, and makes it easier for the user to view and manipulate the cards. APPLE-1003, ¶[68].

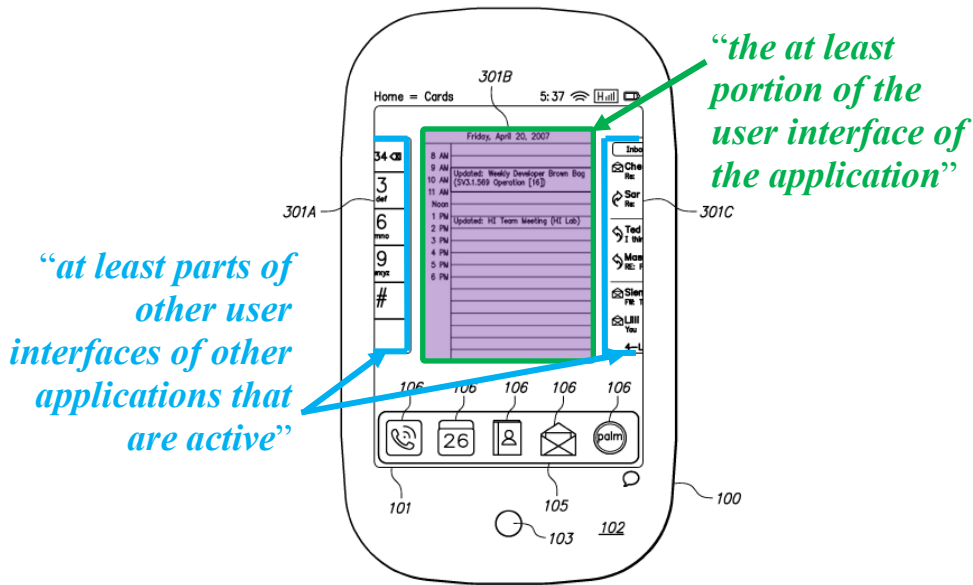
In contrast, if the cards behind the card in focus were in the same layer as the background layer, any time these cards are moved, the entire background layer would also move which would (1) create unnecessary distractions to the user, (2) potentially require more processing power because all the elements that are part of the background layer would also have to be moved. To avoid these disadvantages, it would have been obvious to a POSITA that the background layer would, as a design choice, appear to be fixed and behind the cards. APPLE-1003, ¶[69].

For at least the foregoing reasons, Shiplacoff renders obvious that the “*at least portion of the user interface of the application*” (card in focus, e.g., card 301B in FIG. 3 or card 301C in FIG. 17A,) “*is displayed in the first virtual display layer which is one of a plurality of virtual display layers*” (e.g., layers associated with the displayed cards) “*that appear at lesser depths as compared to the second virtual display layer*” (background layer). APPLE-1003, ¶[70].

(g) Claims 10 and 11

[10] and [11]

As shown in Shiplacoff’s FIG. 3, card 301B (“*the at least portion of the user interface of the application*”) “*is displayed along with*” partially visible cards 301A and 301C (“*at least parts of other user interfaces of other applications*”). APPLE-1004, ¶[78]. Shiplacoff explains that “cards 301 show applications or other activities in operation. Thus, as the user navigates among cards 301, he or she can see the actual live application or other activity within each card 301.” APPLE-1004, ¶[87]. Accordingly, a POSITA would have understood that 301A and 301C “*are active*.” APPLE-1003, ¶[71].



APPLE-1004, FIG. 3.

(h) Claim 12

[12]

As explained above in [1a] and [1k], the home screen 101 in FIG. 1 is displayed in the same manner when the first input is detected (*see* [1a]) and when the second input does not meet the one or more criteria (*see* [1k]). APPLE-1004, FIG. 1; APPLE-1003, ¶[72].

(i) Claim 13

[13]

See [1], [2]; APPLE-1003, ¶[73].

(j) Claim 14

[14]

Shiplacoff discloses several recited features of [14]. For example, as explained in [1j], “*the one or more criteria includes a plurality of criteria*” such as whether a certain displacement amount and direction has been satisfied.

APPLE-1003, ¶[74]. For similar reasons, Shiplacoff also discloses “*the movement threshold includes a distance threshold.*” The “swipe up” gesture is also a “*movement across the display [that] includes movement across the touch interface.*” As noted above in [1], Shiplacoff also discloses that “*the display and the touch interface are components of a touch screen.*” APPLE-1004, FIG. 1, ¶[64]. For at least these reasons, Shiplacoff renders [14] obvious. APPLE-1003, ¶[74].

(k) Claim 15

[15pre]

Shiplacoff teaches “systems and methods for implementing a card metaphor for activities such as software applications” in computer devices. APPLE-1004, 1:24-27. As explained below, Shiplacoff renders obvious the features recited in claim 15 and its dependent claims. *See infra* [15a]-[26], *supra* [1e]; APPLE-1003, ¶[75].

[15a]

See [1pre]-[1e]; APPLE-1003, ¶[76].

[15b]

See [1f]; APPLE-1003, ¶[76].

[15c]

See [1g]; APPLE-1003, ¶[76].

[15d]

See [1h]; APPLE-1003, ¶[76].

[15e]

See [1i]; APPLE-1003, ¶[76].

[15f]

See [1j]; APPLE-1003, ¶[76].

[15g]

See [1k]; APPLE-1003, ¶[76].

(l) Claim 16

[16]

See [2]; APPLE-1003, ¶[77].

(m) Claim 17

[17]

See [3]; APPLE-1003, ¶[77].

(n) Claim 18

[18]

See [4]; APPLE-1003, ¶[77].

(o) Claim 22

[22]

See [8]; APPLE-1003, ¶[77].

(p) Claim 23

[23]

See [9]; APPLE-1003, ¶¶[77].

(q) Claim 24

[24]

See [10]; APPLE-1003, ¶[77].

(r) Claim 25

[25]

See [11]; APPLE-1003, ¶[77].

(s) Claim 26

[26]

See [12]; APPLE-1003, ¶[77].

(t) Claim 27

[27pre]

See [1pre]-[1e]; APPLE-1003, ¶[78].

[27a]

See [1f]; APPLE-1003, ¶[78].

[27b]

See [1g]; APPLE-1003, ¶[78].

[27c]

See [1h]; APPLE-1003, ¶[78].

[27d]

See [1i]; APPLE-1003, ¶[78].

[27e]

Feature [27e] recites similar features to [1j], and additionally recites “and that the second input that meets a second one or more criteria that is met when the second input is detected to include a duration parameter that is above a duration threshold.” APPLE-1001, 99:51-65. For at least the reasons noted in [1j] and the reasons noted below, Shiplacoff renders [27e] obvious. APPLE-1003, ¶[79].

With respect to the additional feature, it would have been obvious to a POSITA that a touch and slide action that forms part of a “swipe up” gesture (“*second input*”) would have involved a user touch that has a duration (“*duration parameter*”) greater than a predetermined duration threshold (“*duration threshold*”). APPLE-1004, ¶[127]; APPLE-1003, ¶[80]. For instance, a POSITA would have understood that some of the differences between a flick up gesture and

tap gesture, on the one hand, and a swipe up gesture, on the other are the speed and movement of the gestures. APPLE-1004, ¶¶[100], [127]; APPLE-1003, ¶[80].

Thus, while the gestures may have an initial point of user input contact and a final point of input contact, the difference in the gestures include the time duration of the touch (which then determines the speed), the length of the movement after the initial touch, and the directionality of the movement after the initial touch.

APPLE-1003, ¶[80]. In general, it was known in the art that different gestures can be configured by parameters such as a speed, location, time, and direction of touches. APPLE-1008, 19:63-65 (“event information for a swipe event includes two or more of: a location, time stamp, direction, and speed of a swipe”), 18:41-43; APPLE-1009, 18:1-40 (Tables 1 and 2 depicting a time period of 150 ms associated with a swipe gesture); APPLE-1003, ¶[80]. Moreover, a minimum predetermined time period threshold for a touch was also commonly used in the art such that any touch that did not satisfy the minimum predetermined time period threshold would be considered an unintentional touch or another type of gesture, such as a tap gesture. APPLE-1010, 11:2-7; APPLE-1003, ¶[80].

Accordingly, whether the objective was to identify and ignore accidental and unintentional touches or to distinguish the swipe gesture from other gestures, it would have been obvious to a POSITA that Shiplacoff renders obvious “that the second input that meets a second one or more criteria that is met when the second

input is detected to include a duration parameter that is above a duration threshold.” APPLE-1003, ¶[81].

Alternatively, Shiplacoff also teaches that, in general, various gestures can “be provided for switching among the modes.” APPLE-1004, ¶¶[77], [124]. Through this disclosure, Shiplacoff effectively discloses that there is flexibility in design choice to select a certain type of gesture to switch between the different modes. APPLE-1003, ¶[82]. It would have been obvious to a POSITA that a design choice for a gesture to switch to the card mode in Shiplacoff would have involved selecting certain movement thresholds and duration thresholds that would have to be satisfied/met for the switch to the card mode to be made. APPLE-1003, ¶[82]; *see also* APPLE1008, 6:38-61 (describing “gesture recognizer work[ing] in different distinct operating modes”; a “device can select one of the gesture definitions for the next application gesture, depending on the current operating mode. This provides flexibility in using the gesture recognizer in different operating modes. In some embodiments, a plurality of gesture recognizers with multiple gesture definitions is adjusted depending on the operating mode.”) For example, the gesture could involve a touch for a duration followed by a slide upwards, which is effectively a combination of a tap and hold plus slide upward gesture. APPLE-1003, ¶[82]. When the movement and duration thresholds of such a movement and duration-based gesture are satisfied/met, Shiplacoff’s device

enters the card mode, thereby rendering [27e] obvious.

[27f]

Shiplacoff teaches that “the user can launch additional activities by returning to the launch screen as shown in FIG. 1. In one embodiment, this is performed by performing a gesture or other command.” APPLE-1004, ¶[99]. For instance, Shiplacoff teaches that a card can be closed by clicking (e.g., tapping) on a control within the card or performing a flicking action in an upward direction. APPLE-1004, ¶[100]. As explained above in [27e], a POSITA would have understood that one of the differences between a tap, a flick up gesture, and a swipe up gesture may be the speed of the gesture. APPLE-1003, ¶[83].

It would have been obvious to a POSITA that when Shiplacoff’s device detects a flick gesture that may satisfy the movement threshold associated with the slide up gesture but not the duration parameter associated with the slide up gesture, such a flick gesture would result in closing the displayed card and consequently returning to the display of the launch screen as shown in FIG. 1, which includes icons 106, such as the calendar icon (*“replace the user interface of the application with the home screen including the icon that corresponds to the application”*). APPLE-1004, ¶[100]; APPLE-1003, ¶[84].

Alternatively, Shiplacoff also teaches that various mechanisms can “be provided for switching among the modes.” APPLE-1004, ¶¶[77], [124]; APPLE-

1003, ¶[85]. It would have been obvious to a POSITA that, as a matter of a flexible design choice, the gesture to switch back to the home screen would have involved a gesture that is different from the slide up gesture, and would have involved movement beyond a movement threshold but would not require a duration of the gesture beyond a duration threshold. APPLE-1003, ¶[85].

(u) Claim 28

[28]

See [2]; APPLE-1003, ¶[86].

(v) Claim 29

[29]

See [3]; APPLE-1003, ¶[86].

(w) Claim 30

[30]

See [4]; APPLE-1003, ¶[86].

(x) Claim 34

[34]

See [8]; APPLE-1003, ¶[86].

(y) Claim 35

[35]

See [9]; APPLE-1003, ¶¶[86].

(z) Claim 36

[36]

See [10]; APPLE-1003, ¶[86].

(aa) Claim 37

[37]

See [11]; APPLE-1003, ¶[86].

(bb) Claim 38

[38]

See [12]; APPLE-1003, ¶[86].

(cc) Claim 39

[39]

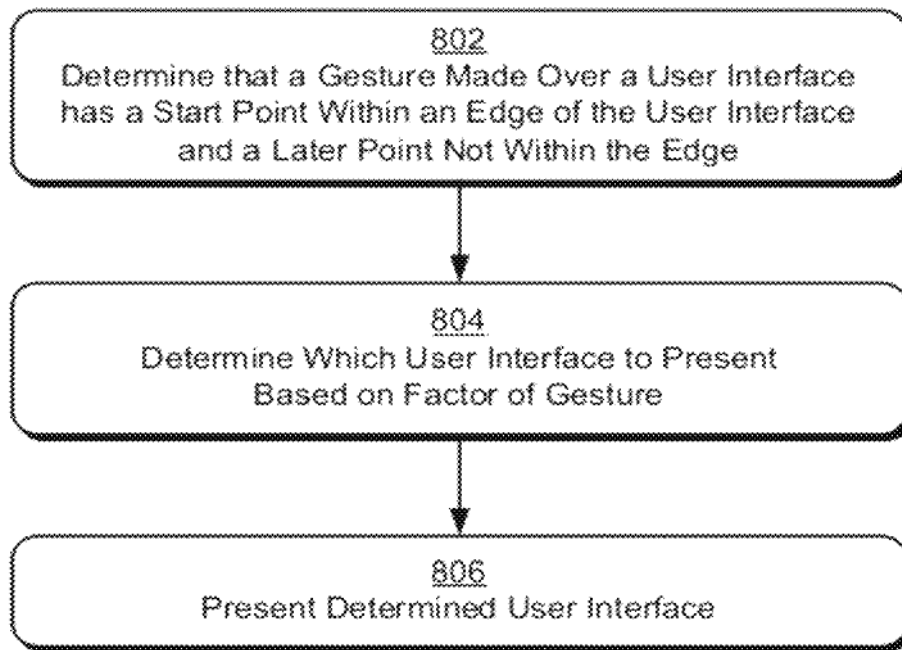
See [14]; APPLE-1003, ¶[86].

B. Ground 2: Claims 1-4, 8-18, 22-30, and 34-39 are obvious over Shiplacoff and Nan

1. Overview of Nan

Nan “describes techniques and apparatuses to “enable selection of a user interface not currently exposed on a display through an edge gesture that is easy-to-use and remember.” APPLE-1005, Abstract, 1:39-43. “[A]n example method for enabling edge gestures including determining an interface to present based on some factor of the gesture” is illustrated in Nan’s FIG. 8 (reproduced below).

APPLE-1005, 2:13-15; APPLE-1003, ¶[30].



APPLE-1005, FIG. 8.

In particular, “FIG. 8 depicts a method 800 for enabling edge gestures including determining an interface to present based on some factor of the gesture.”

APPLE-1005, 7:9-11. “Block 802 determines that a gesture made over a user interface has a start point at an edge of the user interface and a later point not within the edge.” APPLE-1005, 7:17-22; APPLE-1003, ¶[31].

“Block 804 determines which interface to present based on one or more factors of the gesture. Block 804 may do so based on a final or intermediate length of the gesture, whether the gesture is single or multi-point (e.g., single finger or multi-finger), or a speed of the gesture. In some cases, two or more factors of a gesture determine which interface to present such as a drag-and-hold gesture

having a drag length and hold time or a drag-and-drop gesture having a drag length and drop position.” APPLE-1005, 7:30-46. A “gesture handler 128 may determine the length of the gesture, speed, or a number of inputs (e.g., fingers),” and a corresponding user interface may be determined. APPLE-1005, 7:30-46; APPLE-1003, ¶[32].

“In response, block 806 presents the determined user interface. The determined user interface can be any of those mentioned herein as well as a whole new visual such as a new page of an e-book, an additional visual (e.g., a toolbar or navigation bar), or a modified view of a current user interface (presenting text of a current user interface in a different font, color or highlighting).” APPLE-1005, 7:47-55; APPLE-1003, ¶[33].

2. Shiplacoff-Nan Combination (SNC)

A POSITA would have been motivated, would have found obvious, and would have predictably and reasonably expected success in beneficially applying the teachings of Nan to Shiplacoff such that Shiplacoff’s system can implement gestures such as Nan’s edge gestures. APPLE-1003, ¶[34]. Combining the teachings of Shiplacoff and Nan would have merely involved combining prior art elements according to known methods to yield predictable results. APPLE-1003, ¶[34].

In particular, Nan explains that edge gestures are beneficial at least because

(1) “edge gestures can be processed before the entire gesture is complete avoiding latency associated with processing entire gestures started elsewhere;” and “valuable real estate used to” display content of user interest, e.g., a movie, “was not taken up with on-screen controls, nor was the user required to remember and find a hardware button.” APPLE-1005, 2:60-3:5. A POSITA interested in avoiding latency and efficient and less disruptive real estate usage would have predictably turned to Nan’s teachings of implementation details to realize these benefits in Shiplacoff’s system. APPLE-1003, ¶[35].

A POSITA would have implemented Nan’s teachings into Shiplacoff’s system through programming efforts well-within the knowledge and capabilities of a POSITA. APPLE-1003, ¶[36]. For example, Shiplacoff’s system would have been modified to incorporate software, code, and/or related programming to recognize certain gestures, e.g., an edge gesture with a certain length, speed, hold time, or a number of inputs, to execute a change from the full-screen mode to the card mode. APPLE-1003, ¶[36]. As part of this programming, Nan’s gesture handler would have been incorporated into Shiplacoff’s system to realize the above-noted benefits. APPLE-1003, ¶[36].

The Shiplacoff-Nan Combination (SNC) would also have been predictable with a reasonable expectation of success for several reasons. APPLE-1003, ¶[37]. First, Shiplacoff and Nan are directed to similar systems. APPLE-1003, ¶[37].

Shiplacoff teaches detecting and processing gestures to navigate from one mode (and corresponding user interface) to another using an electronic device, such as a computer, with a touch screen. APPLE-1004, ¶¶[64], [67]-[77], [124]-[132], FIG. 1. Nan is similarly related to a computing device with a display that includes touch sensors. APPLE-1005, 3:28-39.

Second, Shiplacoff and Nan are directed to improving the transition of displays from one user interface to another. APPLE-1003, ¶[38]. For instance, Shiplacoff teaches transitioning from one mode and corresponding user interface to another, such as the transition from a full-screen mode user interface to a card mode user interface. *See e.g.*, APPLE-1004, FIGS. 1-4. Nan similarly discloses transitioning from one application user interface, such as a webpage interface 306, to an application-specific interface 702. *See e.g.*, APPLE-1004, FIGS. 3, 7, 6:43-60, 4:29-62.

Third, it would have been obvious to a POSITA looking to improve Shiplacoff, to turn to similar art, such as Nan, to realize some of the benefits of implementing edge gestures as described in Nan. APPLE-1003, ¶[39]. Indeed, Shiplacoff's system was flexible and contemplated that various types of gestures would have been incorporated into its system by a POSITA to implement operations such as changing from one mode to another. APPLE-1004, ¶¶[77], [126]-[130].

For all the foregoing reasons, the SNC would have been obvious. APPLE-1003, ¶[40].

3. Analysis

While Shiplacoff renders the Challenged Claims obvious for the reasons noted above, certain features of claims 1-3, 12, 15-17, 26-29 and 38 are further rendered obvious by SNC for the reasons noted below. Any limitations not specifically addressed below are obvious in view of SNC for the same reasons noted above in Ground 1.

(a) Claim 1 – features [1i]-[1k]

[1i]-[1k]

Under Ground 1, features [1i]-[1k] were addressed, in part, by mapping Shiplacoff's swipe up gesture to the claimed "second input." To the extent Patent Owner argues that Shiplacoff does not disclose and render obvious a "movement threshold" and related features such as "when the second input is detected to include the movement parameter that is above the movement threshold" (features [1j], [1k]), the edge gesture used in the SNC system (that would substitute the swipe up gesture in Shiplacoff alone) renders these features obvious. APPLE-1003, ¶[87].

As explained above, in SNC, an edge gesture with a certain length, speed, hold time, or a number of inputs, is used to execute a change from the full-screen

mode to the card mode. APPLE-1005, FIG. 8, 7:9-55; APPLE-1003, ¶[88].

SNC's system would have determined that an edge gesture occurred when the detected user input movement is above the movement threshold associated with one or more of the length, speed, and number of inputs of the edge gesture.

APPLE-1003, ¶[88]. Moreover, consistent with Shiplacoff's swipe up gesture, it would have been obvious and a simple matter of design choice for the edge gesture to include a movement in the upward direction such that there is movement from an edge of the display (as taught by Nan) to a distance across the display (as taught by Shiplacoff). APPLE-1004, ¶[127]; APPLE-1005, FIG. 8, 7:9-55; APPLE-1003, ¶[88].

(b) Claims 2, 3, and 12

[2], [3], [12]

See supra Sections IV.B.3(a) (features [1i]-[1k]), IV.A.2(b), IV.A.2(c), IV.A.2(h); APPLE-1003, ¶[89].

(c) Claim 15 – features [15e]-[15g]

[15e]-[15g]

See supra Sections IV.B.3(a), IV.A.2(k); APPLE-1003, ¶[90].

(d) Claims 16, 17, and 26

[16], [17], [26]

See supra Sections IV.B.3(a), IV.B.3(b), IV.A.2.(l), IV.A.2.(b), IV.A.2(m), IV.A.2.(c), IV.A.2(s), IV.A.2.(h); APPLE-1003, ¶[91].

(e) **Claim 27 – features [27d]-[27f]**

[27d]-[27f]

As a preliminary matter, for the reasons noted above in Section IV.B.3(a), the SNC renders obvious a “*first one or more criteria that is met when the second input is detected to include the movement parameter that is above the movement threshold.*” APPLE-1003, ¶[92].

To the extent Patent Owner argues that Shiplacoff does not disclose or render obvious the claimed “second one or more criteria,” “duration parameter,” “duration threshold,” and related features such as “that the second input that meets a second one or more criteria that is met when the second input is detected to include a duration parameter that is above a duration threshold” (features [27e], [27f]), SNC also renders these features obvious by virtue of its edge gesture. APPLE-1003, ¶[93].

For example, Nan teaches that an edge gesture may have a certain length, speed, hold time, or number of inputs, and that, when a user input these characteristics is detected, the gesture handler determines that an edge gesture has been made and a corresponding user interface is displayed. APPLE-1005, FIG. 8, 7:9-55; APPLE-1003, ¶[94]. Thus, the edge gesture in the SNC system includes not only a movement threshold, but also a duration threshold. In particular, because Nan discloses that its edge gesture can have an associated length

(movement) and hold time (duration) characteristics (“*second one or more criteria*”) and because the gesture handler determines that an edge gesture has been made when a user input (“*second input*”) satisfying the length and hold is detected (“*a duration parameter that is above a duration threshold*”), SNC renders obvious “*the second input that meets a second one or more criteria that is met when the second input is detected to include a duration parameter that is above a duration threshold.*” APPLE-1003, ¶[94].

(f) Claims 28, 29, and 38

[28], [29], [38]

See supra Sections IV.B.3(a), IV.B.3(b), IV.A.2(b), IV.A.2(c), IV.A.2(h), IV.A.2(u), IV.A.2(v), IV.A.2(cc); APPLE-1003, ¶[95].

V. PTAB DISCRETION SHOULD NOT PRECLUDE INSTITUTION

A. 314(a) – *Fintiv*

Institution should not be discretionarily denied under §314(a) because no *Fintiv* factors favor denial. Rather, five of the six factors enumerated in *Apple Inc. v. Fintiv, Inc.* weigh against discretionary denial, and the other factor is neutral on the issue. IPR2020-00019, Paper 11 at 2-3 (PTAB “precedential” Mar. 20, 2020) (“*Fintiv*”).

Factor 1 weighs against a discretionary denial. Apple intends to file a motion to stay the parallel litigation. Thus, factor 1 does not favor discretionary denial and, at worst, is neutral.

Factor 2 weighs against a discretionary denial. Director Vidal’s Guidance instructed the Board that “when considering the proximity of the district court’s trial date to the date when the PTAB final written decision will be due, the PTAB will consider the median time from filing to disposition of the civil trial for the district in which the parallel litigation resides.” APPLE-1021, 3, 8. According to the latest published district court statistics, the median time to trial in the Southern District of California (SDCal) is 40.2 months, predicting a trial in November 2027—significantly later than a Final Written Decision would be issued in this case. APPLE-1020, 69; APPLE-1021, 8 (“A court’s scheduled trial date, therefore, is not by itself a good indicator of whether the district court trial will occur before the statutory deadline for a final written decision.”). For this reason alone, Factor 2 weighs against discretionary denial. Though a pre-trial conference of October 23, 2025 has been scheduled in co-pending litigation, no trial date has been set, and it is uncertain whether the schedule will stick, particularly if Apple’s motion to stay is granted. APPLE-1022, 6.

Factor 3 also weighs against discretionary denial because Petitioner has diligently filed this Petition while the co-pending litigation is still in its early

stages. Petitioner filed as soon as practicable following Smith’s election of 200 asserted claims of the over 1000 claims in the asserted patents just weeks before filing. Beyond the service of preliminary infringement contentions, the parties and the District Court have yet to expend significant resources. No invalidity contentions have been served, and discovery is in its infancy.

Factor 4 weighs against discretionary denial. As noted above, no trial date has been scheduled. And even if a pre-trial conference date of October 2025 is used as a reference point, if Apple’s to-be-filed motion to stay is granted, the case schedule is going to change and the trial date will be further delayed. Accordingly, it is likely that a final written decision will be issued before trial. Indeed, no stipulation has been offered given the lack of a trial date, and it otherwise remains too early to assess the suitability of a stipulation with invalidity contentions still not exchanged.

Factor 5 The parties in the parallel co-pending litigation are the same.

Factor 6 favors institution because the merits of this Petition are compelling, as described in this Petition.

B. 325(d) – *Advanced Bionics*

Advanced Bionics and the *Becton* factors strongly favor institution.

Advanced Bionics LLC v. MED-EL Elektromedizinische Gerate GmbH, IPR2019-01469 Pap. 6 (PTAB Feb. 13, 2020)(“*Advanced Bionics*”)(precedential); *Becton*,

Dickinson and Co. v. B. Braun Melsungen AG, IPR2017-01586 Pap. 8 (PTAB Dec. 15 2017)(“Becton”)(precedential).

Under the *Advanced Bionics* framework, discretionary denial under Section 325(d) is appropriate only if a condition in the framework’s first prong is satisfied, and if there is no showing of material error under the second prong. *Advanced Bionics LLC v. MED-EL Elektromedizinische Gerate GmbH*, IPR2019-01469 Pap. 6 (PTAB Feb. 13, 2020). As stated in *Advanced Bionics*, those two prongs are:

- (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
- (2) if either condition of [the] first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics., 8-10.

The *Advanced Bionics* framework strongly favors institution.

To briefly recap the relevant prosecution history, the issued patent corresponding to Shiplacoff (APPLE-1004) and US Patent Publication 2010/0185989 (APPLE-1011, hereinafter “Shiplacoff ’989”), also invented by Shiplacoff et al. were cited as two references in the hundreds of references disclosed by the Applicant in Information Disclosure Statements and/or cited by the Examiner in an Office Action. APPLE-1001, 5, 8; APPLE-1002, 186, 302.

The primary reference in this IPR, Shiplacoff, was never applied in any rejection or substantively considered by the Examiner. Shiplacoff was cited as one reference amongst hundreds of prior art references. APPLE-1002, 302. However, when an asserted art (Shiplacoff) is merely listed in a signed IDS, the Board has refused to exercise discretionary denial under §325(d). *Scientific Design Co. v. Shell Oil Co.*, IPR2021-01537, Paper 7 at 24-26 (PTAB 2022) and IPR2022-00158, Paper 7 at 24-26 (PTAB 2022) (granting institution and finding that the Examiner initialing the asserted art on an IDS does not indicate substantive evaluation); *Digital Check Corp. d/b/a ST Imaging v. E-ImageData Corp.*, IPR2017-00178, Paper 6 at 12-13 (PTAB 2017) (acknowledging that a reference was cited in an IDS, but granting institution because there was no indication that the Examiner substantively discussed it during prosecution); *Fox Factory, Inc. v. SRAM, LLC*, IPR2016-01876, Paper 8 at 7-9 (PTAB 2017) (refusing to deny institution based on a prior art reference that was simply cited in an IDS and not considered at any length); *Praxair Distribution, Inc. v. INO Therapeutics, LLC d/b/a Ikaria, Inc.*, IPR2015-00893, Paper 14 at 8 (PTAB 2015); *Analytics For Life, Inc. et al v. 8825319 Canada Ltd.*, IPR2017-01742, Paper 9 at 5-6 (PTAB 2018); *ABS Global, Inc. et al v. Cytonome/ST, LLC*, IPR2017-02097, Paper 11 at 37-38 (PTAB 2018).

Consistent with Board precedent, because no evaluation or rejection during prosecution involved Shiplacoff, none of the *Beckton Dickinson* factors (a)-(f) and

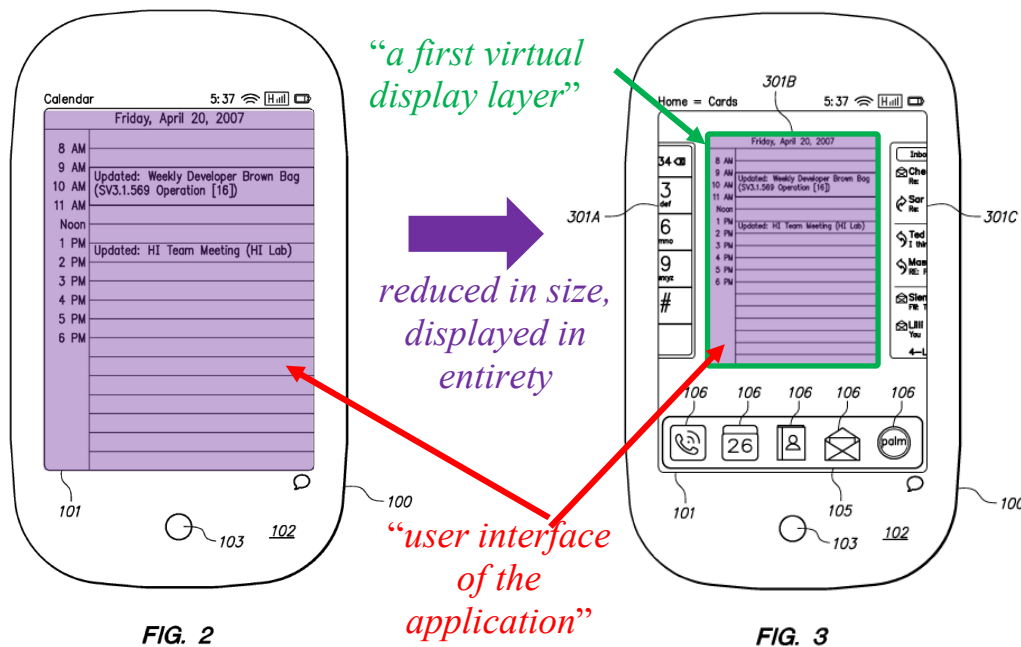
Advanced Bionics prongs (1) and (2) favor discretionary denial. *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (Dec. 15, 2017) (precedential).

To the extent Shiplacoff '989's disclosure is considered, the prosecution history indicates that only FIGS. 3C-3F of Shiplacoff '989 were considered by the Examiner with respect to the earlier-pending claims 4-6, which do not encompass the allowable subject matter or any of the subject matter subsequently added to the claims. APPLE-1002, 201, 463. Shiplacoff '989's FIGS. 3C-3F, which are directed to the concept of a launch wave, cannot be found in Shiplacoff. APPLE-1011, ¶¶[71], [75]. Indeed, there is not a single recitation of a launch wave in Shiplacoff. Thus, Shiplacoff and Shiplacoff '989 are not cumulative and the disclosure relied upon in any Examiner analysis is not relied upon in this IPR Petition.

To the extent that Shiplacoff and Shiplacoff '989's disclosure are alleged to be similar (which Petitioner does not necessarily concede), there is no evidence that any such overlapping subject matter was considered by the Examiner and applied against the allowed claims. Indeed, a review of the prosecution history shows that other than a cursory mention of Shiplacoff '989's FIGS. 3C-3F in the rejection of claims 4-6, there was no substantive discussion related to Shiplacoff '989. And because Shiplacoff '989's FIGS. 3C-3F cannot be found in Shiplacoff, there is no overlap of issues or arguments between this Petition and the prosecution history. For

at least these reasons, *Beckton Dickinson* factors (a)-(d) and *Advanced Bionics* prong (1) do not favor discretionary denial.

Further, while there is no need to reach Part Two of the *Advanced Bionics* framework and *Beckton Dickinson* factors (e)-(f), the record shows that the Challenged Claims were allowed based on a material error by the Examiner. For example, as explained in this Petition, Shiplacoff, by itself or in combination with Nan, renders obvious all the features of the independent claims, including feature [1j], which was the basis for the Examiner's erroneous allowance. In particular, as explained above for feature [1j], Shiplacoff's FIGS. 2 and 3 provide a graphical depiction that clearly disclose the feature ("such that the at least portion of the user interface of the application is reduced in size and is further displayed in its entirety when displayed in the first virtual display layer") relied upon by the Examiner as the basis for allowance. APPLE-1002, 760-778.



APPLE-1004, FIGS. 2 (left), 3 (right).

Shiplacoff’s FIGS. 2 and 3 and its related description cannot be found in Shiplacoff ’989. Thus, the Examiner materially erred by not giving proper consideration to Shiplacoff, even though it was cited in an IDS. APPLE-1002, 302.

Notwithstanding the above, the Petition does not rely solely on the disclosure in Shiplacoff. One invalidity ground is based on the Shiplacoff-Nan combination. Indeed, Nan, by itself or in combination with Shiplacoff, was never considered by the Examiner with respect to any of the issued claims. The Examiner erred by never considering this combination. Thus, none of the *Beckton Dickinson* factors and *Advanced Bionics* prongs support a finding of discretionary denial under 35 U.S.C. § 325(d). *Advanced Bionics, LLC v. MED-EL*

Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020) (precedential).

VI. PAYMENT OF FEES – 37 C.F.R. §42.103

Petitioner authorizes the Office to charge Deposit Account No. 06-1050 for the petition fee set in 37 C.F.R. §42.15(a) and for any other required fees.

VII. CONCLUSION

Accordingly, Petitioner respectfully requests IPR of the Challenged Claims.

VIII. MANDATORY NOTICES UNDER 37 C.F.R. §42.8

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

Petitioner, Apple Inc., is the real party-in-interest.

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

Petitioner is not aware of any disclaimers, reexamination certificates or petitions for *inter partes* review for the '578 Patent.

The '578 Patent is the subject of dispute between the parties at the Southern District of California (*Smith Interface Technologies, LLC v. Apple Inc.*, 3-23-cv-01187, S.D. Cal. (June 27, 2023)). APPLE-1006.

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

Petitioner provides the following designation of counsel.

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D. Service Information

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

Petitioner consents to electronic service by email at IPR50095-0164IP1@fr.com.

Respectfully submitted,

Dated: June 28, 2024

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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 9,117 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Dated: June 28, 2024

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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 June 28, 2024, a complete and entire copy of this Petition for *Inter Partes* Review and all supporting exhibits were provided via USPS Priority Express Mail, to the Patent Owner by serving the correspondence address of record as follows:

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